

Instruction Manual

4812340801
Operation and Maintenance

Tire Compactor
CP28

Diesel Engine
Cummins QSF 4.5 - Stage IIIA 97 kW
Cummins F3.8 - Stage V 101 kW

From serial number
Stage IIIA - 10000533xxB009080 -
Stage V - 10000534xxB009080 -



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Revision	141

Introduction

Dynapac CP28

The Dynapac CP28 is a 28-ton tire compactor with a compaction width of 2,083 mm (81 inch).

It has four directional wheels at the front and four traction wheels at the rear. The hydrostatic drives, flexible ballast solution and a wide range of optional equipment permit a variation of different configurations. The CP28 is widely used in conjunction with other asphalt compactors for surface sealing. Thanks to its weight, it is also suitable for compacting other types of surfaces.

Warning symbols



WARNING! Damage to the machine or its components.



Alert! Your safety may be involved.

Safety information



The Safety Manual that comes with the machine must be read by the operator. Always follow the safety instructions and do not remove the Manual from inside the equipment.



It is recommended to train operators at least in the handling and daily maintenance of the machine in accordance with the instruction manual. Passengers are not allowed in the machine, and the operator must remain in the seat whenever operating the equipment.



Read the manual in its entirety before starting the machine and before performing any maintenance.



Immediately request new manuals if they were lost, damaged, or become illegible.



Make sure you have good ventilation (exhaust air extraction) when the motor is started indoors.

CALIFORNIA Proposition 65

Decal and location of decal shown in section Decals –
Location and description.

 **WARNING:** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

General

This manual contains instructions for the operation and maintenance of the machine.

For maximum performance, the maintenance must be performed correctly, and the machine must be kept clean, so leaks, loose screws and loose connections can be found as soon as possible.

Inspect the machine every day before starting so you can detect any potential leaks or other faults.

Check the floor under the machine. Leaks are more easily detected on the floor than on the machine itself.

If any leaks are detected in hoses or fittings, contact immediately an authorized technical support to conduct the necessary repairs.



THINK ABOUT THE ENVIRONMENT! Do not dispose of oil, fuel, or other harmful substances into the environment. Always dispose of used filters, drain oil, and leftover fuel in the proper location.

This manual has instructions for periodic maintenance, normally performed by the operator.



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

CE Mark and Declaration of Conformity

(APPLIED TO MACHINERY MARKETED IN THE EUROPEAN COMMUNITY)

This machine has the "CE" mark. This shows that it meets the applicable basic health and safety directives in accordance with 2006/42/EC at the time of delivery and that it also meets other directives applicable to the machine.

A "Declaration of Conformity" is included with the machine, which specifies the applicable directives and supplements, as well as the harmonized standards and other regulations relevant to the case.

Safety - General instructions

(also read the Safety Manual)



1. Read and understand this Manual before starting and running 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 work the machine if you are unqualified, untrained or do not have experience. **NEVER** allow passengers to be present and **ALWAYS** run the machine seated on the operator seat.
4. Do not run 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 machines are equipped with a Roll-Over Protective Structure (ROPS) in compliance with ISO 3471. Always wear seat belt.
7. On sharp turns, travel at low speed.
8. Avoid moving near cliffs or with a steep side slope. Operate the machine in Turtle mode and always examine the operation of the brakes.
9. When running 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 running on uneven floors.
12. Obey all safety rules and use the proper 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 flames 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 up 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 key 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 make modifications to 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. Refer to the operating instructions "Engine Stop" in the "Operation" section.

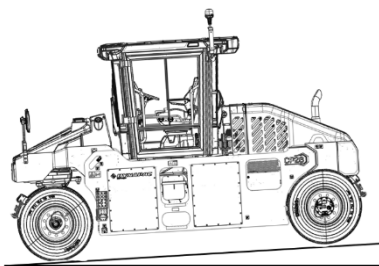
19. For your own protection always use:
 - Safety helmet.
 - Safety boots with toes protection.
 - Ear protectors.
 - Reflective vest.
 - Work gloves.
20. In a machine with a cab, always run it with the door closed and with the seat belt fastened.

Safety - During operation



Prevent people from entering or staying in the danger area, i.e. at least 7 m (23 ft) in all directions from the operating machine. The operator may allow a person to remain in the danger area, but in this case, care must be taken, and the machine should only be operated when the person is in a visible position or has clear information as to where they are.

Transportation on steep terrain



>5% (2.8°)

Fig. - Steep terrain < max. (15 km/h or 9.3 mph)

When transporting on steep terrain (slope >5%), be careful not to exceed the maximum speed of the machine.

Note: This equipment has an engine speed limiter that improves the engine brake when driving on slopes.

Control acceleration using the speed limiter (potentiometer) at a maximum of 15 km/h (9.3 mph) and use the brake if necessary.

Decrease acceleration by controlling the engine speed and use the engine brake. Also use the main brake if the speed continues to increase.

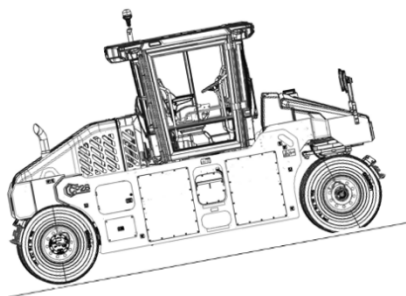
Use turtle mode to make the engine brakes more efficient and extend the dynamic brake system durability.

Performing work and transportation on steep terrain

When working or moving the machine over steep terrain, always drive it in turtle mode.



(>15%).



>15% (8.5°)

**Fig. - Steep slope
Low speed (up to 6 km/h or 3.7 mph)**



Make sure the work area is clear of obstacles, both in front and behind.

Edge-to-edge operation

When working near edges or potholes, ensure that at least **3/4** of the tires are in contact with compacted ground.



During the operation of the equipment, the operator must always remain seated in the operator's seat.

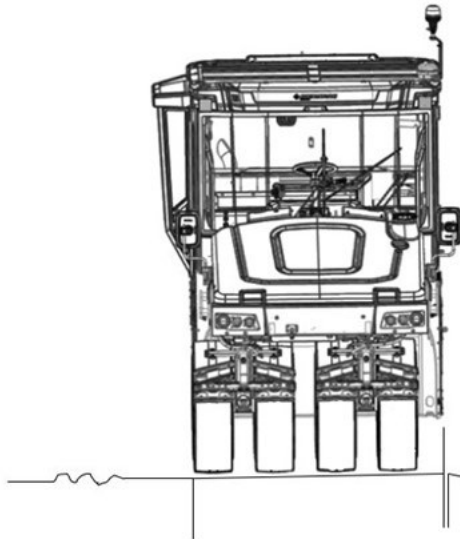


Fig. - Positioning of the wheels when operating close to the edge at least 3/4

Inclination

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

The steering angle is zero, the tire pressure must be among the maximum and minimum limits, and all tanks must be full.

Always keep in mind that an unstable surface, the direction of the machine, different tire pressures, the operating speed and the elevation of the center of gravity, can cause the machine to turn, even on ramps with slopes lower than those specified here.



In the event of an emergency evacuation of the cabin, release the hammer found on the rear pillar, on the right side, and break the opening windows also on the right side.



This equipment is equipped with Rollover Protection Structure (ROPS), avoid working on slopes or uneven surfaces with equipment that does not have this certification.



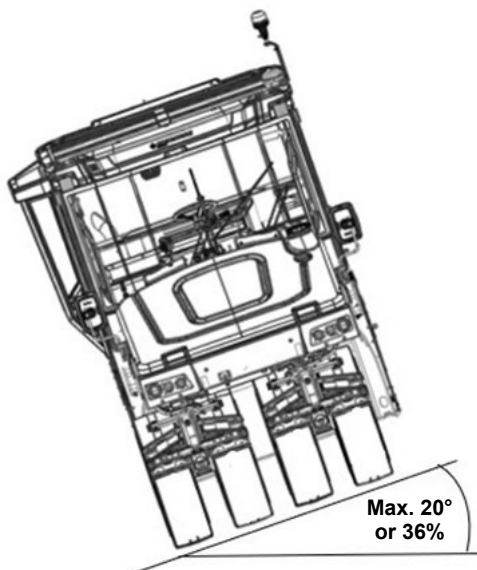
Whenever possible, avoid running transversely on slopes. On slopes, drive straight up and down.



Always use the lowest speed when running on slopes.



Always run the machine with the door closed and the seat belt fastened.



Safety - Optional accessories

Air conditioner

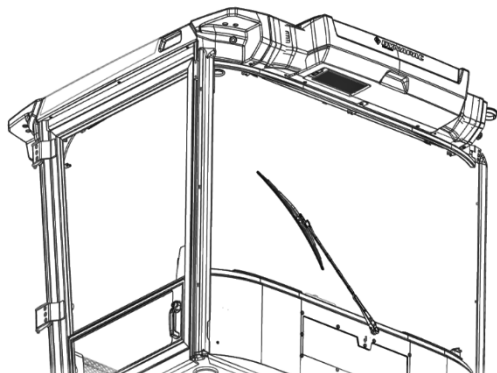


Fig. - Cabin



The system has refrigerant gas under pressure. It is forbidden by law to release refrigerant gas into the atmosphere.



Maintenance services on the air conditioning system should only be performed by trained personnel with the proper tools and equipment.



The air conditioning system is under pressure. Improper handling can cause serious personal injury. Do not loosen and/or untighten hoses and connections with the loaded system.



The system should be refilled with approved refrigerant whenever necessary. Refer to the safety tag found near the refueling location. The work should always be conducted by a trained professional.

Fire extinguisher

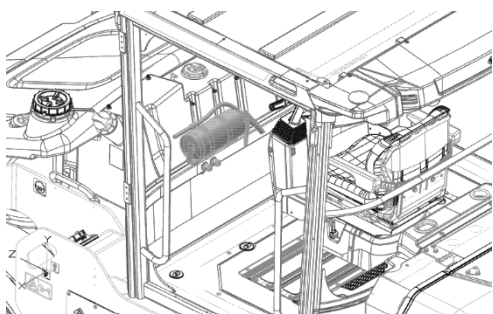


Fig. - Fire extinguisher inside the cabin (Optional)

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 extinguisher is found inside the cabin, in front 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, making the extinguisher inefficient.



Never discharge a fire extinguisher on 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 using it, leave it at a collection point so that it can be recharged immediately.

Special instructions

Recommended Standard Oil and Fluids

When the compactor leaves the factory, the various systems are supplied with oil or fluids indicated in the item "Symbols and Lubricants", which are suitable for operations in environments with temperatures between -15 °C (+5 °F) and +40 °C (+104 °F).



The following recommendations apply for operations at temperatures up to +40 °C (+104 °F).

Higher ambient temperature, from +50 °C (+122 °F)

The engine can run up to this temperature using normal production oil, but for other components use the following oils: Hydraulic system - mineral oil, Shell Tellus T100 or equivalent.

Lower ambient temperature - risk of freezing

Make sure the system has been drained (sprinkler, hoses, tank(s)) or that antifreeze has been added, to prevent freezing of the system.

Temperatures

Make sure the system has been drained (sprinkler, hoses, tank(s)) or that antifreeze has been added, to prevent freezing of the system.

Washing under high pressure



It is important to check that the jet of water under pressure should not be directed at the caps of the fuel tanks and the hydraulic system.

Cover the filler caps with plastic wraps and close with rubber bands. This will prevent water from penetrating through the vent hole of the caps, causing problems in the systems involved and probable clogging in filters.

Never direct the water jet under pressure at electrical, electronic components, or the instrument panel (always keep them covered by plastic covers or wraps).

Fire extinguisher

In the event of a fire in the equipment, use a class ABC chemical or carbon dioxide (CO₂) fire extinguisher. It is also possible to use a class BE CO₂ fire extinguisher.

Rollover protection structure (ROPS)



NEVER weld or drill holes in the ROPS structure.



NEVER repair a ROPS frame, replace it with a new one.

Welding



When carrying out welding on the machine, the battery must be disconnected and the electronics disconnected from the electrical system, consult your technical representative before welding.

Engine and exhaust aftertreatment system



NEVER intentionally tamper with the engine, its control system, or the exhaust aftertreatment system, as this will result in the cancellation of the engine's type approval, making the end user - i.e., the legal entity - responsible for non-compliance with legislation.

Battery handling



When disassembling the batteries, always disconnect the negative cable first.



When assembling them, always connect the positive cable first.



Dispose of used batteries in a manner that is not harmful to the environment. They hold toxic lead.



Never use fast charging to charge the battery, as this may shorten its lifespan.

Direct connection (24V)



Do not connect the negative cable to the negative pole on a dead battery. A spark can cause the gaseous mixture of oxygen and hydrogen formed around the battery to combust.



Check that the battery used for the direct connection has the same voltage as the discharged battery.



Turn off the ignition and all mains-powered equipment.



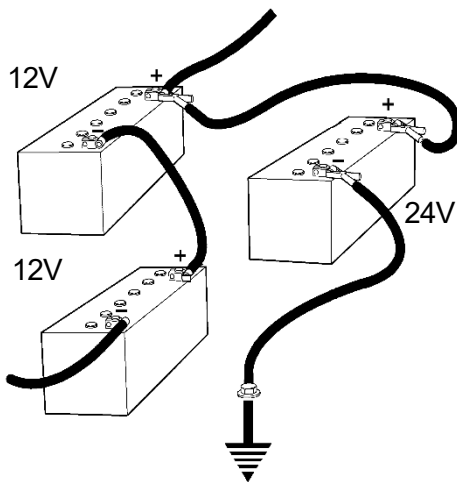
Turn off the engine of the machine that is supplying power to the direct link.

Direct connect cables must be 24V.

Auxiliary starter

When using an auxiliary battery in parallel with those installed in the compactor, always connect the positive (+) terminal of the auxiliary battery to the positive (+) terminal of the installed battery, and the negative (-) terminal of the auxiliary battery to the negative (-) terminal of the battery installed in the machine.

Start the engine on the machine that provides the power and let it run for a brief time. Then try to turn on the other machine. Finally, disconnect the cables in reverse order.



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% [°F10%], % vol	Min.	ASTM D86	150 [302]
	°C90% [°F90%], % vol	Min.		282 [539.6]
		Max.		338 [640.4]
Cleaning	-	-	ISO 4406	Associate Codes 18/16/13
Grey	% mass	Max.	ASTM D482	0.01
Sulphur	ppm	Max.	ASTM D5453 ASTM D2622	Refer to the corresponding Owner's Manual. See Procedure 018-002 in Section V.

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

Engine aftertreatment system

Stage V engines

It is equipped with a Diesel Oxidation Catalyst, a Diesel Particulate Filter and a Selective Catalytic Reduction system (SCR) for further treatment of the exhaust gas.

Diesel Exhaust Fluid (DEF) contains the following characteristics: biodegradable; composed of DEF and water; slight ammonia odor; colorless; it is non-flammable; non-toxic and non-polluting and must meet the International Standard ISO 22241-1 for Diesel engines. The DEF content of DEF solution should be 32.5% ± 0.7% by weight.

For engines using SCR working in the United States and Canada, DEF certified by the American Petroleum Institute (API) is recommended for use.



Follow the recommendations in the manufacturer's manual for the maintenance of the Aftertreatment System.



The disposal of DEF must be done following the environmental legislation of each location, and it is NOT discarded in the environment.



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

Environment - General information

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 conducted 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 taken when changing the HFC - R134A refrigerant. Each region or country establishes technical, environmental and safety criteria so that maintenance must be conducted 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 a proper 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 proper 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's station (ISO 2631)**

The vibration levels have been measured in accordance with the operating cycle described in the European directive 2000/14/EC relevant to machines on the European market equipped with the operator's seat in the transport position.

The vibrations measured in the total length were below the action value of 0.5 m/s^2 as specified in Directive 2002/44/EC (the limit is 1.15 m/s^2).

The vibrations measured in the hand/arm are also below the action value of 2.5 m/s^2 specified in the same directive (the limit is 5 m/s^2).

Noise level

The sound levels have been measured in accordance with the operating cycle described in the European directive 2000/14/EC relevant to machines on the European market equipped with the operator's seat in the transport position.

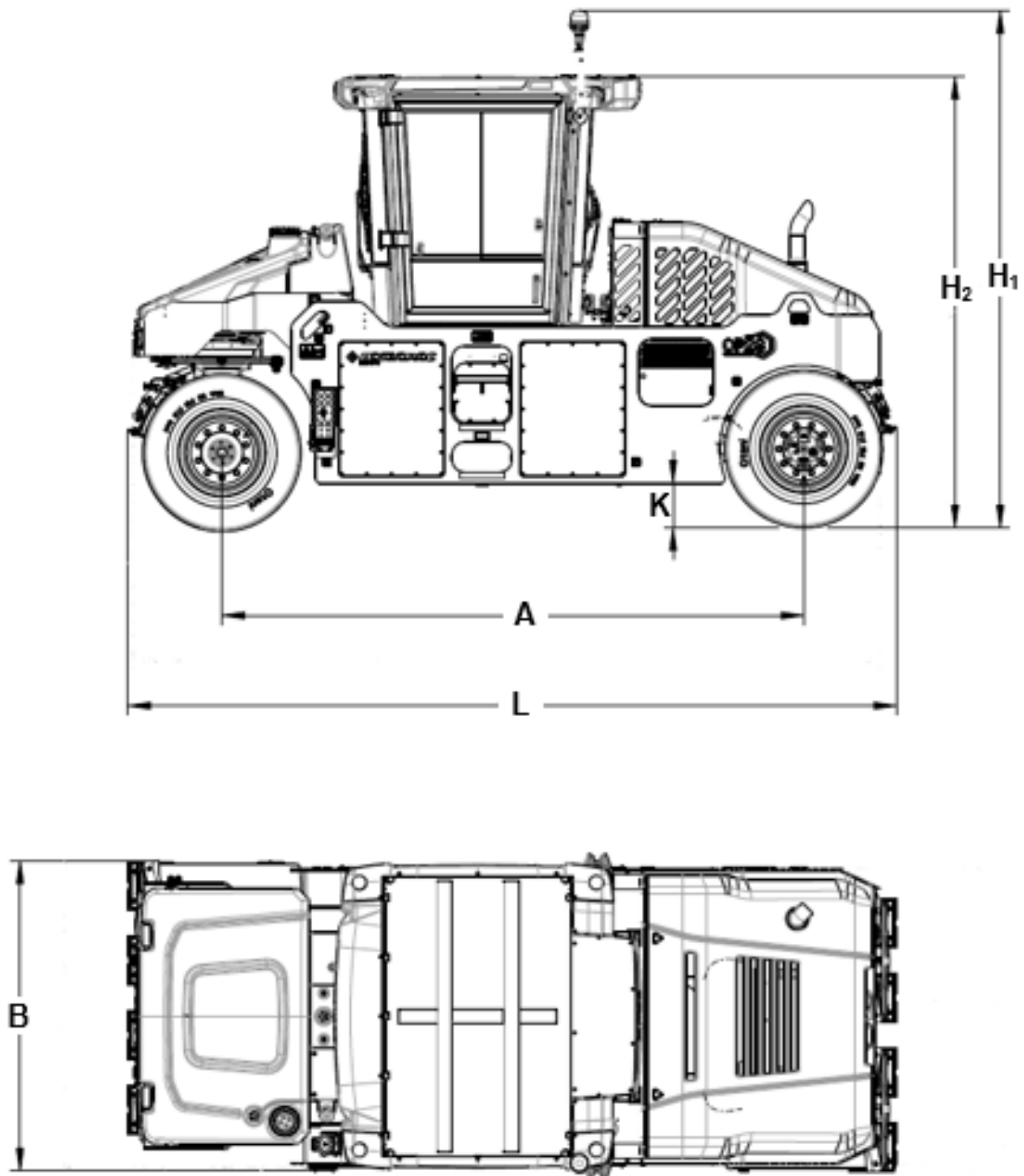
Guaranteed sound power level, L_{WA}	104 dB(A)
Sound pressure level at the operator's working place (platform), L_{pA}	$85 \pm 3 \text{ dB(A)}$
Acoustic pressure level at the operator's working place (cab), L_{pA}	$80 \pm 3 \text{ dB (A)}$

During normal operation, deviations from the above values may occur, depending on the specific working conditions.

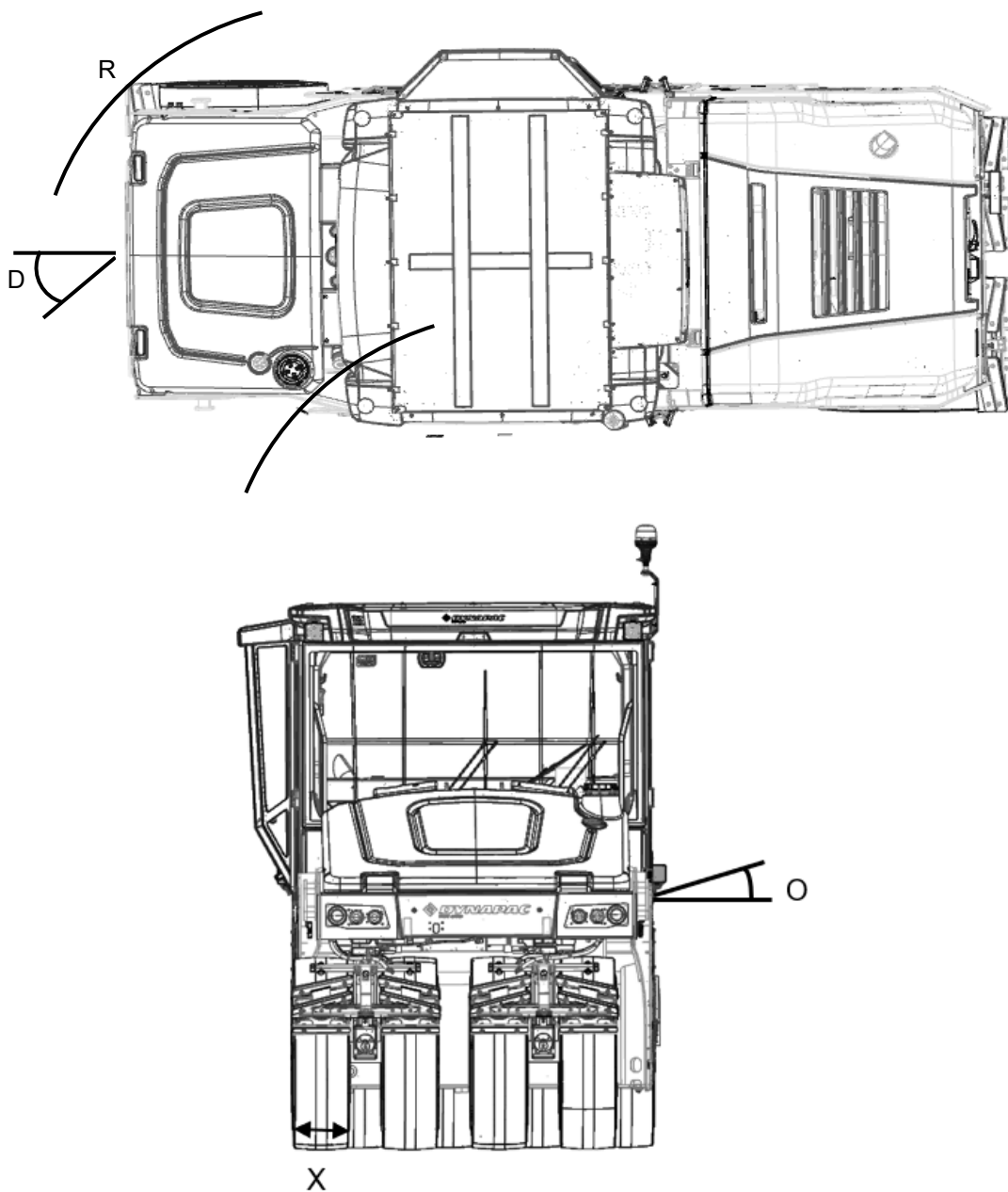
Electrical system

The machines have been tested for electromagnetic compatibility according to EN 13309:2000: "Construction machinery".

Technical specifications - Dimensions



Dimensions	Mm	Inch
A – Between axles	3,900	153.5
B – Overall width	2,083	82
H1 – Height with accessory	3,472	136.7
H2 – Overall height	3,031	119.3
K – Ground distance	301	11.8
L – Overall Length	5,153	202.9



Dimensions	mm	Inch
R – Outer Radius	7,130	280.7
r – Inner radius	5,651	222.48
x – Tire width	320	12.6

Dimensions	Degrees
O – Vertical oscillation	4.5
D – Steering angle	34.6

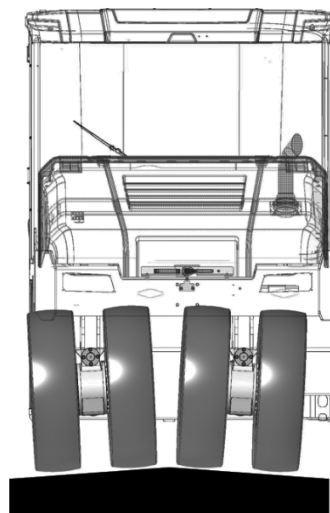
Front Suspension



Oscillation = 4.5°
Tire Tilt = 0°

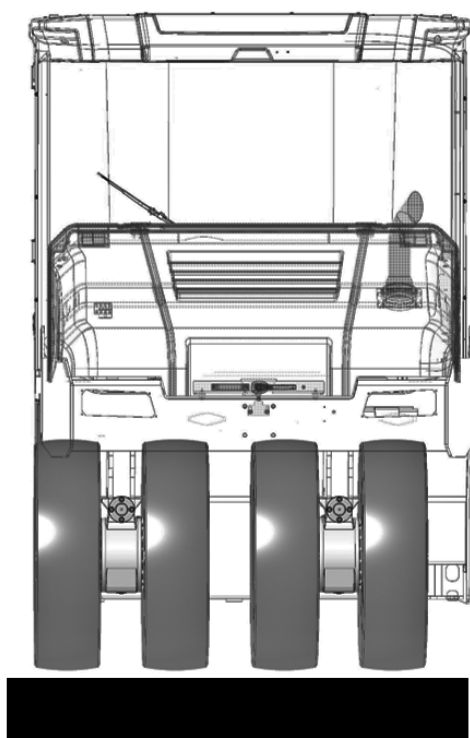


Oscillation = 4.5°
Tire Tilt = 0°

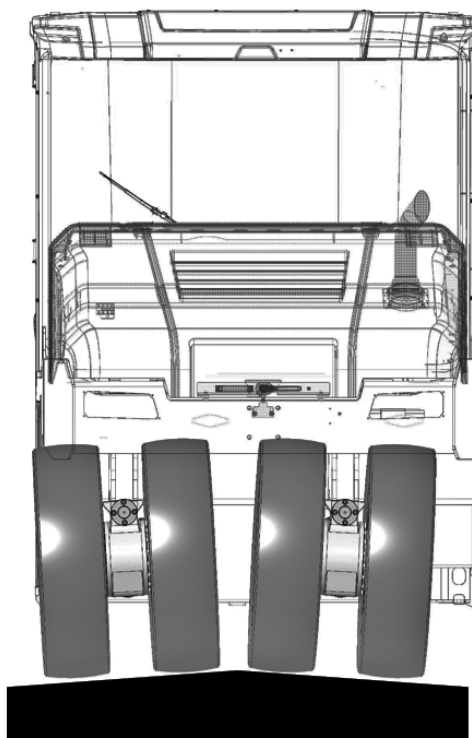


Oscillation = 0°
Tire inclination = 1.5°

Rear suspension



Oscillation = 0°
Tire Tilt = 0°



Oscillation = 0°
Tire inclination = 2°

Weights and volumes

Steel plate combinations	Total weight, kg (lbs)	Wheel Load, kg (lbs)
Machine without Ballast	9,900 (21,825)	1,238 (2,729)
Machine + Central Ballast	13,000 (28,660)	1,625 (3,583)
Machine + Full Ballast	23,000 (50,706)	2,875 (6,338)
Machine + Extra Full Ballast	27,100 (59,745)	3,388 (7,469)

Loose material combinations	Total weight, kg (lbs)	Wheel Load, kg (lbs)
Machine + Water	13,140 (28,968)	1,643 (3,622)
Machine + Wet Sand	16,300 (35,935)	2,038 (4,493)
Machine + Wet Grit	21,240 (46,826)	2,655 (5,853)
Machine + Scrap Metal	25,150 (55,446)	3,144 (6,931)

Steel plate + loose material combinations	Total weight, kg (lbs)	Wheel Load, kg (lbs)
Machine + Central Ballast + Water	16,000 (35,273)	2,000 (4,409)
Machine + Full Ballast + Water	24,500 (54,013)	3,063 (6,753)
Machine + Central Ballast + Wet Sand	18,450 (40,675)	2,306 (5,084)
Machine + Full Ballast + Wet Sand	24,200 (53,351)	3,025 (6,669)
Machine + Central Ballast + Wet Grit	22,400 (49,383)	2,800 (6,173)
Machine + Full Ballast + Wet Grit	25,140 (55,424)	3,143 (6,929)
Machine + Central Ballast + Scrap Metal	25,650 (56,548)	3,206 (7,068)
Machine + Full Ballast + Scrap Metal	25,800 (56,879)	3,225 (7,110)
Machine + Extra Full Ballast + Water	28,200 (62,170)	3,525 (7,771)

This machine can use 16 ballast blocks inside the chassis. Each block weighs 543.3 kg (1,198 pounds) and is used individually. Eight of them are found at the front, and eight at the rear, so use a suitable combination to get the most out of the ballast. In the central compartment, 14 ballast blocks are used inside the chassis and each block weighs 237.6 kg (524 pounds) and is used individually.

The working weight of the compactor consists of the weight of the machine and the weight of the ballast. Thicker layers require a heavier machine for compaction, while thinner layers do not need such a heavy machine.

Filling volumes

Hydraulic oil reservoir	90 L (23.77 gal)
Hydraulic Oil System	30 L (7.93 gal)
T-GEARBOX Lubricating Oil	2x8 L (2x2.11 gal)
Diesel Engine Lubrication Oil	12 L (3.17 gal)
Coolant, Diesel Engine	18.5 L (4.89 gal)
Fuel tank	210 L (55.48 gal)
DEF reservoir	16 L (4.23 gal)
Water Reservoir	360 L (95.10 gal)
Water Ballast Box Volume (Total)	3.2 m ³ (113.01 ft ³)

Working capacity

Compression data

Load on the tires:

- Ballast less	1,238 kg (2,729 lbs)
- Water-ballasted	1,643 kg (3,622 lbs)
- Ballasted at its maximum	3,525 kg (7,771 lbs)

Propulsion

Speed range	0-20 km/h (0-12.4 mph)
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General

Engines

Manufacturer and model: Cummins QSF4.5 STAGE IIIA **Power (SAE J1995):** 130 hp (97 kW) 2,200 rpm

Manufacturer and model: Cummins F3.8 STAGE V **Power (SAE J1995):** 134 hp (101 kW) 2,200 rpm



Stage V engines require the use of Ultra-Low Sulfur Diesel (ULSD) fuel, which contains 15 ppm (parts per million) of sulfur or less. Using fuel with a higher sulfur content may cause operational issues and compromise the service life of engine components, potentially leading to engine malfunction.

CO₂ Emissions (Stage V)

CO₂ emissions measured according to the applicable test cycle in the Regulation (EU) 2016/1628.

Manufacturer/Model	Test cycle	CO ₂ Emissions (g/kWh)
Cummins F3.8 STAGE V	NRTC	717.1

Electrical system

Battery	2 x 12 V / 74 Ah (24V)
Alternator	24V 70A
Fuses	See "Fuses" in the "Electrical system" section

Technical specifications

Lamps (if mounted)	Watt	Socket
Traffic lights, front	75/70 W	P43t (H4)
Front lights	25 W	BA15s
Side lights	3.8 W	SV8.5
Locking lights	21/5 W	BAY15d
Rear lights	21 W	BA15s
Number plate lights	5 W	SV8.5
Work lights	45.6 W	PK22s (H3)
Cab lights	10 W	SV8.5

Hydraulic system

Opening pressure

Steering system	190 BAR	2,755 PSI
Transmission system	420 BAR	6,091 PSI
Feeding system	25 BAR	362 PSI
Brake release	19 BAR	275 PSI

Maximum hydraulic flow rate

Accessory Pumps	41.5 liters (10.96 gallons)
Propulsion Pump	105 liters (27.74 gallons)

Air conditioning (optional)

The system described in this manual is of the AC/ACC (Automatic Climate Control) type, that is, it is a system that keeps the temperature set in the cabin as long as the windows and doors remain closed.

Coolant designation: HFC-R134: A

Coolant weight, full: 1,000 g (2.2 lbs).

Torque

Torque for lubricated bolts tightened with a torque wrench.

NORMAL METRIC THREAD, GALVAN. POLISHED (fzb)	RESISTANCE CLASS					
	8.8, Oiled	8.8 No lubrication	10.9 Oiled	10.9 No lubrication	12.9, Oiled	12.9 No lubrication
M6	8.4 N.m (6.2 lb.ft)	9.4 N.m (6.9 lb.ft)	12 N.m (8.8 lb.ft)	13.4 N.m (9.9 lb.ft)	14.6 N.m (10.7 lb.ft)	16.3 N.m (12.02lb.ft)
M8	21 N.m (15.5 lb.ft)	23 N.m (16.9 lb.ft)	28 N.m (20.6 lb.ft)	32 N.m (23.6 lb.ft)	34 N.m (25.07 lb.ft)	38 N.m (28.02lb.ft)
M10	40 N.m (29.5 lb.ft)	45 N.m (33.1 lb.ft)	56 N.m (41.3 lb.ft)	62 N.m (45.7 lb.ft)	68 N.m (50.1 lb.ft)	76 N.m (56.05 lb.ft)
M12	70 N.m (51.6 lb.ft)	78 N.m (57.5 lb.ft)	98 N.m (72.2 lb.ft)	110 N.m (81.1 lb.ft)	117 N.m (86.3 lb.ft)	131 N.m (96.6 lb.ft)
M14	110 N.m (81.1 lb.ft)	123 N.m (90.7 lb.ft)	156 N.m (115 lb.ft)	174 N.m (128.3 lb.ft)	187 N.m (138 lb.ft)	208 N.m (153.4 lb.ft)
M16	169 N.m (124.6 lb.ft)	190 N.m (140.1 lb.ft)	240 N.m (177 lb.ft)	270 N.m (200 lb.ft)	290 N.m (213.9 lb.ft)	320 N.m (236.01 lb.ft)
M20	330 N.m (243.4 lb.ft)	370 N.m (272.9 lb.ft)	470 N.m (346.6 lb.ft)	520 N.m (383.5 lb.ft)	560 N.m (413.03 lb.ft)	620 N.m (457.28 lb.ft)
M22	446 N.m (329 lb.ft)	497 N.m (366.5 lb.ft)	626 N.m (461.7 lb.ft)	699 N.m (515.5 lb.ft)	752 N.m (554.6 lb.ft)	839 N.m (618.8 lb.ft)
M24	570 N.m (420.4 lb.ft)	640 N.m (472 lb.ft)	800 N.m (590 lb.ft)	900 N.m (663.8 lb.ft)	960 N.m (708.05 lb.ft)	1,080 N.m (796.5 lb.ft)
M30	1,130 N.m (833.5 lb.ft)	1,260 N.m (929.3 lb.ft)	1,580 N.m (1,165.3 lb.ft)	1,770 N.m (1,305.5 lb.ft)	1,900 N.m (1,401.3 lb.ft)	2,100 N.m (1,548.8 lb.ft)

Torque (cont.)

METRIC THREAD NORMAL, ZINC PLATED (Dacromet / GEOMET)	RESISTANCE CLASS			
	10.9 Lubricated	10.9 No lubrication	12.9 Lubricated	12.9 No lubrication
M6	12 N.m (8.8 lb.ft)	15 N.m (11.06 lb.ft)	14.6 N.m (10.7 lb.ft)	18.3 N.m (13.4 lb.ft)
M8	28 N.m (20.6 lb.ft)	36 N.m (26.5 lb.ft)	34 N.m (25.07 lb.ft)	43 N.m (31.7 lb.ft)
M10	56 N.m (41.3 lb.ft)	70 N.m (51.6 lb.ft)	68 N.m (50.1 lb.ft)	86 N.m (63.4 lb.ft)
M12	98 N.m (72.2 lb.ft)	124 N.m (91.4 lb.ft)	117 N.m (86.3 lb.ft)	147 N.m (108.4 lb.ft)
M14	156 N.m (115 lb.ft)	196 N.m (144.5 lb.ft)	187 N.m (138 lb.ft)	234 N.m (172.5 lb.ft)
M16	240 N.m (177 lb.ft)	304 N.m (224.2 lb.ft)	290 N.m (213.9 lb.ft)	360 N.m (265.5 lb.ft)
M20	470 N.m (346.6 lb.ft)	585 N.m (431.4 lb.ft)	560 N.m (413.03 lb.ft)	698 N.m (514.8 lb.ft)
M22	626 N.m (461.7 lb.ft)	786 N.m (579.7 lb.ft)	752 N.m (554.6 lb.ft)	944 N.m (696.2 lb.ft)
M24	800 N.m (590 lb.ft)	1,010 N.m (744.9 lb.ft)	960 N.m (708.05 lb.ft)	1,215 N.m (896.1 lb.ft)
M30	1,580 N.m (1,165.3 lb.ft)	1,990 N.m (1,467.7 lb.ft)	1,900 N.m (1,401.3 lb.ft)	2,360 N.m (1,740.6 lb.ft)

Wheel Bolts

Screw Dimensions	M20 (PN 4700792683)
Resistance class	10.9
Torque	Lubricated: 494 N.m (364.5 lb.ft)
	Non-lubricated: 620 N.m (457.2 lb.ft)

Machine description

Diesel engine

The machine is equipped with a fully electronically controlled, water-cooled, four-cylinder turbocharged diesel engine featuring high-pressure common rail (HPCR) direct injection and a wastegate turbocharger (WGT).

(Stage V)

"The engine is also equipped with an exhaust gas recirculation (EGR) system and a diesel particulate filter (DPF) for advanced exhaust after-treatment.

Electrical system

The machine is equipped with the following electronic control unit (ECU) and components:

- Main ECU (for the machine);
- Diesel Engine Control Module (ECM);
- I/O Board (Control Board);
- DisplayUnit

Propulsion system

The machine features a hydrostatic propulsion system, in which each wheel pair is powered by an individual drive unit. All propulsion motors are configured in parallel, and a central hydraulic pump supplies hydraulic fluid to all motors simultaneously.

Machine speed is proportional to the deflection angle of the control lever from its neutral position, allowing precise speed modulation. A speed selector is included as standard equipment, enabling the operator to predefine speed ranges for various operating conditions.

Brake system

The brake system consists of a service brake, reserve brake and parking brake.

The service brake is hydrostatic and is activated by moving the control lever to neutral.

Parking brake

The parking brake system consists of spring-applied disc brakes for each wheel pair.

The brakes are released with hydraulic pressure and are operated with a switch on the instrument panel.

Steering system

The steering system is a hydrostatic system.

The hydraulic valve regulate control cylinder connected to the front wheels.

A hydraulic pump supplies the control valve with fluid.

The steering angle is proportional to the deflection of the steering wheel.

Cab

The cab features a symmetrical-asymmetrical design and is equipped with a heating and ventilation system, including defrosters for all windows. It also includes air conditioning (AC) and automatic climate control (ACC), and complies with ISO 10263 standards.

Emergency exit

The cab has an emergency exit, the right and left opening windows, which can be crushed with the emergency hammer located in the cab.

On symmetrical and asymmetrical cabs, there is also an option to open the right door from the inside.

FOPS and ROPS

FOPS is the abbreviation for "Falling Object Protective Structure" (roof protection (ISO 3449)) and ROPS is the abbreviation for "Roll Over Protective Structure" (ISO 3471).

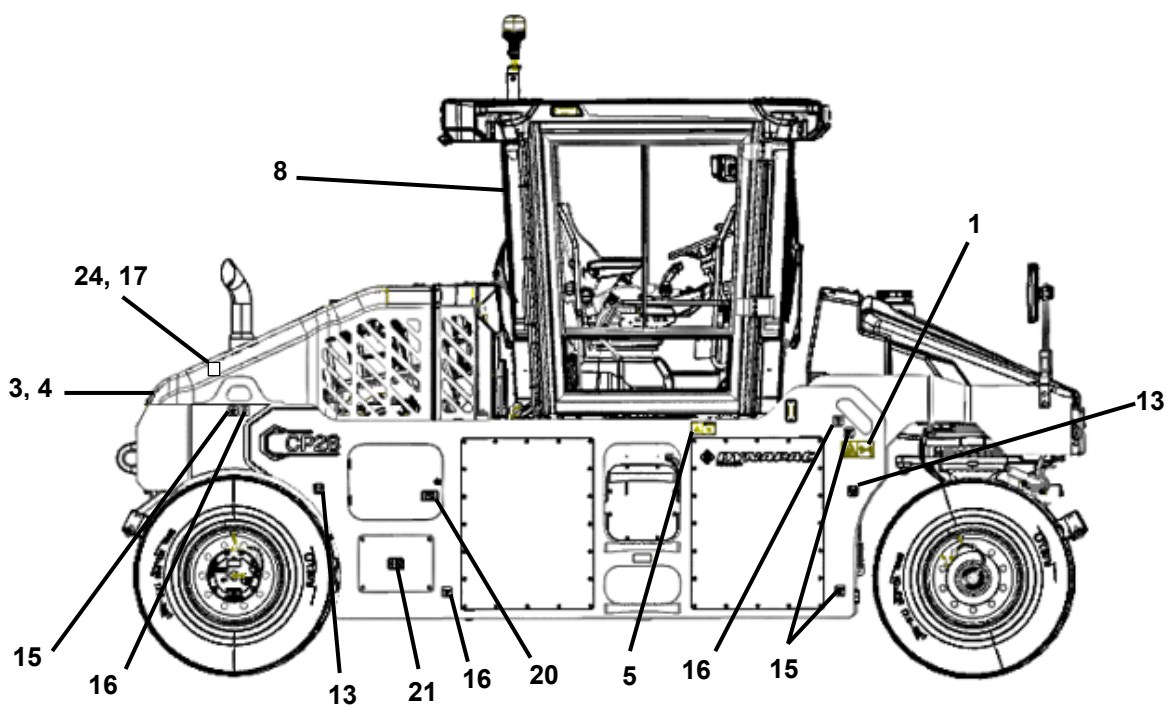
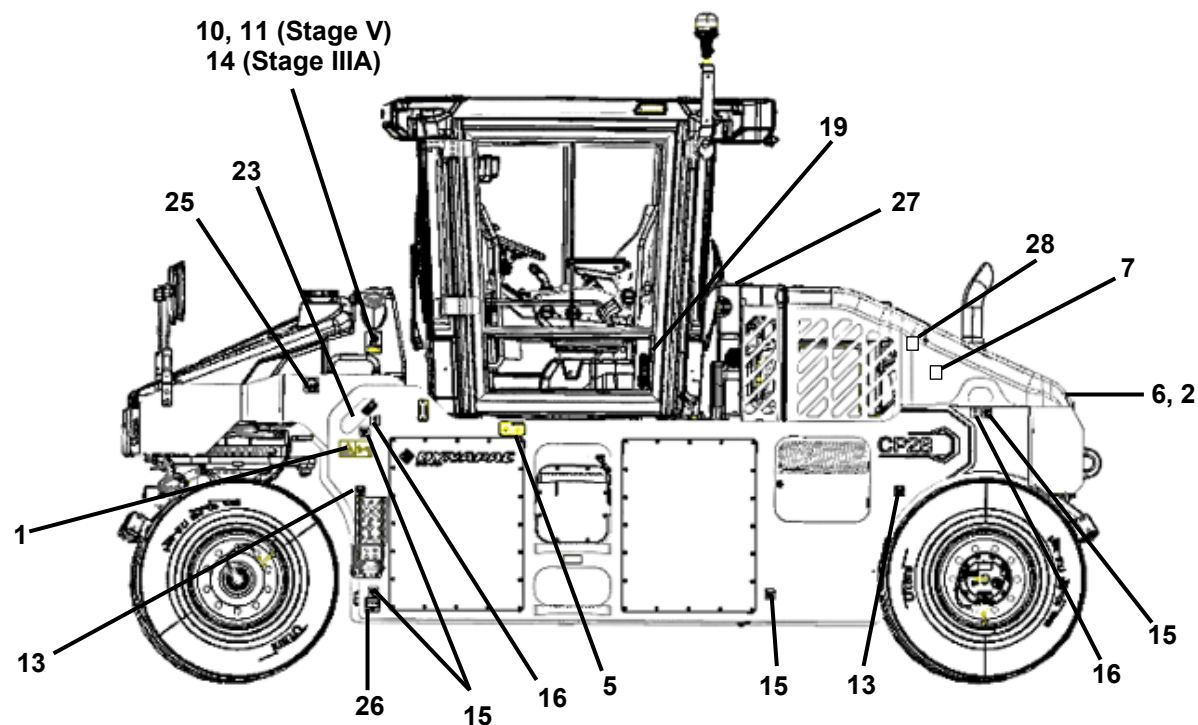
If any part of the protective construction on the cab or FOPS/ROPS structure reveals plastic deformation or cracking, the FOPS/ROPS structure must be replaced immediately.

Never undertake modifications to the FOPS/ROPS structure without first having discussed the modification with Dynapac's production unit.

Dynapac will resolve whether the modification would invalidate approval in line with FOPS/ROPS standard.

The roller is equipped with a cab, that is approved in FOPS level I and ROPS.

Decals - Location and description



Decals - Location and description

Location - decals, CALIFORNIA

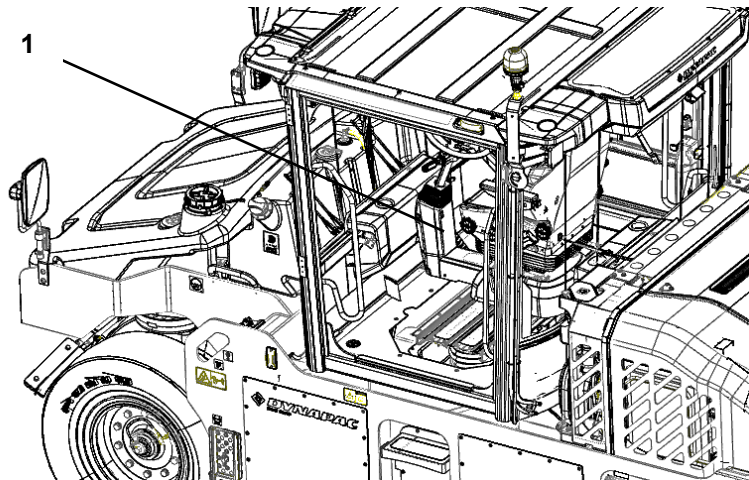


Fig. - Location

Warning, CALIFORNIA Proposition 65 4812129673



WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to
www.P65warnings.ca.gov/diesel

4812129673

Decals - Location and description

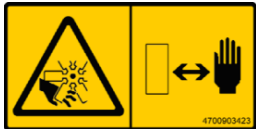
Safety decals - Location and description (cont.)

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

- 1**



4700903422
Wheel crushing hazard zone.
Keep a safe distance from this area
- 2**



4700903423
Rotating engine components, beware!
Keep your hands away from the danger zone
- 3**



4700903424
Hot surface, danger!
Do not touch these surfaces
- 4**



4700904895
Before releasing the brakes, read the chapter on towing carefully, as there is a danger of crushing injuries
- 5**



4700903459
It is recommended to read the Safety and Engine Manuals, as well as the operating and maintenance instructions
- 6**



4700397286
Fluid under high pressure.
Be sure to relieve the pressure of the accumulators before opening the hydraulic system
- 7**



4700791642
Gas should not be used for starting
- 8**



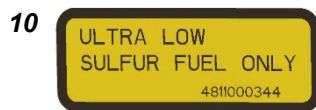
4700903590
Emergency exit - Cabin
- 9**



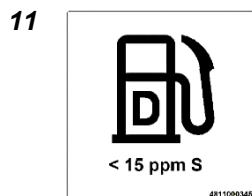
4700792634
Fire extinguisher

Decals - Location and description

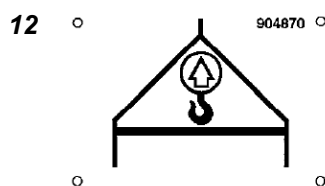
Info decals - Location and description (cont.)



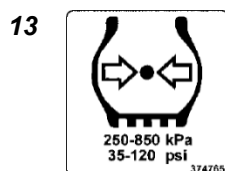
4811000344
 Only low-sulfur fuel
 (Tier 4 or superior)



4811000345
 Diesel oil (Tier 4 or superior)



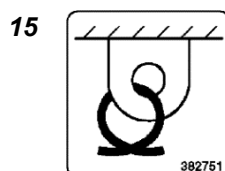
4700904870
 Information on the mass for hoisting the equipment



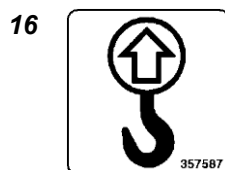
4700374765
 Tire pressure
 Min and Max



4700991658
 Diesel fuel

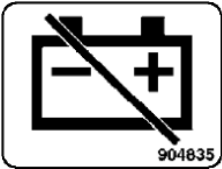
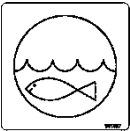
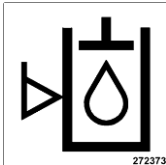


4700382751
 Attachment point



4700357587
 Hoisting point

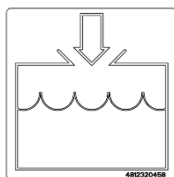
Info decals - Location and description (cont.)

- | | | |
|----|---|---|
| 17 |  | <p>4700272372
Hydraulic oil</p> |
| 18 |  | <p>4700792772
Bio hydraulic (optional)</p> |
| 19 |  | <p>4700903425
Compartment for manuals</p> |
| 20 |  | <p>4700904835
Battery main switch</p> |
| 21 |  | <p>4700393959
Battery voltage</p> |
| 22 |  | <p>4700791274
Sound power level</p> |
| 23 |  | <p>4700991657
Water reservoir</p> |
| 24 |  | <p>4700272373
Hydraulic oil level</p> |

Decals - Location and description

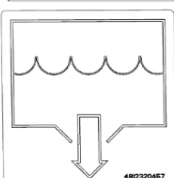
Info decals - Location and description (cont.)

25



4812320458
Water filling

26



4812320457
Water drainer

27



4700388449
Cooling

28



4812318406
Do not water

29



4812320468
Dyn@link

Identification plate

Machine plate

The machine plate (1) is found on the top step on the left side of the operator's platform.

This plate indicates the name of the manufacturer, type of machine, serial number, working weight, engine power and year of manufacture (machines with delivery outside the European Union do not have CE marks and, in some cases, do not show the year of manufacture either).

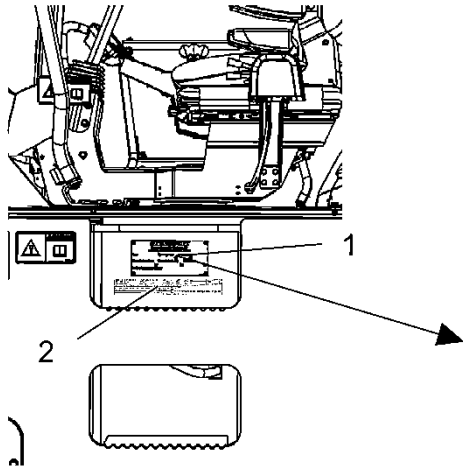


Fig. - Chassis
1. Identification plate
2. Engine identification

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	Date of Mfg
XXXX kg		XXXX kg	XXXX kg	XX/XXXX

NOTE: When ordering spare parts, inform the machine's serial number.

Product Identification Number (PIN) on the chassis

The product identification number - PIN (1) is engraved as shown in the figure. This is the same number that appears on the machine's nameplate (serial number).

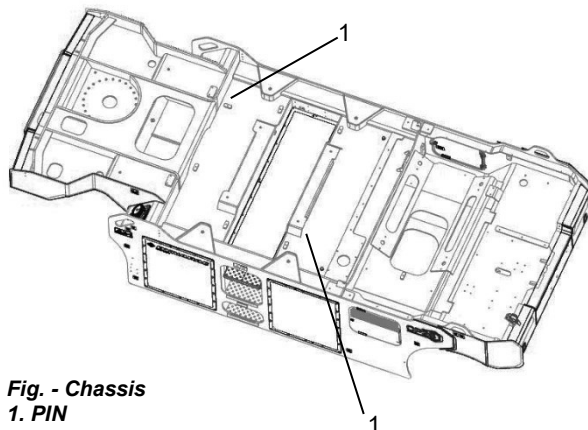


Fig. - Chassis
1. PIN

100	00123	V	S	B	123456
A	B	C	D	E	F

17 - character Product Identification Number (PIN) breakdown

- A - Manufacturer code (100 = Dynapac)
- B - Family/Model code (00533 = CP28 Stage IIIA)
(00534 = CP28 Stage V)
- C - Verification code
- D - Year of manufacture (S=2025, T=2026...)
- E - Factory code (B = Sorocaba, Brazil)
- F - Sequential serial number (from 000001 to 999999)

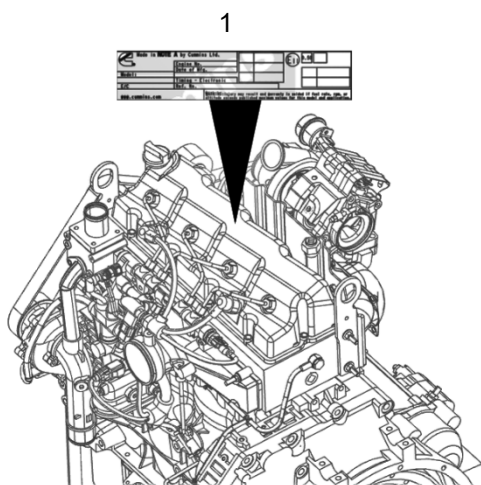


Fig. - Engine
1. Engine nameplate

Engine plate

The engine plate (1) is located on the cylinder head valve cover, which can be accessed when the hood is open.

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

The plate has information such as serial number and engine specifications.

NOTE: When ordering replacement parts, inform the engine's serial number.

Operator instruments and controls

Multifunction display, side panel and command keyboard.

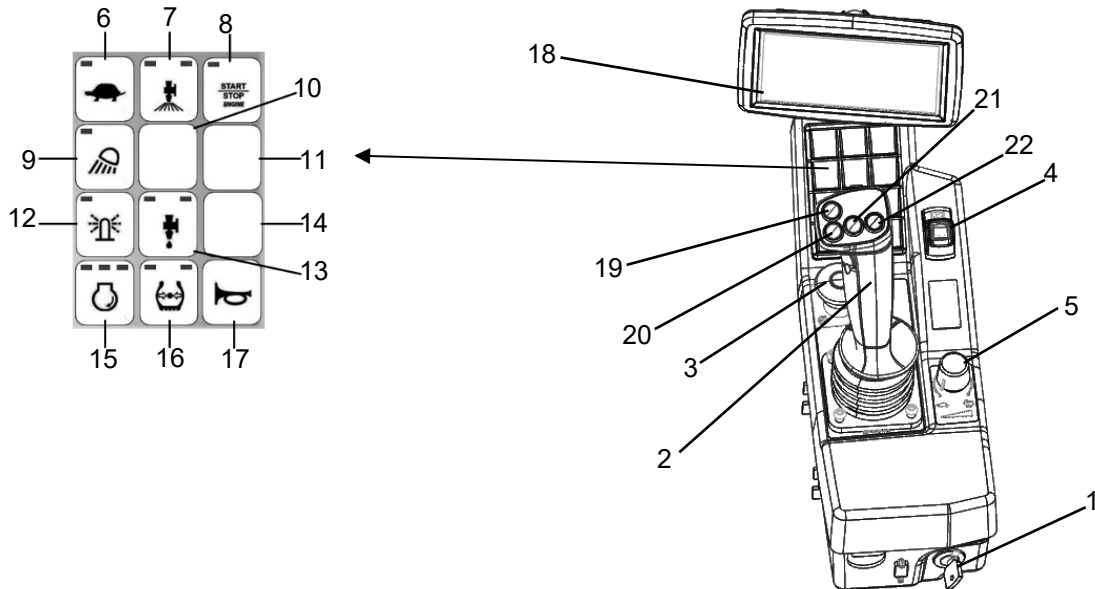


Fig. - Multifunction screen, side panel and command keyboard

1. Starter switch
2. Forward/Reverse lever
3. Emergency stop button
4. Parking brake switch
5. Speed adjustment
6. Driving mode (Rabbit/Turtle)
7. Water sprinkler control
8. Engine start/stop
9. Work lights
10. Empty
11. Empty
12. Rotating beacon
13. Emulsion control
14. Empty
15. Engine speed selection
16. AOR control (On/Off)
17. Horn
18. Multifunction display
19. Inflates the tires - consult manual AOR control mode
20. Deflate tires - consult manual AOR control mode
21. Emulsion system - manual mode
22. Water sprinkler system for manual mode
23. Warning lights

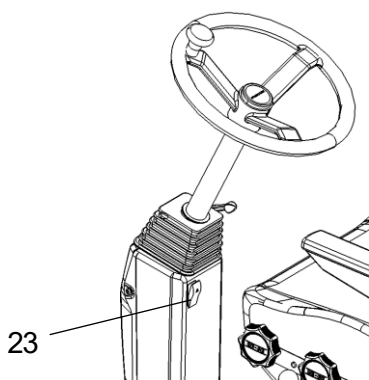
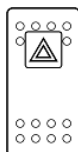


Fig. - Steering column



Flashing warning light

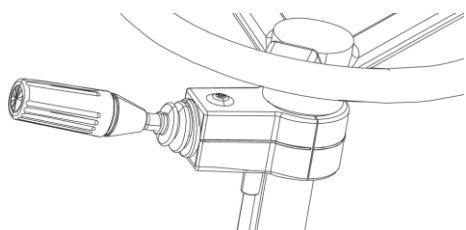


Fig. - Steering wheel switch (accessory)

Functions

1. Direction indicator
2. Work Lights
3. High/Low
4. Parking Lights
5. Horn

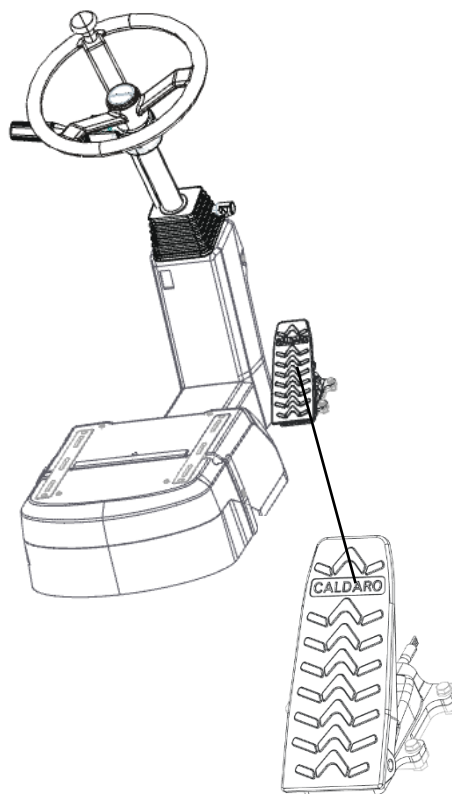
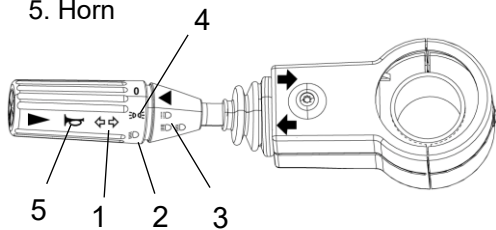
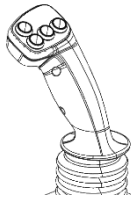
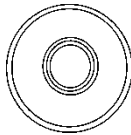
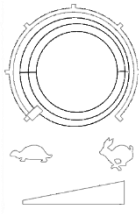


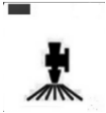
Fig. - Brake pedal

Instruments and controls - Description and function

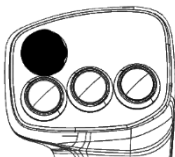
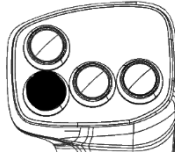
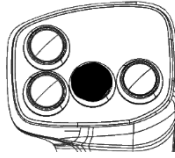
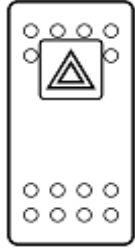
Instruments and controls - Description and function

No	ASSIGNMENT	SYMBOL	FUNCTION
1	Machine Start Switch		The electrical circuit is off. All electrical devices and controls are on.
2	Forward/Reverse Joystick		To start the machine, the joystick must be in "Neutral". Push it forward and turn the speed limiter clockwise to move forward and pull it back and turn the speed limiter clockwise to move backwards.
3	Emergency Stop Button		Press the button for the machine and the motor to shut down. The entire electrical system will also be shut down
4	Parking Brake Switch		To activate the parking brake, press the top of the switch (P). To release the parking brake, press down on the red part of the switch.
5	Speed Limiter		Speed limiter (maximum speed is obtained by tilting the Forward/Reverse joystick). Set the lever in the desired direction and turn the speed limiter button clockwise reaching to speed on the display (18).
6	Rabbit/Turtle Mode		Starting on the compactor will always be in turtle mode. Rabbit mode will be obtained only when rabbit mode is enabled.

Instruments and controls - Description and function

7	Water Sprinkler Control		When in manual mode, the left LED will be lit, and the sprinklers can be activated manually by pushing the blue button (22) on the forward/reverse Joystick.
8	Engine Start/Stop		The starter should only be activated when all instruments and electrical controls are turned on.
9	Work Lights Button		Press to turn on/off all work lights.
10	Empty	.	
11	Empty	.	
12	Rotating Beacon		Press to activate the rotating beacon.
13	Emulsion Sprinkler Control		When in manual mode, the first LED will be lit, and the emulsion can be activated manually by pushing the red button (21) on the forward/reverse Joystick.
14	Empty	.	
15	Engine Speed		Press to select the engine speed range.

Instruments and controls - Description and function

16	AOR control (On/Off)		When activated in manual mode, the first LED will be lit and control is done through the buttons (19) and (20) of the forward/reverse lever to inflate and deflate the tires, respectively.
17	Horn		Press to activate the horn.
18	Multifunction Display		Interface with the operator for additional settings and adjustments.
19	Inflate the Tires		When the manual mode of the AOR control is on, press the button on the forward/reverse control to inflate the tires.
20	Deflating the Tires		When the manual mode of the AOR control is on, press the forward/reverse control button to deflate the tires.
21	Emulsion System Button for Manual Mode		When the manual mode of the emulsion control is activated, press the red button to turn on the system.
22	Sprinkler System Button for Manual Mode		When the manual mode of the water sprinkler control is activated, press the blue button to turn on the system.
23	Hazard Light Switch		Press the switch to activate the Hazard light.

Instruments and controls - Description and function



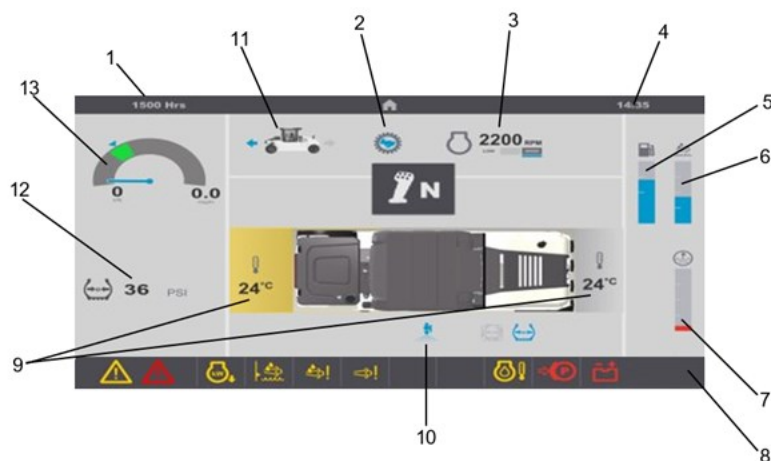
Fig. - Welcome screen

Multifunction display - Overview

When the start switch is turned to the "I" position, the welcome screen will appear on the display. It will stay on for few seconds and then automatically enter the home screen.



Fig. - Home Screen



1. Working hours
2. Speed indicator (Turtle / Rabbit)
3. Diesel engine rpm
4. Clock
5. Fuel level
6. DEF level
7. Sprinkler reservoir level
8. Warning lamps
9. Asphalt temperature sensor meter (two sensors switch from front to back, depending on the direction of driving)
10. Water sprinkler indicator
11. Direction
12. Tire pressure
13. Speedometer

Selections in the quick pick menu

The touch screen allows you to activate, adjust distinct functions, etc. directly on the display.

If you point to the display, a quick selection menu appears.



Fig. - Quick menus

Sprinkler

Open the sprinkler settings in the settings menu.

Alarm

Opens alarms with fault records and codes.

Brake test

It must be conducted daily according to the procedure in the section Operation – Starting, chapter Starting the engine.

Main menu

Opens the home page from the main menu.



Fig. - Asphalt temperature display

Asphalt Temperature Sensor (optional)

Asphalt temperatures are presented in Celsius or Fahrenheit. (selected under User Settings).

Dual temperature sensors at the back and front of the machine.



**Asphalt Temperature Sensor Adjustment
(Minimum and Maximum)**

Fig. - Temperature settings

The sensors are removable and are located one at the front and one at the back of the machine.

Maximum speed and minimum values are in the display image; the temperature area will turn green if the temperature remains within the desired values and will turn yellow if the temperature is higher than the maximum value.

Asphalt temperature limit min. 50 °C, max. 150 °C (min. 122 °F, max. 302 °F).

Instruments and controls - Description and function

ECOMODE

This equipment has a fuel-saving system.

When activated, ECOMODE maintains the working speed by reducing the engine speed (≈ 1600 rpm), with this fuel savings can reach up to 30% depending on the work (inclination, ballasts, etc.).



Do not use ECOMODE on steep terrain greater than 15%.



"MAIN MENU"

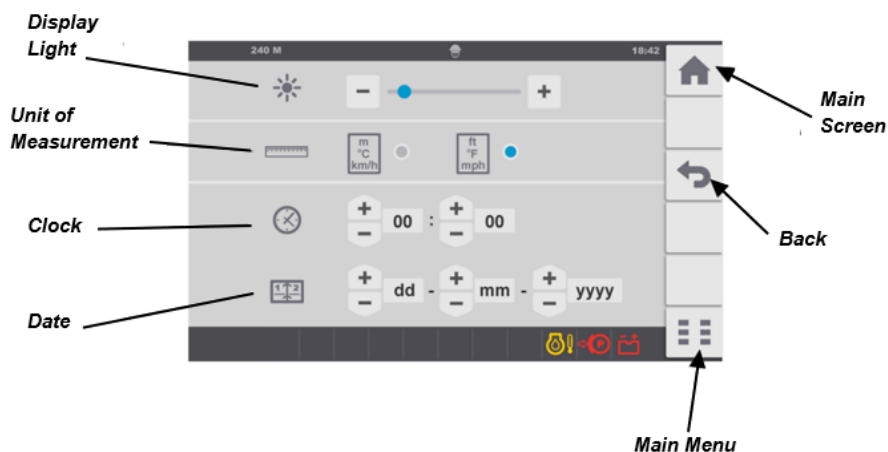
On the main menu it is also possible to change the user and machine settings, access the service menu and return to the home screen.



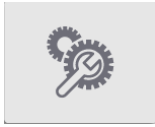
User Settings

"USER SETTINGS"

Users can change the display light intensity, choose between the Metric or Imperial system, and set time and date.

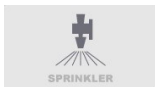


SETTINGS MENU

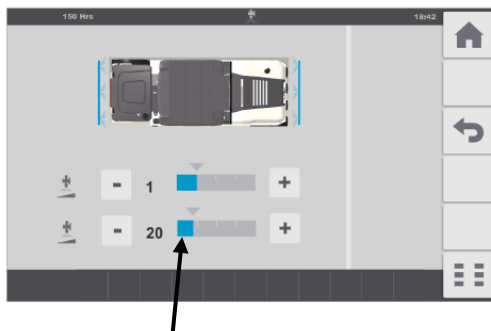


Definitions

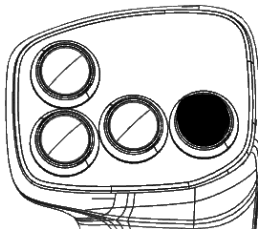
Different selections in the settings menu will direct you to screens where you can change the settings of machine features, such as the sprinkler, engine, compaction, EcoSave and DPF.



Sprinkler



Pause time in seconds



Full Flow Button (Blue)

SPRINKLER

The machine is equipped with two sprinkler systems.

3-stage filtration – at the filling point of the water tank, before the sprinkler pumps and inside each nozzle.

Automatic Water Control (AWC) ensures that the water spray is active only when the compactor is in motion.

The sprinkler timer controls the amount of time between sprinkler intervals.

Sprinkling/emulsion system activated on the Forward/Reverse lever buttons.

The sprinkler activation time is always 4 seconds with automatic sprinkler (AWC). The pause time (seconds) between sprays is adjustable. (1-30 sec)
(+) = longest pause time, (-) = shortest pause time.

The full flow button on the forward/reverse joystick activates both sprinkler systems while the button is pressed.

ENGINE

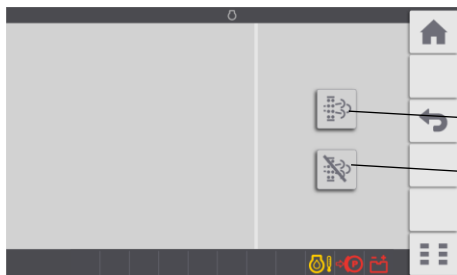
Engine



(Stage V)

Usually, it is not necessary to initiate the regeneration.

The regeneration delay should only be used to prevent exhaust gas cleaning when the machine is working in a hazardous or unsuitable environment to avoid the overheating of the engine.



Activation of stationary regeneration.

Delayed regeneration (inhibition).

Activation of stationary regeneration can be used if the exhaust gas cleaning/regeneration symbol is visible as a fixed light on the display. The regeneration can be started if the Exhaust System Cleaning Symbol is visible on the screen.

During the performance of the regeneration in stationary mode, stop the machine, activate the p-brake then activate the stationary regeneration.

The engine speed will rise to 1000~1200 rpm during 20 to 45 minutes depending on how clogged the exhaust filter is.

NOTE: To start and complete regeneration, the engine coolant temperature must be >70 °C (158 °F).

Compaction



COMPACTION

Compression values can be displayed in the imperial or metric systems.



Fig. – Compaction - Metric system

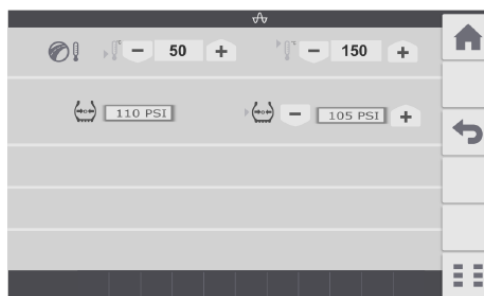
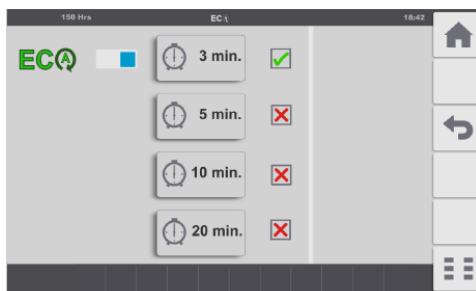


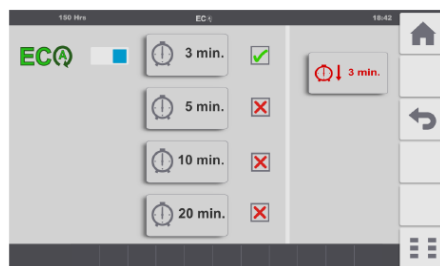
Fig. – Compaction - Imperial system



Enable EcoSave page



EcoSave Timer Selection Page



EcoSave Timer in Progress Page

ECOSave

Diesel engine automatic stop system.

It automatically shuts off the engine if the machine is not moving. The operator can set the time limit.

Automatic engine shutdown

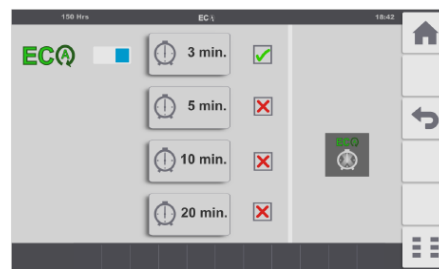
Reduces fuel consumption by turning off the engine when idling is too long.

Shutdown timer

The operator chooses the timer function from the preset options.

Alerts

Provides a warning when there is one minute left on the timer, with the option to extend the time.



Page engine turned off by EcoSave

Instant Boot

The engine restarts immediately after the shutdown.

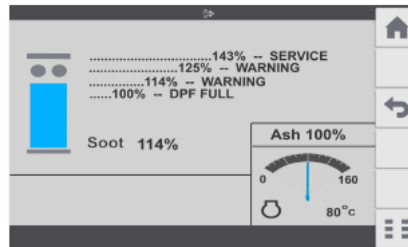
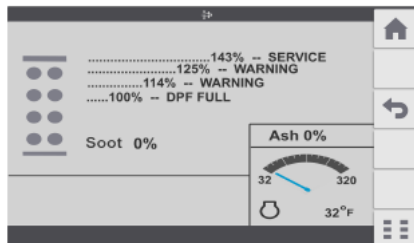
Instruments and controls - Description and function

DPF (Diesel Particulate Filter)

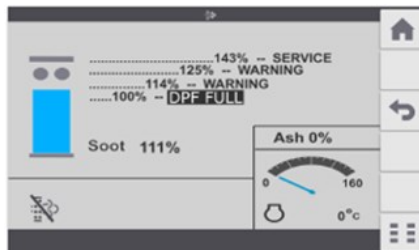
(For Stage V engines only)

Displays the DPF status view.

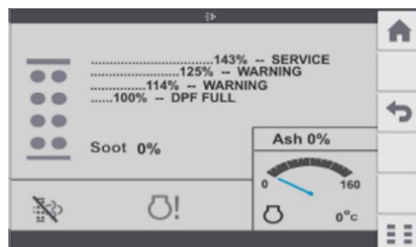
DPF



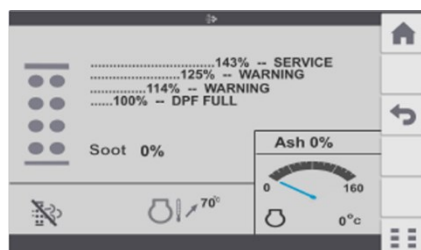
DPF status with soot level 114% and ash 100% and engine temperature at 80°C (metric unit selected).



Inhibited manually by the inhibition switch.

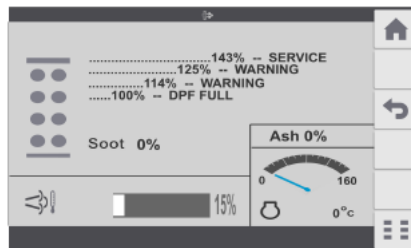
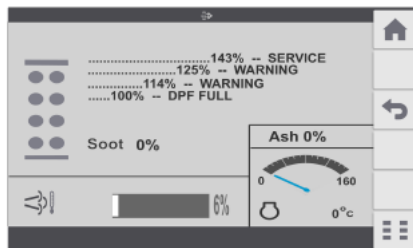


Inhibited by the engine.

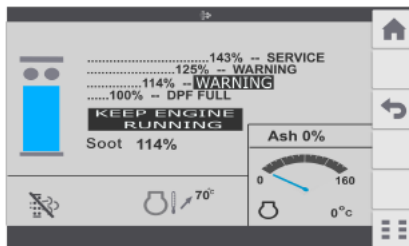


Inhibition due to low exhaust gas temperature.

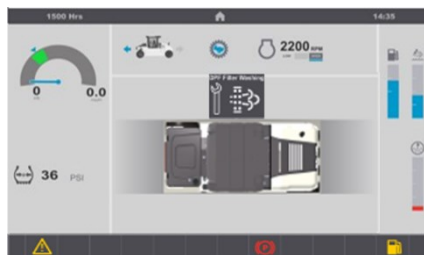
Instruments and controls - Description and function



Active regeneration status (6, 15, 24, 33, 42, 51, 60, 69, 78, 87, 96%).

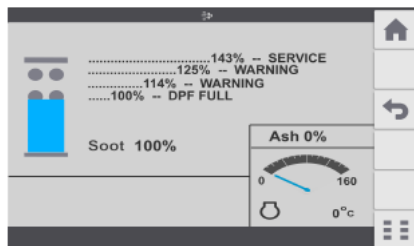


Engine run warning when the soot level is $\geq 114\%$ and the engine temperature is below 70 degrees, or when regeneration is in progress.

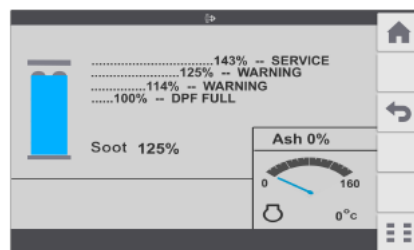


Full DPF.

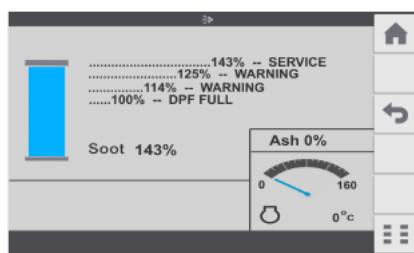
Different Levels of Soot



Soot Level 100



Soot level 125



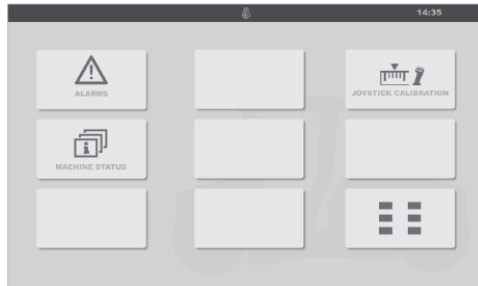
Soot Level 143

Instruments and controls - Description and function



"SERVICE MENU"

Assistance



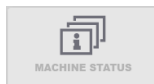
The service menu is also accessible via the main menu for adjustments.



Alarms



System log "ALARMS" and error codes.
SRC00 - engine error codes. (ECM)
SRC03 - machine error codes. (ECU)

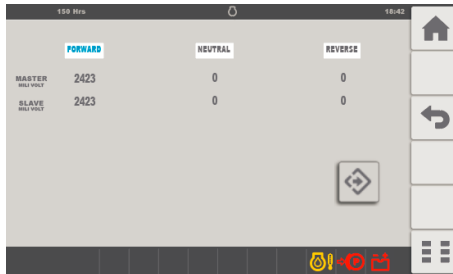


Machine status



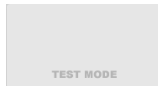
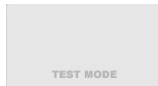
"MACHINE STATUS" - Summary of levels, charges, and temperatures.

Joystick Calibrations



"JOYSTICK CALIBRATIONS"

This section is protected by a PIN code and can only be accessed by a trained technician.



"TEST MODE" – For installation personnel only, a PIN code is required.

Test Mode



About



"ABOUT"

You can view the machine software version and joystick functionalities.

Instruments and controls - Description and function

Alarm symbols - Machine

The following symbols may be displayed at the bottom of the display unit:

Multifunction display - Alarms

SYMBOL	DESCRIPTION	FUNCTION
	Warning symbol, hydraulic oil filter.	If the symbol appears when the engine is running at full speed, the hydraulic oil filter must be replaced by a new one.
	Warning symbol, air filter.	If the symbol appears when the engine is running at full speed, the air filter needs to be cleaned or replaced.
	Warning symbol, battery charge.	If the symbol appears when the engine is running, the alternator is not charging. Stop the engine and find the fault.
	Warning symbol, engine temperature.	If this symbol appears, the engine is overheating. Stop the engine immediately until the problem has been identified and resolved. Also refer to the engine manual.
	Warning symbol, hydraulic oil temperature.	This symbol appears when the hydraulic oil is overheating. Do not move the roller by putting it in neutral, wait for the oil to cool down, and find the problem. If the problem persists, turn off the engine.
	Warning symbol, low fuel level.	This symbol appears when the fuel level reaches 10% or lower.
	Warning symbol, low sprinkler water level.	This symbol appears when the water sprinkler level is at 10% or lower.
	Warning symbol, low diesel engine oil pressure.	This symbol appears when the engine oil pressure is below the minimum needed. Immediately stop the engine.
	Warning symbol, low coolant level.	This symbol appears when the level is low. Top up with coolant (glycol) and check for leaks. When top up the coolant reservoir only use genuine Dynapac coolant. The use of non-homologated coolants may result in engine damage and cancelation of engine warranty.
	Warning symbol, water in the fuel.	This symbol appears when there is water in the fuel. Stop the engine and drain the water from the pre-filter.
	Warning symbol, parking brake.	This symbol appears when the parking brake is activated.

Instruments and controls - Description and function

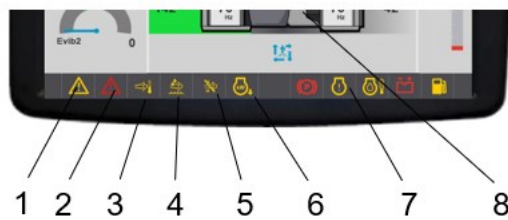


Fig. - Display symbols

Alarm symbols - DEF system and exhaust gases aftertreatment (Stage V engines)

The following symbols may be displayed at the bottom of the display:

Comment (Stage V): To start and complete regeneration, the engine coolant temperature must be over $>70^{\circ}\text{C}$ ($>158^{\circ}\text{F}$).

	Symbol	Description and function
1		Warning light (yellow) Minor malfunction: Correct as soon as possible.
2		Warning light (red) Serious breakdown: Turn off the engine immediately!
3		High exhaust gas temperature (yellow) Appears when the exhaust temperature exceeds the calibrated temperature limit and when regeneration is in progress
		Engine handling (yellow) The symbol is displayed if the operator is attempting to make changes to the engine.
4		DEF deposit level (yellow) It appears when the DEF deposit level is at an extremely low/critically low level. The level is displayed in the level bar in the upper-right corner of the screen.
		DEF quality (yellow) It indicates when the DEF quality is outside the acceptable tolerances.
5		Exhaust cleaning/regeneration symbol. Stationary regeneration needed (yellow) (level V) Park the machine, put the Forward/Reverse lever in neutral position, and press the parking brake.
		Regeneration not possible / regeneration blocked (delayed) enabled (yellow) (level V) This symbol is displayed when a regeneration cannot be performed for some reason or when an inhibited (delayed) regeneration was selected.

Instruments and controls - Description and function

6		Engine power reduction (yellow) The symbol appears when a critical regeneration error occurs, resulting in a reduction of engine power.
7		Engine failure (yellow) See the error code.
8		This symbol appears in the center of the display when the engine temperature is below 70°C / 158°F and no regeneration is therefore possible. (Stage V).
		This symbol appears in the center of the display in the event of another engine failure in conjunction with the impossibility of regeneration. (Stage V)

DEF (DEF deposit level) screens

Symbol		Notice	Level	Comment
	-	-	<10%	A warning appears when the DEF reservoir level is low. The operator needs to refill the DEF tank.
	-	-	<5%	When DEF reaches 5%, the level indicator flashes intermittently. The operator must refill the DEF tank.
			<2.5%	When the level drops to a critical level, the DEF level symbol flashes in conjunction with the reduced power icon and the "Yellow Warning" lights up on the dashboard. The operator must refill the DEF tank. If the DEF tank is not refilled, the engine power will decrease. The normal power will be restored once the DEF has been refilled.

Instruments and controls - Description and function

			0%	When the level drops close to zero, the DEF level symbol flashes in conjunction with the reduced power icon and the "Yellow Warning" lights up on the display. The operator must refill the DEF tank. If the DEF tank is not refilled, the engine power will decrease. The normal power will be restored once the DEF has been refilled.
				When the DEF meter shows a reading of zero for 30 minutes, the DEF level symbol flashes in conjunction with the reduced power icon and the "Red Warning" lights up on the panel. The engine is limited to idle speed. The operator shall immediately stop the machine and refill the DEF tank. The engine power will be restored as soon as the DEF tank is refilled.

DEF (DEF quality) screens

Symbol		Notice	Level	Comment
	-	-	1	The warning is displayed when the quality of the DEF in the tank is out of tolerance range. The operator must drain and refill the DEF tank with new DEF.
	-		2	When the quality of the DEF in the tank remains outside the tolerance range, and nothing is done, the DEF quality warning symbol flashes and the "Yellow Warning" lights up on the panel. The operator must drain and refill the DEF tank with new DEF.
			3	In the event of continued driving without rectification of improved DEF quality, the DEF quality symbol flashes in conjunction with the reduced power icon and the "Yellow warning" lights up on the display. The operator must drain and refill the DEF tank with new DEF. The engine power will return to normal once the DEF is refilled with quality DEF.

Instruments and controls - Description and function

			4	In the event of continued driving without rectification of improved DEF quality, the DEF quality symbol flashes in conjunction with the reduced power icon and the "Yellow warning" lights up on the display. The operator must drain and refill the DEF tank with new DEF. The engine power will return to normal once the DEF is refilled with quality DEF.
			5	In the event of continuous driving without rectification of improved DEF quality, the DEF quality symbol flashes in conjunction with the reduced power icon and the "Red warning" lights up on the dashboard. The operator should immediately stop at a suitable location and drain and refill the DEF tank with new DEF. Normally, engine power is restored as soon as the DEF is replenished.

DEF screens (EAT - manipulation)

Symbol		Notice	Level	Comment
	-	-	1	The warning is displayed when an exhaust system failure occurs after treatment. Contact technical assistance.
	-		2	If nothing is done to rectify the fault in the exhaust gas system after treatment, the next warning is that the Manipulation symbol flashes and the "Yellow Warning" lights up on the panel. Contact technical assistance.
			3	A continued failure in the exhaust system after treatment displays an Intermittent Handling symbol in conjunction with the reduced power icon and the "Yellow Warning" lights up on the dashboard. Engine power is reduced. Contact technical assistance.

Instruments and controls - Description and function

			4	A continued failure in the exhaust system after treatment displays an Intermittent Handling symbol in conjunction with the reduced power icon and the "Yellow Warning" lights up on the dashboard. Engine power is reduced even further. Contact technical assistance.
			5	A continued failure in the exhaust system after treatment displays an Intermittent Handling symbol in conjunction with the reduced power icon and the "Red Warning" lights up on the dashboard. The engine is limited to idle speed. The operator must stop immediately in a suitable place. Contact technical assistance.

DEF (exhaust cleaning light) screens (Stage V)

Symbol		Notice	Level	Comment
	-	-	2	The Exhaust System Temperature Symbol (HEST) illuminates during exhaust system cleaning. In addition, the HEST Symbol also lights up if the exhaust temperature exceeds the set temperature minimum.
	-	-	3	The Exhaust System Temperature (HEST) symbol illuminates during exhaust system cleaning. In addition, the HEST Symbol also lights up if the exhaust temperature exceeds the set temperature minimum.

Instruments and controls - Description and function

	-	-	3	The Exhaust System Cleaning/Regeneration Symbol notifies the operator that the aftertreatment system has not performed an automatic regeneration within the required time limit and that an exhaust system cleaning is required. Refer to the machine settings (Engine).
			4	The Exhaust System Cleaning/Regeneration Symbol notifies the operator that the aftertreatment system has not performed an automatic regeneration within the required time limit and that an exhaust system cleaning is required. Refer to the machine settings (Engine). Engine power is reduced, and yellow warning is displayed.
			5	The Exhaust System Cleaning/Regeneration Symbol notifies the operator that the aftertreatment system has not performed an automatic regeneration within the required time limit and that an exhaust system cleaning is required. Refer to the machine settings (Engine). Engine power is reduced, and red warning is displayed. Contact technical assistance.

DEF (exhaust cleaning light) screens (Stage V)

Symbol		Notice	Level	Comment
	-	-	2	The Exhaust System Cleaning/Regeneration Symbol notifies the operator that the aftertreatment system has not performed an automatic regeneration within the required time limit and that an exhaust system cleaning is required. Refer to the

Instruments and controls - Description and function

				machine settings (Engine).
	-	-	2	The Exhaust system cleaning/regeneration symbol deactivated (inhibited), shows that the regeneration is deactivated (inhibited). (see machine settings (Engine)) ; therefore, automatic and manual exhaust system cleaning cannot occur (without mission). This procedure can be used by the operator to prevent cleaning of the exhaust system when the machine is running in a hazardous environment.
	-	-	3	The Exhaust System Cleaning/Regeneration Symbol notifies the operator that the aftertreatment system has not performed an automatic regeneration within the required time limit and that an exhaust system cleaning is required. Refer to the machine settings (Engine).
	-	-	3	The Exhaust system cleaning/regeneration symbol deactivated (inhibited), indicates that the regeneration is deactivated (inhibited). (see machine settings (Engine)) ; therefore, automatic and manual exhaust system cleaning cannot occur (without mission). This procedure can be used by the operator to prevent cleaning of the exhaust system when the machine is running in a hazardous environment.

Instruments and controls - Description and function

			4 The Exhaust system cleaning/regeneration symbol deactivated (inhibited), shows that the regeneration is deactivated (inhibited). (see machine settings (Engine)); therefore, automatic and manual exhaust system cleaning cannot occur (without mission). This procedure can be used by the operator to prevent cleaning of the exhaust system when the machine is running in a hazardous environment. Engine power is reduced, and a yellow warning is displayed.
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DEF tank filling (Stage V engines)

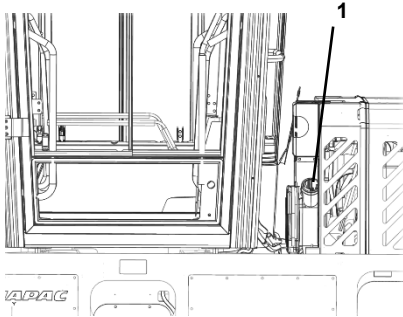


Fig. - DEF
1. DEF tank



DO NOT put DEF fluid in the fuel tank, or any fluid in the DEF tank, otherwise it will cause damage to the engine and/or DEF system.

The DEF tank is located between the operator's platform and the engine compartment. Fill the tank if the DEF lamp is displayed on the post-treatment screen.



Turn off the machine to perform the procedure.

Clean the tank cap (2) and DEF inlet to prevent any debris from entering through the tank inlet causing contamination.

Turn the tank cap (2) counterclockwise until it stops to open the tank.

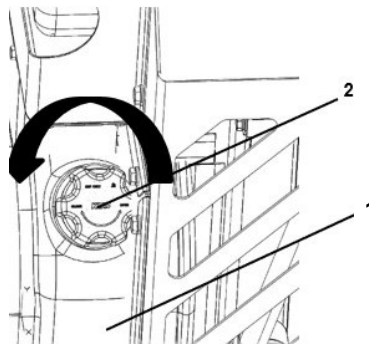


Fig. - DEF Tank
1. DEF Tank
2. DEF Tank Cap

The capacity of DEF tank is 16L, 32.5/67.5% mixed (DEF fluid + clean water). Fill with recommended DEF fluid (AdBlue or DEF 32). Clean any impurities that may have lodged in the inlet and cover of the DEF.



DO NOT fill the tank above the limit. Overfilling the tank can inhibit tank performance and potentially damage the tank due to fluid expansion.

DEF tank drain procedure (Stage V engines)

Turn off the machine to perform the procedure.

The drain plug is in the center bottom of the tank (1).

Place an auxiliary reservoir directly beneath the drain outlet plug. Ensure that the auxiliary reservoir is correctly positioned under the drain outlet to allow draining to occur without any spillage.

Remove the DEF cap and place it on a clean surface.

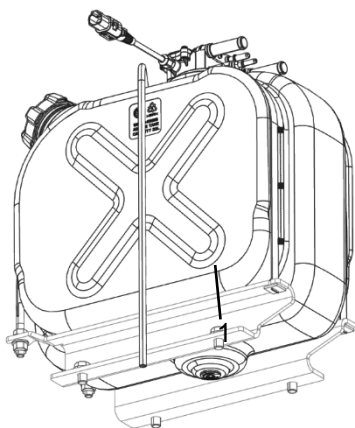


Fig. - DEF Tank
1. Drain plug.

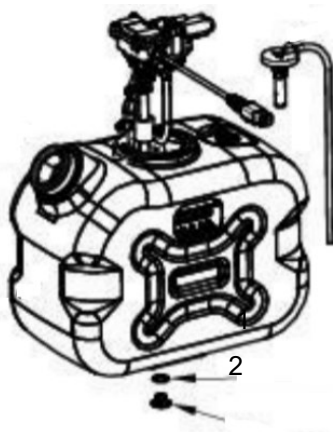


Fig. - Remove drain plug
1. O-ring
2. Drain plug

Using the 1/4" Allen wrench, unscrew the DEF tank drain plug by turning counterclockwise. Place the drain plug in a place free of debris.

Allow the tank to drain to the desired level.

Place the plug by turning clockwise. Tighten the plug with 14 ± 1 N.m of torque.

Refill the tank and check if there are leaks.



It is strongly recommended that DEF drained from the tank to be disposed and not reused to avoid contamination.

Exhaust gas aftertreatment system

Exhaust gas aftertreatment system (Stage V engines)

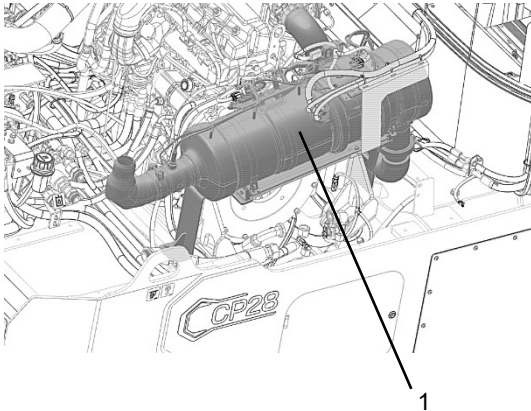


Fig. - Engine compartment
1. Exhaust aftertreatment system (Stage V)

Exhaust gas aftertreatment system with electronic integration for the reduction of nitrogen oxides (NO_x) and particulate matter (PM).

Located in the engine compartment on the right side of the machine, the equipment is installed on the exhaust pipe at the outlet of the turbocharger.



The exhaust system may remain hot even after the engine has been shut down. To avoid the risk of fire, burns, or material damage, allow the system to cool completely before starting any procedure or repair. Ensure that no combustible materials are near the hot exhaust components.



Exhaust filter maintenance must be performed by professionally trained personnel due to the presence of HIGHLY toxic components.



The catalyst elements contained in the aftertreatment system are made of brittle material. Avoid dropping or striking the sides of the system to preserve the integrity of the catalyst elements.



Do not clean the inlet of the Diesel Oxidation Catalyst (DOC). This action may damage the aftertreatment system.



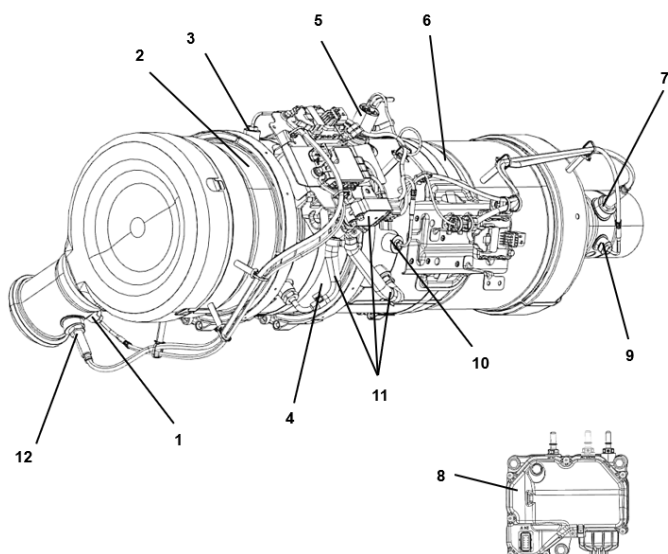
Handle the Diesel Exhaust Fluid (DEF) line with care when disconnecting it from the dosing valve. The supply connector is easily damaged.



The material captured in the diesel particulate filter may contain concentrations of metals and polycyclic aromatic hydrocarbons (PAHs) and therefore must be handled and disposed of in accordance with applicable local regulations.

Exhaust gas aftertreatment system

The system consists of:



1. Intake temperature sensor of the Diesel Oxidation Catalyst (DOC) in the aftertreatment system.
2. Aftertreatment DOC (Diesel Oxidation Catalyst).
3. Intake temperature sensor of the Diesel Particulate Filter (DPF) in the aftertreatment system.
4. Aftertreatment DPF (Diesel Particulate Filter).
5. Aftertreatment Diesel Exhaust Fluid (DEF) dosing valve.
6. Aftertreatment decomposition tube and Selective Catalytic Reduction (SCR) catalyst assembly.
7. Aftertreatment outlet NOx sensor.
8. Aftertreatment DEF dosing unit.
9. Aftertreatment SCR outlet temperature sensor.
10. Aftertreatment DPF outlet temperature sensor.
11. DPF differential pressure sensor and aftertreatment tubing.
12. Aftertreatment intake NOx sensor.

Instruments and controls - Cabin

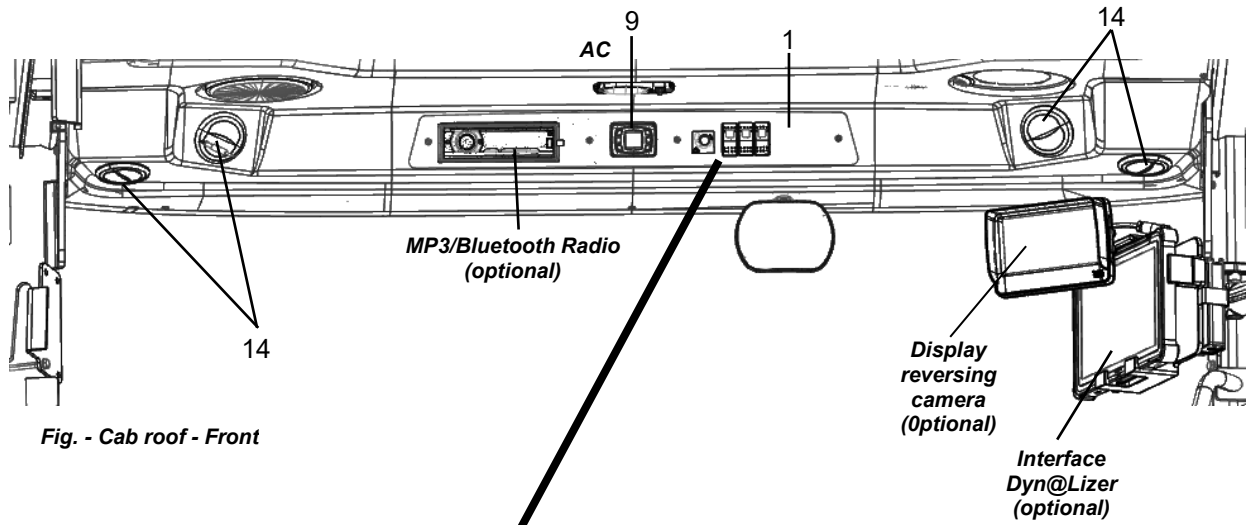


Fig. - Cab roof - Front

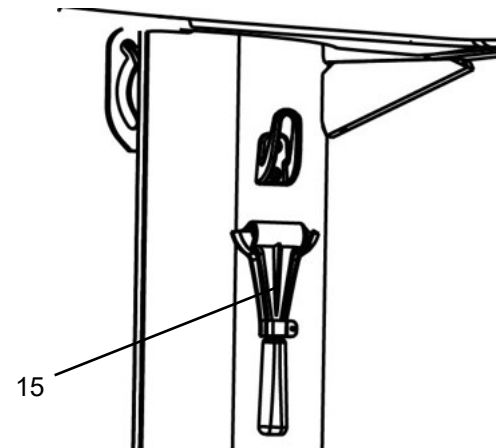
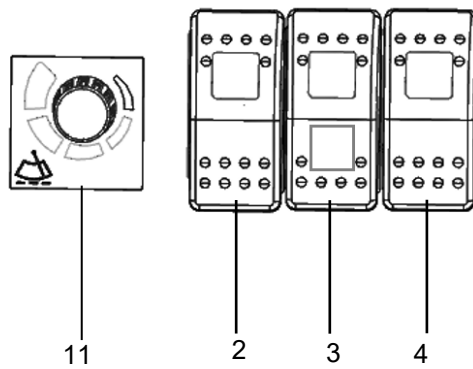


Fig. - Right rear column
15. Hammer for emergency exit

Instruments and controls - Cabin

Instruments and controls - Cabin

No	Assignment	Symbol	Function
1	Fuse box		Contains fuses from the electrical cabin system.
2	Front windshield wiper switch		Press to turn on the front windshield wiper.
3	Front and rear wiper nozzle switch		Press the top edge to turn on the front windshield nozzles.
			Press the bottom end to turn on the rear windshield nozzles.
4	Press to turn on the rear windshield wiper.		Rear side windshield wiper switch
5	Front side windshield wiper switch		Press to turn on the front side windshield wiper.
6	Front and rear side window nozzle switch		Press the top end to get the front side glass washed.
			Press the bottom end to get the rear side window washed.
7	Rear side windshield wiper switch		Press to turn on the rear side windshield wiper.
8	Heating system		Cabin heating system
9	Air conditioner		AC air conditioning
10	Air conditioning (ACC) (micro ECC)		Automatic control of the air conditioning.
11	Flashing front windshield wiper		Intermittent operation of the front windscreen wipers.
14	Defogging nozzle		Rotate the nozzle to direct the air flow.
15	Emergency exit hammer		In the event of an emergency exit from the cab, release the hammer and break the opening windows on the right side.

Using the controls in the cabin

Defog

To quickly remove fog or moisture, make sure that only the front and rear air outlets are open.

Turn the heating and fan indicator on high.

Adjust the air outlets so that air exits toward the window and windshield to eliminate fog or moisture.

Heating

If the cab is cold, open the lower air outlet on the front beams and the center outlets on ceiling.

Set the heating and fan to desired temperature and fan speed.

Once the desired temperature is reached, lower the temperature and fan speed as needed.

AC/ACC

NOTE: While using AC/ACC, all windows must remain closed for the system to work effectively.

A/C - System operation



Power/Enter

When the machine key is on the A/C display buttons will be lit, showing that the product is in standby mode.

To turn on the panel by pressing the power button, it will show the logo and software version on the display and then the inner cab temperature will be shown. For the panel to return to standby mode, you must press the power for 3s.

Setpoint Up/Down buttons

Setpoint the desired temperature inside the cab. To adjust it, press  or . The setpoint temperature will appear flashing on the display, press one key per time until you reach the inner cab desired temperature.

Display

The display shows setpoint value, ventilator speed in bar graph, active function, and other information. It also allows the operator to view the actual temperature in the cab, as well as the parameters. It also serves to alert when an A/C system failure occurs.

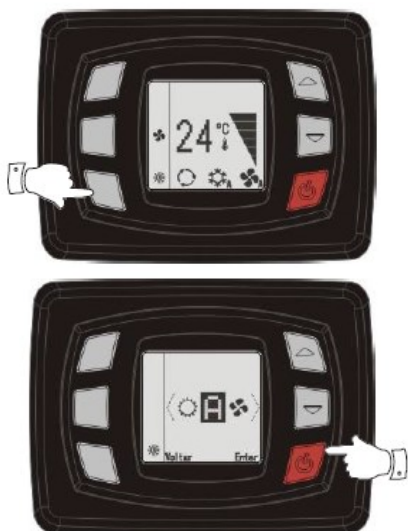
Modes of Operation

To change the mode, press the ( mode of operation) key, choose the desired mode:

The controller has 4 modes of operation which are:

- Ventilation only 
- Cooling only 
- Heating only 
- Auto mode 

Press the key  to confirm or wait few seconds to cancel.



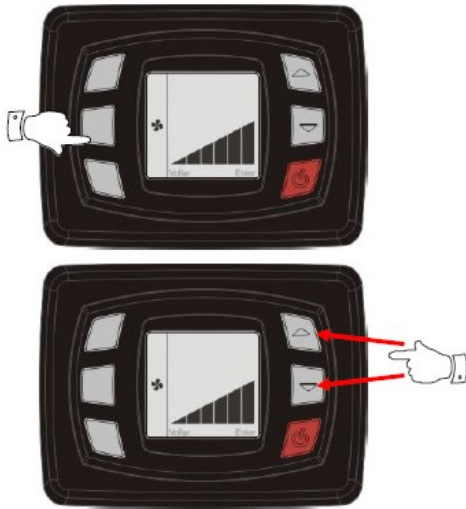
Ventilation

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

Manual ventilation

Manual ventilation has three speeds. When any function (cooling, heating or automatic mode) is active, the ventilation function will always be on. To change the fan speed, press

the button  (fan mode) and then adjust the desired speed by pressing the buttons  or . Then press the key  to confirm or wait few seconds and the speed will be saved.



Electrical system

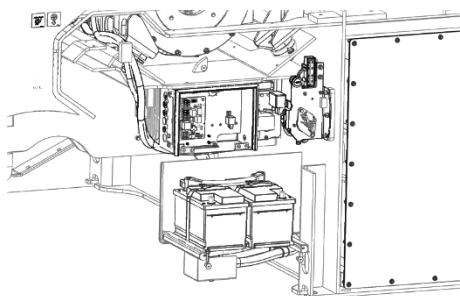


Fig. - Main control box

The main control box of the machine is found on the right side at the rear of the machine, upper and lower doors.

The fuses in the engine compartment are placed along with the main battery switch.

The compactor is equipped with a 24V electrical system, provided by an AC alternator.

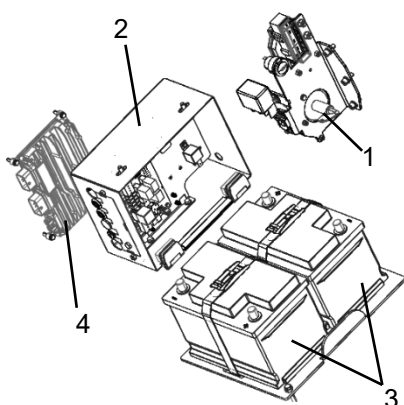


Fig. - Battery compartment
1. Main switch
2. Distribution box
3. Batteries
4. ECU module



Connect the batteries to the correct polarities (negative terminals to the ground). The cable between the battery and the alternator should never be disconnected while the engine is running.



Avoid direct contact with any electrical source. Risk of injury or even death!



Battery replacement must be performed only by professionally trained personnel. Other electrical interventions must be conducted exclusively by a qualified technician.

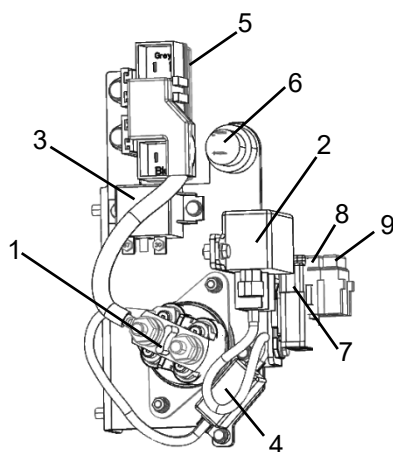


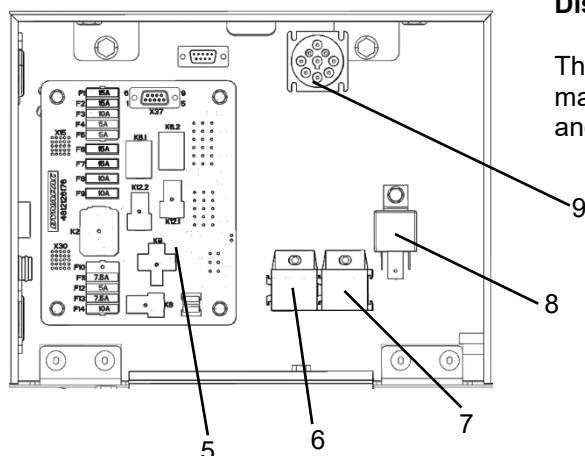
Fig. - Main fuse panel and relays
1. General key
2. Preheating relay (120A) (K5)
3. Starter relay (50A) (K1)
4. Fuse (F20)
5. Main fuse box (F4.1, F4.2, F4.3)
6. 24V plug
7. Fuse (F13)
8. Fuse (F26)
9. Fuse (F23)

Main fuse panel

The main fuse panel is found behind the battery main switch, above the battery compartment.

Fuses by codes:

F4.1	Main ECU	(50A)
F4.2	Main fuse	(50A)
F4.3	Cabin	(30A)
F13	ECM (motor controller)	(30A)
F20	Grill heater	(150A)
F23	Diagnostics, ECM service outlet (X22)	(5A)
F26	Power output 24V	(10A)



Distribution box

The distribution box is found on the right side of the machine. There is a cover above the distribution box and fuses.

Fig. - Distribution box

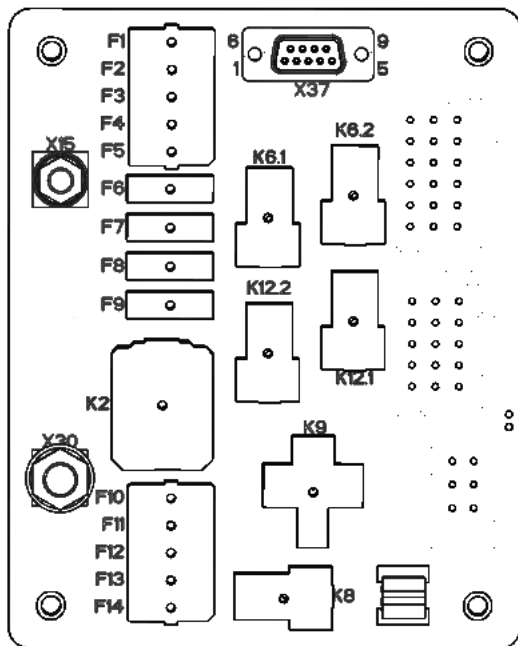
5. A6 circuit board

6. DEF line heater relay (K36) - Stage V engines

7. DEF supply module heater relay (K37) - Stage V engines

8. ECU main relay (K23)

9. Diagnostic socket for ECM (X22)



Printed circuit board in distribution box

The figure shows the position of the fuses and relays.

The following table shows the amperage and function of the fuses. All fuses are type C (medium).

The table shows the functions of the relays.

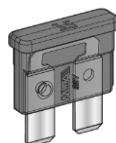


Fig. - Circuit board

Circuit board	
Fuses	
F1 (15A) Display control, keypad, display.	F8 (10A) Sprinkler pump 1, Control pressure sensor (SBW), seat position sensor (SBW).
F2 (15A) DEF, heater (K37).	F9 (10A) Sprinkler pump 2, DCM.
F3 (10A) K23 Main relay (ECU A7), NOX sensor, temperature sensor etc.	F10 (7.5A) empty.
F4 (5A) Speed sensor, fuel level sensor, asphalt temperature sensor.	F11 (7.5A) Dyn@lyzer, on-board computer.
F5 (5A) Seat switch, parking brake, seat belt.	F12 (5A) Fleetlink, main power supply (CPU) A7 relay (K2), main power supply (CPU) ECU, K8 driving lights relay.
F6 (15A) Right working light.	F13 (7.5A) Driving lights.
F7 (15A) Left working light, 24V power supply (driver's seat).	F14 (10A) Road lights.
Relays	
K2 Main relay	K9 Flash relay.
K6.1 Left work lights, ROPS/Cab.	K12.1 Sprinkler pump 1.
K6.2 Right work lights, ROPS/Cab.	K12.2 Sprinkler pump 2.
K8 Steering light relay	

Cabin fuse box

The cab electrical system has its own fuse box and is located behind the cover plate at the front right on the cab roof.

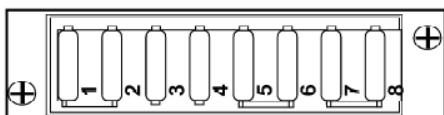


Fig. - Fuse box on the roof of the cabin

1. Interior lighting (10A)
2. Front/Rear windshield wiper/motor (10A)
3. AC/ACC (15A)
4. Heating fan (20A)
5. Front/Rear wiper pump (10A)
6. Front/Rear wiper motor, AC pressure sensor (15A)
7. Dyn@lyzer (7.5A)
8. Empty

Operation - Before starting the machine

Operation - Before starting the machine

Daily maintenance



Before starting the working day or operator shift, make sure that daily maintenance has been performed. Refer to the maintenance section of this manual for more information.

Main switch

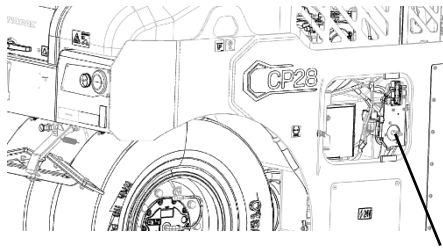


Fig. - Engine compartment.
1. Battery switch

1



Turn off the main switch after using the equipment. This prevents accidental starting and especially protects electronic devices.



If the main switch compartment door is locked, the switch can be reached from the engine compartment.

Adjusts of steering and seat structure.

The machine's steering and seat structure has three adjustment options: transverse slide, 180° seat rotation and inclination adjustment of the steering column.

Transverse slide is possible by pulling the lever (1) forward (A). The transverse lock will be released allowing the structure to move from left to right or vice versa.

180° seat rotation is possible by pulling the lever (1) back (B). Make sure the lever is centered in the correct position, locking the structure before starting move with the machine.

The tilt of the steering wheel can be adjusted by releasing the locker (2). Lock the column before moving the machine.

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



Perform all adjustments in the operator's controls with the machine stopped.



Before starting your shift at work and running the machine, check if the seat and the steering column are locked.

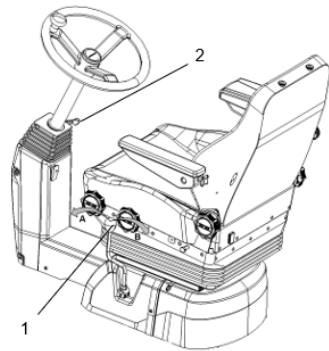


Fig. - Set of controls and operation
1. Lock lever - Transverse/Rotation
2. Lock lever - column tilt direction

Operation - Before starting the machine

Operator's Seat - Adjustment

Make sure the operator's seat is adjusted so that all the controls are within easy reach. This will allow the machine to be run comfortably.

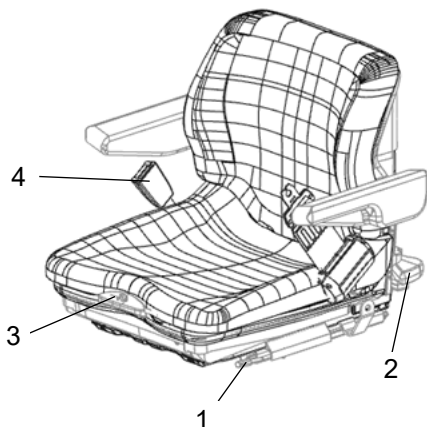


Fig. - Operator's bench

- (1) Longitudinal adjustment.
- (2) Weight adjustment.
- (3) Backrest adjustment.
- (4) Seat belt.



Ensure the seat is adjusted before starting.



Always wear your seat belt (4).

Comfort operator's seat (optional) - Adjustment.

Adjust the operator's seat so that all controls are easily accessible and machine operation is comfortable.

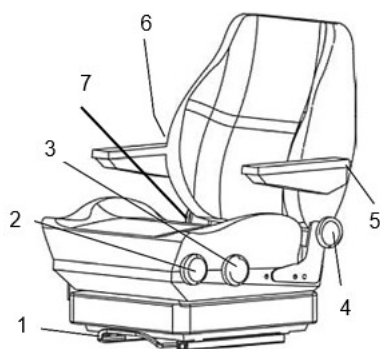


Fig. - Operator's seat (optional adjustments)

- (1) Longitudinal adjustment.
- (2) Height adjustment.
- (3) Seat inclination adjustment.
- (4) Adjustment of the backrest inclination.
- (5) Armrest tilt adjustment.
- (6) Lumbar support adjustment.
- (7) Seat belt.

Sub-abdominal seat belt

If the machine has a cab, the operator must wear a seat belt. To tighten the belt, pull it out of the retraction mechanism in an even motion, making sure it fits snugly around your waist. The belt will lock if it is pulled sharply, or if the machine is stopped on a slope.



Insert the buckle of the belt until you hear a characteristic "click". Otherwise, the seat belt will not be locked.

To release the belt, press the red button on the clasp. Then allow the belt to be retracted completely.

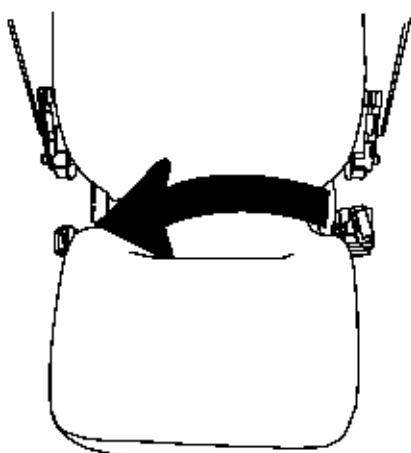


Fig. - Flap seat belt

Operation - Before starting the machine

Visibility

Before starting the engine, make sure that the visibility around the machine is not obstructed.

All cabin windows must be clean, and the rearview mirrors adjusted for optimal rear visibility.

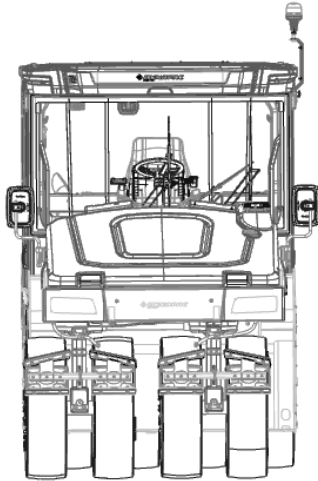


Fig. - Visibility

Rearview mirrors - Adjustment

The mirror adjustment is accessible from the ground. The rearview mirror arm has a stop in the fully extended position. The mirror can then be adjusted for good rear visibility. The visibility requirement is in accordance with ISO 14401. All rear-view mirrors must be clean and adjusted for good rear visibility.

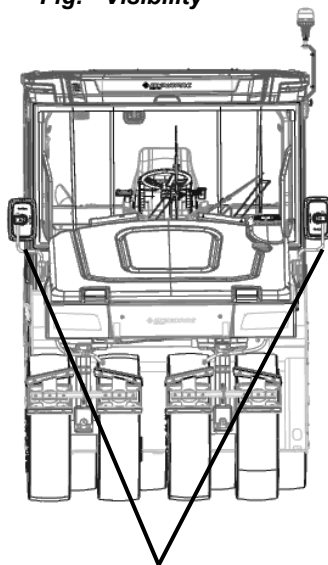


Fig. - Rear-view mirrors

Rear camera (optional)

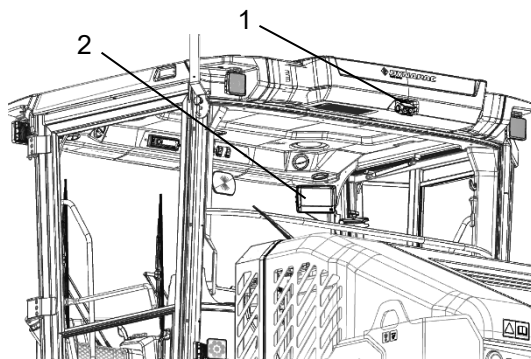


Fig. - Upper rear of the cabin

1. Rear camera

2. 7" Display



Whenever adjustment or repair of the rear-view camera is required, use a portable ladder.

If the machine is equipped with a rear-view camera, check via the display screen whether camera positioning adjustments are necessary.

Operation - Before starting the machine

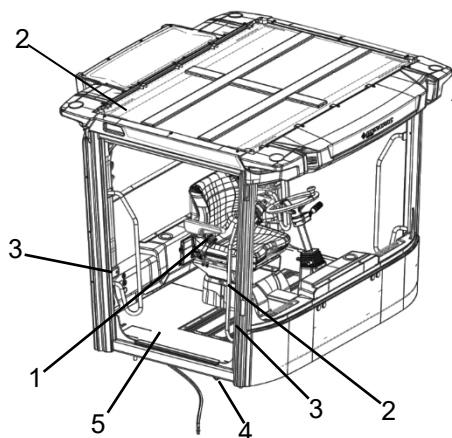


Fig. - Operator's bench

- 1. Seat belt
- 2. Safety handrails
- 3. Locking Knob
- 4. Rubber element
- 5. Anti-slip protections

Operator position

Always wear a seat belt (1) and a safety helmet.



If the ROPS (Roll-Overprotective Structure) is affected by plastic deformations or fractures resulting from physical factors (rollover, tip-over, object impact, etc.), it must be replaced in accordance with the manufacturer's specifications.



Replace the seat belt with a new one if there is wear or if it has been subjected to a major impact.



The safety handrails (2) are placed inside the cab and are adjustable.



Check the cabin for damage. Notify the immediate superior for further action if damage is detected.

Release the locking knob (3), adjust and lock the railings in the desired position.



Check that the rubber elements (4) of the platform are intact. Worn rubber elements affect cab comfort.



Make sure that the anti-slip guards (5) on the platform are in good condition and replace them with new ones if they are worn.



If the machine has a cabin, make sure that the door is always closed when traveling.

Hood closure procedure

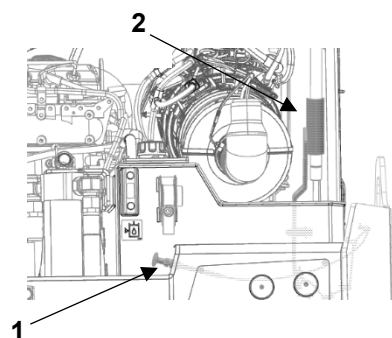


Fig. - Engine compartment

- 1. Control cable handle.
- 2. Safety lock.

When accessing the engine compartment, proper precautions must be followed for hood closure. Do not try to close the hood before releasing the safety latch.

Pull the latch knob (1) and check whether the safety latch (2) moves to prevent interference during closure.

After releasing the latch, pull the hood strap until the lock handle is accessible and continue with the closure. Ensure that the hood is properly locked.

Operation - Start-up

Display - Control

Remain seated while operating the machine.

Turn the start switch (1) to position I and the home screen will appear on the Multifunction Display (2).

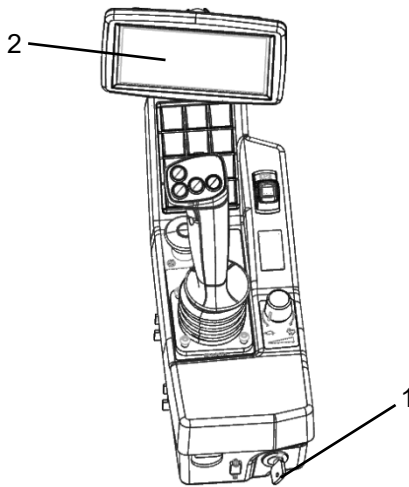


Fig. - Side panel
1. Start switch
2. Multifunction Display



Fig. - Status image
3. Fuel level
4. Water level
5. Working hours
6. DEF level

Check the DEF level (6) is not below the minimum limit. Also check the fuel (3) and water levels (4) and if the battery shows 24V.

The indicator (5) records and indicates the total number of hours worked by the engine.

Interlock

The machine comes equipped with Interlock.

The diesel engine will shut off after 4 seconds if the operator leaves the seat while the machine is moving forward/backward. In case the machine is in a neutral position when the operator rises from the seat, a horn will activate until the parking brake is activated.

If the parking brake is engaged, the Diesel engine will not stop, but the engine will automatically shut off if, for any reason, the transmission is out of the neutral position when the operator is not seated in his seat.



Always stay seated in the operator's seat!

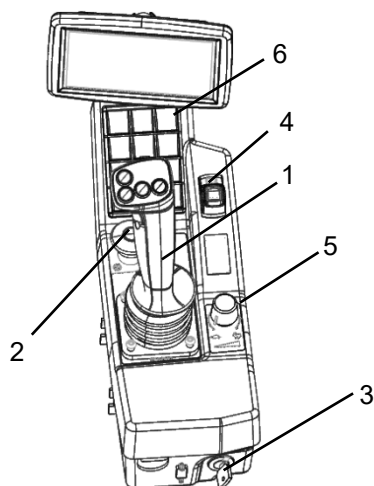


Fig. - Control Panel

- 1. Forward/Reverse Lever
- 2. Emergency stop button
- 3. Key switch
- 4. Parking brake
- 5. Speed limiter

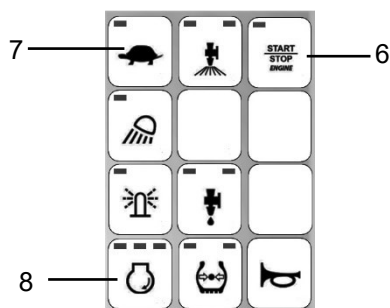


Fig. - Membrane panel

- 6. Engine start/stop button
- 7. Speed gear
- 8. Engine rotation knob

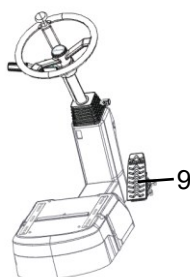


Fig. - Brake Pedal (9)

Starting the engine

Check that the emergency stop system (2) is disengaged (top position) and that the parking brake (4) is engaged.

Set the Forward/Reverse joystick (1) to the Neutral position (centered). The Diesel engine will only work if the joystick is in neutral position.

While sitting in the operator's seat, turn the key switch (3) to the right to the first position ("I"), then press the engine start button (6).



Do not attempt to run the starter for too long (the limit is 30 seconds). If it doesn't work, wait a minute to try again.

Warm up the engine for few minutes at idle, or longer if the ambient temperature is below 10°C.



When leaving the engine running indoors, check that there is adequate ventilation for the remotion of exhaust gases.

First movement with the machine

Set the speed limiter (5) to zero by turning it fully counterclockwise, select the desired gear speed (7) and select the engine low speed (8). Deactivate the parking brake and position the joystick (1) Forward/Reverse to the desired direction.

Gradually turn the speed limiter (5) clockwise until the desired speed is reached, and if you want to slow down, turn it counterclockwise.

Speed control can also be done through the Forward/Reverse joystick (1) according to joystick positioning. When it is in operation and there is a need to stop the machine, return the Forward/Reverse joystick (1) to the neutral position or reposition the speed limiter (5) to the turtle position. If a quicker stop is required, depress the brake pedal (9).



In emergency situations, activate the emergency stop button (2) and/or promptly depress the pedal brake!

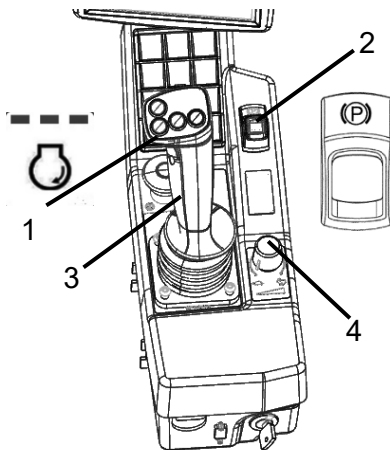


Fig. - Control panel

1. Engine rotation knob
2. Parking brake
3. Forward/reverse lever
4. Speed limiter



Fig. - Screen view
5. Brake Test Button

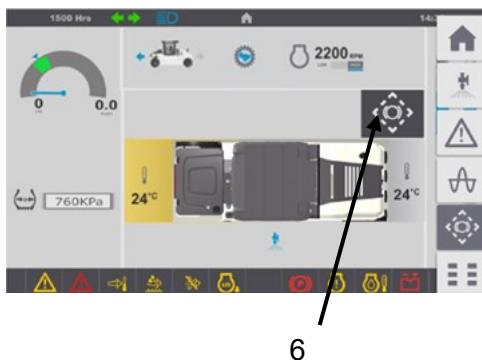


Fig. - Screen view
6. Pop-up symbol (parking brake test)

Brake test

To check that the brake system works and is in good condition, perform the following procedure daily.

Place the machine on a flat surface.



Make sure that there are no obstacles in any direction of the machine, either on the ground or above the roller.

Activate the parking brake (2) and then activate the quick selection menu in the display. The brake test button (5) will be visible in the menu bar on the touchscreen.

Set the engine speed (1) to medium or high rpm and set the speed limiter (4) to maximum.

Press the brake test button (5) on the display touchscreen and hold it down; A pop-up symbol (6) will be displayed on the screen when the button is activated.

NOTE! This activation is not possible from the display controller button.

By pressing the brake test (5) on display, it is possible for the machine to move against the brakes and thus test the brakes under load.

Wait 2-3 seconds and move the forward/reverse joystick (3) slowly forward and slowly back to the neutral position, then release the brake test button (5).

Be prepared for the machine to move during this operation.

Then stop the machine by immediately pulling the joystick to the neutral position.

If the machine **does not** move, the brake system effect is ok.

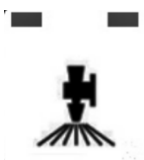


If the machine moves, the brake system is not approved, and the brake pads are considered worn and must be replaced.



The machine must be immediately removed from service and shall not be used until the brakes have been repaired and approved.

Display during selection activation via button set.



Sprinkler, manual/automatic

Warning alarm indication, please refer to the table for details.

Automatic sprinkler control (auto active)

Sprinklers are activated when the forward/reverse lever is out of the neutral position.



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.

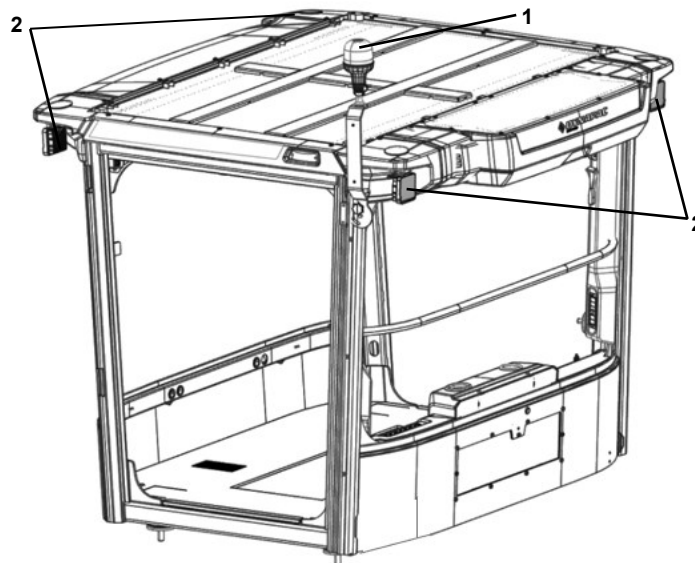
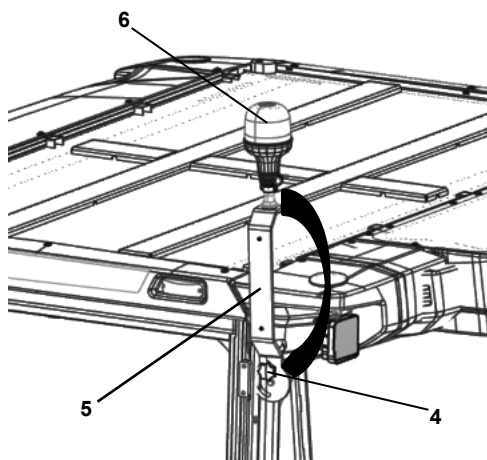


Fig. - Cabin

1. Rotating beacon light

2. Front and rear upper work lights



Release the handle (4) and fold the lamp holder (5) downwards.

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

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

Fig. - Rotating beacon

4. Handle

5. Lamp holder

6. Warning light

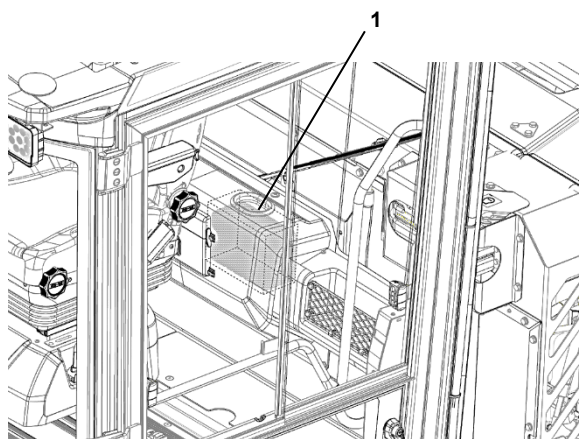


Fig. - Operator's platform
1. Windshield wiper fluid reservoir

Windshield wiper blades - Replacement

Check that the windshield wiper blades are in good condition. Replace the wiper blades when they are not cleaning properly.

Use a ladder for easy access to replace the wiper blade.

Windshield wiper fluid - Check and fill up

Park the machine on a flat surface.

Add flushing liquid, when necessary, into the reservoir (1) located behind the operator's seat.

The reservoir has a capacity of 2.1 liters (2.2 qts).

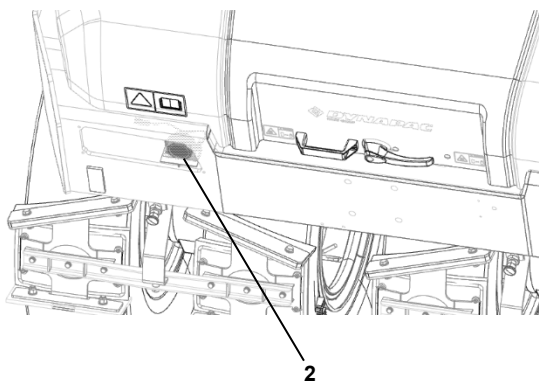


Fig. - Rear of the machine
2. Backup alarm

Backup alarm check

Before running the machine, perform a backup alarm check.

Turn the key to activate the electrical system (Do not start the engine).

With the parking brake engaged, move the joystick 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.

Compactor operation



Under no circumstances should the machine be moved away from the ground. The operator must be seated on the seat during the operation.



Make sure the areas in front and behind the machine are clear.

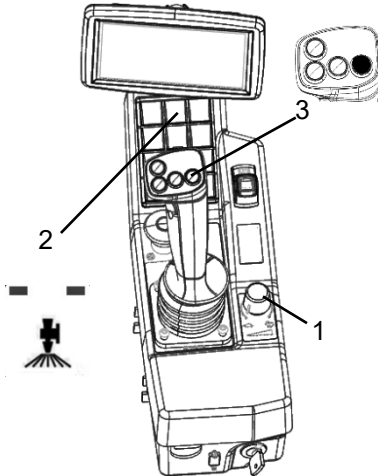


Fig. - Side panel
1. Speed limiter
2. Button to activate sprinkler
3. Full-flow watering

1. The selected gear the machine will run. To activate the operating speed, use the speed limiter (1). Check that the steering works normally by turning the steering wheel right and left once, with the compactor stationary.
2. When compressing asphalts, be sure to activate the sprinkler system (2) for automatic mode or (3) for manual mode.



Check that the work areas in front and behind the machine are clear.



Release the parking brake button (7) by pressing the red lock on the button backwards and changing the position of the joystick. Keep in mind that the machine may roll if it is on a slope.

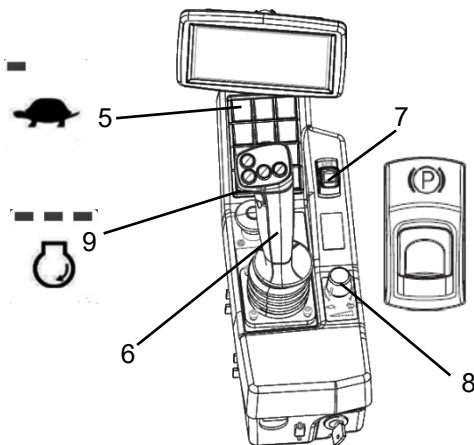


Fig. - Side panel
5. Low/High Speed
6. Forward/Reverse Lever
7. Parking brake
8. Speed limiter
9. Engine speed selection

3. Turn on the low speed (5).
4. Select the engine rpm (9).
5. Gently push the Forward/Reverse joystick (6) in either direction, depending on which one you want to travel.
6. Increase or decrease the speed of the machine using the speed limiter (8).



Check that the parking brake (7) works properly by activating it and placing the Forward/Reverse joystick (6) in the F or R position. That way, when you accelerate the engine, it won't move.

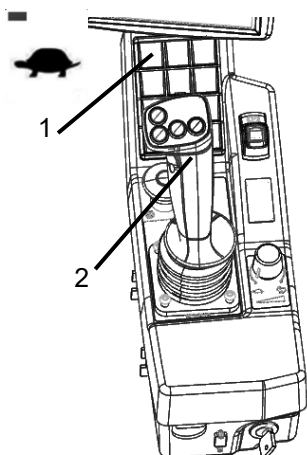


Fig. - Side panel
1. Machine speed knob
2. Forward/reverse lever

Low/High speed button

The speed is selected via the machine's speed button (1) via two modes of the different gears: Mode 1 and Mode 2.



Low speed or turtle mode 1: Used for maximum climbing capacity on an incline during compaction.



High speed or rabbit mode 2: Used for maximum transport speed or eventually to do static compaction at high speed.

The forward/reverse joystick must be in neutral position to be able to change the gear.



The speed mode of the machine is shown at the top of the center of the screen.

Speed Mode	Maximum speed (km/h)	Maximum Speed (mph)
	6	3.7
	20	12.4

Carefully move the forward/reverse joystick (2) forward or backward, depending on the direction in which you want to drive.

The speed increases as the joystick moves away from the neutral position.

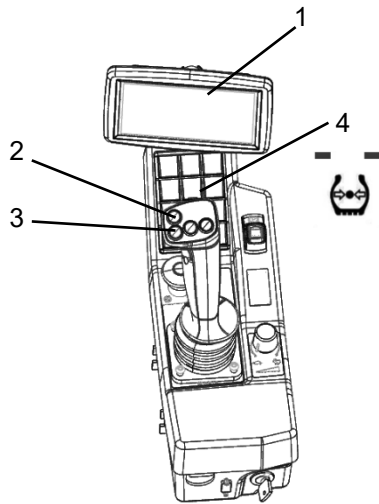


Fig. - Side panel
1. Multifunction screen
2. Increased tire pressure
3. Decreased tire pressure
4. AOR control button (on/off)

Tire pressure adjustments (optional)

The operator will be able to change the pressure during operation by controlling the air pressure in the tires. It will enable tire inflation (4) in automatic mode and can be variably adjusted in manual mode with the buttons (2) and (3) on the joystick, in a range of 240 kPa to 830 kPa (35 to 120 PSI). The tire pressure level is displayed in the lower left corner of the multifunction screen (1).



When the tire pressure is at the maximum level (830 kPa) or at the minimum (240 kPa), it is not possible to increase/decrease the pressure.

Cocoa mats (optional)

To apply the mats (1) to the wheels, perform the following:

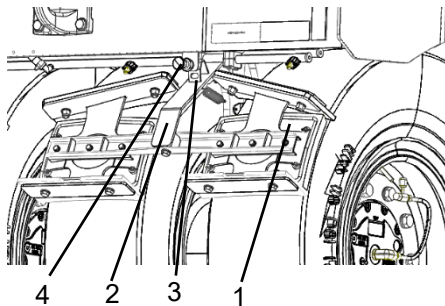


Fig. - Adjusting the scraper bars
1. Cocoa mats
2. Scraper holder
3. Mounting hole
4. Locking pin

- Hold and lift the center of the scraper holder (2).
- Ensure that the locking pin (4) has been properly released from the mounting hole (3), allowing the scraper to rest against the tire in the working position.

To retract the scrapers:

- Hold and lift the center of the scraper holder (2).
- Make sure the locking pin (4) fits securely back into the mounting hole (3).

Operation - Ballast box

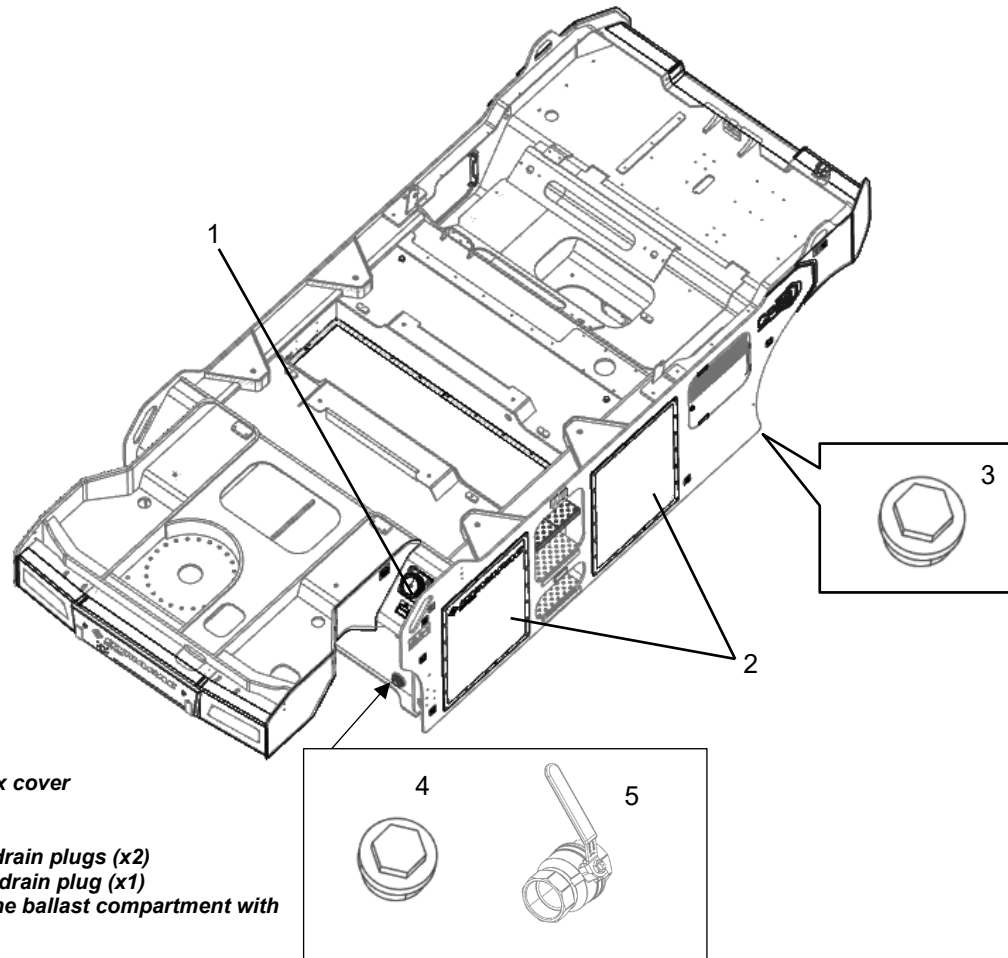


Fig. - Ballast box cover

- 1. Filling tube
- 2. Side covers
- 3. Rear bottom drain plugs (x2)
- 4. Front bottom drain plug (x1)
- 5. Drain tap of the ballast compartment with water.

Ballast with water

Remove the cap from the filling tube (1) on the right side of the machine.

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

Do not remove the drain plugs (3) and keep the drain tap (4) closed while filling the compartment with water. For machines equipped with a ball valve (5), keep it closed.

Complete the ballast box, where necessary with steel.

Water should be added when filled with metal blocks, as this will fill all the spaces between the ballast.



When using the mixed ballast compactor, start by using the available steel objects and then add any missing water.



Distribute the ballast evenly in the box.

Steel ballast compartments

The CP28 compactor frame uses 3 ballast compartments: front, center and rear.

Front and rear compartments

Ballast steel plates can be efficiently loaded into these compartments from the side of the machine frame using a forklift.

This design not only simplifies the loading process but also allows the compactor to reach a weight of 28,000 kg (61,729 lbs) when the plates are placed in these areas combined with the plates in the central compartment.

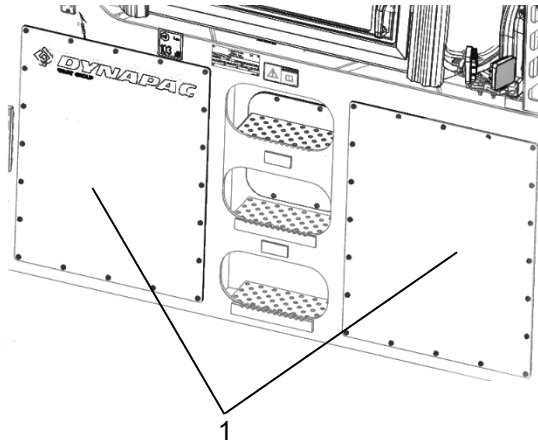


Fig. - Front and rear compartments
1. Side covers

1. With the ballast box drained (no water), remove the four side covers (1) from the ballast box.
2. Loosen the nuts and lock nuts (2) and remove the support bracket (3) from the steel ballasts.

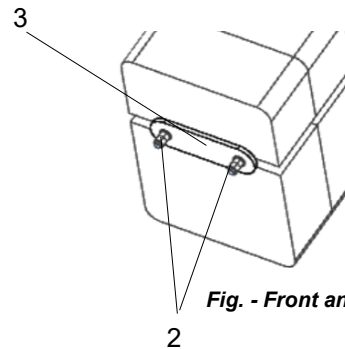
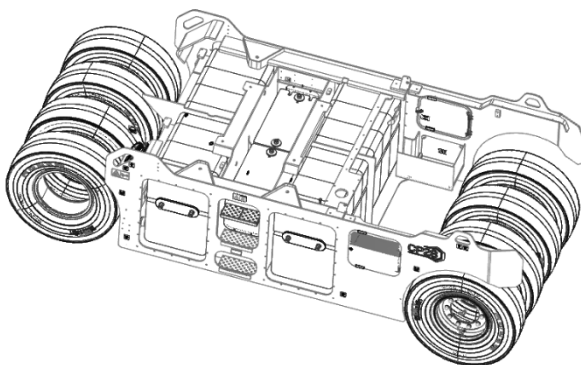


Fig. - Front and rear steel ballasts

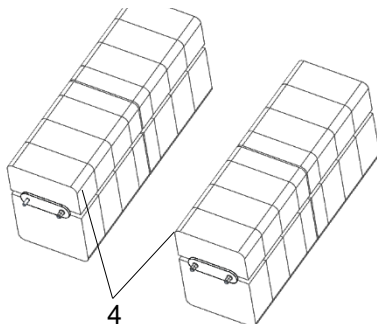


Fig. - Removable steel ballasts (front and rear)
1. Side covers
2. Nut and lock nut
3. Backing plate
4. Ballast grooves

3. Install or remove the ballast, as needed, using the forks of a common forklift. The ballast grooves (4) are designed so that the forklift forks fit perfectly and facilitate the operation of removing, installing and transporting them.
4. After installing or removing the ballast in the box, assemble the backing plate, performing the reverse removal operation.



Distribute the steel ballast evenly.

Central compartment

Loading this compartment with steel ballast plates is only possible from the top of the structure, the cabin must be removed.

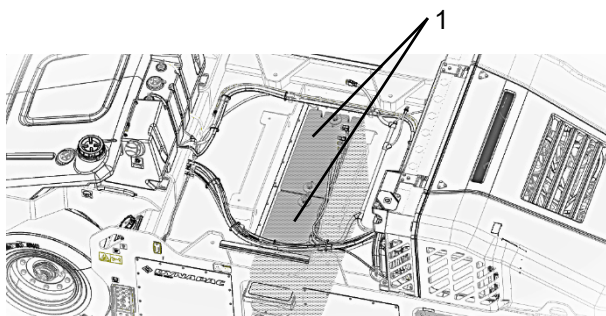


Fig. - Central compartment
1. Central steel ballasts

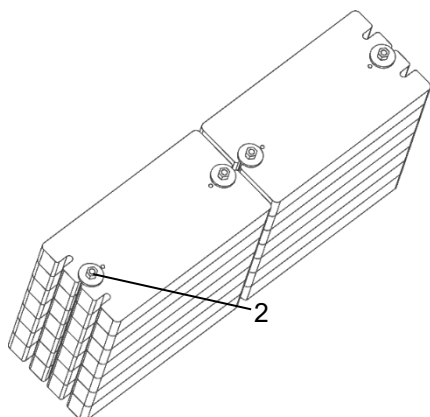


Fig. - Central removable steel ballasts
2. Nut and washer

Operation - Ground pressure

Ground pressure (during operation)

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

High tire pressure provides a smaller contact surface (1), while lower pressure provides a larger contact surface (2).

The contact surface of the tires with the ground is especially important for the compaction result. The total weight divided by the number of tires gives the correct pressure per wheel according to the following table:

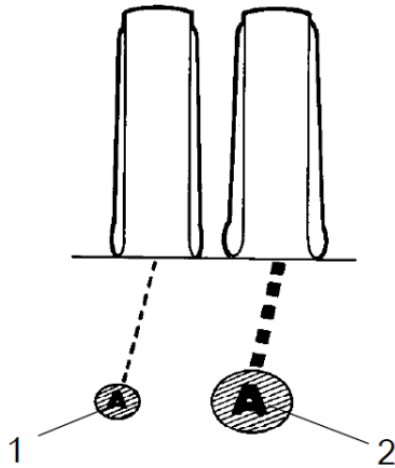


Fig. - Ground contact surface

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

Ground pressure

	TIRE PRESSURE (kPa)					
	240	350	480	620	720	830
WHEEL LOAD (kgf)	GROUND PRESSURE (kPa)					
1,125	215	245	265	295	330	340
1,375	225	265	295	335	360	385
1,825	255	275	335	380	395	430
2,250	260	315	360	415	440	490
2,750	275	325	385	440	475	520
3,000	280	330	405	460	490	545

	TIRE PRESSURE (psi)					
	35	50	70	90	105	120
WHEEL LOAD (lbs)	GROUND PRESSURE (psi)					
2,480	31	36	38	43	48	49
3,031	33	38	43	49	52	56
4,022	37	40	49	55	57	62
4,959	38	46	52	60	64	71
6,061	40	47	56	64	69	75
6,612	41	48	59	67	71	79

Low tire pressure - 240 kPa (34.8 PSI)

The lower the tire pressure, the lower the pressure on the contact surface, as the surface area will be larger.



Fig. - Low ground pressure, larger contact area

Normal tire pressure - 480 kPa (69.6 PSI)

Used in the degradation session.



Fig. - Normal pressure in the soil

High tire pressure - 830 kPa (120.4 PSI)

The higher the tire pressure, the higher the pressure on the contact surface, as the surface area will be smaller.



Fig. - Higher ground pressure, smaller contact area

Operation - Brakes

(Interlock/Parking Brake/Emergency Brake)



The interlock, parking brake and emergency brake should be checked daily before the machine starts to be used. To check that the emergency brake and Interlock work properly, it is necessary to turn the machine off and on again.



To check that the Interlock works properly, the operator should stand up from the seat with the machine moving forward and backward (test in both directions). He must hold the steering wheel and prepare for a sudden stop. The audible alarm will start to sound and after 4 seconds the engine will turn off and the brakes will be activated.



To check that the emergency brake is working properly, the operator must press the corresponding button with the machine moving forward and backward (test in both directions). He must then hold the steering wheel and prepare for a sudden stop. The engine will turn off and the brakes will be activated.



To check that the parking brake is working properly, it must be activated when the machine is moving forward or backward (test in both directions). The operator should hold the steering wheel and prepare for a sudden stop when it is activated. The engine will continue running.

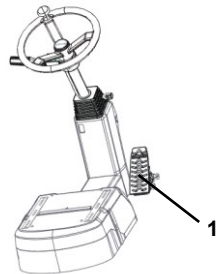


Fig. - Pedal
1. Brake pedal

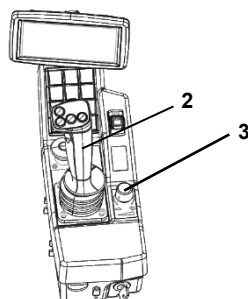


Fig. - Side panel
2. Forward/Reverse Lever
3. Speed limiter

Dynamic brake

Step on the brake pedal (1), return the joystick (2) gently to the Neutral position, and turn the speed limiter (3) counterclockwise to the turtle position.

The brake pedal activates an abrupt stop of the equipment. During normal operating conditions, its use is not required, as the hydrostatic brake will bring the compactor to a smooth stop, thereby preventing damage to the compacted material. In situations requiring a rapid stop, use the brake pedal.

Emergency brake

Normally the brake pedal is used for braking.



To perform emergency braking, press the emergency stop button (1), hold the steering wheel, and prepare for a sudden stop. The engine will be turned off.

The Diesel engine will be switched off and must be started again if necessary.

When starting the engine after emergency breaking, the Forward/Reverse joystick must be returned to the "Neutral" position, and the parking brake must be reactivated.

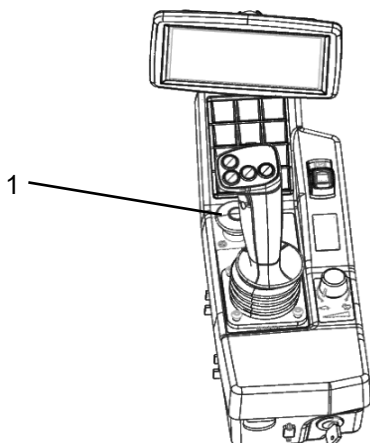


Fig. - Side panel
1. Emergency stop

Turning off the engine

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

Check to see if the multifunction display (1) displays any indication of fault alarms. Turn off all lights and other electrical functions.

Activate the parking brake button (3).

Turn the speed limiter (5) counterclockwise to the turtle position.

Press the engine start/stop button (4) and turn the starter key (2) to the left to completely off the machine.

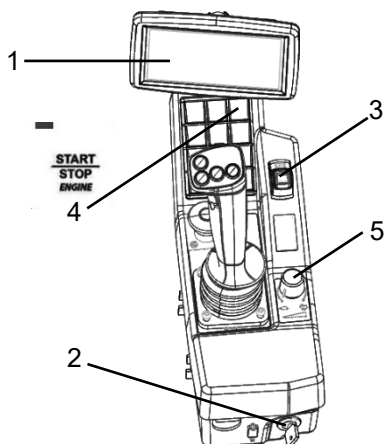


Fig. - Side panel
1. Multifunction screen
2. Start switch
3. Parking brake switch
4. Engine start/stop button
5. Speed limiter

Fit and lock the instrument panel cover over the screen and the top of the instruments control (for compactors that do not have a cab).

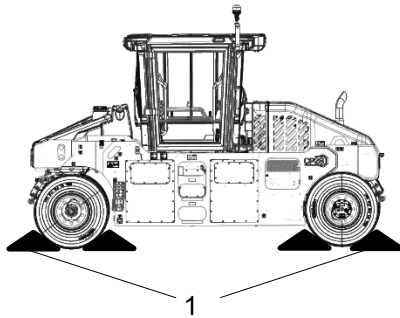
Operation - Wheel chock

Fig. - Wheel chock



Never get out of the machine and leave it with the engine running without first activating the parking brake.



Make sure the machine is parked in a safe area free of traffic. Chock up the wheels when parking on slopes.

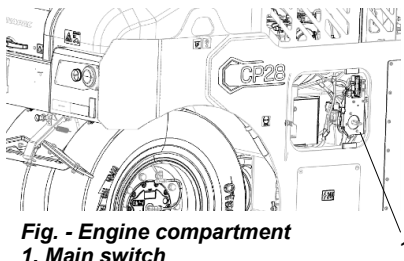
Main switch

**Fig. - Engine compartment
1. Main switch**

At the end of the work shift, turn off the main switch of the battery (1) and remove the key.

This will prevent the battery from being discharged and make it difficult to start and drive the machine if unauthorized people attempt to use it. Lock the maintenance doors and engine hood with the key.



If the compartment providing access to the main switch is closed, the switch can be accessed through an available opening in the engine compartment. In emergency situations, always turn off the main switch.

Long-term storage



To store for prolonged periods (over one month), follow the instructions below.



In very cold climates, there is a risk of freezing of certain components. Empty water tanks and pipes.

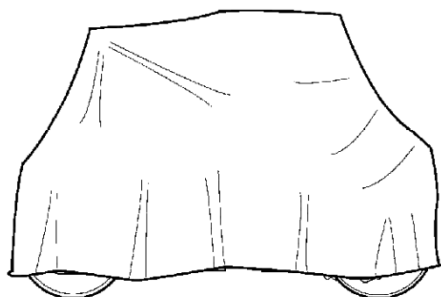


Fig. - Protecting the machine from the weather

These instructions are valid for storages of up to 6 months.

Before putting the machine back into operation, the following points must be conducted before parking and storing the machine.

Wash the machine and touch up the paint to avoid rusting. Use anti-rust products on exposed parts and lubricate the machine thoroughly, as well as apply consistent putty to unpainted surfaces.

Engine

Refer to the manufacturer's information in the motor instruction manual that came with the machine.

Battery

Disassemble the compactor's batteries, clean their exterior parts, and recharge them once a month.

Air Filter, exhaust pipe

Close the air tubing (see "Every 50 Hours" and "Every 1,000 Hours" sections) or its intake opening with plastic or tape. Seal the exhaust pipe opening as well, so that there is no moisture entering the engine.

Water distribution system

Remove all liquid from the water tank and all hoses. Also empty the filter box and water pump and remove all sprinkler nozzles.

Refer to the Maintenance section for more information on water drainage.

Fuel tank

Fully fill the fuel tank to prevent condensation.

Hydraulic oil reservoir

Fill the hydraulic reservoir to the top-level mark (see the "Every 10 Hours of Operation" section).

Tires

Make sure the tire pressure is at least 200 kPa (29 PSI).
Place supports under the chassis so that the tires are not subjected to load.

Steering cylinder, hinges, among others

Lubricate the steering cylinder piston rod with grease to preserve it.

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

Covers, oiled canvas

Place the instrument cover/cover on the instrument panel.

Cover the compactor entirely with a protective tarp. It should be kept a little above ground.

Store, if possible, the machine in a closed place and preferably at a regular temperature.

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

As a precaution, place chocks on the compactor's tires when parking uphill and switch off the engine.

Engine coolant

Check that the liquid mixture is within the recommended levels and has a freezing temperature lower than the lowest temperature expected during the storage period.

DEF tank (Stage V engines)

Draining the DEF tank is recommended if it is not used for more than 6 months.



After drainage, dispose of it in accordance with current environmental legislation and updated standards.



To avoid accidents, on ramps or slopes, park across the road in the direction of the slope.



Never leave the machine with the engine running. Before leaving, apply for the emergency/parking brake.



Make sure the compactor is parked in a safe place and is not obstructing traffic.

Lifting

Lifting the roller

Check that the front wheels are parallel to the chassis before lifting the compactor. Shut down the engine and engage the parking brake.

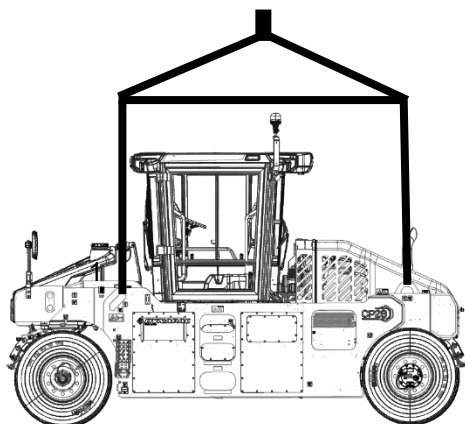


Fig. - Compactor prepared for lifting



Make sure the hooks are securely placed on the lugs. Only lift the equipment through the specific eyelets for this use.



Always use steel cables and chains in accordance with safety standards and check that there are no damaged components and that parts are not damaged during lifting.



The maximum weight of the machine should be read on the lifting plate (1). See also the Technical Specifications.



Do not remain under or near the machine while it is hoisted.

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

Jacking compactor lifting



The maximum weight of the machine should be read on the lifting plate (1). See also the Technical Specifications.



Lifting devices, such as jacks (2) or equivalents, shall be sized in accordance with the safety regulations for these devices.



Do not remain under or near the machine while it is hoisted. Also check that the lifting device is fixed and secure in its position, and on a stable level and surface.

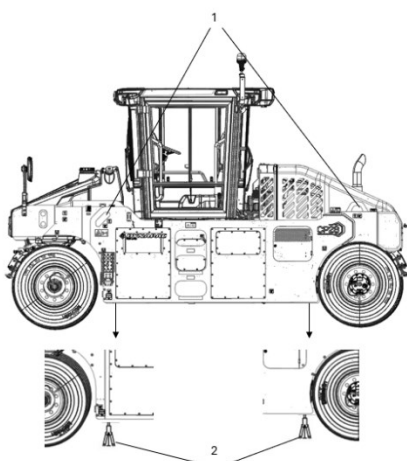


Fig. - Compactor lifted with jack
 1. Lifting plate
 2. Jack location

The machine should only be lifted with a jack or similar device if it is correctly fitted to the lug's spots. The frame is reinforced at these points to withstand the stress. Lifting in other locations may cause damage to the machine or injury to the operator.

Towing

Short-distance towing with engine running

The compactor can be moved up to 300 meters (984 ft) according to the following instructions:

To tow the machine, use the same points used for lifting.

1. Park the machine in a flat, safe place. Chock up the tires if necessary.
2. Open the lid and check that the booster pump is accessible.
3. On the pump, there are two bypass valves (1) (hex bolts) that must be rotated three times to the left (counterclockwise) in order for the whole system to be in a bypass state, which means that sides A and B on the pump will be freely connected to the pressure side. This function allows the machine to be moved without the drive shaft turning.
4. Start the Diesel engine and let it run at idle.
5. Set the forward/backward scroll command to one of two positions. If it is in a neutral position, the hydraulic motor brakes will be activated.
6. The compactor can be towed and even driven, now, if the steering system is working.
7. To exit bypass mode, turn both valves (1) three times to the right (clockwise).

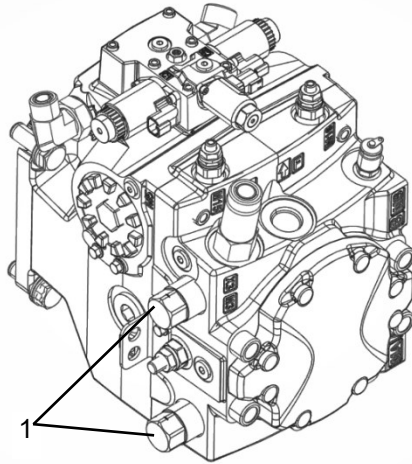


Fig. - Transmission pump
1. Bypass valves



The machine may be towed at a maximum speed of 5 km/h (3.1 mph) or more and a distance must not be longer than 300 meters (984 ft). If this occurs, there is a risk of damage to the transmission system. Make sure the towing valves are reset (by turning them three times clockwise) after towing.

Short-distance towing with engine off



As a safety measure, chock up the wheels, as the machine may start to move when the brakes are hydraulically released.

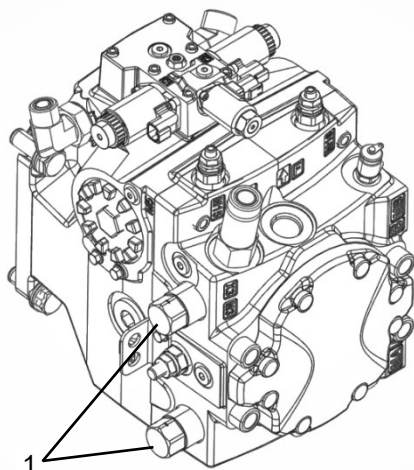


Fig. - Transmission pump
1. Bypass valves

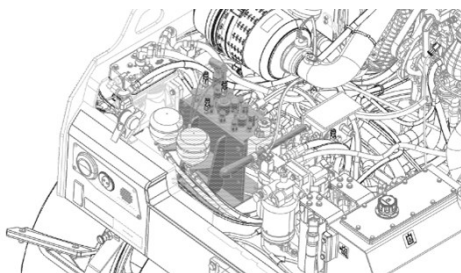


Fig. - Engine compartment

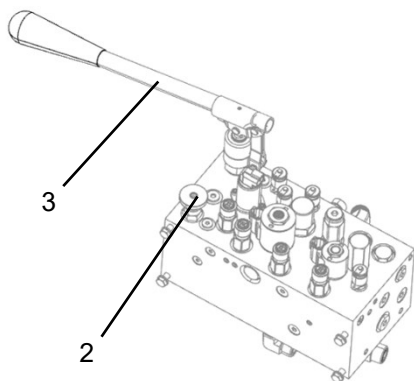


Fig. - Brake release valve
2. Knob
3. Pump lever

The compactor can be moved up to 300 meters (984 ft) according to the following instructions:

1. Park the machine in a flat, safe place.
2. Open the lid and check that the booster pump is accessible.
3. On the pump, there are two bypass valves (1) (hex bolts) that must be rotated three times to the left (counterclockwise) in order for the whole system to be in a bypass state, which means that sides A and B on the pump will be freely connected to the pressure side. This function allows the machine to be moved without the drive shaft turning.
4. The brake release pump is positioned at the rear of the engine compartment.
5. Pump with the lever (3) until the brakes are released.
6. To quickly deplete the brake relief pressure, start or engage the starter for few seconds.
7. If you are unable to start, turn the towing valve four times to the left/counterclockwise (always remember to turn it four times afterwards, but to the right/clockwise).
8. To disconnect the bypass mode, loosen the hex bolts three turns to the right.
9. In this way, the compactor can be towed.



The machine may not be moved at a speed of more than 5 km/h (3.1 mph) and a distance more than 300 meters (984 ft). If this occurs, there is a risk of damage to the transmission system. Make sure the towing valves are reset (by turning them three times clockwise) after towing.

Compactor towing



During towing, the compactor must be braked by the vehicle attached to it. Always use the towbar, as the machine will not be able to brake.



The compactor must be towed slowly and cannot be moved at a speed of more than 5 km/h (3.1 mph) and more than 300 meters (984 ft) away.

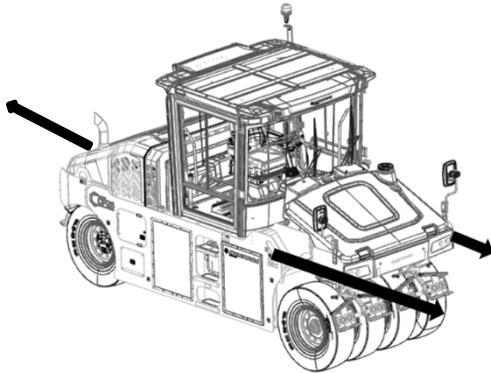


Fig. - Direction of the trailer

When towing a machine, your devices must be connected to both lifting holes.

The traction forces must act in the longitudinal direction of the machine, as shown in the figure on the side. Refer to the table below to find out the maximum allowable pulling force for this machine model:

MODEL	kN	lbf
CP28	412	92,700

Towing eyes (optional)

The compactor may be equipped with a towing eye, which is exclusively intended for towing objects with a maximum weight of 4,000 kg (8,810 lbs).

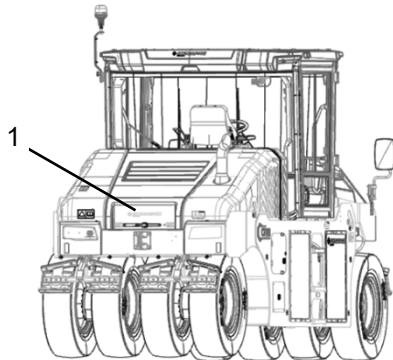


Fig. - Rear of the machine
1. Tow eyes

Transport

Preparing the compactor 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 neutral position, i.e. the tires are facing forward.

Shim (1) the tires at a 37° angle and a minimum height of 25 cm (9.9 inches). They should be worn both in the front and in the back.

Shim the chassis (2) to ensure that the chains stay taut in case the tires deflate. Put them into the machine according to the figure below.

Secure the compactor with chains at all four corners. The docking points are displayed on the security decals. Place the straps in symmetrical pairs, crossing them together.

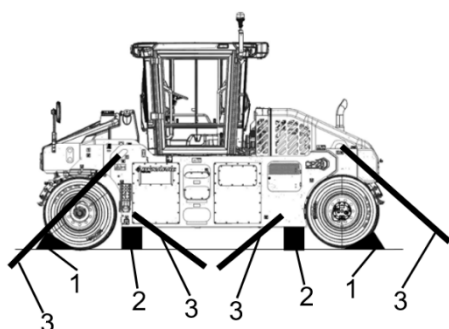


Fig. - Positioning

- 1. Shims**
- 2. Brackets**
- 3. Girdles**



Make sure that the chains, brackets, and trailers of the transport vehicle are approved and have the necessary tension to perform the fitting and locking. Regularly check the slack of the belts.

Operating instructions - Summary



Follow the safety standards specified in the Safety Manual.

- Make sure that all MAINTENANCE INSTRUCTIONS have been conducted. For more information, see the maintenance section of this manual.
- Turn on the battery switch.
- Sit on the operator seat during operation.
- Set the joystick to the "Neutral" position.
- Leave the emergency button on.
- Turn the machine on by switching the key to the "I" position.
- Keep machine speed and engine speed LOW.
- Press the start/stop button on the membrane panel to start the engine and leave the engine running until it warms up.
- Select the engine speed range **HIGH** or **ECOMODE**.
- Release the parking brake.
- The compactor always starts in turtle gear mode.



Always check the brakes. Before starting the work shift, perform an operational test on the system, and remember that if the hydraulic oil is not heated, the braking command will take longer to be obeyed.



When running the roller, use the forward and reverse joystick with extreme caution.

- Check if the tires are being properly sprinkled, when necessary, with enough water and evenly.



In an emergency, apply the emergency stop, hold the steering wheel well and prepare for hard braking.

- When parking: stop the engine, apply the parking brake and chock up the compactor's 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

In order for the machine to work satisfactorily and at the lowest possible cost, it is necessary to conduct complete maintenance.

The Maintenance section includes the periodic maintenance that must be performed on the machine.

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

Machine delivery

The machine is tested and adjusted before leaving the factory.

The inspection should take place as soon as it is delivered to the customer, following the list presented in the warranty document.

Any transport damage must be immediately reported to the transporter.

Warranty

The warranty will only be valid if the inspections have been conducted at the time of delivery of the machine, as well as the maintenance inspections within the terms of the warranty.

The warranty will not be valid if damage occurs due to inadequate service, incorrect use of the machine, use of lubricants and hydraulic oils other than those specified in the manual, or if other changes have been made without the necessary authorization.

Warning symbols



WARNING! Damage to the machine or its components.



CARE! Your safety may be involved.

Preventive maintenance - Symbols and lubricants

Preventive maintenance - Symbols and lubricants



Always use high standard quality lubricants and in the indicated quantity. Too much grease or lubricating oil can cause overheating and accelerated wear.

 ENGINE OIL	Ambient temperature -15°C +50°C (+5°F +122°F)	Dynapac Engine Oil 200	P/N 4812161855 (5L) P/N 4812161856 (20L)
 HYDRAULIC OIL	Ambient temperature -15°C +50°C (+5°F +122°F) Ambient temperature above +40°C (+104°F)	Dynapac Hydraulic 300 Shell Tellus T100 or equivalent	P/N 4812161867 (5L) P/N 4812161868 (20L)
 HYDRAULIC OIL BIOLOGICAL	When leaving the factory, the machine can be filled with biologically degradable oil. When replacing or topping up the oil, use a product of the same type as the previous one.	PANOLIN HLP Synth 46 (www.panolin.com)	
 TRANSMISSION OIL	Ambient temperature 0°C +40°C (+32°F +104°F)	Dynapac Gear Oil Extra	P/N 4812325403 (20L)
 GREASE		Dynagrease	P/N 4812030096 (0.4Kg)
 FUEL	Fuel shall not exceed 0.0015 (15 ppm) percent sulfur mass content. See the operating instructions for the engine.	STAGE V: Very low sulfur diesel	
 COOLANT	Effective antifreeze protection down to -37°C (-34.6°F). Previously diluted.	Dynacooler	P/N 4812340476 (20L)
 DEF (DEF)		STAGE V ENGINE DEF/AdBlue® in accordance with ISO 2224-1 	



For extremely high or low ambient temperatures, other lubricants will be needed.
Refer to the "Special Instructions" chapter or **DYNAPAC**.

Preventive maintenance - Symbols and lubricants

Maintenance symbols

	Engine oil		Air filter
	Engine oil level		Battery
	Engine oil filter		Sprinkler water
	Hydraulic oil		Sprinkler
	Hydraulic oil level		Emulsion (optional)
	Hydraulic oil filter		Fuel tank
	Grease		Fuel filter
	Lubricating oil		Transmission oil
	Coolant		Transmission oil level
	Coolant level		Air conditioning (optional)
	Air pressure		Recyclable

Maintenance and lubrication points

Maintenance and lubrication points

Please read this section of the manual carefully before performing any maintenance or lubrication service on the machine.

Get into the habit of examining the areas around and below the equipment. It is a common and easy way to detect leaks in their initial phase and probable anomalies.

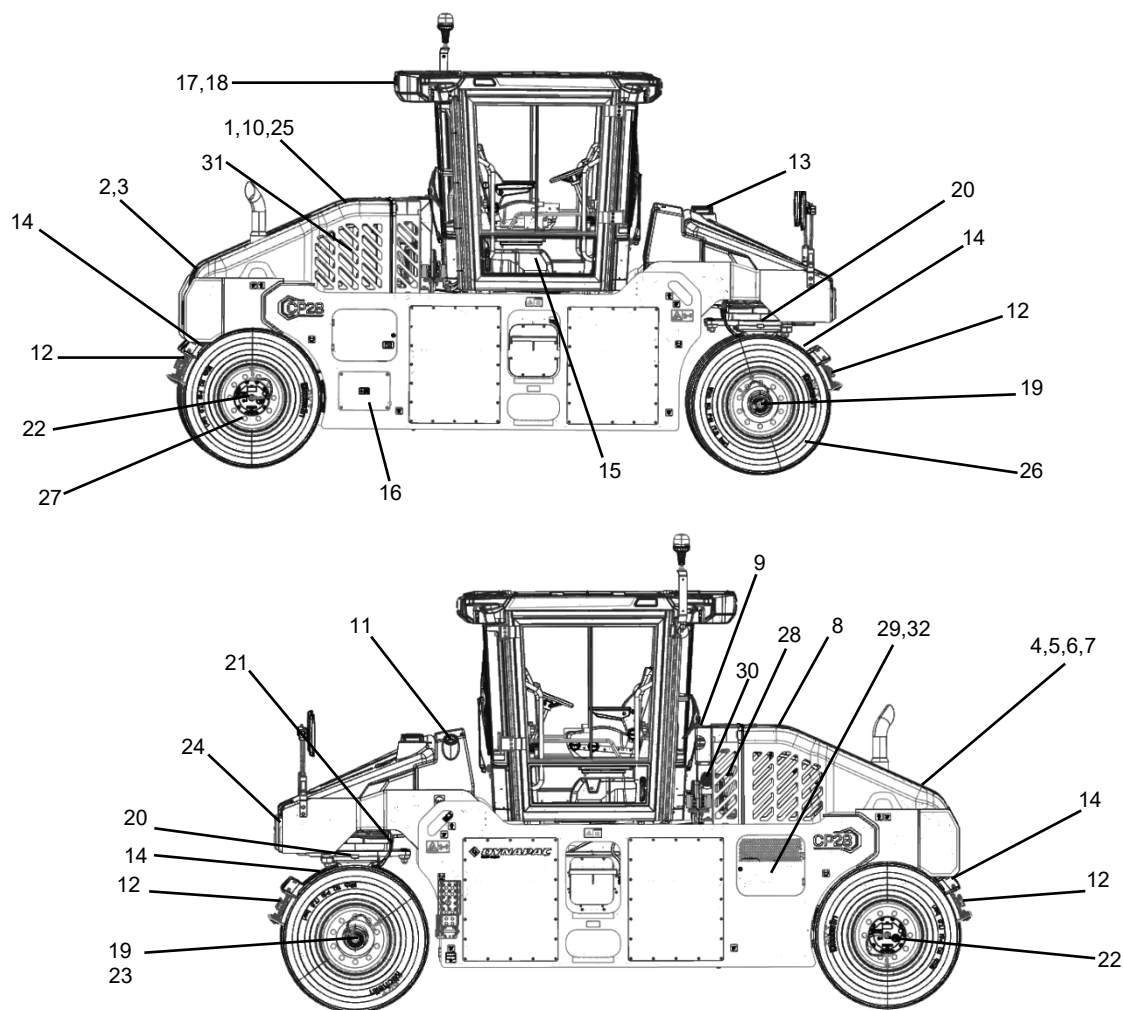


Fig. - Overhaul and lubrication points.

- | | | |
|----------------------------|-------------------------------|--|
| 1. Engine oil | 12. Scrapers | 23. Wheel hub |
| 2. Oil Filter | 13. Water supply tank | 24. Sprinkler filter |
| 3. Fuel filter | 14. Sprinkler system | 25. Alternator belt |
| 4. Hydraulic oil filter | 15. Seat bearing | 26. Tire |
| 5. Hydraulic oil level | 16. Battery | 27. Wheel |
| 6. Hydraulic oil supply | 17. Cabin air filter | 28. Air conditioning drain filter |
| 7. Hydraulic oil reservoir | 18. Cabin air conditioning | 29. Air filter drier |
| 8. Hydraulic oil cooler | 19. Lower articulated bearing | 30. DEF tank (Stage V) |
| 9. Coolant | 20. Upper articulated bearing | 31. Diesel aftertreatment system (Stage V) |
| 10. Engine air filter | 21. Articulated bearing | 32. Emulsion tank |
| 11. Fuel supply | 22. Orthogonal axis | |

Scheduled maintenance and lubrication

Scheduled maintenance and lubrication

Maintenance and lubrication procedures

Maintenance and lubrication services should be performed first, based on the number of hours of operation, and secondly on periods, such as daily, weekly, etc.



Always clean around caps, plugs, grease fittings, or plugs before opening them or applying grease.



Respect and follow the engine manufacturer's instructions. For more information, see the Engine Manual.

DAILY (every 10 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
Before starting the engine		
1	Check the diesel engine oil level	Refer to the engine instruction manual
9	Check the engine coolant level	
5	Check the hydraulic oil level	
11	Fill the fuel tank	
13, 14	Fill the water tank/check the sprays nozzles	
32, 14	Check the level of the emulsion tank/check the sprays nozzles	When equipped (optional)
14	Clean the spray nozzle	
24	Clean the sprinkler filter	
32	Clean the emulsion filter	When equipped (optional)
12	Check the fit of the scrapers	
25	Check alternator belt tension	Refer to the engine instruction manual
3	Drain the fuel pre-filter	Refer to the engine instruction manual
30	Refill the DEF tank	See section "Def tank filling"

FIRST 50 hours of operation

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
2	Replace the engine oil filter	Refer to the engine instruction manual
3	Replace the engine fuel filter	Refer to the engine instruction manual
3	Replace the diesel engine pre-filter	Refer to the engine instruction manual
4	Replace the hydraulic oil filters	
22	Replace the orthogonal shaft oil	

WEEKLY (every 50 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
26	Check the air pressure of the tires	
27	Check the tightness of the wheel bolts	
10	Check and clean the engine air filter elements	Replace when necessary
18	Check the air conditioner	When equipped (optional)
28	Check the air conditioner drain filter	When equipped (optional)
19	Lubricate the lower articulated bearing	
20	Lubricate the upper articulated bearing	
21	Lubricate the articulated bearing	

Scheduled maintenance and lubrication

QUARTERLY (every 250 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
8	Check and clean the hydraulic oil cooler and water cooler of the diesel engine	If necessary
16	Check the batteries	

EVERY 6 MONTHS (every 500 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
1	Replace diesel engine oil	Refer to the engine instruction manual
2	Replace the diesel engine oil filter	Refer to the engine instruction manual
10	Check and replace the main air filter	Refer to the engine instruction manual
10	Check and replace the secondary air filter	Refer to the engine instruction manual
29	Replace the air filter drier	Machine equipped with tire inflation
3	Replace the diesel engine fuel filter	Refer to the engine instruction manual
3	Replace the diesel engine pre-filter	Refer to the engine instruction manual
-	Check the threaded joints	
7	Check the hydraulic oil tank cap	
15	Lubricate the seat bearing	

YEARLY (every 1,000 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
-	Check the clearance of the diesel engine valves	Refer to the engine instruction manual
-	Inspect the engine drivetrain	Refer to the engine instruction manual
-	Replace the engine valve cover gasket	Refer to the engine instruction manual
4	Replace the hydraulic oil filters	
17	Replace the cabin air filter	
22	Replace the orthogonal shaft oil	
22	Check the oil level of the orthogonal shaft	
23	Lubricate the bearing and check the tightness of the wheel hub nut	

EVERY 2 YEARS (every 2,000 hours of operation)

POSITION IN THE PICTURE	PROCEDURE	COMMENTS
6	Replace the hydraulic oil	
11	Clean the fuel tank	
13	Clean the water tank	
14	Clean the sprinkler system	
9	Replace the coolant	Refer to the engine instruction manual
31	Check the particulate filter of the diesel aftertreatment system (for Stage V engines)	Refer to the engine instruction manual

Scheduled maintenance and lubrication

Scheduled maintenance

 Scheduled maintenance			10 hours (Daily) First 50 hours 50 hours (Weekly) 250 hours (Monthly) 500 hours (Monthly) 1,000 hours (Every 6 Months) 1,500 hours 2,000 hours 3,000 hours (Every 2 Years)										
Pos.	Action	P.											Notes
1	Check the diesel engine oil level	114	☐										Refer to the engine instruction manual
9	Check the engine coolant level	114	☐										
5	Check the hydraulic oil level	115	☐										
11	Fill the fuel tank	115	☐										
13, 14	Fill the water tank/check the sprays nozzles	116	☐										
32, 14	Check the level of the emulsion tank/check the sprays nozzles	116	☐										When equipped (optional)
14	Clean the spray nozzle	117	☐										
24	Clean the sprinkler filter	117	☐										
32	Clean the emulsion filter	118	☐										
12	Check the fit of the scrapers	118	☐										
25	Check alternator belt tension	119	☐										Refer to the engine instruction manual
3	Drain the fuel pre-filter	119	☐										Refer to the engine instruction manual
30	Def tank – Refill (for Stage V engines)	120	☐										See section "Def tank filling"
2	Replace the engine oil filter	121		•									Refer to the engine instruction manual
3	Replace the engine fuel filter	121		•									Refer to the engine instruction manual
3	Replace the diesel engine pre-filter	121		•									Refer to the engine instruction manual
4	Replace the hydraulic oil filters	122		•									
22	Replace the orthogonal shaft oil	122		•									
26	Check the air pressure of the tires	123			☐								
27	Check the tightness of the wheel bolts	123			☐								
10	Check and clean the engine air filter elements	124			☐								Replace if necessary
18	Check the air conditioner	125			☐								When equipped (Optional)
28	Check the air conditioner drain filter	125			☐								When equipped (Optional)
19	Lubricate the lower articulated bearing	126			☐								
20	Lubricate the upper articulated bearing	126			☐								
21	Lubricate the articulated bearing	126			☐								
8	Check and clean the hydraulic oil cooler and water cooler of the diesel engine	127				☐							If necessary



Check the machine's hour meter to find out what type of maintenance is required.

Scheduled maintenance (cont.)

 Scheduled maintenance o Check • Replace			10 hours (Daily) First 50 hours 50 hours (Weekly) 250 hours (Monthly) 500 hours (Monthly) 1,000 hours (Every 6 Months) 1,500 hours 2,000 hours (Every Yearly) 3,000 hours (Every 2 Years)										Notes
Pos.	Action	P.											
16	Check the batteries	127				o							
1	Replace diesel engine oil	129					•					Refer to the engine instruction manual	
2	Replace the diesel engine oil filter	130					•					Refer to the engine instruction manual	
10	Check and replace the main air filter	130					•					Refer to the engine instruction manual	
10	Check and replace the secondary air filter	130					•					Refer to the engine instruction manual	
29	Replace the air filter drier	131					•					Machine equipped with tire inflation	
3	Replace the diesel engine fuel filter	131					•					Refer to the engine instruction manual	
3	Replace the diesel engine pre-filter	131					•					Refer to the engine instruction manual	
-	Check the threaded joints	-					o						
7	Check the hydraulic oil tank cap	131					o						
15	Lubricate the seat bearing	132					o						
-	Check the clearance of the diesel engine valves	-						o				Refer to the engine instruction manual	
-	Inspect the engine drivetrain	-						o				Refer to the engine instruction manual	
-	Replace the engine valve cover gasket	-						•				Refer to the engine instruction manual	
4	Replace the hydraulic oil filters	133						•					
17	Replace the cabin air filter	134						•					
22	Replace the orthogonal shaft oil	134						•					
22	Check the oil level of the orthogonal shaft	135						o					
23	Lubricate the bearing and check the tightness of the wheel hub nut	135						o					
6	Replace the hydraulic oil	136								•			
11	Clean the fuel tank	137								o			
13	Clean the water tank	138								o			
14	Clean the sprinkler system	138								o			
9	Replace the coolant	139								•		Refer to the engine instruction manual	
31	Check the particulate filter of the diesel aftertreatment system(for Stage V engines)	140								o		Refer to the engine instruction manual	



Check the machine's hour meter to find out what type of maintenance is required.

Daily (every 10 hours of operation)



Park the compactor on a flat surface.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the forward/reverse joystick is in the "neutral" position.



When the engine is running in closed spaces, make sure there is enough air ventilation, to avoid carbon monoxide poisoning.



Check the diesel engine oil level

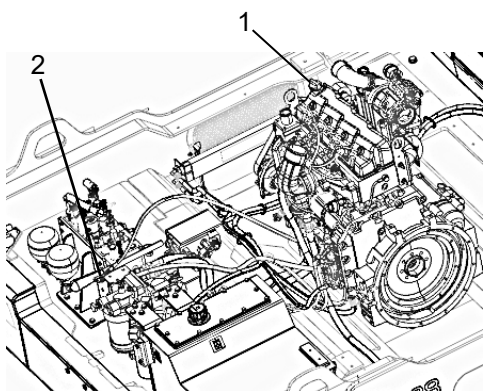


Fig. - Engine compartment

- 1. Oil supply cap
- 2. Oil level dipstick

The oil dipstick (2) is found next to the hydraulic block.



Be careful with engine parts that are still hot and the radiator when removing the dipstick, as there is a risk of burns.

1. Pull the dipstick (2) out and check that the oil level is between the top and bottom marks. For more information, refer to the engine's instruction manual.



The engine oil level can be changed when heating the machine, so it is ideal to check the oil while the engine is still off before operation.



Check the engine's coolant level

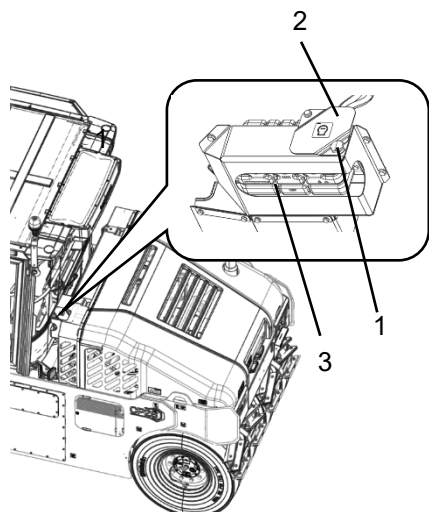


Fig. - Expansion tank

- 1. Handle
- 2. Protection plate
- 3. Expansion tank

The expansion tank is found on the left, between the operator's platform and the engine compartment. To access the expansion tank (3), use a portable platform or ladder. Remove the handle (1) and rotate the guard plate (2).

Check that the coolant level is between the MAX and MIN marks of the expansion tank (3). If necessary, remove the tank cap and complete the level.



NEVER open the expansion tank cap while the engine is hot and always wear gloves and goggles.

When filling with coolant, always use a compound consisting of 50% water and 50% additive. Refer to the lubricant specifications in this manual and in the engine instruction manual. Never mix different coolant liquids, as the mixture may compromise the product's effectiveness.

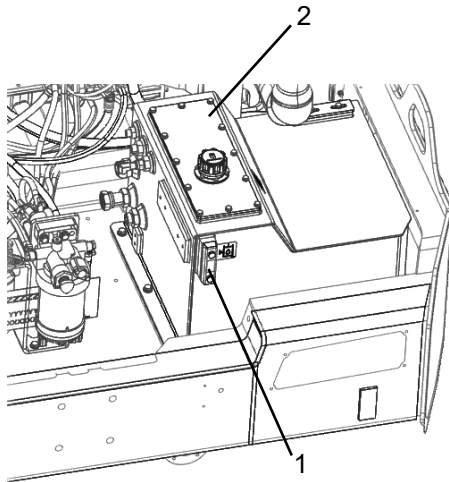


Fig. - Hydraulic oil reservoir
1. Oil level sight glass
2. Hydraulic oil reservoir cap



Check the hydraulic oil level

1. Park the compactor in a flat place and turn off the engine.
2. Check the hydraulic oil reservoir level glass (1) found at the rear of the machine.
3. If the oil level is 2 cm below the top line of the sight glass, top up with the recommended hydraulic oil.



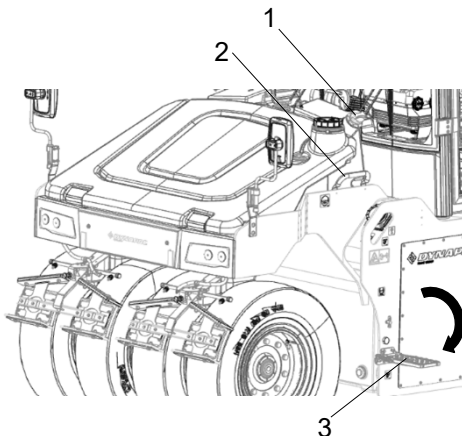
Use only the hydraulic oil recommended by **DYNAPAC**.



Fill the fuel tank



Never refuel the engine while it is running. Do not smoke and avoid spilling fuel out of the nozzle.



The filler nozzle and reservoir cap are in front of the operator's platform on the left side of the machine.

Check the fuel tank daily before starting work or fill the tank when the job is complete.

Use the retractable step (3) as foot support and hold the hand grip to access the fuel tank (2).

Release and remove the tank cap (1) and check all the way to the bottom of the filler nozzle.

The reservoir has a capacity of 210 liters (55.5 gallons) of fuel. After refueling the tank, return the retractable step (4) to the closed position. For more information on fuel quality, refer to your engine manual.

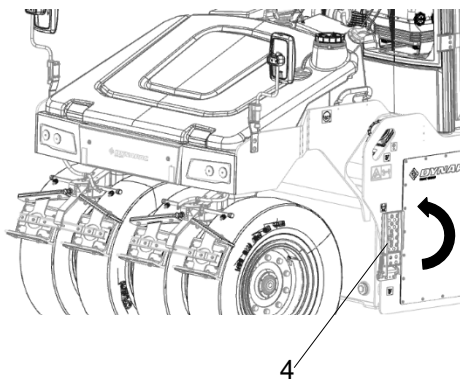


Fig. - Fuel tank filling
1. Cap
2. Hand grip
3. Retractable step (open)
4. Retractable step (closed)



When refueling, stop the machine in a flat and safe place, turn off the engine and ground the filling nozzle by placing it in contact with the chassis in a non-isolated place before the start of filling the tank.



During filling, keep the pump nozzle in contact with the supply nozzle tube. Always fill up with the fuel recommended by DYNAPAC.



The use of adulterated, contaminated, dirty, or poor-quality fuel may damage the components of the injection system and the engine. Damages resulting from this condition are not covered under the warranty.



Fill the water tank/check the sprays nozzles

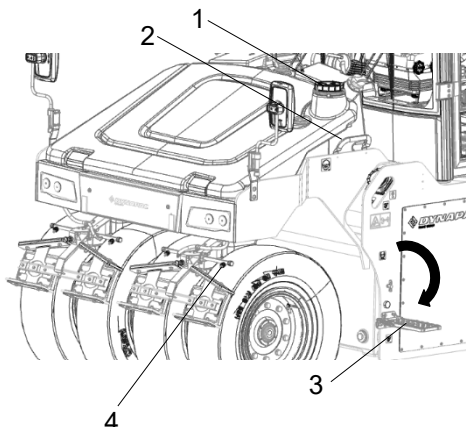


Fig. - Water tank supply

- 1. Lid
- 2. Hand strap
- 3. Retractable step
- 4. Sprays nozzles

To access the water tank, open the retractable step (3) to use it as step and hold the hand grip (2).

There is a fill cap on top of the water tank (1) on the left side of the machine.



Loosen and remove the tank cap and fill it with clean water. Do not remove the filter.

Fill the reservoir, which has a capacity of 360 liters (95.1 gallons), with emulsion fluid - such as water mixed with 2% cutting fluid. After refilling the tank, return the retractable step (3) to its closed position.



Only recommended additive: small amount of eco-friendly antifreeze liquid.

Check that the sprays nozzles (4) are not clogged, and if necessary, clean them as well as the filter.



Periodically check the compactor's tires for excessive wear.

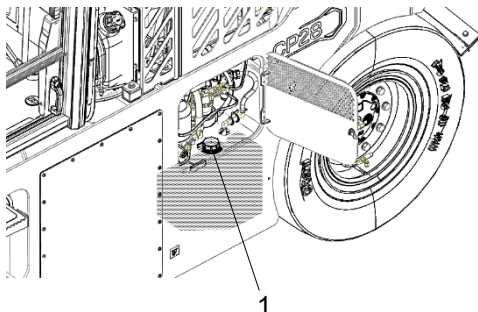


Fig. - Emulsion tank supply

- 1. Cover
- 2. Sprays nozzles

Check the level of the emulsion tank/check the sprays nozzles (if equipped)

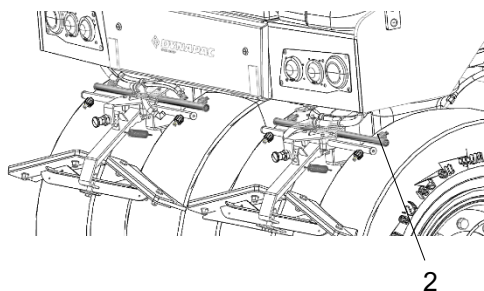
The emulsion tank is mounted on the right-hand side of the machine, with its lid accessible through the opening of the air dryer filter compartment.

Refill with emulsion liquid whenever necessary.



Do not add flammable or environmentally hazardous liquids to the emulsion tank.

Check that the spray nozzles (2) of the emulsion system, located upstream of the spray tube, are free from blockages. If any obstructions are detected, clean both the nozzles and the corresponding filter.



Clean the spray nozzles

Manually release the clogged nozzle (1).

Use compressed air to clean the nozzle (1) and the screen filter (2). It is also possible to use the spare parts and clean the clogged ones later.

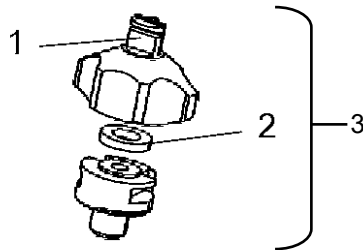


Fig. - Sprinkler injector

- 1. Mouthpiece
- 2. Screen Filter
- 3. Sprinkler Gun Assembly

NOZZLE	COLOUR	Ø (mm)	l/min (2.0 bar)	gal/min (40 PSI)
Pattern	Yellow	0.8	0.63	0.20
Optional	Blue	1	1	0.31
Optional	Red	1.2	1.25	0.39
Optional	Brown	1.3	1.63	0.50

After performing the check and eventually cleaning, turn on the system and verify that it works properly.



Wear safety goggles when working with compressed air.



Clean the sprinkler filter



Be aware of the risk of freezing during winter. Drain all reservoirs, tanks, filters, and pipelines during this period or mix a small amount of antifreeze with the water.

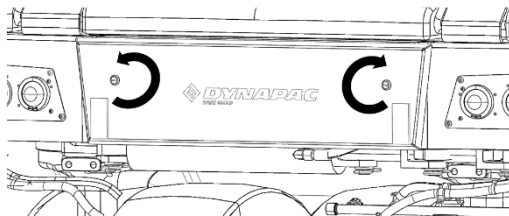


Fig. - Front compartment of the sprinkler system

The pre-filter is found inside the upper chassis compartment at the front of the machine.

Access to the spray system is made through the compartment lid. Using a screwdriver, turn the latches in the direction shown in the figure.

After opening the lid, before performing any procedure, the system's operation can be checked using the manual activation button (1) found next to the filter (3).

To clean the filter (3), open the drain tap (2) of the filter and let the dirt out.

If necessary, clean the filter and filter housing. Check that the rubber gasket of the filter compartment is intact.

After checking and cleaning, replace the components in the correct location and start the system to verify that it works properly.

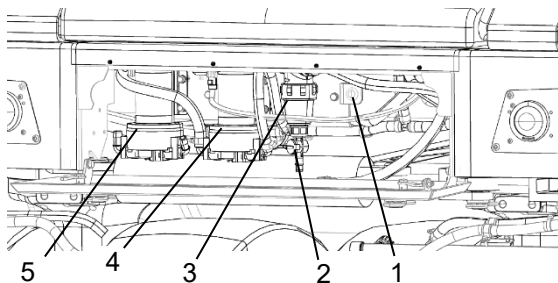


Fig. - Sprinkler system, front chassis compartment

- 1. Manual override button
- 2. Drain tap
- 3. Filter
- 4. Water pump
- 5. Extra water pump (optional)

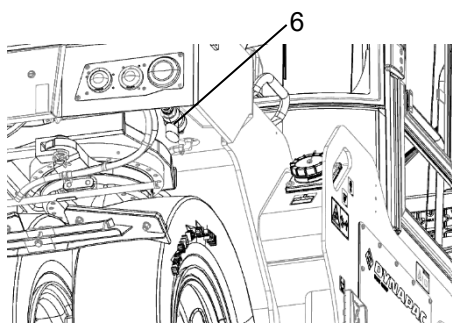


Fig. - Water tank drainage system
6. Drain tap

Another drain tap (6) is found under the water reservoir, on the left side of the front of the chassis. The water reservoir and the pumping system can be drained through this tap.

It is also possible to install an extra pump in case the standard pump stops working.

To perform drainage of the entire sprinkler system, refer to "Clean the water tank" in the "Maintenance - Every 2,000 Hours" section.

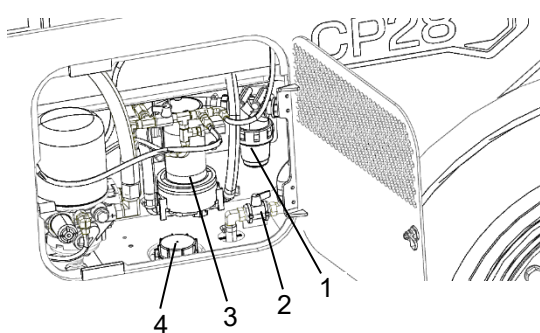


Fig. - Emulsion system compartment
1. Emulsion filter
2. Ball valve
3. Emulsion pump
4. Cover



Clean the emulsion filter (if equipped)

To clean the emulsion filter (1), close the ball valve (2), rotate the filter base counterclockwise, and remove the filter element for cleaning.

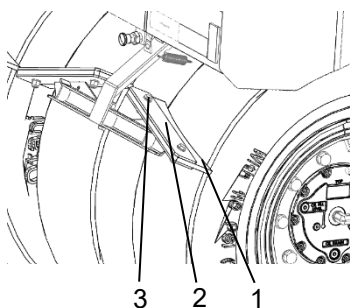


Fig. - Tire scrapers
1. Scraper blade
2. Scraper holder
3. Screws

Check the fit of the scrapers

Make sure the scrapers and tires are in good working condition, otherwise replace them.

If the scraper wear is uneven, loosen the adjusting screw (3).

Pull the blade (1) down until it flushes with the tire. Once the adjustment is made, tighten the screws (3) again.

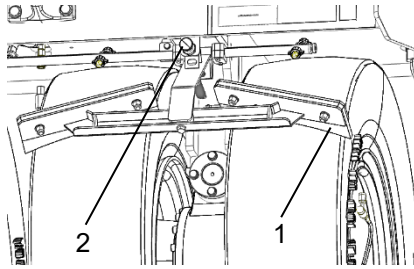


Fig. - Tire scrapers
1. Scraper blade
2. Lock

Scrapers should be away from the tires during transport.

To do this, raise the scraper blades (1) and make sure they are secured in the raised position secured by the lock (2).

To lower the scrapers, raise the scraper blade (1) while pulling the lock (2).

Check alternator belt tension

The belt tension check should be conducted with the pressure or Burroughs belt tension meter.

- The tension of the new belt shall be 890 N (200 lb).
- The belt tension used should be 360 – 710 N (80 – 160 lb).

NOTE: The belt is considered worn after ten minutes or more of operation.

OBSERVATION: This procedure is not applied to automatic belt tensioners.



If the tension of the used belt is below the minimum value, tighten it to the maximum allowable value for used belts.

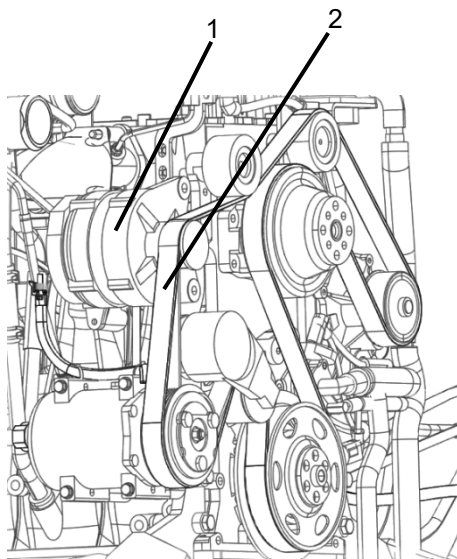


Fig. - Alternator belt tension
1. Alternator
2. Alternator belt



Drain the fuel pre-filter

To perform the fuel pre-filter drain, follow the instructions below:

1. Release the drain plug (3) at the bottom of the pre-filter.
2. With the help of the manual booster pump (4), make sure to remove all sediment. If in doubt, consult the engine's instruction manual.
3. When only clean fuel comes out of the pre-filter, close the drain plug.

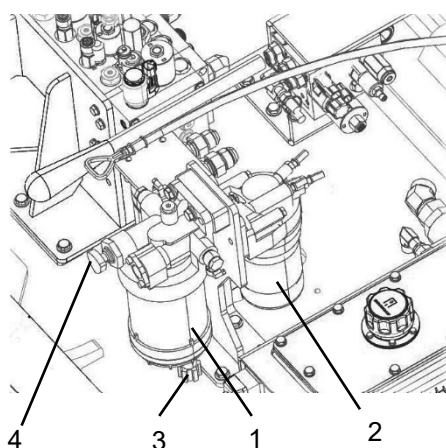


Fig. - Engine compartment
1. Fuel Pre-Filter
2. Fuel filter
3. Drain plug
4. Hand Pump



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment.

DEF tank - Refill (for Stage V engines)

Check the DEF tank daily. Follow the engine manufacturer's specifications on the use of DEF.

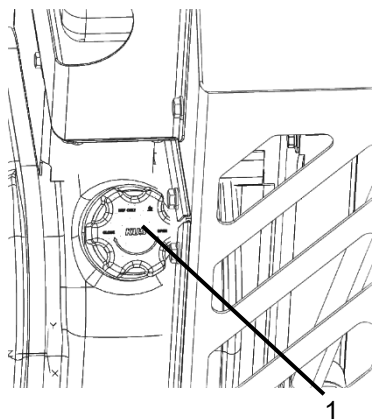


Fig. - Urea tank
1. Oil level sight glass
1. Cap for refueling



The DEF solution can only be refilled in the tank designated for use in post-treatment of the gases. Accidental filling with another fluid (e.g. diesel oil) causes irreparable damage to the dosing system. If the tank is accidentally filled with water, the On-Board Diagnostics (OBD) system generates an error message.



See section "*Filling the DEF tank*".



NEVER fill up with fuel while the engine is running. DO NOT smoke and avoid spilling fuel.

After the FIRST 50 hours of operation



Park the compactor on a flat surface.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the Forward/Reverse joystick is in the "Neutral" position.



When the engine is running in enclosed spaces, make sure there is enough air intake, to avoid carbon monoxide poisoning.



Replace the diesel engine oil filter



Never conduct maintenance work under the machine while the engine is running. Always park the machine in a flat place and chock up the tires.

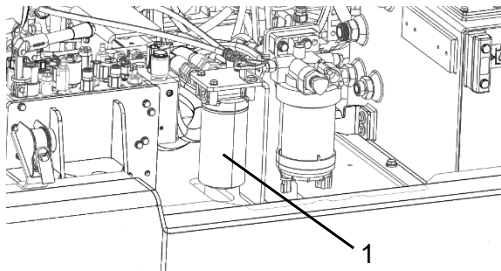


Fig. - Engine compartment
1. Diesel engine oil filter

The oil filter (1) is found at the rear of the engine compartment.

Refer to the engine instruction manual for information on replacing the oil filter.



Replace the engine fuel filters (filter and pre-filter)

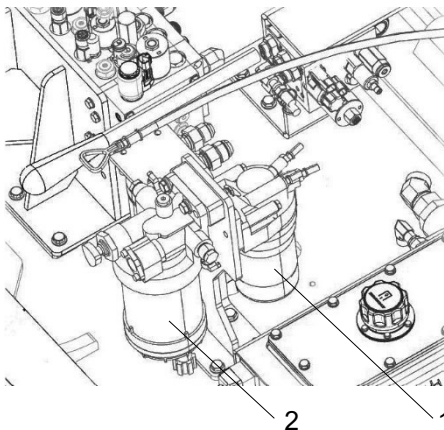


Fig. - Engine compartment
1. Fuel filter
2. Fuel pre-filter

The filters are found at the rear of the engine compartment, next to the hydraulic tank.

1. Release the bottom of the pre-filter (2) and drain the water, then replace the filter element and re-fit the pre-filter unit.
2. Fit the fuel filter in the correct place, start the engine and check that the filter is well sealed.

Maintenance - After the FIRST 50 hours of operation



Replace the hydraulic oil filters

The hydraulic filters are found at the rear of the engine compartment, next to the hydraulic.



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment. See the Environment chapter of this manual.

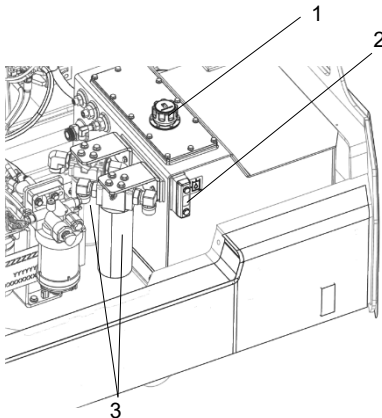


Fig. - Hydraulic oil reservoir
 1. Reservoir cap
 2. Level sight glass
 3. Hydraulic filter (x2)

1. Open the hydraulic oil reservoir cap (1).
2. Carefully clean the sealing surface of the filter holder.
3. Apply a thin layer of clean hydraulic oil to the rubber gasket of the new filter.
4. Attach the filter by hand, first until the filter gasket rests against the holder. Then tighten another half turn.
5. Check the hydraulic oil level in the sight glass (2) and adjust.
6. it if necessary. See the "Every 10 Hours" section for more information.
7. Start the engine and check that the filter is well sealed.



Replace the orthogonal shaft oil



Use extreme caution when draining the oil. Wear gloves and goggles, as hot oil can cause burns if in contact with the skin.

Move the machine until the filler plug (1) is in a horizontal position.

Release the supply plug (1) and release the level plug (2) as well, so that the air can be released, drain the oil through the drain plug (3), after that reassemble the plug (3). Refill the oil through the filler plug (1) until the oil starts to flow out of the level plug (2).

Top up with approximately 8 liters of new transmission oil. Refer to the lubricant specification.

Check that the oil level reaches the lower end of the plug opening and level (2).

Clean and reassemble the plugs.

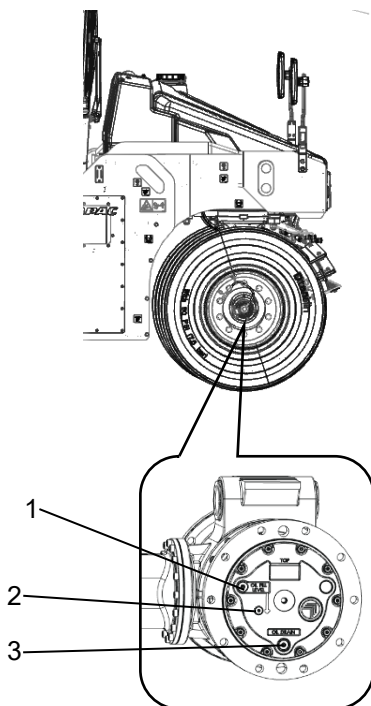


Fig. - Oil refilling of the orthogonal shaft
 1. Fueling plug
 2. Level plug
 3. Drain plug

Weekly (every 50 hours of operation)



Check the air pressure of the tires

Before checking the tire pressure, visually check that there is no physical damage or wear.

The pressure should be checked with an air pressure gauge, and all should have the same pressure.

To find out what the recommended pressure values are, refer to the "Technical Specifications" section.

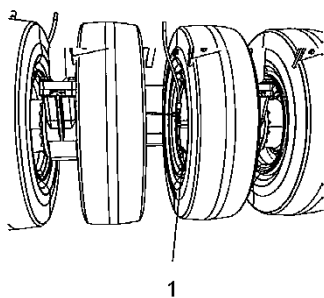
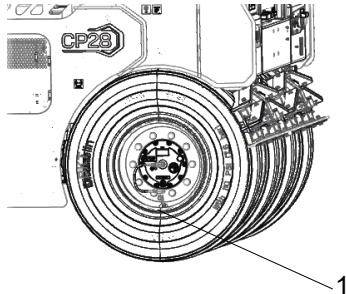


Fig. - Outer wheels / Inner wheels
1. Air valve



When replacing tires, it is important to know that they have the same original diameter and width, otherwise they may slide inside the wheel or make it impossible to install.

Check the tightness of the wheel bolts



Before retightening the wheel bolts, perform a careful visual inspection to verify that they are in good condition, free of damage or deformation that could compromise the application of torque.

The retightening of the wheel bolts must be performed using a properly calibrated torque wrench adjusted according to the torque specified in this manual, following the cross-tightening pattern to ensure even distribution of force.

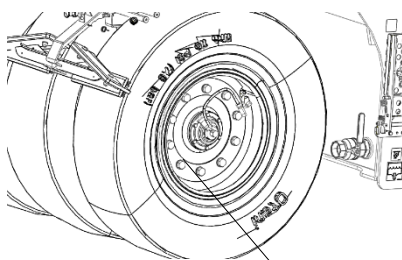


Fig. - Wheel
1. Wheel bolt



See "Wheel Bolts" table in "Technical specifications".

Check and clean the engine air filter elements



Check and replace the main air filter



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

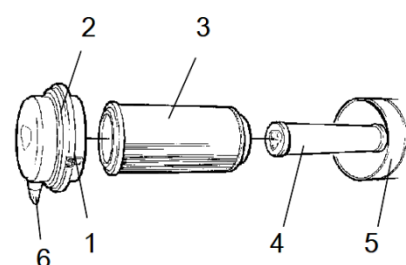


Fig. - Air filter

1. Cable ties
2. Cover
3. Main filter
4. Safety filter
5. Filter compartment
6. Anti-dust valve

1. Release the cable ties (1), remove the cover (2) and the main filter (3). Do not remove the safety filter (4).
2. Clean the air filter, if necessary, following the instructions on this page.
3. When replacing the main filter (3), insert a new one in its place and fit the air filter components in reverse order.
4. Check that the anti-dust valve (6) is in good condition and replace it if necessary.
5. When fitting the cap, make sure the dust valve is facing down.

To clean the air filter, follow the instructions below:

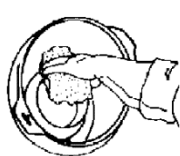
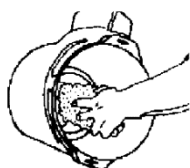


Fig. - Inside the Outlet Tube



Outside of the Outlet Tube

1. Clean the inside of the filter cover and compartment.
2. Also clean the two surfaces of the outlet pipe, as shown in the figure on the side.



Check that the hose clamps between the filter compartment and the intake hose are securely tightened and that the hoses are intact. Check the entire hose system all the way to the engine.



Check and replace the secondary air filter



Replace the secondary air filter with every five replacements or cleanings of the primary air filter.

To replace the secondary air filter with a new one, follow the instructions below:

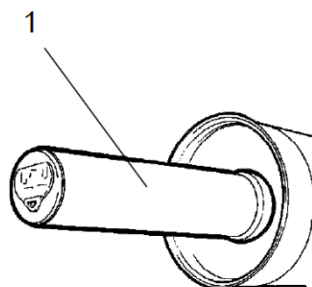


Fig. - Air filter
1. Safety Filter

1. Remove the old secondary air filter (1) from the bracket, install a new one, and assemble the assembly components in the reverse order of disassembly.
2. Clean the main air filter if necessary.



Check the air conditioner (if equipped)



Park the compactor on a flat surface.



Always use a portable ladder when inspection or maintenance of the cabin air-conditioning system is needed.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the Forward/Reverse Joystick is in the "Neutral" position.

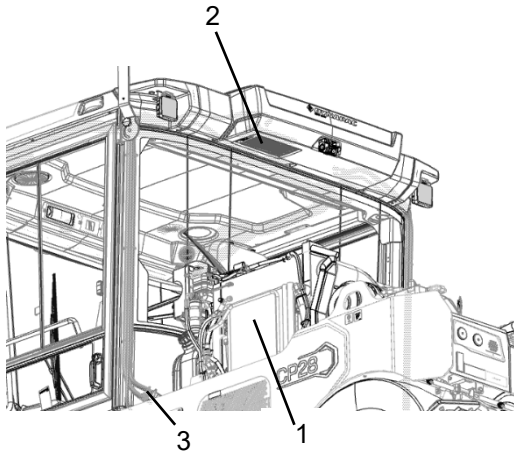


Fig. - Cabin
1. Condenser element
2. Air conditioning filter
3. Coolant hoses

With the help of compressed air, clean the dust from the condenser element (1). Clean from top to bottom.



Do not use compressed air jets with too much force, as this may damage the fins of the element.



Always wear protective goggles when working with compressed air.

Also check that the hoses in the system are not touching other components.

Check the condition of the hoses and coolant connections (3) and make sure there is no sign of oil film, which could indicate leaks.

Check that there are no drain obstructions in the coolant unit, as they can accumulate condensation inside the unit.

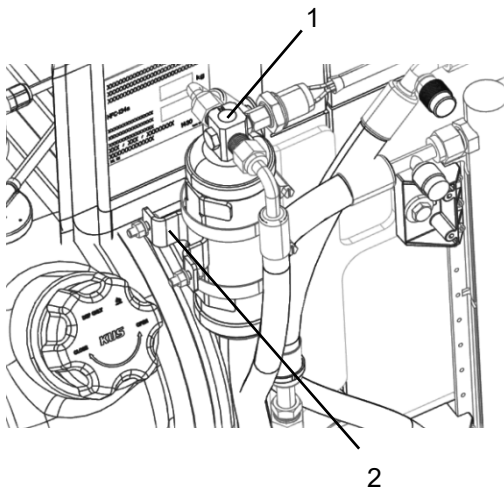


Fig. - Drying filter
1. Display
2. Filter holder



Check the air conditioner drain filter (if equipped)

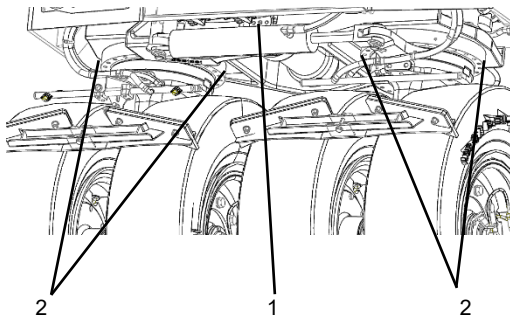
With the unit in operation and with the help of the display (1), check that there are no bubbles in the drying filter.

The filter is found between the DEF tank (Stage V) and the radiator, together with the condensing unit, on the left side of the machine.

If there are bubbles visible through the display, it means that the coolant level is too low. Turn off the unit to prevent damage and fill with coolant to the correct level.



Only authorized people/companies may conduct work on the coolant circuit.

**Lubricate the articulated bearings**

Lubricate the articulated bearing fitting (1) and the upper (2) and lower (3) articulated bearing fittings with five manual greaser applications.

Use the grease according to the lubricant specifications recommended by **DYNAPAC**.

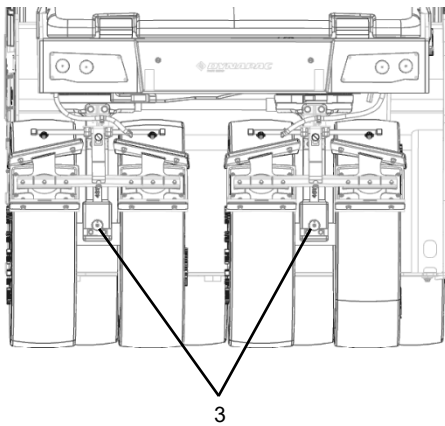


Fig. - Front suspension

- 1. Articulated bearing grease fitting**
- 1. Upper articulated bearing fittings**
- 2. Lower articulated bearing fittings**

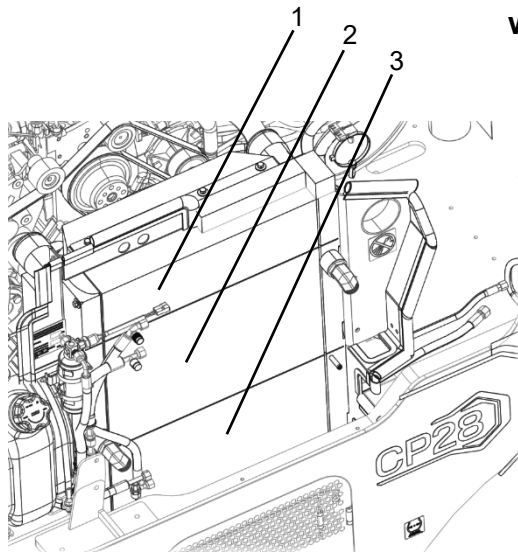
Monthly (every 250 hours of operation)**Check and clean the hydraulic oil cooler and water cooler of the diesel engine**

Fig. - Radiators
1. Recharging air radiator
2. Hydraulic oil cooler
3. Water Radiator



Whenever you use compressed air, wear safety glasses.



Whenever possible, clean the hives in the opposite direction to the airflow of the fan. Whenever you wash the hive, cover the electrical and electronic components.

**Check the batteries**

Periodically inspect terminals and cables for signs of corrosion, wear, or looseness.

Apply suitable lubricants to the connectors to prevent oxidation and improve electrical conductivity.

Check the condition of protective covers or specialized seals designed to guard against moisture and contaminants.



The machine's electrical system may keep small residual charges even after disconnecting the battery. Using calibrated equipment, test for the absence of voltage before handling any system components.



Never smoke or allow sparks and exposed flames near the batteries when examining them. Batteries typically produce explosive gases that can cause severe injury.

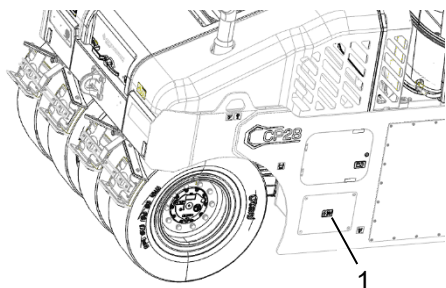


When working with batteries, protect your face and eyes by wearing the proper personal protective equipment and always providing proper ventilation.



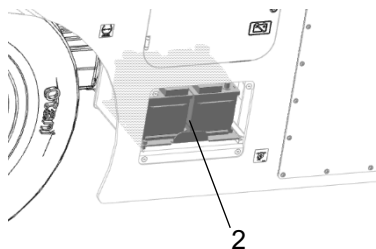
Battery replacement must be performed only by professionally trained personnel.

Maintenance - Every 250 hours



When removing the battery, initially disconnect the negative (-) post. However, when installing, connect the positive (+) pole first. Avoid contact between both battery terminals with metal tools or inadvertent contact between the positive terminal and the machine chassis, at the risk of causing a short circuit.

Battery compartment cover (1), found on the rear side of the machine.



The batteries are sealed and do not need any maintenance procedures.



PROTECT THE ENVIRONMENT: Return the used battery at the time of replacement. Every consumer or end user must deliver the discarded battery to a point of sale or an authorized collection site, ensuring proper and safe disposal.

Fig. - Battery compartment
1. Battery compartment cover
2. 12V 74Ah battery (x2)

Every 6 Months (every 500 hours of operation)



Park the compactor on a flat surface.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the Forward/Reverse lever is in the "Neutral" position.



When the engine is running in enclosed spaces, make sure there is enough air intake, to avoid carbon monoxide poisoning.

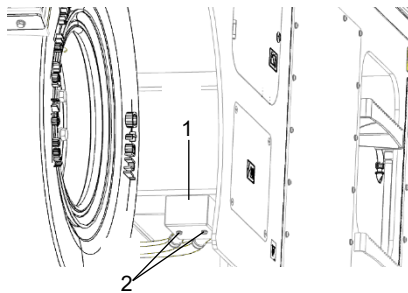


Fig. - Engine oil and coolant drain
1. Protection
2. Screws



Replace diesel engine oil

The engine oil drain plug is found at the bottom rear of the machine, on the right side. Access to it can be made by removing the protection (1) by loosening the screws (2).

Drain the oil while the engine is still hot and place a container with a minimum capacity of 14 liters below the plug.



Use extreme caution when draining the oil. Wear gloves and goggles, as hot oil can cause burns if in contact with the skin.

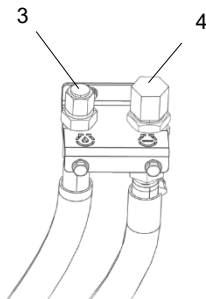


Fig. - Engine oil and coolant drain
3. Engine oil drain plug
4. Coolant drain plug

1. Release the engine drain plug (3) found on the left.
2. Let all the oil drain into the container and when you finish the operation, attach the drain plug (3) back and mount the guard (1).
3. Then tighten the hex nut.



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment.



Use a portable platform or ladder to access the engine oil filler cap.

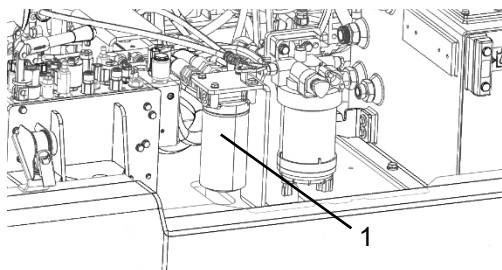
Always fill up with fresh oil. For information on correct oil quality, refer to the lubricant specifications or the engine's owner's manual. Fill up according to the required volume of engine oil. Check the dipstick to know if the volume is correct and before conducting the operation, leave the engine running for few minutes at idle and then turn it off.



Replace the diesel engine oil filter



Never conduct maintenance work under the machine while the engine is running. Always park the machine in a flat place and chock up the tires.



The oil filter (1) is found at the rear of the engine compartment.

Refer to the engine instruction manual for information on replacing the oil filter.

Fig. - Engine compartment
1. Oil Filter



Replace the main air filter

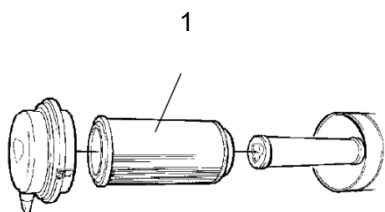


Fig. - Air filter
1. Main filter

Replace the air filter (1) every 1,000 hours, even if it has not yet been cleaned 5 times. For information on filter replacement, refer to the "Maintenance – Every 50 Hours" section.



If the filter is not replaced when it is clogged, the engine will lose power and the exhaust will leave black smoke, in addition to the risk of damage to the engine.



Replace the secondary air filter

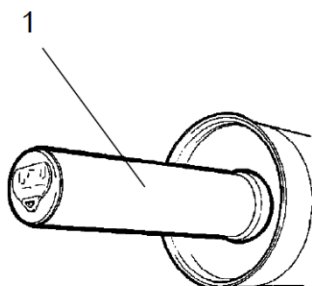


Fig. - Air filter
1. Secondary filter

Replace the secondary air filter with a new one every 5 main filter replacements or cleanings. The secondary air filter should not be cleaned.

To replace the secondary air filter with a new one, follow the instructions below:

1. Remove the old secondary filter (1) from the bracket, install a new one, and assemble the components of the assembly in the reverse order of disassembly.

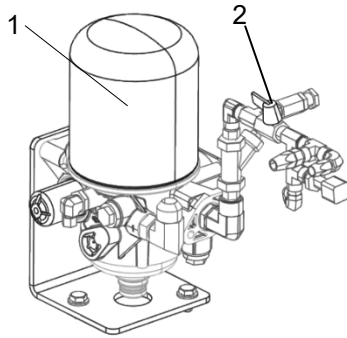


Fig. - Air dryer filter
1. Cartridge
2. Ball valve

Replace the air filter drier

To replace the filter, close the ball valve (2), discard the compressed air and unscrew the cartridge with a suitable tool.

Clean and grease the sealing surfaces and the attachment thread.

Screw by hand until it rests against the body of the assembly and tighten half a turn. Open the ball valve (2) again.

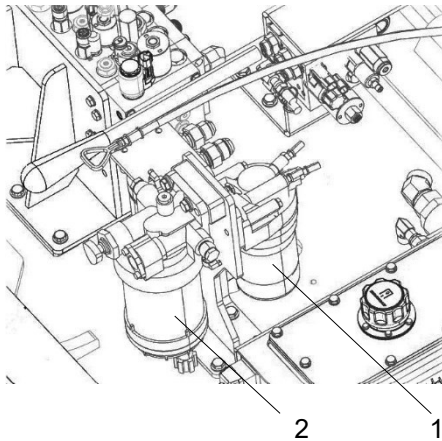


Fig. - Engine compartment
1. Fuel filter
2. Fuel Pre-Filter



Replace the engine fuel filters (filter and pre-filter)

The filters are found at the rear of the engine compartment, next to the hydraulic tank.

3. Release the bottom of the filter and drain the water, then reattach the filter unit.
4. Fit the fuel filter in the correct place, start the engine and check that the filter is well sealed.



Check the hydraulic oil tank cap

To check the hydraulic oil tank cap:

1. Release the tank cap and check if it is clogged. Air should pass freely through the lid in both directions.
2. If there is an obstruction in one direction, wash the filter with a little diesel oil and use compressed air until the obstruction is eliminated, or replace the cover with a new one.



Always wear protective goggles when working with compressed air.

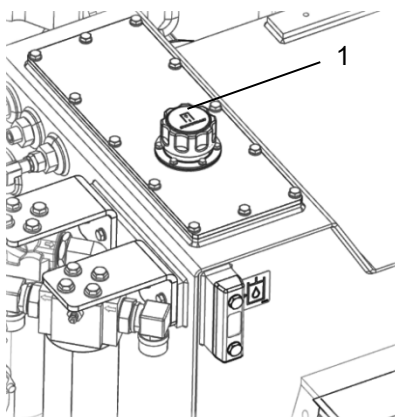


Fig. - Rear of the chassis
1. Tank Cap



Lubricate the seat bearing



Don't forget that the chain is a particularly important part of the steering.

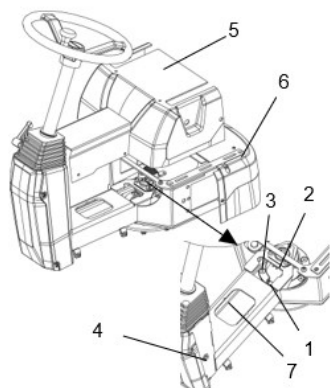


Fig. - Seat bearing
1. Lubrication nozzle
2. Gear
3. Steering chain
4. Set screws
5. Covers
6. Slide rails
7. Marking

To lubricate the seat bearing:

Remove the caps (5) to access the lubrication cup (1). Lubricate the driver's seat rotation with three pumps of the manual lubrication pump.

Clean and grease the chain (3) between the seat and the steering column.

Also lubricate the seat rails (6) with lubricating grease.

If the chain is loose next to the sprocket (2), loosen the screws (4) and move the steering column forward. Tighten the screws and check that the chain is properly tensioned.

Do not place the belt excessively under tension. It should be possible to move the strap about 10 mm (0.4 inches) to the side with your index finger/thumb on the marking (7) on the seat frame. Fit the strap lock underneath.



If changing the position of the seat is difficult, lubricate it more often than determined in this manual.

Yearly (per 1,000 hours of operation)

Park the compactor on a flat surface.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the Forward/Reverse lever is in the "Neutral" position.



When the engine is running in enclosed spaces, make sure there is enough air intake, to avoid carbon monoxide poisoning.

**Replace the hydraulic oil filters**

Hydraulic filters are found at the rear of the engine compartment, next to the hydraulic tank.



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment. See the Environment chapter of this manual.

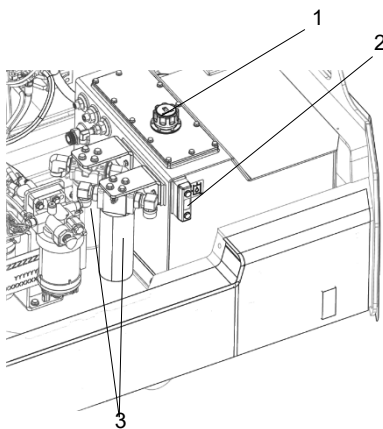


Fig. - Hydraulic oil reservoir

- 1. Reservoir cap**
- 2. Level Sight Glass**
- 3. Hydraulic filter (x2)**

8. Open the hydraulic oil reservoir cap (1).
9. Carefully clean the sealing surface of the filter holder.
10. Apply a thin layer of clean hydraulic oil to the rubber gasket of the new filter.
11. Attach the filter by hand, first until the filter gasket rests against the holder. Then tighten another half turn.
12. Check the hydraulic oil level in the sight glass (2) and adjust it if necessary. See the "Every 10 Hours" section for more information.
13. Start the engine and check that the filter is well sealed.



Replace the cabin air filter



Always use a portable ladder whenever inspection or maintenance of the cabin air-conditioning system is needed.

There is an air purifying filter (1) at the rear of the cabin. To replace it, do the following:

1. Open the protective cover.
2. Remove the filter holder. Remove the filter element and replace the filter with a new one.
3. If the machine performs work in dusty environments, you may need to replace the filter more often.



Improper disposal and environmental contamination may result in serious impacts: pollution of water resources, soil contamination, biodiversity loss, and human health issues.



Replace the orthogonal shaft oil



Use extreme caution when draining the oil. Wear gloves and goggles, as hot oil can cause burns if in contact with the skin.

Move the machine until the filler plug (1) is in a horizontal position.

Release the supply plug (1) and release the level plug (2) as well, so that the air can be released, drain the oil through the drain plug (3), after that reassemble the plug (3). Refill the oil through the filler plug (1) until the oil starts to flow out of the level plug (2).

Top up with approximately 8 liters of new transmission oil. Refer to the lubricant specification.

Check that the oil level reaches the lower end of the plug opening and level (2).

Clean and reassemble the plugs.



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment. See the Environment chapter of this manual.

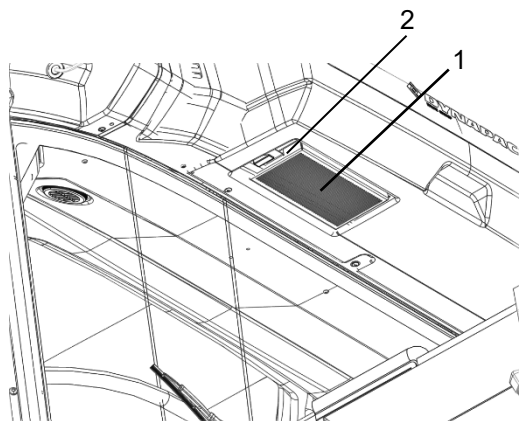


Fig. - Rear of the cab
1. Air Purifier Filter
2. Filter holder

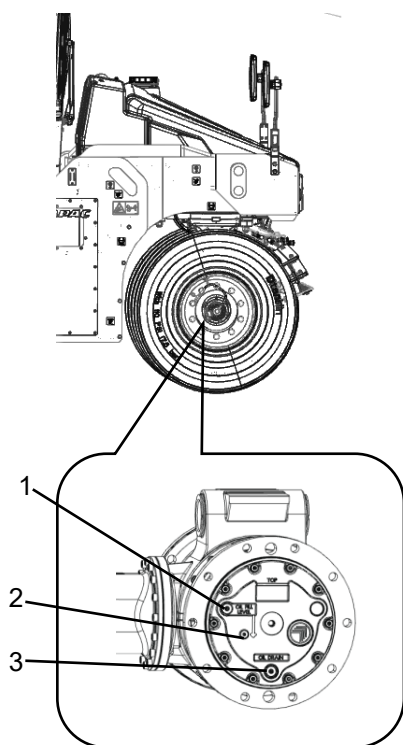


Fig. - Oil refilling of the orthogonal shaft
1. Fueling plug
2. Level plug
3. Drain plug



Check the oil level of the orthogonal shaft

Move the machine until the level plug (2) is in a horizontal position.

Clean the area around the level plug (2) and then release it.

Check that the oil level reaches the inside end of the plug opening.

If the level is low, fill up with new transmission oil to the correct level. Refer to the lubricant specification.

Clean and reassemble the plugs.



Lubricate the bearing and check the tightness of the wheel hub nut

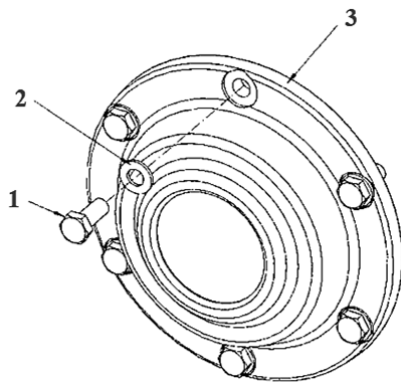


Fig. 1 - Protective cover

- 1. Screw
- 2. Washer
- 3. Protective cover

1. Remove the screws (1), washers (2), protective cover (3), nut (4), lock washer (5), and spacer (6).
2. Lubricate the bearing with Shell Retinax LX2 grease or similar.
3. For reassembly, place the spacer (6), a new lock washer (5) and apply a torque of 244 N.m to the nut (4).
4. Secure the protective cover (3) with the screws (1) and washers (2) initially removed. Apply a torque of 23 N.m to the screws.

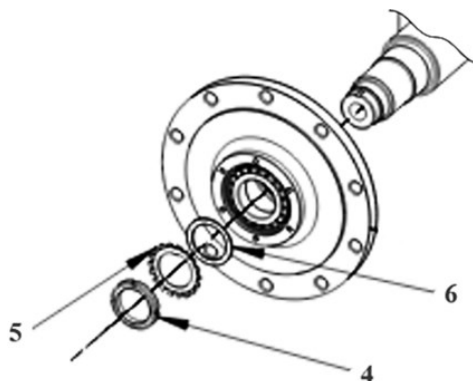


Fig. 2 - Side view of the bearing

- 4. Nut
- 5. Lock washer
- 6. Spacer

Maintenance - Every 2,000 hours

Every 2 Years (every 2,000 hours of operation)



Park the compactor on a flat surface.



Whenever inspecting and adjusting the machine, stop the engine and confirm that the Forward/Reverse lever is in the "Neutral" position.



When the engine is running in enclosed spaces, make sure there is enough air intake, to avoid carbon monoxide poisoning.



Replace the hydraulic oil



Use extreme caution when draining the oil. Wear gloves and goggles, as hot oil can cause burns if in contact with the skin.

To replace the hydraulic reservoir oil, do the following:

1. Park the compactor in a flat place and turn off the engine.
2. Provide a container with sufficient capacity to drain the reservoir from the hydraulic circuit (90 liters).
3. There are a drain tap (1) and a plug (2) on the right side, at the rear under the chassis.
4. Remove the plug at the end of the hose and then open the drain cock.
5. Allow the oil to drain completely. Close the drain cock, reinstall the plug, and refill the tank with new oil.



TAKE CARE OF THE ENVIRONMENT: All used oil must be collected and stored properly for later recycling. Do not dispose of the oil in the soil, sewer system, or other location that may in any way harm the environment. See the Environment chapter of this manual.

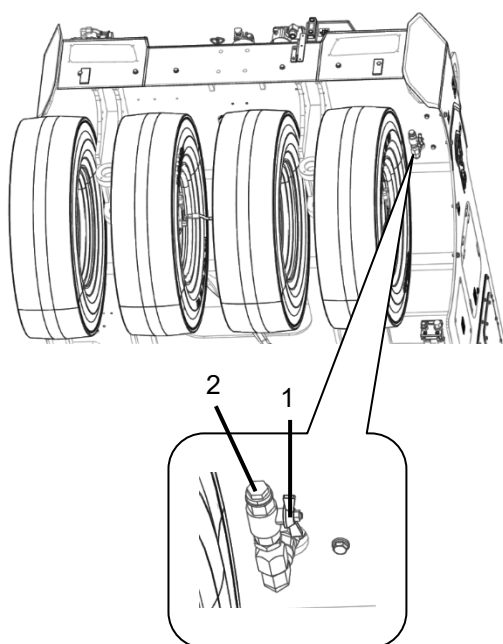


Fig. – Hydraulic tank drain hose
 1. Drain tap
 2. Plug



Clean the fuel tank



NEVER perform maintenance work under the machine while the engine is running. Always Park the machine in a flat place and chock the tires.

The simplest way to clean the reservoir is when it is almost empty:

1. To access the fuel tank, open the retractable step (3) to use it as a step and hold the hand grip (2).
2. Open the fuel filler cap (1) of the fuel tank.
3. The fuel tank drain hose is located on the right side of the machine, inside the step compartment.
4. Loosen the lock nut (6) of the drain hose attached to the chassis and pull the hose out.
5. Place two suitable containers under the fuel tank drain plug (5).
6. Release the drain plug (5) and drain the remaining fuel from the reservoir.
7. Reinstall the drain plug and tighten it.
8. After cleaning the tank, return the retractable stirrup (4) to the closed position.



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



TAKE CARE OF THE ENVIRONMENT: All waste used must be collected and stored properly for later recycling. Do not dispose of any waste in the soil, sewer system, or other location that could in any way harm the environment. See the Environment chapter of this manual.



Use extreme caution when handling fuels, as there is a risk of fires.

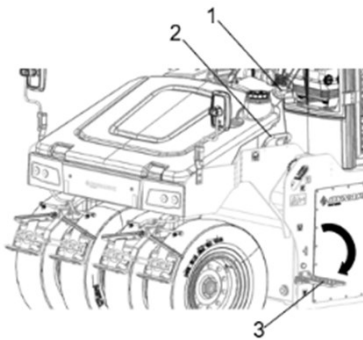


Fig. - Cleaning the fuel tank
 1. Lid
 2. Hand strap
 3. Retractable stirrup (open)
 4. Retractable stirrup (closed)

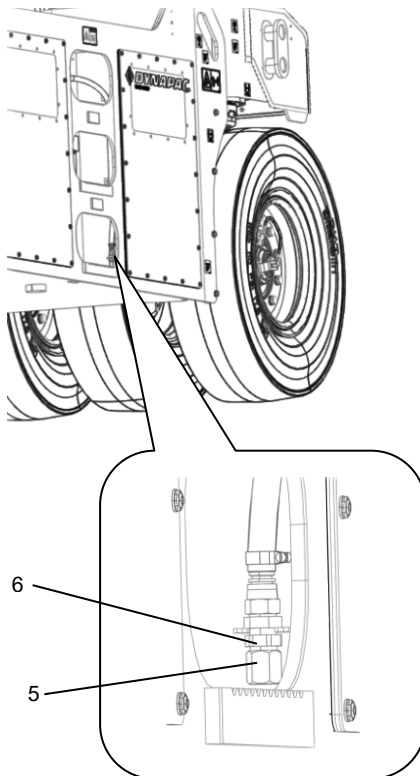


Fig. - Fuel tank drain
 5. Plug
 6. Lock nut

Maintenance - Every 2,000 hours



Clean the water tank

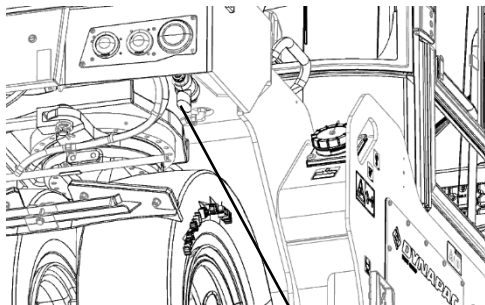


Fig. - Water tank
1. Drain tap

Rinse the reservoir with water, adding a little detergent suitable for plastic surfaces.

Turn off the drain tap (1), fill up with water and check for leaks.



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



Clean the sprinkler system



Remember the danger of frostbites during the winter. Empty reservoirs, tanks, filters and pipes during this period or mix some antifreeze liquid into the water.

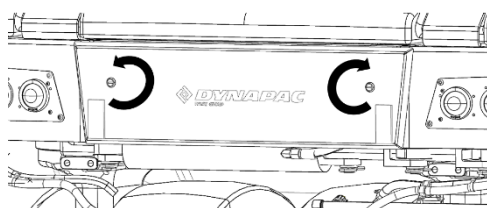


Fig. - Front compartment of the sprinkler system

The pre-filter is found inside the upper chassis compartment at the front of the machine.

Access to the sprinkler system is made through the compartment cover. Using a screwdriver, rotate the latches in the direction shown in the figure.

After opening the cover, before performing any procedure, the system operation can be checked using the manual activation button (1) found next to the filter (2).

The filter compartment (2) has a drain tap (3) in the pumping system, in the water reservoir. The reservoir and parts of the pumping system can be drained through this tap.

Water hoses are connected to the pump with quick joints (4) to simplify drainage. When necessary, replace the backup pump (5) (if fitted).

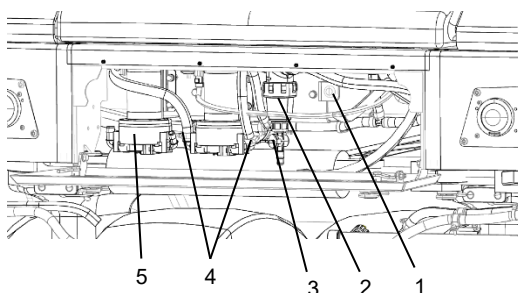


Fig. - Sprinkler system, front chassis compartment

- 1. Manual override button**
- 2. Filter**
- 3. Drain tap**
- 4. Quick hitch**
- 5. Extra water pump (optional)**



Replace the engine coolant



Care! Risk of serious burns!

Wait until the engine temperature is below 50°C before removing the coolant reservoir cap or draining the cooling system.



Use a portable platform or ladder to access the expansion tank.

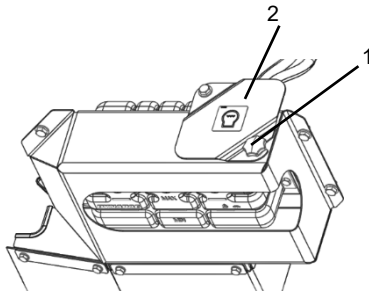


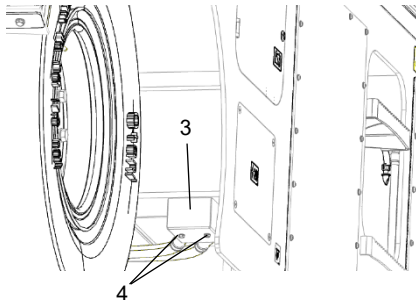
Fig. - Expansion tank
1. Handle
2. Protective cover

1. Remove the handle (1) and rotate the protective cap (2) to gain access to the expansion tank cap. Once you have access, remove the cover.



NEVER Open the coolant reservoir cap when the engine is hot.

2. The coolant drain plug is found at the bottom rear of the machine, on the right side. Access to it can be made by removing the protection (3) by loosening the screws (4).
3. After removing the protection (3) reserve a suitable container to collect the coolant (with a capacity of 14 liters).



Be careful when draining the product. Wear gloves and goggles.



TAKE CARE OF THE ENVIRONMENT: All used coolants must be collected and stored properly for later recycling. Do not dispose of coolant in the ground, sewer system, or other location that may in any way harm the environment. See the Environment chapter of this manual.

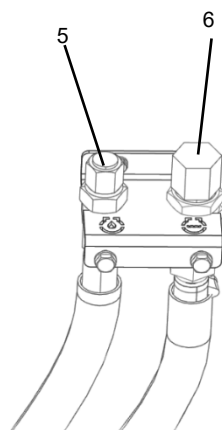


Fig. - Engine oil and coolant drain
5. Engine oil drain plug
6. Coolant drain plug

4. Release the drain plug (6) and put all the liquid drain into the container.
5. After replacement, attach the drain plug (6) and mount the guard (3) back on.

Maintenance - Every 2,000 hours

Check the particulate filter of the diesel aftertreatment system (for Stage V engines)



Exhaust filter maintenance must be performed by professionally trained personnel because they contain HIGHLY toxic components.



The diesel particulate aftertreatment filter element is made of brittle material. Avoid falls or bumps on the side of the system to preserve the catalytic elements.



Material captured in the diesel particulate filter may contain concentrations of metals and aromatic polynuclear hydrocarbons and should therefore be handled and disposed of following applicable local regulations.

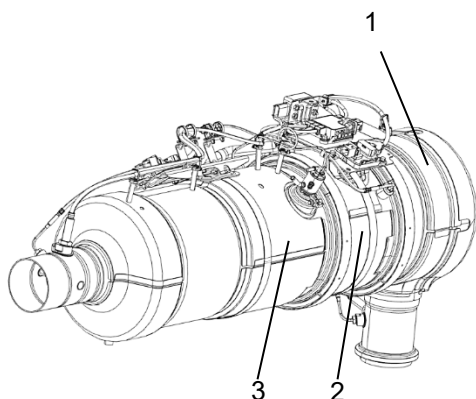


Fig. - Aftertreatment system

- 1. Diesel Oxidation Catalyst (DOC)**
- 2. Diesel Particulate Filter (DPF)**
- 3. Decomposition tube and selective catalytic reduction (SCR) catalyst assembly**

In some specific cases, the inspection can be visual:

- Check for external signs of obstruction or leakage.
- Observe if there is excessive dark smoke in the exhaust.
- Check if there is a warning symbol on the screen indicating DPF saturation.



See also "DPF (Diesel Particulate Filter)" and "Alarm symbols - DEF system and exhaust gas aftertreatment" in "Instruments and controls - Description and function".



Refer to the engine manual for more information.

If there are any of these malfunctions in the visual inspection, also check:

- If there is a loss of engine power.
- Increased fuel consumption.
- Frequent regenerations or failures in regeneration.



ALWAYS fill up with LOW SULPHUR fuel to ensure the best performance and durability of the exhaust aftertreatment system. Also, strictly follow all SCHEDULED MAINTENANCE shown in this manual and the engine manufacturer's recommendations.

Revision

DATE	VERSION	MODIFICATION
11-05-2025	0	General



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