



CHECKS BEFORE START-UP

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7.1. CHECKS WITH ENGINE OFF

7.1.1 Checking for leaks

Before each work shift

Before each work shift, visually inspect to detect any leaks.

Every 20/30 working hours

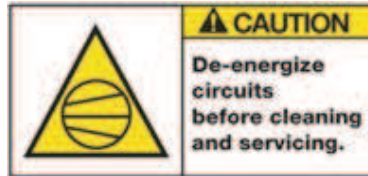
Every 20/30 working hours, conduct a general check on the hydraulic system to detect any leaks.

Safety precautions



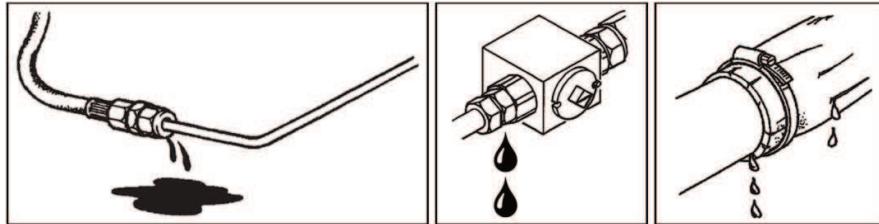
WARNING

The non-hermetic fittings and connections should be closed only after discharging pressure (DIESEL ENGINE OFF).



WARNING

Do not re-tighten or open pressurised rigid and flexible tubing. Danger of burning or scalding due to exiting liquids.



7.1.2 Check of hydraulic pipes and hoses

Daily

Check the condition of the fittings and the appearance of any anomalies that indicate a state of deterioration of a pipe or hydraulic or pneumatic hose.

Possible anomalies:

- Abrasion and tearing of the cover with the casing zones torn or exposed.
 - Localized deformations under pressure;
 - Sticky or soft areas;
 - Leaks.
-

Replacement of a hose: safety precautions



ATTENTION

When one of the above anomalies is found, the damaged hose must be replaced immediately.



ATTENTION

Hydraulic hoses should be replaced according to the SAE J1273 standard.



ATTENTION

If a hose has to be replaced, refer to the code in the "HYDRAULIC SYSTEMS" manual and, in general, the following conditions must be met:

- *Equal diameter.*
 - *Length equal to or greater. If the length is greater, check that it does not interfere with the moving parts of the vehicle.*
 - *Same (or higher) classification or abbreviation of the relative compliance with the legislation.*
 - *Same (or higher) safety devices (explosion-proof sheaths, anchorage devices against removal, anti-abrasion protection, protection against heat etc.).*
-

7.1.3 Checking oil level in tank

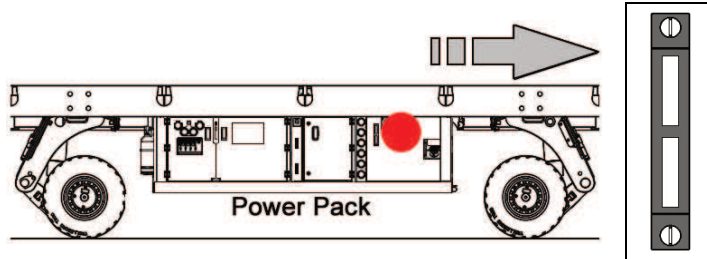
Before each work shift

On a daily basis, or after each work shift, check the oil level in the tank using the relevant indicator placed on the tank.

The oil level check should be carried out with the vehicle in the fully low position (to lift/lower the vehicle, see chapter 10).



With the vehicle in the fully low position, the oil level must reach the maximum point of the control indicator. Otherwise, top-up is necessary.



The oil level in the tank is also indicated on the control board and radio control displays, on the main page.

Indicator on control board display	Indicator on radio control display
<p>An analog gauge with a semi-circular scale. The needle is positioned near the 'E' (Empty) marker. The 'F' (Full) marker is at the opposite end of the scale. A small icon of a tank with a drop is centered above the needle.</p>	<p>A digital display showing a blue tank icon on the left and the text '0%' on the right.</p>

Hydraulic oil type



NOTE

The type of hydraulic oil to use is specified in paragraph 13.10.1.1.



7.1.4 Check of position of hydraulic taps

Daily

Before each shift, check the correct position of the taps on the vehicle.



NOTE

The taps position in normal running condition is reported at paragraph 3.2.



In particular, check that hydraulic taps [12] (2 units) – [20] – [21] are set according to the pre-established stability condition, on 3 or 4 points.



ATTENTION

Given the small number of suspensions, to ensure greater stability it is preferable to use the vehicle in the 4-point hydraulic stability condition. This condition can cause greater torsional stress on the chassis: if possible, avoid uneven ground, drive the vehicle on level ground and keep the pressures at the hydraulic points at very similar values.



ATTENTION

Pay attention to the taps [9] of suspensions. Keeping even a single tap [9] closed during operation of the vehicle can cause serious damage to suspensions.



NOTE

The different stability configurations and taps diagrams for a single vehicle are given in paragraph 10.6.1.



NOTE

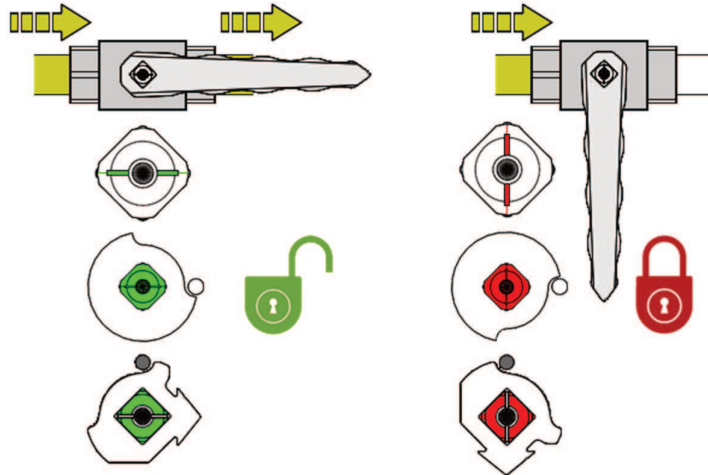
The different stability configurations and taps diagrams for vehicles coupled in convoy are given in paragraph 12.5. ⁽¹⁾



General description

Each tap, where the handle is applied, is equipped with a groove; the direction of the groove indicates if the oil flows or not through the tap.

	TAP OPEN: The groove of the tap is parallel to the tubing.
	TAP CLOSED: The groove of the tap is perpendicular to the pipeline.



INDICATIVE FIGURE

⁽¹⁾ = where applicable.

7.1.5 Checking tyre pressure

Before each work shift

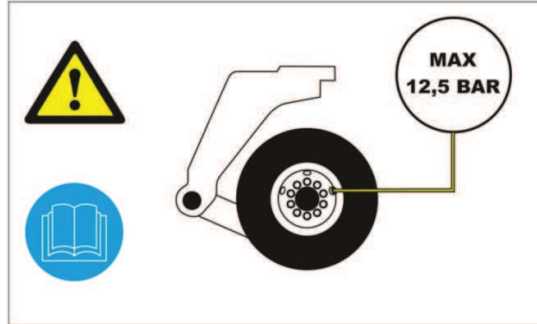
Check the inflation pressure and wear of tyres.



NOTE

The pressure check must be carried out with the tyres "cold", i.e. having been parked for many hours.

Tyre pressure



(12,5 bar – 181.30 psi)

Precautions for use and safety



ATTENTION

Using the vehicle with incorrect inflation pressure can cause serious damage to the tyres and the inflation valve.

Anti-puncture treatment

On request, tyres can undergo an anti-puncture treatment, which consists of filling the inner tube with polymer material while also maintaining the correct internal pressure value.

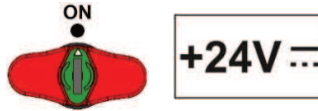
In this case, it will only be necessary to check the wear condition of the tyres.

7.1.6 Vehicle battery switch

Connection and disconnection operations

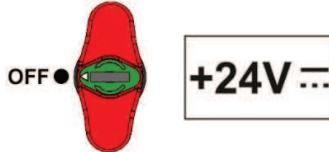
CONNECTIONS

- 1) Connect the vehicle batteries → Switch [+24V] lever in the [ON] position.



UNPLUGGING OPERATIONS

- 1) Disconnect the vehicle batteries → Switch [+24V] lever in the [OFF] position.



ATTENTION

The Diesel engine batteries can be disconnected only if the yellow light over the switch handle is off..

- *Indicator light ON: the batteries cannot be disconnected yet.*
- *Indicator light OFF: the batteries can be disconnected.*



ATTENTION

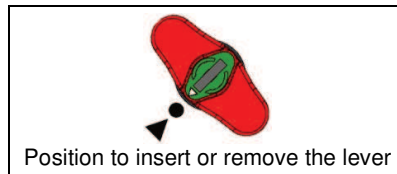
If the vehicle is not used for more than 1-2 hours, it is appropriate to disconnect the batteries and the control unit of the Diesel engine.



NOTE

The batteries of the radio control can be charged when the vehicle batteries and the engine control unit are connected.

The images represent the extractable type handle ►●.



If, for safety reasons, the lever must be of non-removable type, see the instructions outlined in the relevant manual. The manual can be consulted, in PDF format, in the 'Attachments' folder in the attached digital documentation.

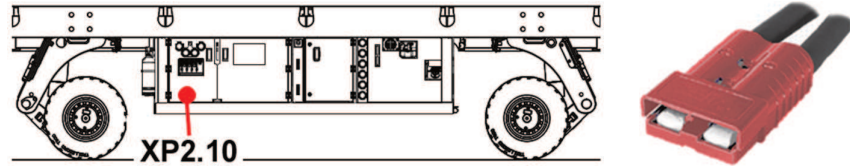


7.1.7 Battery status check

7.1.7.1. Diesel engine batteries

In case of low battery level

If the battery level is too low and does not allow the vehicle and the Diesel engine to start, use the jump-start emergency connector [XP2.10] placed below of the lifting manifold.



NOTE

As a rule, Diesel engine batteries are charged by the alternator installed on the crankshaft. In the event of a component malfunction, the relevant icon lights up on the [EB1] electrical cabinet and radio control displays, in the dedicated screens:



7.1.7.2. Battery packs in electric and hybrid vehicles

Before each work shift

Check the battery charge status on the vehicle and radio control displays.

Indicator on control board display	Indicator on radio control display

In case of low battery charging, the “Generic battery failure” icon below appears on the vehicle and radio control displays.

Recharge the batteries with the specific charger before operating the vehicle.



ATTENTION

The “Generic battery failure” icon:



- may also indicate the presence of other errors/anomalies relating to the operation of batteries;
- is not due solely to their low level.

7.1.8 Checking fuel level

Before each work shift

Check that the “Low fuel level” icon is not displayed on the touch screen display of the vehicle or on the radio control display; if it is, top-up is necessary.
The fuel level in the tank is indicated on both displays, on the main page.



Indicator on control board display	Indicator on radio control display
	

Requirements for quality and content of sulphur in the fuel



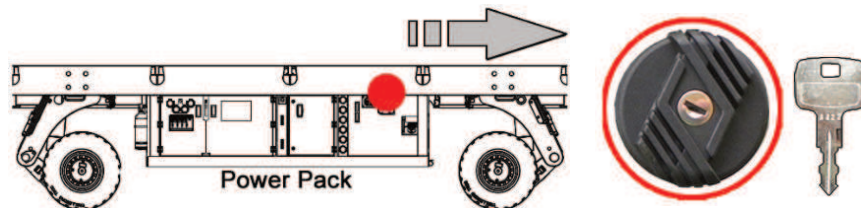
NOTE

For the quality and content of sulphur in the fuel, refer to the Diesel engine instruction manual.



Fuel and sulphur content

The fuel tank cap is fitted with a lock.
The hermetic closure can cause a slight increase in tank pressure; a possible purge noise while unscrewing the cap is therefore completely normal.



Safety precautions



WARNING

Strictly avoid approaching the tank opening with open flames or lit cigarettes: fire hazard.
Also avoid your face coming in close contact with the opening, to avoid inhaling harmful vapours.



7.1.9 Check of AdBlue® additive level ⁽¹⁾

Before each work shift

Check that the “AdBlue® Level Low” icon is not present on the vehicle's touch screen display or radio control display; otherwise, top-up is required. The additive level inside its specific tank is indicated on both displays, on the main page.



Indicator on control board display	Indicator on radio control display

Quality requirements

The AdBlue® additive is critically important to reduce emissions from the Diesel engine and to ensure that it complies with the European Stage IV and V (US Tier 4F) emission standards.



NOTE

More information on the AdBlue® additive can be found in paragraph 1.13.6 and in the Diesel Engine instruction manual.



⁽¹⁾ = the SCR system (see paragraph 1.13.6) is available only on some of the Diesel engine equipped vehicles.

7.1.10 Checking the diesel engine

Before each work shift

Perform all the checks required by the manufacturer of the Diesel engine and given in the relevant manual.



7.1.11 Checking the hydraulic oil radiator

Interventions to carry out

Check the radiator fins are not damaged and not dirty (with dust, mud, insects, etc.), otherwise dismantle the radiator protective grate and clean the fins by blowing compressed air or spraying water from the rear of the radiator (in the direction opposite the cooling air flow). The direction of the jet must be parallel to the fins in order to avoid damaging the fins. Oily or greasy dirt can be removed with steam jet or hot water.

If necessary, clean the fins with water and with non-abrasive detergent. Use a soft brush.



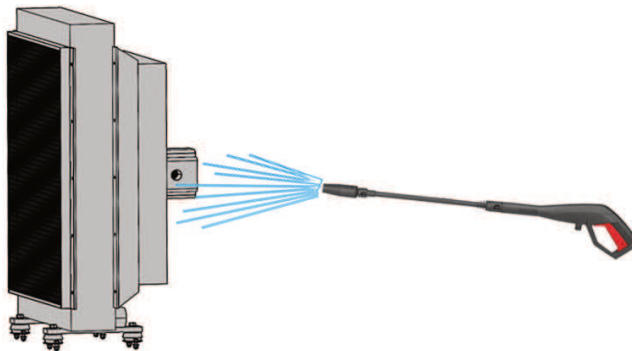
ATTENTION

Do not use water jets or HIGH PRESSURE sprayers because they could bend the radiator fins and, therefore, affect the air flow necessary for cooling.



WARNING

The use of water jets or sprayers requires appropriate protection of hands, face and eyes.



INDICATIVE FIGURE

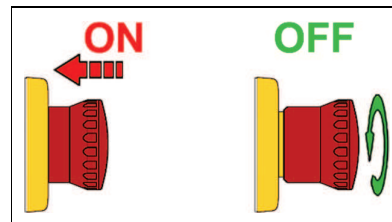
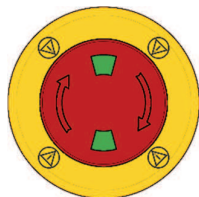
7.1.12 Checking the emergency stop buttons

Before each work shift

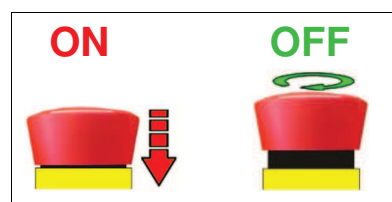
Check that all the emergency stop buttons are reset.

VEHICLE

Button placed on the right and left side.



RADIO CONTROL TRANSMITTER



NOTE

For more information, see paragraph 11.1.

