Rev.09/2020

Agromehanika
SINCE 1968

AGT 1060

OPERATING INSTRUCTIONS

ACKNOWLEDGEMENT

Thank you for the confidence you have placed in our company by choosing our new AGT 1060 series tractor.
After many years of experience we can now say that, relying on global trends of development of such tractors and taking into account the desires and requirements of customers, we have developed a product that meets high standards aimed to provide the highest level of performance and reliability, which can be used in various fields of agriculture and public utilities, as well as to facilitate production.

The following operating and maintenance instructions refer to this tractor. Variant/version……. Serial number…… Year of manufacture…….	 **Agromehanika d.d** Hrastje 52a 4000 Kranj, Slovenia https://agromehanika.si/

DECLARATION OF CONFORMITY

The manufacturer:

AGROMEHANIKA, proizvodnja in trgovina Kranj d. d.
Hrastje 52 a, KRANJ, SLOVENIA

hereby declares that the product:

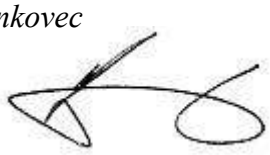
AGT 1060 tractor

is manufactured in accordance with:

1. ***the Regulation on the approval and market surveillance of agricultural and forestry vehicles (EU) no. 167/2013***
   and any related subsequent modifications.

Date:
21-09-2020

Director:
Jan Šinkovec



CONTENTS

1 GENERAL

The AGT tractors were designed and manufactured to provide the highest level of reliability and work performance to its users. However, a lot also depends on the user, their approach to work and to subsequent maintenance and proper care of the tractor.
For this purpose, these operating instructions have been prepared in such a way as to prevent the user or to minimise the risk of contact with exposed components of the tractor.

As the manufacturer, we have drafted these operating instructions in accordance with the **standard SIST ISO 3600:1996** and by taking into account the principle of communication (manufactured - user) for easier reading and understanding of information.

To ensure that these instructions are followed correctly by you as the operator of your new AGT tractor, you must carefully read the operating and maintenance instructions and follow them when handling the tractor.
The pictures in these instructions may show the tractor without its safety guards and devices to give clearer information and **CANNOT** be used as a reference for the correct use of the tractor.

Operating and maintenance instructions are an integral part of the tractor and contain essential information for efficient and safe operation and long service life of the tractor.
Please keep these operating and maintenance instructions in an easily accessible area so that they are available in any situation.
If the tractor is sold to another customer, be sure to also hand over these instructions.

If you require professional assistance, please contact one of our service centres that will be happy to help you. Upon contact, please provide exact information about your tractor, which can be found on the identification plate.

In addition to operating instructions, when purchasing the AGT tractor you should also receive the following documents:

- engine operating and maintenance instructions,
- warranty certificate and
- the declaration of conformity of the product.

Due to development and modifications, the text of Operating and maintenance instructions may slightly differ from the actual state of the tractor. Therefore, we, as the manufacturer, reserve the right to make technical changes of information without notifying the customer in advance.

1.1 TERMS

The terms used in these operating instructions are explained below for easier understanding of the text that follows.

- **FOPS (Falling objects protective structure)**, safety structure, which protects the driver in case of falling objects from above;
- **OPS (Operator protective structure)**, safety structure, which protects the driver from penetrating objects;
- **ROPS (Roll over protective structure)**, roll bar or safety cabin, which protects the driver in case of a tractor rollover;
- **PTO (Power take-off)**, a power take-off shaft that transmits the drive directly from the engine to the tractor implement;
- **Universal joint**, the shaft that connects the tractor and the tractor implement;
- **EGR (Exhaust gas recirculation)**, a valve used for the recirculation of exhaust gas;
- **DPF (Diesel Particulate Filter)**, a device that removes diesel particulate matter or soot from the exhaust gas to reduce the emissions of dangerous substances;
- **Cat. I cab**, the cab **does not** provide appropriate protection for the driver who performs spraying operations for the protection of plants;
- **Operator/driver**, a person who is qualified and suitably trained for operating or driving the tractor and is authorized to service the tractor;
- **Maintenance**, a set of servicing operations aimed at achieving functionality and efficient operation of the tractor for further use. The maintenance schedule is usually prescribed by the manufacturer, including the appropriate time intervals and procedures;
- **Service technician**, a person who is authorized to perform service work on the tractor;
- **Authorized service centre**, the service chosen by the manufacturer for routine maintenance of the tractor;
- **Improper use**, use of the tractor, which is not in compliance with operating instructions;
- **Dangerous area**, an area within which there is a high risk for safety and health of persons;
- **View direction**, the position of the tractor is determined by the drawing and depends on the driving direction. Directions shown in the figure (Fig. 1) are used in the following pages of the operating instructions.

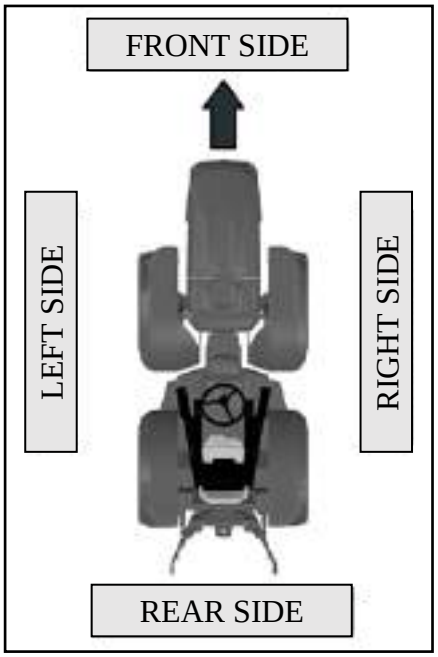


Fig. 1

2 SAFETY

This chapter contains all the necessary information which the driver or the operator of the tractor must be aware of and therefore require particular attention. The operator must follow all safety warnings and procedures, which are required to ensure safe operation.

As the operator, you must carefully read this chapter, as only proper handling will ensure your safety and protection against potential dangers that may be present while performing work with the tractor.

List of safety warnings, classified according to the nature of work:

- **Safety warnings;**
- **Dealer;**
- **Operator or employer;**
- **Safety instructions before using the tractor;**
- **Safety instructions during tractor operation;**
- **Safety instructions after using the tractor;**
- **Safety instructions for operating the tractor on steep slopes;**
- **Safety instructions for using implements;**
- **Safety instructions for operating the tractor on roads;**
- **Safety instructions for transporting the tractor;**
- **Safety instructions for maintenance of the tractor;**
- **Safety instructions for operating the tractor with weights installed;**
- **Safety instructions for operating the tractor during spraying;**
- **Safety instructions for operating the tractor in forestry operations;**
- **Safety instructions for operating the tractor with a front loader;**
- **Safety instructions for environmental protection (recycling);**
- **Additional safety requirements;**
- **Description of safety signs on the tractor.**

Safety warnings also appear later in this text of operating instructions in connection with particular phases of work, as well as on the safety labels on the tractor and are divided in three main groups: **danger, warning and important**, to emphasise that the operator's attention is required.
Whenever you see one of these signs, comply with the containing instructions for safe work and act accordingly when emergency situations arise. Failure to comply with the safety warnings about dangers may lead to serious injuries or even death.

To ensure your own safety, always comply with these safety rules!

	**WARNING:** This symbol indicates potential danger which may occur and result in serious injuries of the operator or damages to the tractor and its equipment.
	**IMPORTANT:** This symbol highlights important technical information preceding various work procedures and warns against potential danger, which may occur during operation and cause minor injuries.
	**DANGER:** This symbol indicates imminent danger which may result in serious injuries or even death.

2.1 SAFETY WARNINGS

Fig. 2

- Carefully read all the instructions related to safety rules in the operating instructions for your tractor.
- Learn how to operate and handle your tractor and its control units;
- Make sure to become familiar with all the characteristics of the tractor, including weight, loads (load carrying capacity), speed, stability of the tractor etc. to avoid any consequences or serious injuries resulting from non-compliance;
- Always follow the rules, particularly when you intend to drive on public roads;
- Ensure that the signs on the tractor are clearly visible;
- Never remove or coat the safety signs on the tractor with paint;
- When repairing or replacing tractor components make sure that they contain all the necessary safety signs. Safety signs can be ordered from authorized dealers;
- Ensure your tractor is in good technical condition. Any unauthorized modification of the tractor may deteriorate its functions and safe operating conditions and may lead to a shorter service life.

2.2 DEALER

Before the tractor is sold, the dealer must ensure to the customer that the tractor is safe and ready for immediate use.

Fig. 3

- The dealer must explain to the customer all safety rules, controls and instruments indicating the current state of the tractor.
- The customer must also be informed by the dealer about the rules for servicing prescribed by the manufacturer.
- The dealer must show to the customer the content of operating instructions, clearly stating the importance of reading the chapter on safety and the fact that failure to do so may lead to serious injuries.

2.3 OPERATOR OR EMPLOYER

Before commencing work, the operator must be informed about the tractor and the correct use of all its working functions, particularly with regard to certain parts, where extreme caution is required. It is therefore required:

- That the operator is familiar with operating instructions before using the tractor, confirming that that he/she will rigorously follow all safety instructions for work and maintenance;
- That the operator becomes familiar with safety warnings contained in the operating manual and with the safety labels on the tractor;
- That the operator becomes familiar with the risks which may arise due to improper operation of the tractor; considering the nature of work, the employer must ensure this to the operator before the latter begins operating the tractor;
- The tractor may **only** be driven by one person;

- That the operator or the employer ensures proper maintenance and inspection of the tractor and its components;
- That the operator or the employer ensures that damaged or faulty parts are only replaced with original products, otherwise the manufacturer may void the warranty without prejudice;
- That other persons (third parties) without appropriate skills become familiar with operating instructions;
- That the operator, when being the employer, instructs the person in charge of working with the tractor or to provide training for such person;
- That the user prevents any person lacking appropriate skills from operating the tractor;
  - That the tractor is only operated by one operator, without an assistant, except when driving with objects, preventing good view of the surroundings and obstructing the driver's field of view;
  - The assistant is only in charge only of showing the correct driving direction; the assistant may not ride on the tractor and must keep a suitable safety distance.;
- That the operator is healthy - mentally and physically;
- That the person that operates the tractor undergoes a medical examination (in accordance with local regulations).

2.3.1 PERSONAL PROTECTION

During work, the operator of the tractor must wear clothes that are properly fastened and efficient personal protection equipment.

- Safety helmet
- Facial protection (glasses or mask)
- Safety gloves
- Suitable work clothing
- Suitable hearing protection equipment
- Safety shoes

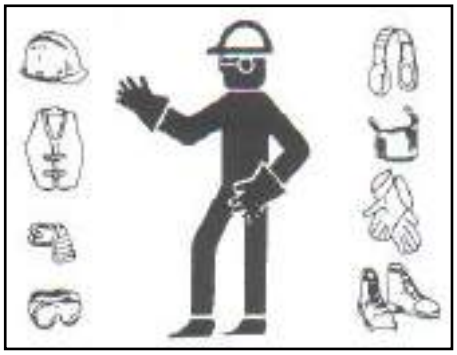


Fig. 4

- If you are exposed to pesticides when working with the tractor, use suitable personal protective equipment listed above (protective mask, work clothes etc.) as recommended by the pesticide manufacturer.

Fig. 5

2.3.2 IMPROPER USE

- Never use the tractor under the influence of alcohol or other substances. If you are using medication, consult your physician beforehand.
- Prevent unauthorized persons from operating the tractor.
- Avoid aggressive driving; this may quickly result in an accident.
- Do not change, remove or alter any safety devices on the tractor.
- Do not use the tractor if you are not familiar with operating instructions.
- Do not use loose clothing or inappropriate footwear.

2.4 SAFETY INSTRUCTIONS BEFORE USING THE TRACTOR

Before using the tractor, always check if all safety devices (safety belt, roll bar etc.) are correctly installed (securely attached) and functional. Only use the tractor with original parts and safety devices installed by the manufacturer.

Before commencing work with the tractor, make sure the following conditions have been fulfilled:

- Before operating the tractor, become familiar with all controls, which must be within reach and always set in neutral position until the tractor is operated or started.
- Perform a visual inspection of the tractor; check if all the parts and equipment are securely installed and undamaged:
  - check that the brakes, including the parking brake are in proper working order;
  - check the operation of the hydrostatic control system;
  - check the oil level and top up if the level is low;
  - check the condition of the electric system (battery, wires, headlamps, warning lamps etc.).
- Perform a visual inspection of tractor tyres before operating the tractor.
  - Check the tyre pressure and adjust if not properly inflated.
  - Check for potential damage, such as bulges or cuts.
  - Check the tyre tread for wear.
- Only check the tyre pressure when implements or ballast weights are detached.
- Make sure the main tractor components are clean, remove any dust or debris from the engine, the radiator, the tank etc. and prevent potential fire risks.
- The tractor can be entered laterally, from both sides; **never** enter the tractor from anywhere else than the dedicated entrance points, otherwise there is a risk of serious injuries due to falling (Fig. 6).
- Make sure the surfaces and foot supports are clean and free from dirt, oil, dust etc. before entering the tractor. During winter, always remove any ice or snow before entering.
- Use the handhold and the footstep to enter the tractor. Never hold on to the gear shift lever and do not step on the pedals when entering the tractor.
- Always use the “three-point grip” principle - both feet and one hand or one foot and both hands when climbing on and off the tractor.
- Ensure a good ergonomic position (seat, steering wheel and rear-view mirrors); before use, the space must be tidy and ensure an optimum field of view, without limitations.
- Before operating a tractor with a cab, make sure all the windscreens are clean.
- Only start the tractor when seated on the driver's seat (Fig. 7).
- The driver's seat can be rotated according to the desired driving direction (forward or reverse);
- Only rotate the seat when the tractor is stopped, NEVER perform this operation during driving.
- The area with the seat rotation plate must be clean and correctly locked, so that the seat is securely fixed and will not lift in the event of a tractor rollover.

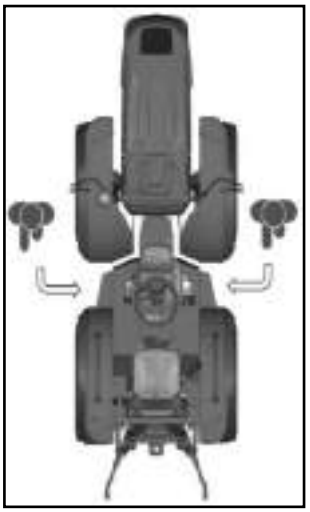


Fig. 6

Fig. 7

- Take special care when filling up the tractor's fuel tank. Stop the engine and allow the engine to cool down before filling the fuel tank in a well-ventilated area. In case of spillage always wipe off any fuel spilt.
- Never fill the fuel tank all the way to the top, because fuel expands and contracts with temperature changes.
- You must be prepared for a sudden fire, which is why you must ensure that a first aid kit and a fire extinguisher is always available during work (Figure 8).
- Make sure that the phone numbers of your doctor, ambulance, infirmary, hospital and fire department are in a visible place.

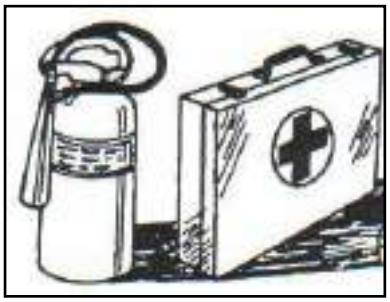


Fig. 8

2.4.1 IMPROPER USE OF THE TRACTOR

- Do not use the tractor if all routine maintenance procedures were not performed within the prescribed time intervals.
- Do not use the tractor if the tyres show signs of wear and tear or damage; immediately replace the tyre (Fig. 9);
- Do not check the tyre pressure when implements or weights are installed on the tractor;

Fig. 9

- NEVER leave the tractor running in closed spaces or spaces with poor ventilation. Exhaust gases like CO (carbon monoxide) are potentially dangerous to your health and you should therefore always provide adequate ventilation (Fig. 10);

Fig. 10

- Do not smoke when filling the fuel tank and do not perform this operation in a potentially hazardous environment, such as near a source of open fire or sparks; negligence cause a fire (Fig. 11);

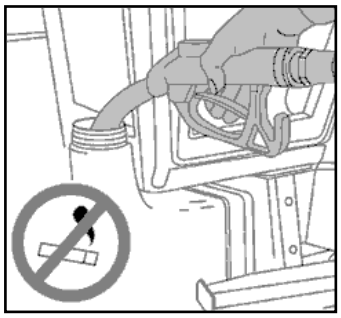


Fig. 11

- Never start the engine when standing next to the tractor.
- Do not start the engine by short-circuiting the starter because the tractor can drive off unexpectedly, if in gear (Fig. 12).

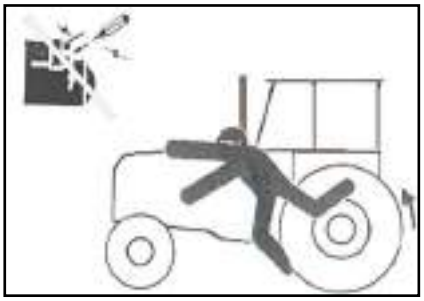


Fig. 12

2.5 SAFETY INSTRUCTIONS DURING TRACTOR OPERATION

When working with the tractor, always comply with the rules and road traffic regulations when driving on the road and strictly follow the safety instructions.
Before commencing work, make sure that other persons, especially elderly and children, are outside of the tractor's danger area, especially when it is running or moving. If necessary, stop the tractor and wait until such persons move to a safe distance before continuing work **(see the figure with dangerous areas** Fig. 13**)**.
When working with the tractor, make sure the following conditions have been fulfilled:

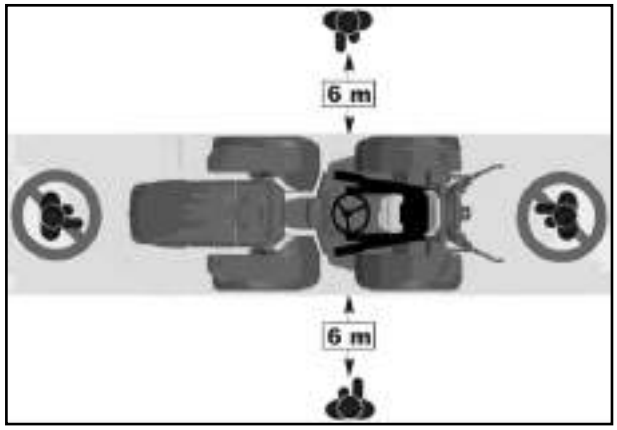


Fig. 13


Fig. 14

- Before operating the tractor, always check the condition of the safety belt and immediately replace it if damaged or worn.
- Always use a safety belt that ensures safe working conditions and retains the driver in its position in case of a tractor roll-over (Fig. 14);
- **As an exception. the safety belt is NOT required for short distances on a tractor without a cab, with the roll bar lowered, when there is no risk of roll-over;**
- When driving or operating the tractor, the roll bar (ROPS) must always be moved in the vertical position (Fig. 15);
- The roll bar only provides appropriate level of protection if its structure is intact.
- If the safety roll bar is lowered, the tractor must be positioned on a solid, level ground without slopes or obstacles.


Fig. 15

- **Replace the roll bar** if the roll bar or its structure is damaged, in case of a tractor roll-over or when running into an obstacle while driving.
- The safety cab (ROPS) installed on the tractor meets the safety requirements of European standards.
- If the tractor rolls over, the safety cab will only protect or reduce the risk of driver injuries if the driver follows all safety precautions and uses the safety belt.
- When optional equipment is installed in the safety cab, consult the qualified persons who will provide you the necessary information.
- **Replace the safety cab** if the safety cab or its structure was damaged during a tractor rollover or if you crashed into an obstacle while driving!
- The manual throttle should only be used for starting (pre-heating) the engine or when operating tractor implements, which require constant rpm.
- Any unauthorized persons riding on a part of the tractor which was not designed for carrying people may be injured or have an accident (falling off the tractor), or distract the driver during operation, or change the tractor's barycentre, or obstruct the driver's field of view, thereby causing the working conditions on the tractor to become unreliable.
- You and the persons around you must always use caution when standing near the rotating parts of the tractor.
- All moving parts (shafts, couplers, cylinders, belts etc.) must be equipped with a protection to prevent potential entanglement of clothes or body parts.

Always adjust your driving style to environment conditions to avoid the risk of accidents or property damage and ensure the safety and health of persons.

During operation, both the tractor and its implement generate a certain level of noise.

- Excessive noise may cause serious hearing damage. The risk increases with the noise level and the duration of exposure. For this reason, the Operating instructions contain data regarding the noise level generated by your tractor.
- The use of hearing protection (ear plugs or earmuffs) is recommended if the noise level exceeds 85 db (A) or the operator is exposed to noise for an extended period of time.
- The noise level may vary depending on the type of implement and the rpm speed of the PTO shaft.

2.5.1 IMPROPER USE OF THE TRACTOR

- **Do not use the tractor in environments where there is a potential risk of falling objects, even if the tractor cab is installed.**
  In such cases, the use of special protective equipment is mandatory (FOPS – Falling object protective structure and OPS – Operator protective structure), which are NOT CERTIFIED for this tractor!

Fig. 16

- Do not commence work before making sure there are no unauthorized persons standing near the operating area of the tractor.
- Do not let anyone approach the tractor while using a loader or when a load is lifted.
- Prevent any unauthorized person from approaching the tractor (Fig. 17);

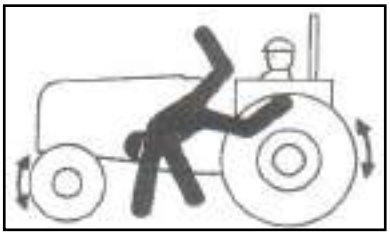


Fig. 17

- It is forbidden to carry any unauthorized persons on the tractor.
- Never exit or enter the tractor when driving.
- Do not change or modify the roll bar when it is damaged, do not cut, drill, straighten or weld on its structure, otherwise you risk reducing the level of safety.
- The safety roll bar is not intended for towing, which is why you should NEVER attach chains or pulling ropes onto it, otherwise you may risk damages to the tractor or a tractor rollover.

Fig. 18

- Never change or modify the roll bar, do not cut, drill, straighten or weld on its structure.
- The operator's attention must be completely focused to safe work with the tractor, therefore:
  - DO NOT listen to music on headphones during work;
  - DO NOT use a smartphone during work;
  - Any optional equipment in the tractor cab must be adjusted in advance.

Fig. 19

- Do not change the settings on the screen while driving the tractor; make sure the conditions are safe and pull over the tractor before you do so.
- **NEVER remove the safety guards from the moving parts; entanglement with rotating parts may cause serious injuries or even death.**

2.6 SAFETY INSTRUCTIONS AFTER OPERATING THE TRACTOR

Before exiting the tractor or leaving the tractor unsupervised, take the following safety precautions.

Observe the concept "Tractor stopped under safe conditions with the engine running":

- Stop the tractor.
- Activate the parking brake.
- Move all controls to neutral position.
- Always lower the three-point linkage.
- Always lower any tractor mounted equipment to the ground.
- Disengage the PTO drive shaft when not in use.
- Before exiting, make sure there are no persons nearby.
- Move all hydraulic system controls to neutral position if they are not used.
- Climb from the tractor and put wedges under the wheels if necessary.

Fig. 20

Observe the concept "Tractor stopped under safe conditions with the engine stopped":

- Stop the tractor.
- Move all controls to neutral position.
- Activate the parking brake.
- Always lower the three-point linkage.
- Always lower any tractor mounted equipment to the ground.
- Make sure the PTO drive shaft is disengaged.
- Move all hydraulic system controls to neutral position.
- Stop the tractor's engine, shift into the first gear to increase safety and remove the key.
- Climb from the tractor and put wedges under the wheels if necessary.

Observe the concept "Tractor stopped under safe conditions with a trailer without brakes or with an overrun brake attached":

- Stop the tractor on a level surface.
- Repeat the procedure described above: "Tractor stopped under safe conditions with the engine stopped".
- Activate parking brake on the trailer (if equipped, see the trailer's operating instructions).

After you finish using the tractor or before parking the tractor for an extended period of time, perform the general safety-related measures.

- Park the tractor on a level and solid ground, in a covered area or an area where the tractor can be covered without potential risks or obstacles.
- Stop the tractor when conditions are safe, as described above, and prevent other persons from accessing the controls in the driver's area; lock the door if the tractor is equipped with a cab.
- Disconnect the negative (-) terminal from the battery. When preparing for winter storage, remove the battery from the tractor and store it at an appropriate room temperature to prevent electrolyte freezing.
- If installed, lower the tractor mounted implement to the ground.

2.6.1 IMPROPER USE OF THE TRACTOR

- Do not park the tractor in confined spaces, otherwise the vicinity of a hot engine may cause a fire or damage to other property.
- Do not leave the driver's area before ensuring that the safety precaution of stopping the tractor was correctly performed.

2.7 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR ON STEEP SLOPES

- When operating the tractor, avoid working on uneven ground, steep slopes or embankments. Particular attention should be paid when driving near ditches or holes.
- Adverse weather conditions can soften the ground and reduce the stability of the tractor, which can lead to slipping or even overturning, therefore you should **always make sure the ground is solid before driving, particularly during poor weather conditions.**
- When driving on steep slopes, adjust the speed by shifting into an appropriate gear, particularly when carrying heavy loads or implements.
- Only attach a trailed implement or a trailer on the original linkage system of the tractor.
- The trailed implement must always be lighter than the tractor.
- When driving uphill on a steep slope with the tractor carrying a heavy trailed implement, always drive in reverse, otherwise the front end of the tractor may be lifted off the ground due to excessive load, which can lead to a tractor rollover.
- When braking with a trailed implement, particularly when driving downhill, you must take into account the length, width and weight of the latter, which are very important for stability, the stopping distance in relation to the speed of the tractor may significantly increase due to their impact.
- When driving on a steep slope, always lower any implements on the tractor as close to the ground as possible.
- If the tractor starts to roll over, firmly grasp the steering wheel, push your feet firmly against the ground and lean against the backrest of the seat. When the tractor has completely stopped, leave the driver's area using one of the emergencies exits.

2.7.1 IMPROPER USE OF THE TRACTOR ON STEEP SLOPES

- When driving on steep slopes, never shift into neutral and do not press the clutch pedal.
- Avoid aggressive driving and sudden stopping and avoid sharp turning, otherwise the tractor may roll over.
- Do not drive the tractor transversely across the slope, otherwise you risk a roll over; if possible, only drive straight up and down the slope.

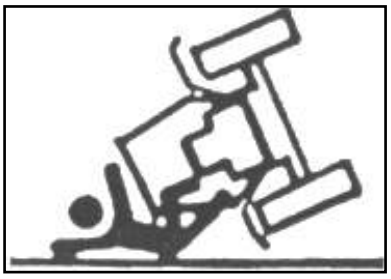


Fig. 21

2.8 SAFETY INSTRUCTIONS FOR USING IMPLEMENTS

If additional implements are installed on the tractor, which can change the weight distribution, adjust your driving style to current conditions.

- Only attach implements on dedicated places on the tractor, which are designed for this purpose.
- When a fixed, self-supporting implement is connected to the tractor through the universal joint, always keep the tractor running in idle or shift into neutral position, activate the parking brake and place wedges under the wheels.
- Keep in mind that any implement changes the total weight, which reduces the braking efficiency and has a significant impact on a longer stopping distance.

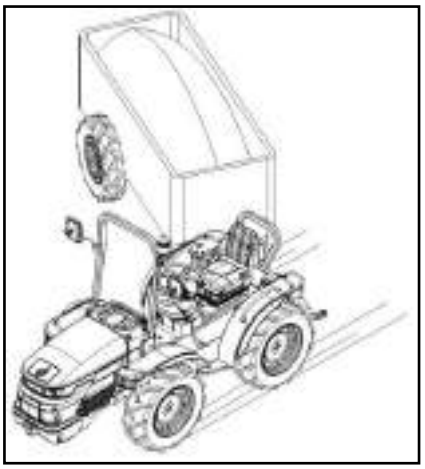


Fig. 22

2.8.1 TRACTOR MOUNTED IMPLEMENTS

- Attach the tractor mounted implement to the three-point linkage system of the tractor and secure it with pins. The implement height and the tractor must be on the same level to enable connection to the PTO drive shaft.
- Always ensure that the tractor remains stable when attaching a tractor mounted implement. For this purpose, calculation formulas are provided in the operating instructions to determine their suitability.
- Learn how to use a tractor mounted implement correctly before you start to use it on the tractor, which is why you must read the operating and maintenance instructions of the implement.
- Before driving on the road, lift the tractor mounted implement and lock it in place to prevent dangerous movements and tractor instability.

2.8.2 TRAILED IMPLEMENTS

- Attach a trailed implement to the tow bar on the tractor.
- Do not attach a trailed implement to the three-point linkage system on the tractor because the latter is only designed for mounted implements. Failure to follow this rule may lead to a tractor rollover.
- Only tow tractor implements without brakes or implements equipped with mechanical brakes. When driving the tractor with trailed implements without brakes, particularly during braking, you must take into account the total weight of the tractor with the trailed attachment or load because you may quickly lose control over the tractor.
- Learn how to use a trailed implement correctly before you start to use it on the tractor, which is why you must read the operating and maintenance instructions of the implement.
- Whenever leaving the tractor with a trailed implement attached, repeat the procedure described in the chapter “SAFETY INSTRUCTIONS AFTER USING THE TRACTOR” and always place safety wedges under the tractor or trailer wheels when parked on a slope.

2.8.3 UNIVERSAL JOINT

Drive components may cause serious accidents, which is why you must follow the instructions below:

- To actuate the components of the implement (pump, fan etc.), use the universal joint which is prescribed for the particular implement according to its size and structure and is equipped with a protective cover.
- Before first use, inspect the universal joint and ensure appropriate length (it should not be too short or too long) to prevent it from falling off or jamming when engaged.
- Attach the universal joint to the implement first before attaching it to the PTO drive shaft on the tractor.
- When installing the universal joint, make sure the safety pin is correctly locked. Push and pull the universal joint forwards and backwards until the safety pin is securely locked.
- Only attach the implement to the tractor when the PTO drive shaft is disengaged.
- Only attach and detach the universal joint **when the engine is switched off and the ignition key is removed from the ignition.**
- Before activating the PTO drive shaft, check the rpm and make sure there are no people or animals within the danger zone of the tractor.
- When attaching the universal joint, you can manually rotate the output PTO drive shaft of the tractor, provided that the engine is switched off and the drive shaft is disengaged.

- Always make sure that all the protections are in place and that they cover all the rotating parts, including the "crosses" on both sides of the universal joint.
- Do not use the universal joints if the safety guards are not installed.
- Avoid angles exceeding 15° to ensure a long service life of the universal joint.
- Before engaging rotation, secure the protections with a chain and make sure that the safety guards of the universal joint on the tractor and on the implement are coupled (attached).

2.8.4 IMPROPER USE OF IMPLEMENTS

- Do not allow any unauthorized persons to stand between the tractor and the implement when the latter is in operation or when the implement is attached or detached from the tractor.
- Attach the universal joint following the order Implement → Tractor. **Never attach it in reverse order, otherwise this could result in serious injuries or even death.**
- Rotating shafts without protections are very dangerous.
- Do not touch rotating universal joints! Keep at a safety distance of 1.5 m from the rotating universal joint.
- Do not engage the PTO drive shaft on the tractor for no reason and make sure that the angular difference at the couplings of the universal joint is not too large.
- Do not connect the electrical and hydraulic system to implements (mounted or trailed) when the tractor is running; only connect these systems, when tractor is safely stopped.
- Do not use any implements when the universal joint is not connected properly.
- Do not attach any implements which do not meet all conditions for safe use or without appropriate signalling devices, without appropriate safety devices or when the tractor capacity is not compatible with the implement.
- Do not attach any trailed implements to the front tow bar of the tractor; this tow bar is only designed to tow a tractor in case of a break-down (without implements installed).
- Make sure the tractor is not overloaded by the implement and when the tractor is under heavy load, ensure proper stability by adding suitable weights.

2.9 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR ON ROADS

Do not drive on public roads. If this cannot be avoided, you must comply with the following instructions.

- When driving the tractor, follow the road traffic rules.
- Always make sure that the brake pedals are coupled together before driving.
- If you intend to drive the tractor on public roads, make sure it is equipped with signal lights and signs, in accordance with road traffic rules.
- Make sure that the signal lights on the tractor and the implement (if used) are in perfect working order.
- Check the condition of tyres (pressure and wear).
- The lift mechanism must be securely fixed in the upper position when driving.
- If you are driving a tractor with an implement attached, reduce speed and take into account that the braking distance (depending on the weight) is significantly increased.
- When driving the tractor on the road, the seat should always be turned to the normal driving position (see the chapter TERMS), never in the opposite direction.
- Always use the foot throttle when driving on the road. The manual throttle must be adjusted to minimum.
- When driving, always adapt to traffic and road conditions, pay attention to underpasses or public utility lines to avoid contact with the highest point of the tractor.

2.9.1 IMPROPER USE OF THE TRACTOR ON THE ROAD

- Do not drive aggressively, do not brake hard or make sudden sharp turns.
- If you are driving on public roads, do not engage the PTO drive shaft; it can only be engaged during work.
- Do not use differential lock when moving off or driving on roads.
- Tractor tyres must not be filled with water when driving on roads.

2.10 SAFETY INSTRUCTIONS FOR TRANSPORTING THE TRACTOR

The tractor can be transported by towing with another vehicle or by loading the tractor on a transport vehicle.

2.10.1 TRANSPORT

- The tractor can only be transported by persons with previous training or appropriate knowledge and skills.
- The tractor must be transported in accordance with instructions provided by the manufacturer in the operating instructions.
- Before transport, make sure that all parts are securely fastened to the tractor and that all opening parts are correctly closed.
- When transporting, always use suitable loading ramps to ensure the safety of the entire procedure of loading and subsequent unloading from the transport vehicle.
- The loading ramp must have a lateral safety edge, preventing the tractor from slipping sideways when loading or unloading.
- Always make sure that the loading ramp is securely attached to the transport vehicle and on the ground and that it is free of dirt, oil, ice etc., which may cause uncontrolled slipping. In this case, clean the surface of the loading ramp before loading and unloading.
- During loading and unloading, an additional person must be present to give safety instructions from a safe distance.
- The tractor must be properly fastened to the transport vehicle, as described in the operating instructions.
- If loaded transport vehicle exceeds external measurements, make sure that all signals and warning lights are in their place and in good working order, required by local legislation.

2.10.2 TOWING

- The tractor should only be towed in case of a break-down and over short distances.
- Comply with the speed limit of 10 km/h when towing the tractor.
- When towing the tractor, always keep warning lights or other devices for better signalling turned on, in accordance with applicable road traffic rules.

2.10.3 IMPROPER TRANSPORT

- Never stand next to the tractor during loading or unloading.
- During loading or unloading, the PTO drive shaft must always be disengaged.
- Do not load the tractor with a hoist or a forklift. For safe loading, use a tow bar or a towing chain with a winch, which must be correctly connected to tractor's connection points.

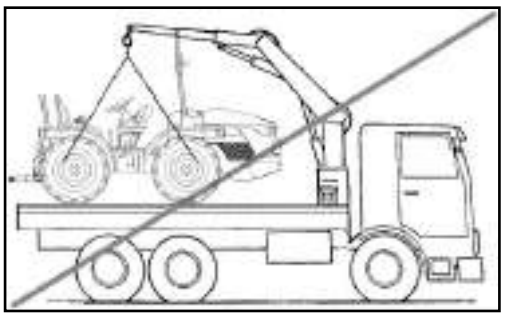


Fig. 23

2.11 SAFETY INSTRUCTIONS FOR MAINTENANCE OF THE TRACTOR

In the period of tractor operation, ensure regular maintenance of the tractor in accordance with time intervals prescribed by the manufacturer. Proper maintenance will ensure a long service life of the tractor and an appropriate level of safety.
Maintenance work on the tractor can only be performed by authorized service centres complying with the manufacturer's instructions. Failure to follow this instruction will void your warranty rights.

Before starting maintenance work on the tractor, shut down the engine, remove the key and engage the parking brake, then wait for the tractor to cool down.

Fig. 24

- Learn how to perform the servicing procedures, otherwise leave this to suitably qualified persons.
- Keep the workplace clean and dry.
- Only begin performing maintenance and service procedures when the tractor is clean.
- During maintenance and service, disconnect all implements and remove the weights.
- Only use appropriate tools and protective equipment when performing maintenance.
- Disengage the PTO drive shaft on the tractor to prevent sudden activation and machine operation (Fig. 25).
- Before repairs and maintenance, place appropriate supports under the tractor to prevent uncontrolled movements.
- Safely support and install all the parts which must be lifted for servicing.


Fig. 25

- Maintain machine parts in good condition. Any problems should be immediately repaired. Replace any worn or damaged parts. Remove the excess oil, grease and any other impurities.
- Check the condition of the hydraulic system (couplings, hoses), in particularly hoses leading to the hydraulic cylinders of the steering system.
- Check the condition of the air conditioning system and pay particular attention to the joints.
- Liquids coming from the hoses may be under high pressure and can damage your skin. If they penetrate the skin, they may cause dangerous injuries (Fig. 26).


Fig. 26

- When determining the leakage points on hoses, use a cardboard for help. Protect your hands and body when handling a circuit under high pressure.
- Before repairing high-pressure hoses, always release pressure from the hoses and double-check that the pressure is released.
- Before you re-engage the systems under pressure, make sure they are safely connected.
- In case of injury, seek medical attention. To prevent the risk of serious injuries, block any penetration of liquids into the skin and remove the liquid within a few hours.

- Do not heat the painted parts of the tractor as heating generates toxic gases with can damage your health. If any painted parts of the tractor must be repaired by welding, soldering or heating, you must first remove the paint by sanding (Fig. 27).
- Regularly check that the wheel nuts are properly tightened. Use the correct tightening torque. The table with tightening torques is provided in the Maintenance chapter of the operating instructions.
- Always remove the tyre before repairing a damaged rim. If you are not suitably equipped to perform this operation, leave it to a qualified person.

Fig. 27

- When welding the rim and the flange (due to damage!), remove the tyre from the rim because the air pressure would increase during welding and the tyre could blow up.
- Check the coolant level regularly.
- Before inspecting or adding the coolant, shut down the engine and allow it to cool down. When the engine is hot, the coolant in the tank is under pressure and could cause burns when opening the cover.
- Before making any adjustment or repairs on the electrical system or before any welding operations on the tractor, disconnect the battery terminals (negative cable –).
- Use caution when handling the battery and take care to connect the battery terminals to the tractor correctly.
- Battery acid is toxic and corrosive, which is why it may destroy your clothes, burn your skin or cause blindness in case of eye contact.
- Operations must always be performed as recommended and the battery must be charged in a well-ventilated area; when handling the battery, use safety glasses and rubber gloves and do not inhale toxic gases when adding the electrolyte.
- If you spill the electrolyte on your skin, immediately rinse with water and remove the contaminated clothing. Sprinkle the affected area with baking soda to neutralize the acid. If the electrolyte contacts your eyes, flush with water for 10–15 minutes and immediately seek medical attention.
- In case of electrolyte ingestion, immediately drink plenty of water and magnesium milk, scrambled eggs or vegetable oil and seek immediate medical attention (Fig. 28).

Fig. 28

- In case of suspected poisoning (symptoms: sweating, dizziness, depression, headache, nausea):
  - stop working immediately;
  - remove any wet clothing;
  - stay calm;
  - lie down on your side;
  - immediately call a doctor.

2.11.1 IMPROPER USE DURING MAINTENANCE

Fig. 29

- Do not use open fire in the vicinity of hoses under high pressure. Damage to any hose under high pressure may cause the leakage of flammable liquid (fuel, oil) and result in severe burns.
- Never attempt to remove hydraulic hoses or other devices (air conditioner) under high pressure.
- Do not perform an inspection of the tractor if safety devices are not "activated".
- Do not lubricate, repair or adjust the tractor when the tractor is moving.
- Do not touch any moving parts! Turn off the drive and make sure that the hydraulic circuit is not under operating pressure.

Fig. 30

- Do not perform any maintenance work during operation of the tractor. Stop the tractor when the conditions are safe.
- Tyres should only be replaced by a qualified person, who has access to suitable equipment, is certified and able to provide professional installation.
- Never install or remove a tyre from the rim if you are not qualified to do so and do not perform this operation without using suitable tools or machines.
- Always remove the tyre before repairing a damaged rim. If you are not suitably equipped to perform this operation, leave it to a qualified person.

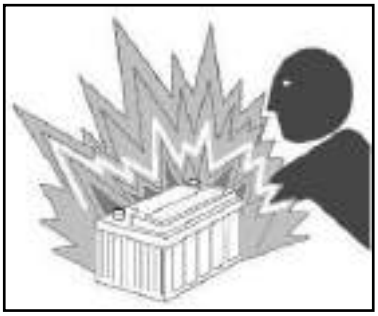


Fig. 31

- Never install damaged rims or tyres on the tractor.
- Never exceed the maximum tyre pressure, otherwise the tyre could explode.
- Do not add the coolant when the engine is hot.
- Never connect the battery terminals together. This may cause an explosion.
- Do not smoke or have open flames (welding) near the area where the battery is being charged.
- To clean the electric components, do not direct a water jet directly on electric components.

2.12 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR WITH WEIGHTS INSTALLED

When operating the tractor with weights installed, as required by the specific situation, certain precautions must be taken, in particular those regarding safety.

- Unevenly installed weights significantly affect tractor balance, therefore, always install weights in symmetry, according to the type of implement attached and the type of surface where the work is carried out.
- If you ballast the tractor by putting water in tyres, only perform this operation if you are suitably qualified, otherwise let a qualified person to do this.
- When water ballasting the tyres during winter, add antifreeze to the water.
- When driving with heavy or long implements, always put weights to the front of the tractor.
- When detaching an implement from the tractor, you must always remove the weights to avoid tractor instability, reduce the wear of vital components and increase functionality.

2.12.1 IMPROPER USE OF WEIGHTS

- Be careful not to overload the tractor with weights installed and do not exceed the maximum weight.
- Do not use weights on the tractor unless necessary.
- Do not use weights that are not compatible with those prescribed by the manufacturer.
- Do not use weights that are not compatible with the weight of the implement attached and therefore not suitable for work.

2.13 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR DURING SPRAYING

The operator of the tractor must be familiar with the regulations concerning plant protection products. For this reason, you must always read the instructions for use on the label of chemical protection products.
Comply with regulations, safety precautions and instructions:

- When working, keep the cab windows and doors closed and use respiratory protection, such as a gas mask or a fresh-air helmet.
- When preparing chemical substances, wear appropriate clothing. When working, use protective mask, gloves, boots and protective clothing.
- Before use, read the operating instructions of the spraying device and become familiar with all the risks related to the device.
- After use, clean the spraying device and store it in a suitable area, where it cannot be accessed by unauthorized persons.
- Regularly clean the tractor and the spraying device to reduce the risk of direct contact with chemicals.
- After spraying is finished (if necessary), clean the tractor and the spraying equipment in a suitable area to avoid the release of chemicals into the environment.
- Ensure that your protective equipment and clothing is properly maintained and clean. A dirty gas mask may cause skin irritation. Replace the filter regularly.
- Keep the protective equipment in a dry, cool and clean area.
- Protective equipment which is contaminated with chemicals during work must be cleaned in accordance with the rules on cleaning dangerous substances.

It is recommended that the tractor cab is hermetically closed during the spraying process and that the cab allows for a generation of overpressure with fresh air ventilation to prevent the chemically polluted air from entering the cab. **According to specifications, the tractor is not equipped with a suitable cab for this purpose or the cab is NOT CERTIFIED, which means that this tractor is not suitable for this type of work!**

2.13.1 IMPROPER USE DURING SPRAYING

- **Do not begin spraying before using personal protective equipment, even if your tractor is equipped with a protective cab.**
- Do not use protective equipment if worn out; always take care of your protective equipment.
- Never store your protective equipment in the same place where chemicals are stored.
- Store your chemical protection suit separately from other clothes.
- Do not spray in the presence of other persons in the operating area, otherwise such persons may be exposed to inhalation of chemical products.

2.14 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR IN FORESTRY OPERATIONS

When the tractor is used in forestry operations, you must be aware of potential hazards, which often occur if trees, branches or other object fall or penetrate the drivers area.

- Only use the tractor for forestry operations when the tractor is immobilised and the implement driven by the universal joint is attached.
- When carrying out forestry work, make sure that the tractor is securely positioned and stable on the ground. This must be ensured by any means necessary (support wedges, weights etc.).

The protective cab on the tractor is not intended for forestry work, it is NOT CERTIFIED and does not meet the conditions to be used as protective equipment FOPS – Falling object protective structure and OPS – Operator protective structure.

2.14.1 IMPROPER USE IN FORESTRY OPERATIONS

- **Do not use the tractor for forestry operations if there is a risk of falling or penetrating objects from the sides!**

2.15 SAFETY INSTRUCTIONS FOR OPERATING THE TRACTOR WITH A FRONT LOADER

- The front loader must be equipped with a suitable support device, which prevents the loads from slipping into the driver's area when the lift arms are raised.
- If objects on the loader are not properly secured, they could fall on persons standing in direct vicinity of the tractor.
- When transporting objects on the front loader, you must lower the bucket as close to the ground as possible.
- When driving downhill with loaded front loader, drive downhill in reverse.
- When driving on uneven ground with the front loader attached, reduce tractor speed to prevent the loss of steering control.

The tractor is NOT equipped with a CERTIFIED protection equipment for operating a front loader and is therefore not suitable for such operations!

2.16 SAFETY INSTRUCTIONS FOR ENVIRONMENTAL PROTECTION (RECYCLING)

Each company is obliged to predict, assess and ensure subsequent monitoring of the environmental impact of its products and services.
To identify impacts on the environment, the following factors must be taken into account, including atmospheric emissions, waste water discharges, waste management, soil pollution, use of raw materials and waste resources related to local environmental pollution problems.

To reduce these environmental impacts, the manufacturer recommends some general measures, which must be taken by anyone operating the tractor during its service life.

- Be careful to avoid environmental pollution during tractor maintenance procedures.
- Uncontrolled release of chemicals into the environment is **strictly prohibited!**

Fig. 32

- Any waste liquids must therefore be collected in suitable containers and disposed of correctly, in accordance with local regulations.
- When the tractor reaches the end of its service life, it must be cleaned, disassembled and its materials must be sorted by individual components and taken to a waste management organization.
- Plastic components can be recycled or incinerated in dedicated incineration facilities and metal parts can be recycled as scrap metal.
- **Improper recycling or disposal is subject to penalties prescribed by law!**

2.17 ADDITIONAL SAFETY REQUIREMENTS

This chapter describes additional dangers or risks, which are common and to which you must pay particular attention as the operator, even if they were already described in the operating instructions and considered or anticipated by you.

- **Danger of stability loss:** To avoid the loss of stability of the tractor, the operator must drive safely and responsibly, particularly with implements or weights, or both, installed on the tractor when driving near ditches, on slopes, or on soft and uneven ground in adverse weather conditions.
- **Danger of tripping:** When entering or exiting the tractor, the operator must take care to avoid tripping over control units or slipping on dirty surfaces. It is therefore recommended to use a three-point grip when entering or exiting the tractor.
- **Danger of impact:** The operator must always ensure that the universal joint is correctly connected and disconnected, which is why it is important to always follow the correct order and the connection procedure Implement → Tractor or the disconnection procedure Tractor → Implement, to avoid dangerous impacts, which can cause severe injuries or even death.
- **Danger of crushing:** When connecting or disconnecting an implement, the operator must always remain within the safe zone of the the driver's seat and must not allow other persons to approach during the process.
- **Danger of cuts:** The user must never put their hands near the rotating parts of the fan or other moving parts lacking appropriate safety protections. Before maintenance operations, always make sure the tractor is safely stopped.
- **Dangerous substances:** The tractor must never be operated in closed or poorly ventilated areas, where there is a risk of poisoning with exhaust gases (carbon dioxide - CO2). When handling chemical substances, always use protective equipment (face mask), even if the cab is equipped with suitable filters.
- **Danger of pulling:** Do not approach rotating mechanical parts of the tractor, such as the front (optional) and the rear universal joint because it can quickly lead to accidents with serious injuries or even death.
- **Danger of abrasion:** When driving, the operator must never touch the rotating wheels or other rotating parts within reach.
- **Danger of burns:** The user must never touch the engine, when it is running and creating heat. Parts of the engine, such as the block, the radiator and particularly the exhaust pipe, become very hot during operation and may cause severe burns upon contact. Before touching or performing maintenance tasks on these components, wait until they cool down.

2.18 DESCRIPTION OF SAFETY SIGNS ON THE TRACTOR

Safety and warning signs can be found on the tractor and in the operating instructions. Take a close look of them to ensure your own safety. Follow the instructions and recommendations related to the safety precautions from the previous chapter.
Make sure that the safety signs are clearly visible. After servicing or replacement of parts, make sure that all the required signs are attached. Safety signs are available through authorized dealers.

Position of safety signs, **front right side view of the tractor**

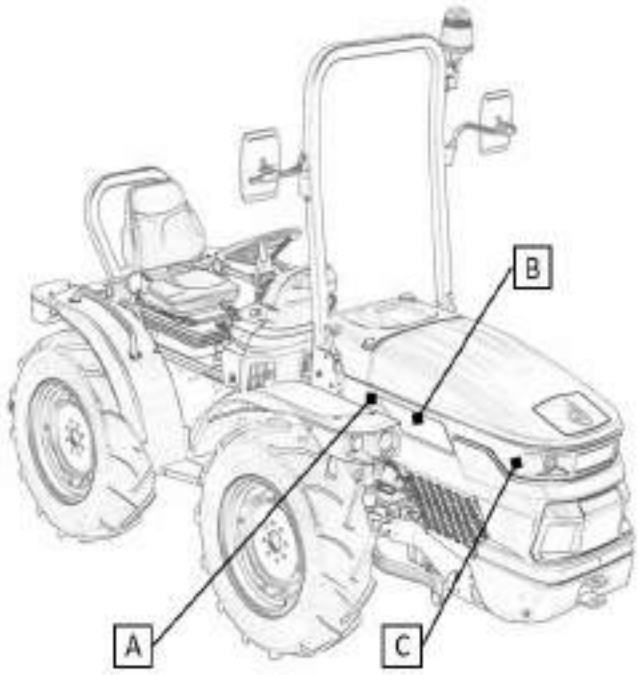


Fig. 33

No.	Position	Code	Meaning	Description	Image (sign)
A	On the engine cover	535040	**Danger**	Danger of burns, hot surfaces Before performing any operations, wait until the engine cools down.	
B	On the expansion tank bracket (engine)	535041	**Warning**	Hot liquid under pressure, danger of burns. Before adding liquid, wait until the engine cools down.	
C	On the housing of the fan deflector	535044	**Danger**	Danger of cuts and entanglement with moving parts. Stop the engine before performing any operations.	

Position of safety signs, **rear left side view of the tractor**

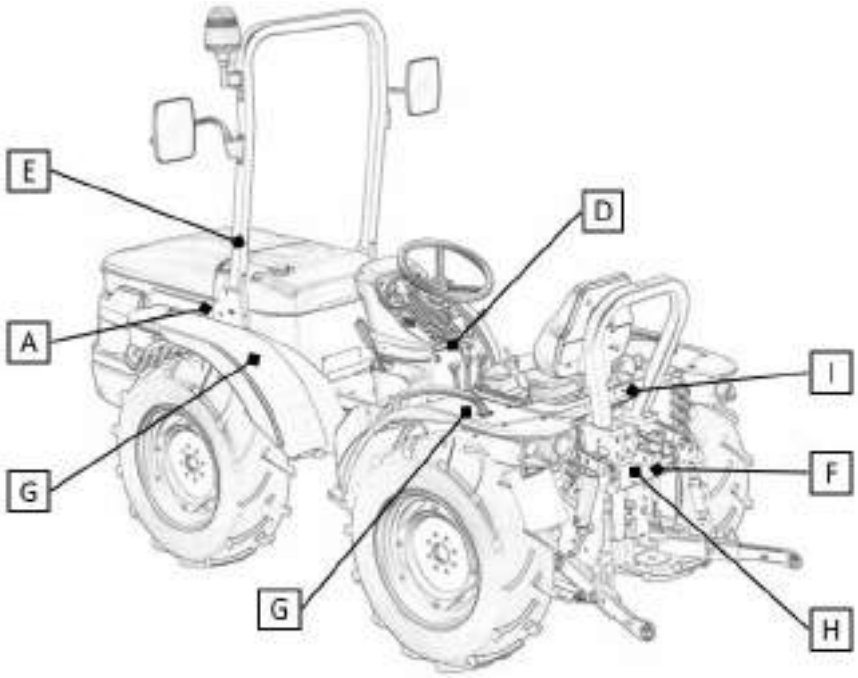
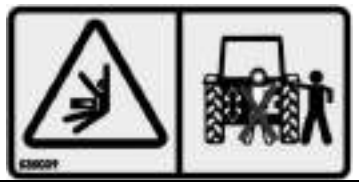


Fig. 34

No.	Position	Code	Meaning	Description	Image (sign)
A	On the engine cover	535040	**Danger**	Danger of burns, hot surfaces Before performing any operations, wait until the engine cools down.	
D	On the driver's console	535023	**Warning**	Follow the safety instructions, general danger. Before performing any operations, stop the engine and remove the key from the ignition.	
E	On the front roll bar.	535024	**Danger**	Do not operate the tractor when the safety bar is lowered (danger of rollover).	
F	On the protective sheet metal of the PTO drive shaft.	535025	**Danger**	Danger of entanglement with rotating mechanical parts. Stay away from rotating universal joints and stop the engine before handling such components.	

No.	Position	Code	Meaning	Description	Image (sign)
G	On the front and the rear fender	535026	**Danger**	Danger of falling. Do not carry persons on inappropriate places and do not climb on and off the machine if the tractor is not safely stopped.	
H	On the protective sheet metal of the PTO drive shaft.	535038	**Danger**	Danger of crushing body parts by rotating mechanical components. Stay away from rotating components. Stop the engine before performing any operations.	
I	On the rear roll bar.	535039	**Danger**	Danger of crushing due to moving parts. Stay on the side of the tractor when handling.	

3 TECHNICAL SPECIFICATIONS OF THE TRACTOR

The tractor is fitted with type plates in accordance with the Commission Delegated Regulation (EU) No. 1322/2014.

3.1 MANUFACTURER'S INFORMATION

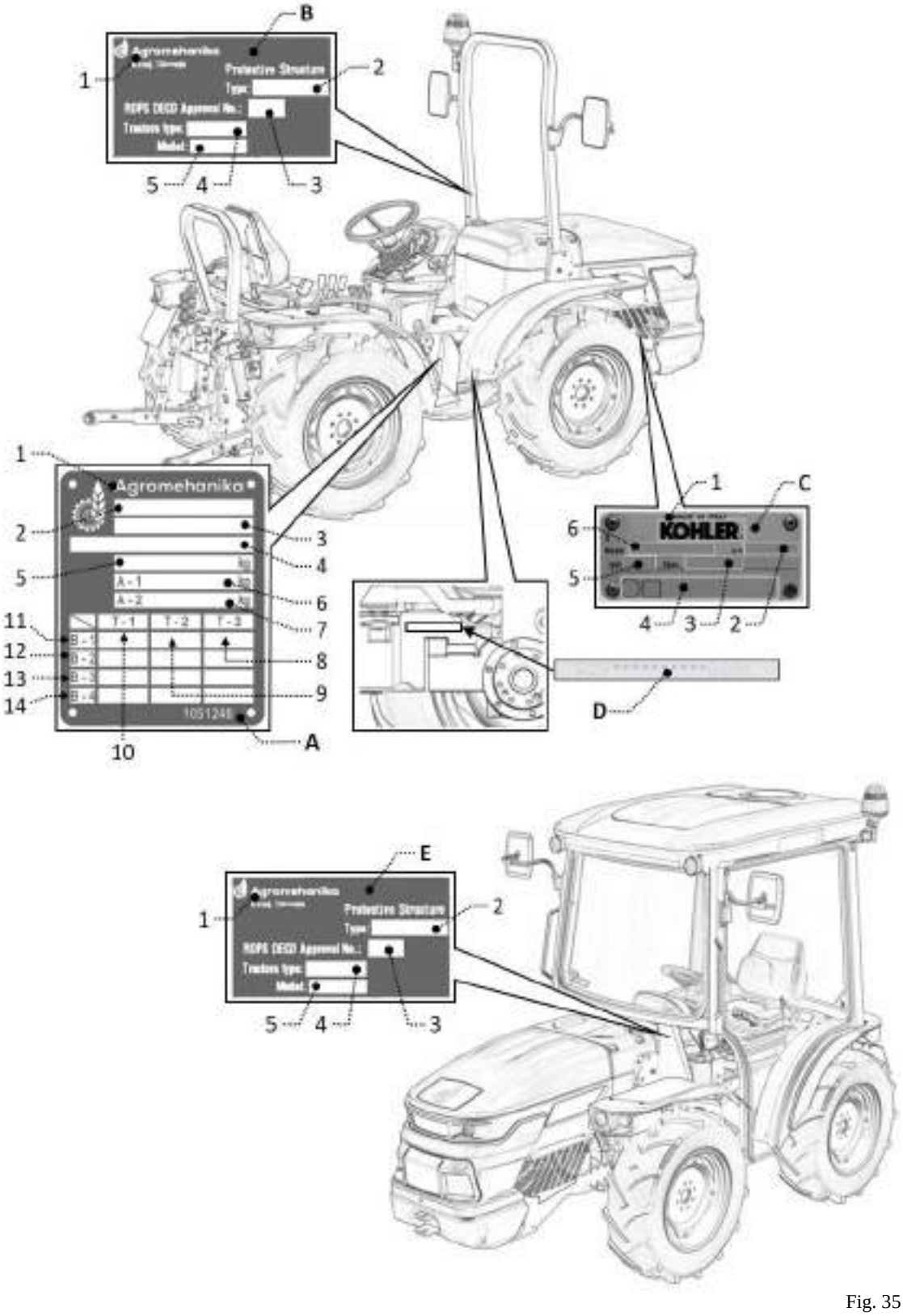


Fig. 35

DESCRIPTIONS OF TYPE PLATES

A – Type plate with information about the manufacturer and the tractor, installed at the right side of the platform under the tractor's console (in the driving direction).

The type plate contains the following information:
1. Manufacturer.
2. Tractor category according to speed.
3. EC approval number.
4. Identification number.
5. Maximum permitted gross weight.
6. Maximum permitted weight on the front axle.
7. Maximum permitted weight on the rear axle.
8. Type of trailer (T-1, with a drawbar).
9. Type of trailer (T-2, with a rigid drawbar).
10. Type of trailer (T-3, with a central axle).
11. Maximum permitted trailer weight (B-1, without brakes).
12. Maximum permitted trailer weight (B-2, with an overrun braking system).
13. Maximum permitted trailer weight (B-3, with hydraulic braking system).
14. Maximum permitted trailer weight (B-4, with pneumatic braking system).

B – Type plate on the roll bar (ROPS), installed on the left side of the roll bar tube.

The type plate contains the following information:
1. Manufacturer.
2. Structure type.
3. OECD approval number.
4. Tractor type.
5. Tractor model.

C – Type plate with engine information, installed on the right engine block.

The type plate contains the following information:
1. Manufacturer.
2. Identification number.
3. Engine version.
4. EC approval number.
5. Maximum no. of engine revolutions.
6. Engine type.

D – Type plate with the identification number of the tractor, installed on the right side, above the tractor joint.

E – Type plate on the safety cab (ROPS), installed on the left side of the cab frame.

The type plate contains the following information:
1. Manufacturer.
2. Structure type.
3. OECD approval number.
4. Tractor type.
5. Tractor model.

3.2 REPLACEMENT PARTS

The manufacturer guarantees flawless and long-lasting operation of the tractor, provided that only original replacement parts are installed. Installing and using non-original parts on the tractor may lead to significantly reduced performance and higher repair costs, and the manufacturer shall not be liable for any property damage or personal injuries arising from such practices.
Using non-original parts may void the tractor warranty coverage. It is therefore recommended that only original replacement parts or accessories, delivered by Agromehanika d.d., are used.

In case of any malfunction or damage to the tractor, the manufacturer will provide the required servicing and a reliable technical support from its expert staff.

Please write down the information below, so that you, as the owner, will always be familiar with all information regarding your tractor when contacting the technical service:

1. **Information about your tractor:** _____
2. **Tractor model:** _____
3. **Tractor serial number:** _____
4. **Engine model:** _____
5. **Engine number:** _____
6. **Year of manufacture:** _____
7. **Telephone number of the sales unit:** _____

4 GENERAL DESCRIPTION OF THE TRACTOR

The AGT 1060 tractors are designed for different requirements or tasks in agriculture and horticulture. By adding some technical accessories, they can also be used for public utility services or forestry.
Thanks to their rigid transmission with different widths, small turning radius, constant four-wheel drive and low barycentre, these tractors can also be used in hilly areas.

For different operations, the tractor is equipped with the following:

- rear hydraulic lift system with a three-point linkage;
- drawbar;
- drive shaft;
- hydraulic connections.

As an option or as required by specific operation, the tractor can also be fitted with the front hydraulic system with a three-point linkage or a cab for a more comfortable driver's area.
The equipment described above makes the tractors suitable for a wide range of tasks.
The tractor can only be operated by one operator, who is responsible during work and must strictly follow all instructions for safe operation.

The tractor is distinguished by:

- Constant four-wheel drive, ensuring excellent grip on challenging terrain;
- Rigid transmission with an integrated central joint for fast manoeuvring and excellent handling characteristics on surfaces;
- Synchronized gearbox;
- Option of choosing the driving direction by turning the seat and the steering wheel;
- Good ergonomic position of the driver for a better view over the work, regardless of the driving direction or position of the rotating seat;
- Wide selection of rims and tyres;
- Four-wheel braking with permanent drive;
- Adjustable wheels and drive system for different types of terrain;
- Small turning radius;
- Differential locks on both sides:
- Low operating costs;
- Easy and safe use and simple maintenance.

4.1 DESCRIPTION OF THE MAIN COMPONENTS OF THE TRACTOR

All the main components, including detailed explanations, are described in the following pages.

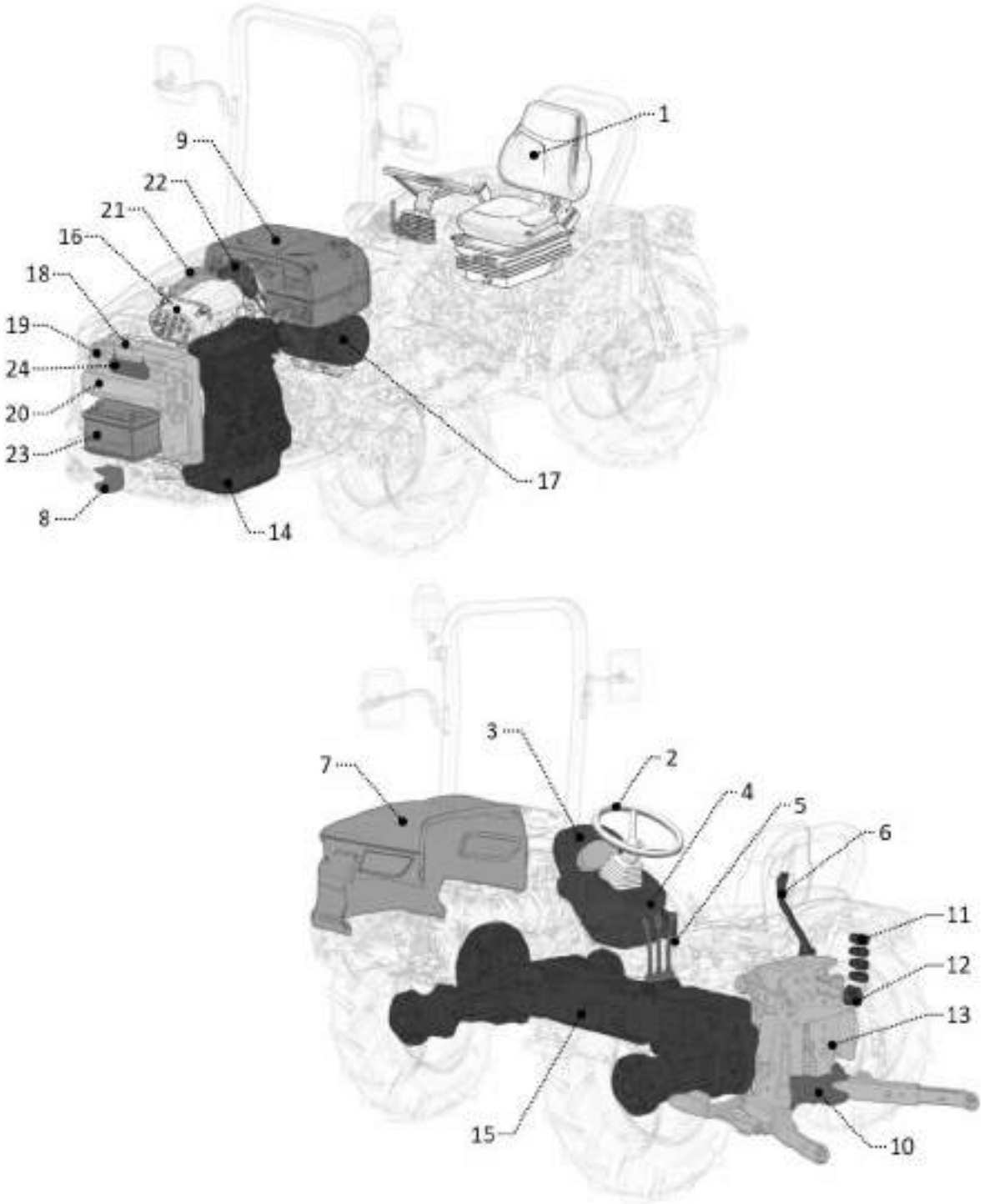


Fig. 36

1. Driver's seat

The driver's seat has an ergonomic design, which means that it can be adjusted to the user's working environment according to their physical features. The position of the seat allows the user to have a complete overview of the surroundings and a convenient access to the controls.

2. Steering wheel

The steering wheel is hydraulically controlled and allows for an easy steering of the front wheels.

3. Dashboard

The dashboard consists of control devices and indicators for the current state of the tractor, including a speedometer, hour meter, PTO tachometer, engine tachometer, temperature and fuel level gauges, indicators etc.

4. Console

It consists of various controls for controlling the operating functions. For detailed information, refer to the chapter "Description of instruments and controls".

5. Controls

The controls connected to the synchronized gearbox, which are used to determine speed and driving direction.

6. Hydraulic controls

Hydraulic controls are used to control the lift mechanism and tractor mounted or trailed implements. Controls are connected to the hydraulic system installed on the tractor, which actuates all its main components. The hydraulic system is supplied by a gear pump driven by the engine.

7. Engine cover

The engine cover is designed to protect the operator and to prevent contact with moving parts, such as pulleys, radiator fan etc. It is protected with a lock, which can be opened for inspection.

	**WARNING:** If the tractor was in operation, beware of hot surfaces when opening the engine cover!

	**WARNING:** Only open the engine cover when the tractor is safely stopped. Prevent unauthorized opening of the engine cover.

8. Front tow hook

The front tow hook is designed for towing the tractor in case of malfunctions.

9. Fuel tank

The tank contains fuel to supply the engine.

	**IMPORTANT:** Only fill the tank with the fuel type prescribed by the manufacturer!

10. Rear tow hook

The rear tow hook is designed for attaching and pulling trailed implements.

11. Rear hydraulic couplings

Hydraulic couplings are used for quick connection of hydraulically powered implements.

12. Electric connection

The electric connection consists of a 7-pin electrical socket to connect the electrical system of the implements (trailer).

13. Rear hydraulic lift mechanism

The rear lift mechanism with a three-point linkage system is used to attach and lift the tractor implements. It is available in various versions according to working requirements and desires of customers.

14. Engine

The main drive component of the tractor.

15. Transmission

Rigid transmission features a constant four-wheel drive and a differential lock on both sides.

- The front axle is equipped with a wheel reduction gear in both sides and a hydraulically operated differential lock.
- The rear axle is equipped with a wheel reduction gear in both sides and a hydraulically operated differential lock.
- The PTO drive shaft is used to transmit power to trailed or tractor mounted implements. The PTO drive shaft is equipped with an electro-hydraulic clutch and can operate independently from speed or at a speed synchronized with gearbox shifting or tractor engine revolutions.
- The gearbox is synchronized with 4 gears and 3 speed groups with an inverter for changing the movement direction, consisting of 12 forward and 12 reverse gears, or a total of 24 gears.

16. Air filter

The air filter prevents larger particles from entering the engine suction system.

17. Exhaust pipe (DPF filter)

The exhaust pipe is used to convey the exhaust gas and to reduce the noise in the environment. The DPF (diesel particulate filter) cleans the exhaust gas to reduce environmental pollution.

18. Water radiator

A water radiator or heat exchanger is designed to cool the water generated during engine operation due to internal combustion.

19. Air radiator (intercooler)

An air radiator or heat exchanger designed to cool the air before entering the engine.

20. Oil radiator

An oil radiator or heat exchanger is designed to cool the oil generated during the operation of the tractor.

21. Expansion tank

This tank is used to protect the closed circuit of the coolant.

22. Engine computer

The engine computer controls the engine functions.

23. Battery

The battery powers the electrical components of the tractor.

24. Fuel cooler

The fuel cooler or heat exchanger is intended for cooling the fuel when returning into the tank.

4.2 DESCRIPTION OF THE MAIN COMPONENTS OF THE CAB

A tractor equipped with a cab can be used for driving on the road. The cab is a **category 1** equipment and is not suitable for working with dangerous substances because it does not provide protection for the driver in this type of work; refer to the chapter "Safety instructions for operating the tractor during spraying".

	**WARNING:** The protective cab was not tested for falling objects or intrusion of materials and is therefore NOT CERTIFIED and does not meet the conditions to be used as protective equipment FOPS – Falling object protective structure and OPS – Operator protective structure!

The illustration below shows the main components of the cab.

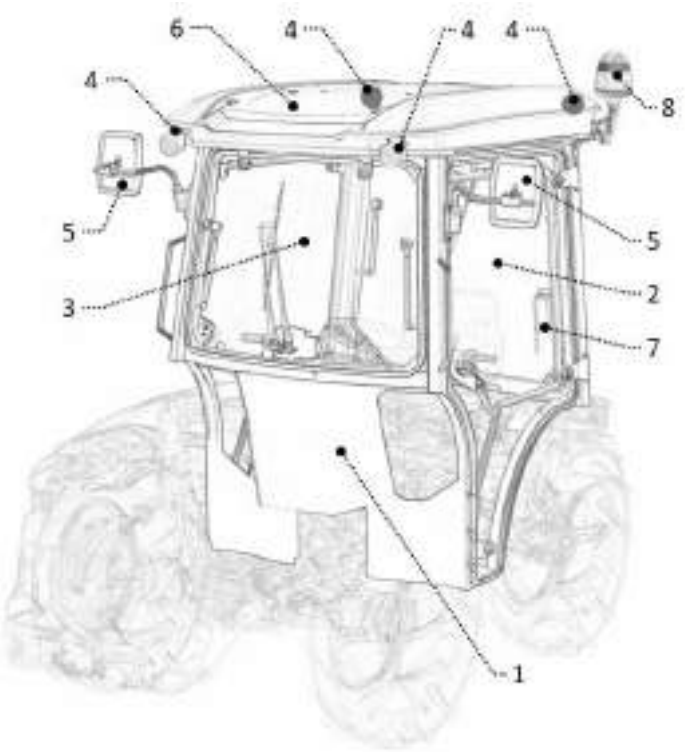


Fig. 37

1. Cab

The cab is mounted on a frame consisting of several platforms which are connected at four transmission points, at the left and right sleeve in the rear and at the intermediate transmission section in the front. This configuration enables easier disassembly and assembly during repairs or replacement of a damaged cab.

The cab is equipped with separate controls (switches for lamps, wipers etc.), which are independent from the other tractor components, and it is equipped with an air conditioner.

2. Cab doors

The cab doors are installed on both sides of the cab. They are designed to allow for an easy entering and exiting of the user or the operator. **They also serve as an emergency exit in the event of a rollover.** Each door is also equipped with a lock.

3. Front and rear windscreen

Both windscreens are made from toughened glass. They are opened outwards from below, by means of a hinge installed at the top and a mechanical lever at the bottom. Each windscreen is also fitted with a gas spring for easier opening, which automatically opens it to its maximum stroke when the mechanical lever at the bottom is released.

Both windscreens are fitted with a single centre-mounted wiper, controlled through a separate connector in the cab and a windscreen washing device.

4. Working lamps

The lamps can be adjusted manually to different angles for an optimal illumination of a specific area. There are four lamps installed on the cab, two in the front part and two in the rear (see Fig. 37).

5. Rear-view mirrors

The rear-view mirrors must be adjusted to ensure you can safely monitor the tractor and the implement when driving. The rear-view mirrors are correctly adjusted when the driver is easily able to see the sides of the tractor and the implement from the operating area. The rear-view mirrors are mandatory equipment for road driving.

6. Cab filter

The filter prevents foul air from entering the cab.

7. Windscreen washing tank

The tanks contain a cleaning solution for washing the front and the rear windscreen.

8. Rotating lamp

The rotating lamp is used on tractors with tractor implements exceeding the width of the tractor or on tractors with tractor mounted implements, when the rear edge of the implement extends 1.5 m beyond the rear edge of the tractor.

In this case, an additional warning lamp is also required, which is installed at the rear end of the implement.

4.3 DESCRIPTION OF THE DRIVER'S SEAT

The driver's seat with mechanical suspension is type-approved in accordance with the Commission Delegated Regulation (EU) no. 167/2013 and the following standards:

- the Commission Delegated Regulation (EU) no. 1322/2014, cat. A, class I and II;
- certified to ISO standard 7096:2000;
- certified to EN 13490:2001.

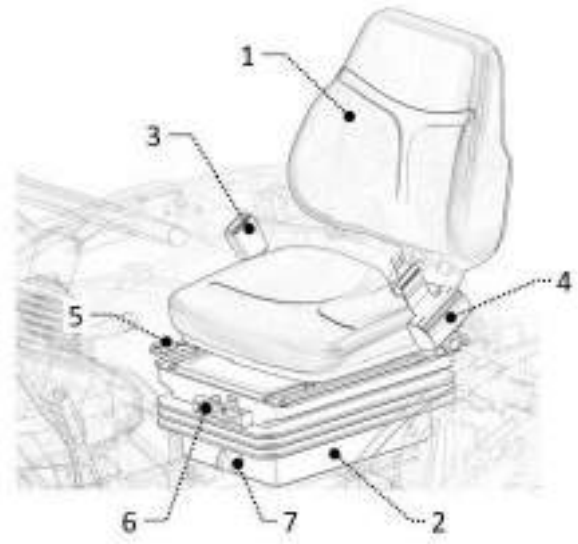


Fig. 38

The seat shell is designed to ensure a secure grip for the driver when driving or uneven or sloping terrains. The metal structure of the seat is protected against corrosion in accordance with the quality standards of the motor vehicle industry. Because the seat is equipped with mechanical suspension and a hydraulic shock absorber, it provides a good level of comfort and protects the driver from excessive vibrations. Among other excellent qualities of the seat are also the automatic adjustment to the weight of the driver (50 kg to 120 kg), a 100 mm stroke of the suspension system, adjustable height of the seat (vertically) up to 80 mm and adjustable length (horizontally) up to 150 mm.

Seat description (see Fig. 38**):**

1. seat with polyurethane filling with black synthetic leather cover for easy washing;
2. mechanical suspension with hydraulic shock absorber;
3. safety belt with two-point anchorage, locking mechanism;
4. safety belt with two point anchorage, buckle clip;
5. seat length adjustment lever;
6. hydraulic shock absorber hardness adjustment lever;
7. seat height adjustment lever.

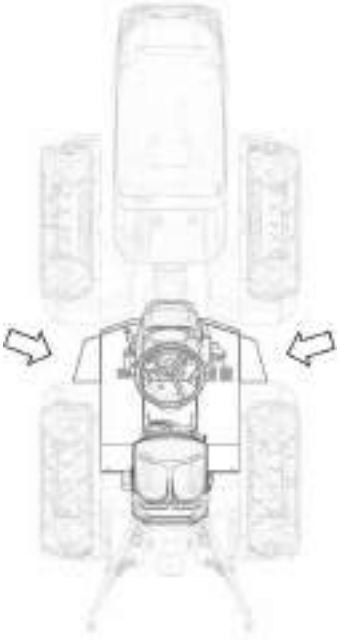


Fig. 39

Access to the driver's seat

The driver's seat can be accessed from the left of from the right side.

Always use the footstep and the corresponding handholds to climb on and off the tractor.

Always keep the entrance area and the driver's seat clean and remove any objects that could later interfere with their use.

	**WARNING:** The seat can only be occupied by the driver or the operator. Climbing on and off the tractor is only allowed when the engine is stopped.

4.4 HYDRAULIC SYSTEM DESCRIPTION

The main component of the hydraulic system is the hydraulic pump, which supplies all hydraulic components. It is directly connected to the engine and connects two independent systems:

- The first system supplies the lifting components and additional distributors or connectors through control devices.
- The second system supplies the tractor's steering system and also controls both differential locks and engagement of the universal joint (hydraulic clutch) through the control block.

The hydraulic pump pumps the oil from the rear transmission part (gearbox housing), through the filter and into the controls.

The hydraulic system consists of the following components (see the hydraulic diagram in Fig. 40):

1. Hydraulic pump

The pressure required for the operation of the hydraulic system is generated by two pumps with independent operation:

- Service pump for rear hydraulics (the first system) with a capacity of 11 cm³, flow rate of 28 l/min at 2600 rpm and operating pressure of 180 bar.
- The pump connected to the steering unit (the second system) with a capacity of 4.35 cm³, flow rate of 11 l/min at 2600 rpm and operating pressure of 150 bar.

2. Control mechanism

The control mechanism is composed of a hydraulic cylinder and joints and provides steering control of the tractor to the left and right.

3. Cylinder housing

Together with the corresponding components, the cylinder housing is used to lock the front differential.

4. Steering unit

The steering unit is designed to control the steering mechanism to the left or to the right and vice-versa when the seat is turned opposite to the driving direction.

5. 4-way directional valve

When the seat is turned by 180°, the 4-way directional valve automatically changes the direction of operation of the steering wheel cylinder to the opposite direction.

6. Cylinder housing

Together with the corresponding components, the cylinder housing is used to lock the rear differential.

7. Oil filter

The filter prevents the debris in oil from entering the pump. It is installed on the suction tube.

8. Choke valve

The choke valve is used to dampen and lock the lowering of the rear hydraulic lift mechanism.

9. Controls

Controls are used for lifting and lowering the rear hydraulic mechanism and for activating the quick couplings (to connect implements).

10. Quick coupling (connection)

The tractor can be optionally fitted with several quick couplings, as required by the user.

11. Lift cylinders

The tractor can be optionally fitted with several quick couplings, as required by the user.

12. Control block

By means of electro-hydraulic valves, the control block enables the engagement and disengagement of the PTO drive shaft and the differential lock.

13. PTO drive shaft

The PTO drive shaft is engaged through a multi plate clutch in an oil bath, which is independent and separate from the main clutch. The housing is fitted with an integrated choke valve for soft starting or preventing a sudden thrust of the drive shaft when the solenoid valve is switched on.

14. Oil cooler

For cooling the hydraulic oil, which is heated during operation of the tractor.

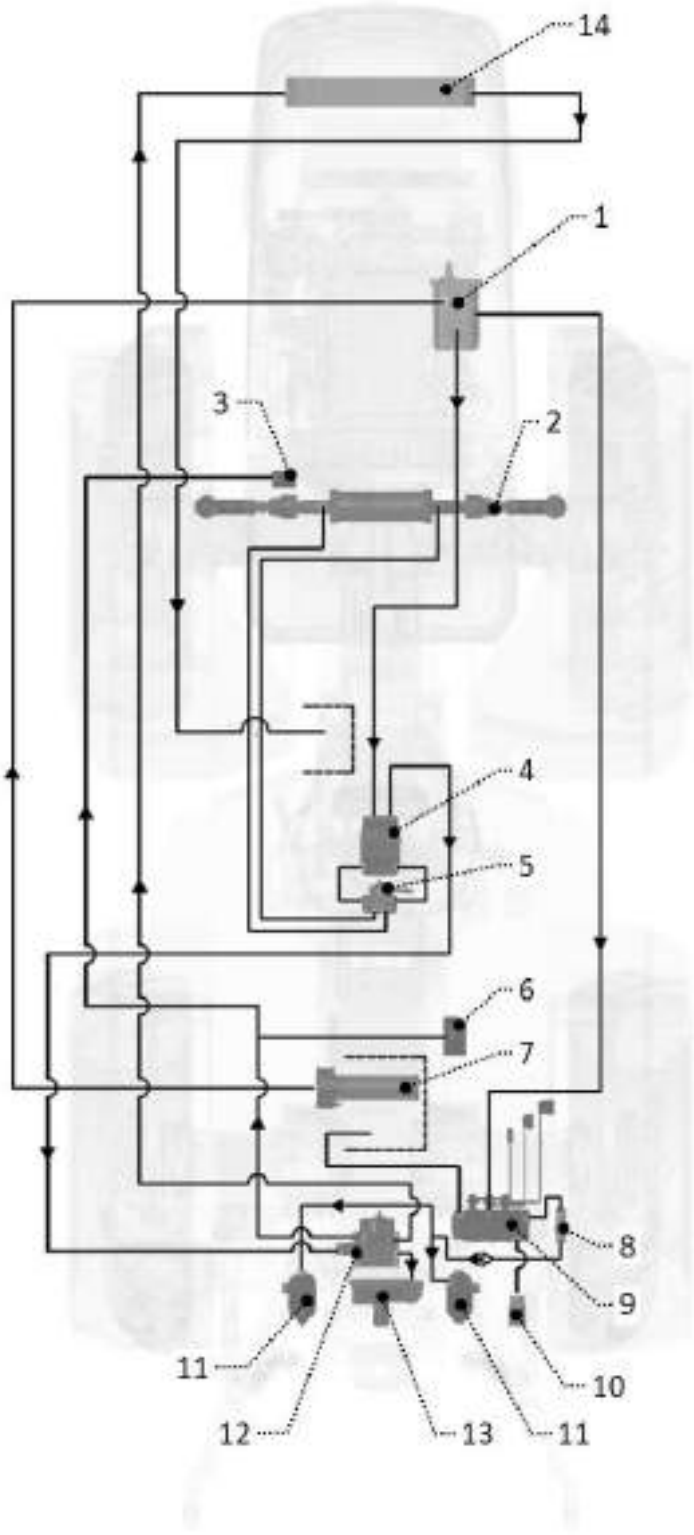


Fig. 40

4.4.1 HYDRAULIC DIAGRAM

Hydraulic circuit diagram

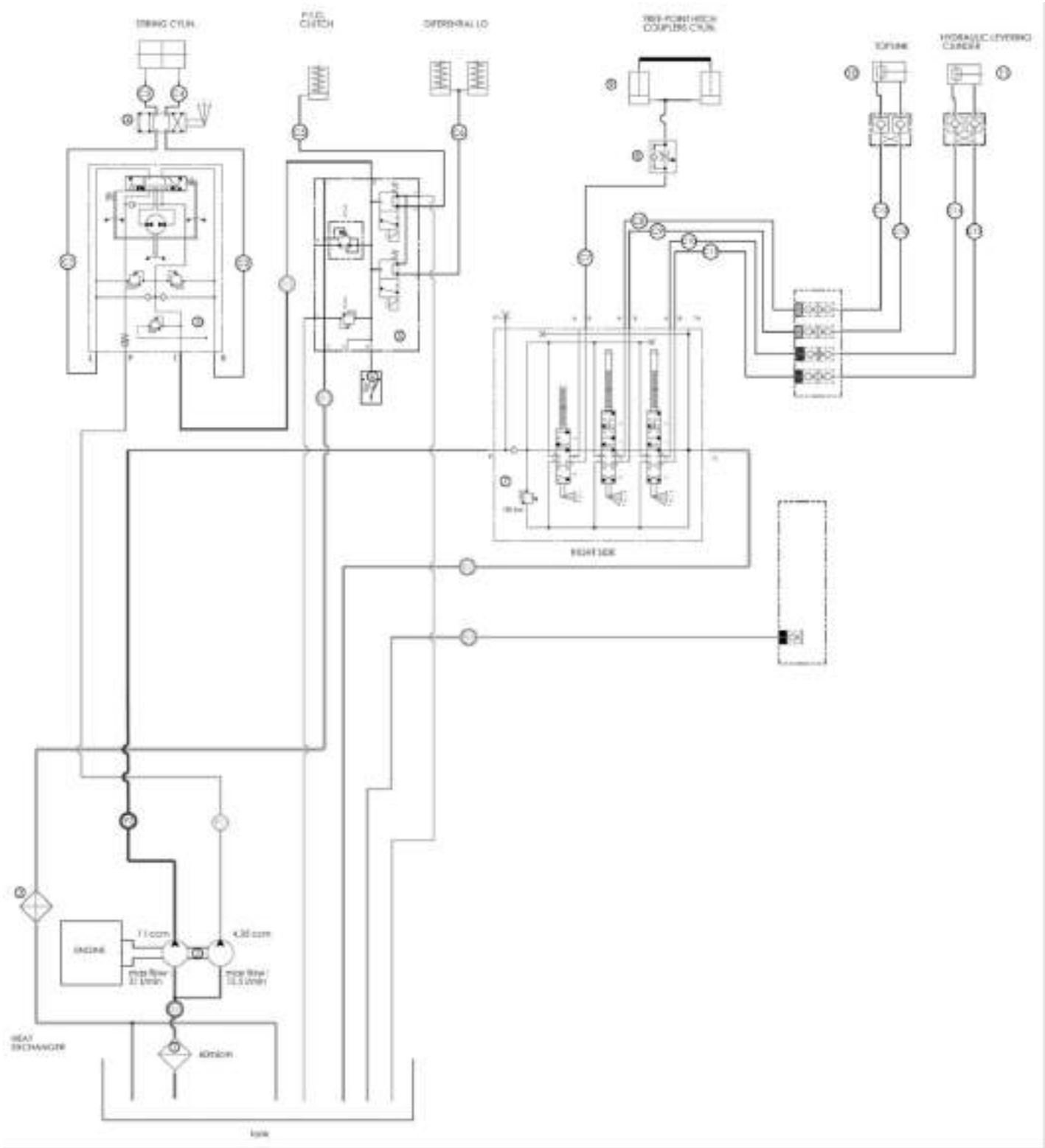


Fig. 41

4.5 DESCRIPTION OF THE FRONT HYDRAULIC LIFT MECHANISM (OPTIONAL)

The tractor can be equipped with a front three-point hydraulic lift mechanism. It is controlled by means of two single-acting hydraulic cylinders and comes equipped with quick couplings, which are used to connect the mechanism to the hydraulic system.
The front three-point lift mechanism is controlled through the controls installed next to the driver's seat.
The tractor implement can be attached to the three-point lift mechanism in the float position for ground following or rigidly fixed in position.

Description of the main components (see Fig. 42):

1. **Hydraulic cylinder**

It is used to control the front three-point lift mechanism.

2. **Lower link arms**

They allow for the connection of different implement types; provided with a cat. I hook with an automatic hook-up for an easy and quick attachment of the implement to the front hydraulic lift mechanism.

3. **Top link**

For connecting the third point of the implement.

4. **Safety frame**

It protects the engine cover, radiator and the engine from potential damage and it serves as a support for attaching the top link for the third point of the front lift mechanism.

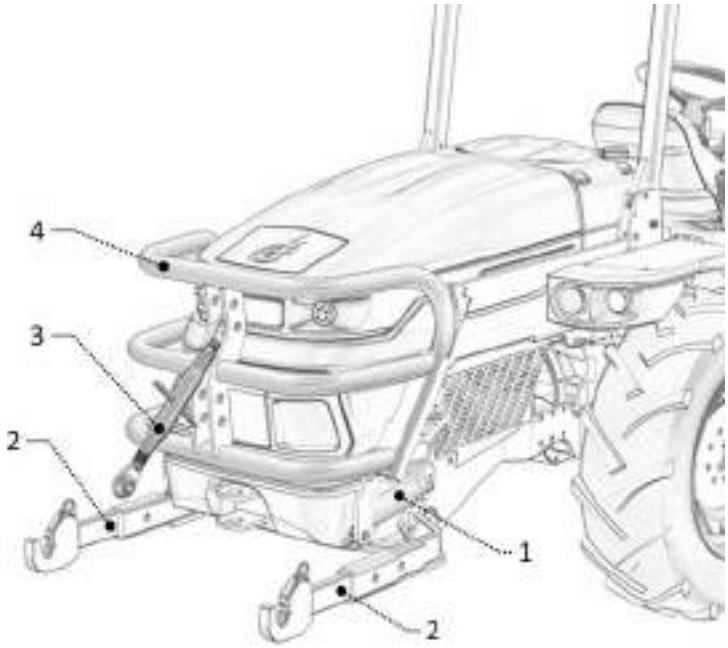


Fig. 42

4.6 DESCRIPTION OF THE REAR HYDRAULIC LIFT MECHANISM

As standard, the tractor is equipped with a category I three-point linkage system for pulling implements. The three-point linkage system basically consists of two lower link arms and a top link.
Lower link arms are connected to lift arms through adjustable lift rods, which are controlled by two single-acting hydraulic cylinders.
On both sides of lower link arms, there are two lateral tensioners for limiting the transverse movement of the three-point hitch when tractor mounted implements are in a raised position. Articulated connections of all the components of the three-point linkage system allow movement in all directions.

Description of the main components (see Fig. 43)

1. **Hydraulic cylinder**

It is used to control the rear three-point lift mechanism.

2. **Lower link arms**

They allow for the connection of different implement types.

3. **Top link**

For connecting the third point of the implement.

4. **Lift arms**

For lifting and lowering the three-point lift mechanism.

5. **Lateral tensioner**

For limiting the horizontal movements of the three-point lift mechanism.

6. **Vertical tensioner**

It is height-adjustable and connects the lift arms to the lower link arms.

7. **Rear hydraulic connections**

They are fitted with quick couplings for connecting the implement to hydraulic system.

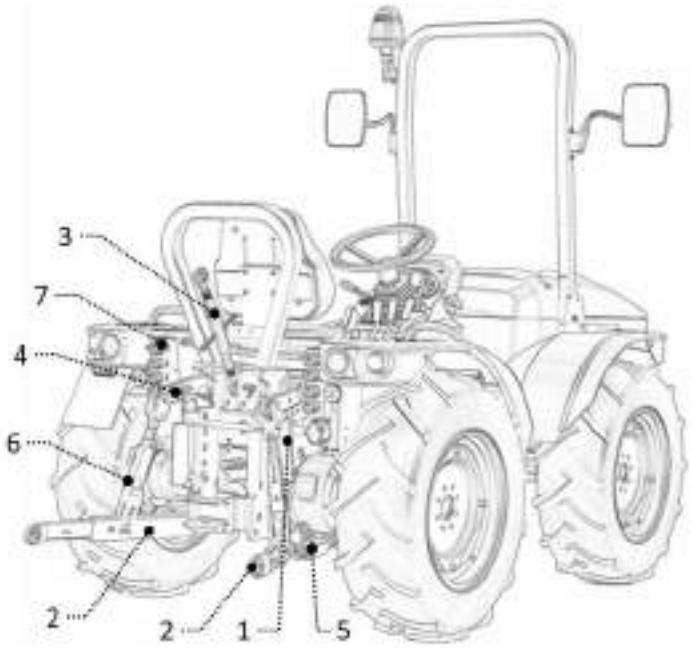


Fig. 43

The lower link arms can be connected in two different ways, which are further divided into several options:

- **Ball link connection** can be made when the ball has a standard bore, which is used to insert the connection bolt installed on the implement to be attached to the tractor.
- **Ball connection (optional)** can be made when the balls with equally standard bores have been previously inserted on the connection bolts of the machine to be attached to the tractor. The ends of lower link arms of the three-point linkage system are fitted with a hook with a hole for the ball installed on the tractor. The attachment is made by lifting the lower link arms while precisely positioning the tractor next to the implement.

The top link can be connected in two different ways:

- mechanically adjustable with a ball link (standard) into which a bolt is inserted or
- hydraulic connection with a ball connection or link (optional).

Due to different sizes of tractors and implements, the three-point linkage is divided in three categories, as standard:

Three-point linkage categories

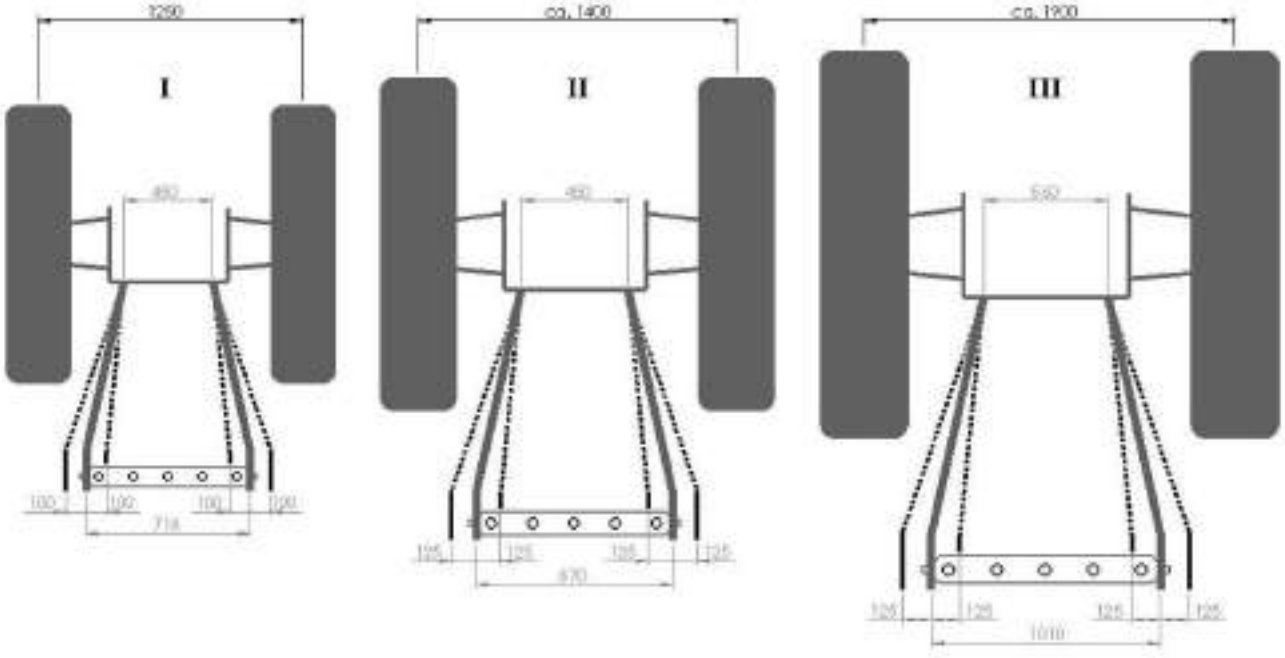


Fig. 44

Connection points on the tractor – bore diameter for the connection pin	Lower link arm	Top link
	d4	d2
Category I	22.4	19
Category II	28.7	25.5
Category III	37.4	31.7

4.7 DESCRIPTION OF THE MAIN SAFETY COMPONENTS

The main safety components of the tractor are described in the following pages.

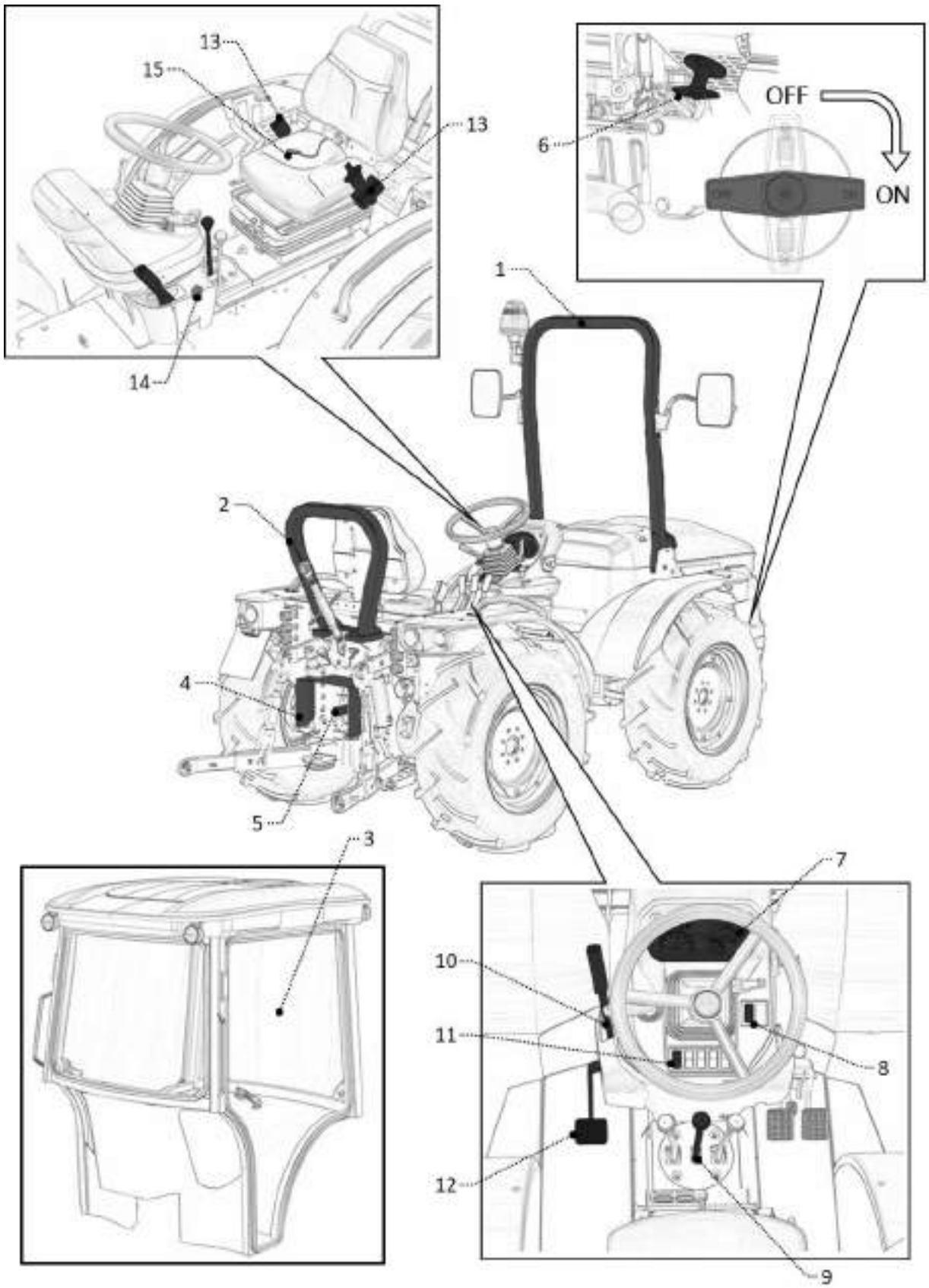


Fig. 45

1. **Front roll bar (ROPS)**

The roll bar protects the driver in case of an accident or a tractor rollover. The front roll bar is designed so it can be moved to horizontal position. This is only allowed when it cannot be avoided due to circumstances during work, on even ground where there is no risk of rollover and for short distances.

When the roll bar is lowered, the driver may not fasten the safety belt, which is why the driver must use extra caution during driving because there are no safety elements to protect him in case of a rollover. In any case, the driver or the operator must never drive the tractor on public roads when the roll bar is lowered.

	**WARNING:** The driver MUST NOT use the safety belt when the roll bar is lowered!

	**WARNING:** The tractor must not be used if the roll bar is not properly installed, if the roll bar is damaged or modified in any way. **In this case, replace the roll bar with a new one.**

2. **Rear roll bar (ROPS)**

The roll bar protects the driver in case of an accident or a tractor rollover.

3. **Cab (ROPS)**

The cab protects the driver in case of an accident or a tractor rollover.

	**IMPORTANT:** The roll bars and the cab (ROPS) have been tested to the standard OECD and provide an appropriate level of protection for the driver in the event of a rollover.

4. **PTO drive shaft protective cover**

The protective cover prevents the operator from coming into contact with the rotating drive shaft. The protective cover is made in accordance with the Commission Delegated Regulation (EU) No. 1322/2014.

5. **PTO drive shaft guard**

It provides protection against dirt and prevents the operator from coming into contact with the rotating drive shaft.

6. **Main ON/OFF switch for switching off the battery**

It immediately switches off the electrical system, regardless of the current state of the tractor. To switch on and off, see the figure Fig. 45.

7. **Dashboard**

It shows the current state of the tractor. The indicator lamps are used to alert you when there is a malfunction or when a control has been activated.

	**WARNING:** When the indicator lamps on the dashboard come on, stop working, safely stop the tractor, remedy the problem or consult technical service.

8. Front PTO drive shaft switch (optional equipment)

For engaging and disengaging the front drive shaft.

- When the switch is on, it prevents the engine from being started.

9. Switch on the driving direction selector lever (neutral gear)

The indicator lamp "N" on the dashboard indicated the state of the inverter. When the lever is not in neutral position (forward or reverse driving), the switch prevents the engine from being started.

10. Parking brake switch

It detects when the parking brake is switched on; indicator lamp "P" on the dashboard.

11. Rear PTO drive shaft switch

For engaging and disengaging the rear drive shaft.

- When the switch is on, it prevents the engine from being started.

12. Clutch switch

It detects the position of the clutch; when the pedal is not depressed, the switch prevents the tractor engine from starting.

13. Safety belt

It is classified as a two-point safety belt because it is fastened at two points on the seat and is strapped across the driver's waist.

Initially, the safety belt is in adjustment position, which means that its length must be adjusted before use according to the operator's body.

	**WARNING:** Always use the safety belt when driving the tractor, the only exception is when the roll bar is lowered!

14. Seat mechanism switch

When driving, the seat mechanism must always be appropriately locked with a pin. When the seat mechanism is raised, the switch prevents the engine from starting or immediately stops the engine when the mechanism is engaged during driving.

15. Seat switch

It detects the presence of the driver.

- The switch prevents the engine from starting when the driver is not properly positioned on the seat.
- To alert to potential danger, the switch activates the horn if the driver leaves the seat when the tractor is running and fails to activate the parking brake.
- When the driver leaves the seat while the engine is running, the switch deactivates the operation of the drive shaft after 7 seconds. It is activated through external PTO switches.

4.8 DESCRIPTION OF INSTRUMENTS AND CONTROLS

For easier explanation and understanding of all the controls on the tractor, this chapter is divided into different categories.

- Signs on controls;
- Tractor console;
- Driving controls;
- Operating controls;
- Hydraulic controls;
- Cab controls.

4.8.1 DESCRIPTION OF SIGNS ON CONTROLS

Position of signs, **right lateral view of the tractor**

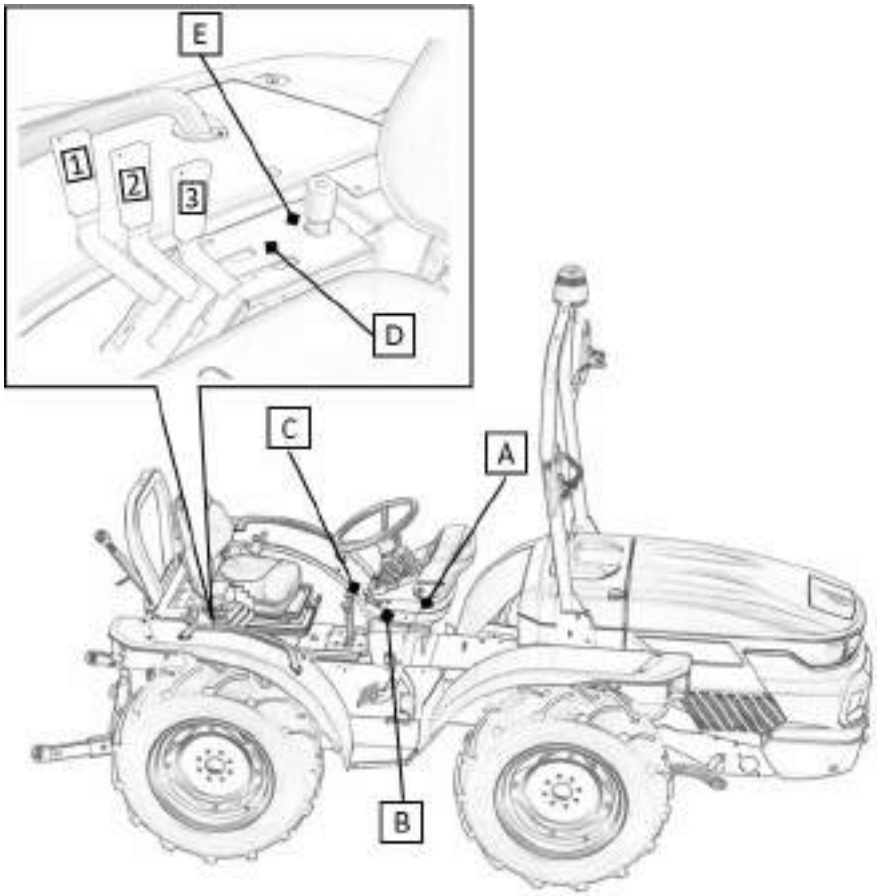
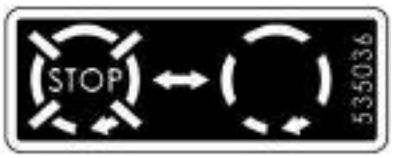
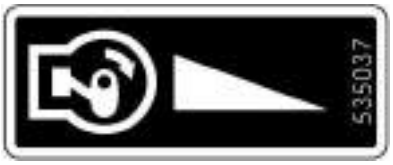


Fig. 46

No.	Position	Code	Meaning	Description	Image (sign)
A	On the console	535036	**Important**	Ignition key.	

No.	Position	Code	Meaning	Description	Image (sign)
B	On the console	535037	**Important**	Approximate representation of engine rpm according to the accelerator lever position.	
C	On the transmission between the seat and the steering wheel console.	535109	**Important**	**Left gear shift lever** - illustration of speed groups: turtle (intermediate), rabbit (fast), snail (slow). N means that the lever is in neutral.	
	On the transmission between the seat and the steering wheel console.	535108	**Important**	**Central gear shift lever** - illustration of driving direction, forward or reverse. N means that the lever is in neutral.	
	On the transmission between the seat and the steering wheel console.	535107	**Important**	**Right gear shift lever** - illustration of gears (1-4).	
D	On the protection of the control **(right side of the seat)**	535018	**Important**	**Control lever no. 1** (see Fig. 46) - controls the rear hydraulic lift mechanism.	
	On the protection of the control **(right side of the seat)**	535046	**Important**	**Control lever no. 2** (see Fig. 46) - controls the quick couplings marked with **green**.	

No.	Position	Code	Meaning	Description	Image (sign)
D	On the protection of the control **(right side of the seat)**	535047	**Important**	**Control lever no. 3** (see Fig. 46) - controls the quick couplings marked with **red.**	
E	On the protection of the control **(right side of the seat)**	535015	**Important**	Rotary knob (choke valve) - for damping the lowering of the rear hydraulic lift mechanism.	

Position of signs, **front left side view of the tractor**

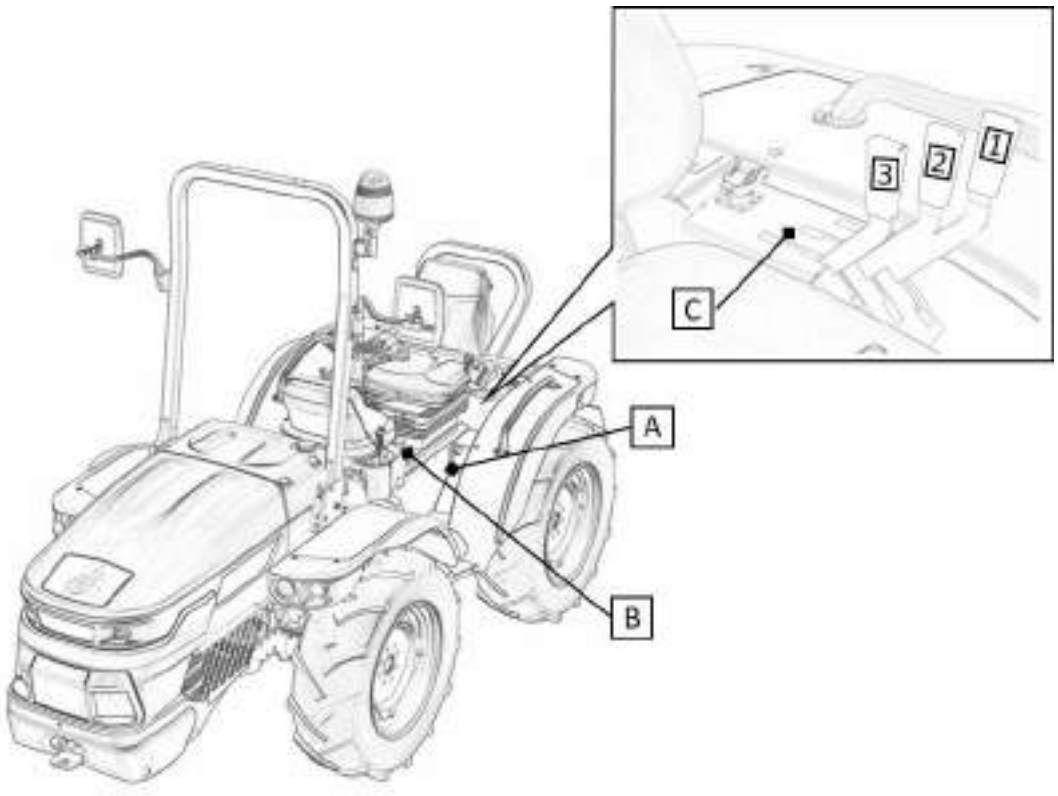
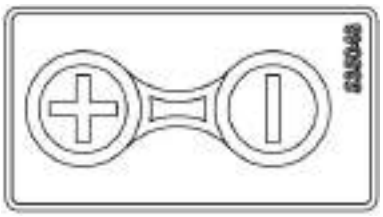
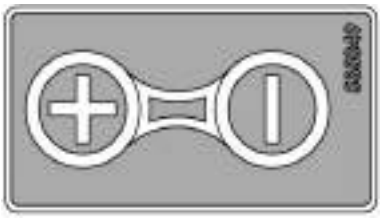


Fig. 47

No.	Position	Code	Meaning	Description	Image (sign)
A	On the left, next to the seat, at the bottom	535013	**Important**	For selecting the engagement method of the PTO drive shaft; as standard, though the engine or synchronized with the gearbox.	
B	On the seat mechanism, next to gear shift levers	535016	**Important**	Before rotating the seat, all gear shift levers must be set to neutral and the tractor must be safely stopped.	
C	On the protection of the control **(left side of the seat)** **ONLY AS OPTIONAL EQUIPMENT**	535020 or 535048	**Important**	**Control lever no. 1** (see Fig. 47) - It controls the front hydraulic lift mechanism. - in versions without the front hydraulic lift mechanism the lever is used to control the coupling marked with **yellow!**	 
	On the protection of the control **(left side of the seat)** **ONLY AS OPTIONAL EQUIPMENT**	535045	**Important**	**Control lever no. 2** (see Fig. 47) - It controls the quick couplings marked with **blue**.	
	On the protection of the control **(left side of the seat)** **ONLY AS OPTIONAL EQUIPMENT**	535049	**Important**	**Control lever no. 3** (see Fig. 47) - It controls the quick couplings marked with **orange**.	

Position of signs, **rear left side view of the tractor**

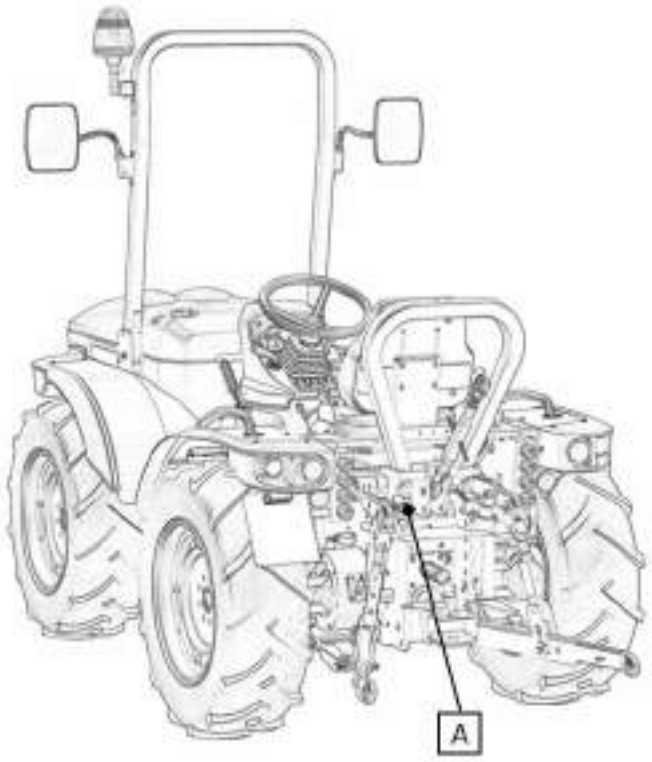


Fig. 48

No.	Position	Code	Meaning	Description	Image (sign)
A	Under the rear roll bar, next to the lever	535011	**Important**	Selection of the PTO drive shaft rpm	

4.8.2 TRACTOR CONSOLE

Illustration of devices installed on the console, which are described in detail on the following pages.

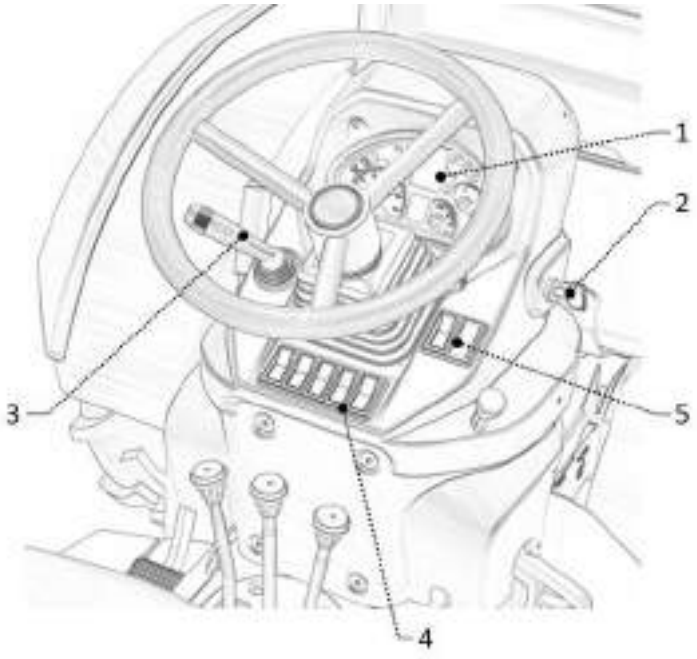


Fig. 49

1. **Dashboard**
2. **Ignition key**
3. **Multi-function lever,** it controls the lamps, the horn and direction indicators
4. **Switches**, for activating the operating functions
5. **Switches**, for activating the operating functions

4.8.2.1 DASHBOARD

The dashboard provides the required visual information to the driver of the tractor.
The instruments or gauges indicate the current state of tractor operation and the indicator lamps inform or alert to the general state of the tractor.

Fig. 50

1. **Tachometer**

It displays the number of engine revolutions in rpm. The total range of the tachometer scale is 30 x 100 revolutions.

2. **Fuel gauge**

The indicator on the gauge shows the remaining amount of fuel in the tank. When the indicator moves to the red area, it indicates that only the spare amount of fuel remains in the tank and the warning lamp on the gauge comes on.

	**WARNING:** Do not leave the engine running when the fuel tank is nearly empty. If the supply system is interrupted due to the lack of fuel, the injection circuit must be bled.

3. **Coolant temperature gauge**

The gauge indicates the engine coolant temperature in the range from 40 to 120 °C. The operating temperature of the tractor engine is 85 °C.
Overview of operating ranges:

- Blue zone - cold engine
- White zone - operating temperature of the engine
- Red zone - engine overheating

When cold starting the engine, the indicator is in the blue zone. In this case, do not overload the tractor and do not accelerate rapidly, but always allow the engine to reach the operating temperature (indicator in the white zone) before applying full load.
The engine overheating range is 100-120 °C.

	**WARNING:** If the indicator on the gauge moves to the red area (red zone), immediately unload the engine and leave it running in idle. When the temperature drops, shut down the engine and inspect the cooling system. In case of problems, consult the technical service!

4. Indicator lamps (meaning of symbols)

Symbol	Description	Signal type
	**General alarm:** This warning lamp indicates a malfunction.	Red LED lamp
	**Parking brake (activated)** This warning lamp flashes if the parking brake was not activated when the driver leaves the seat during tractor operation. Do not move off or drive the tractor when the parking brake is activated!	Red LED lamp
	**Engine oil pressure:** This warning lamp illuminates before the engine is started or when the ignition key is in position 1. The lamp turns off after the engine is started or during engine operation. If the warning lamp for the engine oil pressure turns on, immediately shut down the engine and check the oil level. If the oil level is below the ″min″ mark, add more oil. If the warning lamp is still on, it indicates that the engine oil pressure is too low. Immediately contact the technical service to resolve this problem.	Red LED lamp
	**Battery (voltage):** This warning lamp illuminates before the engine is started or when the ignition key is in position 1. The lamp turns off after the engine is started or during engine operation. If the warning lamp for battery voltage turns on after the engine is started or during engine operation, it indicates that the alternator is not charging the battery. Immediately shut down the engine, check the condition and tension of the alternator drive belt. If the belt is in good condition, the alternator may be faulty. Contact the technical service to resolve this problem.	Red LED lamp
	**Air filter blockage** If this warning lamp is on, the air filter is blocked. In this case you must clean or replace the air filter or filter inserts. The filter can be accessed by raising the engine cover; refer to the chapter “Tractor maintenance”.	Red LED lamp
	**Engine fault:** This warning lamp indicates a major engine fault; shut down the tractor's engine. Investigate the fault; a fault code may be displayed on the dashboard. Consult the technical service.	Red LED lamp
	**Engine fault:** This warning lamp indicates an engine fault. Investigate the fault; a fault code may be displayed on the dashboard. Consult the technical service.	Orange LED lamp

	**Exhaust gas:** This warning lamp turns on when the exhaust gas temperature is too high. This can be caused by the DPF filter blockage and may require filter regeneration.	Orange LED lamp
	**Glow plugs:** This indicator lamp illuminates before the engine is started or when the ignition key is in position 1. The indicator lamp is illuminated until the glow plug reaches the required temperature to ignite the fuel mixture (oil) in the engine cylinder. After this, the glow plug stops heating and the indicator lamp turns off. When the indicator lamp turns of, you may start the engine.	Orange LED lamp
	**Direction indicators:** When this indicator lamp is on, it indicates that left or right direction indicators are activated. They are used to indicate direction during driving. This indicator lamp also flashes when the hazard warning light switch is pressed, which also operates when the ignition is off.	Green LED lamp
	**Position lights:** When the indicator lamp is on, it indicates that position lights for dashboard illumination are activated.	Green LED lamp
	**Headlamps (low beam):** When this indicator lamp is on, it indicates that the front low-beam headlamps are activated.	Green LED lamp

5. Buttons

The buttons allow the user to adjust the functions on the dashboard.

A) The "UP" button selects the options in the menu by moving up the menu.

B) The "MENU" button allows you to access the menu screen with fault codes (only when the faults are active) and is also used to confirm changes or exiting the menu.

C) The "DOWN" button selects the options in the menu by moving down the menu.

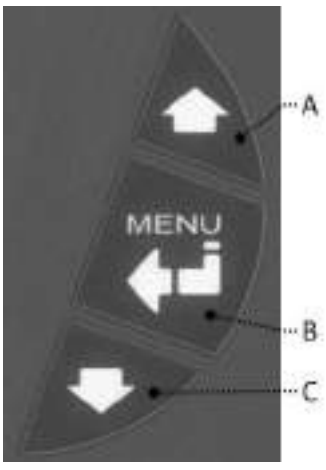


Fig. 51

6. Multifunction display

Display overview during normal tractor operation

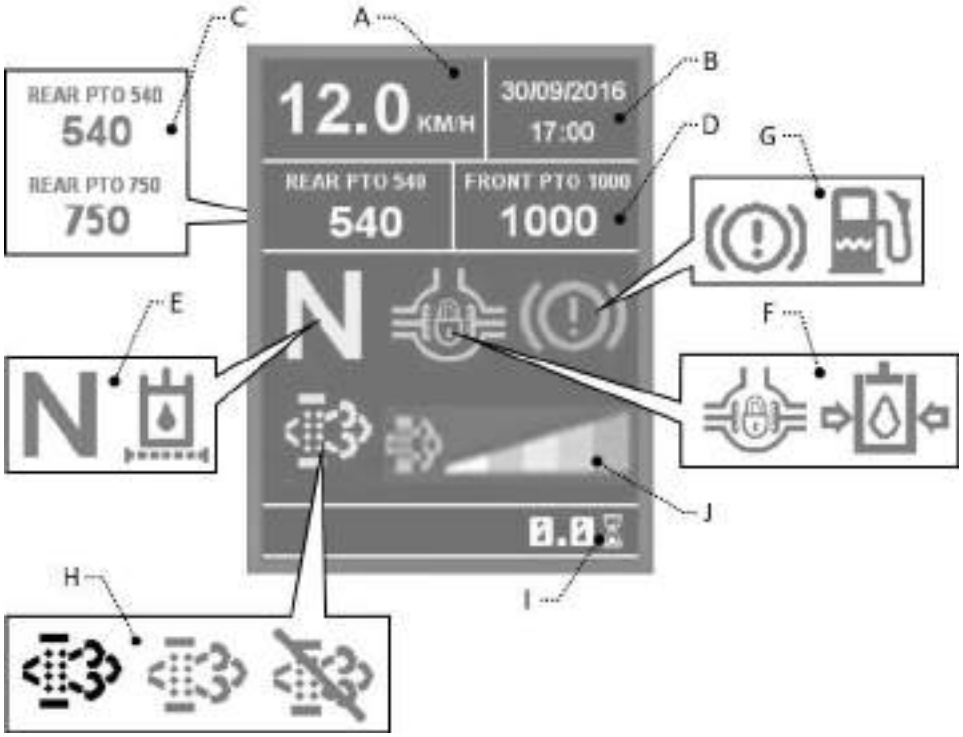


Fig. 52

A) Tractor speed, it indicates the current speed of the tractor.

B) Time and date, it indicates the exact time and date.

C) Rear PTO drive shaft revolutions, it indicates the number of revolutions of the rear PTO drive shaft when the PTO shaft is engaged. Using the mode selector lever, you can choose between two speeds: 540 or 750. The selected operation mode is displayed above the current speed value for the rear PTO drive shaft (see Fig. 52).

D) Front PTO drive shaft revolutions (optional equipment), it indicates the number of revolutions of the PTO drive shaft when the PTO shaft is engaged.

E) Field, it displays the following functions:

- **Neutral gear**, when the driving direction selector lever (inverter) is in neutral position;
- **Hydraulic oil filter**, this warning lamp turns on when the hydraulic oil filter is blocked; replace the filter - refer to the chapter “Tractor maintenance”.

F) Field, it displays the following functions:

- **Differential lock**, this lamp indicates that differential lock is activated;
- **Hydraulic oil pressure**, this warning lamp indicates that the oil pressure in the hydraulic system is low. Check the hydraulic oil level or consult the technical service.

G) Field, it displays the following functions:

- **Brakes**, this warning lamp turns on when the brake fluid level is below minimum; refill the brake fluid and check the braking system for leaks.
- **Fuel filter**, this warning lamp comes on due to the presence of water or condensate in the fuel system; replace the fuel filter.

H) Field, it indicates the condition of the DPF filter:

- **DPF filter regeneration, yellow LED**, this warning lamp turns on then regeneration is required. If filter regeneration setting was not change, it is automatically performed.
- **DPF filter regeneration, yellow LED crossed-out**, the user forced the filter regeneration to stop.
- **DPF filter regeneration, blue LED**, the user carried out a forced filter regeneration.

The user can select the settings for filter regeneration; see the description below.

I) The operating hours counter displays the number of operating hours of the tractor; the hours are only counted when the engine is running.

J) Condition of the DPF filter, the scale represents the blockage levels of the DPF filter; regeneration is required and carried out when the yellow area or higher is reached.
The tractor has five levels of DPF filter blockage, which are displayed in sequential order and described below.

The colour scale of DPF filter blockage

1 – white
2 – yellow
3 – orange
4 – red

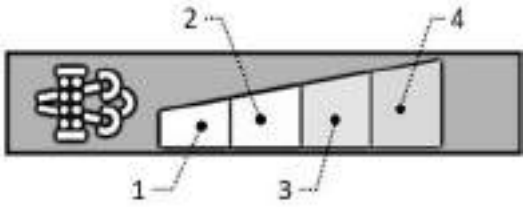


Fig. 53

Level	Scale	Warning sign	Description
"Level 0" regeneration not required	No display, the DPF filter clogging level is less than 30%.	No warning signs	• The engine is running at full power (100%). • Regeneration can be forcibly stopped by the user.
"Level 1" regeneration not required	 The DPF filter clogging level is between 30% and 80%	No warning signs	• The engine is running at full power (100%); • Regeneration can be forcibly stopped by the user.
"Level 2" automatic regeneration	 The DPF filter clogging level is 85%	 May be on	• The engine is running at full power (100%); • The filter regeneration is automatic if the operating conditions are met; • Regeneration can be forcibly stopped by the user.

Level	Scale	Warning sign	Description
"Level 3" forced regeneration required	 The DPF filter clogging level is 95%	 Illuminated	• The engine is running at full power (100%); • Forced shut-down by the user is not possible. • Automatic regeneration is not possible, even if the operating conditions are met. • Forced regeneration is required.
"Level 4" emergency forced regeneration required	 The DPF filter clogging lever is 105%	 Flashes  Flashes  Illuminated	• The engine torque is reduced, the engine performance is reduced to 75% of its capacity because no regeneration was performed at level 3; • Forced shut-down by the user is not possible. • Automatic regeneration is not possible, even if the operating conditions are met. • Emergency forced regeneration is required.
»Level 5« regeneration not possible	 The DPF filter clogging level is higher than 115%.	 Flashes  Flashes  Flashes	• The engine power is significantly reduced, the engine performance s reduced to 50% of its capacity because no regeneration was performed at level 4. The tractor cannot be operated. • Forced regeneration by the user cannot be performed. • Forced shut-down by the user is not possible. • Automatic regeneration is not possible, even if the operating conditions are met. • The filter regeneration can only be performed by a service technician. **Call an authorized service centre as soon as possible to avoid serious damage to the tractor engine!**

	**WARNING:** DPF filter regeneration increases the temperature of the exhaust gas and the filter, which is why you must use caution to avoid the risk of fire!

	**WARNING:** Do not leave the tractor unattended during a DPF filter regeneration, even when the tractor has been safely stopped.

4.8.2.2 USER MENU

Description of functions which can be adjusted by the user.

1. **Date and time setting**

Before adjusting this setting, the tractor must be immobilized and safely stopped, with a zero speed on the gauge.

To adjust the clock:

- Press the button and hold for 4 seconds; the time and date menu is displayed.
- Adjust the time by using the buttons and .
- Press to confirm.
- Adjust the minutes by using the buttons and .
- Press to confirm.

Fig. 54

To adjust the date (continued):

- Adjust the day by using the buttons and .
- Press to confirm.
- Adjust the month by using the buttons and .
- Press to confirm.
- Adjust the year by using the buttons and .
- Press to confirm.

Fig. 55

The adjustment is finished. The menu closes and the home screen is displayed.

2. **Setting the forced regeneration of the DPF particulate filter**

Before adjusting the regeneration mode setting, the tractor must be immobilized and safely stopped. Make sure the following conditions are met, otherwise you will not be able to perform this setting.

- To enable the forced regeneration setting, the filter clogging level must reach the level 3 or higher.
- The tractor's engine must be running at idle speed.
- The driving direction lever (inverter) must be in neutral.
- The parking brake must be engaged.
- The PTO drive shaft must be disengaged.
- The water temperature must be at least 65°C or higher.

Forced regeneration can be manually started when the DPF filter blockage reaches level 3 (recommended). This is required when it reaches level 4, with the warning sign illuminated, to prevent further blockage and the resulting engine damage.

Forced regeneration setting:

- Press and hold the button for 4 seconds.
- The DPF regeneration is forcibly started, the blue LED turns on.
- Release the button.
- Wait until the process is completed, which is indicated by the blue LED turning off.

Fig. 56

	IMPORTANT: If you hold the button and the conditions for forced regeneration have not been fulfilled, the blue LED will start flashing rapidly, with an interval "on for 0.5 second and off for 0.5 second).

	IMPORTANT: During the regeneration process, DO NOT shut down the tractor's engine and DO NOT increase the engine rpm! The forced regeneration process is interrupted immediately when the user de-activates any condition required for activation!

	WARNING: Forced regeneration can only be performed when the tractor is immobilized, parked outdoors, away from people or other objects. Be aware of high temperatures and the risk of fire!

3. Regeneration prohibition setting

- Press and hold the button for 4 seconds.
- DPF regeneration is turned off, the yellow LED turns on.
- Release the button.
- To cancel the regeneration prohibition, press and hold the button for 4 seconds.
- The yellow LED turns off and regeneration switches to automatic mode.
- Release the button.

Fig. 57

	IMPORTANT: DPF filter regeneration can only be forcibly turned off until the next time the engine is stopped. Each time the engine is started, this setting switches to automatic mode!

	IMPORTANT: Automatic regeneration is performed when the filter blockage reaches 80 or 90%, at the minimum water temperature 65°C or higher and the engine rpm range higher than idle.

	WARNING: Regeneration can only be forcibly turned off when the resulting high temperatures of exhaust gas could endanger other people or property.

4. Fault menu display

If the general alarm sign starts flashing on the dashboard (refer to the table in the chapter "Indicator lamps"), an engine malfunction has occurred. To determine the malfunction type, a special menu of stored faults is provided, which helps the user to read and communicate the code to the technical service.

To display the fault menu, proceed as follows:

- Press the button  .
- Navigate through the fault codes using the button  and  .
- Press  to exit the menu.

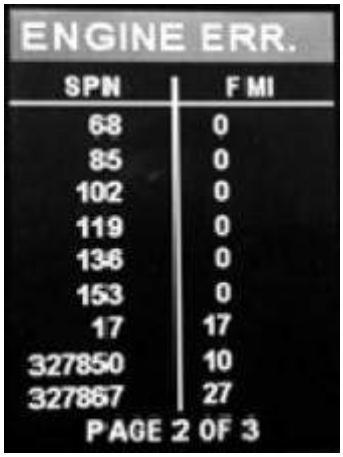


Fig. 58

The meaning of abbreviations in the fault menu; both fault identifiers must be provided to the technical service:

SPN – Code marking
FMI – Fault meaning

	IMPORTANT: The fault menu can only be accessed in the presence of active faults. If there are no faults on the tractor, the menu will not be displayed even when pressing the button!

4.8.2.3 IGNITION KEY

It is used to activate the electrical system and start the tractor's engine. The key can be turned to the following positions:

P – The parking lamps turn on. Push the key into the lock and turn it to the left. When in this position, the key can be removed from the lock.

0 – The electrical system is off; you can remove the key.

1 – The electrical system is on, the dashboard illuminates, all the conditions for starting the engine are fulfilled, preheating of glow plugs is activated.

2 – The engine is started, hold the key in this position until the engine is started. When the key is released, it will automatically return to position 1.

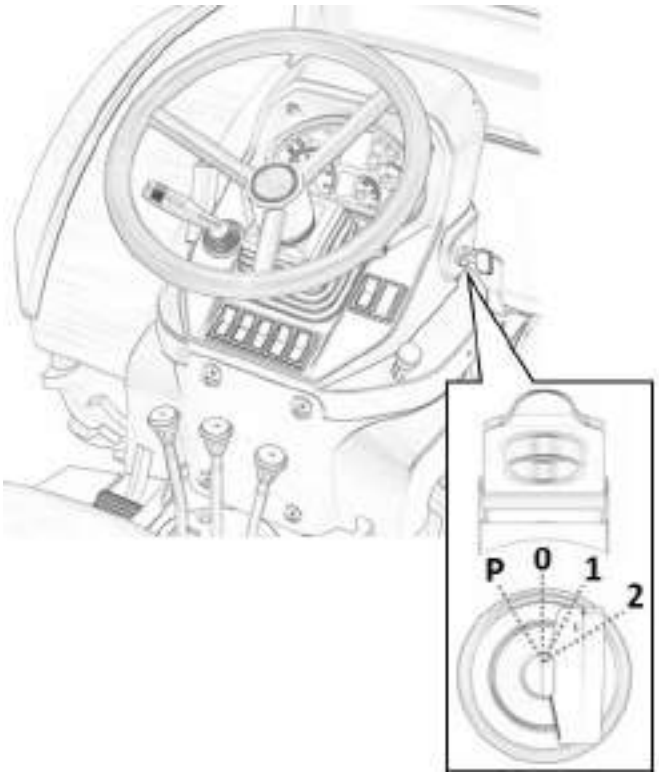


Fig. 59

	**WARNING:** When the key is in the position P, the parking lights turn on. Do not leave the key in this position for a long time, because you can discharge the battery and tractor start up, will not be possible!

4.8.2.4 MULTIFUNCTION LEVER

It is used to activate the following functions:

1 – Rotating button on the lever in position 1, all the lamps are turned off.

2 – Rotating button on the lever in position 2, the parking lamps are turned on.

3 – Rotating button on the lever in position 3, the low beam headlamps are turned on.

4 – Lever in position 4, the right direction indicators are turned on.

5 – Lever in position 5, the left direction indicators are turned on.

6 – Lever in position 6, pressing the rotary knob activates the horn.

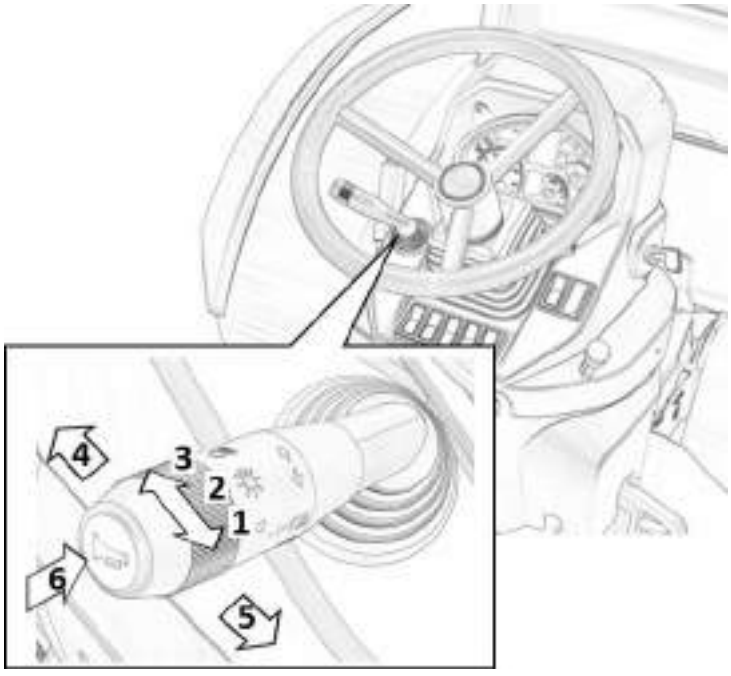


Fig. 60

4.8.2.5 SWITCHES FOR ACTIVATING THE OPERATING FUNCTIONS

These switches are located under the steering wheel and are used to activate the following functions.

- Switch in position 0, the function is off (the indicator lamp in the switch is off).
- Switch in position 1, the function is on (the indicator lamp in the switch is on).

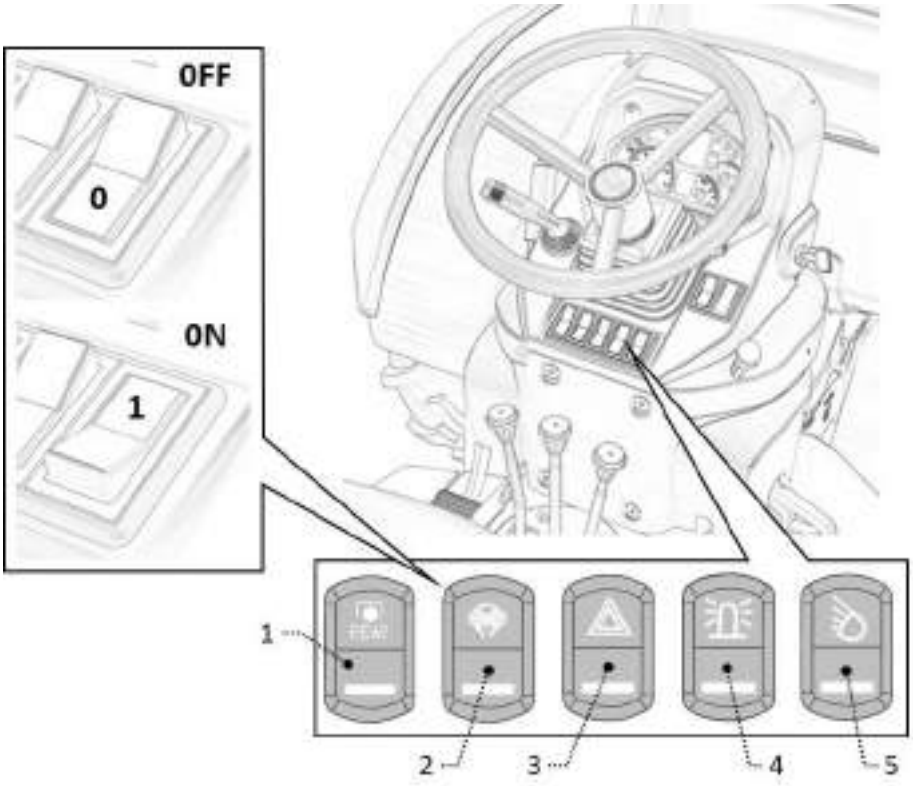


Fig. 61

1. **The rear PTO drive shaft,** pressing the switch activates the rear PTO drive shaft, the indicator lamp in the switch turns on.

	**IMPORTANT:** For safety reasons, if the operator leaves the driver's seat when the PTO drive shaft is engaged, the drive shaft will disengage after 7 seconds. The PTO drive shaft can be re-engaged through external switches on the fenders; the procedure is described in the following pages!

2. **Differential lock,** pressing the switch activates the differential lock, the indicator lamp in the button turns on.

3. **Hazard warning lights,** pressing the switch activates the warning signal; all four direction indicators start blinking and the warning lamp in the button is flashing. This function is also enabled when the tractor is turned off, with the ignition key in position 1.

4. **Rotating lamp,** pressing the switch activates the rotating lamp.

5. **Working lamp,** pressing the switch activates the working lamps on the tractor.

	**IMPORTANT:** The switch on the console must be activated in order to use the additional switch for controlling the working lamps.

4.8.2.6 SWITCHES FOR ACTIVATING THE OPERATING FUNCTIONS

These switches are located on the right side of the steering wheel and are used to activate the following functions.

- Switch in position 0, the function is off (the indicator lamp in the switch is off).
- Switch in position 1, the function is on (the indicator lamp in the switch is on).

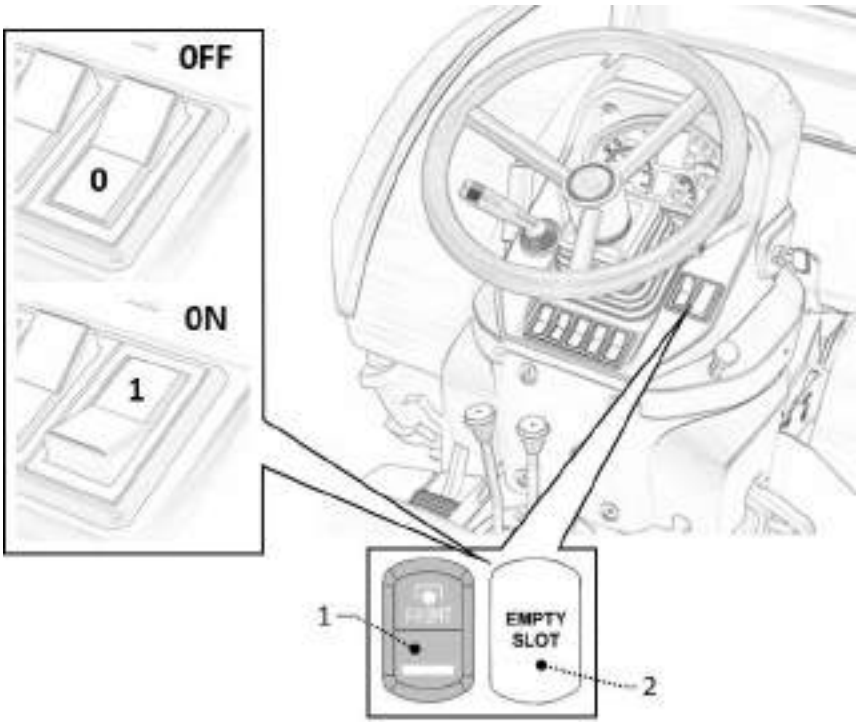


Fig. 62

1. **The front PTO drive shaft (optional equipment),** pressing the switch activates the front PTO drive shaft, the indicator lamp in the switch turns on.

	IMPORTANT: For safety reasons, if the operator leaves the driver's seat when the PTO drive shaft is engaged, the drive shaft will disengage after 7 seconds. The PTO drive shaft can be re-engaged through external switches on the fenders; the procedure is described in the following pages!

	IMPORTANT: The front PTO drive shaft CANNOT be used with the current engine version, not even as optional equipment!

2. **Unoccupied position (cover),** it provides space for installing an additional switch, as required by the user.

4.8.3 DRIVING CONTROLS

All driving controls required by the user for driving are described below.

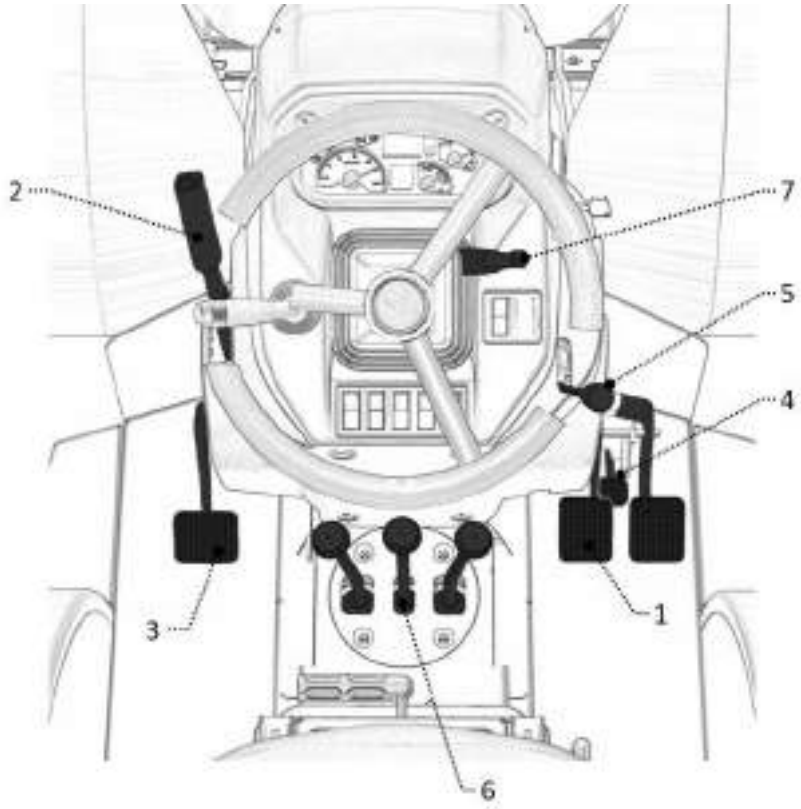


Fig. 63

1. **Foot brake,** when driving, it is used to reduce the speed or stop the tractor.
2. **Parking brake,** it is used to block the tractor in place; comply with the rule “stop the tractor when conditions are safe”.
3. **Clutch,** it is used when moving the gear shift levers to select the tractor's speed.
4. **Accelerator pedal,** for adjusting the tractor's driving speed by foot.
5. **Accelerator lever,** for manual adjustment of the constant speed of engine revolutions.
6. **Control levers,** for selecting the speed groups, driving direction and gearbox gears.
7. **Steering wheel lever,** for adjusting the inclination of the steering wheel.

4.8.3.1 FOOT BRAKE

Each drive shaft in the rear part of the transmission assembly has four hydraulic disc brakes in an oil bath, which can be activated with two independent brake pedals, through a separate hydraulic braking system.

1. **Brake pedal,** for braking the rear left wheel.
2. **Brake pedal,** for braking the rear right wheel.
3. **Safety latch,** for connecting the two pedals. When the safety latch is locked, the tractor braking capacity is distributed to all four wheels. When the pedals are disconnected, they enable independent braking of the rear left wheel or the rear right wheel.

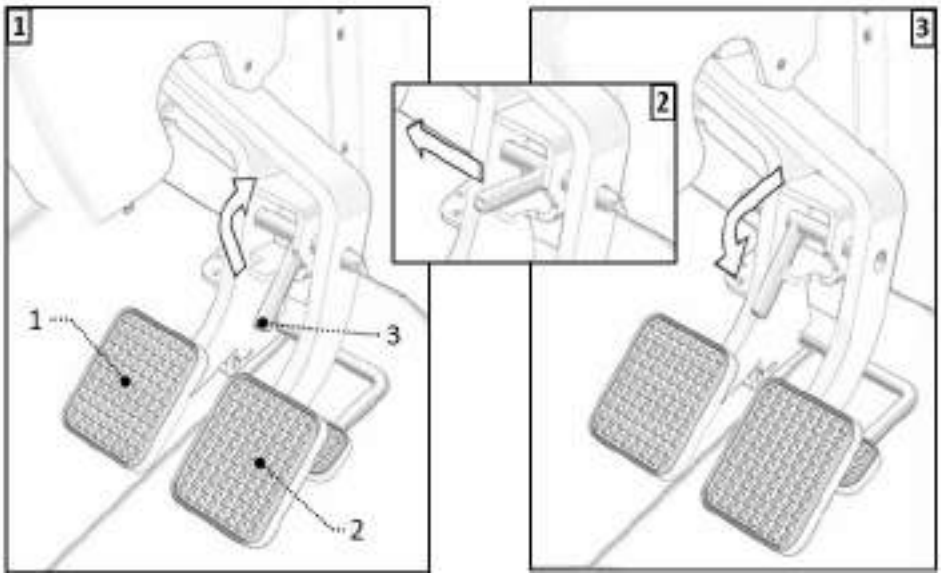


Fig. 64

To disconnect the brake pedals, follow the procedure shown in the figure Fig. 64. Pull the safety latch upwards (figure 1), then move it to the left (figure 2) and insert it back into the groove (figure 3). The pedals are now disconnected; to connect the pedals, repeat the procedure in reverse order.
When the seat is turned, the brake pedals are pushed upwards and must be connected during this procedure!

	**WARNING:** The pedals can only be disconnected when working with the tractor. When driving on public roads, always make sure that the brake pedals are connected!

	**WARNING:** When driving the tractor uphill, the brake pedals must always be connected! The pedals must also be connected if the seat is reversed.

4.8.3.2 PARKING BRAKE

The parking brake is activated with a lever and it is completely independent of the working brakes. It is designed to block the wheels when the tractor is not moving, when operating in idle or when the tractor is completely stopped.

For safety reasons, when the tractor is stopped and the user leaves the driver's seat without activating the parking brake, a beeper sounds after 2 seconds and the parking brake lamp on the dashboard starts to flash (see 65). Activate the parking brake.

Fig. 65

	**WARNING:** Never leave the driver's seat when driving the tractor!

4.8.3.3 CLUTCH

The clutch is used to control the tractor when driving off and shifting gears. The clutch is controlled by means of the pedal installed on the left side of the driver's seat.
When the seat is turned, the clutch pedal is pushed upwards; refer to the chapter “Turning the seat”.

	**IMPORTANT:** When driving off from a complete stop, release the clutch gently and slowly apply the throttle to prevent sudden movement!

4.8.3.4 ACCELERATOR PEDAL

The accelerator pedal is used to change the speed of the tractor and to increase or decrease the number of engine revolutions.
When turning the seat, the accelerator pedal is pushed upwards; refer to the chapter “Turning the seat”.

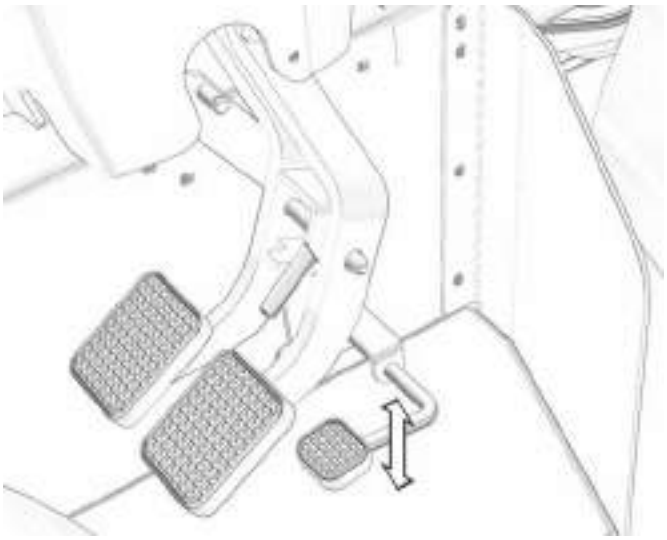


Fig. 66

4.8.3.5 ACCELERATOR LEVER

By moving the accelerator lever up and down, the number of engine revolutions can be adjusted as desired. When the position of the accelerator lever is fixed, the driver can maintain a constant number of engine revolutions on the tractor.

There is a scale gauge mounted under the lever, displaying the approximate value of the tractor’s engine load. The higher the area of the throttle on the scale, the higher the engine revolutions and the load on the engine and vice-versa.

If the lever is positioned at a particular point, with a constant number of revolutions, and then the number of revolutions is increased by depressing the accelerator pedal, the number of revolutions will increase as long as the pedal is depressed. When the accelerator pedal is released, the number of engine revolutions drop to the initial position adjusted with the accelerator pedal.

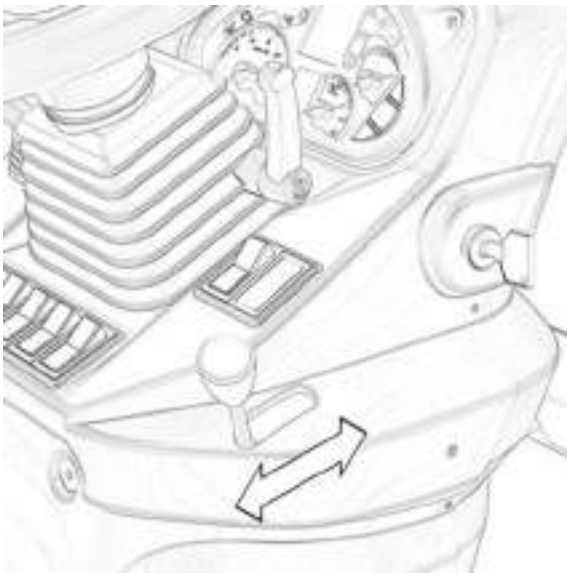


Fig. 67

4.8.3.6 CONTROL LEVERS

1. **Speed group adjustment lever (reduction gear)**

- The ″rabbit″ position activates the fast transmission level.
- The ″turtle″ position activates the intermediate transmission level.
- The ″snail″ position activates the slow transmission level.

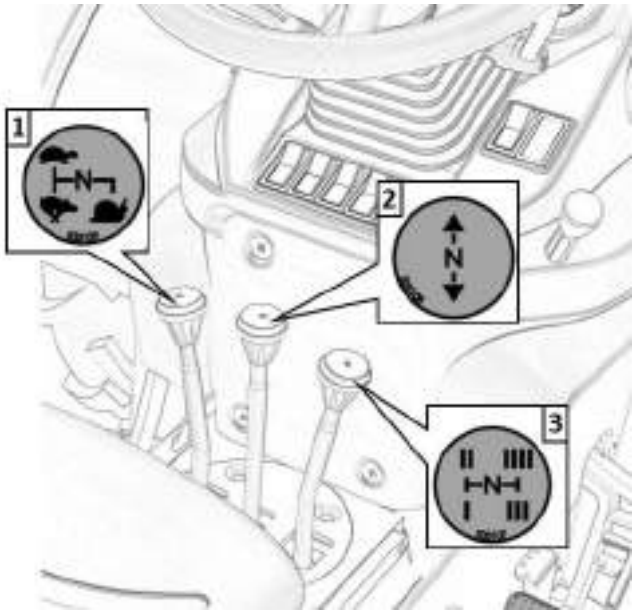


Fig. 68

2. **Driving direction lever (inverter)**

This lever is used to change the driving direction of the tractor to forward or reverse.

- The ″forward arrow″ position activates the forward movement direction of the tractor.
- The ″backward arrow″ position activates the reverse movement direction of the tractor.

3. **Gear shift lever**

The numbers (1-4) indicate the transmission levels in the gearbox or tractors speeds, with the level 1 meaning the lowest driving speed and the level 4 the highest.

4.8.3.7 STEERING WHEEL ADJUSTMENT LEVER

This lever is used to adjust the tilt angle of the steering wheel to achieve the best possible ergonomics for the driver.

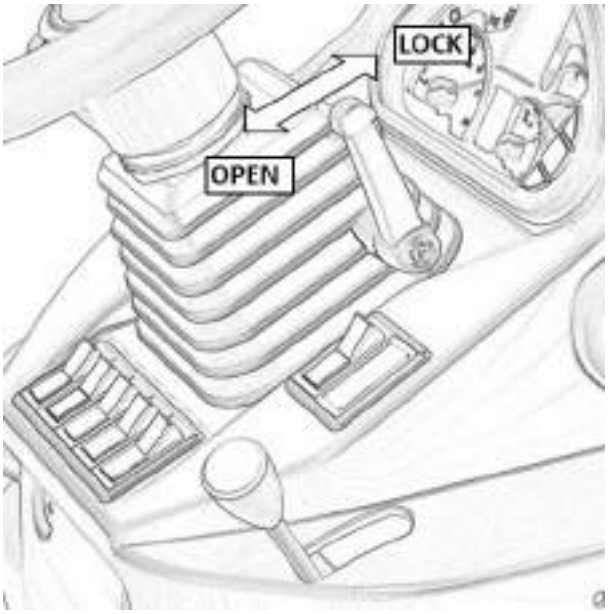


Fig. 69

4.8.4 OPERATING CONTROLS (PTO DRIVE SHAFT)

The figure below illustrates all controls related to the operation of the PTO drive shaft. The data regarding the rotation speed of the drive shaft are provided in the chapter "Technical data – PTO drive shaft".

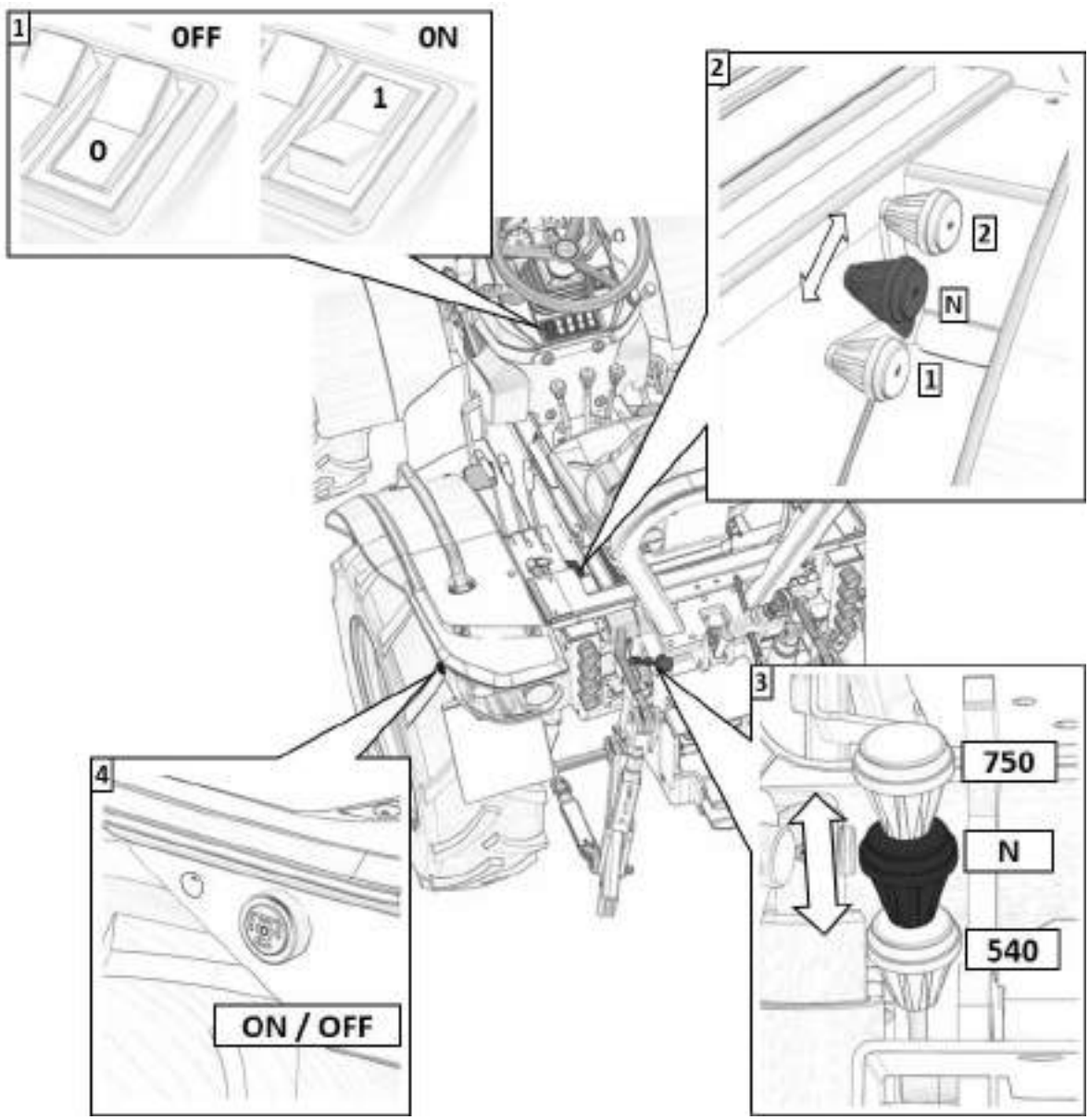


Fig. 70

1. **The rear PTO drive shaft switch**

The switch is located on the console and is used to engage and disengage the rear PTO drive shaft. The shaft can only be engaged if all the other operating controls (levers) are functional.

2. **The power take-off shaft lever** allows for the selection of the drive mode for the PTO drive shaft.

Use the lever to choose between two positions:

- "Position N" – The lever is in neutral position, the PTO drive shaft is disengaged.
- "Position 1" – The standard method of PTO drive shaft connection, directly to the engine; move the lever downwards. The PTO drive shaft rotates independently, at the number of engine revolutions (constant rotation to the right).

- "Position 2" – The synchronized method of PTO drive shaft connection to the gearbox; move the lever upwards. The PTO drive shaft rotates in relation to the gearbox ratio; depending on the driving direction, it rotates to the left or to the right. When connected to the gearbox, the PTO drive shaft can only be engaged when the tractor is moving!

3. **Lever for selecting the PTO drive shaft rpm**

Use the lever to choose between two rpm levels:

- "The upper position 750" – The PTO drive shaft rotates at 750 rpm.
- "Central position N" – The lever is in neutral position, the PTO drive shaft is disengaged.
- "The lower position 540" – The PTO drive shaft rotates at 540 rpm.

	**IMPORTANT:** Move the levers before operating the tractor of stop the tractor when the conditions are safe, shut down the engine and perform this action. Only activate the switch in the end, when the tractor's engine is already running!

	**WARNING:** When the PTO drive shaft is not used, the levers must always be in neutral position and the switch must be deactivated.

4. **The rear PTO drive shaft switch**, an external switch, located at the rear part of the fender on the lamp housing, which is used to engage the PTO drive shaft when the operator leaves the driver's seat to control the implement-related operations.
   The switch operates as an ON/OFF switch, with a special safety system for the engagement of the PTO drive shaft, as described in the chapter "Engaging the PTO drive shaft".

4.8.5 HYDRAULIC CONTROLS

The system is controlled by means of a control unit with control levers, which are used to direct the oil flow from the tractor's pressure circuit and into hydraulic outputs of internal and external hydraulic consumers.
As standard, the tractors are equipped with a control device with three control levers located on the right-hand side. If the tractor is optionally fitted with the front hydraulic lift mechanism, an additional control device with three control levers on the left-hand side is installed.

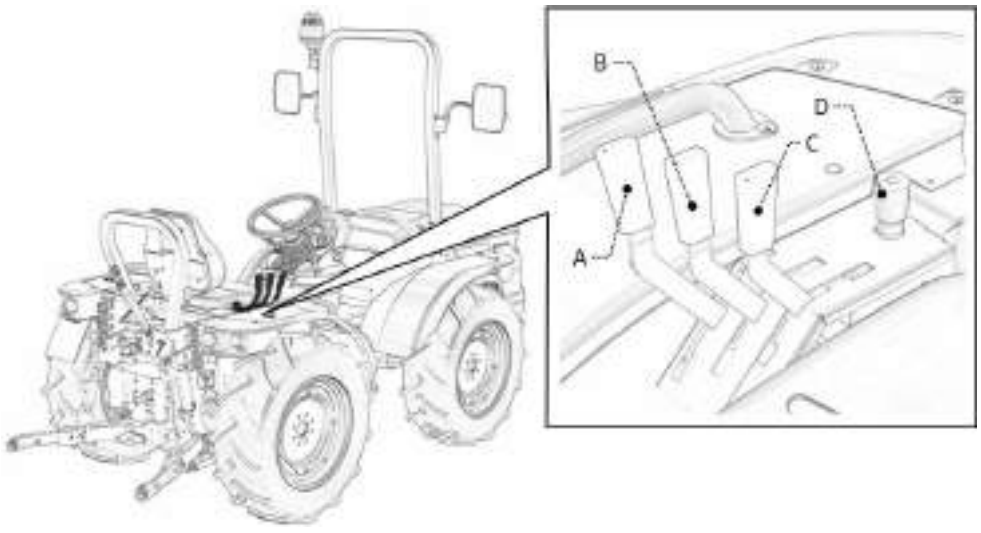


Fig. 71

Each lever is used to control a particular function through a control valve installed in the control device.

Below is the description of functions attributed to control levers for the standard hydraulic system, see Fig. 71:

A. Lever, for controlling the front hydraulic lift mechanism.
B. Lever, for controlling the hydraulic system through a quick coupling.
C. Lever, for controlling the hydraulic system through a quick coupling or controlling the rear hydraulic lift mechanism by means of double-acting hydraulic cylinders, which can be installed as optional equipment.
D. Rotary knob, for damping the lowering of the rear hydraulic lift mechanism.

	**WARNING:** If a heavier implement is used, remember that the oil permeability through the control can be 8 cm³/min. When transporting heavier loads, the rotary knob D must be fully closed!

4.8.5.1 THE REAR HYDRAULIC LIFT MECHANISM CONTROL

The control lever A (see Fig. 71) directs the oil from the pressure circuit, which is directly supplied to both single-acting hydraulic cylinders at the same time by means of a control valve in the control device, to control the rear hydraulic mechanism.

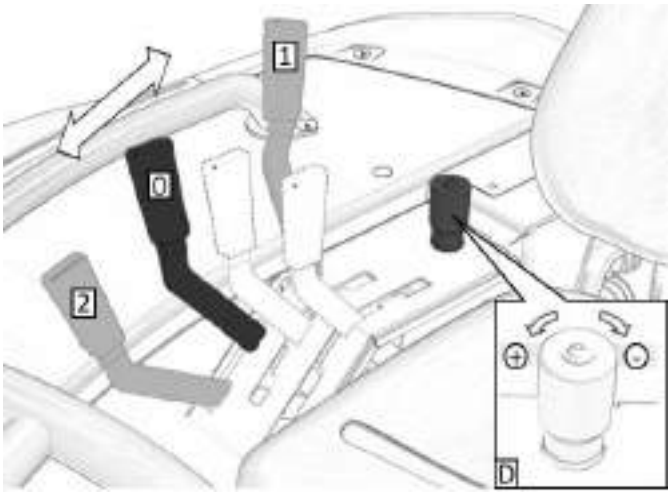


Fig. 72

The control lever has three positions:

- "Position 0", neutral position of the lever, the lift mechanism remains in position.
- "Position 1", the oil under pressure is supplied, the rear hydraulic mechanism is raised. When the lever on the control device is released, it returns to neutral position 0 and the rear hydraulic mechanism remains in the raised position.
- "Position 2", the oil is discharged, the rear hydraulic mechanism is lowered. As the lever is blocked inside its guide, it will remain in position 2, which is why it must always be manually moved to position 0 in order to stop the lowering of the lift mechanism.

  If the control lever remains in position 2 when the lift mechanism is completely lowered, the operator can use the float position option which means that the implement attached to the tractor will automatically adapt to the ground.

Rotary knob D (see Fig. 71), use the knob to adjust the oil flow rate, which is supplied to the rear hydraulic lift mechanism. It dampens the lowering movement:

- when the knob is rotated to the right (clockwise direction) the oil flow is closed;
- when the knob is rotated to the left (anti-clockwise direction) the oil flow is opened.

This function is only suitable when using heavy implements, to prevent sudden lowering and the resulting tractor instability.

	**IMPORTANT:** If the rotary knob for damping is closed all the way, the hydraulic lift mechanism is blocked and cannot be lowered, even with the control lever in position 2. The mechanism can still be lifted by the user.

4.8.5.2 HYDRAULIC SYSTEM CONTROL THROUGH QUICK COUPLINGS

Control lever B - Control lever C

Each control lever directs the oil from the pressure circuit, by means of a control valve in the control device, through two hydraulic connections or quick couplings for controlling the external implements equipped with a hydraulic system and a double-acting hydraulic cylinder. It is also possible to connect external implements equipped with a hydraulic system and a single-acting hydraulic cylinder; e.g. implements with a hydraulic tilt system, such as tipping trailers etc.

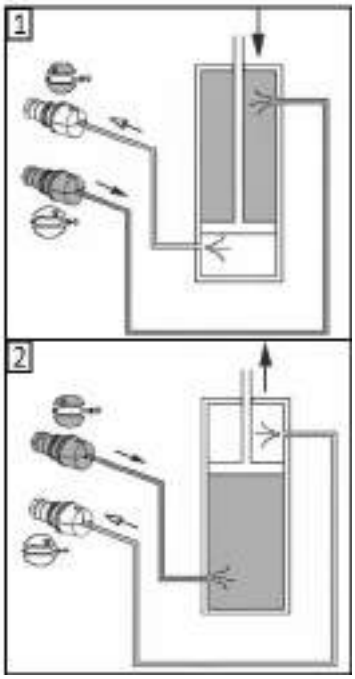


Fig. 73

Description of hydraulic system operation by means of quick couplings connected to a double-acting hydraulic system.

Each control lever has four positions:

- "Position 0", neutral position of the lever, the connections are not supplied with oil, the tractor implement is not activated.
- "Position 1", the oil under pressure is supplied, the tractor implement is activated.
- "Position 2", the oil under pressure is supplied, the tractor implement is activated and operates in the opposite direction from position 1 of the lever.
- "Position 3", the oil flow under pressure is released, the tractor implement is activated in the float position.

When the lever is in position 1 and 2, it is blocked inside its guide and must be moved to position 0 manually in order to stop its operation.
Move the lever to position 3 along the guide groove in the sheet metal housing where it will be blocked. To interrupt the operation, the lever must always be manually moved to position 0.

	IMPORTANT: Immediately move the control lever from position 3 to position 0, otherwise the implement may hit the ground or the tractor may be lifted and become unstable.

Description of hydraulic system operation by means of connecting to a single-acting hydraulic system. Only one connection is used.

- If the lever is moved to position 1 or 2, depending on the coupling connection, the oil under pressure is supplied to the single-acting cylinder on the connection and the hydraulic cylinder starts lifting. When released, the lever will not automatically return to neutral position 0; this must be done manually. The hydraulic cylinder remains in the desired lift position.

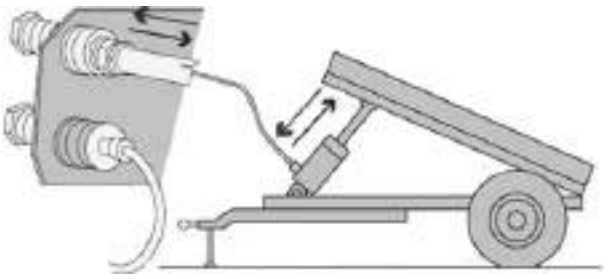


Fig. 74

- If the lever is moved down along the groove to position 3, the oil flow from the single-acting hydraulic cylinder is released back into the tractor's hydraulic system. By means of an external acting force or an integrated spring, the cylinder on the connection begins to lower (depending on the version). If the control lever is returned to position 2, the lowering operation of hydraulic cylinder on the connection is stopped.

The control lever B is used to activate the **green hydraulic connection.**

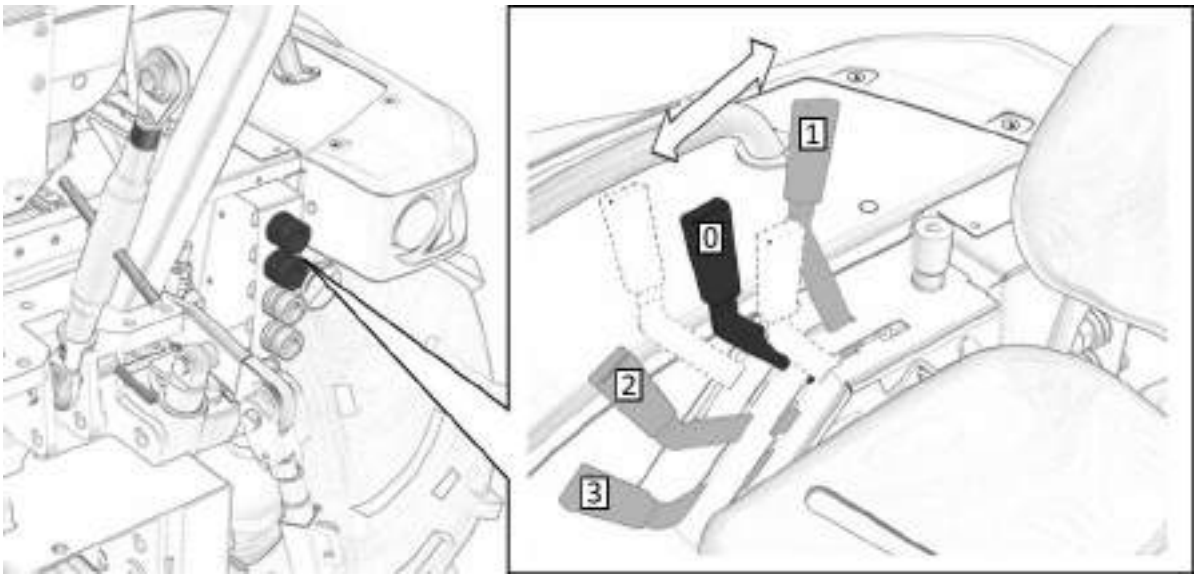


Fig. 75

The control lever C is used to activate the **red hydraulic connection.**

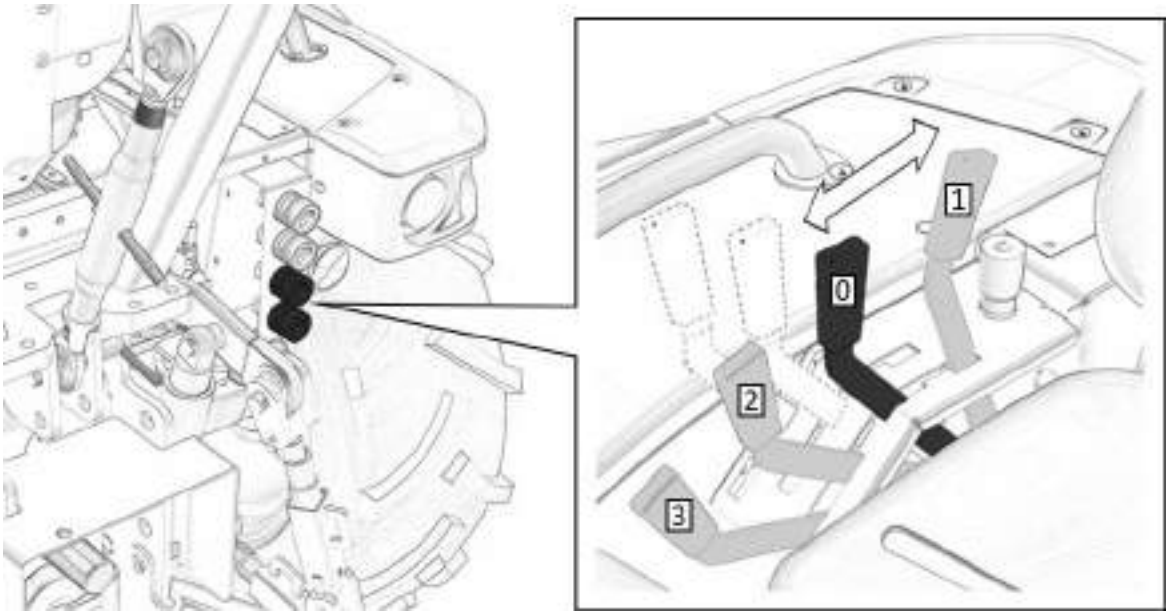


Fig. 76

	**IMPORTANT:** When the hydraulic system or hydraulic connections are not in use, the levers should always be moved into neutral position!

4.8.6 CAB CONTROLS

These controls are located on the roof of the upper part of the cab. The ventilation device installed above the roof supplies fresh air into the cab through the lateral filters and provides the option of air heating. The settings for air supply and other functions can be adjusted by the driver or the operator, by using the controls described below.

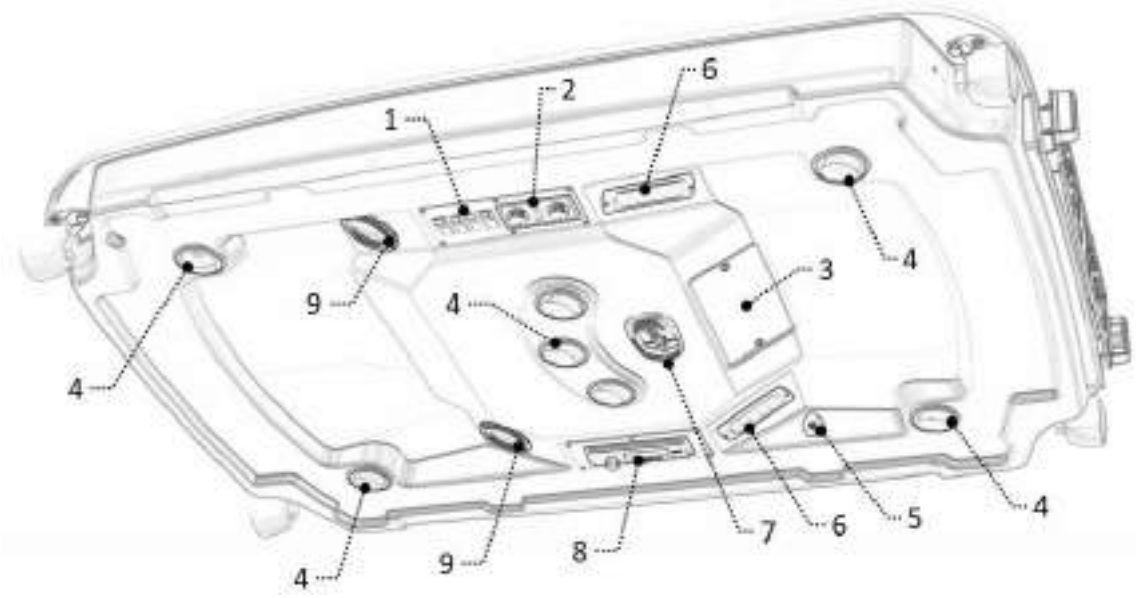


Fig. 77

1. **Switches** for activating and deactivating the functions described below.

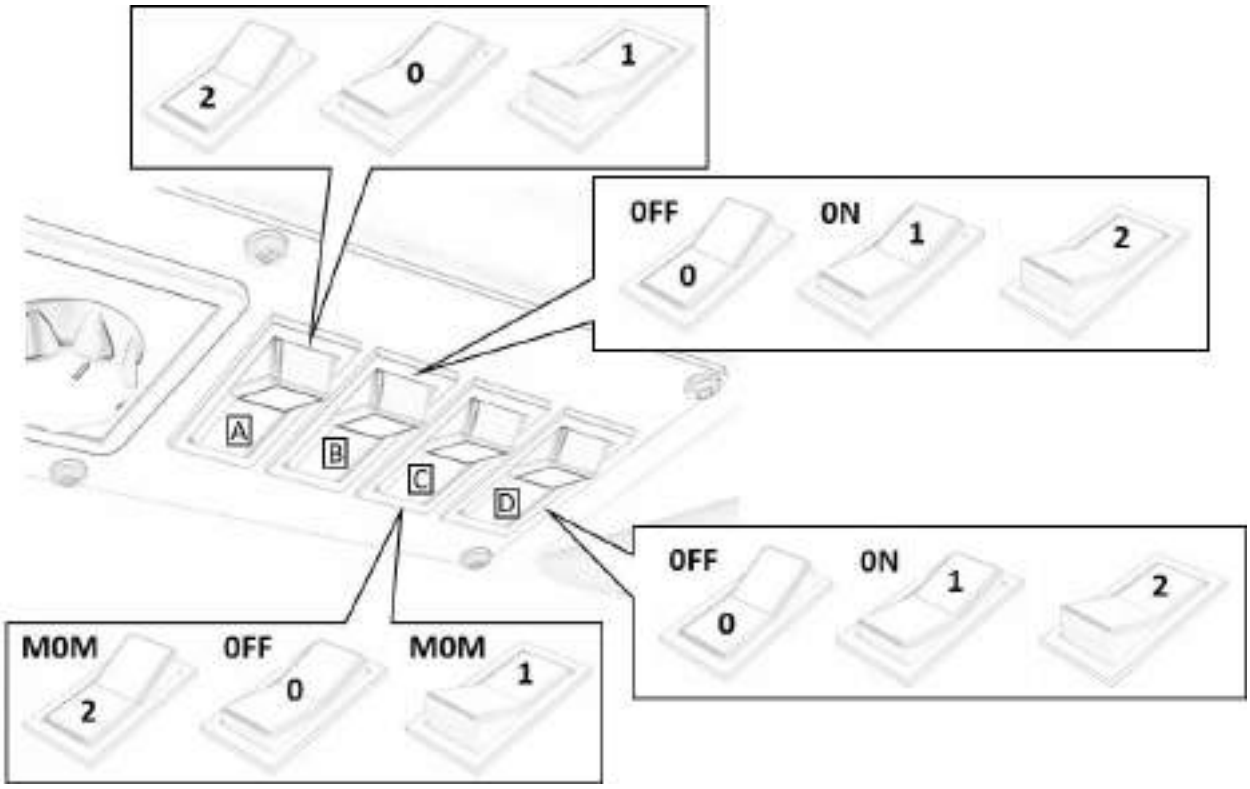


Fig. 78

A) Switch, for controlling the work lights on the cab, the main on/off switch is located on the console, see the section "Switches for turning on the work functions".

- **Position 0,** all four work lights are on;
- **Position 1,** the front work lights are on;
- **Position 2,** the rear work lights are on.

B) Switch, used to activate the rear windscreen wiper.

- **Position 0,** the function is off, the wiper is off;
- **Position 1,** the function is activated, the wiper operates at the speed level 1;
- **Position 2,** the function is activated, the wiper operates at the speed level 2.

C) Switch, used to activate the front and rear windscreen washing.

- **Position 0,** the function is off, washing is off;
- **Position 1,** the function is activated, the front windscreen spraying is activated, when the switch is released, it automatically returns to position 0. (Momentary – current position).
- **Position 2,** the function is activated, the rear windscreen spraying is activated; when the switch is released, it automatically returns to position 0. (Momentary – current position).

D) Switch, used to activate the front windscreen wiper.

- **Position 0,** the function is off, the wiper is off;
- **Position 1,** the function is activated, the wiper operates at the speed level 1;
- **Position 2,** the function is activated, the wiper operates at the speed level 2.

2. Heating regulation control unit

As standard, the cab is fitted with a control unit which can be used by the operator to regulate heating and ventilation. If an optional air conditioning device is installed, it also provides a cooling option – see description below.

The standard unit has to adjustment buttons.

- Button 1 is used to turn the ventilation on and off and to adjust the speed levels of fan rotation (3 speeds).
- Button 2 is used to adjust the level of heating power for the tractor's cab.

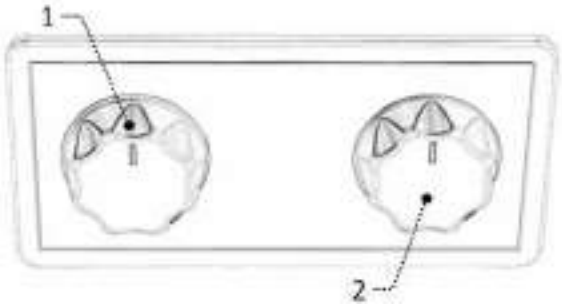


Fig. 79

The unit with an air conditioner has two adjustment buttons and a switch.

- Button 1 is used to turn the ventilation on and off and to adjust the speed levels of fan rotation (3 speeds).
- Switch 2 is used to turn the air conditioner on and off.
- Button 3 is used to adjust the air conditioning temperature; turning the button to the left activates the cooling function and turning to the right activates the heating function.

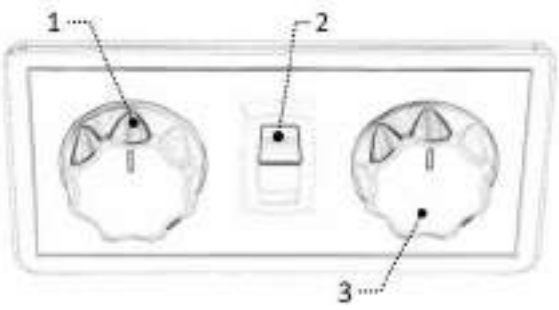


Fig. 80

3. Fuses

The cab system has separate fuses for the protection of the electrical system. See description in the chapter “Electrical system of the tractor”.

4. Air vents

Adjustable slots for internal air circulation
The slots are opened and closed by rotating the rotary knob and pressing the blades. When the slots are open, the air in the cab is mixed with the ambient air; when the slots are closed, only fresh air is supplied to the cab through the vents. Fig. 81.

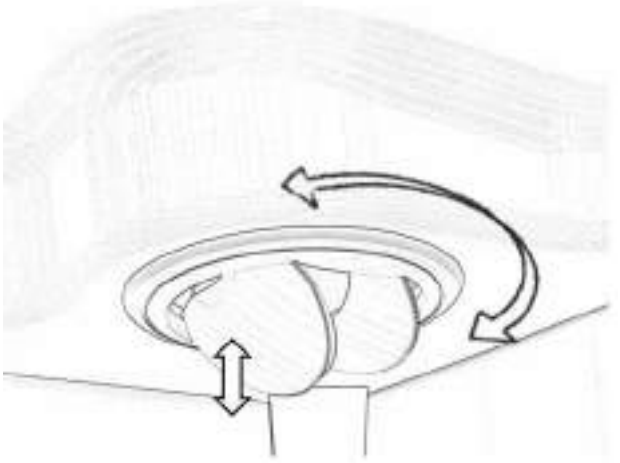


Fig. 81

If condensation forms on the windscreens, direct the external air vents toward the windows, adjust ventilation to the highest level and increase the heating level. If the windscreens are still foggy, gradually decrease the heating level.

5. Electrical socket

For connecting optional electrical devices.

6. Adjustable slots for internal air circulation

The slots can be opened and closed by means of a rotary knob. When the slots are open, the air inside the cab is mixed with exterior air. When the slots are closed, only fresh air is supplied to the cab through the vents.

Fig. 82

7. Interior lamp

It illuminates the driver's area in the cab. The interior lamp is activated or deactivated by pushing the switch forwards and backwards.

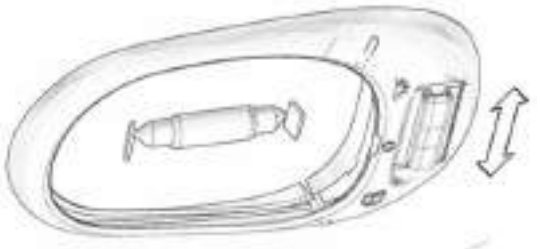


Fig. 83

8. Radio unit space

A radio unit optionally ordered by the user can be installed in this space.

9. Speakers

Speakers optionally ordered by the user can be installed in this space.

4.9 DESCRIPTION OF OPTIONAL EQUIPMENT

This chapter describes optional equipment, which can be installed according to the requirements of the tractor operator.

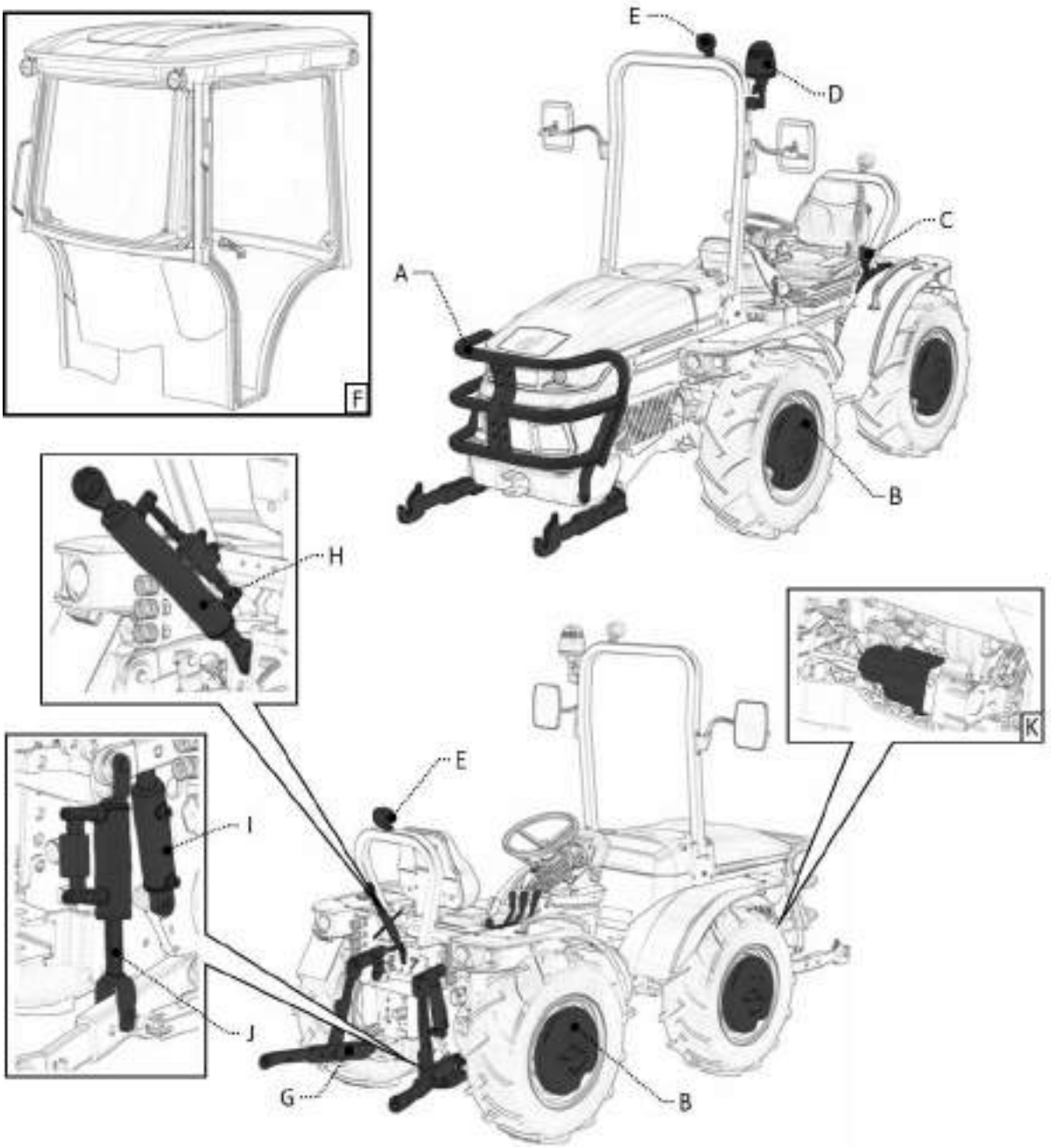


Fig. 84

A. **Front hydraulic lift mechanism**, it is provided with a protection system consisting of hoses for the protection of radiators and the engine cover and it can be fitted with a top link, which is used for attaching the third linkage point, see description below.
B. **Weights**, for greater stability of the tractor,
C. **Hydraulic controls**, additional control devices on the left side of the tractor, allowing the user to extend the range of hydraulic operating functions.
D. **Rotating lamp**, the orange rotating lamp warns other drivers to use caution.
E. **Working lamp**, it is used to illuminate the working area in poor visibility conditions. The working lamps MUST NOT be used when driving on public roads.
F. **Cab**, it increases the operator's comfort when driving and protects the operator from falling objects or in case of a tractor rollover.
G. **Rear hydraulic lift mechanism**, the three-point type mechanism enables quicker attachment of different types of implements and is provided with several additional equipment options for this purpose; see description below.
H. **Top link**, for hydraulic adjustment from the driver's seat;
I. **Double-acting hydraulic lift cylinder**, for lifting and lowering the rear hydraulic lift mechanism from the driver's seat.
J. **Vertical hydraulic tensioner**, for adjusting the height of the arm, which is used to connect a tractor mounted implement. It can be controlled from the driver's seat.
K. **Hydraulic pump**, you can install a pump with a capacity greater than 11cm³ and with an additional oil radiator.

4.9.1 FRONT HYDRAULIC LIFT MECHANISM

The front lift mechanism is a three-point type mechanism with adjustable lower link arms and an automatic hook for a category 1 ball connection.

The mechanism features a quick connection system and the lower link arms are automatically fixed by means of a spring when attaching an implement.

The front hydraulic linkage is equipped with quick couplings for connecting the implement to the hydraulic system. The operator is able to use 2, 3 or 4 quick couplings on the hydraulic mechanism.

For information on how to control the front hydraulic lift mechanism, refer to the chapter "Additional control devices for the hydraulic system with a front hydraulic lift mechanism".

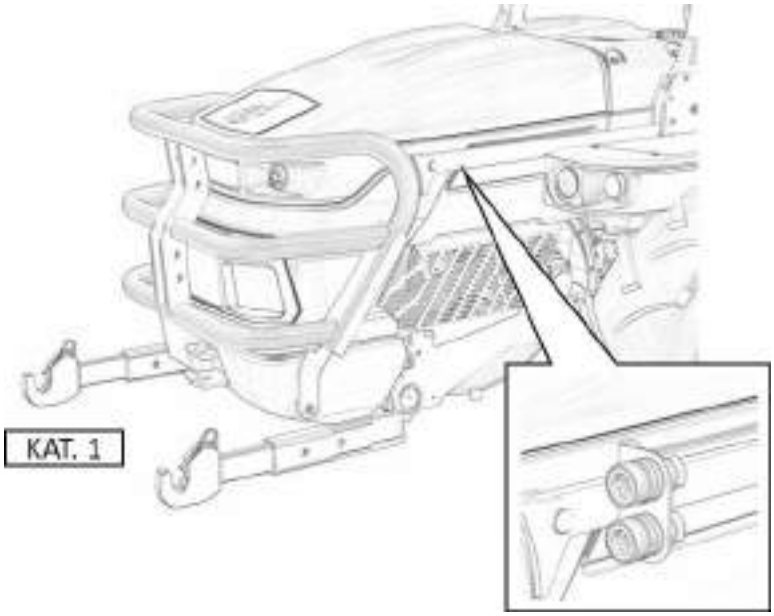


Fig. 85

4.9.2 WEIGHTS

Weights are used to increase the stability of the tractor with implements installed. For the standard tractor version, two types of wheel weights can be used, depending on the wheels installed.

4.9.2.1 WHEEL WEIGHTS

These weights are installed on all four wheels – with four screws on specific points of the front and the rear wheels. According to the sizes of tractor wheels, you can choose between two wheel weight options with different masses.

- **40 kg wheel weight**, for 16” and 18” wheels.
- **48 kg wheel weight**, for 15” wheels.

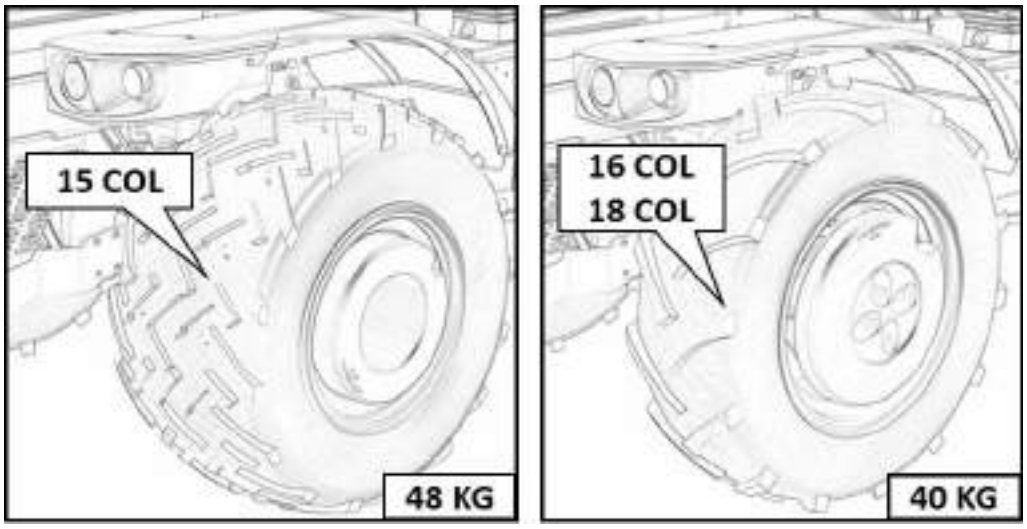


Fig. 86

	**DANGER:** Wheel weights are heavy, which is why you must use caution during assembly and disassembly to avoid crushing body parts.

4.9.3 ADDITIONAL HYDRAULIC CONTROLS

Additional control devices are installed on the left side of the tractor. Each lever is used to control a particular function through a control valve installed in the control device. Description of control levers and their arrangement according to function is available on the following pages.

- Additional control device on the standard hydraulic system.
- Additional control device on the hydraulic system with a front hydraulic lift mechanism.

Diagram of control levers on the tractor.

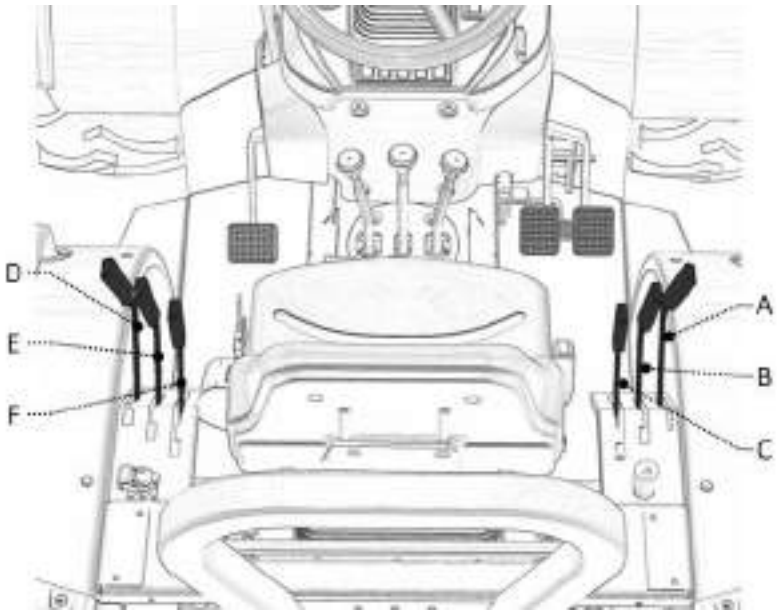


Fig. 87

4.9.3.1 ADDITIONAL CONTROL DEVICE ON THE STANDARD HYDRAULIC SYSTEM

Control levers A, B and C, see Fig. 87, are fitted as standard equipment and their functions are described in the chapter "Hydraulic controls".

The control lever D is used to activate the **yellow hydraulic connection C** or the quick coupling for controlling external implements, which are equipped with a hydraulic system with a single-acting cylinder.

The control lever has three positions:

- "Position 0", neutral position of the lever, there is no oil supply to the connection, the tractor implement is not activated.
- "Position 1", the oil under pressure is supplied, the tractor implement is activated.
- "Position 2", the oil flow under pressure is released, the tractor implement is activated. If the control lever remains in position 2 when the lift mechanism is completely lowered, the operator can use the float position option which means that the implement attached to the tractor will automatically adapt to the ground.
- When in position 1, the lever will return to position 0. If in position 2, the lever must be moved manually.

The control lever E is used to activate the **blue hydraulic connections A** or the quick couplings for controlling external implements, which are equipped with a hydraulic system with a single or a double-acting cylinder.

The control lever has four positions:

- "Position 0", neutral position of the lever, the connections are not supplied with oil, the tractor implement is not activated.
- "Position 1", the oil under pressure is supplied, the tractor implement is activated.
- "Position 2", the oil under pressure is supplied, the tractor implement is activated and operates in the opposite direction from position 1 of the lever.
- "Position 3", the oil flow under pressure is released, the tractor implement is activated in the float position.
- To interrupt the operation, always move the lever to position 0, regardless of its position.

The control lever F is used to activate the **orange hydraulic connections B** or the quick couplings for controlling external implements, which are equipped with a hydraulic system with a single or a double-acting cylinder. The control lever has four positions, which are the same as with control lever E, see description above.

Hydraulic connection D (black), or "dead" coupling, which is used to discharge oil from the connection.

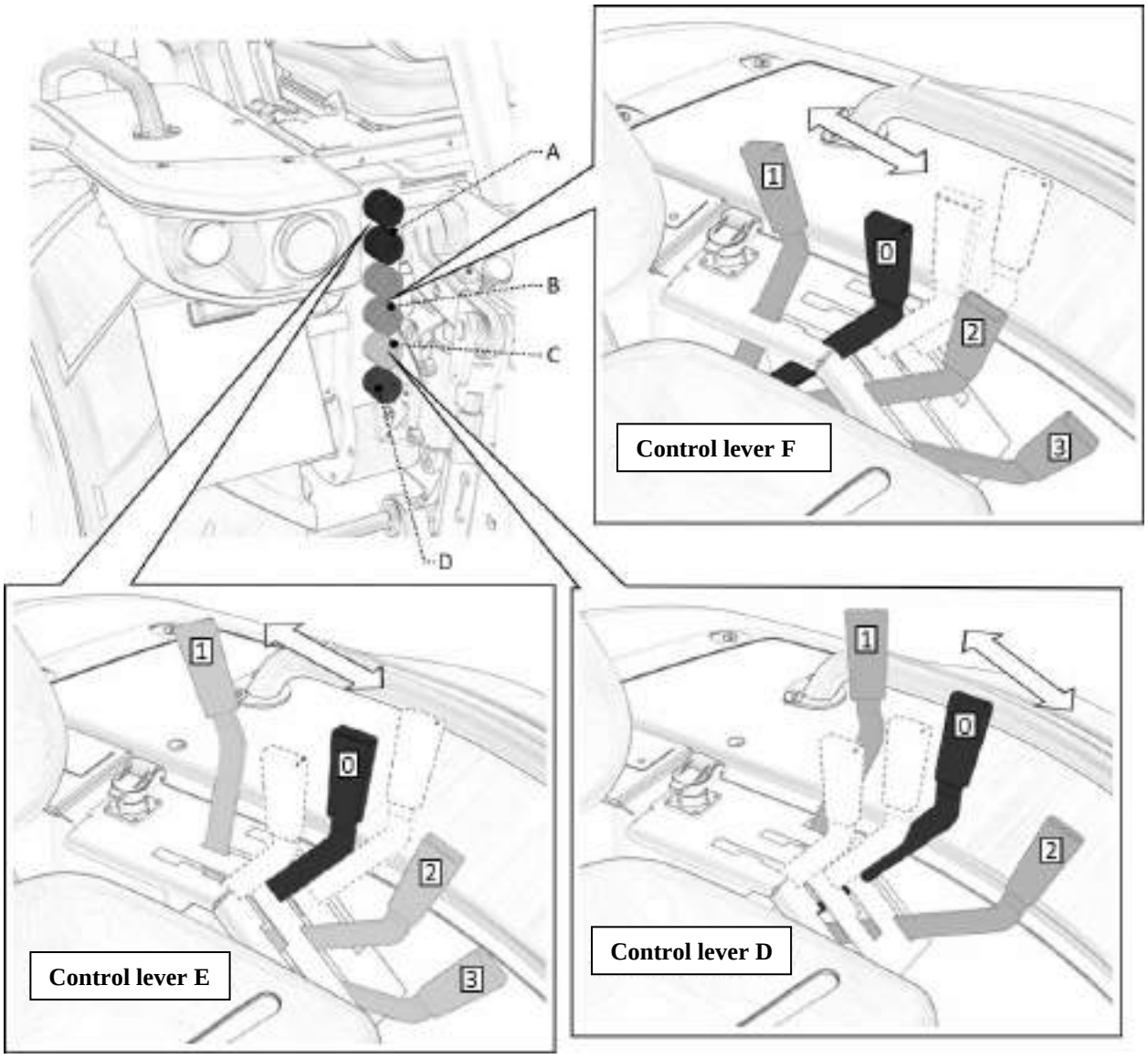


Fig. 88

4.9.3.2 ADDITIONAL CONTROL DEVICE ON HYDRAULIC SYSTEM WITH A FRONT HYDRAULIC LIFT MECHANISM

Control levers A, B and C, see Fig. 87, are fitted as standard equipment and their functions are described in the chapter "Hydraulic controls".

Control lever D, see Fig. 87, it is used to control the front hydraulic lift mechanism.

The control lever has three positions:

- "Position 0", neutral position of the lever, the lift mechanism remains in position.
- "Position 1", the oil under pressure is supplied, the front hydraulic mechanism is lifted. When released, the lever on the control device returns to neutral position 0 and the mechanism remains in the raised position.
- "Position 2", the oil is discharged, the rear hydraulic mechanism is lowered. As the lever is blocked inside its guide, it will remain in position 2, which is why it must always be manually moved to position 0 in order to stop the lowering of the lift mechanism.

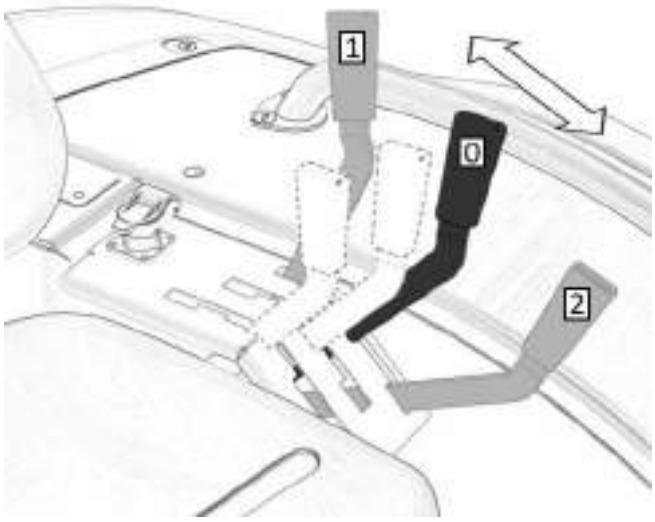


Fig. 89

If the control lever remains in position 2 when the lift mechanism is completely lowered, the operator can use the float position option which means that the implement attached to the tractor will automatically adapt to the ground.

The control lever E is used to activate the **blue hydraulic connections A** or the quick couplings installed in the front part of the tractor. This function is suitable for external implements equipped with a hydraulic system with a single or a double-acting cylinder.

The control lever has four positions:

- "Position 0", neutral position of the lever, the connections are not supplied with oil, the tractor implement is not activated.
- "Position 1", the oil under pressure is supplied, the tractor implement is activated.
- "Position 2", the oil under pressure is supplied, the tractor implement is activated and operates in the opposite direction from position 1 of the lever.
- "Position 3", the oil flow under pressure is released, the tractor implement is activated in the float position.
- To interrupt the operation, always move the lever back to position 0, regardless of its position.

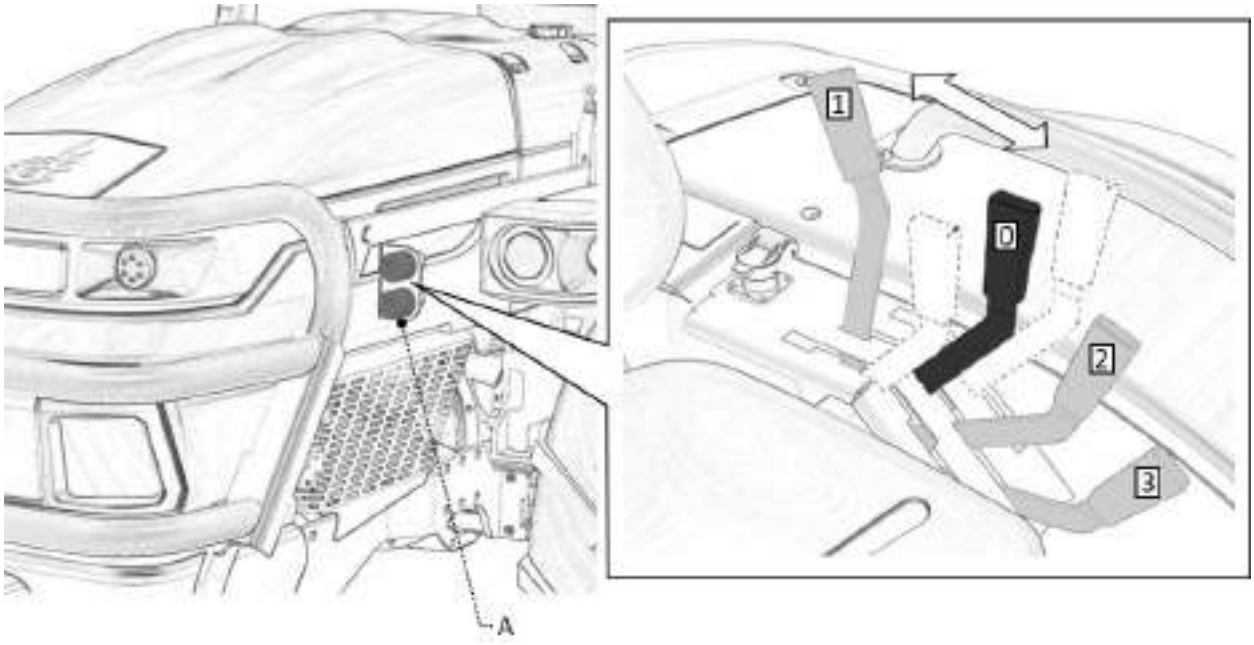


Fig. 90

The control lever F is used to activate the **orange hydraulic connections B** or the quick couplings for controlling external implements, which are equipped with a hydraulic system with a single or a double-acting cylinder.
The control lever has four positions, which are the same as with control lever E, see description above.

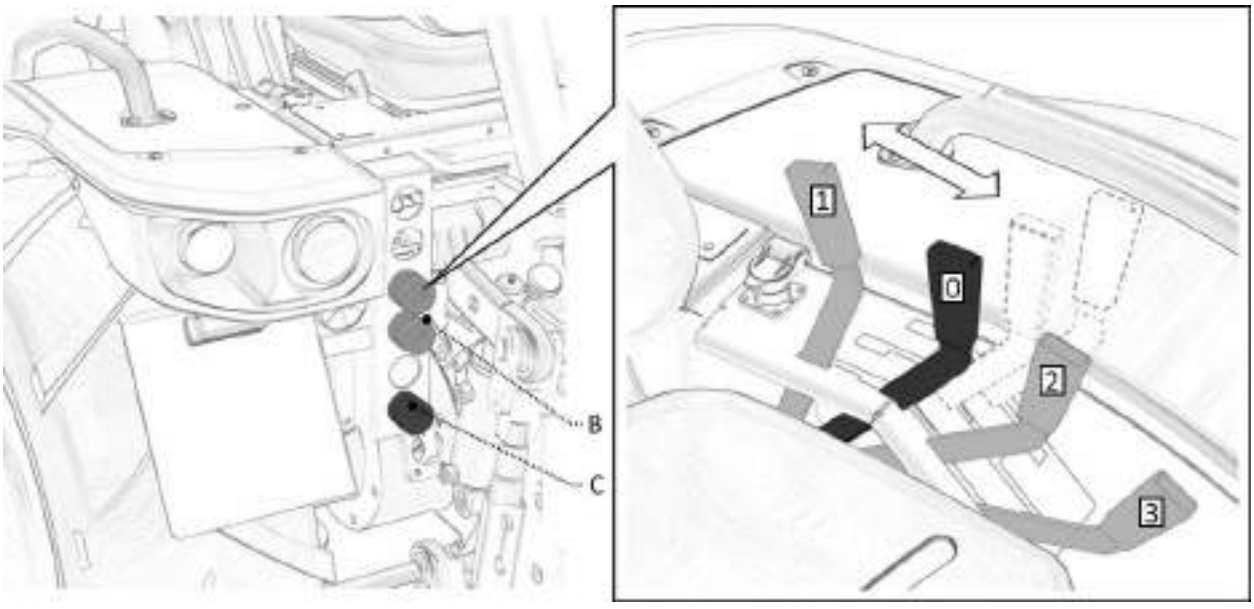


Fig. 91

Hydraulic connection C (black), or “dead” coupling, which is used to discharge oil from the connection.

4.9.4 REAR HYDRAULIC LIFT MECHANISM

The rear hydraulic lift mechanism can be fitted with a wider range of optional equipment and the user can choose between different lower link arms. The rear lift mechanism also enables two-way operation. The lower link arms can also be adjusted by means of a vertical hydraulic tensioner and the operator can use the hydraulic top link for easier adjustment of tractor mounted implements. The entire equipment range for the hydraulic lift mechanism is described below.

4.9.4.1 LOWER LINK ARMS

The available versions of lower link arms are described below.

1. **Link arms with a standard connection** (with a ball link), the arms are length-adjustable and provided as standard tractor equipment.
2. **Link arms with a category 1 automatic connection** (quick connection), the arms are length-adjustable and provided as optional tractor equipment.
3. **Link arms with a category 1 automatic connection** (quick connection), the arms are length-adjustable, the automatic hook for ball connection can only be moved horizontally; provided as optional tractor equipment.

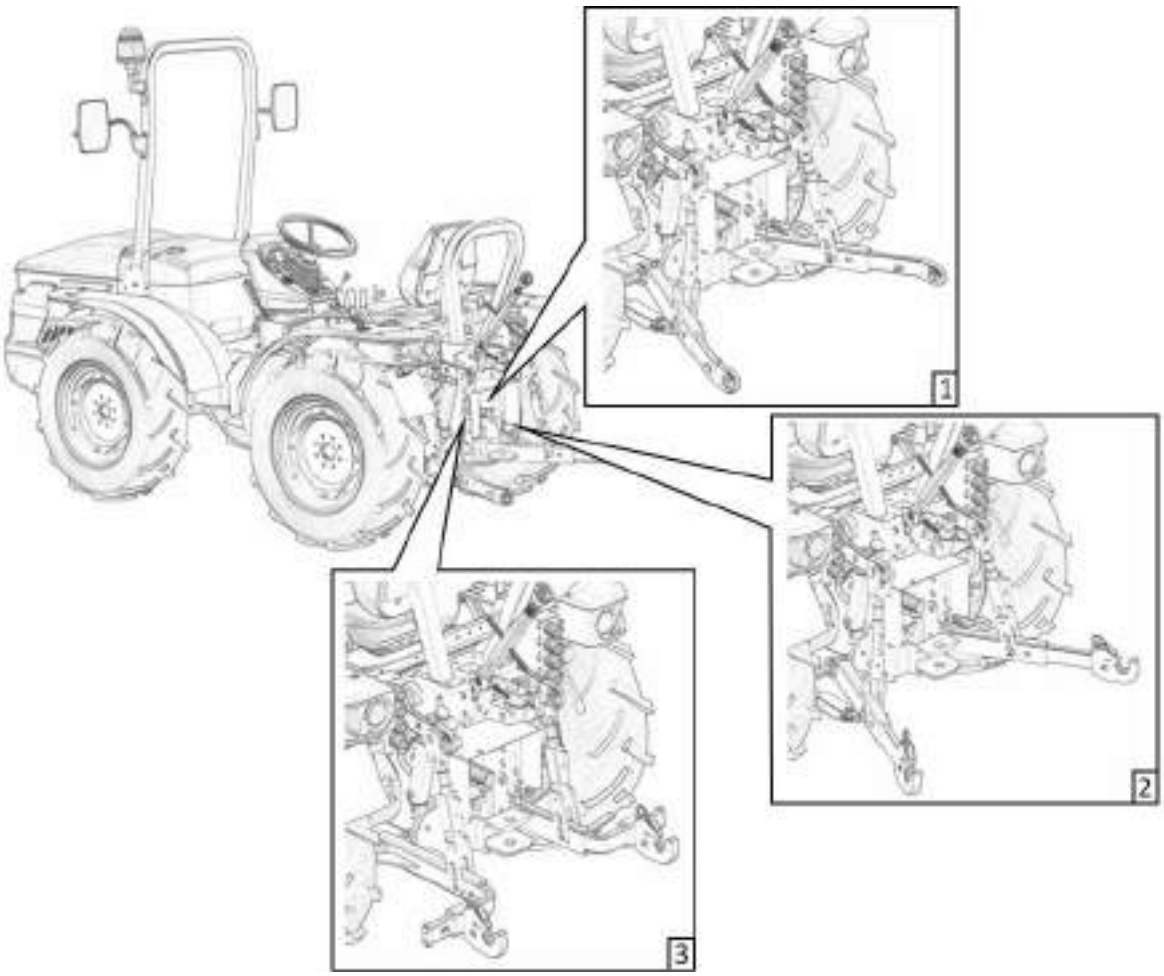


Fig. 92

4.9.4.2 TOP LINK

Optionally, the user may replace the standard mechanical top link with a hydraulic top link for hydraulic adjustment of the top link or the connection bar, which is used for connecting the third linkage point, directly from the driver's seat by means of a shift lever. See Fig. 84.

4.9.4.3 VERTICAL HYDRAULIC TENSIONER

The rear lift mechanism can also be optionally upgraded with a lift rod for the hydraulic version.

- **Standard lift rod**
  As standard, the hydraulic lift mechanism is equipped with two lift rods, one on the left and one on the right side.

- **Hydraulic lift rod**
  There is only one hydraulic lift rod installed on the right side of the hydraulic lift mechanism, see Fig. 93.
  The hydraulic lift rod is used for adjusting the height of lower link arms directly from the driver's seat by means of a shift lever.

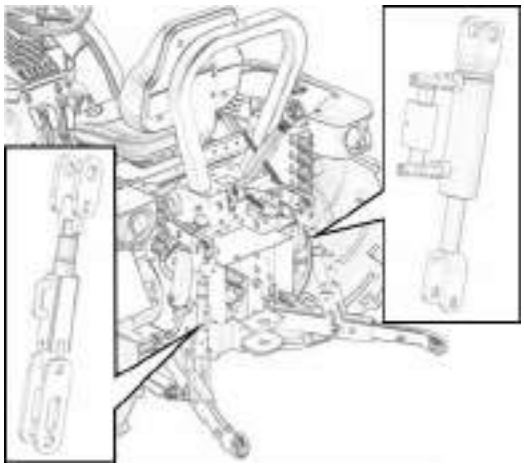


Fig. 93

Vertical hydraulic tensioner label.

No.	Position	Code	Meaning	Description	Image (sign)
/	On the protection of the control device	535019	**Important**	Hydraulic control of vertical tensioner.	

4.9.4.4 DOUBLE-ACTING HYDRAULIC LIFT CYLINDER

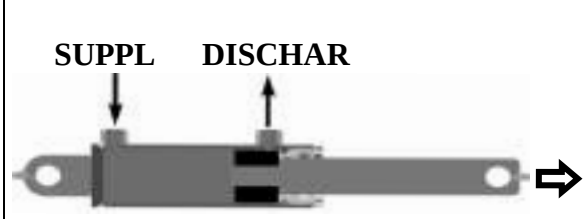
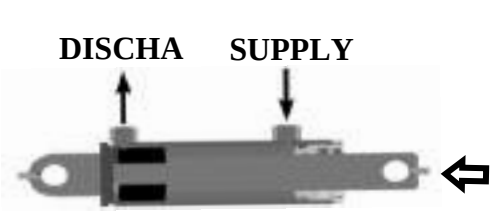
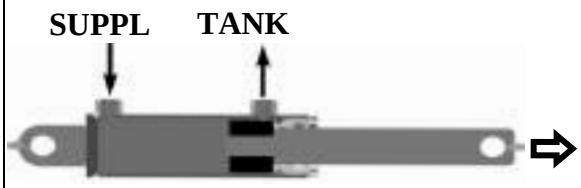
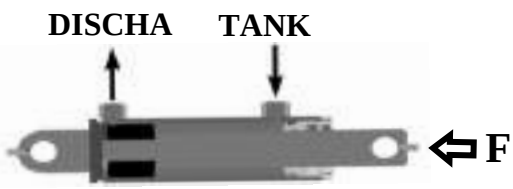
As standard, the rear hydraulic lift mechanism operates on the principle of a one-way system and the operator may choose to optionally upgrade the rear mechanism to a two-way system to control the lifting and lowering operations through a control lever on the control device. See Fig. 84.

Hydraulic lift mechanism operation

The rear hydraulic lift mechanism is controlled by two hydraulic cylinders, providing the ability to select between one-way or two-way operation in connection with a three-way valve.

- **One-way operation of hydraulic cylinder,** the pressure from hydraulic oil acts on the piston in the cylinder from one side, which allows the cylinder to be moved in one direction (lifted), while the return movement (lowering) is achieved by an external force, generated by the implement weight or a spring.

- **Two-way operation of hydraulic cylinder**, the pressure from hydraulic oil acts on the piston in the cylinder alternately from both sides (depending on the position of the control lever), which allows the cylinder to be moved in both directions.

	LIFTING	LOWERING
DOUBLE-ACTING HYD. CYLINDER		
SINGLE-ACTING HYD. CYLINDER		

The hydraulic lift mechanism function is no longer attributed to the control lever A, but is moved to the control lever C of the control device; see chapter “Hydraulic controls”.

Control lever C (see Fig. 71) directs the oil from the pressure circuit, which is directly supplied to both double-acting hydraulic cylinders at the same time, by means of a control valve in the control device, to control the rear hydraulic lift mechanism.

The rotary button is used to dampen the lowering, see chapter “The rear hydraulic lift mechanism control”.

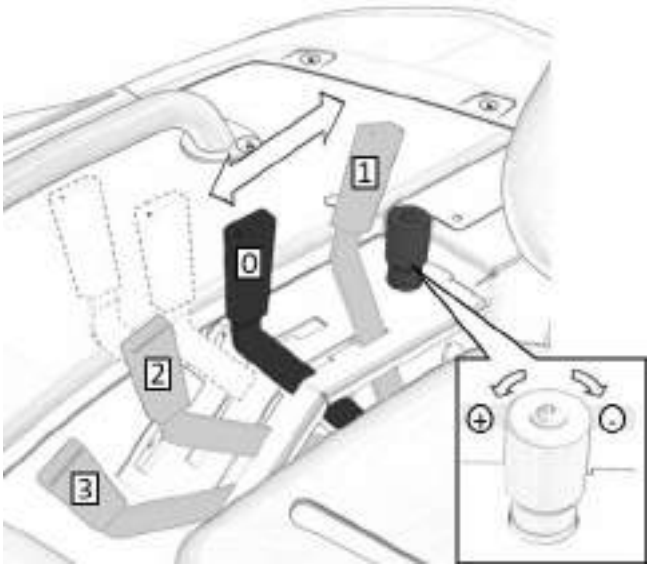


Fig. 94

The control lever has four positions:

- “Position 0”, neutral position of the lever, the lift mechanism remains in position.
- “Position 1”, the oil under pressure is supplied, the rear hydraulic mechanism is raised. When the lever on the control device is released, it remains blocked inside its guide in position 1, which is why it must always be manually moved to position 0 in order to stop the lifting movement.
- “Position 2”, the oil is discharged, the rear hydraulic mechanism is lowered. As the lever is blocked inside its guide, it will remain in position 2, which is why it must always be manually moved to position 0 in order to stop the lowering movement.
- “Position 3”, the oil is releases, the rear hydraulic lift mechanism starts to lower, the lever remains fixed in position 3 and must always be manually moved to position 0.

When the control lever is in position 3, the operator can use the float position option, which means that the implement attached to the tractor will automatically adapt to the ground. This only applies if the three-way valve is in position 1, see description below.

With this version of hydraulic lift mechanism, it is possible to convert the double-acting hydraulic cylinder into a single-acting cylinder by means of an additional three-way valve installed on the right side, next to the driver's seat.

- To convert to one-way operation of hydraulic cylinder, move the valve lever to position 1.
- To convert to two-way operation of hydraulic cylinder, move the valve lever to position 2.

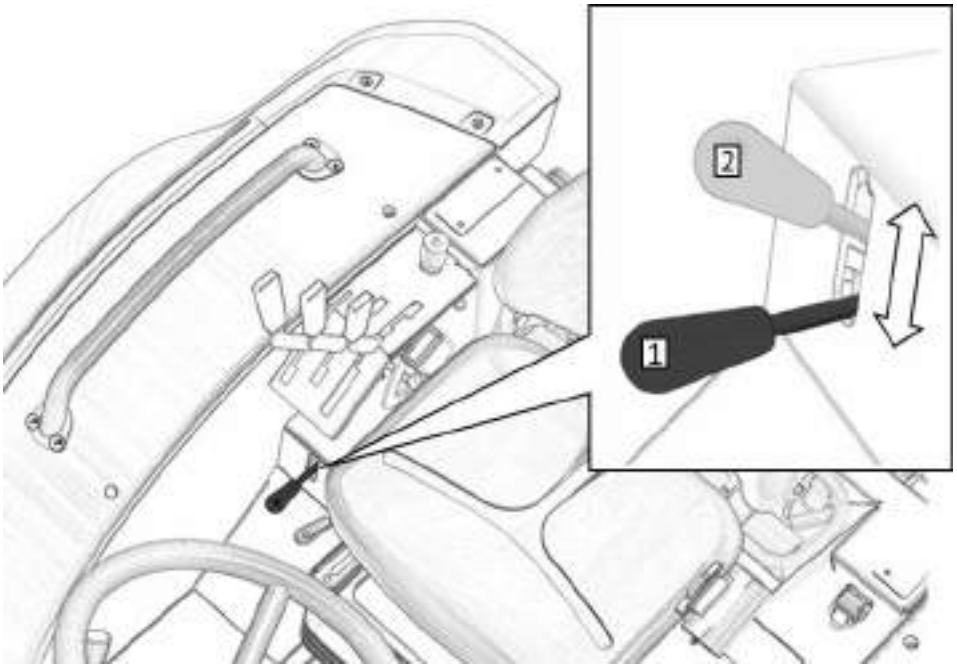
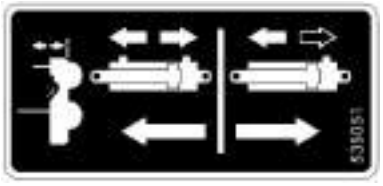


Fig. 95

Label on the three-way valve

No.	Position	Code	Meaning	Description	Image (sign)
/	Next to the lever of the three-way valve	535051	**Important**	It is possible to switch between one-way and two-way operation of hydraulic lift mechanism.	

	**WARNING:** Never move the lever of the control device and leave it fixed in position 3 when the three-way valve lever is in position 2. If an implement is attached, it may impact with the ground and compromise the stability of the tractor, which may lead to injuries and property damage.

4.9.5 FLOATING HYDRAULICS WITH SUPPORT

This figure shows all the control devices required for controlling the floating hydraulics with support.

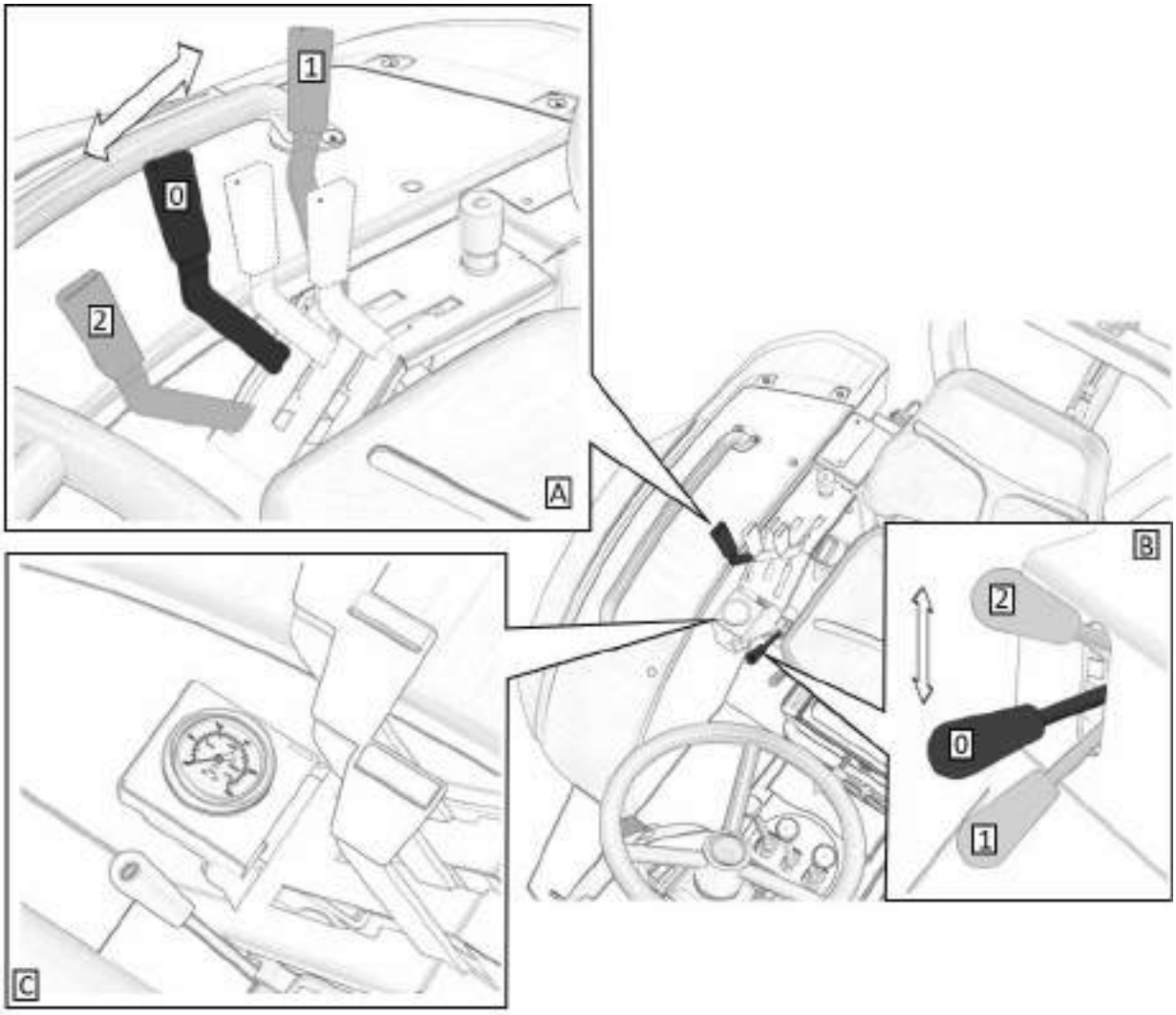


Fig. 96

Before commencing work with floating hydraulics with support, the pressure in the hydraulic accumulator must be adjusted to a specific pressure value, which can be read from the gauge C and depends on the weight of the implement.

Before charging, the implement on the rear lift mechanism must be lowered to the ground. If this is not the case, move the lever A for lifting the hydraulics in position 2 and lower the implement to the ground, see chapter “The rear hydraulic lift mechanism control”.
When lowering the system, the lever on the bottom valve B must always be moved to position 2.

To charge the hydraulic accumulator, move the lever on the bottom valve B to position 1. Use the control lever A for lifting the hydraulic mechanism to charge the hydraulic accumulator (control lever A in position 1) until the implement starts lifting from the ground. Stop charging at this point (move the control lever A to position 0). Read the pressure from the gauge C.

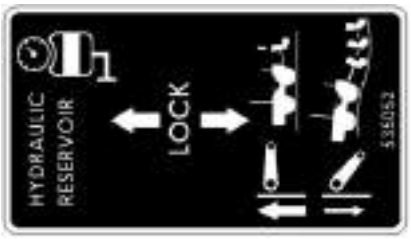
To be adjusted correctly, the pressure according to the weight of the implement must be 20% lower than pressure reading on the gauge C. Readjust the pressure with control lever A for lifting the hydraulic mechanism.

When the pressure adjustment in the hydraulic accumulator is successfully completed, move the lever B on the bottom valve B to position 2. The pressure in the hydraulic cylinder is “stored” and always remains the same when you lower the implement to the ground.

To discharge the hydraulic accumulator, move the lever of the bottom valve B to position 1 and then move the control lever A to position 2 (lowering) and hold the lever until the pressure is no longer visible on the gauge. Move the lever of the bottom valve B to position 2; the rear hydraulic lift mechanism operates without the floating hydraulics with support.

If the lever of the bottom valve B is moved to position 0, the rear hydraulic lift mechanism is blocked and will remain in the previously adjusted position (control lever A for lifting and lowering is deactivated).

Labels for floating hydraulics with support.

No.	Position	Code	Meaning	Description	Image (sign)
/	Next to the lever of the bottom valve	535052	**Important**	Control of the rear hydraulic lift mechanism and floating hydraulics with support.	
/	At the right side of the fender, next to the lever of the bottom valve	535030	**Danger**	Danger of impact; floating hydraulics MUST NOT be under pressure when not in use!	

	**WARNING:** Before working on the hydraulic system, particularly when connecting or disconnection implements, the lever B must always be in position B, the implement must be lowered and the system MUST NOT be under pressure!

4.9.6 HYDRAULIC BRAKE ON A TRAILED IMPLEMENT

Optionally, the tractor can also be equipped with a system for connecting trailed implements with a hydraulic brake.

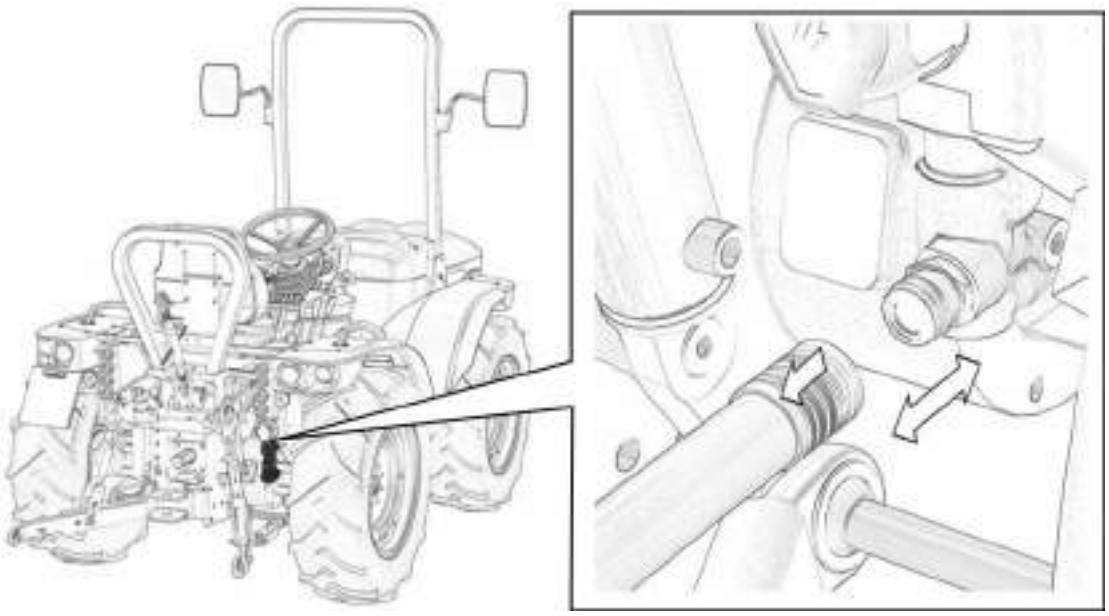


Fig. 97

Operation
When the brake pedal is depressed, the valve on the hydraulic brake redirects the oil from the pressure circuit through a hydraulic conductor to the braking system of the trailed implement and the implement starts to brake.

Connecting the hydraulic connection hose
The male hydraulic coupling on the brake valve with a size of ⅜″ allows for the connection of the female connector of the connection hose.
To connect the hydraulic connection hose:

- Stop the tractor when the conditions are safe.
- Shut off the tractor's engine (the key must be in position 0, refer to the chapter “Ignition key”).
- Insert the hydraulic connection hose into hydraulic coupling of the brake valve on the tractor.
- When connected, start the tractor’s engine and make sure the hydraulic system operates properly.
- Depress the brake pedal a few times to equalize the pressure in the hydraulic braking system of the implement.

Disconnecting the hydraulic connection hose

- Stop the tractor when the conditions are safe.
- Shut off the tractor's engine (the key must be in position 0).
- Disconnect the hydraulic connection hose. Push the hose forwards and pull the safety device towards you to activate and release it, then push the coupling back.

Maximum output pressure of the hydraulic coupling is 140 bar!

	IMPORTANT: Before making the connection, check that the system of the trailed implement is suitable for the operating pressure of the tractor.
	IMPORTANT: Always make sure the pressure is released before performing and work on the hydraulic system. To do this, shut down the tractor and depress the brake pedal several times.
	WARNING: Before disconnecting the trailed implement, always apply the parking brake and place safety wedges to secure it against moving!
	WARNING: When transporting a trailed implement, both brake pedals must be mechanically connected with a pin!

4.10 DESCRIPTION OF DEVICES FOR USING THE TRACTOR ON THE ROAD

The position of devices on the tractor is shown in the figure. To turn the lamps on and off, refer to the chapter “Tractor console”.

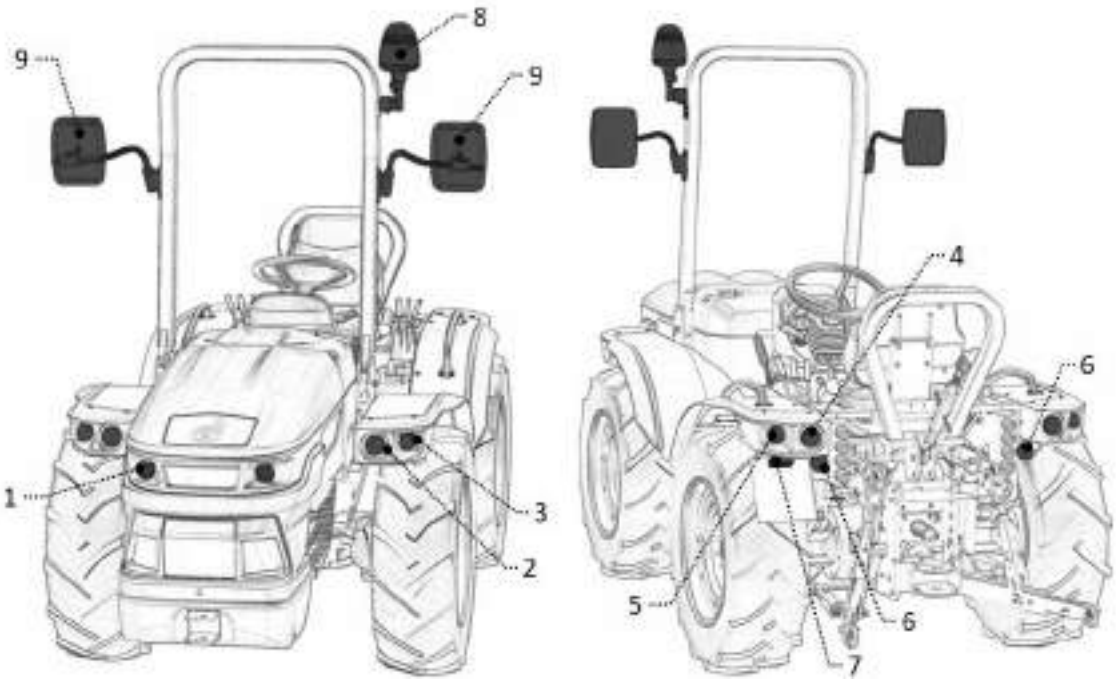


Fig. 98

1. Front headlights
2. Position lights
3. Front direction indicators
4. Rear stop and position lamp
5. Rear direction indicators
6. Reflectors
7. Plate lights
8. Rotating lamp (optional)
9. Rear-view mirrors

4.11 DESCRIPTION OF THE ELECTRICAL SYSTEM OF THE TRACTOR

The main components of the tractor's electrical system are described below.

4.11.1 BATTERY

The battery with a rated voltage of 12 V is a source of electric power for the entire power supply system of the tractor. The battery characteristics are described in the chapter "Technical data".

Make sure that the battery is always clean and all terminals are tightened and greased. It is recommended to apply a lubricating grease to all the terminals before they are tightened to significantly reduce the risk of corrosion.

Start the engine as instructed, see chapter "Starting the tractor".

Access
The battery is installed directly under the engine cover, in front of the radiators. Occasionally check the electrolyte level (it must be between the MIN and MAX marks) and add some distilled water, if necessary and allowed by the battery model. If the tractor will not be used for an extended period of time in the winter and with low outdoor temperatures, make sure to remove the battery from the tractor and store it somewhere warm.

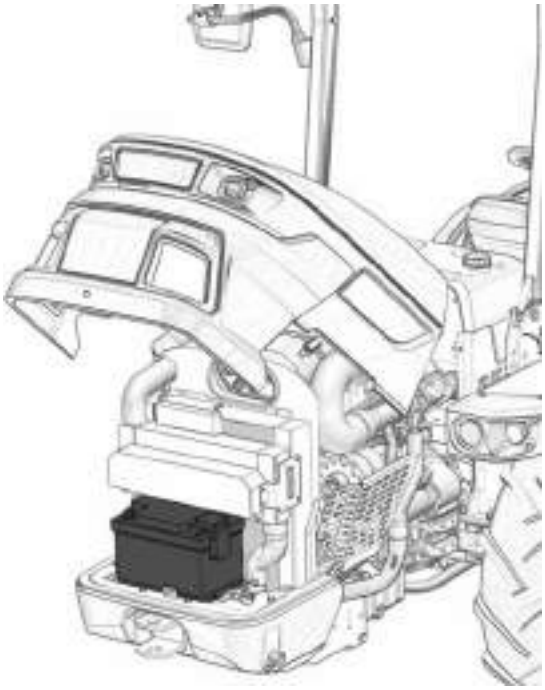


Fig. 99

4.11.2 ELECTRIC STARTER

An electric starter is an electric motor connected to the engine flywheel through a gear wheel. It is directly powered by the battery. Characteristics of the electric starter are described in the chapter "Technical data".

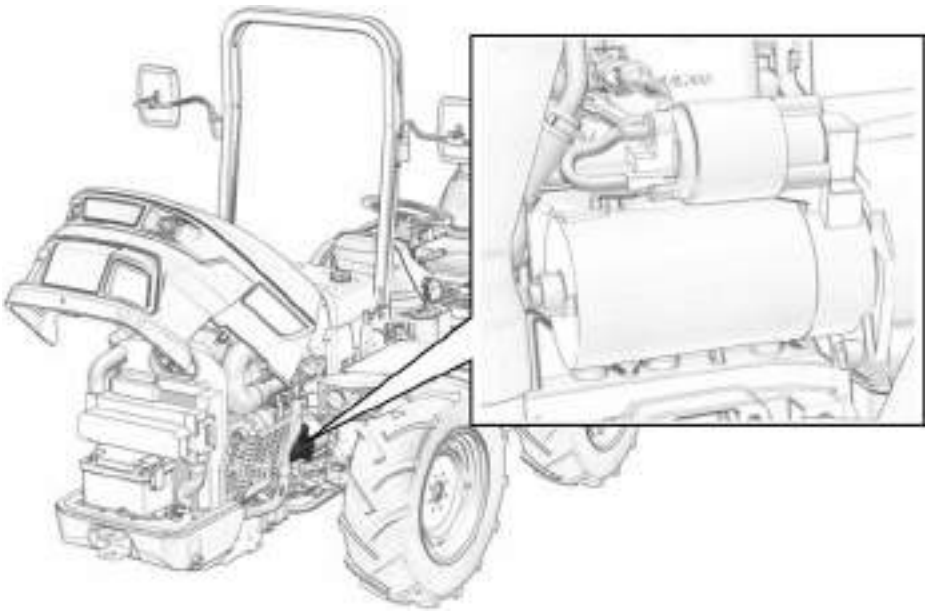


Fig. 100

A large amount of power is consumed when the engine is started, which is why the following must be taken into account when using the starter:

- The started can be activated, without interruption, for a maximum of 10 seconds.
- If the engine fails to start, wait at least 10 10 before trying again.
- If the engine does not start after several starting attempts, stop trying to start the engine and find out what is causing the problem.

4.11.3 ALTERNATOR

The alternator is used to maintain the required voltage of the battery and other components of the tractor's electrical system. It will only function properly when it is properly mechanically fastened, properly connected to the battery and the electrical installation is not damaged.

The operator can see if the alternator operates properly by looking at the indicator lamp on the dashboard. When it operates properly, the indicator lamp must be turned off. The alternator characteristics are described in the chapter "Technical data".

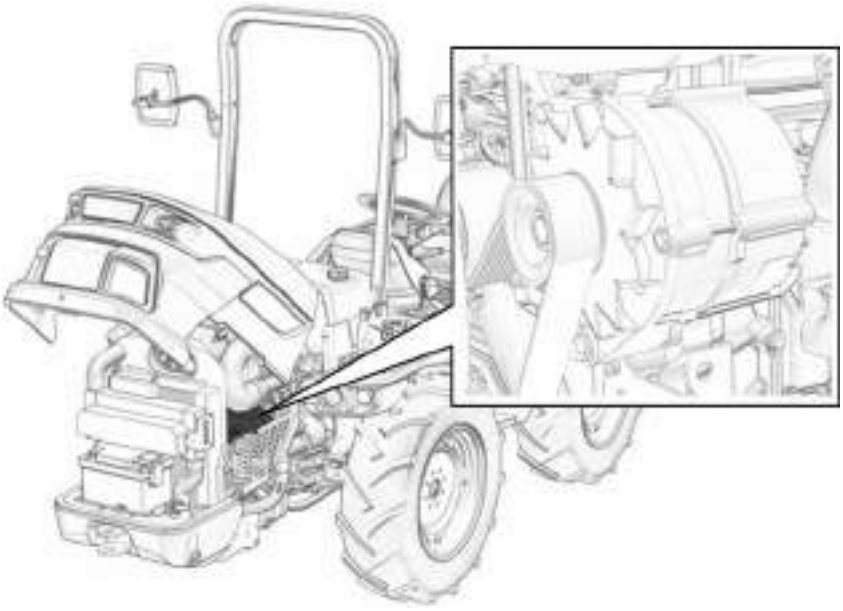


Fig. 101

4.11.4 ENGINE COMPUTER

The engine computer or engine control module is an electronic device that controls a series of drives on an internal combustion engine to ensure optimal performance of the engine.

The engine computer is connected to the dashboard through a Can-Bus communication network and sends information on the operation of the engine and other components or any malfunctions that may occur during operation.

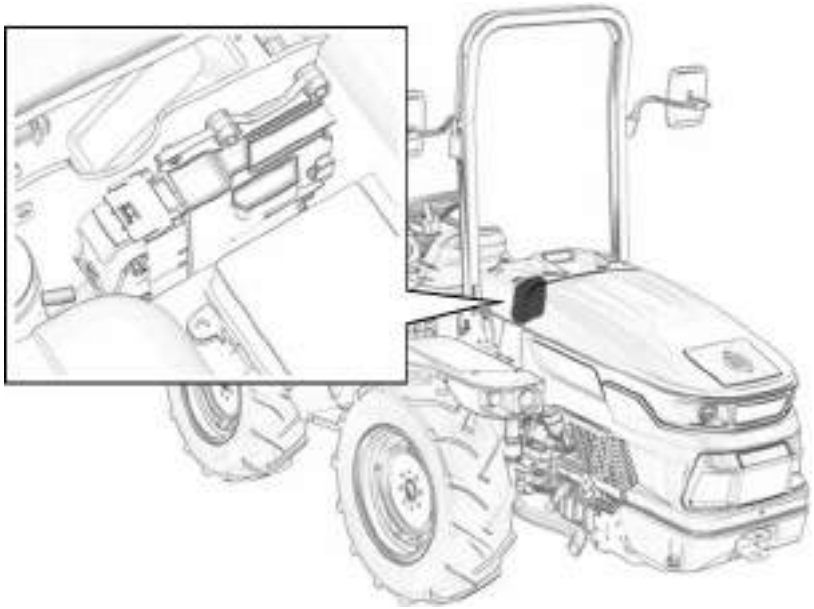


Fig. 102

4.11.5 FUSES

When a blown fuse is detected, remove the fuse box cover and replace the blown fuse. If the fault keeps re-occurring, the electrical system must be inspected by a service technician or a qualified person.

Before replacing a blown fuse:

- Park the tractor when the conditions are safe.
- Move the ignition key to position 0.
- If possible, repair the fault that caused the fuse to blow.
- Replace the blown fuse.

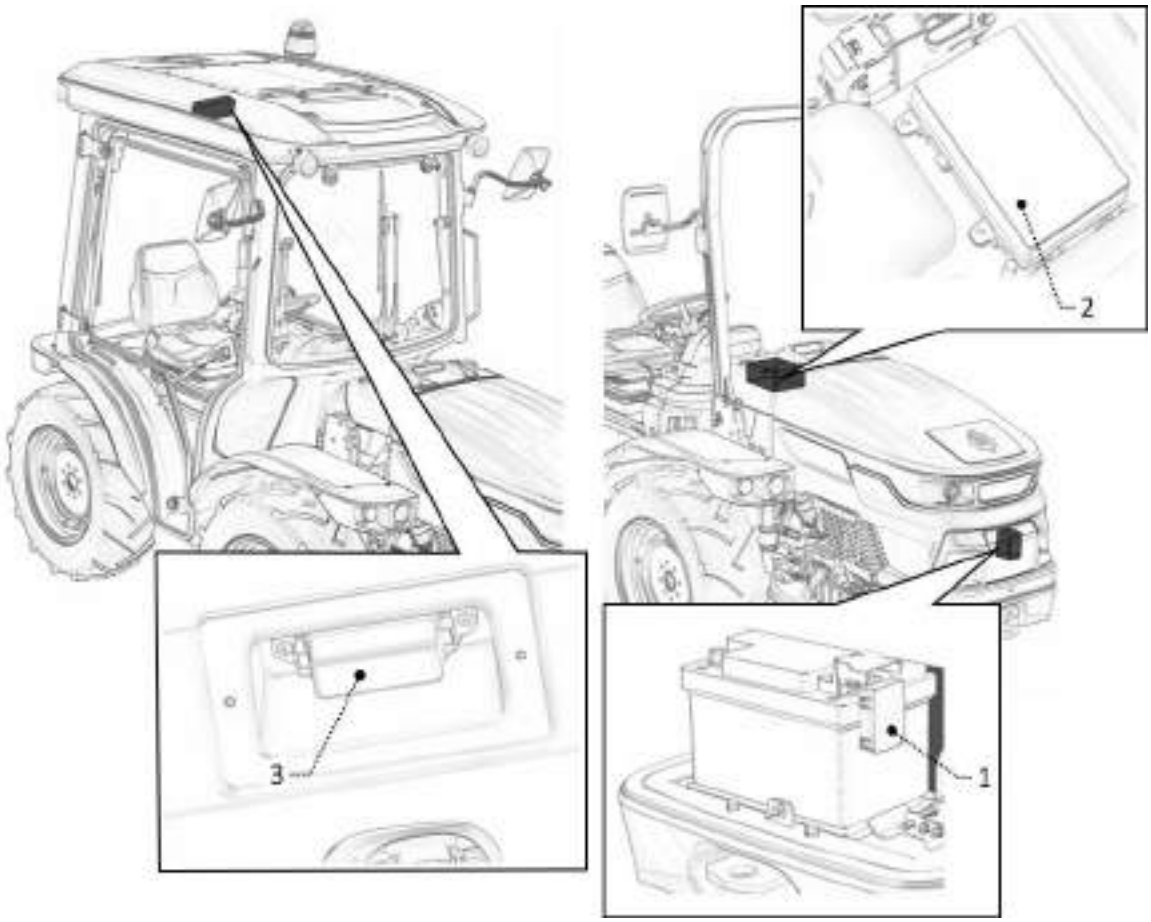


Fig. 103

The position of fuses is shown in the figure

1. **Fuses in the engine compartment**
2. **Fuses in the tank compartment**
3. **Fuses in the cab**

4.11.5.1 FUSES IN THE ENGINE COMPARTMENT

The fuses are located in a housing on the positive side of the battery. To access the fuses, open the engine cover and remove the cover of the fuse box.

Arrangement of fuses (diagram)

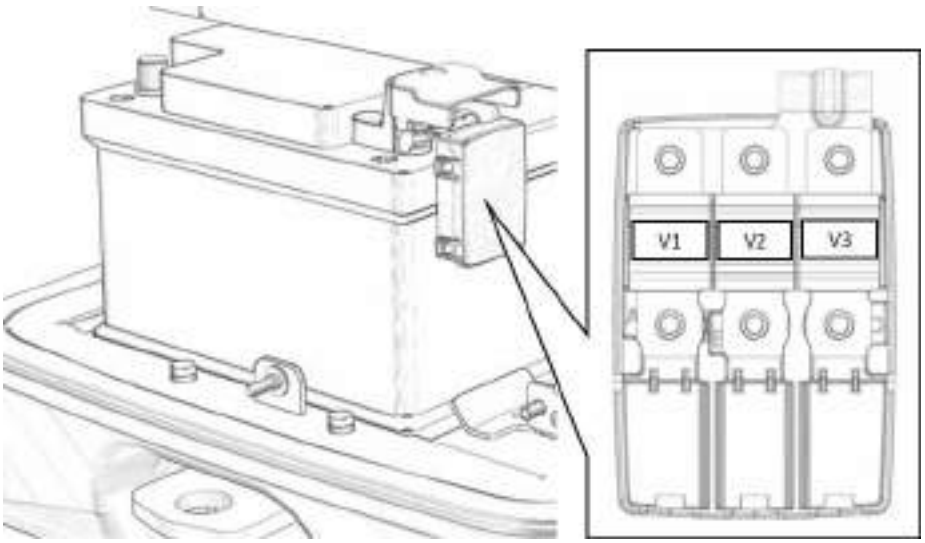


Fig. 104

Table with a description of fuses

Designation/position	Description	Rating
V1	Electric starter	200 A
V2	Cold start heater and battery charging during engine operation	100 A
V3	Electrical system of the tractor	50 A

	IMPORTANT: When replacing a fuse, always use fuses with characteristics matching the data in the table.

4.11.5.2 FUSES IN THE TANK COMPARTMENT

The fuses are located inside a fuse bow, which is on the right side of the tank, near the roll bar bracket. Relays, described below, are also installed next to the fuses. Before replacing a relay, safely stop the tractor as described in the chapter “Fuses”.
To access the fuses and relays, remove the tank cover and the cover of the fuse box.

Arrangement of fuses and relays (diagram, see the next page)

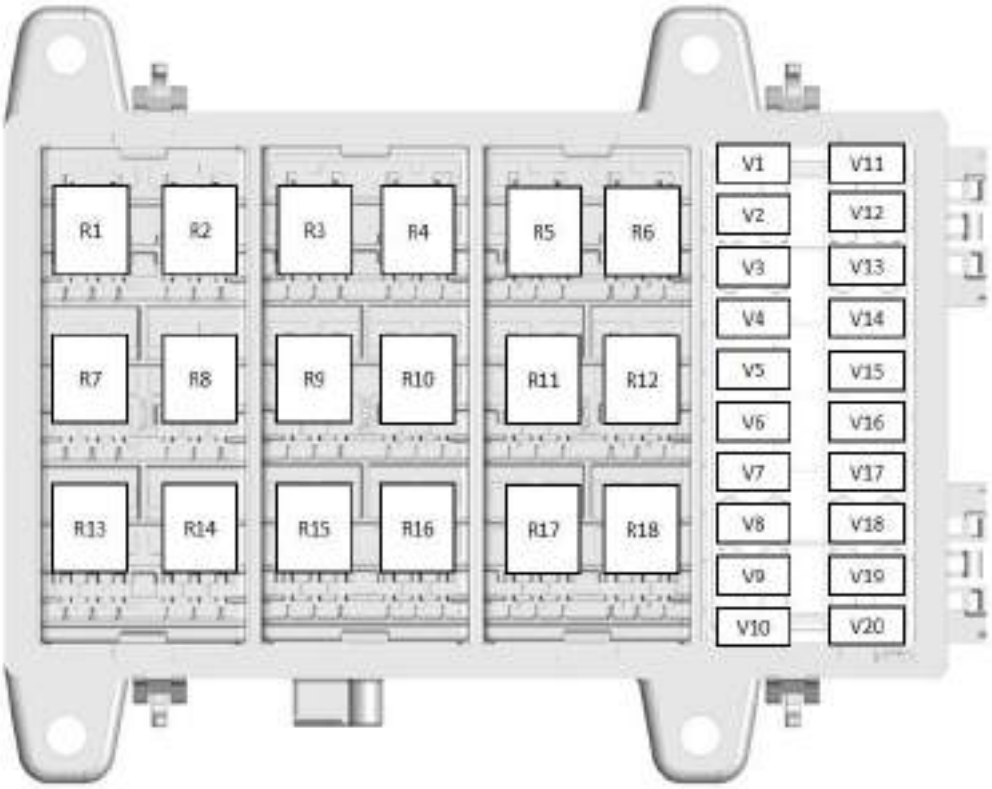


Fig. 105

Table with a description of fuses

Designation/position	Description	Rating
V1	Engine computer (F2)	20 A
V2	Electronic devices on the tractor (F11)	20 A
V3	Cab + (F18)	10 A
V4	Electrical socket 12V (F16)	15 A
V5	Front PTO drive shaft, rear PTO drive shaft, differential lock, speed sensor (F5)	10 A
V6	Front headlights (F15)	15 A
V7	Position lights with the ignition off (F7)	15 A
V8	Horn (F4)	15 A
V9	3-pin socket (F10)	25 A
V10	Cab + (F17)	7.5 A
V11	Working lamps (F12)	20 A
V12	Switching on using the ignition key (F19)	25 A
V13	Dashboard (F1)	25 A

Designation/position	Description	Rating
V14	Cab (F13)	15 A
V15	Rear stop lamp (F8)	15 A
V16	Direction indicators (F9)	15 A
V17	Air conditioning (F20)	10 A
V18	Rotating lamp (F14)	10 A
V19	Engine computer (F3)	7.5 A
V20	Position lights (F6)	15 A

Table with a description of relays

Designation/position	Description	Rating
R1	Front PTO drive shaft (K7)	/
R2	Fuel pump (K18)	/
R3	Air conditioning compressor (K19)	/
R4	Working lamps (K13)	/
R5	Position lights with the ignition on (K6)	/
R6	Horn (K4)	/
R7	Rear PTO drive shaft (K8)	/
R8	Differential lock (K9)	/
R9	Air conditioning fan (K11)	/
R10	Right direction indicators (K15)	/
R11	Electric starter (K5)	/
R12	Front headlights (K17)	/
R13	Position lights with the ignition off (K2)	/
R14	Air conditioning control unit or heating regulation (K12)	/
R15	Rotating lamp (K14)	/
R16	Left direction indicators (K16)	/
R17	Rear stop lamp (K10)	/
R18	Ignition (K3)	/

IMPORTANT: When replacing a fuse, always use fuses with characteristics matching the data in the table.

IMPORTANT: When replacing a relay, always use relays with characteristics matching the data in the table.

4.11.5.3 FUSES IN THE CAB

The fuses are located in a fuse box at the left side of the cab roof. To access the fuses, open the cover of the fuse box.

Arrangement of fuses and relays (diagram)

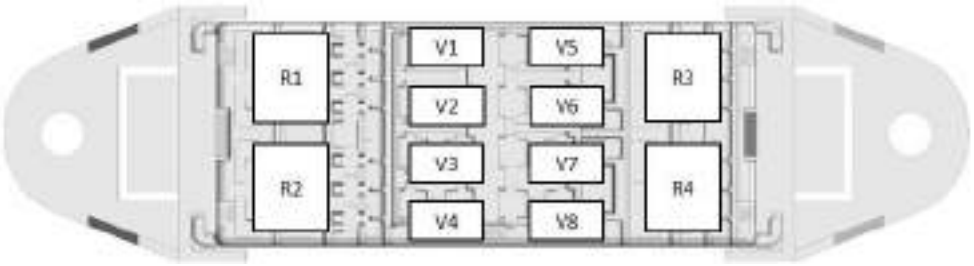


Fig. 106

Table with a description of fuses

Designation/position	Description	Rating
V1	Rear working lights	15 A
V2	Front working lights	15 A
V3	Radio	7,5 A
V4	Windscreen wiper	7,5 A
V5	Rear wiper	7,5 A
V6		7,5 A
V7		
V8		

Table with a description of relays

Designation/position	Description	Rating
R1	Clime	/
R2	Front working lights	/
R3	/	
R4	Rear working lights	/

	**IMPORTANT:** When replacing a fuse, always use fuses with characteristics matching the data in the table.

	**IMPORTANT:** When replacing a relay, always use relays with characteristics matching the data in the table.

4.11.6 EXTERNAL 7-PIN SOCKET FOR IMPLEMENTS

The socket is made in accordance with the standard ISO 1724. It has seven pins and it is designed to connect the electrical system of trailed or mounted implements to the tractor.

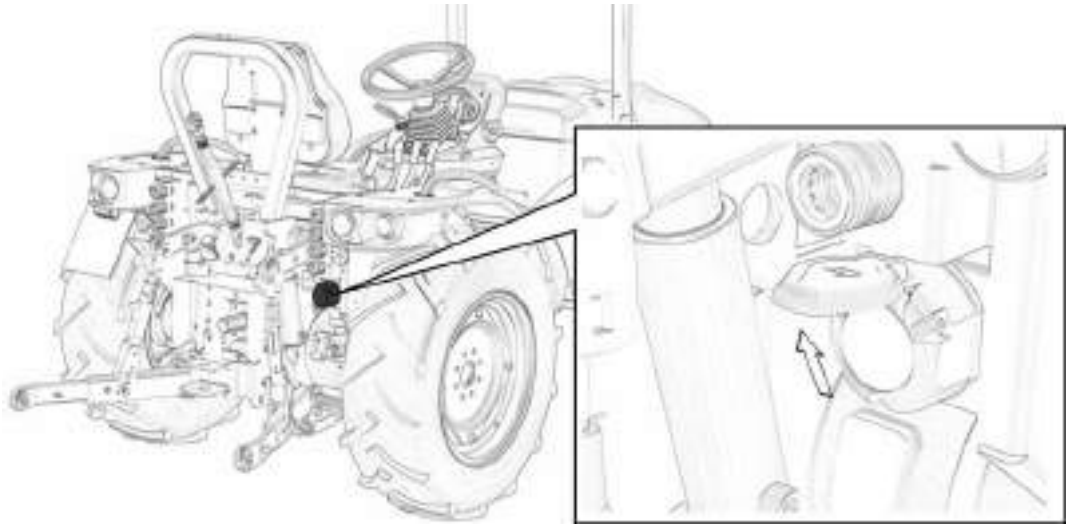


Fig. 107

Arrangement of pins on the 7-pin tractor socket

Pin	Designation according to DIN	Description or function	Colour code of pins
1	L	Left direction indicator	Yellow
2	54 G	Empty pin	Blue
3	31	Ground	White
4	R	Right direction indicator	Green
5	58 R	Rear headlight and license plate lamp	Brown
6	54	Brake lamps	Red
7	58 L	Rear left headlight	Black

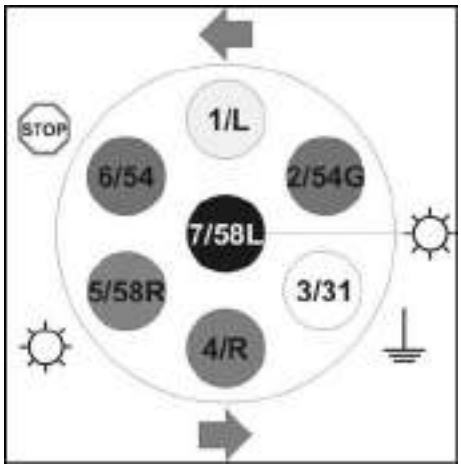


Fig. 108

4.11.7 EXTERNAL 3-PIN SOCKET FOR IMPLEMENTS

The 12V socket is designed for connecting various electrical devices to the tractor.

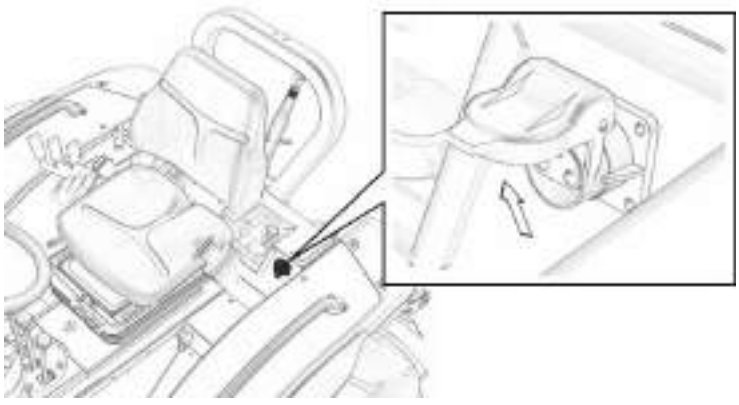


Fig. 109

5 TRANSPORTING THE TRACTOR

When transporting the tractor, the operator or the driver of the transport vehicle must comply with the manufacturer's instructions as laid out in the operating instructions. Depending on the final destination, there are several possible solutions available for transporting the tractor on various means of transport.

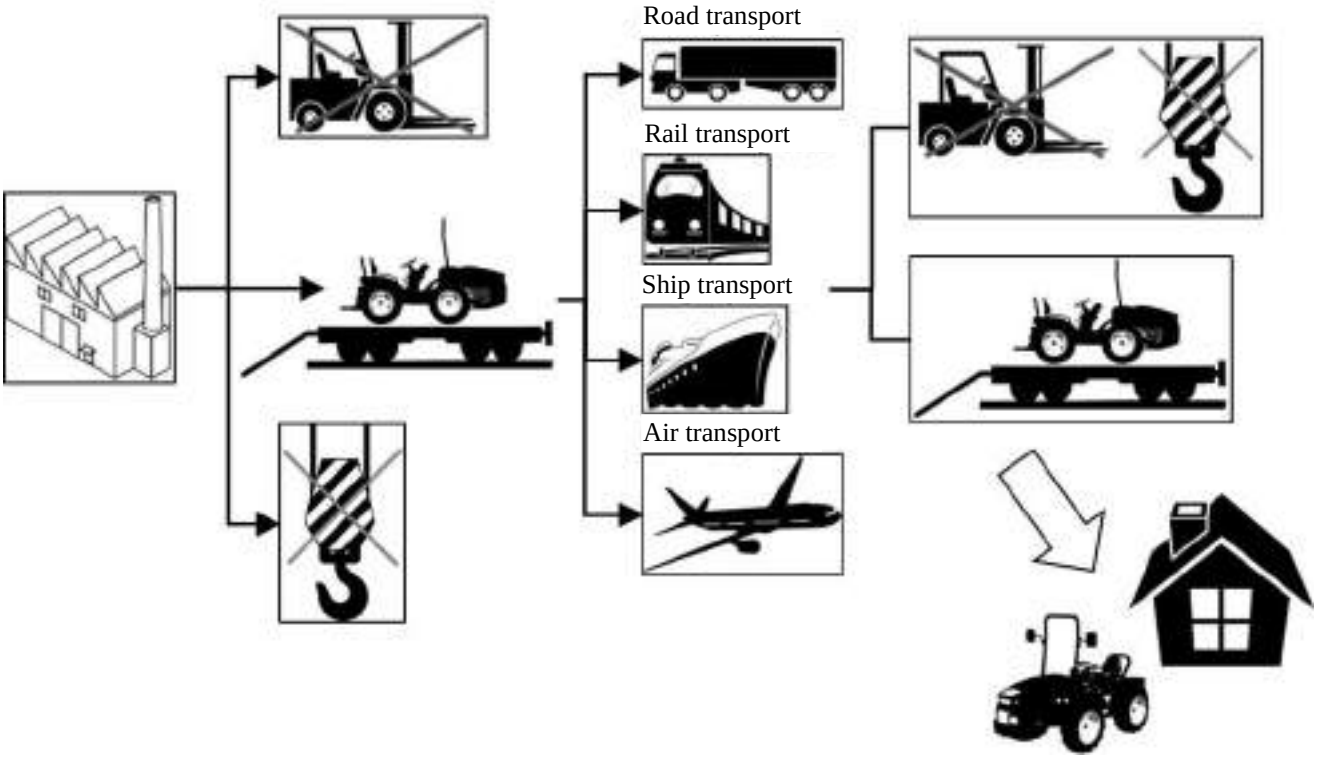


Fig. 110

	IMPORTANT: Be very careful when loading and unloading the tractor to avoid personal injuries or property damage.

5.1 LOADING

To load the tractor on a transport vehicle, use a ramp next to which you can park the vehicle or a loading ramp, which must be securely fastened to the transport vehicle and to the ground. When using a loading ramp to load the tractor, make sure that the load-bearing capacity and the wheelbase of the loading ramp is sufficient.
Only load the tractor when seated on the driver's seat or by using a tow bar or a chain with a winch.

Loading procedure

- Start the tractor.
- Lift the rear hydraulic lift mechanism to the uppermost position. If the tractor is optionally equipped with a front hydraulic lift mechanism, it must be lifted as well. For information on controlling the lift mechanisms, refer to the chapter “Hydraulic controls”.

- Turn the rotating knob for damping the lowering of the rear hydraulic lift mechanism all the way to block the lowering operation; refer to the chapter “The rear hydraulic lift mechanism control”:
- Slowly drive the tractor up the ramp or the loading ramp and onto the transport vehicle. The driver must be familiar with the procedure for loading the tractor onto the transport vehicle to ensure adequate safety.
- When you park the tractor on the transport vehicle, shut down the engine and apply the parking brake. Before removing the key, shift into the lowest gear.

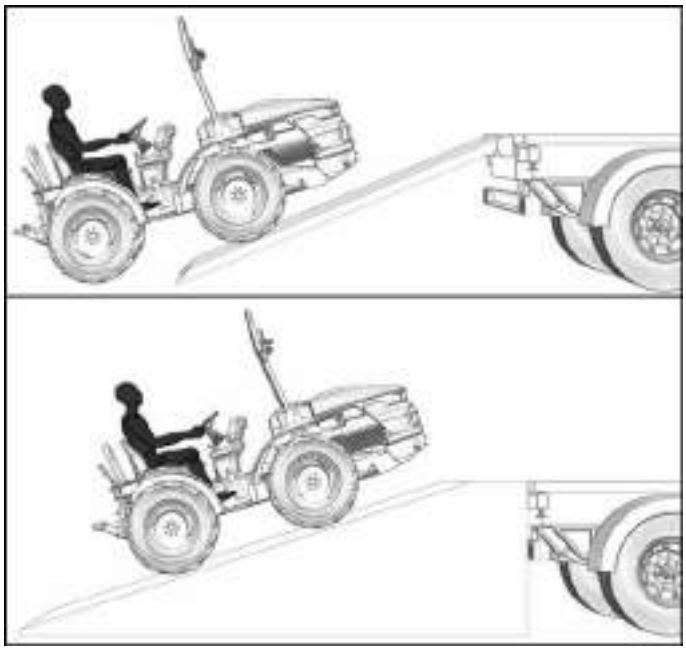


Fig. 111

Before transporting, secure the tractor with safety wedges and use belts to fasten it. The roll bar on the tractor can be lowered to save some space during transport.

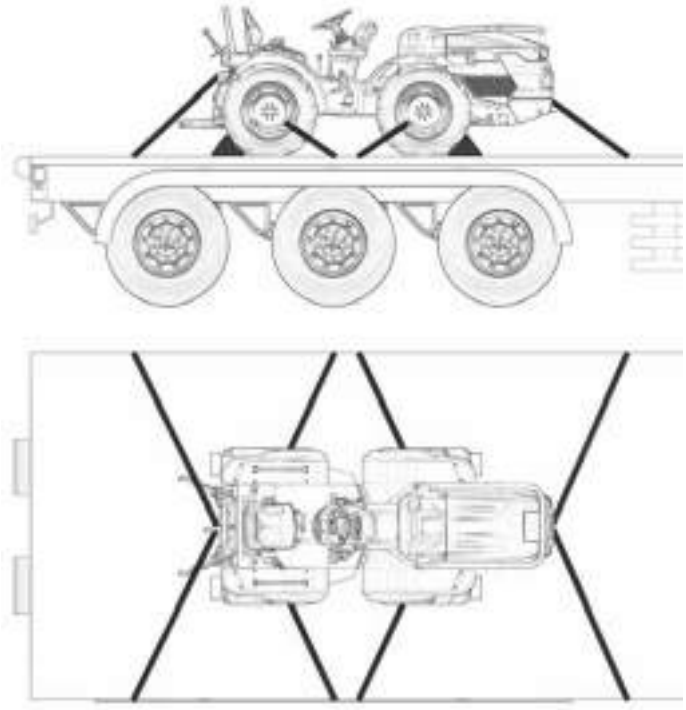


Fig. 112

	**IMPORTANT:** Use a loading ramp to load the tractor on a transport vehicle!

	**WARNING:** The tractor **must not** exceed the maximum permissible dimensions of the transport means.

5.2 UNLOADING

The procedure for unloading the tractor is carried out in reverse order of the loading procedure. Before driving the tractor off the transport vehicle, make sure that the load-bearing capacity of the loading ramp is sufficient. Adjust the position of the ramp to the wheelbase of the tractor, see, and securely fasten it to the transport vehicle and the ground. Drive the tractor off the transport vehicle; the driver must sit in the driver's seat.

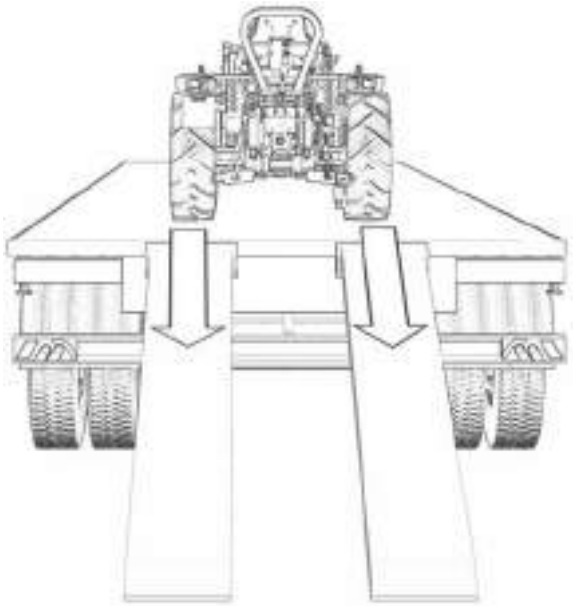


Fig. 113

	**WARNING:** If the engine of the tractor is shut down when unloading the tractor, the steering wheel is stiff and harder to turn because the hydraulic system is turned off.

5.3 TOWING

The tractor can be towed in the event of a failure or for transporting, when the tractor is loaded onto a transport vehicle using a winch.
The tow hook is installed at the front of the tractor, in the middle of the bumper, directly under the engine cover.

	**WARNING:** Do not use the front tow hook for towing other implements!

Attaching the tractor to a towing vehicle, see Fig. 114

- Drive the towing vehicle to the tractor so that the tow bar can be easily attached.
- Remove the safety pin on the bolt and pull the bolt out of the tow hook.
- Attach the tow bar (1) to the vehicle and the tractor.
- Insert the bolt (2) back into the tow hook on the tractor and secure it with a pin (1); the procedure for the towing vehicle is similar.
- When the tractor is attached to the towing vehicle, move the shift levers to neutral and release the parking brake.
- When towing, the driver must always remain on the seat.
- After towing, restore the tractor to its original operating condition.

If possible, keep the engine running during the towing process for easier steering wheel control. Otherwise the hydraulic system is turned off, which makes the steering wheel stiff and harder to turn.

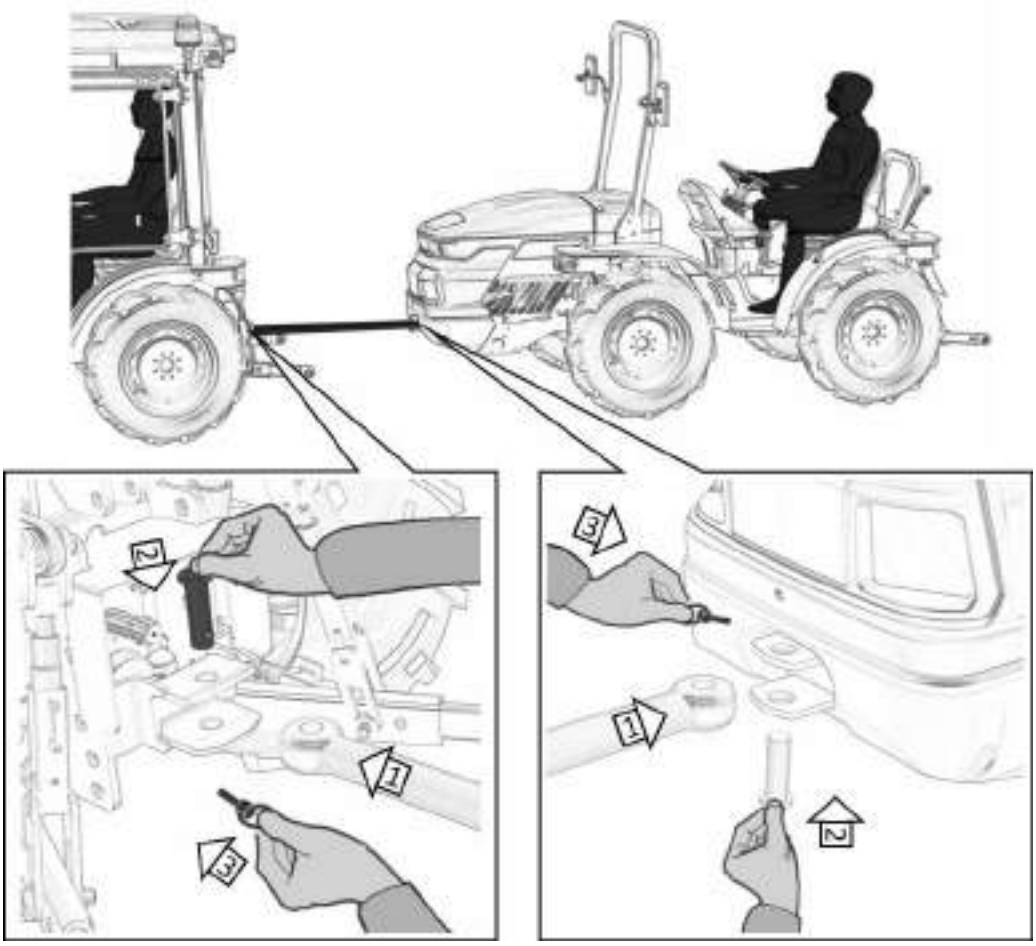


Fig. 114

	**WARNING:** Before towing, always make sure that the main bolts on the tractor and the towing vehicle are correctly inserted and blocked with a safety pin.

	**IMPORTANT:** Always use a towing vehicle with sufficient power to tow the tractor and only over short distances and with a maximum speed of 10 km/h.

6 TRACTOR ADJUSTMENTS

The person authorized to adjust the tractor must comply with the basic safety instructions and take the necessary precautions to ensure the appropriate level of safety in the place of work.
Unless otherwise specified for exceptional cases, all tractor adjustments must be performed with the engine off.

Stopping the tractor safely

- The tractor must always be parked on a flat surface. If this is not possible, secure the tractor by placing additional wedges under the wheels to ensure it is safely positioned.
- Move all controls to neutral position and activate the parking brake.
- If a mounted implement is attached to the tractor, lower the hydraulic lift mechanism and position the implement on the ground.
- If a trailed implement is attached to the tractor, activate the brake on the implement. If there are no brakes, place safety wedges under the wheels of the implement.
- Move the PTO shaft control lever to neutral position.
- Move all hydraulic system controls to neutral position.
- Shut down the engine, remove the key and shift into first gear to ensure better safety.

For easier explanation and understanding of all adjustments which can be made to the tractor, this chapter is divided into different categories.

- Adjusting the driver's area
- Adjusting the lights
- Adjusting the rear hydraulic lift mechanism
- Adjusting the front hydraulic lift mechanism

6.1 ADJUSTING THE DRIVER'S AREA

The driver or the operator can adjust the optimal ergonomic position for driving or working with the tractor by adjusting the seat, the steering wheel and the rear-view mirrors.

6.1.1 ADJUSTING THE DRIVER'S SEAT

A) Adjusting the length of the seat, see Fig. 115

By pushing the lever outwards, the seat can be moved forwards or backwards to adjust it to your size requirements.
After the adjustment is finished, release the lever, which will automatically be locked in place to block the seat in position.

B) Adjusting the height of the seat, see Fig. 115

Use the rotary knob to adjust the height of the seat.

- Rotate the knob to the right (-) to lower the seat to the desired height.
- Rotate the knob to the left (+) to raise the seat to the desired height.

C) Adjusting the suspension of the seat, see Fig. 115

The seat suspension system can be individually adjusted according to the terrain where you intend to perform work or drive.

Use the rotary knob to adjust the suspension of the seat.

- Turn the lever to the right (+) to make the suspension harder.
- Turn the lever to the left (-) to make the suspension softer.

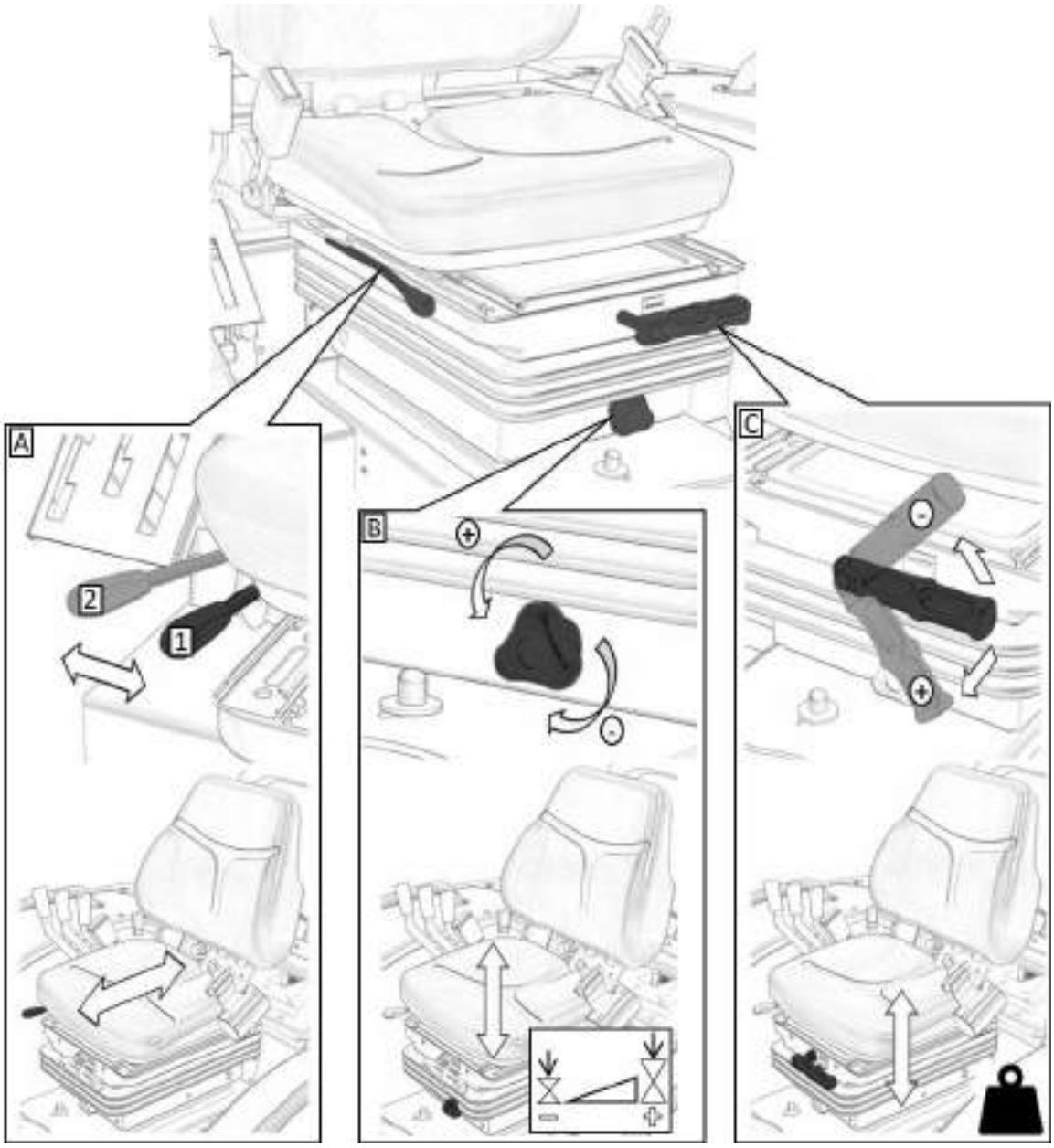


Fig. 115

6.1.2 ROTATING THE DRIVER'S SEAT

The tractor provides the option of seat rotation by 180°. Rotating the seat will simultaneously rotate the entire console with instruments and controls. Rotating the seat also activates a switch valve under the dashboard, which automatically determines the position and reverses the oil flow in the hydraulic system to match the steering to the direction of steering wheel turning when the operator drives in reverse.

Seat rotation procedure, see Fig. 116
Safely stop the tractor and perform the seat rotation procedure with the engine off and the parking brake applied.

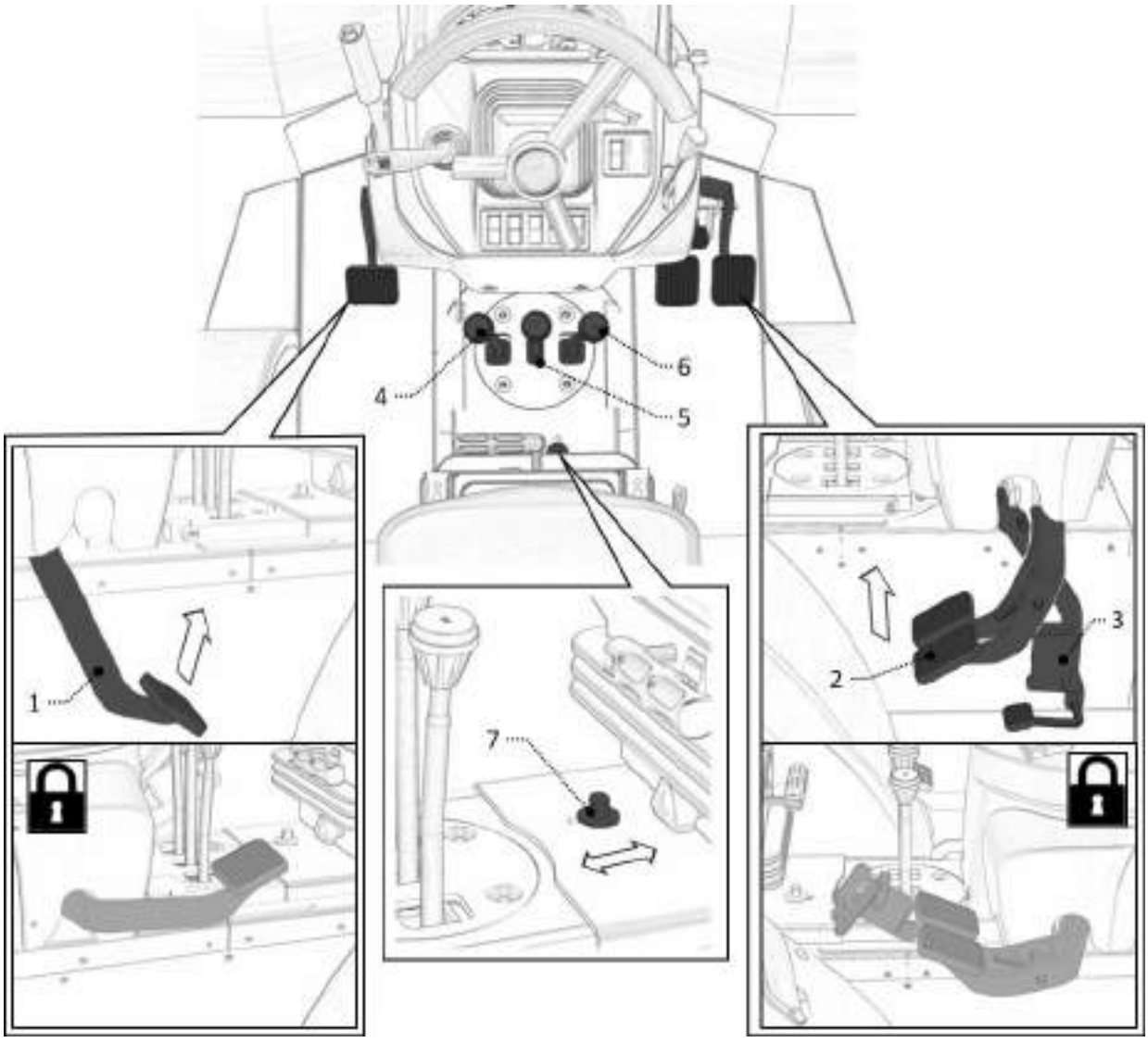


Fig. 116

- Move the control levers 4, 5, and 6 to neutral position.
- Lift the clutch pedal 1.
- Lift the foot accelerator pedal 3.
- Lift the foot brake pedals 2 and connect them with a safety pin for easier lifting.

- Release the safety device 7 and lift the seat. The gas spring ensures that the seat remains in the upright position.

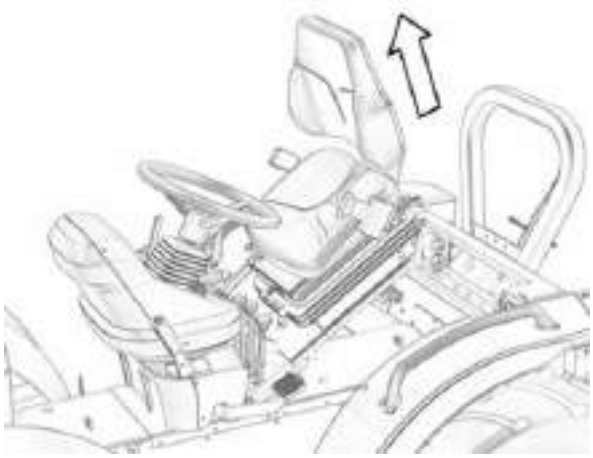


Fig. 117

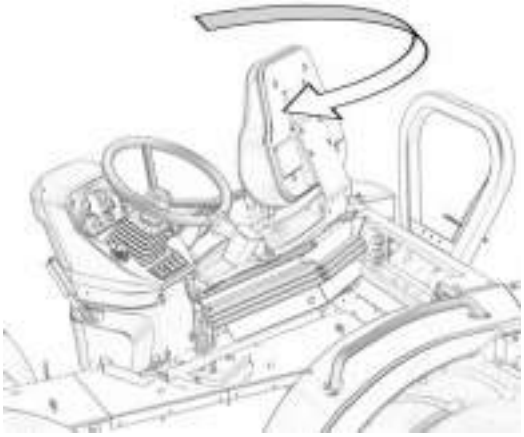


Fig. 118

- Rotate the seat to the right (clockwise) by 180°.

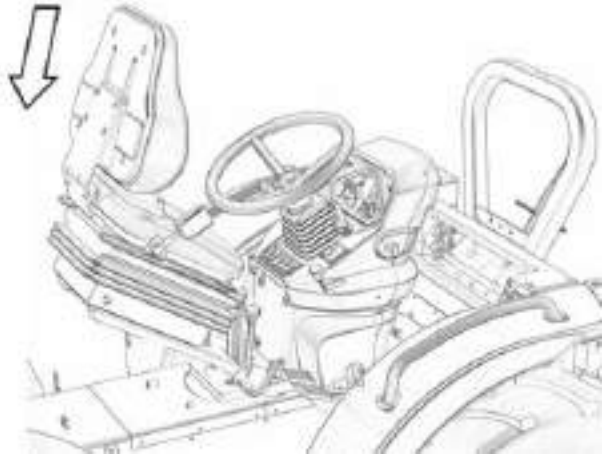


Fig. 119

- Lower the seat and make sure that the mechanism was engaged to block the seat in the new position.
- Return the pedals 1, 2 and 3 to their original position.

	**WARNING:** Whenever the seat is rotated, check the entire control system (steering system, brakes, accelerator pedal etc.) for correct operation before starting the tractor.

	**WARNING:** When driving the tractor on the road, the driver's seat must always be positioned in the driving direction (towards the engine), never in the opposite direction.

	**IMPORTANT:** Before performing the seat rotation procedure, always move the shift levers to neutral position.

6.1.3 STEERING WHEEL ADJUSTMENT

The operator is able to adjust the steering wheel of the tractor according to his ergonomic needs. Safely stop the tractor and perform the adjustment with the engine off and the parking brake applied.

Steering wheel adjustment procedure
The tilt of the steering wheel is adjusted by releasing the lever.

- Rotate the lever to position 2 (anti-clockwise direction) to release the steering wheel mechanism.

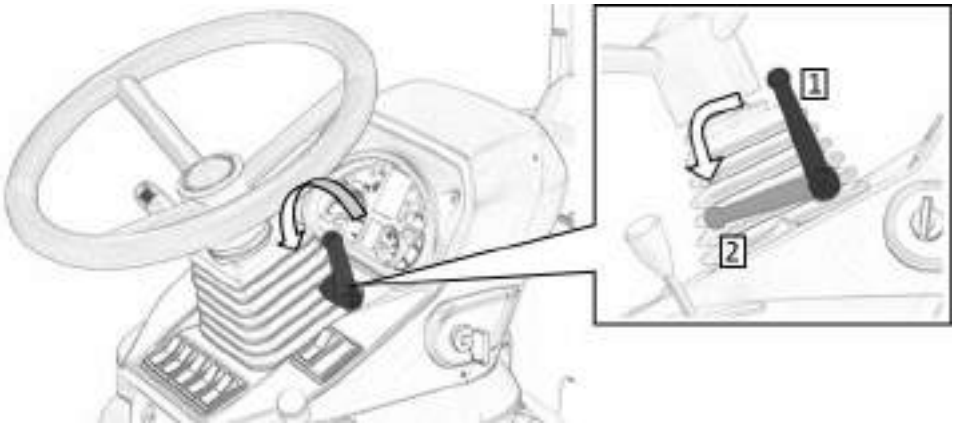


Fig. 120

- Adjust the desired tilt by moving the steering wheel forwards and backwards.

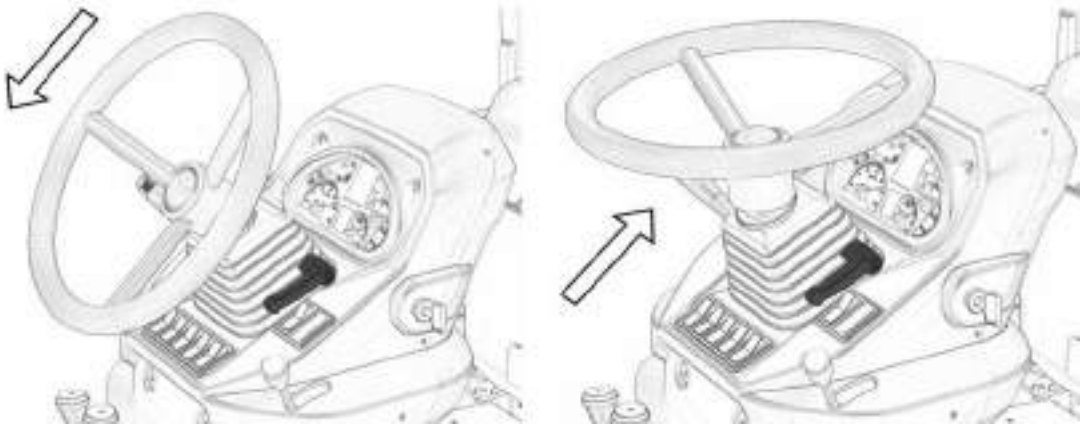


Fig. 121

- Rotate the lever to position 1 (clockwise direction) and fix the lever in the original position; the steering wheel mechanism is now locked.

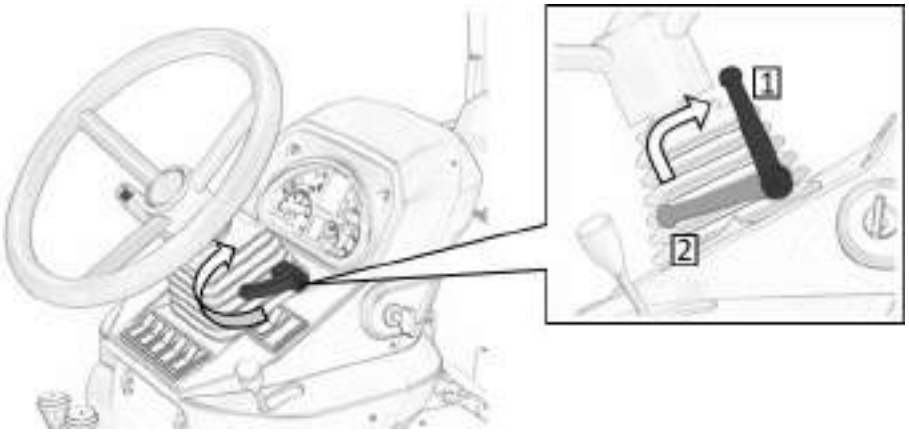


Fig. 122

	**WARNING:** After performing this adjustment, make sure the steering wheel is locked in its current position.

6.1.4 ADJUSTMENT OF REAR-VIEW MIRRORS

Rear-view mirrors, which can be adjusted to the ergonomic needs of the operator, provide a good view of the rear-view field.

Horizontal adjustment

To make a horizontal adjustment, loosen the screws (1) on the bracket and move the mirror by hand to the left or to the right until you reach the desired position. When the adjustment is finished, re-tighten the screws on the bracket to fix the mirror in place.

Fig. 123

Adjusting the tilt of the mirror

The mirror can be rotated by 360° forwards/backwards or to the left/right, which makes it possible to adjust the mirror to different angles.

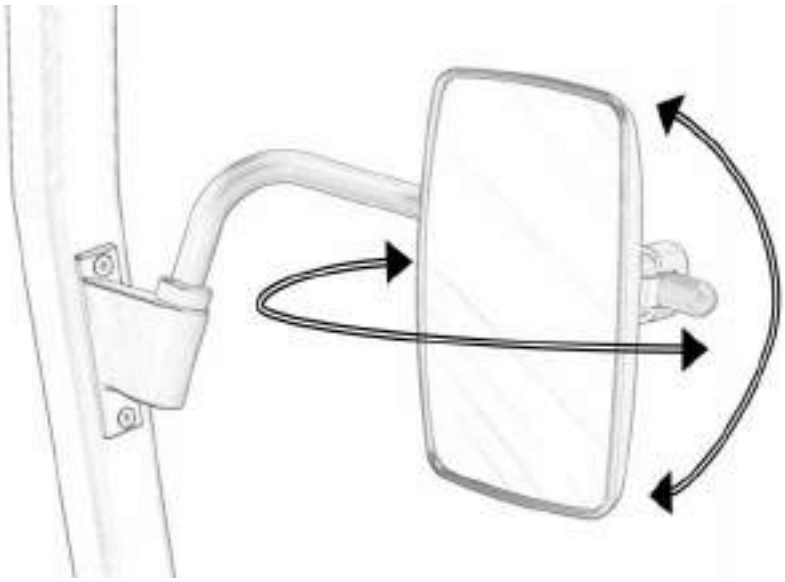


Fig. 124

Rotating the mirror

The arms of the mirror also enable the mirror to be rotated on the mounting axis. In tight spaces, they can be rotated completely inwards or outwards. With each movement, the mirror arms are locked in the particular intermediate position.

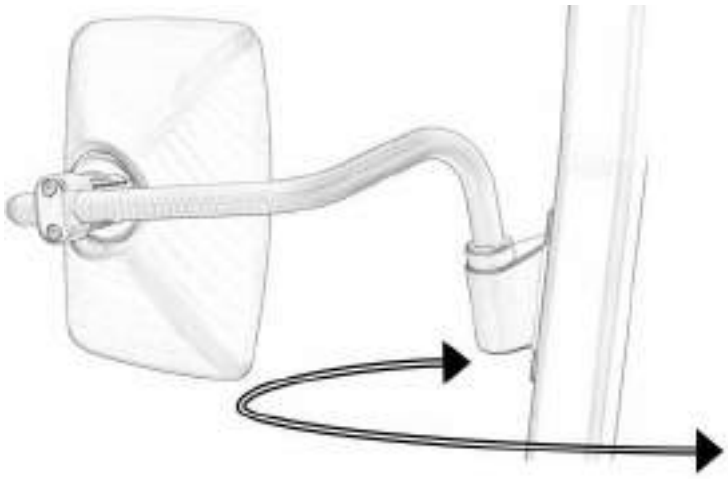


Fig. 125

6.2 ADJUSTING THE LIGHTS

This chapter describers the lights on the tractor, which can be adjusted.

6.2.1 ADJUSTING THE FRONT HEADLIGHTS

To adjust the front headlights, position the tractor on a horizontal surface, make sure the tyre pressure is correctly adjusted and that the front wheels are straight. Position the tractor at a distance of 5 m from the wall with the low beam headlights on and check if the headlights are correctly positioned. If the headlights are not positioned properly, adjust them; see Fig. 127.

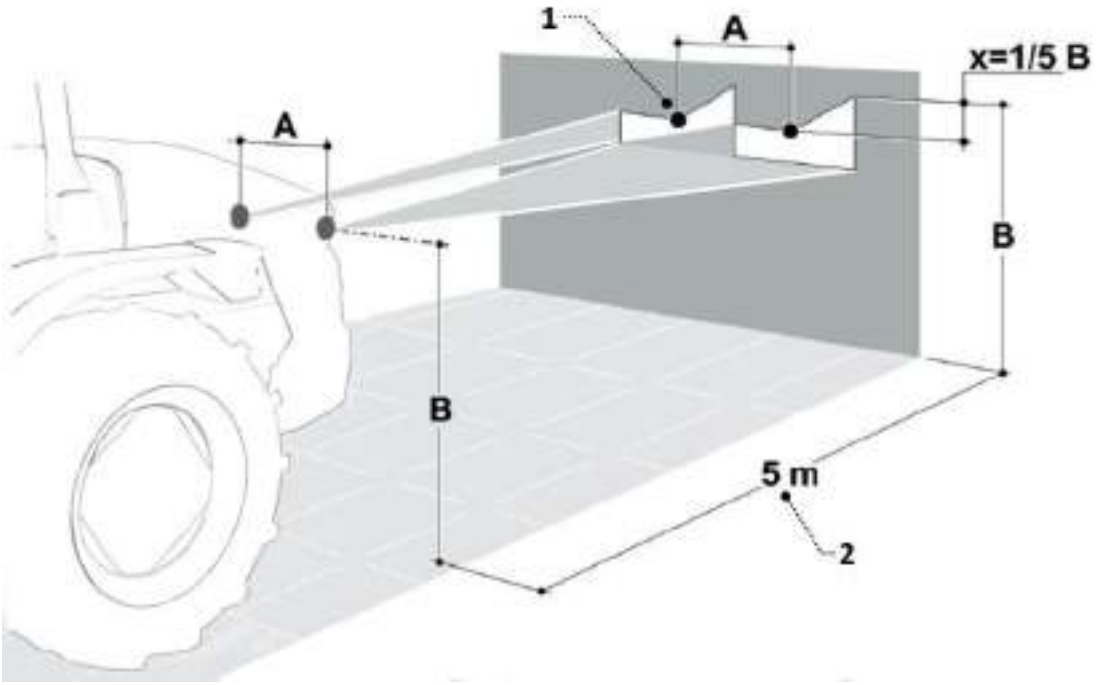


Fig. 126

1 - projection points at the middle height of the headlight beam on the wall
2 - distance between the tractor headlights and the wall
3 - distance between the headlights
B - height of the headlight beam
x - distance between the middle of the headlight beam and the horizontal axis

	**IMPORTANT:** Please note that the illustration is adapted for countries with right-hand traffic. In countries with a left-hand traffic system, the projection area of headlights on the wall must be symmetrical. The ends of the light field on the wall must always point to the edge of the road.

6.2.1.1 ADJUSTMENT

To determine the projection points of headlights on the wall, drive the tractor to the wall with the headlights on, mark the middle point of the light beam, then back-up the tractor until it is 5 m from the wall.

To adjust the lateral position and the height of the headlights, use the screws shown in the figure. Perform the following procedure to access the screws.

- Open the engine cover.
- Adjust the headlight position by tightening or loosening the screws.
- Close the cover and check the beam. If necessary, repeat the procedure.

When the adjustment is finished, the distance between the projection points on the wall must match the distance between the headlights.

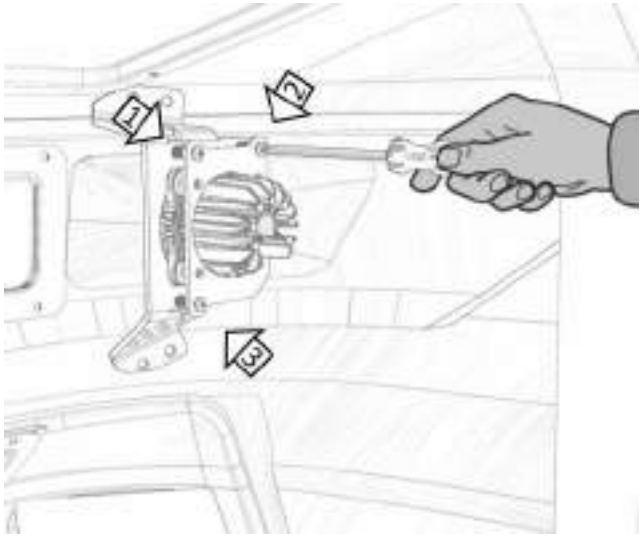


Fig. 127

	IMPORTANT: As a road user, you must ensure that the headlights are correctly positioned to avoid disturbing the other drivers on the road!

6.2.2 ADJUSTING THE WORKING LAMPS

Adjusting the lamps up and down, this adjustment can be performed manually. If this is not possible, do the following:

- First, loosen the screw on the articulated part of lamps.
- Manually adjust the position of lamps to reach the desired illumination angle and tighten the screw.

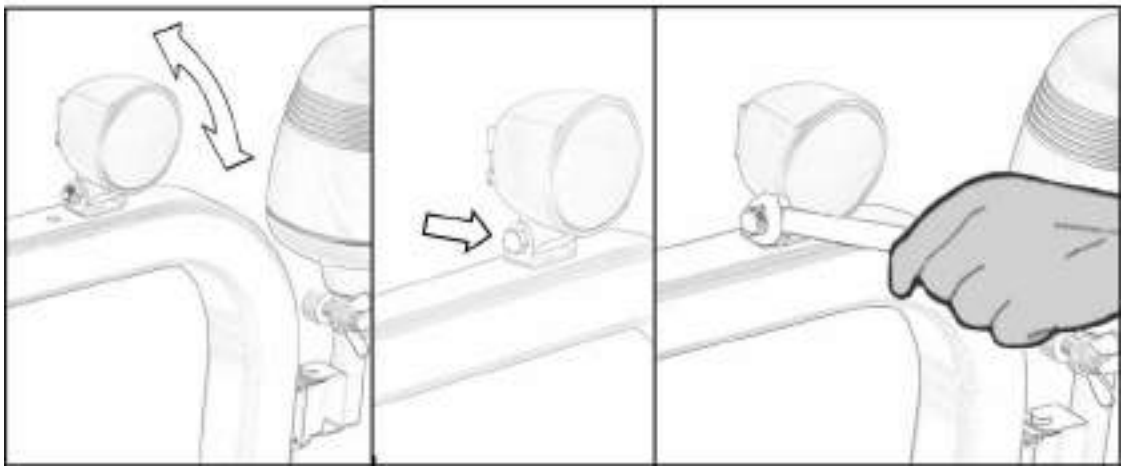


Fig. 128

6.2.3 ADJUSTING THE WORKING LAMPS (VERSION WITH A CAB)

Adjusting the lamps up and down, this adjustment can be performed manually. If this is not possible, do the following:

- First, loosen the screw on the articulated part of lamps.
- Manually adjust the position of lamps to reach the desired illumination angle.
- Tighten the screw.

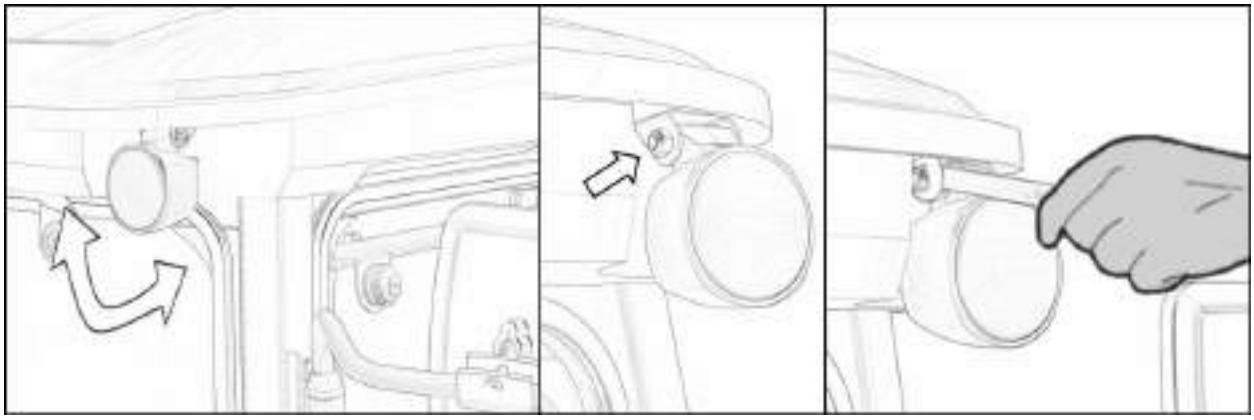


Fig. 129

Adjusting the lamps to the left/right, this adjustment can be performed manually. If this is not possible, do the following:

- Move the working lamp upwards. If this is not possible, repeat the procedure described above for adjusting the lamps up and down.
- Loosen the screw next to the rear working lamp.
- Manually adjust the position of lamps to the desired position.
- Tighten the screw.

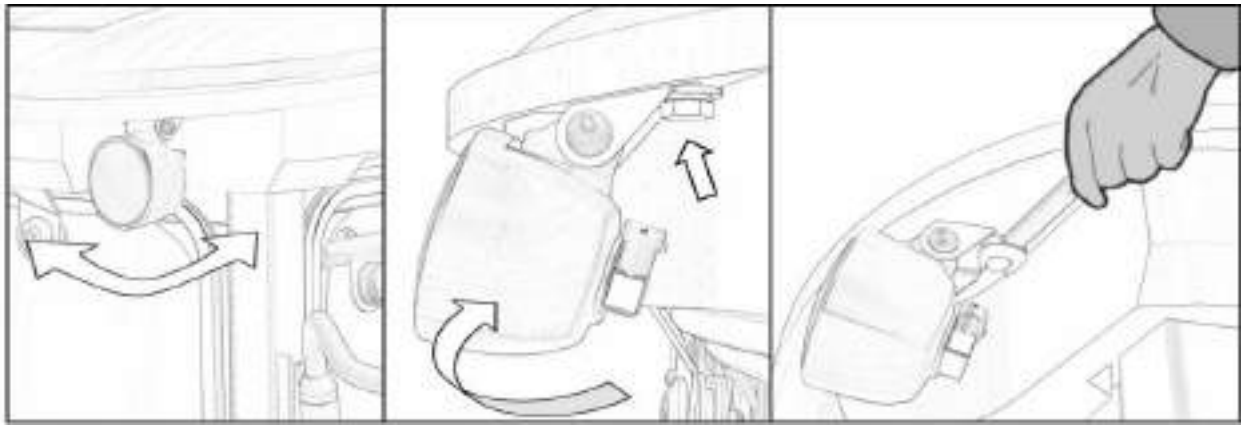


Fig. 130

	IMPORTANT: These lamps should only be used as assistance when performing work. When driving on the road, these lights must be turned off to avoid blinding the other drivers.

6.3 ADJUSTING THE REAR HYDRAULIC LIFT MECHANISM

With suitable adjustments, this tractor model allows for the connection of category I implements. Before connecting an implement for the first time, it is important to check that the weight does not exceed the maximum permissible axle load on the tractor.
If you believe that the tractor would be too unstable with the implement connected, install appropriate weights to increase stability.

The rear hydraulic lift mechanism must be adjusted whenever you change the implement and the attachment points are arranged differently than on the previous implement.

According to requirements, the rear hydraulic lift mechanism can be adjusted in several different ways, as described below.

1. Adjusting the lower link arms
2. Adjusting the vertical tensioners
3. Adjusting the top link
4. Adjusting the lateral tensioners

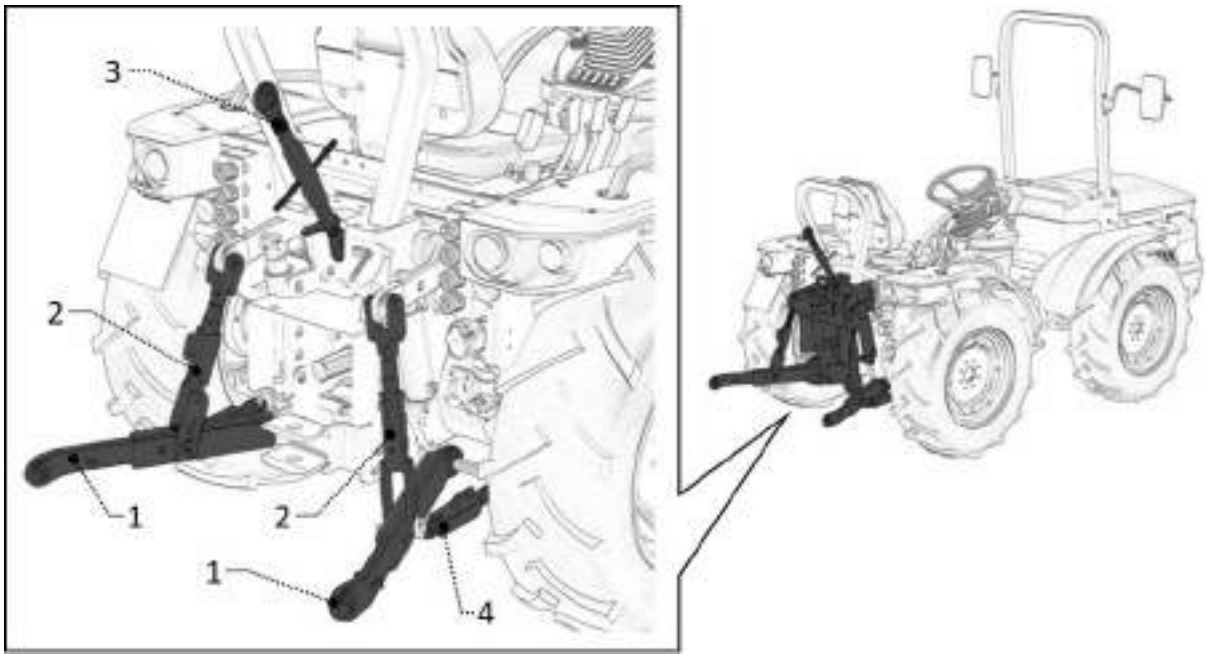


Fig. 131

Before adjusting the rear hydraulic lift mechanism

- Drive the tractor to the implement to be installed.
- Lower the lower link arms to the height of connection points on the implement.
- Stop the tractor when the conditions are safe, if necessary, secure it with safety wedges.

6.3.1 ADJUSTING THE LOWER LINK ARMS

This chapter describes how to adjust the link arms with standard and automatic linkage systems, with two possible versions for a fixed connection to the link arm or adjustable connection.

6.3.1.1 STANDARD LINKAGE WITH A BALL LINK

To adjust the lower link arms:

- Remove the safety pin (1) and pull out the bolt (2).
- Adjust the desired position of the link arm.
- When you finish adjusting the position of the arm, insert the bolt back and lock it with a safety pin.
- Repeat the procedure for the other link arm.

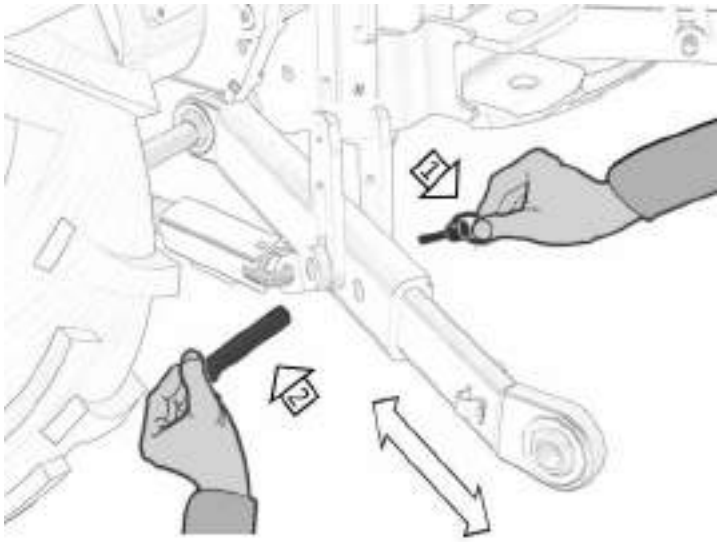


Fig. 132

6.3.1.2 AUTOMATIC LINKAGE FOR IMPLEMENTS WITH A BALL JOINT (OPTIONAL)

The automatic linkage is fixed and can only be adjusted vertically with the adjustable arm. With this version, the adjustment procedure for the lower link arms is the same as for the standard linkage; see description above.

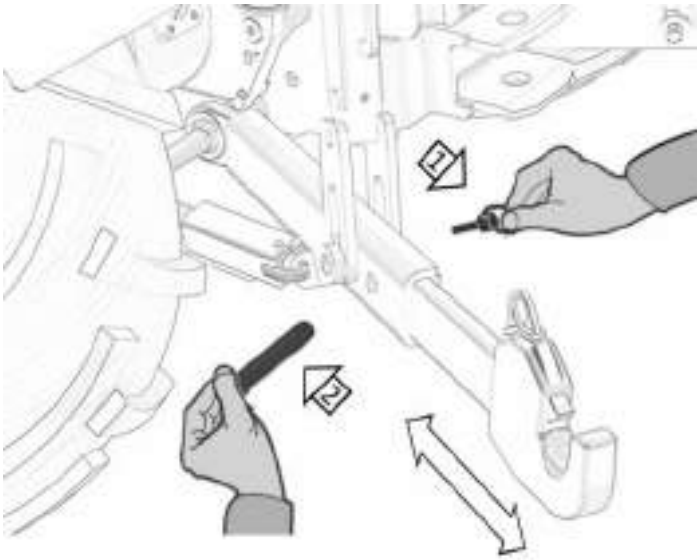


Fig. 133

6.3.1.3 AUTOMATICALLY CONTROLLED LINKAGE FOR IMPLEMENTS WITH A BALL JOINT (OPTIONAL)

The automatic linkage is a separate component, which is moved along the link arm. Vertical adjustment can be made by means of an adjustable arm and horizontal adjustment can be made by moving the linkage along the arm to the left and to the right.

Vertical adjustment of the lower link arms in this version is the same as for the standard linkage; see description above.

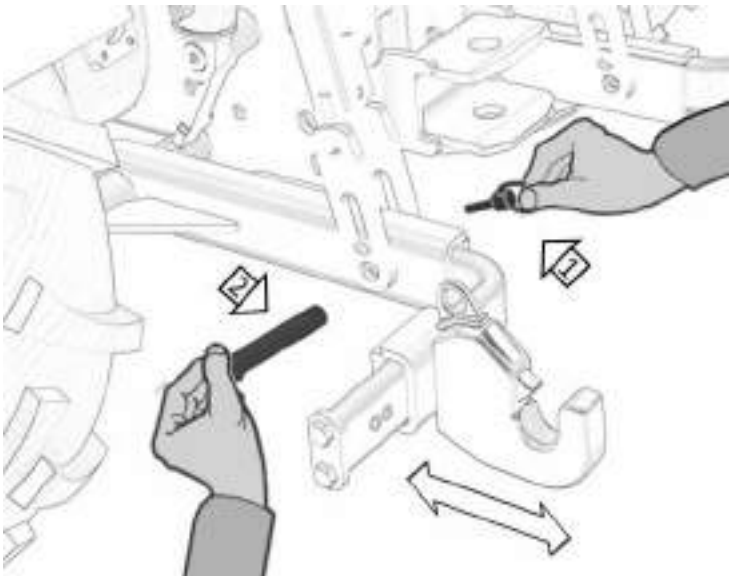


Fig. 134

Horizontal adjustment is made by following the procedure below:

- First, slightly loosen the safety nut on the screw (1) and the screw (2) to release the linkage.
- Adjust the desired position of the automatic linkage on the arm by moving it to the left or to the right.
- When adjusted in the desired position, re-tighten the screw (2) and block it with a safety nut (1).
- Repeat the procedure for the other link arm.

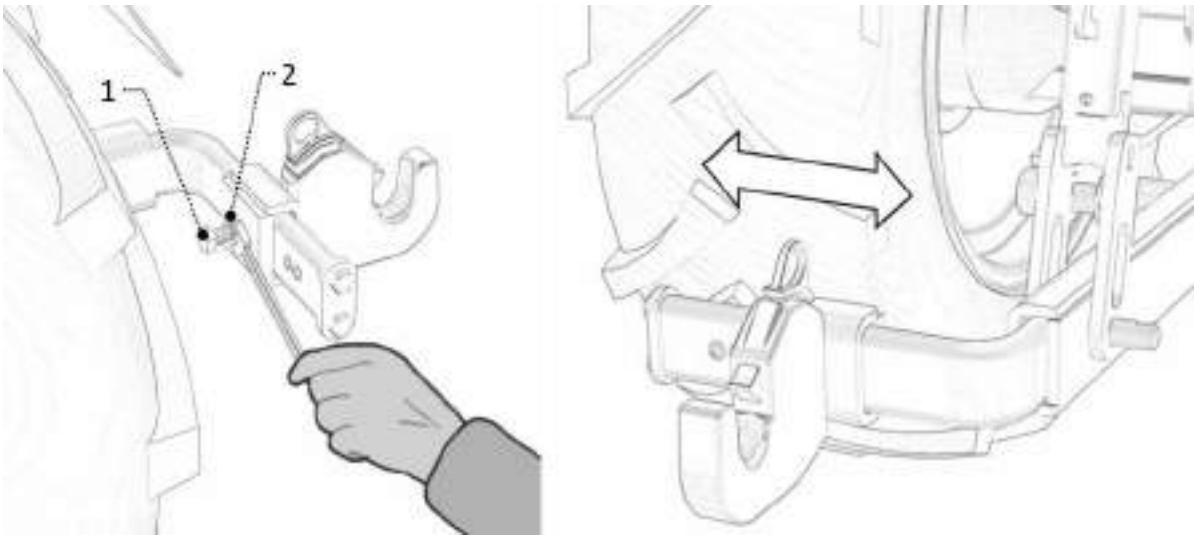


Fig. 135

	**WARNING:** When the lower link arms are adjusted, always make sure that the bolts are properly inserted and blocked with a safety pin before working.

6.3.2 ADJUSTING THE VERTICAL TENSIONERS

The adjustment of vertical tensioners regulates the height of lower link arms. Extending the tensioners reduces the height to which the lower link arms are lifted and retracting the tensioners increases the lift height.
According to the requirements of implements installed, you can choose to only adjust the height on one or both tensioners.

6.3.2.1 STANDARD VERTICAL TENSIONERS

Adjust the tensioners manually by following the procedure below:

- Remove the safety pin (1) and lift the handle of the tensioner.
- The tensioner is extended by rotating the handle in the clockwise direction and retracted by rotating the handle in the opposite direction.
- After the desired height on the vertical tensioner is adjusted, release the handle and lock it with a safety pin.
- You can repeat this procedure on the other side.

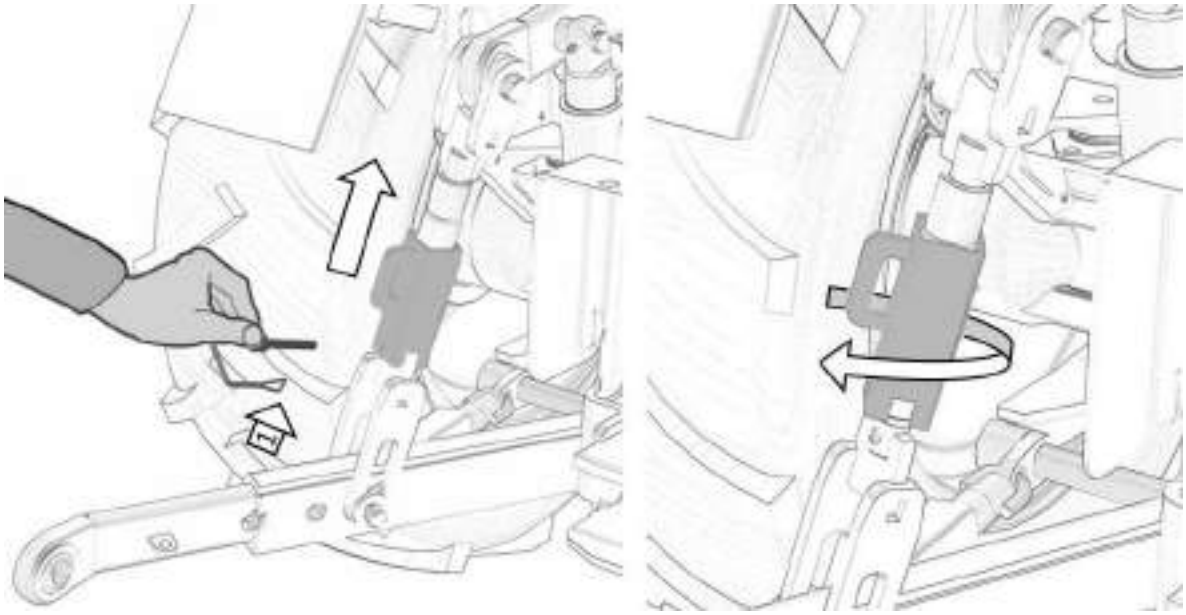


Fig. 136

	**WARNING:** After adjusting the vertical tensioner, always make sure that the safety pin is closed and properly blocks the tensioner handle before working.

6.3.2.2 VERTICAL HYDRAULIC TENSIONER

The vertical hydraulic tensioner is adjusted with a control lever on the control device, which is used for controlling the double-acting hydraulic system.

- The tensioner is retracted by moving the lever upwards in position 1 and extended by moving the lever downwards in position 2.
- In position 3, the lever is not functional and the vertical tensioner is not moving.
- When you adjust the desired height of the vertical tensioner, move the control lever to position 0 to block the tensioner.

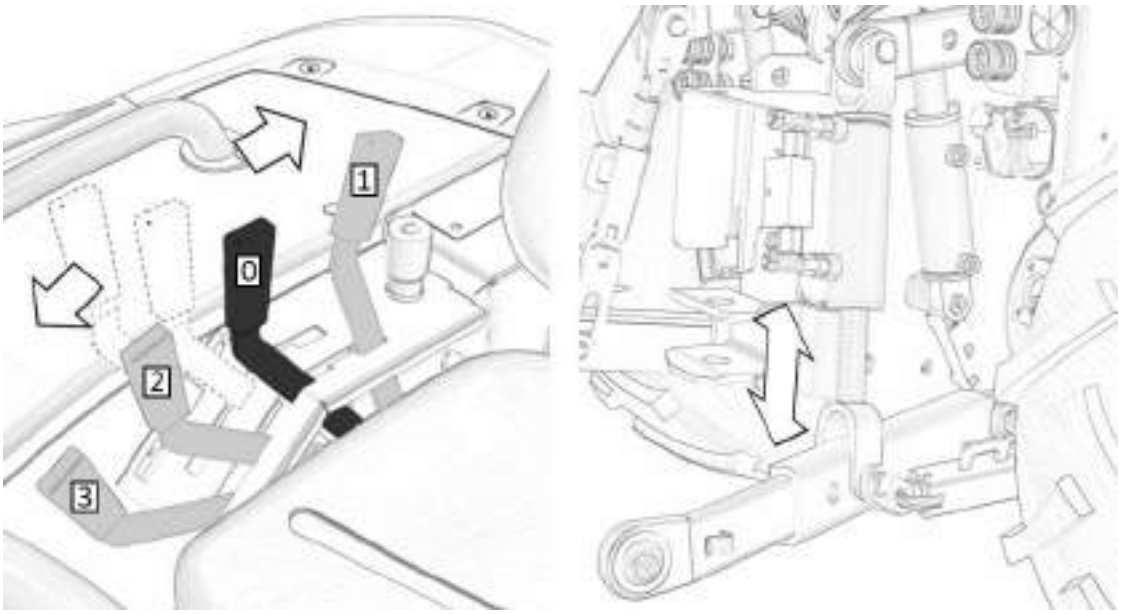


Fig. 137

6.3.3 ADJUSTING THE TOP LINK

Before the implement is attached to the tractor, the top link adjustment must be performed. Adjusting the length of the top link bar regulates the angle of the implement in relation to the ground level.

If the top link is extended, the angle of the implement decreases. If the top link is retracted, the angle increases.
In addition to the standard, mechanically adjustable top link, the user can optionally choose a hydraulically adjustable top link.

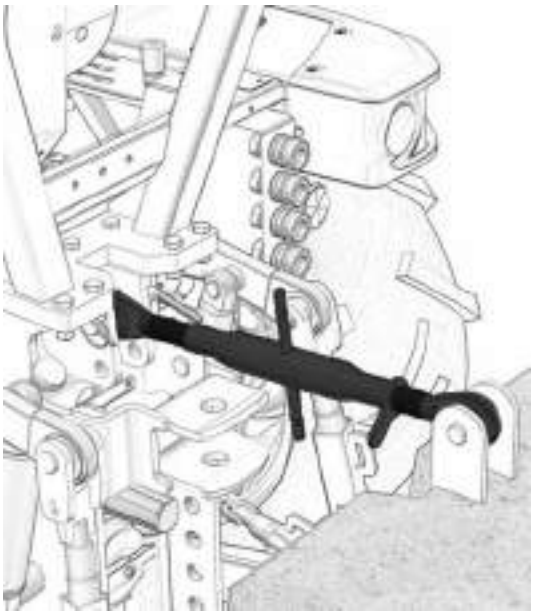


Fig. 138

6.3.3.1 STANDARD TOP LINK

The standard top link is mechanically operated and manually adjusted according to the procedure below.

- Release the safety lever (1).
- The top link is extended by rotating the handle (2) on the central part of the bar in the clockwise direction and retracted by rotating in the opposite direction.
  (This only applies when the top link is attached to the tractor with the safety lever is at the side of the implement. If the top link attachment is reverse, the adjustment direction by rotating the lever is also reversed.)
- After adjusting the desired top link length, screw the safety lever (1) back and block the rotation of the handle on the central part of the top link bar (2).

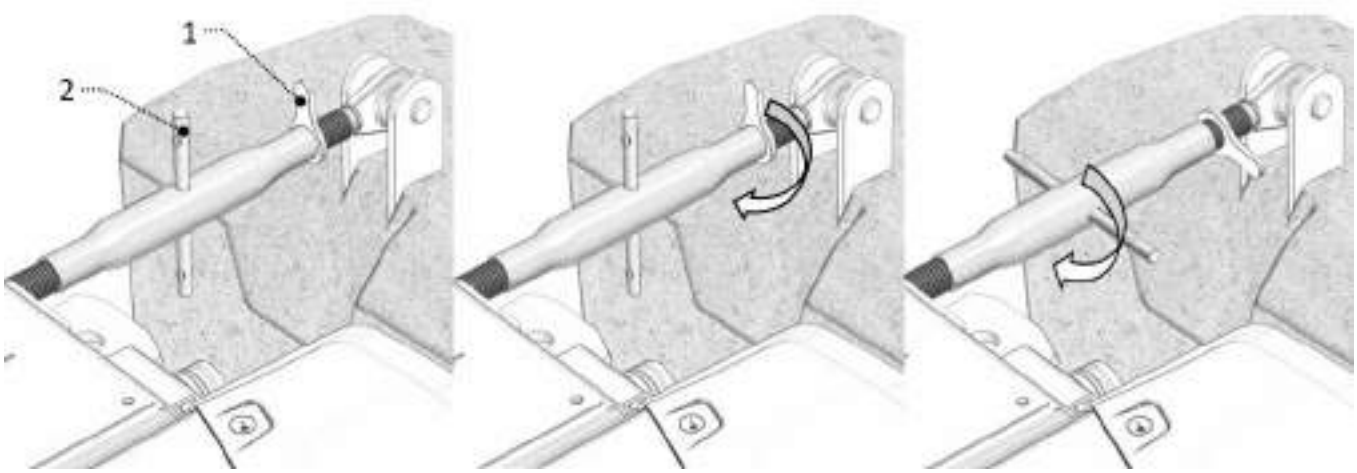


Fig. 139

	**WARNING:** After the adjustment of the top link is completed, always make sure that the safety lever is tightened before starting to work!

	**WARNING:** Never extend the top link too much, to the point that only a minimum thread length remains on the connection parts on the bar, otherwise they could fall out when loaded and cause serious accidents during work.

6.3.3.2 HYDRAULIC CONNECTION ROD

The lift rod is adjusted with a hydraulic control lever on the control device.

- The lift rod is retracted or extended by moving the control lever up and down to position 1 or 2 and the direction of operation depends on the connection of hydraulic couplings.
- In position 3, the lever is not functional and the hydraulic connection rod is not moving.
- When you adjust the desired length of the connection rod, move the control lever to position 0 to block the rod in place.

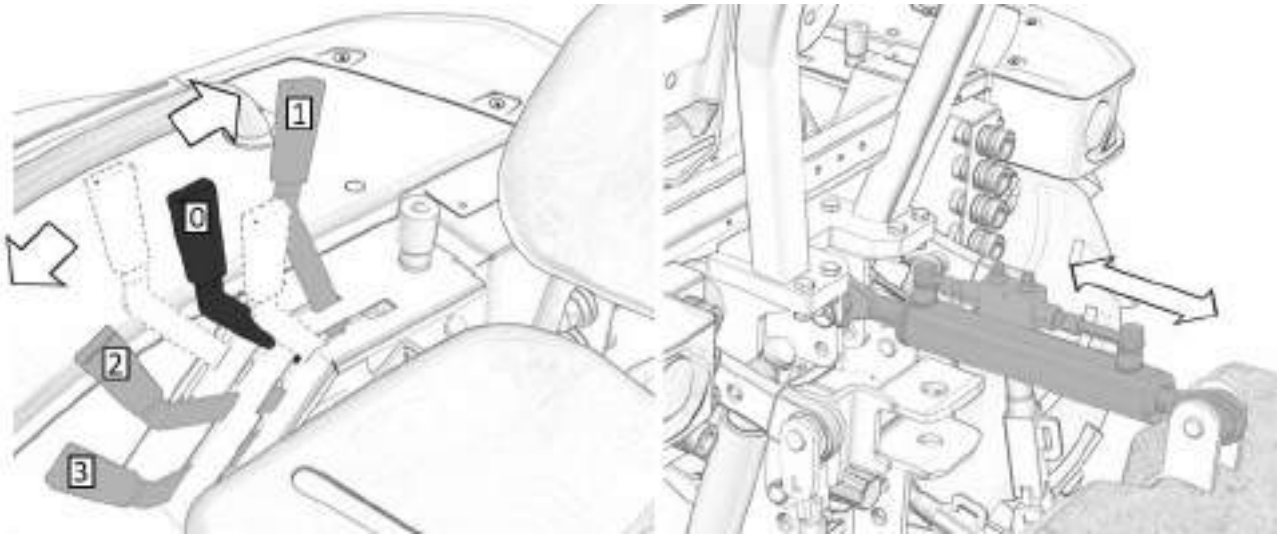


Fig. 140

6.3.4 ADJUSTING THE LATERAL TENSIONERS

The lateral tensioners are designed to limit or prevent lateral movement of the implement. They are adjusted when the implement is already attached to the tractor.

Manually adjust the lateral tensioners by following the procedure below:

- Remove the safety pin (1) and remove the handle of the tensioner from the safety groove.
- The lateral tensioner is closed or retracted by rotating the handle in the clockwise direction and opened or extended by rotating the handle in the opposite direction.
- After the desired length of the lateral tensioner is adjusted, insert the handle back into its safety groove and lock it with a safety pin.

Lateral tensioners are continuously adjusted, depending on the work and on whether the operator requires the implement to be attached in a fixed or flexible position.

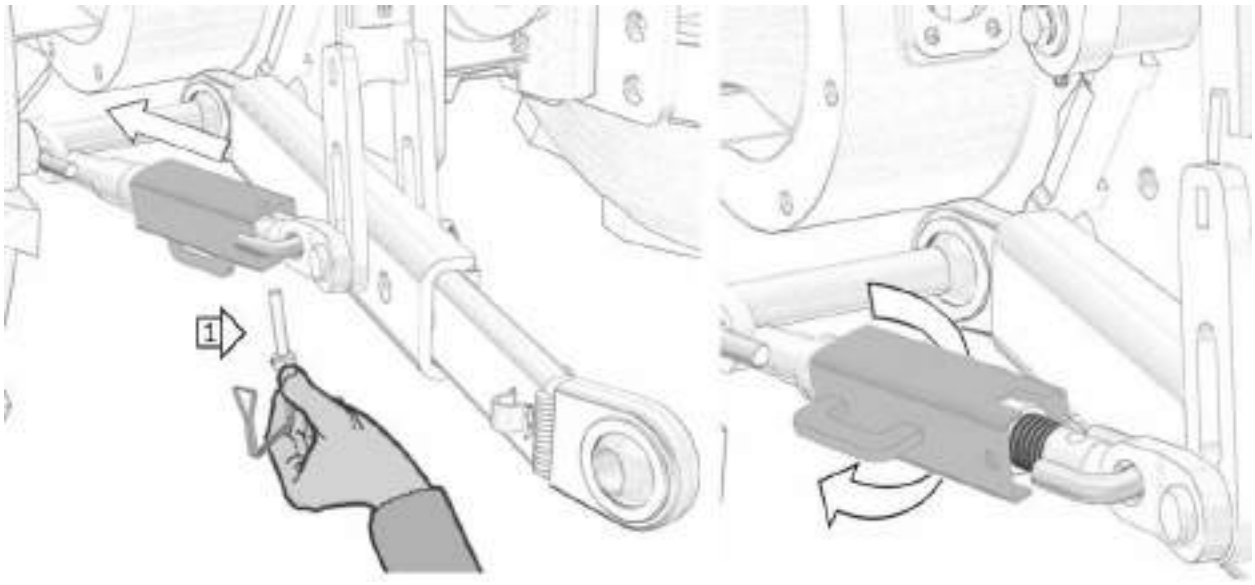


Fig. 141

6.4 ADJUSTING THE FRONT HYDRAULIC LIFT MECHANISM (OPTIONAL)

With suitable adjustments, this tractor model allows for the connection of category I implements. Before connecting an implement for the first time, it is important to check that the weight does not exceed the maximum permissible axle load on the tractor.
If you believe that the tractor would be too unstable with the implement connected, install appropriate weights to increase stability.
This adjustment must be performed whenever you change the implement and the attachment points are arranged differently than on the previous implement.

According to requirements, the front hydraulic lift mechanism can be adjusted in several different ways, as described below.

1. Adjusting the lower link arms
2. Adjusting the top link

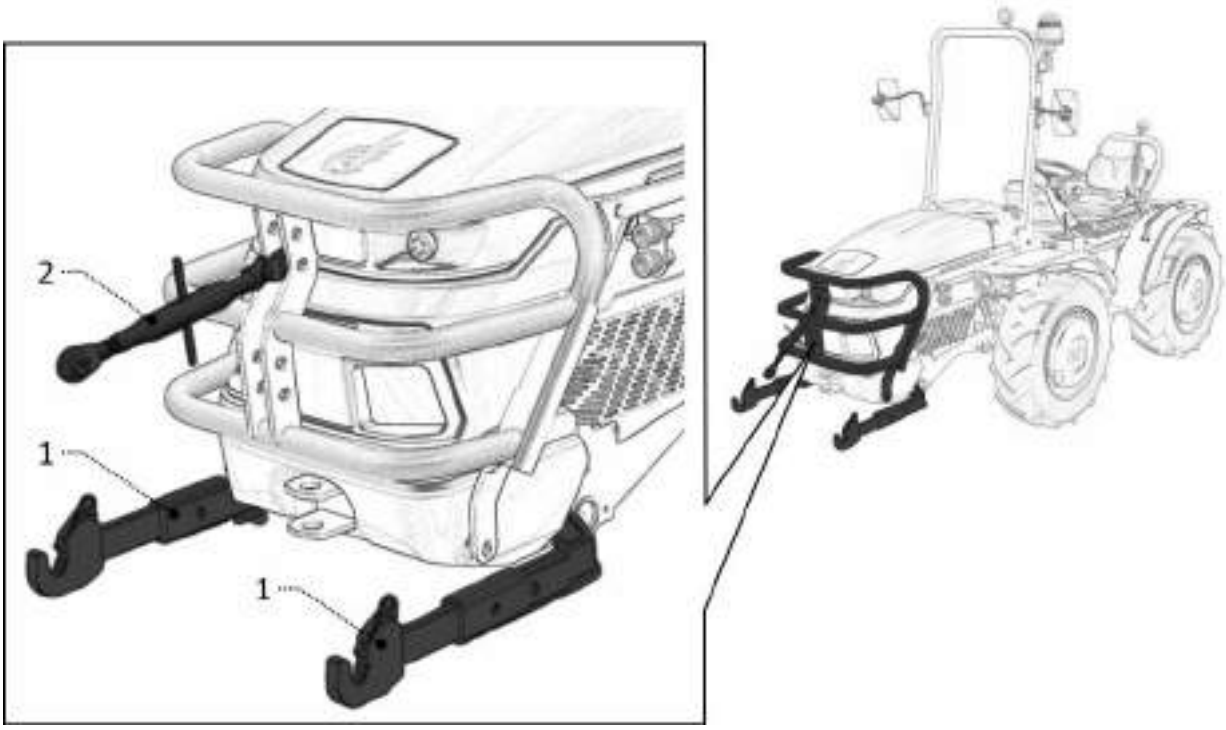


Fig. 142

Before adjusting the front hydraulic lift mechanism

- Drive the tractor to the implement to be installed.
- Lower the lower link arms to the height of connection points on the implement.
- Stop the tractor when the conditions are safe, if necessary, secure it with safety wedges.

6.4.1 ADJUSTING THE LOWER LINK ARMS

The automatic connection is fixed and can only be adjusted vertically with the adjustable arm.

To adjust the lower link arms:

- Remove the safety pin (1) and pull out the bolt (2).
- Adjust the desired position of the link arm by moving it up and down.
- When you finish adjusting the position of the arm, insert the bolt back and lock it with a safety pin.
- Repeat the procedure for the other link arm.

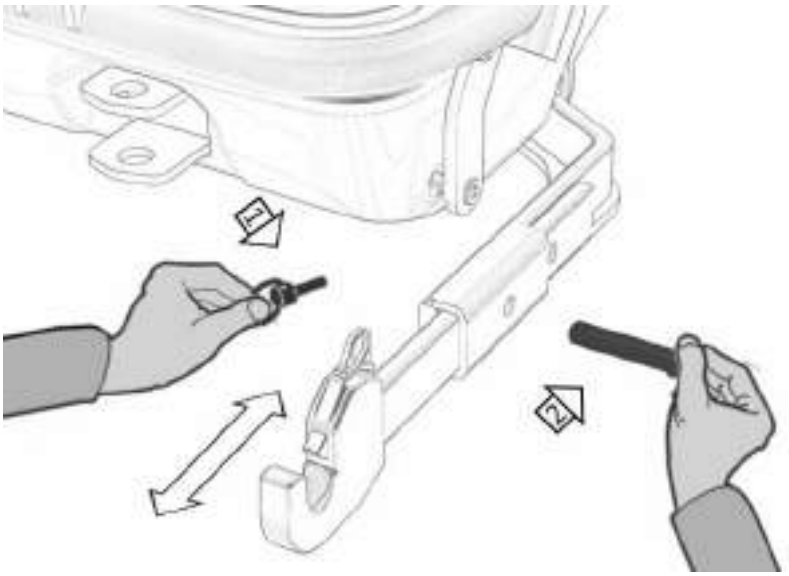


Fig. 143

	**WARNING:** When the lower link arms are adjusted, always make sure that the bolts are properly inserted and blocked with a safety pin before working.

6.4.2 ADJUSTING THE TOP LINK

The top link is adjusted in the same way as described in the previous paragraph; refer to the chapter “Adjusting the top link”.

In addition to the standard, mechanically adjustable top link, the user can optionally choose a hydraulically adjustable top link.

6.5 ADJUSTING THE HEIGHT OF THE REAR TOW HOOK

The tow hook is designed for attaching trailed implements and is suitable for single-axle or double-axle trailers. When performing the attachment for the first time, it is important to check whether the tow hook on the tractor is suitable for the traction load and the vertical load on the attachment point of the trailed implement. If you believe that the tractor would be too unstable with the implement connected, install appropriate weights to increase stability.
The rear tow hook must be adjusted with each attachment of a trailed implement, if the height of the attachment point differs from the previous implement.

For easier attachment of the trailed implement, you can also adjust the height of the tow hook.

- Drive the tractor to the implement.
- Remove the safety pins (1) from all four bolts.
- Remove the bolts (2).
- Adjust the desired position of the tow hook. Another person can help you make this adjustment. The tow hook can also be turned if the attachment point on the implement is higher.
- After performing the adjustment, insert the bolts (2) and lock them with the corresponding safety pins (1).

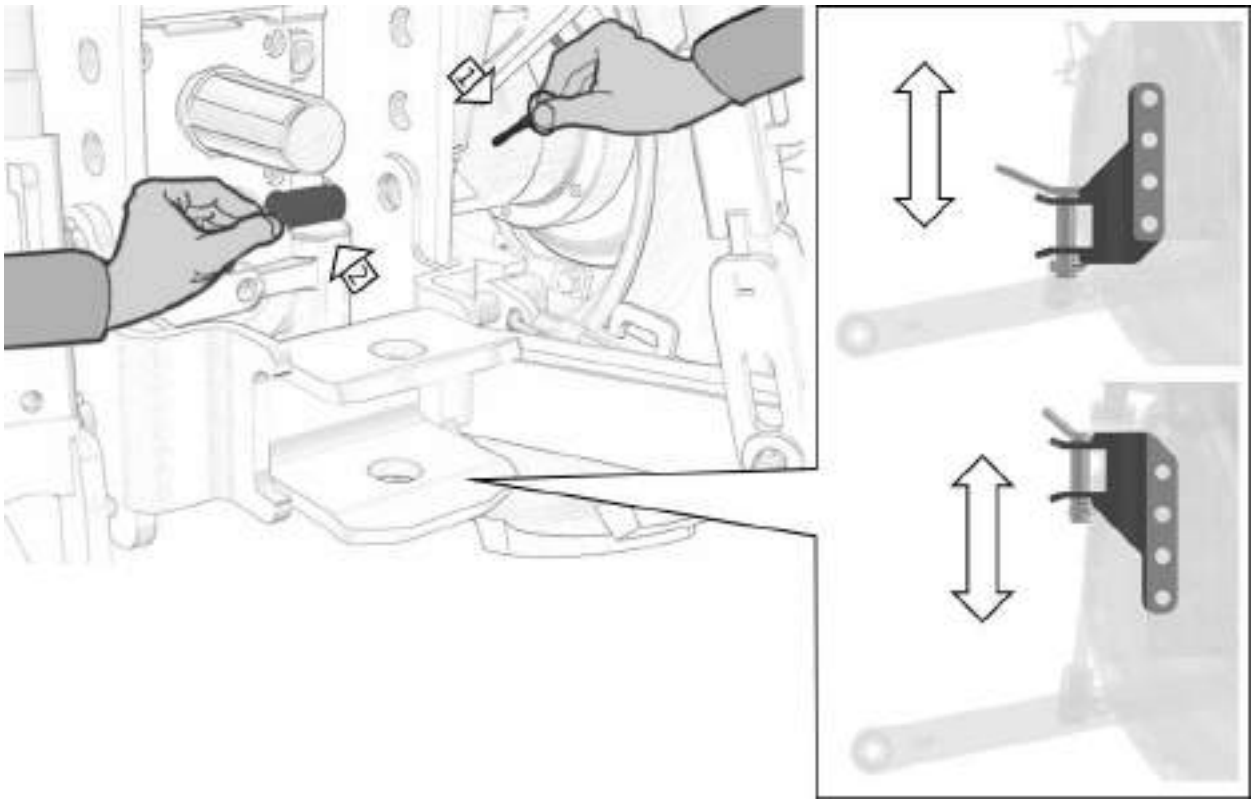


Fig. 144

	**WARNING:** When the rear tow hook is adjusted, always make sure that the bolts are properly inserted and blocked with a safety pin before starting to work.
	**DANGER:** Do not attach a trailed implement if the tow hook is damage.

7 OPERATION OF THE TRACTOR

Before operating the tractor, the driver must always read the operating and maintenance instructions, become familiar with the operating controls and perform a test drive with the tractor.

- For a proper operation of the tractor, it is important to be familiar with the operation of all the operating controls.
- Only operate the tractor when in good mental and physical health and properly instructed about the work to be carried out.
- ALWAYS use caution, even if you have operated the tractor before; safety always comes first, the work can wait.
- Before operating the tractor, always make sure that the safety devices are properly installed and functional.

7.1 USING THE SAFETY BELT

To fasten the safety belt. insert the belt tongue (1) into the buckle (2). The safety belt is unfastened by pushing the red button on the buckle and releasing the belt tongue.

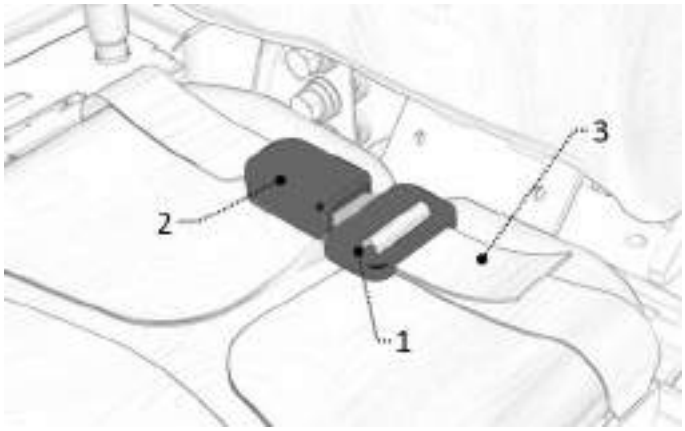


Fig. 145

Before starting to work with the tractor, always adjust the safety belt by adjusting the strap (3) along your body.

Adjusting the safety belt

- Fasten the safety belt as described above.
- Push the strap of the safety belt into the buckle to release it and pull it from the other side to tighten it to the length that suits you.
- To extend the strap of the safety belt, repeat the procedure in reverse order.

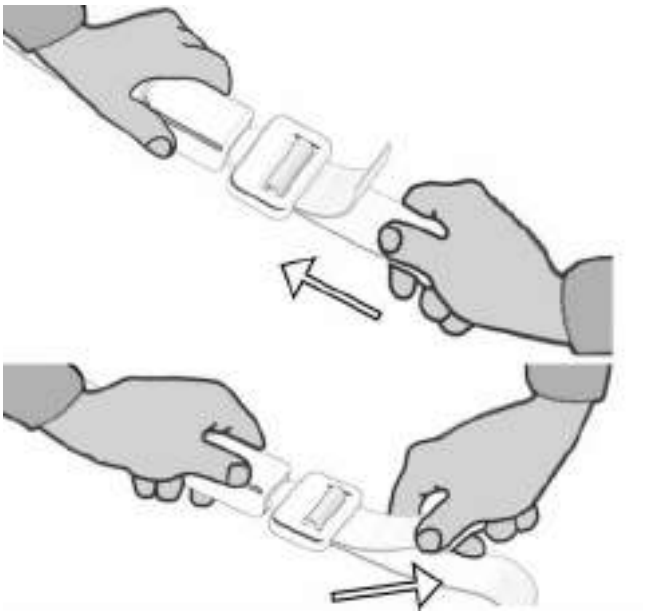


Fig. 146

	**WARNING:** When adjusted, the safety belt must not be too loose, otherwise it will lose its function in the event of a tractor rollover. Subsequent adjustments are not necessary if the tractor is operated by a single person. However, the adjustment is NECESSARY if the tractor will be operated

7.2 USING THE ROLL BAR

Before starting to work, always make sure that the roll bar is properly installed in the upright position.

The roll bar can only be lowered when the nature of work does not allow otherwise, but only over short distances and in areas where there is no danger of rollover. When the roll bar is lowered, the driver MUST NOT fasten the safety belt and must pay particular attention because he is not protected.

To lower the roll bar, follow the procedure below.

- Before lowering the roll bar, make sure that the operating area is safe to avoid any injuries when handling the roll bar.
- Remove the safety pin (1) and pull out the bolt (2).
- Slowly lower the roll bar to the horizontal position. To make this task easier, move your grip and your body to the left and right when it is lowered.
- While lowering the roll bar, take care to avoid injuries from rear-view mirrors. It is recommended to move them inwards before lowering, refer to the chapter “Adjustment of rear-view mirrors”.
- When the work is finished, make sure that the roll bar is moved to the appropriate position.
- Insert the bolt (2) and the safety pin (1) back and block the roll bar in place.

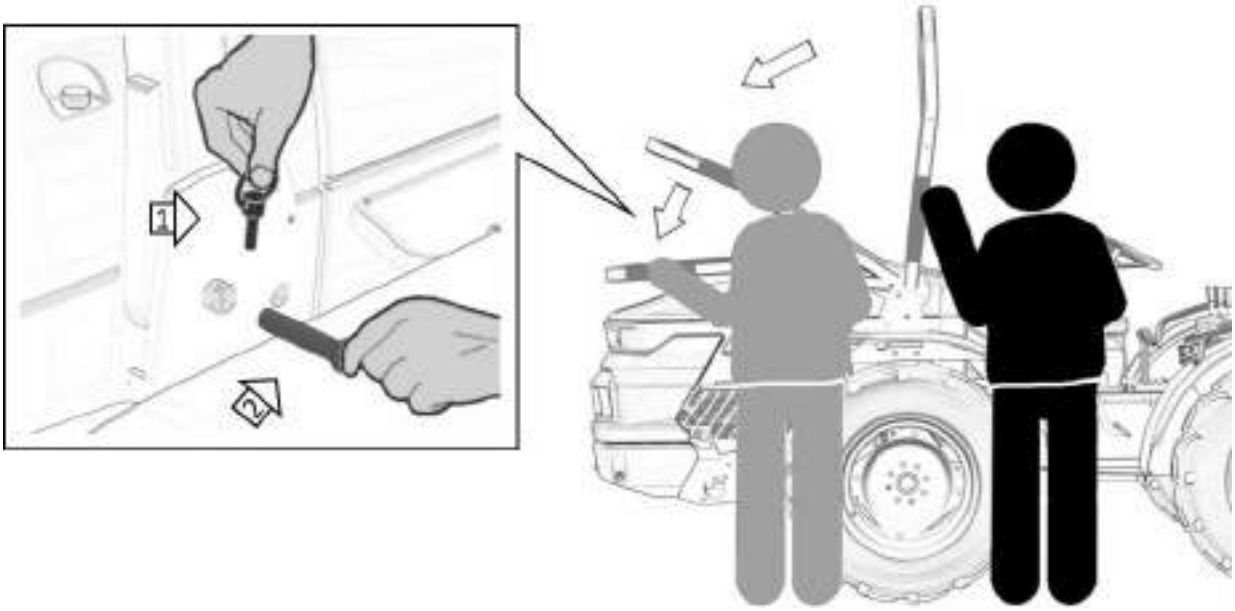


Fig. 147

	**WARNING:** Lowering the roll bar may result in injuries if your body posture is not appropriate, which is why this task must be carried out with caution.

	**DANGER:** Do not use the safety belt when driving with the roll bar lowered.

After the drive is finished, immediately raise the roll bar in the upright position.

To raise the roll bar, follow the procedure below.

- Before raising the roll bar, make sure that the operating area is safe to avoid any injuries when handling the roll bar.
- Remove the safety pin (1) and pull out the bolt (2).
- Slowly raise the roll bar to the vertical position. To make this task easier, move your grip and your body to the left and right when raising the roll bar.
- When the work is finished, make sure that the roll bar is moved to the appropriate position.
- Insert the bolt (2) and the safety pin (1) back and block the roll bar in place.

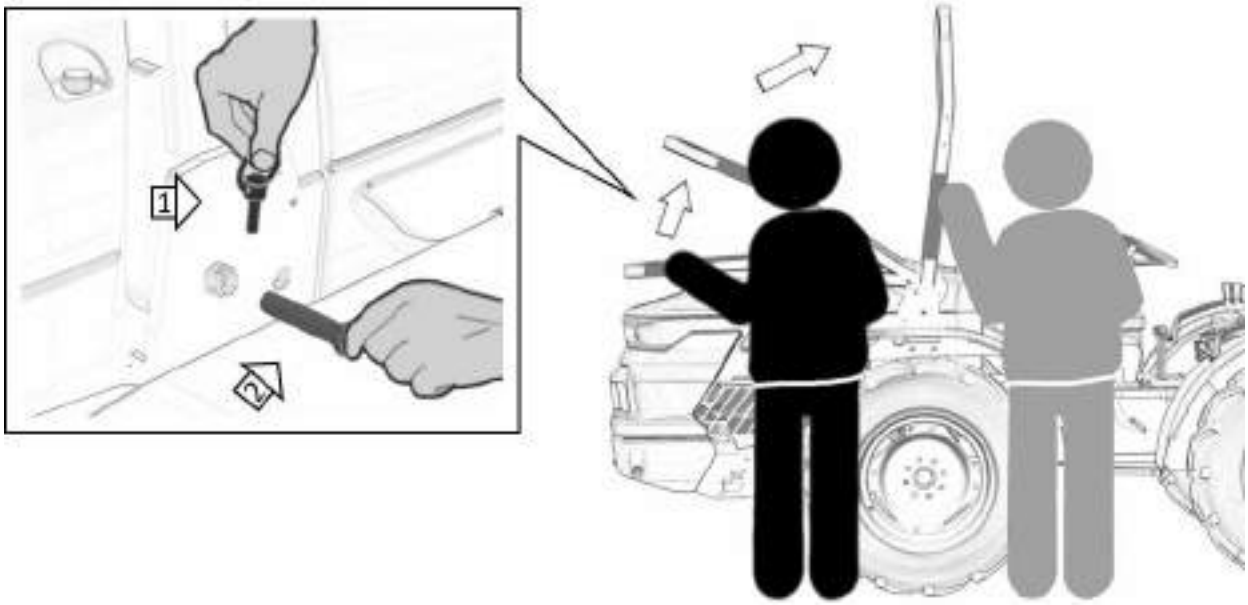


Fig. 148

	**DANGER:** Do not use the safety belt when driving with the roll bar lowered.

	**WARNING:** If the roll bar is damaged or improperly installed, do not use the tractor for performing any work!

7.3 STARTING THE TRACTOR

When purchased, the tractor is immediately ready for use. However, we RECOMMEND that the tractor is not operated at full load for **at least 20 hours of operation** to ensure that all the moving parts are properly worn in. By following this advice, you will ensure efficient performance and long service life of the tractor. During the first hours of operation, follow the instructions below.

- After the engine is started, leave it running in idle for a few minutes.
- Do not expose the engine to excessive load during the initial use. If this cannot be avoided, it should be done gradually.
- Leave the engine running for a few moments before shutting off the tractor.
- Regularly check the engine oil level during the first hours of operation. After the first 50 hours of operation, change the oil and the oil filter.

7.3.1 STARTING THE ENGINE

Before starting the tractor, always check that there is enough oil in the engine, enough liquid in the radiator and enough fuel in the tank.

The tractor is equipped with safety devices to prevent immediate starting. The operator must follow the proper starting procedure and fulfil all the conditions described below.

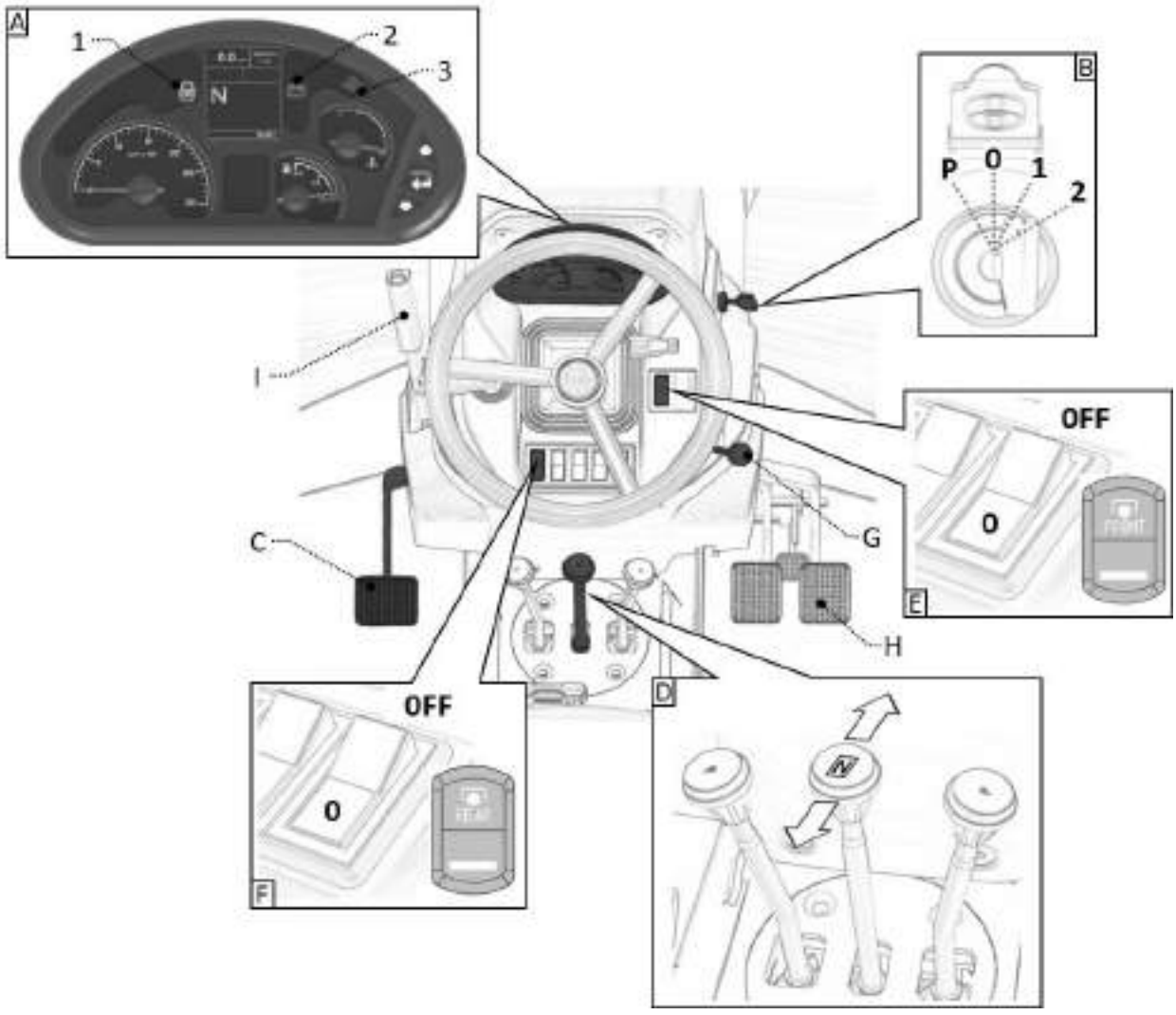


Fig. 149

To start the tractor, follow the instructions below, see Fig. 149

- Always turn off all consumers connected to the electrical system (lights, wipers, fans etc.).
- Sit on the driver's seat.
- Depress the brake pedal (H) or activate the parking brake (I) to avoid losing control over the tractor on uneven ground.
- Disengage the rear PTO drive shaft (F) and the front PTO drive shaft. The front PTO drive shaft can only be disengaged if installed as optional equipment.
- Depress the clutch pedal (C) and hold it down.
- Move the lever for changing the driving direction (inverter) (D) to neutral position.
- Adjust the accelerator lever (G) to the minimum position.
- Insert the key (B) and turn it to position 1. The dashboard will illuminate and perform a quick examination of the system, the indicators will reset and the following indicator lamps will illuminate on the dashboard.

No.	Indicator lamp	Description
1		General alarm (the indicator lamp is flashing; it normally comes off when the engine is started.)
2		Glow plugs, the engine is preheating
3		Battery (voltage), the battery is not charging
4		Engine oil pressure, low pressure

- Wait until the indicator lamp for glow plugs turns off, then turn the key to position 2. When the engine starts running, release the key (it will automatically return to position 1).
- Before starting to work, leave the engine running for a few minutes to allow the oil to be heated slowly; this is particularly important when the temperatures are low.

Conditions for starting the tractor (short description)

Condition no.	Action
1	Driver's seat activated
2	Clutch pedal activated
3	The lever for changing the driving direction (inverter) in neutral position
4	Both PTO drive shafts are disengaged (if applicable; if this is not the case, only the rear shaft)

	**IMPORTANT:** Due to the system check upon starting the engine, it takes about 2 seconds before normal operation is resumed!

	**WARNING:** You are only allowed to start the engine when sitting on the driver's seat and wearing the safety belt!

	WARNING: DO NOT accelerate to full speed when the engine is cold, particularly if the tractor is equipped with a turbo charger. Leave the engine running for at least a few minutes to ensure that the oil is heated slowly and the engine parts are properly lubricated!

If the engine does not start

- Before attempting to restart the engine, wait at least one minute to allow the starter to cool down.
- Before making another attempt to start the engine, first turn the key to position 0 and repeat the procedure described above.

	WARNING: Do not try to perform several starting attempts one after the other to avoid damaging the starter. If this cannot be avoided, wait at least 15 to 20 seconds before making another attempt. A maximum of four attempts are allowed.

7.3.2 SHUTTING OFF THE ENGINE

If the tractor was exposed to an extended period of operating under load and the engine is very hot, always leave it running in idle for at least a few minutes before you shut it off.

To shut off the engine, follow the instructions below, see Fig. 149

- Release the accelerator pedal; refer to the chapter “Driving controls”.
- Depress the clutch pedal (C) and the foot brake pedal (H) to stop the tractor.
- If engaged, disengage the PTO drive shaft (F and E).
- If used, move the accelerator lever (G) to the minimum position.
- Move the lever for changing the driving direction (D) to neutral position.
- Pull the parking brake (I).
- Shut off the engine by turning the key (B) to position 0 on the main switch.
- Remove the key and close the lock with the guard.

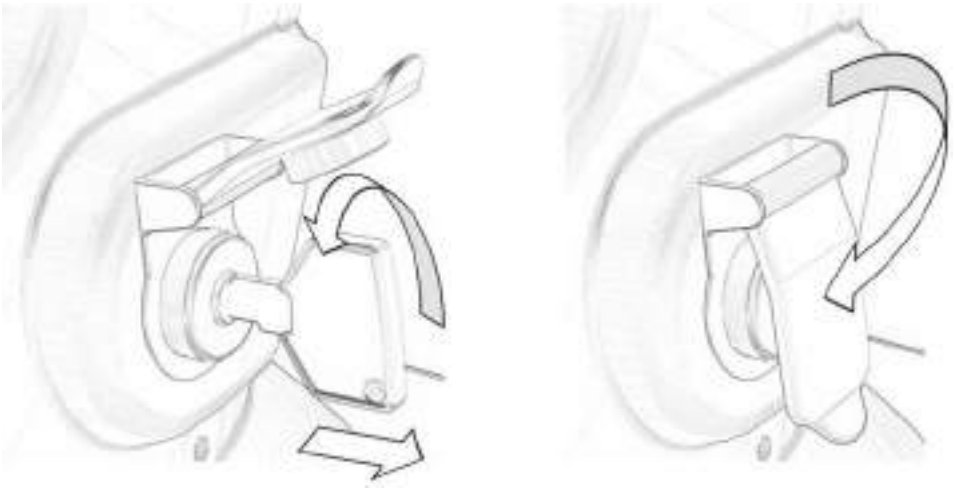


Fig. 150

	WARNING: Stop the tractor when the conditions are safe and make sure that it cannot be started by another person. The tractor must not be parked in areas where it could represent an obstacle or any risk for other people.

7.3.3 STARTING THE ENGINE USING A BATTERY

When the tractor fails to start because the battery is weak, you can use the battery of another vehicle. Both batteries must have the same nominal voltage (12 V DC) and the equal or greater current.

Make sure that the devices are compatible before connecting the batteries.

- If connecting to an auxiliary battery, make sure it has sufficient level of electrolyte and good voltage.
- When connecting to a charging station, make sure that the cables are correctly installed and the current source generated by the device is not too high.
- When connecting to an auxiliary battery installed in another vehicle, first connect the cables and then start the vehicle's engine and increase the number of revolutions to about ¼ of the power.

Perform the connection as described below.

- Use cables with a suitable cross-section and protected connectors.
- Turn off all unnecessary consumers of power on the tractor.
- Move all shift levers to neutral position, activate the parking brake and turn the ignition key to position 0.
- Open the engine cover.
- Remove the protection from the positive battery terminal.

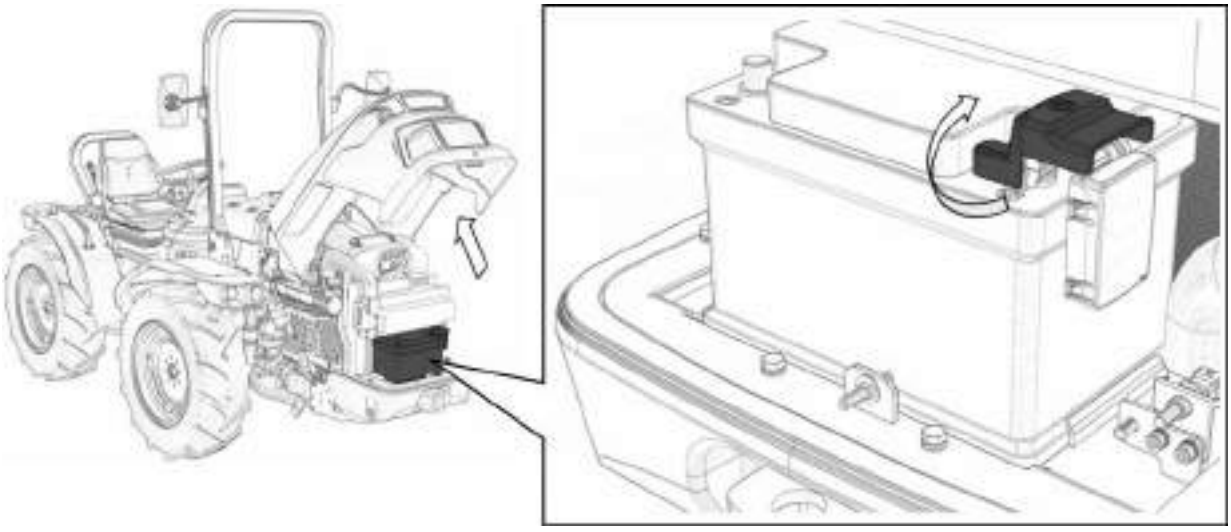
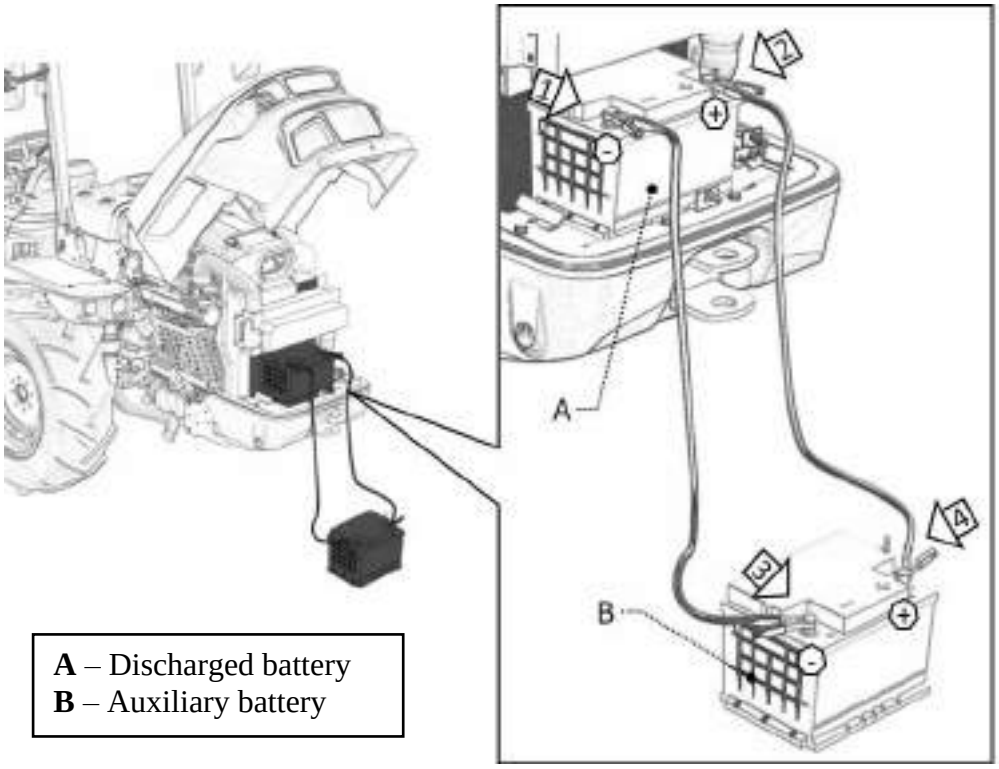


Fig. 151

- Connect the connector of the first cable (red), first to the positive terminal of the discharged battery (+ or red) and then to the positive terminal of the auxiliary battery.
- Connect the connector of the second cable (black), first to the negative terminal of the auxiliary battery (– or black) and then to the negative terminal of the discharged battery.
- Start the tractor's engine following the normal procedure, refer to the chapter “Starting the engine”.
- To remove the cables, repeat the procedure in reverse order.
- Close the engine cover.

Connection and disconnection diagram, see Fig. 152

	Order
Connecting the cables	2 – 4 – 3 – 1
Disconnecting the cables	1 – 3 – 4 – 2



A – Discharged battery
B – Auxiliary battery

Fig. 152

If the engine still does not start after following this procedure, wait a few moments to allow the starter to cool down a bit and try again. Repeat this a few times (4-5-times) and if the engine still fails to start, there may be an engine or electrical system malfunction (in case of problems, consult the technical service).

	**WARNING:** Do not connect to the auxiliary battery of another vehicle when it is connected to a charging station, otherwise you may risk serious personal injuries or damage on electrical components of both machines due to an overcurrent!

	**WARNING:** Always take care to connect the cables to the battery of another vehicle and the tractor correctly to avoid short circuit.

	**WARNING:** During operation, batteries release explosive gas, therefore you must prevent the use of open fire or sparks in their vicinity. Avoid contact with battery acid, which is very corrosive.

	**WARNING:** When charging, comply with the rated voltage of the battery.

7.4 ENGINE COVER

The engine cover protects the engine assembly and the other components against external factors or damage, which may occur during work.

To lift the engine cover, follow the procedure below.

- Insert the hex key (6 mm) into the lock through the opening in the cover.
- Turn the key to the left (anti-clockwise) and release the lock.

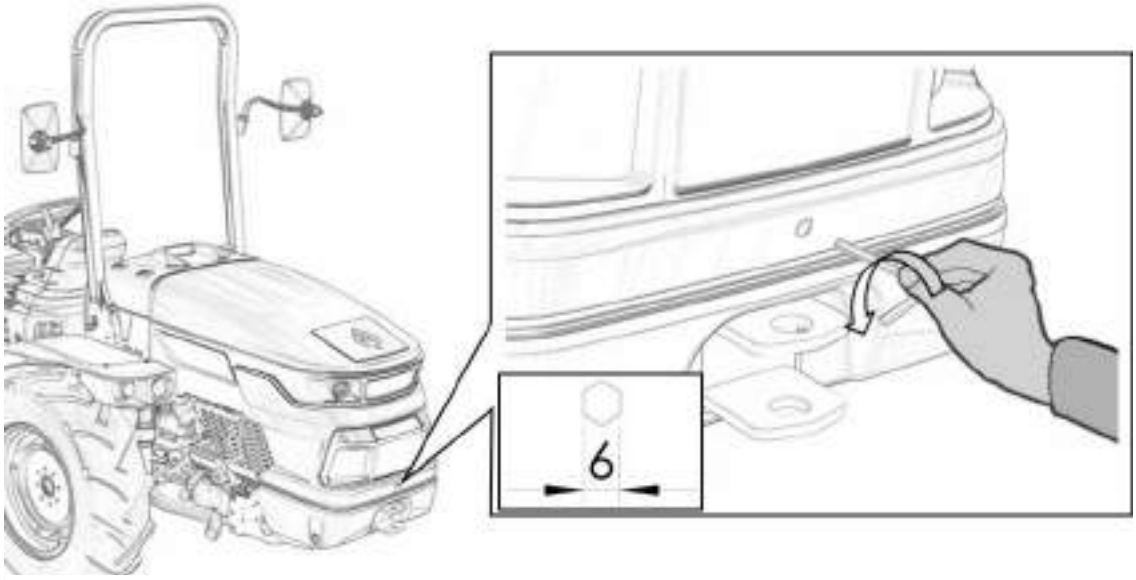


Fig. 153

- Lift the engine cover.
- To fix the engine cover in the upright position, push the lever and lock it.

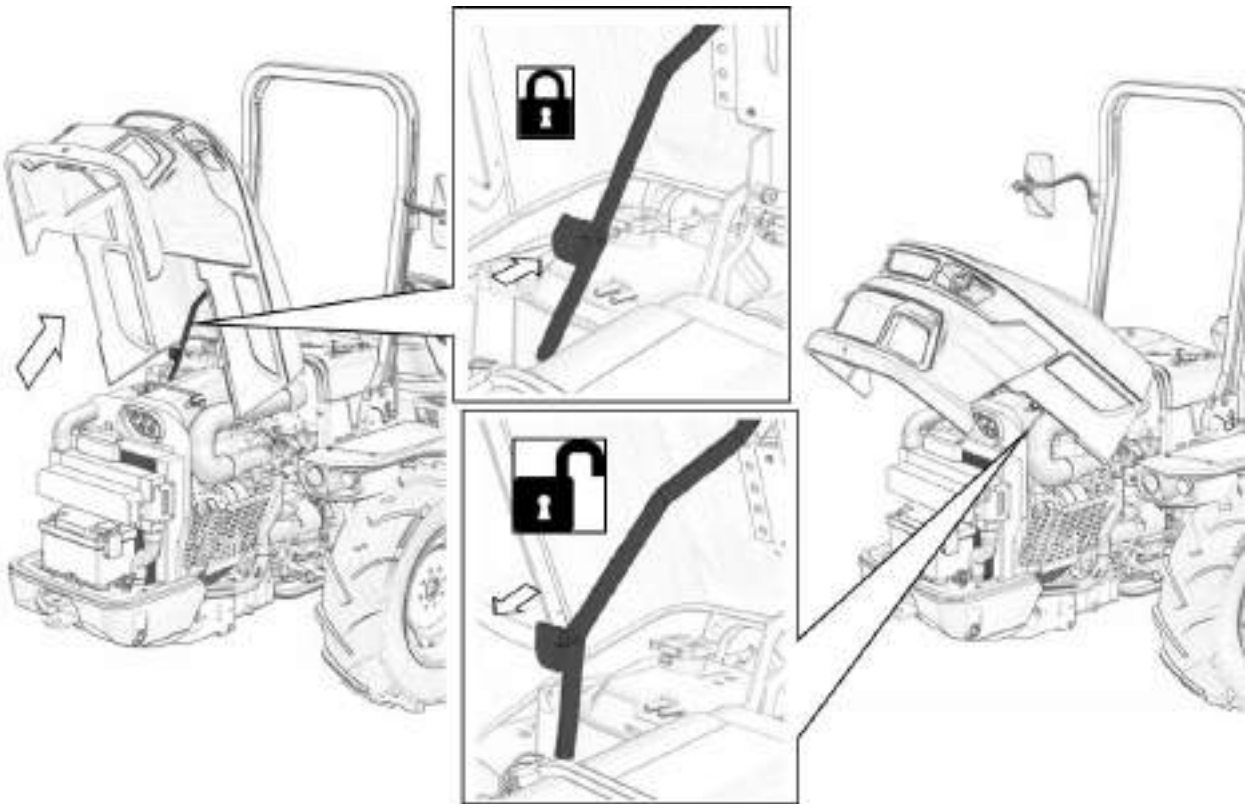


Fig. 154

- After you finish working, move the lever back towards you and release the engine cover. The lock will automatically engage to lock the cover in its original place.

7.5 USING THE TRACTOR CAB

This chapter provides some instructions for handling the cab doors and windscreens.

7.5.1 CAB DOORS

Opening the doors

- To open from the outside, push the button on the handle and pull the door towards you.
- To open from the inside, pull the lever on the mechanism towards you and open the door by using the handle.

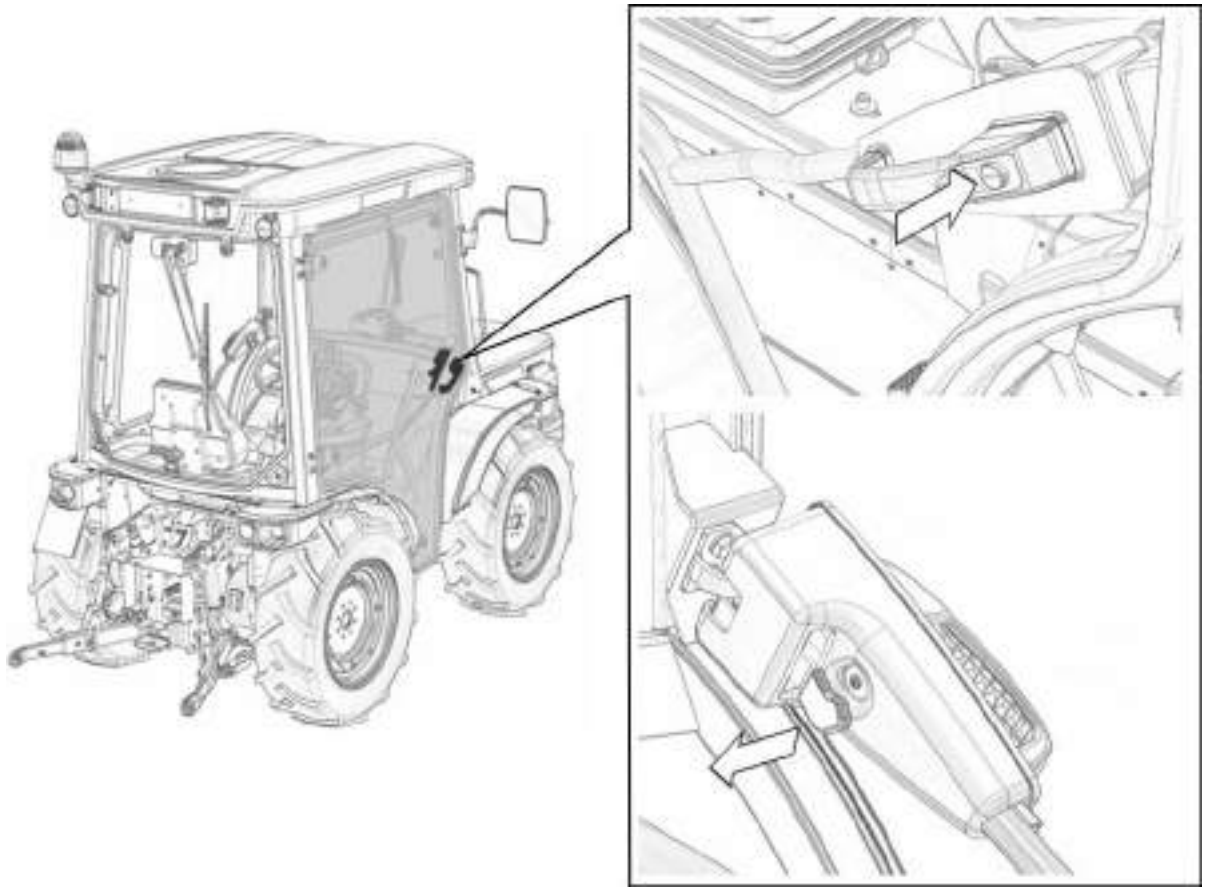


Fig. 155

The cab is equipped with a lock which enables locking the doors to prevent unauthorized persons from entering the tractor. The lock is installed in the button of the external handle.

- insert the key into the lock;
- turn the key to the left to lock the door;
- turn the key to the right to unlock the door.

7.5.2 FRONT WINDSCREEN

Opening the front windscreen

- To open the front windscreen, turn to handle to the left (anti-clockwise direction).
- Release the handle. The windscreen will slowly open to the final position by means of gas springs.
- To close the windscreen, grab the handle and slowly move it towards you. Close the windscreen by turning the handle to the right (clockwise direction).

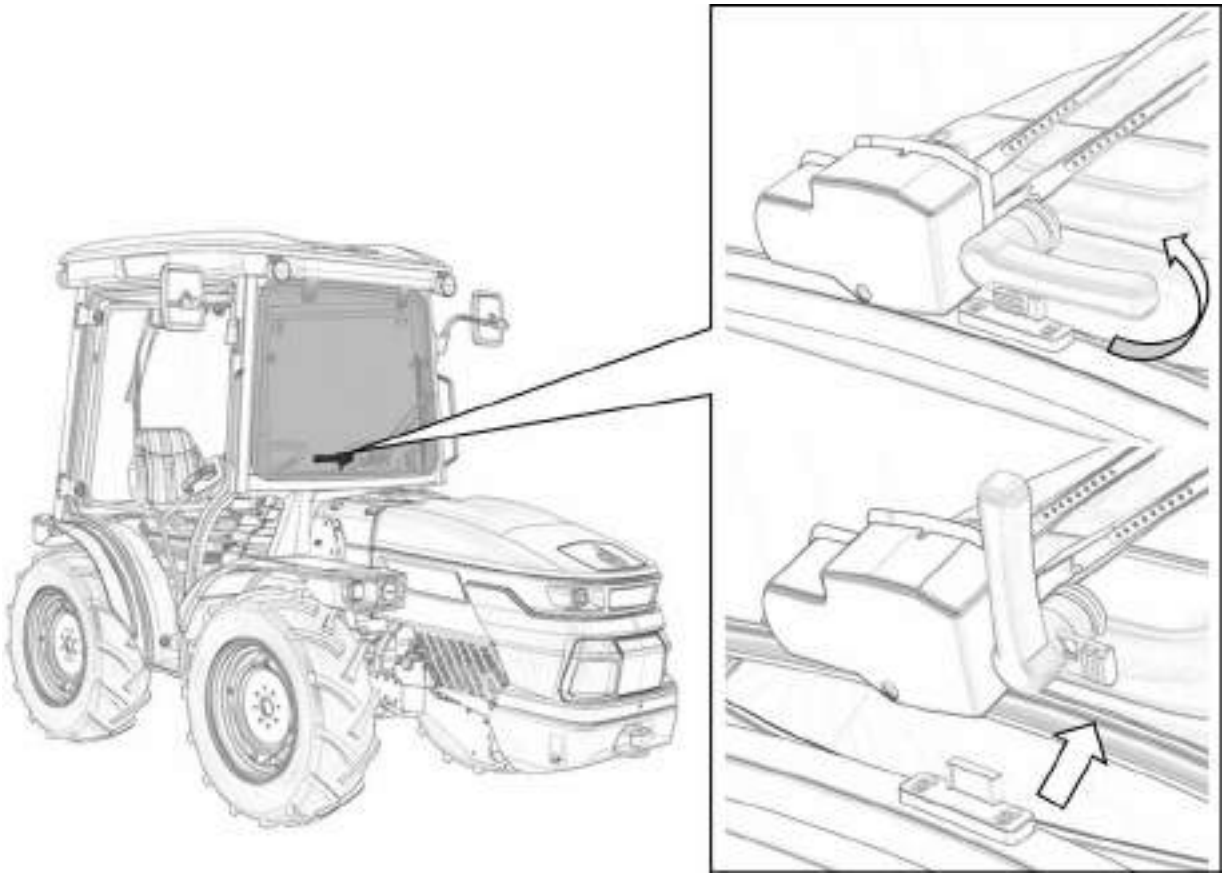


Fig. 156

Partial opening of the front windscreen

The closing mechanism enables the partial opening position of the windscreen. To do this, follow the procedure described below:

- Open the windscreen and move it forward (1);
- Turn the handle to the right (2) until it is in the closed position again (clockwise direction);
- Lower the windscreen. The handle will latch into the closing mechanism and the windscreen will remain partially open (3);
- To close the windscreen, hold the handle and turn it to the left (anti-clockwise direction), then slowly pull the windscreen towards you. Close the windscreen by turning the handle to the right (clockwise direction).

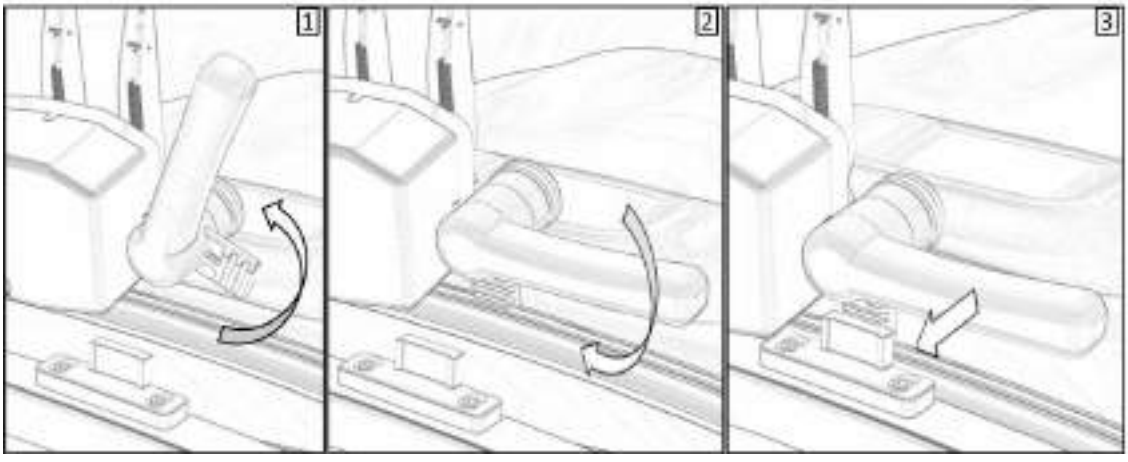


Fig. 157

	**WARNING:** When driving the tractor on slopes or dangerous terrain, the front and/or rear windscreen MUST NOT be in the partially opened position!

7.5.3 REAR WINDSCREEN

Opening the rear windscreen

- To open the rear windscreen, turn to handle to the left (anti-clockwise direction).
- Release the handle. The windscreen will slowly open to the final position by means of gas springs.
- To close the windscreen, grab the handle and slowly move it towards you. Close the windscreen by turning the handle to the right (clockwise direction).

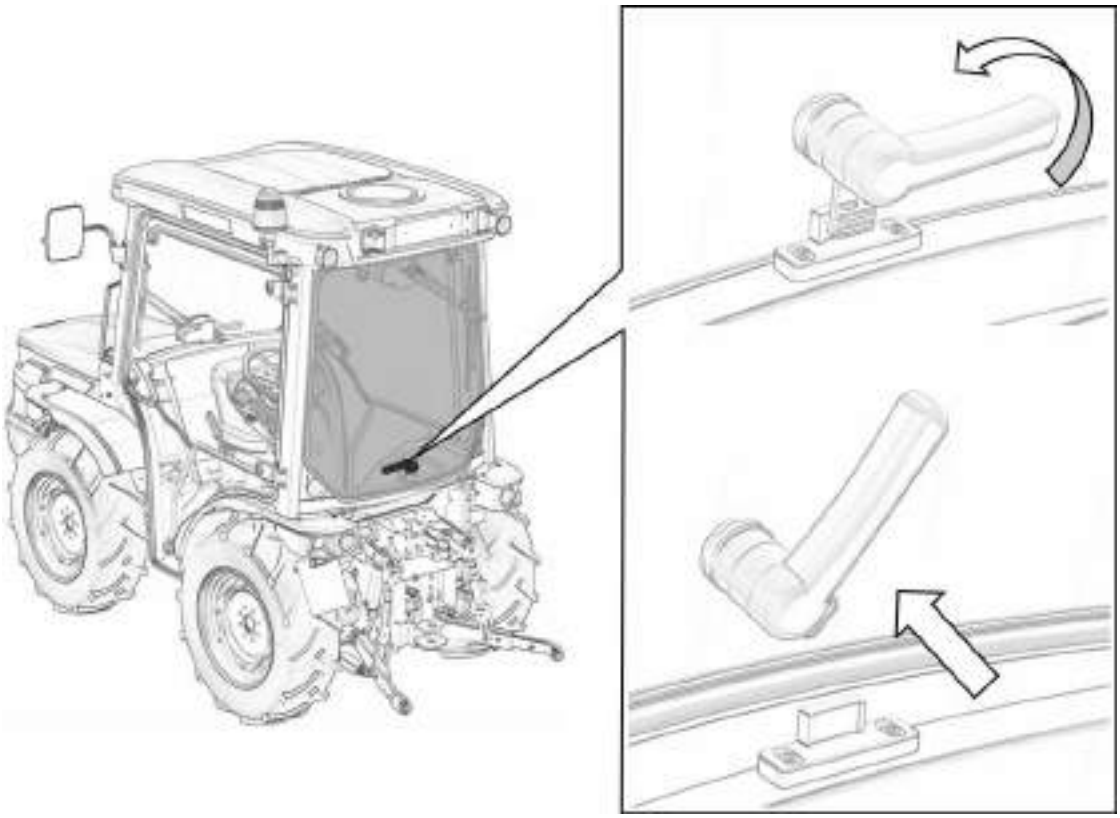


Fig. 158

Partially opened rear windscreen

The closing mechanism, which is functionally the same as for the front windscreen, enables the partial opening position of the windscreen. See the chapter “Front windscreen” for adjustment.

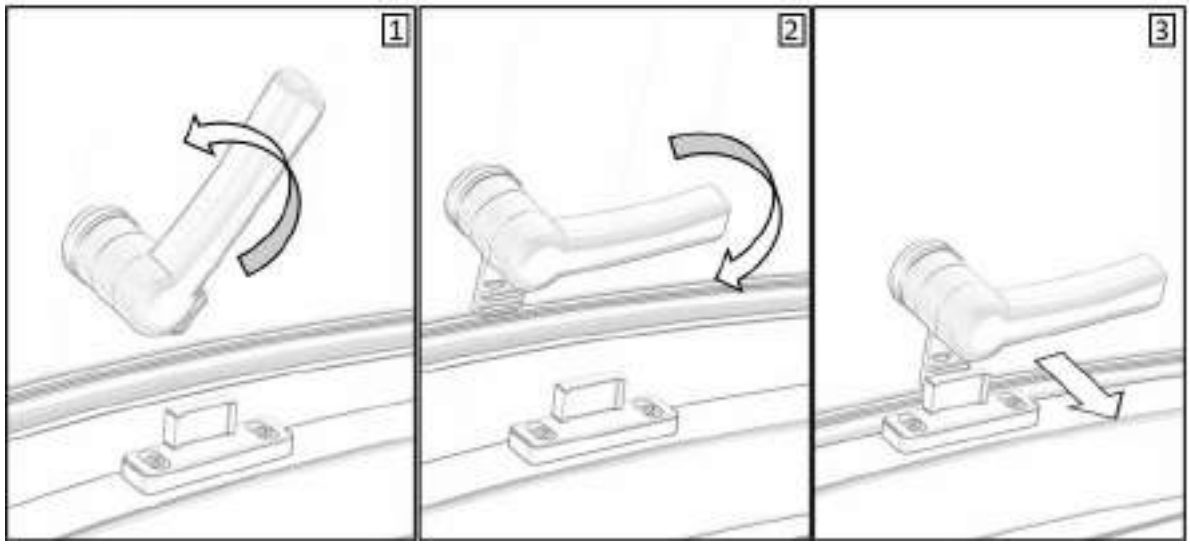


Fig. 159

7.6 PTO DRIVE SHAFT

The PTO drive shaft is used for direct transmission of drive to the implement on the tractor.

7.6.1 PTO DRIVE SHAFT ENGAGEMENT

The controls for operating the PTO drive shaft are described in the chapter "Operating controls – PTO drive shaft". To engage the PTO drive shaft, follow the procedure below. The PTO drive shaft can be engaged in two ways:

- through the switch on the console;
- through the switch on the fender.

7.6.1.1 PTO DRIVE SHAFT ENGAGEMENT THROUGH THE SWITCH ON THE CONSOLE

Engagement is only possible when the operator sits on the driver's seat.

- Stop the tractor in safe conditions and activate the parking brake.
- Shut off the tractor's engine.
- Use the power take-off lever to select the operation mode of the PTO drive shaft.
  - "Lever in position 1", driven according to engine revolutions.
  - "Lever in position 2", synchronized drive through the gearbox.
- Select the level between 540 or 750 rpm with the speed selection lever.
- Sit on the driver's seat.
- Start the engine.
- Activate the PTO drive shaft switch.
  - Position 1, the switch is off.
  - Position 2, the switch is on.

Only activate or deactivate the power take-off lever and the speed selection lever when the tractor is turned off.

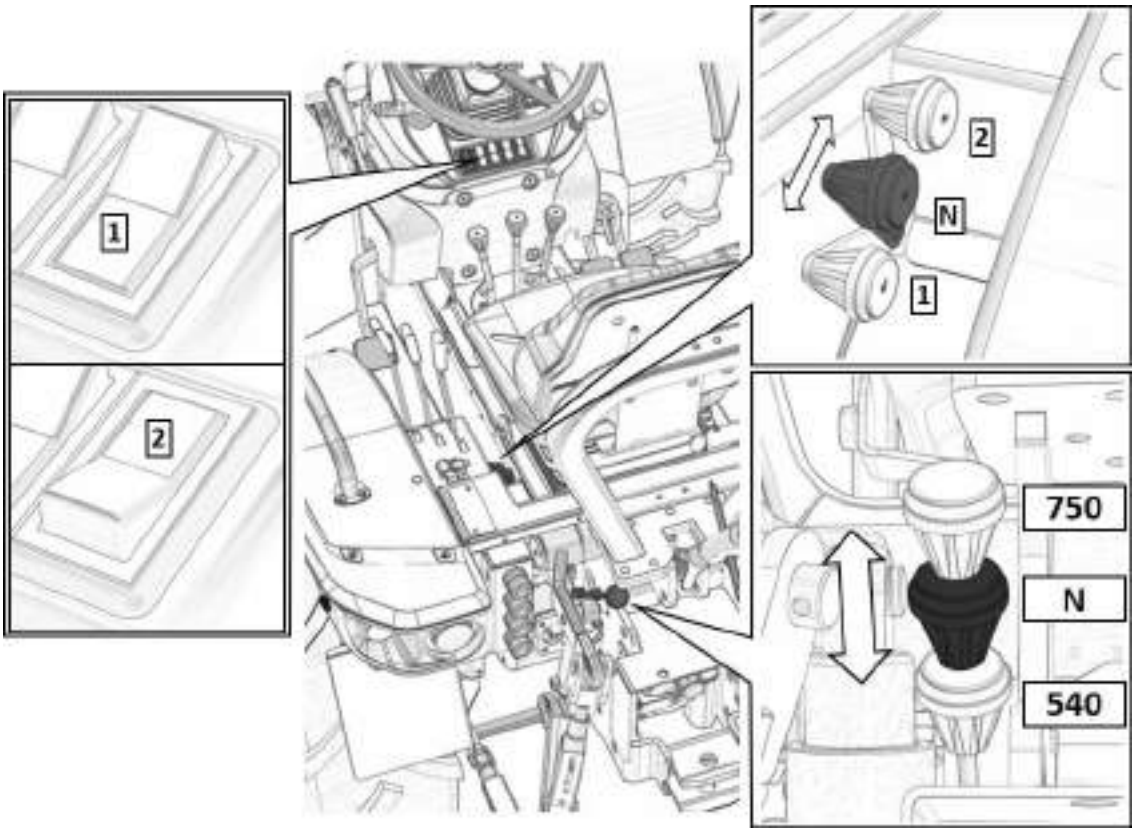


Fig. 159

Conditions for engaging the PTO drive shaft, driver in the seat (short description)

Condition no.	Action
1	Driver's seat activated
2	All PTO control levers activated
3	The switch on the console is activated

	**IMPORTANT:** For safety reasons, the PTO drive shaft will disengage after 7 seconds when the driver leaves the seat! It can only be engaged again when the operator sits back on the seat or engages the shaft through the external switch on the fender.

	**WARNING:** If an implement is installed on the tractor, always make sure that the safety pins on the universal joint are properly locked before engaging the PTO drive shaft.

7.6.1.2 PTO DRIVE SHAFT ENGAGEMENT THROUGH THE SWITCH ON THE FENDER

The PTO drive shaft can be engaged with the external switch when the operator works outside of the driver's area or when not seated in the driver's seat.

It can only be engaged if the PTO engagement switch on the console is activated!

- The tractor's engine is running, all conditions for engaging the PTO drive shaft have been fulfilled; refer to the chapter "PTO drive shaft engagement through the switch on the console".
- Activate the parking brake.
- Press the switch on the fender and release it (1 second).
- Press the switch again and hold it for 5 seconds.
- The PTO drive shaft is engaged.

The external switch for engaging the rear PTO drive shaft is located on the rear left fender and the switch for engaging the front PTO drive shaft (if installed as an option) on the front left fender.

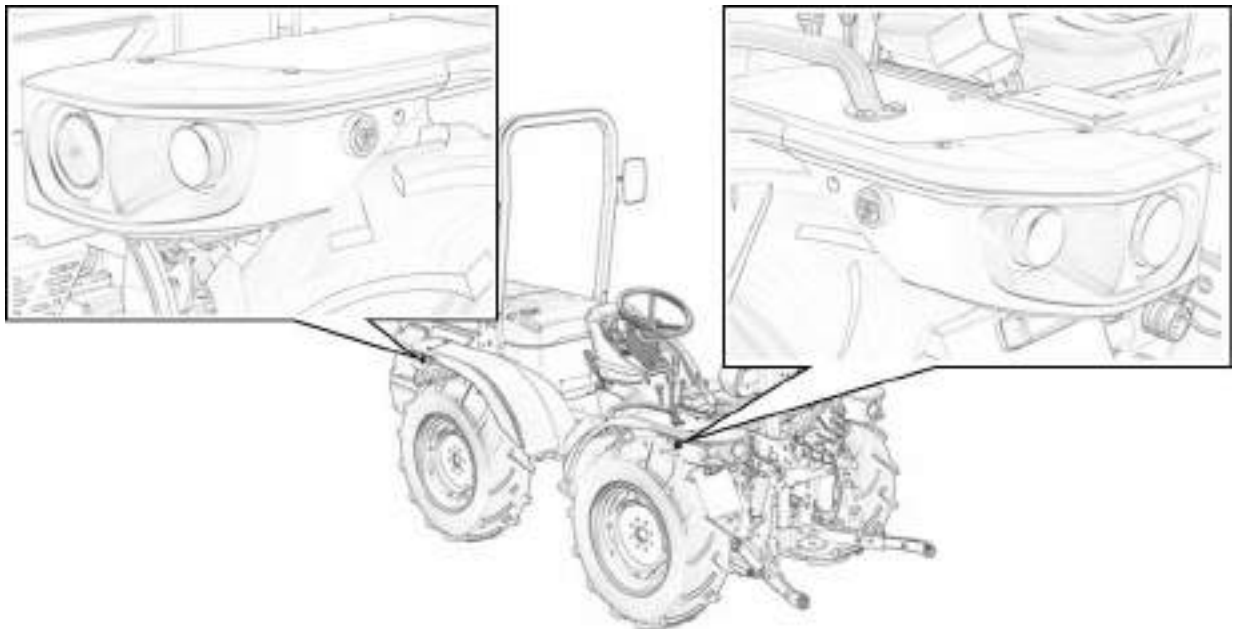


Fig. 160

Conditions for engaging the PTO drive shaft, driver not in the seat (short description)

Condition no.	Action
1	Driver's seat NOT activated
2	Parking brake activated
3	All PTO control levers activated
4	The PTO engagement switch on the console activated
5	The switch on the fender activated

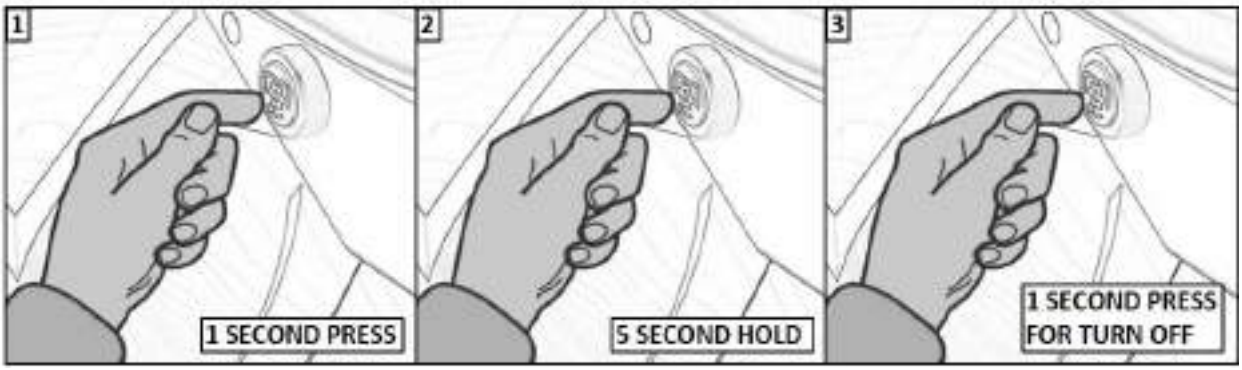


Fig. 161

	IMPORTANT: When you press the switch for the second time, you must hold it for 5 ± 1 seconds. If the switch is released too soon (3 seconds) or held too long (7 seconds) the PTO drive shaft will not engage! Repeat the procedure to start the drive shaft.

	WARNING: If an implement is installed on the tractor, always make sure that the safety pins on the universal joint are properly locked before engaging the PTO drive shaft.

	WARNING: Before starting the PTO drive shaft, make sure there are no other people in the vicinity and you are standing in a safe area. Before you do so, make sure that the implement is correctly installed and the safety pins on the universal joint are properly locked.

7.6.1.3 PTO DRIVE SHAFT DISENGAGEMENT

To disengage the PTO drive shaft, follow the procedure below.

- Deactivate the switch on the console which interrupts operation even when the operator is not seated in the driver's seat.
- Or, deactivate the external switch on the fender by pressing it again (if this switch was used to engage the shaft).
- Move the power take-off lever and the speed selection lever to neutral position, refer to the chapter “Description of operating controls – PTO drive shaft”.
- Shut off the engine and activate the parking brake.

	WARNING: When the PTO drive shaft is disengaged, the vital components of the implements continue to rotate due to inertia. In this time, you must wait and stay away from the PTO drive shaft until it has stopped completely.

7.6.2 PTO DRIVE SHAFT ROTATION

Diagram of PTO drive shaft rotation according to the operation mode.

	Tractor driving direction	Operation mode	PTO drive shaft rotation
1	Forwards	Driven through the gearbox	Rotating to the left (anti-clockwise direction)
2	In reverse	Driven through the gearbox	Rotating to the right (clockwise direction)
3	/	Driven through the engine	Rotating to the right (clockwise direction)

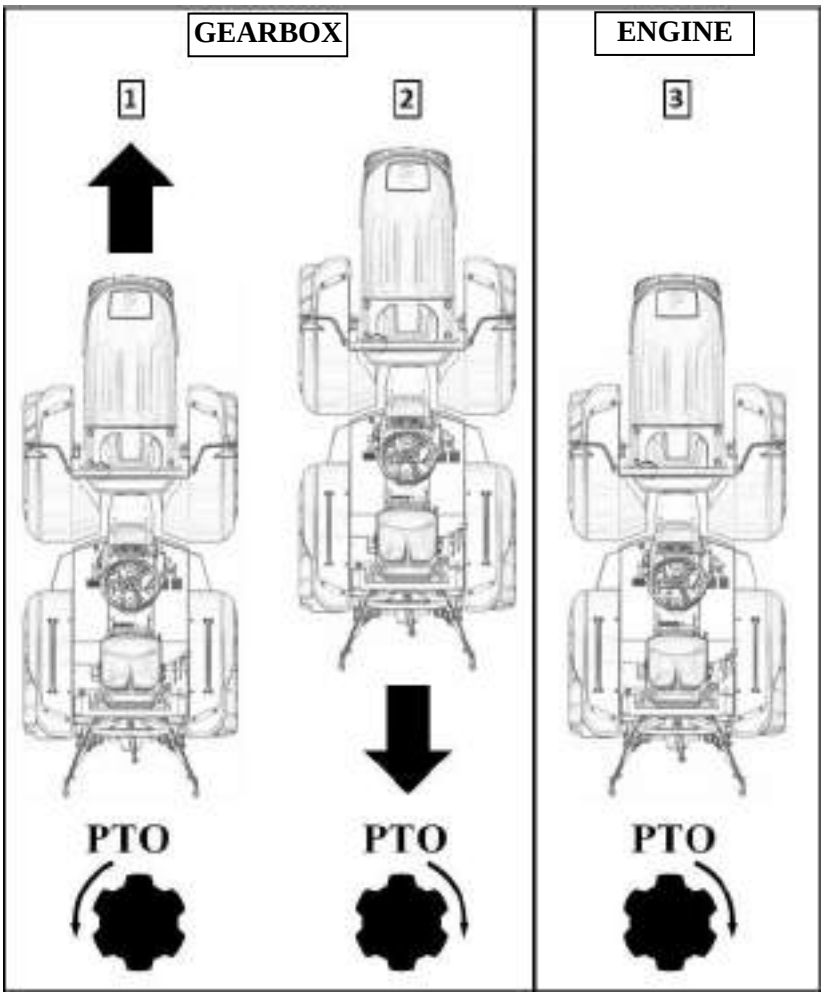


Fig. 162

	IMPORTANT: When the PTO drive shaft is synchronized with the gearbox and the latter is not used for more than 15 minutes, it is recommended that you disengage the gearbox by moving the lever to neutral position. This will prevent unnecessary rotation of components of the drive assembly.

7.7 UNIVERSAL JOINT

The universal joint IS NOT included with the tractor and is a part of the implement.

7.7.1 CONNECTING THE UNIVERSAL JOINT

Before connecting the universal joint, always stop the tractor in safe conditions and shut off the engine. When the universal joint is installed on the tractor it can be rotated manually, but ONLY when the engine is turned off and the PTO drive shaft speed selection lever is in neutral position; refer to the chapter "Operating controls – PTO drive shaft".

To connect the universal joint to the tractor and the implement (mounted or trailed), follow the procedure below.

- Unscrew the safety guard on the PTO drive shaft (1).
- Move the PTO speed selection lever to neutral position.
- Check the condition of the universal joint and the PTO shafts on the tractor and the implement for damages.
- Install the universal joint (2) on the PTO drive shaft (3) on the tractor.

	**WARNING: Always attach the universal joint to the PTO drive shaft on the implement first before attaching it to the PTO drive shaft on the tractor!**

- Check that the safety pins on the universal joint are properly locked. Push and pull the joint forwards and backwards until the safety pins on both sides of the drive shafts are locked.
- Make sure that protective devices are in place and cover all the rotating parts.
- Secure the protective devices with a chain to prevent their rotation.

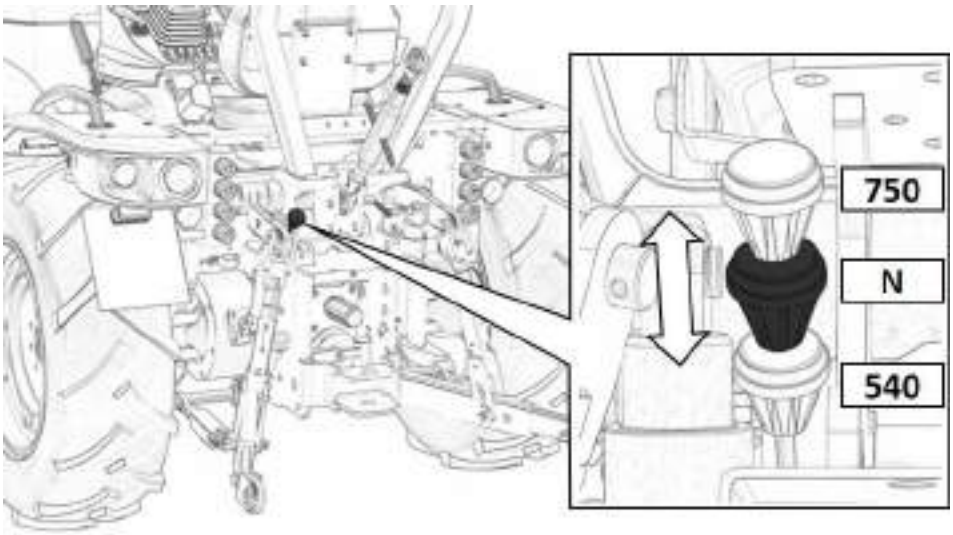


Fig. 163

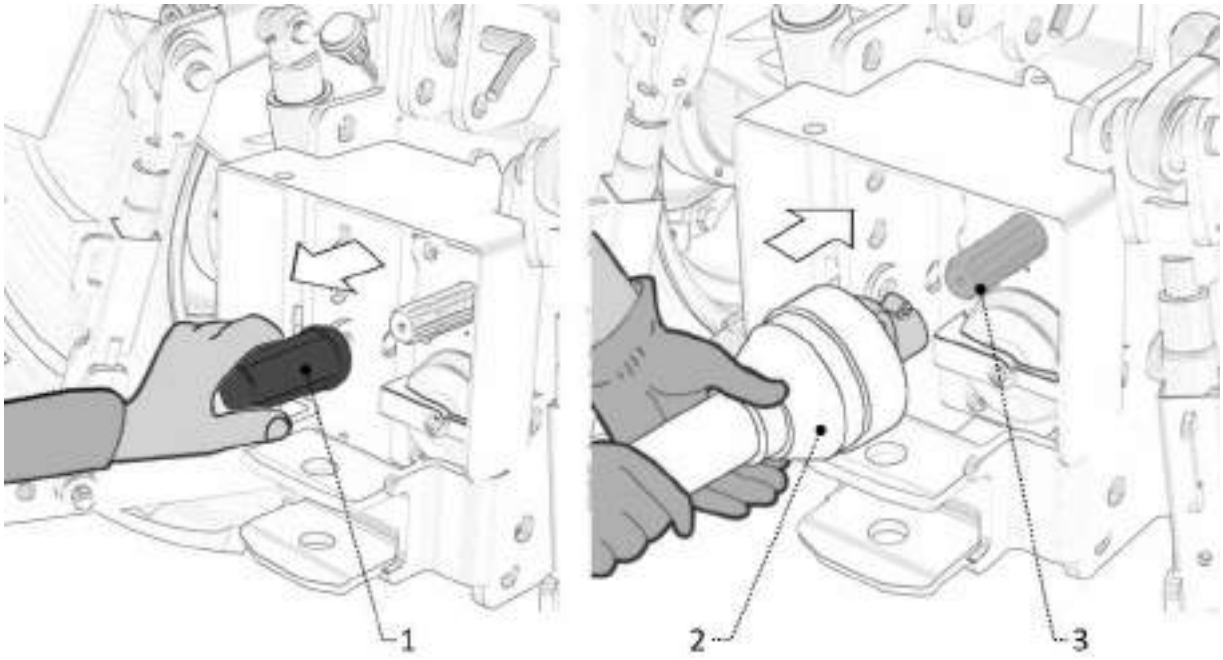


Fig. 164

	**WARNING:** Do not use the universal joints if protective devices are not in place!

	**DANGER:** If the universal joint is connected to the tractor first and it accidentally engages, it may start to wobble and cause serious injuries or death!

If the universal joint is too long and needs to be shortened, disassemble the universal joint and separately install each part to the PTO shaft of the tractor and the implement.

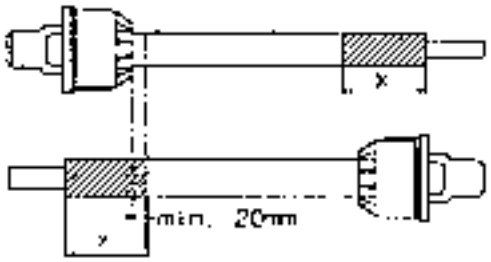


Fig. 165

Measure the length by which the universal joint must be shortened and mark the cutting point. Use an appropriate tool to equally shorten both parts of the joint and remember to grind off the edges after cutting.

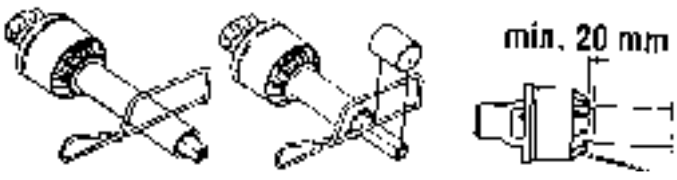


Fig. 166

Install the profiles and join both parts of the universal joint.

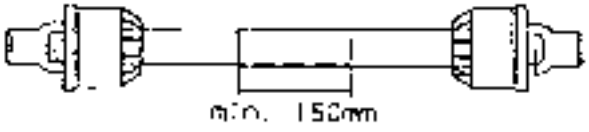


Fig. 167

	**WARNING:** The tubes of the universal joint must overlap by a minimum of 150 mm!

7.7.2 DISCONNECTING THE UNIVERSAL JOINT

To disconnect the universal joint from the tractor and the implement (mounted or trailed), follow the procedure below.

- Disengage the tractor's PTO drive shaft, refer to the chapter "PTO drive shaft disengagement".
- Remove the safety chain protecting the safety devices against rotation.
- Push the safety pin (2) to disconnect the universal joint (1) from the drive shaft on the tractor and place it in a suitable place to avoid damaging the universal joint.

	**WARNING: The universal joint must always be disconnected from the tractor's PTO drive shaft first before it is disconnected from the PTO drive shaft on the implement.**

- Install the safety guard (3) of the tractor's PTO drive shaft back in its place.

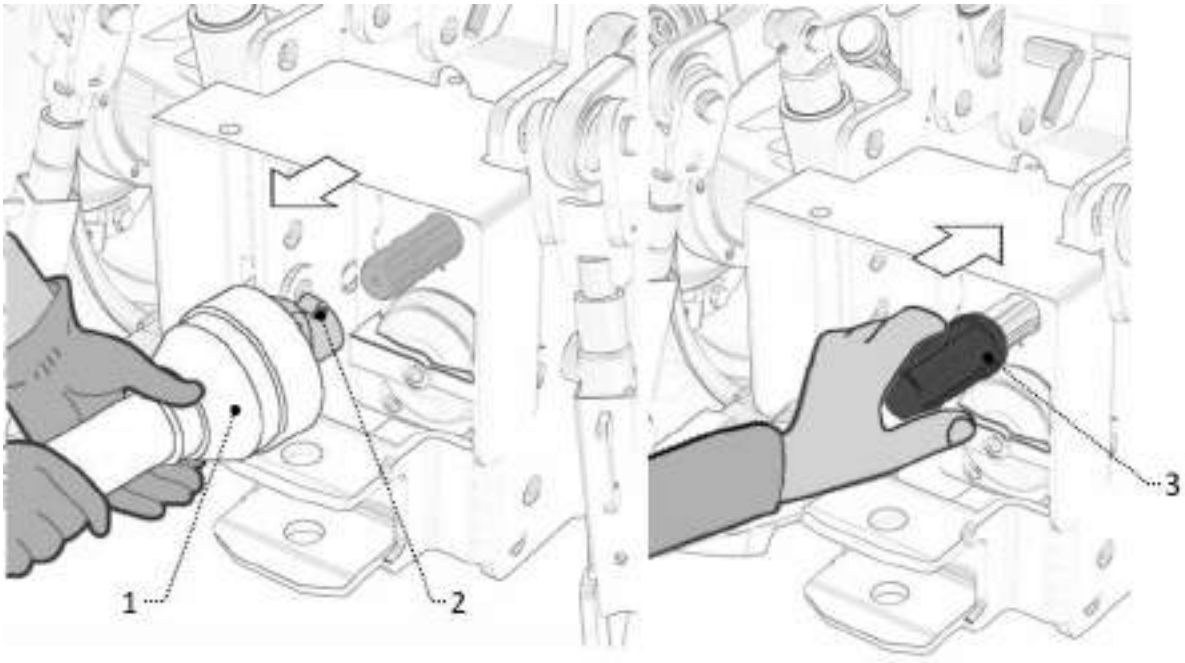


Fig. 168

7.8 USE OF IMPLEMENTS

Connection and disconnection of the implement to the rear hydraulic lift mechanism of the tractor is usually performed by the operator alone, but it can also be done with the assistance of another person who can show to the driver or the operator the accuracy of approaching the tractor to the implement. During the connection or disconnection procedure, the other person must always remain in the area where there is no immediate risk of contact. The implement must always be connected to or disconnected from the tractor on flat and solid surfaces.

7.8.1 CONNECTING AND DISCONNECTING THE IMPLEMENT ON THE REAR HYDRAULIC LIFT MECHANISM

The description of the connection procedure is based on the assumption that the rear hydraulic lift mechanism is already adjusted for the implement, otherwise a new adjustment is required first, refer to the chapter "Adjusting the rear hydraulic lift mechanism".

When disconnecting, you must keep in mind that the ground on which you are going to perform the procedure must be level and solid to ensure good positioning and stability of the implement in a free-standing position, while making sure that it does not obstruct and endanger other persons.

The tractor provides two types of connections on the lower link arms.

- Standard linkage with a ball link;
- Automatic linkage (optional).

7.8.1.1 STANDARD LINKAGE WITH A BALL LINK

To connect the implement to the tractor, follow the procedure below.

- Drive the tractor to the implement.
- Move the lower link arms (2) by using the lever on the control device (1) until they are at the same height as the linkage points on the implement.
- Stop the tractor and make sure the conditions are safe.
- Unscrew the lateral tensioners (3) until the link arms become loose, refer to “Adjusting the lateral tensioners”.
- Install the lower link arms to the bolt of the implement (4) and secure it with a safety pin (5).
- Release the top link (6) from its holder by removing the safety pin (7) on the tractor and install it on the third linkage point of the implement, insert the bolt (8) and secure it with a safety pin (9).
- Lift the implement using the lever on the control device.
- If the implement is not parallel to the ground, adjust the top link to an appropriate length, refer to “Adjusting the top link”.
- Fold the support legs on the implement (if equipped).
- Tighten the lateral tensioners to prevent the implement from swinging.
- Connect all electrical and hydraulic connections of the implement to the connection system on the tractor.
- Install the universal joint, first to the PTO drive shaft on the side of the implement and then on the side of the tractor, refer to “Connecting the universal joint”.

	**DANGER:** After installing the universal joint, always make sure that the safety devices are securely attached and functional and the safety pins are locked in position to prevent the universal joint from coming off the implement or the tractor. Incorrect installation may result in serious injuries or even death.

	WARNING: The manufacturer prepared an assessment of risks, which are only applicable for the tractor without an implement installed or in combination with an implement determined by the manufacturer. The operator must therefore be familiar with all the risks which may occur when installing an implement not prescribed by the manufacturer of the tractor and must take full responsibility in

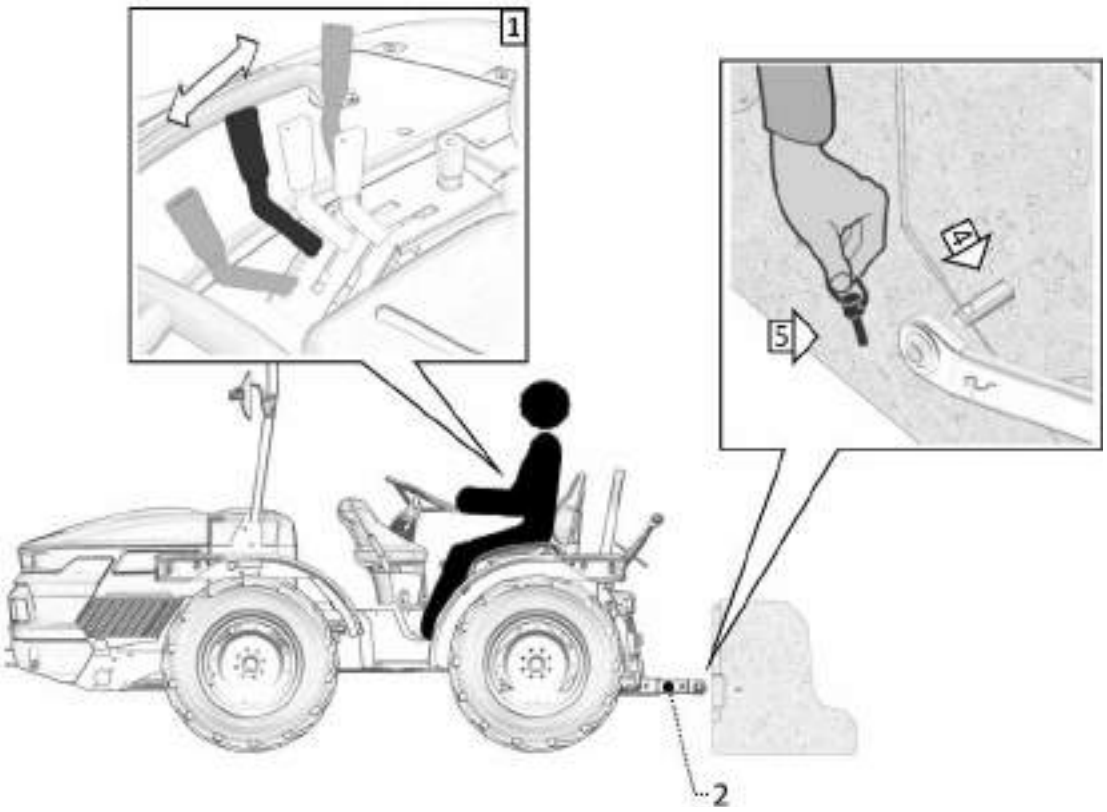


Fig. 169

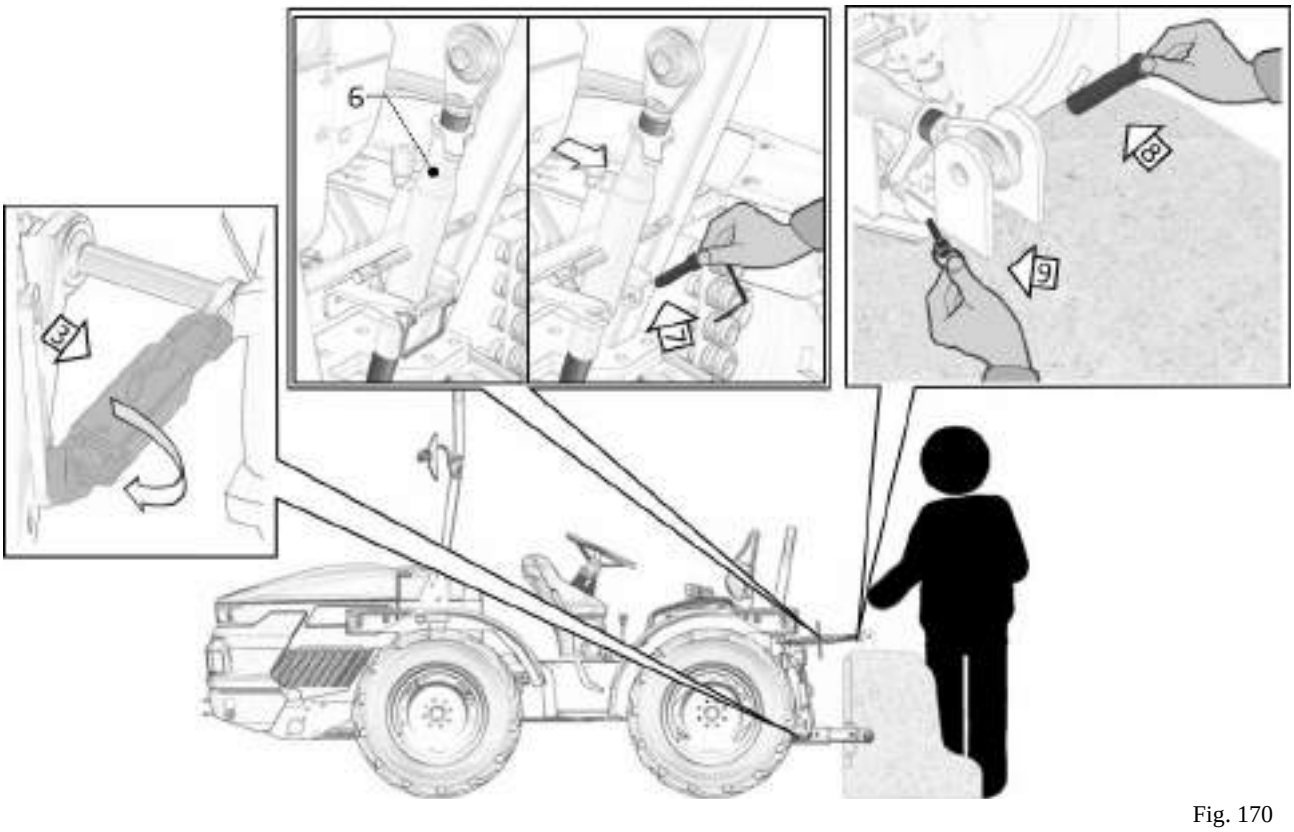


Fig. 170

	**WARNING:** When attaching the implement, take care to avoid crushing of body parts!

To disconnect the implement from the tractor, follow the procedure below.

- Stop the tractor in safe conditions.
- Lower the support legs on the implement (if equipped).
- Lower the implement to the ground using the lever on the control device.
- Shut off the tractor's engine.
- Disconnect all electrical and hydraulic connections from the connection system on the tractor.
- Disconnect the universal joint from the PTO drive shaft, first on the side of the tractor and then on the side of the implement, refer to the chapter ″"Disconnecting the universal joint"″.
- Remove the top link from the third linkage point on the implement, release the safety pin and the bolt.
- Disconnect the top link from the implement and place it back into the guard on the tractor.
- Unscrew the lateral tensioners until the arms become loose again.
- Remove the safety pins and disconnect the lower link arms from the bolts on the implement.
- Remove the implement.

	**WARNING:** When disconnecting the implement, take care to avoid crushing of body parts!

7.8.1.2 AUTOMATIC LINKAGE

To connect the implement to the tractor, follow the procedure below.

- Install the ball joint (1) to the bolts on the implement and secure it with a safety pin (2).
- Drive the tractor to the implement.
- Unscrew the lateral tensioners until the link arms become loose, refer to "Adjusting the lateral tensioners". This applies to the version of lower link arms which can only be adjusted in length, refer to "Lower link arms".
- Using the lever on the control device (3), lift the lower link arms (4) until they are properly locked in the ball joints.
- Stop the tractor and make sure the conditions are safe.
- Release the top link (5) from its holder by removing the safety pin (6) on the tractor and install it on the third linkage point of the implement, insert the bolt (7) and secure it with a safety pin (8).
- Lift the implement using the lever on the control device.
- If the implement is not parallel to the ground, adjust the top link to an appropriate length, refer to "Adjusting the top link".
- Fold the support legs on the implement (if equipped).
- Tighten the lateral tensioners to prevent the implement from swinging (only if provided with this version of hydraulic lift mechanism).

- Connect all electrical and hydraulic connections of the implement to the connection system on the tractor.
- Install the universal joint, first to the PTO drive shaft on the side of the implement and then on the side of the tractor, refer to “Connecting the universal joint”.

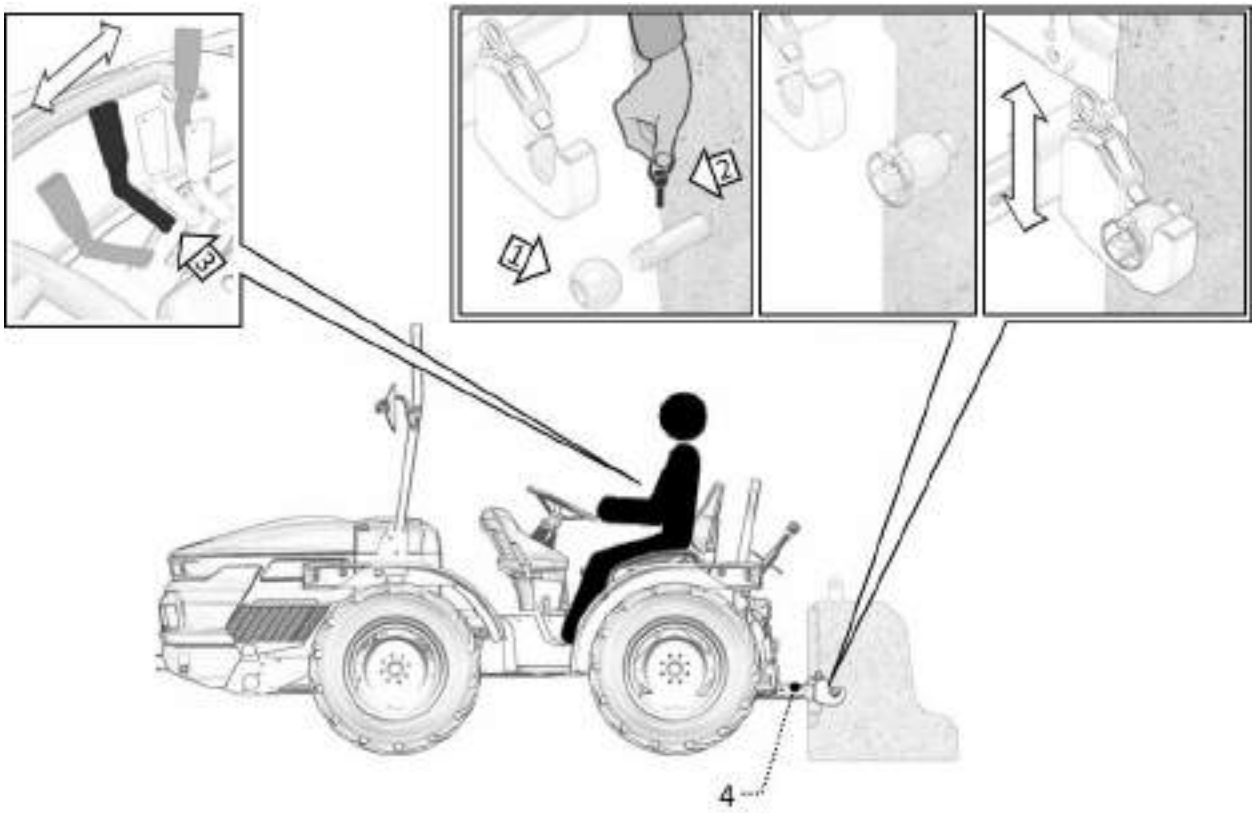


Fig. 171

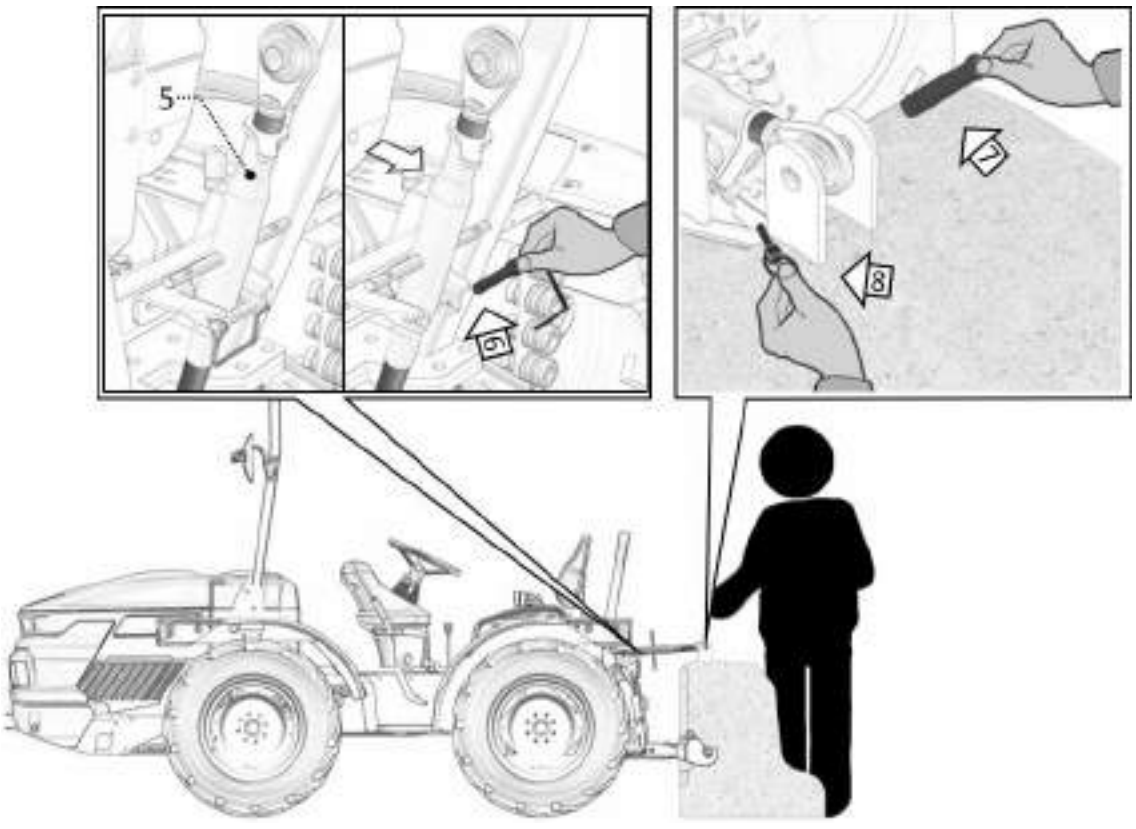


Fig. 172

	**WARNING:** When attaching the implement, take care to avoid crushing of body parts!

	**DANGER:** After installing the universal joint, always make sure that the safety devices are securely attached and functional and the safety pins are locked in position to prevent the universal joint from coming off the implement or the tractor. Incorrect installation may result in serious injuries or even death.

	**WARNING:** The manufacturer prepared an assessment of risks, which are only applicable for the tractor without an implement installed or in combination with an implement determined by the manufacturer. The operator must therefore be familiar with all the risks which may occur when installing an implement not prescribed by the manufacturer of the tractor and must take full responsibility in

To disconnect the implement from the tractor, follow the procedure below.

- Stop the tractor in safe conditions.
- Lower the support legs on the implement (if equipped).
- Lower the implement to the ground using the lever on the control device.
- Shut off the tractor's engine.
- Disconnect all electrical and hydraulic connections from the connection system on the tractor.
- Disconnect the universal joint from the PTO drive shaft, first on the side of the tractor and then on the side of the implement, refer to the chapter ″"Disconnecting the universal joint"″.
- Remove the top link from the third linkage point on the implement, release the safety pin and the bolt.
- Disconnect the top link from the implement and place it back into the guard on the tractor.
- Unscrew the lateral tensioners until the lateral tensioners until the arms become loose again (only if provided with this version of hydraulic lift mechanism).
- Release the safety guard (1) on the automatic linkage and disconnect the lower link arms from the ball joints on the implement.
- Remove the implement.

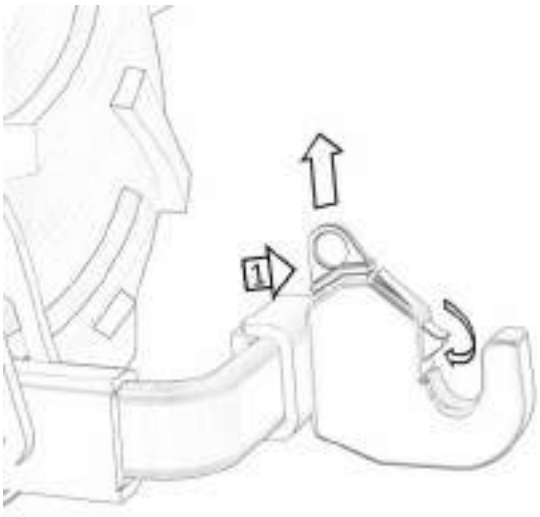


Fig. 173

	**WARNING:** When disconnecting the implement, take care to avoid crushing of body parts!

7.8.2 CONNECTING AND DISCONNECTING THE IMPLEMENT ON THE FRONT HYDRAULIC LIFT MECHANISM

The description of the connection procedure is based on the assumption that the front hydraulic lift mechanism is already adjusted for the implement, otherwise a new adjustment is required first, refer to the chapter "Adjusting the front hydraulic lift mechanism".

When disconnecting, you must keep in mind that the ground on which you are going to perform the procedure must be level and solid to ensure good positioning and stability of the implement in a free-standing position, while making sure that it does not obstruct and endanger other persons.

To connect the implement to the tractor, follow the procedure below.

- Install the ball joint (1) to the bolts on the implement and secure it with a safety pin (2).
- Drive the tractor to the implement.
- Using the lever on the control device (3), lift the lower link arms (4) until they are properly locked in the ball joints.
- Stop the tractor and make sure the conditions are safe.
- Install the top link (5) to the tractor and to the third linkage point on the implement. Install the bolt (6) on both sides and secure it with a safety pin (7).
- Lift the implement using the lever on the control device.
- If the implement is not parallel to the ground, adjust the top link to an appropriate length, refer to “Adjusting the top link”.
- Fold the support legs (if equipped).
- Connect all electrical and hydraulic connections of the implement to the connection system on the tractor.

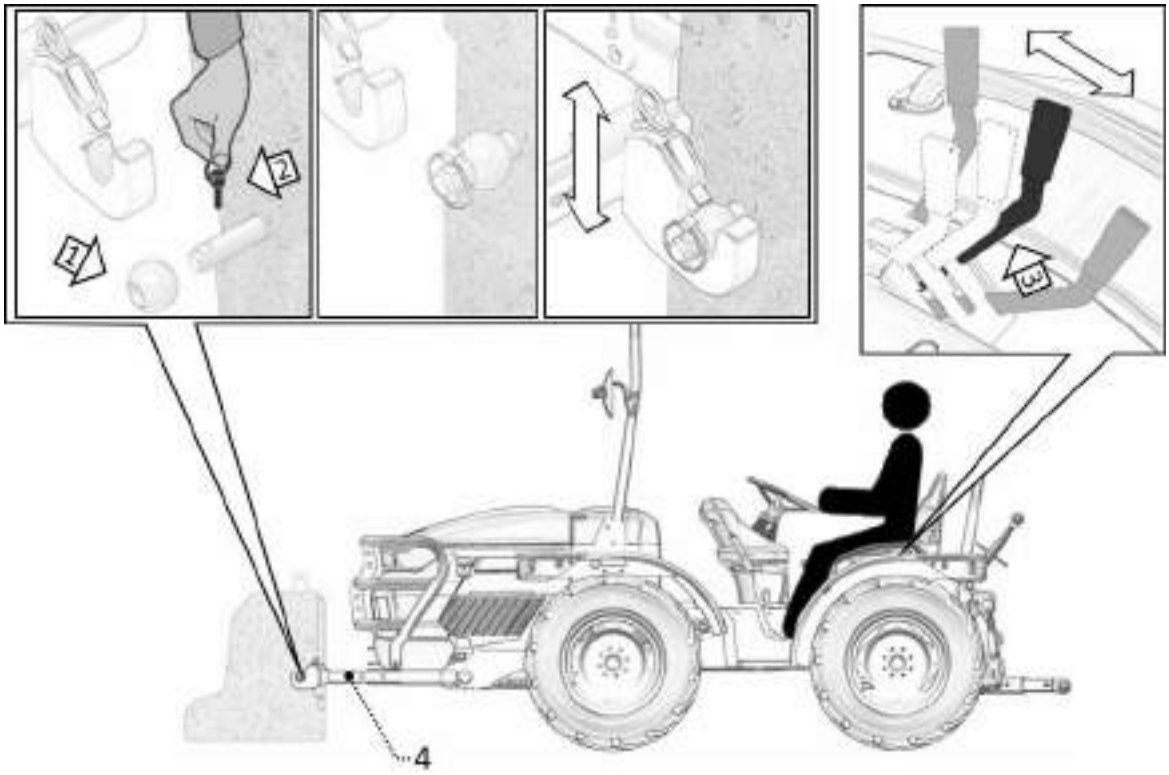


Fig. 174

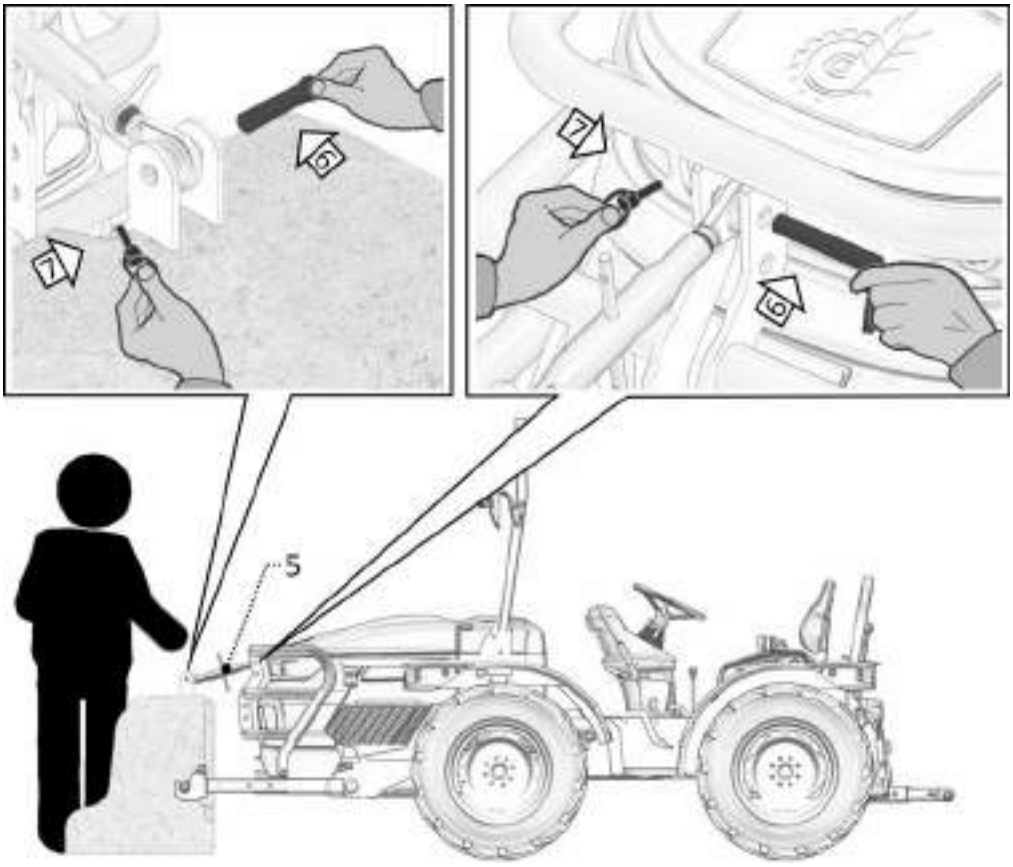


Fig. 175

To disconnect the implement from the tractor, follow the procedure below.

- Stop the tractor in safe conditions.
- Lower the support legs on the implement (if equipped).
- Lower the implement to the ground using the lever on the control device.
- Shut off the tractor's engine.
- Disconnect all electrical and hydraulic connections from the connection system on the tractor.
- Remove the top link from the third linkage point on the implement by releasing the safety pins and the bolts on both sides. Store the top link in a suitable place.
- Release the safety guard on the automatic linkage and disconnect the lower link arms from the ball joints on the implement.
- Remove the implement.

	**WARNING:** When attaching the implement, take care to avoid crushing of body parts!

	**WARNING:** The manufacturer prepared an assessment of risks, which are only applicable for the tractor without an implement installed or in combination with an implement determined by the manufacturer. The operator must therefore be familiar with all the risks which may occur when installing an implement not prescribed by the manufacturer of the tractor and must take full responsibility in

7.8.3 CONNECTING AND DISCONNECTING THE IMPLEMENT ON THE REAR TOW HOOK

The description of the connection procedure is based on the assumption that the tow hook is already adjusted for the implement, otherwise it must be adjusted again, refer to "Adjusting the height of the rear tow hook".

To connect a trailed implement, follow the procedure below.

- Remove the safety pin (1) on the tow hook and pull out the bolt (2).
- Drive the tractor to the implement.
- Adjust the third support foot (3) until the tow bar on the implement is at the same height as the tow hook on the tractor.
- Back up the tractor to the bolt linkage point, so that the hole on the tow bar of the implement is centred with the hole of the tow hook on the tractor.
- Insert the bolt and secure it with a safety pin.
- Lift the third support foot of the implement.
- Connect all electrical and hydraulic connections of the implement to the connection system on the tractor. If the implement is equipped with a hydraulic braking system, connect the system to the corresponding hydraulic connection, which can be installed on the tractor as optional equipment, refer to "Hydraulic brake on a trailed implement".
- Remove the guards from the implement (if installed).
- Install the universal joint, first to the PTO drive shaft on the side of the implement and then on the side of the tractor, refer to "Connecting the universal joint". The universal joint can be installed if the geometry of the connection bar matches the linkage and the tow hook on the tractor is not positioned too high.

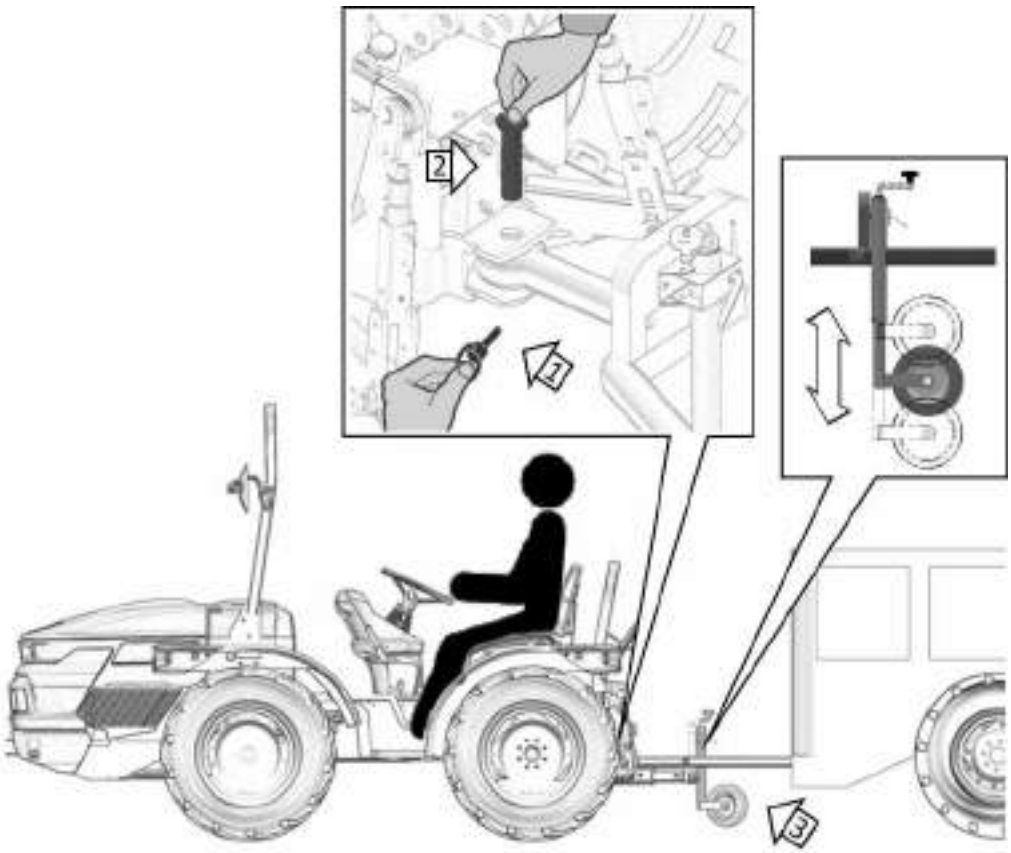


Fig. 176

	**WARNING:** After installing a trailed implement, always make sure that the bolt is correctly inserted and secured with a safety pin.

7.9 USING CONNECTION OF THE TRACTOR

This chapter explains how to use all hydraulic and electric connection installed on the tractor.

7.9.1 USING HYDRAULIC CONNECTIONS

Before installing hydraulic connection hoses, make sure that hydraulic connections and hydraulic connection hoses are not damaged and check their length between the tractor and the implement to ensure smooth operating during work.
Hydraulic couplings are female parts of connections with dimensions ½ ″, which allow for the connection of male parts of connection hoses according to the PUSH-PULL system (ISO 7241-1), which means that the coupling will automatically lock the male part of the connection hose when pushed to connect it and automatically release the male part of the connection hose when pulled to disconnect it.

To connect hydraulic connection hoses

- The tractor must be turned off and stopped in safe conditions.
- Release the pressure in the hydraulic system and connections by moving the lever on the control device up and down.
- Open the protection covers (1) on hydraulic connections; each colour designates a particular function.
- Insert the hydraulic connection hose (2) by pushing it into the hydraulic connection on the tractor. Before continuing, make sure that the connection hose is properly locked!
- When connected, start the tractor's engine and make sure the hydraulic system operates properly.
- Move the lever on the control device up and down a few times to equalize the pressure in the hydraulic system of the implement.

Fig. 177

	**WARNING:** Implements installed on the tractor must use the same oil with characteristics matching those of the oil in the tractor, otherwise there is a risk of serious damage to the hydraulic system!

	**DANGER:** Never connect or disconnect hydraulic connection hoses when the engine is running!

To disconnect hydraulic connection hoses

- Stop the tractor in safe conditions, turn off the engine and lower the implement (mounted).
- Release the pressure from the hydraulic system.
- Disconnect hydraulic connection hoses. Push the hose towards the connection and then pull it back vigorously to release it.
- Install the corresponding protection covers back on hydraulic connections. Before installing the covers back in place, clean them thoroughly.

	**WARNING:** Always keep the hydraulic couplings clean and protected with protection covers.

7.9.2 USING ELECTRIC CONNECTIONS

Perform the electrical connection as shown in the figure Fig. 178, first lift the safety door on the electric connection on the tractor and then insert the electric cable. Disconnection in performed in reverse order.
Before starting to work, check the functionality of all electrical installations on the implement.

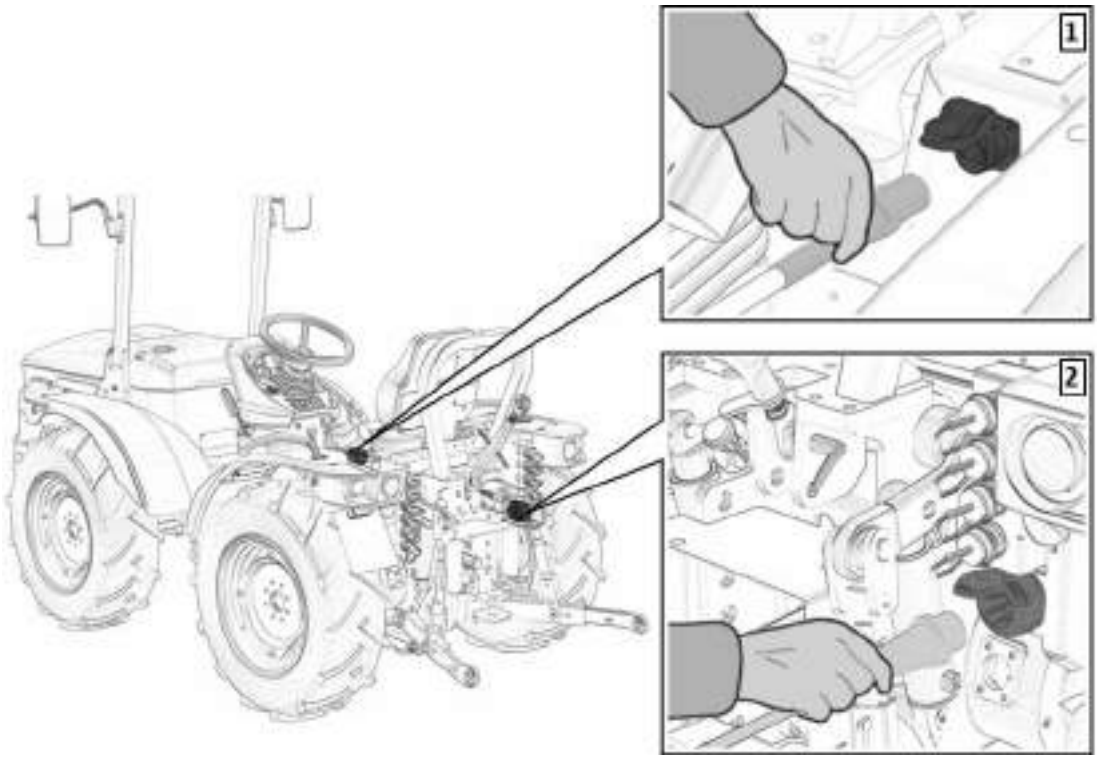


Fig. 178

Connections on a tractor with standard equipment, see Fig. 178.

- 7-pin socket behind the driver's seat;
- 3-pin socket on the left side of the driver's seat (1).

	**WARNING:** Before installing the electrical installation of the implement, turn off the tractor and remove the ignition key from the main switch.

7.10 USING THE WEIGHTS

The weights can only be installed and removed from the tractor in areas with suitable equipment and which provide safe working conditions (suitably equipped workshops).

	**WARNING:** When installing or removing weights, take care to avoid crushing of body parts!

	**WARNING:** When installing wheel weights, always ensure that the weight is evenly distributed on both sides of the tractor.

	**DANGER:** Do not overload the tractor with weights exceeding its maximum permissible weight!

	**DANGER:** Do not use the tractor with weights installed unless absolutely necessary or when no implement is installed, otherwise you risk compromising the stability when braking and manoeuvring. After the implement is disconnected, the weights must always be removed.

7.10.1 40 KG WHEEL WEIGHTS

For a proper installation of wheel weights, an additional distance plate is required, along with special distance screws to replace the existing ones. These wheel weights are designed for 16 and 18-inch wheels.

To install the weights, follow the procedure below; refer to the figure Fig. 179.

- Check that the notch on the weight matches the wheel valve for inflating the tyre.
- Install a distance plate (2) on the inner side of the weight (1) and fasten it with screws (3).
- Unscrew the wheel nuts (5), but only in the place where you intend to install the weight.
- Insert distance screws (4) in the place where the wheel nuts were installed.
- Install the weight on the distance screws.
- When installing the weights, take care to ensure that the notch on the weight covers the wheel valve for inflating tyres.
- Tighten the wheel nuts.
- Make sure that the weights are properly installed on both sides of the tractor.

The wheel weight is removed in reverse order as described above.

	**IMPORTANT:** The 40 kg weights cannot be installed on 15-inch wheels because the external diameter is too large. For these wheel dimensions, 48 kg weights are used, which have a smaller external diameter.

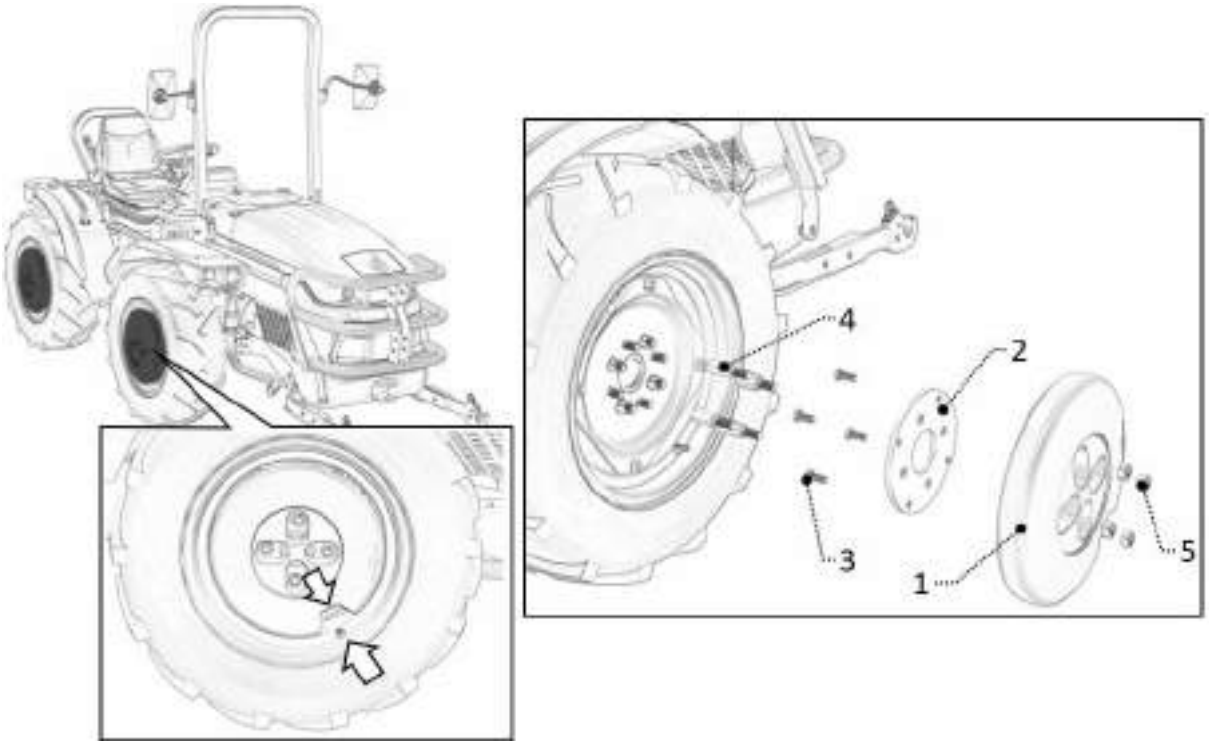


Fig. 179

7.10.2 48 KG WHEEL WEIGHTS

These wheel weights are designed for 15-inch wheels. To install the weights, follow the procedure below; refer to the figure Fig. 180.

- Unscrew the wheel nuts (1) and remove the wheel, refer to the chapter “Installation of wheels”.
- Install the weight (2) on the external side of a free wheel and fasten it with screws (3) from the other side.
- When installing the weights, take care to ensure that the notch on the weight covers the wheel valve for inflating tyres.
- Install the wheel back on the tractor and tighten the wheel nuts.
- Make sure that the weights are properly installed on both sides of the tractor.

The wheel weight is removed in reverse order as described above.

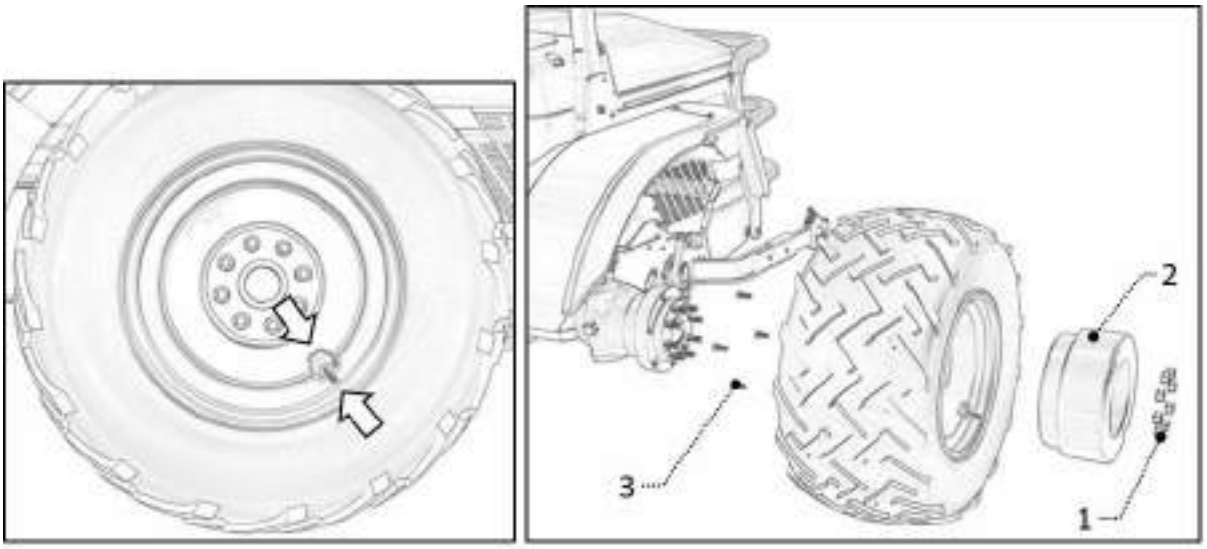


Fig. 180

7.11 RECOMMENDATIONS FOR USING THE TRACTOR

As the operator, you must always follow the recommendations described below.

- Even if you are familiar with them, always test all operating controls, particularly the control devices for starting and stopping before using the tractor for the first time.
- Check the condition of the tractor, the fluid levels (oil, water, fuel) and tyre wear and pressure.
- When the temperatures are low, always pre-heat the engine before starting to work with the tractor.
- Only use the tractor with the roll bar in the upright position and the safety belt properly adjusted.
- The tractor can also be used with the roll bar lowered, but only when driving over short distances and on terrains where there is no danger of rollover. When doing so, you must not fasten the safety belt and you must pay particular attention when driving because you are not appropriately protected.
- Always stop the tractor and depress the clutch pedal before moving the shift lever for changing the driving direction.
- Always keep the clutch pedal depressed before changing gears.
- The gear must always be suitable for the condition of the terrain, never drive in neutral gear on sloping terrain.
- If an implement is installed, always adapt the driving speed to the implement.
- Stop the tractor before engaging the PTO drive shaft because the engine revolutions must drop to a minimum.
- To stop the operation of the implement during driving, disengage the tractor's PTO drive shaft.
- When driving in reverse with an implement installed, lift the rear hydraulic mechanism and disengage the PTO drive shaft.
- Before making sharp turns with a trailed implement installed on the tractor and universal joint engaged, stop the PTO drive shaft and disconnect the universal joint.
- Stay away from the universal joint after disengaging it, because it continues to rotate for a while. You can approach it when completely stopped.
- When the PTO drive shaft is synchronized with the gearbox, its operation is conditioned with the movement of wheels and will rotate even when the tractor's engine is turned off. You must therefore pay attention to the risk of wobbling if the universal joint is attached.
- Before engaging differential lock, stop the tractor and reduce the number of engine revolutions to a minimum.
- Only use the differential lock when absolutely necessary, when the wheel traction is reduced.
- **DO NOT use the differential lock when turning the tractor!**

7.11.1 USING THE TRACTOR ON THE ROAD

The tractor can only be used on the road when in perfect technical condition, after passing the roadworthiness test and registration, and if the driver has a valid driver's license.

Comply with the following instructions when driving the tractor on the road.

- Before driving on the road, securely fasten all the moving parts.
- Remove any remaining dirt from the tractor to avoid soiling the road.
- If the implement installed on the tractor exceeds the maximum dimensions, the implement must be equipped with safety signs.
- Check that the signal lights and instruments are in perfect working order.
- When driving, the implement must be lifted to the uppermost position and blocked with the rotary knob to ensure safety, refer to “The rear hydraulic lift mechanism control”.
- Connect the brake pedals to distribute the braking force to all four wheels when driving, refer to the chapter “Operating controls”.
- When driving on the road, the differential lock must be disengaged.
- When driving on the road, the front roll bar must always be in the upright position and must never be lowered down.

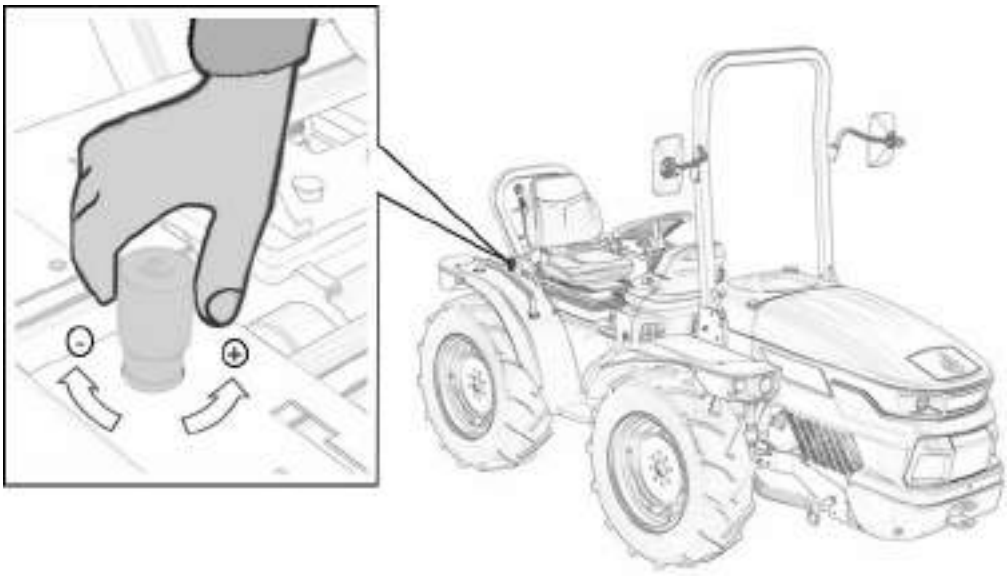


Fig. 181

Before driving on the road, the implement must be secured in the lifted position and blocked by rotating the rotary knob all the way to the right (clockwise).

	**WARNING:** Driving on the road is ONLY allowed when the driver's seat is rotated to its normal position or in the driving direction, NOT when it is reversed.

7.11.2 DRIVING THE TRACTOR

To start driving the tractor, follow the instructions for starting described below.

- Depress the clutch pedal (1) and hold it down.
- Start the tractor's engine, refer to the chapter “Starting the engine”;
- Select the speed group using the lever (2).
- Select the driving direction using the lever (3).
- Select a suitable gear using the lever (4).
- Release the parking brake.
- Slowly release the clutch pedal (1), keep the engine revolutions as low as possible and carefully depress the accelerator pedal (6) until the tractor moves off.
- When releasing the clutch pedal and the gearbox is in gear, take care not to release it suddenly to avoid losing control over the tractor.

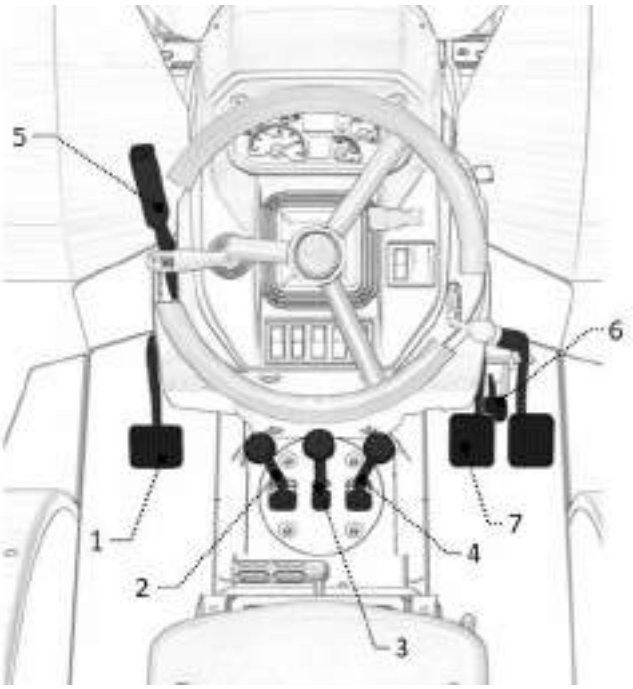


Fig. 182

- After the tractor moves off, you must release the clutch pedal completely, do not hold it partially depressed; this could result in excessive wear of the clutch disks.
- To adjust the tractor's driving speed, use appropriate shift levers and the accelerator, clutch and brake pedals (7).

	**IMPORTANT:** Never hold the clutch pedal depressed for an extended period of time. In this case, move the lever for changing the driving direction to neutral and release the clutch pedal.

	**IMPORTANT:** If the operator leaves the driver’s seat when driving and the parking brake is not engaged, the tractor starts to beep after 2 seconds. Stop the tractor in safe conditions and activate the parking brake before leaving the driver’s seat.

7.11.3 STOPPING THE TRACTOR

Always stop or park the tractor in areas where it will not obstruct or endanger other road users.
To stop the tractor, follow the instructions described below.

- Reduce the speed of the tractor by releasing the accelerator pedal.
- Depress the clutch and brake pedals to stop the tractor.
- Move the shift levers for driving in neutral position.
- Deactivate the switch for the rear universal shaft (if used).
- Pull the parking brake.
- Lower the implement to the ground (if installed).
- Shut off the tractor's engine, refer to the chapter “Shutting off the engine”;
- Move the shift lever to the lowest gear and release the clutch.
- Remove the key from the ignition lock.

7.12 EXTENDED PERIOD OF INACTIVITY AND RESTARTING THE TRACTOR

This chapter provides instructions in case the tractor will not be used for a while, for example, before the winter season.

7.12.1 EXTENDED PERIOD OF INACTIVITY OF THE TRACTOR

If the tractor will not be used for some time, carry out the following operations to ensure that some vital components remain functional.

- Start the engine and leave it running in idle for a few moments or until it is heated.
- Stop the tractor's engine and allow it to cool down.
- Discharge the old engine oil and replace with new oil of the same type; replace the oil filter at the same time.
- Clean the radiator and, if necessary, top up with an appropriate coolant.
- Fill the fuel tank to prevent unnecessary condensation.
- Check the condition of the fuel filter and replace it if necessary.
- Clean or replace the air filter.
- Remove the battery, clean it and check its voltage. If necessary, charge the battery and store it in a dry and cool area.
- Clean the external surfaces of the tractor. In case of scratches or abrasions, coat with appropriate paint to prevent corrosion.
- Protect the metal surfaces which cannot be painted with a lubricant or an anti-corrosion product.
- Keep the tractor stored in a dry and protected area. If the tractor is stored outdoors, cover it with a protective waterproof awning.
- To protect the tyres, it is recommended to park the tractor in an area protected from direct heat and sunlight.
- To maintain the tractor in a good technical condition, it is recommended to occasionally start the tractor’s engine and leave it running in idle for at least 15 minutes.

7.12.2 RESTARTING THE TRACTOR

Before restarting the tractor after an extended period of non-use, check all vital components and make sure they are in perfect working order. For this reason, it is particularly important to follow the instructions given below before operating the tractor again.

- Install the charged battery back in its place and connect it, refer to “Changing the battery”.
- Check the levels of all fluids (oil, coolant, fuel).
- Check the hydraulic system (leakage, level of hydraulic oil).
- Lubricate all greasing points.
- Check all safety devices on the tractor for proper operation.
- Check the tyres for wear and pressure.
- Clean any dirt from the driver’s area and control devices.
- Start the engine and leave it running in idle for a few moments or until it is heated.

	**WARNING:** Do not start the tractor in closed areas or areas with poor ventilation. Exhaust gas is very dangerous and may cause asphyxiation.

7.13 TANK FILLING

Only use **diesel fuel** complying with the standards prescribed by engine manufacturer. For detailed information, read the engine operating instructions.

It is recommended that you never run the tank completely empty, as this may interrupt the fuel supply to the entire system, which must be vented again in this case.

Add the fuel as described below.

- Shut off the tractor's engine.
- Unscrew the cover at the top of the tank (1).
- Fill the tank with fuel. Do not fill the tank to the brim.
- Take care not to spill any fuel in the environment when filling the tank. If this cannot be avoided, place a collection container under the fuel drain opening.
- Tighten the cover after filling the tank.

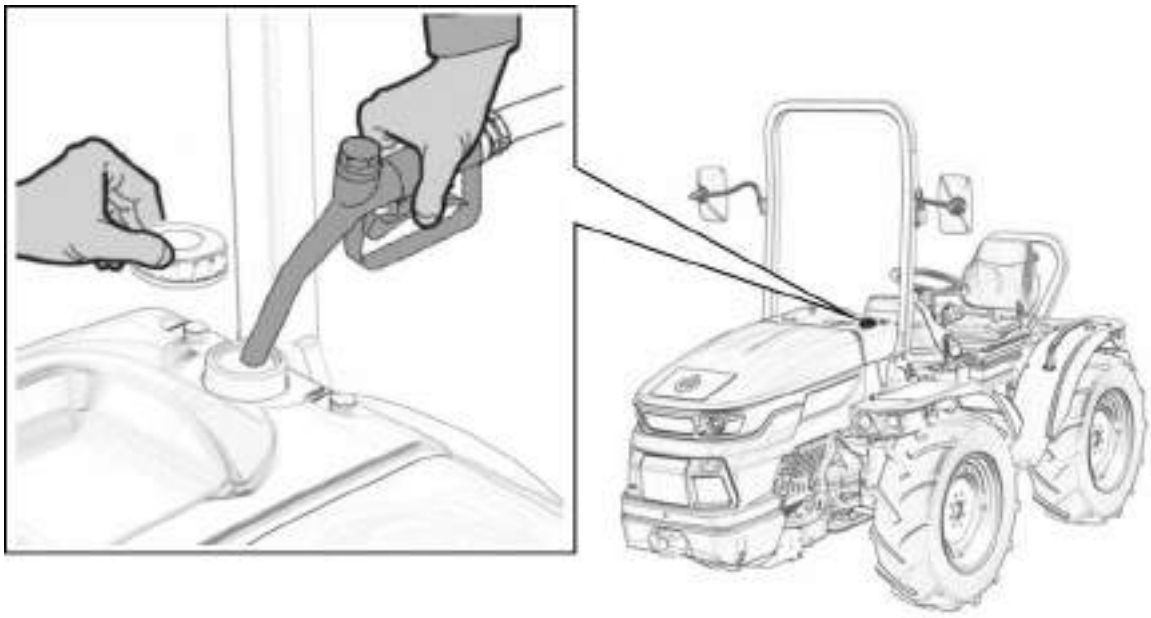


Fig. 183

	**WARNING:** Fuel is inflammable and may ignite and cause a fire if spilled on hot surfaces or electrical parts, which is why you must never fill the fuel tank near sparks or fire. Never smoke while adding fuel!

	**WARNING:** Never add fuel when the tractor is running!

	**IMPORTANT:** Do not leave the tank empty for an extended period of time as this accelerates condensation.

8 TRACTOR MAINTENANCE

As the operator, you must always follow the maintenance recommendations described below.

- Regularly perform maintenance operations on the tractor. Proper maintenance ensures a long-life span and performance.
- Only use original replacement parts for replacing worn parts and only use oils and lubricants recommended by the manufacturer. Do not use other brands of oils or blends with characteristics that differ from the ones prescribed.
- Regularly check the wheel screws, other important screws on the tractor and the joints of hydraulic and electrical connection for proper tightening.
- Unless otherwise specified, all maintenance operations must be performed with the tractor turned off.
- Maintenance work on the engine or near the engine must be performed when the engine is completely cold.
- During maintenance work in the engine compartment, make sure that the engine cover is properly supported to prevent it from falling and causing crushing injuries of body parts.
- After completing maintenance operations, clean the work area. Do not leave any parts or harmful liquids in the environment, but remove them in accordance with local regulations.
- The personnel performing maintenance work must be familiar with the procedures, comply with the safety instructions and take all necessary actions to ensure the workplace safety.

	**IMPORTANT:** Maintenance work on the tractor can only be performed by authorized service centres complying with the manufacturer's instructions. Failure to observe this recommendation and the maintenance intervals specified in the operating instructions will void the warranty!

8.1 TRACTOR LIFTING POINTS

The recommended points for lifting the tractor, see Fig. 184.

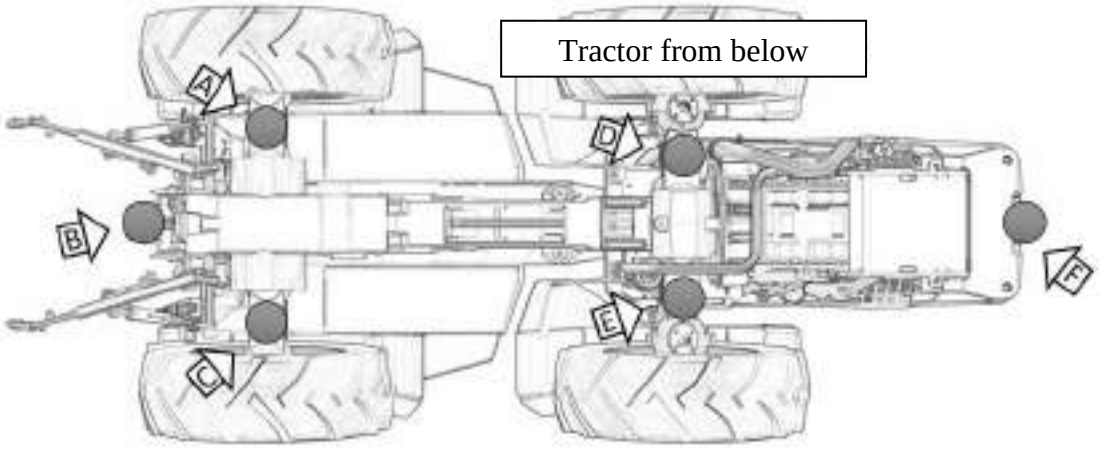


Fig. 184

Position A - the rear right part of the axle, for lifting the rear right sleeve;
Position B - rear hook point, for lifting the rear part of the tractor;
Position C - the rear left part of the axle, for lifting the rear left sleeve;
Position D - the front right part of the axle, for lifting the front right sleeve;
Position E - the front left part of the axle, for lifting the front left sleeve;
Position F - front hook point, for lifting the front part of the tractor.

8.2 WHEELS

Comply with the following instructions before changing the wheels.

- Park the tractor on a solid and level surface, activate the parking brake and immobilise the tractor by placing safety wedges under the wheels.
- Remove the key from the ignition lock to prevent accidental starting.

8.2.1 REMOVING AND INSTALLING WHEELS

For lifting the tractor, use a stable hoist with a sufficient load carrying capacity and install it on the recommended lifting points, refer to the chapter “Tractor lifting points”.

- Before removing the wheel, lift the tractor and support it with an appropriate support stand (1).
- Wait until the wheel is lifted from the ground, then unscrew all the nuts (2) and remove the wheel (3).
- When re-installing the wheel, use appropriate tightening torques.
- After the work is finished, lift the tractor, remove the support stand and lower the tractor to the ground.
- Check that the wheel nuts and screws on the rims are properly tightened.

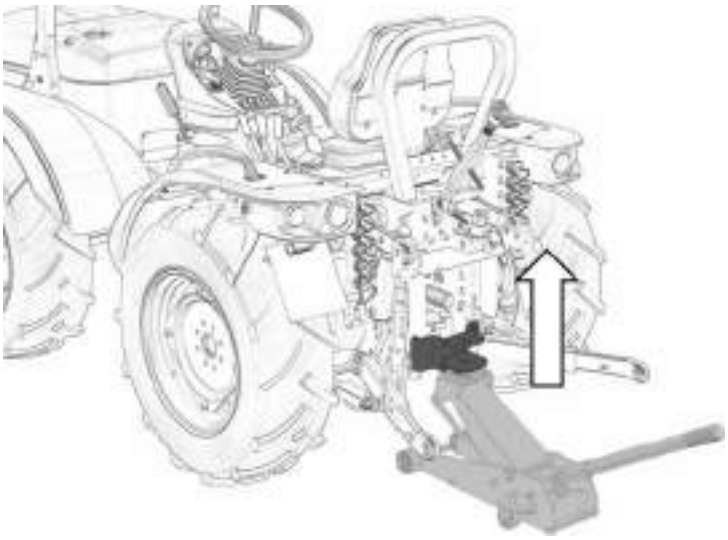


Fig. 185

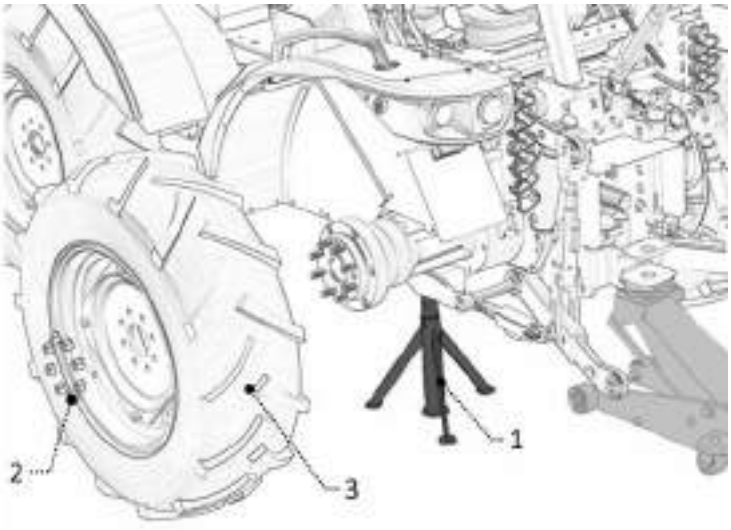


Fig. 186

	**WARNING:** When removing the wheel, make sure that the tractor securely rests on its support and there are no people inside the danger area when changing the wheel.

	**WARNING:** Do not start the tractor until the wheel changing procedure is completely finished!

Tightening torques

Description	Dimensions	Torque Nm / Kgm
Rim screws	M 14 x 1,5	150 / 15.3
Wheel nuts	M 16 x 1,5	210 / 21.4

	**IMPORTANT:** Regularly check that the nuts and screws on front and rear wheels are tightened according to the prescribed tightening torque.

	**WARNING:** If wheels with different dimensions are installed on the tractor (to replace the basic wheels), a different wheel diameter value must be entered to ensure that the speed is correctly displayed on the dashboard. **Only an authorized service technician can perform this procedure!**

8.2.2 TYRES

As the operator, it is recommended that you follow the recommendations described below.

- The tyres must be installed or removed by a qualified person, using appropriate tools and complying with the safety instructions prescribed by the manufacturer of tyres and rims.
- To ensure a long service life and operation, the tyres must be regularly inspected (cracks, cuts, bulging, damaged rims etc.).
- Maintain the appropriate tyre pressure. When filling, use a connection and a hose of appropriate length, ensuring sufficient distance so that you are not standing directly in front of the tyre.
- The correct tyre pressure values are specified in the chapter “Technical data of the tractor”.
- The tyre tread must always be turned towards the driving direction of the tractor. With adjustable rims, where the wheel tracks are adjustable, the wheel can be moved to the left and to the right.
- The tractor enables driving in both directions (seat rotation). When the operator often drives in reverse, the tyres can also be reversed to ensure a better grip.

Fig. 187

	**WARNING:** Never inflate the tyres beyond the maximum prescribed pressure!

8.2.2.1 TYRE PRESSURE CHECK

Check the tyre pressure with the tractor weights and implements removed and by following the procedure described below.

- Stop the tractor on a level and solid surface.
- Shut off the tractor's engine (ignition key in position 0).
- Visually check the tyres for potential wear.
- Check the tyre pressure.

	IMPORTANT: When filling the tyre with air, always take into account the type of tyres installed or their dimensions, the type of work to be performed and equipment to be installed!

Tyre pressure for operating the tractor on soft surfaces, e.g. soil

- **A Correct tyre pressure** for the work to be carried out; it provides a good grip, the soil correctly enters the tyre tread when driving, the tyre tread remains clean.
- **B The tyre pressure is too low** for the work to be carried out, giving poor results because the grip on the ground is poor, the soil does not enter the tyre tread correctly when driving, the tyre surface can be damaged, particularly when pulling heavy loads.
- **C The tyre pressure is too high** for the work to be carries out, giving poor results because the grip on the ground is poor; such aggressive tyre tread may damage the ground significantly and there is a high risk of damaging the tyre in case of impact.

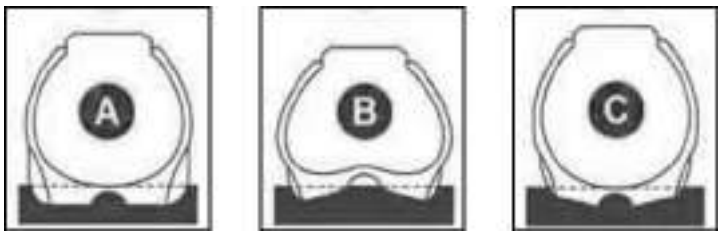


Fig. 188

Tyre pressure for operating the tractor on hard surfaces, e.g. road

- **D Correct tyre pressure** for the work to be carried out, enabling the optimum preservation of the base layer and reducing the wear of the tyre tread.
- **E The tyre pressure is too low** for the work to be carried out, it may cause an uneven wear of the tyre tread and damage to the tyre, the tractor is very unstable when driving.
- **F The tyre pressure is too high** for the work to be carried out, it may cause an uneven wear of the tyre tread with a high risk for tyre damage in case of impacts and driving is uncomfortable.

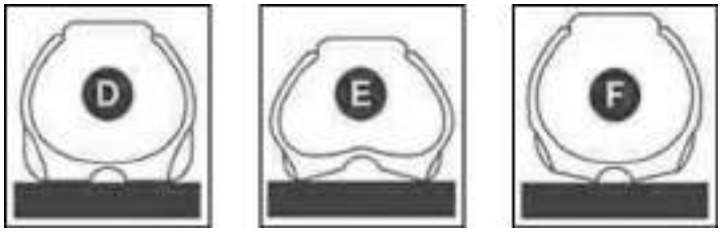


Fig. 189

	IMPORTANT: The pressure values specified in the operating instructions apply to optimal working conditions. Some differences can nevertheless occur, depending on the type of surface and the load on the tractor, which must be taken into account before filling the tyres!

8.2.3 THE REST FOR THE FINAL WHEEL POSITION

The rest is designed to protect the steering mechanism against sudden loads when the wheel is turned to the final turning position.

To adjust the rest, follow the procedure below.

- Activate the parking brake.
- Place safety wedges to prevent the tractor from moving.
- Using a hoist, lift the front end of the tractor and make sure its is properly supported with support stands.
- Turn the steering wheel to the left and right until reaching the final position of the steering mechanism.
- Unscrew the safety nut (1) and adjust the screw (2) to the housing of the sleeve (3).
- The rest for the final wheel position is adjusted correctly when the distance between the screw and the housing is not greater than 1 mm.

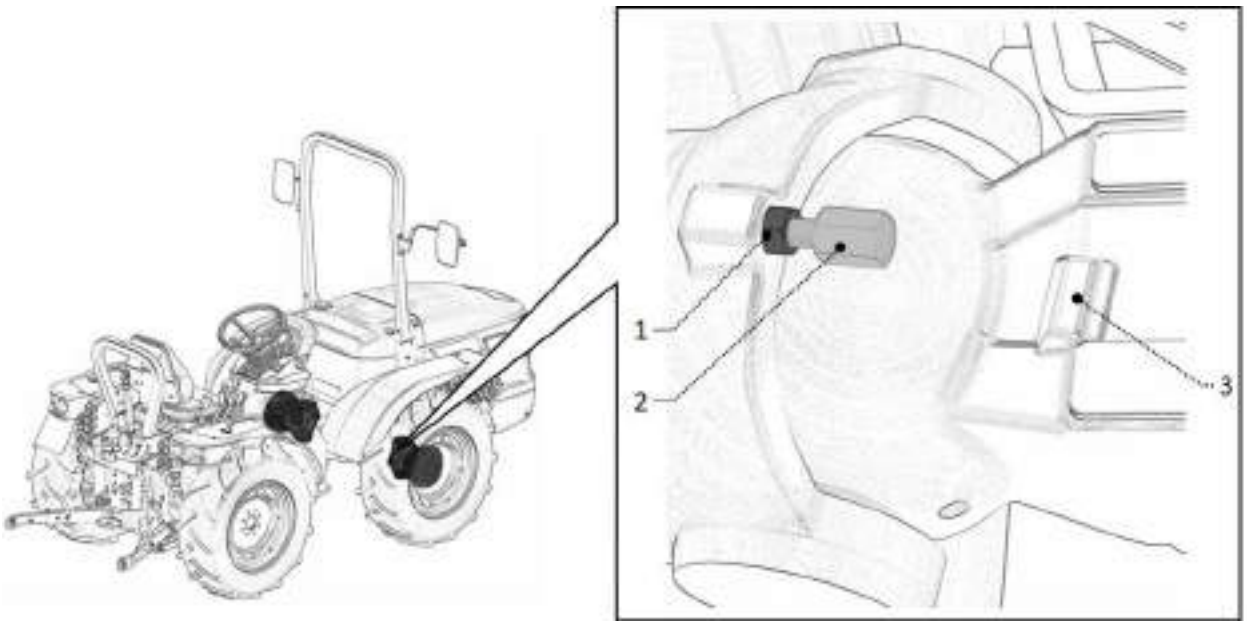


Fig. 190

	**WARNING:** The rest is only designed for protection and must not come into contact with the sleeve during normal turning!

8.2.4 WHEEL TRACK ADJUSTMENT

The rim is assembled in such a way that the connective plate is asymmetrically welded to the arch to allow the base plate to be attached in two different positions.

- If the base plate is turned to the other side of the connective plate, the rim and the base plate can be positioned in four ways, see Fig. 191.
- By turning the entire rim on the wheel hub, you can adjust it to eight positions between the centre of the wheel and the contact surface of the hub. This means you can adjust the wheel track to four different widths, refer to the chapter “Wheel dimensions”.
- Before adjusting the rim, check the tyre dimensions that can be installed to prevent the wheel from colliding with other parts of the tractor, refer to the chapter “Wheel dimensions”.

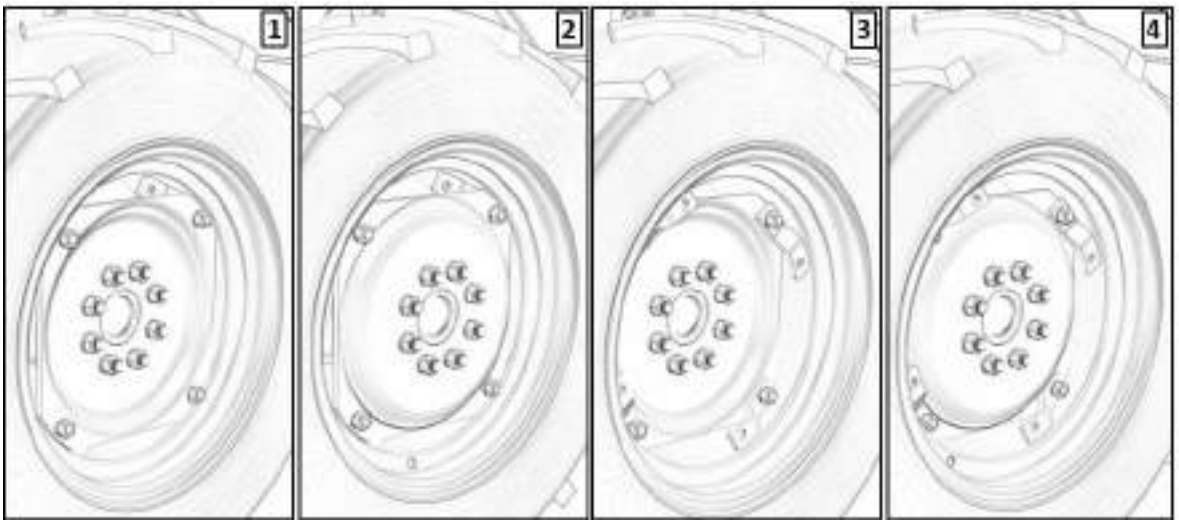


Fig. 191

Rim assembly

1. Rim
2. Base plate
3. Connective plate
4. Fastening bolt (spring washer and nut)

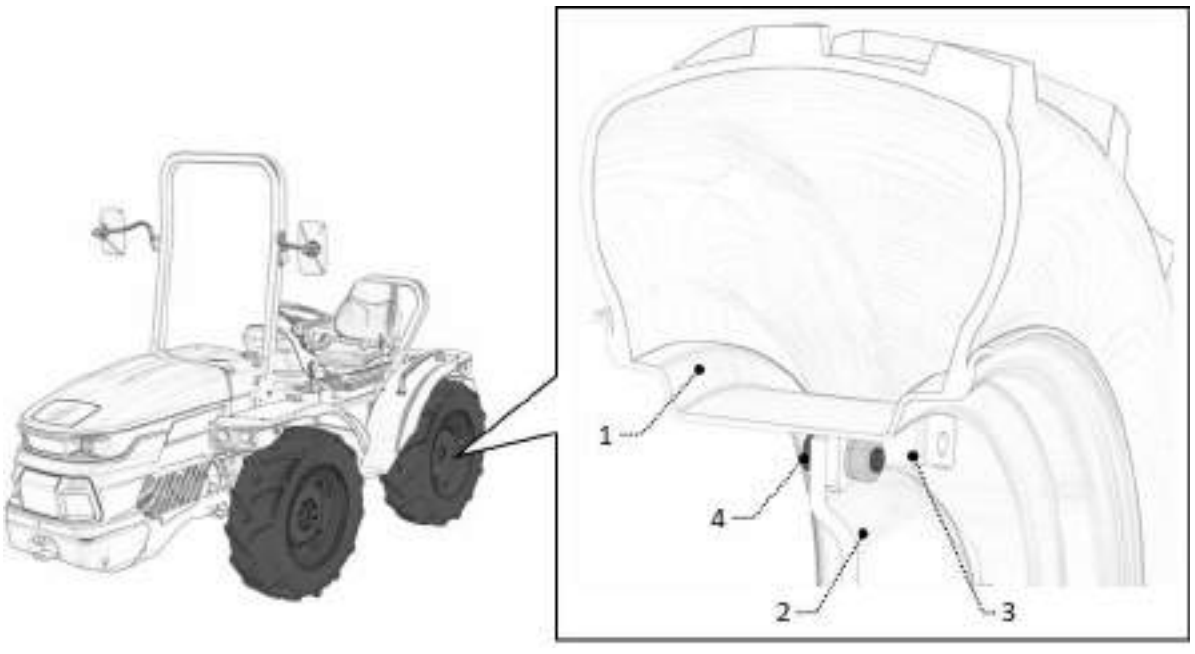


Fig. 192

8.3 ELECTRICAL SYSTEM

Before performing maintenance work on the electrical system, stop the tractor in safe conditions, turn off the main switch for disconnecting the battery, refer to “Description of the main safety components”.

8.3.1 CHANGING THE BATTERY

Check the batter charge level or the electrolyte level. if the battery worn out, is replace it with a new one. If the battery is new, check that its dimensions and capacity are suitable and match or exceed the original model.

Disconnecting the battery

- The key must be in position 0, the main battery switch (1) must be switched off;
- If the tractor was operating, wait until the engine cools down enough;
- Open the tractor engine cover;
- Partially loosen the screws (2) on both sides of the hydraulic oil cooler;
- Remove the hydraulic oil cooler (3) and tilt it to the left as far as the hydraulic hoses allow;
- First, disconnect the ground cable from the negative terminal of the battery;
- Next, disconnect the positive lead along with the fuse box from the positive terminal of the battery;
- Unscrew the screw (4) and remove the bracket (5);
- Remove the battery (6) from its compartment;
- Do not place any metal objects on the battery during operation.

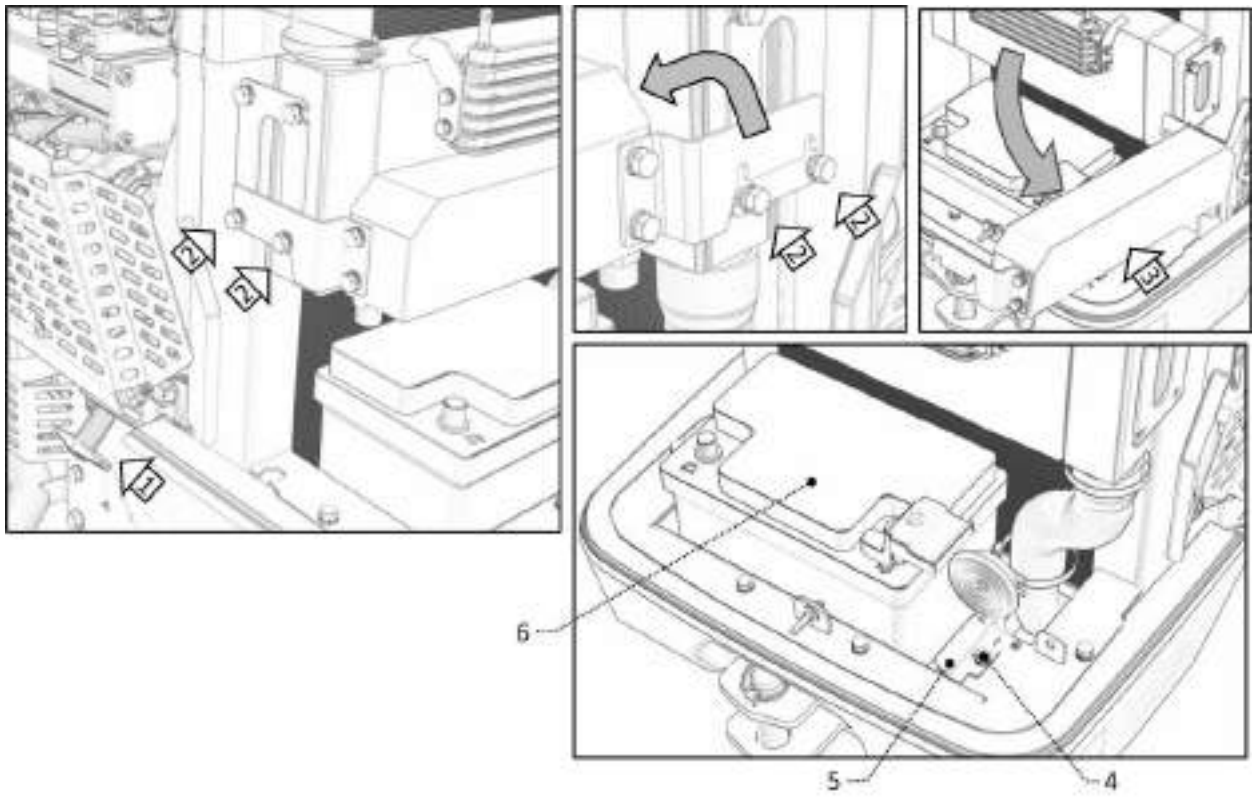


Fig. 193

Connecting the battery

- Place the new battery (1) back into the battery compartment;
- Install the bracket (2) and tighten the screw (3);
- Connect the cables to both battery terminals, first connect the positive cable to the positive terminal and then connect the grounding cable to the negative terminal. It is recommended to grease the battery terminals before connecting the cables;
- Install the hydraulic oil cooler (4) and secure it on both sides with screws (5);
- Turn on the main switch, see figure Fig. 194;
- The tractor is ready to be started.

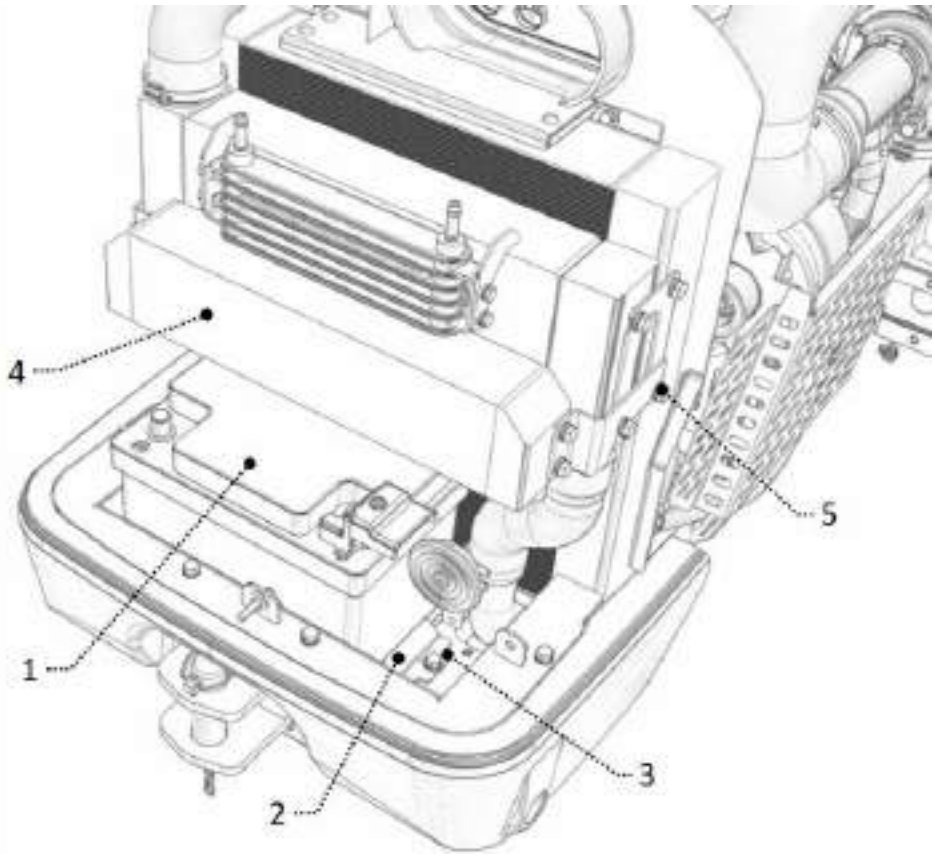


Fig. 194

	**IMPORTANT:** If the tractor is used in wet conditions or near water, ensure that the battery and the electrical components are properly protected to avoid contact with water!

	**WARNING:** Always make sure that the cables are correctly connected to battery terminals (negative and positive) to prevent short circuit!

	**IMPORTANT:** Worn out batteries must not be disposed of as household waste. They must be taken to dedicated collection points for recycling, in accordance with applicable regulations. When you purchase a new battery, you can also leave the old battery with the dealer who will make sure it is properly recycled.

8.3.2 CHANGING THE LIGHT BULBS

The figure shows the position of lights on the tractor. To change the light bulbs, see description below.

- A – Front headlights
- B – Lamp assembly on the front fenders
- C – Lamp assembly on the rear fenders
- D – License plate illumination lamp
- E – Working lamp
- F – Interior lamp (cab)
- G – Rotating lamp

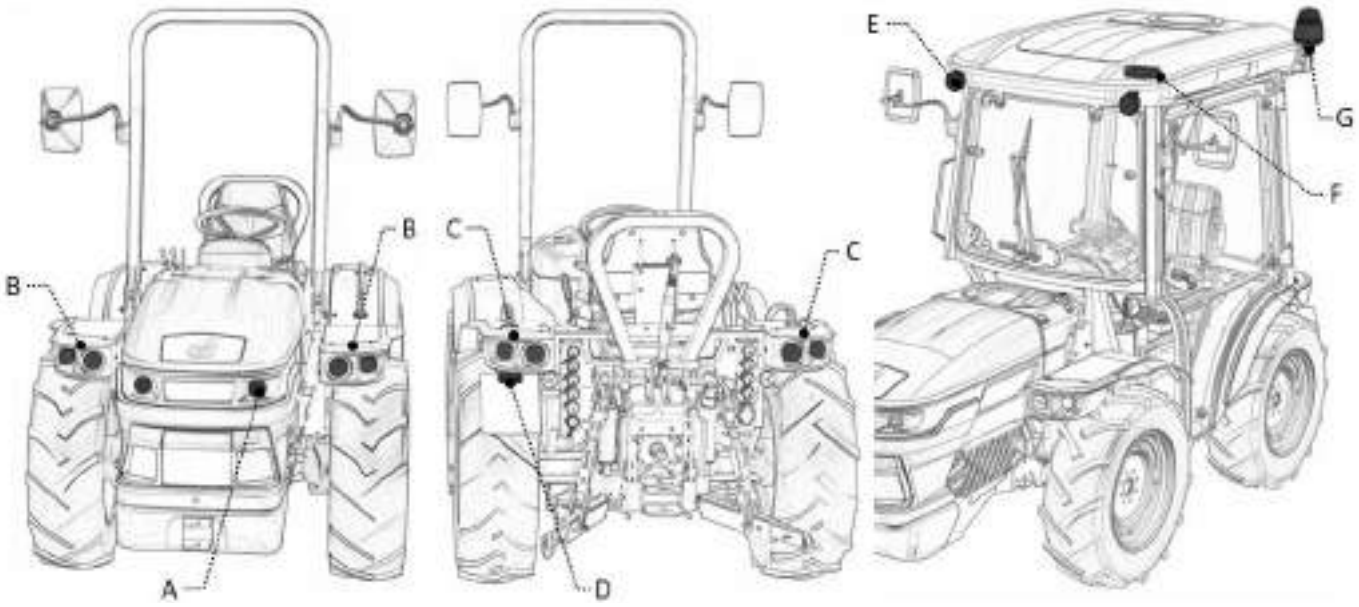


Fig. 196

8.3.2.1 FRONT HEADLIGHTS

The front headlights use LED technology and are therefore not fitted with light bulbs. In case of failure, the entire lamp must be replaced. To replace the lamp, follow the procedure below; refer to the figure Fig. 197.

- Open the engine cover.
- Disconnect the connector from the lamp.
- Unscrew the screws A and remove the lamp.
- Unscrew the screws B and remove the bracket from the lamp.
- Replace the old lamp with a new, original lamp, then reinstall the bracket on the lamp and tighten the screws B.
- Place the lamp back into the engine cover and tighten the screws A.
- Connect the connector to the lamp.
- When this operation is finished, adjust the lamps; refer to “Adjusting the front headlights”.

	**WARNING:** If the tractor was running, there is a risk of hot surfaces and you must wait until it cools down completely before changing the lamps!

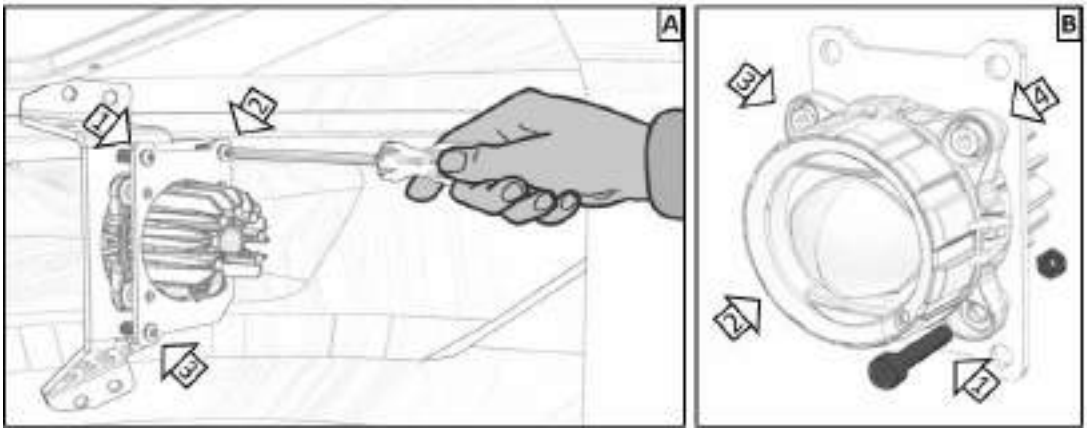


Fig. 197

8.3.2.2 LAMP ASSEMBLY ON THE FRONT FENDERS

The lamp assembly on the front fenders includes

- two position lights (1);
- two direction indicators (2).

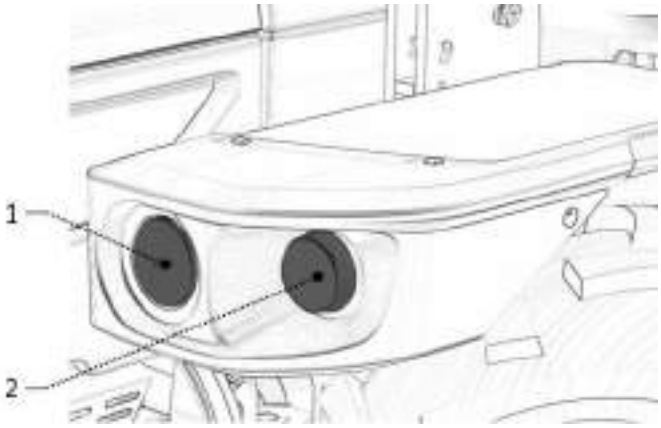


Fig. 198

Position light

The position lights use LED technology and are therefore not fitted with light bulbs. In case of failure, the entire lamp must be replaced. To replace the lamp, perform the procedure described below. Refer to the figure Fig. 199.

- Unscrew the screws (A) under the lamp housing on the fender and remove the protective cover.
- Disconnect the connector from the lamp.
- Unscrew the screws (B) and remove the bracket from the lamp.
- Unscrew the screws (C) and remove the lamp.
- Replace the old lamp with a new one and tighten the screws (C); they must be loosely tightened so that the lamp can be adjusted later.
- Install the lamp housing back in its place and tighten the screws (B).
- Adjust the position light so it perfectly fits the housing and fully tighten the screws (C).
- Connect the connector to the lamp.
- Reinstall the protective cover and tighten the screws (A).

	**IMPORTANT:** Only use lamps with technical characteristics matching the original lamps!

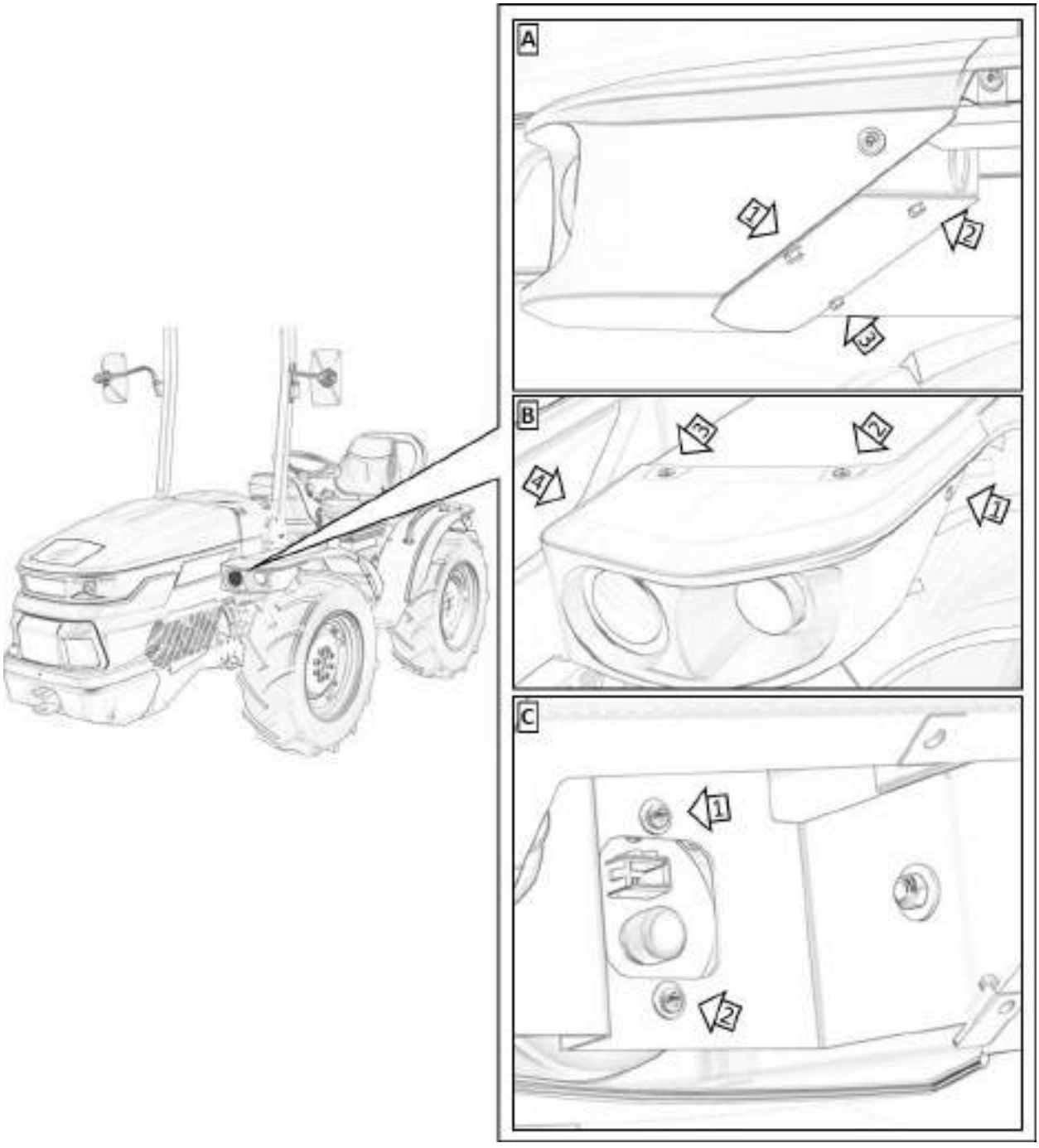


Fig. 199

Direction indicator

Light bulb type P21 12V 21W (single filament). To replace the light bulb in the direction indicator, perform the procedure described below. Refer to the figure Fig. 200.

- Unscrew the screws (A) under the lamp housing on the fender and remove the protective cover.
- Rotate the bulb holder (B) on the direction indicator to the left and remove it.
- While holding the holder, gently push the bulb (C), rotate it all the way in anti-clockwise direction and pull it out.
- Replace the old light bulb with a new one, insert it all the way into the holder and install it by slightly pushing and rotating the bulb in clockwise direction.

- Insert the holder with the bulb back into the direction indicator and rotate it to the right to fasten it.
- Reinstall the protective cover and tighten the screws (A).

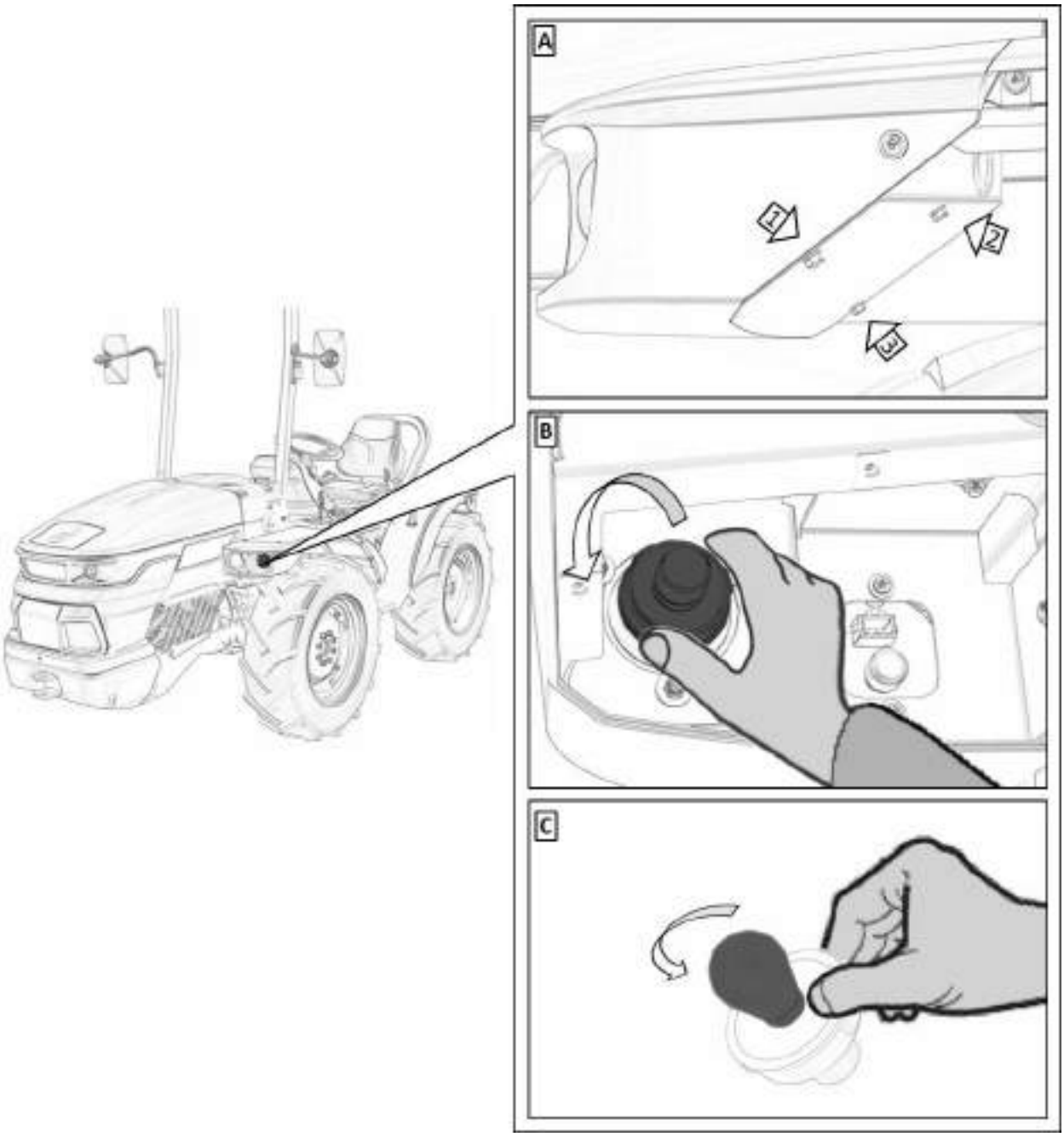


Fig. 200

	IMPORTANT: Only use lamps with technical characteristics matching the original lamps!

8.3.2.3 LAMP ASSEMBLY ON THE REAR FENDERS

The lamp assembly on the rear fenders includes

- two rear stop lamps (1);
- two direction indicators (2).

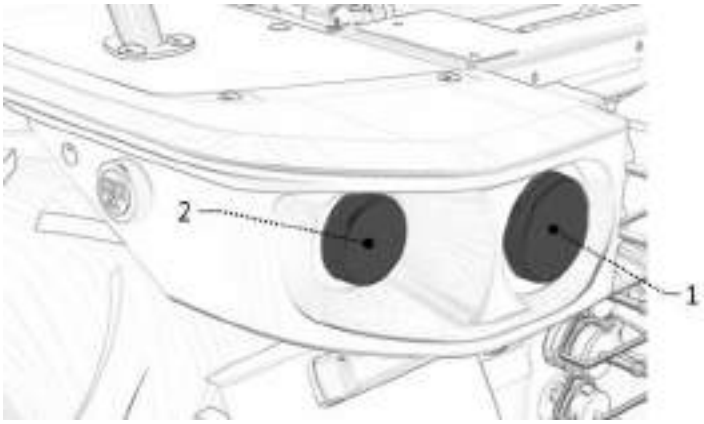


Fig. 201

Direction indicator

Light bulb type P21 12V 21W (single filament). The rear direction indicator functions in the same ways as the front direction indicator and the light bulb replacement procedure is the same, refer to the description and the illustration in the section “Lamp assembly on front fenders”.

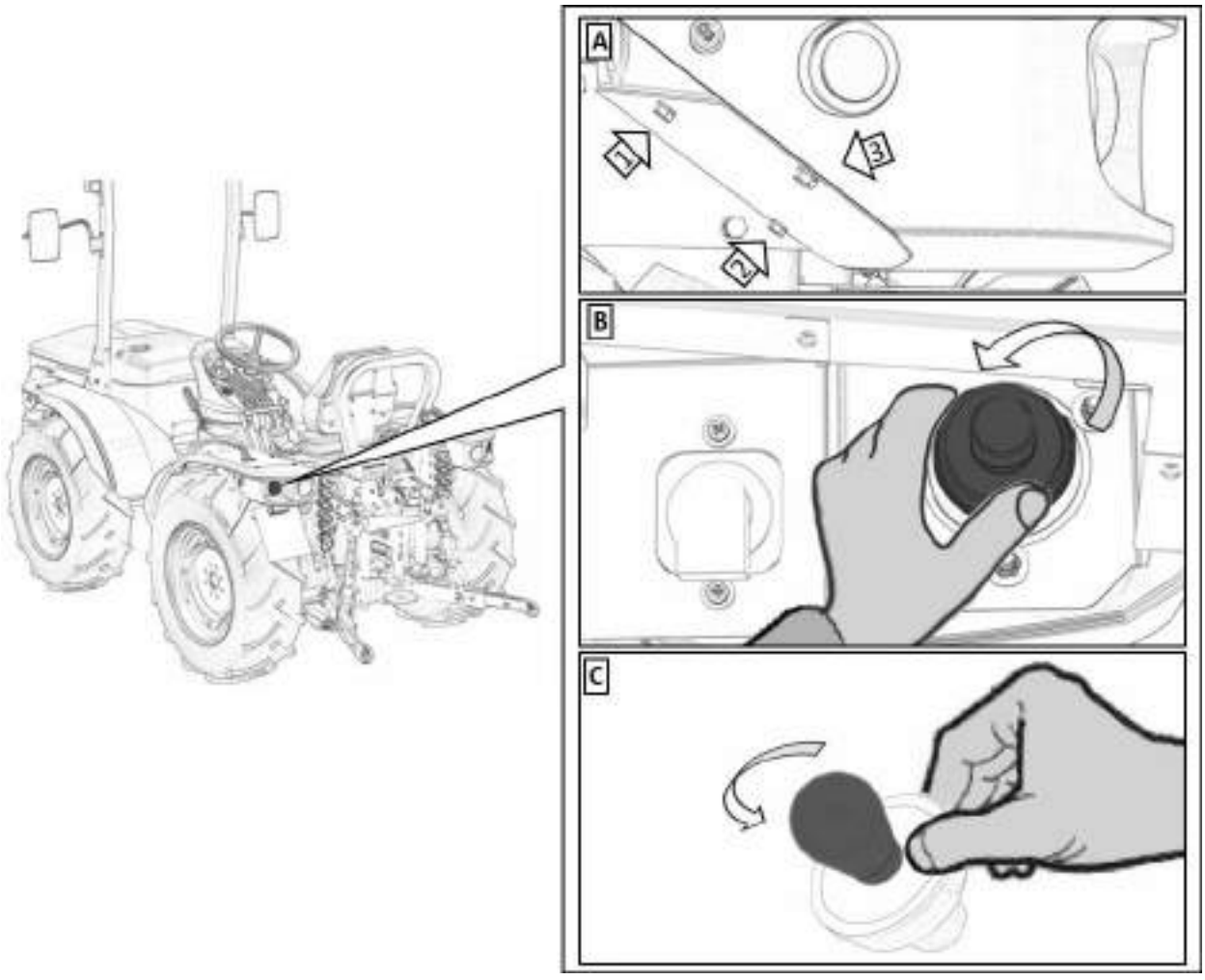


Fig. 202

Rear stop lamp

The light bulb type for the stop lamp is P21 12V 21W (double filament). To replace the light bulb in the lamp, perform the procedure described below.

- Unscrew the screws (A) under the lamp housing on the fender and remove the protective cover.
- Disconnect the connector from the lamp.
- Rotate the bulb holder (B) on the lamp to the left and remove it.
- While holding the holder, gently push the bulb (C), rotate it all the way in anti-clockwise direction and pull it out.
- Replace the old bulb with a new one. Insert it all the way into the holder and install it by slightly pushing and rotating the bulb in a clockwise direction.
- Insert the holder with the bulb back into the lamp and rotate it to the right to fasten it.
- Connect the connector to the lamp.
- Reinstall the protective cover and tighten the screws (A).

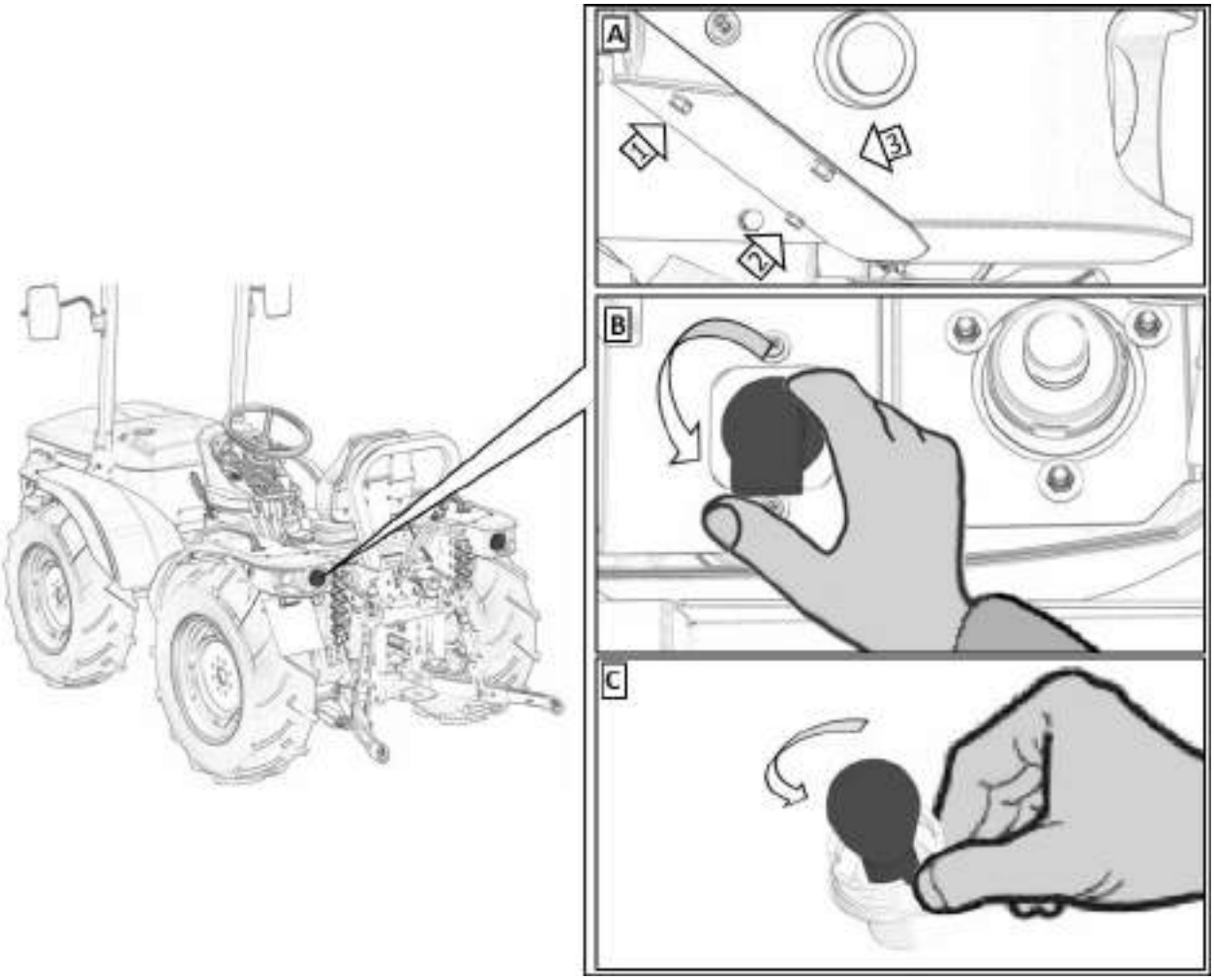


Fig. 203

	IMPORTANT: Only use light bulbs with technical characteristics matching the original light bulbs!

8.3.2.4 LICENSE PLATE ILLUMINATION LAMP

The light bulb type for the license plate illumination lamp is 12V 5W (single filament). To replace the light bulb in the lamp, perform the procedure described below.

- Unscrew the two screws and remove the lamp housing.
- Remove the old light bulb and replace it with a new one.
- Reinstall the housing and tighten the screws.

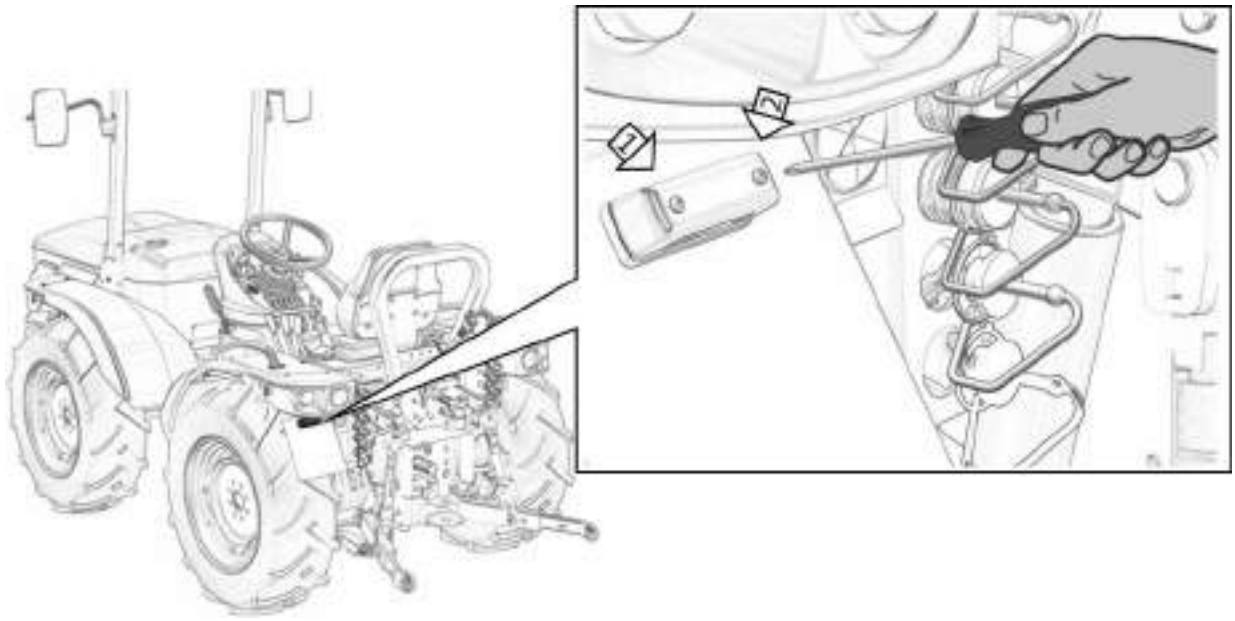


Fig. 204

8.3.2.5 WORKING LAMP (OPTIONAL)

To replace the light bulb in the lamp, perform the procedure described below.

- Disconnect the connector from the lamp.
- Rotate the light bulb in the lamp all the way to the left (anti-clockwise direction) and remove it.
- Replace the old bulb with a new one. Insert it all the way into the lamp and reinstall it by slightly pushing and rotating the bulb to the right (clockwise direction).
- Connect the connector to the lamp.

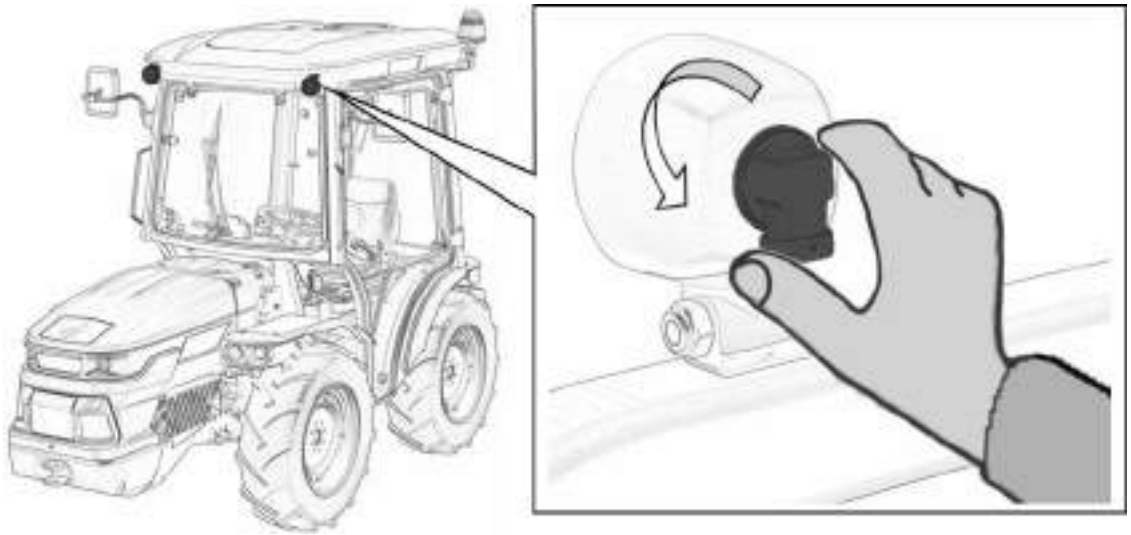


Fig. 205

8.3.2.6 INTERIOR LAMP (TRACTOR VERSION WITH A CAB)

The light bulb type for the interior lamp is 12V 5W (single filament). To replace the light bulb in the lamp, perform the procedure described below.

- Remove the cover on the lamp with a flat screwdriver.
- Remove the old light bulb and replace it with a new one.
- Install the cover back onto the lamp.

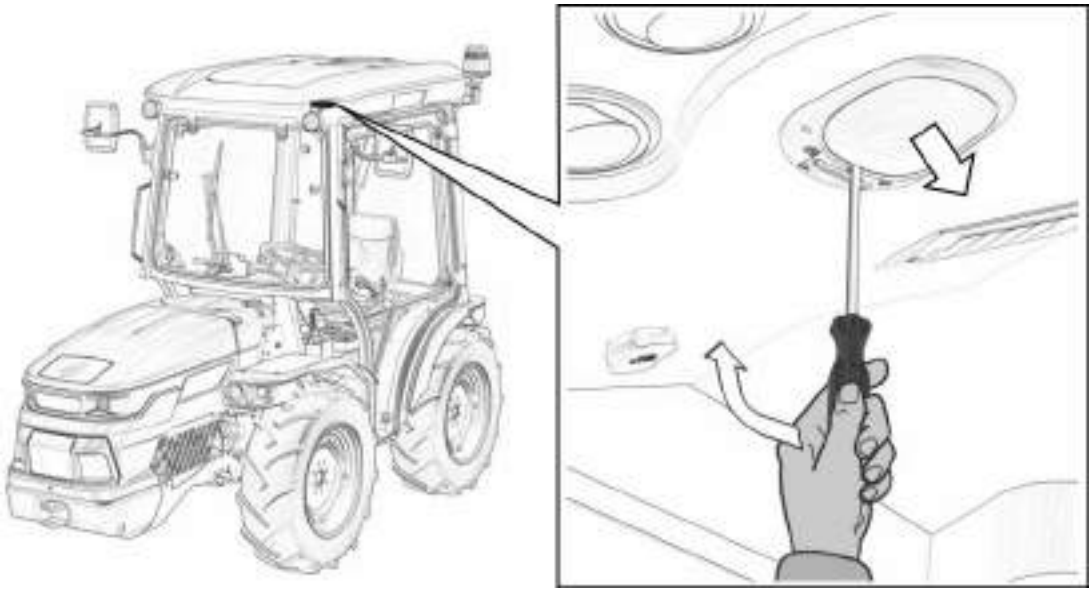


Fig. 206

8.3.2.7 ROTATING LAMP (OPTIONAL)

The light bulb type for the rotating lamp is H1 12V 55W. To replace the light bulb in the lamp, perform the procedure described below.

- Unscrew the screw (1) on the holder and remove the lamp.
- Unscrew the lamp cover by rotating it to the left (anti-clockwise direction).
- Replace the light bulb.
- Screw the cover back on by turning it to the right (clockwise direction).
- Install the rotating lamp back on its holder and tighten the screw (1).

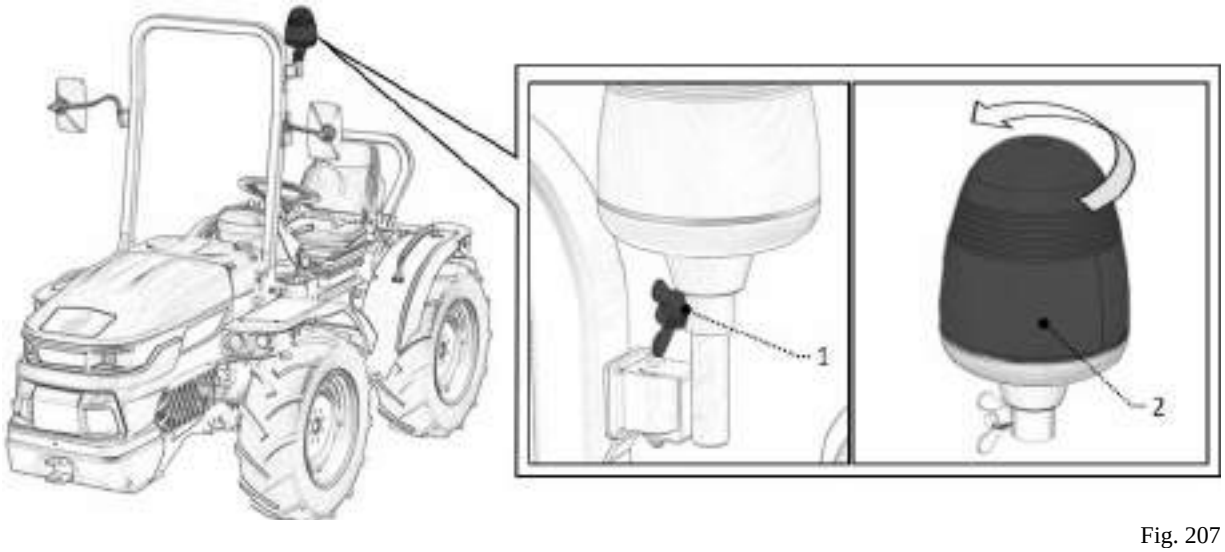


Fig. 207

8.4 CLEANING THE TRACTOR

Clean the tractor with a water jet, taking care not to point it towards electrical parts, particularly the engine assembly, where the air filter, alternator and starter are installed. If you decide to clean the engine, protect these parts with suitable covers.
To clean the tractor, only use biodegradable cleaning products, which can be mixed with water.

You can use compressed air to dry the tractor, which is also appropriate for cleaning or blowing dusty parts. After cleaning, always apply grease to all grease nipples to ensure that the sliding surfaces are protected against corrosion.

	**WARNING:** Do not use aggressive chemicals or hydrocarbon solvents, particularly when cleaning plastic components and painted surfaces!

8.5 ENGINE MAINTENANCE

Before performing any maintenance work on the engine, comply with the instructions described below.

- Stop the tractor in safe conditions and in a suitable area.
- If the tractor was operating, wait until the engine cools down enough.
- Remove the key from the ignition lock.

8.5.1 CHECKING THE ENGINE OIL LEVEL

To check the level, follow the procedure described below.

- Park the tractor on a horizontal surface.
- Pull out the oil level dipstick from the engine compartment. The dipstick is located on the left side of the engine under the starter.
- Check the oil level (minimum and maximum), add more oil if necessary but do not fill beyond the maximum mark.
- After you finish this task, insert the oil level dipstick back in its place.

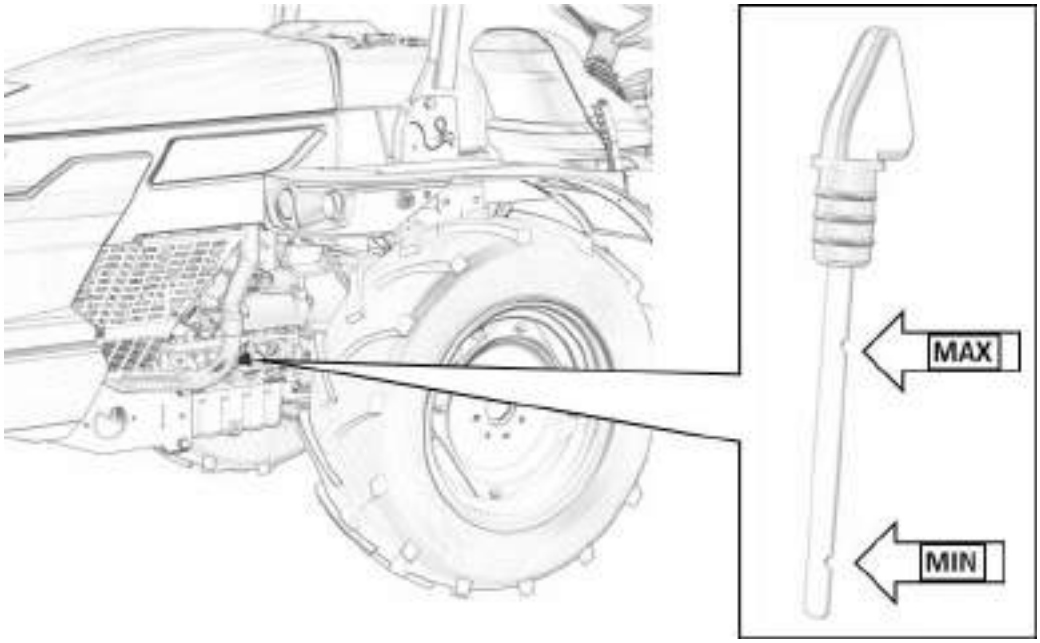


Fig. 208

8.5.2 CHANGING THE ENGINE OIL

The engine oil should be changed when the engine is still warm, following the procedure below; this way it is easier to drain the oil through the opening.

- Open the engine cover.
- Place a collection container for waste oil under the drain plug on the engine's crankcase
- Remove the screw (1) and wait until the old oil is drained into the container.
- Remove the old copper seal ring from the screw and replace it with a new original part.
- Re-tighten the screw on the crankcase.
- Unscrew the oil cap (2).
- Add the prescribed type of engine oil with a suitable viscosity that meets the requirements, refer to the chapter "Technical data of the tractor - oil".
- Add the oil until the level reaches the upper mark on the dipstick, refer to "Checking the engine oil level".
- Tighten the oil cap and start the engine for a few moments. When the engine is started, check the screw on the crankcase for leakage.
- Shut off the engine and check the oil level. If necessary, add more oil.

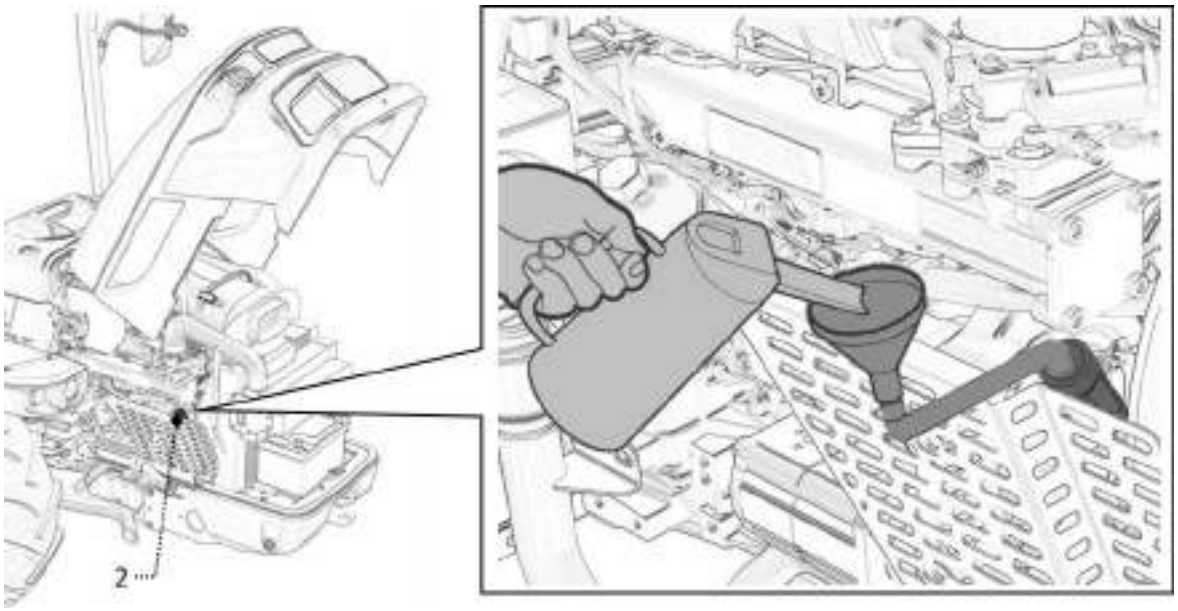


Fig. 209

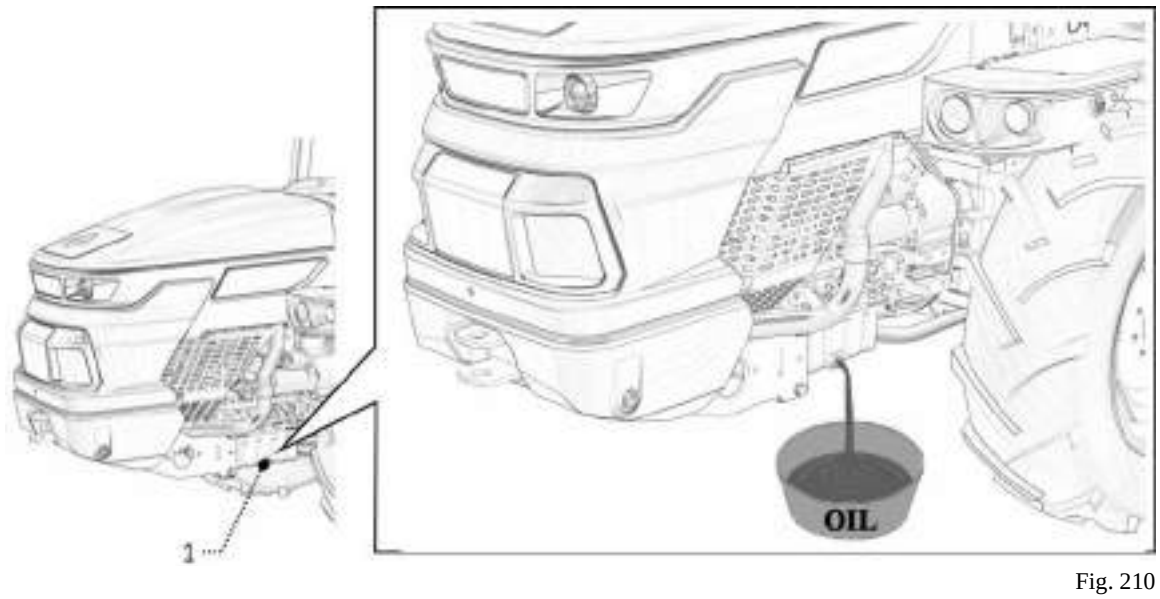


Fig. 210

	**WARNING:** Used engine oil must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.5.3 CHANGING THE OIL FILTER

To change the oil filter, follow the procedure described below.

- Drain the engine oil, refer to "Changing the engine oil".
- Using a suitable tool (1), unscrew the plastic housing (2) of the oil filter and remove it. The housing has a special structure where a socket wrench can be inserted.

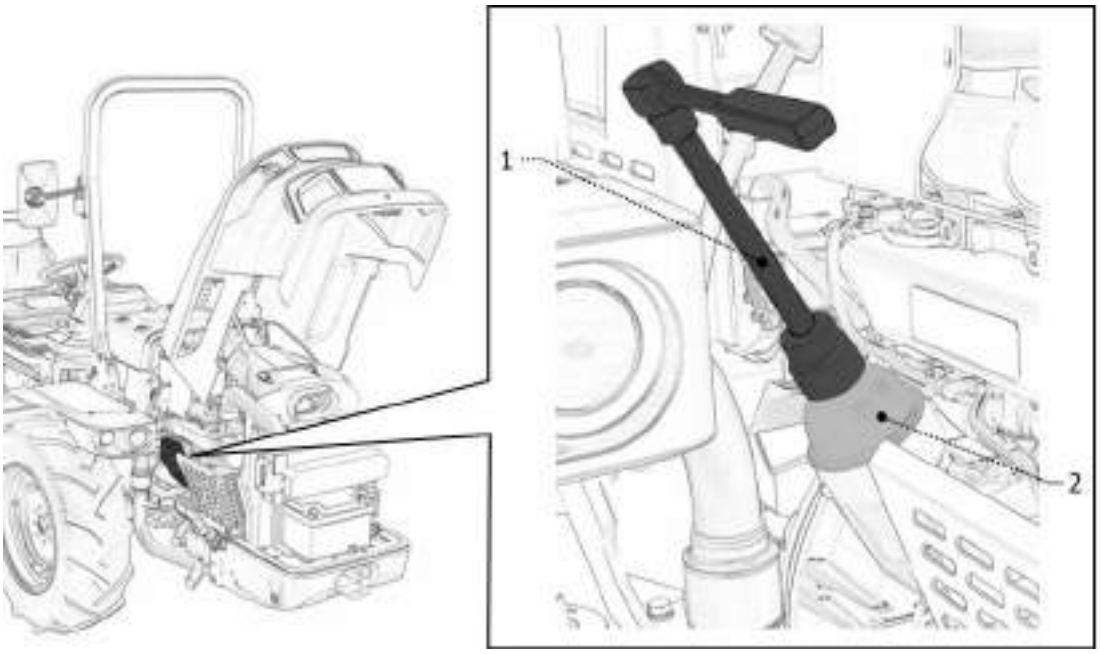


Fig. 211

- Remove the old oil filter (3) and replace it with a new original filter.
- Replace all seals on the plastic housing and lubricate them with oil.
- Install the housing back in its place and securely tighten it by hand; you can also use a tool in the end.
- Clean any oil residues from the engine surfaces.

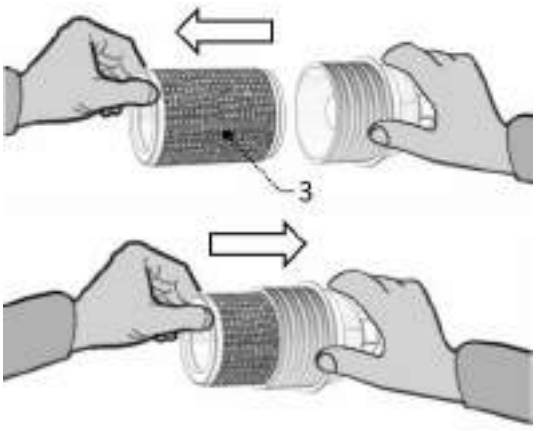


Fig. 212

	**WARNING:** Do not use excessive force when tightening the plastic housing with a tool, otherwise it may crack. Use appropriate tightening torques.

8.5.4 CHANGING THE AIR FILTER

When the air filter is blocked, a warning lamp illuminates on the dashboard, refer to the chapter "Dashboard" and the filter mist be cleaned or replaced.

To replace the air filter, follow the procedure described below.

- Open the engine cover;
- Unscrew the screws (A);

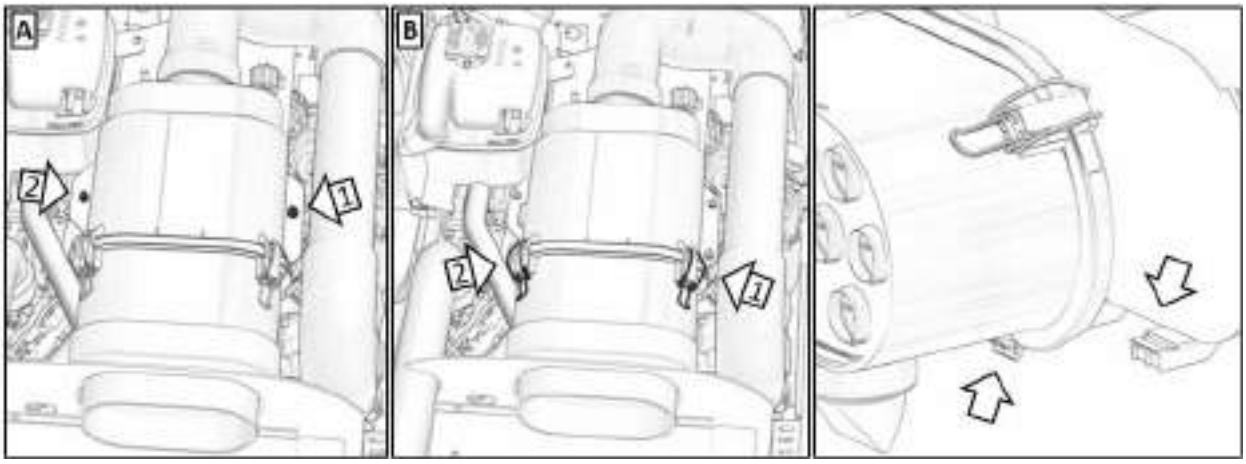


Fig. 195

- Release the safety hooks (B) and lift the filter for easier removal of cartridges;
- Remove the external filter cartridge (E);
- Remove the internal filter cartridge (F). For easier disassembly, pull the cartridge while lifting its slightly at the same time until it releases;
- Clean dust and dirt from the inner filter housing (G);
- Install a new original internal filter cartridge (F);
- Install a new original external filter cartridge (E);
- Assemble the filter (C), making sure that the lower pins on the cover (D) engage in the lower part of the housing (G), see figure Fig. 195;
- Fasten the safety hooks and secure the filter by tightening the screws (A).

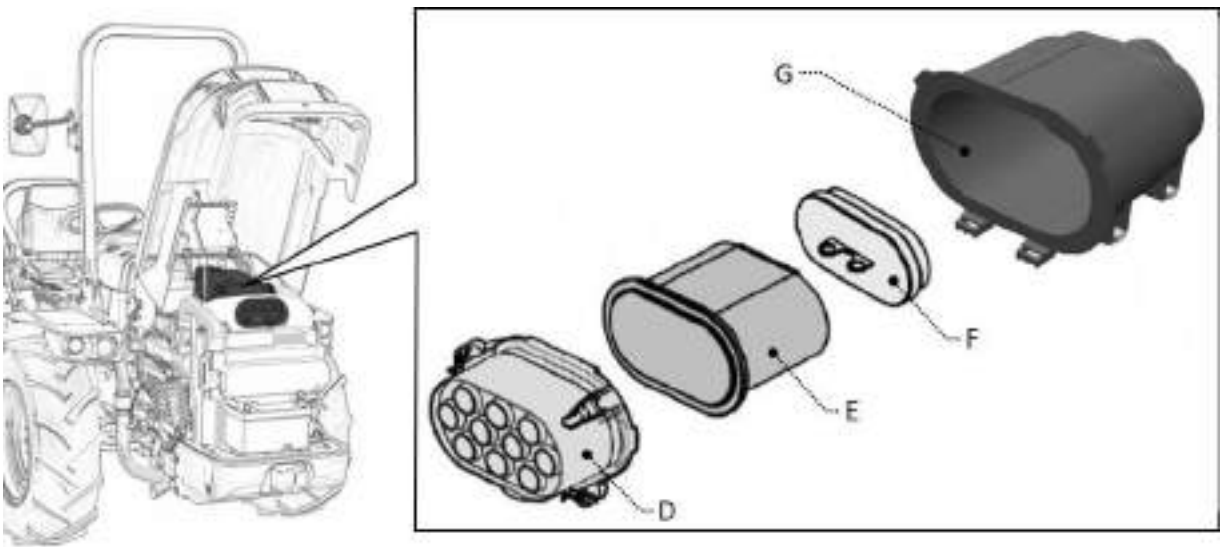


Fig. 214

8.5.5 CLEANING THE AIR FILTER

As a precaution, if the tractor is used in a dusty environment, it is recommended to check the filter for blockage sooner and clean it if necessary.

Cleaning the filter insert with compressed air

- To disassemble the air filter, refer to the chapter "Changing the air filter".
- Point the compressed air jet directly towards the inside of the filter insert. The air pressure must not exceed 3 bar.
- Move the air jet nozzle across the entire surface, along the paper folds, until all the dust is removed. Take care not to damage the filter during this operation.
- After cleaning, the filter must be checked for damages (holes, cracks). In this case, replace it with a new one.

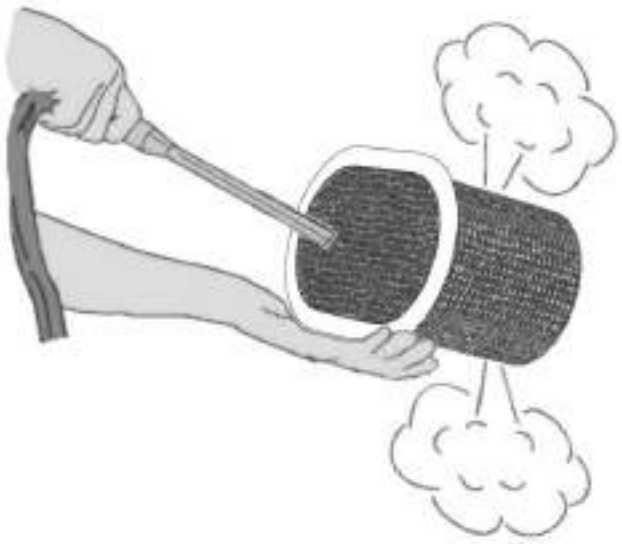


Fig. 215

	**IMPORTANT:** The external filter insert must be replaced after 6 cleaning operations, while the internal filter insert is not cleaned and must be replaced with every second replacement of the external filter insert.

	**WARNING:** Always use safety glasses and safety mask when cleaning dust and other particles from the filter to prevent contact with eyes and respiratory system!

8.5.6 CHANGING THE FUEL FILTER

Due to deposits and water accumulating in the filter while the tractor is running, the fuel filter must be always be replaced within the prescribed intervals, refer to “Maintenance table”.

To change the fuel filter, follow the procedure described below.

- The filter is located behind the front left wheel.
- For easier filter replacement you can remove the wheel after the tractor is lifted and supported with an appropriate support stand.
- Disconnect the connector from the filter (1).
- Use an appropriate tool to unscrew the fuel filter (2).
- Remove the old oil filter and replace it with a new original filter.
- Fill the new filter with fuel and securely tighten it by hand; you can also use a tool in the end.
- Connect the connector back to the filter.
- Run the engine for a few moments to allow the pump to vent the fuel lines.

	**WARNING:** Do not use excessive force when tightening the filter with a tool, otherwise it may be damaged. Use appropriate tightening torques.

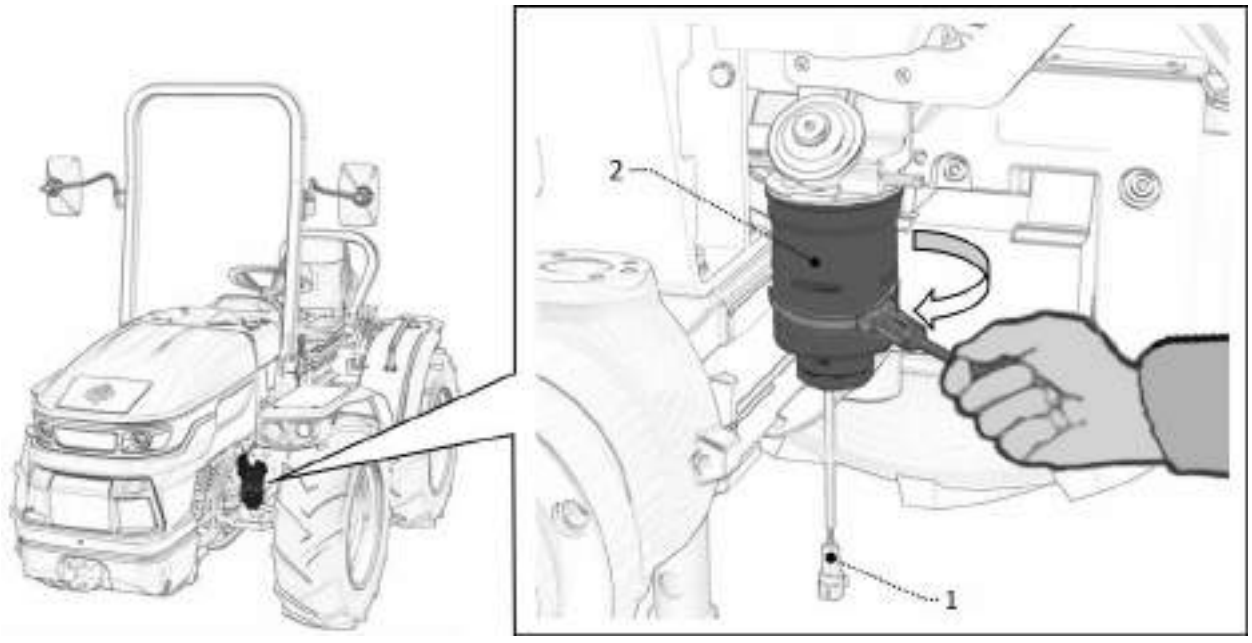


Fig. 216

8.5.6.1 CHANGING THE AUXILIARY FUEL FILTER

The auxiliary filter is installed under the cover of the tank. It is designed to prevent larger particles from entering the fuel circuit. If you see there are many particles present through the transparent housing, replace the filter.

To change the auxiliary filter, follow the procedure described below.

- Unscrew the fuel filler cap at the top of the tank (A).
- Unscrew the screws on the cover of the tank (B) and remove the cover.
- Unscrew the clamps (1 and 2) on the fuel filter (C).
- Remove both hoses from the filter and block them with a plug to avoid fuel spillage.
- Remove the screw (3), remove the old fuel filter and replace it with a new original filter.
- Tighten the screw (3) and fasten the filter in its place.
- Install both hoses back onto the filter and make sure to install them in correct order (inlet – outlet) and tighten the clamps.

	**IMPORTANT:** DO NOT clean the auxiliary fuel filter.

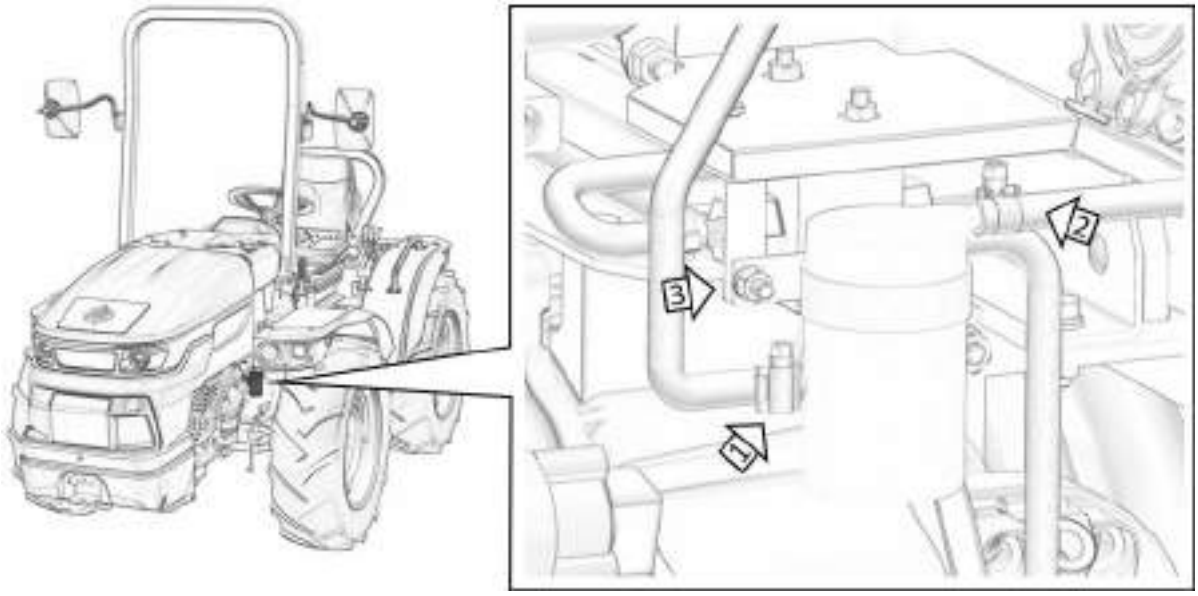


Fig. 196

	**WARNING:** Do not use excessive force when tightening the clamps on the auxiliary filter to avoid damaging the filter.

8.5.7 CHANGING THE BELT

This procedure must be performed by a qualified person. Before working on the area with the belt assembly, stop the tractor in safe conditions, shut off the engine and remove the key from the ignition lock.

Check the belt tension by pressing on the middle of the longest section of the belt (between the drive shaft and the alternator).

If the belt is too loose, it must be adjusted.

- Loosen the screws on the protective grille (1) and remove it.

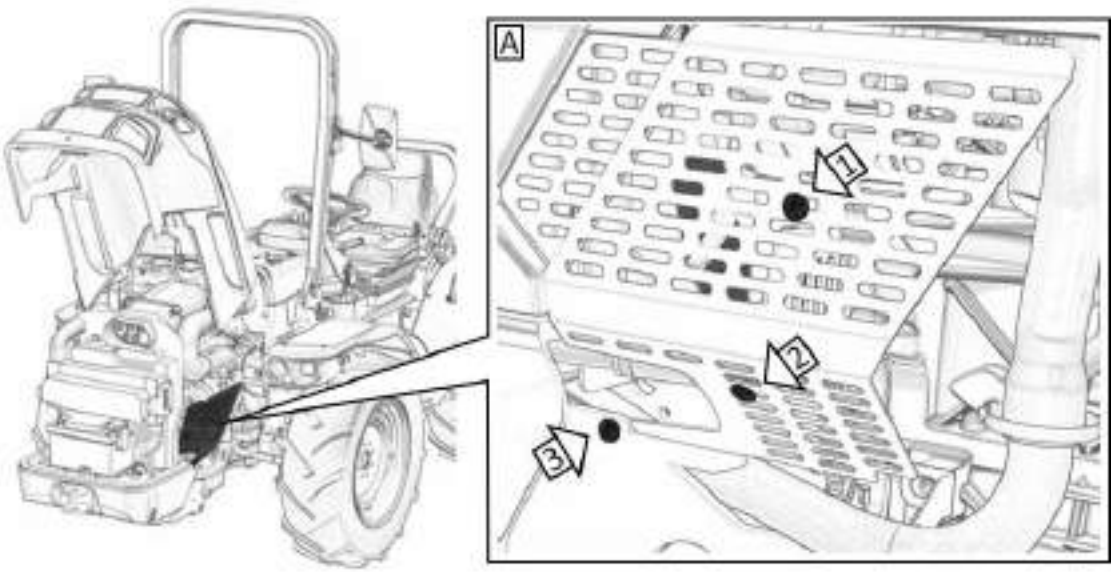


Fig. 197

- Loosen the lock nut (1) on the tensioner (B);
- The tensioner is adjusted up or down by adjusting the screw (2);
- Tighten the belt properly. Press the middle of the belt between the main shaft and the alternator with a force of 10 kg (G); at this point (p), the belt should not bend by more than 10 mm.
- When the adjustment is finished, tighten the lock nut and secure the tensioner in the new position;
- Install the protective grille back on the tractor

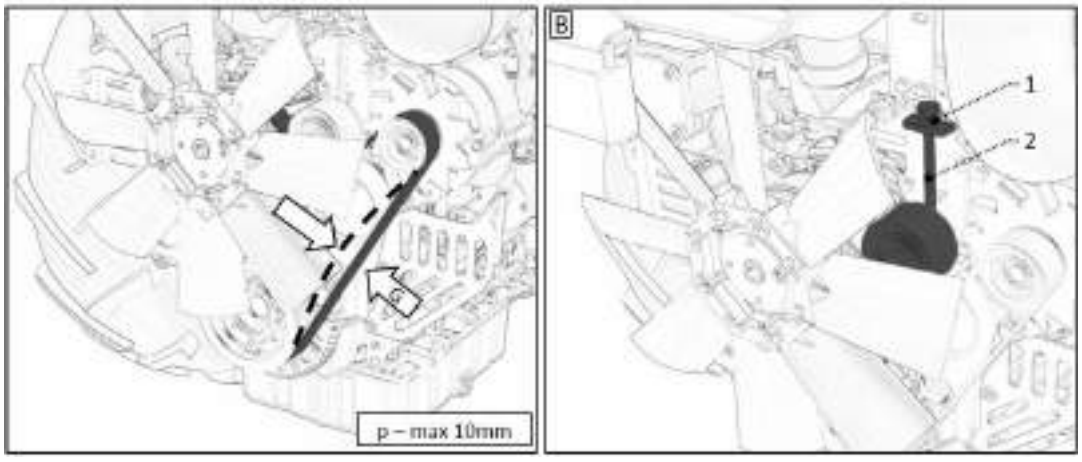


Fig. 219

The procedure for changing the belt is the same as described above, the only difference is that the screw on the tensioner must be removed to release the old belt which is then replaced with a new one. After the replacement is completed, remember to tighten the safety nut on the tensioner!

8.6 COOLING SYSTEM MAINTENANCE

Before performing any maintenance work on the cooling system, comply with the instructions described below.

- Stop the tractor in safe conditions and in a suitable area.
- Because the coolant is under pressure when the engine is running, you must wait for the engine to properly cool down to avoid burns.
- Remove the key from the ignition lock.

8.6.1 CHECKING THE COOLANT LEVEL

The expansion tank is located on the right side of the engine. When the engine is off, the coolant level must be exactly at the maximum mark on the expansion tank. It must not be higher than the mark because the fluid expands during operation.

If there is not enough coolant in the expansion tank, add the missing quantity by following the procedure below.

- Make the coolant by mixing water and antifreeze as instructed by the manufacturer and according the desired temperature measured with a gauge.
- Open the engine cover.
- Unscrew the cap on the expansion tank.
- Fill the coolant until it reaches the maximum mark on the expansion tank.
- Tighten the cap on the expansion tank.
- Close the engine cover.

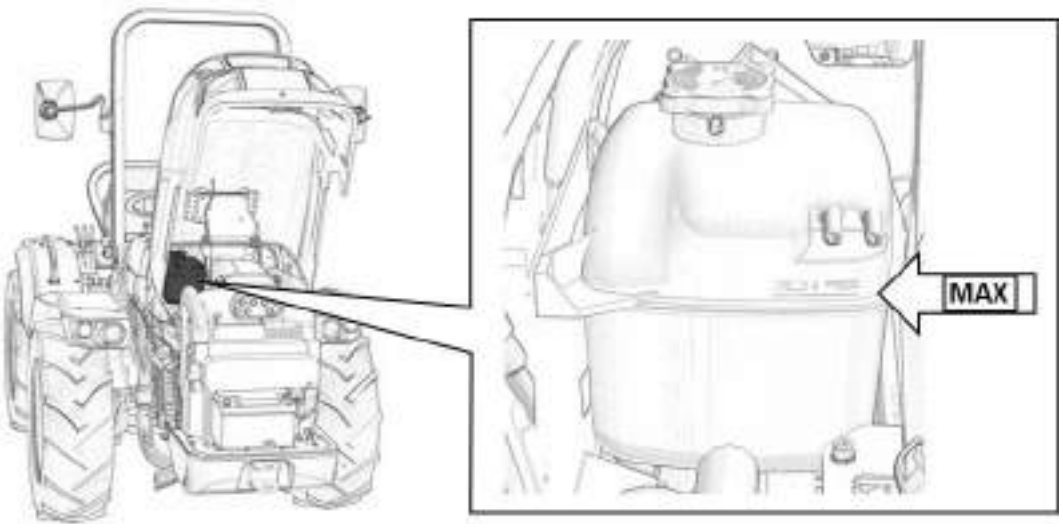


Fig. 220

	**DANGER:** Never open the cover on the expansion tank or on the radiator when the engine is hot. The cooling system is pressurized and there is a risk of steam or hot liquid being ejected which may injure you or other people nearby!

	**IMPORTANT:** Check the concentration of the coolant mixture in the cooling system of the tractor at least one a year using an appropriate instrument.

8.6.2 DRAINING THE COOLANT

This procedure must be performed by a qualified person. Before working on the area with the engine assembly, stop the tractor in safe conditions, shut off the engine and remove the key from the ignition lock.

	**DANGER:** The engine must not be hot. Wait until it cools down, otherwise the coolant could cause serious injuries with high degree burns. Never work on the tractor's cooling system when the engine is running. The system is pressurized and there is a risk of steam or hot liquid being ejected!

Drain the coolant by removing the lower hose on the radiator as described below.

- Loosen the screws on the protective grille (1) and remove it.
- Place a collection container under the hose.
- Unscrew the clamp on the hose (1).
- Remove the hose (2) from the radiator and drain the coolant.
- After the work is finished, install the hose back on the radiator and tighten the clamp.

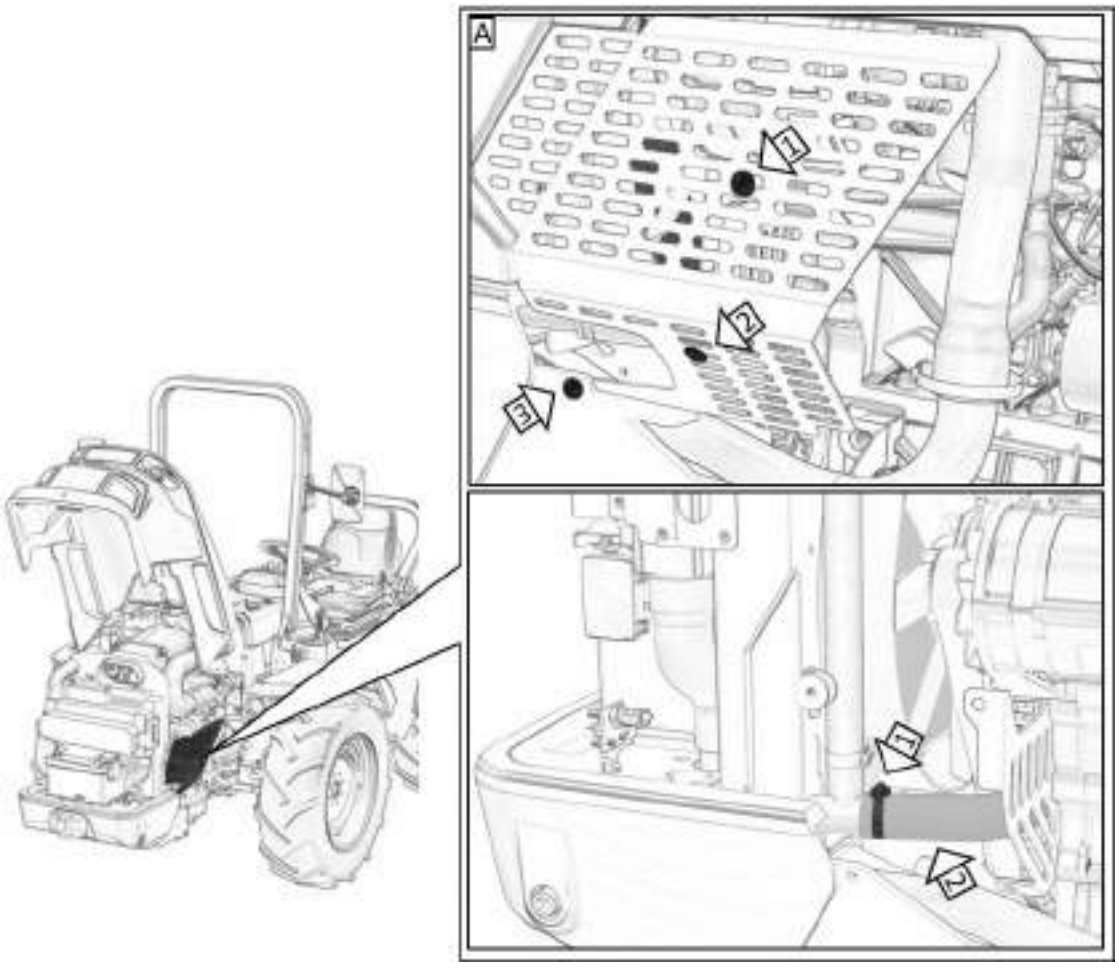


Fig. 198

	**WARNING:** Used coolant must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.6.3 CLEANING THE RADIATOR

Regularly check that the radiator is clean to ensure adequate ventilation and correct cooling. If the slots are blocked, the radiator fins will not receive enough air to allow for sufficient ventilation, which may result in overheating and subsequent damage to engine parts under load.

To clean the radiator, follow the procedure described below.

- Lift the engine cover.
- Clean the radiator using compressed air.
- We recommend that the other radiators are cleaned by following the same procedure as this is the only ways to ensure a sufficient air flow to the water radiator.

Illustration of all radiators on the tractor.

- Water cooler or coolant radiator (1)
- Air radiator (2)
- Fuel radiator (3)
- Hydraulic oil radiator (4)

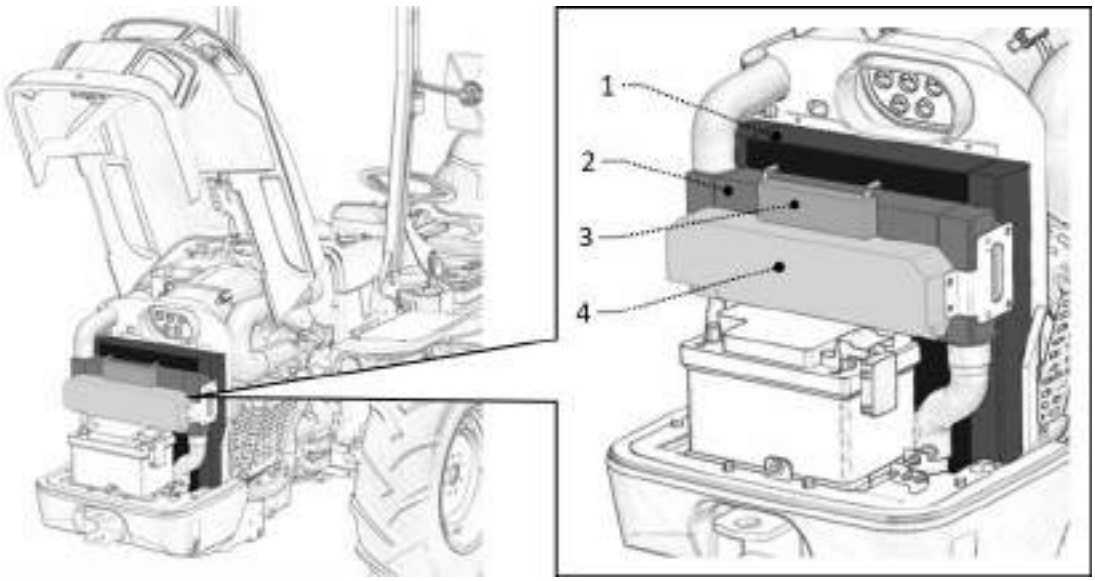


Fig. 222

	**WARNING:** Do not use the compressed air jet too close to the radiator fins to avoid damaging the fins.

	**WARNING:** When cleaning the radiator or the grill, always use safety glasses and safety mask for protection against dust and other particles that may come in contact with your eyes and respiratory tract.

8.7 TRANSMISSION MAINTENANCE

Before performing any maintenance work on the transmission assembly, comply with the instructions described below.

- Stop the tractor in safe conditions, on a horizontal surface, lower the hydraulic lift mechanisms (front and rear) and lower the rest of the equipment, powered by the gearbox oil.
- If the tractor was operating, wait until the engine cools down enough.
- Remove the key from the ignition lock.

8.7.1 CHECKING THE GEARBOX OIL LEVEL

Before checking the gearbox oil level, the tractor must always be parked with the engine turned off to allow the parts to cool down. Check the oil level on the indicator at the rear of the tractor, next to the PTO drive shaft. If you see oil inside the indicator, there is enough oil. If the indicator is empty, you must add more oil, refer to “Changing the gearbox oil”.

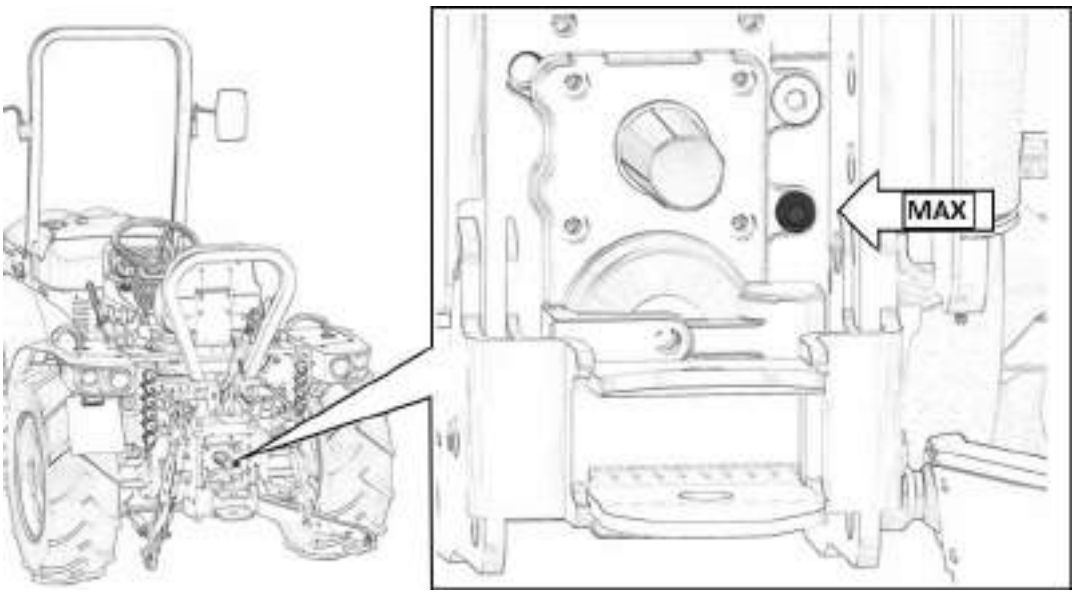


Fig. 223

8.7.2 CHANGING THE GEARBOX OIL

To change the gearbox oil, follow the procedure described below.

- Safely park the tractor on a horizontal surface.
- Move all control devices to neutral position.
- Place a suitable collection container for used oil under the drain plug on the bottom of the gearbox.
- Loosen the drain screw (A) and wait until the old oil is drained into the container.
- Re-tighten the screw on the gearbox.
- If necessary, you must also replace the oil filter for the hydraulic system, refer to “Changing the hydraulic oil filter”.
- Loosen the filler screw (B).
- Add the prescribed type of oil with a suitable viscosity that meets the requirements, refer to the chapter “Technical data of the tractor - oil”.
- Add oil until you can see it in the indicator, refer to the chapter “Checking the gearbox oil level”.
- Re-tighten the screw (B).

- Run the engine for a few moments and perform a few hydraulic operations. While doing so, check the hydraulic oil filter (if replaced) and screws on the gearbox for leakage.
- Shut off the engine, lower the lift mechanism (if they were operated) and check the oil level again. If necessary, add more oil.

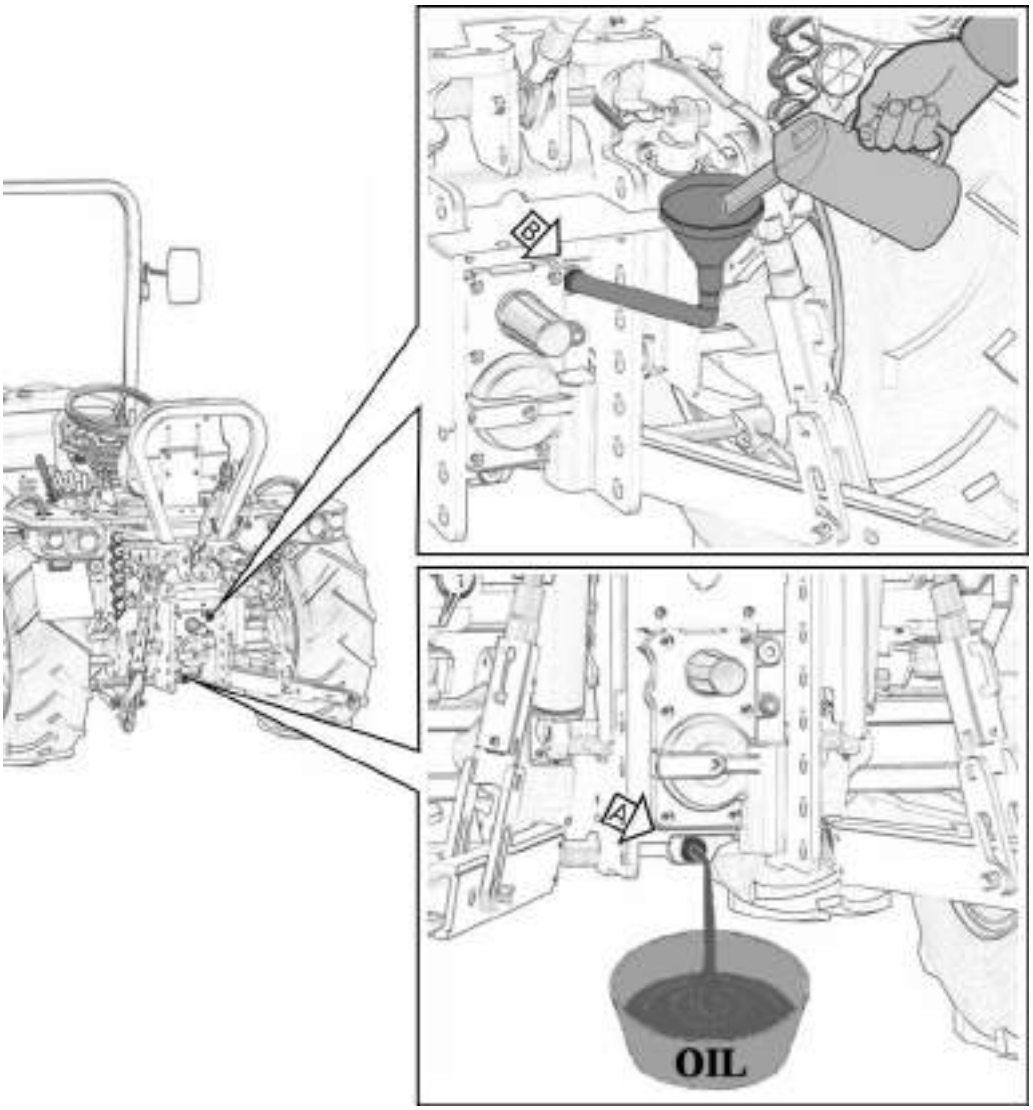


Fig. 224

	**WARNING:** Used oil must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.7.3 CHANGING THE HYDRAULIC OIL FILTER

The gearbox oil filter must be replaced if the indicator lamp for hydraulic oil filter blockage illuminates when the oil is heated and the engine is running.

To change the oil filter, follow the procedure described below.

- The filter is located under the platform on the bottom of the gearbox, next to the left sleeve.
- For easier filter replacement you can remove the wheel after the tractor is lifted and supported with an appropriate support stand.
- Drain the hydraulic oil, refer to “Changing the gearbox oil”.
- Loosen the screws on the housing (A).
- Move the housing away and remove the old filter insert (B) and replace it with a new original one. Take care to position the filter correctly in its housing.
- Replace the seal (C) on the housing and lubricate it with oil before installing it.
- Install the housing with the filter back in its place and tighten the screws.
- Fill with the prescribed oil, refer to “Changing the gearbox oil”.

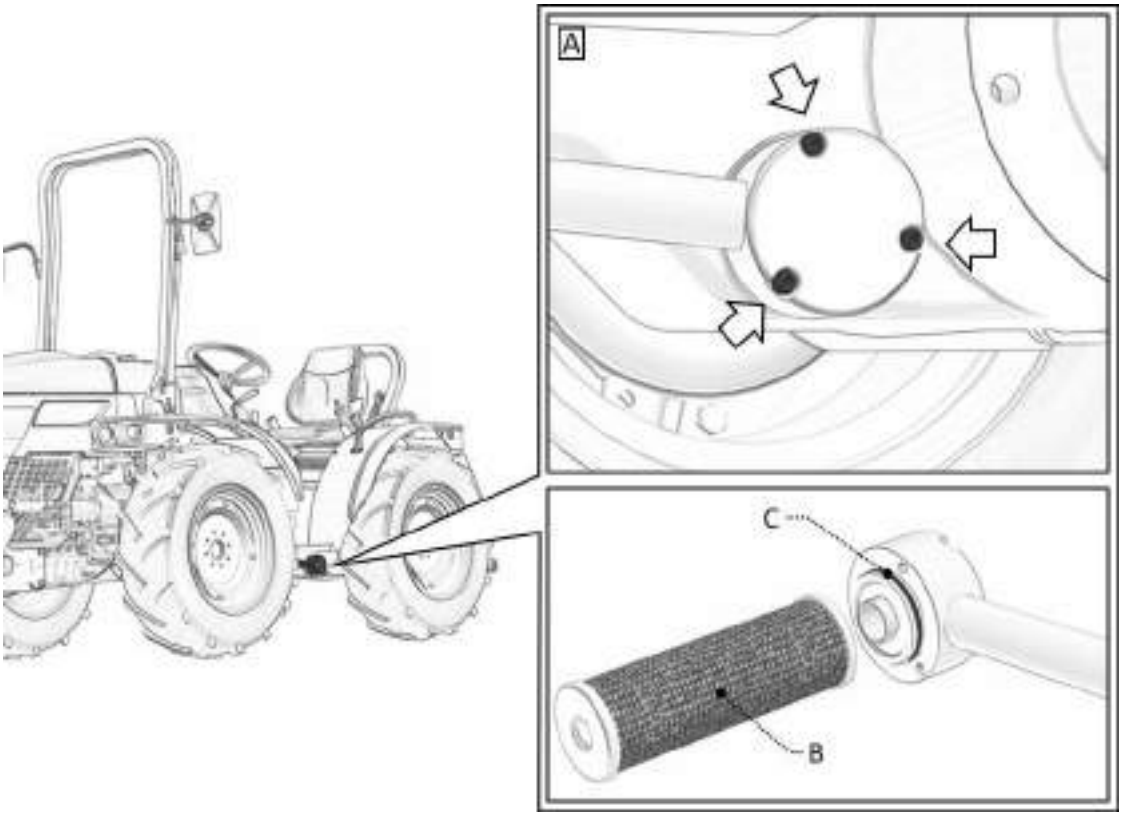


Fig. 225

	**WARNING:** Do not leave any used parts in the environment. They must be disposed of in accordance with local regulation.

8.7.4 CHECKING THE FRONT DIFFERENTIAL OIL LEVEL

Before checking the front differential oil level, the tractor must always be parked with the engine turned off to allow the parts to cool down.
Check the oil level in the indicator on the front left sleeve. If you see oil inside the indicator, there is enough oil. If the indicator is empty, you must add more oil, refer to “Changing the front differential oil”.

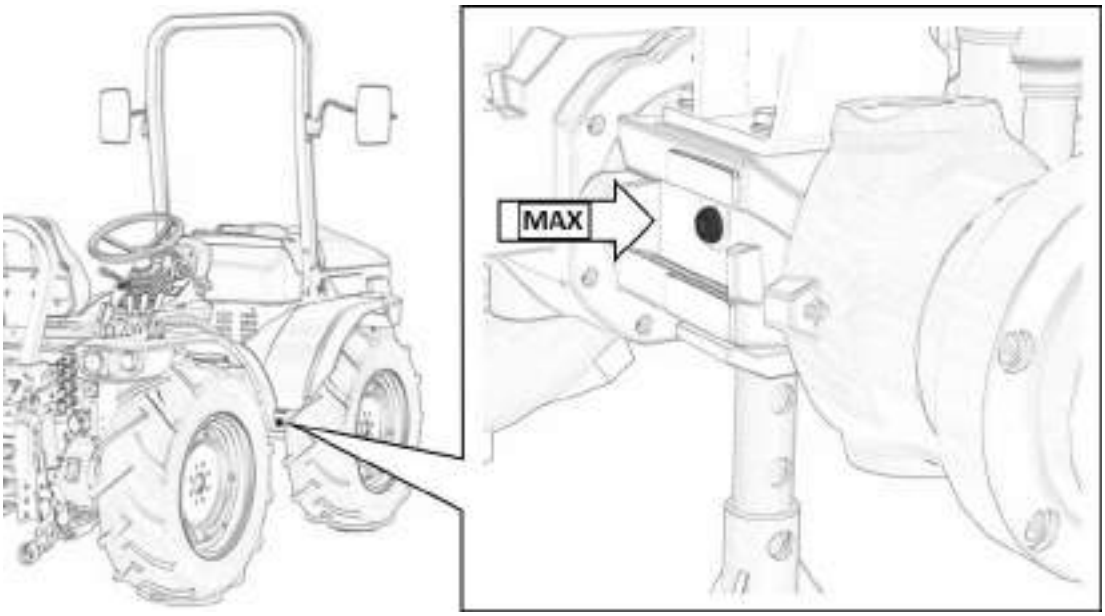


Fig. 226

8.7.5 CHANGING THE FRONT DIFFERENTIAL OIL

To change the front differential oil, follow the procedure described below.

- Safely park the tractor on a horizontal surface.
- For easier oil filling you can remove the wheel after the tractor is lifted and supported with an appropriate support stand.
- Place a suitable collection container for used oil under the drain plug at the bottom of the gearbox.
- Loosen the drain screw (A) and wait until the old oil is drained into the container.
- Re-tighten the drain screw.
- Loosen the filler screw (B) at the top of the front bridge.
- Add the prescribed type of oil with a suitable viscosity that meets the requirements, refer to the chapter “Technical data of the tractor - oil”.
- Add oil until you can see it in the indicator, refer to the chapter “Checking the front differential oil level”.
- Install a new copper seal ring on the screw (B) and fasten it back in its place.
- After operating the tractor for a few hours, check the oil level.

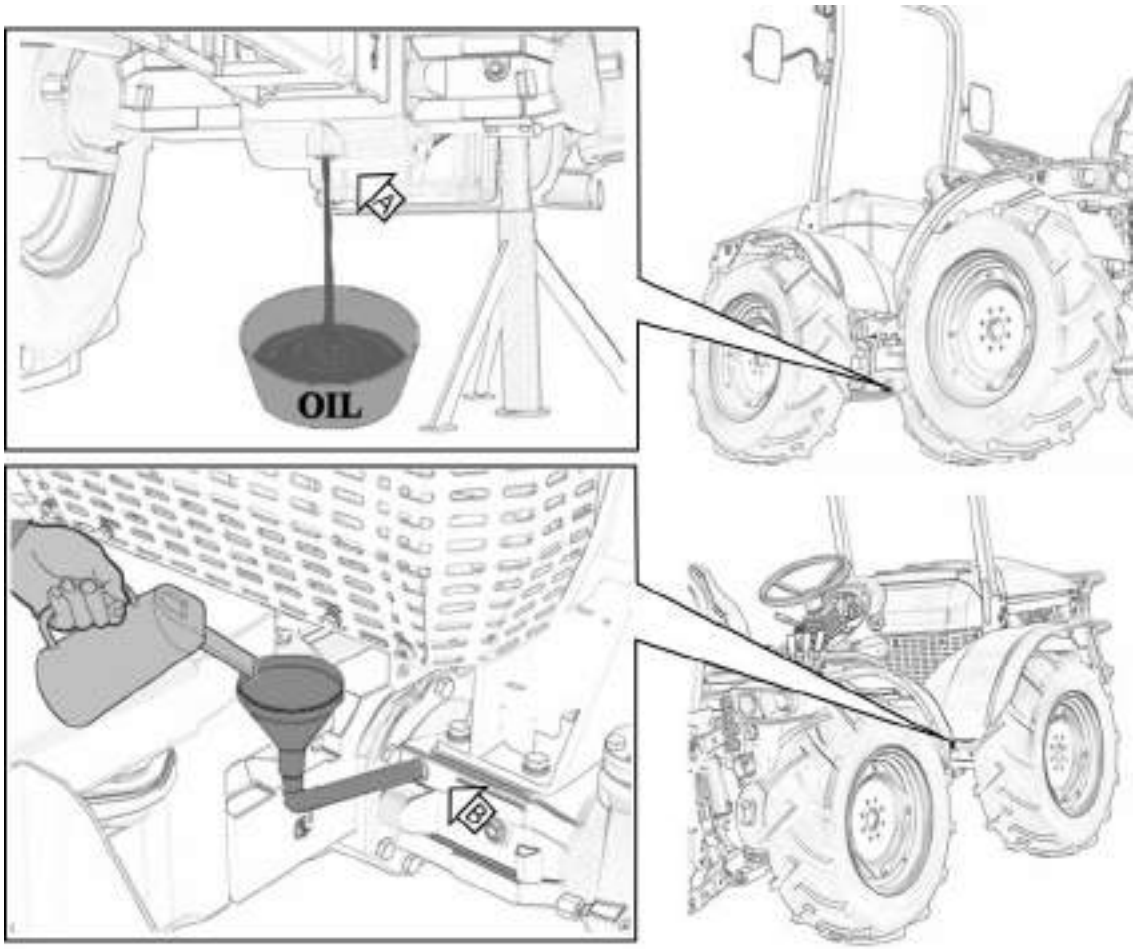


Fig. 199

	**WARNING:** Used oil must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.7.6 CHECKING THE OIL IN LATERAL REDUCERS

To check the oil in lateral reducers, follow the procedure described below.

- Park the tractor on a horizontal surface, shut off the engine and activate the parking brake.
- Lift the tractor on the side where you intend to perform the check, support the tractor with a suitable support stand and remove the wheel.
- Rotate the lateral reducer until the drain screw (1) is positioned vertically at the top and the control screw (2) is at the right side of the reducer.
- Loosen the control screw. The oil level must reach the bottom edge of the screw opening. If necessary, add more oil, refer to the chapter “Changing the oil in lateral reducers”.

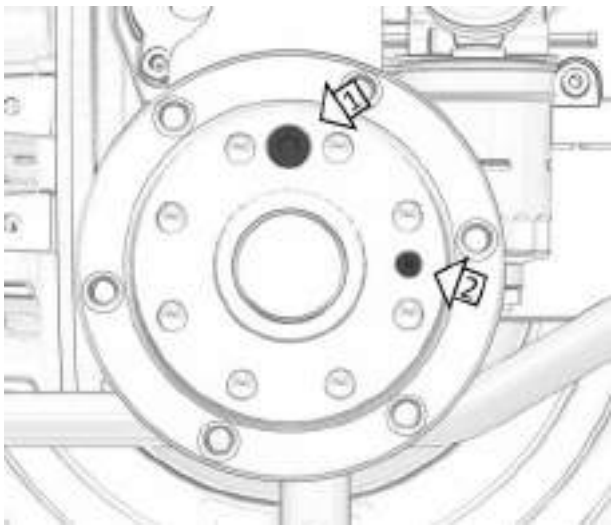


Fig. 228

- After the work is finished, install and tighten the control screw back in its place.

8.7.7 CHANGING THE OIL IN LATERAL REDUCERS

To change the oil in lateral reducers, follow the procedure described below.

- Park the tractor on a horizontal surface, shut off the engine and activate the parking brake.
- Lift the tractor on the side where you intend to change the oil, support the tractor with a suitable support stand and remove the wheel.
- Rotate the lateral reducer until the drain screw (1) is positioned vertically at the bottom.
- Place a suitable collection container for used oil under the drain plug at the bottom of the reducer.
- Loosen the drain screw and wait until the old oil is drained into the container.

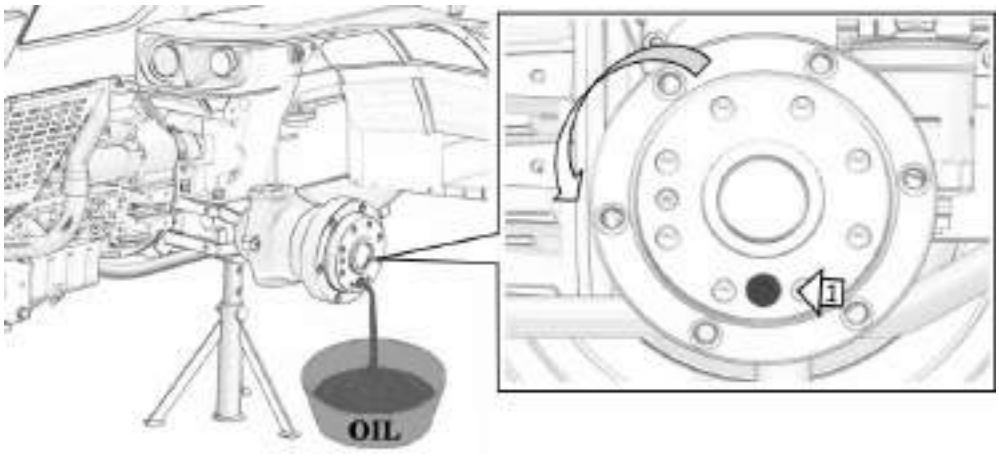


Fig. 229

- After the work is finished, rotate the lateral reducer by 180°; the drain screw is positioned at the top again.
- Loosen the control screw (2).
- Add the prescribed type of oil through the drain opening, with a suitable viscosity that meets the requirements, refer to the chapter “Technical data of the tractor - oil”.
- Add oil until it reaches the bottom edge of the control screw opening.
- Replace the old seal ring on the control screw with a new one and screw it back in its place.
- Finally, tighten the drain screws.

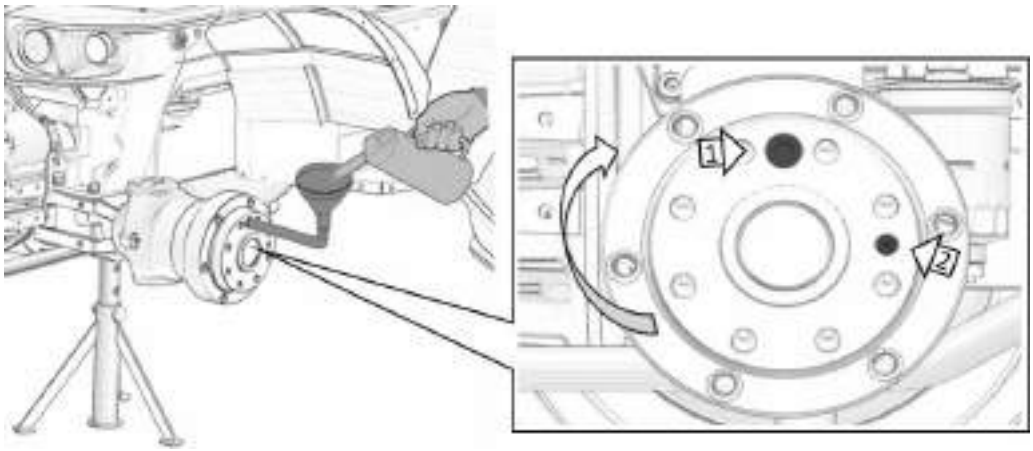


Fig. 230

	**WARNING:** Used oil must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.8 AIR CONDITIONER MAINTENANCE (CAB VERSION)

The following section contains some recommendations for air conditioning maintenance, which must be followed by the operator.

- The air conditioner compressor on the tractor must be installed in a stable position.
- Never open the cooling circuit under pressure.
- Always use safety glasses and gloves when working on the air conditioner.

	**WARNING:** Do not use open flames and do not weld on the cooling system or next to it.

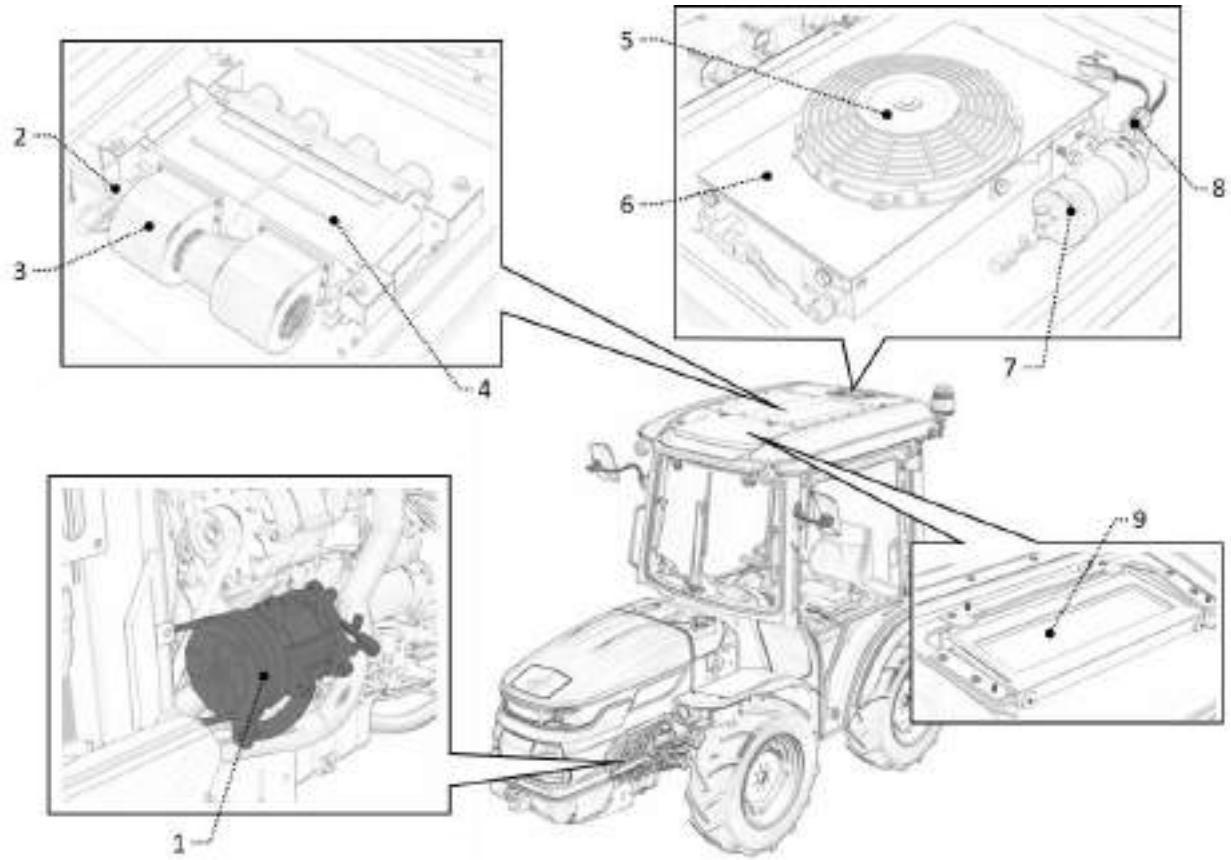


Fig. 200

Air conditioner components

1. Air conditioner compressor
2. Expansion valve
3. Cab fan
4. Evaporator
5. External fan
6. Capacitor
7. Dryer
8. Pressure switch
9. Cab filter

8.8.1 AIR CONDITIONER FILLING

	**WARNING:** The air conditioner can only be filled by a specialist or a service centre!

- The filling valves for the air conditioner are located at the left side of the engine, behind the rear side of the compressor.
- **The air conditioner is filled with refrigerant R134a.**

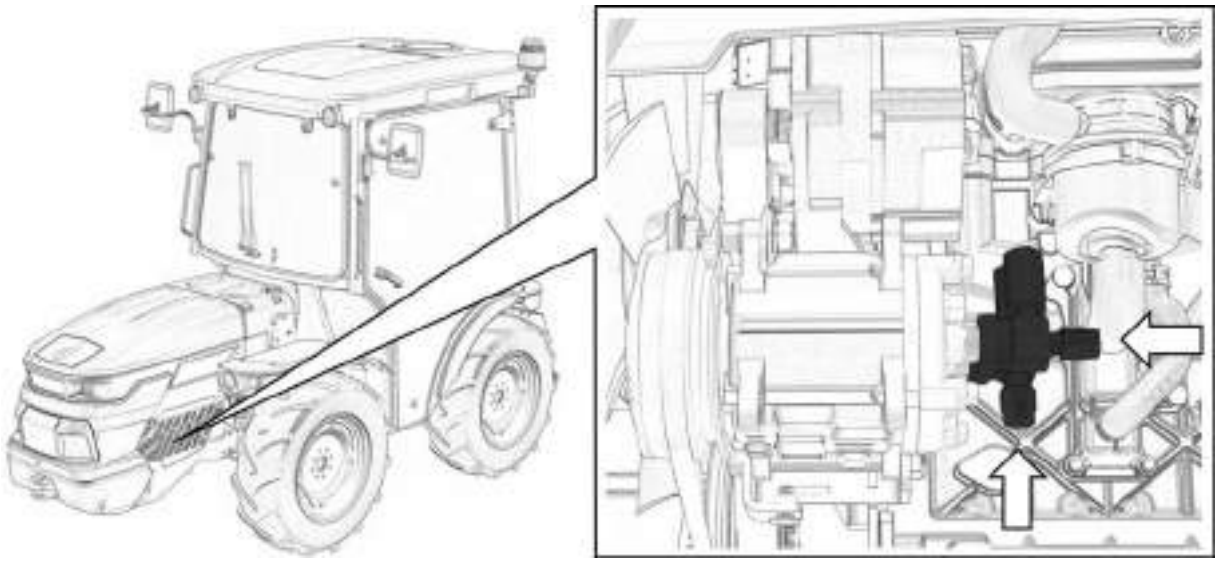


Fig. 201

8.8.2 CHANGING THE AIR CONDITIONER BELT

This procedure must be performed by a qualified person. Before working on the area with the belt assembly, stop the tractor in safe conditions, shut off the engine and remove the key from the ignition lock.

Check the belt tension by pressing on the middle of the longest section of the belt (between the drive shaft and the air conditioner compressor), see Fig. 3.

If the belt is too loose, it must be adjusted.

- Unscrew the protective grill.
- Slightly loosen the screws B.
- Adjust the tension of the belt by moving the air conditioner compressor.
- When the adjustment is finished, tighten the screws B and secure the compressor in place.

The procedure for replacing the belt is the same as the adjustment procedure described above, by releasing the air conditioner compressor.

- Before replacing the belt, remove the water hose so that you will be able to remove the old belt and replace it with a new one, refer to the chapter “Draining the coolant”.

	**WARNING:** Do not leave any used parts in the environment. They must be disposed of in accordance with local regulation.

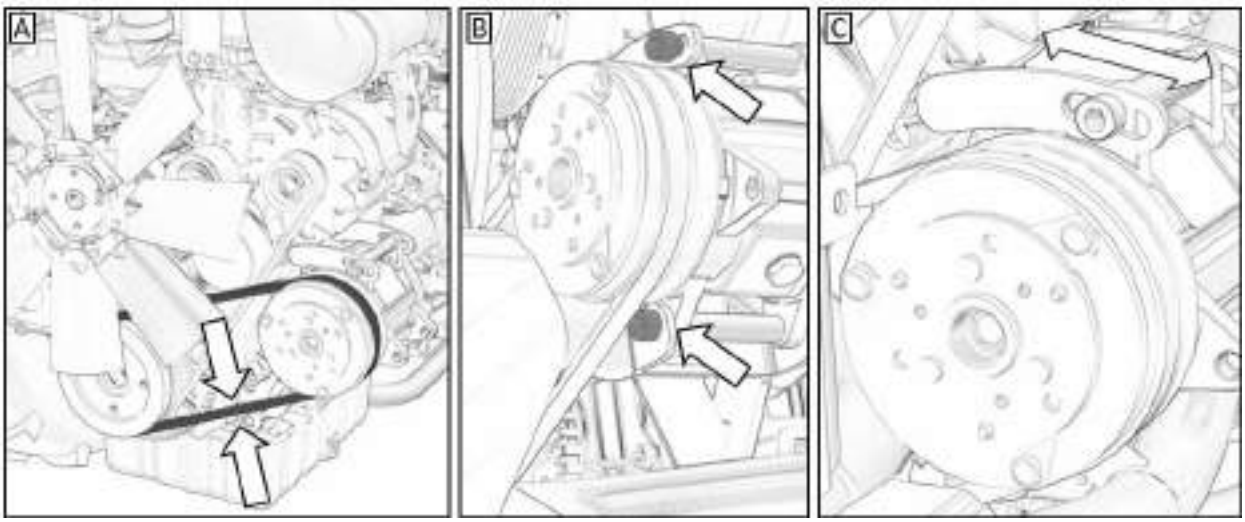


Fig. 233

8.8.3 CHANGING THE CAB FILTER

- The cab filter is located at the front of the cab roof. To replace the cab filter, follow the procedure described below.
-
- Loosen the screws (A) and remove the cover;
- Unscrew the screws (B) and remove the filter holder;
- Remove the old filter (C) and replace it with a new, original filter. Make sure that the filter is correctly placed back in its housing;
- Install the holder and tighten it with screws (B);
- Install the outer cover and tighten it with screws (A).

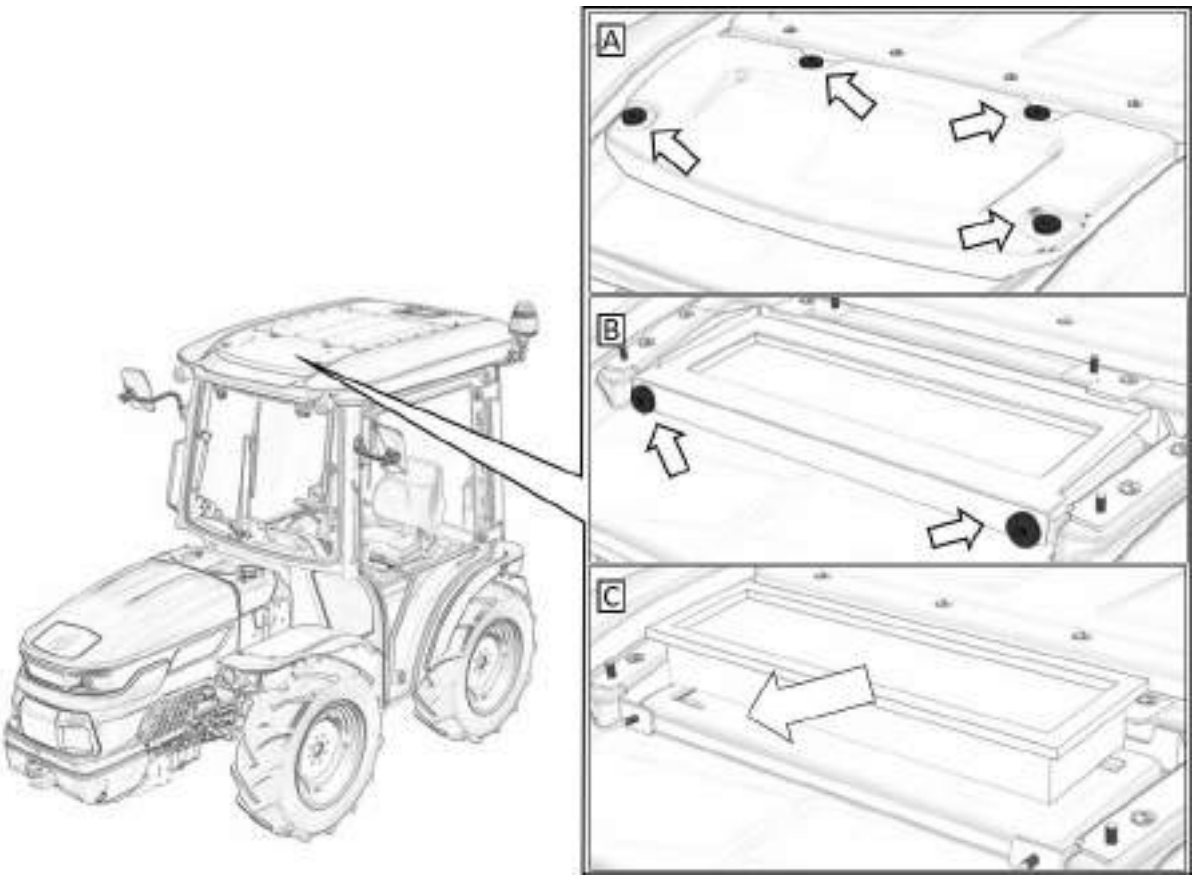


Fig. 202

8.9 BRAKING SYSTEM MAINTENANCE

Before performing any maintenance work on the braking system, comply with the instructions described below.

- Stop the tractor in safe conditions and in a suitable area.
- If the tractor was operating, wait until the engine cools down enough.
- Lower the hydraulic lift system to the ground; lower the implement, if attached.
- Remove the key from the ignition lock.

8.9.1 CHECKING THE BRAKE AND CLUTCH OIL LEVELS

If the oil level drops below minimum, the warning light will illuminate on the dashboard, refer to the chapter “Dashboard”. For this reason, you must check the oil level and top it up if necessary. The tank is located at the top of the rear side of the console, under the external plastic covering. To check the oil level, follow the procedure described below.

- Loosen the screws (A) on the console joint.
- Remove the cover from the rear part of the console.
- Check the oil level in the tank (B), which must reach the marking on the edge.
- If necessary, add more oil, but not beyond the maximum mark.
- After the work is finished, install the cover and tighten the screws.

	**IMPORTANT:** Add oil with suitable characteristics, meeting the requirements, refer to the chapter “Technical data of the tractor - oil”.

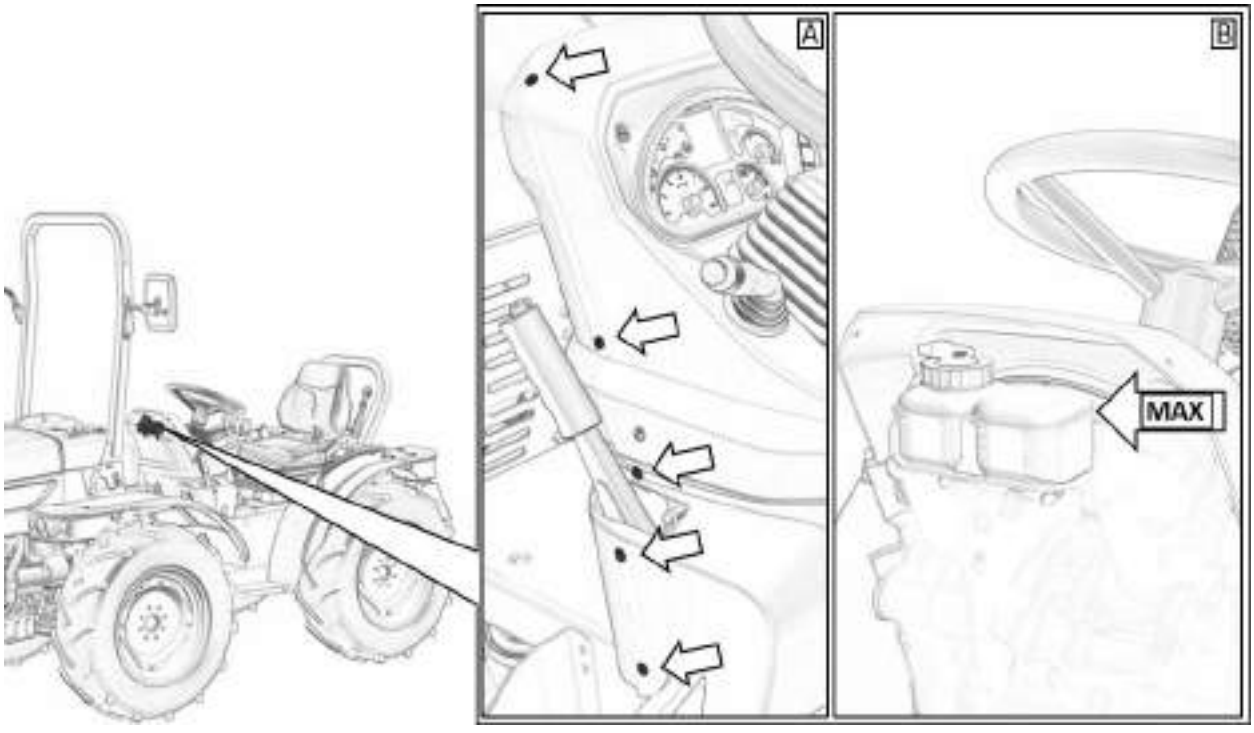


Fig. 235

8.9.2 BRAKE AND CLUTCH BLEEDING

- The clutch bleeding system (1) is located at the left side of the platform, behind the plug on the sheet metal, which is parallel to control devices.
- The parking brake bleeding and adjustment system (2) is located on the rear transmission, behind the rear hydraulic lift mechanism.

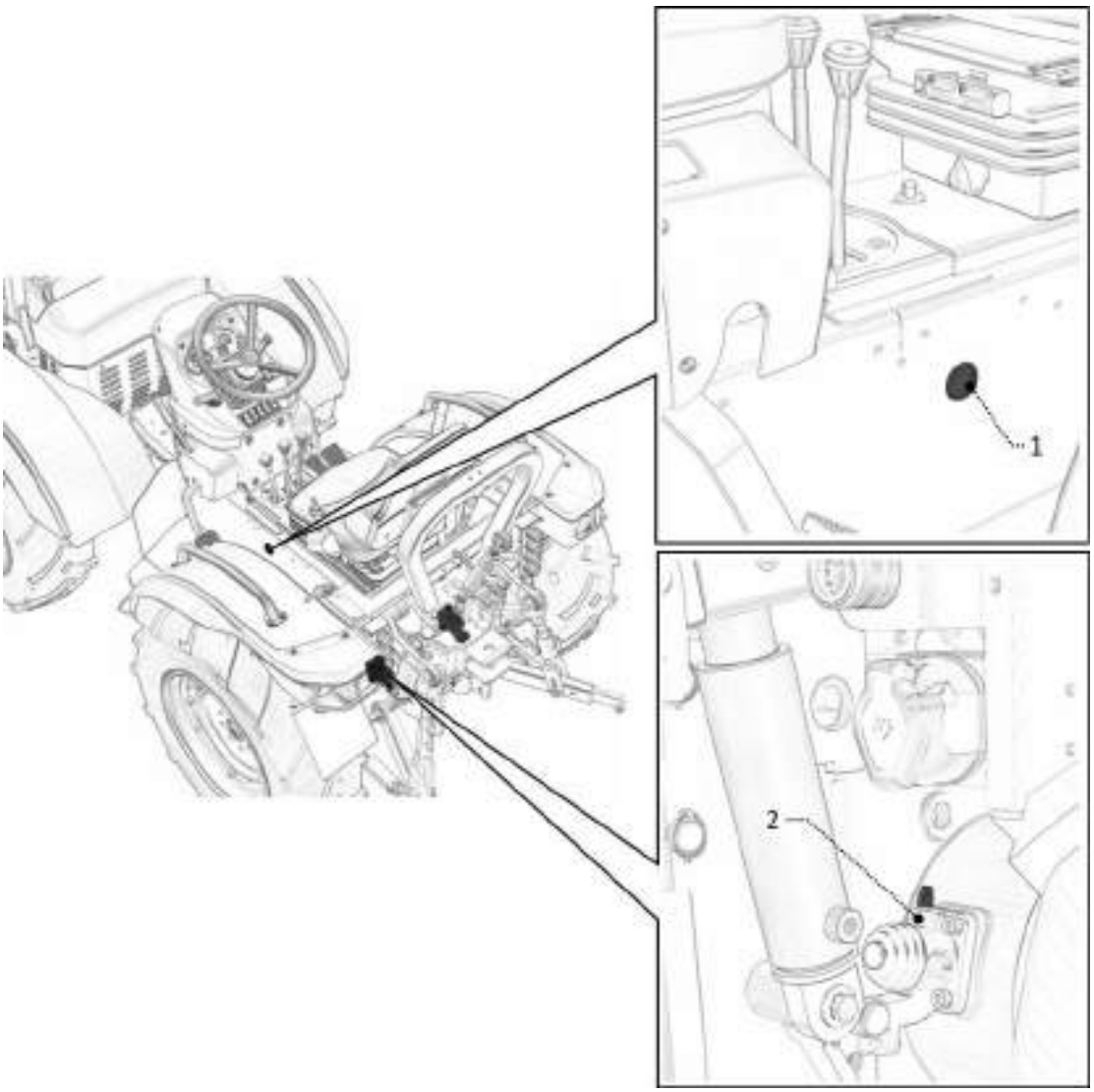


Fig. 236

	**WARNING:** The brakes can only be bled by a specialized person or a service centre equipped with appropriate tools!

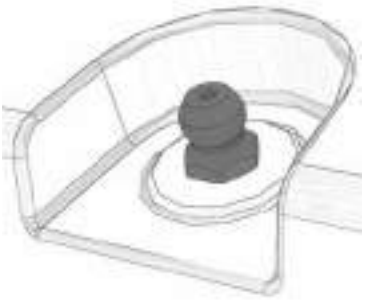
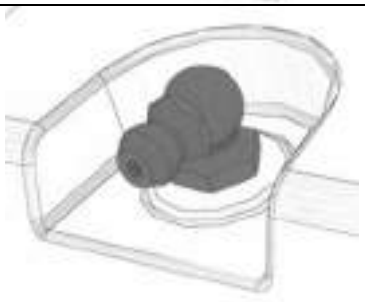
	**WARNING:** The brake fluid must not be disposed of in the environment. In accordance with applicable regulations, it must be collected in suitable collection containers.

8.10 GREASING POINTS ON THE TRACTOR

To ensure proper operation, regularly grease the parts with grease fittings according to the prescribed intervals. The following page contains some advice which must be followed.

- Every 50 hours of operation, all moving parts must be properly greased.
- If the tractor is cleaned with a high-pressure washer, greasing is recommended after each cleaning.
- Stop applying grease when it comes out of the moving section. On places where these are not visible, stop applying sooner.

The moving parts on the transmission and hydraulic lift mechanisms are equipped with grease fitting types specified in the table.

Grease fitting type	Standard	Description	Illustration
Type A	DIN 71412	Straight grease fitting	
Type B	DIN 71412	45° angle grease fitting	
Type C	DIN 71412	90° angle grease fitting	

WARNING: Before greasing, the carefully clean the grease fittings and the greasing pump to prevent the grease from being mixed with dirt!

8.10.1 DIAGRAM OF GREASING POINTS

No.	Greasing point	Description / function	Greasing point	Grease fitting
1	Transmission	Lubricates the joint on the front axle.	Grease fitting at the left side next to the transmission joint.	Type A
2			Grease fitting at the left side of the central transmission part.	Type A
3	Front bridge	Lubricates the joint on the front left sleeve.	Grease fitting at the upper part of the joint.	Type A
4			Grease fitting at the lower part of the joint.	Type A
5		Lubricates the joint on the front right sleeve.	Grease fitting at the upper part of the joint.	Type A
6			Grease fitting at the lower part of the joint.	Type A
7	Rear hydraulic lift mechanism	Lubricates the rear left hydraulic cylinder.	Grease fitting on the upper cylinder holder.	Type A
8			Grease fitting on the lower cylinder holder.	Type A
9		Lubricates the rear right hydraulic cylinder.	Grease fitting on the upper cylinder holder.	Type A
10			Grease fitting on the lower cylinder holder.	Type A
11		Lubricates the connection shaft of lift arms.	Grease fitting at the middle of the shaft holder.	Type A
12	Front hydraulic lift mechanism (optional equipment)	Lubricates the front left hydraulic cylinder.	Grease fitting on the lower cylinder holder, under the bumper.	Type A
13		Lubricates the front right hydraulic cylinder.	Grease fitting on the lower cylinder holder, under the bumper.	Type A
14		Lubricates the connection shaft of lift arms.	Grease fitting at the left part of the shaft holder.	Type A
15			Grease fitting at the right part of the shaft holder.	Type A

Location of grease points, sees Fig. 237, Fig. 238 and Fig. 239.

Rear left side view of the tractor

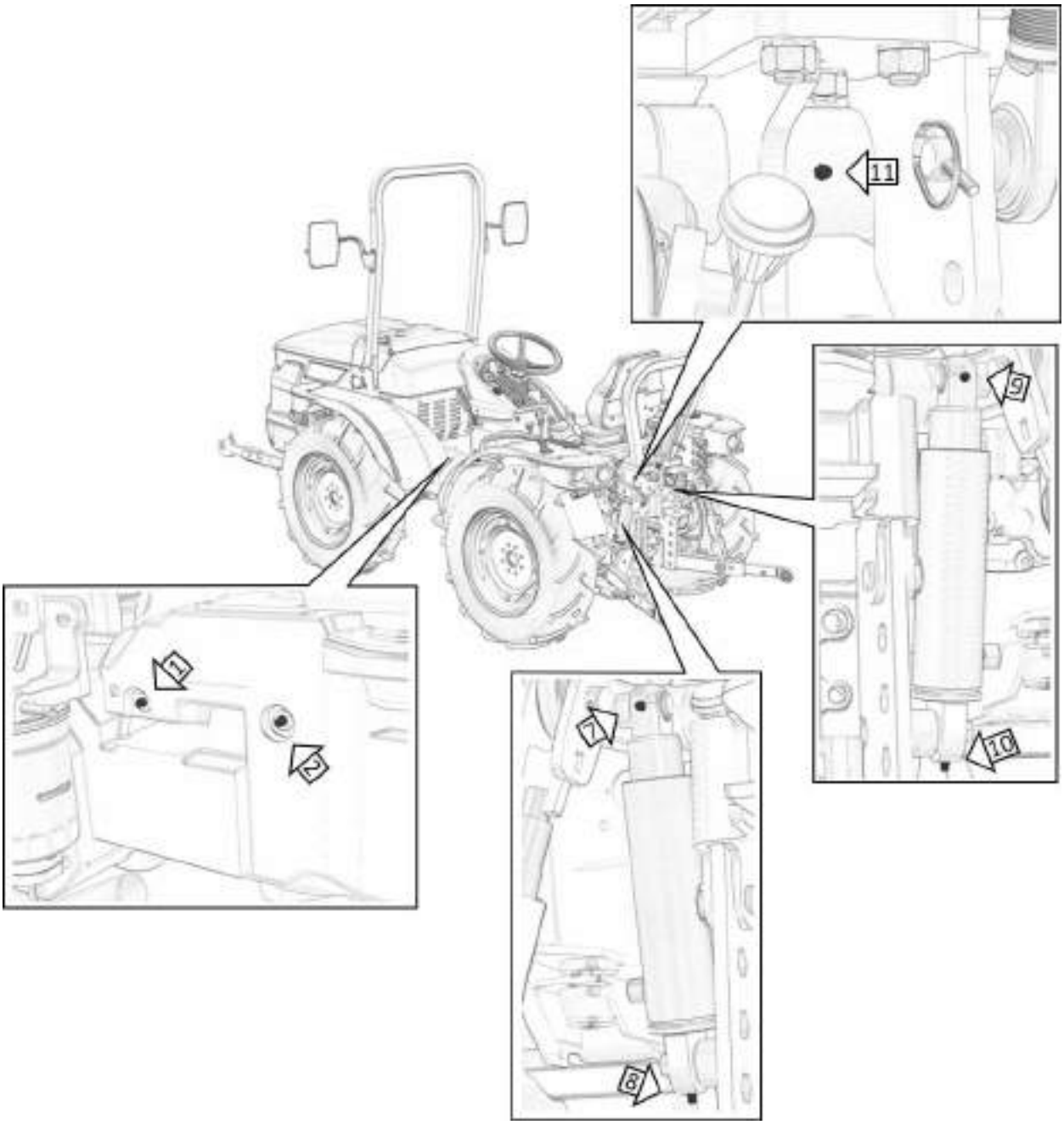


Fig. 237

Front right side view of the tractor

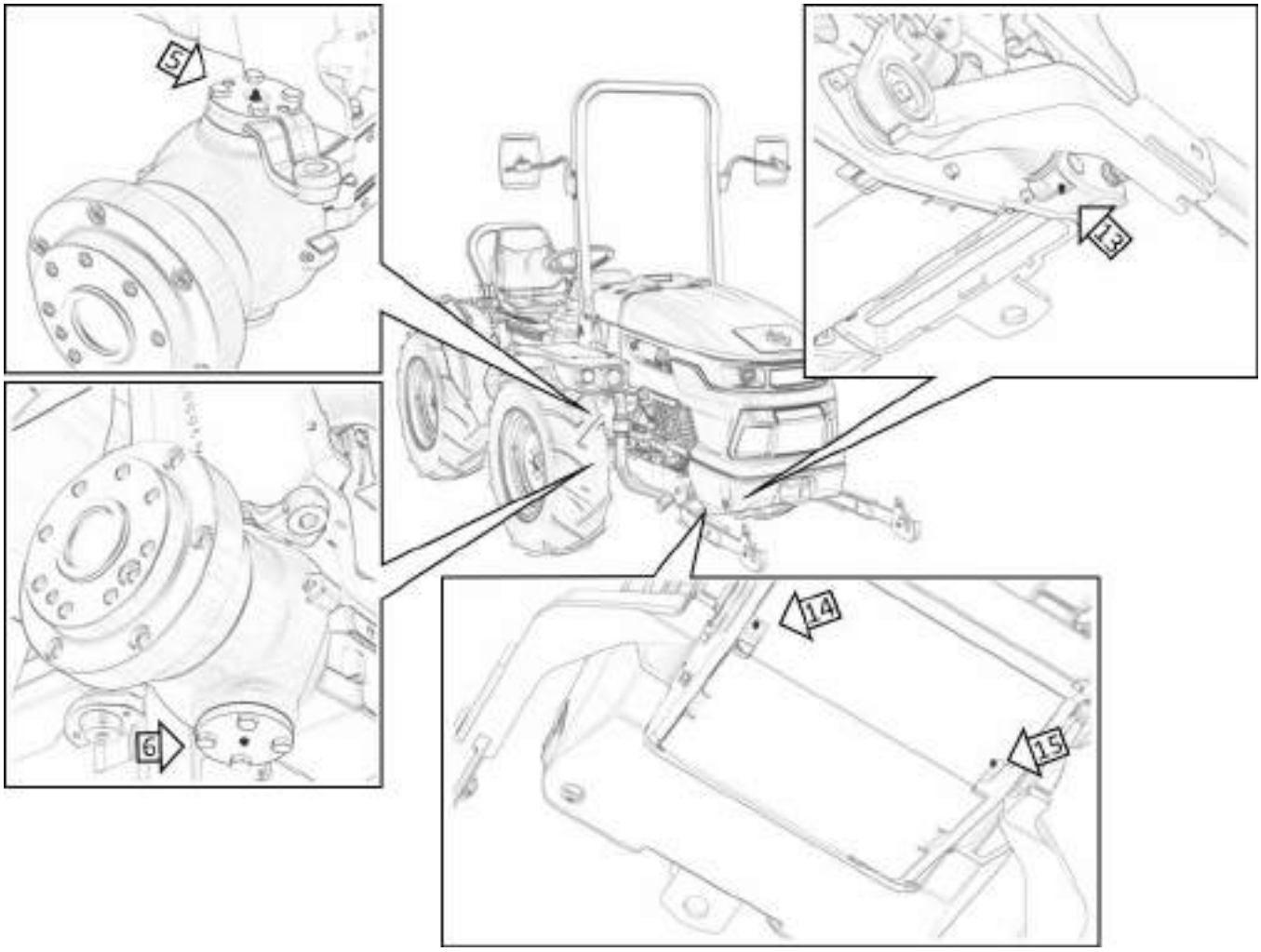


Fig. 238

Front left side view of the tractor

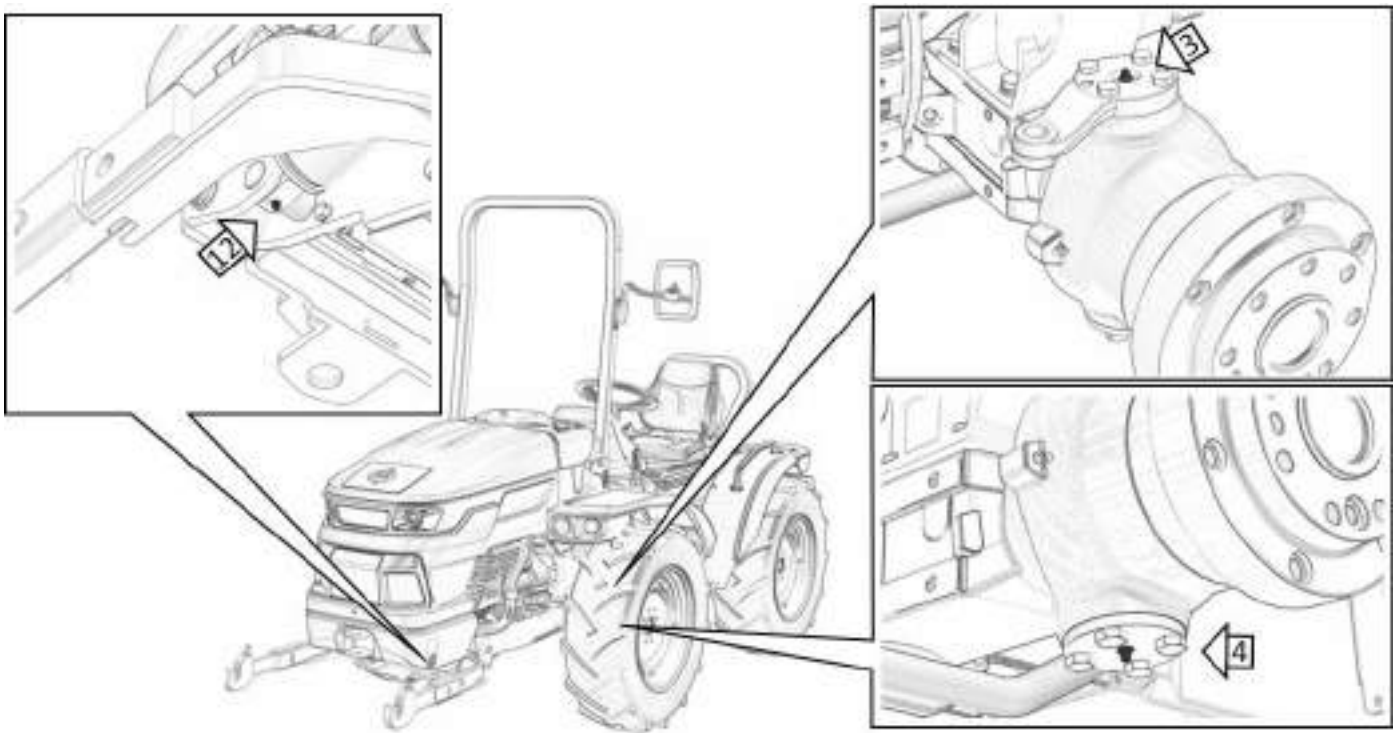


Fig. 239

8.11 MAINTENANCE TABLE

Frequency	Material / spare part	Operation	Type of work
Each working day	Engine oil	Check the level	Refer to "Checking the engine oil level".
	Brakes	Check the braking performance	Test – apply brake while driving.
	Light sources	Check all lamps for proper operation	Perform a visual check. If necessary, replace the bulbs; refer to "Changing the light bulbs".
1st service First 50 hours	Engine oil	First engine oil change	Refer to the chapter "Changing the engine oil". Call an authorized service centre.
	Engine oil filter	First engine oil filter change	Refer to the chapter "Changing the oil filter". Call an authorized service centre.
	Air filter	Clean	Refer to the chapter "Cleaning the air filter".
	Engine belt	Check the tension	Refer to the chapter "Changing the belt". Call an authorized service centre.
	Battery	Check the voltage	Consult an authorized service technician.
	Dashboard – display of functions	Check the dashboard display, the sensors on the transmission and engine for proper operation	Consult an authorized service technician.
	Coolant	Check the level	Refer to the chapter "Checking the coolant level".
	Brakes and clutch	Check the brakes and the clutch for proper operation – if necessary, bleed the system	Consult an authorized service technician.
	Transmission oil (gearbox)	Checking the level and quality of transmission oil in the gearbox	Refer to the chapter "Checking the gearbox oil level".
	Wheel bolts and other bolts	Check the bolt tightening using a torque wrench	Refer to the chapter "Installation of wheels".
	Hydraulic system	Check the hydraulic system, the sealing and pressure values at the rear hydraulics valve (170-180 bar) and at the PTO engagement valve (16-18 bar)	Consult an authorized service technician.
2nd service After 250 hours	Air filter	Replace the air filter – the main cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
	Cab filter (tractor version with the cab)	Replace the cab filter	Refer to the chapter "Changing the cab filter". Call an authorized service centre.
		Perform all the checks required for the 1st service.	

Frequency	Material / spare part	Operation	Type of work
3rd service After 500 hours or 2 year, whichever comes first	Engine oil	Change the engine oil	Refer to the chapter "Changing the engine oil". Call an authorized service centre.
	Engine oil filter	Change the engine oil filter	Refer to the chapter "Changing the oil filter". Call an authorized service centre.
	Fuel filter	Change the main fuel filter	Refer to the chapter "Changing the fuel filter". Call an authorized service centre.
	Fuel pre-filter	Change the fuel pre-filter	Refer to the chapter "Changing the fuel filter". Call an authorized service centre.
	Air filter	Replace the air filter – the main cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
		Replace the air filter – the protective cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
	Coolant, air and fuel tubes	Check and replace if necessary	Consult an authorized service technician.
		Perform all the checks required for the 1st service.	
4th service After 750 hours	Transmission oil (gearbox)	Change the transmission oil in the gearbox	Refer to the chapter "Changing the gearbox oil". Call an authorized service centre.
	Hydraulic oil filter	Replace the transmission oil filter (60μ cartridge)	Refer to the chapter "Changing the hydraulic oil filter". Call an authorized service centre.
	Air filter	Replace the air filter – the main cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
		Perform all the checks required for the 1st service.	
5th service after 1000 hours	Engine oil	Change the engine oil	Refer to the chapter "Changing the engine oil". Call an authorized service centre.
	Engine oil filter	Change the engine oil filter	Refer to the chapter "Changing the oil filter". Call an authorized service centre.
	Fuel filter	Change the main fuel filter	Refer to the chapter "Changing the fuel filter". Call an authorized service centre.
	Fuel pre-filter	Change the fuel pre-filter	Refer to the chapter "Changing the fuel filter". Call an authorized service centre.
	Air filter	Replace the air filter – the main cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
		Replace the air filter – the protective cartridge	Refer to the chapter "Changing the air filter". Call an authorized service centre.
	Reducer oil (front axle)	Change the front axle oil	Refer to the chapter "Changing the front differential oil".
	Reducer oil (lateral reducers)	Change the oil in the lateral reducers – front	Refer to the chapter "Changing the oil in lateral reducers".
	Mineral hydraulic oil for brakes and clutch	Change the oil in the braking system and the clutch	Refer to the chapter "Braking system maintenance". Call an authorized service centre.
		Perform all the checks required for the 1st service.	

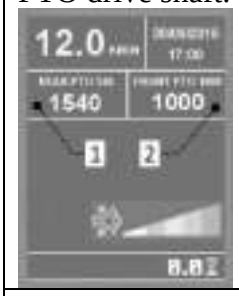
Frequency	Material / spare part	Operation	Type of work
6th service After 1500 hours	Coolant – antifreeze	Replace the engine coolant.	Refer to the chapter "Cooling system maintenance". Call an authorized service centre.
	Engine oil, filter, fuel filters, air filter	Perform all the changes required every 500 hours	Refer to the corresponding chapters for each spare part above. Call an authorized service centre.
	Transmission oil	Change the transmission oil in the gearbox	Refer to the chapter "Changing the gearbox oil". Call an authorized service centre.
	Hydraulic oil filter	Replace the transmission oil filter (60µ cartridge)	Refer to the chapter "Changing the hydraulic oil filter". Call an authorized service centre.
7th service After 2000 hours	Engine belt	Replace the poly-V engine belt	Refer to the chapter "Changing the belt". Call an authorized service centre.
	Engine oil, filter, fuel filters, air filter	Perform all the changes required every 500 hours	Refer to the corresponding chapters for each spare part above. Call an authorized service centre.
	Mineral hydraulic oil for brakes and clutch	Change the oil in the braking system and the clutch	Refer to the chapter "Braking system maintenance". Call an authorized service centre.
The subsequent services should be performed every 500 hours		Perform all changes and checks required every 500 hours	Refer to the corresponding chapters for each spare part above. Call an authorized service centre.
! Attention: every 4000 hours	The DPF filter kit with the catalyst, clamps and connections	Replace the DPF filter and the catalyst	Consult an authorized service technician.
	The engine intake manifold tube	Replace the engine intake manifold	Consult an authorized service technician.
	Coolant, air and fuel tubes	Replace if necessary	Consult an authorized service technician.

8.12 TRACTOR TROUBLESHOOTING

MALFUNCTIONS, CAUSES AND SOLUTIONS

The following information is provided to help you identify and correct any malfunctions, which may occur during tractor operation.
To ensure better troubleshooting results, it is recommended to have these procedures carried out by an authorized service workshop where a general tractor inspection is also possible.

8.12.1 WARNING MESSAGES

Malfunction	Cause	Solution
A beeping sound is emitted when the engine is running.	The driver is not in the driver's seat.	Sit on the driver's seat or use the parking brake. Refer to the chapter "Driving the tractor".
The driver is not in the driver's seat while the engine is running and the parking brake is disengaged.	Malfunction of the sensor for the driver's presence on the seat.	Sensor failure or electrical system fault. Consult an authorized service technician. (*)
PTO drive shaft. 	The PTO drive shaft is engaged. 1. Rear PTO drive shaft 2. Front PTO drive shaft	Disengage the PTO drive shaft. Refer to the chapter "Tractor console".
Hydraulic oil pressure. 	Low oil pressure, malfunction or failure of the hydraulic pump, valves or sensor.	Consult an authorized service technician. (*)
	The hydraulic oil filter is blocked.	Stop the tractor in safe conditions and shut off the engine! Replace the hydraulic oil filter. Refer to the chapter "Maintenance".
	Low hydraulic oil level.	Stop the tractor in safe conditions and shut off the engine! Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance". If the malfunction persists, consult an authorized service technician. (*)
Hydraulic oil filter. 	The hydraulic oil filter is blocked.	Replace the hydraulic oil filter. Refer to the chapter "Maintenance".

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
Differential lock. 	The differential lock is engaged.	Disengage the differential lock. Refer to the chapter “Tractor console”.
Brakes. 	Low brake fluid level.	Stop the tractor in safe conditions and shut off the engine! Check the brake fluid level and add if necessary. Refer to the chapter “Maintenance”. If the malfunction persists, consult an authorized service technician. (*)
	Malfunction of the sensor on the brake fluid tank.	Sensor failure or electrical system fault. Consult an authorized service technician. (*)
Fuel filter. 	A significant quantity of water or condensation is present in the fuel system.	Replace the fuel filter. Refer to the chapter “Maintenance”.
DPF filter. 	The diesel particulate filter is blocked and must be regenerated.	Perform a forced filter regeneration. Regeneration is automatic when the conditions are appropriate. If this lamp and the engine lamp are flashing, regeneration is no longer possible! **Contact an authorized service centre as soon as possible to avoid serious damage to the engine of the tractor.** (*)
Air filter. 	The air filter is blocked.	Clean or replace the air filter. Refer to the chapter “Maintenance”.

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
Engine oil pressure. 	Low engine oil level.	**Shut off the tractor's engine immediately!** Check the engine oil level and add if necessary. Refer to the chapter "Maintenance". If the malfunction persists, consult an authorized service technician. (*)
	Low oil pressure, a malfunction of engine components (oil pump)	**Shut off the tractor's engine immediately!** Consult an authorized service technician. (*)
Engine. 	An engine malfunction.	Refer to the fault menu. Refer to the chapter "Dashboard". Consult an authorized service technician. (*)
General alarm. 	Tractor malfunction.	Refer to the fault menu. Refer to the chapter "Dashboard". Consult an authorized service technician. (*)
Exhaust gas. 	The exhaust gas temperature is too high. The diesel particulate filter (DPF) is blocked.	Perform a forced DPF filter regeneration. If this solution does not resolve the problem, contact an authorized service centre as soon as possible to avoid serious damage to the engine of the tractor! (*)
Battery. 	Alternator malfunction.	**Shut off the tractor's engine immediately!** Alternator failure. Consult an authorized service technician. (*)
	Electrical system fault.	Consult an authorized service technician. (*)

8.12.2 ENGINE MALFUNCTIONS

Malfunction	Cause	Solution
The engine does not start.	The fuel filter is blocked.	Replace the filter and the auxiliary fuel filter. Refer to the chapter "Maintenance".
	The fuel supply system is blocked.	Read the recommendations in the engine operating manual.
		Replace the fuel filters. Refer to the chapter "Maintenance".
	Air in the fuel supply system.	Bleed the system. No air bubbles should be present in the system. If the problem persists, consult an authorized service technician. (*)
	Starter failure.	Replace the starter. This operation can only be performed by an authorized service centre. (*)
	The fuel tank is empty.	Fill with the prescribed fuel. Refer to the chapter "Tank filling".

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
The engine does not start.	Incorrect fuel type.	Completely drain and clean the tank and fuel lines. Add the correct fuel type. Refer to the chapter “Tank filling”.
	The fuel pump is not working properly.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
		Check the electrical system on the pump. If the malfunction persists, consult an authorized service technician. (*)
	The glow plug fuse in the control device is damaged.	Replace the fuse. Refer to the chapter “Fuses”.
	Engine control unit malfunction.	Check the fuses and relays. Refer to the chapter “Fuses”. Consult an authorized service technician. (*)
	Engine control unit failure.	Consult an authorized service technician. (*)
	Sensors on safety devices are damaged.	Consult an authorized service technician. (*)
	High-pressure pump malfunction.	Check if the pump functions properly; replace if defective. This operation can only be performed by an authorized service centre. (*)
		Check the electrical current on the pump. If there is no current, check the control device fuse. This operation can only be performed by an authorized service centre. (*)
	EGR valve malfunction.	Replace the EGR valve. This operation can only be performed by an authorized service centre. (*)
		The EGR valve must be cleaned. This operation can only be performed by an authorized service centre. (*)
	The ignition switch is damaged.	Replace the switch. Consult an authorized service technician. (*)
	The PTO drive shaft switch is activated.	Disengage the PTO drive shaft. Refer to the chapter “Tractor console”.
	The lever for changing the driving direction (inverter) is not in neutral position.	Move the lever in neutral position. Refer to the chapter “Starting the tractor”.
	The clutch pedal has not been activated.	Depress the clutch pedal. Refer to the chapter “Starting the tractor”.
	The driver is not in the driver's seat.	Sit on the driver's seat. Refer to the chapter “Starting the tractor”.
The starter is not working.	The main fuses are damaged.	Replace the fuses. Refer to the chapter “Fuses”.
	Main battery switch malfunction.	Check the cable connections.
		Replace the switch. Consult an authorized service technician. (*)

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
The starter is not working.	The starter is damaged.	Replace the starter. Consult an authorized service technician. (*)
	Discharged battery.	Charge or replace the battery. Refer to the chapter "Changing the battery".
	The battery terminals are oxidised, there is no electrical contact.	Clean and grease the surfaces of both terminals. Refer to the chapter "Changing the battery".
The engine is knocking.	Low engine oil level.	**Shut off the tractor's engine immediately!** Check the engine oil level and add if necessary. Refer to the chapter "Maintenance". If the malfunction persists, consult an authorized service technician. (*)
	Low fuel pressure in the supply.	The filters are blocked, replace the fuel filters. If the malfunction persists, consult an authorized service technician. (*)
		Fuel pump malfunction.
Engine performance is reduced.	The engine is overloaded.	Shift into a lower gear and reduce the towing load.
	The air filter is blocked.	Clean or replace the filter. Refer to the chapter "Maintenance".
	The DPF filter is blocked, the engine is running in forced mode.	Perform a forced filter regeneration. If this solution does not resolve the problem, contact an authorized service centre as soon as possible to avoid serious damage to the engine of the tractor! (*)
	The fuel filter is blocked.	Replace the main and the auxiliary fuel filter.
	Fuel pump malfunction.	It may be blocked. Clean and bleed the pump, replace if necessary. This operation can only be performed by an authorized service centre. (*)
	The intake or the exhaust system is damaged.	Consult an authorized service technician. (*)
The engine is overheating, a warning lamp illuminates on the dashboard during operation.	The coolant level in the system is too low.	Check the cooling system for potential leaks, add coolant to the proper level. Refer to the chapter "Maintenance".
	The radiator is dirty or blocked (radiator fins).	Clean the radiator fins. Refer to the chapter "Maintenance".
	Engine thermostat malfunction.	Replace the thermostat. Consult an authorized service technician. (*)
	Temperature indicator malfunction.	Replace the thermal switch. Consult an authorized service technician. (*)
	The belt is faulty.	Check the belt tension, if the belt is worn out, replace it. Refer to the chapter "Maintenance".

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
The engine operating temperature is low.	Thermostat malfunction, the thermostat is damaged.	Replace the thermostat. This operation can only be performed by an authorized service centre. (*)
	The indicator on the dashboard is damaged.	Consult an authorized service technician. (*)
Excessive engine oil consumption.	The oil viscosity is unsuitable.	Replace the oil with the prescribed type. Refer to the chapter "Maintenance".
	External oil leakage.	Fix (tighten) the joints and leaking surfaces. Consult an authorized service technician. (*)
	The engine oil level is too high.	Lower the engine oil level. Refer to the chapter "Maintenance".
	The valve guides, seals or piston rings are worn.	A major service on the engine is required, contact an authorized service technician.
Fuel consumption is too high.	The air filter is blocked.	Clean or replace the filter. Refer to the chapter "Maintenance".
	The engine is overloaded.	Shift into a lower gear, reduce the towing load.
	The injection nozzles are dirty or damaged.	Clean or replace the injection nozzles. This operation can only be performed by an authorized service centre. (*)
	The engine ignition is not adjusted properly.	Adjust the ignition. This operation can only be performed by an authorized service centre. (*)
Black smoke coming from the exhaust system.	The injection nozzles are damaged or blocked.	Clean or replace the nozzles. This operation can only be performed by an authorized service centre. (*)
	The air filter is dirty.	Clean or replace the filter. Refer to the chapter "Maintenance".
	The DPF filter is damaged.	Consult an authorized service technician. (*)

8.12.3 TRANSMISSION MALFUNCTIONS

Malfunction	Cause	Solution
Gear shifting is difficult.	The clutch does not disengage fully.	The clutch disks are worn. This operation can only be performed by an authorized service centre. (*)
		Presence of air in the hydraulic system, bleed the system. Consult an authorized service technician. (*)
		Check the brake fluid level and add if necessary.
	The gearbox shift fork or synchronizers are worn.	The gearbox must be repaired. This operation can only be performed by an authorized service centre. (*)
The operation is too noisy.	The oil level is too low.	Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance".
	The oil viscosity is unsuitable.	Replace the oil with the prescribed type. Refer to the chapter "Maintenance".
	The bearings are worn or the components are broken.	This operation can only be performed by an authorized service centre. (*)

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
The gear jumps out of its position.	The gearbox synchronizers or joints on levers of control devices are worn.	Repair the gearbox or adjust the joint or change any worn out components. This operation can only be performed by an authorized service centre. (*)
	The gearbox shift fork is worn.	The gearbox must be repaired. This operation can only be performed by an authorized service centre. (*)

8.12.4 BRAKE SYSTEM MALFUNCTION

Malfunction	Cause	Solution
Inadequate braking.	Presence of air in the hydraulic system.	Bleed the brake system. Refer to the chapter "Maintenance". Consult an authorized service technician. (*)
	Brake discs are worn.	Replace the brake disks. This operation can only be performed by an authorized service centre. (*)
	Brake cylinders are damaged.	Replace the cylinders. This operation can only be performed by an authorized service centre. (*)
	Excessive stroke of brake levers.	Adjust the levers. This operation can only be performed by an authorized service centre. (*)
	The brake fluid level is too low.	Check the brake fluid level and add if necessary. Refer to the chapter "Maintenance".
It is difficult to engage the parking brake.	The mechanism operation is affected by rust and dirt.	Clean the dirt and lubricate the mechanism.
	Excessive stroke of the lever mechanism.	Adjust the mechanism. This operation can only be performed by an authorized service centre. (*)
	The wire does not slide in its sheath.	The wire must be lubricated. This operation can only be performed by an authorized service centre. (*)

8.12.5 STEERING SYSTEM MALFUNCTIONS

Malfunction	Cause	Solution
Turning the steering wheel is difficult.	The oil pressure is too low.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
	The hydraulic pump is damaged.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
	The hydraulic steering assembly is damaged: • 4-way directional valve • Steering unit • Steering mechanism cylinder	Check and replace any defective components of the hydraulic steering assembly. This operation can only be performed by an authorized service centre. (*)

(*) - These operations should only be performed by an authorized service technician!

Malfunction	Cause	Solution
The steering wheel does not allow for precise steering.	Presence of air in the steering system.	Bleed the system. This operation can only be performed by an authorized service centre. (*)
	The seals on steering cylinders are worn.	Replace the seals. This operation can only be performed by an authorized service centre. (*)
The steering wheel is not working.	The hydraulic oil pressure is too low.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
	Low oil level.	Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance".
	The steering mechanism cylinder is defective.	Replace the cylinder. This operation can only be performed by an authorized service centre. (*)
	Hydraulic pump failure.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)

8.12.6 HYDRAULIC LIFT MECHANISM MALFUNCTIONS

Malfunction	Cause	Solution
The hydraulic mechanism is not lifted when the control lever is moved.	The hydraulic mechanism is overloaded. the weight of the implement exceeds the maximum lifting capacity of the hydraulic lift mechanism.	Disconnect the implement or reduce the weight. Before connecting the implement, make sure that its characteristics are compatible with the tractor's characteristics.
	The hydraulic oil level is too low.	Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance".
	Low hydraulic oil pressure.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
		Check and replace any defective valves on the hydraulic system. This operation can only be performed by an authorized service centre. (*)
	The hydraulic pump is damaged.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
	The priority valve is damaged.	Replace the valve. This operation can only be performed by an authorized service centre. (*)
The hydraulic mechanism cannot bear the selected height of the implement.	The valve on the control device is worn or damaged.	Replace the safety valve on the control device. This operation can only be performed by an authorized service centre. (*)
The float mode does not operate properly.	Incorrect adjustment of hydraulic accumulator.	Adjust correctly. Refer to the chapter "Floating hydraulics with support ".
	Hydraulic accumulator failure.	Replace the hydraulic accumulator. This operation can only be performed by an authorized service centre. (*)
	Switch valve failure.	Replace the valve. This operation can only be performed by an authorized service centre. (*)

(*) - These operations should only be performed by an authorized service technician!

8.12.7 PTO DRIVE SHAFT MALFUNCTION

Malfunction	Cause	Solution
The PTO drive shaft does not rotate.	The solenoid valve fuse is faulty.	Replace the fuse. Refer to the chapter "Fuses".
	The solenoid valve for PTO drive shaft engagement is faulty.	Check the valve and replace it if necessary. This operation can only be performed by an authorized service centre. (*)
	The electrical wiring of the solenoid valve is faulty.	Consult an authorized service technician. (*)
	The PTO drive shaft switch is faulty.	Replace the switch. This operation can only be performed by an authorized service centre. (*)
	One of the control levers for the PTO drive shaft is in neutral position.	Move the lever to engage. Refer to the chapter "Operating controls".
	The driver is not in the driver's seat.	Sit on the driver's seat. Refer to the chapter "Starting the tractor".
	Malfunction of the external switch for PTO drive shaft engagement.	The engagement procedure through the external switch was not carried out properly. Refer to the chapter "PTO drive shaft engagement".
		The parking brake is not activated. Refer to the chapter "PTO drive shaft engagement".
		The switch is faulty and must be replaced. This operation can only be performed by an authorized service centre. (*)
The universal joint clutch is slipping.	The contact plates of the clutch are worn.	Repair the clutch. This operation can only be performed by an authorized service centre. (*)
	The soft start damper is faulty.	Replace the damper. This operation can only be performed by an authorized service centre. (*)
	The solenoid valve for the PTO drive shaft engagement is faulty.	Replace the valve. This operation can only be performed by an authorized service centre. (*)
The front PTO drive shaft does not engage (installed as optional equipment).	The fuse is faulty.	Replace the fuse. Refer to the chapter "Fuses".
	The solenoid valve for the PTO drive shaft engagement is faulty.	Replace the valve. This operation can only be performed by an authorized service centre. (*)
	The PTO drive shaft switch is faulty.	Replace the switch. This operation can only be performed by an authorized service centre. (*)
	Malfunction of the external switch for PTO drive shaft engagement.	The engagement procedure through the external switch was not carried out properly. Refer to the chapter "PTO drive shaft engagement".
		The parking brake is not activated. Refer to the chapter "PTO drive shaft engagement".
		The switch is faulty and must be replaced. This operation can only be performed by an authorized service centre. (*)

(*) - These operations should only be performed by an authorized service technician!

8.12.8 DIFFERENTIAL LOCK MALFUNCTION

Malfunction	Cause	Solution
The differential lock does not engage.	The fuse is faulty.	Replace the fuse. Refer to the chapter "Fuses".
	The solenoid valve for differential lock engagement and disengagement is faulty.	Check the valve and replace it if necessary. This operation can only be performed by an authorized service centre. (*)
	The differential lock engagement switch is faulty.	Replace the switch. This operation can only be performed by an authorized service centre. (*)

8.12.9 ELECTRICAL SYSTEM MALFUNCTION

Malfunction	Cause	Solution
There is no power supply to the electrical system.	The fuse is faulty.	Replace the fuse. Refer to the chapter "Fuses".
	Discharged battery.	Charge or replace the battery. Refer to the chapter "Changing the battery".
	The battery terminals are oxidised.	Clean and grease the terminals. Refer to the chapter "Changing the battery".
	The main battery switch is damaged or faulty.	Replace the main switch. This operation can only be performed by an authorized service centre. (*)
	The ground wires are not in contact with the tractor's chassis.	Check the wire connections. Consult an authorized service technician. (*)
The warning lamp for the battery illuminates while the engine is running.	The belt is loose or damaged.	Check the belt tension, if the belt is worn out, replace it. Refer to the chapter "Maintenance".
	Alternator failure.	Replace the alternator. This operation can only be performed by an authorized service centre. (*)
Dashboard malfunction, before the engine is started.	Discharged battery.	Charge or replace the battery. Refer to the chapter "Changing the battery".
The warning lamp for engine oil pressure illuminates while the engine is running.	Low oil level.	Check the engine oil level and add if necessary. Refer to the chapter "Maintenance".
	The engine oil filter is blocked.	Replace the oil filter. Refer to the chapter "Maintenance".
	Engine failure.	**Shut off the tractor's engine immediately!** Contact an authorized service centre.
The warning lamp illuminates on the coolant temperature gauge while the engine is running.	The radiator is dirty or blocked (radiator fins).	Clean the radiator fins. Refer to the chapter "Maintenance".
	The coolant level in the system is too low.	Check the coolant level and add if necessary. Refer to the chapter "Maintenance".
	The cooling system pump is faulty.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)

(*) - These operations should only be performed by an authorized service technician!

8.12.10 MALFUNCTIONS IN THE CAB

Malfunction	Cause	Solution
The heating in the cab is not working.	The coolant level in the system is too low.	Check the coolant level and add if necessary. Refer to the chapter "Maintenance".
	Electric fan failure.	Replace the fuse. Refer to the chapter "Fuses".
		Check the fan; replace if defective. This operation can only be performed by an authorized service centre. (*)
The air conditioner in the cab is not working.	The fuse is faulty.	Replace the fuse. Refer to the chapter "Fuses".
	The air conditioner capacitor is blocked.	Clean the capacitor. This operation can only be performed by an authorized service centre. (*)
	The air conditioner capacitor is faulty.	Replace the capacitor. This operation can only be performed by an authorized service centre. (*)
	The belt is loose or damaged.	Adjust the tension, if necessary, replace the belt. Refer to the chapter "Maintenance".
	The refrigerant level in the air conditioner system is too low.	Fill the system with refrigerant. Refer to the chapter "Maintenance".

8.12.11 MALFUNCTIONS OF HYDRAULIC BRAKE SYSTEM OF THE TRAILED IMPLEMENT

Malfunction	Cause	Solution
The brakes on the implement are blocked.	Low hydraulic oil level.	Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance".
	There is a fault in the hydraulic system of the implement.	Read the operating instructions of the implement.
The brakes on the implement are not working.	Low hydraulic oil level.	Check the hydraulic oil level and add if necessary. Refer to the chapter "Maintenance".
	The hydraulic pump is damaged.	Replace the fuel pump. This operation can only be performed by an authorized service centre. (*)
	The hydraulic brake valve is faulty.	Replace the brake valve. This operation can only be performed by an authorized service centre. (*)

8.12.12 TRACTOR MALFUNCTIONS (GENERAL)

Malfunction	Cause	Solution
The tyres are unevenly worn.	The tyre pressure is too low.	Inflate the tyres. Refer to the chapter "TECHNICAL DATA".
The tractor is rocking or jumping.	The weight is not distributed properly.	Distribute the weight properly. Do not overload the tractor. Install appropriate weights. Refer to the chapter "TECHNICAL DATA".

(*) - These operations should only be performed by an authorized service technician!

9 TECHNICAL DATA OF THE TRACTOR

For easier understanding and quick reference purposes, the technical data are divided into several sections with tables. The values given in the tables may variate depending on the method of measurement and the configuration of the tractor.

9.1 TRACTOR DIMENSIONS

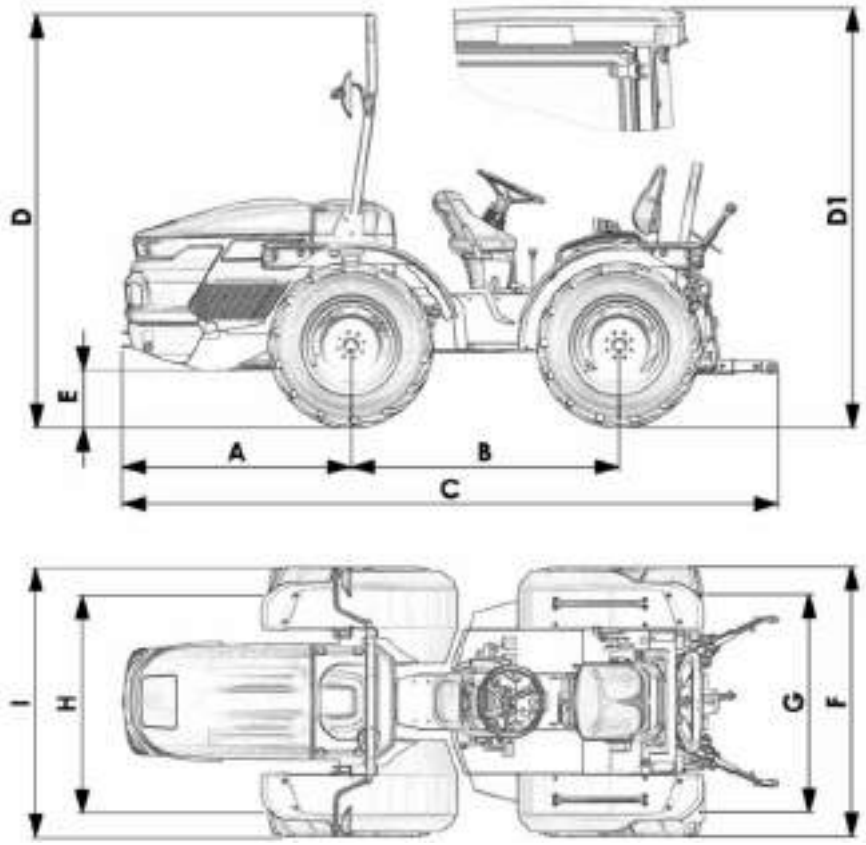


Fig. 203

Description of designation in the table given below.

- A – overhang or the distance between the centre of the front axle and the end point of the front part;
- B – wheelbase;
- C – maximum length;
- C1 – maximum length (with the front hydraulic lift mechanism installed);
- D – maximum height of the tractor with the roll bar;
- D1 – maximum height of the tractor with the cab (optional equipment);
- E – ground clearance;
- F – width of the tractor at the rear (standard version);
- F1 – width of the tractor at the rear (wide version – optional equipment);
- G – wheel track of the tractor at the rear (standard version);
- G1 – wheel track of the tractor at the rear axle (wide version – optional equipment);
- H – wheel track of the tractor at the front axle (standard version);
- H1 – wheel track of the tractor at the front axle (wide version – optional equipment).
- I – width of the tractor at the front (standard version);
- I1 – width of the tractor at the front (wide version – optional equipment).

Tractor dimensions.

Tyres	Dimensions (mm)							
	Tyre width	A	B	C	C1	D	D1	E
29x12.50-15	320	1190	1380	3290 - 3550	3525 - 3895	2067	2107	245
31x15,50-15 (400/50-15)	400	1190	1380	3290 - 3550	3525 - 3895	2108	2148	280
7.5-16	209	1190	1380	3290 - 3550	3525 - 3895	2101	2141	273
260/70 R16	258	1190	1380	3290 - 3550	3525 - 3895	2084	2124	256
280/70 R16	282	1190	1380	3290 - 3550	3525 - 3895	2098	2138	270
250/80 R18	250	1190	1380	3290 - 3550	3525 - 3895	2136	2176	308
280/70 R18	282	1190	1380	3290 - 3550	3525 - 3895	2124	2164	296
300/65 R18	297	1190	1380	3290 - 3550	3525 - 3895	2130	2170	302
260/70 R20	258	1190	1380	3290 - 3550	3525 - 3895	2135	2175	307

Tyres	Dimensions (mm)								
	Tyre width	F	F1	G	G1	H	H1	I	I1
29x12.50-15	320	1500	1890	Refer to the chapter " TRACTOR WHEELBASES" .	Refer to the chapter " TRACTOR WHEELBASES" .	Refer to the chapter " TRACTOR WHEELBASES" .	Refer to the chapter " TRACTOR WHEELBASES" .	1505	1833
31x15,50-15 (400/50-15)	400	1580	1920					1585	1913
7.5-16	209	1266 - 1883	/					1266 - 1883	/
260/70 R16	258	1421 - 1567	/					1421 - 1567	/
280/70 R16	282	1394 - 1470	/					1394 - 1470	/
250/80 R18	250	1300 - 1587	/					1300 - 1587	/
280/70 R18	282	1394 - 1470	1750					1394 - 1470	1750
300/65 R18	297	1487	/					1487	/
260/70 R20	258	1410	/					1410	/

- The wheelbase between the front and the rear axle of the tractor is 1185 mm.
- The wheelbase between the front and the rear axle of the wide tractor version is 1585 mm.

9.1.1 DIMENSIONS OF THE REAR HYDRAULIC LIFT MECHANISM

The drawing shows the technical data for the standard lift mechanism. The rear hydraulic lift mechanism is a category 1 mechanism.

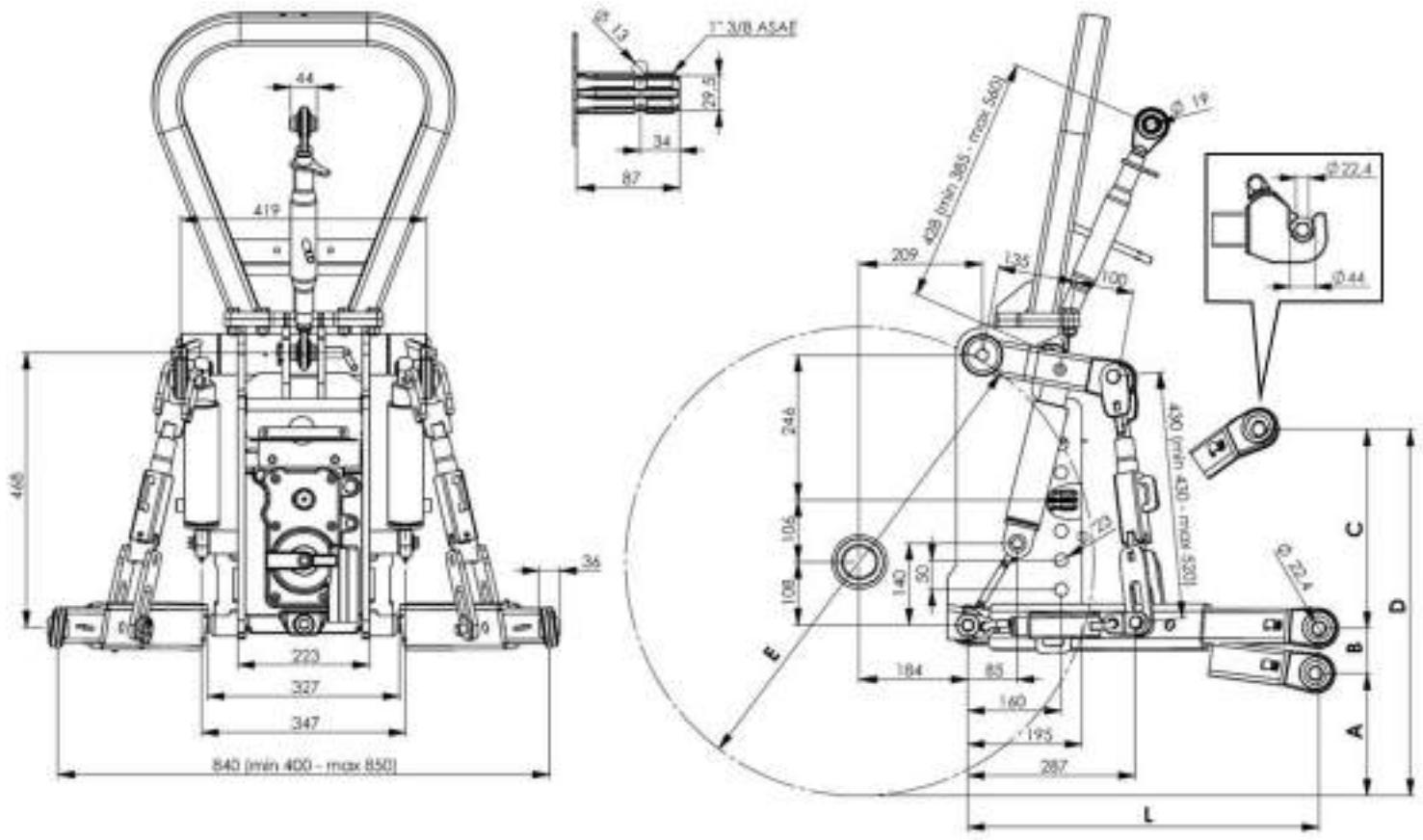


Fig. 241

The table provides data on the height, depending on the wheels (measured from the ground), and the default length of tensioners adjusted to 430 mm, as well as the distance between the lower lift arms of 840.

Description of designation in the table given below.

- E – wheel diameter;
- L – the length of adjustable lower lift arm;
- A – the minimum height of the rear lift mechanism;
- B – the maximum lowering distance of arms;
- C – the maximum lifting distance of arms;
- D – the maximum height of the rear lift mechanism.

The bolt on the lower lift arms can be adjusted to two different positions to ensure better adaptation to the connection on the implement.

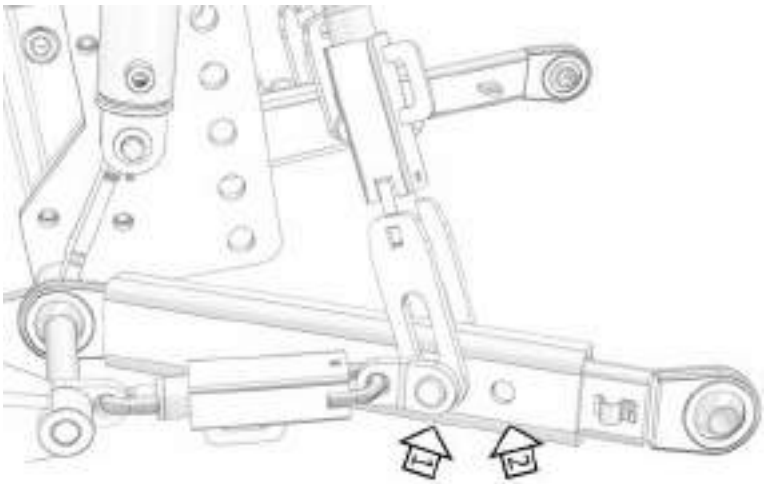


Fig. 242

Adjustment of the bolt in the first position of the lower lift arm

Tyres	Dimensions (mm)								
	E	L				L			
		545				595			
		A	B	C	D	A	B	C	D
29x12.50-15	755	207	65	288	560	197	71	314	582
31x15,50-15 (400/50-15)	800	230			583	220			605
7.5-16	803	231			584	221			606
260/70 R16	770	215			568	205			590
280/70 R16	798	229			582	219			604
250/80 R18	870	265			618	255			640
280/70 R18	849	254			607	244			629
300/65 R18	850	255			608	245			630
260/70 R20	872	266			619	256			641

Adjustment of the bolt in the first position of the lower lift arm

Tyres	Dimensions (mm)								
	E	L				L			
		645				695			
		A	B	C	D	A	B	C	D
29x12.50-15	755	187	77	341	605	178	83	367	628
31x15,50-15 (400/50-15)	800	209			627	200			650
7.5-16	803	211			629	202			652
260/70 R16	770	194			612	185			635
280/70 R16	798	208			626	199			649
250/80 R18	870	244			662	235			685
280/70 R18	849	234			652	225			675
300/65 R18	850	235			653	226			676
260/70 R20	872	245			663	236			686

Adjustment of the bolt in the second position of the lower lift arm

Tyres	Dimensions (mm)								
	E	L				L			
		595				645			
		A	B	C	D	A	B	C	D
29x12.50-15	755	229	60	270	559	222	65	293	580
31x15,50-15 (400/50-15)	800	252			582	245			603
7.5-16	803	253			583	246			604
260/70 R16	770	237			567	230			588
280/70 R16	798	251			581	244			602
250/80 R18	870	287			617	280			638
280/70 R18	849	276			606	269			627
300/65 R18	850	277			607	270			628
260/70 R20	872	288			618	281			639

Adjustment of the bolt in the second position of the lower lift arm

Tyres	Dimensions (mm)								
	E	L				L			
		695				745			
		A	B	C	D	A	B	C	D
29x12.50-15	755	216	69	317	602	209	74	340	623
31x15,50-15 (400/50-15)	800	238			624	232			646
7.5-16	803	240			626	233			647
260/70 R16	770	223			609	217			631
280/70 R16	798	237			623	231			645
250/80 R18	870	273			659	267			681
280/70 R18	849	263			649	256			670
300/65 R18	850	264			650	257			671
260/70 R20	872	274			660	268			682

IMPORTANT: The values given in the table may variate depending on the method of measurement and the configuration of the rear lift mechanism.

9.1.2 DIMENSIONS OF THE FRONT HYDRAULIC LIFT MECHANISM (OPTIONAL EQUIPMENT)

The drawing shows the technical data for the front hydraulic lift mechanism. The mechanism belongs to category 1.

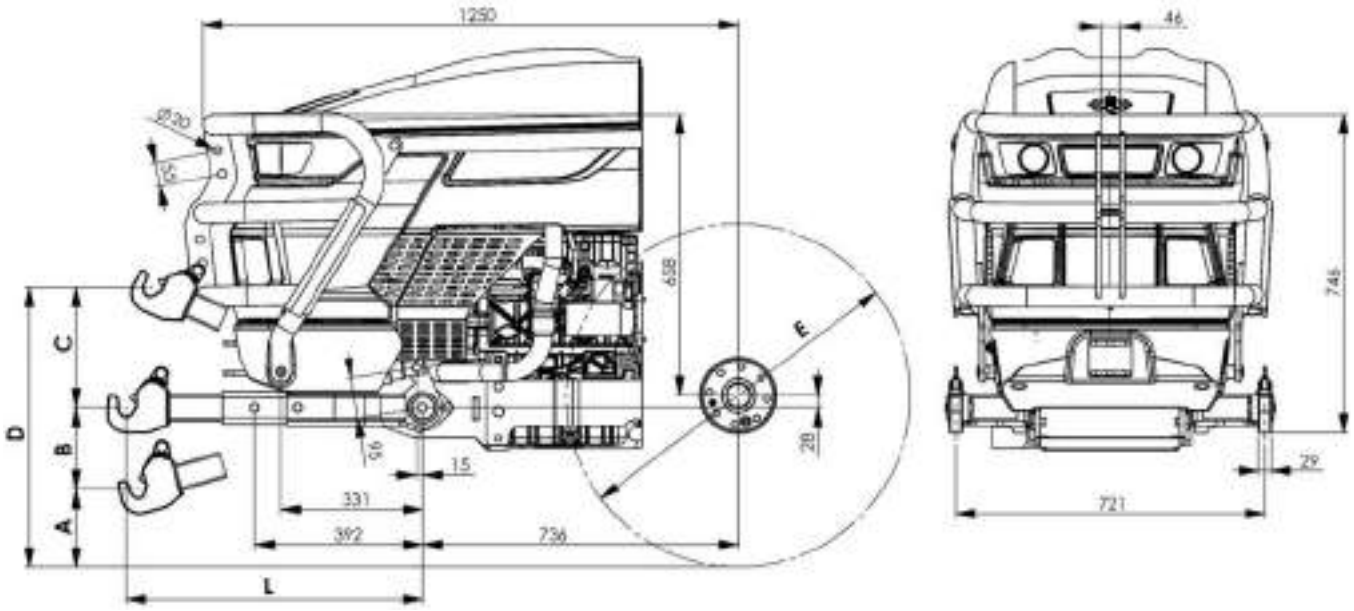


Fig. 243

The table provides data on the height, depending on the wheels (measured from the ground), and the distance between the lower lift arms of 721.

Description of designation in the table given below.

- E – wheel diameter;
- L – the length of adjustable lower lift arm;
- A – the minimum height of the front lift mechanism;
- B – the maximum lowering distance of arms;
- C – the maximum lifting distance of arms;
- D – the maximum height of the front lift mechanism.

Tyres	Dimensions (mm)												
	E	L 690				L 740				L 790			
		A	B	C	D	A	B	C	D	A	B	C	D
29x12.50-15	755	157	191	282	630	143	205	302	650	130	218	322	670
31x15,50-15 (400/50-15)	800	180			653	165			672	152			692
7.5-16	803	181			654	167			674	154			694
260/70 R16	770	165			638	151			658	137			677
280/70 R16	798	179			652	164			671	151			691
250/80 R18	870	215			688	201			708	187			727
280/70 R18	849	204			677	190			697	177			717
300/65 R18	850	205			678	191			698	178			718
260/70 R20	872	216			689	202			709	189			729

9.1.3 DIMENSIONS OF THE REAR TOW HOOK

The drawing shows the technical data for the rear tow hook.

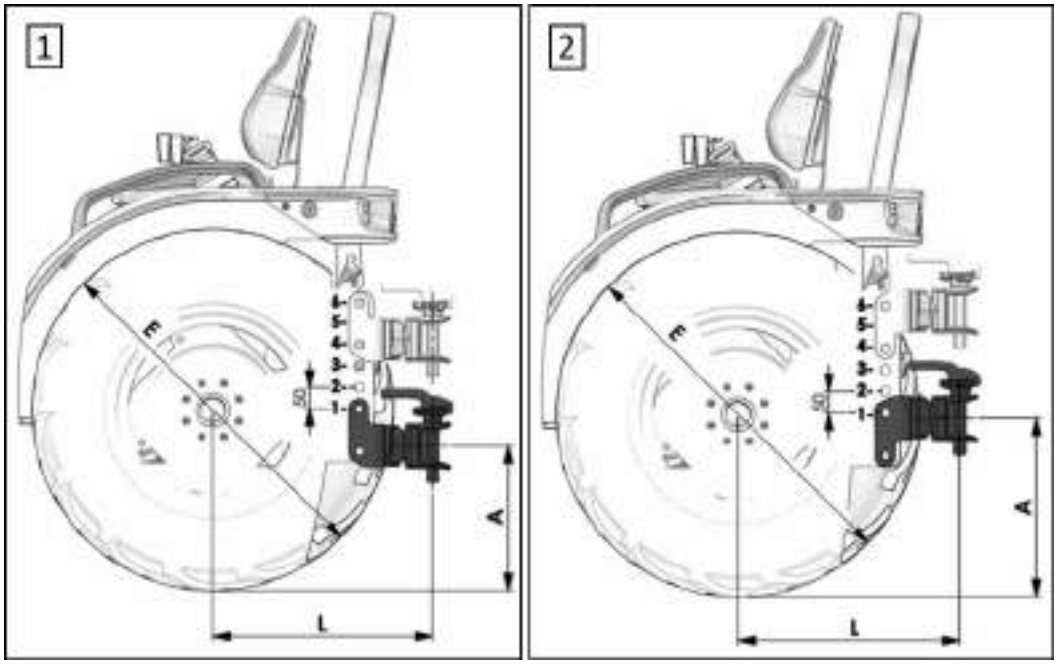


Fig. 244

The table provides data on the height of the hook, depending on the wheels (measured from the ground).

Description of designation in the table given below.

- 1 – position of the hook;
- 2 – position of the hook;
- E – wheel diameter;
- L – distance between the connection point on the hook and the centre of the rear tractor axle;
- A – height of the tow hook.

Dimensions in the table with the swivel rear tow hook

Tyres	Dimensions (mm)			
	E	L	1	2
			A	A
29x12.50-15	755	518	293 - 543	368 - 618
31x15,50-15 (400 / 50-15)	800		315 - 565	390 - 640
7.5-16	803		317 - 567	392 - 642
260/70 R16	770		300 - 550	375 - 625
280/70 R16	798		314 - 564	390 - 640
250/80 R18	870		350 - 600	425 - 675
280/70 R18	849		340 - 590	415 - 665
300/65 R18	850		340 - 590	415 - 665
260/70 R20	872		351 - 601	426 - 676

9.1.4 TRACTOR WHEELBASES

This chapter describes the wheelbases of the tractor with different rim options, which can be fixed or adjustable.

9.1.4.1 ADJUSTABLE RIMS

The drawing shows the tractor wheelbases with all available versions of adjustable rims.

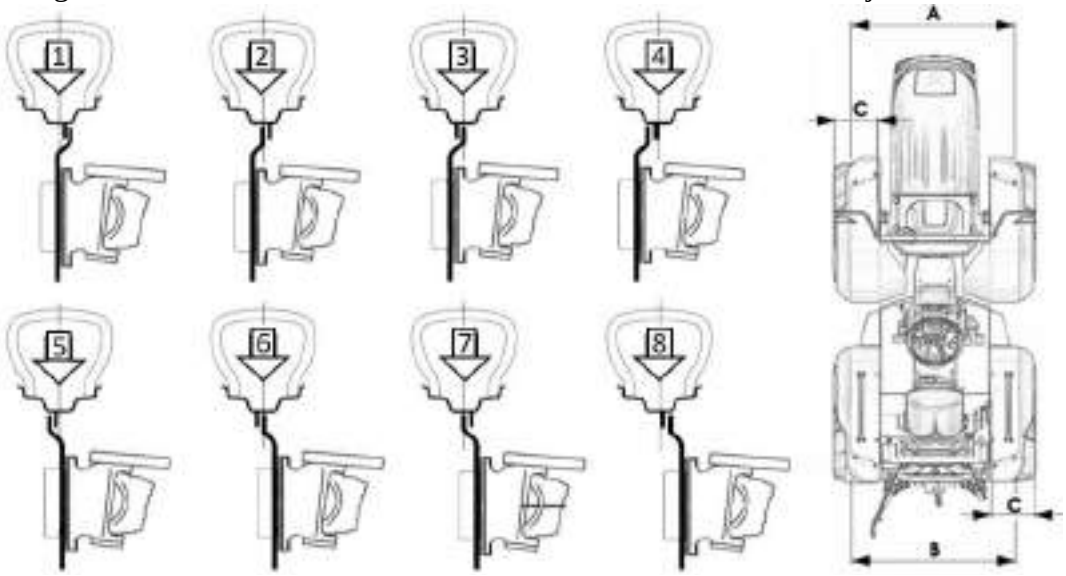


Fig. 245

Tyres	Dimensions (mm)								
	C	Width	Type							
			1	2	3	4	5	6	7	8
7.5-16	209	A	1234	1169	1121	1056	1154	1219	1267	1332
		B	1234	1169	1121	1056	1154	1219	1267	1332
260/70 R16	258	A		1227				1162	1309	
		B		1227				1162	1309	
280/70 R16	282	A	1277	1197						
		B	1277	1197						
250/80 R18	250	A					1139			
		B					1139			
280/70 R18	282	A		*1196			*1101	1181		
		B		*1196			*1101	1181		
300/65 R18	297	A					*1107	1187		
		B					*1107	1187		
260/70 R20	258	A						1168		
		B						1168		

- * When the wheels are adjusted to this wheelbase with the tyres inflated, there is a risk of collision with tractor components!

	**WARNING:** During each wheelbase measurement, always make sure that the wheels do not come in contact with the bodywork or other tractor components when they are rotated or turned.

	**WARNING:** Use appropriate tightening torques when installing wheels or tightening the nuts and screws!

9.1.4.2 FIXED RIMS

The drawing shows the tractor wheelbases with all available versions of fixed rims.

1 – standard version tractor
2 – wide version tractor

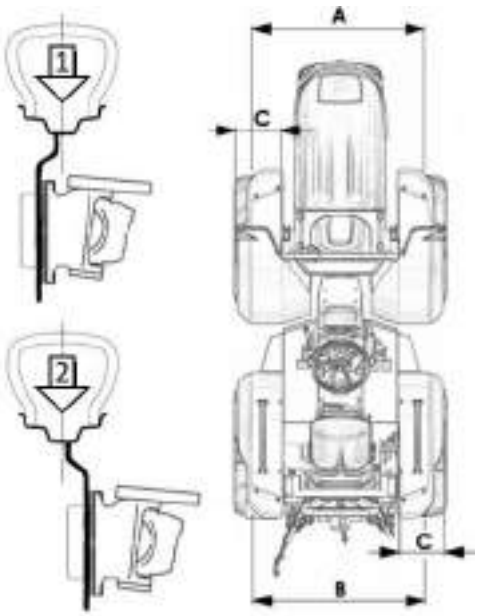


Fig. 246

Tyres	Dimensions (mm)				
	C	Tractor type	Width	Type	
				1	2
29x12.50-15	320	1	A	1185	1205
			B	1185	1205
		2	A	1513	*
			B	1513	*
31x15,50-15 (400 / 50-15)	400	1	A	1185	1205
			B	1185	1205
		2	A	1513	*
			B	1513	*

- This wheel adjustment is not possible with this wheelbase.

	**WARNING:** During each wheelbase measurement, always make sure that the wheels do not come in contact with the bodywork or other tractor components when they are rotated or turned.

9.2 TYRE PRESSURE

This chapter contains the technical specifications of tyres and rims.

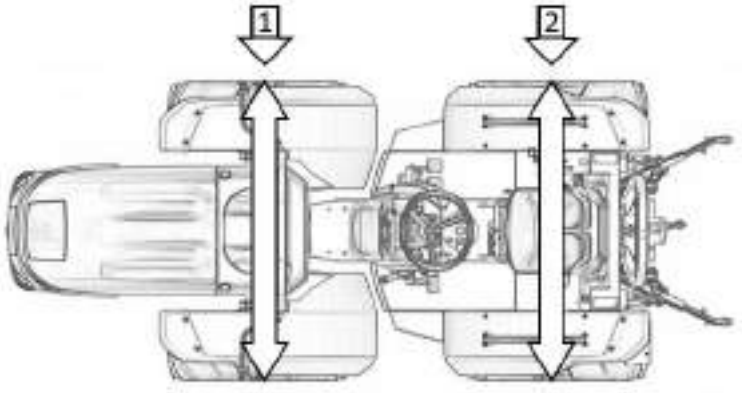


Fig. 247

Tyres	Dimensions (mm)		Pressure (bar)	
	Rim	Width	Front axle (1)	Rear axle (2)
29x12.50-15	10 LB x 15	320	1	1
31x15,50-15 (400/50-15)	13 LN x 15	400	1	1
7.5-16	5.5 x 16	209	2.2	2.2
260/70 R16	W8 x 16	258	2	2
280/70 R16	W9 x 16	282	1.8	1.8
250/80 R18	W7 x 18	250	2	2
280/70 R18	W9 x 18	282	1.8	1.8
300/65 R18	W9 x 18	297	1.6	1.6
260/70 R20	W8 x 20	258	2	2

9.3 UNLADEN WEIGHT OF THE TRACTOR

This table describes the unladen weight of the tractor in running order, without implements or weights, with an empty fuel tank and the weight allowance for the driver (75 kg).

Description	Measurement unit	Tractor with a roll bar	
		Standard version	Wide version
Total weight	kg	1572 - 1882	1652 - 1962
Weight on the front axle	kg	1036 - 1258	1061 - 1283
Weight on the rear axle	kg	536 - 624	591 - 679

Description	Measurement unit	Tractor with a cab	
		Standard version	Wide version
Total weight	kg	1812 - 2122	1892 - 2202
Weight on the front axle	kg	1076 - 1298	1101 - 1323
Weight on the rear axle	kg	736 - 824	791 - 879

9.3.1 MAXIMUM TECHNICALLY PERMISSIBLE MASS OF THE TRACTOR

Description	Measurement unit (kg)
Total weight	2600
Weight on the front axle	1500
Weight on the rear axle	1800

9.3.2 MAXIMUM PERMISSIBLE MASS OF THE TRACTOR

This table describes the weights for the maximum permissible axle loads according to the tyre type.

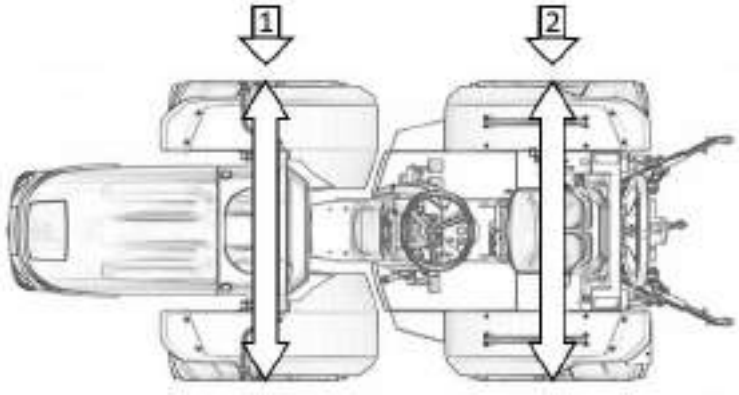


Fig. 248

Tyres	Dimensions (mm)			Tractor axle	Mass (kg)	
	Wheel diameter	Tyre load capacity	Axle spacing		Maximum permissible mass per axle	Maximum total mass
29x12.50-15	755	1180	1180 - 1520	1	1500	2600
				2	1800	2600
31x15,50-15 (400/50-15)	800	1250	1180 - 1520	1	1500	2600
				2	1800	2600
7.5-16	803	675	1057 - 1674	1	1350	2600
				2	1350	2600
260/70 R16	770	870	1163 - 1309	1	1500	2600
				2	1740	2600
280/70 R16	798	940	1112 - 1188	1	1500	2600
				2	1800	2600
250/80 R18	870	945	1050 - 1337	1	1500	2600
				2	1800	2600
280/70 R18	849	1090	1112 - 1468	1	1500	2600
				2	1800	2600
300/65 R18	850	1150	1190	1	1500	2600
				2	1800	2600
260/70 R20	872	/	/	1	1500	2600
				2	1800	2600

9.3.3 MAXIMUM PERMISSIBLE LOAD ON THE CONNECTION POINT

This table describes the masses for the maximum vertical load on the connection point (tow hook) according to the tyre type.

Tyres	Dimensions (mm)		Mass (kg)
	Wheel diameter	Tyre load capacity	Maximum load on the connection point
29x12.50-15	755	1180	740
31x15,50-15 (400/50-15)	800	1250	740
7.5-16	803	675	740
260/70 R16	770	870	740
280/70 R16	798	940	740
250/80 R18	870	945	740
280/70 R18	849	1090	740
300/65 R18	850	1150	740
260/70 R20	872	/	740

IMPORTANT: Before installing a trailed implement, check the table with maximum vertical and tensile loads on the drawbar coupling of the tractor.

WARNING: NEVER install any (tractor mounted or trailed) implements with technical characteristics exceeding the capacity of the tractor!

9.3.4 MAXIMUM TENSILE LOAD ON THE CONNECTION POINT

The tractor can tow implements without brakes (trailers, tanks etc.), implements with an overrun brake or implements with independent mechanical brakes. An implement with independent mechanical brakes
is braked by means of a lever installed on the dedicated bracket in the tractor.

Brake type	Technically permissible mass of the trailed implement (kg)
Trailed implement without independent brakes	1600
Trailed implement with an overrun brake	4500
Trailed implement with an independent (mechanical) brake	4500

9.4 WEIGHTS

This table shows the type and the amount of weights, which can be installed to improve the stability of the tractor and to increase the traction power when using heavy implements.

Weight type	Weight material	Mass (kg)	Installation position	Fastening	Amount of weights	Total amount of weights on the tractor	Maximum total weight on the tractor (kg)
Wheel weight	Grey cast iron (SI)	48	Wheel 29x12.50-15	Rim centre (4 bolts)	1	2 / 4	96 - 192
			Wheel 31x15,50-15 (400/50-15)		1	2 / 4	
		40	Wheel 7.5-16		1	2 / 4	80 - 160
			Wheel 260/70 R16		1	2 / 4	
			Wheel 280/70 R16		1	2 / 4	
			Wheel 250/80 R18		1	2 / 4	
			Wheel 280/70 R18		1	2 / 4	
			Wheel 300/65 R18		1	2 / 4	
			Wheel 260/70 R20		1	2 / 4	

DO NOT install wheel weights on one side only because this would compromise the stability of the tractor. The weights must be installed according to the system laid down in the table.

Installation position	Wheel
Front axle	1 and 2
Rear axle	3 and 4
Both axles	1, 2, 3, 4

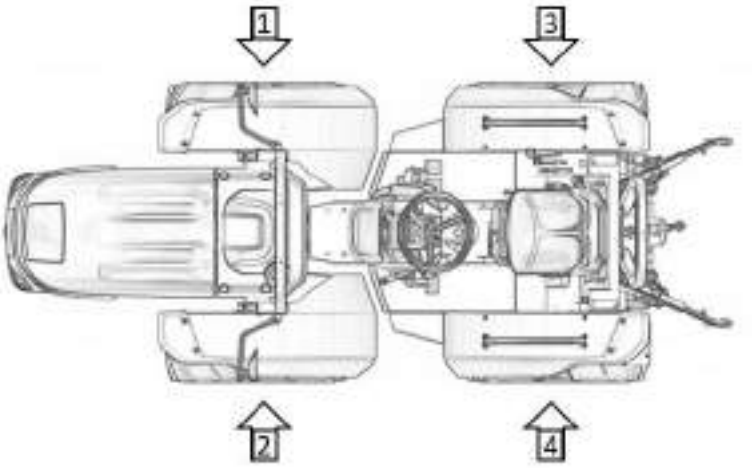


Fig. 249

	**WARNING:** To maintain the stability of the tractor, ALWAYS remove weights when disconnecting the implement. If you leave the weights installed after disconnecting the implement, the tractor may become unstable.
	**WARNING:** Install the same amount of weights on both sides to ensure the tractor is properly balanced!

9.5 NOISE LEVEL

This table provides information on noise level, measured on the tractor under different operating conditions. The values were measured in accordance with testing method, in compliance with the guidelines of the Commission Delegated Regulation (EU) no. 1322/2014 – Annex XIII.

Description	No. of revolutions (rpm)	Measured value (dB / A)	
		Tractor version with the roll bar	Tractor version with the cab
Sound level with the tractor at standstill	1950	76.7	/
Sound level while driving the tractor	1950	77.4	/
Sound level at the driver's area	1950	85.8	/

WARNING: When the tractor is continuously used over an extended period of time, hearing protection must be used to reduce the sound level at the operator's area.

9.5.1 VIBRATIONS ON THE DRIVER

The seats on the tractor are designed in compliance with the requirements of the Category A, Class II/III.
The measured vibration values for seats used in your tractor model are provided in the following table and comply with the Regulation (EU) no. 1322/2014 - Annex XIV and its subsequent amendments.

Seat model / type	Vibrations* (weight)	
	Lightweight driver	Heavyweight driver
COBO SC84-M200	1.24 m/s² (4.07 ft/s²)	1.1 m/s² (3.61 ft/s²)

* Vibrations in relation to weight and acceleration.

9.6 TRACTOR INCLINATION

The table shows the static stability of the tractor with lateral inclination. The tests were conducted without equipment and weights installed, with the tractor stopped diagonally on a sloping surface.

Description				Measured value (α)	
Tractor in inclined position (lateral stability)	Tyres	Tyre width / diameter (mm)	Tractor wheelbase (mm)	Tractor version with the roll bar	Tractor version with the cab
Slipping					/
Rollover					/

WARNING: The tests cannot replicate the conditions in the environment. Therefore, the values in the table are only used as static guidelines and are not considered as a safe limit value for working without the risk of rollover!

9.7 TECHNICAL CHARACTERISTICS

Function	Unit	Description	
Engine		**Kohler KDI 1903 TCR**	
Type		4-stroke, diesel	
Emission standard		Stage 5	
Capacity	cm³	1861	
Engine power	kW / HP	42 / 56	
Maximum torque	Nm / rpm	225 / 1500	
Fuel injection		Direct	
Max. no. of revolutions	rpm.	2600	
Cylinders/aspiration	No./Type	3 / turbo common rail	
Cylinder diameter / travel	mm	88 / 102	
Fuel pump		Kohler ED0065851630	
Cooling		Water	
Fuel tank capacity	L	36	
Transmission		**Permanent four-wheel drive**	
Gearbox		Synchronous, 24 gears (12 forward / 12 reverse)	
Maximum speed	km/h	30	
Main clutch		6-disc clutch in oil bath, hydraulic engagement	
Rear PTO drive shaft		Standard equipment 1 3/8″ (34.9mm) - 6 grooves DIN 9611	
		Electro-hydraulic control	
		5-disc clutch in oil bath	
Rear PTO drive shaft speed	rpm.	540 / 750 /synchronized with gearbox	
Front PTO drive shaft – optional equipment		Optional equipment 1 3/8″ (34.9mm) - 6 grooves DIN 9611	
		Electro-mechanical control	
Front PTO drive shaft speed – optional equipment	rpm.	1000	
Service brake		Brake discs in oil bath, hydraulic engagement	
Parking brake		Mechanical control through the service brake lever	
Front and rear differential lock		Electro-hydraulic control	
Control system		**Hydraulic, front**	
Hydraulic system			
Oil filter insert	µ (mesh)	60	
Hydraulic pump		Steering wheel	Service
Capacity at 2600 rpm.	l/min	11	28
Volume / max. pressure	cm³ / bar	4.35 / 150	11 / 180
Hydraulic brake (trailed implement)		**Optional equipment**	
Maximum pressure at the coupling output	bar	60	

Function	Unit	Description
Rear hydraulic lift mechanism		**Standard equipment**
Type		Three-point linkage
Category		Category I
Control		Hydraulic through control devices
Lifting capacity	kg	1240
Hydraulic connections		At the rear – 4 as standard + 6 optional
Front hydraulic lift mechanism		**Optional equipment**
Type		Three-point linkage
Category		Category I
Control		Hydraulic through control devices
Lifting capacity	kg	450
Hydraulic connections		Front – 2 optional
Electrical system		
Supply voltage	V	12
Alternator	V / A	14 / 100
Electric starter	V / kW	12 / 2.2
Battery	V / Ah	12 / 85
Lamps		
Low beam headlights (LED)	W	15
Front position lights (LED)	W	1.8
Direction indicators	W	21
Rear position lights	W	5
Brake lamp	W	21
License plate lamp	W	1
Working lamps (optional equipment)	W	65
Rotating lamp (optional equipment)	W	55
Interior lamp (optional equipment)	W	10

9.8 PRESCRIBED OILS, LIQUIDS AND LUBRICANTS

This chapter provides the details of all prescribed oils, liquids and lubricants which ensure a long performance life of the tractor in accordance with the technical specifications.
To order these products, contact your Agromehanika d.d dealer.

9.8.1 OILS

	Oils	Quantity (l)
Engine	• SAE 5W 30, (Q8 FT8700) • API CJ-4 Low S.A.P.S. • 10W40 Shell Rimula R6 LM	8.9
Front bridge	• API GL 5 85W90 Texaco	4.5 (standard version)
	• SAE90W Mapetrol Trans Gear EP	5.5 (wide version)
Transmission	• Shell Spirax S4 TX 10W40 • API GL-4 10W30 (Q8 T2200)	25
Lateral reducers (front)	• API GL 5 85W 90 Texaco • SAE90W Mapetrol Trans Gear EP	0.4 (per reducer)
Brakes and clutch	• PENTOSIN CHF 11S	0.5

9.8.2 LIQUIDS

	Liquid	Quantity (l)
Coolant	• ECOLINIA, concentrate G11 (-40°C)	9 (standard version) 10 (cab version)

9.8.3 LUBRICANTS

Lubricant	Description
FUCHS renolit bfx Colour: red	Calcium graphite lubricant □ Grease for bearings exposed to low speed, high loads, mechanical restrictions and poor weather conditions. □ It is also used for steering mechanism suspension, transmission shafts requiring less lubrication. □ Not recommended for bearings, rotating at high revolutions.
INA GKS Colour: black	Mineral based calcium lubricant with colloidal graphite □ Suitable for lubrication of bearings and joints on agricultural and construction machinery exposed to lower speeds and high loads.
INA bapleks T2 Colour: yellow	Barium complex lubricating grease □ Used for lubricating all types of bearings and parts, which come in contact with water.

9.9 PTO DRIVE SHAFT

During work, rotating axes of the universal joint on the tractor and the implement must be aligned as best as possible. It is recommended to avoid angles exceeding 15° to ensure a long service life of the universal joint.

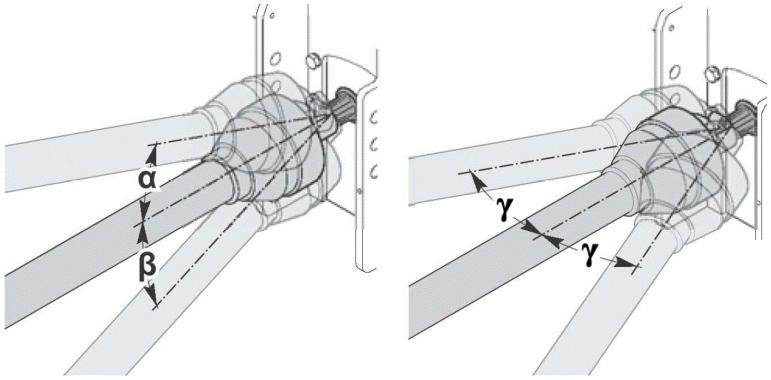


Fig. 250

This table provides allowable deflection angles of the universal joint on the tractor, but you must first account for the maximum allowable deflection angle of the universal joint, as specified by the manufacturer in the operating instructions.

Description	Symbol	Greatest deflection
Vertical movement up	α	45°
Vertical movement down	β	30°
Lateral movement (lift mechanism installed)	γ	35°
Lateral movement (lift mechanism not installed)	γ	55°

9.9.1 PTO DRIVE SHAFT CHARACTERISTICS

Characteristics of the PTO drive shaft for mechanical drive:

- PTO drive shaft with independent mechanical control (driven by the engine), rotating in the clockwise direction;
- Synchronized drive shaft (driven by the gearbox), rotating in a counter-clockwise direction when a forward gear is selected and in a clockwise direction in reverse gear;
- Spline shaft ASAE 1" 3/8.

9.9.2 TABLE OF THE PTO DRIVE SHAFT SPEEDS

Description of designation in the table given below.

- N – forward driving of the tractor
- R – driving in reverse
- Z – the “Rabbit” gear, fast speed level activated
- Ž – the “Turtle” gear, intermediate speed level activated
- P – the “Snail” gear, slow speed level activated
- 1,2,3,4 – speed levels; level 1 is the slowest, level 4 is the fastest

9.9.2.1 PTO DRIVE SHAFT DRIVEN BY THE ENGINE – SWITCHING THE LEVER (540)

Gear ratio	Engine revolutions								
	1000	1200	1400	1600	1800	2000	2200	2400	2600
	PTO drive shaft revolutions								
4.43	225.7	270.9	316	361.2	406.3	451.5	496.6	541.8	586.9

9.9.2.2 PTO DRIVE SHAFT DRIVEN BY THE ENGINE – SWITCHING THE LEVER (750)

Gear ratio	Engine revolutions								
	1000	1200	1400	1600	1800	2000	2200	2400	2600
	PTO drive shaft revolutions								
3.19	313.5	376.2	438.9	501.6	564.3	627	689.7	752.4	815

9.9.2.3 PTO DRIVE SHAFT DRIVEN BY THE GEARBOX – SWITCHING THE LEVER (540)

- Reading example: N – 1 – Z (forward driving – speed level 1 – “Rabbit” gear)

Gear	Gear ratio	Engine revolutions								
		1000	1200	1400	1600	1800	2000	2200	2400	2600
		PTO drive shaft revolutions								
		Forward driving								
N-1-Z	5.50	182.0	218.4	254.8	291.1	327.5	363.9	400.3	436.7	473.1
N-1-Ž	21.75	46.0	55.2	64.4	73.6	82.7	91.9	101.1	110.3	119.5
N-1-P	81.40	12.3	14.7	17.2	19.7	22.1	24.6	27.0	29.5	31.9
N-2-Z	3.66	272.9	327.5	382.1	436.7	491.3	545.9	600.5	655.1	709.7
N-2-Ž	11.70	85.5	102.6	119.7	136.8	153.9	171.0	188.1	205.2	222.3
N-2-P	46.31	21.6	25.9	30.2	34.6	38.9	43.2	47.5	51.8	56.1
N-3-Z	2.50	400.3	480.4	560.5	640.5	720.6	800.6	880.7	960.8	1040.8
N-3-Ž	9.89	101.1	121.4	141.6	161.8	182.0	202.3	222.5	242.7	263.0
N-3-P	37.00	27.0	32.4	37.8	43.2	48.6	54.1	59.5	64.9	70.3
N-4-Z	1.86	537.8	645.4	752.9	860.5	968.1	1075.6	1183.2	1290.7	1398.3
N-4-Ž	7.36	135.9	163.0	190.2	217.4	244.6	271.7	298.9	326.1	353.3
N-4-P	27.54	36.3	43.6	50.8	58.1	65.4	72.6	79.9	87.1	94.4
		Driving in reverse								
R-1-Z	5.01	199.5	239.4	279.2	319.1	359.0	398.9	438.8	478.7	518.6
R-1-Ž	19.85	50.4	60.5	70.5	80.6	90.7	100.8	110.9	120.9	131.0
R-1-P	74.26	13.5	16.2	18.9	21.5	24.2	26.9	29.6	32.3	35.0
R-2-Z	3.18	314.2	377.0	439.8	502.6	565.5	628.3	691.1	754.0	816.8
R-2-Ž	12.60	79.4	95.2	111.1	127.0	142.9	158.7	174.6	190.5	206.3
R-2-P	47.15	21.2	25.5	29.7	33.9	38.2	42.4	46.7	50.9	55.1
R-3-Z	2.28	438.8	526.6	614.3	702.1	789.9	877.6	965.4	1053.2	1140.9
R-3-Ž	9.02	110.9	133.0	155.2	177.4	199.5	221.7	243.9	266.1	288.2
R-3-P	33.76	29.6	35.6	41.5	47.4	53.3	59.3	65.2	71.1	77.0
R-4-Z	1.70	589.5	707.4	825.3	943.2	1061.1	1179.0	1296.9	1414.9	1532.8
R-4-Ž	6.71	148.9	178.7	208.5	238.3	268.1	297.9	327.7	357.4	387.2
R-4-P	25.13	39.8	47.8	55.7	63.7	71.6	79.6	87.6	95.5	103.5

9.9.2.4 PTO DRIVE SHAFT DRIVEN BY THE GEARBOX – SWITCHING THE LEVER (750)

Gear	Gear ratio	Engine revolutions								
		1000	1200	1400	1600	1800	2000	2200	2400	2600
		PTO drive shaft revolutions								
		Forward driving								
N-1-Z	3.96	252.7	303.3	353.8	404.4	454.9	505.5	556.0	606.6	657.1
N-1-Ž	15.66	63.9	76.6	89.4	102.2	114.9	127.7	140.5	153.2	166.0
N-1-P	58.61	17.1	20.5	23.9	27.3	30.7	34.1	37.5	41.0	44.4
N-2-Z	2.64	379.1	454.9	530.8	606.6	682.4	758.2	834.1	909.9	985.7
N-2-Ž	8.42	118.7	142.5	166.2	190.0	213.7	237.5	261.2	285.0	308.7
N-2-P	33.34	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0	78.0
N-3-Z	1.80	556.0	667.2	778.4	889.7	1000.9	1112.1	1223.3	1334.5	1445.7
N-3-Ž	7.12	140.5	168.6	196.7	224.8	252.8	280.9	309.0	337.1	365.2
N-3-P	26.64	37.5	45.0	52.6	60.1	67.6	75.1	82.6	90.1	97.6
N-4-Z	1.34	747.0	896.4	1045.8	1195.2	1344.6	1494.0	1643.4	1792.8	1942.2
N-4-Ž	5.30	188.7	226.5	264.2	301.9	339.7	377.4	415.2	452.9	490.7
N-4-P	19.83	50.4	60.5	70.6	80.7	90.8	100.9	110.9	121.0	131.1
		Driving in reverse								
R-1-Z	3.61	277.0	332.5	387.9	443.3	498.7	554.1	609.5	664.9	720.3
R-1-Ž	14.29	70.0	84.0	98.0	112.0	126.0	140.0	154.0	168.0	182.0
R-1-P	53.47	18.7	22.4	26.2	29.9	33.7	37.4	41.1	44.9	48.6
R-2-Z	2.29	436.3	523.6	610.9	698.2	785.4	872.7	960.0	1047.2	1134.5
R-2-Ž	9.07	110.2	132.3	154.3	176.4	198.4	220.5	242.5	264.6	286.6
R-2-P	33.95	29.5	35.3	41.2	47.1	53.0	58.9	64.8	70.7	76.6
R-3-Z	1.64	609.5	731.4	853.3	975.2	1097.1	1219.0	1340.9	1462.8	1584.7
R-3-Ž	6.49	154.0	184.8	215.6	246.4	277.2	308.0	338.8	369.5	400.3
R-3-P	24.30	41.1	49.4	57.6	65.8	74.1	82.3	90.5	98.8	107.0
R-4-Z	1.22	818.8	982.6	1146.4	1310.1	1473.9	1637.6	1801.4	1965.2	2128.9
R-4-Ž	4.83	206.9	248.2	289.6	331.0	372.3	413.7	455.1	496.5	537.8
R-4-P	18.09	55.3	66.3	77.4	88.4	99.5	110.6	121.6	132.7	143.7

The speed of the universal joint can also be calculated for engine revolutions not provided in the table using the following formula:

$$PTO\ SHAFT\ REVOLUTIONS = \frac{ENGINE\ SPEED}{GEAR\ RATIO}$$

9.10 TRACTOR SPEED

Tractor speed with the engine operating at the maximum torque and **2600 revolutions per minute**.

Tyre	Diameter (mm)	Gear	FORWARD speed (km/h)			REVERSE speed (km/h)		
			Z	Ž	P	Z	Ž	P
29x12.50-15	755	1	8.0	2.0	0.5	8.7	2.2	0.6
		2	11.9	3.7	0.9	13.7	3.5	0.9
		3	17.5	4.4	1.2	19.2	4.8	1.3
		4	23.5	5.9	1.6	25.8	6.5	1.7
31x15,50-15 (400/50-15)	800	1	8.4	2.1	0.6	9.2	2.3	0.6
		2	12.6	4.0	1.0	14.5	3.7	1.0
		3	18.5	4.7	1.3	20.3	5.1	1.4
		4	24.9	6.3	1.7	27.3	6.9	1.8
7.5-16	803	1	8.5	2.1	0.6	9.3	2.3	0.6
		2	12.7	4.0	1.0	14.6	3.7	1.0
		3	18.6	4.7	1.3	20.4	5.2	1.4
		4	25.0	6.3	1.7	27.4	6.9	1.8
260/70 R16	770	1	8.1	2.0	0.5	8.9	2.2	0.6
		2	12.2	3.8	1.0	14.0	3.5	0.9
		3	17.8	4.5	1.2	19.6	4.9	1.3
		4	24.0	6.1	1.6	26.3	6.6	1.8
280/70 R16	798	1	8.4	2.1	0.6	9.2	2.3	0.6
		2	12.6	3.9	1.0	14.5	3.7	1.0
		3	18.5	4.7	1.2	20.3	5.1	1.4
		4	24.8	6.3	1.7	27.2	6.9	1.8
250/80 R18	870	1	9.2	2.3	0.6	10.0	2.5	0.7
		2	13.7	4.3	1.1	15.8	4.0	1.1
		3	20.2	5.1	1.4	22.1	5.6	1.5
		4	27.1	6.8	1.8	29.7	7.5	2.0
280/70 R18	849	1	8.9	2.3	0.6	9.8	2.5	0.7
		2	13.4	4.2	1.1	15.4	3.9	1.0
		3	19.7	5.0	1.3	21.6	5.4	1.5
		4	26.4	6.7	1.8	29.0	7.3	2.0
300/65 R18	850	1	9.0	2.3	0.6	9.8	2.5	0.7
		2	13.4	4.2	1.1	15.5	3.9	1.0
		3	19.7	5.0	1.3	21.6	5.5	1.5
		4	26.5	6.7	1.8	29.0	7.3	2.0
260/70 R20	872	1	9.2	2.3	0.6	10.1	2.5	0.7
		2	13.8	4.3	1.1	15.9	4.0	1.1
		3	20.2	5.1	1.4	22.1	5.6	1.5
		4	27.1	6.9	1.8	29.8	7.5	2.0

9.11 ELECTRICAL CONNECTION OF THE TRACTOR

9.11.1 WIRING DIAGRAM OF FENDERS

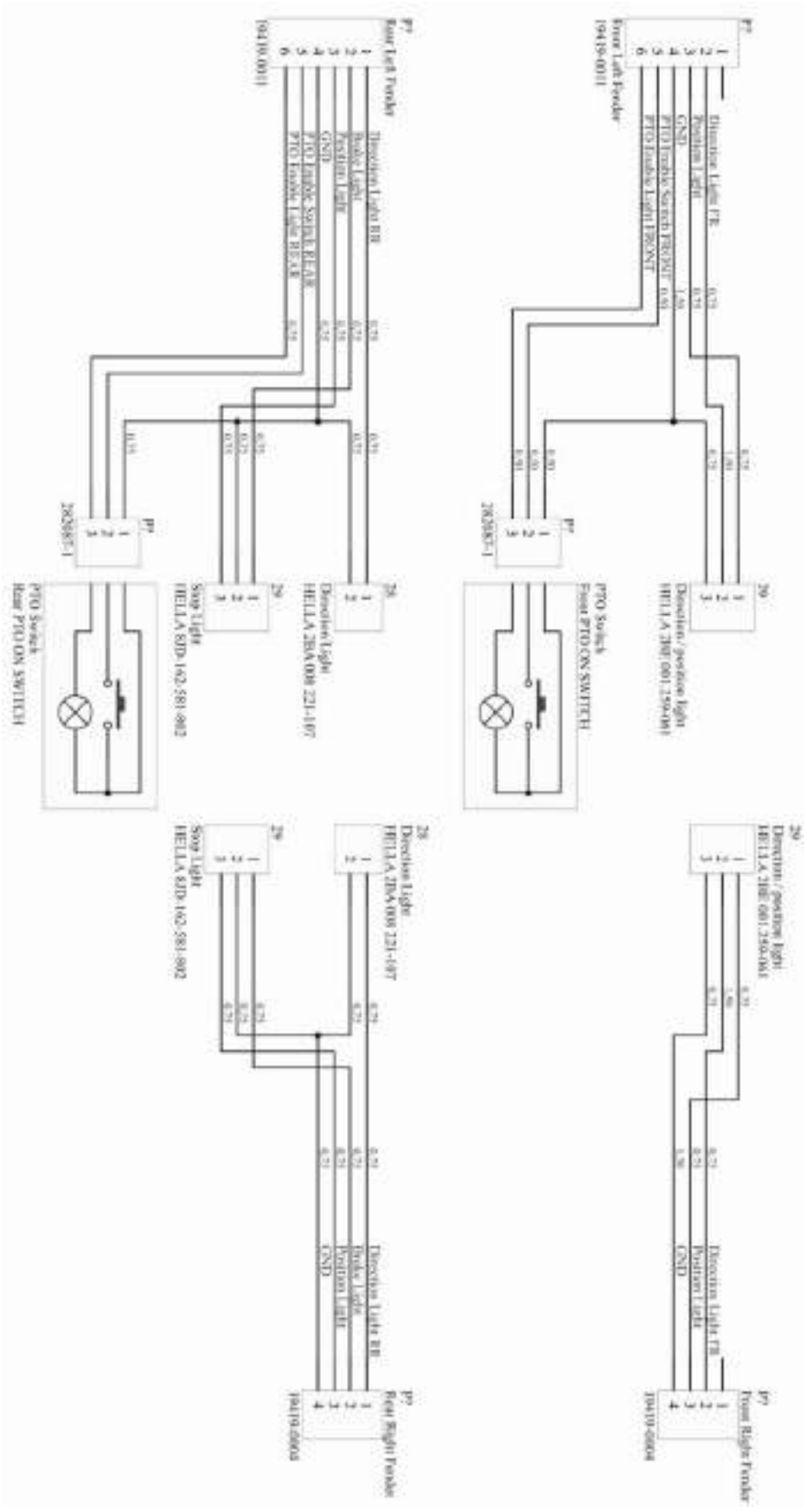


Fig. 251

9.11.2 WIRING DIAGRAM OF THE ENGINE

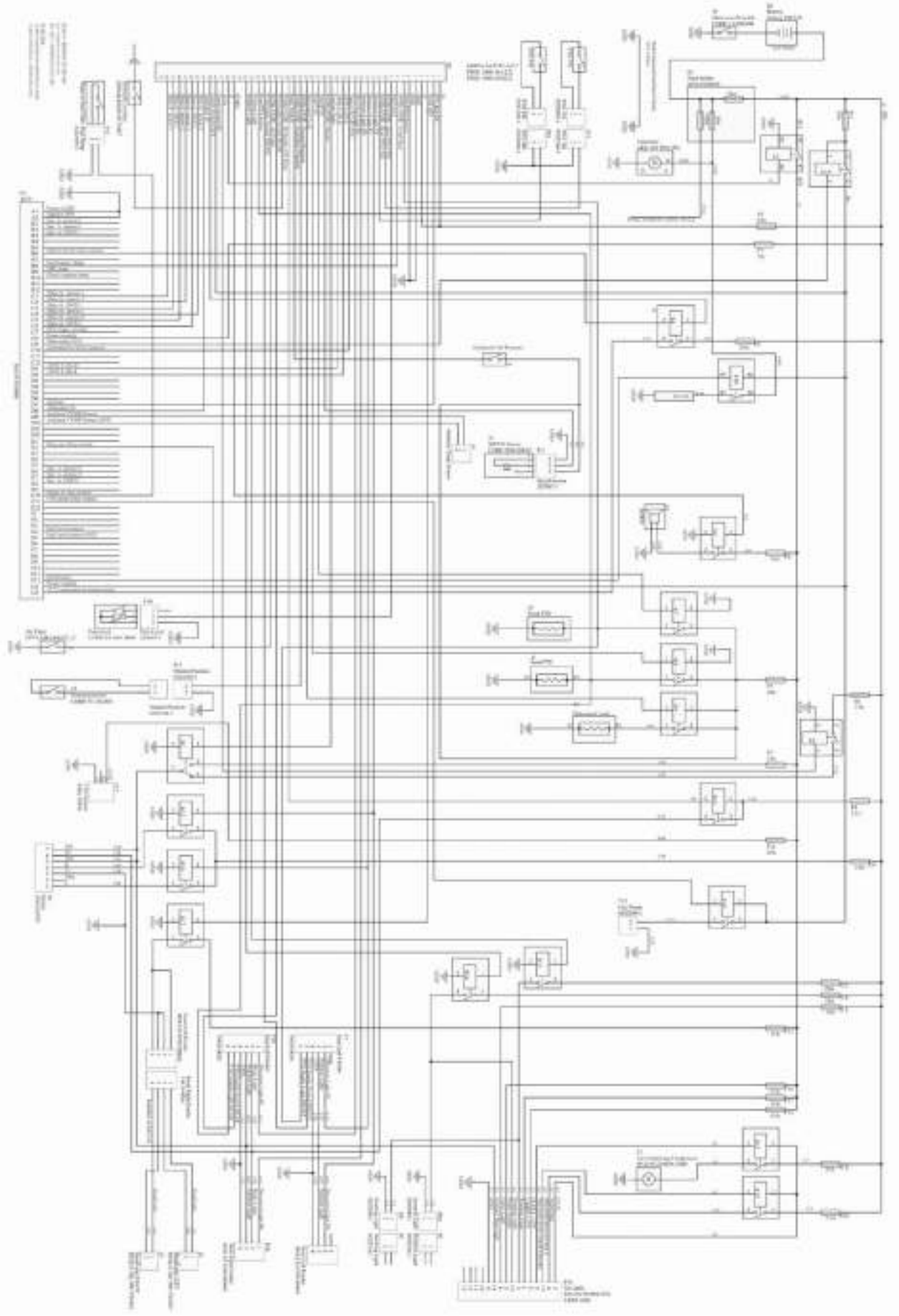


Fig. 252

9.11.3 WIRING DIAGRAM OF THE DASHBOARD

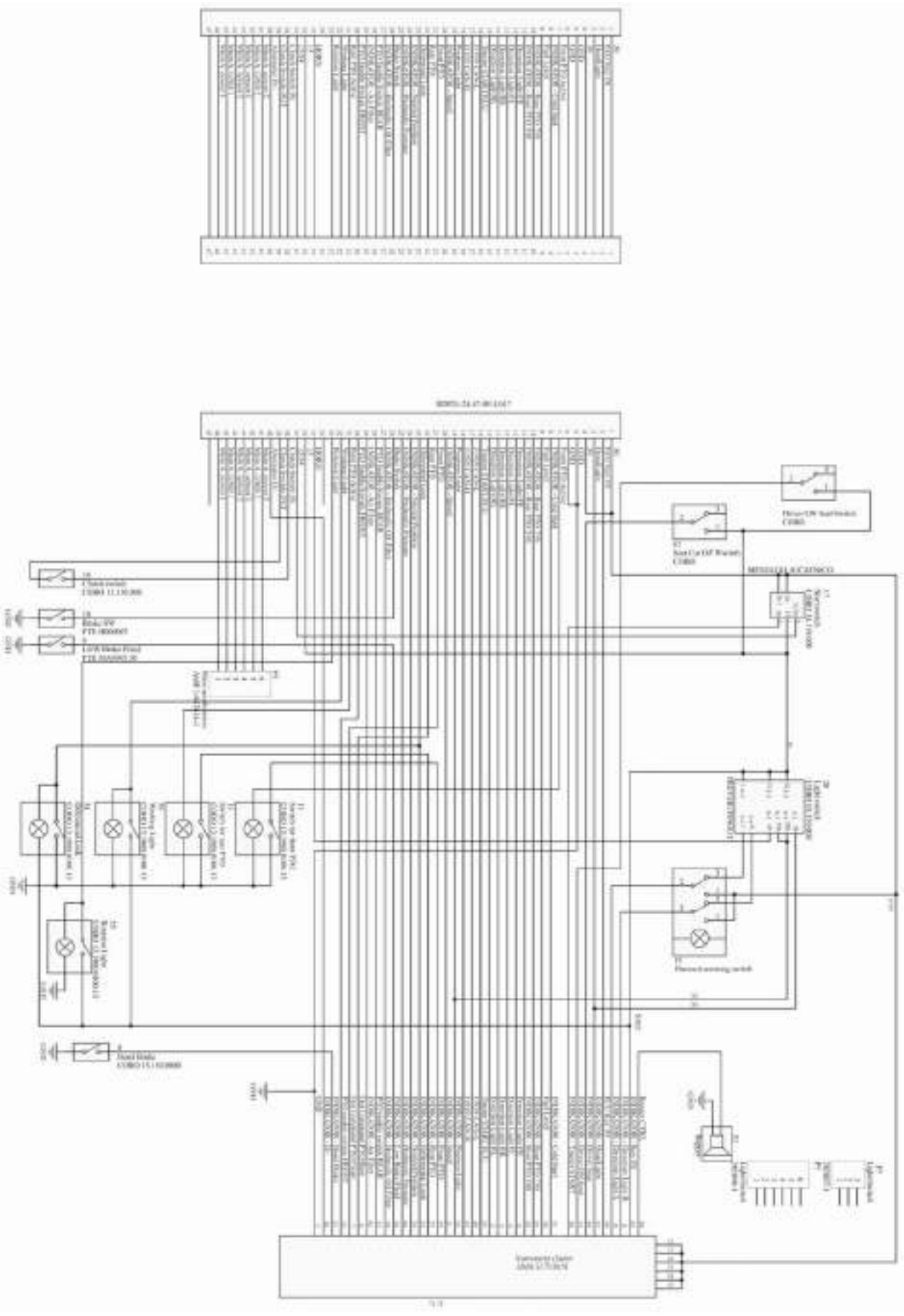


Fig. 253

9.11.4 WIRING DIAGRAM OF THE CAB

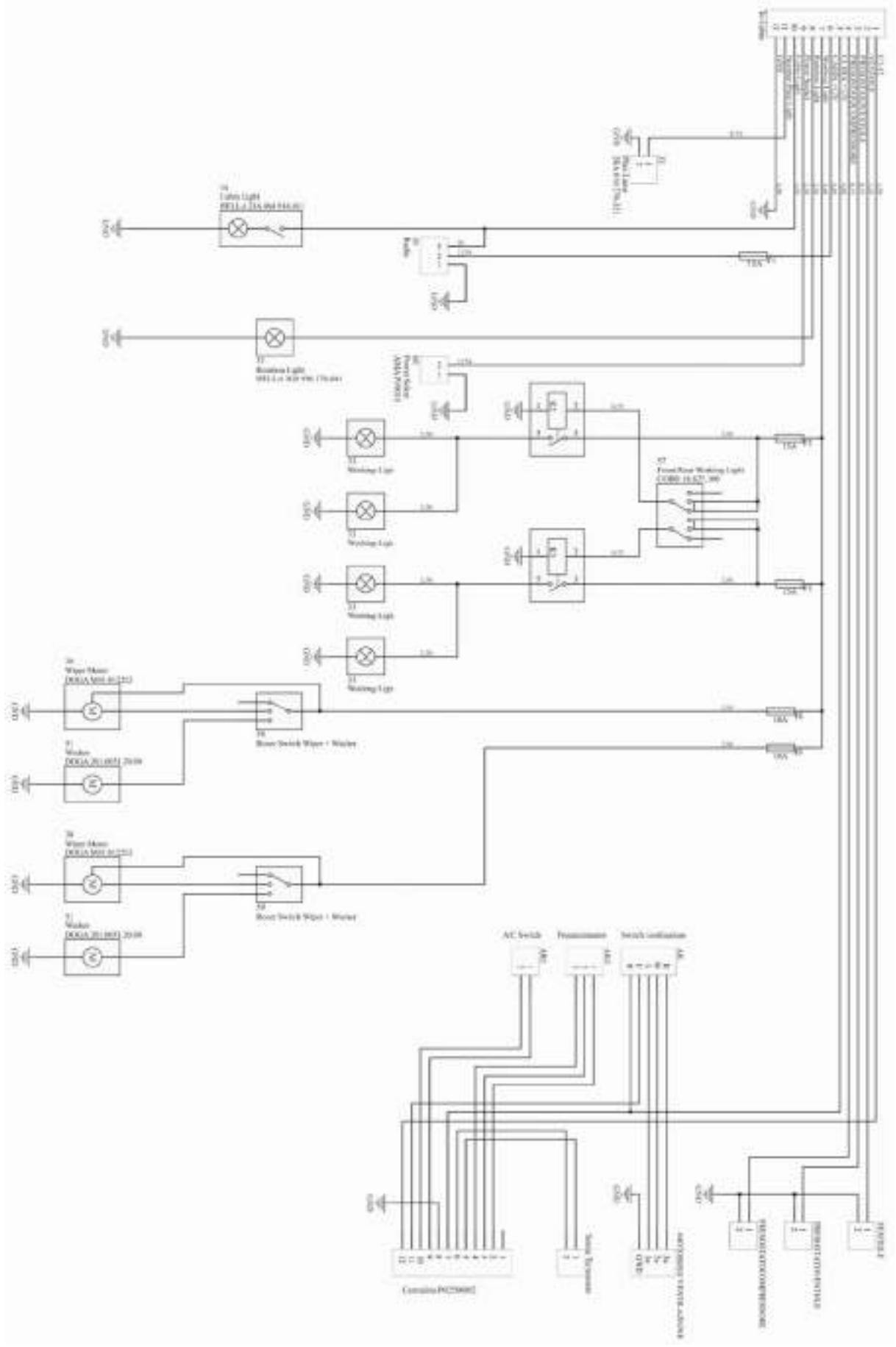


Fig. 254

10 CONVERSIONS OF TRACTOR LOADS

The total weight of the tractor with implements attached to the front or rear hydraulic system must not exceed the maximum permissible total weight, the maximum axle load and the tyre load capacity.

At least 20 % of the total tractor weight must always be distributed on the front axle.

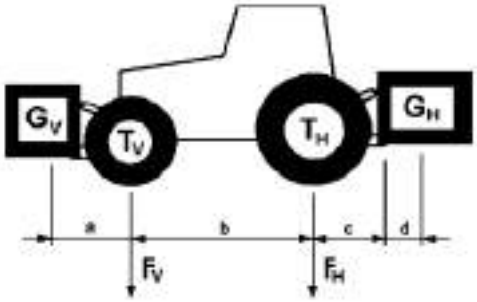


Fig. 255

The following information is required to make the calculation:

T_L - [kg] unladen weight of the tractor

T_V - [kg] the proportion of unladen weight of the tractor on the front axle

T_H - [kg] the proportion of unladen weight of the tractor on the rear axle

G_H - [kg] total weight of the rear implement / rear weight

G_V - [kg] total weight of the front implement / front weight

a - [mm] distance between the barycentre of the front implement / weight and the front axle

b - [mm] wheelbase of the tractor

c - [mm] distance between the rear axle and the axle of the rear ball on the lift lever

d - [mm] distance between the rear ball axle on the lift lever and the rear implement / weight

Rear implement of a combination of rear and front implement

1) Calculation of the minimum required load on the front axle G_{Vmin}

$$G_{V\,min} = \frac{G_H \cdot (c + d) - T_V \cdot b + 0{,}2 \cdot T_L \cdot b}{a + b}$$

Front implement

2) Calculation of the minimum required load on the rear axle G_{Hmin}

$$G_{H\,min} = \frac{G_V \cdot a - T_H \cdot b + 0{,}45 \cdot T_L \cdot b}{b + c + d}$$

3) Calculation of the actual load on the front axle $T_{V\,tot}$

(If the weight of the front implement (G_V) installed on the tractor does not provide the required load on the front axle (G_{Vmin}), the front implement must be ballasted to achieve the minimum load on the front axle!)

$$T_{V\,tot} = \frac{G_V \cdot (a + b) - T_V \cdot b - G_H \cdot (c + d)}{b}$$

4) Calculation of the actual total weight G_{tot}

(If the weight of the rear implement (G_H) installed on the tractor does not provide the required load on the rear axle (G_{Hmin}), the rear implement must be ballasted to achieve the minimum load on the rear axle!)

$$G_{tot} = G_V + T_L + G_H$$

5) Calculation of the actual load on the rear axle T_{tot}

$$T_{tot} = G_{tot} - T_{V\,tot}$$

NOTES

Agromehanika
SINCE 1968

Hrastje 52A,
4000 Kranj,
Slovenia
T: 04 2371300
F: 04 2371303
info@agromehanika.si
www.agromehanika.si

When ordering spare parts, always provide the following information:
the type and serial number of the tractor.
This information is printed on the identification plate on the tractor.

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GUARANTEES THAT THE TRACTOR WILL OPERATE PROPERLY IF ORIGINAL SPARE PARTS ARE USED

We are constantly working to improve our products. Therefore, we appreciate your understanding about reserving the right to modify the design, the equipment and technical characteristics of the tractor without prior notice.