5400 series tractors

MF 5425
MF 5435
MF 5445
MF 5455
MF 5460
MF 5465
MF 5470
MF 5475
MF 5480

AGCO S.A. - Beauvais - France - RC B562 104 539
MASSEY FERGUSON is a worldwide brand of AGCO

Original Operator's Manual

No. 4346732M2
Issue 1
5400 - EAME
English

Foreword

We would like to welcome you to the ever-growing number of people who own a Massey Ferguson tractor; people who appreciate quality. We are proud of every tractor that leaves our factories, each being technically advanced and of a high quality.

This Operator's Manual contains the specifications for your new tractor. Please ensure that all operators read the instructions and follow them carefully. The pages that follow contain vital information on your tractor; please read them carefully.

Your Massey Ferguson dealer will guarantee you quality servicing and will provide you with all the assistance you need. When it comes to servicing, remember that your dealer knows your tractor best and that he wants you to be completely satisfied.

Please leave this Operator's Manual in the tractor if resold. The subsequent owner will need the information it contains.

All information and specifications in this manual are up to date at the time of publication. However, our on-going policy to improve our products obliges us to reserve the right to make alterations at any time without notice.

Please note that this manual relates to all models and refers to both standard and optional equipment. You may therefore find details relating to equipment that is not fitted on your tractor.

This Operator's Manual complies with Directive 2010/52 EC.

Massey Ferguson, Beauvais

5400 series tractors

1. Tractor identification

1.1 Locating serial numbers

1.1.1 Locating serial numbers

T006946

IMPORTANT: *Please quote the serial number of your tractor in all correspondence with your dealer or agent.*

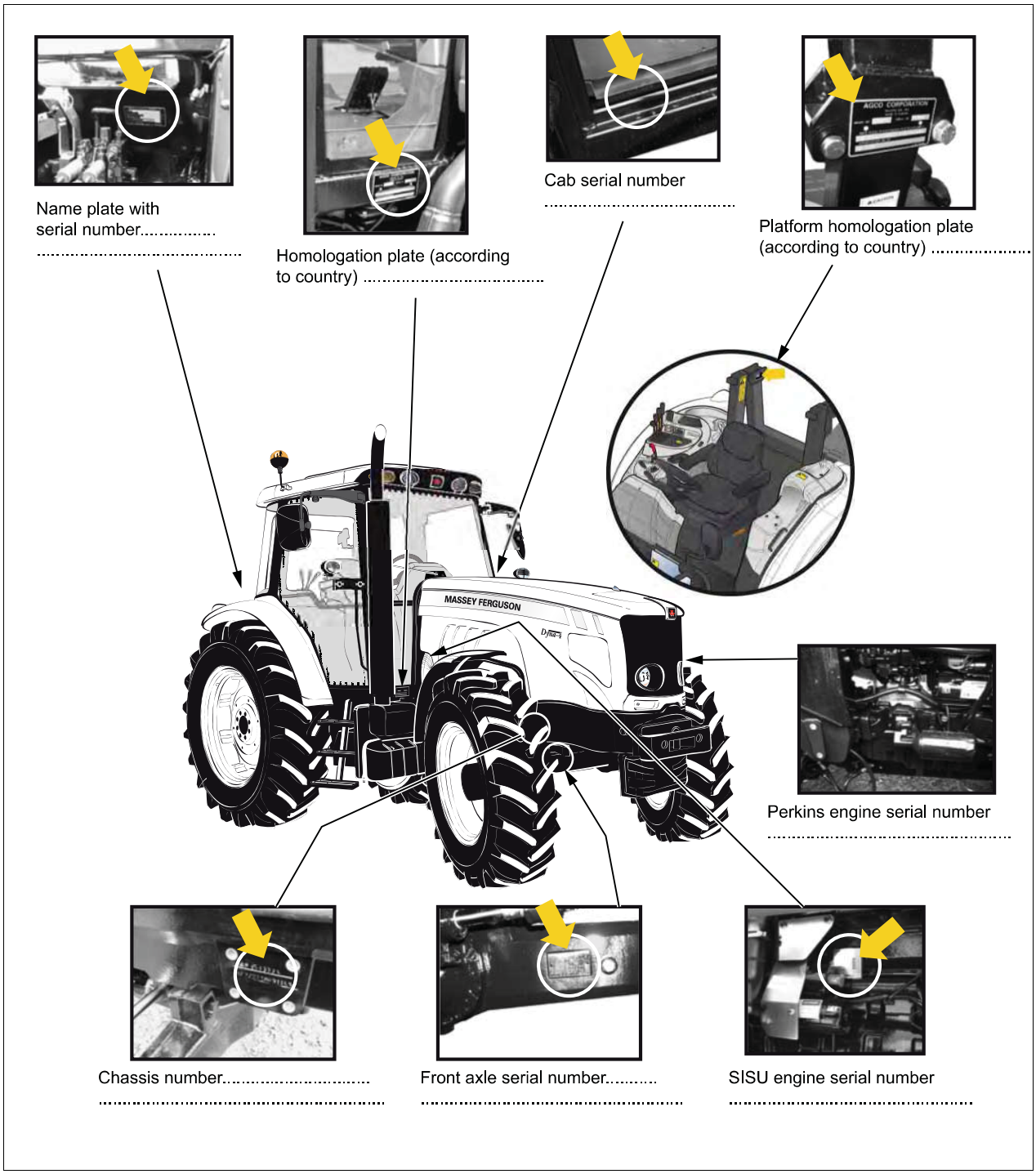


Fig. 1.

I017767

1

1.2 Your tractor identification details

1.2.1 Your tractor identification details

T000866

Model: _____

Serial number: _____

Engine serial number: _____

Owner's name: _____

Street: _____

Postcode: _____

Town: _____

County: _____

Country: _____

Dealer code: _____

Tractor received from (tick one of the following):

☐ Factory ☐ Other dealer (transfer)

Notes: _____

2. Safety instructions and safety points - Warranty

2

2.1 Introduction

2.1.1 Introduction - Safety instructions

T000867

Operator's Manual

NOTE: *This Operator's Manual is widely published and distributed and the availability of the attachments indicated, whether fitted to the basic tractor or as an accessory, may vary depending on the country or region in which the tractor is used. To find out which attachments are available in a given region, contact a Massey Ferguson dealer.*

The purpose of this manual is to enable the owner and the operator to operate the tractor appropriately under normal conditions of use. Providing they follow the instructions carefully, the tractor will give many years of service in the Massey Ferguson tradition.
Use for any other activity (particularly forestry work) is considered to be contrary to the intended use.
The commissioning of equipment by the Massey Ferguson dealer on the user's premises enables the dealer to ensure that these operating and service instructions are properly understood. Always consult the Massey Ferguson dealer if there is any part of this manual that you do not understand. It is important that these instructions are understood and followed.
This manual does not cover all operation and safety instructions relevant to the implements and accessories that may be fitted at the time of tractor delivery or later. It is essential that operators use and understand the Operator's Manuals relating to these implements and accessories.

IMPORTANT: *This manual must always be kept with the tractor. For extra copies, contact your Massey Ferguson dealer.*

This chapter in the Operator's Manual highlights certain basic safety-related situations that may be encountered during normal operation and servicing of the tractor and provides the information needed to handle these situations.
This chapter supplements any safety instructions given in other chapters of this manual.
It may be necessary to take additional precautions, depending on the implements and accessories used and the working conditions on-site or in the service area. Massey Ferguson can under no circumstances exercise direct control over the commissioning, operation, inspection, lubrication or servicing of the tractor. It is therefore YOUR responsibility to take suitable safety precautions in such areas.

WARNING:
It is your responsibility to read and understand the instructions that appear in this chapter before using the tractor. They must then be strictly adhered to throughout the working day.

Servicing, spare parts, accessories and conditions of use

Daily servicing should become a routine, and a logbook of operating hours should be kept.
When spare parts are required, it is important to use only genuine Massey Ferguson parts. Massey Ferguson dealers supply genuine parts and can offer advice concerning their fitting and use. The use of lower quality parts may cause serious damage. Customers are advised only to purchase their spare parts from an approved Massey Ferguson dealer. In the same way, you must only use accessories specifically adapted to your tractor.
Owing to the considerable variation in operating conditions, it is not possible for the manufacturer to formulate complete or absolute assertions in its publications concerning the performance or operating methods of its machines or to accept liability for any loss or damage which may result from such assertions or possible errors or omissions.
If the tractor is to be used in abnormal conditions which could cause damage (use in deep water or in paddy fields for instance), you should consult your Massey Ferguson dealer to obtain special instructions to prevent the warranty from becoming void.
These tractors are designed only for usual farming activities (intended use). Use for any other activity (particularly forestry work) is considered to be contrary to the intended use.
Strict compliance with the repairs, service and operating conditions as specified by Massey Ferguson is also an essential component of the intended use.

IMPORTANT: *Massey Ferguson accepts no responsibility in the event of damage to equipment or personal injury resulting from improper use.*

The tractor must only be used, serviced and repaired by personnel who have full knowledge of its specific features and who are aware of the applicable safety measures (prevention of accidents).

Customers are strongly advised to contact a Massey Ferguson dealer in the event of after-sales problems and for any adjustments which may be necessary.

2.2 Safety — Symbols and terms

2.2.1 Safety — Symbols and terms

T000869

Signal

This safety alert symbol means CAUTION! BE ALERT! YOUR SAFETY DEPENDS ON IT!
The safety alert symbol identifies important safety notices on machines, safety signs, in instruction books or elsewhere. When you see this symbol, be alert to the risk of injury or death. Follow the instructions in the safety notice.

SAFETY is paramount! Why?
- ACCIDENTS DISABLE AND KILL
- ACCIDENTS ARE COSTLY
- ACCIDENTS CAN BE AVOIDED

Terms

The terms DANGER, WARNING and CAUTION are used with the safety alert symbol. It is essential to learn how to recognise these safety messages and to follow the recommended safety measures and instructions.

DANGER:
indicates an imminently hazardous situation which, if not avoided, will result in DEATH or VERY SERIOUS INJURY.

WARNING:
indicates a potentially hazardous situation which, if not avoided, could result in DEATH or SERIOUS INJURY.

CAUTION:
indicates a potentially hazardous situation which, if not avoided, may result in MINOR or MODERATE INJURY.

The terms IMPORTANT and NOTE are not directly related to personal safety, but are used to provide additional information and advice on the operation or maintenance of equipment.

IMPORTANT: *identifies specific instructions or procedures which, if not strictly applied, could damage or destroy the tractor, its equipment or the surrounding area.*

NOTE: *identifies points of particular interest for the most effective and suitable operation or repair.*

2.3 Safety decals and instructions

2.3.1 Checking and replacing the safety decals and instructions

T000871

WARNING:

Never remove or obscure the safety decals and instructions.

Replace any safety decals and instructions that are illegible or missing. Replacement decals are available from the dealer in the event of loss or damage. If a second-hand tractor has been purchased, check that all of the safety decals and instructions are correct, legible and in the correct position. To do this, refer to the section on the presentation and location of these decals.

2.3.2 Presentation and location of the safety decals and instructions

T001270

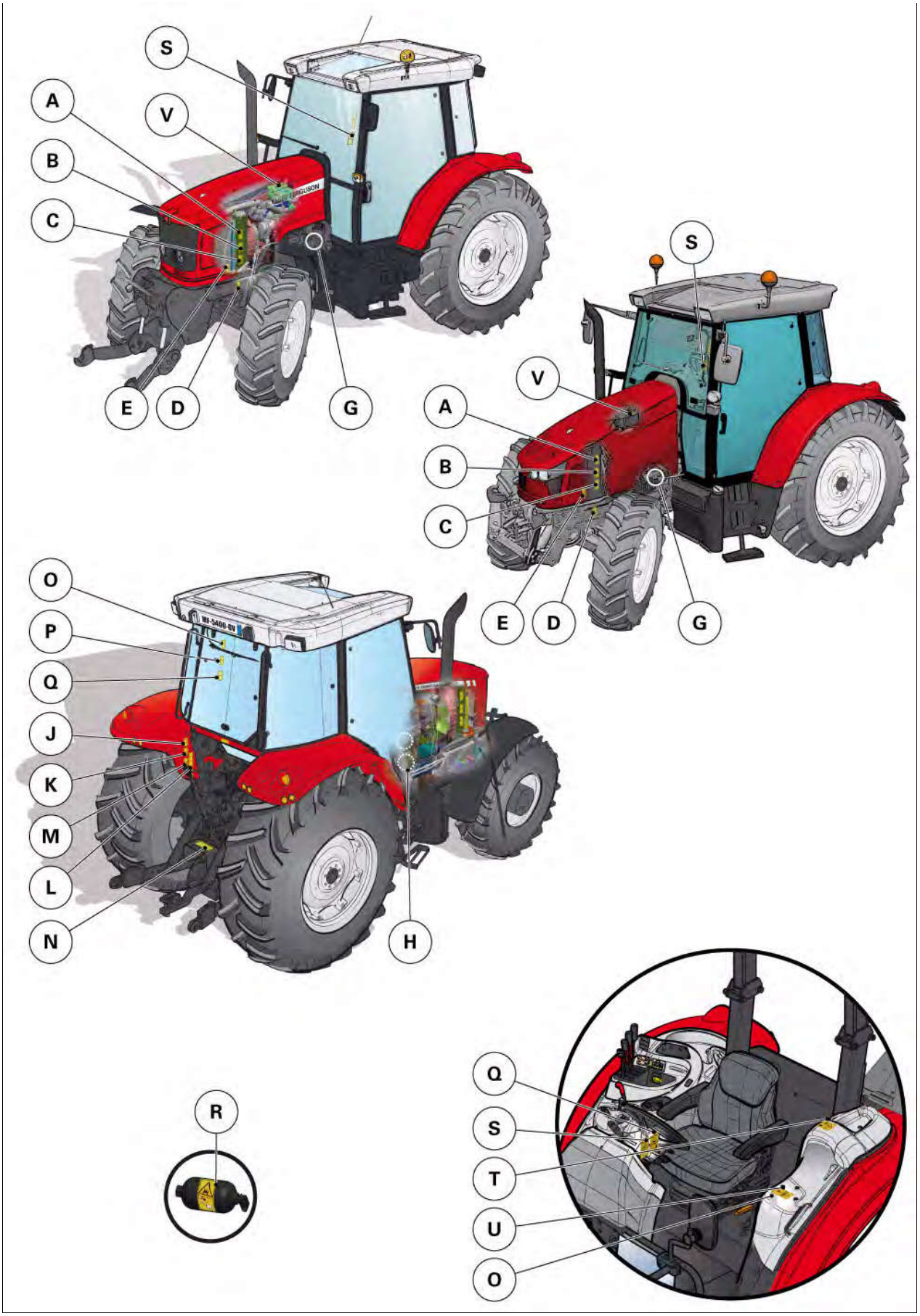
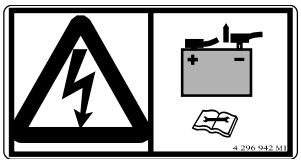
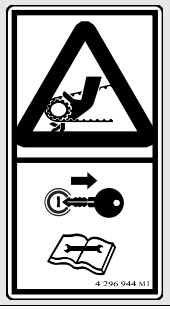
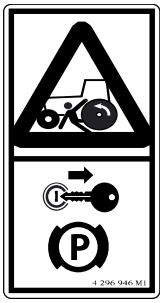
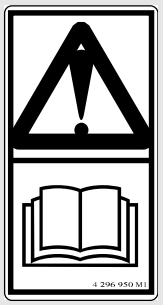
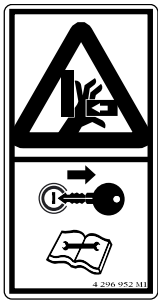
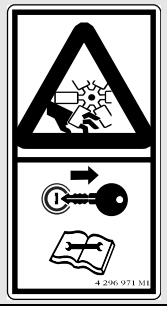
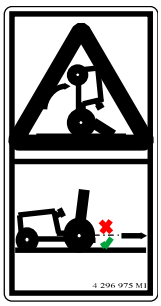
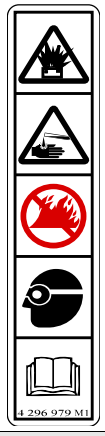


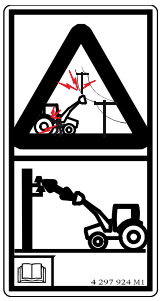
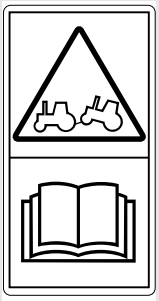
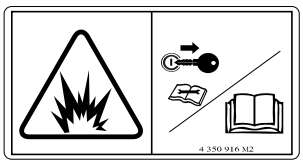
Fig. 1. I018463

	– **4296942M1** ((H) *fig. 1*) – **WARNING:** Electric shock hazard – risk of personal injury and component damage. Remove negative (ground) cable from battery before removing starter solenoid cover and before servicing electrical system.
	– **4296944M1** ((A) *fig. 1*) – **WARNING:** Entanglement hazard in belt drives. Keep hands clear of rotating parts and belts while engine is running. Switch off the ignition and remove the key before working on the tractor.
	– **4296946M1** ((O) *fig. 1*) – **WARNING:** Runaway machine and runover hazards. Switch off the ignition, remove the ignition key and engage the Park-Lock before leaving the tractor.
	– **4296950M1** ((Q) *fig. 1*) – **WARNING:** To avoid personal injury, read the Operator's Manual for safety information and operating instructions before operating the tractor.
	– **4296952M1** ((D) *fig. 1*) – **WARNING:** Pinch point hazard Keep clear of axle suspension system when engine is running. Switch off the ignition and remove the key before working on the tractor.
	– **4296954M1** ((J) *fig. 1*) – **WARNING:** Driveline separation hazard, which may result in personal injury and machine damage. Make sure drawbar / 3-point hitch is in correct position and check length of PTO driveshaft when attaching PTO driven equipment. See Operating section of manual for detailed information.

2

	– **4296958M1** ((P) *fig. 1*) – **WARNING:** Risk of being crushed under tractor in the event of a roll-over. Keep seat belt fastened snugly when operating, do not jump if tractor starts to tip.
	– **4296960M1** ((U) *fig. 1*) – **WARNING:** Crushing hazard if the tractor overturns Wear the seat belt when using the instructor seat Read the Operator's Manual for more information: – The instructor seat is not intended for use by children. – The instructor seat must not be used to transport passengers. – The instructor seat must only be used by service personnel or for training purposes.
	– **4296962M1** ((V) *fig. 1*) – **DANGER:** Falling and crushing hazard. Do not sit on the tractor fenders.
	– **4296967M1** ((C) *fig. 1*) – **WARNING:** Burn hazard – hot surfaces. Keep away from hot engine components when engine has been running. Shut off engine, remove key and wait for system to cool before performing maintenance or repair work.
	– **4296969M1** ((M) *fig. 1*) – **WARNING**: Crushing hazard between tractor and implement. Stand outside of tractor tire when using external controls for 3-point hitch. Do not stand between tractor and implement.
	– **4296971M1** ((B) *fig. 1*) – **WARNING:** Shearing hazard – engine fan. Keep your hands away from the fan and the belts when the engine is running. Shut off engine and remove key before performing maintenance or repair work.

	– **4296975M1** ((K) *fig. 1*) – **DANGER:** Rear overturn hazard, which may result in personal injury or death. Pull only from approved drawbar or lower links of 3-point hitch at horizontal position or below. Never pull from above rear axle centerline.
	– **4296977M1** ((L) *fig. 1*) – **DANGER:** Entanglement hazard – PTO driveline. Stand clear of rotating shafts. Keep all driveline, tractor and equipment guards in place during operation.
	– **4296979M1** ((I) *fig. 1*) – **DANGER:** Lead-acid battery hazards o Explosive gases; o Corrosive liquid (sulphuric acid); Keep away from all naked flames or sparks Shield eyes when working on or around battery. Read safety and operating instructions in the Operator Instruction Book for further information.
	– **4296981M1** ((G) *fig. 1*) – **DANGER:** Runaway machine and runover hazards. Only start the engine when seated in the seat with the PTO disengaged and the transmission in the neutral position. DO NOT short across starter terminals to start engine.
	– **4296985M1** ((E) *fig. 1*) – **WARNING:** Pinch point hazard due to moving parts Keep hands clear of linkage when pivoting coolers
	– **4297148M1** ((N) *fig. 1*) – **WARNING:** Falling hazard Do not step on PTO shield.

	– **4297924M1** ((S) *fig. 1*) – **DANGER:** Electrocution hazard Tractors fitted with a front loader: Exercise extreme caution to avoid coming into contact with power lines.
	– **4349217M1** ((T) *fig. 1*) – **WARNING:** Towing – Carefully read the specific instructions from the Operator's Manual before towing the tractor.
	– **4350916M2** ((R) *fig. 1*) – **DANGER:** Explosion hazard – contents under pressure. Fill accumulators with nitrogen only – other gases may explode. See Operation section of manual for detailed information.
	– **4356345M1** ((W) *fig. 1*) – **WARNING:** Hazardous environments Put on suitable protective clothing, safety goggles and a respirator before working in an area that is being treated. See Operation section of manual for detailed information.

2.4 General safety instructions

2.4.1 Awareness of the safety instructions and symbols

T000880

Remember that you alone are responsible for safety. Good safety practices protect not only you, but also bystanders. Before using the tractor, study the instructions given in this book with care, as well as all of the safety decals and instructions fixed to the tractor: Make them an integral part of your safety procedure. Also note all the usual protective measures which should be taken when working and above all, don't forget:
Safety depends on you. You can prevent accidents which could cause serious injury or death.

WARNING:
In some of the illustrations in this book, the safety panels and guards have been removed for reasons of clarity. Never use the tractor if these parts are not in place. If some of these parts have been removed for repair purposes, they must be refitted before use.

2.4.2 Operator familiarity in the use of the tractor

T000881

– ***WARNING:***
The operator must not drink alcohol or take any medication that may affect his concentration or co-ordination. If taking medication, whether prescribed or not, the operator must seek medical advice with regard to his ability to operate machinery safely.

To be able to use your tractor, it is first necessary:
- to be familiar with operating an agricultural tractor
- to have been trained in the operation of the tractor that you have just purchased
- to have read and understood this entire book — always consult the dealer as soon as there is any doubt or lack of understanding *fig. 1*
- find out about the rules and safety regulations applicable to the work you are doing. Some regulations specify that no one under the age of 16 may operate power machinery, for example. This includes tractors. It is your responsibility to know what these regulations are and to observe them in the operating area or situation. These rules include, but are not limited, to the safety instructions relating to correct operation of the tractor as described in this book.

– Do not allow children or unqualified persons to operate the tractor.
– Do not allow children to use the instructor seat.
– The instructor seat is only intended for short periods of use.

Fig. 1. I002903

2

– **WARNING:**
In poor conditions, slow down and be extra careful, and engage 4-wheel drive if fitted.

It is important to have good knowledge of the operation of the tractor as well as all of its accessories and attached implements.
Remember that rain, snow, ice, loose gravel or soft ground can change the performance of the tractor.

2.4.3 Filling the fuel tank

T001555

– Always switch off the engine before filling up.
– Do not smoke while refuelling the tractor. Keep away from naked flames *fig. 2*.
– Proceed with care to prevent any splashes.

Fig. 2. I024804

2.4.4 Getting into and out of the cab

T000883

– Always use three-point contact with the tractor and face the tractor when mounting and dismounting. (Three-point contact means that both hands and one foot or one hand and both feet are in contact with the tractor at all times when getting on and off).
– Clean your shoes and wipe your hands before getting on the tractor.
– Use handrails, grab handles, ladders or steps (if fitted) when getting on and off.
Do not use the control levers as a handhold.
– Do not step on pedals when getting in and out.
– Never attempt to mount or dismount a moving tractor.
– Never jump off a tractor when it is running except in an emergency.

2.4.5 Mandatory procedure before dismounting the tractor

T000902

Before getting out of the cab, whether during the course of or at the end of the working day, always:

1. Immobilise the tractor by applying the parking brake.
2. **DANGER:**
Place the reverse shuttle lever in the neutral position.
3. Disengage the front and rear PTO.
4. Lower the implements to the ground.

5. Stop the engine (see the chapter in the Operation section of the Operator's Manual). Ensure that the engine is not idling and has stopped.
6. Remove the ignition key.

2.5 Special instructions

2.5.1 Specific recommendations for agricultural and forestry tractors

T006914

Hot surfaces

Be careful of surfaces which may be hot, in particular engine and hydraulics components, during operation and services.

FOPS (Falling Object Protection Structure)

- Alternative 1 (no FOPS available): Protection against falling objects is not provided, unless clearly specified otherwise.
- Alternative 2 (optional FOPS fitted): Protection against falling objects is provided under OECD-code 10 (Energy level 1365 J). If a higher protection level is necessary, additional safety equipment should be installed on the tractor (no original equipment available).

OPS (Operator Protection Structure)

- Alternative 1 (no OPS available): Protection against penetrating objects is not provided, unless clearly specified otherwise.
- Alternative 2 (optional OPS fitted): Protection against penetrating objects is provided under ISO 8084 (Machinery for forestry). Before operating, check if protection is adapted to your work conditions.

Hazardous substances

NOTE: *A mark indicating the cab's level of protection against hazardous substances is located on the front left-hand pillar inside the cab. For platform tractors, this mark is displayed on the arch.*

IMPORTANT: *Always wear personal protective equipment when handling the filters.*

- Alternative 1 (less cab or cab under category 1): Protection against hazardous substances (agricultural chemicals etc.) in the form of dust, aerosols and fumes is not provided. In particular, tractors fitted with these cabs are not to be used for spraying pesticides without any additional protection. Personal protective equipment must be used according to the chemical manufacturer's recommendations.
- Alternative 2 (cab under category 2): Protection against hazardous substances (agricultural chemicals etc.) in the form of aerosols and fumes is not provided. In particular, tractors fitted with these cabs are not to be used for spraying pesticides without any additional protection. Personal protective equipment must be used according to the chemical manufacturer's recommendations.
  Protection against dust (category 2 of standard EN15695-1:2009) is provided under the following conditions:
  - all roof hatch, cab doors and cab windows are closed
  - cab ventilation is running
  - air filter is clean and is serviced under maintenance interval (refer to service guide). When replacing the filter, only a filter certified for at least category 2 cabs is permitted. Activated carbon filters do not improve the cab's level of protection. Always refer to the user instructions provided with the filter.
- Alternative 3 (cab under category 4): The cab is equipped with protection against hazardous substances (agricultural chemicals etc.) in the form of dust, aerosols and fumes. For pesticide spraying, tractors fitted with these cabs must also have a specially designed filter for category 4 cabs.
  This protection (category 4 of standard EN 15695-1:2009) is provided under the following conditions:
  - All roof hatches, doors and windows are closed
  - Cab ventilation is running
  - Air filters are clean and serviced according to the maintenance interval (refer to service guide)

  Given the risk associated with contaminants entering the cab when opening the door to enter or exit the vehicle, this protection is designed to supplement, but not necessarily replace, the use of personal protective equipment when working in an environment with aerosols and/or fumes, such as pesticides. The chemical manufacturer's instructions concerning the use of personal protective equipment must be followed.
  When replacing the filter, only a filter certified for at least category 4 cabs is permitted.
  Always refer to the user instructions provided with the filter. Once spraying operations are complete, it is important to return the special filter to its case and replace it with a standard anti-dust filter.

Instructor (passenger) seat

– If an instructor (passenger) seat is provided, protection for the occupant of the seat is provided by the same roll-over protective structure (ROPS) that protects the operator.
– This seat may only be used to transport a passenger when driving on public roads.
– Always use the seat belt correctly adjusted.

2.6 Special safety instructions for preparing the tractor for use

2.6.1 Protective clothing

T000873

Wear all the protective clothing and equipment with which you are provided or which is appropriate for certain working conditions *fig. 1*.

For example, you may need:

- A safety helmet
- Goggles or a face shield
- Ear protection
- A respirator or filter mask
- Inclement weather clothing
- Reflective clothing
- Gloves suitable for the work to be carried out
- Safety footwear

DANGER:

Do not wear loose clothing, jewellery or other items and tie up long hair which could catch on controls or other parts of the tractor.

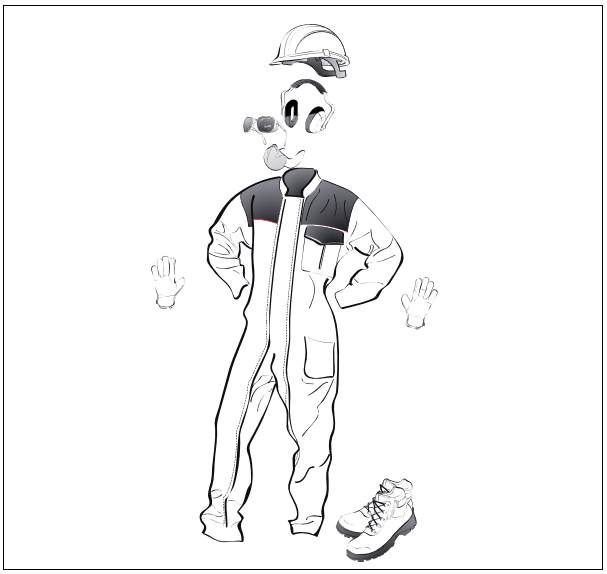


Fig. 1. I002858

2.6.2 Activated carbon filter information

T011579

WARNING:

Due to the risk of contaminants entering the cab when the door is opened to enter or exit, use of a carbon filter is intended to supplement but not necessarily replace the use of personal protective equipment when operating in an environment containing aerosols and/or vapours, such as pesticides.

The specific chemical manufacturer's instructions regarding personal protective equipment (PPE) must be followed. If the cab being fitted with this filter does not already have a safety sign like the one included with this filter, install the safety sign in a prominent place inside the cab in view of the operator.

This filter is designed to reduce the concentration of aerosols and vapours entering the cab. To be effective, it must have an effective seal to prevent leakage around the filter and must be used in a cab air system that does not have leaks, especially in the zone between the filter and the fan. In addition, the cab and its ventilation system must be capable of maintaining a positive pressure inside the cab and an air flow of at least 30 cubic meters per hour (18 cubic feet per minute).

The cab with carbon filter is intended to be used as only one part of a managed system of occupational health and safety, as noted below:

Operator Enclosures as Part of an Occupational Health and Safety Management System (OHSMS)

Many self-propelled agriculture vehicles have operator enclosures (cabs) for comfort and protection of the operator and riders. The cab can provide an effective physical barrier between the occupants and the environment, but that barrier must, by necessity of occupant respiration, allow air to enter and exhaust the cab. This requirement is met by the cab's heating, ventilation and air-conditioning (HVAC) system.

The HVAC system should employ a filter through which air entering the cab is first passed for contaminant reduction. Filters should also be provided in the recirculation air-stream to reduce airborne contaminants already in the cab air space. In either application, these filters must be designed specifically for the HVAC system within which they are operating. The filters must also incorporate the correct media required to remove the specific air-born contaminant for which it is being employed.

For such applications, the HVAC system must be of robust design, manufacture and maintenance. In such a system, fresh air and cab pressurization requirements are provided by an air supply drawn through a filter with negligible filter bypass.
Even with an appropriate cab and HVAC system, there are other opportunities for contaminates to enter the cab. While outside the cab, a person can become contaminated on his/her body or clothing. Contaminated objects can be brought into the cab. Another potential for cab contamination exists when doors or windows are open in a contaminated environment.
In any case, whenever the cab interior has been contaminated, the effectiveness of the cab to provide contamination protection will be diminished. Health and safety for agricultural machine operators as well as others working in, on or around these machines can only be addressed through a comprehensive program.
Such a program is defined as an Occupational Health and Safety Management System (OHSMS). While cabs may be used as an effective engineering control within an OHSMS, this is not intended to imply that the cab alone is appropriate for any specific application.
That determination can only be made by those responsible for the OHSMS in a specific application. It is the responsibility of those charged with managing the use of the vehicle on which the cab is attached to define and manage an appropriate OHSMS, and ensure that all federal, state and local regulatory requirements are followed.
Cabs should not be used as a replacement for any other engineering control or PPE that has been specifically required by federal, state or local regulatory authorities.

Hierarchy of Controls
The Hierarchy of Controls, in their preferred order of action:
1. Elimination
2. Substitution of less hazardous materials, processes, operations or equipment
3. Engineering controls
4. Warnings
5. Administrative controls
6. Personal protective equipment (PPE)

Continuous Improvement Cycle
Cabs should only be used to control operator air contaminant exposures within an OHSMS. This management system must consider occupational safety and health as a continuous improvement cycle that includes these on-going processes:
1. Management, Leadership and Employee Participation: This step in the cycle involves the formulation of the management system, the establishment of policy, statements of responsibility and the integration of the employees into the management system.
2. Planning: This step is based upon initial and going reviews of the management system and numerous factors affecting occupational safety and health within an organization. Included in these reviews is a review of the hazard, risks and controls and data collected to evaluate the hazards and the efficacy of the control measures. In explanatory comments, exposure measurements are included as part of the assessment processes. The results of audits and measurements are also to be reviewed.
3. Implementation and Operation: This section describes the organization components of a occupational safety and health program. It describes the hierarchy of controls mentioned above and several broad classes of management function. Among these requirements are employee training and evaluation of employee training. Furthermore, this section requires a written, clearly documented occupational safety and health program.
4. Evaluation and Corrective Actions: The section specifically requires management processes to monitor and evaluate hazards, risks and their controls. Explanatory comments note that this includes quantitative measures of worker exposure. Practically, this involves physically testing the efficiency of the cab being used as an engineering control within an OHSMS.
5. Management System Review: Management is required to review the management system to ensure its suitability, adequacy and effectiveness. This cycle includes provisions for exposure monitoring and the monitoring of control measure performance. It is the responsibility of the manager of the safety and health program to determine how worker exposure to air contaminants and other hazards are to be controlled. It is also the responsibility of this manager to take whatever actions are needed to control workplace hazards. This includes but is not limited to exposure assessment, audits of varies programs such respiratory protection, ventilation system maintenance, etc.

Limitations of Cabs Used in Hazardous Environments:

While it may seem that respiration (breathing) exposure would present the greatest risk for personal exposure to contaminants, this is not the case when working with pesticides. The most prevalent method of exposure for applicators and those working around agricultural pesticides is through dermal (skin) contact.
Dermal contact with contaminants may occur directly from air-borne contaminants. It may also happen when contaminants are transferred from one object to another or when air-borne contaminants settle on objects that are subsequently contacted. Any surfaces in or out of the cab that have been contaminated are potential hazards for dermal exposure.
Within the cab, seats, upholstery, controls and other surfaces that become contaminated will pose such a hazard. In addition to dermal exposure, a contaminated cab interior will also pose a respiration hazard as the contaminant may, after settling on a surface, become air-borne once again whereby it may be inhaled.
Recirculation filters can be used to help reduce these contaminates from the cab interior air space. When a vehicle is operated in an environment where air-born contaminants exist, the cab can be an effective engineering control for reduction of exposure risk to persons within it.
In order for a cab to be used for this purpose, it must be of appropriate design. It must also be manufactured, maintained, tested and operated according to the specific requirements defined by evaluation of the hazards.
No cab should ever be considered an effective engineering control unless it has been qualified as such within a comprehensive OHSMS. While the cab manufacturer can design and manufacture a cab to physical specifications, the cab manufacturer can not qualify the cab as an appropriate engineering control for any specific application.
Site-specific information is needed to evaluate the appropriateness of control measures. To use the cab to control hazards, the managers of the OHSMS must carefully consider and evaluate the effectiveness of all engineering controls in their specific application.

The Cab as an Engineering Control
The engineering control requirements of the respiratory protection regulation may be fulfilled by the application of a cab, but this can only be done properly within an OHSMS. Elements of such a program are:

1. Assessment of the hazard with identification of the risk involved.
2. A survey of the machine and the cab involved in the hazardous operation.
3. Reviewing the cab ventilation system and the filter to ensure the filter provides the reduction in contaminants required.
4. Defining how long the filter can be used in this application.
5. Testing the cab ventilation system to ensure it provides the protection required for the operation to be performed. This also includes a review of any monitoring equipment to ensure it is working properly.
6. Repair and/or replacement of any defects or defective equipment found.
7. Retesting of the cab air system as required.
8. Recording in the appropriate log book all information regarding the test results, and repairs and replacement of parts and/or components.
9. Assessment of the effectiveness of the program at a specified time in the cycle of the activity.

2.6.3 Safety devices and items

T000874

Ensure that all safety devices and items are fitted as required and are in good condition.

WARNING:
The location of all these safety devices and items must be known and their use mastered. Never take off, remove or disconnect any of them.

Standard safety devices and items according to country regulations

- ROPS (Roll Over Protective Structure)
- Seat belt
- Power take-off guard
- SMV warning triangle
- Signalling lights
- Safety signs
- Fire extinguisher
- First aid kit

WARNING:
Also make sure you know the emergency numbers.

Fig. 2. I002859

Additional devices and items

Depending on the work to be carried out, other safety devices and items may be required; for example, guards or additional lights and signs.

2.6.4 Checking the tractor

T000872

Check the tractor and ensure that all systems are in good operational condition before beginning the working day. Pay particular attention to the points mentioned below.

- Check for loose, broken, missing or damaged parts. Ensure that everything has been properly repaired.
- Check that the seat belt is in good condition. If it is not, replace it.
- Check that implements are correctly installed.
- Check that the PTO output speed is in keeping with the implement PTO input speed.
- ***WARNING:***
  An unbalanced tractor could overturn and cause serious injury or death. Ensure that front frame counterweights, wheel weights and wheel ballasts are used as recommended by the manufacturer. Do not add extra counterweights to compensate for an overloaded tractor; the load must be reduced instead.

  Check to ensure that the tractor is correctly balanced.
- Check the condition and pressure of tyres (absence of cuts and bulges). Replace worn or damaged tyres.
- Check the correct operation of the brake pedals and the parking brake. Adjust if necessary.
- Ensure that all PTO shaft locking devices are engaged.
- Ensure that the tractor PTO guard and the shaft guards are in place and operating correctly.

– **WARNING:**
Fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause serious physical injury, blindness or death.
Leaks of pressurised fluid may not be visible. Use a piece of cardboard or wood to detect leaks. DO NOT USE YOUR BARE HANDS. Wear safety goggles for eye protection. If any fluid penetrates the skin, seek medical advice within a few hours from a doctor familiar with this type of injury fig. 3.

WARNING:
Release the pressure of the hydraulic or fuel systems before disconnecting them.

Check the hydraulic system for the tractor and the implement as well as the tractor fuel system: Correct tightening of all the unions; no damage to the lines, pipes and hoses; hydraulic systems do not cross one another.
Have any leakages or damaged parts repaired or replaced. Do this before each working day

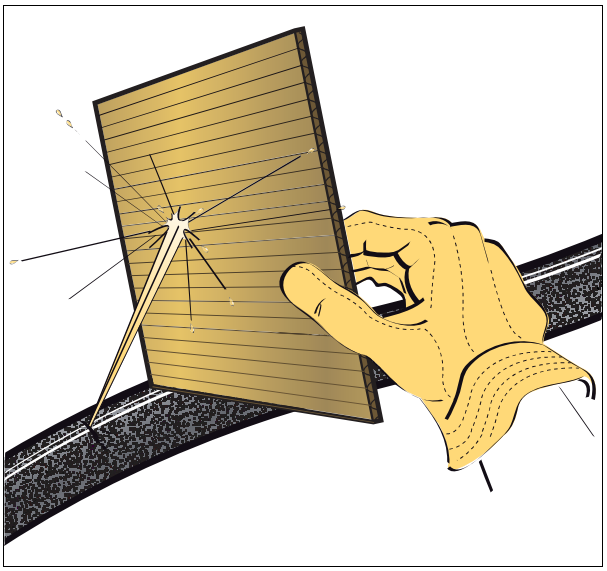


Fig. 3. I002860

– **WARNING:**
The liquid cooling system builds up pressure as the temperature increases. Stop the engine and let the system cool before removing the radiator filler plug.

Check the engine cooling system and add coolant if required.

– All maintenance procedures must have been complied with.

– Check that the weight of the tractor/implement assembly is less than the tractor total permissible load.

2.7 Specific safety instructions for starting the tractor

2.7.1 Protection of persons other than the operator

T000884

1. Before starting up, walk all the way round the tractor and any attached equipment. Ensure that no one is under it, on it or close to it.
2. Warn in advance any persons nearby that the tractor is about to start.
3. Only start up if there is nobody in the vicinity of the tractor/implement assembly. Pay particular attention to looking out for children.

2.7.2 Start up safely

T000885

General instructions

– ***WARNING:***
Before starting the engine, ensure there is plenty of ventilation in the area. Do not operate the engine in an enclosed space. The exhaust fumes may cause asphyxiation.

IMPORTANT: *Electromechanically controlled brake on the steering column (ParkLock): For safety reasons, when the engine is stopped, the ParkLock engages automatically regardless of the position of the control.*
After the engine is started, it is necessary to initialise the ParkLock control in order to deactivate it. If this is not carried out, when a gear is shifted, a beep will sound and the padlock symbol on the instrument panel indicates that the ParkLock remains engaged.

– Always start the engine from the operator's seat.
– Adjust the seat before using the tractor to ensure it is correctly positioned in relation to the controls and to minimise vibrations (see description of seat).
– For road use, ensure that the tractor brake pedals are locked together.
– Fasten the seat belt.
– Check that the parking brake is applied.
– Place the reverse shuttle lever in the neutral position and deactivate the PTO controls.
– Follow the start-up procedures described in the chapter Operation of this book.
– ***DANGER:***
Start the engine with the ignition key and from the operator's seat only. Do not attempt to start the engine by short-circuiting the starter terminals: the tractor may start in gear and this could cause serious injury or death to anyone in the vicinity fig. 1.

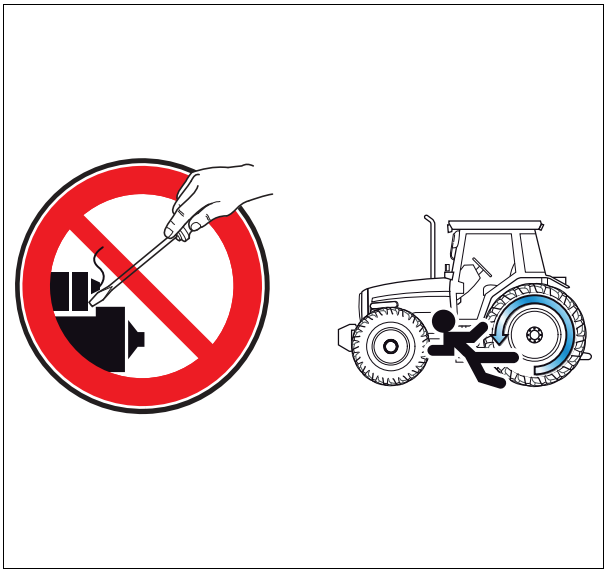


Fig. 1. I002863

2

Starting assistance

WARNING:

Never use any starter fluid or aerosol sprays. This could cause an explosion and the risk of very serious injury.

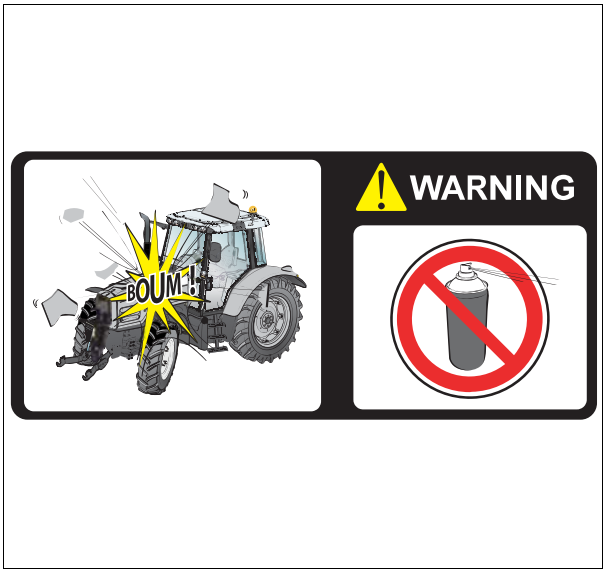


Fig. 2. I002864

2.7.3 Checks to be carried out after start-up

T000886

Controls and indicator lights

After having started the engine, check all the controls and all the indicator lights again. Ensure everything is functioning correctly.

WARNING:

In case of malfunction of a control or an indicator light, resolve the problem before using the tractor.

Mastering of the tractor

Move slowly until you are sure that everything is operating correctly. Be certain that you have full control of the steering and brakes. If the differential is locked, unlock it before continuing your route.

2.8 Specific safety instructions for using the tractor

2.8.1 General instructions

T000875

- Tractors and implements are not toys. Always comply with the conditions of use defined by the manufacturers.
- Never bring a heat source close to the tractor.
- Never exceed the tractor total permissible weight.
- Always consider the way in which the tractor is to be used and the fact that the centre of gravity of the tractor/implement assembly changes according to the load being transported or towed.
- Check that the emergency exits open correctly.
- ***WARNING:***
  An unbalanced tractor could overturn and cause serious injury or death. Ensure that front frame counterweights, wheel weights and wheel ballasts are used as recommended by the manufacturer. Do not add extra counterweights to compensate for an overloaded tractor; the load must be reduced instead.

  Check to ensure that the tractor is correctly balanced.
- Check that the PTO output speed is in keeping with the implement PTO input speed.
- Keep all parts of your body inside the safety zone defined by the cab or by the protective structure for platform tractors.
- Operate the controls smoothly — do not jerk the steering wheel or other controls.
- Always operate the controls from the operator's seat.
- Keep a firm grip on the steering wheel at all times, with your thumbs clear of the spokes when driving the tractor.
- Operate the tractor smoothly: avoid jerky turns, starts or stops.
- Do not turn at high speed.
- Avoid driving close to ditches and banks.
- Avoid taking slopes that are too steep.
- Reduce speed when negotiating turns and slopes and on rough, slippery or muddy surfaces.
- Carefully observe the areas surrounding the route.
- Ensure you have adequate clearance in all directions for the tractor and the implement.
- When using chemicals, follow the chemical manufacturer's instructions for use and storage carefully.
- Adapt the tractor speed according to visibility, weather conditions and the type of terrain.
- ***WARNING:***
  If a part breaks, loosens or does not operate correctly:
  - ***stop work***
  - ***switch off the engine***
  - ***check the machine and make the necessary adjustments and repairs before resuming work.***

- ***DANGER:***
  Do not attempt to unplug the hydraulic connections or adjust an implement with the engine running or the PTO in operation. To do so may result in serious injury or death.

2.8.2 Protection of persons other than the operator

T000876

2

– ***WARNING:***
A tractor is a machine with a single operator.
Do not permit anyone fig. 1 to ride on the tractor or implements, including trailers, unless the implements are specially designed to carry passengers during field work. In the latter case, transport is permitted only for field work, but not for travelling on the road.
In all cases, never allow a child to ride on the tractor or implements.

Fig. 1. I002865

– When operating, attention to the environment of the tractor/implement assembly.
– Never lift loads above someone.
– Do not allow anyone to stand or pass in front of, under or behind an implement *fig. 2*.

Fig. 2. I034928

– Do not allow anyone to stand between the tractor and the implement.
– Keep others away from the working area.
– Beware of the load and implement falling in the event of unexpected lowering of the loader.

2.8.3 Overturning

T000877

Overturning angle

DANGER:
For your safety, never exceed the maximum angle limits listed in the table below.

NOTE: *These angle limits assume a maximum oil level in the rear axle.*
It is recommended to top up the oil by 15 l when working on slopes of maximum gradient.

Models	Speed	Maximum angle: roll/pitch/combined
All models	-	22°/22°

Procedure to follow if the tractor overturns

If the tractor should overturn, keep the seat belt fastened, hold the steering wheel firmly and do not attempt to leave the seat until the tractor has come to a complete stop *fig. 3*. For tractors fitted with a cab, if the doors are obstructed, leave through the rear window or roof hatch.

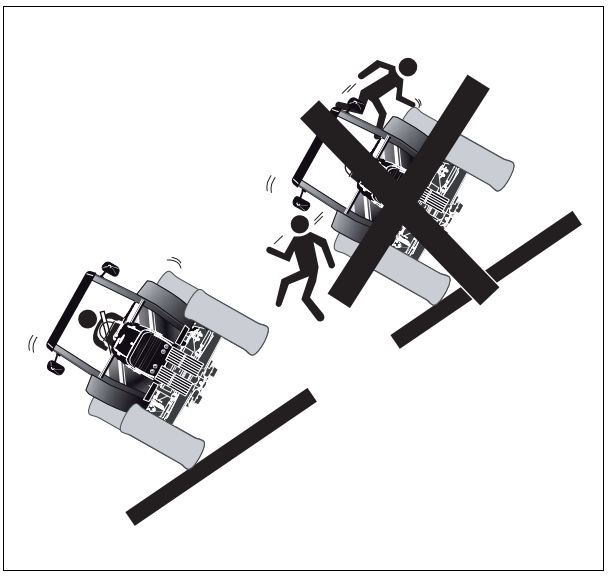


Fig. 3. I002867

Preventing a lateral overturn

- Set the track width to the most appropriate width for the work being carried out.
- Lock the brake pedals together before driving at transport speed.
- Adapt the tractor speed according to visibility, weather conditions and the type of terrain for the implement in use.
- If the tractor is fitted with a front-end loader, carry the bucket and load as low as possible.
- Make wide turns at reduced speed.
- Do not allow the tractor to bounce as this may cause you to lose control.
- Never exceed the tractor total permissible weight.
- Do not brake suddenly. Apply brakes smoothly and gradually.
- ***WARNING:***
  Do not disengage the clutch or attempt to shift gear after you have started downhill.
  When driving down a slope, use the engine brake to slow the tractor down and choose the same gear ratio as used when climbing a slope.
- Engage four-wheel drive (if fitted) to enable four-wheel braking.
- Do not work near the edge of ditches and banks as there is a risk of them collapsing. The tractor must always be kept a distance from the edge that is equal to or greater than the height of the bank or ditch *fig. 4*.

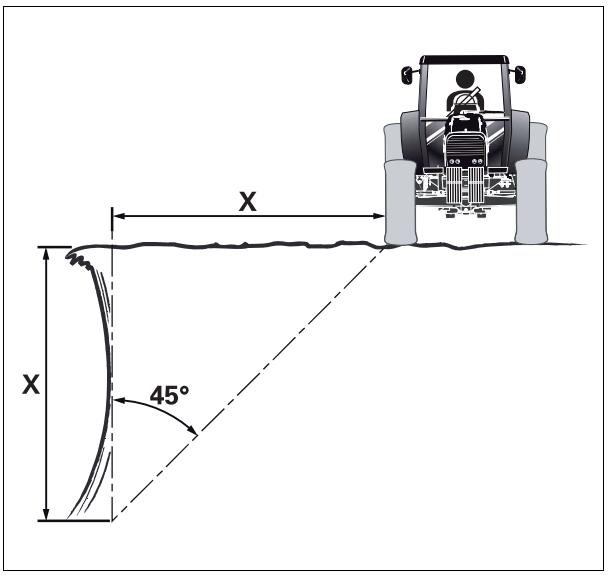


Fig. 4. I002868

- Preferably, climb or descend a slope in a straight line, but do not cross it. When this is not possible, adhere to the following precautions:
  - Avoid holes and dips when driving downhill

  - Avoid stumps, stones and raised areas when driving uphill
  - when turning, avoid turning towards the top of the slope; always slow down and take a wide turn
  - keep the heavier end of the tractor facing towards the top of the slope when driving up and down it.
- When driving across a slope with a tractor fitted with implements on one side, these implements must:
  - always be facing towards the top of the slope
  - never be raised,
  - be left as close as possible to the ground
- When towing a load at transport speed, lock the drawbar in the centre position and use a safety chain.
- Do not use the tractor to round up livestock.

Preventing a rear overturn

- ***WARNING:***
  Hitching a load to the rear axle or on any other part located above the rear axle may cause a rear overturn.

- Do not pull anything using the top link connection or from any point above the centre line of the rear axle. Always use a Massey Ferguson-approved drawbar and only use a lockable drawbar pin.
- When using a drawbar for a three point hitch, use the stabilisers and keep the drawbar in the bottom position.
- Use front weights to increase tractor stability when towing heavy loads or to counterbalance the weight of a heavy rear-mounted implement.
- Start off slowly and then gradually increase speed.
- Do not release the clutch suddenly.
- If a heavy load or immovable object is attached to the tractor, incorrect use of the clutch may cause the tractor to overturn.
- If the front end of the tractor starts to lift, disengage the clutch.
- If the tractor is bogged down in mud or frozen to the ground:
  - do not attempt to drive forward as the tractor could then rotate around its rear wheels and overturn
  - lift any attached implements and attempt to reverse If this is not possible, tow the tractor out with another vehicle.
- If the tractor is stuck in a ditch, if possible, attempt to reverse out. If you must go forward, do so slowly and carefully.
- A bare tractor or a tractor fitted with a rear implement must climb a slope in reverse gear and descend the slope in forward gear.
- A tractor fitted with a full loader at the front must climb a slope in forward gear and descend the slope in reverse gear. The loader must be kept as close to the ground as possible.
- Always engage a gear when driving downhill. Do not allow the tractor to coast down the slope with the clutch disengaged or the transmission in neutral.
- When parking on a slope, turn the wheels in the opposite direction to the slope.

2.8.4 Tractor towing

T000878

Comply with the instructions described in the "Operation" chapter of this book.

2.8.5 Road use

T000879

- ***WARNING:***
  Never allow any passengers to ride on the tractor and implements.

- ***WARNING:***
  Do not use the work lights when travelling on a road because rear white lights are illegal except when reversing and may confuse following drivers.

– Ensure that all clearance flags and rotary beacons that indicate an abnormal load are in position and are in working order.
– Clean all the reflectors and the front and rear lights. Ensure that they are visible and in working order.
– Ensure that the tractor and implements are fitted with SMV warning triangles and other markings recommended to improve visibility when driving on roads (unless the regulations state otherwise) *fig. 5*.

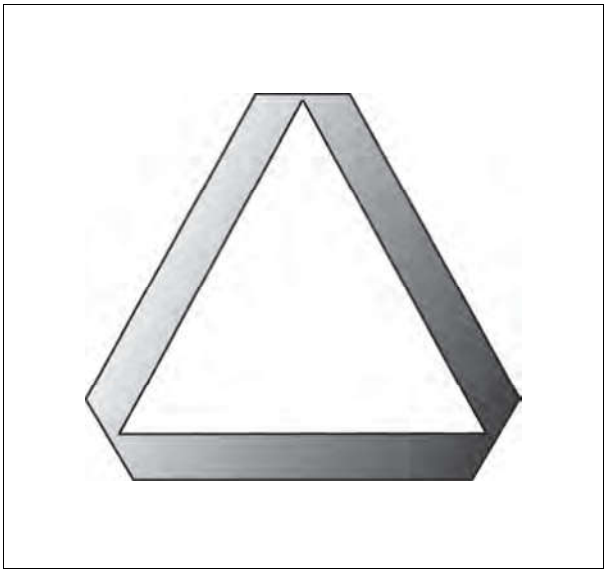


Fig. 5. I002869

– Place all implements in the transport position (as specified in the national road traffic regulations) so that they take up minimum space and lock them in position.
– Lock the brake pedals together.
– Disengage the power take-off and the differential lock.
– Observe all current local and national regulations regarding the use of a tractor on the road.
– Depending on the equipment fitted to the tractor and unless regulations state otherwise, use the rotary beacons or the hazard warning lights day and night.
– Familiarise yourself with the road you will be travelling on.
– Exercise the utmost caution when driving on snow-covered or slippery roads.
– Wait for traffic to clear before entering a public road.
– Beware of blind intersections: Slow down until you have a clear view.
– Do not attempt to push your way through at any intersection.
– Slow down for turns and curves.
– Make wide turns at a moderate speed.
– Signal your intention to slow down, stop or turn.
– Shift to a lower gear before going up or down hills.
– Always drive the tractor in gear. Do not coast with the clutch disengaged or transmission in neutral.
– Do not overlap the lane of traffic for vehicles travelling the other way.
Stay in your lane, as close as possible to the roadside.
– If a traffic jam forms behind the tractor, pull off the road and allow the vehicles behind to pass.
– Drive carefully. Anticipate what other drivers might do.

If towing a load

– Always anticipate obstacles, especially if the trailed implement is not fitted with brakes.
– Start braking much earlier than usual and slow down gradually.
– Ensure that the load is not concealing the lights or the rotary beacons.
– Take account of your load, especially for high obstacles.

2.8.6 Parking brake

T009795

2

If the brakes fail and in an emergency situation, use the parking brake located to the left of the operator.

IMPORTANT: *If the brakes fail, contact your dealer to resolve the problem.*

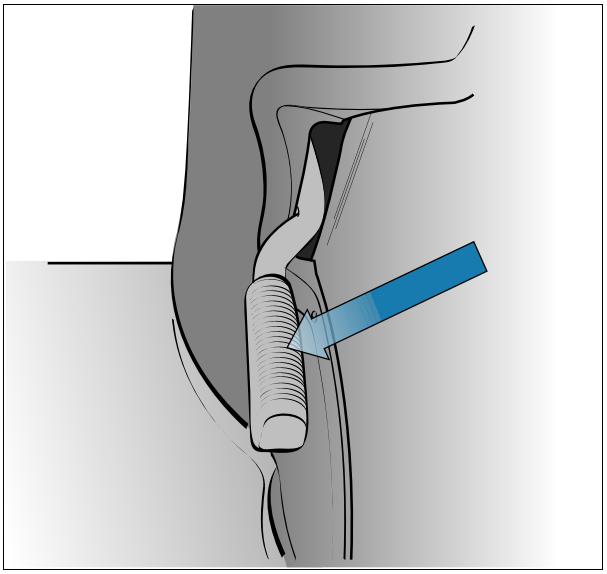


Fig. 6. I004991

2.8.7 Power take-off

T000893

DANGER:

Do not attempt to unplug the hydraulic connections or adjust an implement with the engine running or the PTO in operation. To do so may result in serious injury or death.

– Ensure that all the PTO shaft guards are in place and check the presence of all safety decals *fig. 7*.

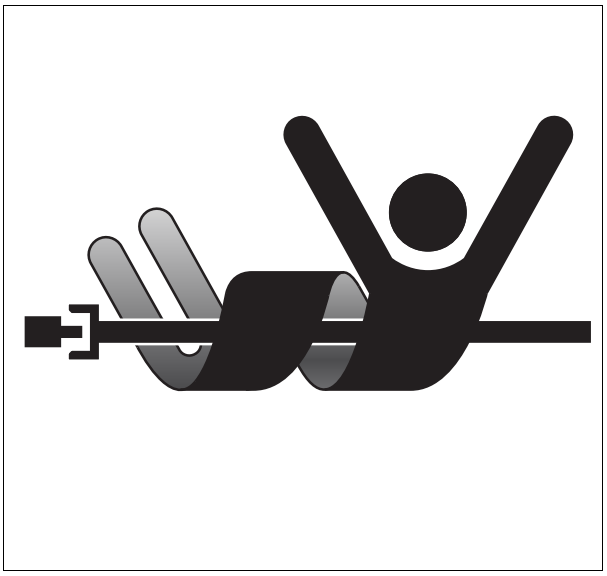


Fig. 7. I002874

– Ensure that the PTO cap (1) is fitted when the PTO shaft is not in use *fig. 8*.
– Before hitching, unhitching, cleaning or adjusting the implements driven by the PTO, follow the "mandatory procedure before dismounting the tractor" *see §2.4.5, page 28*.
– Ensure that there is nobody in the vicinity of the implement before engaging the PTO.
– For stationary PTO operation, place the transmission lever and/or the shuttle lever (both if the tractor is fitted with them) in neutral, apply the hand brake or engage ParkLock (depending on option) and chock the wheels of the tractor and the implement.
– Do not use PTO adapters, reducers or extensions as they extend the PTO coupler beyond the protection offered by the guard.

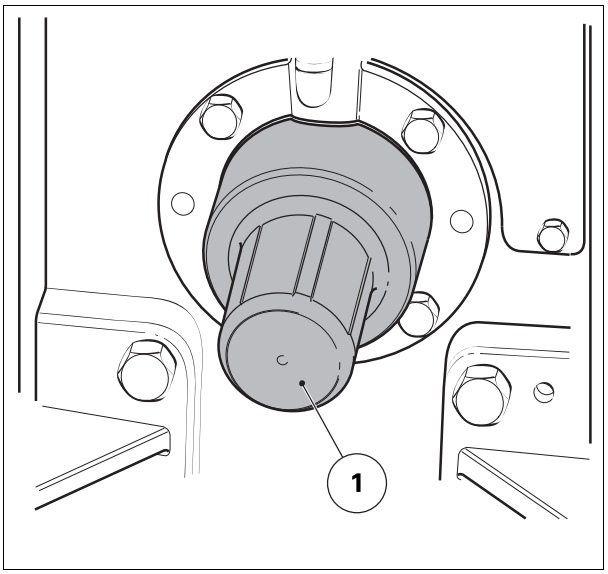


Fig. 8. I002871

– ***IMPORTANT:*** *To prevent any rotation problems or damage to the PTO guard, observe the correct fitting position of the transmission shaft. Ensure that the shaft does not collide with the surrounding area when the implement hitched to the tractor moves (this is a particular risk for short type 3 PTO shafts with a shield measuring 290 mm wide, as this limits the space available for the assembly).*

(1) Correct assembly
(2) Incorrect assembly

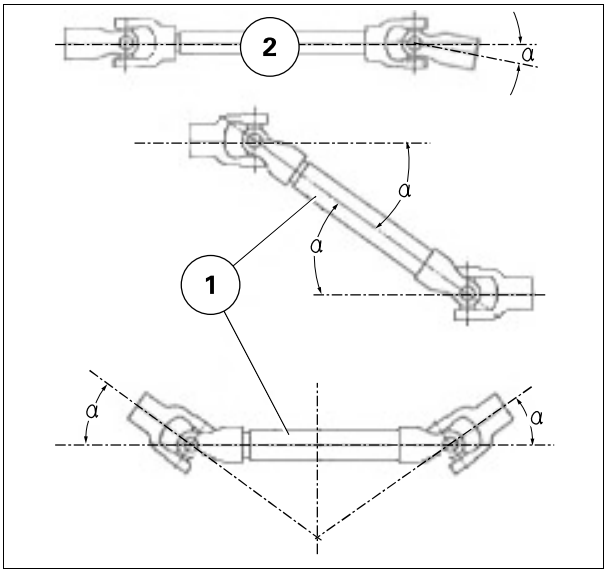


Fig. 9. Transmission shaft I033876

2.8.8 Implements

T000894

– Tractors and implements are not toys. Always comply with the conditions of use defined by the manufacturers.
– ***DANGER:***
To avoid serious injury or death due to falling loads resulting from inadvertent raising or roll-back of the loader, do not connect loader hydraulics to any tractor auxiliary valve that has detents which cannot be locked out or removed, except for the float function in the loader lower circuit. If the tractor is equipped with such a valve, a dedicated, properly configured loader valve must be installed.

DANGER:
A front-end loader with a bucket or forks must be fitted with a holding device. This device must prevent the load (bales, fence posts, rolls of fence, wire etc.) from rolling down the length of the loader arms when the loader is raised, as it could crush the operator. Objects that are incorrectly secured may also fall and injure people in the vicinity of the tractor.

When using a loader, avoid sudden stops, starts, turns or changes in direction. Keep loads close to the ground when transporting.
– Never lift loads above someone.
– Implements fitted to the three-point hitch or to the side of the tractor make a much larger arc when turning than trailed implements. Ensure there is enough room to manoeuvre in complete safety.

- Always use implements suitably adapted to the desired conditions of use (load to transport, speed, slope etc.) to ensure that work is carried out in complete safety.
- Always read the implement instruction books fully for implements to be used with the tractor and comply with the safety instructions they contain. If these instructions cannot be observed in full, do not use the tractor fitted with the machine or trailer.
- Do not modify nor remove any parts of an implement.
- Do not touch the mechanism of an implement nor lean over it or attempt to reach it. Do not allow anyone else to do this either.
- Do not allow anyone (including yourself) to stand or pass in front of, under or behind an implement.
- If the tractor is not immobilised according to the "mandatory procedure before dismounting the tractor" *see §2.4.5, page 28*, never stand or allow any person to stand between the tractor and the implement.
- Always use implements that are capable of safely carrying the load that you wish to place in it. (See information given on the name plate)and the chapter on the hitch.
- Do not overload a trailed implement. Use appropriate weights to maintain tractor stability.
- The top link and the lift rods must never be taken beyond the point where the thread starts to appear.
- When using chemicals, follow the chemical manufacturer's instructions for use and storage carefully.
- All trailed implements and trailers should be connected to the tractor by a safety chain (1) *fig. 10*.
  Should a trailed implement accidentally become separated from the drawbar during transport, this safety chain will help to retain the trailed implement. Using the appropriate adapter parts, attach the chain to the tractor's drawbar anchor or any other specified anchor point. Leave only enough slack in the chain to allow for manoeuvring.
  The safety chain must have a strength equal or greater than the weight of the trailed implement: contact your Massey Ferguson dealer to obtain a suitable chain.

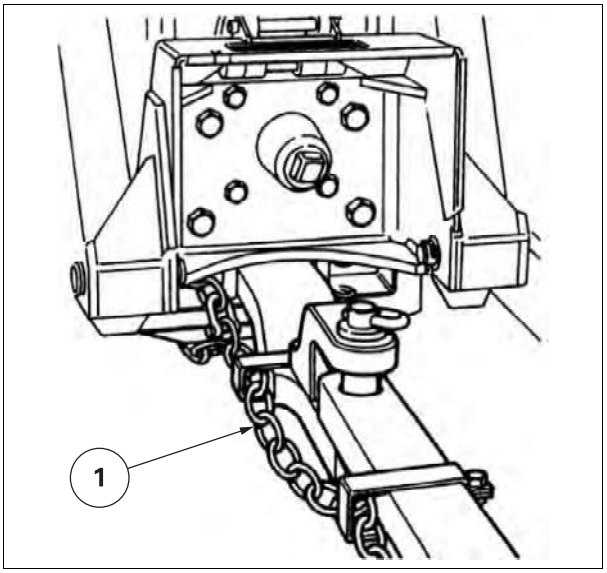


Fig. 10. I002872

- Only tow using the drawbar. Attaching the trailed implement to another location could cause the tractor to overturn.

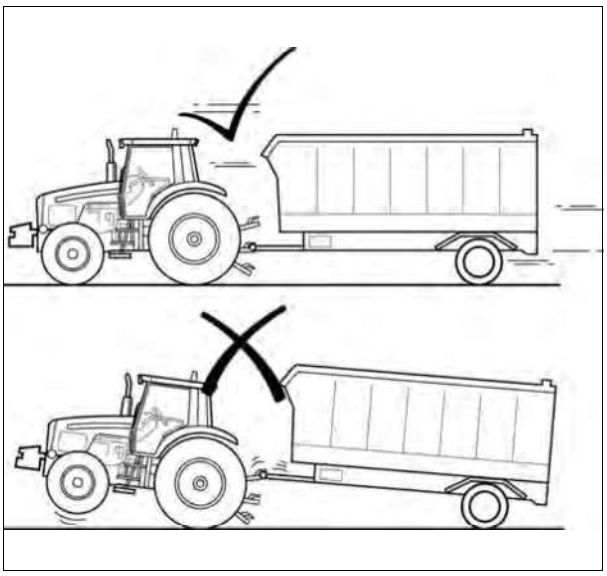


Fig. 11. I002873

Towing: permissible load and speed

WARNING:

The stopping distance increases with the speed and weight of the trailed implements, and also on a slope. Whether they are fitted with a brake system or not, trailed implements that are too heavy for the tractor or that are towed at too high a speed may lead to a loss of control. Take account of the total weight of the trailed implement (including the load).

The maximum permitted trailed weights are indicated on the name plate. In particular, comply with the following loads:

- Trailed weight without brakes: 3000 kg
- Trailed weight with independent brake system: 6000 kg
- Inertia braked trailed weight: 16,000 kg
- Trailed weight with braking assistance (hydraulic or pneumatic): 32,700 kg

Never tow an implement:

- at a speed exceeding the speed limit in force in the relevant country and
- if the true weight of the tractor/implement assembly is greater than the tractor total permissible loaded weight indicated on the name plate.

Towed equipment without brakes:

Do not tow equipment that does not have brakes:

- at speeds of more than 32 kph; or
- at speeds above those recommended by the manufacturer; or
- with a mass (weight) that is over 1.5 t when fully loaded and is more than 1.5 times the mass (weight) of the tractor.

Towed equipment with brakes:

Do not tow equipment that has brakes:

- at speeds of more than 50 kph; or
- at speeds above those recommended by the manufacturer; or
- with a mass (weight) more than 4.5 times the mass (weight) of the tractor when fully loaded;
- at speeds of more than 40 kph if, when fully loaded, it has a mass (weight) more than 3 times the mass (weight) of the tractor.

2.8.9 Front-end loader

T006905

WARNING:

The programmable features of the joystick or any other control MUST NOT be used to operate a loader. In order to prevent involuntary loader motion, the loader joystick controller must be a self neutralising type. When the operator releases his grip on the joystick, the joystick must return to a non-operational neutral position - except for float detent position in the loader lower direction.

Always read the implement instruction books fully for implements to be used with the tractor and comply with the safety instructions they contain.

For the attachment points, refer to Chapter 5.

2.9 Specific safety instructions for servicing the tractor

2.9.1 Pollution warning to observe when servicing the tractor

T000889

IMPORTANT: *It is illegal to pollute drains, water courses or soil.*
Use authorised waste disposal facilities for the collection and treatment of waste; public refuse tips or garages providing facilities for the disposal of used oil.
If in doubt, ask local authorities for advice.

2.9.2 General instructions

T000887

- Never bring a heat source close to the tractor
- Never service the tractor while the engine is running or hot or if the tractor is in motion *fig. 1*. The operator must ensure that potentially hot parts have cooled down before carrying out any work

Fig. 1. I002862

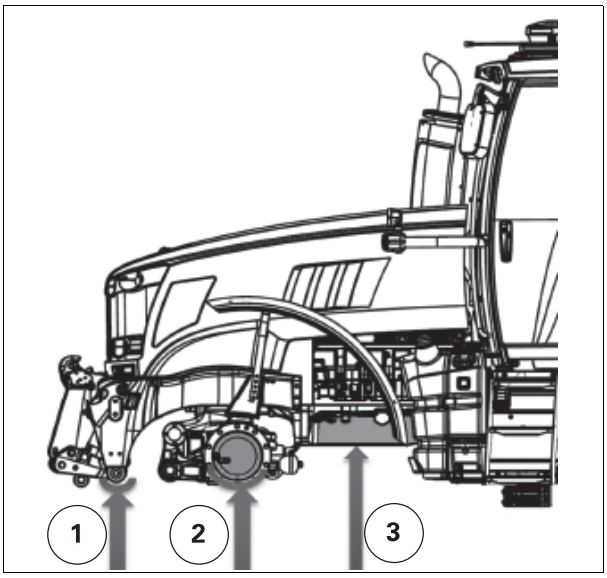
- Before making adjustments to or servicing the electrical system, disconnect the battery cables, negative (-) terminal first.
- To prevent risks of fire or explosion, keep batteries and cold weather starting aids away from naked flames.
- To prevent sparks which could cause explosions, use jump leads according to instructions.
- Consult your Massey Ferguson dealer for repairs or adjustments and have the work carried out by trained personnel.
- The implement and/or tractor must be supported on suitable blocks or stands and not on a hydraulic jack (*see §2.9.3, page 49*).
  The blocks and supports must be adapted to the load carried and must be sufficiently stable to prevent tilting.
  The blocks and supports must be approved and regularly checked by the appropriate authorities.
  Place the blocks and supports on solid ground that can support the load.
- Check all nuts and bolts periodically for tightness, especially wheel hub and rim nuts. Tighten to the torque values stipulated.
- Regularly check the brakes.
  Ensure that the brakes are uniformly adjusted, especially if a trailer is used.
  In case of malfunction, consult your dealer.
- Accumulators.
  The accumulators contain nitrogen and are pressurised.
  They may become hot and cause burns.
  Modifications must not be made to the accumulators (by welding, drilling, attempting to open, cutting etc.).
  The repair, maintenance and commissioning of the accumulators must only be carried out by trained personnel.
  Consult your Massey Ferguson dealer regarding any maintenance.

2.9.3 Handling instructions

T015665

The implement and/or tractor must be supported on suitable blocks or stands and not on a hydraulic jack.
The blocks and supports must be adapted to the load carried and must be sufficiently stable to prevent tilting.
Place the blocks and supports on solid ground that can support the load.
The blocks and supports must be approved and regularly checked by the appropriate authorities.

- Positioning axle stands for support at the front of the tractor:
  Depending on the requirements of the removal procedure, the axle stands must be placed under one of the following locations:
  - (1) Under the low point of the front linkage
  - (2) Under the front axle final drives
  - (3) Under the oil sump (if the front axle is to be removed)
  - (4) and (5) Under the front axle beam



I035279

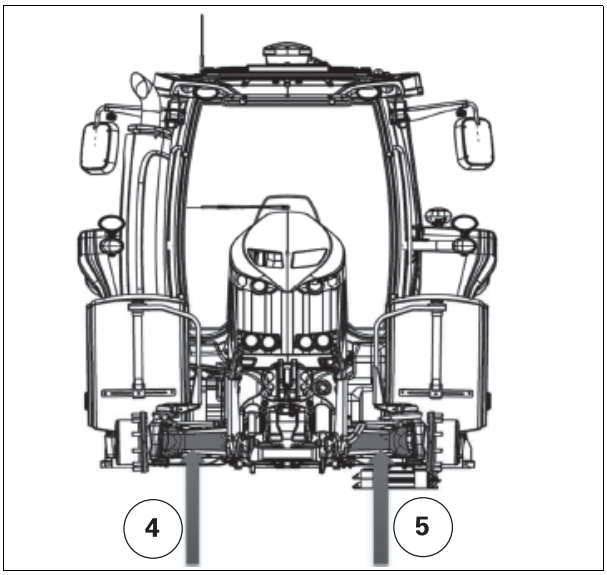


Fig. 2.

I035283

– Positioning axle stands for support at the rear of the tractor:
  – (6) and (7) Under the rear axle beams

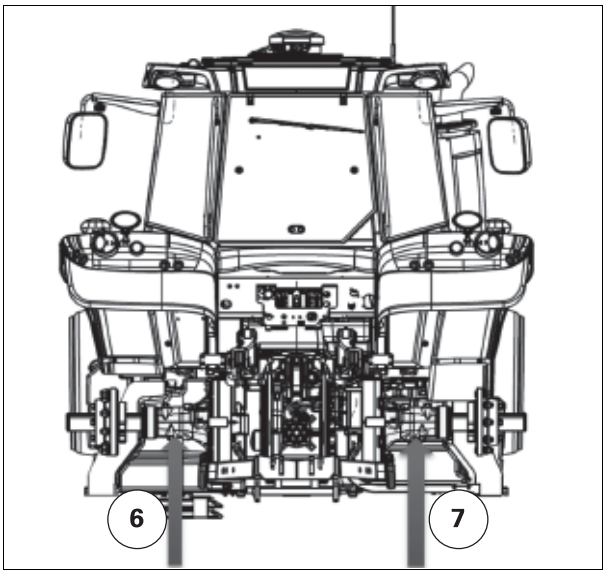
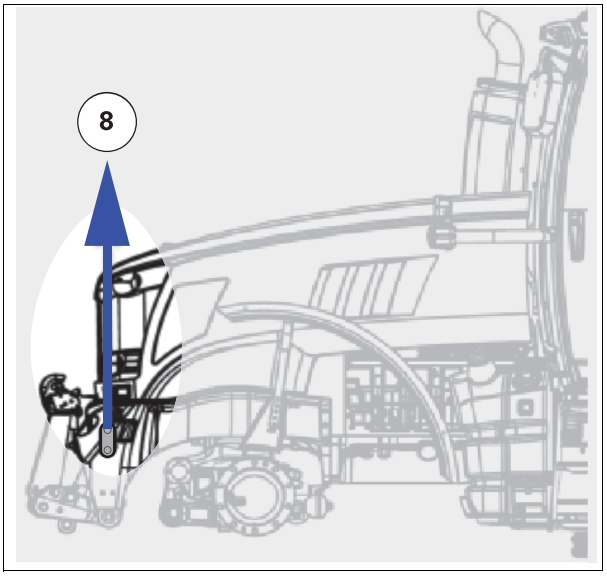


Fig. 3. I035285

– Front sling points:
  – (8) On the side fixing holes of the front linkage
  – (9) On the weight support hole



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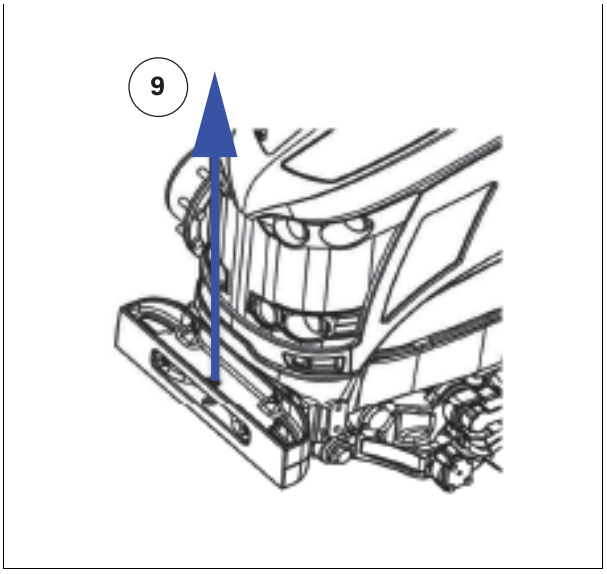

Fig. 4. I035288

2.9.4 Special instructions for cleaning the tractor

T000888

– Before cleaning the tractor, always:

  - follow the "mandatory procedure before dismounting the tractor" see §2.4.5, page 28, and
  - remove or put away implements, buckets, chains and hooks.
- Clean steps, pedals and floor. Remove grease or oil. Brush away dust and mud. In winter, scrape away snow and ice. Remember — slippery surfaces are hazardous.
- When washing the tractor with a jet of water, do not direct the jet straight onto electrical components.
- If using a high-pressure cleaning device, maintain a sufficient distance so as not to damage the paintwork and the sealed sections.
- Keep work surfaces and engine compartments clean.
- After washing, grease the lubrication points, the hinged sections and the bearings.

2.10 Protective structures

2.10.1 Protective structures: use and accreditation

T000935

The protective structures (cab, ROPS, seat belts) limit injuries as far as possible in case of an accident or if the tractor overturns.
They meet all applicable standards for agricultural tractors.

2.10.2 Cab or ROPS (depending on model)

T000936

- The cab and ROPS have been designed to be suitable for this tractor series.
- Never weld parts onto the cab or ROPS.
- Never bend or straighten the cab or ROPS.
- Never drill or modify the cab or ROPS to fit accessories or implements.
  If other controls or displays have to be fitted in the operator's area, contact your Massey Ferguson dealer to find out what to do.
- Do not attach chains or ropes to the cab or to the ROPS in order to pull or tow anything.
- If the cab or the ROPS has been removed, refit it and tighten the fixings to the specified torque before using the tractor again.
- ***WARNING:***
  A cab or ROPS damaged as a result of an accident, overturning or other incident must be replaced before using the tractor again.

2.10.3 Seat belt

T000934

- Wearing the seat belt is an important part of this protection.
- Always wear the seat belt adjusted correctly.

WARNING:
A damaged seat belt must be replaced before using the tractor again.

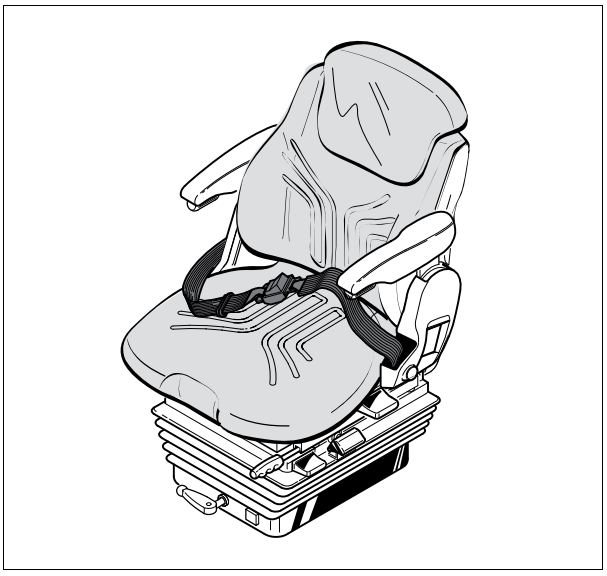

Fig. 1. I002857

2.10.4 Instructor seat

T003334

– Use of the instructor seat is exclusively reserved for an instructor or technician. The seat is NOT suitable for children.
– The seat belt must always be worn and correctly adjusted when using the instructor seat.

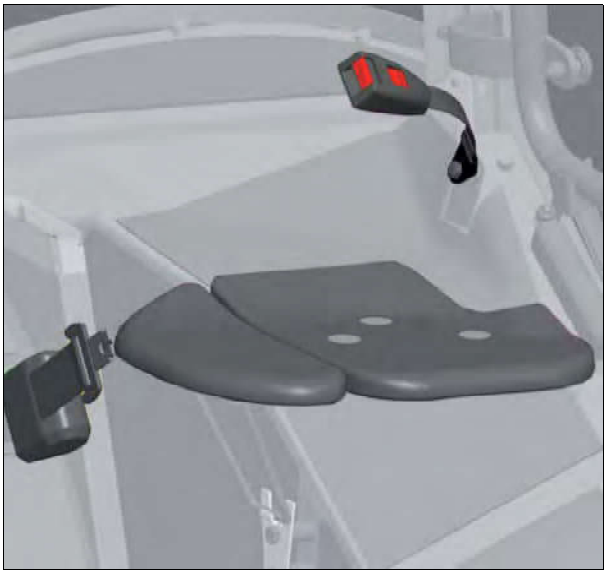

Fig. 2. I009900

2.11 Warranty

2.11.1 General

T000853

When selling new products to its dealers, the manufacturer provides a warranty which, subject to certain conditions, guarantees that the goods are free from defects in material and workmanship. Since this book is published worldwide, it is impossible to detail the exact terms and conditions of warranty that apply to all retail customers in all countries. Purchasers of new Massey Ferguson equipment should therefore request full details from their supplying dealer.
In accordance with the manufacturer's policy of continuous improvement of its products, the manufacturer reserves the right to make alterations to the specifications of machines at any time without notice. The manufacturer disclaims all liability for discrepancies which may occur between the specifications of its products and the descriptions thereof contained in its publications.

2.11.2 Pre-delivery inspection and commissioning on the user's premises

T000854

The dealer is required to carry out certain activities when supplying a new tractor. These consist of carrying out a full pre-delivery inspection to ensure that the tractor supplied is ready for immediate use, and providing full instructions to the user on the basic principles of operation and servicing of the tractor. These instructions will cover instruments and controls, and routine servicing and safety precautions. All persons who will be involved in the operation and servicing of the tractor should be present when these instructions are given.

IMPORTANT: *Massey Ferguson disclaims all liability in the event of any claim resulting from the fitting of non-approved parts, accessories, implements or attachments or unauthorised modifications or alterations.*

2.11.3 Warranty procedure

T000855

Correct commissioning on the user's premises and routine servicing help to prevent breakdowns. However, if operating problems do occur during the warranty period, follow this procedure:

- Immediately inform the dealer you purchased the tractor from, stating the model and serial number. It is very important not to delay, as even if the defect is covered by the original warranty, the coverage may no longer apply if the repair is not carried out immediately.
- Provide the dealer with as much information as possible. The dealer will need to know how many hours the tractor has been in service, what type of work it is used for and the symptoms of the problem.

Routine servicing operations not covered by the warranty

It should be noted that routine servicing operations such as tuning, brake and clutch adjustment, and the supplies used for the tractor servicing (oil, filters, seals, fuel, antifreeze etc.), are not covered by the warranty.

Warning concerning spare parts

Parts other than Massey Ferguson parts are likely to be of lower quality. Massey Ferguson disclaims all liability in the event of loss or damage arising as a result of such parts being fitted. The manufacturer's warranty may also become void if such parts are fitted during the normal warranty period.

2.11.4 Procedure to follow if changing region

T000856

Only the dealer from whom the tractor was purchased is liable for the protection provided by the warranty. Any repairs should, wherever possible, always be carried out by this dealer. If, however, the owner moves to another region or if the tractor is to be used temporarily at a location a long way from the dealer from whom it was bought, it is advisable to ask this dealer for the name and address of the dealer closest to the new address and arrange to have the obligations remaining to be fulfilled under the warranty transferred to this dealer.

If the customer leaves the region covered by the original dealer without having taken these steps, the new dealer will offer its services if needed, but may invoice them at the normal rate unless:

- the customer has clearly stated that the warranty period has not expired, and
- the repair dealer has been given the possibility of taking the necessary steps with the selling dealer.

2.11.5 Servicing during and after the warranty period

T000857

During the warranty period, all servicing and repair work must be carried out by the dealer, who will carefully carry out detailed checks of the progress and performance of the new tractor.

To obtain best results from a Massey Ferguson tractor, it is important to continue regular servicing and periodic inspections after the warranty has expired. All major overhaul work on the tractor must be carried out by a local dealer; an experienced technician will detect any problems which may arise between one overhaul and the next. Technicians regularly follow training courses to update their knowledge of the product and servicing and repair techniques, and the use of special tools and modern diagnostic equipment. They receive regular Service Bulletins and have access to all the workshop manuals and technical publications required to carry out repairs or servicing in accordance with the quality standards required by Massey Ferguson.

2

3. Operation

3.1 Cab

3.1.1 Steering console

T000937

Fig. 1.

I003165

(1) Start switch *fig. 5*
(2) Control unit *fig. 4*
This assembly comprises the direction indicator, windscreen wiper, front and rear windscreen washer and horn.
(3) PowerShuttle control
(4) Steering wheel adjustment *fig. 7*
(5) Instrument panel *fig. 3*
(6) Rotary beacon switch (platform version only).
(7) Side lights and dipped lights.
(8) Rear work lights (operational when sidelights are switched on).
(9) Front work lights (operational when sidelights are switched on).
(10) Hazard warning lights and control switch.
When this button is pressed, the front and rear flashing lights come on together with the corresponding indicator lights on the instrument panel.
(11) Work lights on hand rail.

3.1.2 Instrument panel

T000940

Fig. 2.

I003145

(1) Indicator light panel *fig. 3*

(2) Tachometer
The tachometer shows the engine speed in hundreds of revolutions per minute. The time counter shows the actual work time.

(3) Fuel gauge

(4) Engine coolant temperature gauge.
The central zone shows the normal operating temperature range. Stop the engine if the needle moves into the red zone.

(5) Reverse shuttle reverse indicator light.

(6) Reverse shuttle forward indicator light.

(7) Power take-off speed digital display.

(8) Forward speed digital display.

Indicator light panel

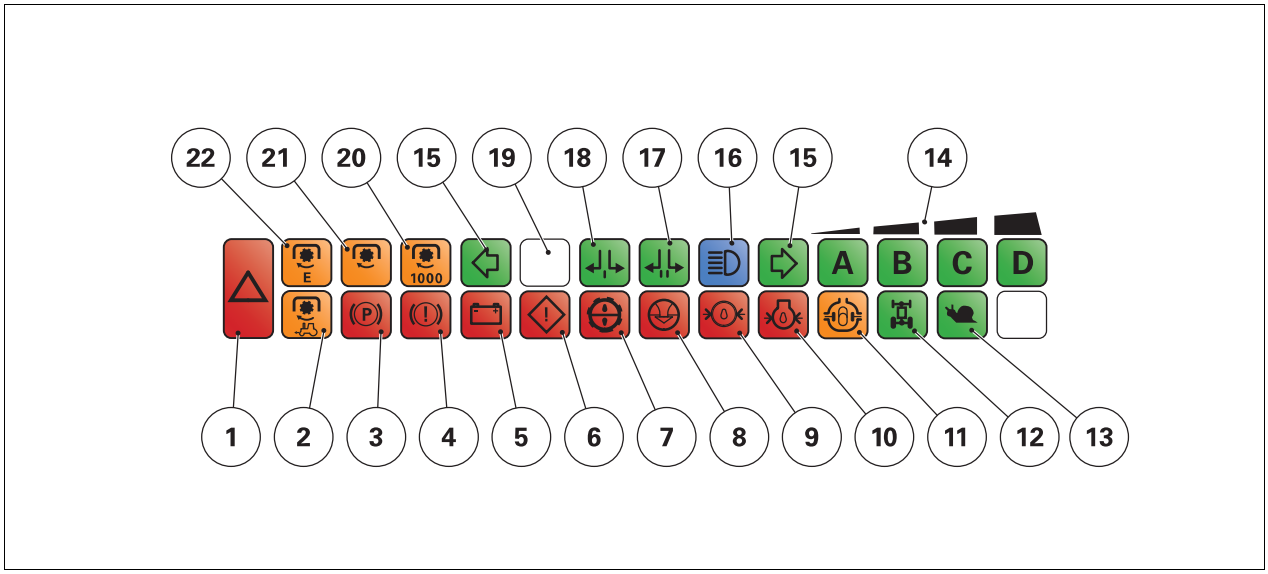

Fig. 3. I003149

(1) Failure warning light (red).
This lights up at the same time as the warning lights (red). If it comes on, stop the tractor immediately and determine the cause of the failure.

(2) Proportional power take-off engaged indicator light (yellow) (optional)

(3) Parking brake indicator light (red)

(4) Pneumatic braking pressure indicator light (red) (optional)

(5) Alternator charge light (red).
This charge indicator light comes on when the ignition key is in the contact position, but the engine is not running. It should switch off when the engine is running and the ignition key has returned to the contact position. If the indicator light comes on when the engine is running, stop the engine and determine the cause of the failure or consult your dealer.

(6) Failure warning light

(7) 15-micron transmission oil filter or 150-micron strainer blockage indicator light. Lubrication fault indicator light (closed centre system only) (red).
If this indicator light stays on after starting the engine, immediately stop the engine and check the lubrication filter and lubrication system. If the problem persists after replacing the filter, consult your dealer.

(8) Air filter blockage indicator light (orange)

(9) 20 bar low pressure oil pressure indicator light (red)
If this indicator light comes on during operation, consult your dealer.
- The electronic control unit prevents the hydraulic oil pressure indicator light from illuminating at low speed.
- The indicator light comes on for a few seconds when the engine is started. If it comes on subsequently, there is a problem.
- When the indicator light comes on for more than two seconds, the electronic control unit disengages the functions involved to prevent damage.
- In the event of a malfunction, the system shifts to D and the 20 bar pressure indicator light comes on.
- Depending on the temperature, it is not unusual for the indicator lights to remain on for a few minutes after the ignition is switched off.

(10) Engine oil pressure light (red).
This indicator light comes on when the ignition key is in the contact position, but should switch off when the engine is started and is running. If the indicator light stays on when the engine is running, stop the engine and determine the cause of the low pressure or consult your dealer.

(11) Differential lock indicator light (yellow).

(12) Four-wheel drive indicator light (green)

(13) Creeper gear operating indicator light (green) (if fitted).

(14) Speed ratio indicator lights (green).

(15) Direction indicator lights (green).

(16) Main beam indicator light (blue)

(17) Direction indicator light for the second trailer (green)

(18) Direction indicator light for the first trailer (green)

(19) Not used

(20) 1000 rpm power take-off engaged indicator light (yellow)

(21) 540 rpm power take-off engaged indicator light (yellow)

(22) Economy power take-off engaged indicator light (yellow) (if fitted).

3.1.3 Control unit

T000939

(1) Windscreen wiper
0. Off
I. First speed
II. Second speed
(2) Left-hand indicator
It is the left-hand indicators that flash.
(3) Right-hand indicator
It is the right-hand indicators that flash.
(4) Horn
(5) Headlights flash
(6) Headlights position (after engaging main lighting) .
(7) Front and rear windscreen washer

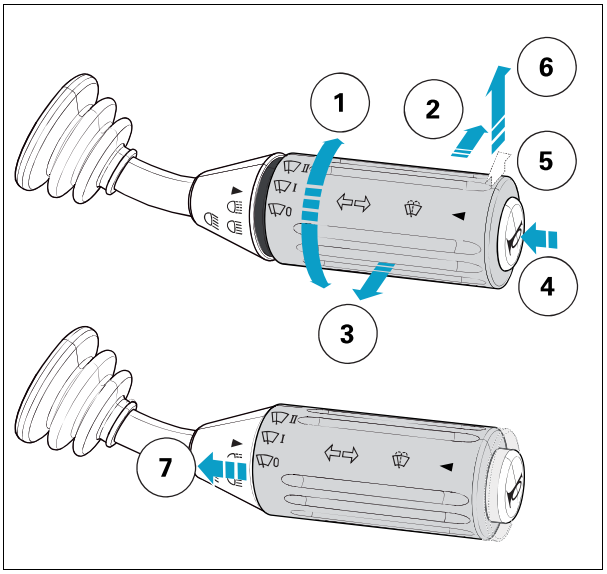

Fig. 4. I029129

3.1.4 Start switch

T000938

(1) Off
(2) Contact position to be used for electrical equipment when the engine is not running.
(3) Contact position to be used for electrical equipment when the engine is running.
(4) Preheating
(5) Start-up

NOTE: *The tractor runs with the key in position (3); to fully disconnect all electrical equipment, the key must be moved back through the accessory position (2) to the stop position (1).*

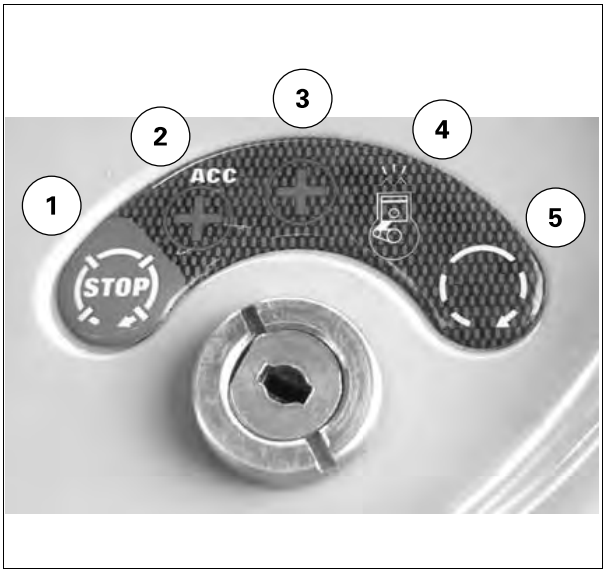

Fig. 5. I003146

3.1.5 Pedals

T000943

(1) Clutch pedal.
(2) Brake pedals
(3) Brake pedal locking latch.
(4) Throttle pedal.

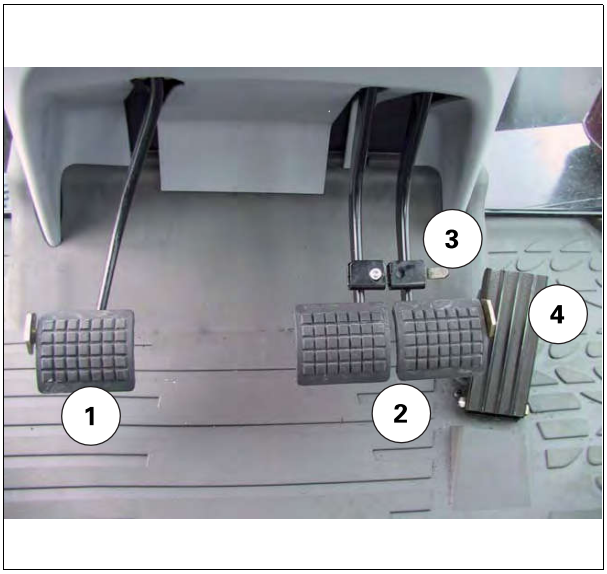

Fig. 6. I013219

Clutch pedal (1)

IMPORTANT: *Never keep your foot on the clutch pedal or keep it halfway engaged.*

The clutch pedal has a safety start switch. The clutch pedal must be depressed fully before operating the starter.

Brake pedals (2)

WARNING:

When travelling on the road, the two pedals must be locked together.

The two brake pedals can be used either separately or locked together using the latch (3).

Throttle pedal (4)

WARNING:

When travelling on the road, only the throttle pedal should be used. The throttle lever should be moved to the idle position so that engine braking can be operational.

Use of the throttle pedal enables a momentary increase of the engine speed set by the hand throttle.

3.1.6 Steering wheel

T000941

The steering wheel tilt and height can be adjusted (optional). Both adjustments are made using a single lever *fig. 7*:

– height adjustment: pull the lever upwards to adjust the height
– tilt angle adjustment: press the lever downwards to adjust the tilt angle.

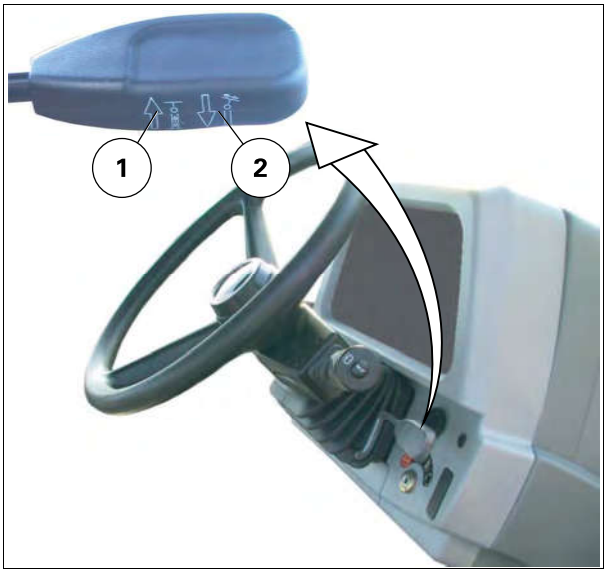

Fig. 7. I003153

3.1.7 Seat

T000945

Several seat models may be fitted, depending on the options and type of cab.

WARNING:
Never adjust the seat when the tractor is in motion.

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3

Fig. 8.

I003166

(A1) Mechanical suspension seat, flat floor cab
(A2) Mechanical suspension seat, lowered cab floor
(A3) Mechanical suspension seat, platform tractors
(B1) Pneumatic suspension seat, flat floor cab
(B2) Pneumatic suspension seat, lowered cab floor

(1) Weight adjustment
(2) Seat height adjustment
(3) Legroom adjustment
(4) Backrest tilt adjustment
(5) Seat swivel adjustment
(6) Headrest
(7) Lumbar support adjustment
(8) Fore/aft shock absorber
(9) Armrest tilt angle adjustment
(10) Height/weight adjustment indicator light
(11) Storage space for books and user instructions

Weight adjustment (1)

Your seat should be adjusted to suit your weight. Weight is indicated by the reference mark (10).
It is advisable to check the operator's weight setting and adjust it as necessary before starting the engine.

Pneumatic suspension seat	Press or pull the adjustment handle to increase or decrease the weight. Adjustment should be made with the operator in the seat. ***IMPORTANT:*** *To avoid damage, do not operate the compressor for more than 1 minute.*
Mechanical suspension seat	Turn the lever to increase or decrease the weight. Adjustment should be made without the operator in the seat.

Seat height adjustment (2)

Once the weight has been set, adjust the seat height.

Pneumatic suspension seat	Press or pull the adjustment handle to increase or decrease the height.
Mechanical suspension seat	Turn the lever to increase or decrease the height.

Legroom adjustment (3)

Raise the lever, adjust the legroom position then release the lever.

Backrest tilt adjustment (4)

Pull the lever, adjust the backrest angle then release the lever.

Seat swivel adjustment (5)

Pull the lever until you feel resistance which allows you to turn the seat 20° to the left and 10° to the right. Lockable every 10°.
There will be a click when the lever locks into place. The swivel should be in the central position for driving.

Headrest (6)

Adjust the headrest extension height by raising or lowering it until it stops (it audibly clicks into its adjustment notches).
The headrest extension can be removed by pulling it upwards past the stop.

Lumbar support adjustment (7)

Adjust the lumbar support by turning the handle to either the left or the right.

Fore/aft shock absorber (8)

In certain conditions (driving with a trailer attached), it is advisable to activate the fore/aft shock absorber. This means that shock impacts in the direction of travel can be better absorbed by the seat.

Armrest tilt adjustment (9)

The armrests can be tilted backwards and their height can be adjusted as necessary by turning the thumb wheels underneath them.

3.1.8 Right-hand console

T000946

Fig. 9.

I003663

(1) Hand throttle
(2) Transmission lever.
(3) Electronic linkage control.
(4) External hydraulic spool valve control levers.

(5) 4WD and differential lock switches
(6) 540/1000 rpm rear power take-off switch.
(7) Power socket for connection of accessories
(8) Accessories socket
(9) Diagnostics connector
(10) DIN attachment points for additional control unit and storage tray.
(11) Economy PTO control lever
(12) Creeper gear control lever
(13) Cigarette lighter
(14) Rotary beacon switch
(15) Rear windscreen wiper switch
(16) Front axle suspension switch.
(17) Front axle suspension activated/deactivated indicator lights.
(18) Auto-hitch control switch
(19) Auto-hitch release lever.
(20) Range shift button
(21) Reverse shuttle control knob.
(22) Power take-off speed display selector switch (540/1000 rpm)
(23) Hydraulic pump coupling switch (if fitted).
(24) Range selection display
25 Proportional PTO control lever

3.1.9 Left-hand console

T000947

(25) Hand brake
(26) Instructor seat
(27) Storage tray
(28) Cup/can stand
(29) Bottle stand

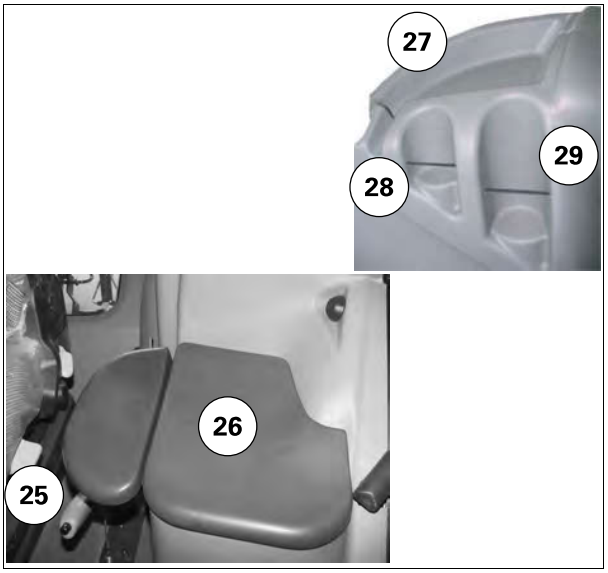


Fig. 10. I003665

3.1.10 Upper console

T000948

Standard roof

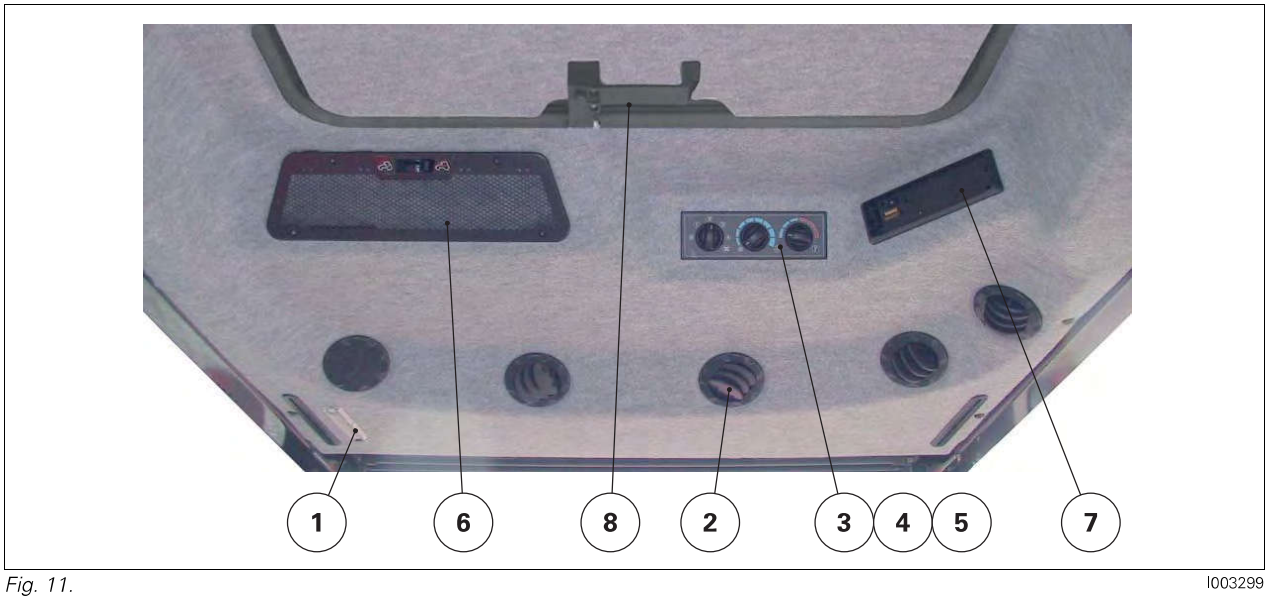


Fig. 11. I003299

(1) Interior light *fig. 14*
(2) Adjustable air circulation vents.
(3) Fan speed control
(4) Air conditioning control knob (optional)
(5) Heater controls
(6) Ventilation grille *fig. 16*
(7) Radio slot.
(8) Roof hatch (optional)

High-visibility roof

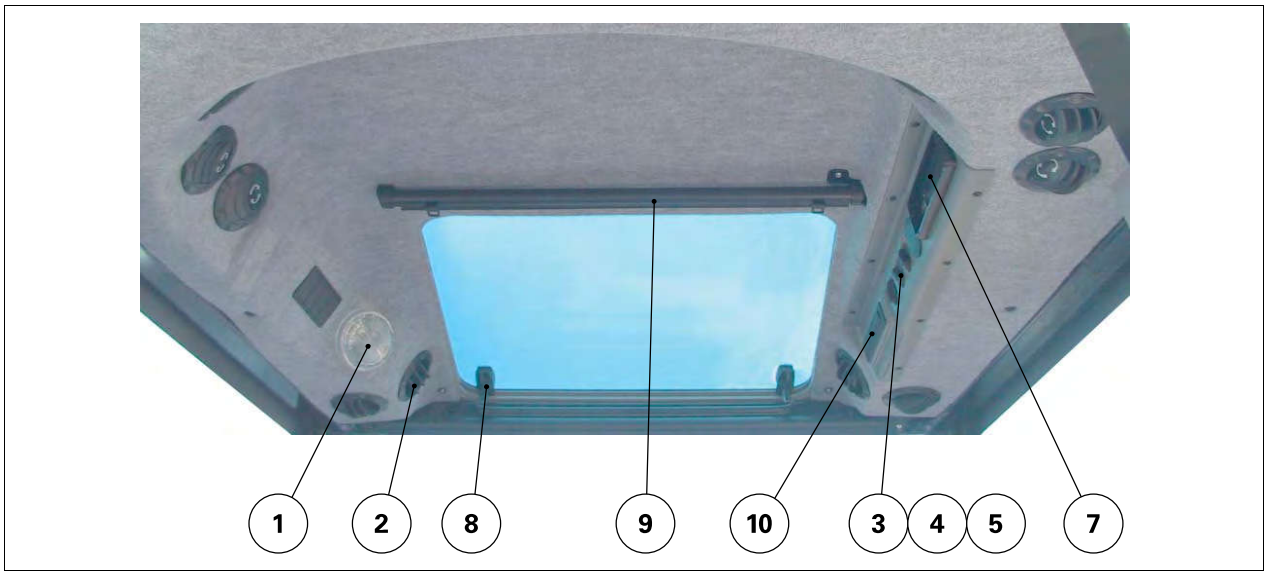


Fig. 12. I003300

(1) Interior light *fig. 15*
(2) Adjustable air circulation vents.
(3) Fan speed control
(4) Air conditioning control knob (optional)
(5) Heater controls
(7) Radio slot.
(8) Roof hatch.
(9) Roof sun visor
(10) Chiller *fig. 17*

Slimline roof

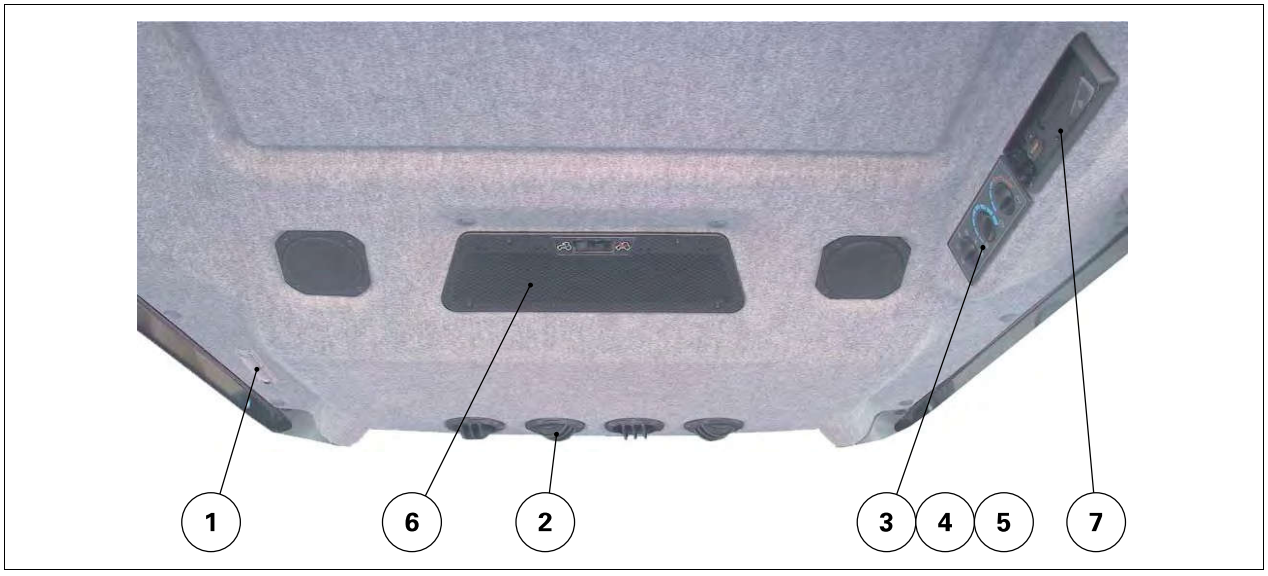


Fig. 13. I003301

(1) Interior light *fig. 14*
(2) Adjustable air circulation vents.
(3) Fan speed control
(4) Air conditioning control knob (optional)
(5) Heater controls
(6) Ventilation grille *fig. 16*
(7) Radio slot.

Interior light

Standard roof and slimline roof

3 positions:

(0): Off

(1) Light comes on when opening the left-hand door

(2) Permanently on

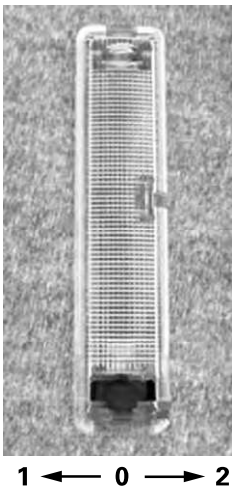


Fig. 14. I003302

High-visibility roof

3 positions:

(0): Off

(1) Light comes on when opening the left-hand door

(2) Permanently on

Fig. 15. I003303

Ventilation grille

(A) External air inlet

(B) Recirculation

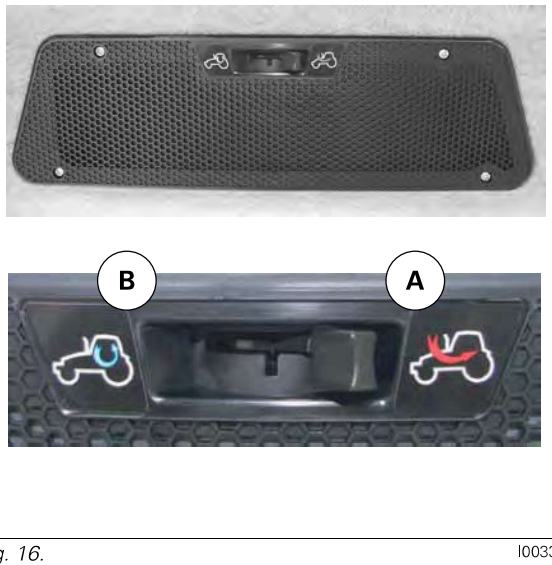


Fig. 16. I003304

Chiller

(A) Chiller
(B) Adjustable ventilation grille

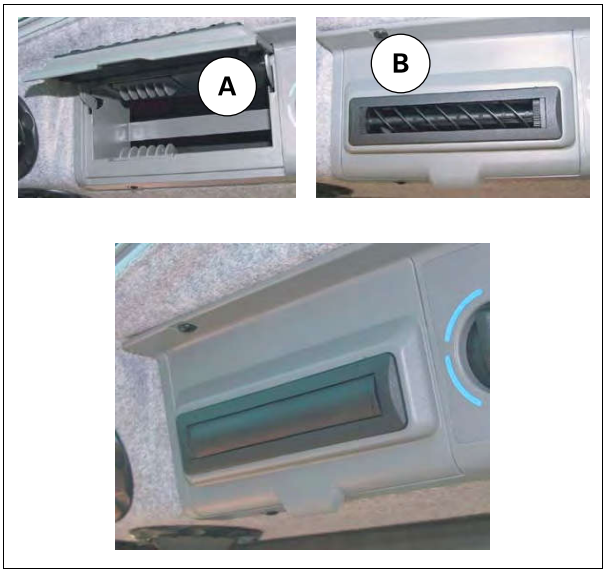


Fig. 17. I003305

3.1.11 Manual air conditioning

T000942

Description

IMPORTANT: *When the air conditioning system is in use, the cab doors and windows must be closed. Do not use the air conditioning system when the temperature falls below 20 °C. Switch off the system before starting up the engine.*

NOTE: *Ensure that the cab air filter is clean.*

NOTE: *The air conditioning and heater can be used at the same time, e.g. to demist the windows quickly.*

(3) Air conditioning temperature control knob
(4) Heater temperature control knob
(5) Fan speed control knob

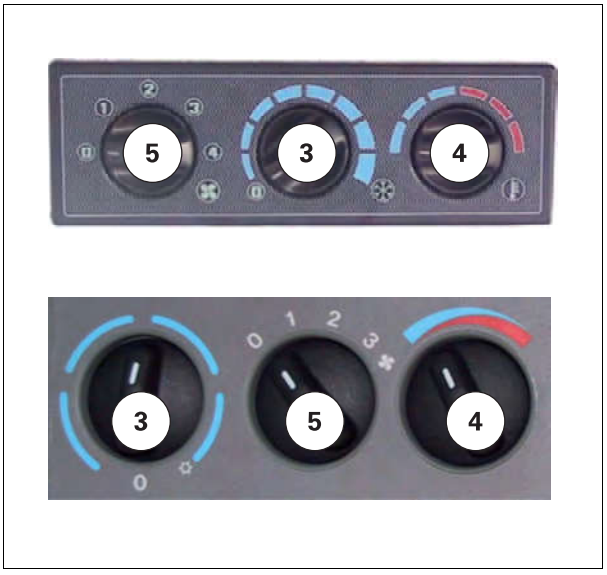


Fig. 18. I017891

Using the heater

1. With the engine running, turn the knob (3) completely to the left (position 0).
2. Turn the knob (4) to increase or decrease the cab heater temperature.
   – Clockwise to increase the temperature.
   – Anti-clockwise to lower the temperature.
3. Adjust the fan speed to obtain a comfortable temperature.

Using the air conditioning

NOTE: *If a low fan speed and a low temperature are used for long periods, the evaporator may start to ice up. If icing occurs, adjust the temperature control knob to raise the temperature and, if the icing continues, increase the fan speed.*

NOTE: *If the air conditioning system has not been used for some time, unlock the compressor before starting the engine by rotating the pulley nut with a wrench.*

CAUTION:

To keep the cooling system in good condition, the air conditioning must be operated for a few minutes at least once a week, even in winter.

WARNING:

Do not attempt to disassemble any part of the air conditioning system.

IMPORTANT: *ENSURE THAT THE REFRIGERANT GAS LEVEL IS CHECKED ONCE A YEAR BY YOUR DEALER.*

1. With the engine running, turn the heater temperature control knob (4) towards cold (anti-clockwise as far as it will go).
2. Turn the air conditioning temperature control knob (3) towards cold (clockwise as far as it will go).
3. Move the fan switch (5) to fast position.
4. When the required cab temperature is reached, adjust the air conditioning temperature control knob (3) to maintain a comfortable temperature.
5. Reduce the fan speed to obtain a comfortable temperature.

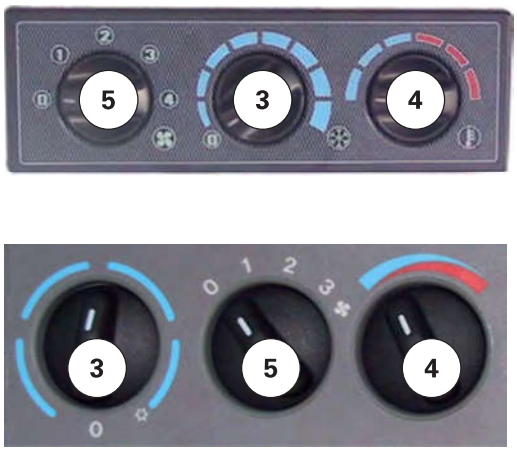


Fig. 19. I017891

3.1.12 Sun visor

T000950

1. To adjust the sun visor, pull vertically down to desired position.
2. To raise the sun visor, pull the cord (1).

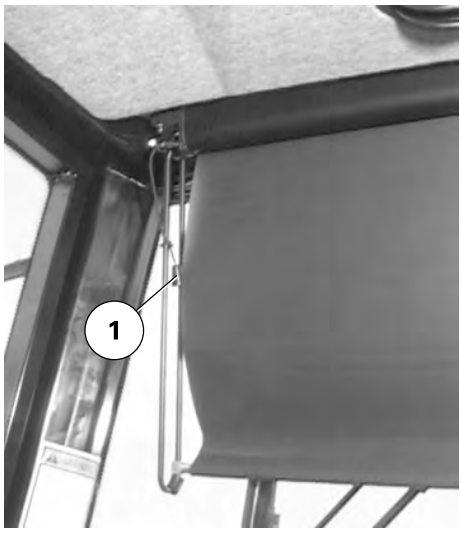


Fig. 20. I003367

3.1.13 Roof hatch

T000951

Standard roof hatch

This hatch has 2 functions:

1. Ventilation function
   The hatch is opened by pressing button (1), which is located on the handle, and pushing the hatch upwards using handle (2).
   To close the hatch, pull handle (2) and make sure that the lock is correctly engaged.
2. Emergency exit function
   To open the hatch fully (emergency exit), press the button (1) to unlock the hatch and then push hard on the handle (2) to force the gas rams from their holders.
   To close the hatch, pull it downwards using the handle (2), taking care to ensure the ends of the gas ram rods engage in the supports. Continue pulling the hatch downwards until the lock is fully engaged.

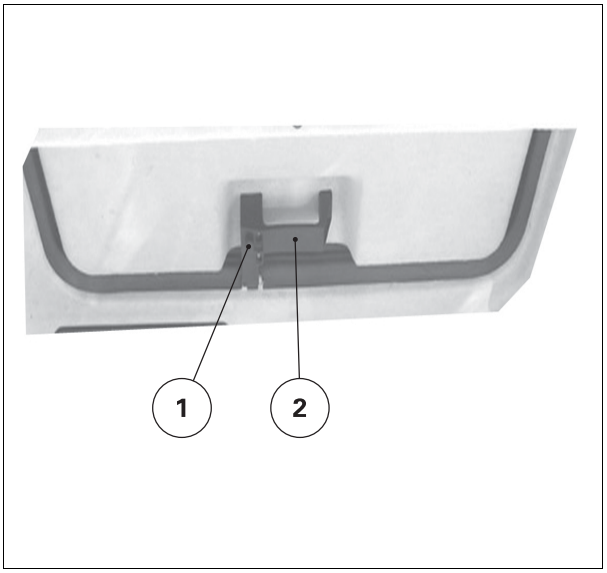


Fig. 21. I003368

High-visibility roof hatch

The high-visibility roof hatch may also be used as an air vent.
It is opened at the front by turning the two locks (1) located at either side of the hatch.

Opening:

1. Turn the two locks (1) to release the hatch.
2. Push upwards as per (2) to open it partially
3. Slide the glass backwards as per (3) to open it completely

Closing:

1. Slide the glass forwards
2. Pull it downwards
3. Turn the two locks (1) to lock the hatch.

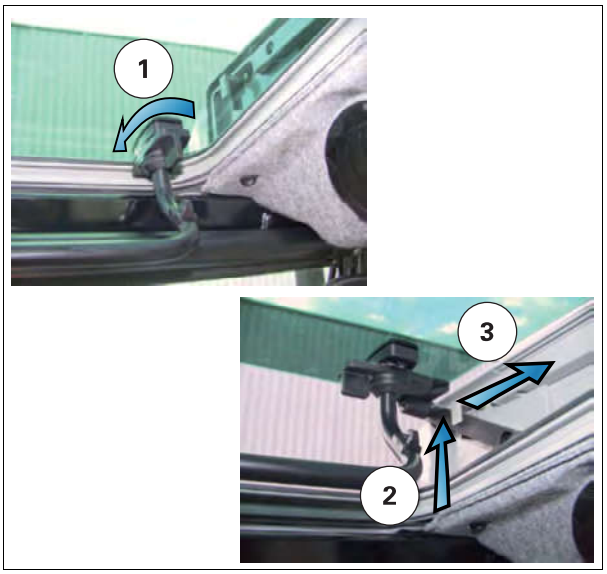


Fig. 22. I003369

3.1.14 Opening windscreen

T000952

The windscreen is opened by turning the handles (1) located at either side of the instrument panel. It can be locked in intermediate or fully open position by two rams.

Fig. 23. I003370

3.1.15 Wheel chock(s) (optional)

T003464

Wheel chock location

Located on the rear right-hand fender, the folding chock(s) (depending on option) immobilises the tractor when required.
Unscrew the wing nut to slide the chock out of its housing.

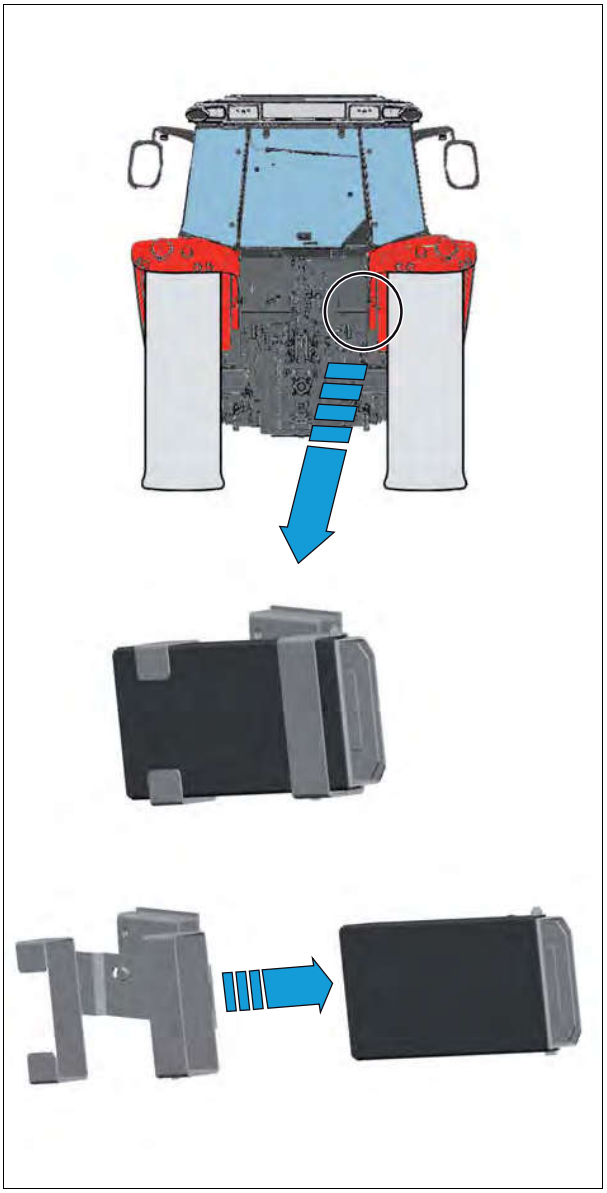


Fig. 24. I029231

Using the wheel chock

1. Once the wheel chock has been extracted from its housing, place it on the ground with the larger side face down.
2. ***CAUTION:***
   The chock springs open automatically.
   Hold down the top of the chock and press (1) to open.

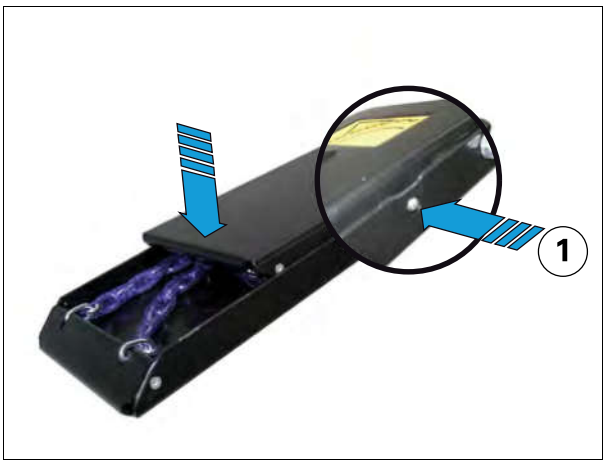


Fig. 25. I017852

3. Gently release the top of the chock.

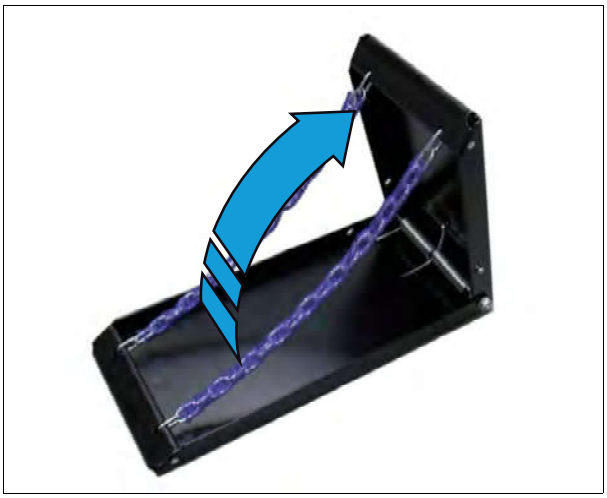


Fig. 26. I017855

4. ***IMPORTANT:*** *Ensure the chock is facing in the right direction before placing it under the vehicle.*

   To immobilise the tractor, position the chock underneath a wheel as shown.

Fig. 27. I017857

3.2 Engine

3.2.1 Running-in

T000953

– Experience has shown that the first 50 hours of tractor operation have a significant effect on the performance and life of the engine.

– From the first operation, the tractor must run with the engine at full load. The engine should be allowed to reach a temperature of 60 °C before being subjected to full load.

– It is quite normal for oil consumption to be relatively high during the running-in period. Therefore, during running-in, the engine oil level must be checked twice a day during the first 50 hours of operation to avoid the risk of lubrication failure.

– During running-in, check the tightness of all nuts, bolts and screws frequently. The wheel nuts must be retightened daily until their torque has stabilised (see chapter 5).

3.2.2 Start-up

T001673

DANGER:
Never run the tractor in an enclosed space unless the exhaust can be ventilated to the outside air. Never run the engine unless you are sitting at the steering wheel of the tractor.

WARNING:
Check that the Power Shuttle control is in neutral and that the hand brake is engaged. Place the PTO control in NEUTRAL.

NOTE: *Also refer to the instructions in the startup sheet.*

Procedure

1. Turn the ignition key to the **ON** position. The indicator lights on the instrument panel should light up.
2. Depress and hold down the clutch pedal.
3. Turn the key to the preheating position and hold there for 2 seconds.
4. Start the engine and release the key.
5. Release the clutch pedal.

3.2.3 Stopping the engine

T000956

1. ***WARNING:***
   Check that the Power Control controller is in neutral.
   If there is a ParkLock on your tractor, check that the control is engaged on the Power Control lever. If not, apply the parking brake.
   Deactivate the PTO controls and the hydraulic controls.

   After stopping the tractor, allow the engine speed to return to idle.

2. ***DANGER:***
   Never run the tractor in an enclosed space unless the exhaust can be ventilated to the outside air.
   Never run the engine unless you are sitting at the steering wheel of the tractor.

   Leave the engine running for several seconds at idle speed. It is necessary to allow the turbocharger to reduce speed.

   NOTE: *If the tractor has been operating under heavy load, allow the engine to run at idle speed for 1 to 2 minutes, depending on the ambient temperature, to allow the turbocharger to cool before stopping the engine.*

3. ***IMPORTANT:*** *Do not stop the engine suddenly when the engine is running at a high speed, because the turbocharger will continue running under its own momentum and will no longer be lubricated. Slow the engine before stopping it.*

   Return the ignition key to the "Stop" position.

3.2.4 Engine speed

T001675

Foot throttle

Use of the foot throttle enables you to exceed the engine speed set by the hand throttle. When the foot throttle pedal is released, the engine rpm returns to that set by the hand throttle.

CAUTION:

- ***When using the foot throttle, the hand throttle should be placed in the idle position.***
- ***Do not keep your foot on the clutch pedal or keep it halfway engaged.***
- ***Always descend slopes with the tractor in gear and never with the clutch disengaged.***
- ***When turning on headlands with heavy mounted implements, reduce the engine rpm.***
- ***Steering is not power assisted when the engine is not running.***

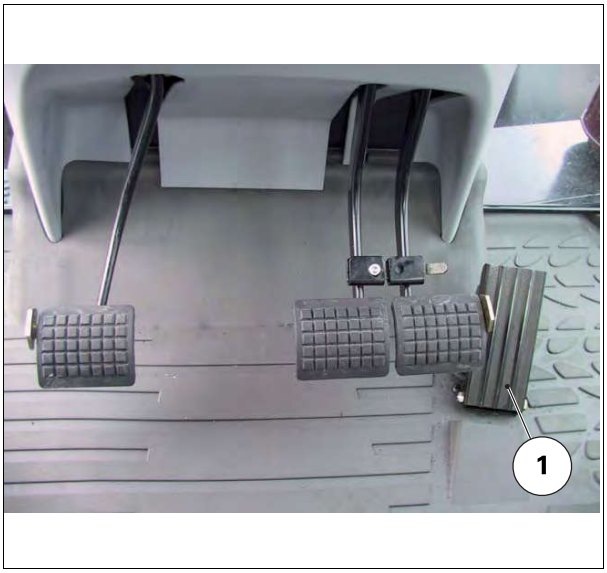


Fig. 1. I017869

Hand throttle

Using the hand throttle allows you to vary the engine speed and to maintain a constant speed.

- To do this, simply push or pull the lever to select a speed .
- The lever remains in this position to maintain the selected speed.
- The lever in rear position corresponds to idle speed.

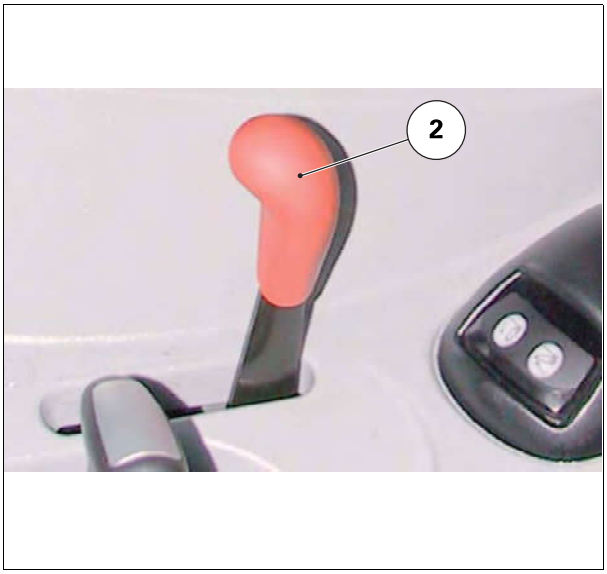


Fig. 2. I017884

Choosing the correct gear ratio

- Select the ratio which gives the optimum fuel consumption without overloading the engine and the transmission.
- Bear in mind that soil conditions can vary within a matter of a few yards in the same field.
- Select a ratio which allows the engine to operate comfortably at about 75% of its maximum power.

3.3 Transmission

3.3.1 General information about the Dyna-4 transmission

T000957

The Dyna-4 transmission has 16 gear ratios. It has four ranges and four Powershift ratios. All these ratios may be selected without touching the clutch pedal.

3

3.3.2 Engaging the transmission

T000958

When the tractor is started up, the transmission is disengaged (gearbox in neutral).

Before selecting a transmission ratio, the gearbox must be engaged:

– either by pressing button (D) until display (B) appears

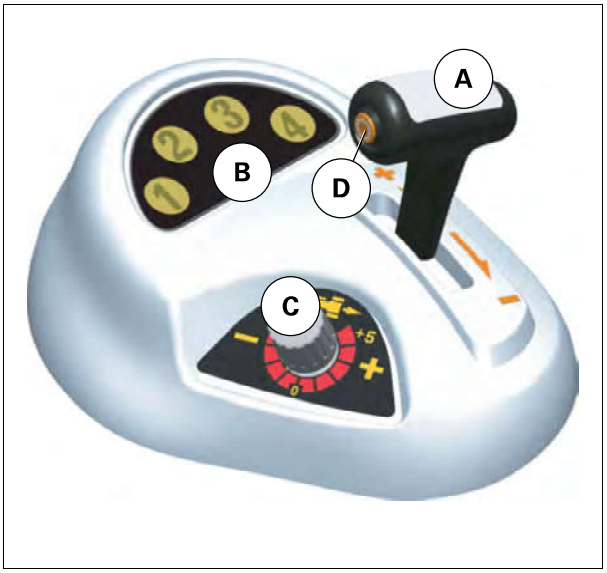


Fig. 1. I003376

– or by lifting lever (E) until display (B) *fig. 1* appears.

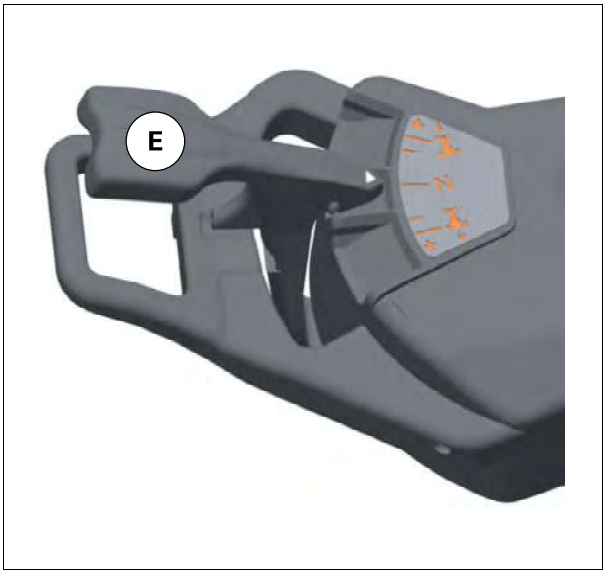


Fig. 2. I003377

3.3.3 Transmission control

T000959

Transmission lever (A) *fig. 3* controls all the ratios. The selected range (1, 2, 3 or 4) is displayed on screen (B) *fig. 3*. The selected Powershift ratio (A, B, C or D) is displayed on the instrument panel.

NOTE: *Shuttle lever (E) may also be used to change the Powershift ratios.*

Manual range shifting

With lever (A)

– Forward travel
  While holding down button (D), push lever (A) forwards to shift to the higher range, pull back on lever (A) to shift to the lower range.

– Reverse travel
  While holding down button (D), pull back on lever (A) to shift to the higher range, push lever (A) forwards to shift to the lower range.

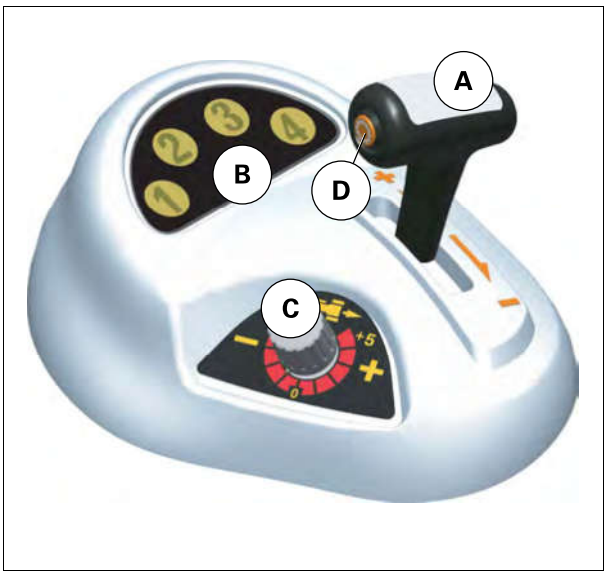


Fig. 3. I003376

With lever (E)

– Forward travel
  While keeping the clutch pedal depressed, push lever (E) forward to shift to the higher range, and pull back lever (E) to shift to the lower range.

– Reverse travel
  While keeping the clutch pedal depressed, pull back lever (E) to shift to the higher range, and push lever (E) forward to shift to the lower range.

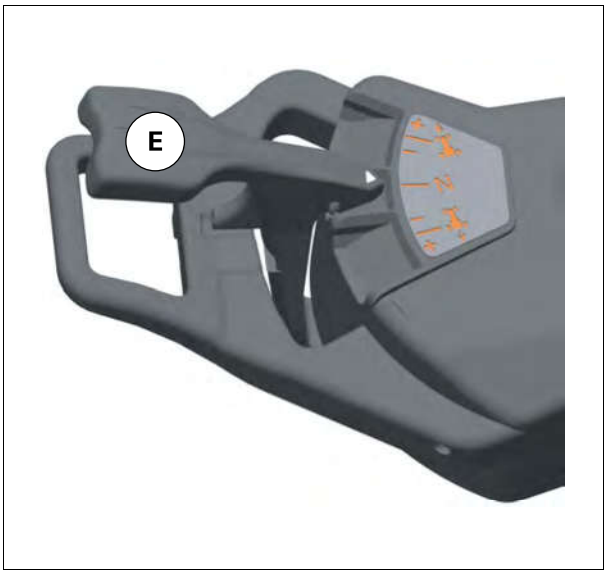


Fig. 4. I003377

NOTE: *It is not possible to shift more than one range at a time. Ranges must be shifted one by one.*

Automatic range shifting

When shifting range, the electronic controller automatically selects the appropriate Powershift ratio based on the tractor speed. This function prevents underspeed and overspeed.

Shifting Powershift ratios

The Powershift ratio is changed by operating lever (A) *fig. 3* or the shuttle lever. Shifting can be carried out in pulses or by holding the lever in position and changing ratios one after the other.

– Forward travel
  Push lever (A) *fig. 3* forwards to shift to the higher ratio, pull back on lever (A) *fig. 3* to shift to the lower ratio.

– Reverse travel
  Pull back on lever (A) *fig. 3* to shift to the higher ratio, push lever (A) *fig. 3* forwards to shift to the lower ratio.

NOTE: *An audible signal is sounded if the user operates the lever again after reaching the last Powershift ratio (A or D) in a range. The audible signal notifies the user that he must select the higher or lower range (depending on the situation).*

Placing in neutral

It may be necessary to place the gearbox in neutral (disengage the transmission), so that, for example, the tractor can be towed. Press button (D) *fig. 3* until display (B) *fig. 3* goes out.

3.3.4 Selecting the ratio at start-up

T000960

General

Depending on the option with which the tractor is fitted, the gear ratio that is engaged when the tractor is started up can be preselected. Any ratio from 1A to 4A can be chosen.

3

DANGER:

Carry out the following steps on a level surface, with the hand brake applied.

Selecting the start-up ratio without preselection: Selecting with the transmission lever

At start-up and after the transmission has been engaged, the gearbox is automatically engaged in the last ratio used before the tractor was stopped. Every time the tractor is stopped, the current ratio is stored in the controller's memory, and this ratio is used when the tractor is started up again (either forward or reverse travel). If the ratio at start-up is not the one that is required, it can be changed while the tractor is stationary with the engine running.

Procedure

1. Check that the transmission is engaged and shuttle lever (E) *fig. 6* is in neutral.
2. Press down on the clutch pedal.
3. Move transmission lever (A) to select the desired Powershift ratio, and also press button (D) to shift to a higher or lower range.
4. Release the clutch pedal.

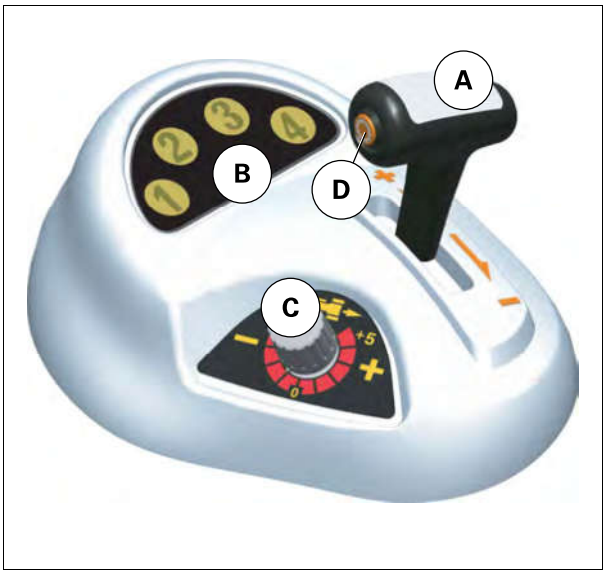


Fig. 5. I003376

Selecting the start-up ratio without preselection: Selecting with the shuttle lever

At start-up and after the transmission has been engaged, the gearbox is automatically engaged in the last ratio used before the tractor was stopped. Every time the tractor is stopped, the current ratio is stored in the controller's memory, and this ratio is used when the tractor is started up again (either forward or reverse travel). If the ratio at start-up is not the one that is required, it can be changed while the tractor is stationary with the engine running.

Procedure

1. Check that the transmission is engaged.
2. Press down on the clutch pedal.
3. Place shuttle lever (E) in forward or reverse travel.
4. Move shuttle lever (E) to select the desired Powershift ratio, and also press button (D) *fig. 5* to shift to a higher or lower range.
5. Move shuttle lever (E) back to neutral.
6. Release the clutch pedal.

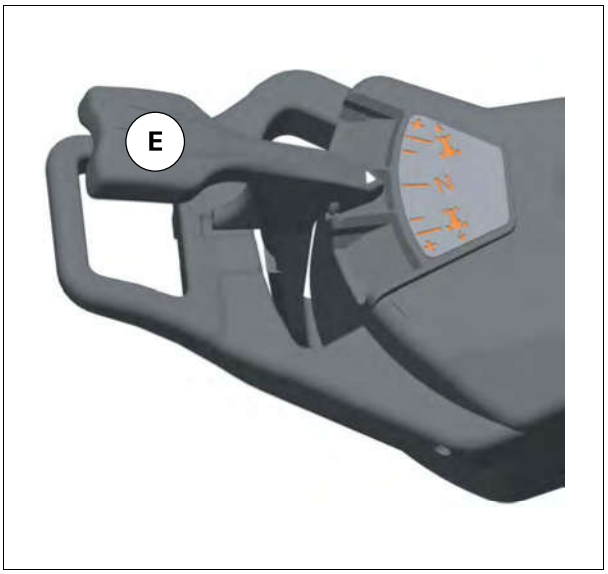


Fig. 6. I003377

Selecting the start-up ratio with preselection: Selecting with the transmission lever

At start-up and after the transmission has been engaged, the gearbox is automatically placed in the ratio stored in the memory. The preselected ratio is stored in the controller's memory and this ratio is used whenever the engine is started up (in forward or reverse travel) until the preselection is changed.

The ratio at start-up can be preselected while the engine is running and the tractor is travelling slower than 5 km/h.

Procedure

1. Check that the transmission is engaged and shuttle lever (E) *fig. 6* is in neutral.
2. Press down on the clutch pedal.
3. Keep button (D) *fig. 5* pressed down.
4. Move transmission lever (A) *fig. 5* to select the range and the desired Powershift ratio.
5. Release button (D) *fig. 5* and the clutch pedal.

Selecting the start-up ratio with preselection: Selecting with the shuttle lever

At start-up and after the transmission has been engaged, the gearbox is automatically placed in the ratio stored in the memory. The preselected ratio is stored in the controller's memory and this ratio is used whenever the engine is started up (in forward or reverse travel) until the preselection is changed.

The ratio at start-up can be preselected while the engine is running and the tractor is travelling slower than 5 km/h.

Procedure

1. Check that the transmission is engaged.
2. Press down on the clutch pedal.
3. Place shuttle lever (E) *fig. 6* in forward or reverse travel.
4. Keep button (D) *fig. 5* pressed down.
5. Move shuttle lever (E) *fig. 6* to select the range and the desired Powershift ratio.
6. Release button (D) .*fig. 5*
7. Move shuttle lever (E) back *fig. 6* to neutral.
8. Release the clutch pedal.

3.3.5 Power Shuttle

T000961

The shuttle control (E) *fig. 2* is located to the left of the steering wheel.
It is used for quickly changing the direction of travel (forward or reverse, *see "Selecting direction of travel", page 84*).

It is also used for quickly changing the Powershift ratios (*see "Shifting Powershift ratios:", page 84*) or controlling the tractor clutch (*see "Tractor clutch control", page 84*). The reverse shuttle tempo may be adjusted according to user preference (*see "Shuttle tempo:", page 84*).

DANGER:
Before leaving the seat, you must move the shuttle control (E)fig. 2 into neutral position. Apply the hand brake.

Selecting direction of travel

Place shuttle control (E) *fig. 2* in the desired direction of travel; the corresponding indicator light on the instrument panel will come on. When the tractor is in motion, each change to the direction is made using the control without disengaging the clutch.

Shifting Powershift ratios:

When the lever is positioned in forward or reverse travel, push or pull the lever in pulses to increase or reduce the Powershift ratio according to the + and - symbols on the lever. Shifting can be carried out in pulses or by holding the lever in position and changing ratios one after the other.

Tractor clutch control

Pull the lever upwards to disengage the clutch; release the lever to engage it. The clutch control on the shuttle lever is proportional.

NOTE: *It is advisable to use the clutch pedal when the tractor is loaded and for all precise manoeuvring (coupling of implements etc.).*

Shuttle tempo:

Use rotary knob (C) *fig. 1*, to adjust the shuttle tempo. The adjustment range is from +5 to -5.

3.3.6 Creeper gears and super creeper gears

T000962

If the tractor is fitted with a creeper gearbox, normal speeds are obtained when the lever is placed in "Hare/Tortoise" position and reduced speeds (4:1 for creeper or 14:1 for super creeper) when the lever is moved to "Snail" position.

NOTE: *If the 4:1 creeper gears are engaged while the tractor is in range 3 or 4, the electronic control automatically shifts to range 2 without changing the Powershift ratio.*

IMPORTANT: *The 14:1 super creeper gears may be used in all ranges.*
Only move the creeper gear lever when the tractor is completely stationary. Do not use weights or water ballast when in creeper mode.
Under no circumstances should the creeper gears be used to obtain a tractive power greater than that available in the normal range.
Move the lever at least once a month to prevent the system from seizing.

DANGER:
Always place the transmission lever in neutral and shuttle control lever (E) fig. 7 in NEUTRAL position before leaving the operator's seat. Apply the hand brake.

NOTE: *If the tractor is being worked in conditions where water comes up as high as the wheel hubs, corrosion damage may occur on some of the components. Consult your dealer or agent with regard to sealing precautions. Failure to do so may invalidate the warranty.*

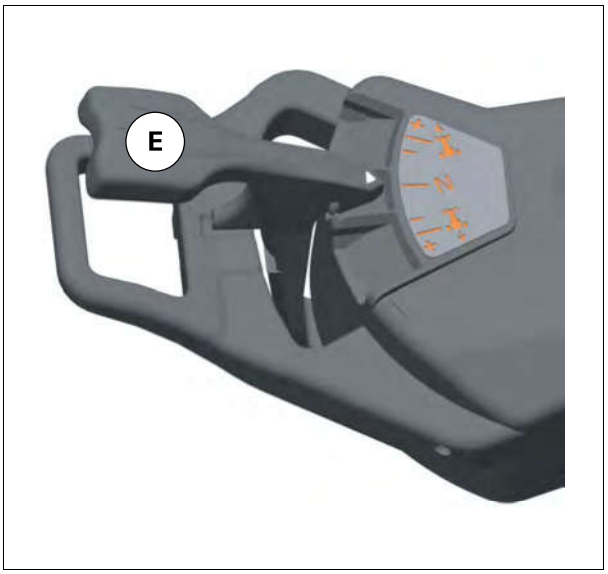


Fig. 7. I003377

3.3.7 Speed limitation

T000969

On versions that are limited to speeds not exceeding 30 km/h, the speed is limited by electronic transmission control.

- When the tractor reaches a travel speed of 28 km/h, the indicator light for the engaged Powershift ratio (C or D) starts flashing.
- When the tractor reaches a travel speed of 30 km/h, all the Powershift ratio indicator lights start flashing.
- When the tractor reaches a travel speed of 33 km/h, the electronic transmission control automatically shifts to the lower ratio (from D to C, from C to B) to limit the speed.

3.3.8 Cold temperature conditions

T000970

If the ambient temperature is below -10 °C, the transmission is locked on Powershift ratio C and the indicator lights for Powershift ratios A and D flash on the instrument panel.

3.3.9 Tractor towing

T000971

WARNING:
Creeper gear must be disengaged and the gearbox in neutral.

If the engine is shut down or out of hydraulic fluid:

Transport by trailer is recommended. As the gearbox is no longer lubricated when the engine is stopped, tow the tractor no further than 50 m and DO NOT EXCEED SPEEDS OF 5 km/h.

If the engine is running:

Turn off engine. Wait 10 minutes for the low pressure to drop. Start the engine and do not touch any gearbox controls to keep transmission in neutral. Allow the engine to run to keep the transmission lubricated. The tractor can be towed over a short distance, less than 1 km. DO NOT EXCEED A SPEED OF 5 km/h.

IMPORTANT: *If the gearbox oil pressure indicator light comes on, only tow the tractor on a trailer.*

3.4 Brakes

3.4.1 Brake pedals

T000972

DANGER:

When driving on the road, the two brake pedals must be locked together. Only the foot throttle should be used, and the hand throttle lever must be in the engine idle position.

3

– Pedals locked together:
Use the pedals locked together when on the road. The brake acts on the 2 rear wheels, the front axle (4-wheel drive only) and on the trailer brake.

– Separated pedals:
Do not use when on the road. Use the pedal on the same side as the relevant wheel. The brake only acts on the relevant rear wheel.

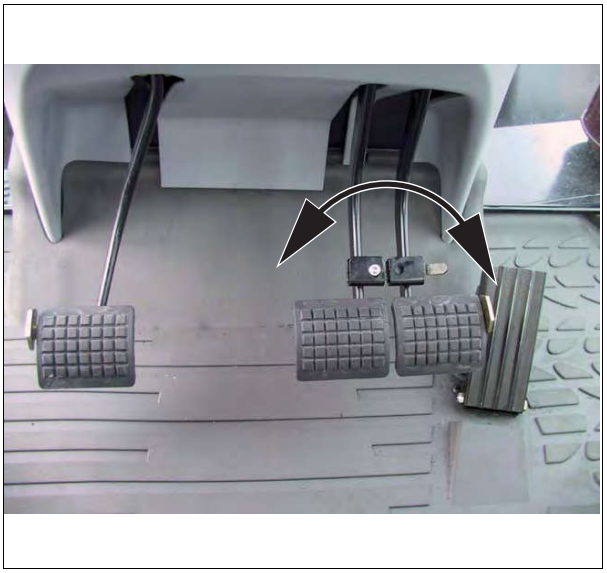


Fig. 1. I003430

3.4.2 Hydraulic trailer brake

T001686

General

WARNING:

When using the trailer brake, it is recommended that the brake pedals are locked together.

The trailer brake system is available as an option.

If a trailer equipped with a hydraulic brake system is hitched to the tractor and connected, the trailer brakes are activated as soon as the operator presses both the tractor brake pedals.

Connection:

1. Remove the plastic cover and check for contamination. Clean if necessary.
2. Connect the trailer hose to the union located at the rear of the tractor.
3. After disconnecting, refit the cover to prevent any possible clogging and damage to the contact faces.

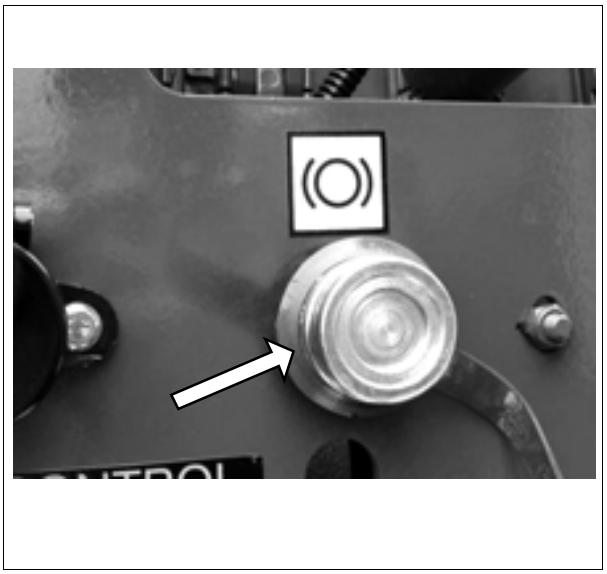


Fig. 2. I003431

3.4.3 Pneumatic trailer brake

T003406

WARNING:

Before activating the trailer brake, lock the brake pedals together ***see §3.4.1, page 86.***

Identification of coupling heads:

Black	5,6 bar max. to 0 bar, used in a single brake line (as used on older trailers).
Red	8 bar max., brake assistance line, used for dual braking (as used on new trailers).
Yellow	0 bar to 8 bar max., used in a double brake line (as used on new trailers).

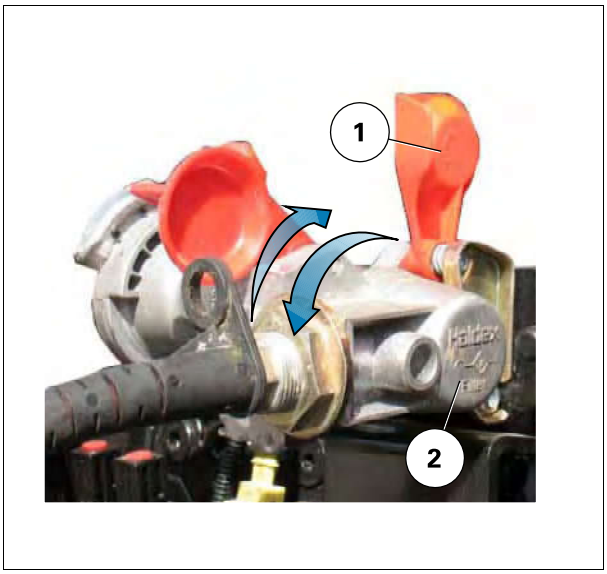


Fig. 3. I017088

Pressure available depending on type of braking

Brake pedals/hand brake not used	Full braking with brake pedal or hand brake lever	Colour of coupling heads
4,8 bar to 5,6 bar	0	Black
6,5 bar to 8 bar	6,5 bar to 8 bar	Red
0	6,5 bar to 8 bar	Yellow

Coupling the trailer to the tractor:

Remove the cover ref. (1) and connect the head of the trailer connection hose ref. (2), turning it downwards until it engages correctly.

IMPORTANT: *Connect the yellow coupling head before the red one in order to avoid an excess of pressure in the system.*

Uncoupling the trailer:

Carry out the operation in reverse, turning the coupling head upwards and refitting the cover ref. (1) to prevent any possible clogging and damage to the contact faces.

IMPORTANT: *Disconnect the red coupling head before the yellow one in order to avoid an excess of pressure in the system.*

Driving the tractor/trailer assembly

Check the pressure in the brake system using the pressure gauge located on the cab pillar.
If the pressure in the brake system drops below 4 bar, the brake indicator light lights up on the instrument panel.

3

WARNING:

When starting, wait for the brake control indicator light to switch off before starting to move. If the pressure drops below 4 bar, trailer braking is no longer operational, and the brake indicator light will light up on the instrument panel fig. 4. Stop the tractor carefully and consult your dealer.

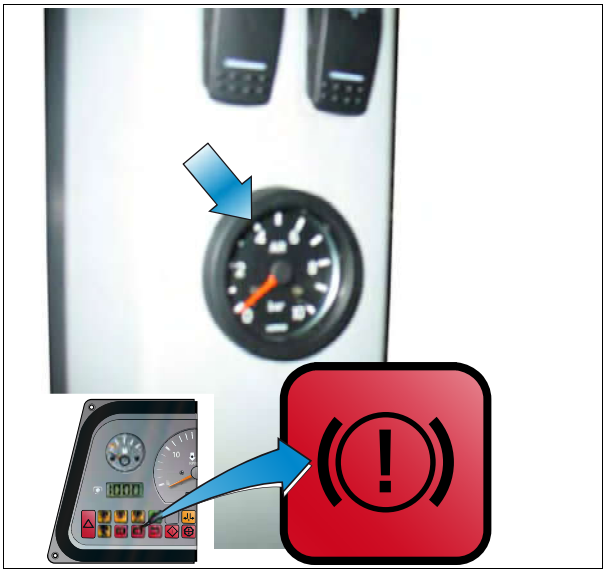


Fig. 4. I019237

3.4.4 Parking brake

T001688

Operation

WARNING:

To compensate for gravity and to prevent the tractor from moving when starting on an ascent or descent, the brake pedals must be applied before releasing the parking brake.

- When the parking brake is engaged, if the shuttle control is moved forwards, the tractor remains stationary.
- If the parking brake is engaged at speeds below 2 km/h, the tractor stops.
- If the parking brake is engaged at speeds above 2 km/h, the tractor continues moving.

3.5 Steering

3.5.1 Steering

T000977

CAUTION:

The steering is hydrostatic. When the engine stops, the booster pump no longer feeds the system. Hydrostatic steering therefore shifts automatically to manual operation mode, which requires greater effort when turning the steering wheel.
However, no hydraulic system can operate efficiently unless:

- ***it is correctly maintained and recommended fluids are used***
- ***the tightness of all unions, and the oil level, are regularly checked***

3.6 Front axle

3.6.1 Four-wheel drive front axle

T000975

Press the 4WD switch (B) to engage the four-wheel drive front axle.
Press again to disengage the four-wheel drive front axle.
Once a speed of 14 km/h is reached, the 4-wheel drive front axle is disengaged automatically. It re-engages automatically as soon as the speed drops below 13 km/h.

NOTE: *When the tractor is stopped, the four-wheel drive front axle is engaged.*

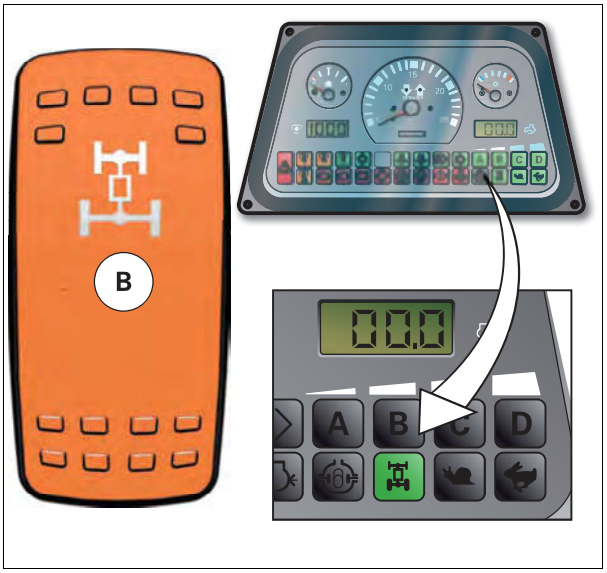


Fig. 1. I003432

Special cases:

- When pressing the switch for more than two seconds, the four-wheel drive front axle is not disengaged for speeds above 14 km/h. The indicator light flashes on the instrument panel.
- When pressing the switch while the tractor is travelling at speeds above 14 km/h, the four-wheel drive front axle will remain engaged regardless of the tractor's speed.
- When applying the hand brake while the tractor is travelling above 2 km/h, the four-wheel drive front axle is engaged automatically.
- If both brake pedals are depressed, the four-wheel drive front axle will engage to provide 4-wheel braking, regardless of the forward speed.

3.6.2 Suspended front axle

T000976

The suspended front axle is designed to improve the operator's comfort by enabling better shock absorption during road use and also to increase the vehicle's stability at high speeds by improving contact with the road surface.
The axle suspension is activated by pressing switch (A) and is deactivated with switch (B) located on the cab right-hand pillar.
Activation and deactivation of the front axle suspension are indicated by indicator lights (C) and (D) respectively.

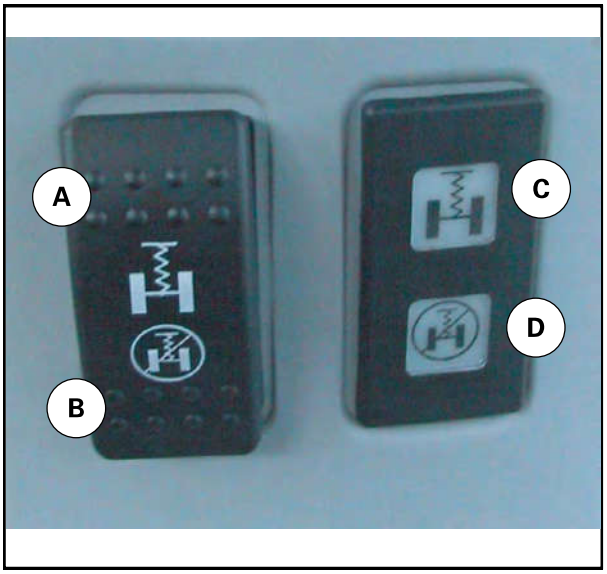


Fig. 2. I003433

3.7 Differential lock

3.7.1 Differential lock

T000968

If wheel slip is anticipated, press the differential lock switch (A). The differential lock and front axle indicator lights come on. In this case, the differential is locked and the front axle is engaged.

WARNING:

Do not engage the differential lock if a wheel is already spinning.

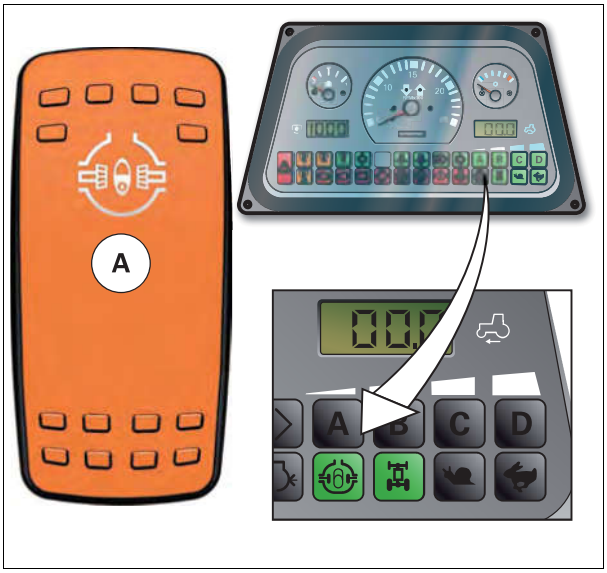


Fig. 1. I003397

Automatic functions of the differential lock:

- When the tractor speed exceeds 14 km/h, the differential lock disengages automatically. It is not automatically re-engaged when the speed drops below 14 km/h.
- When the linkage is placed in the raised or transport position, the differential lock disengages automatically, and is re-engaged when the linkage is in working position.
- Pressing one of the brake pedals (whether coupled or not) permanently disengages the differential lock unless it is temporarily disengaged by the linkage.

3.8 Power take-off

3.8.1 Power take-off

T001577

WARNING:
Always disengage the PTO before attaching, detaching or adjusting an implement.
Take all necessary safety precautions for any operation involving implements that are driven by the PTO.

DANGER:
Never go beyond the universal joint line.
Do not use the tractor or trailer drawbars as a step.
Never use the universal joint as a step. Never wear loose-fitting clothes.
Remain at a safe distance from the universal joint.

3.8.2 Zuidberg front power take-off

T001578

This PTO is driven by the engine.

WARNING:
Always disengage the PTO before attaching, detaching or adjusting an implement.
Take all necessary safety precautions for any operation involving implements that are driven by the PTO.

DANGER:
Never go beyond the universal joint shaft.
Never use the universal joint shaft as a step.
Never wear loose-fitting clothes.
Remain at a safe distance from the universal joint shaft.

Front power take-off specifications	
Number of selections possible for front PTO	1000 tr/min
Maximum permissible power	Clockwise: 99 kW Anti-clockwise: 110 kW
Maximum permissible input torque	Clockwise: 497 Nm Anti-clockwise: 549 Nm
Maximum permissible output torque	Clockwise: 955 Nm Anti-clockwise: 1054 Nm
Rotational direction	1 clockwise or 1 anti-clockwise (viewed from the front of the tractor)
Engine speed for 1000 rpm PTO	2040 rpm
Ratio	2.04
Clutch type	Hydraulics
Splined shaft type	Fixed shaft with 6 splines, diameter 35 mm (1" 3/8) Fixed shaft with 21 splines, diameter 35 mm (1" 3/8)

NOTE: *When stationary, manual rotation of the PTO through 15° facilitates implement hitching.*

Fig. 1. I005828

Power take-off control

A controller located at the front under the grille enables the clutch cycling setting to be increased or decreased (2 to 6 seconds) by adjusting screw 1 (maximum ¾ turn).

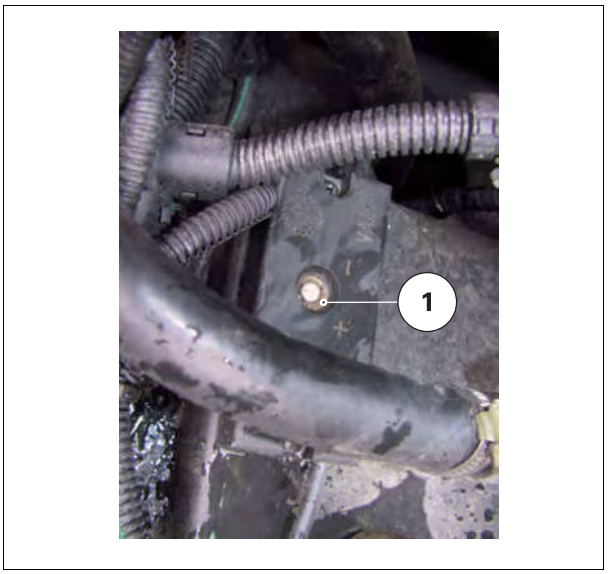


Fig. 2. I005829

Engaging the power take-off

Slide the red slider in the direction indicated by the arrow, while pressing the switch (D) in order to unlock it. The indicator light (2) lights up on the instrument panel.

IMPORTANT: *When the PTO is stopped, the PTO brake is engaged.*

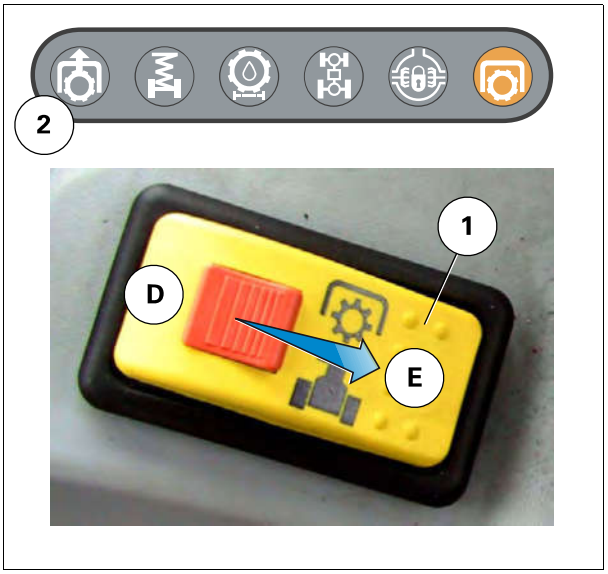


Fig. 3. I016435

Disengaging the PTO

Press on the switch (E) to stop the PTO.
In this position, the red slider of the switch prevents unintentional engagement.

3.8.3 Rear power take-off (PTO)

T000978

3

The PTO can be engaged and disengaged independently of the transmission.
The 540 rpm, 1000 rpm or economy speeds can be obtained by selecting the appropriate ratio.

Engage the PTO at low engine speed to protect the clutch and transmission.

WARNING:

Always disengage the PTO before attaching, detaching or adjusting an implement.

Take all necessary safety precautions for any operation involving implements that are driven by the PTO.

DANGER:

Never go beyond the universal joint shaft.

Do not use the tractor or trailer drawbars as a step.

Never use the universal joint shaft as a step.

Never wear loose-fitting clothes.

Remain at a safe distance from the universal joint shaft.

Selecting the power take-off speed

To engage the PTO, press the yellow lock and move button (3) forwards.

When the PTO is not in use and to prevent any inadvertent movement of the shaft, move button (3) backwards. The PTO is then in the "PTO brake" position.

CAUTION:

The "PTO brake" position cannot be used to halt the implements during rotation.

The intermediate position of button (3) releases the PTO brake.

Fig. 4. I003678

IMPORTANT: To avoid damaging implements driven by the PTO, the engine speeds in the table below must be complied with.		
Selected PTO speed	**Display**	**Maximum engine speed**
540 rpm	540	2090 rpm
540 E rpm	ECO	1600 rpm
1000 rpm	1000 rpm	2030 rpm

3.8.4 Power take-off external control

T001580

PTO stop (F):

– Located on the left-hand fender, the external PTO stop button stops the rear PTO shaft rotating.

– The indicator light flashes on the instrument panel.

– To re-engage the PTO, use the cab controls.

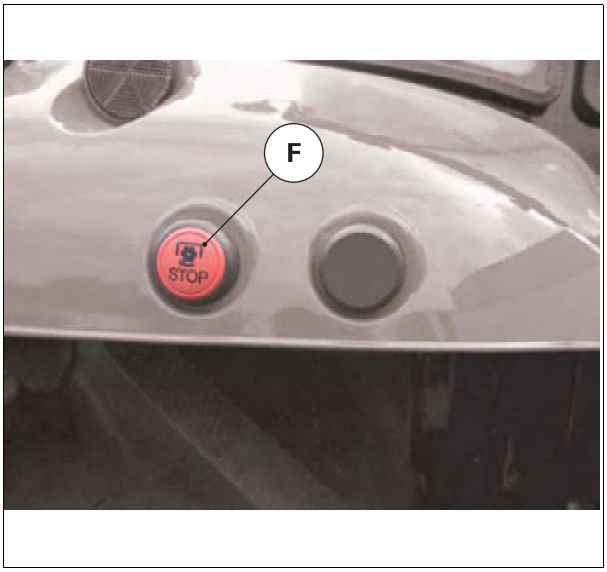


Fig. 5. I005398

3.8.5 Interchangeable 540 and 1000 rpm PTO

T001581

End-fittings that can be fitted:

– Shaft 35 mm (1" 3/8) with 21 splines

– Shaft 35 mm (1" 3/8) with 6 splines

Changing the shaft

IMPORTANT: *Do not use the tractor without the PTO shaft fitted.*

1. Raise the rear of the tractor to prevent oil from pouring out during the procedure.
2. Remove the snap ring (4) using a pair of pliers.
3. Remove the shaft.
4. Fit the other shaft, engaging the splines fully.
5. Check to ensure that the snap ring is not damaged. Replace it if necessary. Refit it.
   NOTE: *Ensure that the snap ring is positioned correctly.*

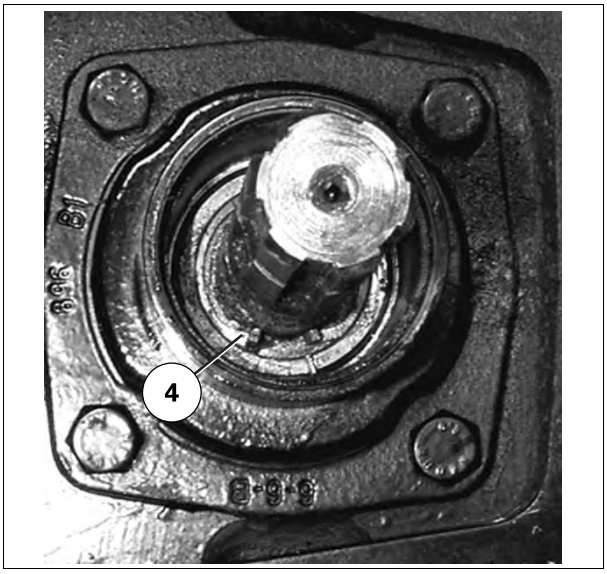


Fig. 6. I003435

3.8.6 Shiftable 540 and 1000 rpm PTO

T001582

Specifications

This type of PTO is suitable for implements requiring different drive speeds for loading and unloading, for example self-loading trailers.

There are two types of shiftable PTO:

– A type with a fixed shaft: A shaft with a diameter of 35 mm and 6 splines providing a rotational speed of 540 rpm.
– A type where the end of the shaft is interchangeable: A shaft with a diameter of 35 mm and 6 splines (540 rpm) or 21 splines (1000 rpm).

Replacing the interchangeable shaft

1. Position a pin or a crosshead screwdriver in the space provided (5).
2. Remove the 6 screws (6).
3. Install the new shaft.
4. Torque tighten 72 Nm minimum to 96 Nm maximum.

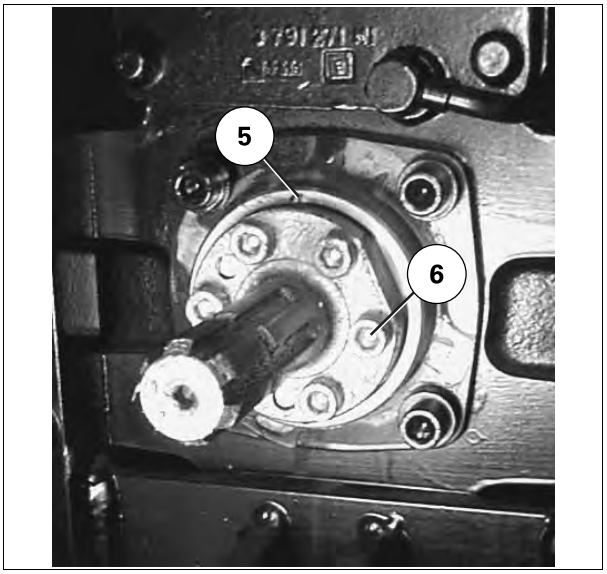


Fig. 7. I003436

Changing speeds

The PTO speed is engaged using the lever (2) located outside on the rear left-hand side of the centre housing or by using the lever (1) located inside the cab.

CAUTION:
PTO must be disengaged during the procedure.

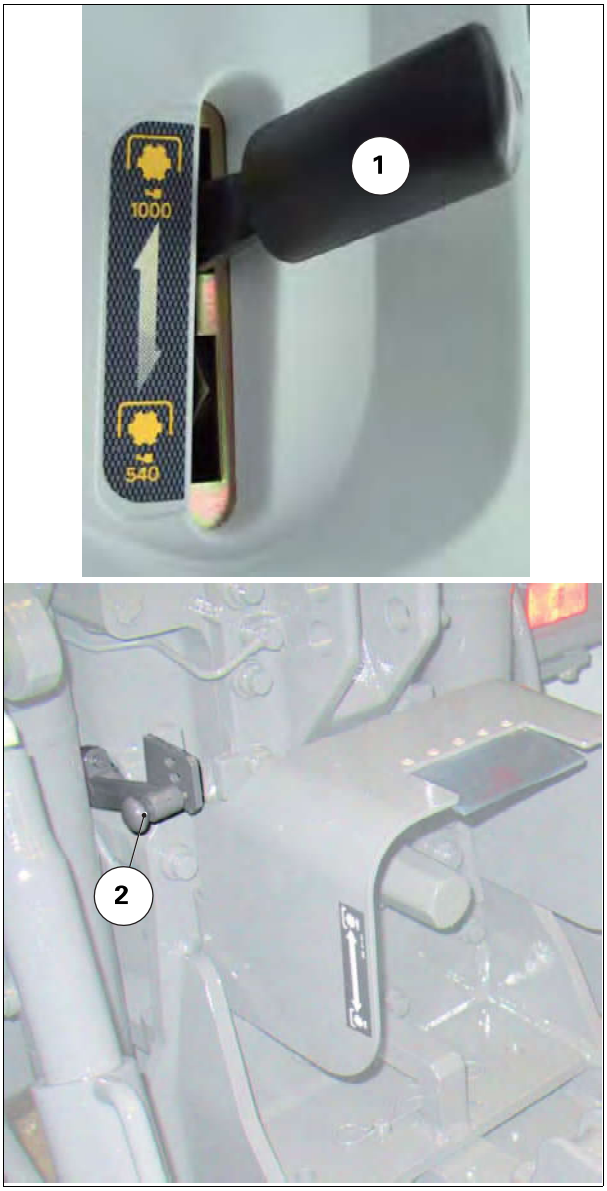


Fig. 8. I017979

Select the display of the speed chosen on the instrument panel using the switch (3).

Fig. 9. I017984

3.8.7 Proportional PTO

T003441

Tractors can be fitted with a GSPTO as an option.

IMPORTANT: *The tractor speed should not exceed 20 km/h when using the proportional PTO. Otherwise the transmission could be severely damaged.*

Number of possible PTO turns for one turn of the wheel, by model

Position	5425/5435/5445/5455	5460/5470	5465	5475	5480
1000 rpm	14.08	15.48	11.42	12.53	15.4
540 rpm	7.68	8.44	6.23	Not known	8.40

The proportional PTO is engaged using the lever inside the cab.

WARNING:
PTO must be disengaged during the procedure.

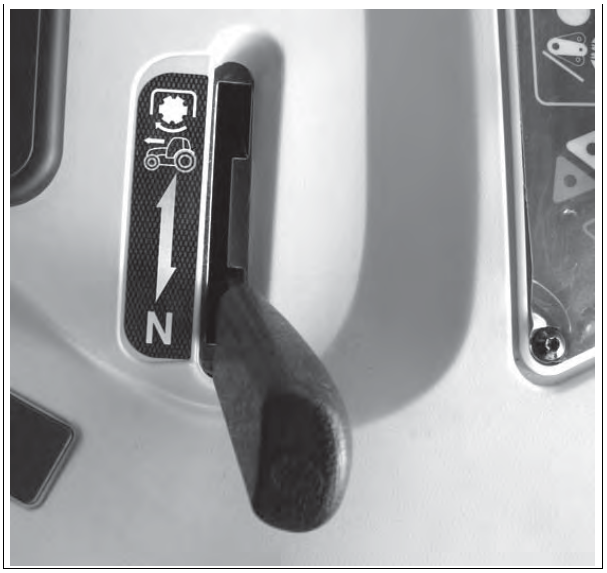


Fig. 10. I024879

3.8.8 Economy PTO

T001584

Speeds of 540 rpm and 1000 rpm can be obtained at an engine speed of ±2000 rpm or 1550 rpm (economy position). Operating the engine at a lower speed saves fuel. The economy PTO is designed to drive lightweight implements that do not require a large amount of engine power.

To engage the economy PTO, position the lever in the economy PTO position (10)

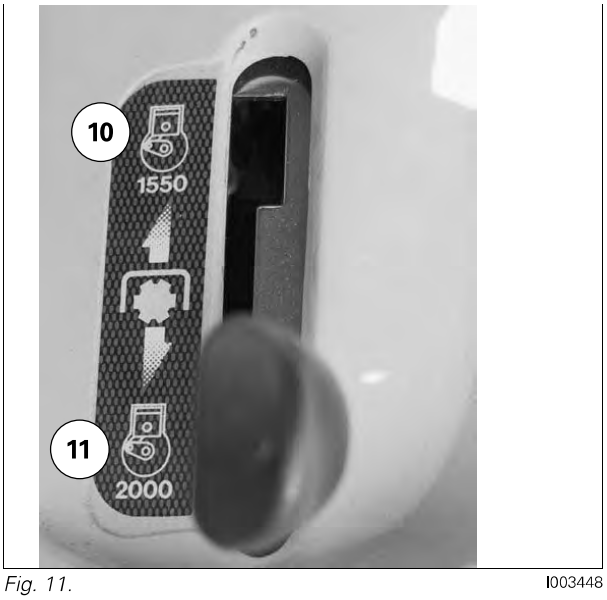


Fig. 11. I003448

NOTE: *Move the lever at least once a month to prevent the system from seizing.*

3.8.9 Power take-off electronic controls

T001402

NOTE: *The PTO electronic controls are designed to protect the tractor and the implement.*

– If the main PTO selector switch is in the "engaged" position when starting the engine, the PTO is disengaged and the PTO indicator light on the instrument panel flashes. No error will be transmitted or displayed. To start the PTO, the PTO selector switch must be moved to the OFF position and then to the ON position.

– Protection against engine stalling: if PTO engagement causes the engine speed to drop more than 50% below the initial speed, the transmission control will turn off the solenoid valve and transmit an error message via the CAN bus and cause the PTO indicator light on the instrument panel to flash.

3.9 Linkage

3.9.1 Rear linkage: Electronic controls

T000984

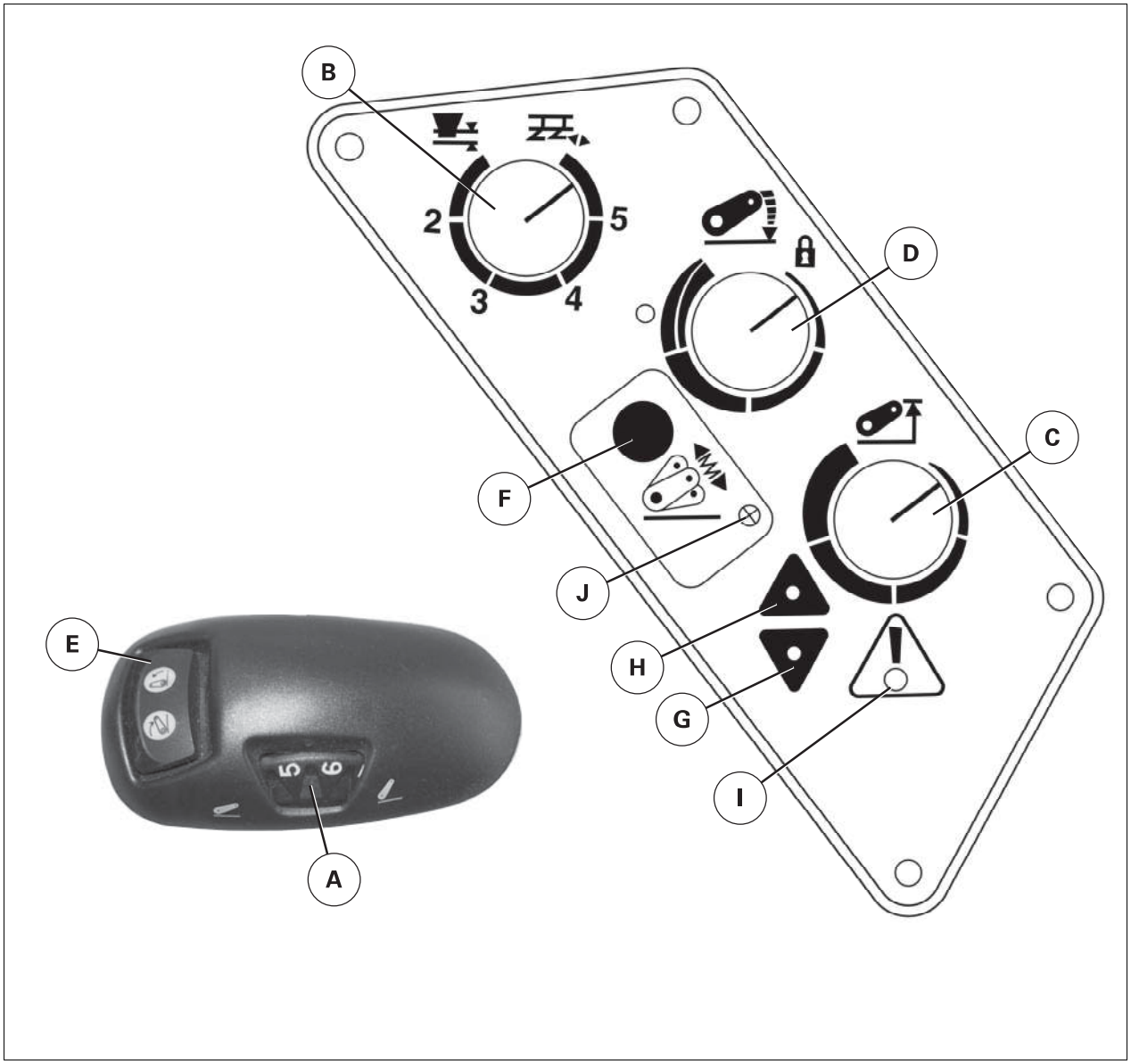


Fig. 1. I003449

(A) Height/depth control knob
(B) Function selector: position/intermix/draft
(C) Maximum linkage height adjustment control
(D) Manual or automatic adjustment of lowering speed
(E) Lift/Lower selector switch with neutral position
(F) Active transport control system button
(G) Linkage lowering indicator light
(H) Linkage lifting indicator light
(I) Console locking and operating failure self-diagnostic indicator light
(J) Active transport control system indicator light

3.9.2 Rear linkage: Unlocking the controls

T003336

DANGER:

Before using the linkage controls, check to make sure that the settings will not cause dangerous linkage arm movements.

When the engine is started, the linkage controls are locked. The indicator light (I) comes on.
To unlock the controls, place the linkage control (E) in neutral position, then in Lift position. The indicator lights (H) and (J) come on and the linkage is then operational.

3.9.3 Rear linkage: Hitching a rear implement

T000985

From the operator's seat:

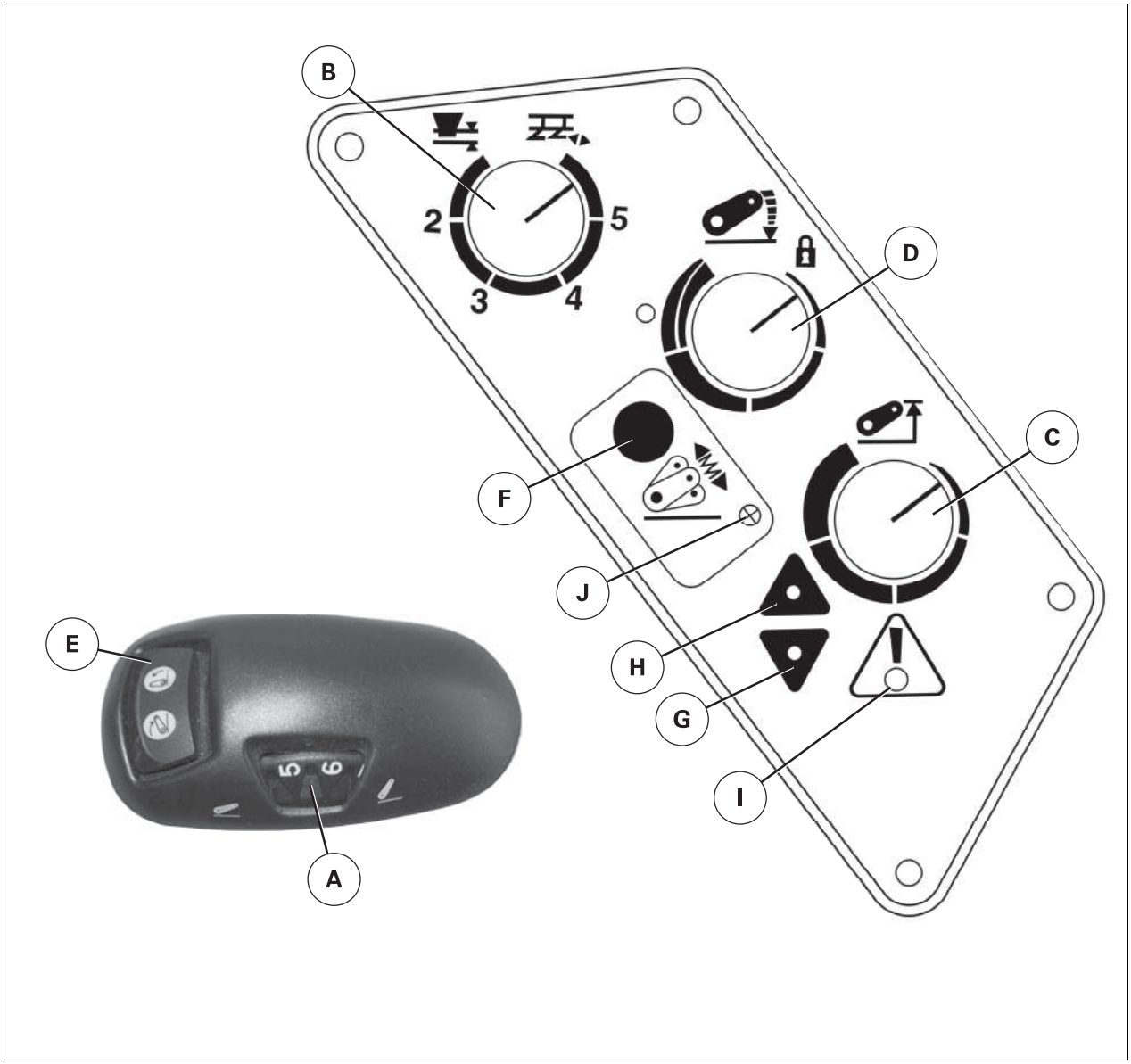


Fig. 2. I003449

1. Start the engine.
2. Indicator lights (I) and (J) come on.
3. (J) comes on for about 0.5 seconds.
4. (I) stays on until the console is activated.
5. Adjust the control knobs.
6. Move function selector knob (B) clockwise to the lowest control position.
7. Move Lift/Lower selector switch (E) to the Lift position.
8. Adjust the position of the arms using control knob (A).
9. Lifting indicator light (G) comes on.

Using the external controls:

DANGER:

Before leaving the seat, you must move the shuttle control to NEUTRAL position.

Apply the hand brake.

NOTE: *To use the external controls fig. 3, the Lift/Lower selector switch (E) fig. 2 must be in Neutral or Lower position.*
When the external control is used, the lowering speed is 70% of the maximum speed (speed control D does not operate).
When the external control is used, the controls in the cab are locked. To unlock them, move the selector switch (E)fig. 2 to Lift then Lower.

1. Lower the linkage arms by pressing one of the linkage lowering buttons (1).
2. When the linkage arms are correctly positioned underneath the implement hitches, raise the linkage arms by pressing one of the linkage lifting buttons (2).

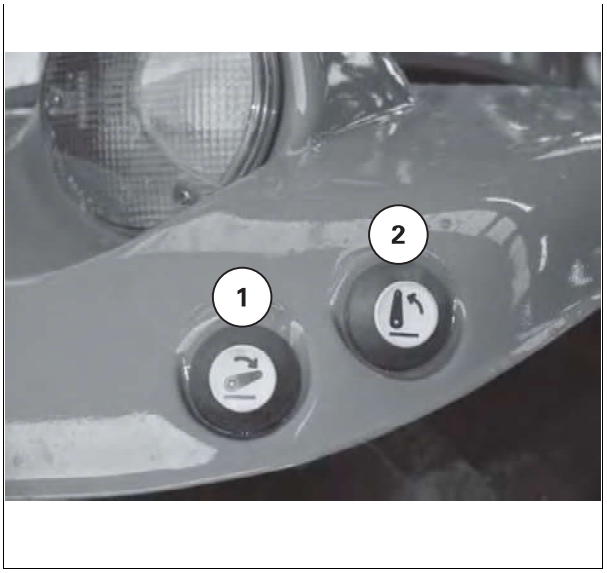


Fig. 3. I003457

3.9.4 Rear linkage: Lowering

T000987

Turn knob (A) *fig. 1* anti-clockwise to lower the drawbar. Lowering indicator light (H) comes on.
Adjust the lowering speed using knob (D) .*fig. 4*

(1) Lowering lock position
(2) Lowering speed slow
(3) Lowering speed fast
(4) Automatic mode
In automatic mode, lowering speed is governed by two parameters: the weight of the implement and forward speed.

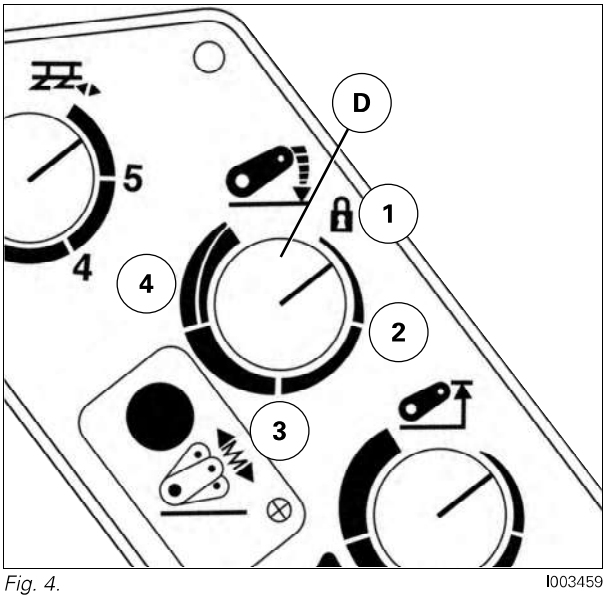


Fig. 4. I003459

3.9.5 Rear linkage: Lifting

T000988

To lift the drawbar, turn knob (A) clockwise .*fig. 1*

Lifting indicator light (G) comes on.

NOTE: *To avoid damaging the tractor or the implement, it is advisable to lift the linkage with the height limit potentiometer set to minimum. Then lift the linkage by turning the potentiometer to the maximum position, checking to ensure that there is no risk.*

3.9.6 Rear linkage: Setting the depth limit

T003339

Positions 1 (min.) to 7 (max.) on knob (A) *fig. 1* determine the implement working depth. Between 8 and 9, the linkage is in floating position.
To vary the working depth, the linkage lowering control (E) *fig. 1* must be placed in the Lower position.

3.9.7 Rear linkage: Transport position setting

T000990

1. Select the position control using knob (B) .*fig. 1*
2. Adjust the maximum linkage height according to the implement to be transported using the height adjustment control knob (C). Start from the minimum position.
3. Place knob (D) in position 1 (padlock) to lock the linkage lowering.

3.9.8 Rear linkage: Active transport control system

T000991

When button (F) is pressed, the system operates automatically *fig. 1*; indicator light (J) comes on.
To deactivate this function, press button (F).

NOTE: *The transport control system is active at each start-up.*

3.9.9 Rear linkage: Operation in working position

T000992

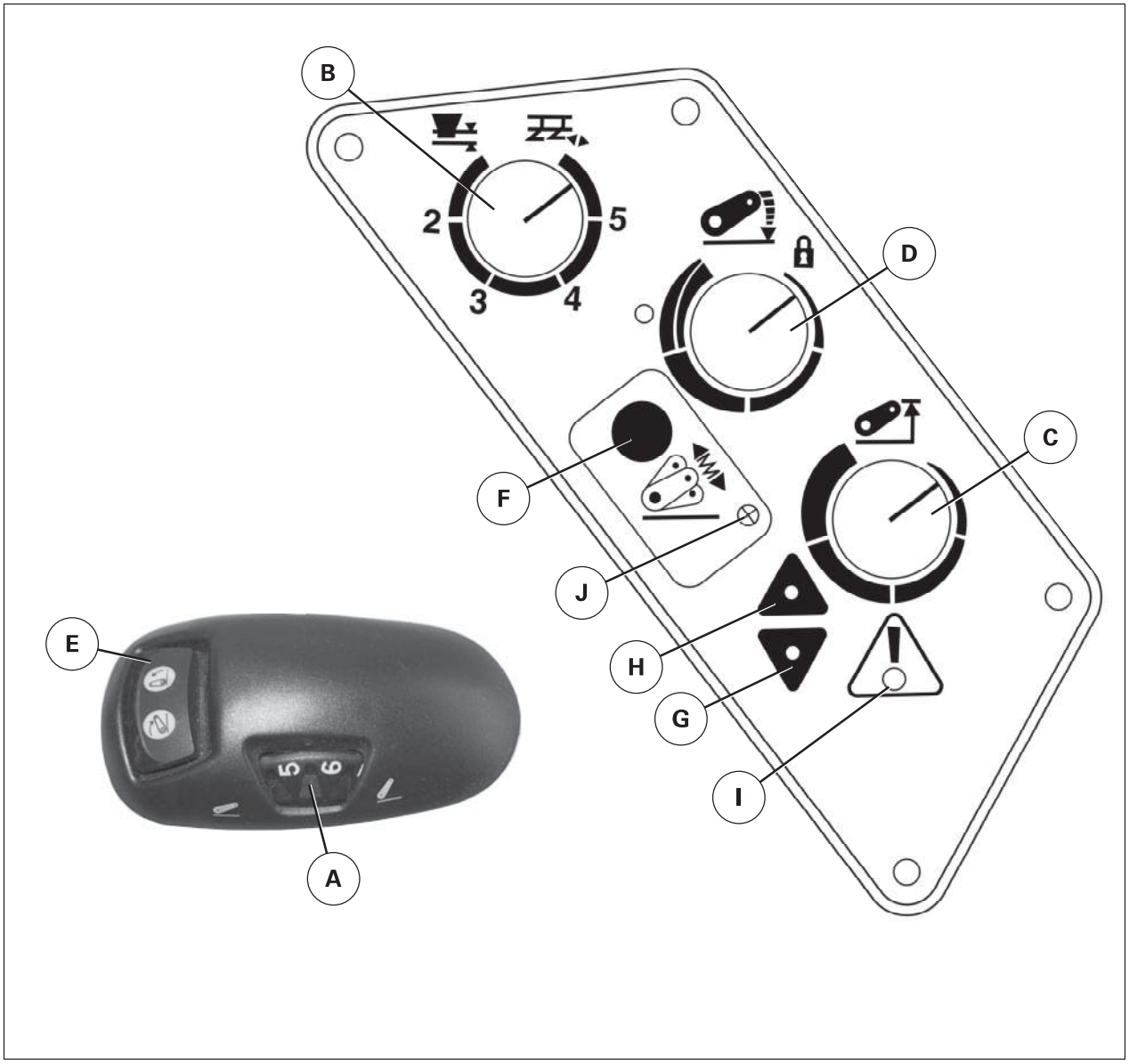


Fig. 5.

I003449

1. Adjust the maximum lifting position using knob (C).
2. Use knob (D) to adjust the linkage lowering speed.
3. Choose the appropriate control method (draft, position or intermix control), depending on the implement, the ground conditions and the type of work, using selector knob (B).
   Examples of settings:
   - Subsoiling: positions 3, 4.
   - Ploughing: positions 3, 4, 5.
   - Shallow ploughing: positions 3, 4.
   - Chisel: positions 2, 3.
   - Implement at a constant height: 1 (position control).
4. Adjust the working depth using knob (A).
5. The lifting and lowering indicator lights (G) and (H) indicate which operation is being carried out.

3.9.10 Rear linkage: Operation at headlands

T000993

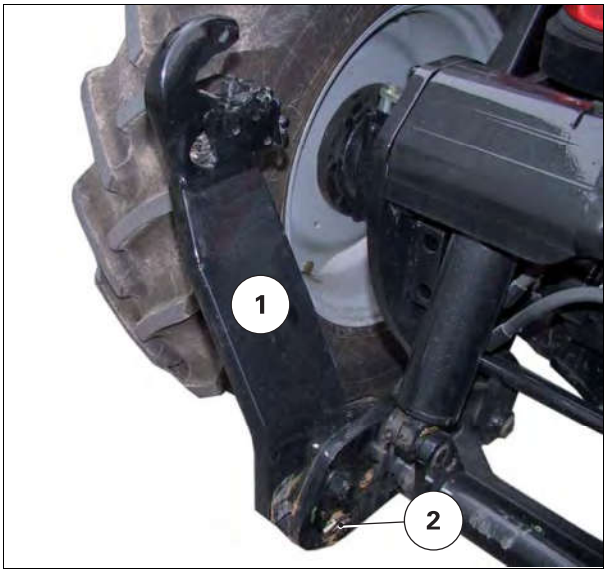
NOTE: *A safety system, similar to a circuit breaker, puts the linkage system out of operation when the ignition is switched off, the engine is stopped (ignition switched off), or external controls are used.*
The purpose of this device is to avoid any accidental and dangerous movement of the linkage arms if someone alters the settings on the console while the tractor is stationary.
To reactivate the linkage system, move switch (E) to the intermediate position, then to the Lift position. The linkage is then operational.
Before reactivating the electronic linkage controller (ELC), ensure that selector knob (C) and depth control knob (A) will not cause any dangerous movement of the lower links.

1. Move linkage selector switch (E) *fig. 1* to the Lift position. The linkage will be lifted to the maximum height setting position pre-selected by (C).
2. To resume work, move Lift/Lower selector switch (E) to "Lower".
3. The settings previously made will be repeated.

3.9.11 Front linkage

T001105

Front linkage, 4-cylinder tractors



I009310

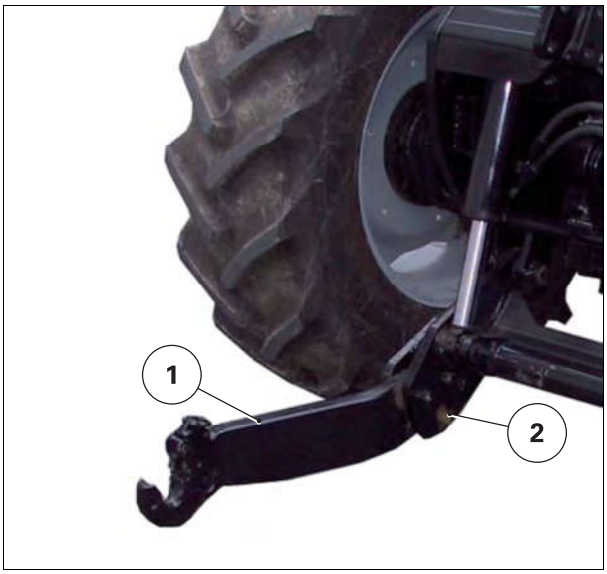
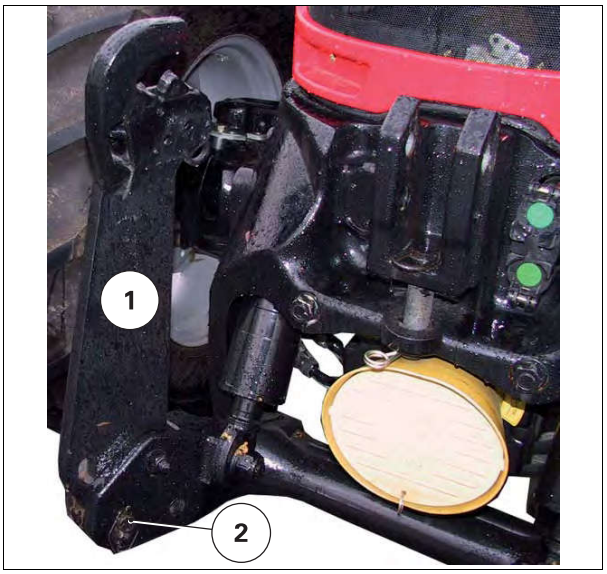


Fig. 6.

I009311

Front linkage, 6-cylinder tractors



I009305

3

Operating the front linkage (4- and 6-cylinder versions):
To use the front linkage, take out the pin (2) to unfold the linkage arms (1) *fig. 6 fig. 7*, then reinsert the pin and the safety pin.

Use the designated spool valve to control the front linkage:

– Two valves located on top of the auxiliary spool valves (Load Sensing system) or on the right-hand side (Open Centre system) allow the various functions of the front linkage to be selected.

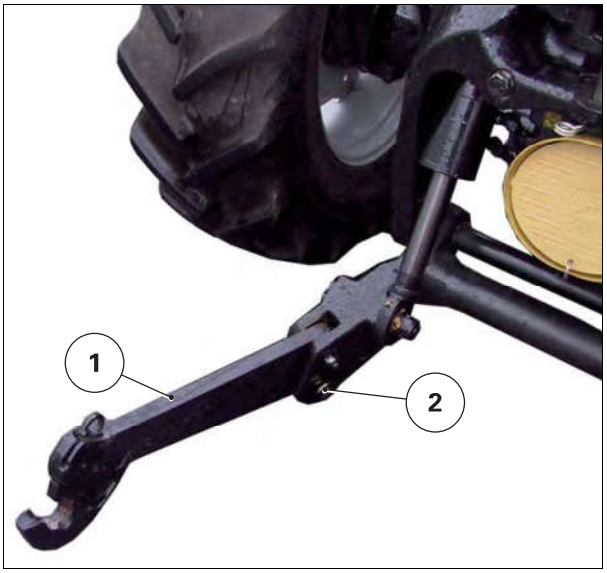


Fig. 7. I009306

Front linkage operation

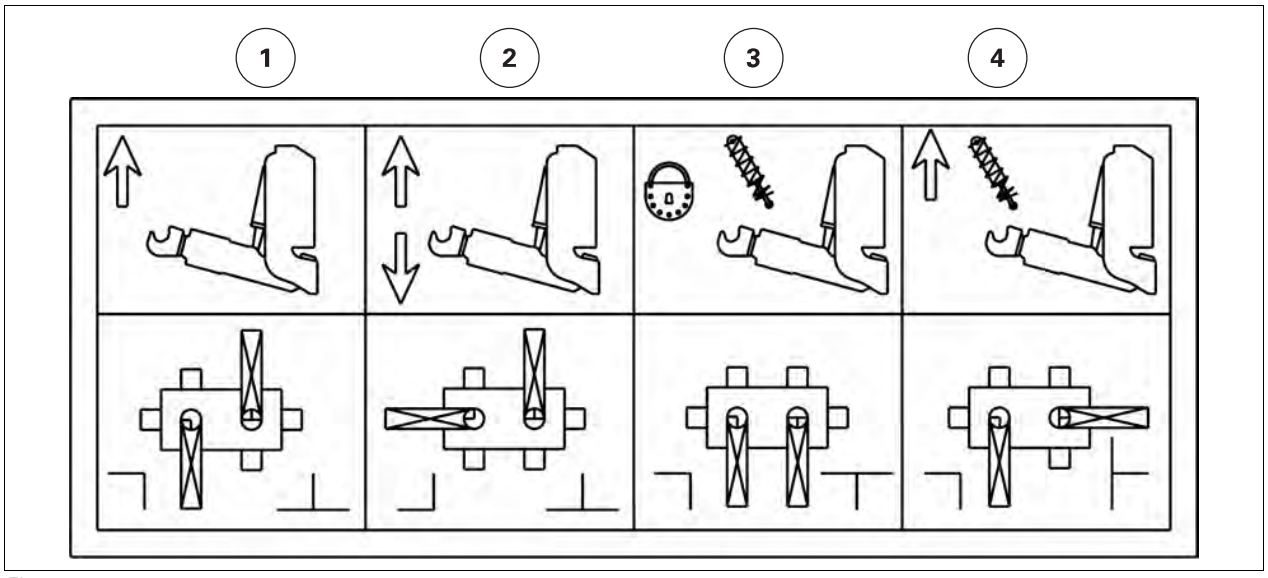


Fig. 8. I009390

(1) Single-acting: The linkage rams receive hydraulic pressure for lifting only; lowering is ensured by the weight of the hitched implement.
NOTE: *The linkage can take a long time to lower if no implement is attached.*

(2) Double-acting: The lift rams receive hydraulic pressure for lifting and lowering.

(3) Transport control system: A hydraulic transport control system locks the linkage in position for road transportation.

(4) Single-acting transport control system: The linkage operates as in the single-acting mode to absorb linkage movement.

3.10 Linkage

3.10.1 Three-point linkage: general information

T000996

The tractor is supplied with either category 2 or 3 ball joint linkage or optional category 2 or 3 fast linkage hitches, depending on the country.

IMPORTANT: *To prevent linkage damage when operating trailed attachments, care should be taken when turning to prevent the drawbar from fouling the linkage.*

3.10.2 Three-point linkage: lower links

T001000

(1) Fixed ball joint type

(2) Hook and ball type
The hooks engage automatically in the ball joints which are fitted to the hitch pins. The normal balls are used for clevis-end linkage; the balls with guide cones are used for single pin linkage. Ensure the linkage is properly locked.
The hooks can be unlocked for uncoupling from the cab, using cables (accessory).

(3) Telescopic lower links
Unlock the pin (A) to adjust the telescopic end. Remember to lock it when hitched.

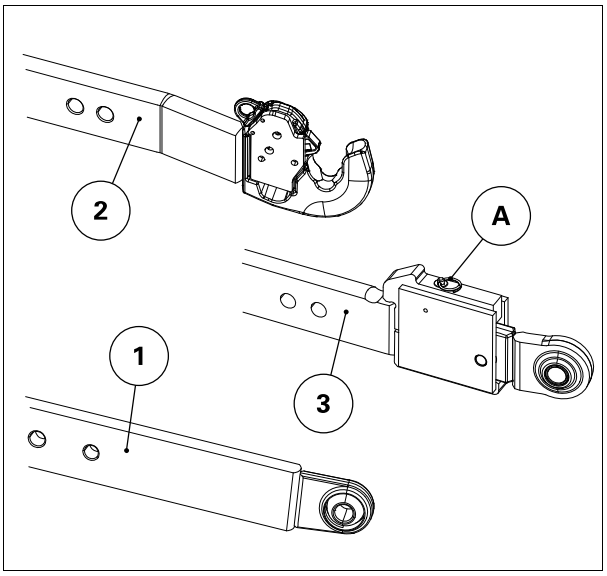


Fig. 1. I003471

3.10.3 Three-point linkage: top link

T001001

The top link is fitted on ball joints. It should be adjusted according to the type of implement to be hitched. To adjust the length of the top link, pull and turn the handle.

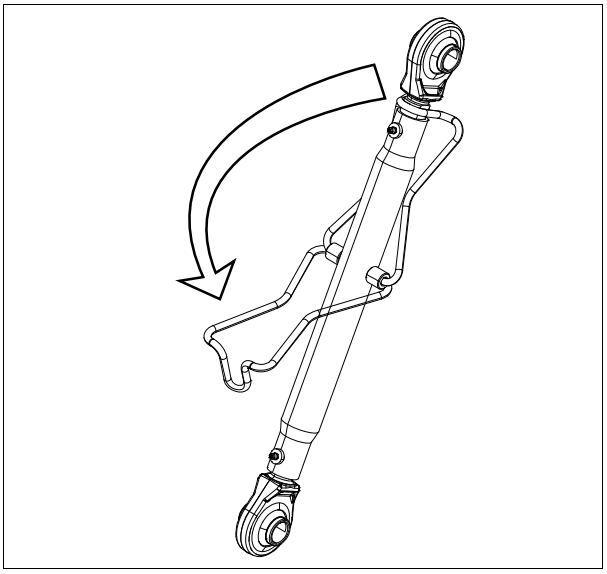


Fig. 2. I003484

3.10.4 Three-point linkage: lift rods

T001002

Adjusting the rod length

pull upwards then turn the handles to reduce or increase the length of the lift rods.

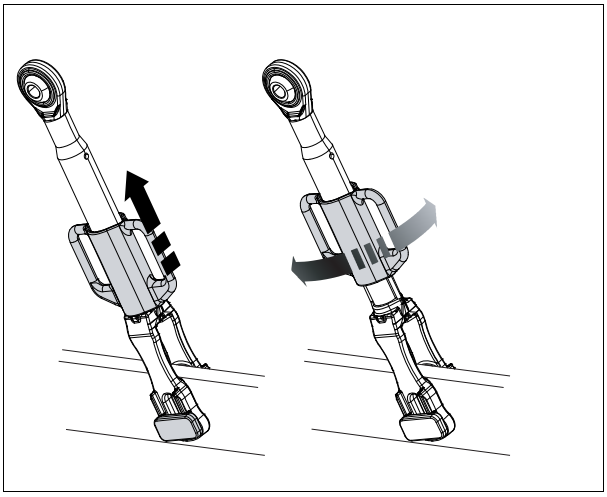


Fig. 3. I003485

Adjusting the lift rod/lower link

Three positions can be obtained by changing the position of the pin *fig. 3*:

(A) Fixed high position
(B) Fixed low position
(C) Floating position for wide implements or implements with a depth wheel

NOTE: *On lift rods without a fixed high position hole (A), only the fixed low position (B) and the floating position (C) can be obtained.*

CAUTION:

Take care to always refit the pins correctly.

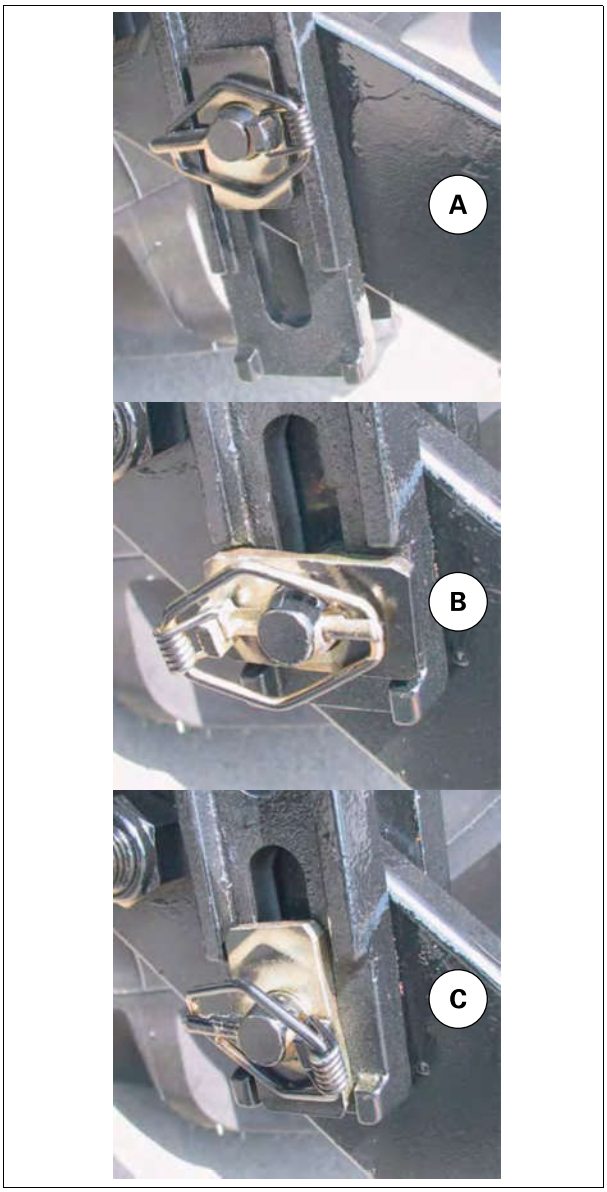


Fig. 4. I003486

3.10.5 Three-point linkage: stabilisers

T001004

General

Stabilisers are used to restrict the lateral movement of the lower links.

Settings

3

1. Fully screw in the stabilisers (maximum oscillation).
2. Start the engine.
3. According to models:
   Tractors with "Lift/Lower" push buttons
   1. Set the control panel "Lift/Lower" switch to "Lift" then to "Neutral". Press the "Lift" button until the lower links reach the highest position.
   2. Turn off engine.
   3. Unscrew the stabilisers *fig. 5* until the lower links no longer have any side sway and are centralised.
   4. Screw both stabilisers in 1 turn.

   Tractors without "Lift/Lower" push buttons
   1. Set the control panel "Lift/Lower" switch to "Neutral" then to "Lift".
   2. Turn off engine.
   3. Unscrew the stabilisers *fig. 5* until the lower links no longer have any side sway and are centralised.
   4. Screw both stabilisers in 1 turn.

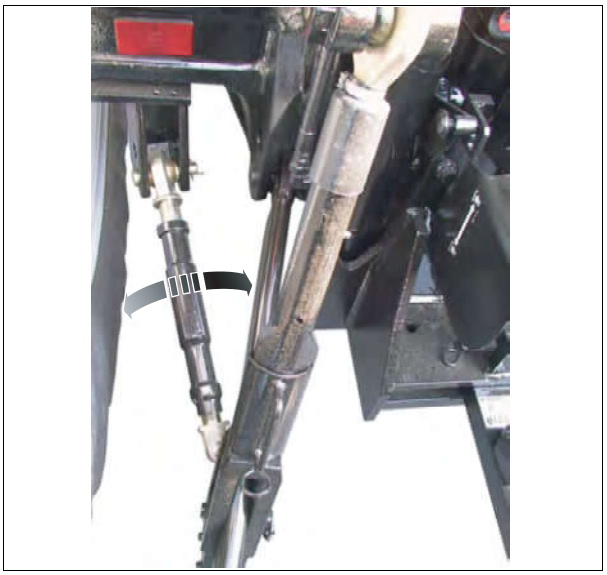


Fig. 5. I003490

3.10.6 Multi-hole drawbar

T001003

This is fitted to the lower links and is suitable for light loads.

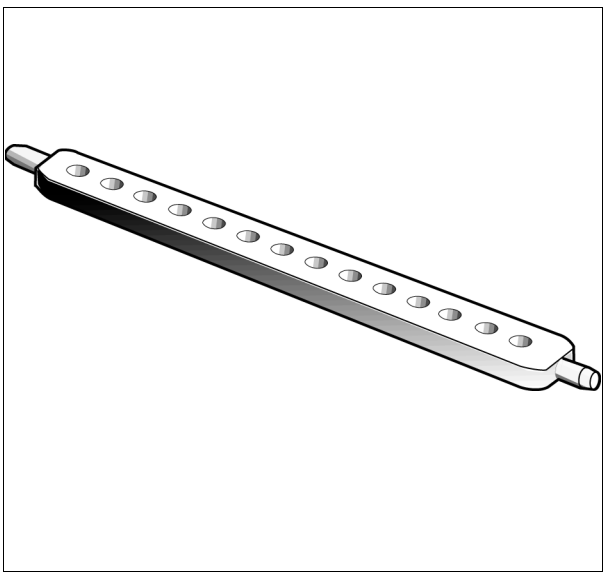


Fig. 6. I003491

3.10.7 Swinging drawbar

T001597

WARNING:
Maximum trailed weight: 13000 kg

WARNING:
Maximum vertical load at hitch point: 1700 kg

Swinging drawbar settings

– Height: A clevis is bolted either above or below the bar, thereby giving two possible height positions.
– Offset:
  a. Remove the clips and take out the clevis pins.
  b. Position the drawbar as required.
  c. Refit the clevis pins and secure them with clips to hold the drawbar in the required position.

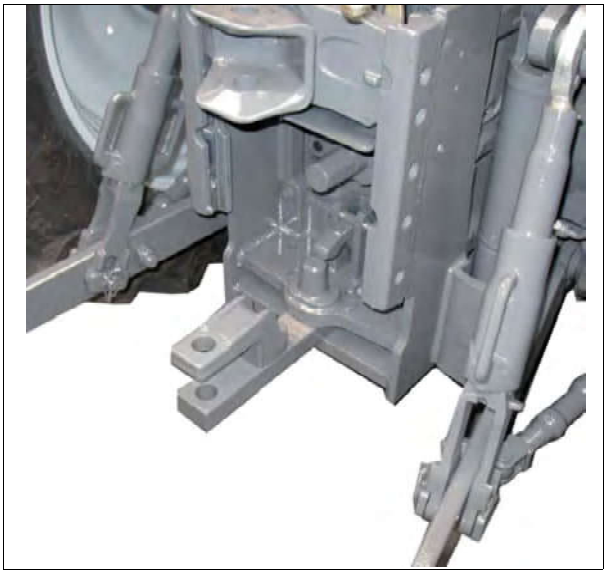


Fig. 7. I018786

3.10.8 Stud for semi-mounted trailer

T001007

This stud is suitable for heavy trailers which transfer heavy loads to the tractor.

It is welded onto the frame of the swinging drawbar. The locking latch must be lowered and locked when a trailer is hitched.

Maximum vertical load: 3000 kg

IMPORTANT: *Check the condition of the stud regularly. If it is worn or damaged, contact your dealer.*

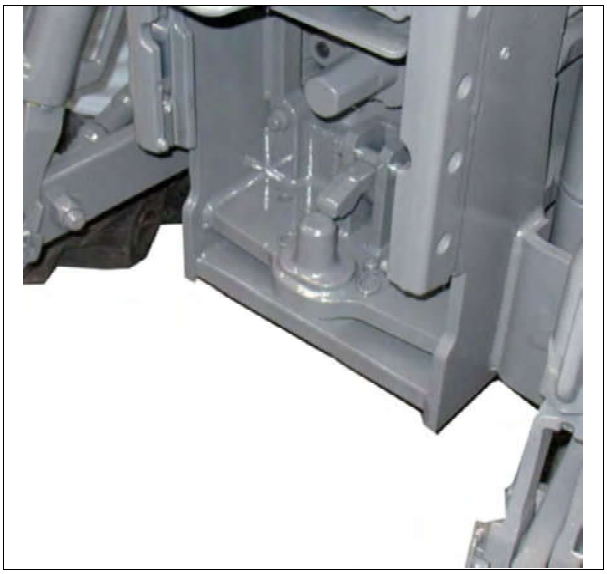


Fig. 8. I003494

3.10.9 4-wheel trailer clevis hitch

T001009

This clevis is intended to hitch trailers with four wheels, which transfer little or no load onto the hitch.
The clevis height can be adjusted using a pin-adjusting scale (A) or an easy adjustment scale (B).

– Maximum trailed weight: 25100 kg
– Maximum vertical load at hitch point: 1800 kg

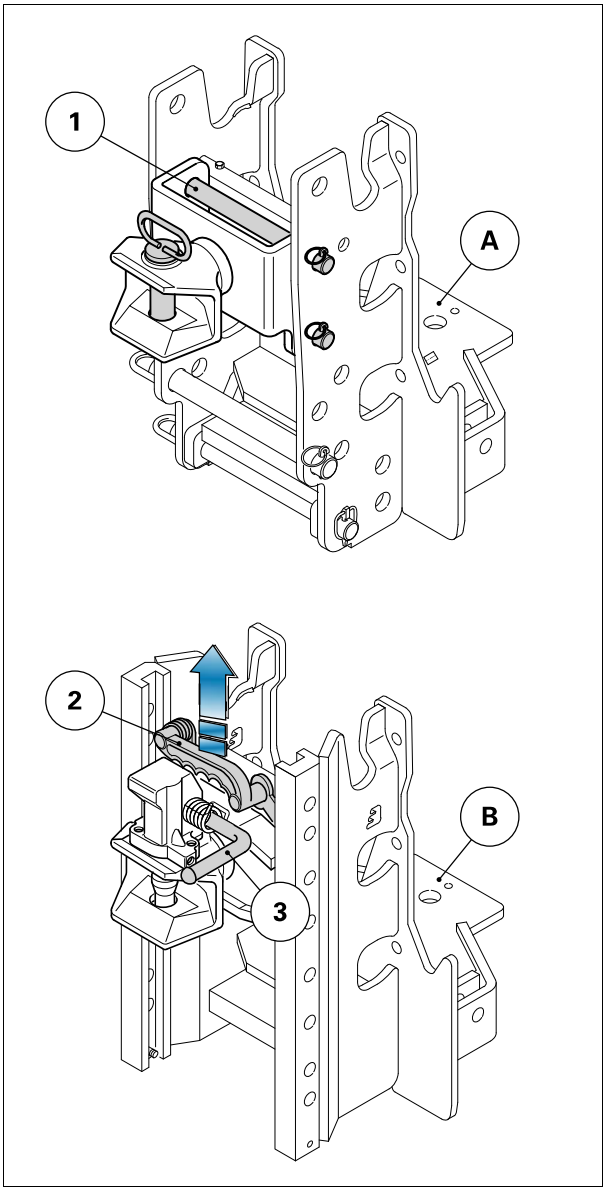


Fig. 9. I003495

Standard clevis, pin-adjusting type

To adjust the height of the clevis, remove the two pins (1) *fig. 9*, position the clevis at the required height and refit the pins and their security pin.

NOTE: *Always hold the clevis in position before removing the pins.*

Automatic clevis, easy adjustment type

To adjust the clevis height, pull the handle (2) upwards *fig. 9*, then raise or lower the clevis to the required height and release the handle.
Lift the lever (3) to hitch the trailer.

3.10.10 Dromone auto-hitch

T001010

General

Designed to pull trailers which weigh heavily on the tractor and require frequent hitching and unhitching.
This hitch type can be fitted with a standard hook or a clevis. If a clevis is fitted, space is provided on the rear right-hand side of the tractor to store the end fitting when not in use (4) .*fig. 10*

– Maximum vertical static load: 3000 kg

Lifting

1. Reverse towards the trailer and align the hook with the trailer drawbar.
2. Press the auto-hitch linkage switch (2) *fig. 10* until the hook locks automatically.
3. Lower the hook slightly until the weight of the trailer is supported by the hook.

Lowering

1. Activate the electronic linkage by pressing the selector switch (E), then raise the linkage to maximum using the button (2), which unlocks the hook.
2. Move the locking lever (1) to release the hook, then press the lowering button (3) to lower the hook to the ground.

Fig. 10. I003496

3.11 Auxiliary hydraulics

3.11.1 Types of spool valve

T000994

Tractors are designed to be fitted with up to 4 spool valves.
For tractors fitted with less than 4 spool valves, kits are available to add more. Consult your dealer.

3

Single spool valve

This spool valve can be single/double acting (convertible). The lever returns to neutral when released. To switch from double to single acting, fully unscrew the valve (2).

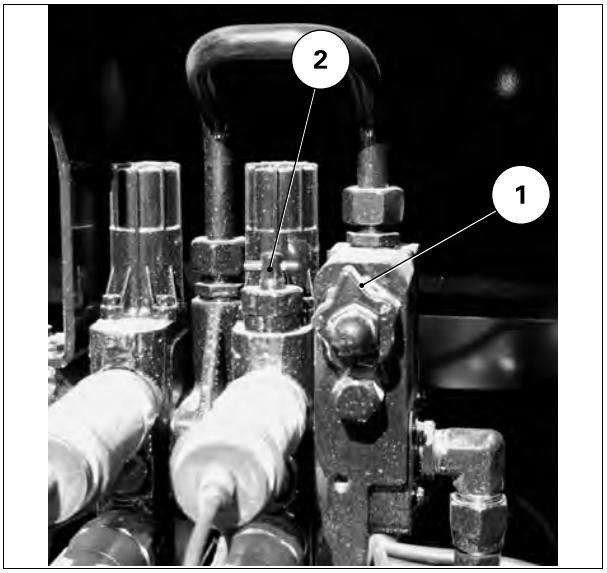


Fig. 1. I003497

Spool valve with flow rate adjustment

This is used to control the flow of oil to this spool valve. This is recommended for implements requiring low quantities of oil, to ensure a precise flow rate, or to adjust the speed of hydraulic motors. It also maintains an adequate flow of oil so that the linkage and the external circuit may be used simultaneously. To adjust the oil flow, turn the button (1) *fig. 1* of the relevant spool valve.

NOTE: *Only the first spool valve is affected by the flow rate adjustment.*

Spool valve with zero leak system

All spool valves have small internal leaks, which may cause small changes in the height settings. This spool valve avoids this problem.

Spool valve with "floating" position

For spool valves fitted with this function, the floating position is obtained by pushing the lever forwards beyond the automatic return to neutral position. The oil can then circulate freely and the implement follows the lay of the land.

Spool valve with Kick-out

When the spool valve is activated, flow is continuous. The spool valve remains open until the pressure increases in the system. When the pressure inside the system reaches 175 bar, the spool valve returns automatically to neutral and the flow is stopped.

NOTE: *Keep male and female couplers clean at all times.*

NOTE: *When using hydraulic implements taking a large quantity of oil out of the transmission (hydraulic motors, large capacity cylinders), top up the oil to the maximum level.*

3.11.2 Hydraulic spool valve control

T000995

The spool valves are controlled by a lever fitted as standard or an optional mechanical joystick.

Standard lever

The control levers are located on the right-hand console.

Fig. 2. I003498

Spool valve control

(N) Neutral position
(+) "+" position
Pull the lever. Flow is directed to the corresponding "+" coupler.
(-) "-" position
Push the lever. Flow is directed to the corresponding "-" coupler.
(~) Floating position
Depress the lever fully.

The levers are numbered from 1 to 4 (depending on options). The lever/coupler identification is displayed by the decals on the right-hand door of the tractor and on the top of the couplers at the rear of the tractor.

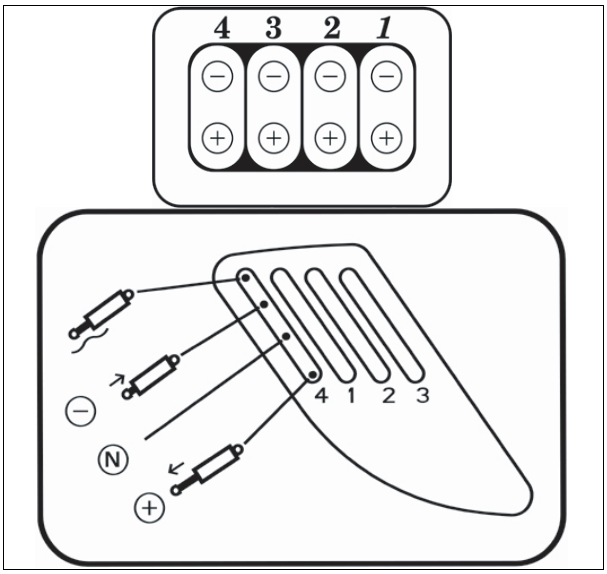


Fig. 3. I003499

Mechanical joystick

This controls two spool valves. It allows two hydraulic functions to be operated simultaneously using the same lever.

(A) First spool valve control
Move the lever to the right or left to control the implement connected to the first spool valve.
(B) Second spool valve control
Move the lever backwards or forwards to control the implement connected to the second spool valve.
(C) Locking the joystick
Push the pin to lock the joystick lever. The lever is then locked in neutral and the spool valves cannot be activated. Lock the lever while driving on the road to avoid any unwanted movement.
(D) Unlocking the joystick
Pull on the pin to unlock and use the lever.
(E) Joystick angle adjustment
Loosen the thumb wheel to unlock the lever. Adjust the joystick angle, then retighten the thumb wheel.

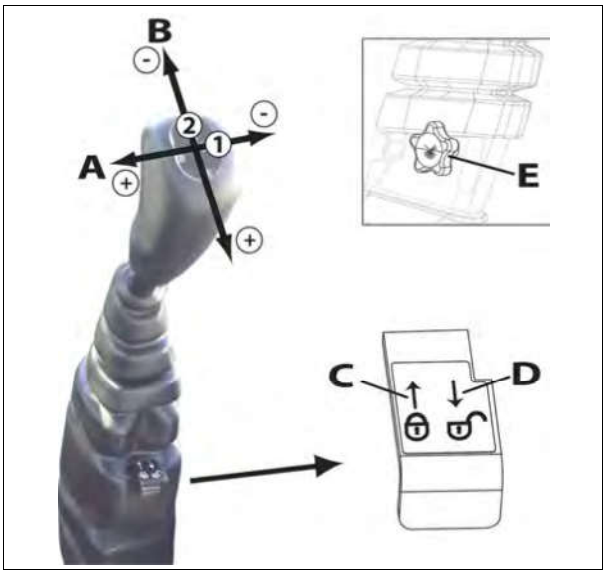


Fig. 4. I003500

3.11.3 Open Centre 100 l/min

T000998

General

The Open Centre 100 l/min system uses two hydraulic pumps. Usually, one pump is used for the linkage, the other for the auxiliary hydraulics. The flow rates of the two pumps can be coupled to use the hydraulic spool valves.

Coupling is carried out using a button located in the cab on the right-hand console (1) .*fig. 6*

IMPORTANT: *When the pumps are coupled, the linkage is locked in position and it cannot be used. Only the external controls on the fenders can be used.*

NOTE: *The pumps are automatically uncoupled when the tractor speed exceeds 25 km/h.*

Pump coupling may or may not be permitted according to engine speed and oil temperature. If coupling is selected via the switch (1) *fig. 6* outside of the permitted conditions, an audible signal can be heard inside the cab.
The light section of the graph represents the area in which pump coupling can be activated.

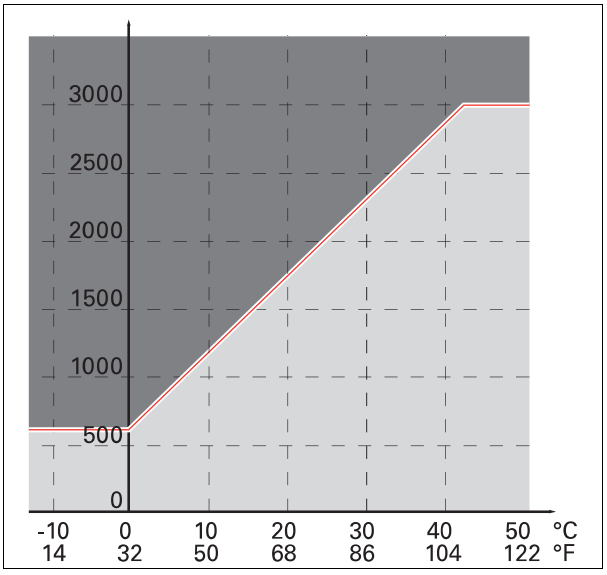


Fig. 5. I009568

Pump coupling

1. Start the engine.
2. Unlock the linkage with the Lift/Lower switch (E).
3. Press the pump coupling switch (1). The indicator light on the switch (1) comes on. The linkage is locked in position and the linkage locking indicator light (I) comes on.

Fig. 6. I003501

Pump uncoupling

1. Press the pump coupling switch (1) .*fig. 6* The corresponding indicator light goes out. The pumps are no longer coupled.
2. To use the linkage, unlock it using the Lift/Lower switch (E) .*fig. 6* The indicator light (I) goes out.

3.12 Wheels and tyres

3.12.1 Wheel studs

T001011

WARNING:
Always tighten the wheel screws and nuts to the correct tightening torque.

Check the tightness of the wheels every day, until there is no longer a variation in the torque provided. After refitting a wheel, check the tightness of the wheel after the first two hours of operation and then every day.

3.12.2 Adjusting the front wheel track width

T001012

2-wheel drive: Values

The front track width is adjustable in increments of 100 mm.

NOTE: *Limit the load on the front axle beam when using wide track widths.*

Track widths	Perkins 4-cylinder engine	SisuDiesel 4-cylinder engine	6-cylinder SisuDiesel engine
Minimum wheel track	1399 mm	1505 mm	1560 mm
Intermediate wheel track	1499 mm 1599 mm 1699 mm	1605 mm 1705 mm 1805 mm	1660 mm 1760 mm 1860 mm 1960 mm
Maximum wheel track	1799 mm	1905 mm	2060 mm

2-wheel drive: Adjustment procedures

1. Raise the front of the tractor using a jack.
2. Take out the three bolts (1) that fix each telescopic arm to the axle beam and remove the bolt locking the telescopic ram (2).

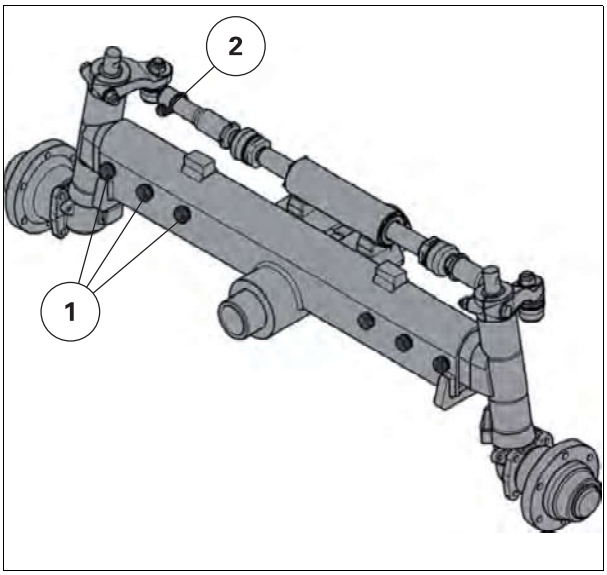


Fig. 1. I003677

3. Position the telescopic arms to obtain the chosen track and tighten the bolts (1) to the corresponding torque.
4. Position the ram rods at the chosen track length and tighten the bolts (2) to the corresponding torque.

4-wheel drive

The track widths available depend on the type of axle beam and the tyre dimensions.

Eight track widths can be obtained by changing the position of the rim in relation to the disc or by reversing the wheels.

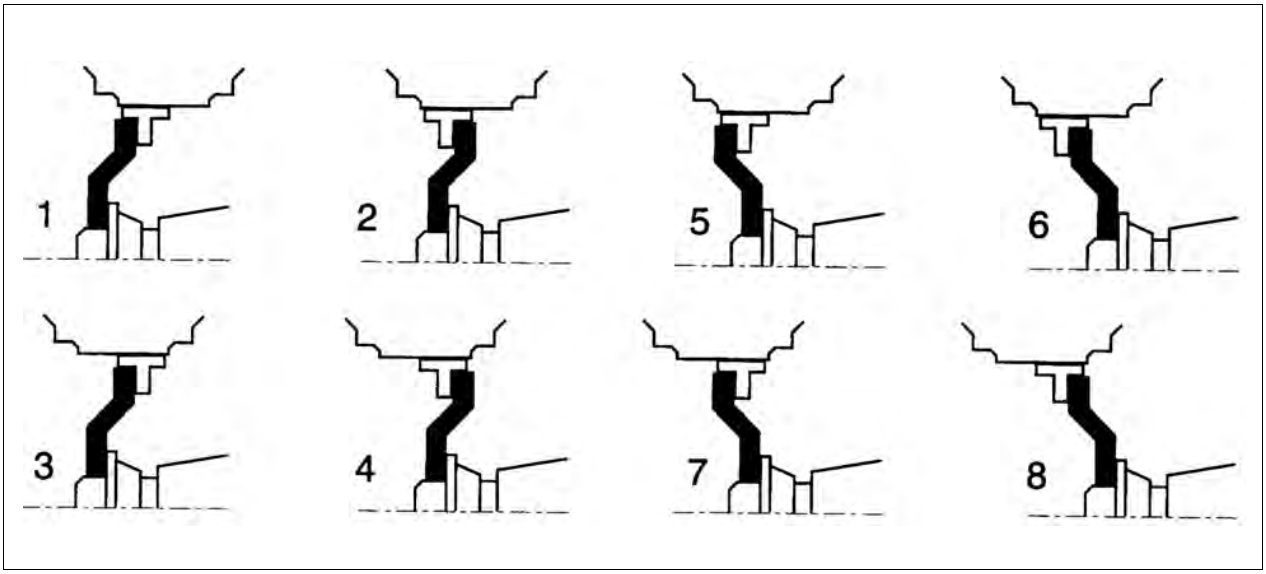


Fig. 2. I003509

Front axle

Reference	Front axle 720	Fixed front axle 730	Suspended front axle 730	Front axle 735
(1)	1437 mm	1437 mm	1568 mm	1568 mm
(2)	1549 mm	1549 mm	1680 mm	1680 mm
(3)	1641 mm	1641 mm	1772 mm	1772 mm
(4)	1753 mm	1753 mm	1884 mm	1884 mm
(5)	1605 mm	1605 mm	1736 mm	1736 mm
(6)	1717 mm	1717 mm	1848 mm	1848 mm
(7)	1809 mm	1809 mm	1940 mm	1940 mm
(8)	1921 mm	1921 mm	2052 mm	2052 mm

When refitting, tighten the nuts progressively to the correct torque in accordance with the table *see §5.11.3, page 206*.

With narrow track widths and with certain tyre fittings, the wheels may touch the bonnet when turning at maximum lock.
To prevent this, the hubs are fitted with threaded stops (1) that can be adjusted to limit the steering angle *see §3.12.3, page 121*.
It is advisable to increase the front axle movement allowance (oscillation) to its maximum level by removing the shim under the stop or by changing the stop (if fitted).

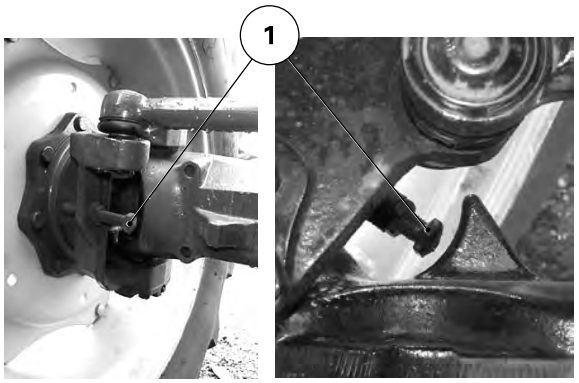


Fig. 3. I003508

NOTE: *The axle is fitted in the factory to be able to withstand tractor transport.*

3.12.3 Adjusting the 4WD front axle stops

T001942

General

Check and, if necessary, adjust the front axle stops each time the front track width is altered or following a wheel and/or tyre change.

Oscillation stop: These stops cannot be adjusted.

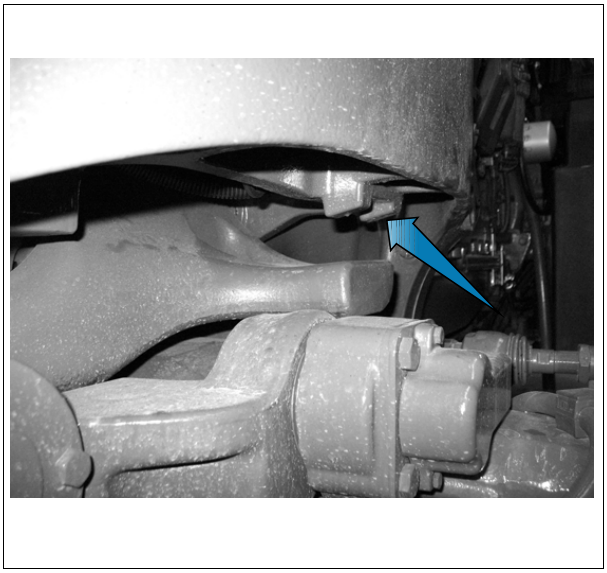


Fig. 4. I022017

Fitting the oscillation stops

1. Fit each stop using the retaining screw.

Adjusting the steering angle

NOTE: *The front axles are intended for a maximum steering angle of 55°.*

(1) Front adjustment screw
(2) Rear adjustment screw

1. Place the front of the tractor on a fixed support so that the front axle is able to swing freely over the entire length of its high and low travel.
2. Switch the engine on and activate the front axle suspension.
3. Start by adjusting the rear stop screw on the side that presents the greatest risk for the front wheel of contact with the immediate environment *fig. 5*, move the axle over the entire length until it touches the oscillation stop in order to adjust the stop screw while maintaining a minimum clearance of 40 mm between the tyre and the nearest point (e.g.: body/attachments).
4. Bring the diagonally opposed stop screw in contact with the front axle and tighten the locknut.
5. Repeat the adjustment operations (3) and (4) to adjust the remaining stop screws.
6. Swing to the right and left once more to check that the adjustment has not moved and/or there is no contact with the immediate surrounding area of the tractor and then tighten the stops fully.

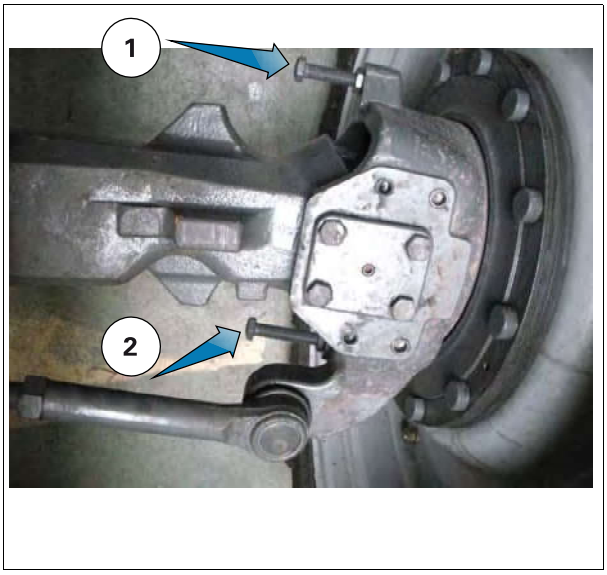


Fig. 5. I011956

Toe-in check

The toe-in check requires specific tools; please consult your dealer if a problem occurs.

Adjusting the front fenders Shoe side adjustment on the front axle

1. Loosen the screw (1) to slide the shoe from the fender.
2. After the position has been changed, retighten the screw (1) to a torque of 22 Nm.
   NOTE: *After adjusting the position of the front fenders, it may be necessary to adjust the stop (2) to limit the movement when the wheels are turned.*

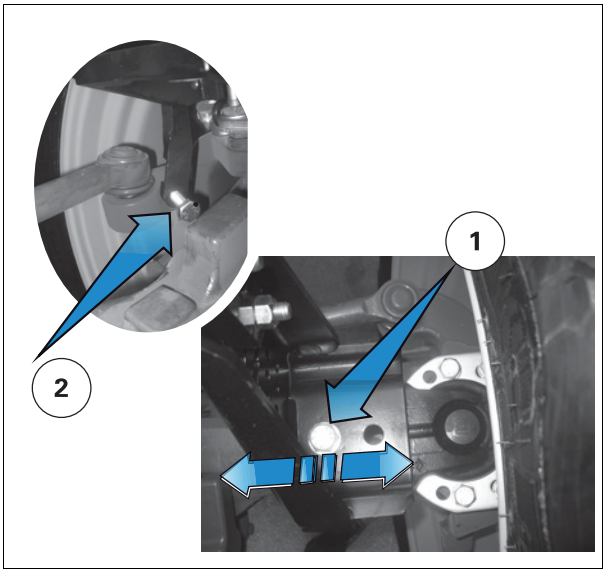


Fig. 6. I034515

Adjusting the front fenders Adjusting the height of the support on the shoe

1. Modify the position of the support (5) *fig. 7* to adapt the height of the fender to the size of the wheel.

Adjusting the front fenders Adjusting the lateral position of the fender on the support (two adjustments are possible)

1. Move the fender in relation to the support (5) by changing the position of the screws (3).
2. Move the fender in relation to the support by loosening the screws (4) to move the fender into the required position.

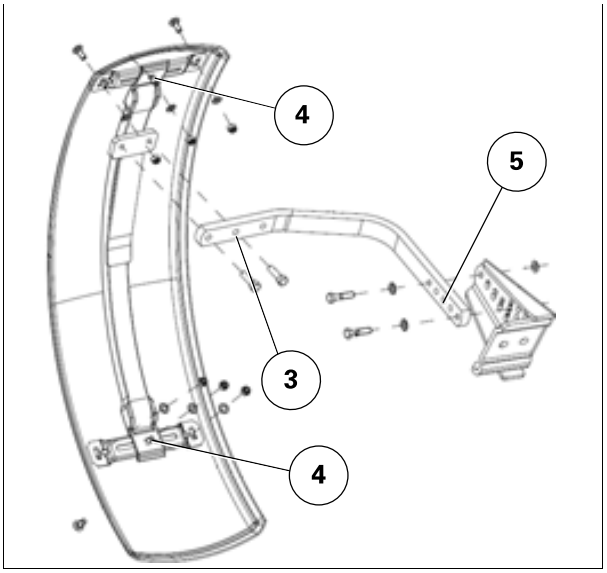


Fig. 7. I036616

3.12.4 Adjusting the rear wheel track width

T001013

The various track widths are obtained by changing the position of the rim in relation to the disc or by reversing the wheels.

NOTE: *The minimum track widths are theoretical and vary according to tyre dimension. Ensure a sufficient gap remains between the tyres and the inside of the fenders (50 mm minimum).*

If the wheels are reversed they must be transferred to the opposite side of the tractor.

When refitting, tighten the nuts progressively to the correct torque in accordance with the table .

3.12.5 Dual wheels

T001014

In general, dual wheels should be used only for reducing soil compaction work (surface treatment work).

When selecting dual wheels that reuse the rims fitted as standard in the factory with a disc thickness of less than 16 mm, additional wheels of a thickness of 16 mm or greater must be obtained and fitted on the inside. These must then be locked together with the standard rims (factory fitted) on the outside.

IMPORTANT: *Use a tube type dual wheel kit, which is fitted to the hubs and not to the rims (kit available from your dealer).*

The following four criteria must be taken into account when selecting the correct dual rear wheels:

1. Soil conditions
2. Traction (narrow wheels)
3. Overall dimensions ((8 ft) for road use)
4. Type of tyre

IMPORTANT: *The wrong choice of dual wheels has a direct influence on the mechanical components and the wheel rims of the tractor. Avoid using dual wheels for intensive pulling, even for short periods (hauling out a tractor stuck in the mud etc.).*

NOTE: *It is preferable to use wide tyres or low-pressure tyres instead of dual wheels.*

Use of dual wheels

- Set the inner wheels to minimum track width *fig. 8*.
  NOTE: *The use of very wide tyres on dual wheels is not recommended.*
  The most efficient dual wheels arrangement uses two tyres of the same specifications.
- When fitting dual wheels with tyres of different widths, the wider wheel must be fitted inside.
- When fitting dual wheels with tyres of the same width, the tyre which is more worn must be fitted on the outside.
- The inflation pressure of the outer tyres should be slightly reduced by approximately 0.2 bar.
- On clay soil, the minimum track width should be increased in proportion to the size of the tyres.

IMPORTANT: *Dual wheels do not double the load capacity of the tractor.*

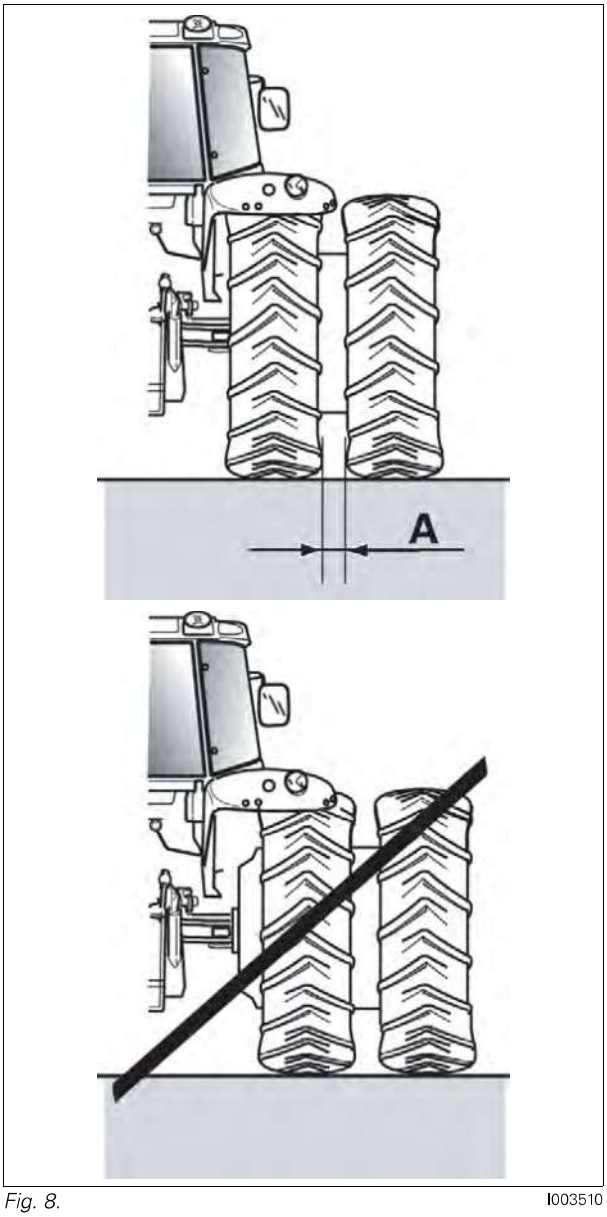


Fig. 8. I003510

3.12.6 Tyre pressures

T001015

Pressure under load

Check the tyre pressures every 100 hours. Tyre pressures vary according to make, load and speed as well as to the type of work being carried out. Refer to the inflation tables issued by the tyre manufacturers.

IMPORTANT: *The following tables display the maximum applicable loads for certain tyre models depending on their inflation pressure. These values must be adhered to. For further details, consult the tables of the relevant manufacturers.*

3

Tyre pressure tables:

- Front wheels, 2-wheel drive tractors: *fig. 9*
- Front wheels, 4-wheel drive tractors: *fig. 10*
- Rear wheels: *fig. 11*

Tyre pressure table: Front wheels, 2-wheel drive tractors

TYRE MAXIMUM LOAD (Pression maxi pneu)

Roues avant 2 RM Front Wheels 2WD	*Kleber*			*Michelin*			*Goodyear*	
	20 mph 30km/h	Inflation pressure bar / Psi	25 mph 40 km/h	20 mph 30km/h	Inflation pressure bar / Psi	25 mph 40 km/h	20 mph 30km/h	Inflation pressure bar / Psi
10.0-16	910	1,6 / 24	730	640	1,0 / 14	500	975	2,0 / 29
	960	1,8 / 26	770	820	1,5 / 21	650	1065	2,3 / 33
	1010	2,0 / 29	810	1000	2,0 / 29	800	1125	2,5 / 36
	1110	2,4 / 35	890	1040	2,1 / 30	830	1215	2,8 / 41
	1160	2,6 / 38	930	1070	2,2 / 32	860		
	1220	2,8 / 41	980	1140	2,4 / 35	920		
11.0-16	990	1,6 / 24	790	710	1,0 / 14	560	1150	2,0 / 29
	1070	1,8 / 26	860	920	1,5 / 21	730	1250	2,3 / 33
	1160	2,0 / 29	930	1120	2,0 / 29	890	1320	2,5 / 36
	1320	2,4 / 35	1060	1160	2,1 / 30	930	1410	2,8 / 41
				1200	2,2 / 32	960	1470	3,0 / 43
				1280	2,4 / 35	1030		

Fig. 9.

I003511

Tyre pressure table: Front wheels, 4-wheel drive tractors

Roues avant Front Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu) Kleber 20 mph 30km/h	Kleber 25 mph 40 km/h	Michelin 20 mph 30km/h	Michelin 25 mph 40 km/h	Goodyear 20 mph 30km/h	Goodyear 25 mph 40 km/h	Inflation pressure (bar)	Inflation pressure (Psi)
11.2 R24							0,4	6
280/85 R24			710				0,5	7
	850		820	770	830	775	0,6	9
	920	870	910	850	965	900	0,8	12
	990	950	1000	930	1045	975	1	14
	110	1040	1090	1010	1135	1060	1,2	17
	1200	1130	1170	1100	1165	1090	1,4	20
	1300	1220	1260	1180	1265	1180	1,6	23
13.6 R24							0,4	6
340/85 R24			870				0,5	7
	1040		1010	940	1015	950	0,6	9
	1140	1080	1120	1040	1165	1090	0,8	12
	1230	1170	1230	1150	1230	1150	1	14
	1350	1280	1330	1250	1340	1250	1,2	17
	1480	1390	1440	1350	1455	1360	1,4	20
	1610	1500	1550	1450	1550	1450	1,6	23
14.9 R24							0,4	6
380/85 R24			1020				0,5	7
	1360		1180	1110	1165	1090	0,6	9
	1480	1400	1310	1220	1300	1215	0,8	12
	1600	1520	1440	1340	1410	1320	1	14
	1760	1660	1560	1460	1550	1450	1,2	17
	1920	1810	1690	1580	1660	1550	1,4	20
	2090	1950	1820	1700	1820	1700	1,6	23
16.9 R24							0,4	6
420/85 R24			1270				0,5	7
	1600		1470	1380	1500	1400	0,6	9
	1740	1660	1630	1530	1660	1550	0,8	12
	1880	1790	1790	1670	1820	1700	1	14
	2080	1960	1950	1820	1925	1800	1,2	17
	2270	2130	2110	1970	2085	1950	1,4	20
	2460	2300	2270	2120	2270	2120	1,6	23
440/65 R24	870		840				0,4	6
			1010	900			0,5	7
	1200		1170	1100	1200	1120	0,6	9
	1200		1360	1270	1345	1255	0,8	12
	1490	1400	1550	1450	1485	1390	1	14
	1640	1530	1740	1620	1635	1530	1,2	17
	1780	1670	1930	1800	1780	1665	1,4	20
	1930	1800			1925	1800	1,6	23
480/65 R24	990		960				0,4	6
			1150	1030			0,5	7
	1380		1340	1260	1375	1285	0,6	9
	1540		1560	1460	1540	1440	0,8	12
	1710	1600	1770	1660	1705	1595	1	14
	1870	1750	1990	1860	1875	1750	1,2	17
	2040	1910	2200	2060	2040	1905	1,4	20
	2200	2060			2205	2060	1,6	23

Roues avant Front Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu) Kleber 20 mph 30km/h	Kleber 25 mph 40 km/h	Michelin 20 mph 30km/h	Michelin 25 mph 40 km/h	Goodyear 20 mph 30km/h	Goodyear 25 mph 40 km/h	Inflation pressure (bar)	Inflation pressure (Psi)
11.2 R28							0,4	6
280/85 R28			750				0,5	7
	920		870	810	885	825	0,6	9
	1000	950	960	900	1015	950	0,8	12
	1080	1030	1060	990	1100	1030	1	14
	1190	1130	1150	1080	1200	1120	1,2	17
	1300	1220	1240	1160	1300	1215	1,4	20
	1410	1320	1340	1250	1340	1250	1,6	23
13.6 R28							0,4	6
340/85 R28			930				0,5	7
	1220		1080	1010	1135	1060	0,6	9
	1320	1260	1190	1120	1200	1120	0,8	12
	1430	1370	1310	1220	1375	1285	1	14
	1580	1490	1430	1330	1500	1400	1,2	17
	1730	1620	1540	1440	1550	1450	1,4	20
	1870	1750	1660	1550	1660	1550	1,6	23
14.9 R28							0,4	6
380/85 R28			1080				0,5	7
	1430		1250	1170	1230	1150	0,6	9
	1560	1480	1390	1300	1375	1285	0,8	12
	1690	1610	1520	1420	1500	1400	1	14
	1860	1760	1660	1550	1660	1550	1,2	17
	2030	1910	1790	1670	1820	1700	1,4	20
	2200	2060	1930	1800	1925	1800	1,6	23
16.9 R28							0,4	6
420/85 R28			1340				0,5	7
	1690		1560	1460	1605	1500	0,6	9
	1840	1750	1730	1610	1765	1650	0,8	12
	1990	1900	1890	1770	1925	1800	1	14
	2190	2070	2060	1930	2085	1950	1,2	17
	2400	2250	2230	2080	2205	2060	1,4	20
	2600	2430	2400	2240	2395	2240	1,6	23
440/65 R28	940		910				0,4	6
			1090	980			0,5	7
	1300		1270	1190	1300	1215	0,6	9
	1460		1480	1380	1455	1360	0,8	12
	1620	1510	1680	1570	1615	1510	1	14
	1770	1660	1880	1760	1770	1655	1,2	17
	1930	1800	2090	1950	1930	1805	1,4	20
	2090	1950			2085	1950	1,6	23
480/65 R28	1080		1050				0,4	6
			1250	1120			0,5	7
	1500		1460	1370	1455	1360	0,6	9
	1680		1700	1580	1640	1535	0,8	12
	1860	1740	1930	1800	1830	1710	1	14
	2040	1900	2160	2020	2020	1890	1,2	17
	2220	2070	2400	2240	2210	2065	1,4	20
	2400	2240			2395	2240	1,6	23

Fig. 10.

I003513

Tyre pressure table: Rear wheels

Roues arrière Rear Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu)											
	Kleber			Michelin			Goodyear			Inflation pressure (bar)	Inflation pressure (Psi)
	20 mph 30km/h	25 mph 40 km/h		20 mph 30km/h	25 mph 40 km/h		20 mph 30km/h	25 mph 40 km/h			
420/85 R30										0,4	6
16.9 R30				1380						0,5	7
	1740			1600	1500	1660	1550			0,6	9
	1890	1800		1770	1660	1820	1700			0,8	12
	2050	1950		1940	1820	1980	1850			1	14
	2260	2130		2120	1980	2140	2000			1,2	17
	2470	2320		2290	2140	2335	2180			1,4	20
	2680	2500		2460	2300	2460	2300			1,6	23
460/85 R30										0,4	6
18.4 R30				1590						0,5	7
	2020			1840	1720	1875	1750			0,6	9
	2200	2090		2040	1910	2085	1950			0,8	12
	2370	2260		2240	2090	2270	2120			1	14
	2620	2470		2440	2280	2460	2300			1,2	17
	2860	2690		2640	2460	2675	2500			1,4	20
	3100	2900		2840	2650	2835	2650			1,6	23
420/85 R34										0,4	6
16.9 R34				1450						0,5	7
	1840			1690	1580	1765	1650			0,6	9
	2010	1910		1870	1750	1925	1800			0,8	12
	2170	2070		2050	1920	2085	1950			1	14
	2390	2260		2240	2090	2270	2120			1,2	17
	2610	2460		2420	2260	2460	2300			1,4	20
	2840	2650		2600	2430	2600	2430			1,6	23
460/85 R34										0,4	6
18.4 R34				1680						0,5	7
	2140			1950	1820	1980	1850			0,6	9
	2330	2210		2160	2020	2205	2060			0,8	12
	2520	2400		2370	2210	2395	2240			1	14
	2770	2620		2580	2410	2600	2430			1,2	17
	3030	2850		2790	2600	2835	2650			1,4	20
	3290	3080		3000	2800	2995	2800			1,6	23
480/70 R34	1360			1340	1250					0,4	6
										0,5	7
	1940	1800		1605	1500	1925	1800			0,6	9
	2130	1980		1875	1750	2140	2000			0,8	12
	2330	2170		2140	2000	2355	2200			1	14
				2395	2240	2570	2400			1,2	17
	2720	2540		2675	2500	2780	2600			1,4	20
	2920	2730		2915	2725	2915	2725			1,6	23

Roues arrière Rear Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu)											
	Kleber			Michelin			Goodyear			Inflation pressure (bar)	Inflation pressure (Psi)
	20 mph 30km/h	25 mph 40 km/h		20 mph 30km/h	25 mph 40 km/h		20 mph 30km/h	25 mph 40 km/h			
540/65 R34	1400			1350						0,4	6
				1620	1450					0,5	7
	1940			1890	1770	1925	1800			0,6	9
	2170			2200	2050	2160	2020			0,8	12
	2400	2250		2500	2330	2395	2240			1	14
	2640	2470		2800	2620	2630	2460			1,2	17
	2870	2680		3100	2900	2870	2680			1,4	20
	3100	2900				3105	2900			1,6	23
340/85 R38										0,4	6
13.6 R38				1080						0,5	7
	1430			1250	1170	1300	1215			0,6	9
	1560	1480		1390	1300	1375	1285			0,8	12
	1690	1610		1520	1420	1500	1400			1	14
	1860	1760		1660	1550	1710	1600			1,2	17
	2030	1910		1790	1670	1875	1750			1,4	20
	2200	2060		1930	1800	1925	1800			1,6	23
420/85 R38										0,4	6
16.9 R38				1540						0,5	7
	1950			1790	1670	1820	1700			0,6	9
	2120	2020		1980	1850	2035	1900			0,8	12
	2290	2180		2180	2030	2205	2060			1	14
	2530	2390		2370	2210	2395	2240			1,2	17
	2760	2590		2560	2390	2600	2430			1,4	20
	3000	2800		2760	2580	2755	2575			1,6	23
460/85 R38										0,4	6
18.4 R38				1800						0,5	7
	2260			2090	1950	2140	2000			0,6	9
	2460	2340		2310	2160	2335	2180			0,8	12
	2660	2540		2540	2370	2600	2430			1	14
	2930	2770		2760	2580	2755	2575			1,2	17
	3210	3010		2990	2790	2995	2800			1,4	20
	3480	3250		3210	3000	3210	3000			1,6	23
540/65 R38	1480			1430						0,4	6
				1720	1540					0,5	7
	2060			2010	1880	2035	1900			0,6	9
	2300			2330	2180	2285	2135			0,8	12
	2550	2380		2650	2480	2535	2370			1	14
	2800	2610		2970	2780	2785	2605			1,2	17
	3040	2840		3290	3075	3040	2840			1,4	20
	3290	3075				3290	3075			1,6	23

Fig. 11.

I003512

3.12.7 Liquid ballasting

T001016

Steering and braking performance can be considerably affected by attaching implements. To maintain the required ground contact pressure, ensure that the tractor is ballasted correctly. Advice is available from your Dealer.

Tyres with inner tube

These tyres can be inflated with water mixed with calcium chloride. Refer to your dealer.

WARNING:

When preparing a calcium chloride solution for ballasting the tractor tyres with water, NEVER pour the water onto the calcium chloride as this may produce chlorine, which is a toxic and explosive gas. This can be avoided by slowly adding calcium chloride flakes to the water and stirring until they are dissolved.

Tyres without inner tubes (tubeless):

Use a monoethylene glycol-based liquid containing corrosion inhibiting agents other than nitrites (Na No2). Example: Agrilest, Castrol, Lestagel, Igol, etc.

3

4. Maintenance

4.1 Service guide

4.1.1 Service guide

T008453

Interpretation of the table:
Initial 50-hour service marked °°: this maintenance instruction is to be carried out by your dealer as part of the 50-hour service defined in the Service Record Book.
Intervals marked °: regular service intervals marked ° are to be carried out at regular intervals (for example: every day, every 50 hours, every 400 hours etc.).
Intervals marked *: For variable intervals marked *, refer to the relevant chapter in this book.

Service guide	50 hrs	400 hrs	800 hrs	1200 hrs	2000 hrs	Every day
General						
Lubricate all points with grease or oil as specified in the Operator's Manual*.	°°	*				
Check the accumulator pressures.		Once a year				
Check that all safety guards are in place and that decals are secure and legible.	°°	°				
Road test the tractor to check all instruments and systems for correct operation.	°°	°				
Road test the tractor to check the steering and brakes for correct operation.	°°	°				
After the road test, check for any leaks of oil, fuel or coolant.	°°	°				
Enquire if the operator has any operational difficulties and correct or demonstrate the solution as necessary.	°°	°				
Complete the Service Record Book.	°°	°				
Cab						
Check and top up the windscreen washer bottle.						°
Clean the cab air filter element.	°°	°				
Change the cab air filter.				°		
Check the air conditioning system for correct operation.	°°	°				
Check the torque of the cab/safety frame mounting bolts.	°°	°				
Lubricate the door locks.	°°	°				
Engine						
Replace the cab shock absorbers.	4800 hours					
Check the engine oil level.						°
Change engine oil and filter (1.		°				
Change the fuel prefilter (1.	°°	°				
Change the fuel filter (1.	°°	°				
Bleed the water from the fuel prefilter.		*				
Change the filter element of the fuel/water separation centrifugal prefilter (1.	°°	°				
Check the valve clearance, replace the cover seal.		° (the 1st time)		°		

Service guide	50 hrs	400 hrs	800 hrs	1200 hrs	2000 hrs	Every day
Check the idle speed and fuel cut-off mechanism.		°				
Check the operation of the injectors.					°	
Check/clean the dry air filter elements.						°
Change the dry air filter elements.				°		
Check the tension and condition of the alternator/fan/air conditioning compressor belts.	°°	°				
Change the alternator/fan/air conditioning compressor belts.				°		
Check the radiator coolant level.						°
Drain, flush and refill the radiator with coolant.				°		
Check/clean the radiator/cooler fins.						°
Clean the air conditioning condenser.						°
Change the air conditioning dryer.				°		
Transmission and auxiliary hydraulics						
Check the transmission/auxiliary hydraulics oil level.						°
Change the transmission/hydraulics oil (recalibrate the clutch if necessary).				°		
Change the transmission high-pressure filter(s).	°°	°				
Change the 150 micron suction strainer				°		
Change the 60-micron PowerShuttle filter element.	°			°		
Lubricate the trumpet housing bearings.		°				
Check the clutch pedal and gearbox ratio engagement for correct operation.	°°	°				
Check all hydraulic systems for correct operation.	°°	°				
Brakes						
Check the condition of the brake pipes/compressed air tanks.	°°			°		
Bleed the brakes.				°		
Check the hand brake adjustment.	°°	°				
Check the trailer brake valve for correct operation.	°°			°		
Front axle and steering						
Check the oil level in the front axle and final drives (4WD).		°				
Change the oil in the front axle and final drives (4WD).	°°		°			
Check the front wheel hubs/steering pivots/check the suspension clearance.	°°	Once a month				
Lubricate the driveshaft/universal joints (4WD).	°°	°				
Lubricate the steering pivots/suspended front axle.		Once a week				

Service guide	50 hrs	400 hrs	800 hrs	1200 hrs	2000 hrs	Every day
Check the steering for correct operation (with and without the engine running).		°				
Check the steering and wheel alignment (including tyre wear and damage).				°		
Recalibrate the suspended front axle.				°		
Power take-off						
Check the power take-off operation.	°°	°				
Change the ZUIDBERG front PTO oil.	°°	°				
Clean the "ZUIDBERG" front PTO strainer.	°°	°				
Linkage						
Check the auto-hitch for correct operation.	°°					°
Electrical equipment						
Check the condition of the battery and the electrolyte level.	°°	°				
Check the tightness of the battery connections and battery safety.	°°	°				
Check all the neutral start switches for correct operation.	°°	°				
Check all the indicator lights, instruments and acoustic alarms for correct operation.	°°	°				
Check all lights for correct operation and adjustment.	°°	°				
Check all electrically-powered devices (heater/fan, radio, windscreen wipers etc.) for correct operation.	°°	°				
Check all electronically controlled systems for correct operation.	°°	°				
Wheels and tyres						
Check the torque of all wheel and rim nuts and bolts.						°

1. If biodiesel fuel is used, refer to the relevant chapter (*see §4.3.21, page 151*)

4.2 Cab

4.2.1 Air conditioning system: condenser

T001124

Frequency

Clean the condenser using compressed air every 400 hours.

4

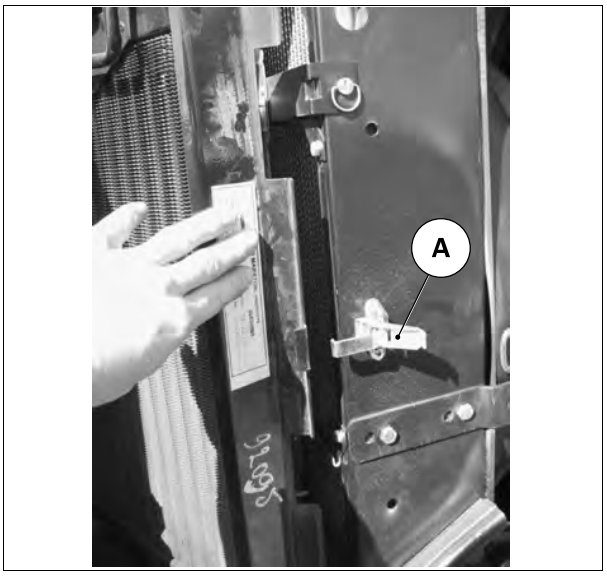


Fig. 1. I003515

Procedure

1. Release the lock.
2. Release the condenser by sliding it to the side.
3. Clean using compressed air.
   NOTE: *Take care not to damage the cooler fins.*

4.2.2 Air conditioning system: checking the air conditioning system

T001125

Frequency

DANGER:

In the event of a leak, wear safety goggles. Escaping refrigerant gas or liquid can cause severe injuries to the eyes. The R134a refrigerant used in the installation gives off a toxic gas if it comes into contact with a flame.

WARNING:

Do not disconnect any part of the air conditioning system. Consult your dealer or agent if a fault occurs.

1. Operate the air conditioning system for a few minutes every week to keep the whole system in good condition and to lubricate the seals.
2. Add charge to the air conditioning system every year at the start of summer (consult your dealer).

4.2.3 Cab air filters

T001030

Frequency

Clean the cab air filter(s) every 400 hours, or more frequently if necessary.
Replace the cab air filter(s) every 1200 hours, or once a year.

WARNING:

The air filter element does not provide protection from chemical products.

Standard roof: Procedure

1. To gain access to the cab air filter, open the hatch on the left-hand side of the cab roof *fig. 2*.
2. Turn the handle and lift out the filter element.
3. Clean the filter by blowing it with compressed air.
4. Before refitting the filter, wipe out the compartment with a damp cloth to remove dust.

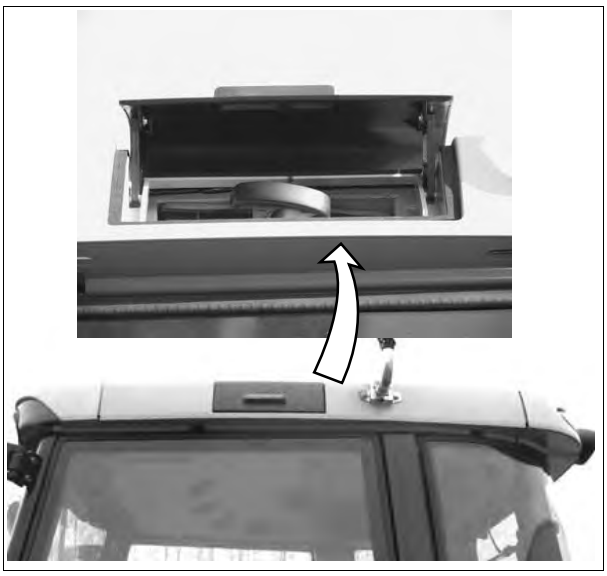


Fig. 2. I003522

Flat roof: Procedure

1. To gain access to the cab air filters, turn the locks *fig. 3*.

Fig. 3. I003524

2. Open the hatches on each side of the cab roof and extract the filter elements.
3. Clean the filters by blowing them with compressed air.
4. Before refitting the filters, wipe out the compartments with a damp cloth to remove dust.

High-visibility roof: Procedure

1. To gain access to the cab air filter, turn the locks *fig. 4* to open the hatch at the rear of the cab roof.
2. Loosen the two nuts *fig. 4* and extract the filter element.
3. Clean the filter by blowing it with compressed air.
4. Before refitting the filter, wipe out the compartment with a damp cloth to remove dust.

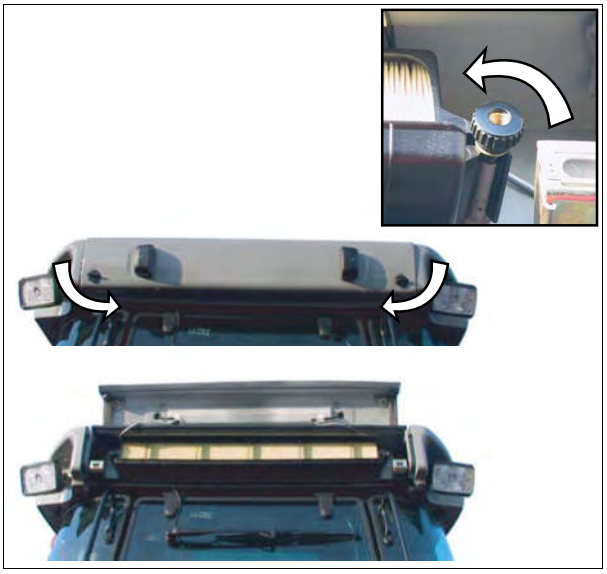


Fig. 4. I003526

4.2.4 ROPS or cab attachment

T001031

Frequency

The cab or arch forms an integral part of the Roll Over Protection Structure (ROPS) and must be attached correctly in order to work effective.
Ask your dealer or agent to check the tightness of the ROPS or cab attachment bolts every 400 hours.

CAUTION:

The cab or ROPS complies with all international safety standards. It must never be drilled or modified to enable installation of accessories or implements. Welding any item to the cab or ROPS or repairing the cab or ROPS is not permitted. If any such operation is carried out, the cab or ROPs may no longer comply with the required standards. Only genuine parts may be used, which must be fitted by your dealer or agent.

4.2.5 Windscreen washer

T001032

The windscreen washer bottle is located between the tractor rear fenders.

Fig. 5. I003527

Frequency

Check there is fluid in the tank every day and top up if required.

IMPORTANT: *Use a fluid suitable for the lowest temperatures encountered to avoid any damage from freezing.*

4.2.6 Hinge and lock lubrication

T001033

Lubricate the following with liquid paraffin every 400 hours:

- the door hinges
- the door locks
- the window locks

4.3 Engine

4.3.1 Recommended products

T001420

IMPORTANT: *The warranty remains valid only as long as the lubricants used comply with the following classifications, and no other products are used.*

Engine oil

AGCO oil corresponding to standards: API CI4 or ACEA E7

Recommended SAE viscosity grades (SAE J300d)

fig. 1: Viscosity grades depending on ambient temperature conditions

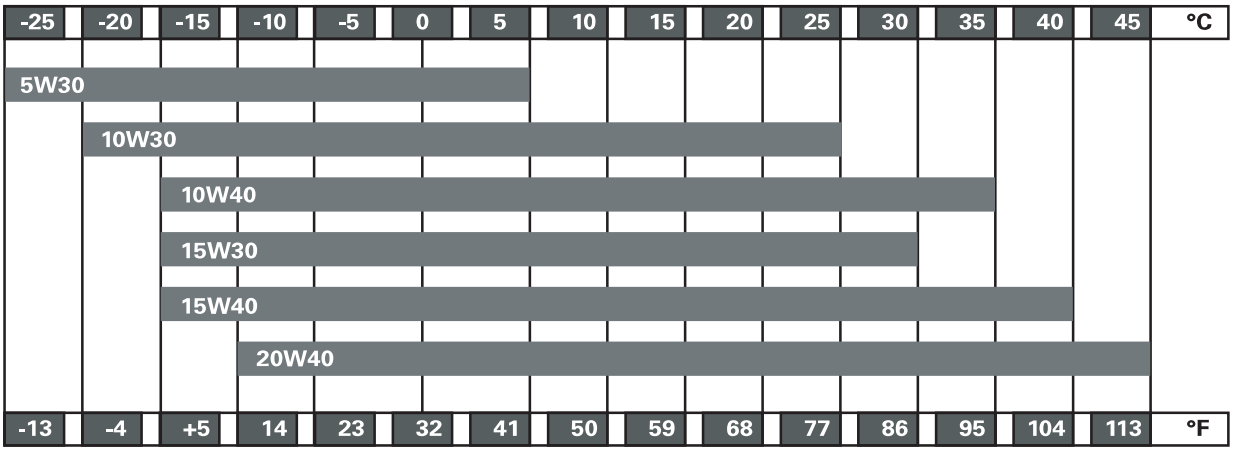


Fig. 1. I003528

Coolant

Antifreeze: Permanent, ethylene/glycol, complying with standard specifications ASTM D3306 (USA) or BS 6580-1992 (Europe/UK) or AS 2108-1977 (Australia).

4.3.2 Fuel

T001051

Reminder of the safety instructions

Before handling fuel, filling the tank etc., observe the following:

- Under no circumstances should petrol, alcohol, paraffin, dieselhol (a mixture of diesel and alcohol) or any other substance be added to diesel fuel as there is an increased risk of fire or explosion.
  In a closed container such as a fuel tank, these mixtures are more explosive than pure petrol. Do not use them. Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system.
- Clean the filler plug area. Fill the fuel tank at the end of each working day to reduce overnight condensation.
- Never remove the plug or refuel when the engine is running.
- When filling the tank, keep control of the nozzle.
- Do not smoke.
- Do not fill the tank to its full capacity. Allow room for expansion and wipe up spilt fuel immediately.
- If the original plug is lost, replace it with an AGCO plug and tighten securely. A non-AGCO plug may not be guaranteed to seal.
- Ensure equipment is properly maintained.

CAUTION:
Diesel fuel is flammable. Handle fuel with care. Keep away from flammable sources. Do not smoke when filling the tank. Do not leave the tractor unattended when filling the tank. Clean up any spilt diesel after filling the tank. Any material which comes into contact with the fuel must be moved to a safe place.
If high-pressure fuel comes into contact with eyes, wash immediately with clean water and seek medical help.

Compulsory fuel for e3 SCR Technology engines

The diesel used must comply with standard EN 590:2009 or ASTM D 975-09b 1-D or 2-D.
To obtain the correct power and optimum engine performance, use only good quality fuel.

IMPORTANT: *If the type of diesel is not observed, the engine and depollution system will be subject to damage that will not be covered by the warranty.*

Fuel recommended for other engines

In addition to fuels for e3 SCR Technology engines, the diesel used must comply with standard EN 14214:2008 or ASTM D6751.
To obtain the correct power and optimum engine performance, use only good quality fuel.

Fuel storage

The utmost care must be taken to keep fuel clean.

– Never clean the inside of containers or other fuel system components with a fluffy cloth.

– The capacity of bulk storage tanks should not be too large. The shelf life of the fuel is approximately six months.

– The storage tank should be under cover and supported on a cradle high enough for the tractor fuel tank to be filled by gravity. It should have a suitable manhole to provide access for cleaning. The outlet tap should be about 75 mm above the bottom of the tank to allow water and sludge to settle. It should have a removable screen. The storage tank should slope by about 4 cm per metre towards the rear (drain plug side).

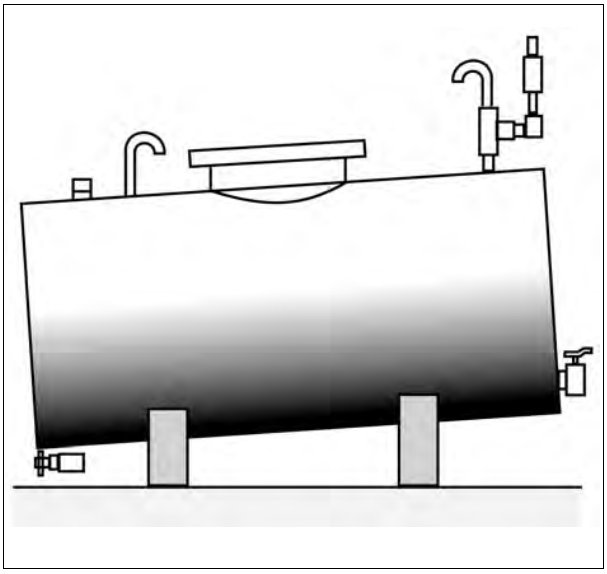


Fig. 2. I003532

– Let the fuel settle in the storage tank for 24 hours before use after any servicing or refilling the tank.

– Clean out the storage tanks regularly; normally every five years, more frequently in cold climates.

– Bleed the tanks frequently to drain off any water formed by condensation.

– Rotate fuel stocks to prevent deterioration of old fuel and the accumulation of water or foreign matter.

– Bring in fresh supplies without waiting for stocks to run out; refuelling from the bottom of the tank may cause a blockage.

Advice on the use of fuel in cold weather

– In cold weather, diesel fuel increases in viscosity and wax particles form. This may lead to operating problems if precautions are not taken.

– ***IMPORTANT:*** *Environmental protection — you must comply with local regulations in force relating to underground storage.*

  Underground storage is preferable.
  If this is not possible, place the storage tank in a location which is protected from the cold, wind and damp.

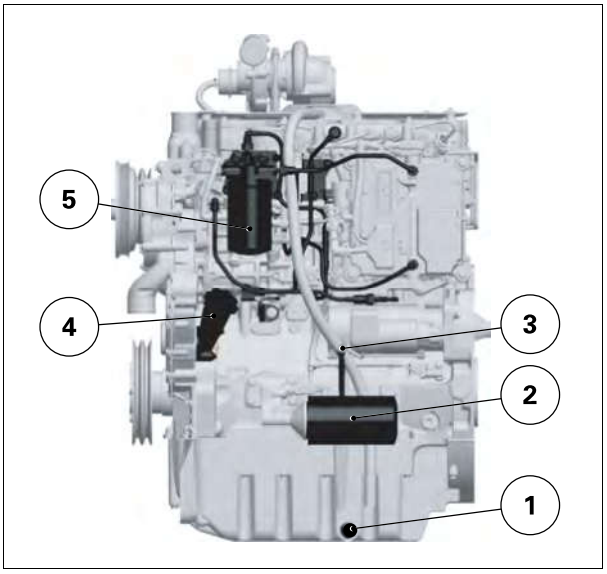
– After filling the storage tank, drain the first 5 litres into a drum before filling the fuel tank. Then return the fuel in the drum to the storage tank.

- Insulate all exposed pipework. Ensure that any pipework is short in length and designed to be disassembled if necessary.
- Only stock "winter" quality fuel during the cold weather season.
- Frequently clean the fuel filter bowl.
- Do not puncture the fuel filter.
- Ensure a spare filter is always available. If a blockage occurs, due to fuel waxing, changing the fuel filter will enable restarting.

4.3.3 Perkins 4-cylinder engine

T001035

(1) Engine oil drain plug
(2) Engine oil filter
(3) Engine oil dipstick
(4) Oil filler plug
(5) Fuel filter
(6) Fuel prefilter



I003587

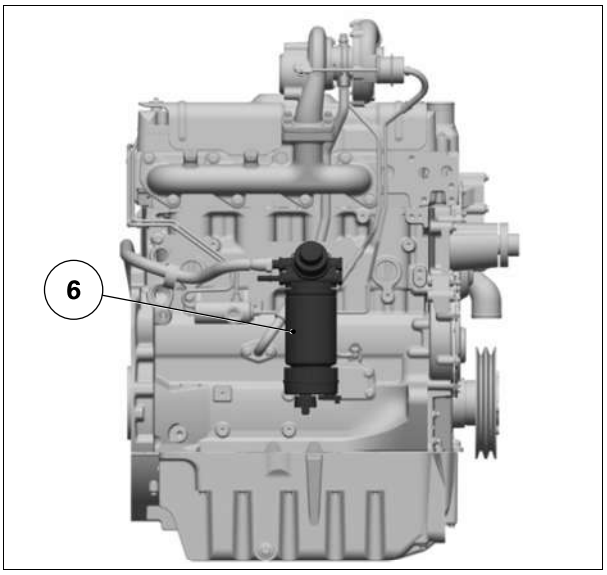


Fig. 3. I024935

4.3.4 SisuDiesel 4-cylinder engine

T001037

(1) Engine oil drain plug
(2) Engine oil filter
(3) Engine oil dipstick
(4) Oil filler plug
(5) Fuel prefilter
(6) Fuel filter

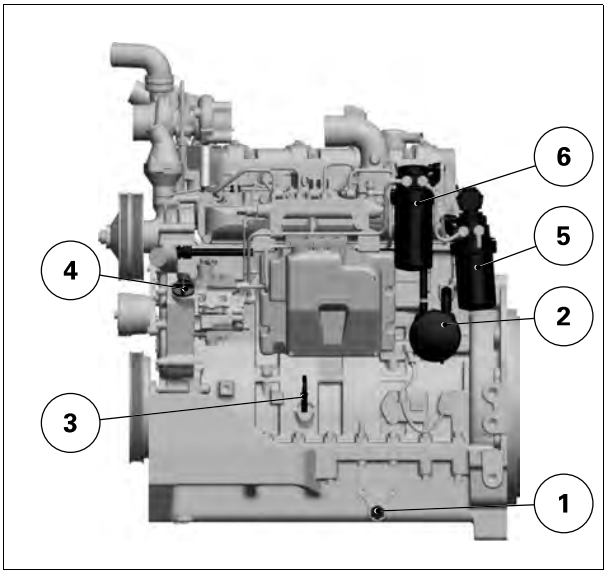


Fig. 4. I003589

4.3.5 6-cylinder Sisu engine

T008018

(1) Engine oil drain plug

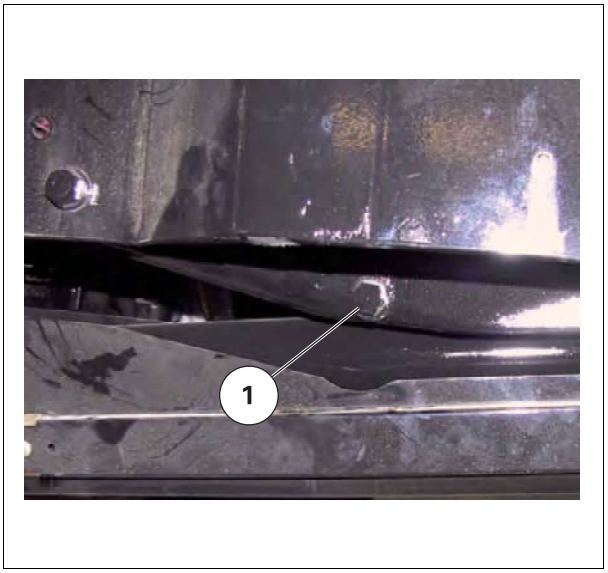


Fig. 5. I005558

(2) Engine oil filter
(3) Engine oil dipstick
(4) Oil filler plug
(5) Fuel prefilter
(6) Fuel filter

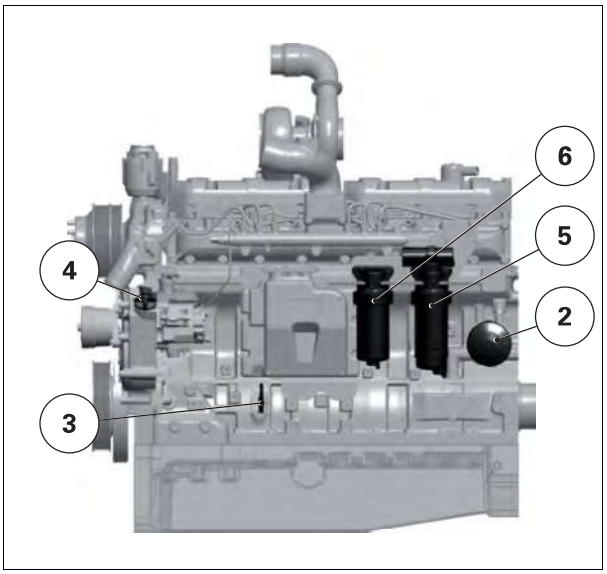


Fig. 6. I020261

4.3.6 Engine oil level check

T001562

Frequency

Check the engine oil level daily.

Procedure

NOTE: *This operation is to be carried out when the engine is cold.*

NOTE:

To avoid unnecessarily heavy oil consumption:

– *Do not exceed the MAX mark on the dipstick.*
– *Do not refill until the level reaches the MIN mark on the dipstick.*

1. Stand the tractor on level ground, with the front axle suspension disengaged. Stop the engine.
2. Check the oil level using the dipstick.
3. Top up with oil if necessary.

4.3.7 Draining the engine oil

T002010

Frequency

Drain the engine oil every 400 hours maximum.
In difficult working conditions, the oil may need changing more frequently (every 200 hours for example).

Procedure

1. Drain the oil when the engine is warm.
2. Stand the tractor on level ground, with the front axle deactivated. Stop the engine.
3. Undo and remove the plug(s) from the engine sump.
   NOTE: *If there are two drain plugs, it is recommended to undo them to achieve more efficient drainage as there is a separating panel that traps the oil on each side of the sump.*
4. ***IMPORTANT:*** *Do not dispose of the oil in the environment. Always store oil in suitable containers so that it can be collected and processed by specialist organisations.*

   Collect the used oil in a container of sufficient size.
5. Refit and tighten the drain plug(s) to a torque of 35 Nm.
6. Refill with a recommended oil to the "max" mark.
   NOTE: *Allow time for the oil to settle in the sump before rechecking the level.*
7. Start the engine and check that there are no leaks from the drain plug(s).

4.3.8 Replacing the engine oil filter

T001423

Frequency
Change the engine oil filter every 400 hours

Procedure
1. With the engine switched off, drain the engine oil before replacing the oil filter (*see §4.3.7, page 142*).
2. Unscrew and discard the complete filter and the worn seal.
3. Fill the new filter slowly with clean oil.
4. Smear a few drops of clean engine oil on the new seal ring, then place the ring in the housing on top of the new filter.
5. Screw on the filter until the seal ring touches the filter head, then tighten it a further half-turn by hand only (do not overtighten).
6. Refill with the recommended type of engine oil.
7. Recheck the oil level and top up if necessary.
8. Restart the engine and check that there are no leaks.

4.3.9 Breather system

T001042

Check the hoses periodically for wear, leaks or other damage. Regularly check that the bleed hole is not blocked.

4.3.10 Fuel system: fuel prefilter

T001426

Draining the water: Frequency
Every 100 hours or once a week.

Draining the water: Procedure
1. Place a container underneath the fuel prefilter.
2. Drain the water by opening the valve at the base of the prefilter. Collect the water and dispose of properly in accordance with directives on environmental protection.
3. Re-close the valve and then bleed the system.

Replacing the filter element: Frequency
Replace the filter element every 400 hours

Replacing the filter element: Procedure
IMPORTANT: *Frequently clean the fuel prefilter bowl. Do not puncture the fuel prefilter.*

NOTE: *To avoid water condensation in the fuel tank, refill with fuel at the end of the working day.*
Ensure that a spare prefilter is always available. If a blockage occurs, due to fuel waxing, changing the fuel filter will enable restarting.

1. Drain the prefilter.
2. Remove and discard the filter element.
3. Refit a new element.
4. Bleed the system.

4.3.11 Fuel system: fuel filter

T001425

Frequency
Replace the filter element every 400 hours

Procedure
1. Drain the filter.
2. Remove and discard the filter element.

3. Refit a new element.
4. Bleed the system (*see §4.3.13, page 145*).

4.3.12 Fuel system: Water filter (optional)

T001719

General

This filter prefilters the particles contained in the fuel and is fitted on the left-hand side of the engine.

Self-cleaning is necessary if you notice the internal paper element is starting to become blocked. The following symptoms indicate a blockage:

– Loss of engine power
– Black smoke from the exhaust

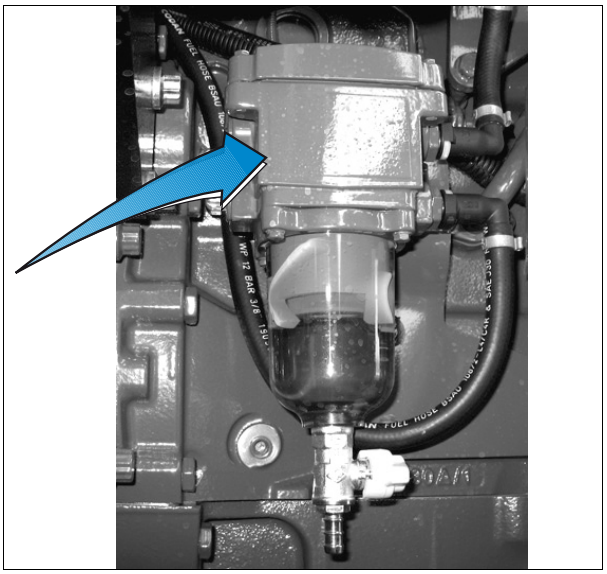


Fig. 7. I024939

Self-cleaning

1. Stop the engine.
2. Open the bleed screw (on the top of the filter).

Fig. 8. I005576

3. Open the drain valve on the transparent container (1) *fig. 9* or loosen the bleed screw (3) (depending on model).
   - atmospheric pressure enters the filter
   - particles and water droplets are detached from the paper element
   - the particles fall to the base of the container via gravity
4. Close the drain valve by pushing and then turning to the left (2) *fig. 9* or retighten the bleed screw (3) (depending on model).
   - the clean fuel above the cartridge rinses the element and carries the fine particles and droplets to the transparent container
   - drain the fuel to flush out the particles and water in the paper element and the transparent container

Fig. 9. I005575

5. Close the air bleed screw and moderately tighten *fig. 8*.
6. Start the engine and allow it to run. If the engine lacks power, carry out the self-clean operation again.

Replacing the filter element: Frequency
Replace the filter element every 400 hours

Replacing the filter element: Procedure
1. Remove the 4 prefilter cover plate screws *fig. 8*.
2. Remove and discard filter (3), retaining pressure maintaining element (4).
3. Refit the new filter element
4. Refit the pressure maintaining element
5. Refit the cover plate and moderately tighten
6. Start and run the engine
7. Check that there are no leaks

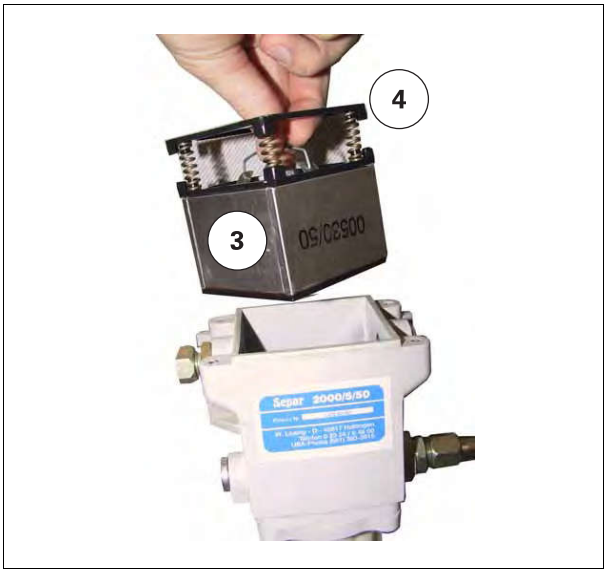


Fig. 10. I005577

4.3.13 Fuel system: bleeding
T008456

General
To ensure correct operation of the engine, the fuel system must be in perfect condition and free of air.

NOTE: *Never activate the starter for more than 30 seconds in one go to avoid overheating.*

1. Switch on the ignition. The electric pump automatically bleeds the system.
2. Start up and allow the engine to run at idle for several minutes.
3. Check there are no leaks
4. Repeat the operation if required.

4.3.14 Fuel system: injection pump, regulator and injectors

T001047

The injection pump, regulator and injectors must be checked and adjusted by the dealer or agent (in accordance with the service guide).

4.3.15 Air filter

T001048

Cleaning and replacement: Frequency

Main filter

– Clean the main filter if the blockage indicator light comes on.
– Replace the filter after it has been cleaned five times or every 1200 hours.

Secondary filter:

– Replace the secondary filter after the main filter has been changed five times or once a year or every 1200 hours.

Cleaning and replacement: Procedure for 4-cylinder engines

IMPORTANT: *Stop the engine before starting work on the filter system.*

CAUTION:
Do not attempt to blow the main element clean using the engine exhaust fumes. Never apply oil to a dry element. Never use petrol, paraffin or solvents to clean an element.

NOTE: *Although the model shown may not correspond to your model, the procedure is identical.*

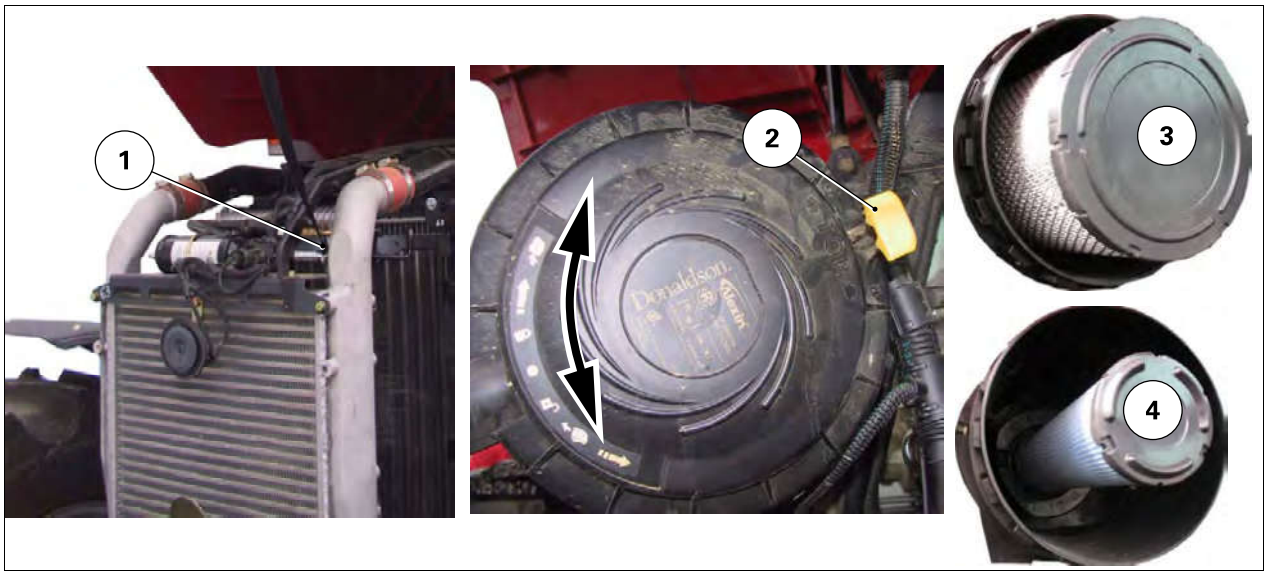


Fig. 11. I009346

1. Lift the bonnet. Release the bonnet retaining strap (1) to fully open the bonnet.
2. Release the air filter lock (2).
3. Turn the cover anti-clockwise.
4. ***IMPORTANT:*** *To clean the main filter, do not tap it against a hard surface.*

   Take out the main filter (3) to clean or replace it.
   Clean the main filter, depending on its condition:
   – Blow a jet of compressed air onto the filter, from the inside outwards, at a maximum pressure of 5 bar, keeping the filter at a safe distance from the nozzle.
   – After cleaning, check to ensure that the secondary filter (4) is not damaged and check the condition of the seals.
5. Remove the secondary filter (4) from the air filter unit. Check its condition and replace if necessary.
6. Carry out the operations in reverse order to refit.

Cleaning and replacement: Procedure for 6-cylinder engines

IMPORTANT: *Stop the engine before starting work on the filter system.*

CAUTION:
Do not attempt to blow the main element clean using the engine exhaust fumes. Never apply oil to a dry element. Never use petrol, paraffin or solvents to clean an element.

NOTE: *Although the model shown may not correspond to your model, the procedure is identical.*

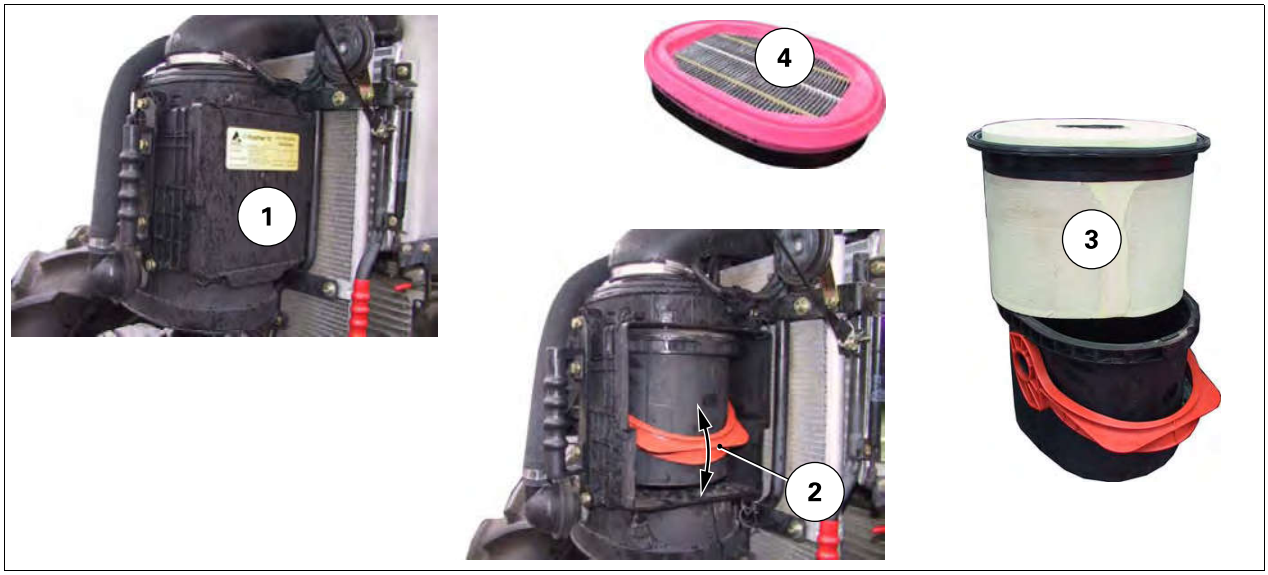


Fig. 12. I009315

1. Lift the engine bonnet.
2. Remove the cover (1).
3. Lift the lever (2) and then take out the filtration assembly.
4. ***IMPORTANT:*** *To clean the main filter, do not tap it against a hard surface.*

   Take out the main filter (3) to clean or replace it.
   Clean the main filter, depending on its condition:
   - Blow a jet of compressed air onto the filter, from the inside outwards, at a maximum pressure of 5 bar, keeping the filter at a safe distance from the nozzle.
   - After cleaning, check to ensure that the secondary filter (4) is not damaged and check the condition of the seals.
5. Remove the secondary filter (4) from the air filter unit. Check its condition and replace if necessary.
6. Carry out the operations in reverse order to refit.

4.3.16 Cooling system

T001428

Coolant quality

- The coolant quality can have a great effect on the efficiency and life of the cooling system (*see §4.3.1, page 138*).
- ***IMPORTANT:*** *Never use pure water as a coolant.*
  If an incorrect mixture is used, AGCO cannot be held responsible for damage caused.
  Precautions against freezing: Check the protection level of the mix before the cold season.

  The antifreeze/water ratio must always be 40-50% antifreeze to 60-50% water.
  The minimum 40% antifreeze/60% coolant mixture must be used even in "non-cold" regions to raise the boiling point and protect the system against corrosion.
  The water used should be clean, soft and non acidic.
  Avoid the addition of pure water to the system, as this will dilute the mixture.

Checking the level and quality of the coolant

1. **Cold engine**, visually check the coolant level daily.

2. **CAUTION:**
The quality of the coolant must be checked when the engine is cold.
Check the quality of the mixture regularly, especially before the cold season.

Filling to top up the coolant level

CAUTION:
If the engine is very hot, loosen the plug to the first notch before removing it to lower the expansion tank pressure.

IMPORTANT: *If the correct procedures are not used, AGCO cannot be held responsible for damage caused.*

4

1. Lift the bonnet to access the expansion tank.
2. Open the expansion tank plug.
3. Fill the expansion tank with coolant up to mid-way between the max/min witness marks .
4. After filling, open the heater tap fully and run the engine at 1000 rpm for several minutes.
5. Switch off the engine, check the level and top up if necessary, without exceeding the mid-way point on the tank.
Refit the plug.

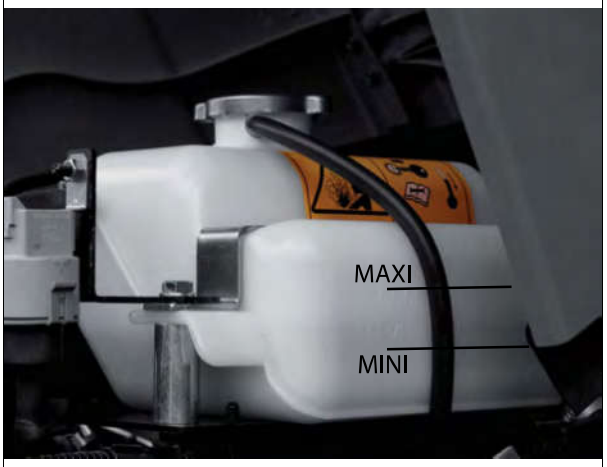


Fig. 13. I018797

Draining the cooling system

Drain the system every 1200 hours according to the following procedure.

CAUTION:
Wait until the system has completely cooled before draining.

1. Lift the bonnet to access the expansion tank.
2. Open the expansion tank plug.
3. Place a drip pan underneath the radiator.
4. Remove the drain plug from the radiator and allow the fluid to drain out completely.
5. Refit the radiator drain plug and fill the system.
6. Fill the system via the expansion tank and then after filling, open the heater tap fully and run the engine at 1000 rpm for several minutes.
7. Switch off the engine, check the level and top up if necessary, without exceeding the mid-way point on the expansion tank.
Refit the plug.

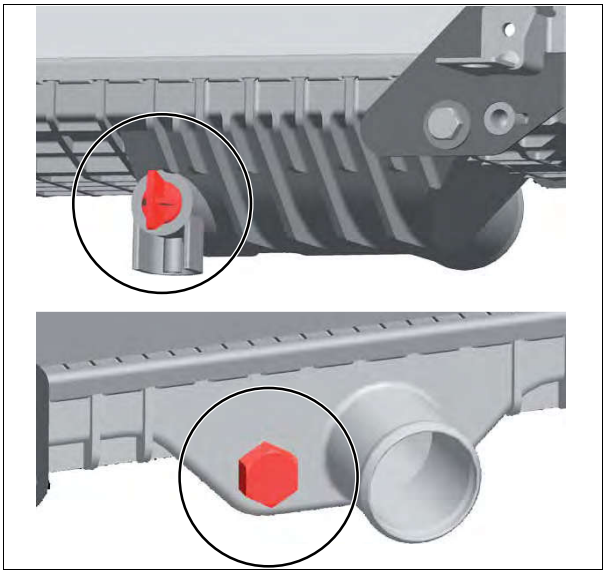


Fig. 14. I018451

Cleaning the radiator

Clean the radiator fins with compressed air every day, depending on the work carried out.

4.3.17 Checking the fan/alternator V belt

T001050

Frequency

Replace the belts as soon as they show signs of wear or every 1200 hours.

Procedure for a V belt

NOTE: *A new belt will have a tendency to slacken after approximately half an hour of operation. A belt tension gauge can be used.*

1. With the engine stopped, manually press the belt halfway between the fan pulley and the crankshaft pulley.
2. Check that the deflection value is between 13 mm and 16 mm.
3. If the tension is incorrect, loosen the alternator mounting bolts.
4. Tension the belt by tilting the alternator.
5. Firmly retighten the alternator bolts.
6. Check the deflection value (step 2).

4.3.18 Checking the fan/alternator/air conditioning Poly-V belt

T001499

Tension

Check the belt tension every 400 hours

Appearance

Examine the appearance of the belt (on a daily basis or whenever refuelling).

– Cross cracks (running across the breadth of the belt) are permissible.

– Longitudinal cracks (running along the length of the belt) that intersect cross cracks are not permissible.

Replace the belt if it is cracked in an unacceptable way, frayed or if pieces have come off (*see §4.3.17, page 149*).

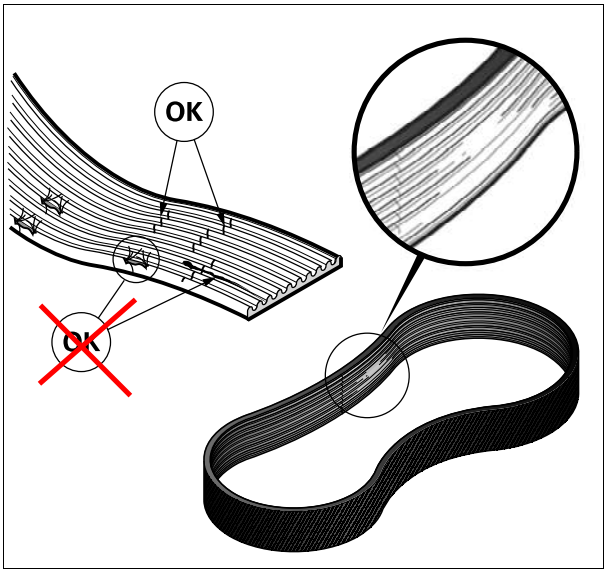


Fig. 15. I004763

4.3.19 Replacing the fan/alternator belt

T010093

Frequency

Replace the belts as soon as they show signs of wear or every 1200 hours.

Procedure for a V belt

NOTE: *A new belt will have a tendency to slacken after approximately half an hour of operation. A belt tension gauge can be used.*

1. With the engine switched off, loosen the alternator bolts
2. Remove the worn belt and replace it with a new belt
3. Tension the belt by tilting the alternator.
4. Firmly retighten the alternator bolts.
5. Check that the deflection value is between 13 mm and 16 mm.

Procedure for a Poly-V belt and roller tensioner

1. Lift the tensioner to remove and refit the belt.
2. After replacement, check the belt tension and adjust if necessary.
3. After the tensioner has been slackened to remove/refit the belt, check the torque of the tensioner screw 43 Nm.
   The belts are tensioned by the automatic tensioner.

Fig. 16. I005132

4.3.20 Fuel

T001051

Reminder of the safety instructions

Before handling fuel, filling the tank etc., observe the following:

- Under no circumstances should petrol, alcohol, paraffin, dieselhol (a mixture of diesel and alcohol) or any other substance be added to diesel fuel as there is an increased risk of fire or explosion.
  In a closed container such as a fuel tank, these mixtures are more explosive than pure petrol. Do not use them. Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system.
- Clean the filler plug area. Fill the fuel tank at the end of each working day to reduce overnight condensation.
- Never remove the plug or refuel when the engine is running.
- When filling the tank, keep control of the nozzle.
- Do not smoke.
- Do not fill the tank to its full capacity. Allow room for expansion and wipe up spilt fuel immediately.
- If the original plug is lost, replace it with an AGCO plug and tighten securely. A non-AGCO plug may not be guaranteed to seal.
- Ensure equipment is properly maintained.

CAUTION:

Diesel fuel is flammable. Handle fuel with care. Keep away from flammable sources. Do not smoke when filling the tank. Do not leave the tractor unattended when filling the tank. Clean up any spilt diesel after filling the tank. Any material which comes into contact with the fuel must be moved to a safe place.

If high-pressure fuel comes into contact with eyes, wash immediately with clean water and seek medical help.

Compulsory fuel for e3 SCR Technology engines

The diesel used must comply with standard EN 590:2009 or ASTM D 975-09b 1-D or 2-D.
To obtain the correct power and optimum engine performance, use only good quality fuel.

IMPORTANT: *If the type of diesel is not observed, the engine and depollution system will be subject to damage that will not be covered by the warranty.*

Fuel recommended for other engines

In addition to fuels for e3 SCR Technology engines, the diesel used must comply with standard EN 14214:2008 or ASTM D6751.
To obtain the correct power and optimum engine performance, use only good quality fuel.

Fuel storage

The utmost care must be taken to keep fuel clean.

- Never clean the inside of containers or other fuel system components with a fluffy cloth.
- The capacity of bulk storage tanks should not be too large. The shelf life of the fuel is approximately six months.
- The storage tank should be under cover and supported on a cradle high enough for the tractor fuel tank to be filled by gravity. It should have a suitable manhole to provide access for cleaning. The outlet tap should be about 75 mm above the bottom of the tank to allow water and sludge to settle. It should have a removable screen. The storage tank should slope by about 4 cm per metre towards the rear (drain plug side).

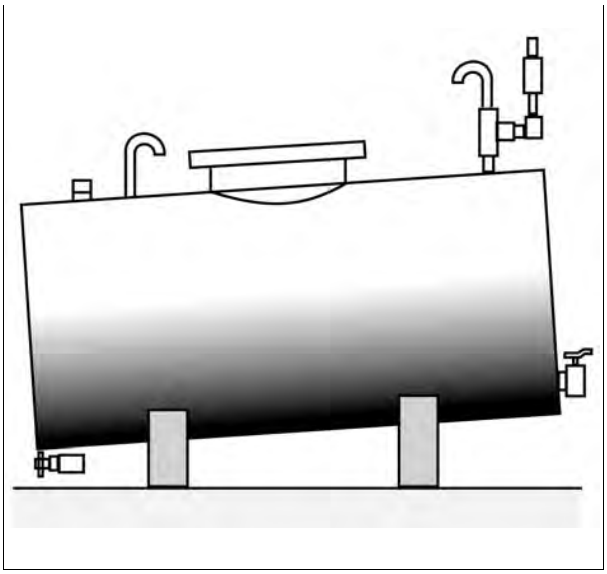


Fig. 17. I003532

- Let the fuel settle in the storage tank for 24 hours before use after any servicing or refilling the tank.
- Clean out the storage tanks regularly; normally every five years, more frequently in cold climates.
- Bleed the tanks frequently to drain off any water formed by condensation.
- Rotate fuel stocks to prevent deterioration of old fuel and the accumulation of water or foreign matter.
- Bring in fresh supplies without waiting for stocks to run out; refuelling from the bottom of the tank may cause a blockage.

Advice on the use of fuel in cold weather

- In cold weather, diesel fuel increases in viscosity and wax particles form. This may lead to operating problems if precautions are not taken.
- ***IMPORTANT:*** *Environmental protection — you must comply with local regulations in force relating to underground storage.*

  Underground storage is preferable.
  If this is not possible, place the storage tank in a location which is protected from the cold, wind and damp.
- After filling the storage tank, drain the first 5 litres into a drum before filling the fuel tank. Then return the fuel in the drum to the storage tank.
- Insulate all exposed pipework. Ensure that any pipework is short in length and designed to be disassembled if necessary.
- Only stock "winter" quality fuel during the cold weather season.
- Frequently clean the fuel filter bowl.
- Do not puncture the fuel filter.
- Ensure a spare filter is always available. If a blockage occurs, due to fuel waxing, changing the fuel filter will enable restarting.

4.3.21 Biodiesel fuel

T006988

Recommendations

Specific recommendations for Perkins Tier 3 engines and requirements concerning the SisuDiesel engine water separator

Tractors can run on a fuel mixture containing biodiesel. The percentage of the mixture varies according to the manufacturer and the engine specifications.
The following information and the table below provide all the details for each engine and the new servicing instructions.

Biodiesel fuels that comply with standards EN 14214 or ASTM D6751 are acceptable.
Rape methyl esters (RME), vegetable oil methyl esters (VOME) and soy methyl esters, together known as fatty acid methyl esters (FAME) are all included in these standards.

IMPORTANT: *Unrefined, cold-pressed rapeseed oil, other unesterified vegetable oils or types of fuel such as ethyl alcohol and methanol MUST NOT BE USED in these products. This fuel requires a different type of engine design, with precombustion chambers or a specific type of injection system. Moreover, "domestic fuel" must not be used as its quality has been reduced by the refineries. It can no longer provide sufficient lubrication and the amount of heavy polycyclic aromatic hydrocarbons has been increased to a critical level.*

Perkins Tier 0, 1 and 2 engines can run on a mixture containing up to 5% biodiesel, without any modification to the servicing schedule.

Perkins Tier 3 engines can run on a mixture containing up to 5% biodiesel, without any modification to the servicing schedule.

All 1104D mechanical engines, 1104D electronic engines with an engine number after no. U022408S and 1106D electronic engines with an engine number after no. U013753S can run on a mixture containing up to 20% (B20) biodiesel without any modification to the servicing schedule, apart from the fuel filters, which must be changed after 50 hours when biodiesel is used for the first time. Electronic engines with numbers prior to those mentioned above can only run on a mixture containing 5% biodiesel as the high-pressure pump and the injectors do not have a nitride coating and would suffer premature wear if a more concentrated mixture of biodiesel were used.

SisuDiesel Tier 0, 1, 2 and 3 engines can run on a fuel mixture containing up to 100% biodiesel. If a 100% mixture is used in these engines, the time between oil changes and oil filter and fuel filter maintenance must be reduced by half. An additional water separator must also be installed (V836859301).

The following instructions must be observed.

If the oil level exceeds the "Max" mark on the dipstick, the engine oil must be replaced. If a fuel leak (oil increase/dilution) suddenly worsens, the cause must be identified and corrected.

Biodiesel can be used pure at start-up temperatures down to approximately –16 °C. Diesel fuel must be used to start up at temperatures below –16 °C.

If the tractor is not used for 4 weeks, the engine must be started up and then stopped using pure diesel fuel to avoid the various components and filters becoming blocked as the seals have reduced resistance to biodiesel.

As biodiesel is a very powerful solvent, any residue in the fuel system may become dislodged after using biodiesel. The fuel filters must therefore be replaced after the first few times the tank is filled with biodiesel.

The low combustion value of biodiesel may lead to a drop in performance of 5% or an increase in fuel consumption of approximately 10%. All older models must therefore be carefully inspected in an approved servicing workshop before using biodiesel. Low compression, a leak from the injectors and coolant temperatures that are too low may lead to dilution of the engine oil. All the hoses and pipes must be checked at least once a year by an approved agent.

General instructions

The fuel must be stored in compliance with the recommended standards to avoid any water absorption or deterioration. Fuel must never be stored for more than 12 months. Under certain conditions, fuel deterioration may lead to corrosion of the metal components and cause the seals to split prematurely.

Never store fuel in a tank with a painted inner surface, as biodiesel dissolves many types of paint.

When you fill up the tractor, make sure that the fuel does not run down the side of the filler neck. If there is any spillage, wipe up any traces of fuel immediately. Avoid splashing the hoses with fuel and wipe off any spillage as quickly as possible.

Engine	Mixture containing biodiesel	Specific actions to perform
Perkins – Tier 0, 1 & 2	5%	None
Perkins – Tier 3*	20%	Replace the fuel filters after 50 hours for the first usage
Valmet/Sisu Tier 0, 1, 2 and 3	100%	Reduce the time between servicing by half. Additional water separator required
* 1104D electronic engines with numbers after no. U022408S and 1106D electronic engines with numbers after no. U013753S.		

Using biodiesel at levels higher than those recommended can have adverse effects on the engine and the fuel system. The higher the concentration of biodiesel, the more harm these effects will cause. It is therefore essential to service the machine at the recommended intervals, or at shorter intervals if recommended, in order to protect the engine and fuel system. The following instructions must be observed.

The oil may become diluted when cold starting or when running at idle speed or partial load. If the oil level exceeds the "Max" mark on the dipstick, the engine oil must be replaced. If a fuel leak (oil increase/dilution) suddenly worsens, the cause must be identified and corrected.

– Loss of power and reduced performance
– Fuel leaks from the seals and hoses
– Corrosion of the fuel injection equipment
– Reduced lubrication of the fuel injection pump
– Carbonisation/obstruction of the injectors, leading to diminished fuel spraying
– Filter blockage
– Coating/seizing of the internal injection system components
– Build-up of mud and sediments
– Reduced operating life

The normal warranty for the machine remains the same on condition that the information and standards given above are complied with and the machine is serviced by an approved AGCO dealer according to the servicing schedule.

Claims under warranty are not accepted for paint damage caused by biodiesel. All claims regarding exhaust fume emissions, increased fuel consumption or reduced performance due to the use of biodiesel are also excluded.

Faults caused by the use of any type of fuel are not considered to be manufacturing or materials faults and are not covered by the AGCO warranty.

4.4 Transmission

4.4.1 Recommended products

T001052

IMPORTANT: *The warranty remains valid only as long as the lubricants used comply with the following classifications, and no other products are used.*

Hydraulic clutch and transmission oil

Oil complying with MF specifications CMS M1145.

Grease

AGCO M.1105 or lithium multi-purpose grease in accordance with the N.L.G.I. indices

- N.L.G.I. number 1: Temperature often drops below 7 °C
- N.L.G.I. number 2: Temperature often ranges between 7 °C and 27 °C
- N.L.G.I. number 3: Temperature often exceeds 27 °C

4.4.2 Checking the hydraulic system level

T001054

Frequency

Check the transmission oil level every 100 hours.

Procedure

1. Use the dipstick (1) located above the tractor rear axle.
2. Check that the level is between the marks indicated on the dipstick.
3. Top up if necessary.
   NOTE: *When using hydraulic implements taking a large quantity of oil out of the transmission (hydraulic motors, large capacity cylinders), top up the oil to the maximum level.*

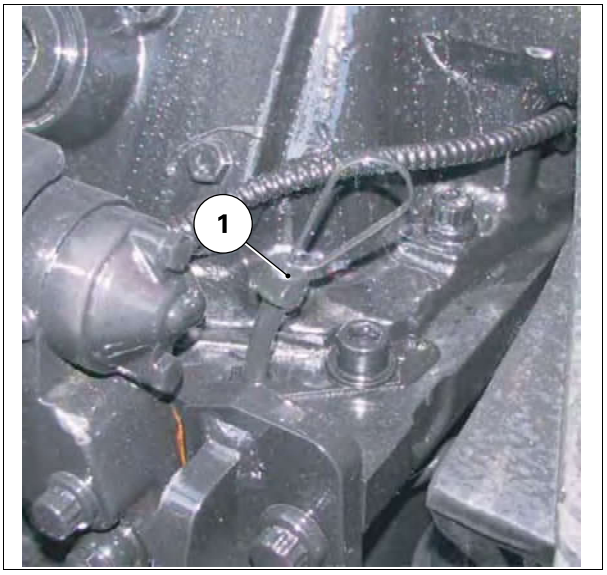


Fig. 1. I003533

4.4.3 Draining the hydraulic system

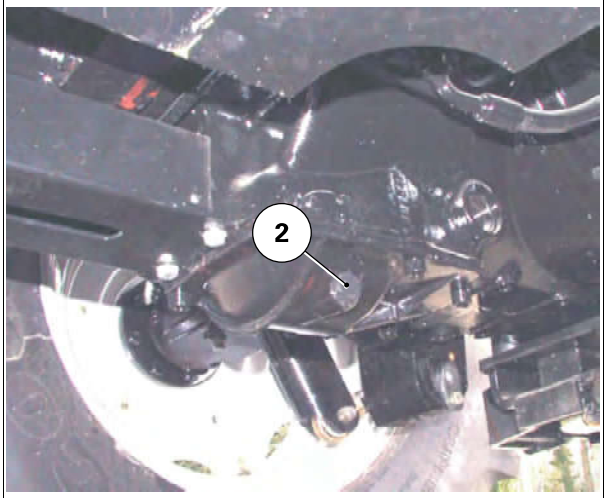
T001053

Frequency

Drain and replace the transmission oil every 1200 hours.

Procedure

1. Using the external linkage controls, place the lower linkage arms in the lowest position.
2. Remove the drain plug (2) and the filler plug (3).
3. Refit the drain plug, then refill the transmission with a recommended oil, to the correct level.
   NOTE: *Allow time for the oil to settle in the transmission and the rear axle before rechecking the level.*
4. After changing the transmission oil, you MUST bleed the hydraulics and brake systems. If necessary, consult your nearest AGCO dealer.



I003534

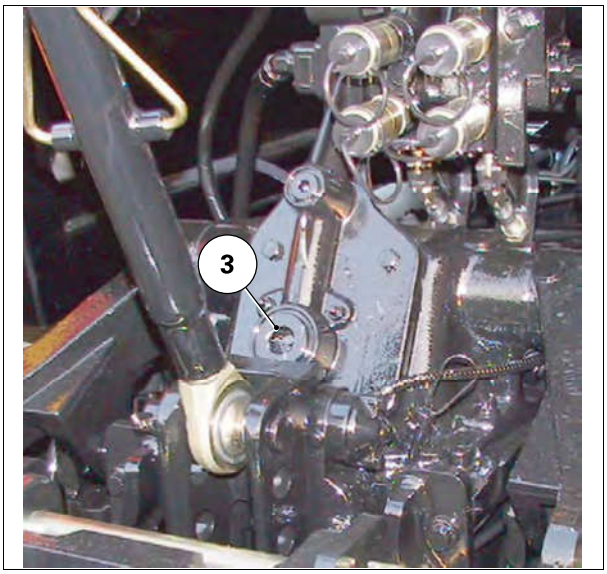


Fig. 2. I003535

4.4.4 Filtering the hydraulic system

T001055

Open Centre version

Change the 60-micron filter strainer on the gearbox every 1200 hours.

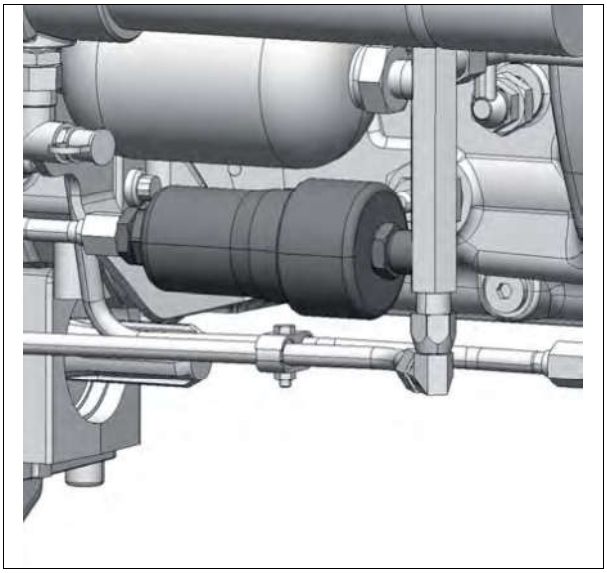


Fig. 3. I003538

4.4.5 Transmission oil cooler (according to version)

T001056

Clean the transmission cooler fins every 400 hours (variable frequency).

4.4.6 Lubricating the rear axle shaft bearings

T001057

1. Remove the plugs (1). Replace them with grease nipples.
2. Operate the grease gun 2 or 3 times.
3. Refit the plugs.

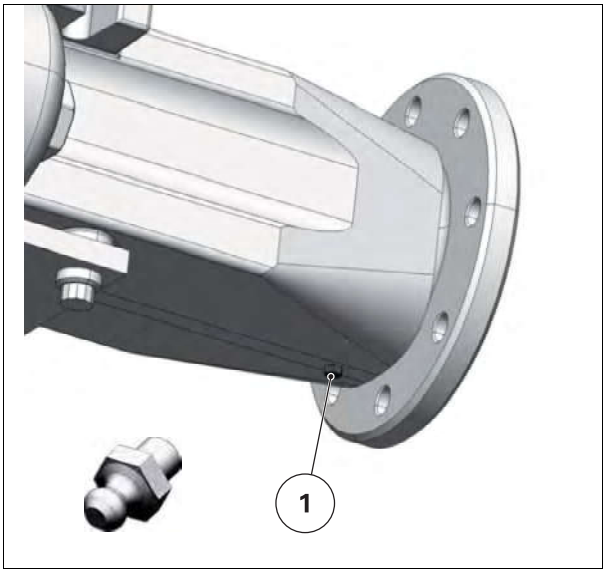


Fig. 4. I003539

4.5 Brakes

4.5.1 Bleeding the brake system

T001058

Frequency

Bleed the brake/piston system every 1200 hours and after every service operation.

4.6 Power take-off

4.6.1 Recommended products

T001818

IMPORTANT: *The warranty remains valid only as long as the lubricants used comply with the following classifications, and no other products are used.*

Zuidberg front power take-off

You must use Autran DX III/Fluid 9 oil.

4

4.6.2 Lubrication

T001824

Lubricate the front PTO shaft regularly to protect it from corrosion and assist implement hitching.

4.6.3 Zuidberg front power take-off

T001825

Frequency

NOTE: *The front PTO functions hydraulically in a separate, independent system. The entire system is cooled by an oil cooler.*

Drain the front PTO at 50 hours and then every 400 hours.

Procedure

1. Remove the two drain plugs ((1)).
2. Remove the circlip and loosen the screw holding the filter cover plate ((2)). Remove and clean the pump filter at each draining.
3. Refit the assembly with a new circlip.
4. In the event of a leak, check the oil level after unscrewing the plug ((3)). Top up and consult your dealer.

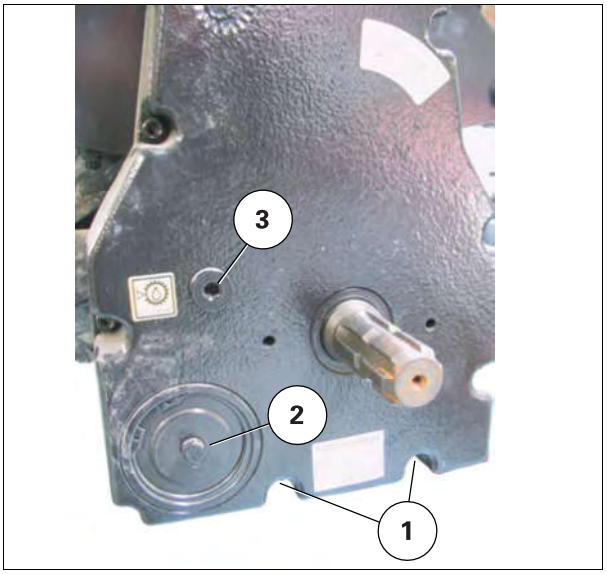


Fig. 1. I007960

4.7 Front axle and steering

4.7.1 Recommended products

T001736

IMPORTANT: *The warranty remains valid only as long as the lubricants used comply with the following classifications, and no other products are used.*

Front axle

Oil for DANA front axle: SAE85W90 (API GL4-MIL L-2105) (final drives and front axle beam)

Grease: AGCO M.1105 or lithium multi-purpose grease in accordance with the N.L.G.I. indices:

– N.L.G.I. number 1: Temperature often drops below 7 °C
– N.L.G.I. number 2: Temperature often ranges from 7 °C to 27 °C
– N.L.G.I. number 3: Temperature often exceeds 27 °C

4.7.2 Two-wheel drive front axle: lubrication

T001061

Frequency

Lubricate the front axle every 50 hours.

Lubrication points

(1) Pivot pins
(2) Front axle bearing (with offset grease nipples)

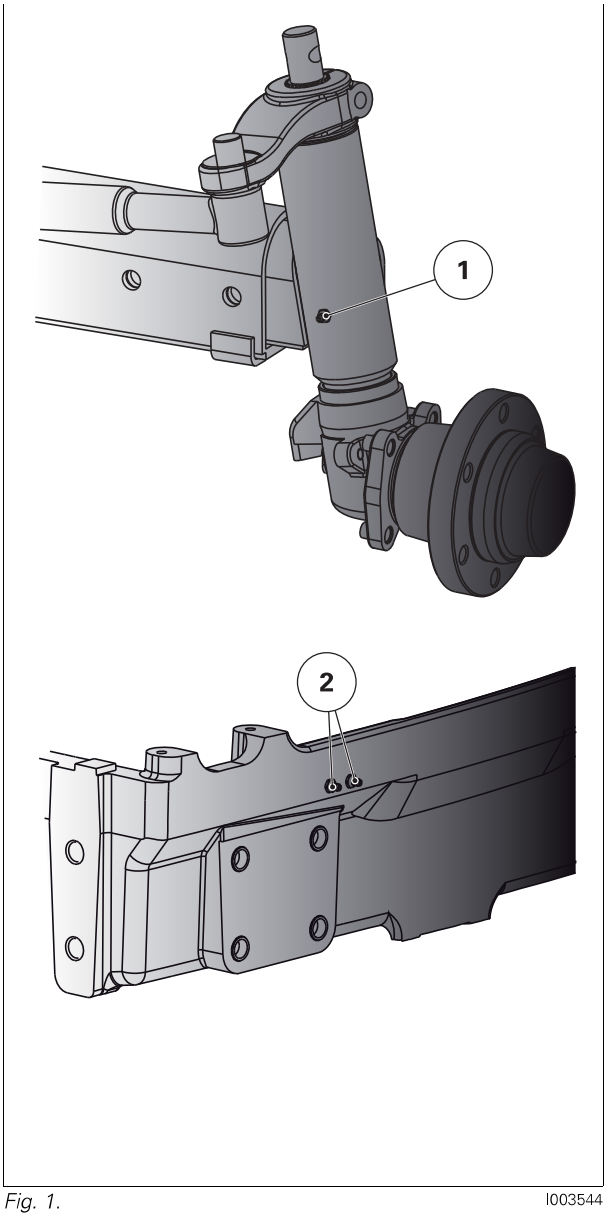


Fig. 1. I003544

(2) Front axle bearing

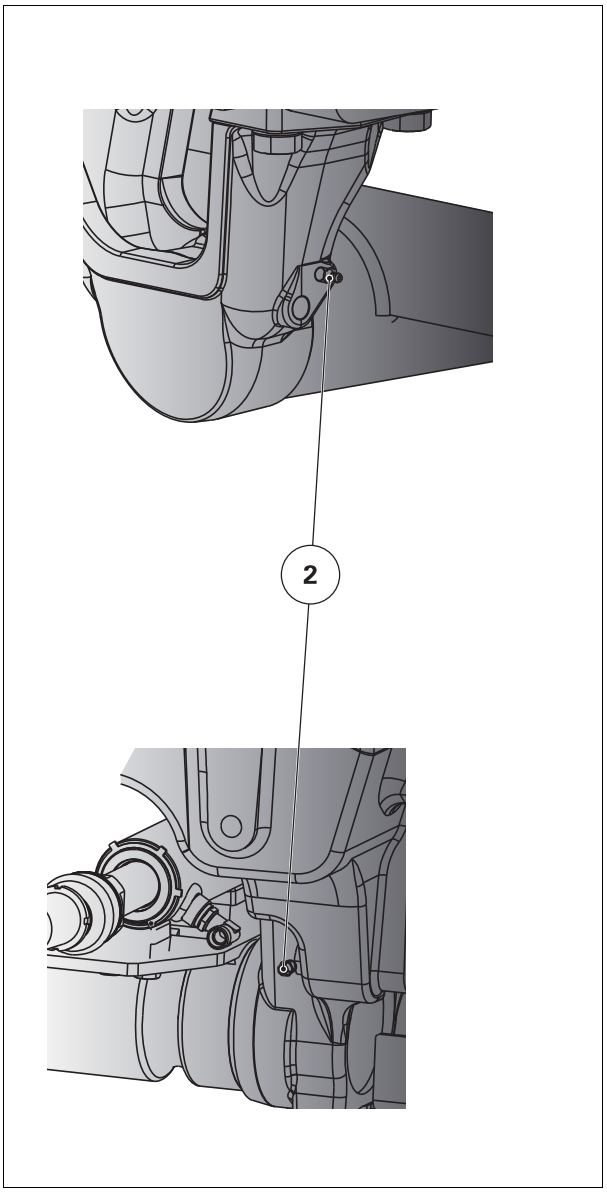


Fig. 2. I018837

4.7.3 Four-wheel drive front axle: checking the oil level in the final drives

T001126

Frequency

Check the oil level in the front final drives every 400 hours.

Procedure

1. Turn the wheel until the plug (1) is horizontally aligned with the centre of the hub.
2. Remove the plug and check that the oil level is flush with the plug port.

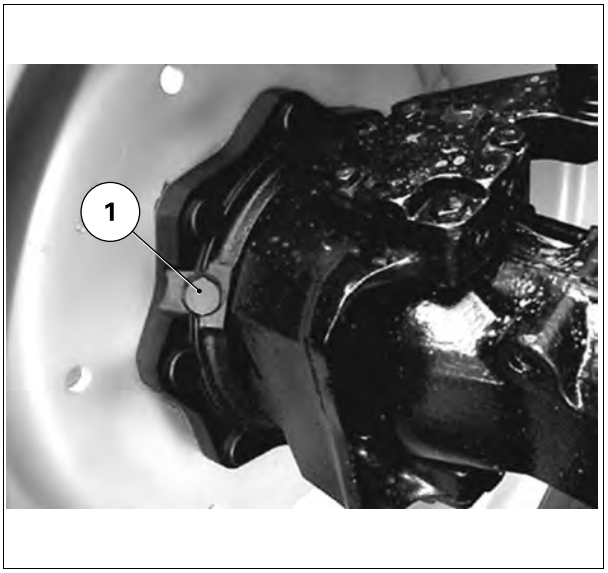


Fig. 3. I003547

4.7.4 Four-wheel drive front axle: draining the oil in the final drives

T001127

Frequency

Drain the oil from the front final drives every 400 hours.

Procedure

1. Turn the wheel until the plug (1) is located at the bottom of the hub.
2. Remove the plug to drain the oil.
3. Position the port facing upwards. Fill with the recommended quantity of oil.

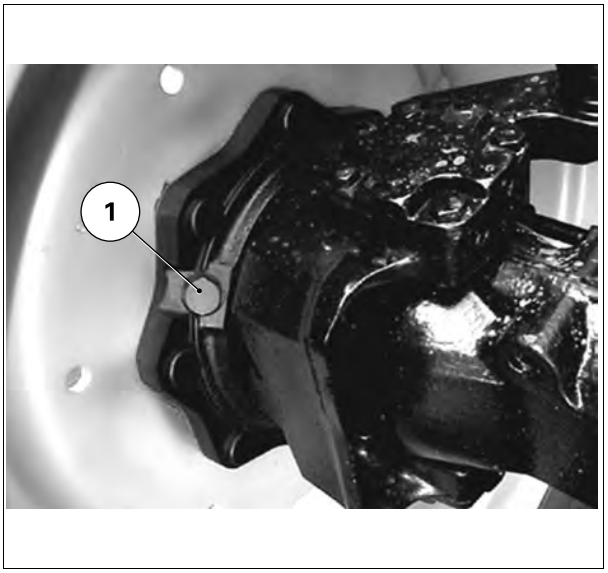


Fig. 4. I003547

4.7.5 Four-wheel drive front axle: Checking the front axle oil level

T003265

Frequency

Check the front axle oil level every 400 hours.

Procedure

1. Stand the tractor on level ground.
2. Remove the plug (1) and check that the oil level is flush with the plug port.

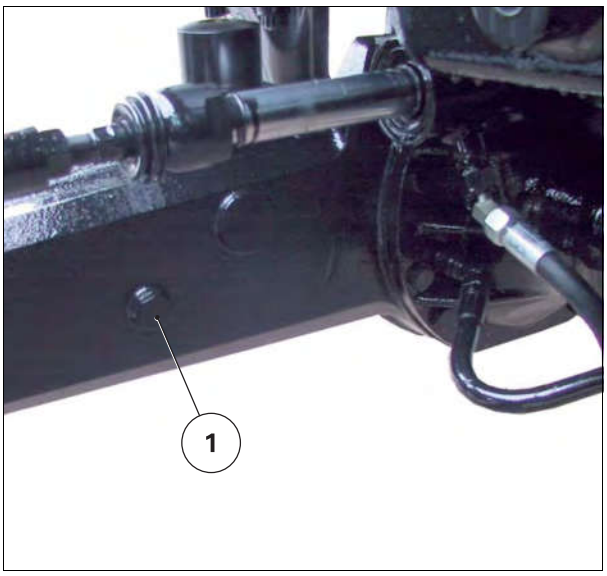


Fig. 5. I009249

4.7.6 Four-wheel drive front axle: Draining the oil from the front axle

T003267

Frequency

Drain the oil from the front axle every 400 hours.

Procedure

1. Park the tractor on a flat surface. Place an oil collection container under the plug (2).
2. Drain the oil via the plug (2).

Fig. 6. I009252

3. Fill with oil via the plug (1) until the level of oil is flush with the filler port.

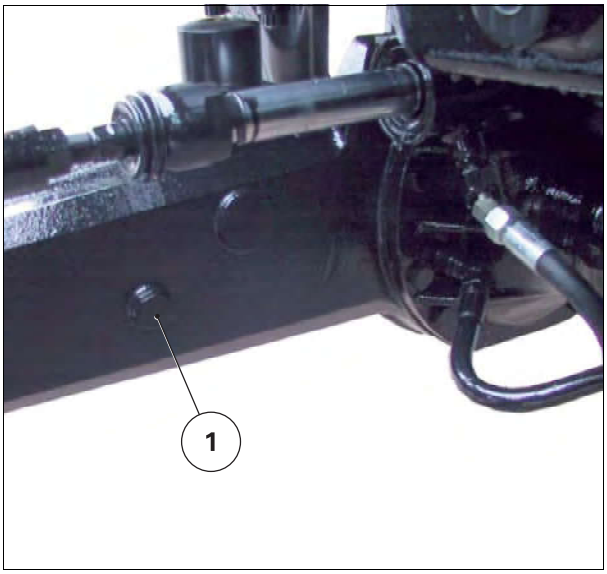


Fig. 7. I009249

4.7.7 Four-wheel drive front axle: lubrication

T001062

Frequency

Lubricate the front axle pivots every 50 hours.

Lubrication points

(1) Pivot pins
(2) Front axle bearings (with offset grease nipples)

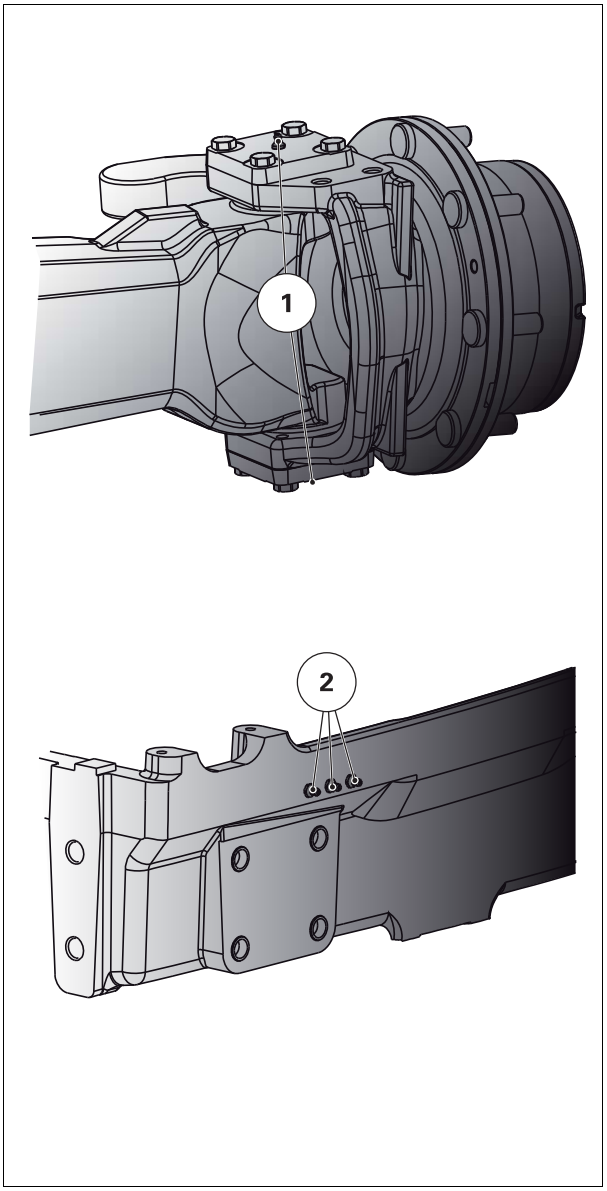


Fig. 8. I003550

(2) Front axle bearings

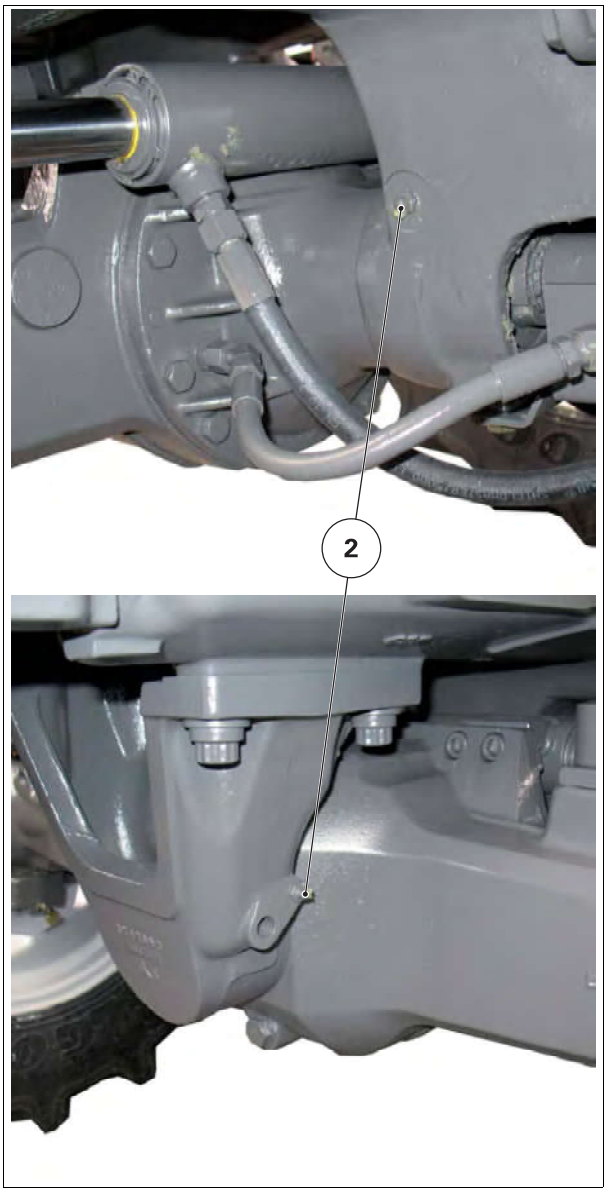


Fig. 9. I018822

3 Suspension pivot
4 Suspension ram pivot

Fig. 10. I018549

4.8 Linkage

4.8.1 Recommended products

T001063

IMPORTANT: *The warranty remains valid only as long as the lubricants used comply with the following classifications, and no other products are used.*

Grease: AGCO M.1105 or lithium multi-purpose grease in accordance with the N.L.G.I. indices:

– N.L.G.I. number 1: Temperature often drops below 7 °C
– N.L.G.I. number 2: Temperature often ranges from 7 °C to 27 °C
– N.L.G.I. number 3: Temperature often exceeds 27 °C

4.8.2 Three-point linkage: lubrication

T001064

Frequency

Lubricate the linkage mechanism every 50 hours.

Lubrication

(1) Top link
(2) Lift rods
(3) Stabilisers

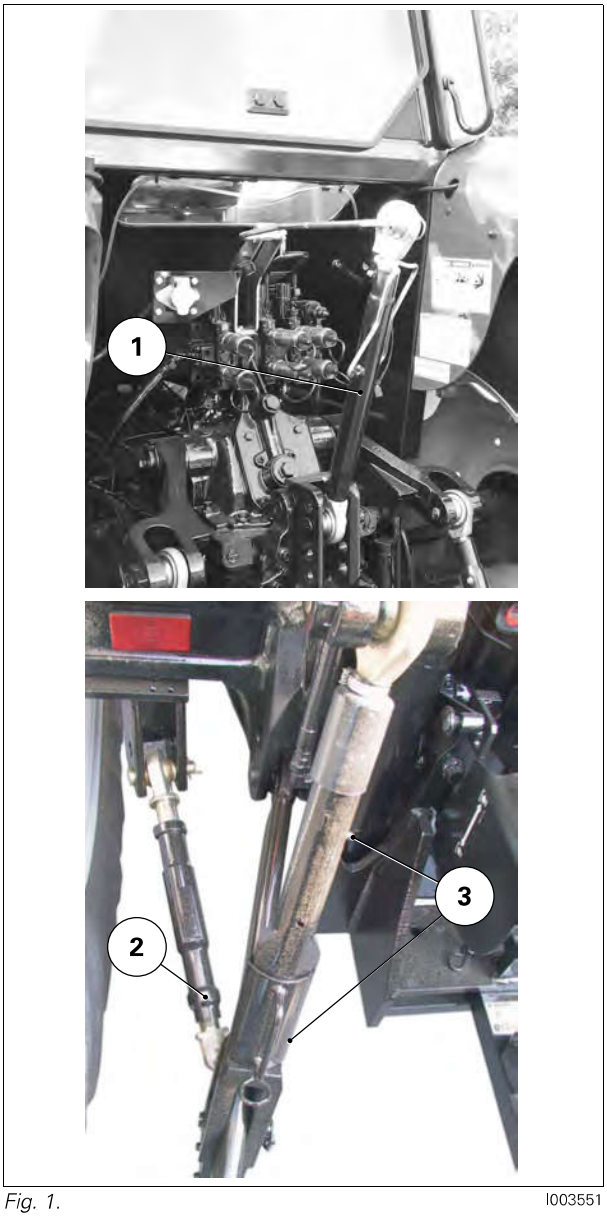


Fig. 1. I003551

4.8.3 Auto-hitch: lubrication

T001129

Frequency

Lubricate the auto-hitch every 2 weeks.

Lubrication points

WARNING:

Stop the engine before lubricating.

CAUTION:

The adjustment if the cable (3) is fine-tuned in our workshops; if work is required on the hook and/or cable, consult your dealer or agent to avoid any damage.

(1) Pin
(2) Pin
(3) Control cable (to be lubricated)

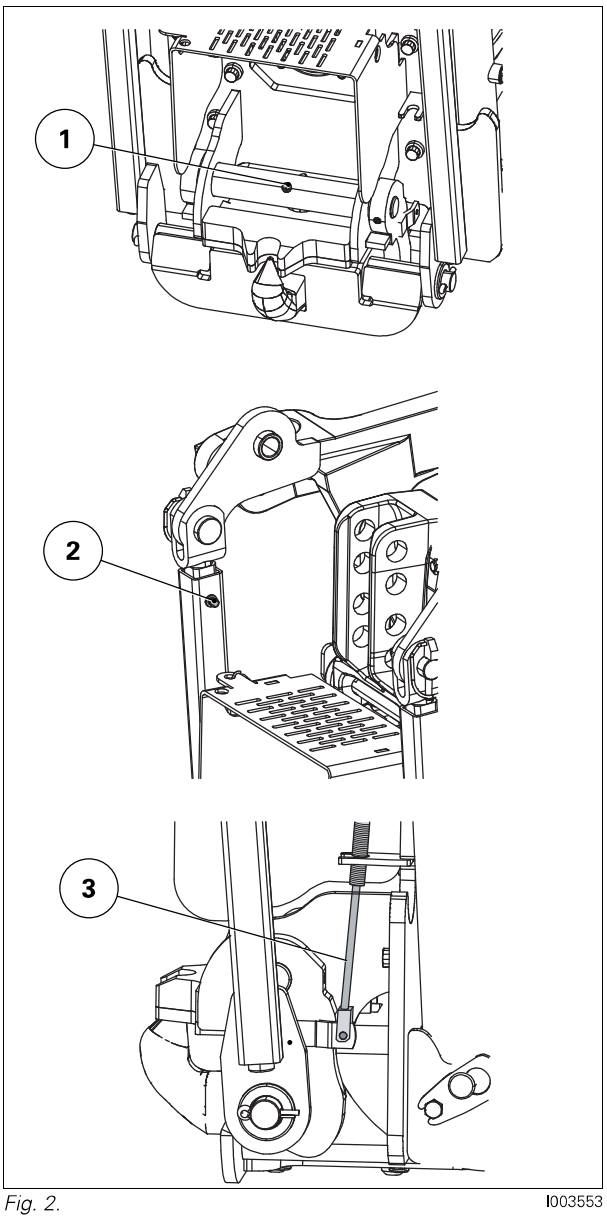


Fig. 2. I003553

4.8.4 Front linkage: lubrication

T001130

(1) Lift ram joints
(2) Linkage arm joint

Lubricate the front linkage joints every 50 hours.

Fig. 3. I003679

4.9 Auxiliary hydraulics

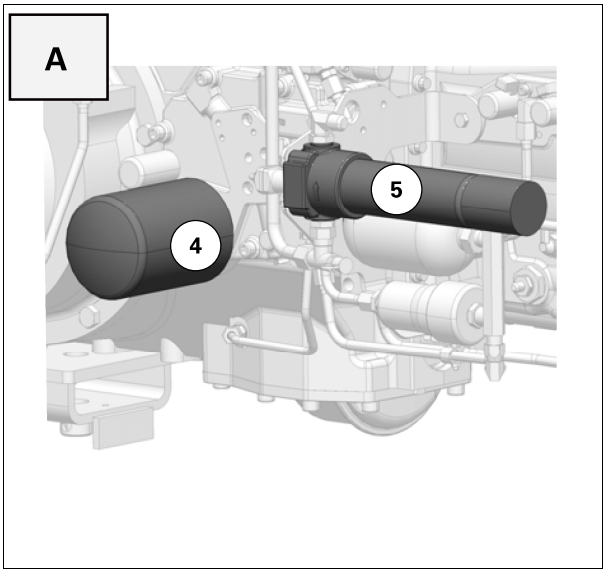
4.9.1 Filtering the auxiliary hydraulic system

T001065

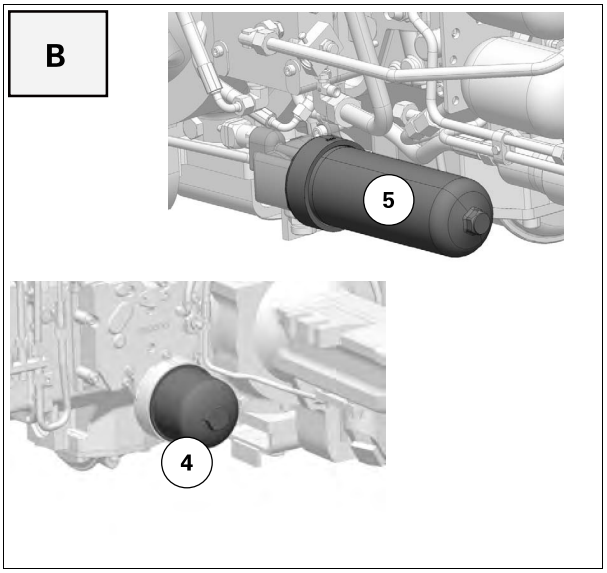
Changing the 150-micron suction strainer and the 15-micron filter: Frequency

(A) Open centre
(B) Closed centre:
(C) Filter for suspended front axle

1. Change the 150-micron suction strainer (4) every 1200 hours
2. Change the 15-micron filter (5) every 400 hours.



I018247



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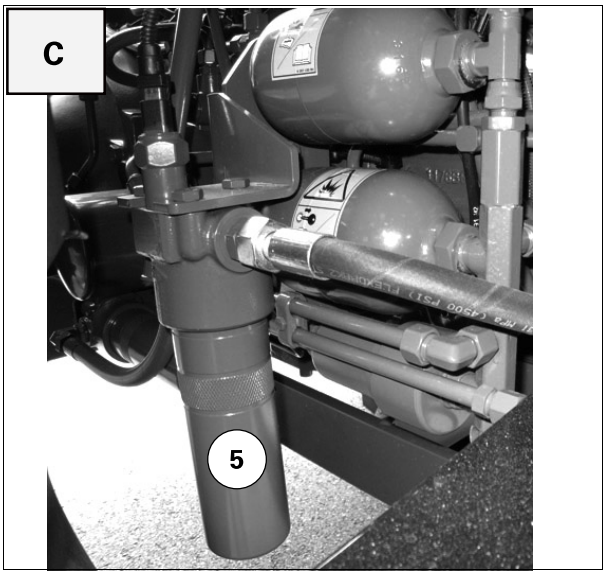

Fig. 1.

I025033

Changing the 150-micron suction strainer: Procedure

1. Unscrew the strainer (4) and discard it.
2. Lightly oil the rubber seal.
3. Screw on the new strainer until the seal touches it. Tighten a further half-turn. Do not overtighten.

Changing the 15-micron filter: Procedure

1. Unscrew the bowl, remove the filter (5), drain it well and discard it.
2. Replace the seal every 800 hours, or as necessary.
   NOTE: *Wait 6 minutes for the seal to retract before refitting the bowl.*
3. Slide the new filter (5) into the filter head.
   NOTE: *To avoid contamination of the new filter by foreign material (mud etc.), do not completely remove the protective plastic until the filter element is in place.*
4. Refit the filter bowl and screw hand-tight until it locks.

4.10 Electrical equipment

4.10.1 Batteries

T001066

The tractor's electrical circuit operates on 12 V. The negative terminal is the earth.

Wipe the battery top and smear the terminals with liquid paraffin every 400 hours.

WARNING:

Batteries produce explosive gases. Sparks, flames, lit cigarettes or any flammable source must be kept at a distance. Wear suitable safety goggles when working near batteries.

4

4.10.2 Alternator

T001498

Ask your dealer or agent to check the alternator every 1200 hours or once a year.

IMPORTANT: *The alternator wiring must be disconnected before any arc welding is carried out on the tractor or on an implement which is attached to it.*
Do not disconnect or reconnect the battery cables when the engine is running.
Never operate the engine when the cable linking the alternator and battery is disconnected.
Do not attempt to connect any additional electrical equipment, as this may damage components of the existing electrical circuit.

4.10.3 Power socket (ISO)

T001447

Rear power socket (ISO)

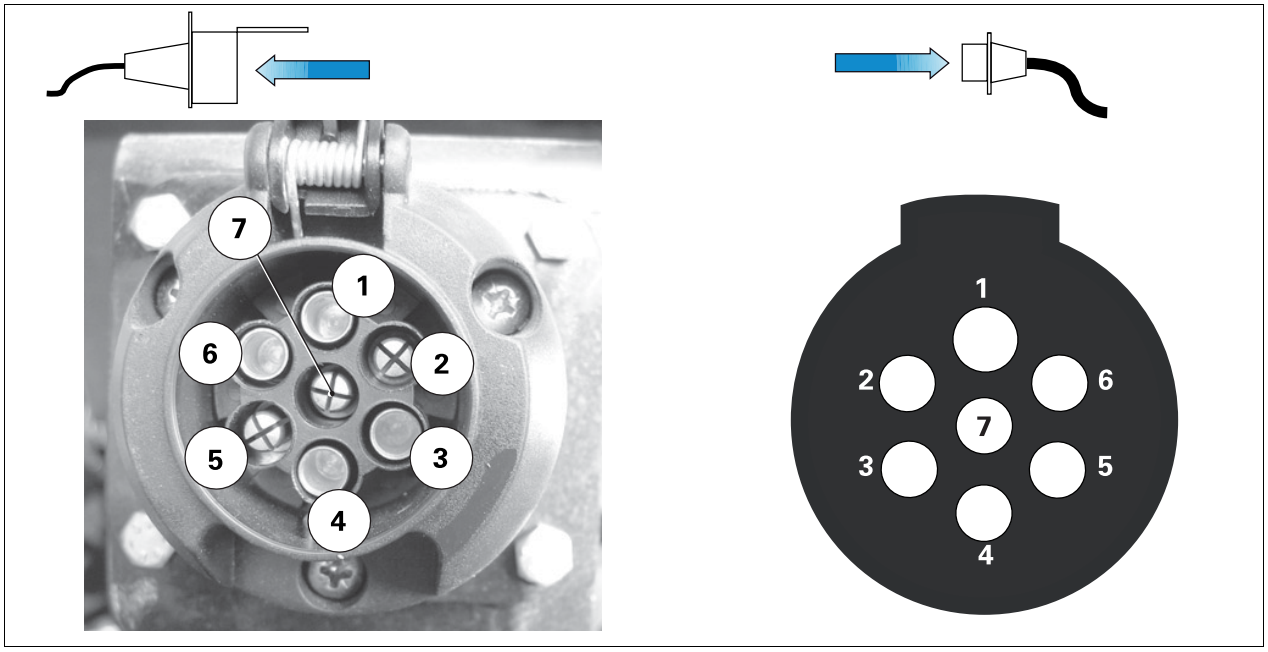

Fig. 1.

I004140

Reference	ISO circuit	Maximum electrical charge
(1)	Left-hand indicator and hazard warning light	4x 21 W
(2)	Reversing light	Not known
(3)	Earth	-
(4)	Right-hand indicator and hazard warning light	4x 21 W
(5)	Right-hand side lights and number plate lights	4x 6 W
(6)	Stop lights	Not known
(7)	Left-hand side lights	20 A

ASAE/ISO front power socket (rear view)

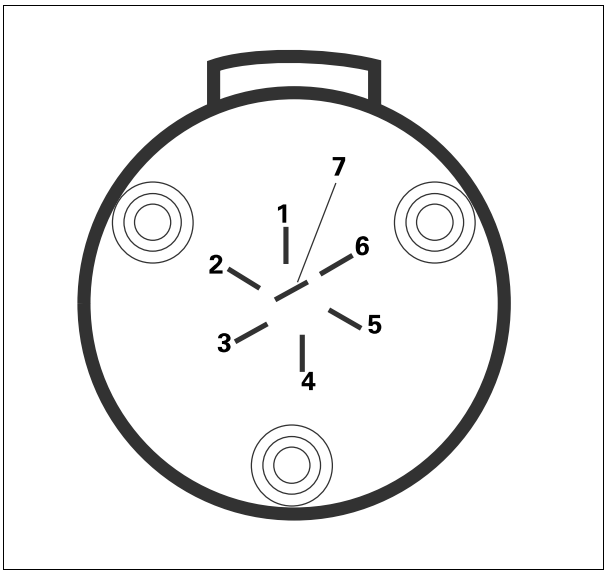

Fig. 2. I030599

Reference	Circuit	Maximum electrical charge
(1)	+ Battery[2]	25 A
(2)	Work lights	Not known
(3)	Earth	-
(4)	+12 V APC[1]	10 A
(5)	Side lights	Not known
(6)	Rotary beacon	Not known
(7)	Side lights	Not known

1. + APC = + 12 V accessories
2. + BAT = + 12 V battery

4.10.4 Adjusting the headlights

T001070

Adjustment diagram

(A) Distance between the headlights and a wall or a screen
(B) Height from the centre of the headlights to the ground
(C) Centre-to-centre distance between headlights
(D) Vertical offset

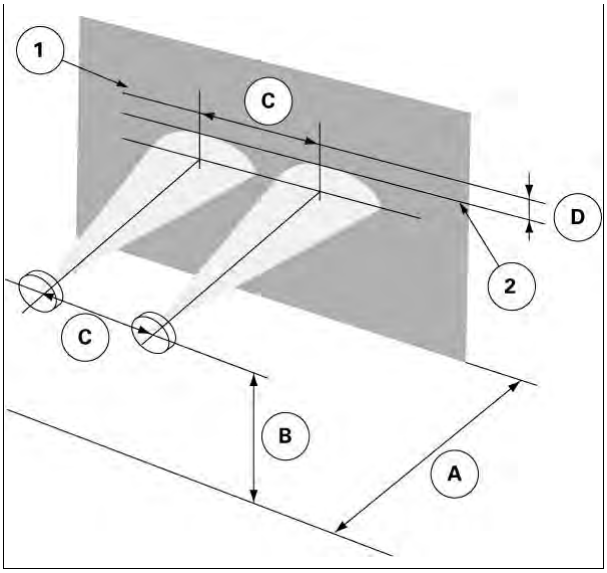

Fig. 3. I003563

Procedure

NOTE: *Do not let your fingers come into direct contact with the iodine bulbs.*

1. Position the tractor on a level surface, facing a wall or screen at a distance of 7,5 m.

2. Trace a horizontal line (1) on the wall, corresponding to the height (B).
3. Trace two vertical lines on the wall corresponding to the width (C).
4. Trace a horizontal line (2) on the wall under line (1) at a distance of (D) = 0.1x(B).
5. Adjust each headlight individually by masking the opposite light. Align the upper edge of the lit zone with line (2); align the centre of the lit zone with the corresponding vertical line traced in step 3.

4.10.5 Fuses

T001074

4

Fuse box

No.	Amperage	Operation
F1	30	Accessories power socket
F2	10	Pneumatic seat/Hand brake
F3	20	Reversing lights/+APC[1] linkage and transmission Autotronic 5
F4	10	Charge pump
F5	10	Front PTO/injection control
F6	10	Suspended front axle
F7		Not used
F8	3	Starter relay
F9	3	+APC[1]/air conditioning
F10	25	Front windscreen wiper
F11	10	Rear windscreen wiper/radio
F12	7.5	Horn
F13	20	Front work lights
F14		Not used
F15	20	Work lights
F16	20	Rear work lights
F17	20	Radio/cigarette lighter/roof light
F18	5	Suspended front axle
F19	15	Fuel preheater
F20	30	Power socket / Work lights
F21	15	Hazard warning light unit
F22	30	+APC[1] front accessories
F23	7.5	+ permanent Autotronic 5 linkage and transmission
F24	30	Electronic injection
F25	7.5	Side lights
F26	7.5	Side lights
F27	20	Rotary beacon
F28	20	Warning
F29	20	Hand rail work lights
F30	10	Stop lights
F31	15	Main beams
F32	10	Dipped lights

1. + APC = +12 V ignition on

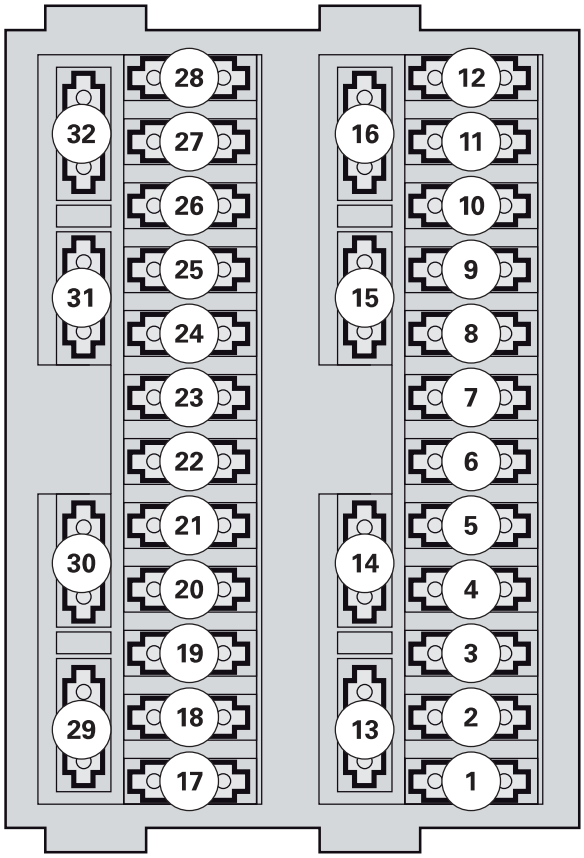

Fig. 4. I003567

Other fuses

– 50 A fan fuse: In the instrument panel trim, right-hand side
– 5 A circuit breaker fuse: Behind the circuit breaker

4.10.6 Relay

T001075

Reference	Function	Location
(1)	Earth authorisation (work lights)	Pedal support: Left-hand side
(2)	Front work lights	Pedal support: Left-hand side
(3)	Rear work lights	Pedal support: Left-hand side
(4)	Air conditioning compressor	Pedal support: Left-hand side
(5)	Stop lights	Pedal support: Left-hand side
(6)	Rotary beacon	Pedal support: Left-hand side
(7)	Grille panel work lights (depending on model)	Pedal support: Left-hand side
(8)	Fuel supply pump	Pedal support: Left-hand side
(9)	Air conditioning	Pedal support: Right-hand side
(10)	Hazard warning light unit	Pedal support: Right-hand side
(11)	Work lights on hand rails (depending on model)	Pedal support: Right-hand side
(12)	Reversing light	Pedal support: Right-hand side
(13)	Windscreen wiper timer	Pedal support: Right-hand side
(14)	Main beams on hand rail	RH console

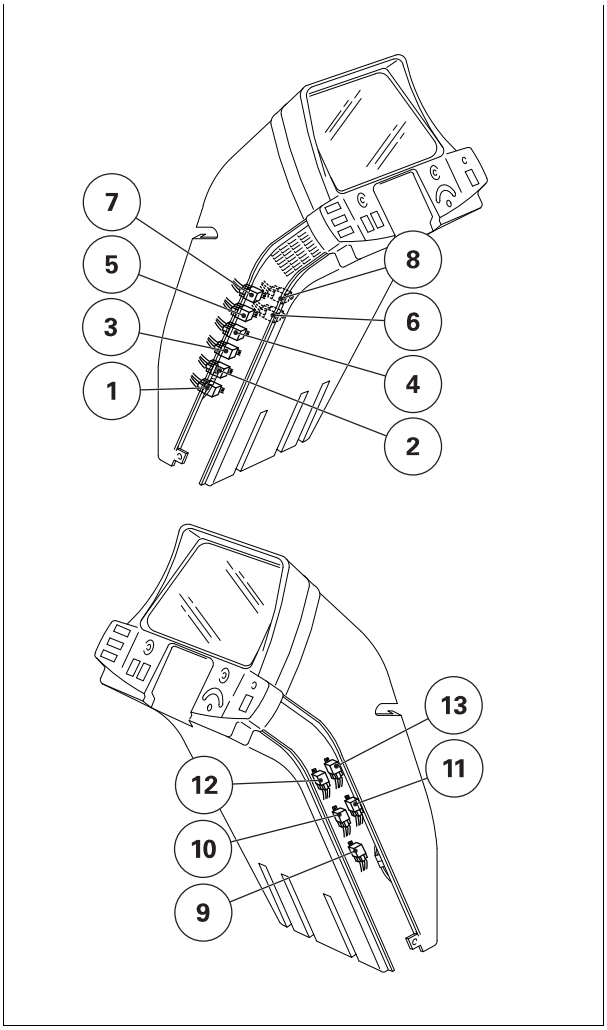

Fig. 5. I009627

4.10.7 Fuses and engine relay

T008458

In line fuse

(175 A) 175 A in line fuse: In the battery tray

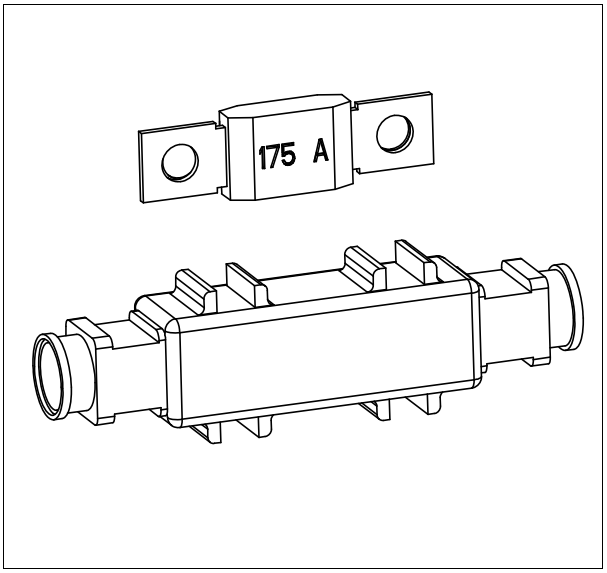

Fig. 6. I009640

Perkins 4-cylinder engine

(1) Starter relay
(2) Preheater relay
(3) 50 A preheating fuse

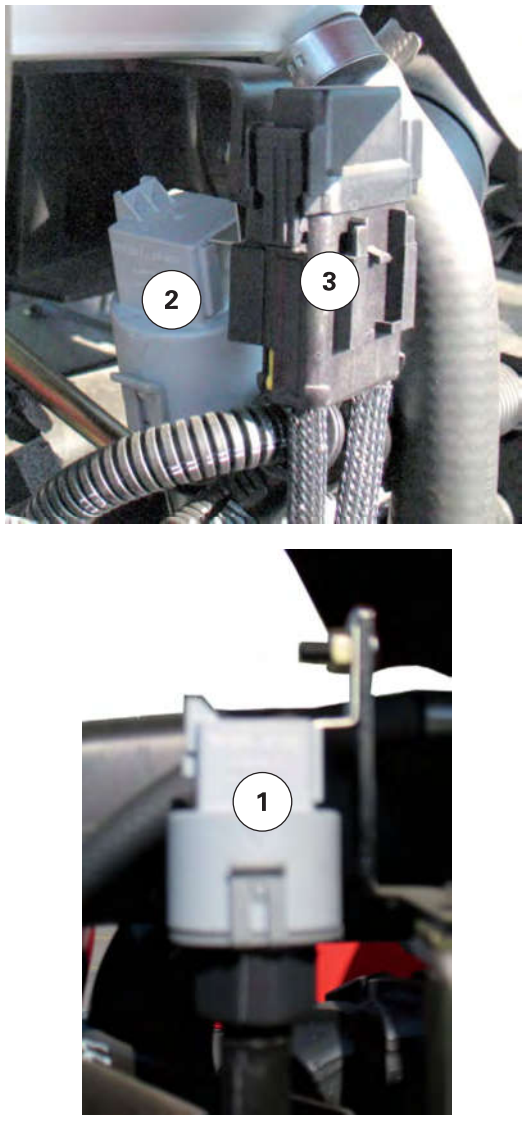

Fig. 7. I012107

SisuDiesel 4-cylinder engine

(1) Starter relay

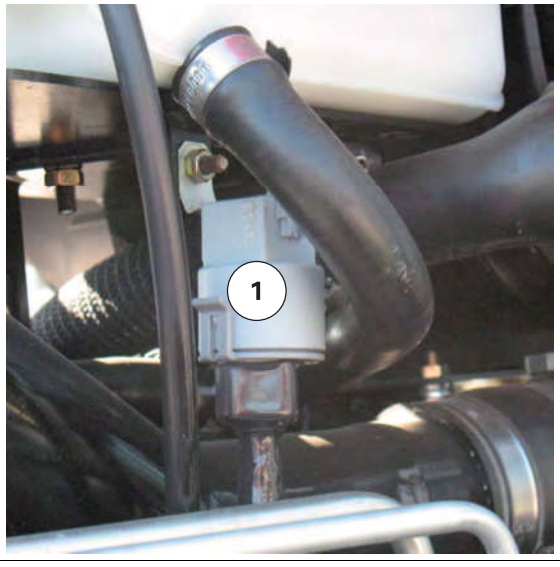

Fig. 8. I012109

SisuDiesel 6-cylinder engine

(1) Starter relay

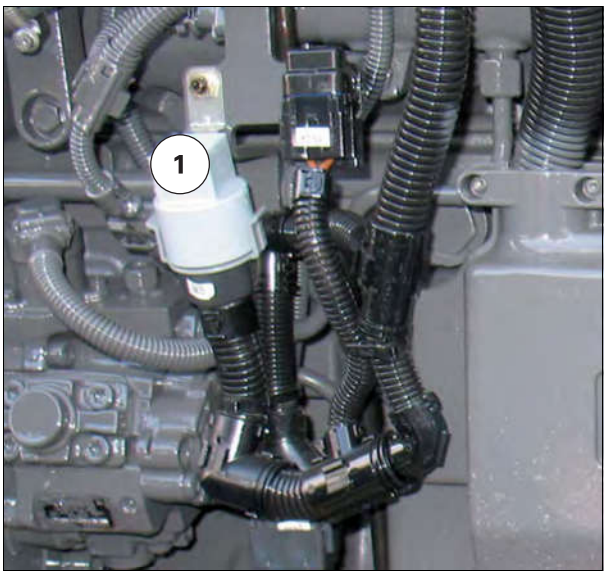

Fig. 9. I020204

4.11 Pressure washing

4.11.1 Pressure washing

T001076

When pressure washing, protect and do not direct the jet on the following components:

- Alternator
- Starter
- Radiator
- Front axle pivot pins
- Inspection cover
- Radar
- Harnesses and electrical connections
- Decals
- Cab door and window seals.
- ***IMPORTANT:*** *Exhaust outlet: When washing, it is strictly prohibited to allow water into the exhaust outlet.*

4.12 Storing your tractor

4.12.1 Storing your tractor

T001077

When the tractor is not used for several months, it is important to follow these precautions to provide proper protection:

1. If possible, it is preferable to protect the tractor from inclement weather by storing it under cover.
2. Each linkage must be fully lowered to avoid any pressure building up in the rams.
3. Fill the tank with fuel to prevent any water entering the fuel tank due to condensation.
4. Protect the air inlet and exhaust from humidity.
5. Remove the battery and store it in a dry location.
6. Clean the tractor.
7. Carry out the maintenance indicated in the Operator Instruction Book (oil changes, filters etc.)
8. Lubricate all the points as indicated in the Operator Instruction Book.
9. Use grease to protect metal parts that are not painted (ram rods).
10. If possible, slacken off the engine accessories belt tensioner.
11. Chock the tractor so that the wheels are no longer in contact with the ground.
12. Use cloth to protect the instrument panel and coverings from direct sunlight (only if the tractor is stored outside).
13. Use water-resistant products (e.g. wax) to protect the tractor from moisture (only if the tractor is stored outside).

5. Technical specifications

5

5.1 General specifications

5.1.1 Model 5425

T001974

Engine	
Brand	Perkins
Type	1104D-44TA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Normal Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 720
Synchronisation ratio (displayed on the name plate)	1.335

Hydraulics	
Hydraulic type	Open centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.2 Model MF 5435

T001975

Engine	
Brand	Perkins
Type	1104D-44TA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Normal Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 720
Synchronisation ratio (displayed on the name plate)	1.335

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.3 Model MF 5445

T001976

Engine	
Brand	Perkins
Type	1104D-E44TA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Normal Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 720
Synchronisation ratio (displayed on the name plate)	1.335

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.4 Model MF 5455

T001977

Engine	
Brand	Perkins
Type	1104D-E44TA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Normal Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 720
Synchronisation ratio (displayed on the name plate)	1.335

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.5 Perkins model MF 5460

T016209

Engine	
Brand	Perkins
Type	1104D-E44TA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Heavy Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 730
Synchronisation ratio (displayed on the name plate)	1.346

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.6 SisuDiesel model MF 5460

T016210

Engine	
Brand	SisuDiesel
Type	44 CWA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Heavy Duty +

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 735
Synchronisation ratio (displayed on the name plate)	1.344

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.7 Model 5465

T008194

Engine	
Brand	SisuDiesel
Type	66CTA
Number of cylinders	6

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Heavy Duty +

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 735
Synchronisation ratio (displayed on the name plate)	1.326

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.8 Model 5470

T001080

Engine	
Brand	SisuDiesel
Type	44 CWA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Heavy Duty +

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 735
Synchronisation ratio (displayed on the name plate)	1.344

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.9 Model 5475

T008195

Engine	
Brand	SisuDiesel
Type	66CTA
Number of cylinders	6

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Super Heavy Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 735
Synchronisation ratio (displayed on the name plate)	1.326

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.1.10 Model 5480

T001081

Engine	
Brand	SisuDiesel
Type	49 CWA
Number of cylinders	4

Transmission	
Gearbox type	GBA25
Rear axle type	GPA20
Final drive type	Super Heavy Duty

Power take-off	
PTO type	Interchangeable/shiftable shaft
Speeds	540/1000/eco

Front axle	
Front axle type	DANA 735
Synchronisation ratio (displayed on the name plate)	1.338

Hydraulics	
Hydraulic type	Open Centre/Closed Centre
Number of spool valves	0-4

Electronics	
Transmission control	Autotronic 5
Linkage control	Autotronic 5

Cab	
Air conditioning	Manual
Windscreen	Standard / Opening (optional)
Roof	Standard/High Visibility (optional)

5.2 Cab

5.2.1 Noise levels (dBA) at operator's ears

T001085

Noise levels (dBA) at operator's ears measured according to EEC Directive 77/311, Appendix 2

Model	Windows closed	Windows open
MF 5425	80	82
MF 5435	80	83
MF 5445	80	82
MF 5455	80	83
MF 5460	79	83
MF 5465	79	83
MF 5470	80	82
MF 5475	79	83
MF 5480	80	83

5.3 Engine

5.3.1 Engine specifications

T008462

	5425	5435	5445	5455	Perkins 5460
Type	Perkins 1104D-44T	Perkins 1104D-44TA	Perkins 1104D-E44TA	Perkins 1104D-E44TA	Perkins 1104D-E44TA
Turbocharging	yes	yes	yes	yes	yes
Intercooler	-	air/air	air/air	air/air	air/air
Number of cylinders	4				
Bore	105 mm				
Stroke	127 mm				
Displacement in litres	4.4				
Nominal power ISO hp[1] (kW) at an engine speed of 2200 rpm	82 (60.4)	92 (67.7)	95 (69.9)	105 (77.3)	115 (85)
Maximum power ISO hp[1] (kW) at an engine speed of 2000 rpm	86 (63.4)	96 (70.7)	100 (73.6)	112 (82.4)	125 (92)
Maximum torque ISO[1]	360 Nm	391 Nm	443 Nm	504 Nm	524 Nm
Engine speed at maximum torque	1400 rpm				
Idle speed (± 50 rpm)	935 rpm	935 rpm	790 rpm	790 rpm	790 rpm
Max. speed at no load (± 50 rpm)	2350 rpm	2350 rpm	2250 rpm	2250 rpm	2250 rpm
Lubrication	By gear pump - suction strainer and external filter(s) with replaceable cartridge(s).				
Valves	Overhead, operated by valve lifters				
Valve clearance - Cold - Inlet	0,35 mm ± 0,05 mm				
Valve clearance - Cold - Exhaust	0,35 mm ± 0,05 mm				

1. Metric unit

	SisuDiesel 5460	5465	5470	5475	5480
Type	SISU 44CWA	SISU 66CTA	SISU 44CWA	SISU 66CTA	SISU 49CWA
Turbocharging	yes	yes	yes	yes	yes
Intercooler	air/air	air/air	air/air	air/air	air/air
Number of cylinders	4	6	4	6	4
Bore	108 mm	108 mm	108 mm	108 mm	108 mm
Stroke	120 mm	120 mm	120 mm	120 mm	127 mm
Displacement in litres	4.4	6.6	4.4	6.6	4.9
Nominal power ISO hp[1] (kW) at an engine speed of 2200 rpm	115 (85)	120 (88)	125 (92)	135 (99)	135 (99)
Maximum power ISO hp[1] (kW) at an engine speed of 2000 rpm	126 (93)	130 (96)	135 (99)	145 (106)	145 (106)
Maximum torque ISO[1]	535 Nm	563 Nm	602 Nm	626 Nm	627 Nm
Engine speed at maximum torque	1400 rpm				
Idle speed (± 50 rpm)	835 rpm	790 rpm	835 rpm	790 rpm	835 rpm

	SisuDiesel 5460	5465	5470	5475	5480
Max. speed at no load (± 50 rpm)	2250 rpm	2250 rpm	2250 rpm	2250 rpm	2250 rpm
Lubrication	By gear pump - suction strainer and external filter(s) with replaceable cartridge(s).				
Valves	Overhead, operated by valve lifters				
Valve clearance - Cold - Inlet	0,35 mm ± 0,05 mm				
Valve clearance - Cold - Exhaust	0,35 mm ± 0,05 mm				

1. Metric unit

5.3.2 Fuel system and air filter

T008463

	5425	5435	5445	5455	Perkins 5460	SisuDiesel 5460	5465	5470	5475	5480
Fuel filter	1	1	1	1	1	1 + prefilter	1 + prefilter	1 + prefilter	1 + prefilter	1 + prefilter
Injection pump	Perkins	Perkins	Perkins	Perkins	Perkins	Bosch	Bosch	Bosch	Bosch	Bosch
Fuel injection type	Mechanical	Mechanical	Common Rail	Common Rail	Common Rail	Common Rail	Common Rail	Common Rail	Common Rail	Common Rail

5.3.3 Cooling

T001088

Type	Pressurised system
Regulation	Thermostat, opening: 82 °C
Fan	Viscostatic clutch fan.
Water pump	Centrifugal, driven by gears

5.3.4 Tightening torques

T001345

Drain plug	35 Nm

5.4 Transmission

5.4.1 Forward speed for models MF 5425/MF 5435 with Dyna-4 transmission and 18.4R38 tyres

T002006

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
1	A	1,99 km/h	0,50 km/h	0,14 km/h
1	B	2,44 km/h	0,61 km/h	0,17 km/h
1	C	2,98 km/h	0,74 km/h	0,21 km/h
1	D	3,67 km/h	0,92 km/h	0,26 km/h
2	A	4,71 km/h	1,18 km/h	0,34 km/h
2	B	5,80 km/h	1,45 km/h	0,41 km/h
2	C	7,07 km/h	1,77 km/h	0,50 km/h
2	D	8,70 km/h	2,17 km/h	0,62 km/h
3	A	9,57 km/h		0,68 km/h
3	B	11,77 km/h		0,84 km/h
3	C	14,36 km/h		1,03 km/h
3	D	17,66 km/h		1,26 km/h
4	A	22,08 km/h		1,58 km/h
4	B	27,16 km/h		1,94 km/h
4	C	33,12 km/h		2,37 km/h
4	D	40,73 km/h		2,91 km/h

5.4.2 Forward speed for models MF 5445/MF 5455 with Dyna-4 transmission and 18.4R38 tyres

T001874

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
1	A	2,11 km/h	0,53 km/h	0,15 km/h
1	B	2,60 km/h	0,65 km/h	0,19 km/h
1	C	3,17 km/h	0,79 km/h	0,23 km/h
1	D	3,90 km/h	0,98 km/h	0,28 km/h
2	A	5,02 km/h	1,25 km/h	0,36 km/h
2	B	6,17 km/h	1,54 km/h	0,44 km/h
2	C	7,53 km/h	1,88 km/h	0,54 km/h
2	D	9,26 km/h	2,31 km/h	0,66 km/h
3	A	10,19 km/h	-	0,73 km/h
3	B	12,53 km/h	-	0,90 km/h
3	C	15,28 km/h	-	1,09 km/h
3	D	18,80 km/h	-	1,34 km/h
4	A	21,79 km/h	-	1,56 km/h

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
4	B	26,80 km/h	-	1,91 km/h
4	C	32,69 km/h	-	2,33 km/h
4	D	40,21 km/h	-	2,87 km/h

5.4.3 Forward speed for models MF 5460/MF 5470 with Dyna-4 transmission and 18.4R34 tyres

T001090

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
1	A	1,96 km/h	0,49 km/h	0,14 km/h
1	B	2,42 km/h	0,60 km/h	0,17 km/h
1	C	2,95 km/h	0,74 km/h	0,21 km/h
1	D	3,62 km/h	0,91 km/h	0,26 km/h
2	A	4,66 km/h	1,16 km/h	0,33 km/h
2	B	5,73 km/h	1,43 km/h	0,41 km/h
2	C	6,99 km/h	1,75 km/h	0,50 km/h
2	D	8,60 km/h	2,15 km/h	0,61 km/h
3	A	9,46 km/h	-	0,68 km/h
3	B	11,64 km/h	-	0,83 km/h
3	C	14,19 km/h	-	1,01 km/h
3	D	17,46 km/h	-	1,25 km/h
4	A	21,82 km/h	-	1,56 km/h
4	B	26,84 km/h	-	1,92 km/h
4	C	32,74 km/h	-	2,34 km/h
4	D	40,27 km/h	-	2,88 km/h

5.4.4 Forward speed for model MF 5465 with Dyna-4 transmission and 18.4R34 tyres

T001091

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
1	A	2,17 km/h	0,54 km/h	0,15 km/h
1	B	2,66 km/h	0,67 km/h	0,19 km/h
1	C	3,25 km/h	0,81 km/h	0,23 km/h
1	D	3,99 km/h	1,00 km/h	0,29 km/h
2	A	5,14 km/h	1,28 km/h	0,37 km/h
2	B	6,32 km/h	1,58 km/h	0,45 km/h
2	C	7,70 km/h	1,93 km/h	0,55 km/h
2	D	9,48 km/h	2,37 km/h	0,68 km/h

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
3	A	10,43 km/h	-	0,75 km/h
3	B	12,83 km/h	-	0,92 km/h
3	C	15,65 km/h	-	1,12 km/h
3	D	19,25 km/h	-	1,37 km/h
4	A	22,31 km/h	-	1,59 km/h
4	B	27,44 km/h	-	1,96 km/h
4	C	33,47 km/h	-	2,39 km/h
4	D	41,16 km/h	-	2,94 km/h

5.4.5 Forward speed for models 5475/5480 with Dyna-4 transmission and 18.4R34 tyres

T001214

Range	Ratio	Without creeper gears engaged	With creeper gears 1/4 engaged	With creeper gears 1/14 engaged
1	A	1,97 km/h	0,49 km/h	0,14 km/h
1	B	2,43 km/h	0,61 km/h	0,17 km/h
1	C	2,96 km/h	0,74 km/h	0,21 km/h
1	D	3,64 km/h	0,91 km/h	0,26 km/h
2	A	4,68 km/h	1,17 km/h	0,33 km/h
2	B	5,76 km/h	1,44 km/h	0,41 km/h
2	C	7,02 km/h	1,76 km/h	0,50 km/h
2	D	8,64 km/h	2,16 km/h	0,62 km/h
3	A	9,51 km/h	-	0,68 km/h
3	B	11,69 km/h	-	0,84 km/h
3	C	14,26 km/h	-	1,02 km/h
3	D	17,54 km/h	-	1,25 km/h
4	A	21,93 km/h	-	1,57 km/h
4	B	26,97 km/h	-	1,93 km/h
4	C	32,89 km/h	-	2,35 km/h
4	D	40,45 km/h	-	2,89 km/h

5.4.6 Gearbox

T001094

Dyna-4	Robotic gearbox
Number of ratios	– 16 forward – 16 reverse
Reverse shuttle	Power Shuttle
Clutch	Wet multidisc
Filtration	– 1 x 150 micron strainer – 1 x 15 micron filter – 1 x 60 micron filter

5.4.7 Final drives

T001095

Drives	Epicyclic, located in the rear axle housings.
Reduction ratio:	– 5425/5435/5445/5455: 4.714 – 5460/5465/5470: 5.077 – 5475/5480: 5.571

5.4.8 Rear differential lock

T001096

Type	Dog clutch lock
Order	Hydraulic, with electric control

5.5 Brakes

5.5.1 Brake technical specifications

T001097

Operation	– Hydraulics – Two master cylinders – Automatic adjustment
Type	Disc (1 per wheel)
Parking brake	– Disc – Operates on pinion shaft
Trailer brake	– Available as an option – Hydraulic control – Pneumatic control according to model

5.6 Front axle and steering

5.6.1 Four-wheel drive front axle

T001098

Clutch mechanism	Electrohydraulic, electric control via button in cab
Differential lock	Coupler, electrohydraulic control

5.6.2 Steering

T001099

Steering type	Hydrostatic, controlled by a steering unit
Assistance	Hydraulics

Theoretical turning radius

	2WD	4WD
Front tyre dimensions	14.9R28	16.9R28
Track width	-	1750 mm
Interior angle	51.5°	55°

5.6.3 Tightening torques

T001100

Telescopic arms (2WD)	220 Nm - 260 Nm
Ball joints on steering ram (2WD)	180 Nm
Ball joints on steering ram (4WD)	120 Nm - 150 Nm
Ball joints on wheel pivot (2WD)	120 Nm
Ball joints on wheel pivot (4WD)	120 Nm - 140 Nm

5.7 Power take-off

5.7.1 Specifications

T001102

Power take-off	Proportional to engine speed.
Clutch	Hydraulics
Interchangeable PTO shaft	– 540 rpm at ±2000 rpm engine speed 35 mm (1" 3/8) Ø shaft with 6 splines – 1000 rpm at ±2000 rpm engine speed 35 mm (1" 3/8) Ø shaft with 21 splines
Shiftable PTO shaft	– 540 rpm at ±2000 rpm engine speed 35 mm (1" 3/8) Ø shaft with 6 splines – 1000 rpm at ±2000 rpm engine speed 35 mm (1" 3/8) Ø shaft with 21 splines
Economy PTO (optional)	540 and 1000 rpm obtained at 1550 rpm engine speed
Proportional PTO (optional)	Ratio for 1000 rpm PTO: – 5425: 14.08 to 14.37 PTO revolutions to one turn of the wheel – MF 5435/MF 5445/MF 5455: 14.08 to 14.37 PTO revolutions to one turn of the wheel – MF 5460: 15.48 to 15.81 PTO revolutions to one turn of the wheel – MF 5465: 11.42 PTO revolutions to one turn of the wheel – 5470: 15.48 PTO revolutions to one turn of the wheel – 5475: 12.53 PTO revolutions to one turn of the wheel – 5480: 15.40 PTO revolutions to one turn of the wheel
Control	– Shiftable PTO: Using the lever located on the rear axle or in the cab depending on option – Economy PTO: Using the lever in the cab – Proportional PTO: Using the lever in the cab

5.7.2 Tightening torques

T001103

PTO shaft screws	72 Nm - 96 Nm

5.8 Hydraulic linkage

5.8.1 Rear linkage

T001104

Type	– 3-point – Category 2 or 3 – 2 rams: Ø 66 mm or 75 mm (depending on model or option)
Capacity[1] at ball joints	66 mm rams: 4724 kg 75 mm rams: 5903 kg

1. Variable capacity according to lift rod position and linkage type.

5.9 Auxiliary hydraulics (according to specification or country)

5.9.1 Open Centre 57 l/min

T001106

The open centre 57 l/min system is supplied by a two-stage gear pump. This pump is driven directly by the engine.

Low flow rate system	Supplied by the first stage of the pump Flow rate of 32,7 l/min at maximum speed, pressure 175 bar Supplies: – The hydrostatic steering – The speed reducer – The PTO – The front axle – The clutch – The gearbox control – The differential lock – The front PTO – The brakes – The transmission lubrication
High flow rate system	Supplied by the second stage of the pump Flow rate of 57 l/min at maximum speed, pressure 200 bar Supplies: – The hydraulic linkage – The auxiliary hydraulic system – The trailer braking
Filtration	– External 150-micron suction strainer – External 15-micron high-pressure filter

5.9.2 Open centre 100 l/min (optional)

T001107

The open centre 100 l/min system is supplied by a two-stage gear pump and by an additional gear pump. These pumps are driven directly by the engine.

Low flow rate system	Supplied by the first stage of the two-stage pump Flow rate of 32,7 l/min at maximum speed, pressure 175 bar Supplies: – The hydrostatic steering – The speed reducer – The PTO – The front axle – The clutch – The gearbox control – The differential lock – The front PTO – The brakes – The transmission lubrication
High flow rate system	Supplied by the second stage of the two-stage pump and by the second pump Standard flow rate of 57 l/min and 100 l/min by pump coupling at maximum speed. Pressure 200 bar Supplies: – The hydraulic linkage – The auxiliary hydraulic system – The trailer braking
Filtration	– External 150-micron suction strainer – External 15-micron high-pressure filter

5.9.3 Closed centre system with flow and pressure control

T006880

The closed centre system is supplied by two pumps: A fixed displacement charge pump and a main variable displacement piston pump. These pumps are driven directly by the engine.

Charge pump	Flow rate of 164,5 l/min at 2200 rpm Supplies: – Variable displacement pump 5 bar charge pressure – Gearbox and clutch lubrication – The cooling system – the charge pressure of master cylinders (non-assisted version)
Variable displacement pump	Flow rate of 110 l/min at 2200 rpm, maximum pressure 200 bar Supplies: – The steering – The slave devices (4WD, PTO, assisted braking, clutch etc.) – The trailer brake – The auxiliary hydraulics – The linkage
Filtration	– 1 150-micron suction strainer, located to the left of the transmission housing – External main high-pressure 15-micron filter located on the outside on the right-hand side of the transmission housing

5.10 Electrical equipment

5.10.1 Electrical equipment technical specifications

T001108

Voltage	12 volts. Negative earth
Batteries	1 or 2 maintenance-free batteries
Alternator	80/120 A
Neutral start switch	Operated by the clutch pedal.
Headlights	H4 60/55 W
Side lights	5 W
Indicators	21 W
Number plate light	10 W
Work lights	H3 55 W
Instrument panel lighting and indicator lights	3 W - 2 W - 1.2 W
Roof light	10 W

5.11 Wheels and tyres

5.11.1 Wheels

T001109

Front	– 2-wheel drive steel rims – 4-wheel drive steel rims
Rear	– Manual adjustment steel rims – Fixed steel rims

NOTE: *For dual rear wheels, it is recommended to place the original wheel on the outside and a wheel with a thicker disc on the inside (see §3.12.5, page 122).*

5

5.11.2 Tyres

T001110

Compatibility of front/rear wheels on 4-wheel drive tractors

Front	Rear
11.2R28	13.6R38 16.9R34 18.4R30
12.4R24	13.6R38 16.9R30 18.4R30
13.6R24	13.6R38 16.9R34
13.6R28	16.9R38 18.4R34
14.9R24 14.9R28	13.6R38 18.4R34 18.4R38
16.9R28 380-70R24	20.8R38 480-70R34
380-70R28 420-70R24 440-65R28	480-70R38 520-70R34 540-65R38
420-70R28 480-65R28	520-70R38 520-70R38 600-65R38
480-70R28 540-65R28	580-70R38 650-65R38

NOTE: *The data in this table is not exhaustive. Ask your dealer for further information on other possible choices.*

5.11.3 Tightening torques

T001113

	Disc on hub	Rim on disc
2WD front axle	160 Nm to 210 Nm	-
4WD front axle	400 Nm to 450 Nm	220 Nm to 250 Nm
Rear axle	400 Nm to 450 Nm	220 Nm to 250 Nm

5.12 Capacities and dimensions

5.12.1 Capacities

T001114

Type	Model	Capacity
Fuel tank	All models	130 l to 145 l (depending on equipment)
Additional tank	All models	45 l to 60 l (depending on equipment)
Cooling system	All models	25 l
Engine sump	MF 5425/MF 5435/MF 5445/MF 5455/MF 5460 (Perkins)	9,5 l
Engine sump	MF 5460 (SisuDiesel)	13,5 l
Engine sump	MF 5465	23 l
Engine sump	MF 5470	13,5 l
Engine sump	MF 5475	23 l
Engine sump	MF 5480	13,5 l
Transmission/rear axle	All models	70 l
Front axle beam	MF 5425/MF 5435/MF 5445/MF 5455	5,5 l
Front axle beam	MF 5460 (Perkins)	6,8 l
Front axle beam	MF 5460 (SisuDiesel)/MF 5465/MF 5470/MF 5475/MF 5480	9 l
Front final drive	MF 5425/MF 5435/MF 5445/MF 5455	0,9 l
Front final drive	MF 5460 (Perkins)	1,1 l
Front final drive	MF 5460 (SisuDiesel)/MF 5465/MF 5470/MF 5475/MF 5480	0,8 l
Windscreen washer bottle	All models	3,5 l

5.12.2 Dimensions and weights

T001115

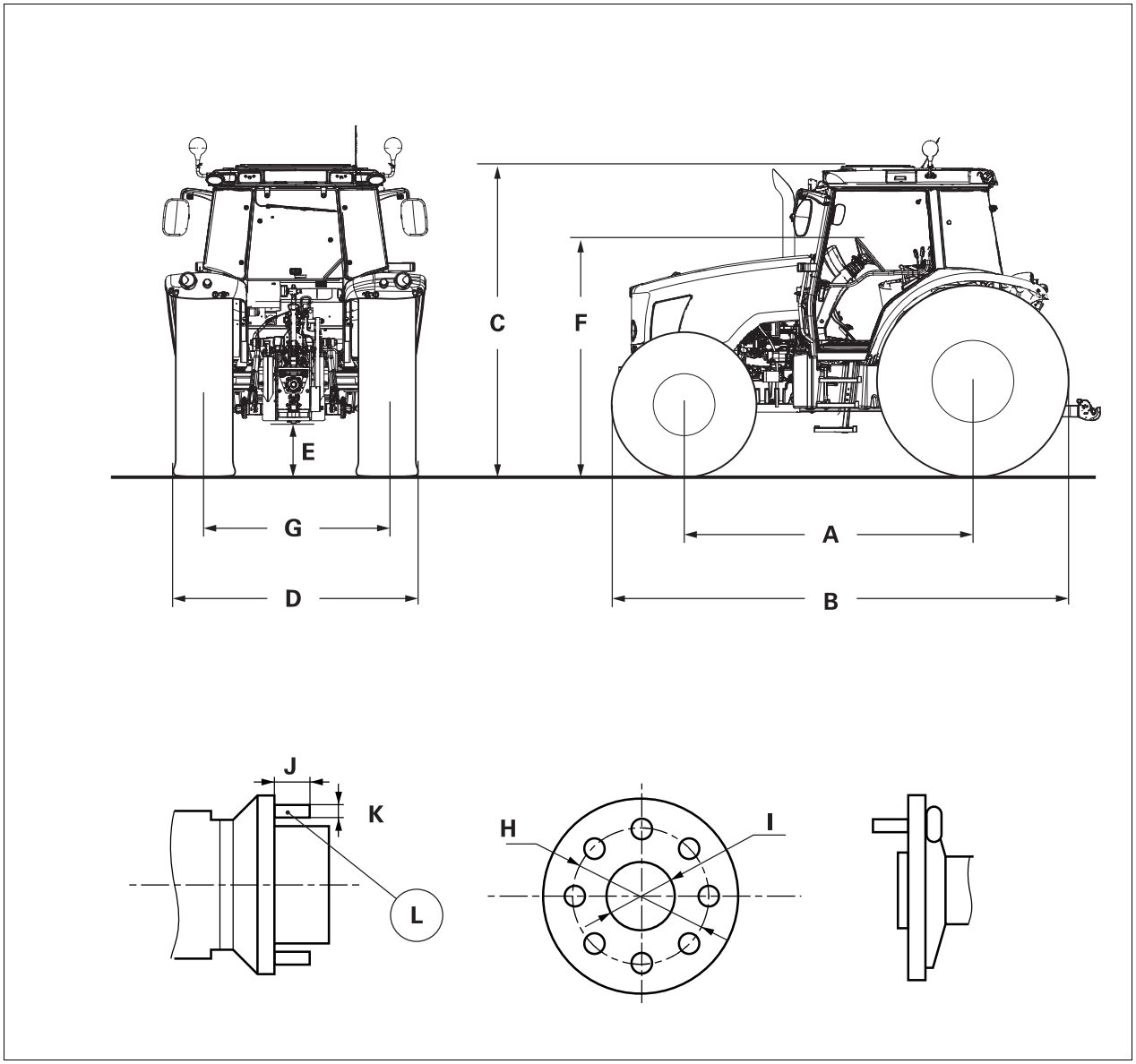

Fig. 1.

I003729

Reference	Measured specification	MF 5425	MF 5435	MF 5445	MF 5455	MF 5460 (Perkins)
(A)	Wheel track	2553 mm	2553 mm	2553 mm	2553 mm	2553 mm
(B)	External length	4245 mm	4245 mm	4245 mm	4245 mm	4245 mm
(C)	Height at roof min/max (1(2	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm
(D)	External width	2550 mm	2550 mm	2550 mm	2550 mm	2550 mm

Reference	Measured specification	MF 5425	MF 5435	MF 5445	MF 5455	MF 5460 (Perkins)
(E)	Ground clearance	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm
(F)	Height to steering wheel	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm
	Min. weight (with full fuel tank, without steel wheel weights)(2	3550 kg	3550 kg	3550 kg	3550 kg	4100 kg

1. With non-suspended front axle
2. Dimensions given vary according to tyre assembly

Reference	Measured specification	MF 5460 (SisuDiesel)	MF 5465	MF 5470	MF 5475	MF 5480
(A)	Wheel track	2674 mm	2900 mm	2674 mm	2900 mm	2674 mm
(B)	External length	4406 mm	4786 mm	4406 mm	4786 mm	4406 mm
(C)	Height at roof min/max (1(2	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm
(D)	External width	2550 mm	2550 mm	2550 mm	2550 mm	2550 mm
(E)	Ground clearance	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm
(F)	Height to steering wheel	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm
	Min. weight (with full fuel tank, without steel wheel weights)(2	4290 mm	4800 kg	4290 kg	5100 kg	4500 kg

1. With non-suspended front axle
2. Dimensions given vary according to tyre assembly

Reference	Measured specification	MF 5425	MF 5435	MF 5445	MF 5455	MF 5460 (Perkins)
(A)	Wheel track	2553 mm	2553 mm	2553 mm	2553 mm	2553 mm
(B)	External length	4245 mm	4245 mm	4245 mm	4245 mm	4245 mm
(C)	Height at roof min/max(1 (2	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm
(D)	External width	2550 mm	2550 mm	2550 mm	2550 mm	2550 mm

Reference	Measured specification	MF 5425	MF 5435	MF 5445	MF 5455	MF 5460 (Perkins)
(E)	Ground clearance	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm
(F)	Height to steering wheel	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm
	Min. weight (with full fuel tank, without steel wheel weights)(2	3800 kg	3800 kg	3800 kg	3800 kg	4350 kg

1. With non-suspended front axle
2. Dimensions given vary according to tyre assembly

Reference	Measured specification	MF 5460 (SisuDiesel)	MF 5465	MF 5470	MF 5475	MF 5480
(A)	Wheel track	2674 mm	2874 mm	2674 mm	2874 mm	2674 mm
(B)	External length	4406 mm	4788 mm	4406 mm	4788 mm	4406 mm
(C)	Height at roof min/max (1(2	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm	2725 mm / 2825 mm
(D)	External width	2550 mm	2550 mm	2550 mm	2550 mm	2550 mm
(E)	Ground clearance	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm	380 mm to 580 mm
(F)	Height to steering wheel	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm	2028 mm / 2151 mm
	Min. weight (with full fuel tank, without steel wheel weights)(2	4540 mm	5050 kg	4540 kg	5350 kg	4750 kg

1. With non-suspended front axle
2. Dimensions given vary according to tyre assembly

Front axle

Reference	Measured specification	Front axle 720	Fixed front axle 730	Suspended front axle 730	Front axle 735
(G)	Distance between flanges	1669 mm	1669 mm	1800 mm	1800 mm
(H)	Centre-to-centre distance between studs	275 mm	275 mm	275 mm	275 mm
(I)	Centring diameter	220,8 mm	220,8 mm	220,8 mm	220,8 mm
(J)	Stud length	38 mm	38 mm	38 mm	38 mm
(K)	Stud diameter	M18 x 1.5	M18 x 1.5	M18 x 1.5	M18 x 1.5
(L)	Number of studs	8	8	8	8

Rear axle

Reference	Measured specification	Rear axle GPA20
(G)	Distance between flanges	1774 mm
(H)	Centre-to-centre distance between studs	203,20 mm
(I)	Centring diameter	149,35 mm
(J)	Stud length	41 mm
(K)	Stud diameter	M18 x 1.5
(L)	Number of studs	8

5.12.3 Attachment points: Models MF 5425/MF 5435/MF 5445/MF 5455

T003330

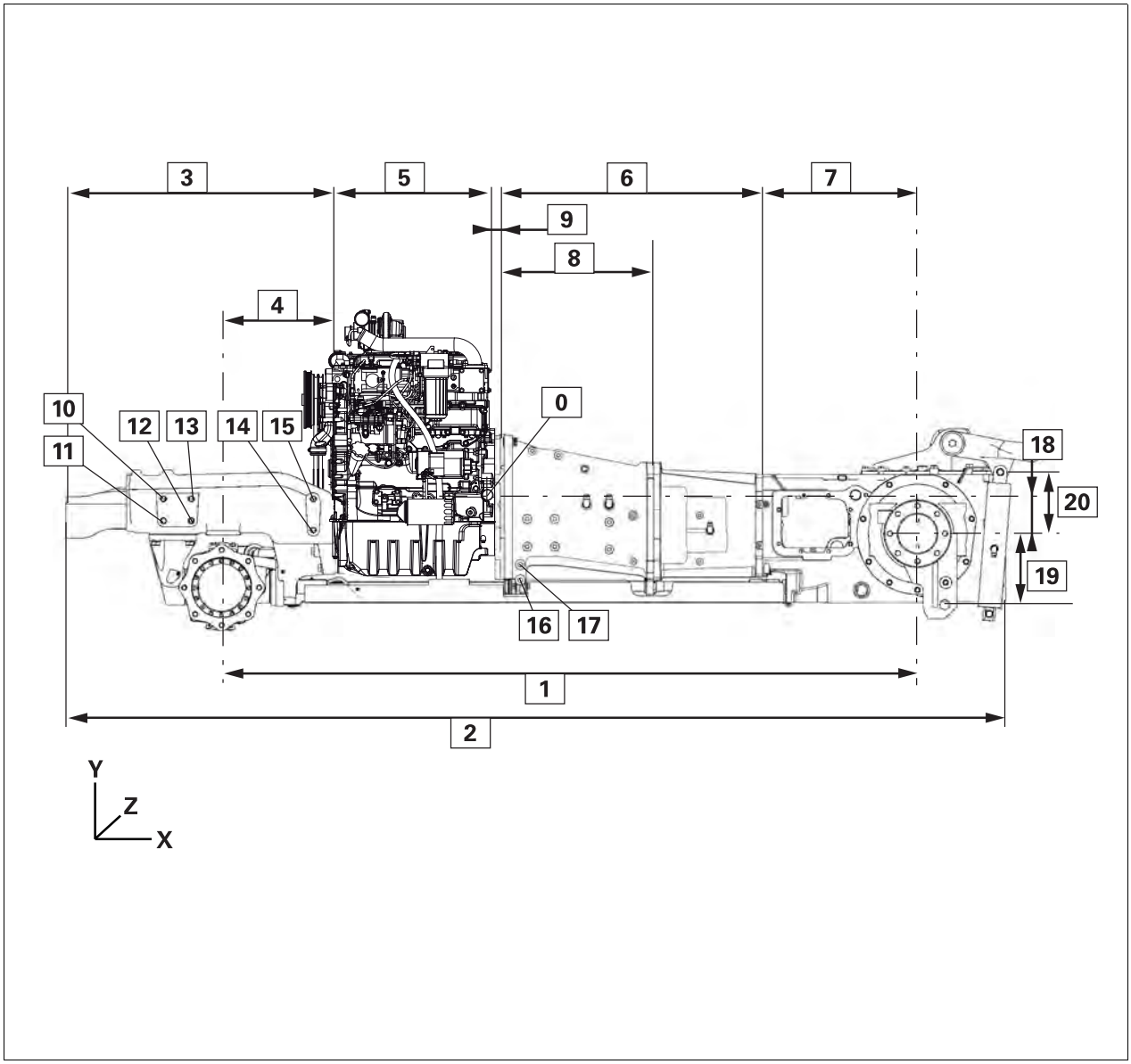

Fig. 2.

I009495

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2464 mm			
(2)	3427 mm			
(3)	1012 mm			
(4)	372 mm			
(5)	540 mm			
(6)	949 mm			
(7)	567 mm			
(8)	549 mm			
(9)	36 mm			
(10)	M20	-1215 mm	±280 mm	20 mm
(11)	M20 x 40	-1215 mm	±280 mm	-60 mm
(12)	M20	-1113 mm	±280 mm	20 mm
(13)	M20	-1113 mm	±280 mm	-60 mm
(14)	M20 x 40	-665 mm	±275 mm	20 mm
(15)	M20 x 40	-665 mm	±275 mm	-94 mm
(16)	M20 x 49	124 mm	±138 mm	-220 mm
(17)	M20 x 49	124 mm	±138 mm	-277 mm
(18)	95 mm			
(19)	269 mm			
(20)	205 mm			

5.12.4 Attachment points: Perkins model MF 5460

T001117

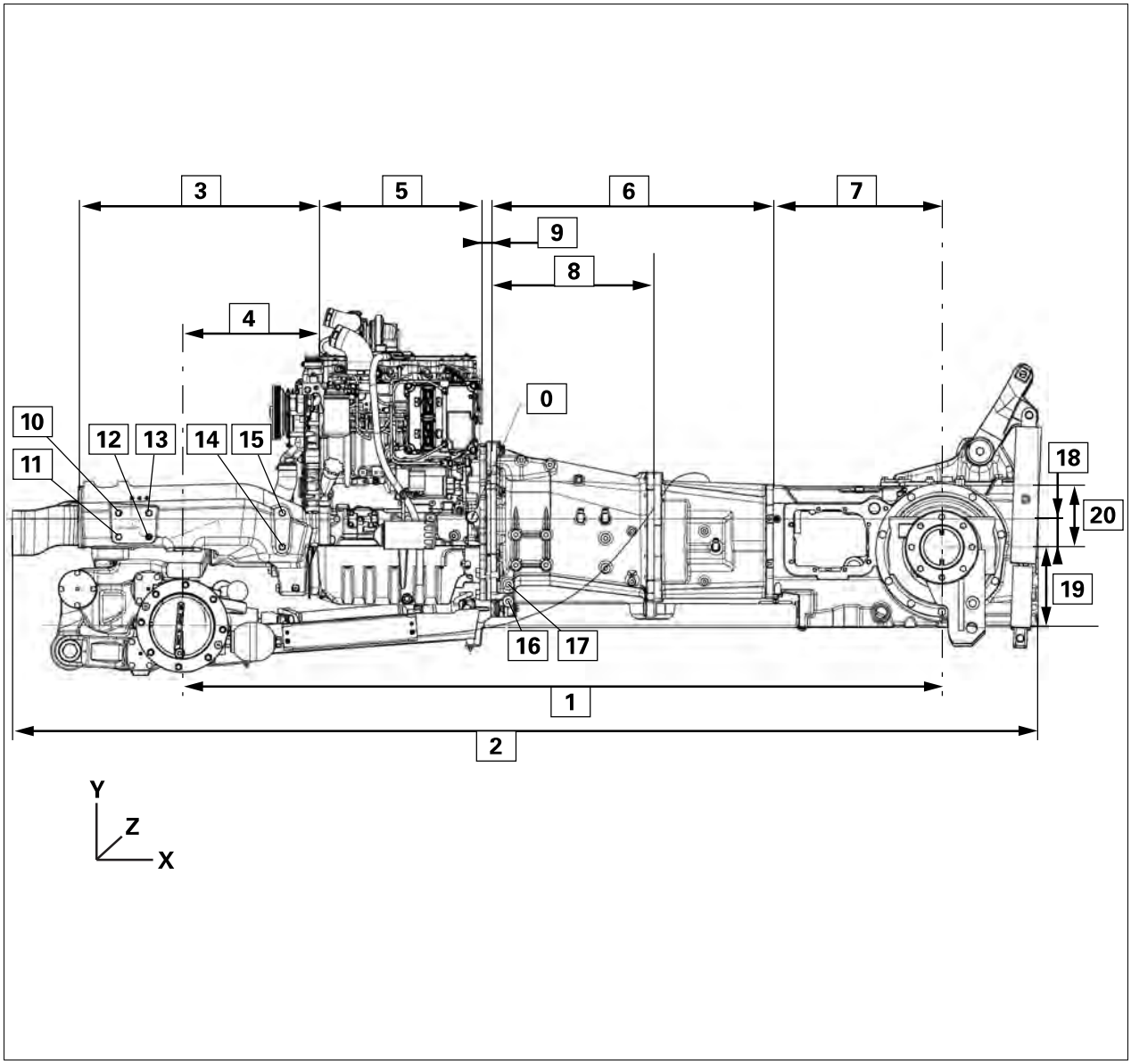

Fig. 3. I003730

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2552 mm			
(2)	3447 mm			
(3)	810 mm			
(4)	460 mm			
(5)	540 mm			
(6)	949 mm			
(7)	567 mm			
(8)	549 mm			
(9)	36 mm			
(10)	M20	-1186 mm	±280 mm	20 mm
(11)	M20 x 40	-1186 mm	±280 mm	-60 mm

Reference		X	Y	Z
(12)	M20	-1084 mm	±280 mm	20 mm
(13)	M20	-1084 mm	±280 mm	-60 mm
(14)	M20 x 40	-636 mm	±275 mm	20 mm
(15)	M20 x 40	-636 mm	±275 mm	-94 mm
(16)	M20 x 49	124 mm	±138 mm	-220 mm
(17)	M20 x 49	124 mm	±138 mm	-277 mm
(18)	95 mm			
(19)	269 mm			
(20)	205 mm			

5

5.12.5 Attachment points: SisuDiesel 5460 model

T016202

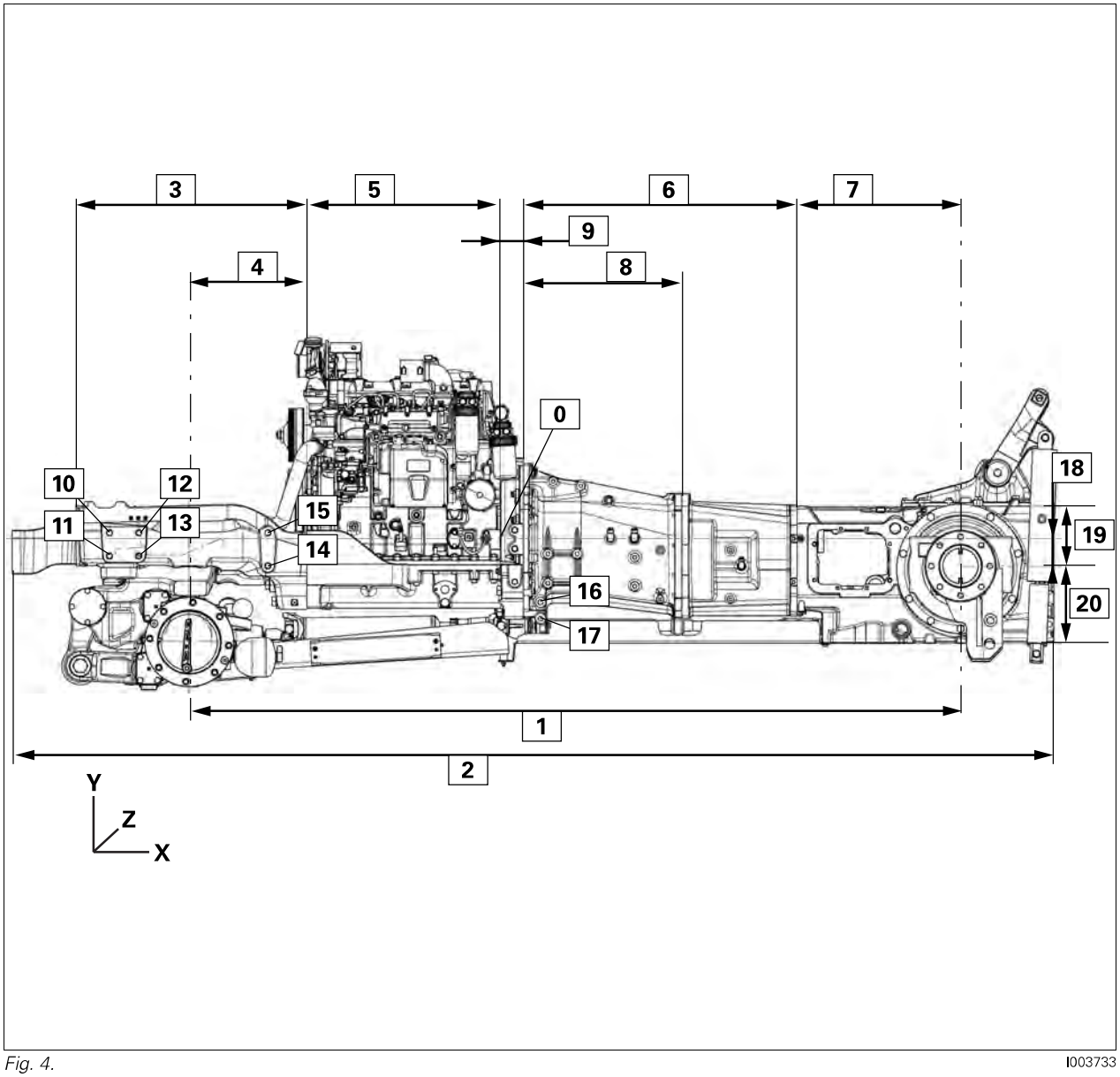

Fig. 4.

I003733

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2754 mm			
(2)	3612 mm			
(3)	800 mm			
(4)	407 mm			
(5)	751 mm			
(6)	949 mm			
(7)	566 mm			
(8)	549 mm			
(9)	81 mm			
(10)	M20	-1355 mm	±280 mm	-20 mm
(11)	M20 x 40	-1355 mm	±280 mm	-60 mm
(12)	M20	-1253 mm	±280 mm	20 mm
(13)	M20	-1253 mm	±280 mm	-60 mm
(14)	M20 x 40	-805 mm	±275 mm	20 mm
(15)	M20 x 40	-805 mm	±275 mm	-94 mm
(16)	M20 x 49	124 mm	±138 mm	-220 mm
(17)	M20 x 49	124 mm	±138 mm	-277 mm
(18)	95 mm	83,5 mm	±274 mm	-146,6 mm
(19)	205 mm	196,5 mm	-138 mm	-220 mm
(20)	268 mm			

5.12.6 Attachment points: Model MF 5465

T001118

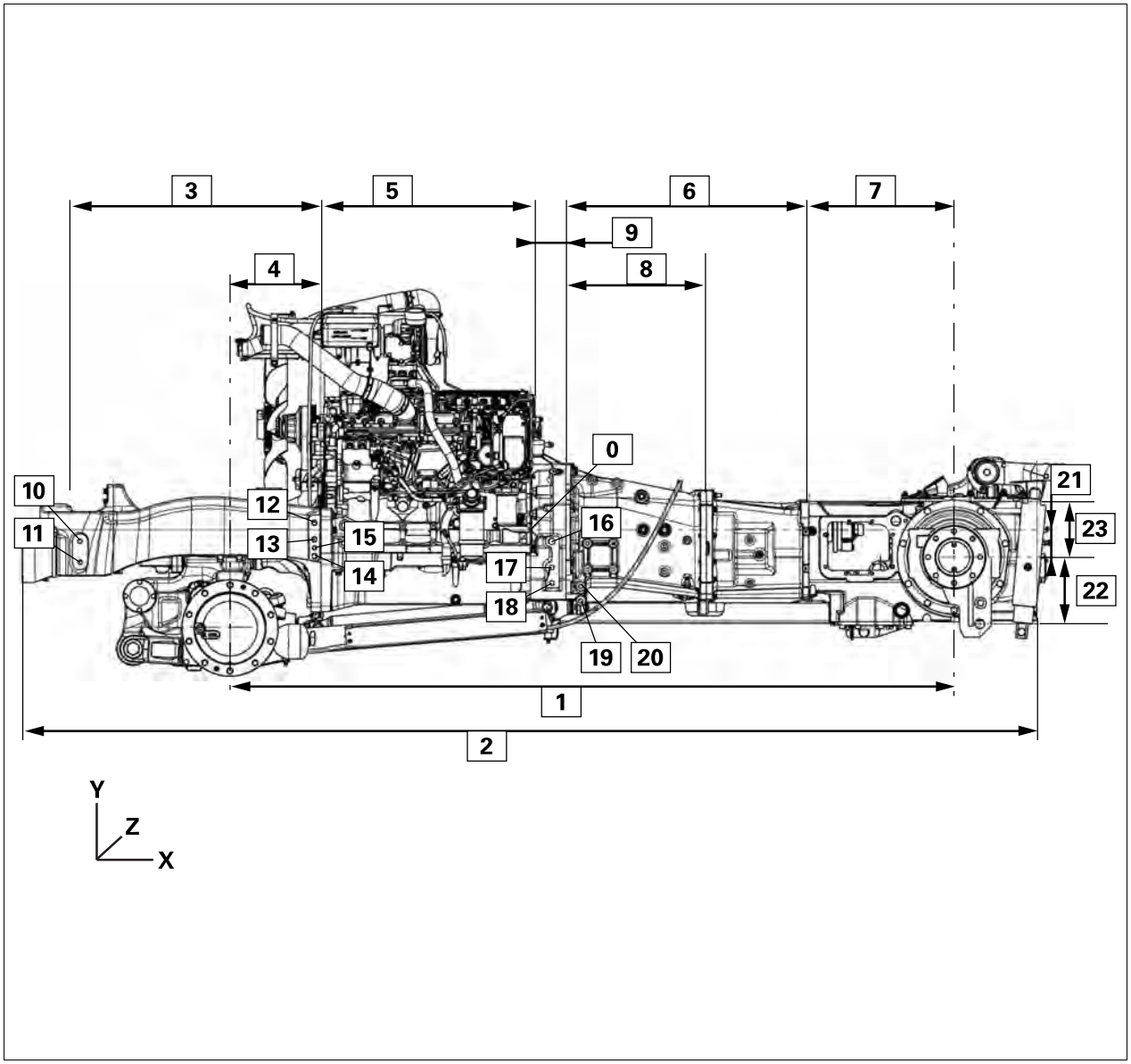

Fig. 5. I003731

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2875 mm			
(2)	4026 mm			
(3)	810 mm			
(4)	356 mm			
(5)	922 mm			
(6)	949 mm			
(7)	567 mm			
(8)	549 mm			
(9)	81 mm			
(10)	M20	-1862 mm	±315 mm	-45 mm
(11)	M20	-1862 mm	±315 mm	-125 mm

Reference		X	Y	Z
(12)	M20 x 45	-947 mm	±280 mm	27,5 mm
(13)	M20 x 45	-947 mm	±280 mm	-37,5 mm
(14)	M20 x 45	-947 mm	±280 mm	-102,5 mm
(15)	Ø15x13	-947 mm	±280 mm	-70 mm
(16)	M20 x 40	51 mm	±270 mm	35 mm
(17)	M20 x 40	51 mm	±270 mm	-35 mm
(18)	M20 x 42	27 mm	±270 mm	-148.5 mm
(19)	M20 x 40	140 mm	-138 mm	-277 mm
(20)	M20 x 40	140 mm	-138 mm	-220 mm
(21)	106 mm			
(22)	249 mm			
(23)	216 mm			

5.12.7 Attachment points: Models 5470/5480

T001119

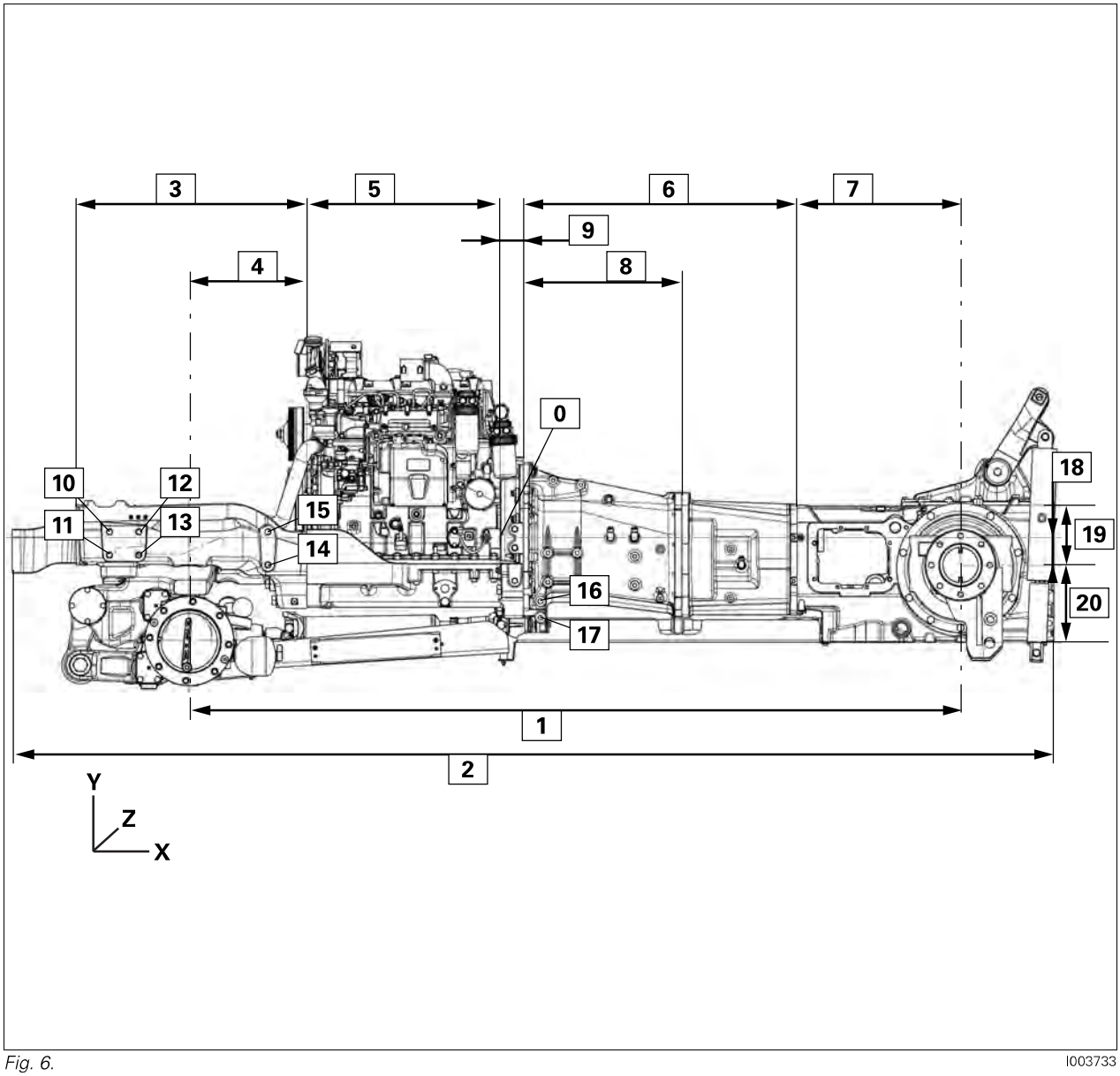

Fig. 6.

I003733

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2754 mm			
(2)	3612 mm			
(3)	800 mm			
(4)	407 mm			
(5)	751 mm			
(6)	949 mm			
(7)	566 mm			
(8)	549 mm			
(9)	81 mm			
(10)	M20	-1355 mm	±280 mm	-20 mm
(11)	M20 x 40	-1355 mm	±280 mm	-60 mm
(12)	M20	-1253 mm	±280 mm	20 mm
(13)	M20	-1253 mm	±280 mm	-60 mm
(14)	M20 x 40	-805 mm	±275 mm	20 mm
(15)	M20 x 40	-805 mm	±275 mm	-94 mm
(16)	M20 x 49	124 mm	±138 mm	-220 mm
(17)	M20 x 49	124 mm	±138 mm	-277 mm
(18)	95 mm	83,5 mm	±274 mm	-146,6 mm
(19)	205 mm	196,5 mm	-138 mm	-220 mm
(20)	268 mm			

5.12.8 Attachment points: Model 5475

T006982

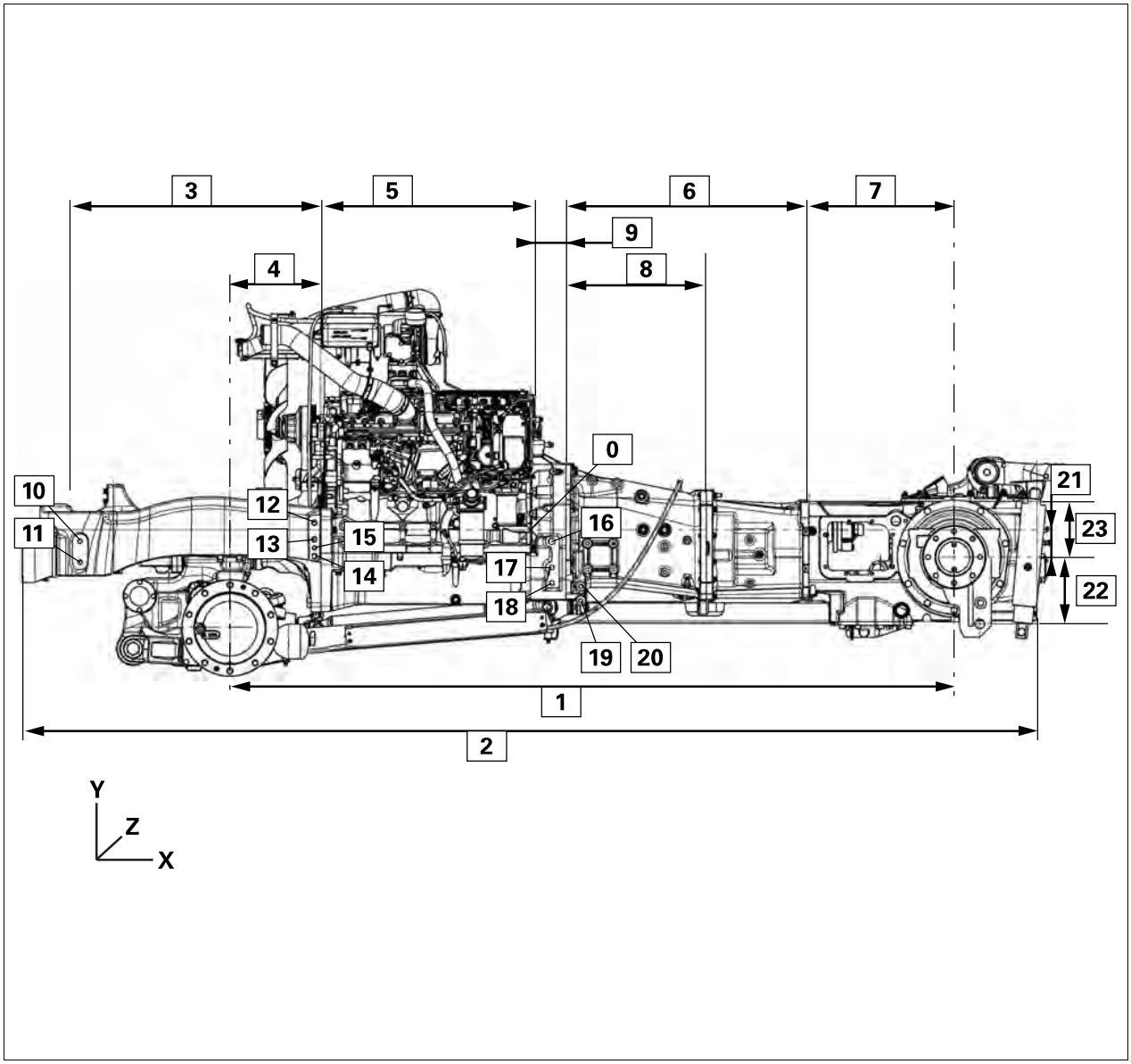

Fig. 7.

I003731

NOTE: *Values x, y and z represent reference point 0 of the tractor.*

Reference		X	Y	Z
(1)	2826 mm			
(2)	3959 mm			
(3)	810 mm			
(4)	354 mm			
(5)	818 mm			
(6)	949 mm			
(7)	567 mm			
(8)	549 mm			
(9)	137 mm			
(10)	M20	-1758 mm	±315 mm	-45 mm
(11)	M20	-1758 mm	±315 mm	-125 mm

Reference		X	Y	Z
(12)	M20 x 45	-843 mm	±280 mm	27,5 mm
(13)	M20 x 45	-843 mm	±280 mm	-37,5 mm
(14)	M20 x 45	-843 mm	±280 mm	-102,5 mm
(15)	M15 x 13	-843 mm	±280 mm	-70 mm
(16)	M20	83,5 mm	±274 mm	45 mm
(17)	M20 x 45	83,5 mm	±274 mm	-206,5 mm
(18)	M20 x 45	83,5 mm	±274 mm	-146,6 mm
(19)	M20 x 40	196,5 mm	-138 mm	-277 mm
(20)	M20 x 40	196,5 mm	-138 mm	-220 mm
(21)	106 mm			
(22)	249 mm			
(23)	216 mm			

6. Accessories

6

6.1 Cab accessories

6.1.1 Cab accessories

T001018

– Radio fittings (loudspeakers, aerial and wiring).
– Radio
– Instructor seat
– Rear windscreen wiper and washer.

6.2 Engine accessories

6.2.1 Engine accessories

T001019

– Engine block preheater (220 V or 110 V according to version)

6.3 Transmission accessories

6.3.1 Transmission accessories

T001020

– Transmission preheater

6.4 Front axle and steering accessories

6.4.1 Front axle and steering accessories

T001021

- Front fenders.
- Front weights: 8/10/12 x 55 kg
- 4-cylinder tractor centre weight: 100 kg
  6-cylinder tractor centre weight: 180 kg or 265 kg
  NOTE: *The centre weight is not compatible with the front PTO. Removal is not easy and the weight must remain fitted.*

6.5 Power take-off accessories

6.5.1 Power take-off accessories

T001022

– Power take-off: Consult your dealer for the different types available

6.6 Linkage accessories

6.6.1 Linkage accessories

T001023

– Category II front linkage with automatic hooks and nitrogen accumulator.
– Rear linkage: different types
– Weight for front or rear linkage: 900 kg to 1500 kg
– Weight support for front or rear linkage

6.7 Auxiliary hydraulics accessories

6.7.1 Auxiliary hydraulics accessories

T001024

– Additional hydraulic spool valves
– Trailer brake

6.8 Electrical equipment accessories

6.8.1 Electrical equipment accessories

T001025

– Battery circuit breaker.

6.9 Wheels and tyres accessories

6.9.1 Wheels and tyres accessories

T001026

– Wheel weights


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