DECLARATION **CE DE CONFORMITE**
AVEC ANNEXE POUR REFERENCE A CERTIFICAT DELIVRE PAR ORGANISME COMPETENT
EC DECLARATION OF CONFORMITY
WITH ANNEX REFERING TO A CERTIFICATE DELIVERED BY A COMPETENT BODY

Fabriquant : AGCO S.A.
Manufacturer

Adresse : Avenue Blaise Pascal, 60026 BEAUVAIS - FRANCE.
Address

Nom du signataire : Jonny Frolli
Signatory' s name

Qualité : Directeur
Quality

Description du produit : Tracteur agricole
Product description *Agricultural tractor*

Le produit identifié ci-dessus est déclaré conforme aux dispositions de :
The identified product hereover is declared conform to the requirements of

- La Directive 75/322 modifiée par la Directive 2000/2 du 14 janvier 2000 et la directive 2001/3 du 8 janvier 2001 relative aux tracteurs agricoles ou forestiers à roues.
- *Directive* 75/322 *modified by the Directive 2000/2 from 14 january 2000 and the directive 2001/3 from 8 of january 2001 relating to wheeled agricultural or forestry tractors.*

en raison de la délivrance par un ORGANISME COMPÉTENT DU CERTIFICAT EN ANNEXE.
due to the delivrery by a Competent Body of the Certificate in annex.

Lieu : Beauvais
Location

Signature :
Signature

ANNEXE A DECLARATION **CE DE CONFORMITE**
ANNEX TO A ***EC DECLARATION OF CONFORMITY***

Fabriquant : AGCO S.A.
Manufacturer

Adresse : Avenue Blaise Pascal, 60026 BEAUVAIS - FRANCE.
Address

Identification du produit : Tracteur agricole
Product Identification *Agricultural tractor*

La conformité aux exigences de la Directive 2001/3 est reconnue pour le produit identifié ci-dessus par :
The Conformity to the requirements of the 2001/3 *Directive of the hereover identified product is recognised by:*

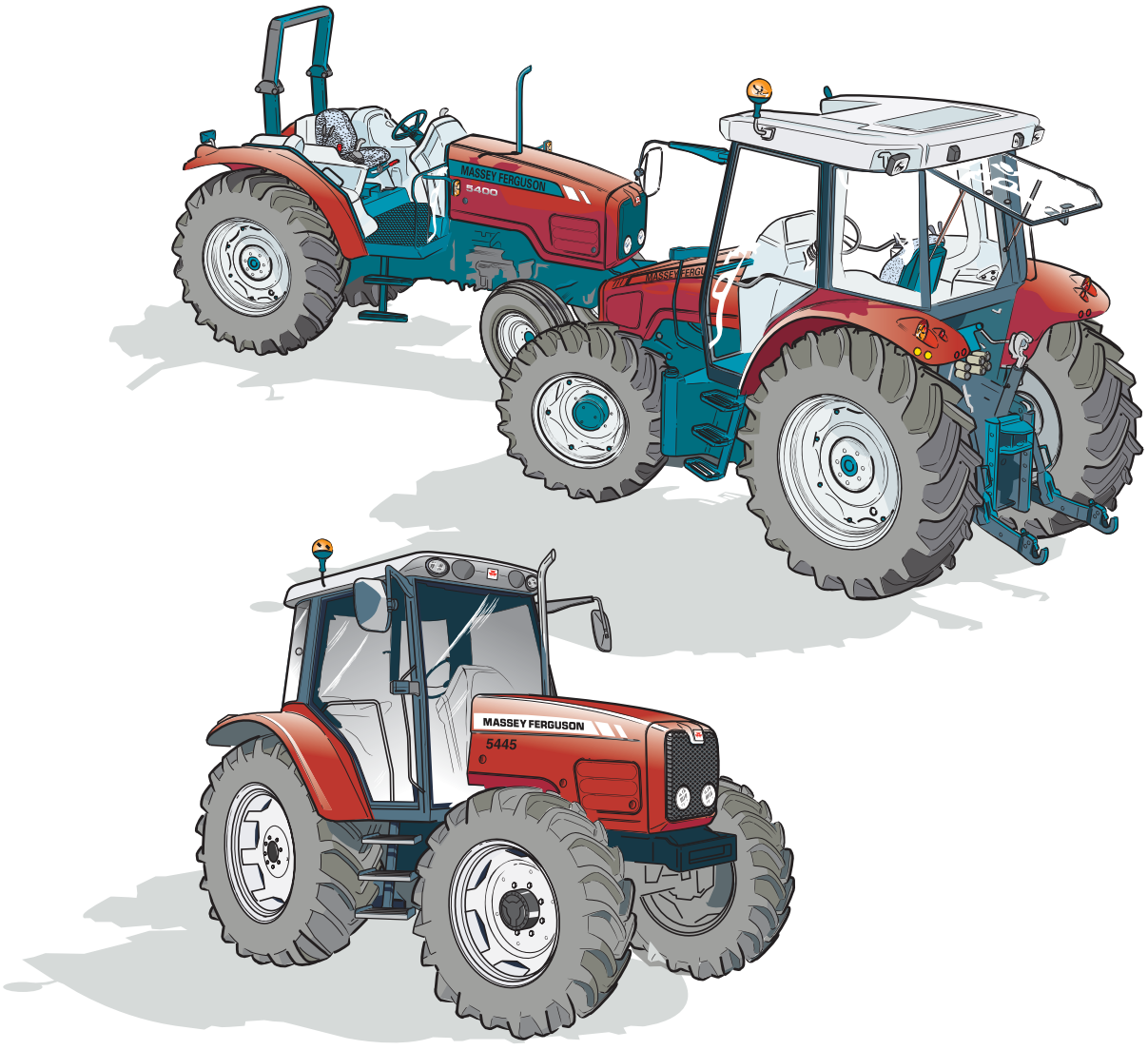
- Organisme compétent : UTAC
  Competent body
- Adresse : Autodrome de Linas
  Address 93311 MONTLHÉRY - FRANCE

qui a delivré le certificat dont les références sont :
who delivrered the certificate which references are

- Numéro du certificat : UTAC e13*75/322*2001/3*1760
  Certificate number
- Date (Approbation LCIE) : 06/05/03
  Date

5400 series tractors

For models 5425-5435-5445-5455-5460-5465



AGCO - SA - Beauvais - France - RC B562 104 539
Massey Ferguson is a wholly owned subsidiary of AGCO Corporation

April 2006
N° 3378468M1
Issue 8
5400 EAME
English

OPERATOR INSTRUCTION BOOK

CONTENTS

Chapter 1

TRACTOR IDENTIFICATION

CONTENTS

1.1 - SERIAL NUMBER

IMPORTANT: WHEN CONTACTING YOUR DEALER OR AGENT, ALWAYS INDICATE YOUR TRACTOR SERIAL NUMBER.

Name plate with serial number (according to country).

Z2-322-10-03

Cab serial number

Z2-323-10-03

Fig. 1

Registration plate (according to country)

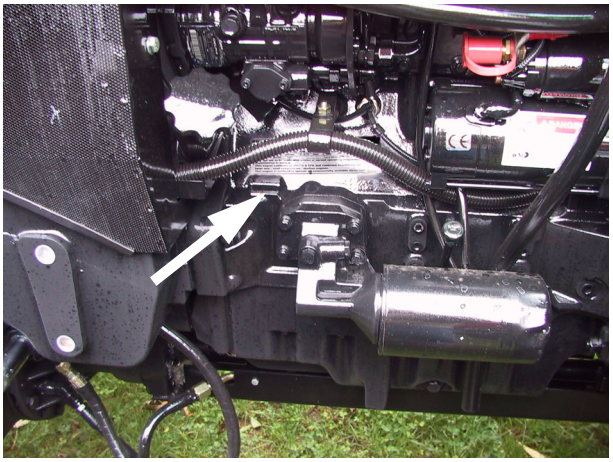
V558

Z2-324-10-03

V656

Fig. 2

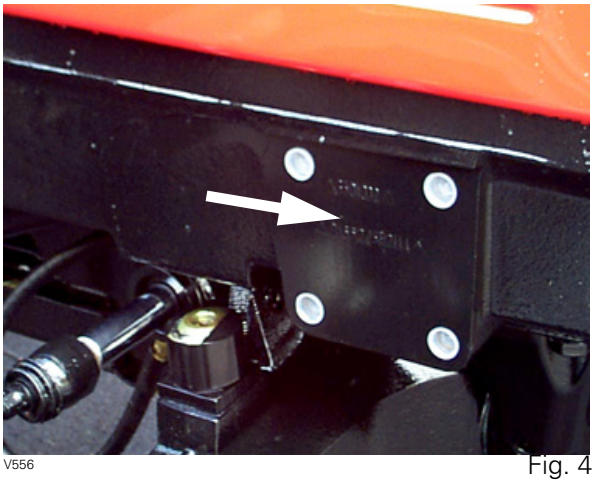
Engine serial number



Z2-321-10-03

Fig. 3

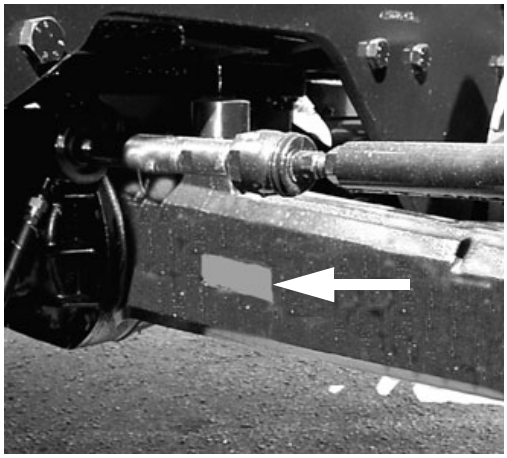
Serial number



V556

Fig. 4

Front axle serial number



V560

Fig. 5

MODEL: .....
.....

SERIAL NUMBER: .....
.....

ENGINE SERIAL NUMBER: .....
.....

OWNER NAME AND ADDRESS (if applicable):
.....
.....
.....
.....
.....
.....

DEALER: .....
.....
.....

STREET: .....

TOWN: .....

STATE: .....

ZIP CODE: .....

DEALER CODE: .....
.....
.....
.....
.....

Chapter 2

INTRODUCTION - SAFETY INSTRUCTIONS AND WARRANTY

CONTENTS

2.1 - INTRODUCTION

The Safety chapter in the Operator Instruction Book stresses certain basic safety-related situations which may be encountered during the operation and normal maintenance of the tractor and gives the information needed to cope with these situations. This chapter SUPPLEMENTS any safety instructions given in other chapters of this book.

It may be necessary to take additional precautions depending on the equipment used and the working conditions on the site or in the servicing area. AGCO can under no circumstances exercise direct control over the commissioning, operation, inspection, lubrication or maintenance of the tractor. It is therefore YOUR responsibility to take suitable safety measures in such areas.

NOTE: This book is published and distributed worldwide and the availability of the equipment indicated, whether on the basic tractor or as accessories, may vary according to the country in which the tractor is used. To find out which equipment is available in a given region, contact an AGCO dealer.

The purpose of this book is to allow the owner and the operator to run the tractor safely. Providing they follow the instructions carefully, the tractor will operate for many years in the AGCO tradition.

Commissioning the equipment at the user's premises by the dealer provides the possibility of ensuring that these operating and maintenance instructions are properly understood. Always consult the dealer if any part of this book is not understood. It is important for these instructions to be understood and followed.

Daily maintenance should become a routine and a log book of operating hours should be kept.

When new spare parts are required, it is important to use AGCO original spare parts only. AGCO dealers supply only genuine original parts and can give advice concerning their fitting and use.

The use of parts of lower quality may cause serious damage. Customers are advised to only purchase their spare parts from an approved AGCO dealer.

Due to the considerable differences 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 accept liability for any loss or damage which may result from such assertions or possible errors or omissions.

To prevent the warranty becoming void, you should consult your AGCO dealer to obtain special instructions if the tractor is to be used under abnormal conditions which could be detrimental to it (use in deep water or in paddy fields for instance).

These tractors are only designed for usual farming purposes (designed use).

Any other use is considered as being contrary to the designed use. AGCO declines all liability in cases of physical damage or injuries resulting from improper use the consequences of which shall be borne by the user alone.

The conformity and strict adherence to the operating, servicing and repair requirements specified by AGCO are also essential factors for designed use.

These tractors must only be used, serviced and repaired by personnel having full knowledge of their specific features and who are aware of the applicable safety rules (prevention of accidents).

Customers are strongly recommended to contact an AGCO dealer in the event of after-sale problems and for any adjustments which may be necessary.

2.1.1 - Pre-delivery inspection, commissioning at the user's premises and warranty

When selling new products to their dealers, the manufacturer gives 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 a retail customer in any particular country.

Purchasers of new AGCO equipment should request full details from their supplying Dealer.

In accordance with the Corporation's policy of continuous improvement to its products, alterations in the specifications of machines may be made at any time without notice. The Corporation disclaims all liability for discrepancies which may occur between the specifications of its products and the descriptions thereof contained in its publications.

A Dealer is required to carry out certain activities when supplying a new AGCO tractor. These consist of a full pre-delivery inspection to ensure that the tractor supplied is ready for immediate use, and full instructions to the user in the basic principles of operation and maintenance of the tractor. These instructions will cover instruments and controls, and routine servicing and safety precautions. All persons who will be concerned with the operation and servicing of the tractor should be present for these instructions.

NOTE: AGCO disclaims all liability to any claim resulting from the fitting of non-approved parts or accessories or unauthorized modification or alteration.

2.1.2 - Warranty procedure

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

Immediately inform the dealer you purchased the tractor from, indicating the model and serial number. It is very important not to wait and it should be realised that, even if the defect is covered by the original warranty, the risk coverage may no long 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.

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, fuel and antifreeze) are not covered by the warranty.

Warning concerning spare parts

Parts other than AGCO parts are likely to be of lower quality. AGCO 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.

2.1.3 - Using the tractor in another region

Only the AGCO dealer from whom the tractor was purchased is liable for the protection provided by the warranty. Any repairs required should always, wherever possible, be carried out by this dealer. If, however, the owner moves to another region or if the tractor is to be used temporarily a long way from the dealer it was bought from, it is recommended to ask this dealer for the name and address of the AGCO dealer nearest the customer's 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 need be, but may bill them at the normal rate unless:

- the user has effectively specified 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.

2.1.4 - Servicing after the warranty period

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

To obtain best results from an AGCO tractor, it is important to continue regular servicing and periodic inspection after the warranty has expired. All major overhaul work on the tractor must be carried out by a local AGCO dealer; an experienced technician will detect any problems which may arise between two overhauls.

Mechanical staff regularly follow training courses to update their knowledge of the product, maintenance and repair techniques and the use of special modern tools and equipment for troubleshooting. They receive regular Service Bulletins and have access to all the workshop manuals and technical publications required to carry out repairs or maintenance meeting the quality standards required by AGCO.

2.2 - SAFETY - ALERT SYMBOLS AND TERMS

This Safety Alert Symbol means CAUTION! BE ALERT! YOUR SAFETY DEPENDS ON IT!

The safety alert symbol identifies important safety messages on machines, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the risk of personal injury or death. Follow the instructions in the safety message.

SAFETY is essential! Why?

- ACCIDENTS DISABLE AND KILL
- ACCIDENTS ARE COSTLY
- ACCIDENTS CAN BE AVOIDED

2.3 - TRACTOR AND IMPLEMENTS

The tractor is a source of power - Mechanical - Hydraulic

- On its own, the tractor is of little practical value. Only when used in conjunction with an implement or other attachment does it become a working unit.
- This Operator Instruction Book is compiled to cover the safe working practices when the tractor runs under normal conditions.
- It does not cover all operation and safety instructions relevant to all known implements and attachments that may be fitted at the time of tractor delivery or later.
- It is essential that operators use and understand the relevant instruction books of such implements and attachments.

2.4 - MAXIMUM TRAVEL SPEEDS

DANGER: Road use of agricultural tractors is subject to speed restrictions depending on the bulkiness of the equipment and weight of the transported load. Consult the regulatory texts in force in the relevant countries.

2.5 - NOTE TO THE OPERATOR

It is YOUR responsibility to read and understand the Safety chapter in this book before starting your tractor. You must follow these safety instructions that take you step by step through your working day.

In reading this section, you will note that illustrations have been used to highlight certain situations. Each item illustrated is numbered and the same number appears in the text, in parentheses. This number is placed at the end of the written text that refers to the item illustrated.

Remember that YOU are the key to safety. Good safety practices not only protect you, but also bystanders. Study the features in this book with care and make them a working part of your safety program. Keep in mind that this safety chapter is written only for this type of machine. Also study the usual protective measures taken when working and in particular -

REMEMBER THAT SAFETY DEPENDS ON YOU. YOU CAN PREVENT SERIOUS INJURY OR DEATH.

2.6 - DANGER, WARNING AND CAUTION

Whenever you see the words and symbols shown below, used in this book and on decals, you MUST apply their instructions as they relate to personal safety.

DANGER: This signal, displayed with the word DANGER, indicates an imminently hazardous situation that, if not avoided, may result in DEATH OR VERY SERIOUS INJURY.

WARNING: This signal, displayed with the word WARNING, indicates a potentially hazardous situation that, if not avoided, may result in DEATH OR SERIOUS INJURY.

CAUTION: This signal, displayed with the word CAUTION, indicates a potentially hazardous situation that, if not avoided, may result in MINOR INJURY.

IMPORTANT: Indicates a special instruction or procedure that, if not strictly observed may cause damage to, or destruction of the machine, the process, or the surroundings.

NOTE: The word NOTE indicates additional information about a subject or procedure for more efficient or convenient operation or repair.

2.7 - DECALS

WARNING: DO NOT remove or obscure DANGER, WARNING, CAUTION or Instruction Decals.

Replace any Danger, Warning, Caution or Instruction Decals that are not readable or are missing. Replacement decals are available from your Dealer in the event of loss or damage. The actual location of these Safety decals is illustrated at the end of this chapter.

If a used tractor has been purchased, refer to the illustrations at the end of this book to ensure that all the safety signs are in the correct position and are readable.

2.8 - SAFETY PROCEDURE TO FOLLOW

2.8.1 - For proper operation

For proper operation of an agricultural tractor, you must be a qualified and approved operator. To be qualified you must understand the written instructions supplied in this book, have been trained, and know the safety rules and regulations applicable to the work.

Some regulations specify that no one under the age of 16 years, for example, may operate power machinery. This includes tractors. It is your responsibility to know what these regulations are, and obey them, in the operating area or situation.

These will include, but are not limited to, the following instructions for safe tractor operation.

WARNING: The operator must not drink alcohol or take any medication that may affect his concentration or coordination. If taking medication, whether prescribed or not, the operator must seek medical advice as regards his ability to safely operate machinery.

2.8.2 - Observe the following instructions

- **DO NOT ALLOW** children or unqualified persons to operate your tractor. Keep others away from the working area.
- Always wear your seat belt securely fastened.
- Where possible, avoid operating the tractor near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slippery, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- Watch where you are going, especially at row ends, on roads, and around trees.
- Passenger seat is only intended for short periods of use
- Do not allow children in the passenger seat.
- **DO NOT PERMIT** others to ride on the tractor or the implement unless an approved passenger seat is fitted.
- Only hitch attachments and implements to the drawbar and hitch points recommended, and never above the centre line of the rear axle.
- Operate the tractor smoothly - no jerky turns, starts or stops. When the tractor is stopped, apply the handbrake securely. Lower the implement and remove the ignition key.
- **DO NOT MODIFY OR REMOVE** any part of the equipment and **DO NOT USE** attachments unless they are properly matched to your tractor.

2.9 - PROTECTION

2.9.1 - Cab

The ROPS (Roll Over Protective Structure) cab has been designed for this tractor series and meets all the safety and sound legal requirements.

The ROPS cab conforms to the various international safety standards. The ROPS cab must **NEVER** be drilled or modified to install accessories or implements. Welding on cab components is **NOT PERMITTED. DO NOT ATTACH** chains or ropes to the main frame of the ROPS cab for pulling purposes.

If additional controls or displays are to be added to the operator's area contact your AGCO dealer for information.

The ROPS cab together with the seat belt is effective in reducing injuries during overturn accidents. Wearing the seat belt is an important part of this protection.

- Always wear your seat belt adjusted snugly.
- Check the seat belt for damage. A damaged seat belt must be replaced (Fig. 1).

V462

Fig. 1

2.9.2 - Damage to the ROPS cab

If the ROPS cab has been damaged as a result of tractor rollover or incident, it must be replaced, NOT repaired.

DO NOT USE the tractor with a damaged ROPS cab.

2.10 - PREPARING FOR SAFE OPERATION

2.10.1 - Know your equipment

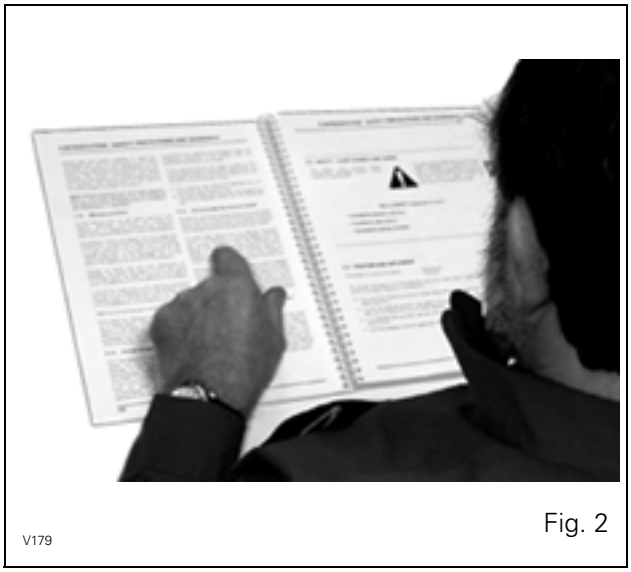
It is important to know the tractor and operation of all its accessories, implements and additional equipment. It is also important to know how to use all the controls, gauges and dials, as well as the rated load capacity, speed range, braking and steering characteristics, turning radius, and operating clearances.

Remember that rain, snow, ice, loose gravel, soft ground, etc. can change the performance of your tractor.

Under poor conditions, slow down and be extra careful, and engage four-wheel drive if fitted.

Study the **DANGER**, **WARNING** and **CAUTION** safety symbols on your tractor and the information signs also.

READ THIS OPERATOR INSTRUCTION BOOK CAREFULLY BEFORE STARTING THE ENGINE.
STUDY IT BEFORE YOU START WORK (Fig. 2).



V179 Fig. 2

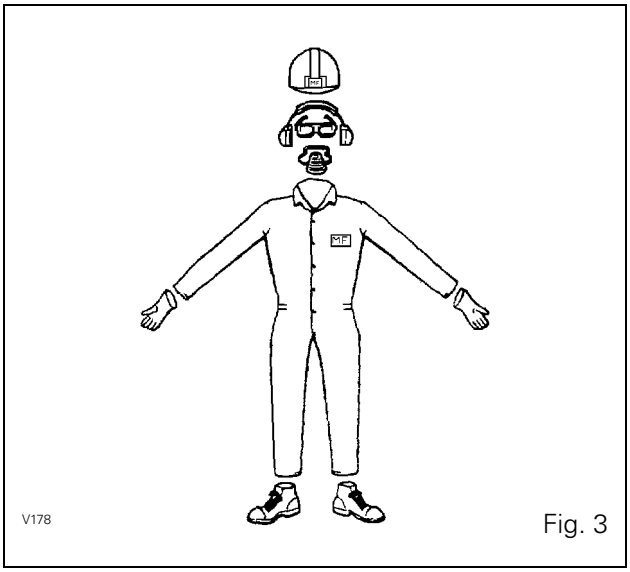
IF THERE IS SOMETHING IN THE BOOK YOU DON'T UNDERSTAND, ASK SOMEONE (for example your equipment dealer) TO EXPLAIN IT TO YOU.
This book covers general safety practice for agricultural tractors. It must always be kept with the tractor. For extra copies contact your AGCO Dealer.

2.10.2 - Protect yourself

Wear all protective clothing and equipment provided or which is appropriate for certain working conditions. Do not take any risks (Fig. 3).
For example, you may need:

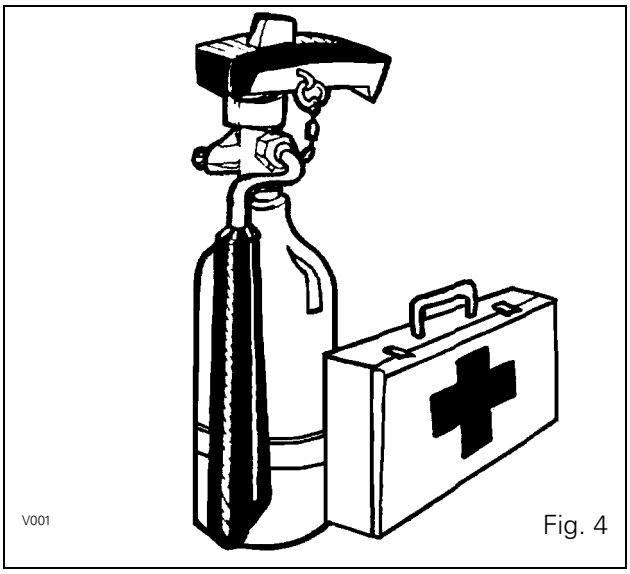
- A safety helmet.
- Safety glasses, goggles, or a face shield.
- Hearing protection.
- Respirator or filter mask.
- Inclement weather clothing.
- Reflective clothing.
- Heavy gloves (neoprene for chemicals, leather for rough work).
- Safety shoes.

DO NOT wear loose clothing, jewellery or other items and tie up long hair which could catch on controls or other parts of the equipment.



V178 Fig. 3

Learn where fire extinguishers and first aid or emergency equipment is kept and where to get help in a hurry. Make sure you know how to use this equipment (Fig. 4).



V001 Fig. 4

2.10.3 - Use all available protective and safety devices

Keep all protective devices correctly attached in their correct places. Ensure that all protective devices, guards and safety signals are fitted as required and are in a good condition.
To help keep you and others around you safe, your tractor should be equipped with:

- Seat belt
- PTO shield

Your tractor may also need:

- Rear view mirror
- Fire extinguisher
- Emergency warning triangle, guards, backup alarm, lighting and marking devices.

It is important to know and use the devices which allow for safe operation of the tractor. Make sure all required equipment is in place and in good working order. **DO NOT REMOVE OR DISCONNECT** any safety device.

2.10.4 - Equipment check

Before you begin your working day, take time to check your tractor and ensure that all systems are in good operating condition.

- **DO NOT SMOKE** while refuelling the tractor. Keep any type of naked flame away (Fig. 5).
- Stop the engine and wait for it to cool before refuelling.

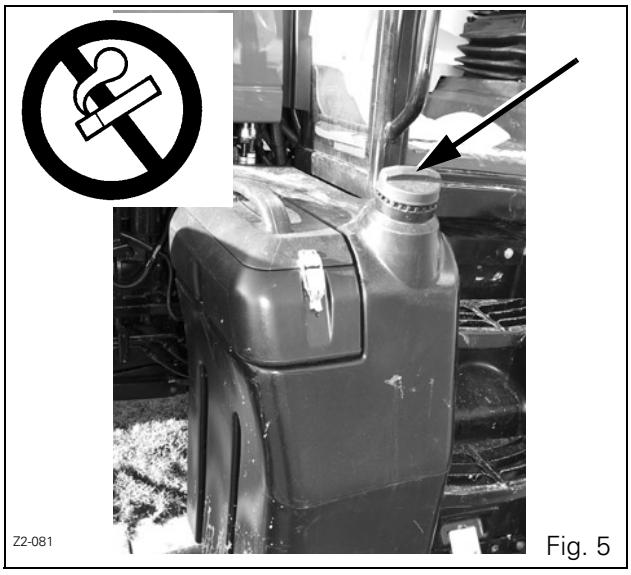

Z2-081

Fig. 5

- Check for loose, broken, missing, or damaged parts. Have everything put into good repair. Make certain all safety devices are in place.
- Check the seat belt for damage. A damaged seat belt must be replaced.
- Check that all implements and equipment are correctly fitted and that the tractor and implement PTO ratios (rpm) are respected.
- Check the condition and pressure of tyres (absence of cuts and bulges). Replace worn or damaged tyres. Check the hand and foot brake operation. Adjust if necessary.
- Check the oil level. Add some oil if necessary.
- Perform all servicing procedures outlined in the Maintenance and Adjustments chapter in this book.
- Check that the PTO shaft locking devices are latched.
- Check that the tractor PTO shield and shaft guards are in place and operating properly.
- Check the tractor and implement hydraulic system. Have any leaks or damaged parts repaired or replaced.

WARNING: Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury, blindness or death.

Fluid leaks, under pressure, 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 is injected into the skin, it MUST be surgically removed within a few hours by a doctor familiar with this type of injury (Fig. 6).

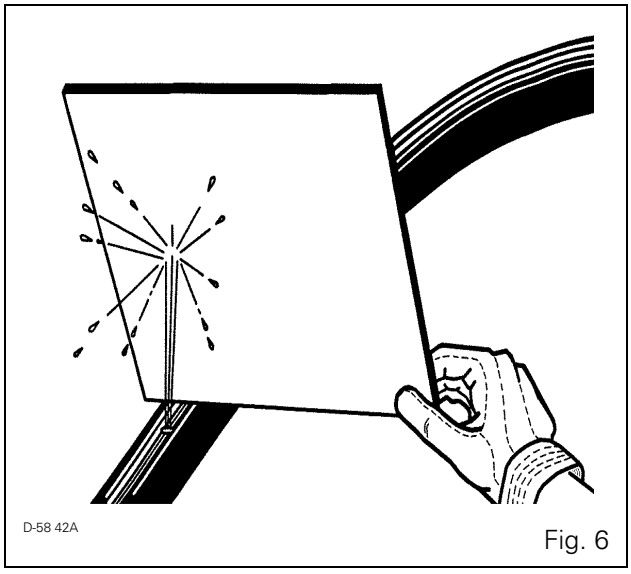

D-58 42A

Fig. 6

Before applying pressure to the fuel or hydraulic system, be sure all connections are tight and that lines, pipes, and hoses are not damaged. Before disconnecting fuel or hydraulic lines, be sure to relieve all pressure.

Make sure that all hydraulic lines are correctly installed and not crossed.

WARNING: Liquid cooling systems build up pressure as the engine gets hot. Before removing the radiator cap, stop the engine and let the system cool.

- Check the engine cooling system and add coolant as required.

2.10.5 - Clean the tractor

- Keep work surfaces and engine compartments clean.
- Before cleaning the machine, always lower implements to the ground, place transmission in neutral, engage the handbrake, shut off the engine and remove the ignition key.
- Clean footsteps, pedals and floor. Remove grease or oil. Brush away dust or mud. In winter, scrape away snow and ice. Remember - slippery surfaces are hazardous.
- Remove or put away implements, buckets, chains and hooks.

2.10.6 - Protect the environment

- It is illegal to pollute drains, water courses or soil. Use authorized waste disposal facilities, including civic amenity sites and garages providing facilities for disposal of used oil. If in doubt, contact your local authority for advice.

2.11 - SERVICING THE TRACTOR

- **DO NOT SERVICE** the tractor while the engine is running or hot, or if the tractor is in motion (Fig. 7).

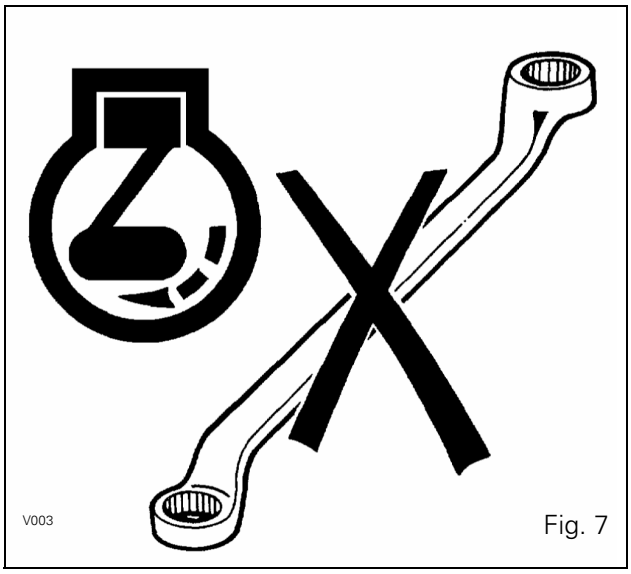


Fig. 7

- Before making adjustments to or servicing the electrical system, disconnect the battery cables, negative (-) cable first.
- To prevent fires or explosions keep naked flame away from the battery or cold weather starting aids. To prevent sparks which could cause explosions use jumper cables according to instructions.
- When making repairs or adjustments it is recommended that you consult your AGCO Dealer, and have the work carried out by trained personnel.
- The implement and/or tractor must be supported on suitable blocks or stands, **NOT** a hydraulic jack.
- Check all nuts and bolts periodically for tightness, especially wheel hub and rim nuts. Tighten to the prescribed torque values.

2.12 - STARTING

2.12.1 - Warn personnel before starting

Before starting, walk completely around the tractor and any attached equipment. Make sure that no one is under it, on it, or close to it. Tell other workers or people nearby that the tractor is about to start. Do not start the tractor while there are people near the tractor, tools or trailed implements.

Ensure that all bystanders, particularly children, are a suitable distance away before starting the engine.

2.12.2 - Get on and off the tractor safely

Always use "three point contact" with the machine, and face the machine when you get on it. (Three point contact means both hands and one foot or one hand and both feet are in contact with the machine at all times when getting on and off).

Clean your shoes and wipe your hands before getting on. Use handrails, grab handles, ladders or footsteps (as provided) when getting on and off.

DO NOT use control levers as a hand hold and never step on pedals when getting on and off.

DO NOT attempt to get on or off a moving tractor. **DO NOT JUMP OFF** a tractor other than in an emergency.

2.12.3 - Safe start-up

WARNING: Before starting the engine make sure there is plenty of ventilation. DO NOT operate the engine in a closed building. The exhaust fumes may cause asphyxiation.

Always start the engine from the driver's seat **with all the transmission levers** and the PTO lever in neutral.

Make sure that the tractor dual brake pedals are locked together at all times unless you are making turns in the field which require independent use of the brakes. Make sure the brakes are properly adjusted so that both brakes engage at the same time.

Adjust the seat, fasten the seat belt (as specified in the book), apply the handbrake and put all controls in neutral before starting up.

DANGER: Start the engine, with the ignition key, from the driver's seat only. DO NOT ATTEMPT to start the engine by shorting across the starter terminals. The machine will start in gear if the neutral start circuit is bypassed. This could cause serious injury or death to anyone in the vicinity of the tractor (Fig. 8).

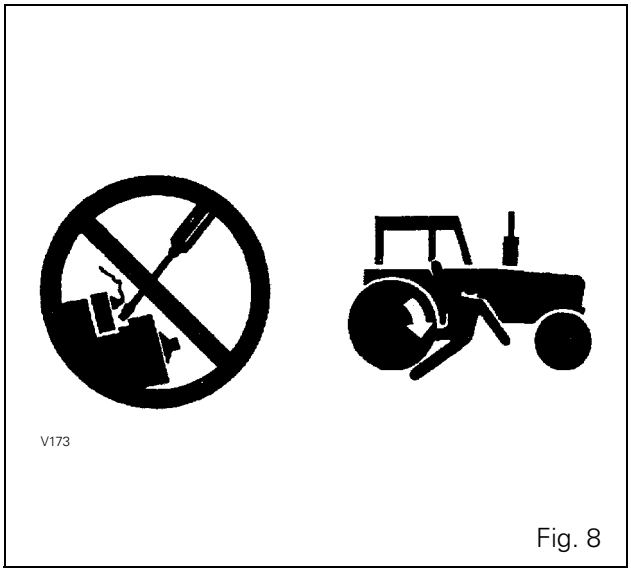


Fig. 8

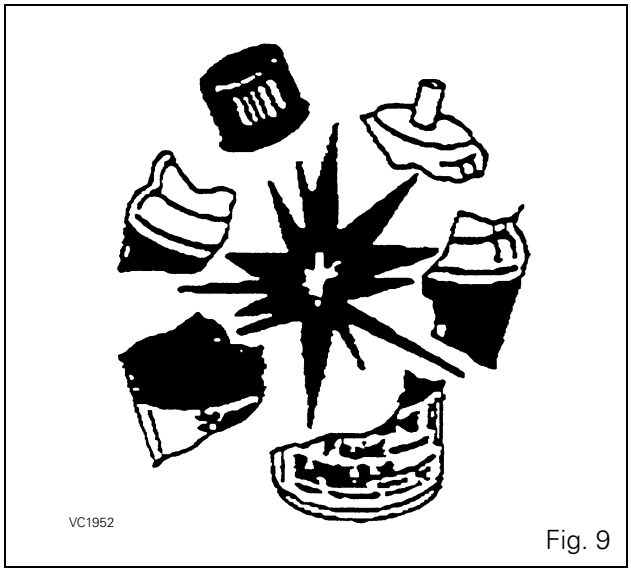


Fig. 9

2.12.4 - Follow recommended start-up procedures

Follow the start-up procedures recommended in the Operation chapter of this Operator instruction Book. This chapter includes normal starting, cold starting, and the use of starting fluids.

2.12.5 - Controls test

After starting, check all gauges and lights again. Make sure everything is functioning correctly. If the tractor does not respond correctly when each control is operated, **DO NOT USE** the machine until the fault is remedied.

Ensure that the starter solenoid cover is always in position.

2.12.6 - Starting fluid

WARNING: It is very important that you read and follow the starter fluid instructions before using it. DO NOT use aerosol cans of starter fluid on tractors with the thermostart connected to the electrical system. Ether combined with thermostart can cause an explosion with damage to engine, personal injury, or both.

Handle starting fluid correctly. Starting fluid must only be used in conjunction with an ether-start aid fitted as original equipment by the manufacturer or installed by a Dealer as an accessory. In cases of tractors being fitted with glow plugs or a thermostart, these must be removed prior to the installation of an ether-start aid (Fig. 9).

If aerosol cans of starting fluid are to be used the thermostart must be disconnected. Remove the wire from the thermostart which will be found on the manifold. Tape the end of the wire to prevent an electrical short circuit.

2.13 - WORKING SAFELY

WARNING: An unbalanced tractor could overturn and cause injury or death.

Make sure front frame counterweights, wheel weights and wheel ballast are used as recommended by the manufacturer. DO NOT add extra counterweights to compensate for an overloaded tractor; it is recommended to reduce the load. Keep all parts of your body inside the cab while operating the tractor.

2.13.1 - Make the right moves

Ensure that the tractor is ready for the work to be carried out. Make sure you know the tractor nominal load capacities and never exceed them. Be certain that any equipment or implements you intend to use **DO NOT EXCEED** the load rating of your tractor. Be sure the tractor and implement PTO speeds match.

Keep in mind that tractors normally operate on uneven, unpaved, and often bumpy or sloping surfaces. Operating conditions can reduce the amount of weight you should carry or pull.

2.13.2 - Safety instructions to be observed

- Operate the controls smoothly - don't jerk the steering wheel or other controls.
- **NEVER** get on or off a moving tractor. Keep a firm grip on the steering wheel at all times, with the thumbs clear of the spokes when driving the tractor.
- Make sure you have adequate clearance in all directions for the tractor and implement.
- **DO NOT** play with a tractor or equipment. Use only for intended purpose.
- **DO NOT** attempt to work the controls except from the driver's seat.
- Before getting off, always disengage the PTO, lower all attachments and implements to the ground, place the tractor in neutral, engage handbrake, shut off the engine and remove the ignition key.

NOTE: DO NOT TOUCH, lean on, or reach through any implement mechanism or permit others to do so.

Stay alert! If a part breaks, loosens or does not operate correctly, stop work, switch off the engine, check the machine and carry out any necessary adjustments or repairs before resuming work.

2.13.3 - Safety of bystanders

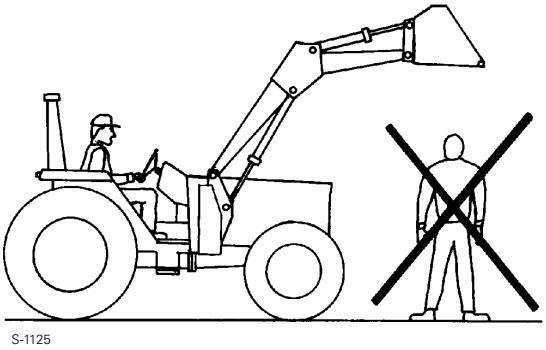
Watch out for others. **DO NOT** allow inexperienced or unqualified people to operate the tractor. They may cause injury to themselves or to others.

WARNING: A tractor is a personal piece of machinery. Do not allow others to drive the tractor or to use the implement (Fig. 10). DO NOT ALLOW another person to get on the implements or any other equipment, including trailers, except in the case of harvesters specially designed for this purpose (for the harvest itself and not for transport purposes). Space should be provided on such equipment so that this type of transport can be carried out in complete safety. DO NOT ALLOW children on the tractor.

V176

Fig. 10

- **Be certain you can control both speed and steering before moving**. Move slowly until you are sure that everything is operating properly. After starting, recheck the steering, right and left. Be certain you have full steering and brake control. If differential is locked, **DO NOT** operate at high speed or turn the tractor until the differential lock is disengaged.
- **DO NOT LIFT** a load over anyone.
- Keep others away from the working area. **DO NOT ALLOW** others to stand beside or walk beneath a raised implement (Fig. 11).



S-1125

Fig. 11

- **DO NOT** lift objects that do not fit safely into the bucket. Obtain the correct equipment.
- When using a loader, avoid sudden stops, starts, turns, or change of direction. Keep loads close to the ground when transporting.
- **DO NOT** stand (or allow anyone else to stand) in front of, under, or behind loaded or loading equipment. **DO NOT DRIVE** a tractor up to someone standing in front of a fixed object.
- Keep others away from universal joints, hitches, drawbars, lift arms, PTO shafts, cylinders, belts, pulleys, and other moving parts. Keep all shields and guards in place.

WARNING: DO NOT STAND, or allow anyone else to stand, between the tractor and implement unless the engine is turned off and the handbrake is engaged, the transmission control lever is in neutral, and all attachments or implements are lowered to the ground.

2.13.4 - Risk of overturning

In the event of an overturn with a tractor fitted with a cab, hold the steering wheel firmly and do not attempt to leave the seat until the tractor has come to a standstill (Fig. 12). If the doors of the cab are obstructed, leave through the rear window or roof hatch.

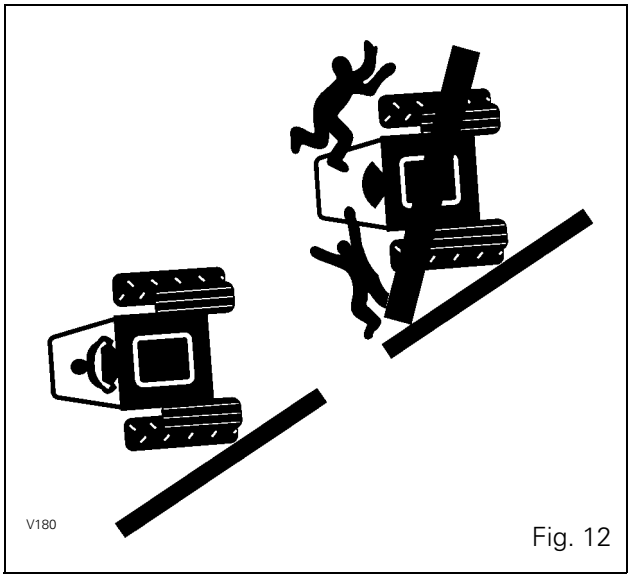


Fig. 12

Fig. 13: Do not operate near the edge of ditches or banks. The distance from the edge should always be equal to or greater than the height of the bank, to prevent it from collapsing.

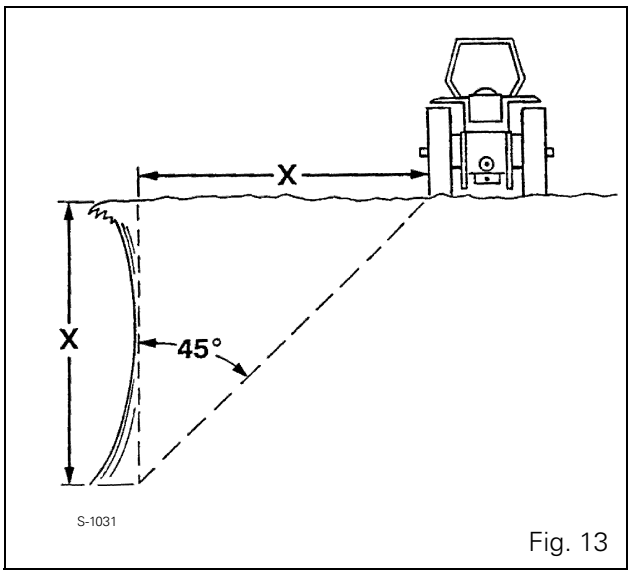


Fig. 13

2.13.5 - To avoid side overturns

- Set the wheel track at the widest setting suitable for the work being done.
- Lock the brake pedals together before driving at transport speeds.
- Reduce speed to match operating conditions. If the tractor is equipped with a front-end loader, carry the bucket and load as low as possible.
- Make wide slow turns at reduced speed. Don't let your tractor bounce. You may lose steering control.
- Don't pull a load too heavy for your tractor. It could run down the slope or the tractor could jackknife around a towed load.
- Don't brake suddenly. Apply brakes smoothly and gradually.
- When driving down a slope, use the gas control to slow the tractor engine and choose the same gear ratio as used when climbing a slope. Shift into gear before you start downhill.
- Engage four-wheel drive (if fitted), this will give four-wheel braking.

WARNING: DO NOT disengage the clutch or attempt to shift gear after you have started downhill.

- The tractor is less likely to turn over if you drive up or down a steep slope rather than driving across it.
- Avoid steep slopes whenever possible. If this is not possible, avoid holes and dips when driving downhill. Avoid stumps, stones, bumps and raised areas when driving uphill. Keep the tractor behind the shear line when working close to ditches or banks. (Fig. 13). Avoid ditches, banks and riversides which might give way.
- When you must drive on a steep slope, avoid turning at the top of the slope. Slow down and turn in a wide turning circle. Drive straight on uphill or downhill slopes, and never drive across them. Keep the heavier end of the tractor facing towards the top of the slope when driving up and down it.
- If a tractor fitted with lateral implements is used on a steep slope, the implement must always face up the slope. Do not raise implements. Keep them as low to the ground as possible when crossing a slope.
- When towing a load at transport speed, lock the drawbar in the centre position and use a safety chain.
- DO NOT use your tractor to round up farm animals.

2.13.6 - To avoid rear overturns

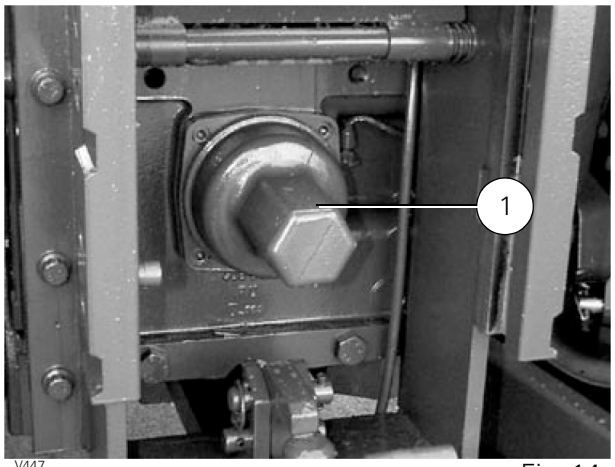
WARNING: Hitching to the rear axle, or any other point above the swinging drawbar, can cause a rear overturn.

- **DO NOT PULL** anything using the top link connection, or from any point on the rear axle or above. Always use an approved AGCO drawbar, and only use a drawbar pin of the correct size and that can be locked in place.
- High hitching can cause rear overturn, which may cause serious injury or death. Hitch loads to the drawbar only.
- Only use a three-point linkage drawbar when stays are fitted to keep it in the down position.
- Use front counterweights to increase tractor stability when towing a heavy load or to counterbalance a heavy rear mounted implement.
- Start forward slowly and gradually increase your speed. **DO NOT** reverse or release the clutch. If the tractor is attached to a heavy load or immovable object, improper clutching may cause rear overturn.
- If the front end of the tractor starts to lift, reduce your speed and, if necessary, disengage the clutch.
- If your tractor is bogged down in mud or frozen to the ground, **DO NOT** attempt to drive forward. The tractor can rotate around its rear wheels and overturn. Lift any attached implement and attempt to **BACK OUT**. If this is not possible, tow it out with another vehicle.

- If you get stuck in a ditch, **BACK OUT**, if possible. If you must go forward, do so slowly and carefully.
- A bare tractor or tractor with rear mounted attachments should be backed up the slope in reverse and travel forward downhill.
- A tractor with a loaded front-end bucket should be backed down the slope and travel forward uphill. Keep the loader bucket as low as possible.
- Always keep the tractor in gear when going downhill. **DO NOT PERMIT** the tractor to coast with clutch disengaged or transmission in neutral.

2.13.7 - Other risks

- Ensure that the PTO shield (1) is in place when the PTO driveline is not in use (Fig. 14).



V447 Fig. 14

- Before attaching, detaching, cleaning or adjusting PTO driven implements, disengage the PTO, stop the engine, remove the ignition key, and make sure that the PTO transmission shaft has stopped.
- Ensure that all the PTO transmission shaft guards and shields are in place and check the presence of all safety decals (Fig. 15).
- Be sure everyone is clear of your machine before engaging the PTO. For stationary PTO operation, always place transmission control lever in neutral, engage handbrake, and chock both tractor and implement wheels.
- When operating mobile PTO driven equipment, **DO NOT** leave the tractor seat until the PTO drive is disengaged, the transmission is in neutral, the handbrake is engaged, the engine shut off and the ignition key removed.
- **DO NOT** use PTO adapters, reducers or extensions as they extend the PTO coupler and universal joint out beyond the protection offered by the PTO shield.

V177 Fig. 15

- The deployment of drawbars and hitches must not allow the threads to show.

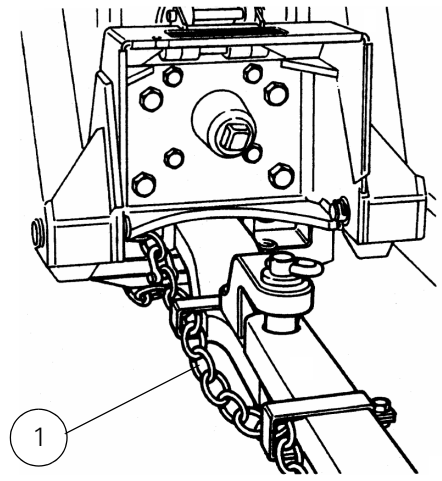
DANGER: DO NOT attempt to unplug the hydraulic connections, or adjust an implement with the engine running or the PTO drive in operation. To do so may result in serious injury or death.

- When using chemicals, carefully follow the chemical manufacturer's instructions for use, storage and disposal. Also follow the chemical application equipment manufacturer's instructions.
- When operating under poor visibility conditions, or in the dark, use your tractor work headlights and reduce your ground speed (**DO NOT** use your work headlights when travelling on a roadway because rear pointed white lights are illegal except when reversing and may confuse following drivers).
- Operate the tractor with suitable track width and tyre type for the work to be carried out. To adjust track width, see chapter Maintenance and Adjustments.
- Reduce your speed when operating over rough or slippery ground and when foliage restricts your view of hazards.
- **DO NOT** make sharp turns at high speed.

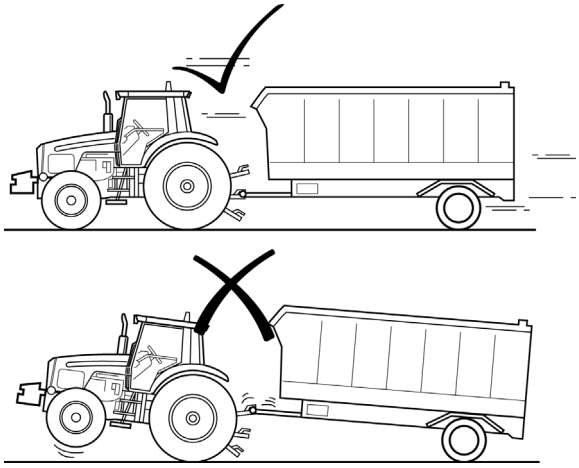
2.13.8 - Implements and attachments

WARNING: A front-end loader (bucket or forks) must be equipped with a suitable holding device to prevent the load (bales, fence posts, rolls of fence, wire etc.) from rolling down the lift arms into the driver's compartment and crushing the driver when the loader is raised. Inadequately secured objects could also fall and injure bystanders.

- Three-point hitch and side mounted implements make a much larger arc when turning than towed equipment-. Make certain to maintain sufficient clearance for turning. Use only AGCO approved equipment.
- When using attachments or implements with the tractor, be sure to read and understand the instructions in the Operator Instruction Book for that attachment or implement and follow its safety instructions. Use only AGCO approved attachments and implements.
- **DO NOT** overload a towed attachment or equipment. Use proper counterweights to maintain tractor stability. Hitch loads to the drawbar only.
- A transport chain 1 will help control drawn equipment should it be accidentally separated from the drawbar while transporting. Using the appropriate adapter parts, attach the chain to the tractor's safety chain anchor or any other specified anchor point. Provide only enough slack in the chain to permit turning. Contact your AGCO dealer for a chain of equal or greater strength than the weight of the trailed implement (Fig. 16).
- Ensure that all trailed implements are fitted with a safety chain linking the tractor to the implement, if required by law (Fig. 16).
- Pull only from the approved drawbars. Towing or attaching to other locations may cause the tractor to overturn (Fig. 17).



V654 Fig. 16



V720 Fig. 17

2.13.9 - Safety measures when towing

- For towed equipment **WITHOUT** brakes, **DO NOT** tow equipment:
  - at speeds exceeding the speed limits in force in the relevant country,
  - that, when fully loaded, weighs more than 1.5 times the weight of the trailer.
- For towed equipment **WITH BRAKES, DO NOT** tow equipment:
  - at speeds exceeding the speed limits in force in the relevant country,
  - that, when fully loaded, weighs more than 4.5 times the weight of the trailer.

NOTE: The tractor requires correct trailer braking system installed and connected to the equipment.

Stopping distance increases with speed and weight of towed loads, and on hills and slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its load.

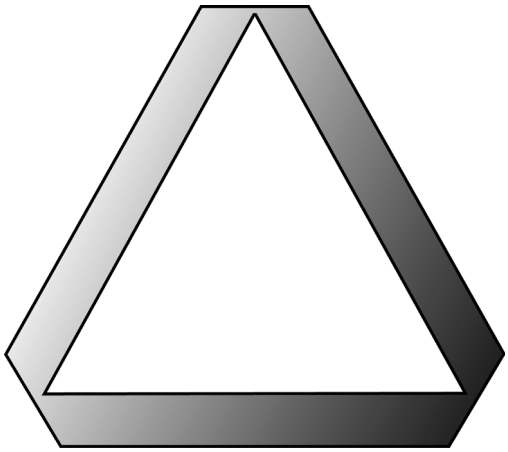
2.13.10 - Tractor Towing

WARNING: Towing: When towing a tractor, it is imperative that the tractor engine is running and the transmission high range (Hare) selected to provide lubrication to the gearbox.

2.13.11 - Road use

Take the following precautions before using the tractor on a public road.

- Respect national laws and local regulations in force relating to tractor use.
- Lock the brake pedals together.
- Place all implements in transport position and lock.
- Place all implements into their narrowest transport configuration.
- Disengage the PTO and differential lock.
- Make sure any required clearance flags or hazard warning lights are in place and in working order.
- Clean off all reflectors and road lights, front and rear, and be certain they are in working order.
- Ensure that the tractor and equipment is fitted with emergency warning triangles and other markings recommended to improve visibility when driving on roads, unless otherwise indicated (Fig. 18).



V002

Fig. 18

2.13.12 - Highway code

When operating your tractor on a public road the following precautions must be taken.

WARNING: NEVER allow any persons to ride on the tractor or on the towed equipment.

- Know the road you are going to travel.
- Turn on flashing warning lights when travelling on roads, day or night, unless prohibited by law.
- Take care when towing a load at transport speeds, especially if the towed equipment is NOT equipped with brakes.
- Observe all local or national regulations regarding the road speed of your tractor.
- Use extreme caution when transporting 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 pass at any intersection.
- Slow down for turns and curves.
- Make wide, gentle turns.
- Signal your intent to slow, stop or turn.
- Shift to a lower gear before going up or down hills.
- Keep tractor in gear. Do not coast with the clutch disengaged or transmission in neutral.
- Stay out of the path of oncoming traffic.
- Drive in your correct lane keeping as near to the curb as possible.
- If traffic builds up behind you, pull off the road and let it go by.
- Drive carefully. Anticipate what other drivers might do.
- When towing a load, start braking sooner than normal and slow down gradually.
- Watch out for overhead obstructions.

- Make sure load does not obscure hazard warning or transport lights.

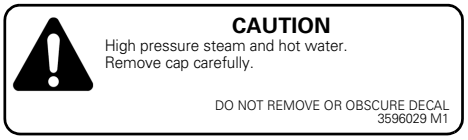
2.14 - SAFETY - AFTER OPERATION

Whenever stopping, bring the tractor to a complete halt, apply the parking brake, disengage the PTO, **place the gear shift lever (1-2-3-4) and the PowerShuttle lever in neutral position**, lower the implement to the ground, stop the engine and remove the ignition key **BEFORE** leaving the seat.

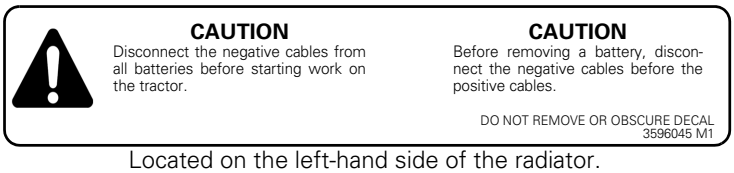
DANGER: PowerShuttle: Always place the gear shift lever and PowerShuttle lever in NEUTRAL position before leaving the seat.

Remove ignition key if the tractor is to be left unattended.

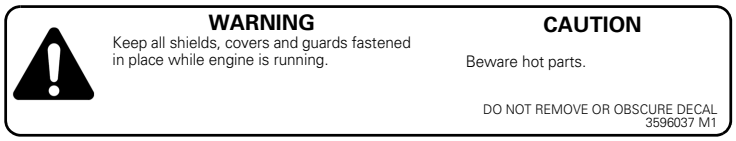
Description of decals



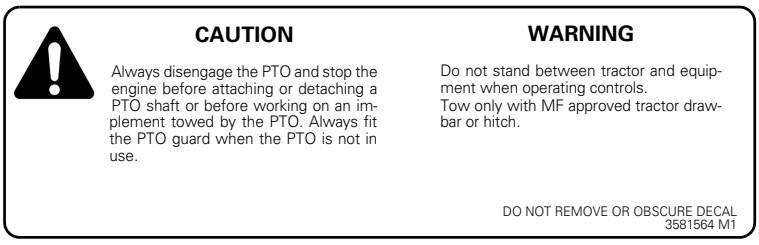
Located on top of the bonnet (access to radiator cap)



Located on the left-hand side of the radiator.

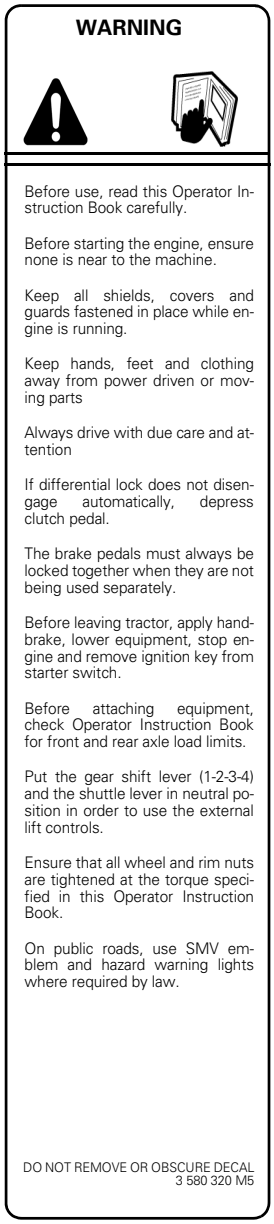


Located on the right- and left-hand sides of the bonnet

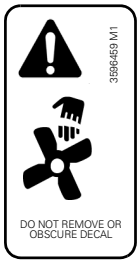


Located at the rear of the tractor

Located on the RH inner column of the cab

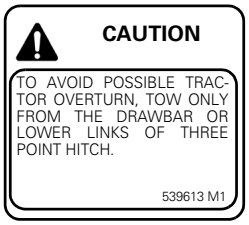


Located on the RH inner column of the cab



Located to the left and right of the radiator.

Located on the seat belt

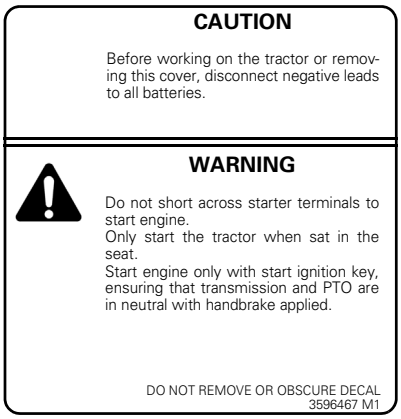


Located on the fenders to the rear of the cab

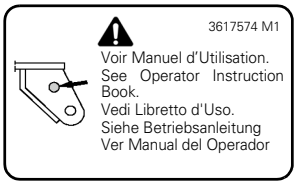
Located on the RH inner column of the cab

3777021M2

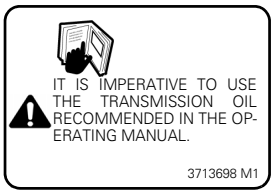
Located on the accumulator.



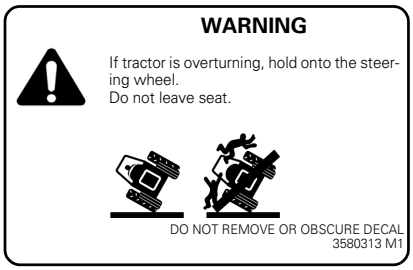
Located on the starter motor.



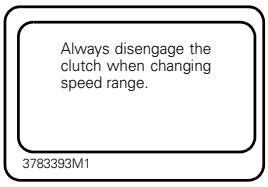
Located on the fenders to the rear of the cab



Located on the fenders to the rear of the cab



Located at the rear of the passenger seat.



Located on the RH on the right-hand pillar.

Chapter 3

INSTRUMENTS AND CONTROLS

CONTENTS

INSTRUMENT PANEL

Fig. 1

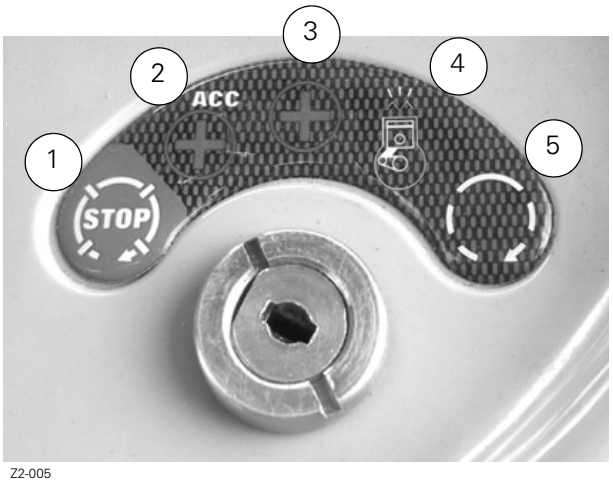
3.1 - INSTRUMENT PANEL

(Fig. 1)

1. Starter switch (See details in Fig. 2).
   1. Stop.
   2. Contact position for electrical equipment to be used when the engine is not running.
   3. Contact position for electrical equipment used when the engine is running.
   4. Preheating
   5. Start.

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).

2. Control unit (see details in Fig. 3).
   This assembly is comprised of the steering change, windscreen wiper, front and rear windscreen washer and horn indicator functions.
3. PowerShuttle control (option).
4. Steering wheel adjustment (see details in Fig. 6).
5. Indicator light panel.
   See details (Fig. 4)
6. Tachometer.
   The tachometer shows the engine speed in hundreds of revolutions per minute. The hourmeter shows the actual work time.
7. Fuel gauge.
8. Engine coolant temperature gauge.
   The green zone shows the normal operating temperature range. Stop the engine if the needle moves into the red zone.
9. Reverse shuttle reverse indicator light (PowerShuttle only).
10. Reverse shuttle forward indicator light (PowerShuttle only).
11. PTO speed digital display.
12. Ground speed digital display.
13. Sidelights and dipped lights.
14. Rear work headlights (operation possible when sidelights are switched on).
15. Front work headlights (operation possible when sidelights are switched on).
16. Hazard warning lights and control switch.
    When this button is pressed, the front and rear flashing lights and corresponding indicator lights come on.
17. Mechanical reverse shuttle control.
18. Flashing beacon switch (platform version only).

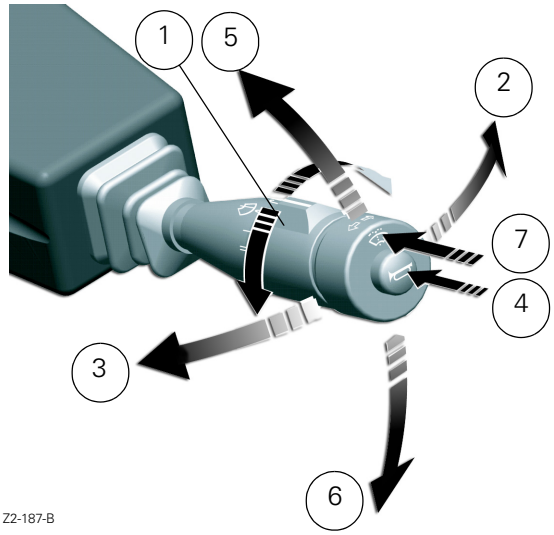


Z2-005

Fig. 2

Legend:

1. Windscreen wiper
   - I. On
   - 0. Off
2. Left-hand direction indicator
3. Right-hand direction indicator
4. Horn
5. Headlights flash
6. Headlights
7. Rear and front windscreen washer



Z2-187-B

Fig. 3

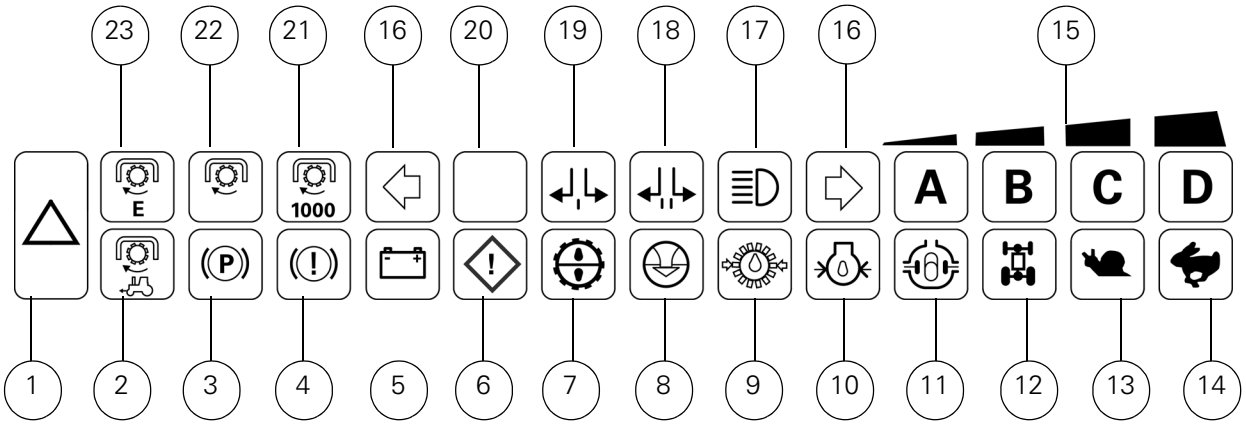


Fig. 4

3.2 - INDICATOR LIGHTS PANEL

(Fig. 4)

1. Failure warning indicator light (red).
   Lights up at the same time as warning lights (red). If it comes on, stop the tractor immediately and find the cause of the failure.
2. Proportional power take-off engaged indicator light (yellow).
3. Parking brake indicator light (red)
4. Not used.
5. Alternator charge indicator light (red).
   This charge indicator light comes on when the ignition key is in **on** position, but the engine is not running. It should switch off when the engine is running and the ignition key has returned to **on** position. If the indicator light comes on when the engine is running, stop the engine and find the cause of the failure or consult your dealer.
6. Failure warning indicator light.
7. 15-micron transmission oil filter clogging indicator light or 150-micron strainer clogging indicator light (red).
   If this indicator light stays on after starting the engine, **immediately stop** the engine, and check the lubricating filter and circuit. If the problem remains after replacing the filter, consult your dealer.
8. Air filter clogging indicator light (red).
9. 17 bar low pressure oil pressure indicator light (red).
   If this indicator light comes on during operation, consult your dealer.
10. Engine oil pressure indicator light (red).
    This indicator light comes on when the ignition key is in **on** 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 find out the cause of the low pressure or consult your dealer.
11. Differential lock indicator light (yellow).
12. 4WD engaged indicator light (green).
13. Creeper gear operating indicator light (green) (if fitted).
14. High speed range indicator light (Hare).
15. Speed range indicator lights (green) depending on assembly.
    Speedshift: C and D only.
16. Direction indicator lights (green).
17. Headlight indicator light (blue).
18. Direction indicator light for the second trailer (green).
19. Direction indicator light for the first trailer (green).
20. Not used.
21. 1000 rpm power take-off engaged indicator light (yellow).
22. 540 rpm power take-off engaged indicator light (yellow).
23. LSPTO engaged indicator light (yellow) (if fitted).

3.3 - PEDALS

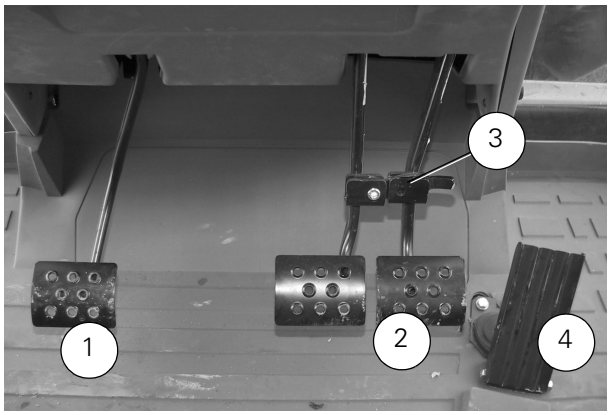
(Fig. 5)

1. Clutch pedal.
   This is fitted with a safety start switch. Fully depress the clutch pedal before operating the ignition key.

NOTE: Do not keep the clutch pedal pressed fully or half down.

2. Brake pedals.
   The two brake pedals can either be used separately or locked together using latch 3.
3. Brake pedals locking latch.
4. Foot throttle.
   Use of the foot throttle enables a momentary increase in the engine speed set by the hand throttle lever.

CAUTION: When travelling on the road only the foot throttle should be used, and the hand throttle lever should be brought to the idle position so that engine braking can be operational.



Z2-202-03-03

Fig. 5

3.4 - STEERING WHEEL

(Fig. 6)

The steering wheel angle and height can be adjusted (except platform versions). Both adjustments are made by a single lever.

- Height adjustment: pull the lever upwards to adjust the height (1 Fig. 6)
- Angle adjustment: press the lever to adjust the angle (2 Fig. 6)

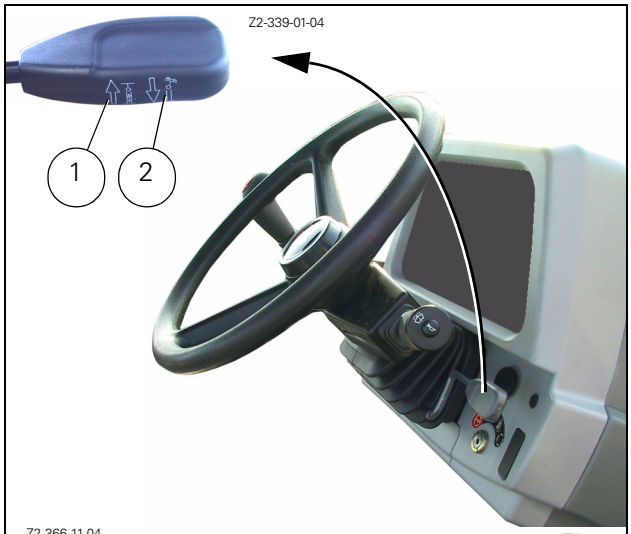


Fig. 6

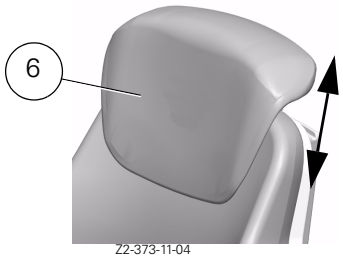
Mechanical suspension seat, flat floor cab

Pneumatic suspension seat, flat floor cab

Mechanical suspension seat, low cab floor

Pneumatic suspension seat, low cab floor

Mechanical suspension seat, platform tractors



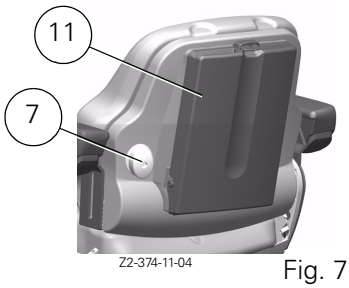


Fig. 7

3.5 - SEAT

Several seat models (Fig. 7) are fitted depending on the cab options and type.

1. Weight adjustment :
   Your seat should be adjusted to your weight. Weight is indicated by the reference (10).
   - **pneumatic suspension seat :**
     Press or pull the adjusting handle to increase or decrease the weight. Adjustment should take place with the driver in the seat.

NOTE: In order to avoid damage, do not operate compressor for more than 1 minute.

   - **mechanical suspension seat :**
     Turn the lever to increase or decrease the weight. Adjustment should take place without the driver in the seat.

NOTE: To prevent damage to the health, the setting for the driver's weight must be checked and adjusted as necessary before the vehicle is driven.

2. Height adjustment :
   Once the weight has been set, adjust the seat height.
   - **pneumatic suspension seat :**
     Press or pull the adjusting handle to increase or decrease the height.
   - **mechanical suspension seat :**
     Turn the lever to increase or decrease the height.
3. Longitudinal adjustment :
   Raise the lever, adjust the longitudinal position then release the lever.
4. Backrest angle adjustment :
   Pull the lever, adjust the angle then release the lever.
5. Seat rotation adjustment :
   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°.
   If you pull more strongly to overcome the resistance the swivel is unlocked and you can turn freely. For locking push back lever again.
   The locking lever must latch audibly into place. The swivel should be in the central position for driving.
6. Backrest extension :
   Adjust the backrest extension height by raising or lowering it to its stop (it audibly clicks into its adjustment notches).
   The backrest extension can be removed by pulling it upwards past its stop.
7. Lumbar support adjustment :
   Adjust the lumbar support by turning the handle to either the left or right.
8. Fore/aft isolator :
   Under certain driving conditions (with a trailer attached), it is useful to activate the fore/aft isolator. This means that shock impacts in the driving direction can be better absorbed by the seat.
9. Armrest angle adjustment :
   If required, the armrests can be folded up and the height adjusted by turning the armrest thumb wheels.
10. Height/weight adjustment indicator light
11. Storage space for books and user instructions

WARNING: Do not adjust seat when tractor is moving.

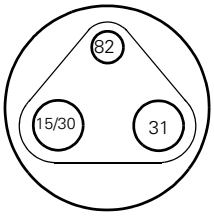

14
13
Z2-276-05-03
60
(2.4")
120
(4.7")
60
(2.4")
7
12
8
Z2-289-06-03
9
Z2-316-09-03
Z2-287-06-03
3
16
AUTO
5
4
Z2-288-06-03
6
10
18
17
1
15
Z2-282-05-03
20
2
3
19
Z2-349-05-04
540
1000
Z2-348-05-04
Z2-227-10-03
11
Z2-200-08-03

Fig. 8

3.6 - RIGHT-HAND CONSOLE

(Fig. 8)

1. Hand throttle lever
2. Gear shift lever
3. Electronic linkage control.
4. External hydraulic spool valve control levers.
5. 4WD and differential lock switch.
6. 540/1000 rpm rear PTO switch.
7. Power socket for connection of accessories.
   Maximum available power:
   15/30 "+" Permanently live (25 Amp).
   82 "+" Only live with ignition key in the "on" position (5 Amp).
   31 "-" negative.



8. Diagnostics connector.
9. DIN attachment points for additional control unit and storage tray.
10. LSPTO lever (if fitted).
11. Creeper gear lever (if fitted).
12. Cigarette lighter.
13. Flashing beacon switch.
14. Rear wiper switch (if fitted).
15. Auto-hitch control switch (if fitted).
16. Auto-hitch release lever.
17. Speedshift control button.
18. High / low speed control button.
19. PTO speed display selector switch (540 / 1000).
20. Hydraulic pump coupling switch (if fitted).

3.7 - LEFT-HAND CONSOLE

(Fig. 9)

21. Handbrake lever.
22. Passenger seat (option).
23. Storage bin.
24. Can carrier.
25. Bottle carrier.

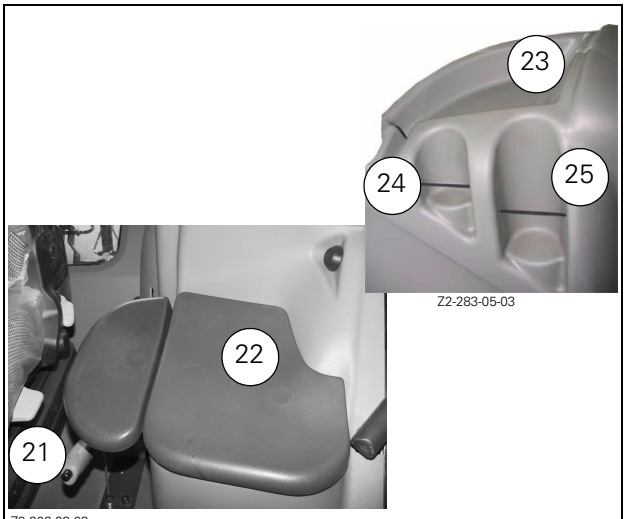
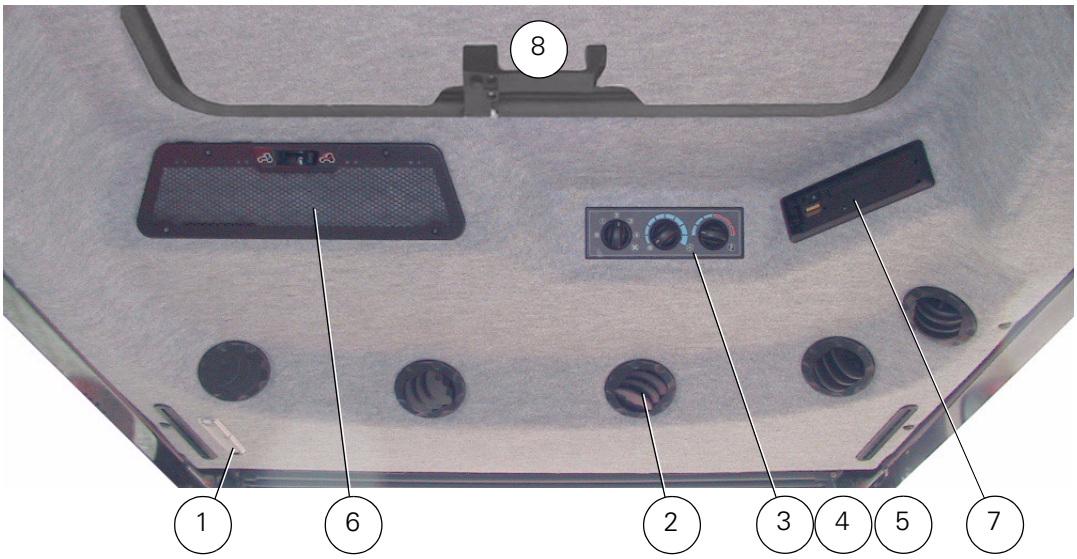


Fig. 9

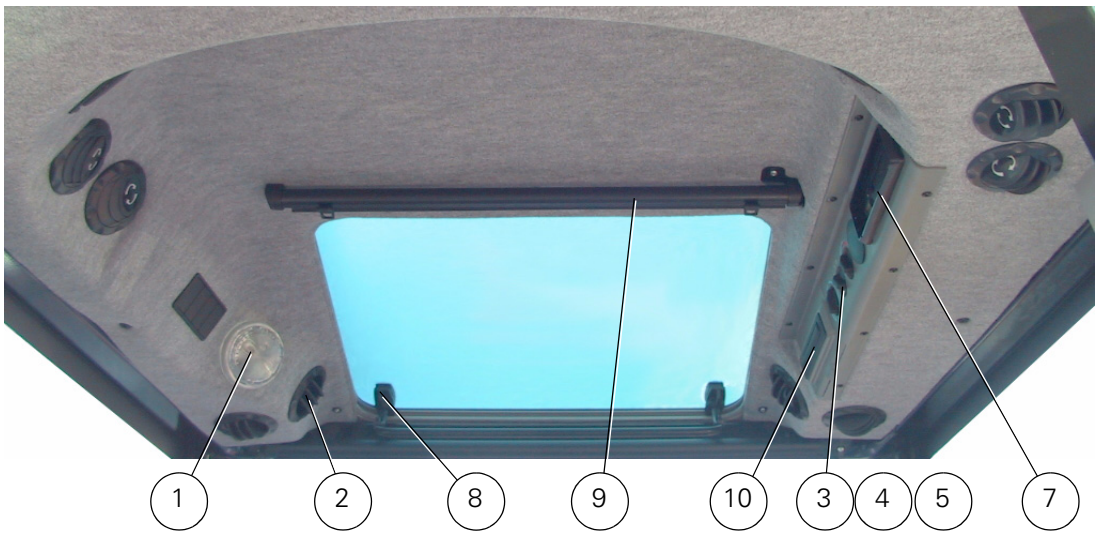
Z2-361-10-04

Standard roof



Z2-396-12-04

High-visibility roof



Z2-375-11-04

Flat roof

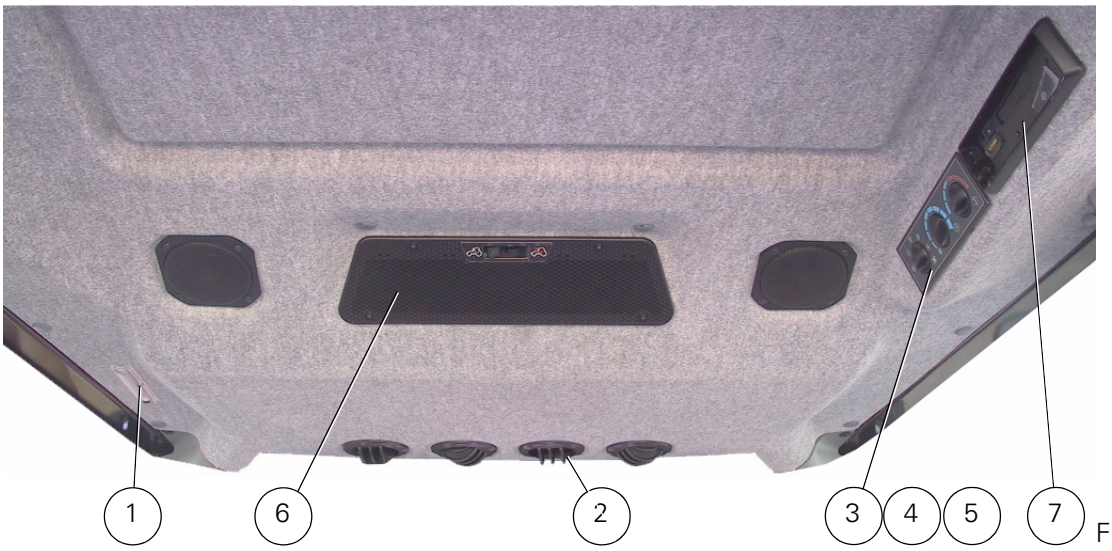
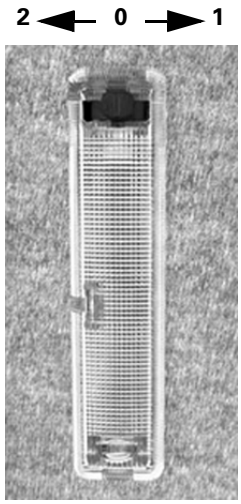


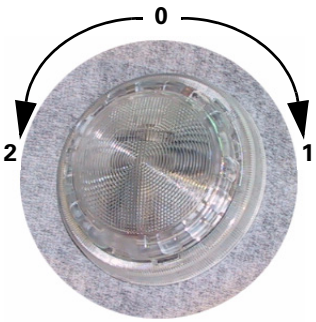
Fig. 10

3.8 - UPPER CONSOLE

1. Interior light.
   By activating the 3-position switch or rotating the 3-position knob (high-visibility roof) (Fig. 11):
   0 - off position.
   1 - light comes on when opening the left-hand door.
   2 - permanently on.
2. Adjustable air circulation vents.
3. Air conditioning control knob (see detail Fig. 14).
4. Heater controls (see detail Fig. 14):
   Blue = cold
   Red = warm
5. Ventilator / heater fan control (3 or 4 speeds) (see detail Fig. 14).
6. Adjustable ventilation grille (see detail Fig. 12).
   A: Outside air intake
   B: Recycling
7. Radio (if fitted).
8. Roof hatch (see detail Fig. 16).
9. Roof sun visor (high-visibility roof only).
10. Chilled compartment (high-visibility roof only) see detail Fig. 13).
    A: Chilled compartment
    B: Adjustable ventilation grille

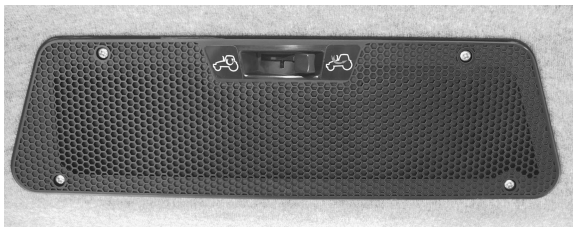


Z2-216-11-04



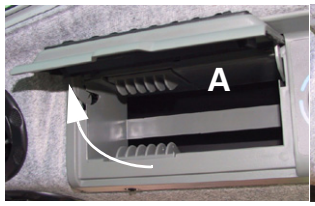
Z2-376-11-04

Fig. 11

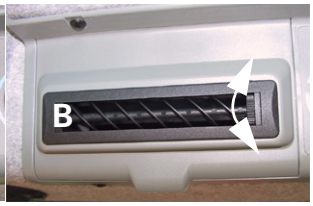

Z2-217-03-03

Z2-218-03-03

Fig. 12



Z2-404-12-04



Z2-405-12-04


Z2-403-12-04

Fig. 13

3.8.1 - Air conditioning system

IMPORTANT: When the air conditioning system is in use, the cab doors and windows should 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.

Use:

Ensure the cab air filter is clean (see chapter 5).

- With the engine running, turn the knob 3 to cold (turn in clockwise direction until knob reaches limit).
- Move the fan switch 5 to fast position.
- When the required cab temperature is obtained, adjust the temperature control knob to maintain a comfortable temperature.
- Reduce the fan speed to obtain a comfortable temperature.

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.

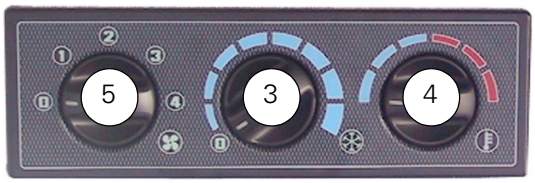
NOTE: If the air conditioning has not been used for some time, unlock the compressor before starting the engine, by rotating the pulley nut with a wrench.

CAUTION: To prevent seizure of the compressor and keep the cooling system in good condition, operate the air conditioning for a few minutes at least once a week even in winter.

HAVE THE FREON LEVEL IN THE CIRCUIT CHECKED ONCE A YEAR BY YOUR DEALER.

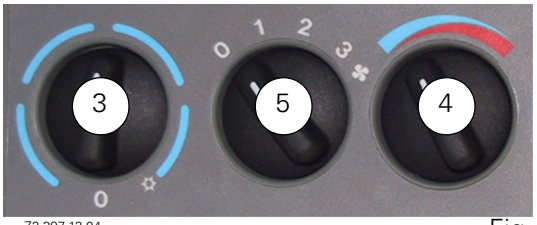
WARNING: Do not attempt to disassemble any part of the air conditioning system.

Standard and flat roof



Z2-377-11-04

High-visibility roof



Z2-397-12-04

Fig. 14

3.9 - SUN VISOR

(Fig. 15)
To adjust the visor pull vertically down to desired position. To raise visor pull cord (1).

Fig. 15

3.10 - ROOF HATCH

3.10.1 - Standard roof hatch

(Fig. 16)
This hatch is normally used to ventilate the cab. To fully open the hatch (emegency exit), push hard on the handle to force the gas cylinders from their holders. To close the hatch, pull it downwards and engage the gas ram rods in the supports.
NOTE: The hatch opening end can be changed (consult your dealer).

Fig. 16

3.10.2 - High visibility sunroof hatch

(Fig. 17)
The hatch is used to ventilate the cab. It is opened at the front by turning the two locks (1) located at either side of the sunroof.

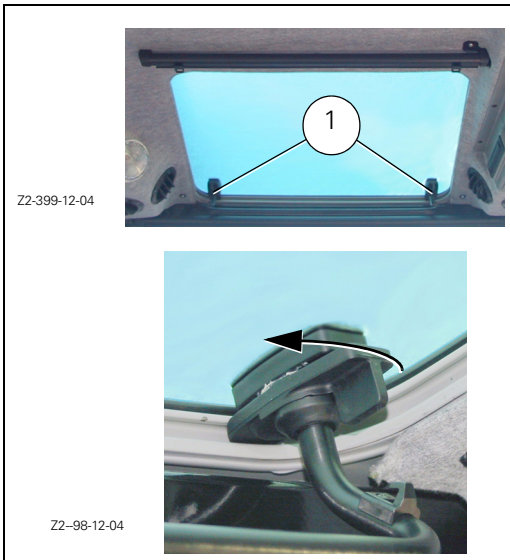


Fig. 17

3.11 - OPENING WINDSHIELD

(Fig. 18)
The windshield is opened by turning the handles (1) located to either side of the instrument panel. It can be locked in intermediate or fully open position by two rams.

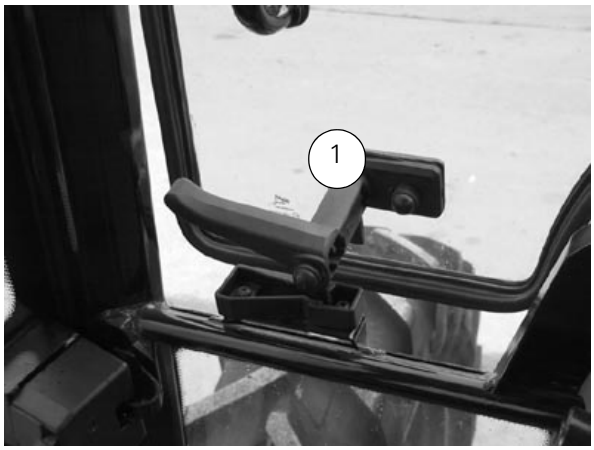


Fig. 18

Chapter 4

OPERATION

CONTENTS

4.1 - RUNNING IN

4.1.1 - The following precautions should be taken during the running in period

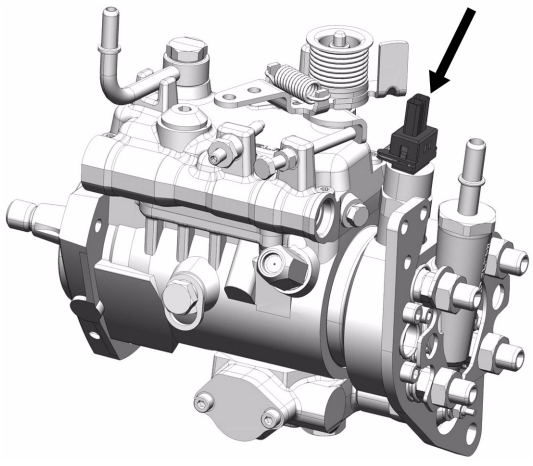
1. Experience has shown that the first 50 hours of tractor operation have a significant effect on the performance and life of the engine.
2. From the first operation, the tractor must run at almost full load of the engine. The engine should always be allowed to reach a temperature of 60°C (140°F) before being subjected to full load.
3. It is quite normal for oil consumption to be relatively high during the running in period. During running in therefore, check the engine oil level twice a day during the first 50 hours of operation to avoid the risk of lubrication failure.
4. During running in, frequently check the tightness of all nuts, bolts and screws. The wheel nuts must be retightened daily until their torque has stabilised (see chapter 5).

4.2 - START-UP

IMPORTANT: Before starting the tractor, refer to this Operator Instruction Book, chapter 5.

DANGER: Before starting, never run the engine in a closed space. Never run the engine unless you are sat at the steering wheel of the tractor.

CAUTION: After a long standstill, to ensure lubrication of the turbo-charger bearings run the engine on the starter for about ten seconds. To stop the engine starting, disconnect the wire (Fig. 1) or remove the F24 fuse (models with electronic injection).



Z2-337-01-04

Fig. 1

4.2.1 - Starting the engine

1. Fully press down the clutch pedal and put the gear shift lever and the shuttle lever in neutral position.
2. Put the throttle lever in maximum position.
3. Turn the ignition switch key to position 2. All indicator lights should come on. If one bulb has blown, replace it before starting the tractor.
4. Reduce engine speed when the engine has started running.

4.3 - STOPPING THE ENGINE

Reduce the engine speed to idling for a few seconds, then turn the ignition key to the "Stop" position.

CAUTION: Do not stop the turbocharger engine suddenly when the engine is running at high speeds, because the turbine will continue turning on its own but will no longer be lubricated. Slow the engine before stopping it.

Tractors fitted with wet clutch: When the engine has stopped, the wet clutch is in declutch position, and it is necessary to tighten the handbrake before leaving the driver's seat.

4.4 - DRIVING THE TRACTOR

4.4.1 - Foot throttle

The use of the foot throttle makes it possible to exceed the engine speed set by the hand throttle. When the foot throttle pedal is released, the engine speed 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 maintain it on the half of its travel.

Always descend slopes with the tractor in gear and the clutch engaged.

When turning on headlands with heavy, mounted implements, reduce engine speeds.

If the engine is not running steering is not power assisted.

4.4.2 - Selecting the correct gear ratio

Fig. 2. Select the ratio which gives the optimum fuel consumption without overloading the engine and the transmission. Bear in mind at the same time 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.

4.4.2.1 - Range shifting

To shift between "Hare" (indicator light (3) (Fig. 2) lit on the instrument panel) and "Tortoise" range, press and hold switch (1) (Fig. 2) of the gear lever until the required range is completely engaged.

NOTE: Do not rush when carrying out this manœuvre. Synchronised "Hare/Tortoise" range shifting is impossible at a speed exceeding 8 kph. "Tortoise/Hare" range shifting is impossible at a speed exceeding 13 kph.

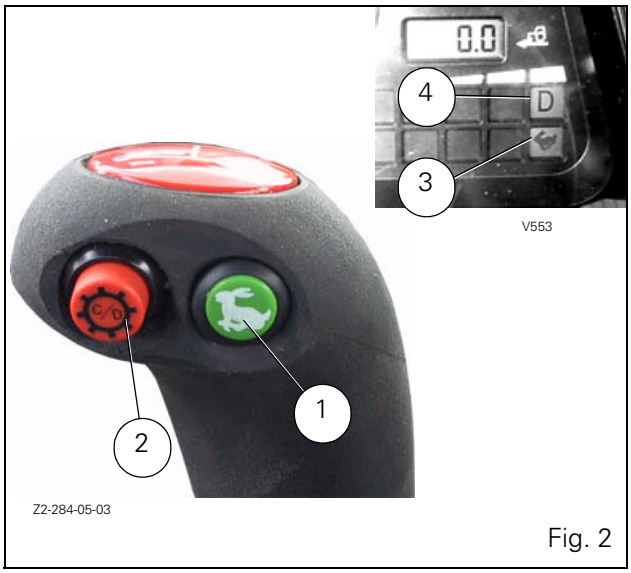


Fig. 2

4.4.3 - Speedshift

Each speed can be increased or decreased during travel by activating the "Speedshift" button (2 Fig. 2) without declutching. The indicator light of the engaged ratio (C or D) is displayed on the instrument panel (4) (Fig. 2).

The Speedshift should be used when the tractor needs additional draft for a short period of time.

CAUTION: Never use Speedshift as a brake.

Engine protection - The control unit prevents Speedshift from shifting from high to low range if engine speed exceeds 2400 rpm; in this case the corresponding indicator light flashes.

4.4.4 - Creeper gearbox

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

IMPORTANT: Creeper speeds 4:1 must only be used in Tortoise range. If used in Hare range, they would damage the transmission.

Super creeper speeds 14:1 can be used in Tortoise and Hare ranges.

Do not move the creeper speed lever except when the tractor is completely stationary. Do not use weights or water ballast when in creeper mode.

Under no circumstances should the creeper speeds be used to obtain a pulling force greater than that available in the normal range.

To avoid seizure of the system, move the lever at least once a month.

DANGER: Always place gear shift lever and shuttle lever in NEUTRAL before leaving driver's seat. Apply the handbrake.

NOTE: If the tractor is working in conditions where water comes higher than the wheel hubs, corrosion damage can occur to some of the components. Consult your dealer or agent for sealing precautions. Failure to do so can invalidate the warranty.

4.4.5 - PowerShuttle (depending on model)

Control located to the left of the steering wheel (Fig. 3)

The PowerShuttle control is used to quickly change direction of travel (forward or reverse).

Use:

- PowerShuttle: Move the PowerShuttle control, ref. 1, to the required direction of operation. The corresponding indicator light comes on. When the tractor is travelling, each change to the direction is with the control, ref.1, without declutching.

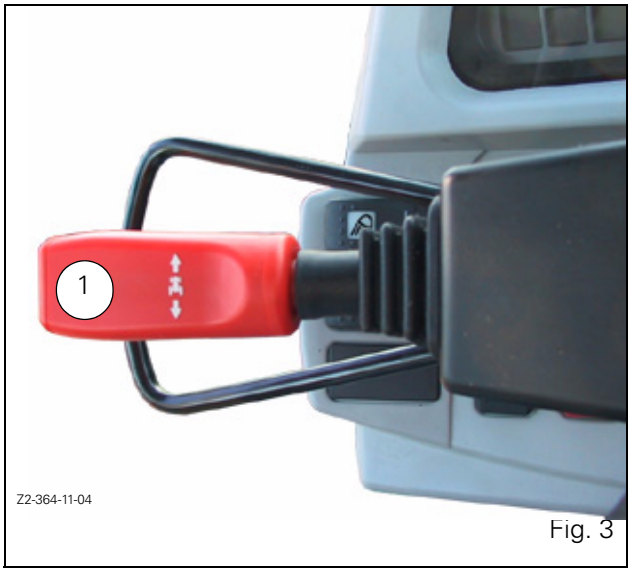


Fig. 3

NOTE: It is recommended to use the clutch pedal when the tractor is loaded and for all precise manoeuvring (attachment of implements, etc.).

DANGER: Always place gear shift lever and shuttle lever in NEUTRAL before leaving driver's seat. Apply the handbrake.

4.5 - BRAKES

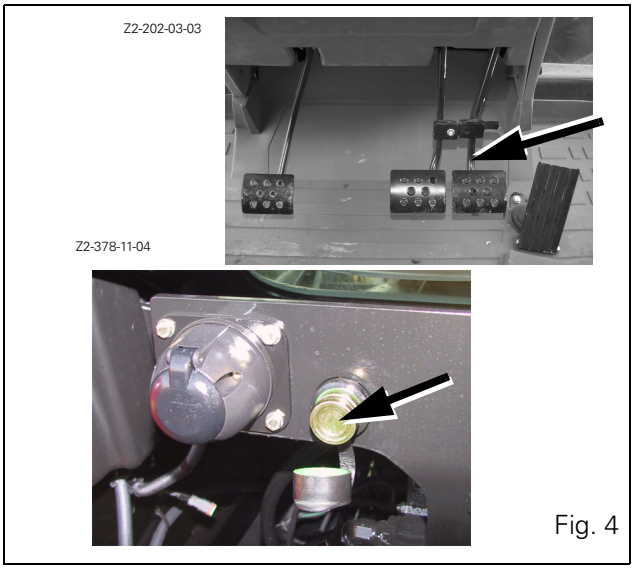
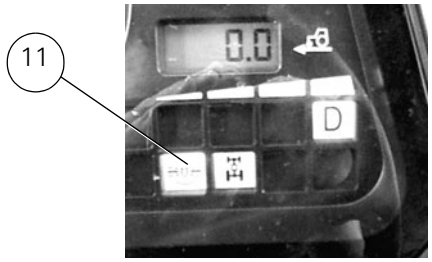


Fig. 4

DANGER: When driving at speed or on the road, the two brake pedals must be locked together (Fig. 4). Only the foot throttle should be used, and the throttle lever must be in neutral position.

WARNING: Trailer brakes (Fig. 4). To activate the trailer brakes, connect the trailer hose to the union at the back of the tractor and lock the brake pedals together.

4.6 - DIFFERENTIAL LOCK



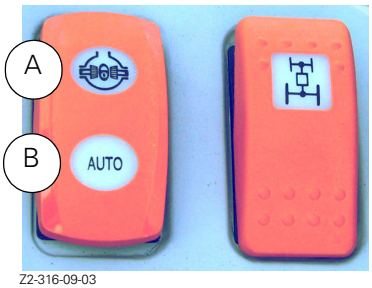


Fig. 5

A. If wheel spin is anticipated, press on differential lock switch A. The corresponding indicator light 11 (Fig. 5) comes on. For optimum performance, engage the differential lock when starting a run.

B. In automatic operation mode, press button B of the differential lock. In this case the differential is locked when the linkage is in lowered position, and is released automatically when the linkage is in raised position.

DO NOT engage the differential lock when a wheel is slipping.

4.7 - POWER TAKE-OFF

Fig. 6

The PTO can be engaged and disengaged independently of the transmission. 540 rpm or 1000 rpm speeds can be obtained by selecting the suitable ratio, which switches on the corresponding indicator light.

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

To engage the PTO, press knob 3 and turn it in a clockwise direction (Fig. 6).

Press or tap the knob to return it to neutral position. Always place the PTO in "PTO brake" position when not in use.

WARNING: Always disengage the PTO before attaching or detaching an implement or making adjustments to it.

Take all safety precautions in any operation involving implements driven by the PTO.

When the PTO is not in use, the switch must be in PTO brake position.

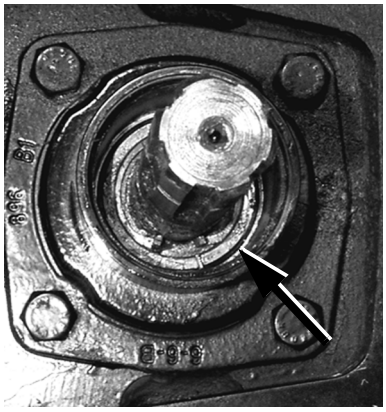
4.7.1 - 540 and 1000 rpm shiftable PTO with interchangeable shaft

Shaft diameter 35 mm (1" 3/8) - 6 splines/540 rpm or 21 splines/1000 rpm at engine speed 2000 rpm.

To change shaft, raise the rear of the tractor to prevent oil from pouring out during the procedure. Remove the snap ring (Fig. 7) using pliers. Pull out the shaft, then refit the other shaft, engaging the splines fully. Refit the snap ring.

NOTE: If possible, raise the rear of the tractor to carry out this operation to prevent oil from flowing out of the PTO port.

NOTE: Check the correct location of the snap ring. Replace any damaged snap ring. Never use the tractor without a PTO shaft being fitted.



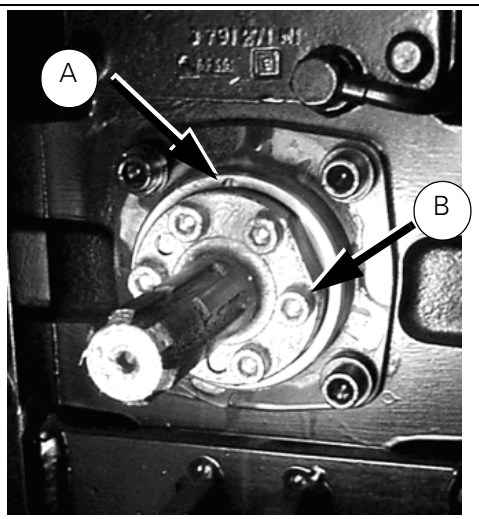
V696

Fig. 7

4.7.2 - Shiftable PTO - 540 and 1000 rpm

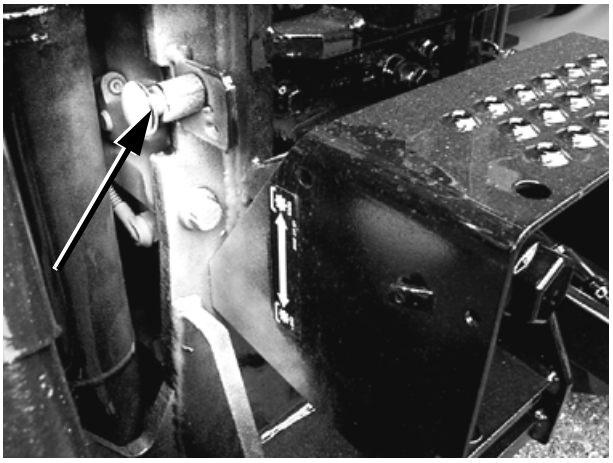
This type of PTO is suitable for implements requiring different drive speeds for various operations and conditions, for example self-loading trailers.

- Fixed shaft: A single shaft, 35 mm (1" 3/8) in diameter, with 6 splines, gives a rotation speed of 540 rpm or 1000 rpm of the PTO shaft at 2000 rpm of the engine.
- The end of the shaft is interchangeable: 6 or 21 splines at 540 to 1000 rpm at 2000 rpm of the engine (Fig. 8):
  To change the shaft (Fig. 8):
  - Position a rod or a cross screwdriver in the space provided, ref. A
  - Take out the 6 screws, ref. B
  - Install the new shaft
  - Tighten to a torque between 72 Nm (minimum) and 96 Nm (maximum).



V649

Fig. 8



V652

Fig. 9

Either of the PTO speeds is selected by the lever on the rear left-hand side of the centre housing (Fig. 9) or by the lever in the cab (Fig. 10).

CAUTION: Place the synchro switch Fig. 10 in the correct position (540 or 1000 rpm). PTO must be disengaged during the procedure.

Z2-221-03-03

Z2-227-10-03

Fig. 10

4.7.3 - Ground Speed PTO

MF 5400 series tractors can be fitted with a ground speed PTO as an optional extra.

IMPORTANT: When using GSPTO, tractor speed must not exceed 20 kph. Speeds higher than this can cause serious damage to the transmission.

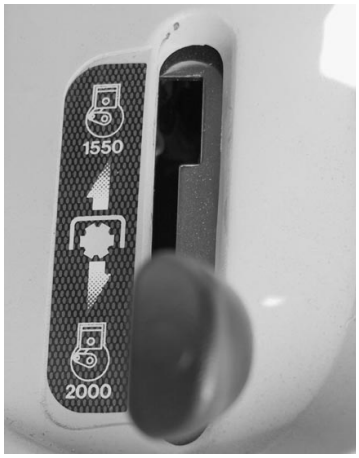
According to models the following PTO rpm are obtained for 1 turn of the wheel:

Position	5425/35/45/ 55/60	5465
540 rpm	7,78	8,56
1000 rpm	14,44	15,86

This PTO is engaged by the lever in cab.
PTO must be disengaged during the procedure.

4.7.4 - "Economy" PTO

Speeds of 540 rpm and 1000 rpm can be obtained at engine speed 2000 rpm (direct drive) or 1550 rpm (for light implements not requiring high engine power).



Z2-219-03-03

Fig. 11

NOTE: To avoid seizure of the system, move the lever at least once a month.

DANGER: Power take-off

Never step across any shaftline.

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

Never use the universal joint shaft as a footstep.

Never wear loose fitting clothes.

Remain at a safe distance from the universal joint shaft.

4.8 - STEERING

CAUTION: Steering is hydrostatic. When the engine stops, the booster pump no longer supplies the system. Hydrostatic steering then passes automatically to manual operation mode which requires greater effort when turning the steering wheel. This mechanism therefore ensures safe operation in all conditions of use. However, no hydraulic system can operate correctly unless:

- ***it is correctly maintained and the approved oils used,***
- ***the tightness of all connections, and the oil level, are regularly checked.***

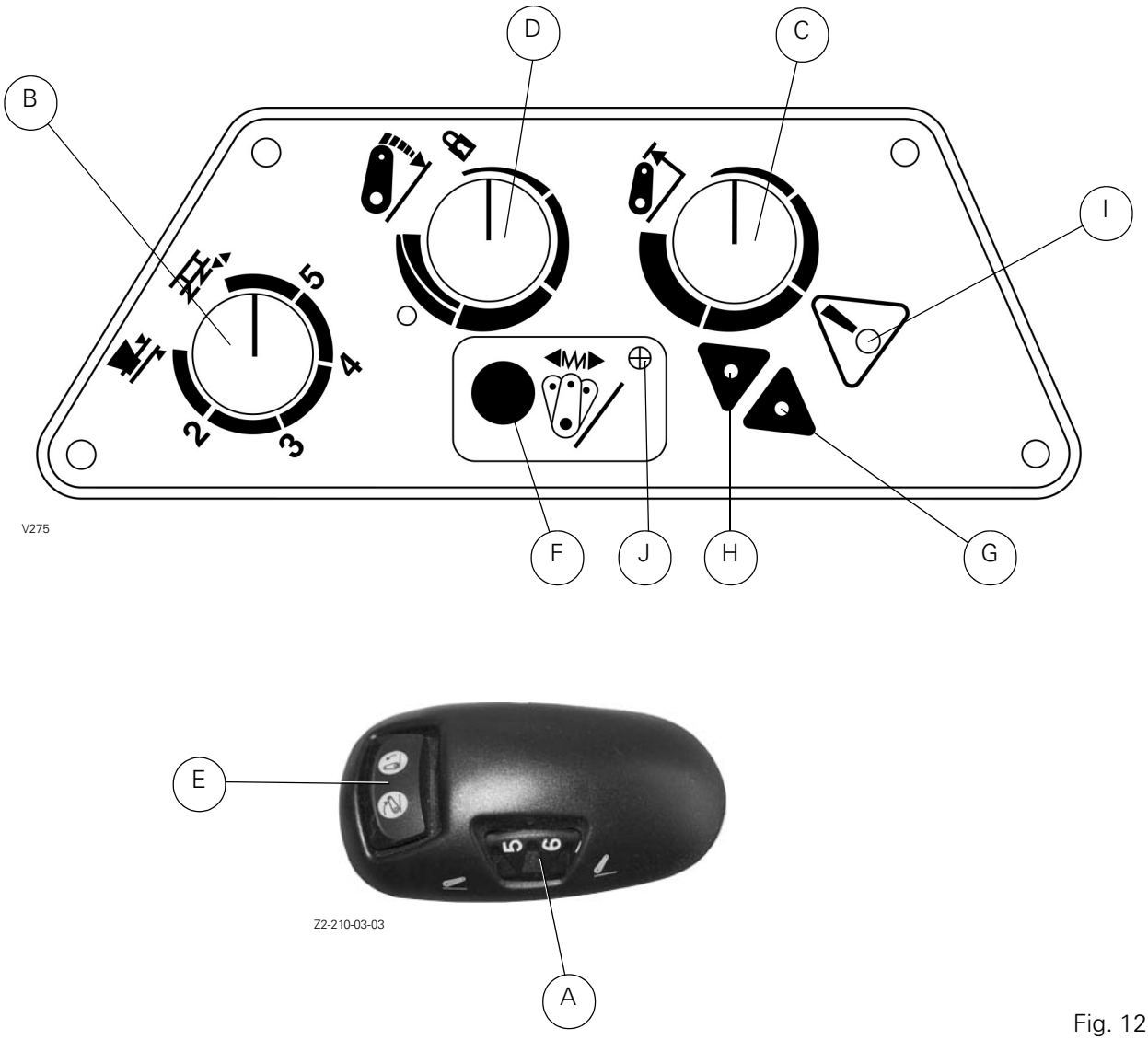


Fig. 12

4.9 - ELECTRONIC LINKAGE

(Fig. 12)

A. Height / depth setting knob
B. Function selector knob: position / Intermix / draft.
C. Maximum lift height setting knob.
D. Adjusting manual or automatic lowering speed.
E. Lift / Lower selector switch with “neutral” position
F. Active transport control system knob.
G. Linkage lowering indicator light.
H. Linkage lifting indicator light.
I. Console locking and faulty operation self-diagnostic indicator light.
J. Active transport control system indicator light.

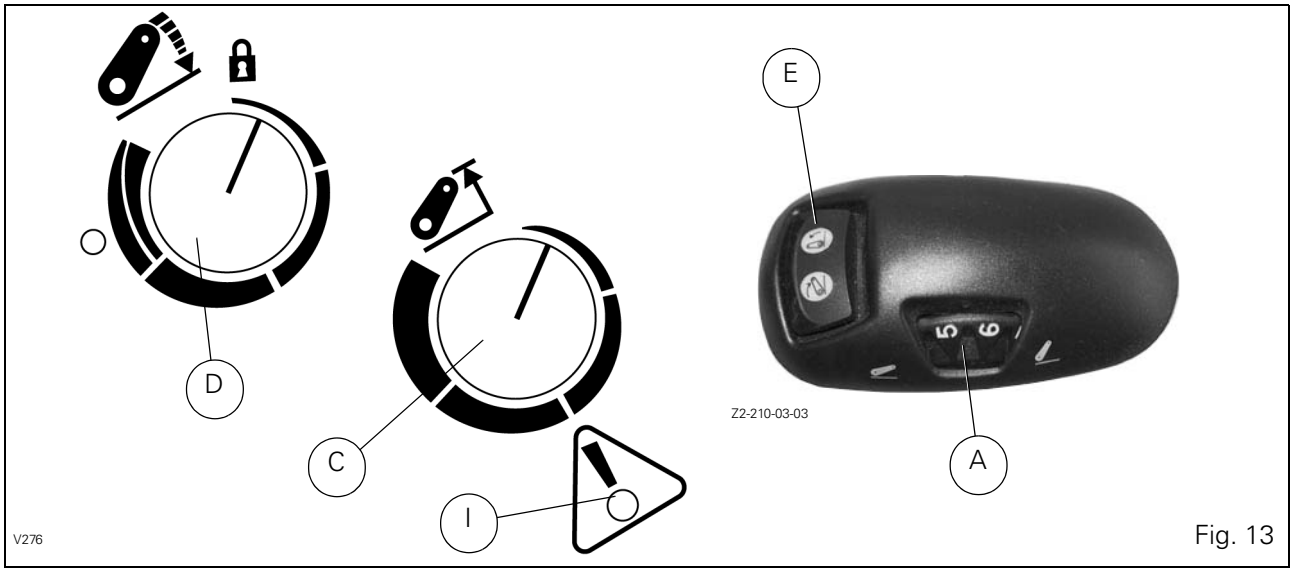


Fig. 13

4.9.1 - Attaching an implement from the driver's seat

Start the engine. Indicator lights I and J come on.
- J comes on for 0.5 seconds approximately.
- I stays on until the console is activated.
- Adjust the control knobs.
- Move the function selector knob (B Fig. 12) clockwise to minimum control position.
- Move the Lift/Lowering selector E to the Lift position.
- Adjust the linkage height in turning the control knob A.
- The indicator light H comes on.

4.9.2 - Lowering

To lower the linkage, turn knob A anti-clockwise. The lowering indicator light (G) will come on.
In automatic mode, lowering speed is governed by two parameters: the weight of the implement and ground speed.
Legend Fig. 14:
1. Lowering lock position.
2. Lowering speed slow.
3. Lowering speed fast.
4. Automatic mode.

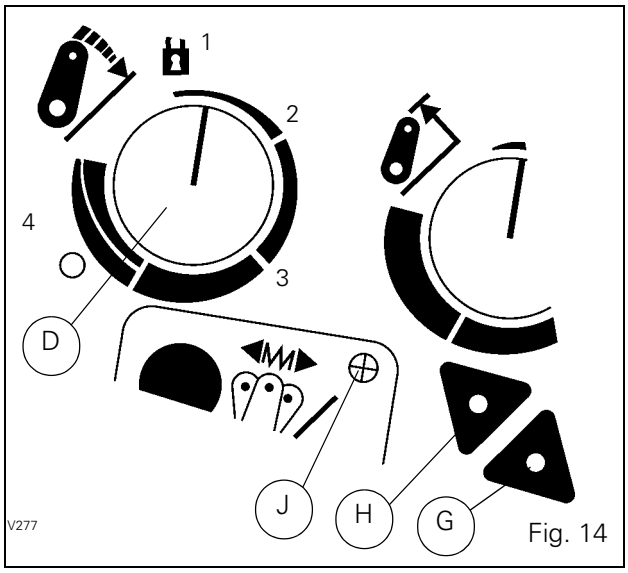


Fig. 14

4.9.3 - Lifting

To lift the linkage turn the knob A clockwise.
The indicator light H comes on.

4.9.4 - Depth control

Knob A in position 1 (min.) to 7 (max.) determines the depth of work.
In position 8 and 9 the linkage is in floating mode.

4.9.5 - Attaching an implement using external controls

To use the external controls (Fig. 15) the Lift / Lower selector switch E must be in Neutral or Lower position.

DANGER: Always place gear shift lever and shuttle lever in NEUTRAL before leaving driver's seat.

Apply the handbrake.

When selector switch E is in the Neutral or Lower position, pressing the external control buttons will cause the linkage to be lifted or lowered.

NOTE: The movement of the lift arms stops as soon as the button is released.

When the external control is used, the lowering speed is 70% of the maximum speed (the speed setting D (Fig. 14) does not operate).

For safety, when the external buttons are operated, the cab control console is automatically switched off.

To switch the cab console controls back on, press on the selector switch E (Fig. 16).

Z2-379-11-04

Fig. 15

Z2-210-03-03

Fig. 16

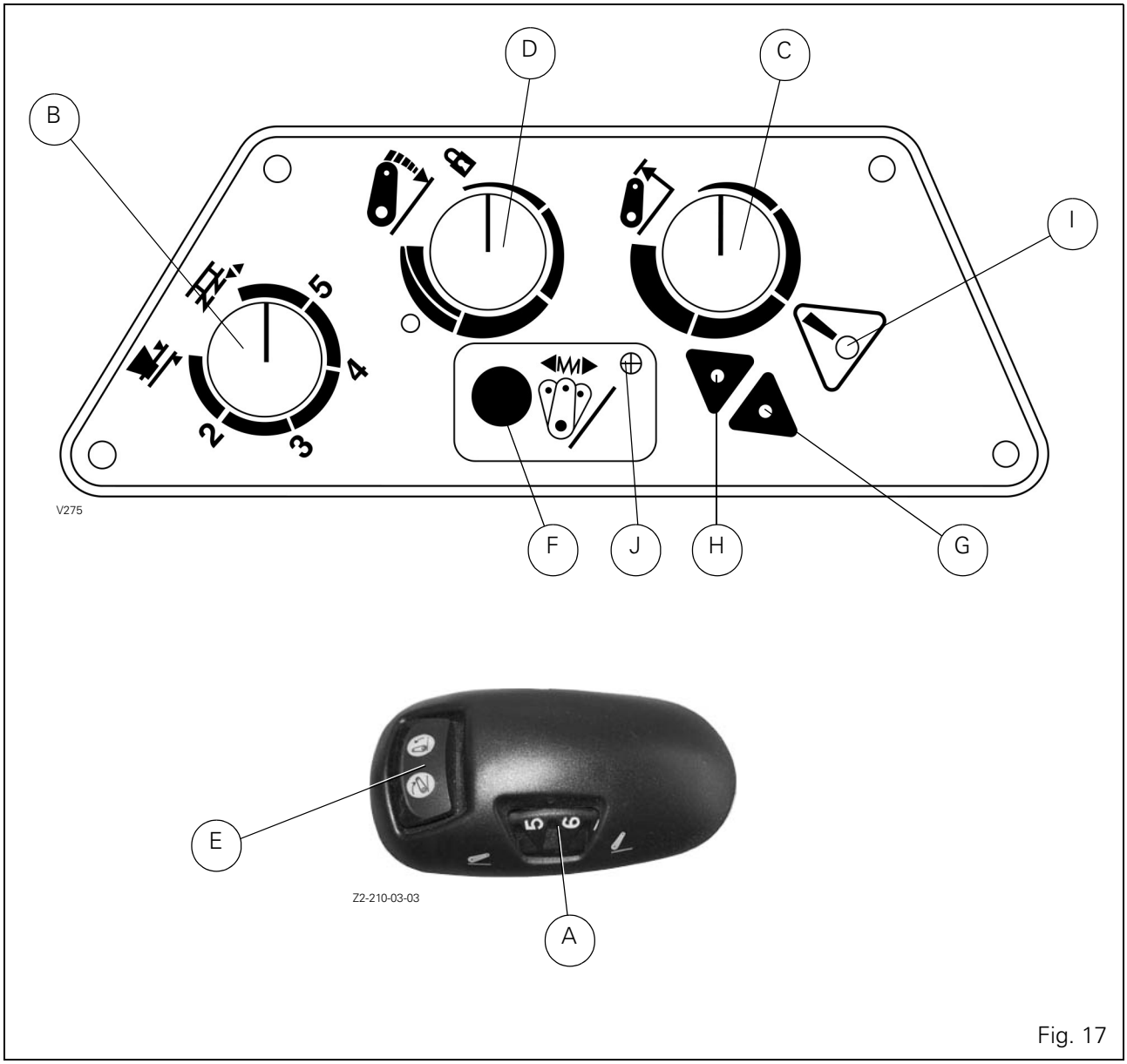


Fig. 17

4.9.6 - Transport

- Select the minimum position with the button B, Fig. 17.
- Adjust the maximum linkage height according to the transport implement using the height setting button C. Start from minimum position.
  Move the knob D to position 1 (padlock).

4.9.7 - Activate transport control system

- The system operates automatically when button F is pressed; indicator light J comes on.
- To deactivate this function, press button F.

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

4.9.8 - Use when working

- Adjust the maximum high position using knob C.
- Using knob D, adjust a maximum linkage lowering speed.
- Choose the implement control mode (Draft Control or Position Control, or a combination of both), according to the implement, the ground conditions and the type of work, by use of the control selector knob B (Fig. 18).
- Adjust the working depth using knob A.
- The Lift and Lower indicator lights H and G allow to display the work being carried out.

Subsoiling: positions 3, 4.

Labour: positions 3, 4, 5.

Chisel: positions 2, 3.

Shallow labour: positions 3, 4.

Position control, when the implement must be kept at a constant height - minimum position.

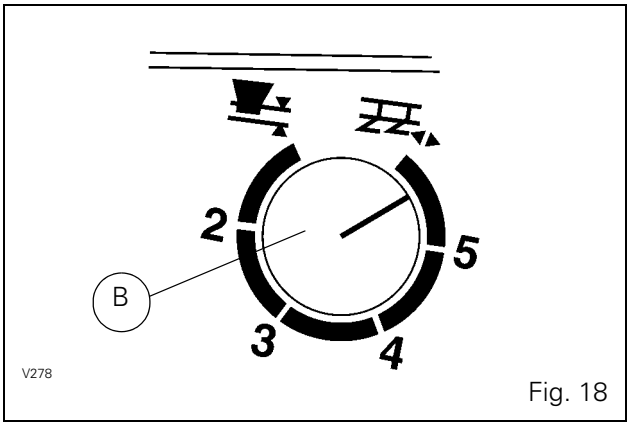


Fig. 18

4.9.9 - Operation at headlands

(Fig. 19)

Put the Lift / Lower switch E into the lift position. The linkage will rise to the preselected maximum lift position C.

In order to resume work, put the Lift/Lower selector switch E into "Lower". The depth settings previously made will be repeated.

NOTE: A safety cut-out puts the linkage system out of operation when the ignition is switched off, the engine stopped (ignition switched off), or external controls are used.

The object of this device is to avoid any accidental movement of the linkage if settings on the console have been altered, while the tractor is stationary.

To reactivate the linkage, move the switch E to the intermediate position, then to the lift position. The linkage is then brought back into operation.

Before reactivating the ELC calculator, ensure that selection C and depth A knob settings cannot cause any dangerous movements of the drawbars.

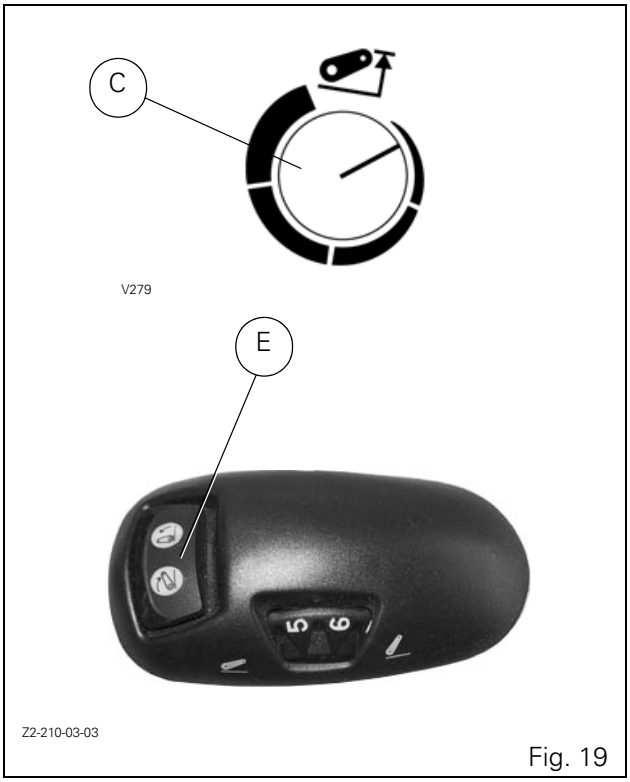


Fig. 19

4.10 - AUXILIARY HYDRAULICS

4.10.1 - Types of spool valves or equipment

Tractors are designed to be fitted with up to 4 spool valves.

Return to neutral. Convertible single / double acting.

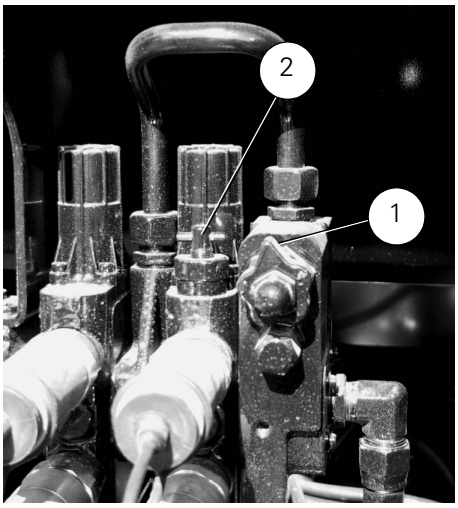
This is the standard spool valve type. The lever returns to neutral when released.

Flow Control Valve

This is used to control the flow of oil to this spool valve.

It is recommended to ensure a precise flowrate for instruments requiring low quantities of oil, or to adjust the speed of hydraulic motors. It is also useful for keeping available a flow of oil for the simultaneous use of the linkage and of the auxiliary hydraulics.

To regulate the flow of oil, turn the knob 1 of the relevant spool valve (Fig. 20).



Z2-236-04-03

Fig. 20

Zero leakage

All spool valves have a small internal leakage, which may result in small changes in the implement settings. This spool valve avoids this problem.

Floating position. Double acting.

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

Kick out

To switch from double to single acting, fully unscrew valve 2 (Fig. 20).

When the spool valve is activated, flow is continuous. The spool valve remains open until the pressure increases in the circuit. When the pressure increases, the spool valve returns automatically to neutral and flow is stopped.

The two feed and return hoses must be fitted vertically.

Other spool valves not available from the company can be obtained through your dealer from the supplier. However, in such cases the company disclaims any liability for possible consequences.

NOTE: Ensure male and female couplers are kept 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 oil to the maximum level.

4.10.2 - Hydraulic spool valve control

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

4.10.2.1 - Standard spool valve lever (Fig. 21)

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

Z2-330-01-04

Fig. 21

Spool valve control :
The lever has four positions (Fig. 22) :
- neutral position "N".
- "+" position: pull the lever. Flow is directed to the corresponding "+" coupler.
- "-" position: push the lever. Flow is directed to the corresponding "-" coupler.
- floating position: push the lever fully.

The levers are numbered 1 to 4 (depending on options). The lever / coupler and lever +/- correspondence 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.

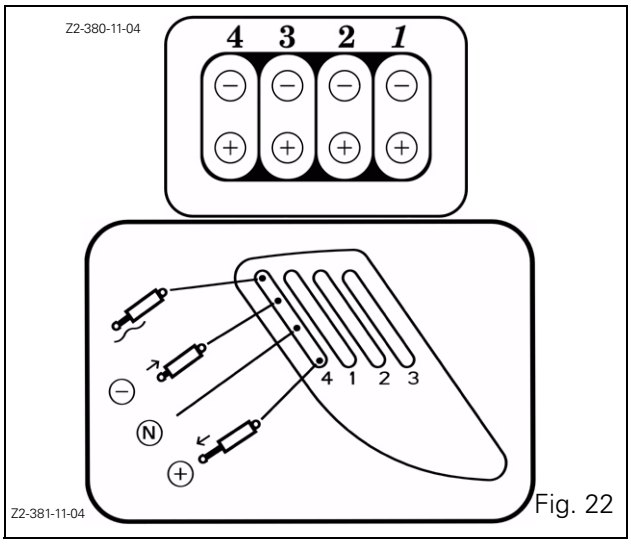


Fig. 22

4.10.2.2 - Mechanical Joystick (Fig. 23)
It controls two spool valves (forward / backward and left / right movement). It allows two hydraulic functions to be operated simultaneously with the same lever.

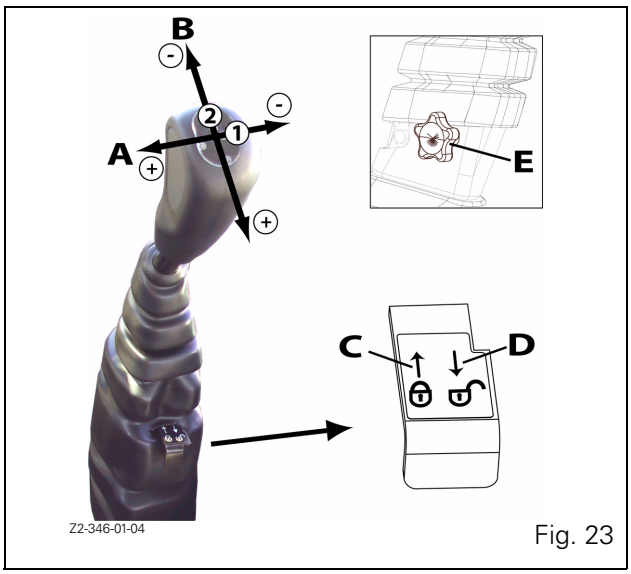


Fig. 23

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

4.10.3 - Open Centre 100L/min

The 100 l/min. Open Centre system uses two hydraulic pumps. Usually, one pump is used for 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 via a button on the cab right-hand console (1) (Fig. 24).

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 kph.

Z2-348-05-04

Z2-210-03-03

Fig. 24

Pump coupling

1. Start the engine.
2. Unlock the linkage with the Lift / Lower switch (E) (Fig. 24).
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. 25).

Z2-350-05-04

Z2-351-05-04

Fig. 25

Pump uncoupling

1. Press the pump coupling switch (1). The corresponding indicator light goes out (Fig. 25). The pumps are no longer coupled.
2. To use the linkage, unlock it using the Lift / Lower switch (E) (Fig. 24). The indicator light (I) goes out.

4.11 - TREPUNKTSOPHÆNG

VIGTIGT: For at undgå beskadigelse af liften under anvendelse af bugserede redskaber, skal man ved vending være særlig opmærksom på risikoen for, at trækstangen kan støde sammen med løftesystemet.

Traktoren leveres enten med bærekugler kategori 2 eller 3 eller som udstyrsvalg med lyngribekløer til kategori 2 eller 3 afhængig af land.

4.11.1 - Nederste trækarme

- Faste trækarme med bærekugler (1 Fig. 26)
- Trækarme med gribekløer og kugler (2 Fig. 26)

  Gribekløerne låser automatisk fast om bærekuglerne, som først er monteret på akseltappene. De almindelige kugler anvendes til gaffelophæng, kugler med keglestyr til almindelige akseltappe. Låsningen afprøves.

  Når redskabet skal kobles fra, udløses gribekløerne ved træk i udløserlinerne (ekstraudstyr) fra førerhuset.
- Teleskoptrækarme (3 Fig. 26) (kun visse lande)

  Teleskopenden indstilles efter udtagning af splitten A. Efter tilkobling af redskab låses igen med splitten.

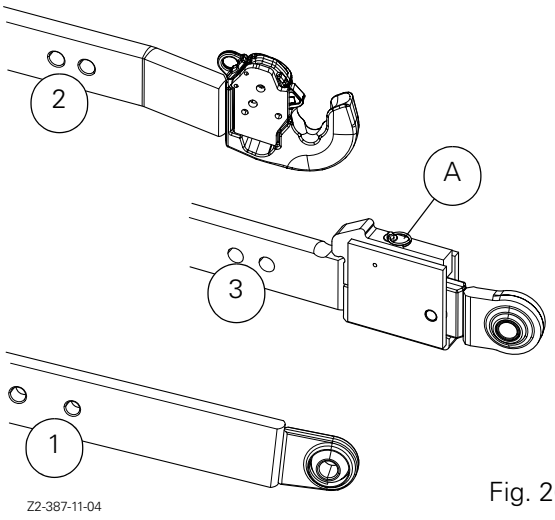


Fig. 26

4.11.2 - 3. punkts topstang

Det tredie punkts topstang (Fig. 27) er monteret på kugler. Den skal indstilles efter den tilkoblede type redskab.

For at indstille det tredie punkts topstang trækkes grebet ud (pil Fig. 27) og drejes for at regulere længden.

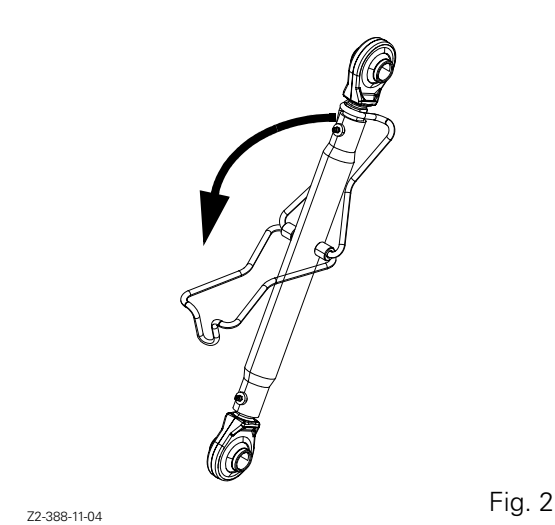


Fig. 27

4.11.3 - Lift rods

- adjusting lift rod length (Fig. 28) : pull upwards then turn the handles to reduce or increase the lenght of the lift rods.

- adjusting the lift rod / drawbar link :
  Three positions can be obtained by changing the position of the pin (1 Fig. 28).
  - fixed high position (A Fig. 29)
  - fixed low position (B Fig. 29)
  - floating position (C Fig. 29) for wide implements or implements with a depth wheel.

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

CAUTION: Take care to always refit the pins and lock them correctly.

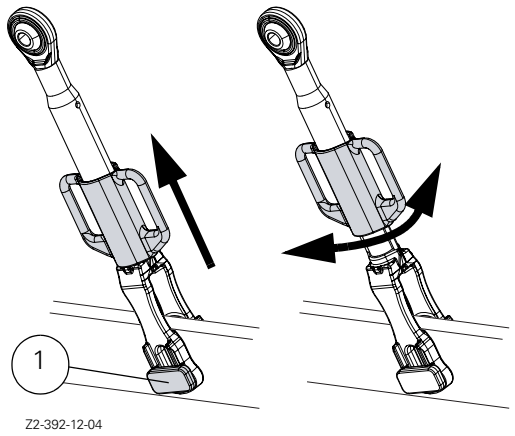
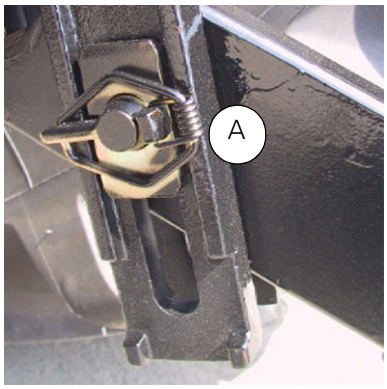
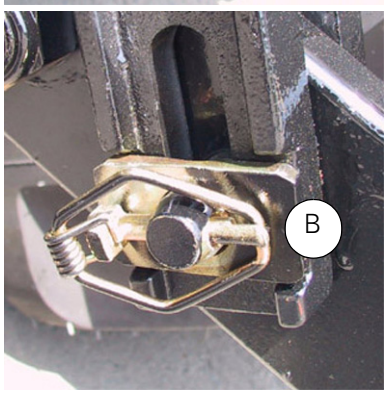


Fig. 28





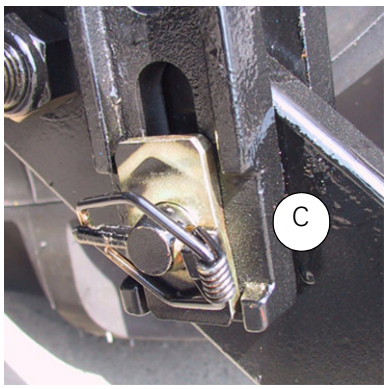


Fig. 29

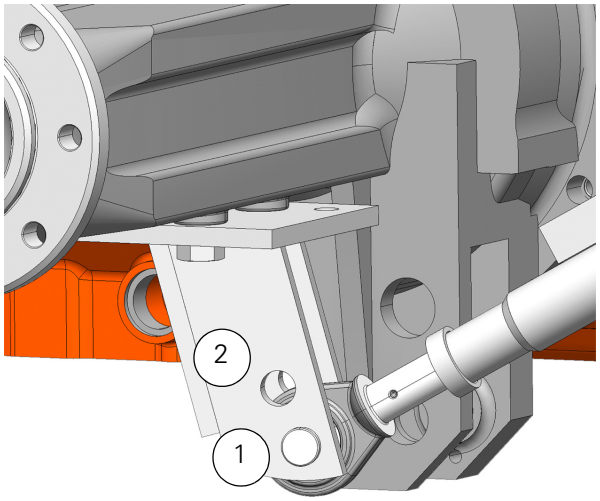
4.11.4 - Stabilisers

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

Stabilisers front end support has 2 positions (Fig. 30).

- Pos. 1 : for constant adjustment of side sway over the entire drawbar vertical travel.
- Pos. 2 : for a determined drawbar side sway at "Low" position and automatic side sway lock at "High" position.

CAUTION: Improper use of this position may result in stabiliser damage.



Z2-331-01-04 Fig. 30

Example of correct position depending on implement used :

Implement 1	1	2
Plough		●
Chisel		●
Rotavator	●	
Sprayer	●	
Seeder	●	
Sub-soiler		●
Beetroot harvester	●	

4.11.5 - Adjustment procedures

Once the suitable position has been determined according to implements used and required travel, adjustment of stabilisers should be carried out as follows :

Oscillation possible in transport position:

1. Position the stabilisers as indicated in position (1) (Fig. 30).
2. Screw or unscrew the stabilisers to obtain the required side sway.

Oscillation impossible in transport position:

1. Position the stabilisers as indicated in position (2) (Fig. 30).
2. Fully screw in stabilisers (Fig. 31).
3. Start the engine.
4. According to models :

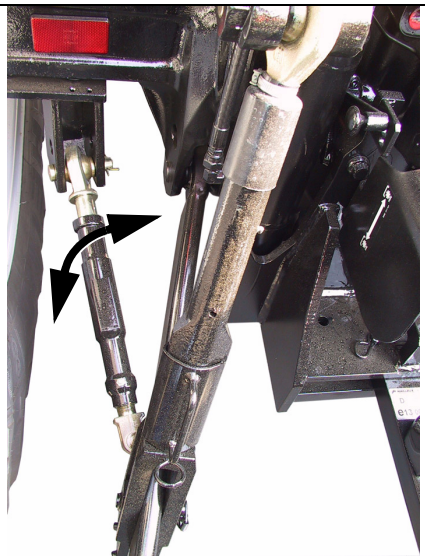
   Tractors with "Lift/Lower" push buttons

   - Set the control panel hitch "Lift/Lower" switch to "Lift" then to "Neutral".
   - Press "Lift" button until lower links reach highest position.
   - Stop the engine.
   - Unscrew stabilisers (Fig. 31) until drawbars have no lateral oscillation and are centralised.
   - Screw both stabilisers in 1 turn.

   Tractors without "Lift/Lower" push buttons

   - Set the control panel hitch "lift/lower" switch to "neutral" then to "lift".
   - Stop the engine.
   - Unscrew stabilisers (Fig. 31) until drawbars have no lateral oscillation and are centralised.
   - Screw both stabilisers in 1 turn.

CAUTION: To prevent stabiliser damage, do not shorten the lift rods or use high travel drawbar position once the above adjustments have been made.



Z2-303-09-03

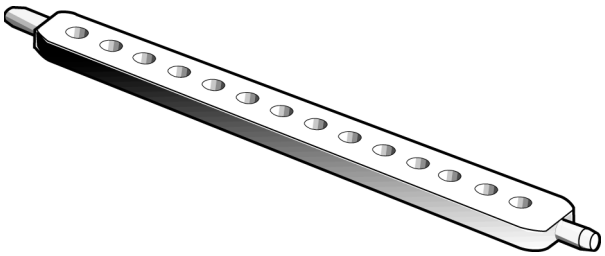
Fig. 31

4.12 - DRAWBARS AND HITCHES

Available as options, according to countries.

4.12.1 - Perforated bar

This is fitted to the lower links and is suitable for light loads (Fig. 32).

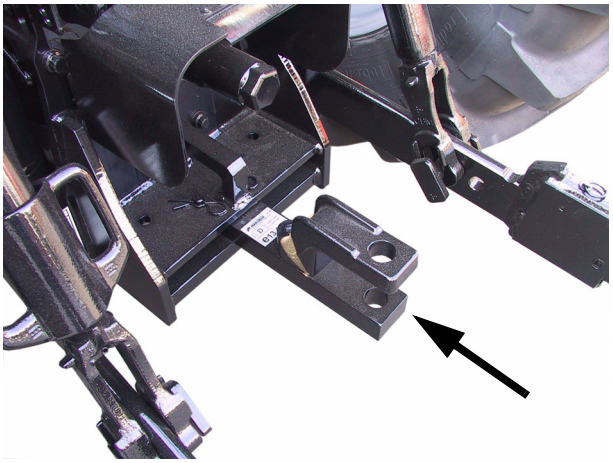


V582

Fig. 32

4.12.2 - Swinging drawbar

(Suitable for trailed implements only) (Fig. 33).



Z2-318-09-03

Fig. 33

Adjustments:

- Height: a clevis is bolted either above or below the bar, thereby giving two height positions.
- Offset: remove the "R" clips and take out the clevis pins.

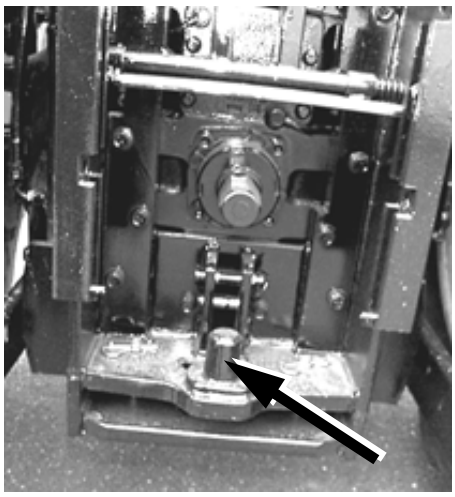
Position the drawbar as required. Refit the clevis pins and secure them with the clips to hold the drawbar in the required position.

Maximum tractable weight: 13,000 kg.

Maximum vertical load at hitch: 1,700 kg

4.12.3 - Stud for semi-mounted trailer

Suitable for heavy trailers which transfer heavy load to the tractor (Fig. 34).



V535

Fig. 34

It is welded to the frame of the swinging drawbar and has a safety retaining latch.

Maximum vertical load: 3,000 kg

4.12.4 - Roller type swinging drawbar

This drawbar is used with very heavy trailed implements. It makes sharp turns at the headland easier, by allowing the drawbar to swing with the implement.

4.12.5 - 4 wheel trailer clevis hitch

This clevis is intended to hitch trailers with four wheels that transfer little or no load to the hitch.

The clevis height can be adjusted via a pin-adjusting scale (A) or an easy adjustment scale (B) (Fig. 35).

Maximum tractable weight: 25,100 kg

Maximum vertical load at hitch: 1,800 kg.

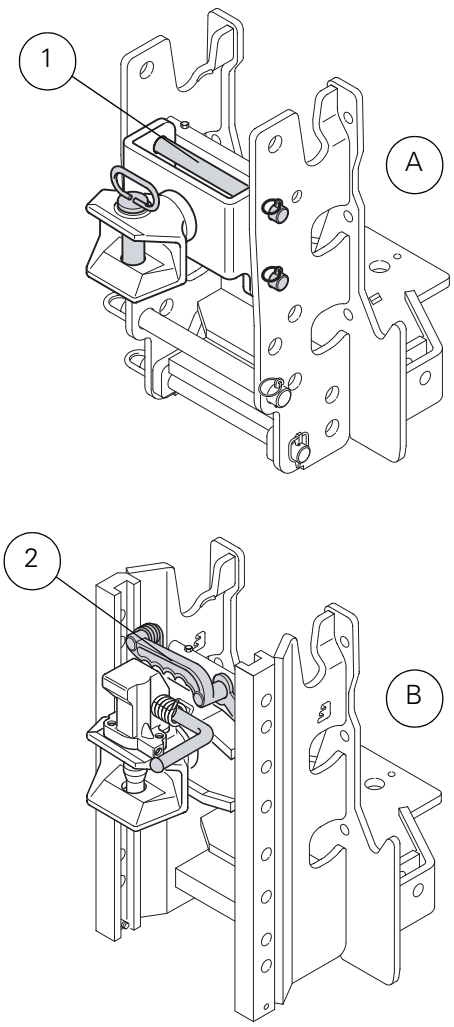
4.12.5.1 - Standard clevis, pin-adjusting scale

To adjust the clevis height, take out the two pins (1), position the clevis at the required height and refit the pins and their lock pins.

NOTE: Always hold the clevis in position before taking out the pins.

4.12.5.2 - Automatic clevis, easy adjustment scale

To adjust the clevis height, pull the handle (2) upwards, then raise or lower the clevis to the required height and release the handle.



Z2-393-12-04

Fig. 35

4.12.6 - "Dromone" auto-hitch

Designed to draw trailers which weigh heavily on the tractor linkage 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 at the rear right-hand side of the tractor to store the end-fitting when not in use (Fig. 38).

Maximum vertical static load: 3,000 kg

A. Closed position
B. Open position

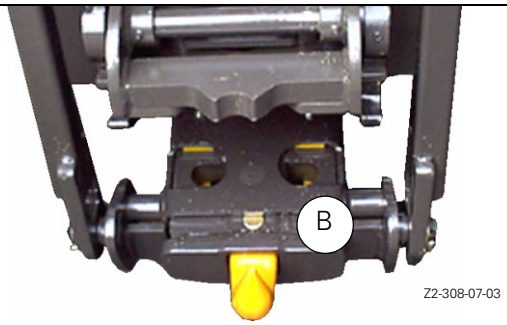
Lowering

1. Activate the electronic linkage by pressing selector E (Fig. 36), then raise the linkage to its maximum with button 2, which unlocks the hook.
2. Move the locking lever 1 to release the hook, then press lowering button 3 to lower the hook to the ground.

Lifting

1. Reverse towards the trailer and align the hook with the trailer linkage.
2. Press the auto-hitch linkage control button 2 (Fig. 36) until the hook locks automatically.
3. Lower the linkage slightly until the trailer weight is supported by the hook.

Fig. 36



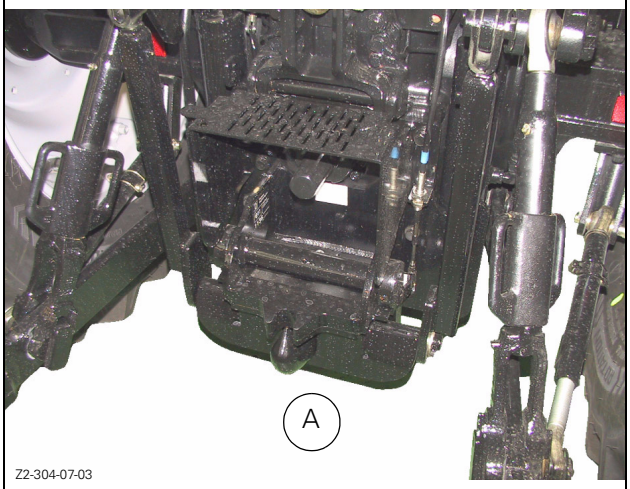


Fig. 37

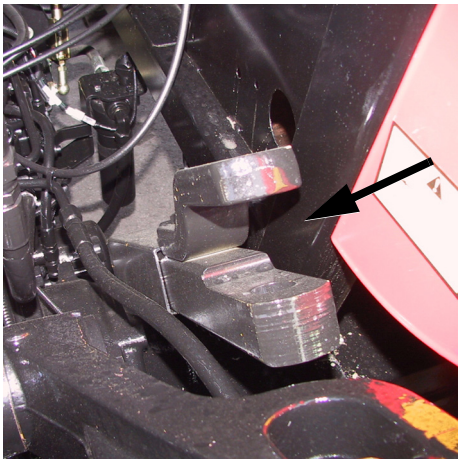


Fig. 38

4.13 - TRANSMISSION CONTROL

Tractors are normally fitted with this system, which concerns three functions:

4.13.1 - Differential lock control

When the engine is started the differential lock is off. Press once on the differential lock switch to engage the differential lock; press a second time to disengage it.

In automatic mode, the differential lock will disengage when the 3-point linkage lifts and will re-engage when the linkage is lowered.

4.13.2 - Power front axle (4WD)

Press the 4WD switch to engage the front axle. Press again to disengage it.

If both brake pedals are depressed the 4WD will engage to provide 4-wheel braking, regardless of ground speed.

4.13.3 - Power Take-Off Control

Safety features to protect the tractor and the implement include the following:

A. If the main PTO switch is on when starting the engine, the PTO is disengaged and causes the PTO indicator light to flash. No error will be transmitted or displayed. To start the PTO, the PTO switch must be put to the off position, and then on.
B. Protection against engine stalling:
   if the PTO engagement causes the engine speed to drop more than 50% below initial speed, the transmission control will turn off the PTO solenoid valve and transmit an error message via the CAN bus and cause the PTO indicator light to flash on the instrument panel.

4.13.4 - Hydraulic pressure (Low pressure)

A. The Autotronic operates on the hydraulic oil pressure indicator light to prevent it illuminating at low speed.
B. The warning light illuminates for a few seconds when the engine is started. If it lights up subsequently, a problem is indicated and should be investigated.
C. When the warning light illuminates for more than two seconds, the Autotronic disengages the functions involved to prevent damage.

Troubleshooting

In the event of a dysfunctioning, the system shifts to the D ratio and the low pressure indicator light (17 bar) comes on.

Depending on the temperature, it is not unusual for the indicator lights to remain lit for a few minutes after switching off the ignition.

Maintenance

Check the hydraulic accumulator pressure once per year.

Legend:

TC: Transmission controller.
4WD: Four wheel drive.
PTO: Power take-off

Chapter 5

MAINTENANCE AND ADJUSTMENTS

CONTENTS

5.1 - INITIAL 50 HOUR SERVICE INSPECTION

Consult your tractor Service Record Book.
The following operations are to be carried out, as applicable, by the **Service Engineer**. A charge will be made for any service items as filter elements, lubricants, seals etc.

5.1.1 - Engine, fuel and cooling systems

1. Change fuel filter element(s).
2. Change fuel prefilter element(s) (150 µ.).
3. Check/Clean dry air filter element(s).
4. Check radiator coolant level.
5. Check tension and condition of alternator/fan belt(s).
6. Check tension and condition of air conditioning compressor belt.

5.1.2 - Electrical system and instruments

7. Check battery condition and electrolyte level.
8. Check tightness of battery connections and battery safety.
9. Check all safety start switches for correct operation.
10. Check all indicator lights, sound alarms and instruments for correct operation.
11. Check correct operation and adjustment of all lights.
12. Check all other electrically powered devices (e.g. cab heater / fans, radio, wipers, etc…) for correct operation.
13. Check all electronically controlled systems for correct operation.

5.1.3 - Front axle and steering

14. Change oil in front axle and epicyclic drive units (4WD).
15. Grease drive shaft / front axle universal joints (4WD).
16. Lubricate the steering pivots / suspended front axle.

5.1.4 - Transmission and hydraulics

17. Check transmission / auxiliary hydraulic oil level.
18. Change transmission oil high pressure filter(s).
19. Change 60 micron PowerShuttle control filter.
20. Check automatic pick-up hitch for correct operation (optional).

5.1.5 - Clutches and brakes

21. Check clutch pedal operation and gear engagement.
22. Check brake pipes condition.
23. Check trailer brake valve for correct operation.
24. Check PTO engagement function.
25. Check parking brake adjustment.
26. Check the hydraulic accumulator pressure once a year.

5.1.6 - General

27. Top up cab windscreen washers.
28. Check the air conditioning system operation.
29. Check torque of cab / safety frame mounting bolts.
30. Check torque of all wheel and rim nuts and bolts.
31. Lubricate all points with grease or oil as specified in the Operator Instruction Book.
32. Check all safety guards are in place with readable stuck decals.
33. Road test the tractor to check all transmission controls for correct operation.
34. Road test the tractor to check the steering and brakes for correct operation.
35. Activate all PTO and hydraulic systems to check correct operation.
36. After road test, check for any leaks of oil, fuel or coolant.
37. Enquire if the operator has any operational difficulties and correct or demonstrate solution as necessary.
38. Complete the owner's Service Record Book.

5.2 - SERVICE GUIDE

SERVICE GUIDE	Visits according to Service Record Book			
	50h	400h	800h	1200h
Engine, fuel and cooling systems				
1. Change engine oil and filter(s).		●	●	●
2. Change fuel filter element(s).	●	●	●	●
3. Change fuel prefilter element (6 cyl.).	●	●	●	●
4. Check valves clearance, replace the cover gasket.				●
5. Check idle speed and fuel cut off mechanism.		●	●	●
6. Check tension and condition of alternator/fan belt(s).	●	●	●	●
7. Clean fuel lift pump strainer.		●	●	●
8. Check/Clean dry air filter element(s).	●	●	●	
9. Change air filter elements.				●
10. Check radiator coolant level.	●	●	●	
11. Drain, flush and refill radiator with coolant.				●
12. Clean main radiator and all other cooler element fins.		●	●	●
13. Clean air conditioning condenser.		●	●	●
14. Change air conditioning receiver drier.				●
15. Check tension and condition of air conditioning compressor belt.	●	●	●	●
16. Observe level of smoke emission from exhaust.		●	●	●
Electrical system and instruments				
17. Check battery condition and electrolyte level.	●	●	●	●
18. Check tightness of battery connections and battery safety.	●	●	●	●
19. Check all safety start switches for correct operation.	●	●	●	●
20. Check all indicator lights, sound alarms and instruments for correct operation.	●	●	●	●
21. Check correct operation and adjustment of all lights.	●	●	●	●
22. Check all other electrically powered devices (e.g. cab heater / fans, radio, wipers, etc…) for correct operation.	●	●	●	●
23. Check all electronically controlled systems for correct operation.	●	●	●	●
24. Check multi-pin "Deutsch" connectors for moisture and repack with SGB grease if necessary.		●	●	●
Front axle and steering				
25. Check oil level in front axle and epicyclic drive units (4WD).		●		●
26. Change oil in front axle and epicyclic drive units (4WD).	●		●	
27. Check front wheel hubs / steering pivots.		●	●	●
28. Grease drive shaft / front axle universal joints (4WD).	●	●	●	●
29. Lubricate the steering pivots / suspended front axle.	●	●	●	●
30. Check steering for correct operation (with & without engine running).		●	●	●
31. Check steering and toe-in adjustment (including tyre wear and damage).				●
Transmission and hydraulics				
32. Check transmission / auxiliary hydraulic oil level.			Every day	
33. Change transmission / hydraulic oil (recalibrate clutch if required).				●
34. Change transmission oil high pressure filter(s).	●	●	●	●
35. Change 60 micron PowerShuttle filter element.	●			●
36. Clean/Change PowerShuttle 250 micron suction strainer.				●
37. Grease trumpet bearings.		●	●	●
38. Check automatic pick-up hitch for correct operation.	●			●
Clutches and Brakes				
39. Check clutch pedal operation and gear engagement.	●	●	●	●
40. Check brake pipes condition.	●			●
41. Bleed brake circuit.				●
42. Check parking brake adjustment.	●	●	●	●
43. Check trailer brake valve for correct operation.	●			●
44. Check PTO engagement function.	●	●	●	●
General				
45. Top up cab windscreen washers.	●	●	●	●
46. Clean cab air filter element.		●	●	

SERVICE GUIDE	Visits according to Service Record Book			
	50h	400h	800h	1200h
47. Change cab air filter element.				●
48. Check the air conditioning system operation.	●	●	●	
49. Check torque of cab / safety frame mounting bolts.	●	●	●	●
50. Check torque of all wheel and rim nuts and bolts.	●	●	●	●
51. Lubricate all points with grease or oil as specified in the Operator Instruction Book.	●	●	●	●
52. Lubricate door locks.	●	●	●	●
53. Check all safety guards are in place with readable stuck decals.	●	●	●	●
54. Road test the tractor to check all transmission controls for correct operation.	●	●	●	●
55. Road test the tractor to check the steering and brakes for correct operation.	●	●	●	●
56. Activate all PTO and hydraulic systems to check correct operation.	●	●	●	●
57. After road test, check for any leaks of oil, fuel or coolant.	●	●	●	●
58. Enquire if the operator has any operational difficulties and correct or demonstrate solution as necessary.	●	●	●	●
59. Complete the owner's Service Record Book.	●	●	●	●

5.3 - USER GUIDE

5.3.1 - Engine, fuel and cooling systems

1. Check / Clean dry air filter element(s) (section 5.10).
2. Check radiator coolant level (section 5.11).
3. Clean main radiator and all other cooler element fins (section 5.11).
4. Observe level of smoke emission from exhaust.

5.3.2 - Electrical system and instruments

5. Check battery condition and electrolyte level.
6. Check tightness of battery connections and battery safety.

5.3.3 - Front axle and steering

7. Check oil level in front axle and epicyclic drive units (4WD).
8. Grease drive shaft/front axle universal joints (4WD) (section 5.7).
9. Lubricate the steering pivots / suspended front axle.
10. Check steering and toe-in adjustment (including tyre wear and damage).

5.3.4 - Transmission and hydraulics

11. Check transmission / auxiliary hydraulic oil level.
12. Grease bearings in rear axle housing (section 5.7).

5.3.5 - General

13. Top up cab windscreen washers (section 5.8).
14. Lubricate all points with grease or oil as specified in the Operator Instruction Book (section 5.7).
15. Lubricate door locks (section 5.7).

5.4 - LUBRICATION

AGCO recommends the following lubricants:

5.4.1 - All year round

• Engine	Terrac Extra or Terrac Motor 15W-40.
• Cooling system	Napgel C2230 in conformity with standards specification ASTM D3306 (USA) or BS 6580-1992 (Europe/UK) or AS 2108-1977 (Australia) for Perkins engine.
• Transmission*	Terrac Extra or Terrac Tractran 9/Fluid 9.
• DANA Front axle, front final drive units.	Terrac Trans -80 W/90.
• CARRARO Front axle, front final drive units.	Terrac Trans - 85 W/140.
• General greasing	Terrac Charge.

** It is essential to use BP Terrac extra oil or another oil product approved by MF according to CMS M1143 or CMS M1144 standard.*

5

These products are manufactured and distributed by:

BP France
bâtiment Newton 1 - Parc St Christophe
10 rue de l' Entreprise - CERGY
95866 CERGY PONTOISE CEDEX

Technical information: 0800 476 840 (freephone).

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

Engine: API CH4 / CCMC D4 or D5

Transmission: refer to MF specifications CMS M1143 or CMS M1144.

Front axle: API GL5.

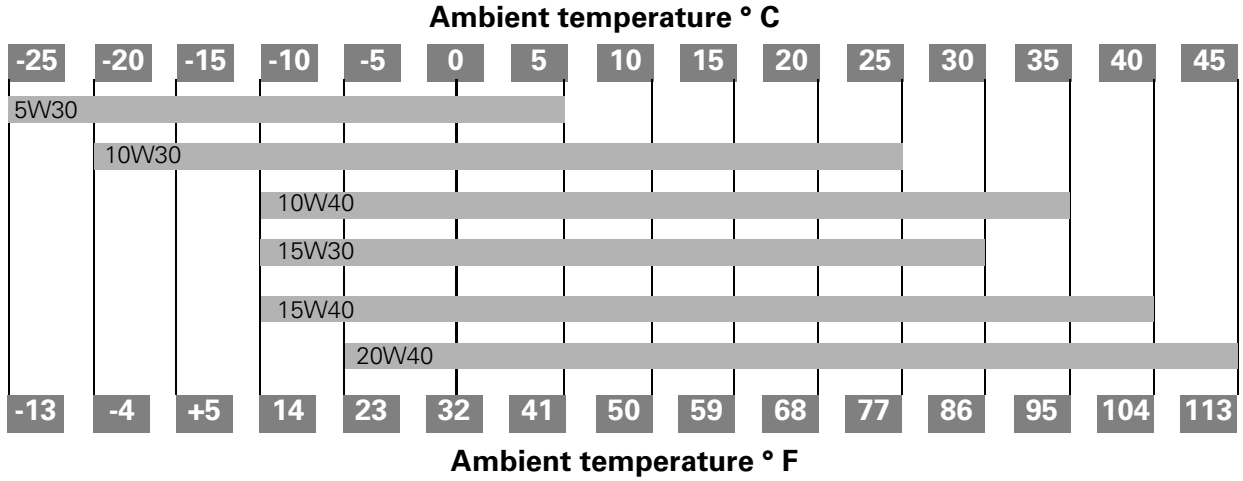
5.5 - RECOMMENDED LUBRICANTS

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

5.5.1 - Engine oil

Use AGCO Multiguard ® (NORTH AMERICA) or equivalent engine oil meeting the following standards: API CH4 or MF CMS M1144.

5.5.2 - Recommended SAE viscosity grades (SAE J300d)



5.5.3 - Coolant

Antifreeze: Permanent type ethylene/glycol in compliance with the standards specification ASTM D3306 (USA) or BS 6580-1992 (Europe/UK) or AS 2108-1977 (Australia) for Perkins engine.

5.5.4 - Transmission and hydraulic clutch

Oil approved by Massey Ferguson, complying with the standard MF CMS M1143 or CMS M1144.

5.5.5 - Front axle

API GL5.
DANA axle: 80 W/90
CARRARO axle: 85 W/140

5.5.6 - Grease nipples

Lubrication fittings: AGCO M.1105 or multi-purpose lithium grease corresponding to the following N.L.G.I. indexes

Temperature often drops below 7°C (45°F)	N.L.G.I. N° 1
Ambient temperatures consistently between 7° and 27°C (45° and 80°F)	N.L.G.I. N° 2
Temperature often exceeds 27°C (80°F)	N.L.G.I. N° 3

5.6 - INSTRUCTIONS FOR PRESSURE WASHING

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

- Alternator
- Starter motor
- Cooler
- 4WD axle stub pivot pins
- Inspection cover
- Radar
- Electrical harnesses and connections
- Safety decals

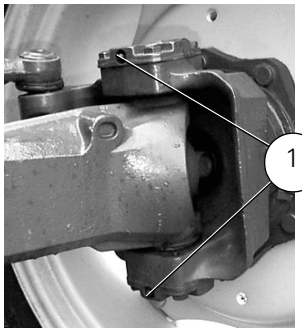
CAUTION: All the maintenance operations must be carried out with the engine stopped, unless otherwise specified.

5.7 - LUBRICATION

5.7.1 - Lubrication points

Every 50 hours:

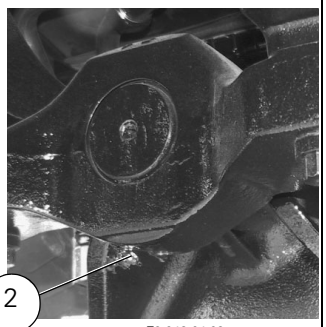
1. Front axle pivots (4WD) (6 grease nipples) (Fig. 1)
   Ref. 1: Swivel pins (2 grease nipples on either side)
   Ref. 2: Front axle front bearing (1 grease nipple)
   Ref. 3: Rear axle front bearing (1 grease nipple)

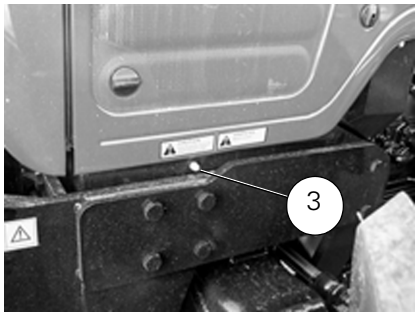


Z2-247-04-03


Z2-246-04-03

Z2-252-04-03

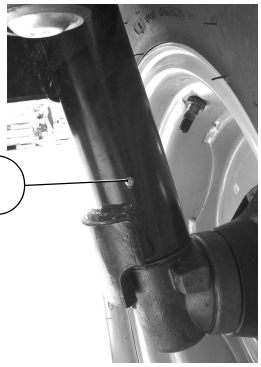

Z2-248-04-03



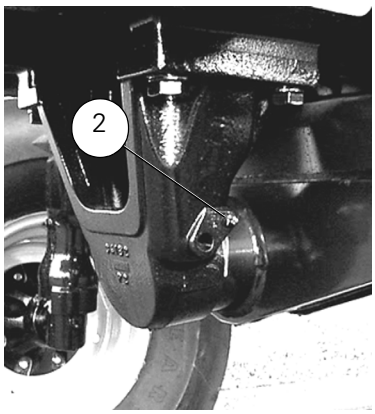
V898

Fig. 1

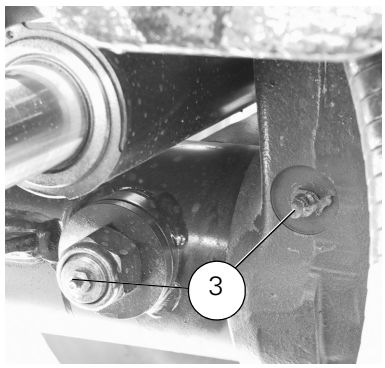
2. Front axle pivots (2WD) (Fig. 2)
   Ref. 1: Swivel pins (2 grease nipples)
   Ref. 2: Front axle front bearing (1 grease nipple)
   Ref. 3: Front axle rear bearing and ram pivot pin (2 grease nipples)



Z2-269-05-03



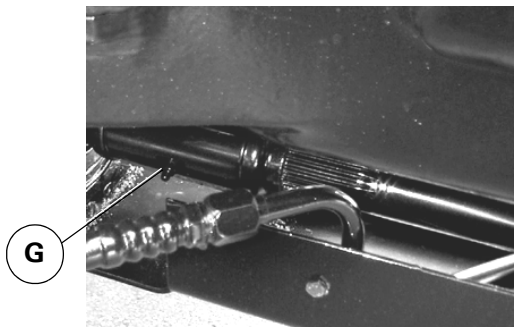
V546



V545

Fig. 2

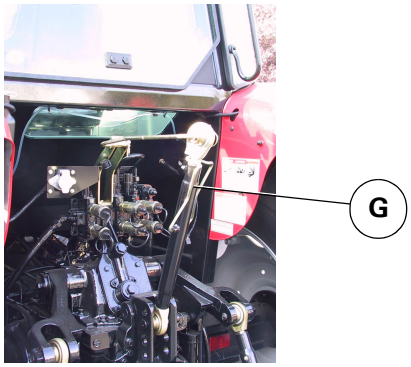
3. 4WD drive shaft (rear and front) (Fig. 3)



V492

Fig. 3

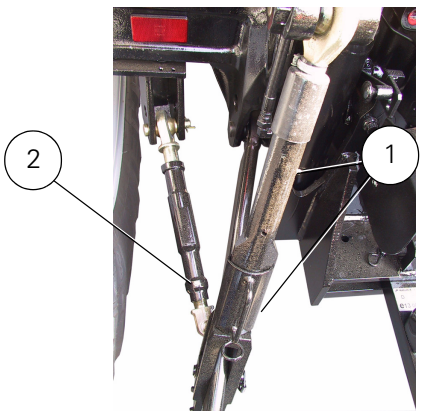
4. Top link (1 grease nipple) (Fig. 4)



Z2-317-09-03a

Fig. 4

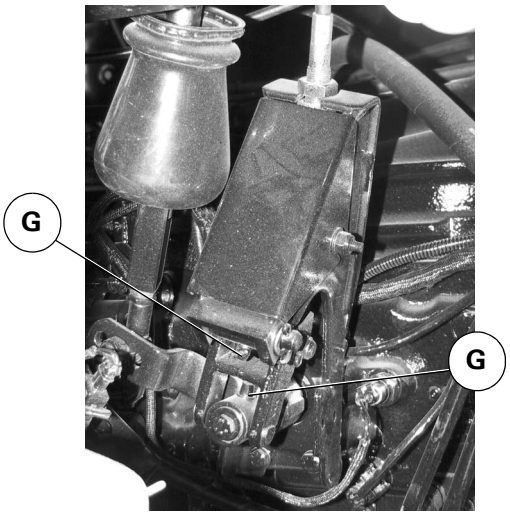
5. Three-point hitch (Fig. 5)
   Ref. 1: lift rods (2 grease nipples)
   Ref. 2: stabilisers (2 grease nipples)



Z2-303-09-03

Fig. 5

6. Shift gear lever joint (Fig. 6)



V543

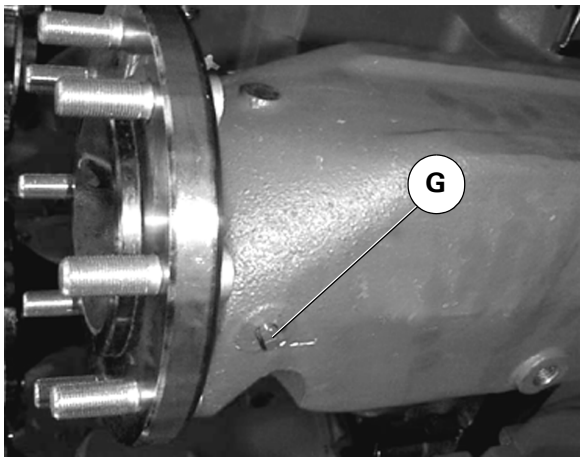
Fig. 6

Every 400 hours:

7. Cab
   Lubricate the door and window locks with liquid paraffin.

8. Greasing the rear wheel bearings (2 greasing points) (Fig. 7):
   Remove the plugs and fit attach grease nipples, then lubricate, operating the grease gun only two or three times.

NOTE: Too much grease will damage the seal.



V595

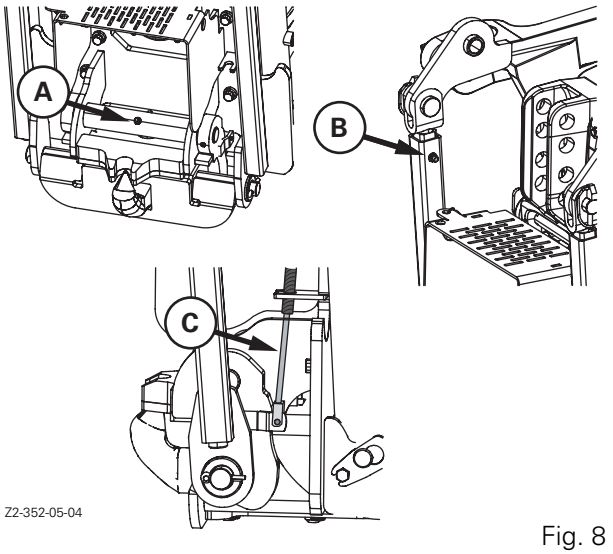
Fig. 7

Twice weekly:

9. Auto-hitch (Fig. 8) 2 grease nipples (A), (B).
   Lubricate and clean control cable (C) on a regular basis.

WARNING: Stop the engine before greaing.

CAUTION: The cable adjustment 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.



Z2-352-05-04

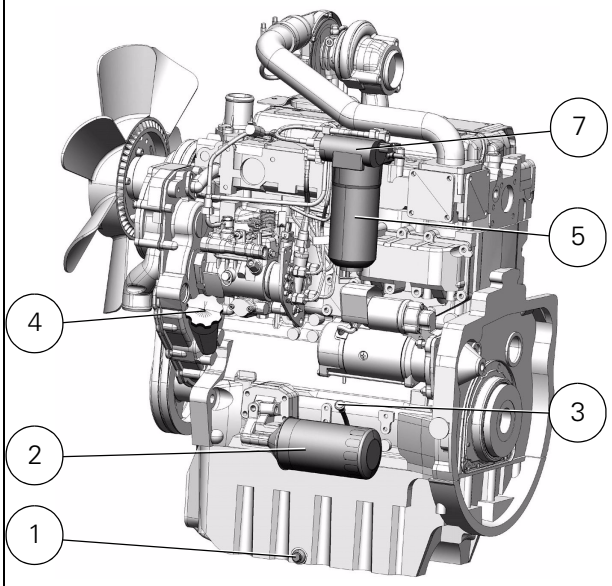
Fig. 8

5.8 - ENGINE

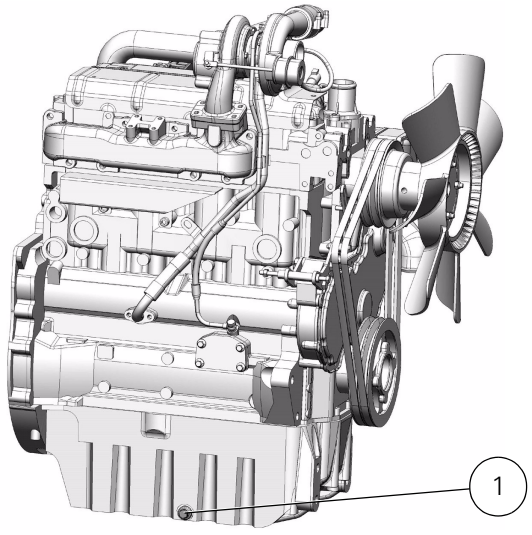
5.8.1 - 4- and 6-cylinder engine

1. engine oil drain plug
2. fuel filter
3. engine oil dipstick
4. oil filler cap
5. fuel filter
6. fuel lift pump
7. pre-filter
8. windscreen washer bottle

4-cylinder engine



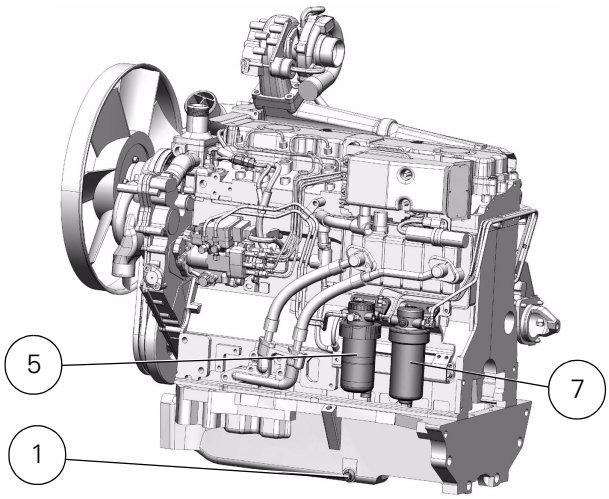
Z2-333-01-04



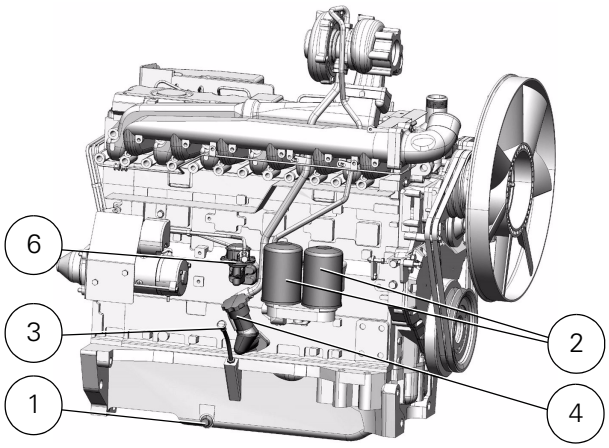
Z2-334-01-04

Fig. 9

6-cylinder engine

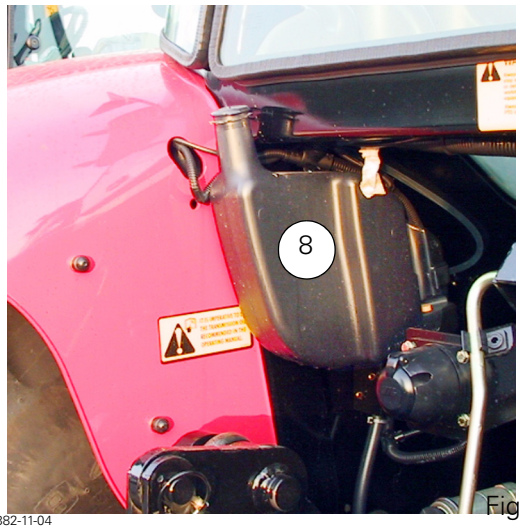


Z2-335-01-04



Z2-336-01-04

Fig. 10



Z2-382-11-04

Fig. 11

5.8.2 - Oil level

With tractor on a level surface: check the engine oil level every ten hours or daily (this interval is flexible).

To avoid a 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.

  Top up if necessary.

5.8.3 - Drain the engine oil every 400 hours

Drain the oil when the engine is warm, remove the plug(s) 1 (Fig. 9, Fig. 10) from the engine sump with the tractor standing on level ground. Refit and tighten the drain plug(s) to a torque of 35 Nm (25.83 lbf-ft). Refill with an approved oil to the **MAX** mark on the dipstick.

NOTE: Allow time for the oil to settle in the sump before rechecking the level.

NOTE: An interval of 400 hours is the maximum. In difficult working conditions the oil may need changing more frequently (every 200 hours for example).

5.8.4 - Change the engine oil filter(s) every 400 hours

To change the filter 2 (Fig. 9, Fig. 10)

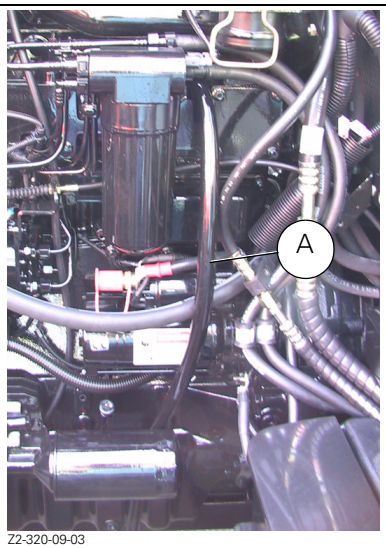
1. Unscrew and discard the filter assembly.
2. Fill the new filter slowly with clean oil.
3. Smear a few drops of clean engine oil on the new sealing ring, then place it on top of the new filter.
4. Screw the filter onto the filter head until the sealing ring just contacts the filter head, then tighten it further half turn by hand only (do not overtighten).
5. Ensure that there is lubricating oil in the sump.

CAUTION: After changing the oil and the filter, ensure that the engine will not start and operate the starter motor until oil pressure is obtained, waiting for 5 bar oil pressure light to go out. To ensure that the engine will not start, disconnect the electrical stop control of the fuel injection pump. Run the engine and check for leaks, then recheck the oil level and top up if necessary. The valves clearance should be checked by your dealer or agent every 1200 hours.

5.8.5 - Closed circuit breather

Check hoses periodically for leakage, abrasion or other damage (A Fig. 12).

- Regularly check that the bleed port is not blocked.



Z2-320-09-03

Fig. 12

WARNING:

DO NOT overfill engine with oil as this could lead to engine overspeed.

DO NOT run engine with any of the hoses disconnected as this could lead to dust damage to the engine.

DO NOT operate the engine with a clogged air filter.

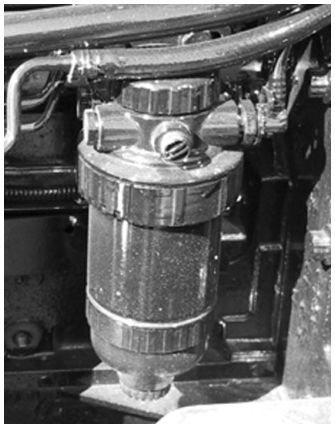
DO NOT allow any of the hoses to be twisted or crushed or at risk from twisting.

DO NOT interfere with or alter the design or settings of any of the closed circuit breather parts. This could lead to serious engine damage.

5.9 - FUEL SYSTEM

5.9.1 - Fuel prefilter (6 cylinders)

Check the prefilter bowl for water at regular intervals and drain as necessary (Fig. 13).
Change 150 micron prefilter element every 400 hours.



Z2-254-04-03

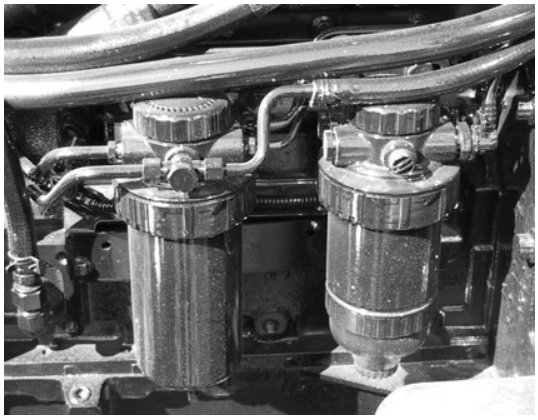
Fig. 13

5.9.2 - Fuel filter(s)

Drain the water every 100 hours.
For this purpose, place a container under each element, then open the lower part of the valves to allow water and deposits to flow out. Close the valves and bleed the circuit.

5.9.3 - Replace the filter element(s) every 400 hours

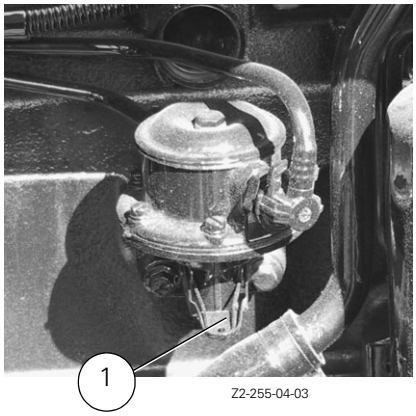
Proceed in the following manner:
1. Drain by opening the valve.
2. Remove and discard the filter elements.
3. Refit new filter elements.
4. Use the fuel lift pump to fill the filter(s).
5. Bleed the circuit (see paragraph 5.9.4).



Z2-253-04-03

Fig. 14

NOTE: The pump lever (1 Fig. 15) must must be moved to its limit of travel. If the pump does not operate and no resistance is felt when the lever reaches its limit of travel, activate the starter to change the pump control cam position. To avoid water condensing in the fuel tank, refill with fuel at the end of the working day.



Z2-255-04-03

Fig. 15

5.9.4 - Bleeding the fuel system

To ensure correct operation of the engine, the fuel system must be in perfect condition and free of air. Bleeding is automatic.
4-cylinder engine: 4-cylinder engines have an electric booster pump. Switch on the ignition and wait for the fuel to fill the filter(s) and circuit before starting the engine. Repeat the operation if required.
6-cylinder engine: 6-cylinder engines have a manual booster pump. Activate the manual booster pump (1 Fig. 15) to fill the filter(s) and circuit before starting the engine. Repeat the operation if required.
NOTE: Only activate the starter motor once in a 30 second interval to avoid overheating.

5.9.5 - Fuel injection pump, regulator and injectors

Adjustment and checks to the fuel injection pump, mechanical regulator and injectors must be carried out by your dealer or agent.

5.9.6 - Fuel tank

Drain the fuel tank every 1200 hours with the hose located under the tank.

5.10 - AIR FILTER

Stop the engine before changing the main element.

5.10.1 - Prefilter and main filter

(Fig. 16)

Main filter A

- Clean the main filter if the clogging indicator light comes on.
- Replace the filter after cleaning five times or every 1200 hours.

Replacing the prefilter B

- Replace the prefilter after five changes, or cleanings, of the main filter, or once a year or every 1200 hours.

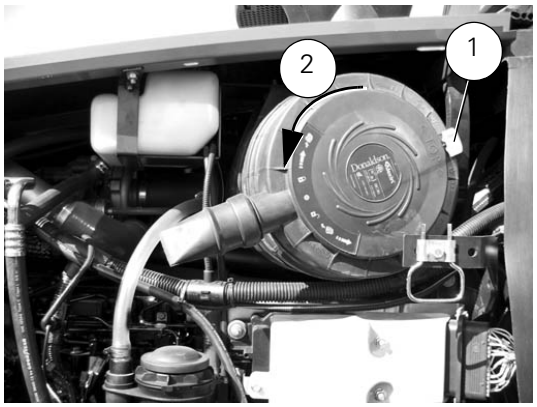
Check that the filter body is not damaged and ensure that all collars and hoses are tight.

1. Lift the left-hand bonnet panel.
2. Remove prefilter A and filter B. To open the filter, pull the lock (1), then turn the cover anticlockwise (2).
3. Clean the main element as outlined below, depending on its condition:
   - blow a jet of compressed air onto the filter, from the inside outwards, at a maximum pressure of 5 bar (75psi), keeping the filter sufficiently far from the nozzle.

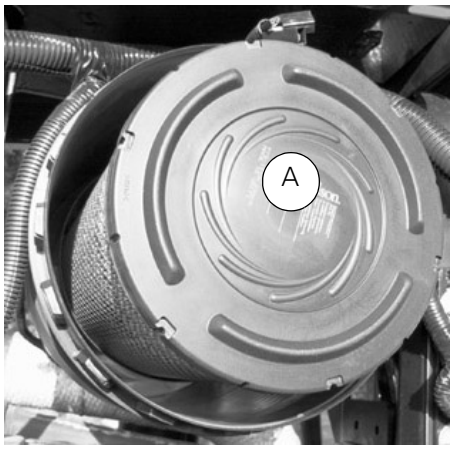
   After cleaning, ensure the prefilter is not damaged by illuminating the inside to check that there are no holes, and check the condition of the seals.
4. Before refitting the element, wipe the filter body with a damp cloth to remove any dust.
5. If the clogging indicator light comes on after a short period of work, the element must be replaced. However, if the lamp stays on after the external element has been replaced, the internal element must also be changed.

DO NOT TAP IT AGAINST A HARD SURFACE TO CLEAN IT.

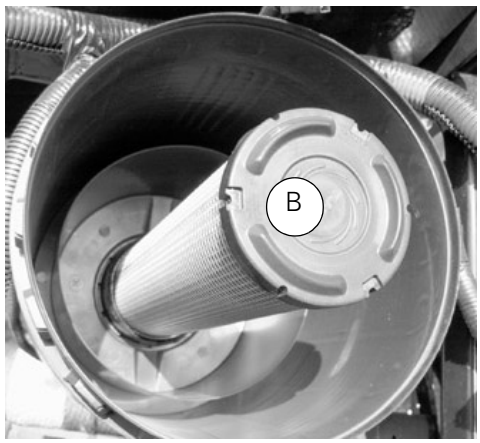
CAUTION: Do not attempt to blow the main element clean with the engine exhaust gases. Never apply oil to a dry element. Never use petrol (gasoline), paraffin or cleaning solvents to clean an element.



Z2-241-04-03



Z2-256-04-03



Z2-257-04-03

Fig. 16

5.11 - COOLING SYSTEM

Check the coolant level every ten hours (this interval is flexible).
The coolant quality can have a great effect on the efficiency and life of the cooling system.
The antifreeze mixture must always be between 40 - 50% antifreeze for 60 - 50% water.
Even the "non cold" regions must respect the minimum 40/60 mixture, in order to raise the boiling point, and protect the system against corrosion.
The water used should be a clean, soft and non acid.

Coolant specifications
Use the coolant recommended by AGCO. The liquid must meet the following standards:
Perkins engines: ASTM D3306 (USA), BS 6580:1992 (Europe/UK), AS 2108-1977 (Australia).
Check the quality and level of mixture regularly, at least once a year, and avoid the addition of pure water in the system that will dilute the mixture.

NOTE: Never use pure water as a coolant.

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

Clean the radiator fins every 400 hours (this interval is flexible) using compressed air.

Check the fan belt tension every 100 hours.

Expansion tank (Fig. 17)
Periodically check the level of coolant in the expansion tank, the red indicator light comes on as soon as the minimum level of coolant is achieved.

NOTE: When filling, do not exceed the mid-way point on the tank.

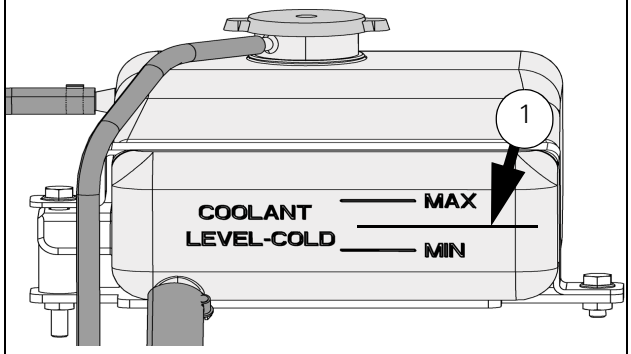
Drain the system every 1200 hours.

WARNING: If the engine is very hot, loosen the plug at the first clevis and remove it to lower the expansion tank pressure.

After filling:
1. Open the heater tap fully and run the engine at 1000 rpm for several minutes.
2. Then stop the engine, recheck and, if necessary, top up the expansion tank with coolant (ref. 1). Refit the plug.

CAUTION: Precautions against frost: Check the degree of protection of the coolant before each cold season.


Z2-383-11-04

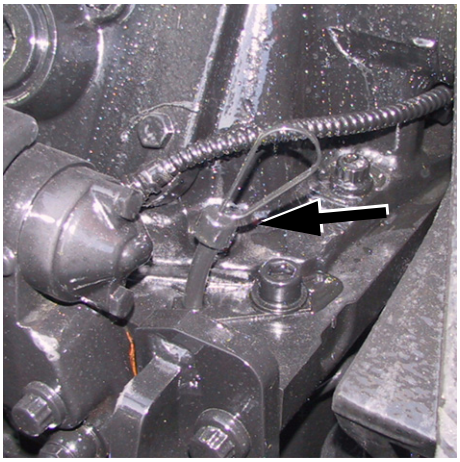


Z2-332-01-04

Fig. 17

5.12 - STEERING, TRANSMISSION AND HYDRAULIC SYSTEM

These systems are all supplied by the same circuit.
Check the transmission oil level every 100 hours using the dipstick (Fig. 18).

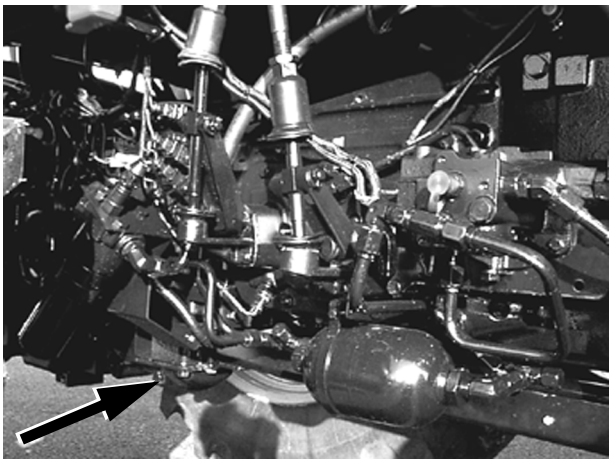


Z2-395-12-04

Fig. 18

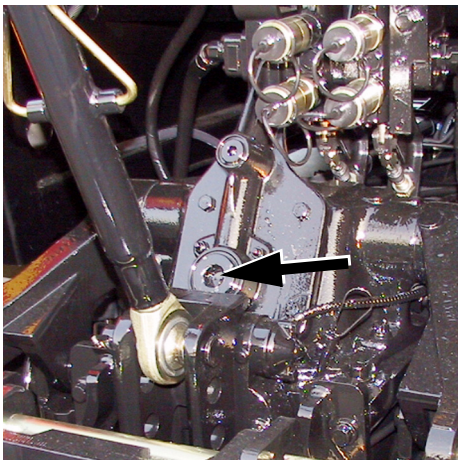
Change the transmission oil every 1200 hours.

1. Move the lift control buttons to lowest position.
2. Remove the drain plug (Fig. 19) and the filler plug (Fig. 20).
3. Refit the drain plugs, then refill the transmission with an approved oil, to the correct level.



V589

Fig. 19



Z2-384-11-04

Fig. 20

NOTE: Allow time for the oil to settle in the rear axle and transmission before rechecking the level. When you change transmission oil, you MUST bleed the hydraulic and braking circuits. If necessary, ask your nearest AGCO dealer for assistance.

5

5.12.1 - Filtering the hydraulic circuit

- **Change the 150 micron suction strainer** every 1200 hours (1 Fig. 21).
  - Unscrew the strainer and discard it.
  - Lightly oil the rubber seal.
  - Screw on the new strainer until the seal come into contact. Tighten an extra half-turn. Do not tighten excessively.

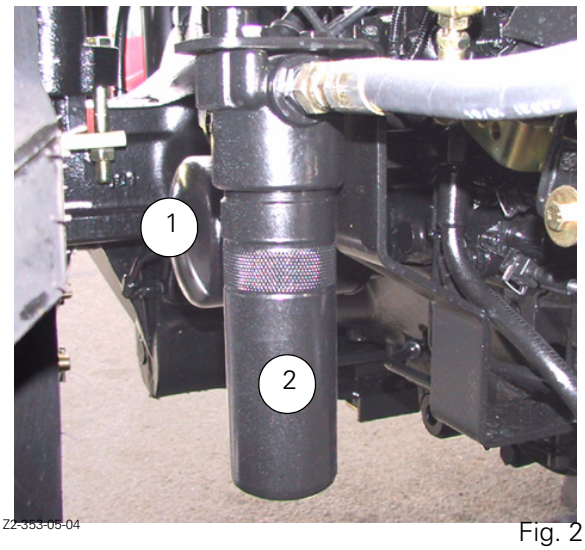


Fig. 21

- **Change the 15 micron filter** every 400 hours. Replace the high pressure filter element located on the right-hand side of the housing (2 Fig. 21).
  - Unscrew the filter body, pull out the filter element, allow to drain fully, and discard it.
  - Every 1200 hours, or as necessary, replace the seal.
  - Slide the new filter element onto the filter head.

  To avoid contamination by foreign material (swarf, sludge, etc.), do not completely remove the protective plastic until the filter element is in place.
  - Replace the filter body and screw hand tight until it locks.

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

- **Change 60 micron filter strainer** of the PowerShuttle (Fig. 22) every 1200 hours.

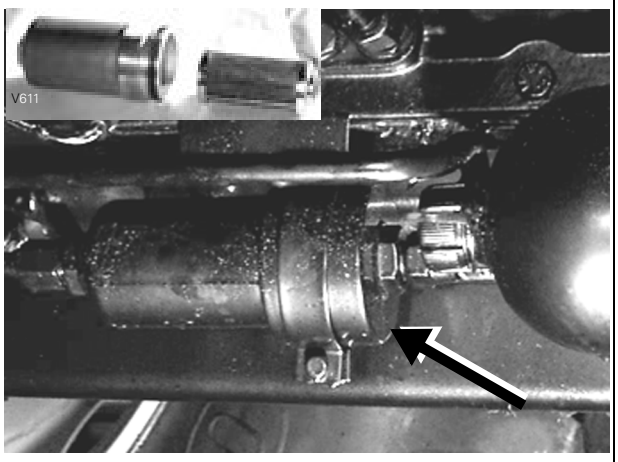
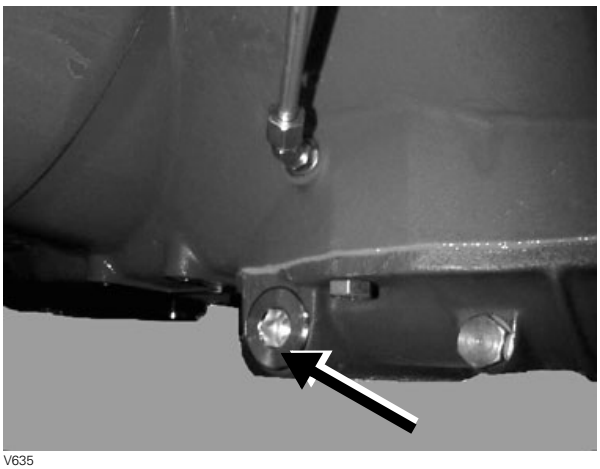
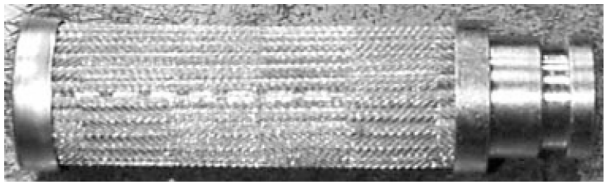


Fig. 22

- **Clean or change the wet clutch 250 micron suction strainer** every 1200 hours (according to model) (Fig. 23).



V635



V636

Fig. 23

NOTE: After changing the oil, the filter or the suction strainer, let the engine idle pressure is obtained, waiting for the 5 bar transmission oil filter light goes out and check for leaks. Recheck the oil level and top up if necessary.

5.12.2 - Transmission oil cooler (depending on version)

Clean the transmission cooler fins every 400 hours (this interval is flexible).

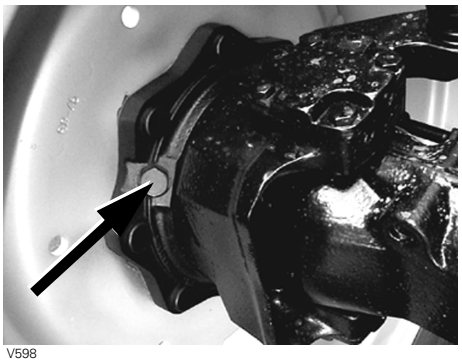
5.13 - FRONT AXLE - 2-WHEEL DRIVE

Check tightness of front axle screws, nuts, locknuts and bearings from time to time.

5.14 - FRONT AXLE - 4-WHEEL DRIVE

5.14.1 - Final drive units

Check the oil level in the front axle final reduction units every 400 hours (Fig. 24).
The oil should be level with the filler cap when the cap is in the horizontal position.


V598


V887

Fig. 24

Drain the oil from the final drive units every 800 hours or every 400 hours when working in muddy, wet or humid conditions.
Turn the wheel of the tractor to bring the drain, filler and level plug to its required position.

5.14.2 - Front axle

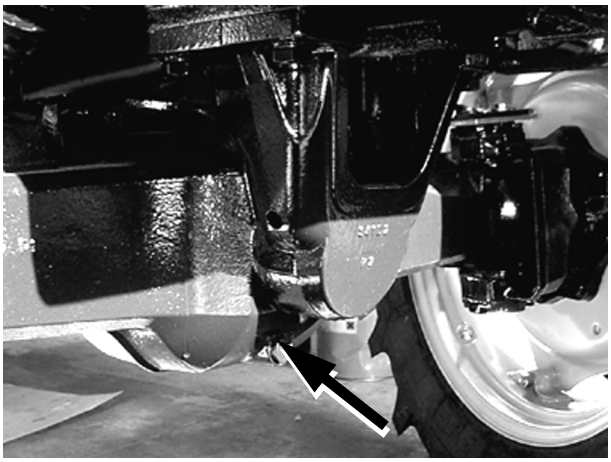
Check the front axle oil level every 400 hours. The oil should be level with the level plug (Fig. 25).

Drain the oil from the front axle every 800 hours via the drain plug (Fig. 26).


V599


V890

Fig. 25


V587


V890

Fig. 26

5.15 - CLUTCH AND BRAKES

5.15.1 - Adjustments

The clutch and brakes are operated hydraulically and require no adjustment. If necessary, consult your dealer or agent.

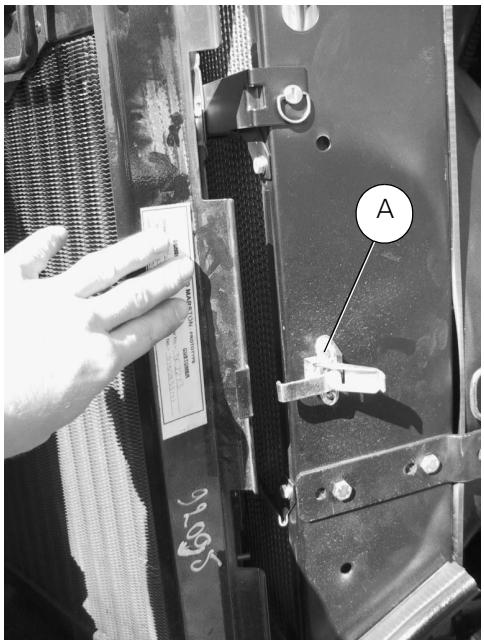
Bleed the brake / piston circuit every 1200 hours and after every servicing operation.

5.16 - AIR CONDITIONING SYSTEM

5.16.1 - Condenser

(Fig. 27)

Clean with a jet of compressed air every 400 hours, taking care not to damage the fins. To assist cleaning, the condenser can be released by unlocking the latch (A Fig. 27).



Z2-245-04-03

Fig. 27

5.16.2 - Checking the air conditioning system

Run the engine and operate the air conditioning system for a few moments.

Have your dealer or agent check the system once a year at the start of the summer.

NOTE: In order to keep the system in good condition, we recommend to operate the system for several minutes each week in order to lubricate all the seals.

NOTE: The condenser assembly slides to assist engine cleaning operations (depending on model).

DANGER: In the event of a leakage, wear safety goggles. Escaping refrigerant gas or liquid can cause severe injuries to eyes. In contact with a flame, R134a refrigerant gives a toxic gas.

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

5.17 - CHECKING THE FAN BELT CONDITION

5.17.1 - Check belt tension every 400 hours

Adjust the alternator belt.

The correct arrow value is 13 to 16 mm when pressing the hand on the belt midway between the fan pulley and crankshaft pulley.

A new belt may loosen after operating for approximately half an hour or an hour. Loosen the alternator clamp bolts in order to adjust the tension.

Firmly retighten the bolts.

The alternator should be checked by the dealer every 1200 hours or once a year.

NOTE: A belt tension gauge can be used.

5.18 - CAB

5.18.1 - Cab air filter

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

Accessing the filter(s) :

Standard roof :

1. To gain access to the cab air filter, open the hatch on the left-hand side of the cab roof (Fig. 28).
2. Turn the handle to the left and lift out the 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.

Flat roof :

1. To gain access to the cab air filters, turn the locks 1 (Fig. 29).
2. Open the hatches on either side of the cab roof, and take out 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 :

1. To gain access to the cab air filter, turn the locks 1 (Fig. 30) to open the hatch at the rear of the cab roof .
2. Loosen the two nuts 2 (Fig. 30) and extract the filter element.
3. Clean the filter by blowing with compressed air.
4. Before refitting the filter, wipe out the compartment with a damp cloth to remove dust.

WARNING: Air filter element does not protect from chemical products. Please ask your AGCO dealer for information concerning the availability of the specific particle filter.

Fig. 28

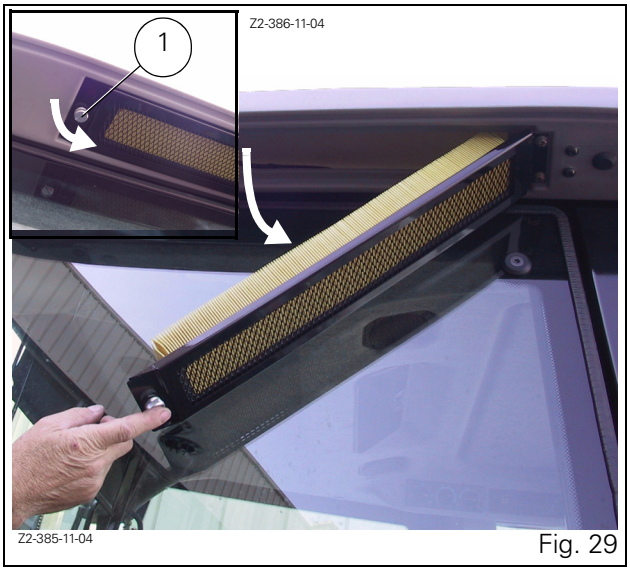


Fig. 29

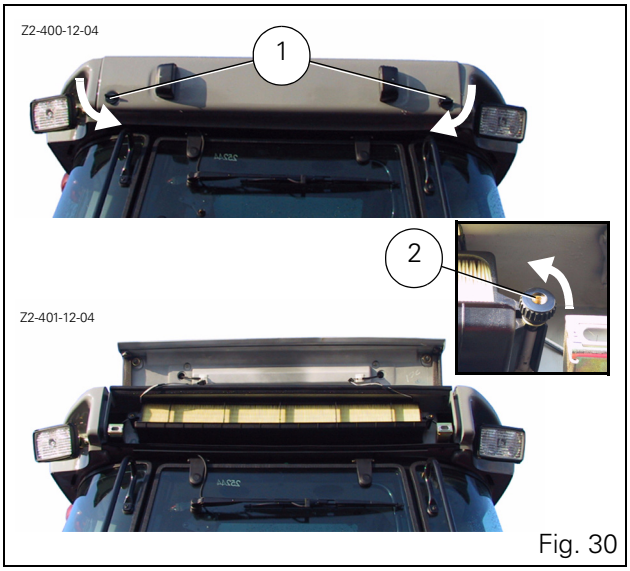


Fig. 30

5.18.2 - ROPS cab or frame

Have the tightness of the cab or frame fixing bolts checked by your dealer or agent every 400 hours.

CAUTION: The ROPS cab or frame complies with all international ROPS standards. It must never be drilled or modified to install accessories or implements. Welding any item to the cab or frame or repairing the cab or frame, is not permitted. If any such operation is carried out, the cab or frame may no longer comply with ROPS standards. The only components which can be fitted are AGCO original components, which must be fitted by your dealer or agent.

5.19 - TYRES

5.19.1 - Dual rear wheels

In general, dual rear wheels should be used for soil bearing capacity work (surface treatment and work) The correct dual rear wheels should be chosen according to the four following criteria :

1. Soil bearing capacity.
2. Tractive effort (narrow wheels)
3. Overall dimensions (2m50 for road gauge)
4. Type of tyre

CAUTION: The wrong choice of dual wheels has a direct influence on the mechanical components and the wheel discs of the tractor. The use of dual wheels should be avoided when making strong tractive efforts, even momentarily (tree-stump extraction, pulling out a bogged-down tractor, etc.).

5.19.2 - Use

Set the tractor to minimum track (Fig. 31).

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.

1. 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.
2. It is preferable to use wide tyres or low pressure tyres instead of twin wheels.

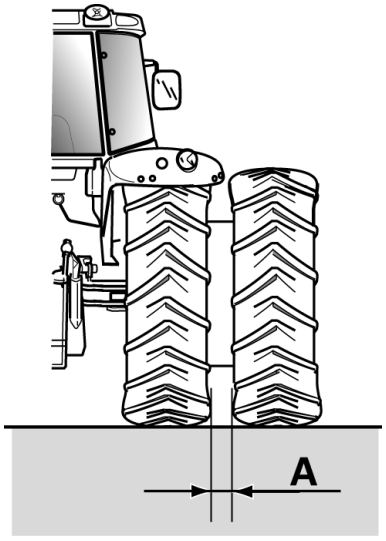
NOTE: Dual wheels do not double the load capacity of the tractor.

The minimum distance allowed between the tyres is 100 mm (A Fig. 31).

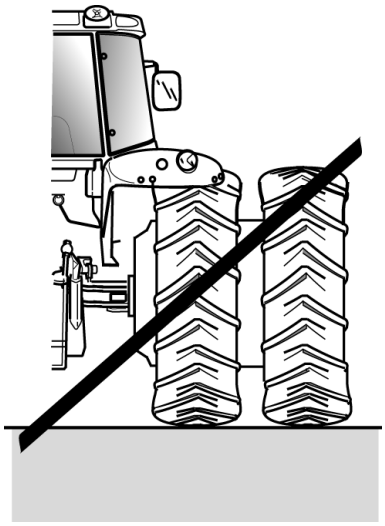
In clay soil, this distance should be increased in proportion to the tyre size. Example:

13.6.28 - Distance 130 mm

16.9-38 - Distance 160 mm



Z2-262-04-03



Z2-263-04-03

Fig. 31

5.19.3 - Wheel bolts

Check the tightening torque after the first two hours of use following fitting and every day thereafter.

5.19.4 - Liquid ballasting

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 local AGCO Dealer.

- Tyres with inner tube:

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

- Tubeless tyres
  Use a glycol based liquid containing corrosion inhibiting agents other than nitrites (Na No_2). Example: Agrilest, Castrol, Lestagel, Igol, etc.

5.19.5 - Inflation pressure:

0.2 bar less on the outer tyres.

5.19.6 - Pressure under load (bar) (psi)

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

IMPORTANT: The relationship between the sizes of the front and rear on 4-wheel drive tractors is most important and only compatible sizes must be used. The compatibilities are given in chapter 6.

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

- 2-wheel drive front wheels (Fig. 32)
- Rear wheels (Fig. 33)
- 4-wheel drive front wheels (Fig. 34)

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. 32

Roues arrière Rear Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu)						Inflation pressure (bar)	Inflation pressure (Psi)
	Kleber		*Michelin*		*Goodyear*			
	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)						Inflation pressure (bar)	Inflation pressure (Psi)
	Kleber		*Michelin*		*Goodyear*			
	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. 33

Roues avant Front Wheels	TYRE MAXIMUM LOAD (Pression maxi pneu)								Inflation pressure (Psi)
	Kleber		*Michelin*		*Goodyear*		Inflation pressure (bar)		
	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			
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)								Inflation pressure (Psi)
	Kleber		*Michelin*		*Goodyear*		Inflation pressure (bar)		
	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			
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. 34

5.20 - WHEELS

Check the tightness of wheel nuts every day. Torque all wheel nuts until torque is held according to the values (dry nuts) (see Specifications).

5.21 - TRACK ADJUSTMENTS

5.21.1 - Front wheel track

5.21.1.1 - 2-wheel drive

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

Wheel tracks (mm)	Standard axle beam	Wide wheel track
Minimum wheel track	1403	1970
Intermediate wheel track	1504 1606 1708 1809	2072 2174 2275
Maximum wheel track	1911	2377

To adjust, proceed as follows:

1. Raise the front of the tractor using a jack.
2. Take out the three bolts (1, Fig. 35) which fix each telescopic arm to the axle beam and remove the bolt locking the telescopic ram (2, Fig. 35).
3. Extend the axle outer arms to achieve the desired track width setting then refit the bolts and tighten to a torque of **340 - 450 Nm**.
4. Adjust the steering rams to correspond with the selected track width. Refit the screws and bolts to a torque of **120 - 160 Nm** .

NOTE: The two widest track width settings must only be used under light load conditions.

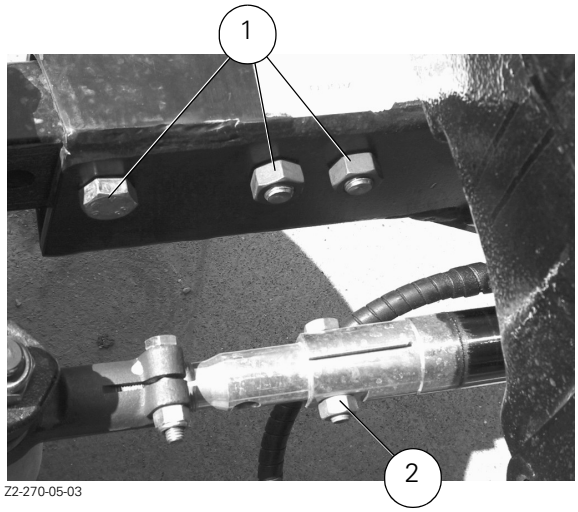


Fig. 35

5.21.1.2 - 4-wheel drive

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

Adjustable steel wheels (Fig. 36)

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

NOTE: If the wheels are reversed, transfer them to opposite sides of the tractor.

When refitting, tighten the nuts progressively to the correct torques. See tightening torque table (chapter 6).

		5425/5435/5445/5455/5460			5465			
Position	Rims	24"	9x28"	11x28"	24"	11x28"	9x28" 12x28" 14x28"	14x28"
Wheel disc facing inwards	1	1438	1435	1437	1568	1568	1566	1686
	2	1551	1549	1550	1682	1681	1680	1800
	3	1639	1641	1640	1770	1771	1772	1892
	4	1752	1755	1753	1883	1884	1886	2060
Wheel disc facing outwards	5	1606	1603	1605	1737	1736	1734	1854
	6	1719	1718	1718	1850	1849	1848	1972
	7	1807	1809	1808	1938	1939	1940	2060
	8	1920	1923	1921	2051	2052	2054	2174

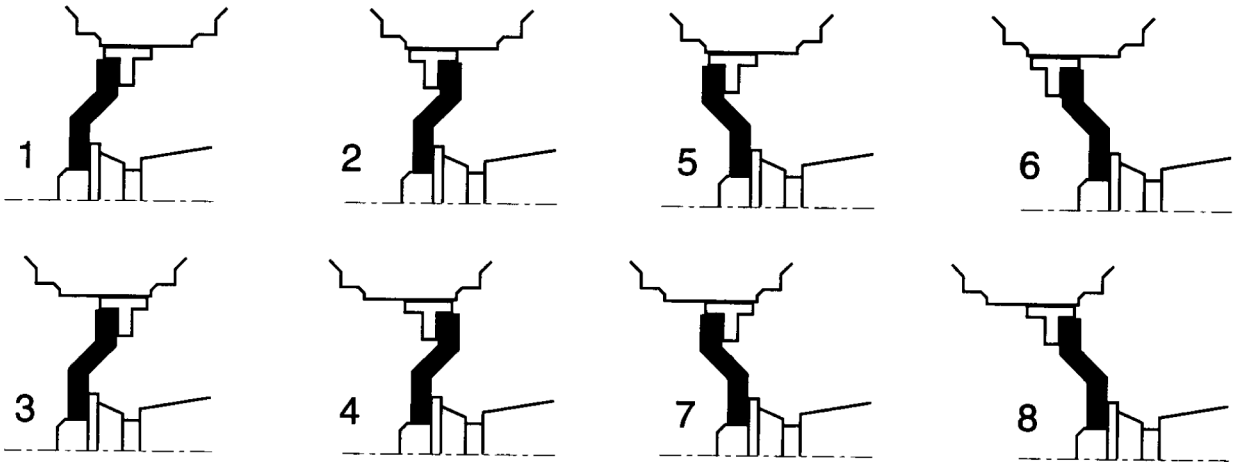


Fig. 36

NOTE: With narrow track widths and with certain tyre fittings, the wheels may touch the body when turning at maximum lock.

To prevent this, the hubs are fitted with threaded stops (Fig. 37) which can be adjusted to limit the turning lock. It is recommended to increase the front axle movement allowance (oscillation) to its maximum level by removing shim 1 under the stop or by changing stop 2 (Fig. 38). In this case, use attachment screw 3 supplied in the toolbox.

NOTE: The axle is factory set for tractor transport.

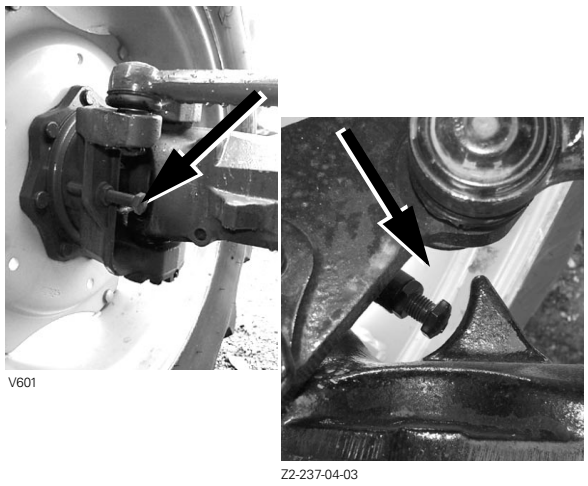


Fig. 37

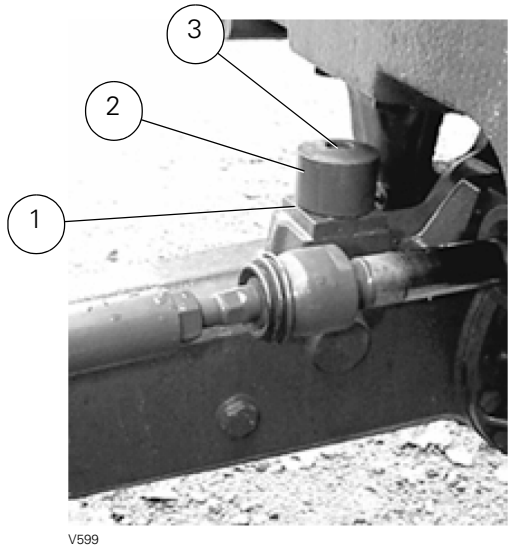


Fig. 38

5.21.2 - Rear wheel track adjustment (mm)

Wheels with steel flange

The various track settings are obtained by changing the position of the rim in relation to the disc or by reversing the wheels (Fig. 39).

NOTE: If the wheels are reversed, transfer them to opposite sides of the tractor.

On refitting, tighten the nuts progressively according to the tightening torque table (chapter 6).

		5425 to 5465					
Position	**Tyres**	16.9R30	16.9R34 18.4R34 480.70R34	520.70R34	600.65R34	13.6R38 16.9R38 18.4R38 480.70R38	520.70R38 540.65R38 600.65R38
Wheel disc facing inwards	**1**						
	2	1538				1636	
	3	1626	1626	●		1532	●
	4	1740	1744	●	●	1736	●
Wheel disc facing outwards	**5**	1824	1824	●	●	1832	●
	6	1928	1942	●	●	2036	●
	7	2026	2026	●	●	1932	●
	8	2140	2144	●	●	2136	●

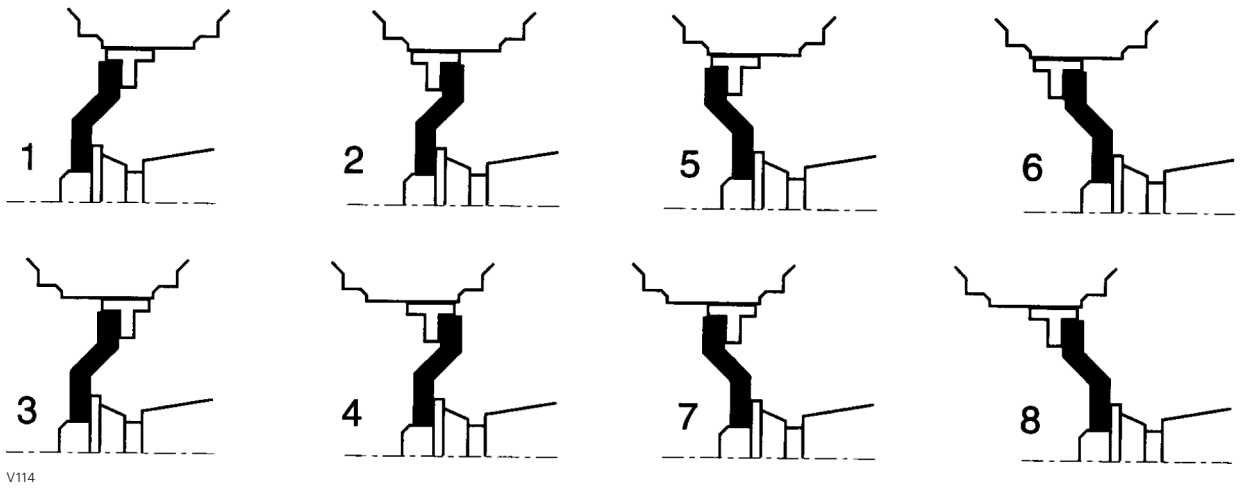


Fig. 39

5.22 - ELECTRICAL EQUIPMENT

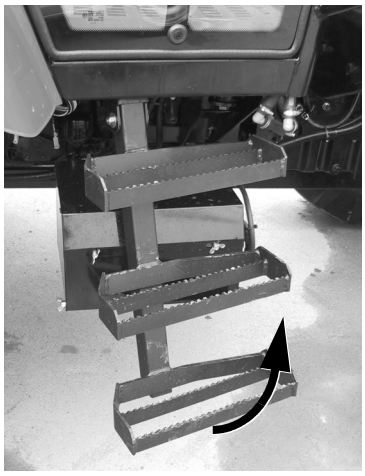
The 12 volts circuit is a negative ground system.

5.22.1 - Batteries

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

The battery is located:

- at the front of the engine compartment on tractors with a standard bonnet
- under the cab right-hand footstep on tractors with a steep nose bonnet (Fig. 40).



Z2-234-04-03

Fig. 40

WARNING: Batteries generate explosive gases. Sparks, flames, lit cigarettes or any flammable source must be kept away. Wear appropriate safety goggles when working near batteries.

5.22.2 - Alternator

Check the fan and alternator belts tension every 400 hours. Retighten the nuts.

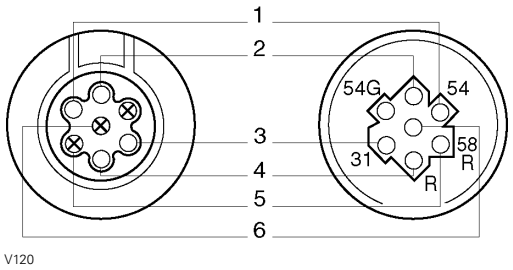
Get your dealer or agent to check the alternator every 1200 hours or once a year.

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 system.

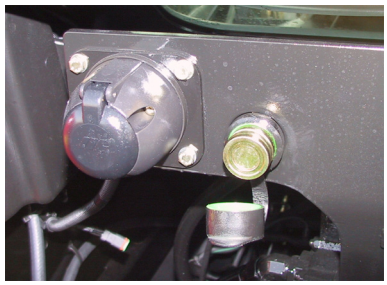
5.22.3 - Trailer socket (ISO)

Connection (Fig. 41).

1. Brake light (white wire)
2. LH direction light (pink wire)
3. Ground (black wire)
4. RH direction light (brown wire)
5. RH side light (red wire - red terminal)
6. LH side light (red wire)



V120



Z2-378-11-04

Fig. 41

5.22.4 - Headlight adjustment

The headlights are adjusted by tightening or loosening the three screws as required.

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

Legend (Fig. 42)

A. Distance between the headlights and a wall or a screen.
B. Height from the centre of the headlights to the ground.
C. Headlights centre to centre distance.
D. Height after adjustment.

5.22.4.1 - Headlight adjustment procedure

1. Position the tractor facing a wall or a screen 7.5m away and on a level surface;
2. Draw a horizontal line, 1, on wall equal to height, B;
3. Draw two vertical lines on wall equal to width, C;
4. Draw a horizontal line, 2, according to D = (B x 0.1). Adjust each headlight individually, by masking the opposite light, and aligning the upper edge of the lighted zone with the top of line 2.

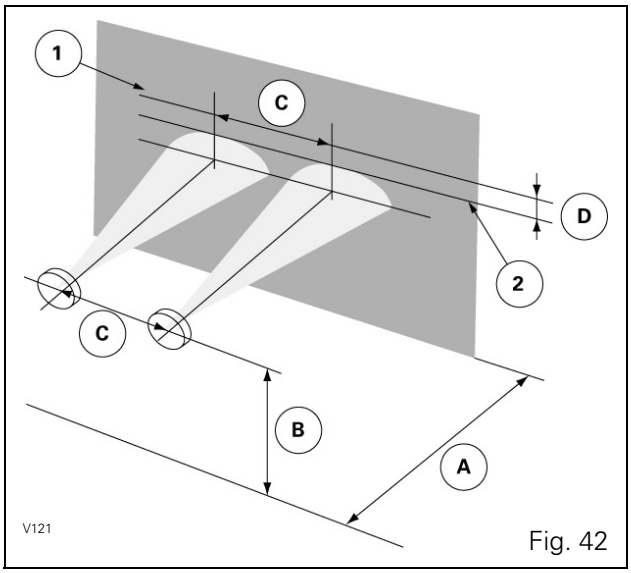


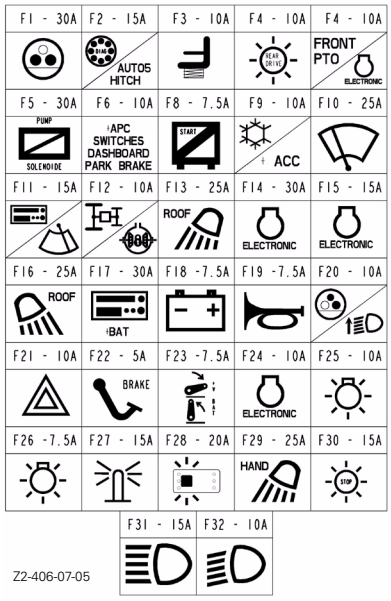
Fig. 42

5.23 - REPLACING FUSES

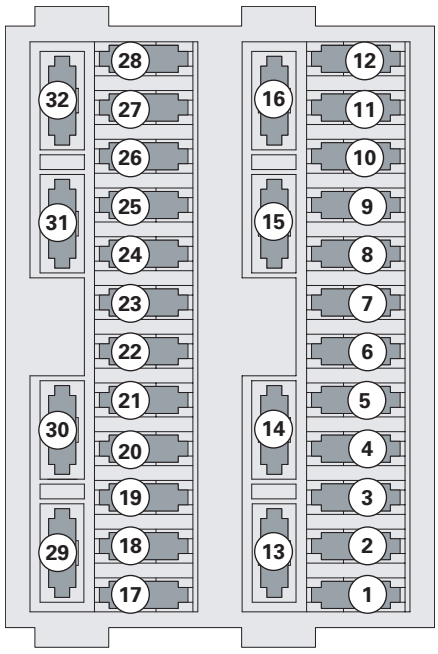
Always replace a fuse with another fuse of the same capacity

Num.	Amp	
F1	30	Accessories power socket
F2	7,5	EHRB linkage, Autotronic 5, diagnostics connector
F3	10	Pneumatic seat, calculator power supply
F4	10	Reversing light, front PTO, electronic injection
F5	30	Injection pump solenoid, diesel fuel booster pump (4-cylinder engine), temperature switch
F6	10	Instrument panel, power take-off, + ignition on (transmission)
F7		Not used
F8	7,5	Starter relay
F9	10	Cab relay, ventilation, air conditioning, radio, buzzer, + ignition on
F10	25	Front windscreen wiper, buzzer
F11	15	Rear windscreen wiper, radio
F12	10	Speedshift, 4WD, PowerShuttle, clutch pedal, differential lock
F13	25	Front work headlight
F14	30	Electronic injection (EEM) (5465 only)
F15	15	Thermostart (EEM) (5465 only)
F16	25	Rear work headlight
F17	30	Radio (+ permanent)
F18	7,5	Alternator charge
F19	7,5	Horn
F20	10	Accessory power socket, handrail lights, reversing light
F21	10	Hazard warning light unit
F22	5	Brake switches
F23	7,5	Linkage
F24	10	Electronic injection (5465 series only), Autotronic 5
F25	10	Front right and rear left sidelights, backlighting
F26	7,5	Front left and rear right sidelights, instrument panel backlighting, ground relay
F27	15	Flashing beacon
F28	20	Warning switch
F29	25	Additional fender and handrail work headlights
F30	15	Stop lights
F31	15	Road lights
F32	10	Dipped lights

A 175A fuse, located near the starter, protects the power supply.
A 50A fuse located in the lower right-hand section of the instrument panel protects the ventilation and / or air conditioning circuit.



Z2-406-07-05



Z2-407-07-05

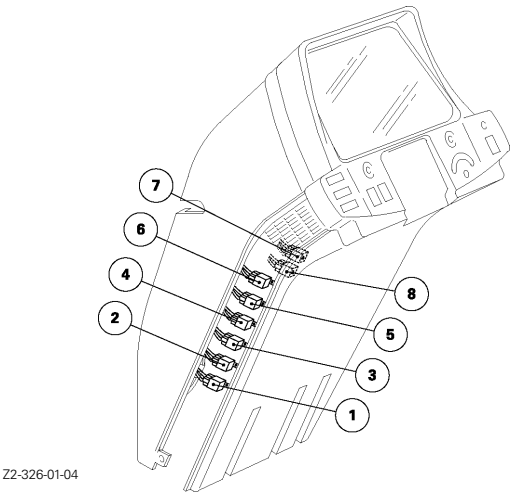

Z2-271-05-03

Fig. 43

5

5.24 - LAYOUT OF RELAYS

Ref.	Function	Amperage	Layout		
1	Ground authorisation (work headlights)	25A	Inside cab	Pedal support	Left leg
2	Front work headlights	25A			
3	Rear work headlights	25A			
4	Air conditioning compressor	25A			
5	Stop lights	25A			
6	Speedshift	25A			
7	Injection pump	25A			
8	Thermostart	25A			
9	Accessory supply	50A			Right leg
10	Reversing light	25A			
11	Wiper timer	25A			
12	Ventilation and air conditioning	50A			
13	Differential locks	25A		Right-hand console	Gear lever bracket
14	4-wheel drive	25A			
15	Direction lights (North America)	25A			
		25A			
		25A			
		25A			



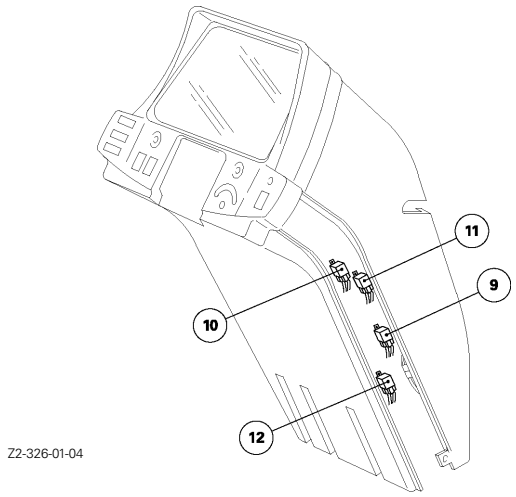


Fig. 44

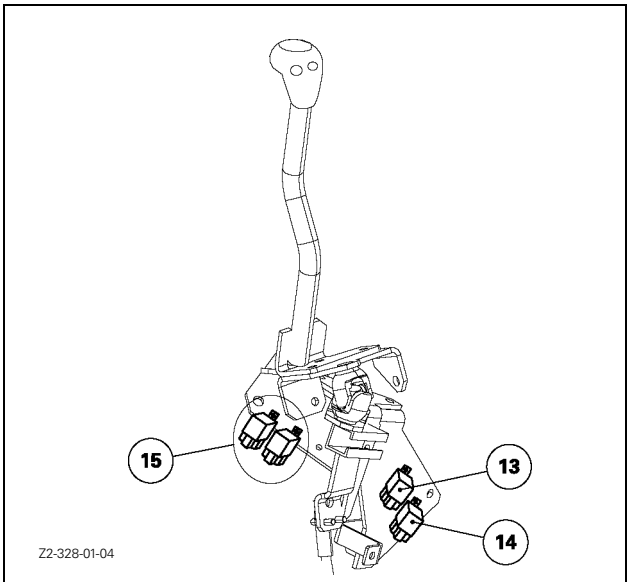


Fig. 45

5.25 - FUEL HANDLING, STORAGE AND SPECIFICATION

5.25.1 - Diesel fuel

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

Under no circumstance should gasoline, alcohol, gasohol or dieselhol (a mixture of diesel fuel and alcohol) be added to diesel fuel because of increased fire or explosion risks. In a closed container such as a fuel tank they are more explosive than pure gasoline. DO NOT use these blends. Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system. Clean the filler cap area. Fill the tank at the end of each day to reduce overnight condensation.

- Never take the cap off or refuel with the engine running or hot.
- When filling the tank, keep control of the nozzle.
- DO NOT smoke.
- Don't fill the tank to its full capacity. Allow room for expansion and wipe up spilt fuel immediately.
- If the original cap is lost, replace it with an AGCO cap and tighten securely. A non-AGCO cap may not be suitable.
- Keep equipment properly maintained.

CAUTION: Diesel fuel is very inflammable. Handle fuel with care. Keep away from naked flames. Do not smoke when filling the tank or when filling the engine. Do not leave the engine when filling the tank. Clean up any fuel which may have been split. Any material which comes into contact with the fuel must be moved to a safe place.

If high pressure fuel comes into contact with the skin, immediately wash with clean water and obtain medical assistance.

5.25.1.1 - Recommended fuel specification

The diesel fuel used must meet DIN EN 590 standard. To get the correct power and performance from your engine, use good quality fuel. The recommended fuel specification for engines is indicated below:

- Cetane No. 45 minimum.
- Viscosity 2… 4.5 mm2/s at 40°C.
- Density 0.820/0.860 kg/litre at 15°C.
- Sulphur 0.20% of mass, maximum.
- Distillation 85% at 350°C.
- Water content maximum 200 mg/Kg.

Cetane Number

Cetane number indicates ignition performance. A fuel with a low cetane number can cause cold start problems and affect combustion.

Viscosity

Viscosity is the flow resistance; engine performance can be affected if it is outside the specified limits.

Density

A lower density reduces engine power, a higher density increases engine power and exhaust smoke.

Sulphur

A high amount of sulphur can cause engine wear.

Distillation

Distillation is an indication of the mixture of different hydrocarbons in the fuel. A high ratio of light-weight hydrocarbons can affect the combustion characteristics.

Low Temperature Fuel

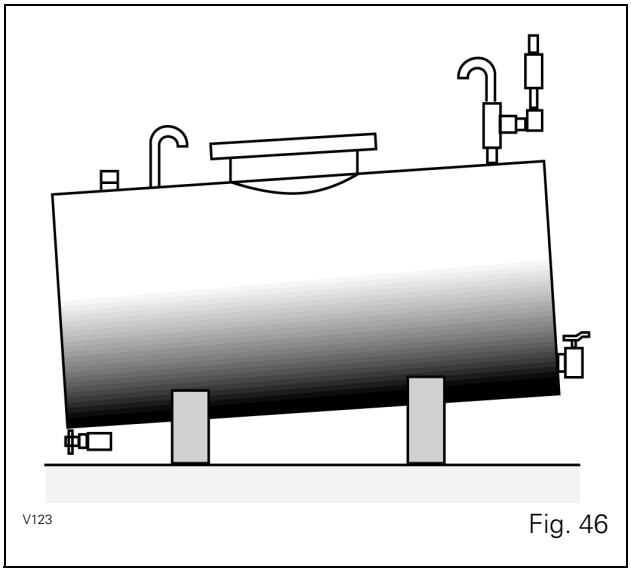
Special winter fuels may be available for engine operation at temperatures below 0°C. These fuels have a lower viscosity and also limit the wax formation in the fuel at low temperatures. If wax formation occurs, this could stop the fuel flow through the filter. If you need advice on engine setting or lubricating oil change periodicity due to the quality of the available fuel, consult your nearest AGCO Dealer.

5.25.2 - Fuel storage conditions

(Fig. 46)

The utmost care must be taken to keep fuel clean.

1. Never clean the inside of containers of other fuel system components with a fluffy cloth.
2. Bulk storage tanks should not be too large: approximately 10,000 litres.
3. 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 strainer. The storage tank should have a fall of about 4 cm per metre towards the rear (drain plug side).
4. Let the fuel settle in the storage tank for 24 hours before use after any maintenance or refilling the tank.
5. Clean out the storage tanks regularly; in general every five years, and more frequently in cold climates.
6. Bleed the tank frequently to drain off any water formed by condensation.
7. Rotate fuel stocks to prevent deterioration of old fuel and the accumulation of water or foreign matter.
8. Do not wait for fuel stocks to be used up before getting in new supplies; refuelling from the bottom of the tank leads to a risk of damage to the fuel system.



V123

Fig. 46

Advice on the use of fuel in cold weather

1. Diesel fuel increases in viscosity and wax particles form in cold weather. This may lead to operating problems if precautions are not taken.
2. Underground storage is preferable.

IMPORTANT: Protection of the environment - local regulations in force relating to underground storage must be complied with.

   If this is not possible, place the storage tank or drum in a location which is protected from the cold, wind or damp.
3. After filling the storage tank, drain the first 5 litres into a drum before filling the fuel tank. After refuelling the tractor, return the fuel in the drum to the storage tank.
4. Insulate all exposed pipework. Ensure that any pipework is short in length and designed to be disassembled if necessary.
5. Stock "winter" quality fuel during the cold weather season.

Frequently clean the fuel filter sediment bowl.

Do not puncture the fuel filter.

Ensure a spare filter is always available. If a stoppage occurs, due to fuel waxing, in most cases changing the fuel filter will make restarting possible.

5.26 - STORING THE TRACTOR

If a tractor is not going to be used for a long time, certain precautions must be taken to protect it. Consult your dealer or agent for further information.

Chapter 6

SPECIFICATIONS

CONTENTS

6.1 - ENGINE

Specifications	5425	5435	5445	5455	5460	5465
Perkins engine	1104C-44	1104C-44	1104C-44T	1104C-44T	1104C-44TA	1106C-E60TA
Number of cylinders	4	4	4	4	4	6
Turbocharger Intercooler	no -	no -	yes no	yes no	yes air/air	yes air/air
Bore (mm)	105	105	105	105	105	100
Stroke (mm)	127	127	127	127	127	127
Cubic capacity (l)	4.4	4.4	4.4	4.4	4.4	6
Nominal power (ISO Kw)	54	60	67	74.5	83.5	87
At engine speed in rpm	2200	2200	2200	2200	2200	2200
Maximum torque (ISO Nm) Engine speed at maximum torque	297 1400	297 1400	380 1400	415 1400	471 1400	500 1400
Idle speed Maximum rated speed (rpm) (± 30 rpm)	950 2330	950 2380	950 2350	950 2350	950 2350	950 2350
Lubrication	By gear pump - suction strainer and external filter(s) with replacable cartride(s)					
Valves	Overhead, push-rod operated					
Valves clearance (Cold): Inlet (mm) Exhaust (mm)	 0.20 0.45	 0.20 0.45	 0.20 0.45	 0.20 0.45	 0.20 0.45	 0.20 0.45
Engine oil cooler	yes	yes	yes	yes	yes	yes

6.1.1 - Fuel system and air filter

Specifications	5425	5435	5445	5455	5460	5465
Fuel filter with sediment bowl	no	no	no	no	no	yes
Number of elements	1	1	1	1	1	1 + prefilter
Injection pump	Bosch VE10		Lucas DP 210			Bosch VP 30
Injectors and nozzle holders: Fuel injection type	 mechanical					 electronic
Cold weather starting	glow plugs					Thermostart
Air cleaner: two-stage, dry element with clogging indicator.						

6.2 - GROUND SPEEDS

6.2.1 - Road speed at 2200 rpm "Speedshift" and creeper and super creeper gears for 5425 and 5435. 16.9R34 tyres

POSITION			FORWARD AND REVERSE POWERSHUTTLE; FORWARD MECHANICAL REVERSE SHUTTLE						REVERSE MECHANICAL REVERSE SHUTTLE					
RANGE			SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14		SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14	
Version			30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph
LOW	1	C	1.96	2.47	0.49	0.62	0.14	0.18	1.90	2.40	0.47	0.60	0.14	0.17
		D	2.47	3.12	0.62	0.78	0.18	0.22	2.40	3.03	0.60	0.76	0.17	0.22
	2	C	2.95	3.73	0.74	0.93	0.21	0.27	2.87	3.62	0.72	0.91	0.21	0.26
		D	3.73	4.72	0.93	1.18	0.27	0.34	3.62	4.58	0.91	1.14	0.26	0.33
	3	C	4.09	5.17	1.02	1.29	0.29	0.37	3.96	5.01	0.99	1.25	0.28	0.36
		D	5.17	6.53	1.29	1.63	0.37	0.47	5.01	6.33	1.25	1.58	0.36	0.45
	4	C	5.92	7.48	1.48	1.87	0.42	0.53	5.74	7.26	1.44	1.81	0.41	0.52
		D	7.48	9.45	1.87	2.36	0.53	0.68	7.26	9.17	1.81	2.29	0.52	0.66
HIGH	1	C	7.84	9.91	-	-	-	-	7.61	9.61	-	-	-	-
		D	9.91	12.53	-	-	-	-	9.61	12.15	-	-	-	-
	2	C	11.85	14.97	-	-	-	-	11.49	14.52	-	-	-	-
		D	14.97	18.92	-	-	-	-	14.52	18.36	-	-	-	-
	3	C	16.39	20.72	-	-	-	-	15.90	20.10	-	-	-	-
		D	20.72	26.72	-	-	-	-	20.10	25.40	-	-	-	-
	4	C	23.73	30.00	-	-	-	-	23.02	29.10	-	-	-	-
		D	30.00	37.91	-	-	-	-	29.10	36.77	-	-	-	-

6.2.2 - Road speed at 2200 rpm "Speedshift" and creeper and super creeper gears for 5445. 16.9R38 tyres

POSITION			FORWARD AND REVERSE POWERSHUTTLE; FORWARD MECHANICAL REVERSE SHUTTLE						REVERSE MECHANICAL REVERSE SHUTTLE					
RANGE			SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14		SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14	
Version			30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph
LOW	1	C	2.08	2.63	0.52	0.66	0.15	0.19	2.02	2.55	0.51	0.64	0.14	0.18
		D	2.63	3.33	0.66	0.83	0.19	0.24	2.55	3.23	0.64	0.81	0.18	0.23
	2	C	3.15	3.98	0.79	0.99	0.23	0.28	3.05	3.86	0.76	0.96	0.22	0.28
		D	3.98	5.03	0.99	1.26	0.28	0.36	3.86	4.88	0.96	1.22	0.28	0.35
	3	C	4.66	5.89	1.16	1.47	0.33	0.42	4.52	5.71	1.13	1.43	0.32	0.41
		D	5.89	7.44	1.47	1.86	0.42	0.53	5.71	7.22	1.43	1.80	0.41	0.52
	4	C	6.30	7.97	1.58	1.99	0.45	0.57	6.11	7.73	1.53	1.93	0.44	0.55
		D	7.97	10.07	1.99	2.52	0.56	0.71	7.73	9.77	1.93	2.44	0.55	0.68
HIGH	1	C	7.81	9.87	-	-	-	-	7.57	9.57	-	-	-	-
		D	9.87	12.47	-	-	-	-	9.57	12.10	-	-	-	-
	2	C	11.79	14.90	-	-	-	-	11.44	14.46	-	-	-	-
		D	14.90	18.84	-	-	-	-	14.46	18.27	-	-	-	-
	3	C	17.46	22.07	-	-	-	-	16.94	21.40	-	-	-	-
		D	22.07	27.89	-	-	-	-	21.40	27.05	-	-	-	-
	4	C	23.63	29.86	-	-	-	-	22.92	28.96	-	-	-	-
		D	29.86	37.74	-	-	-	-	28.96	36.61	-	-	-	-

6.2.3 - Road speed at 2200 rpm "Speedshift" and creeper and super creeper gears for 5455 and 5460. 18.4R38 tyres

POSITION			FORWARD AND REVERSE POWERSHUTTLE; FORWARD MECHANICAL REVERSE SHUTTLE						REVERSE MECHANICAL REVERSE SHUTTLE					
RANGE			SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14		SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14	
Version			30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph
LOW	1	C	2.18	2.76	0.55	0.69	0.16	0.20	2.12	2.68	0.53	0.67	0.15	0.19
		D	2.76	3.49	0.69	0.87	0.20	0.25	2.68	3.38	0.67	0.85	0.19	0.24
	2	C	3.30	4.17	0.82	1.04	0.24	0.30	3.20	4.04	0.80	1.01	0.23	0.29
		D	4.17	5.27	1.04	1.32	0.30	0.38	4.04	5.11	1.01	1.28	0.29	0.37
	3	C	4.88	6.17	1.22	1.54	0.35	0.44	4.74	5.98	1.18	1.50	0.34	0.43
		D	6.17	7.80	1.54	1.95	0.44	0.56	5.98	7.56	1.50	1.89	0.43	0.54
	4	C	6.61	8.35	1.65	2.09	0.47	0.60	6.41	8.10	1.60	2.02	0.46	0.58
		D	8.35	10.55	2.09	2.64	0.60	0.75	8.10	10.24	2.02	2.56	0.58	0.73
HIGH	1	C	8.18	10.34	-	-	-	-	7.94	10.03	-	-	-	-
		D	10.34	13.07	-	-	-	-	10.03	12.68	-	-	-	-
	2	C	12.36	15.62	-	-	-	-	11.99	15.15	-	-	-	-
		D	15.62	19.74	-	-	-	-	15.15	19.15	-	-	-	-
	3	C	18.30	23.12	-	-	-	-	17.75	22.43	-	-	-	-
		D	23.12	29.23	-	-	-	-	22.43	28.35	-	-	-	-
	4	C	24.76	31.29	-	-	-	-	24.02	30.35	-	-	-	-
		D	31.29	39.55	-	-	-	-	30.35	38.36	-	-	-	-

6.2.4 - Road speed at 2200 rpm "Speedshift" and creeper and super creeper gears for 5465. 18.4R38 tyres

POSITION			FORWARD AND REVERSE POWERSHUTTLE; FORWARD MECHANICAL REVERSE SHUTTLE						REVERSE MECHANICAL REVERSE SHUTTLE					
RANGE			SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14		SPEEDSHIFT		CREEPER 1/4		CREEPER 1/14	
Version			30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph	30 kph	40 kph
LOW	1	C	2.03	2.56	0.51	0.64	0.15	0.18	1.97	2.48	0.49	0.62	0.14	0.18
		D	2.56	3.24	0.64	0.81	0.18	0.23	2.48	3.14	0.62	0.79	0.18	0.22
	2	C	3.06	3.87	0.77	0.97	0.22	0.28	2.97	3.75	0.74	0.94	0.21	0.27
		D	3.87	4.89	0.97	1.22	0.28	0.35	3.75	4.74	0.94	1.19	0.27	0.34
	3	C	4.24	5.35	1.06	1.34	0.30	0.38	4.11	5.19	1.03	1.30	0.29	0.37
		D	5.35	6.77	1.34	1.69	0.38	0.48	5.19	6.57	1.30	1.64	0.37	0.47
	4	C	6.13	7.75	1.53	1.94	0.44	0.55	5.95	7.52	1.49	1.88	0.43	0.54
		D	7.75	9.80	1.94	2.45	0.55	0.70	7.52	9.51	1.88	2.38	0.54	0.68
HIGH	1	C	8.13	10.27	-	-	-	-	7.88	9.96	-	-	-	-
		D	10.27	12.98	-	-	-	-	9.96	12.59	-	-	-	-
	2	C	12.28	15.52	-	-	-	-	11.91	15.05	-	-	-	-
		D	15.52	19.61	-	-	-	-	15.05	19.02	-	-	-	-
	3	C	16.99	21.47	-	-	-	-	16.48	20.83	-	-	-	-
		D	21.47	27.14	-	-	-	-	20.83	26.33	-	-	-	-
	4	C	24.60	31.09	-	-	-	-	23.86	30.16	-	-	-	-
		D	31.09	39.29	-	-	-	-	30.16	38.11	-	-	-	-

6.3 - ELECTRICAL SYSTEM

Voltage:	12 volts negative ground.
Batteries:	1 or 2 maintenance free batteries.
Alternator:	80/120 Amp. according to model
Safe start-up:	Operated by the clutch pedal.
Lights:	European code 40/45 W
Sidelights:	5 W
Direction indicators:	21 W
Number plate light:	10 W
Work headlights:	55 W - H3
Instrument panel lighting and indicator lights:	3 W - 2 W - 1.2 W
Roof light:	10 W

6.4 - COOLING

Operating mode:	Centrifugal pump and pressurised radiator. Regulated and controlled by a thermostat. Opening temperature: 82 °C.
Fan:	Viscostatic clutch fan Gear driven water pump.
Belt deflection: on longest cable	19 mm (4 cylinders) 10 mm (6 cylinders)

6.5 - TRANSMISSION

Gearbox:	- 16 gears.
• With Speedshift:	- 16 forward speeds. - 16 reverse speeds. - Synchronised reverse shuttle or mechanical reverse shuttle.
• Creeper gearbox ratio 4/1:	- 4/1: 8 creeper gears. - 14/1: 16 creeper gears.
• Clutch:	- Multidisc wet clutch with electric control (PowerShuttle). - Dry clutch with hydraulic control (mechanical reverse shuttle).
• Filtration:	150 micron suction strainer, located to the left of the centre housing. External main high-pressure 15 micron filter, to the right of the centre housing.
• PowerShuttle 5425 to 5455:	- Driven by clutch with 4 discs in forward, 3 discs in reverse.
• PowerShuttle 5460/5465:	- Driven by clutch with 5 discs in forward, 4 discs in reverse.
• Filtration:	1 strainer, 60 micron.
• Mechanical reverse shuttle 5425 / 5435:	- Driven by dry clutch with 5 pads.
• Mechanical reverse shuttle 5445 to 5465:	- Driven by dry clutch with 6 pads.

6.6 - FINAL DRIVE UNITS

Drive units:	Epicyclic, located in the rear axle housings.
Reduction ratios:	5425/5435/5445/5455 (ND): 4.714:1. 5460 and 5465 (HD): 5.077:1.

6.7 - POWER TAKE-OFF

Power take-off:	Proportional to engine speed: Hydraulic clutch.
Interchangeable shaft:	540 or 1000 rpm at engine 2000 rpm, (Ø35 mm (1.4 in.), 6 or 21 splines).
Shiftable PTO:	Fixed shaft - 540/1000 rpm at engine 2000 rpm (Ø35 mm (1.4 in.)). Interchangeable shaft - 540 rpm or 1000 rpm (Ø35 mm (1.4 in.), 6 or 21 splines) at engine 2000 rpm.
Speed shifting (according to model):	By changing shafts, either by external selector lever on rear left-hand side of centre housing or by lever inside cab.
Economy PTO (option):	Assembles on standard PTO. Standard speeds 540 and 1000 rpm can be obtained: - either as shown above (direct drive) - or at engine 1550 rpm (overdrive gear) - "economy" speed.
Control:	Lever in cab.
Ground speed PTO (optional):	
- 5425/5435/5445/5455/5460:	540 rpm - 7.78 turns of the PTO shaft for 1 turn of the wheels. 1000 rpm - 14.44 turns of the PTO shaft for 1 turn of the wheels.
- 5465:	540 rpm - 8.56 turns of the PTO shaft for 1 turn of the wheels. 1000 rpm - 15.86 turns of the PTO shaft for 1 turn of the wheels.
Control:	Lever in cab.

6.8 - FOUR-WHEEL DRIVE FRONT AXLE

Clutch mechanism:	- Electrohydraulic Electrically controlled via a knob.
Differential lock:	Differential lock with electrohydraulically controlled coupler.
Gear ratios:	AG 85 (18.975) - AG 105B (18.975) - C 20.19 (21.33).

6.9 - HYDRAULICS (ACCORDING TO MODEL OR COUNTRY)

6.9.1 - 57 L/min Open Centre

Two-stage gear pump, driven directly by the engine.

- **1st stage**
  - A pump (flow rate 32.7 l/min. at maximum engine speed, pressure 17 bar) ensures:

Hydrostatic steering	High/Low range gear control
Speed reducer	Differential lock
PTO	Front PTO
Four-wheel drive	Brakes
Clutch	Lubrication of gearbox and PTO

- **2nd stage**
  - A pump (flow rate 57 l/min. at maximum speed, pressure 200 bar) supplies the hydraulic linkage, the auxiliary hydraulics, and trailer braking.

Filtration:	External 150 micron suction strainer. External 15 micron high pressure filter.

6.9.2 - 100 L/min Open Centre

Three hydraulic pumps:

- **1st stage**
  - A pump (flow rate 32.7 l/min. at maximum engine speed, pressure 17 bar) ensures:

Hydrostatic steering	High/Low range gear control
Speed reducer	Differential lock
PTO	Front PTO
Four-wheel drive	Brakes
Clutch	Lubrication of gearbox and PTO

- **2nd stage**
  - A pump (40 l/min. at maximum speed, pressure 200 bar) supplies the hydraulic linkage.
  - A pump (flow rate 56 l/min. at maximum speed, pressure 200 bar) supplies the auxiliary hydraulics and trailer braking.

  The flow rates of the two pumps can be coupled (100 l/min.) for use of the auxiliary hydraulics only.

Filtration:	External 150 micron suction strainer.
	External 15 micron high pressure filter.

6.10 - LINKAGE

6.10.1 - Rear linkage

Type: 3-point, Type 2or 3, with fixed, telescopic or quick attach hook type ball ends (according to model)
Rams: Ø 66. Qty 2 - Lifting force (see table).

CAPACITY	According to model
At ball ends*	4,450 kg

Rams: Ø 75. Qty 2 - Lifting force (see table).

CAPACITY	According to model
At ball ends*	5,616 kg

6.10.2 - Front linkage

Type: TE 2200 with or without nitrogen ball.

CAPACITY	
At ball ends*	2,500 kg

* Maximum capacity according to lift rod position and linkage model.

6.11 - BRAKES

Type: Oil immersed single disc per wheel, outside diameter 343 mm.
Inside diameter of lining: 5425/5435/5445/5455/5460: 296 mm; 5465: 274 mm.
Operation: Hydraulic, from two master cylinders, automatic adjustment.
Parking brake: Operates on the rear axle bevel gear.
Trailer brake: According to model by a hydraulic spool valve.

6.12 - DIFFERENTIAL LOCK - REAR AXLE

Type: coupler.
Control: Hydraulic, with electrical control

6.13 - STEERING

Type: Hydrostatic, fixed or tiltable telescopic steering column, one double acting central ram.

Specified turning radius	5425/5435/5445/5455/5460/5465	
Front tyre dimensions	14.9R28	16.9R28
2WD 4WD	● -	- ●
Wheel track (m) Inner angle	 51.5°	1.75 55°
Outer tyre radius * Without braking (m)	 4.33	 4.52

* with front axle disengaged

6.14 - WHEELS

FRONT	2-wheel drive pressed steel
	4-wheel drive pressed steel
REAR	Manual adjustment steel
	Fixed steel

6.15 - TYRES

Compatibility of front/rear tyres on 4-wheel drive tractors (same make and model).

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

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

6.16 - INFLATION PRESSURE

See chapter 5.

6.17 - TRACK WIDTH ADJUSTMENTS

See chapter 5.

6.18 - NOISE LEVELS (dBA) AT OPERATOR EARS

Measured according to: directive 77/311 CEE Annex 2.

I

Type	CEE 77/311 - Annex II	
	Windows closed	Windows open
5425	80	82
5435	80	83
5445	79	82
5455	79	83
5460	79	83
5465	79	83

6.19 - CAPACITIES

Type	Model	Capacity
Fuel tank	all models	150 l
Additional tank	5425 / 5435 / 5445 / 5455 / 5460	50 l
	5465	80 l
Cooling system	5425 / 5435 / 5445 / 5455 / 5460	16.6 l
	5465	25 l
Engine sump	5425 / 5435 / 5445 / 5455 / 5460	7.5 l
	5465	14.5 l
Transmission/rear axle (+/- 3 l)	5425 / 5435 / 5445 / 5455 / 5460 Inv méca*	62 l
	5425 / 5435 / 5445 / 5455 / 5460 ISC*	74 l
	5465 Inv méca*	56 l
	5465 ISC*	68 l
Front axle	5425 / 5435 / 5445 / 5455	5.5 l
	5460	6.8 l
	5465	6.0 l
Front final drive units (each)	5425 / 5435 / 5445 / 5455	0.9 l
	5460	1.1 l
	5465	0.7 l
*ISC: PowerShuttle. Inv méca: Mechanical reverse shuttle		

6.20 - TIGHTENING TORQUES

6.20.1 - Wheels

	Disc on hub	Rim on disc
Front axle		
2WD	160 to 210 Nm	-
4 WD	400 to 450 Nm	200 to 260 Nm
Rear axle		
Flanged shaft	400 to 450 Nm	180 to 250 Nm

6.20.2 - Miscellaneous

Power take-off shaft: 72 - 96 Nm
Axle outer ram (2WD): 340 - 450 Nm
Steering rams: 120 - 160 Nm
Engine oil drain plug: 35 Nm

6.21 - DIMENSIONS AND WEIGHTS

SPECIFICATIONS	5425		5435		5445		5455		5460		5465	
	4WD	2WD	4WD	2WD	4WD	2WD	4WD	2WD	4WD	2WD	4WD	2WD
A. Wheel base	2464								2553		2780	
B. Overall length with lower links without front weights	4210	4205	4510	4205	4210	4205	4210	4205	4299	4294	4496	4491
C. Height at roof minimum - maximum (tractor with standard cab)	2677 / 2802										2702 / 2802	2706 / 2831
D. External width (1)	2550											
E. Ground clearance (under swinging drawbar support)	380 to 580											
F. Height to steering wheel (platform model)	2026 / 2151										-	
Min. weight (with full tank, without counterweight steel wheels)	3810	3515	3865	3550	3900	3605	3900	3605	4020	3730	4430	4150

(1) Dimensions valid only for tractors with maximum wheel track adjustment.

	Rear axle	Front axle		
		AG 85	AG 105B	C 20.19
G. Distance between flanges:	1774	1669	1800	
H. Stud distance:	203.20	275		
I. Centring diameter:	149.35	220.8		
J. Stud length:	41	38		36
K. Stud or screw diameter:	M18X1.5			
L. Number of studs or screws:	8			

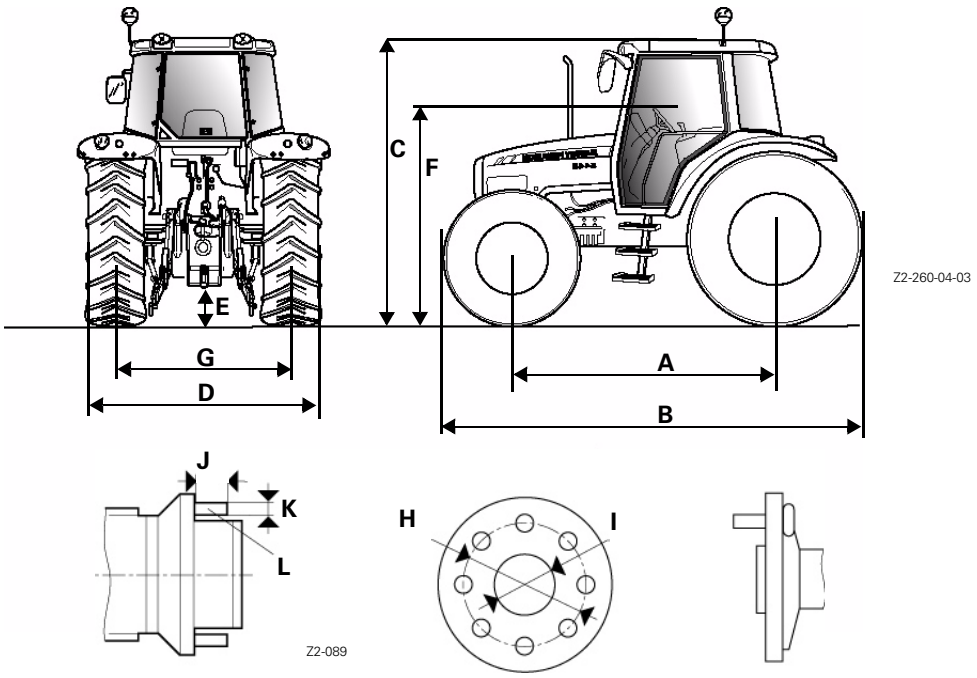
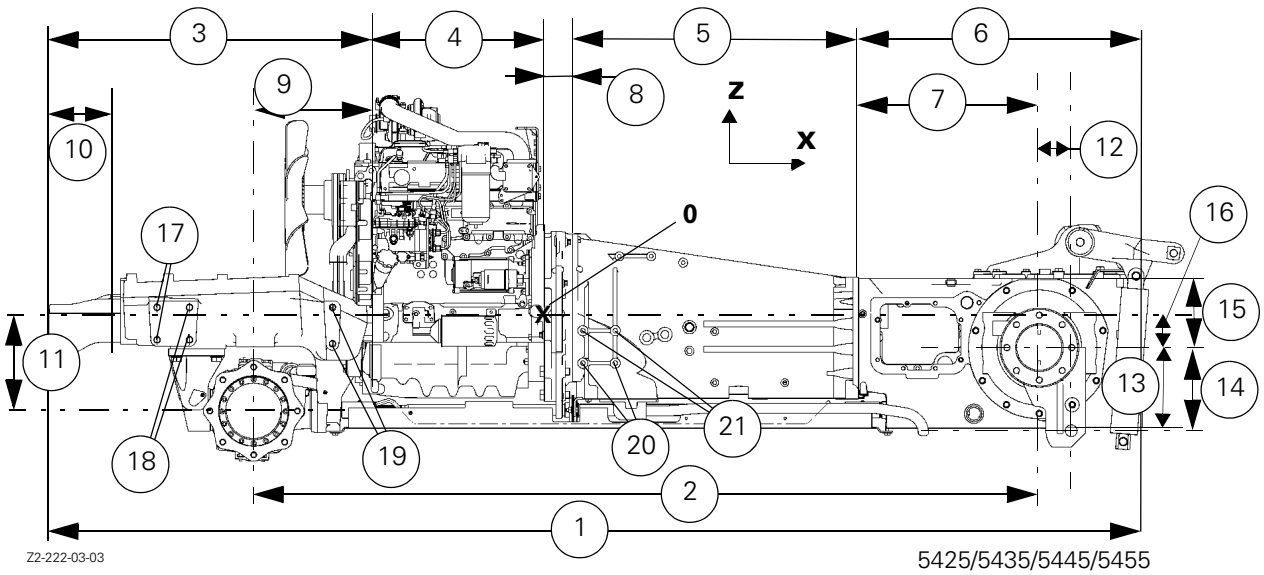


Fig. 1

6.22 - DIMENSIONS AND ATTACHMENT POINTS

6.22.1 - Specifications for models 5425 to 5455



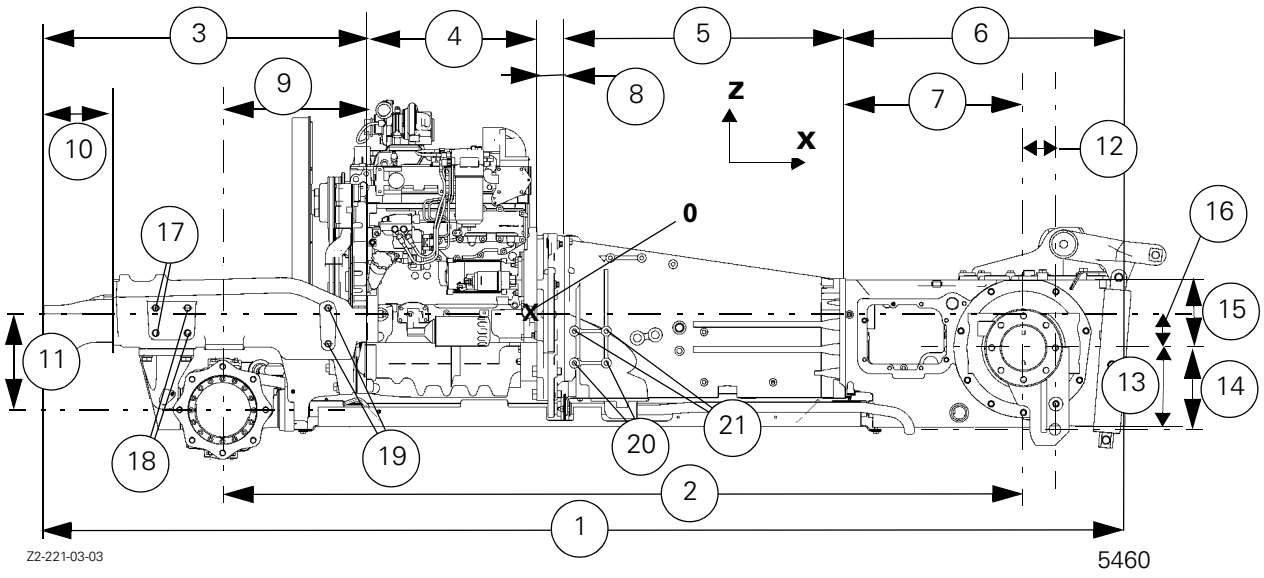
5425/5435/5445/5455

REFERENCE 0= Engine axis	DIMENSIONS (mm)			
		x	y	z
1	3427	-	-	-
2	2464	-	-	-
3	1012	-	-	-
4	540	-	-	-
5	896	-	-	-
6	890	-	-	-
7	567	-	-	-
8	89	-	-	-
9	372	-	-	-
10	222	-	-	-

REFERENCE 0= Engine axis	DIMENSIONS (mm)			
		x	y	z
11	306	-	-	-
12	100	-	-	-
13	249	-	-	-
14	260	-	-	-
15	216	-	-	-
16	106	-	-	-
17	2xM20	-1215	+/- 280	20/-82
18	2xM20	-1113	+/- 280	20/-82
19	2xM20	-665	+/- 275	20/-94
20	2xM16	120/222	+/- 183	-155
21	2xM16	120/222	+/- 223	-53

Fig. 2

6.22.2 - Specifications for model 5460

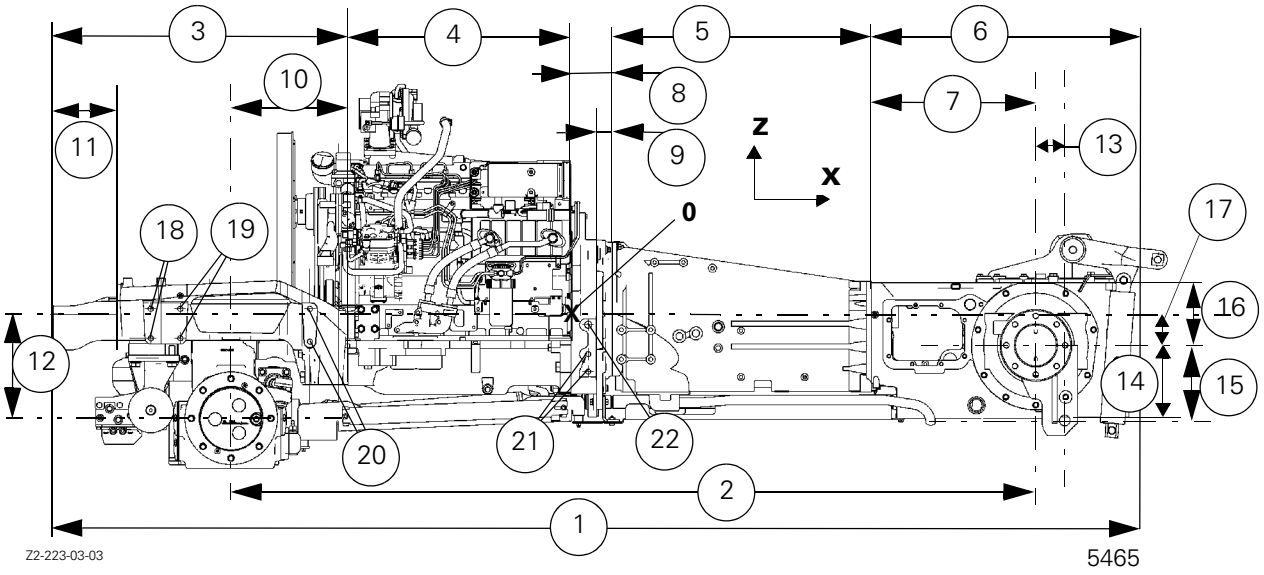


REFERENCE	DIMENSIONS (mm)			
0= Engine axis		x	y	z
1	3447	-	-	-
2	2553	-	-	-
3	1032	-	-	-
4	540	-	-	-
5	896	-	-	-
6	890	-	-	-
7	567	-	-	-
8	89	-	-	-
9	462	-	-	-
10	222	-	-	-

REFERENCE	DIMENSIONS (mm)			
0= Engine axis		x	y	z
11	306	-	-	-
12	100	-	-	-
13	249	-	-	-
14	260	-	-	-
15	216	-	-	-
16	106	-	-	-
17	2xM20	-1215	+/- 280	21/-59
18	2xM20	-1113	+/- 280	21/-59
19	2xM20	-665	+/- 275	21/-93
20	2xM16	120/222	+/- 183	-155
21	2xM16	120/222	+/- 223	-53

Fig. 3

6.22.3 - Specifications for model 5465



REFERENCE	DIMENSIONS (mm)			
0= Engine axis		x	y	z
1	3717	-	-	-
2	2780	-	-	-
3	1018	-	-	-
4	772	-	-	-
5	896	-	-	-
6	890	-	-	-
7	567	-	-	-
8	89	-	-	-
9	53	-	-	-
10	404	-	-	-
11	222	-	-	-

REFERENCE	DIMENSIONS (mm)			
0= Engine axis		x	y	z
12	361	-	-	-
13	100	-	-	-
14	249	-	-	-
15	260	-	-	-
16	216	-	-	-
17	106	-	-	-
18	2xM20	-1452	+/- 280	20/-82
19	2xM20	-1351	+/- 280	20/-82
20	2xM20	-903	+/- 275	20/-94
21	2xM20	59	+/- 274	-137/-197
22	M20	59	+/- 274	-35

Fig. 4

Chapter 7

ACCESSORIES AND OPTIONS

CONTENTS

7.1 - AVAILABLE ACCESSORIES

- Wheel weights
- Front weights: 8/10/12 x 55 kg
- Centre weight: 110 kg

IMPORTANT: Removal is not easy and the weights must remain fitted.

NOTE: The centre weight is not compatible with the front PTO.

- Category II front linkage with automatic hooks and nitrogen accumulator.
- Linkage (Chapter 4).
- Auxiliary hydraulic spool valves (Chapter 4).
- Rear screen wiper and washer.
- Passenger seat.
- Front fenders.
- Creeper gearbox.
- PTO - different types (chapter 4).
- Autotronic transmission control unit (Chapter 4).
- Fittings for radio (loudspeakers, aerial and wiring).
- Radio.
- Seat belt
- Batteries main switch.
- Engine unit heater (220V / 110V according to version).

Index

3378468M1

Printed in France
RC B562 104 539