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 SA.
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 04/03805
  Certificate number
- Date (Approbation LCIE) : 14/06/04
  Date

8400 Series Tractors

For models 8450 - 8460 - 8470 - 8480 Dyna VT

AGCO - SA - Beauvais - France - RC B562 104 539
MASSEY FERGUSON is a worldwide brand of AGCO Corporation

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N° 3378886M1
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8400 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.

Registration plate (according to country)

Z3A-1131-09-

Z3A-1134-09-04

Fig. 1

Name plate with serial number (according to country)

Z3A-1133-09-04

Z3A-1132-09-04

Fig. 2

Front axle serial number

Z4A-1631-11-05

Fig. 3

"Sisu" engine serial number

Z4A-1630-11-

Fig. 4

Cab serial number

Z3A-702-07-04

Fig. 5

1 . TRACTOR IDENTIFICATION

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

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

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

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

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

STREET: .....

TOWN: .....

STATE: .....

ZIP CODE: .....

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

TRACTOR RECEIVED FROM:
(tick one of the following)

.....FACTORY

.....OTHER DEALER (transfer)

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 servicing 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 servicing 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 by the dealer provides the possibility of ensuring that these operating and servicing 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 servicing 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, accessories, implements or equipment or unauthorised 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 section 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 Signs 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 manual, have training, and know the safety rules and regulations for the job.

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 respect 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.
- Instructor seat is only intended for short periods of use
- Do not allow children in the instructor seat.
- **DO NOT PERMIT** others to ride on the tractor or the implement unless an approved instructor 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 attachments or implements. Welding on cab components **IS NOT PERMITTED. DO NOT ATTACH** chains or ropes to the main frame of the 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).

Z2-529-05-03

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).

Z2-530-05-03

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.

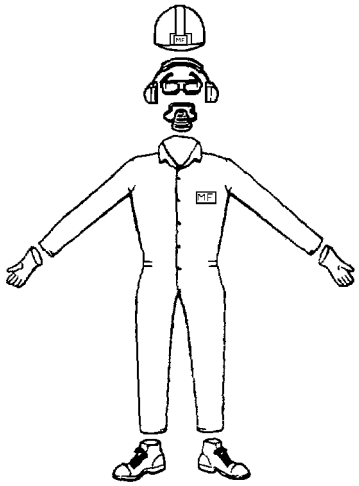
2.10.2 - Protect yourself

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.
- 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.



Z2-531-05-03

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).

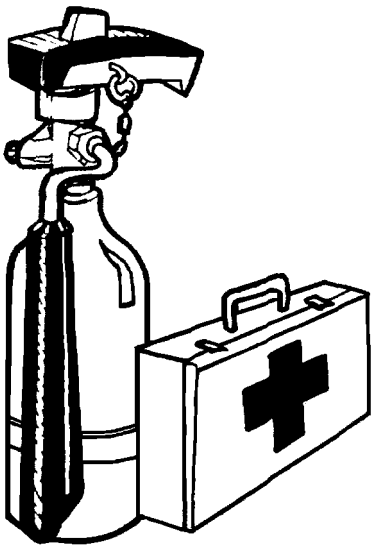


Fig. 4

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:

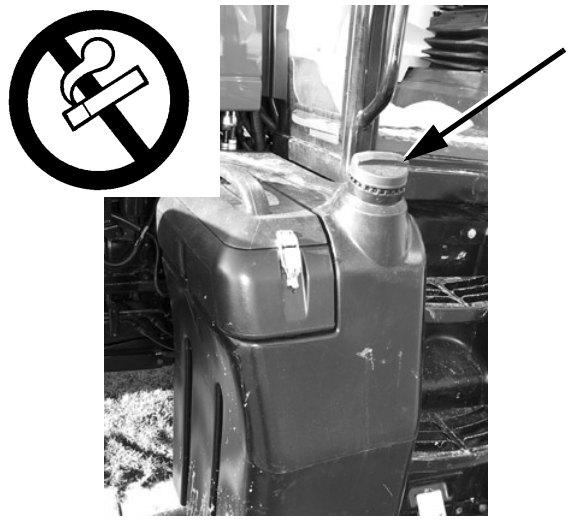
- Rear view mirror
- Fire extinguisher
- Emergency warning triangle, guards, backup alarm, lighting devices and decals.

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.



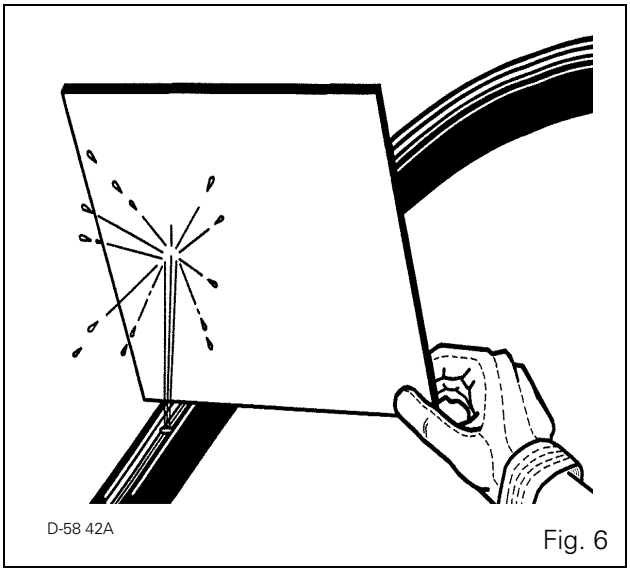
Z2-532-05-03

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 maintenance procedures outlined in the Maintenance and Adjustments chapter in this Guide.
- 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

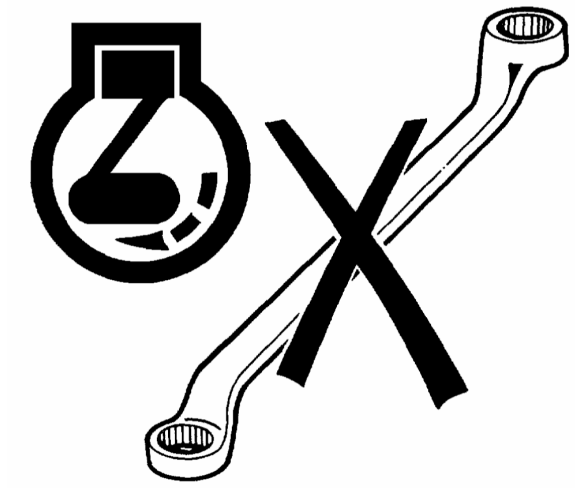
- Keep work surfaces and engine compartments clean.
- Before cleaning the machine, always lower implements to the ground, place transmission in neutral, engage the handbrake, stop the engine and remove the ignition key.
- Clean footsteps, pedals and floor. Remove grease or oil. Brush away dust or mud. 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 authorised 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).



Z2-534-05-03

Fig. 7

- Before making adjustments to or servicing the electrical system, disconnect the battery cables, negative (-) cable first.
- To prevent fires or explosions keep open 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 - Start safely

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).

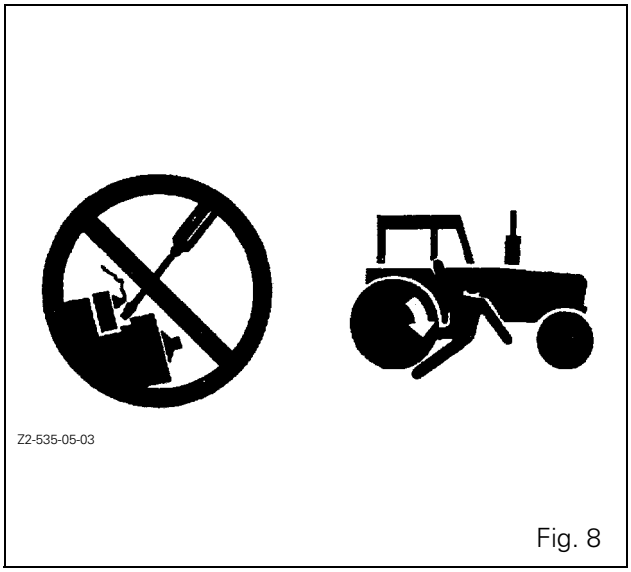


Fig. 8

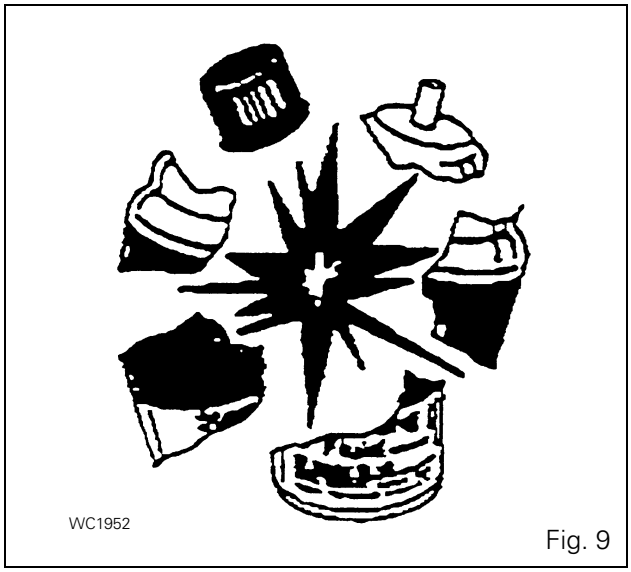


Fig. 9

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 thermostat connected to the electrical system. Ether combined with thermostat 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 thermostat, 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 thermostat must be disconnected. Remove the wire from the thermostat 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 attachments or implements you intend to use **DO NOT EXCEED** the load rating of your tractor. Be sure the tractor and implement PTO speed 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, set the tractor to neutral, activate the ParkLock, stop 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.

Z2-536-05-03

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).

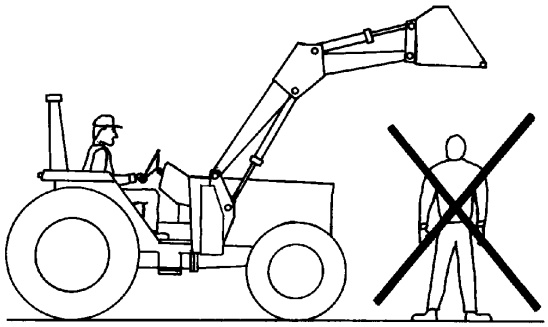


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Fig. 11

- **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.

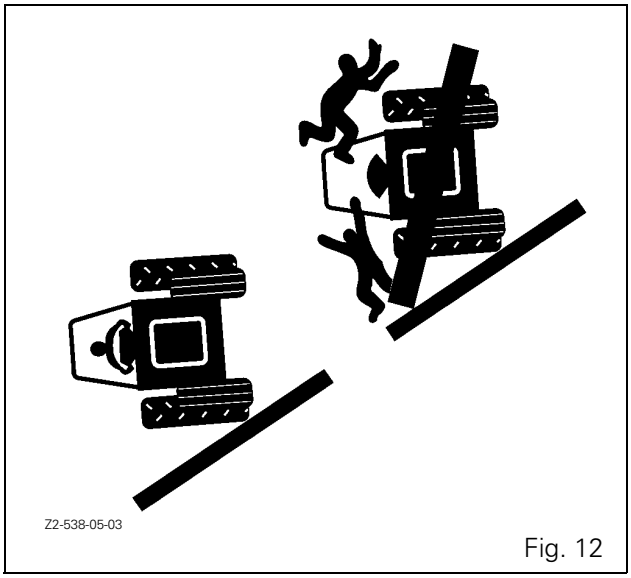

Fig. 12

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.

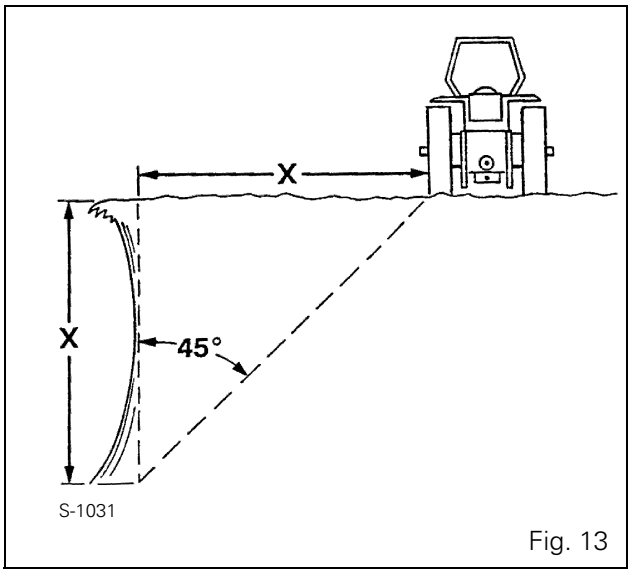

Fig. 13

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 - Emergency handbrake

IMPORTANT: If the brakes fail and in an emergency situation, use the emergency handbrake located to the left of the driver (Fig. 14)

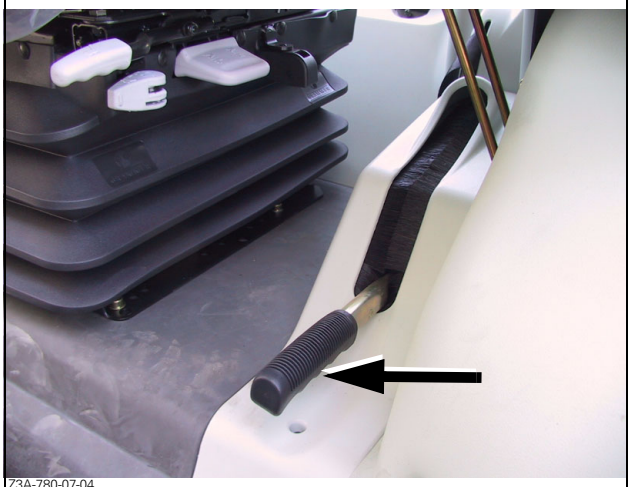

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Fig. 14

DANGER: Do not use the emergency handbrake as a parking brake. The parking brake to be used is the "ParkLock" brake control on the steering wheel.

IMPORTANT: If the brakes fail, contact an approved AGCO dealer to have them repaired.

2.13.8 - Other risks

- Ensure that the PTO shield (1) is in place when the PTO driveline is not in use (Fig. 15).

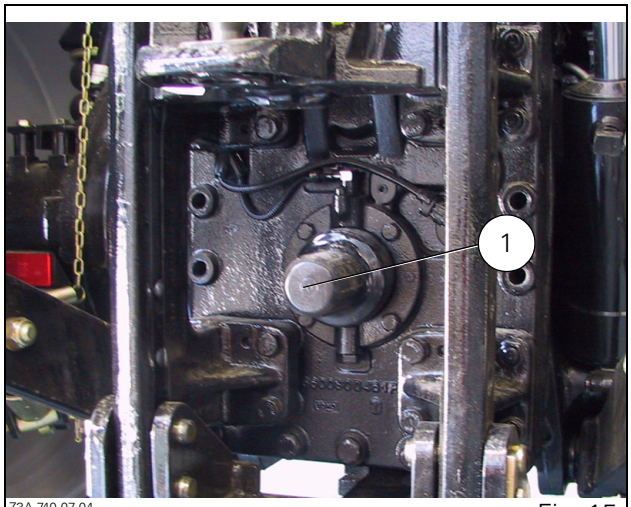

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Fig. 15

- 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. 16).

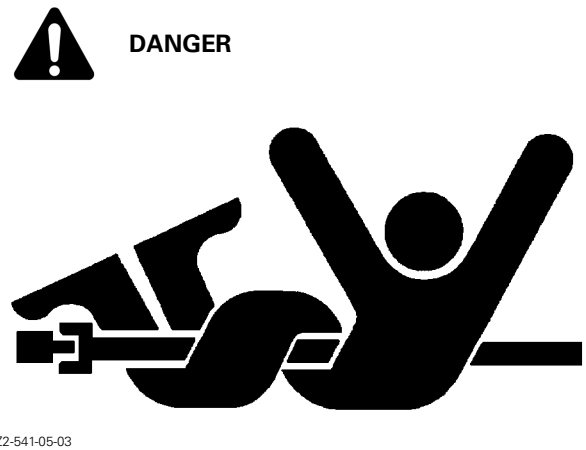

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Fig. 16

- 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.
- The deployment of drawbars and lift rods 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 your tractor with tyres of suitable width, consistent with the particular task you are performing. To adjust tyre 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.

2.13.9 - 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. 17).
- Ensure that all trailed implements are fitted with a safety chain linking the tractor to the implement, if required by law (Fig. 17).
- Pull only from the approved drawbars. Towing or attaching to other locations may cause the tractor to overturn (Fig. 18).

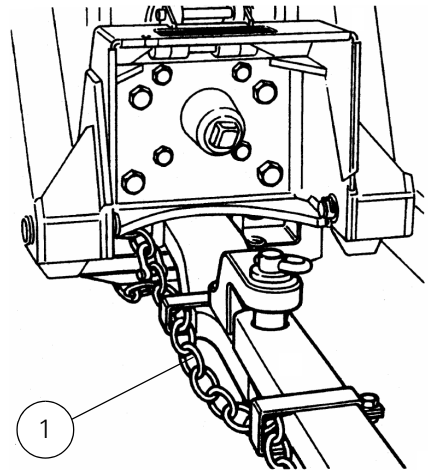

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Fig. 17

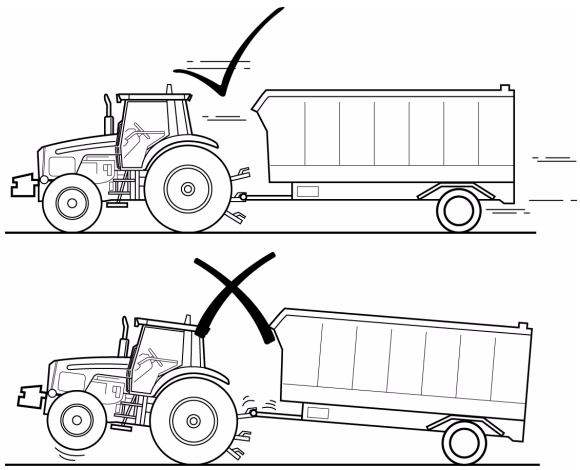
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Fig. 18

2.13.9.1 - 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,
  - at a maximum load higher than that indicated on the name plate.
- For towed equipment **WITH BRAKES, DO NOT** tow equipment:
  - at speeds exceeding the speed limits in force in the relevant country,
  - at a maximum load higher than that indicated on the name plate.

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

See chapter 4.

WARNING: Towing: the following instructions must be followed when towing:

If the engine is not running:

- Maximum towing speed: 10 kph.
- Maximum towing distance: 8 km.

If the engine is running:

Towing speed is identical to that of a trailer without brakes at the speed authorised by legislation in force in the country concerned.

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 are fitted with emergency warning triangles and other markings recommended to improve visibility when driving on roads, unless otherwise indicated (Fig. 19).

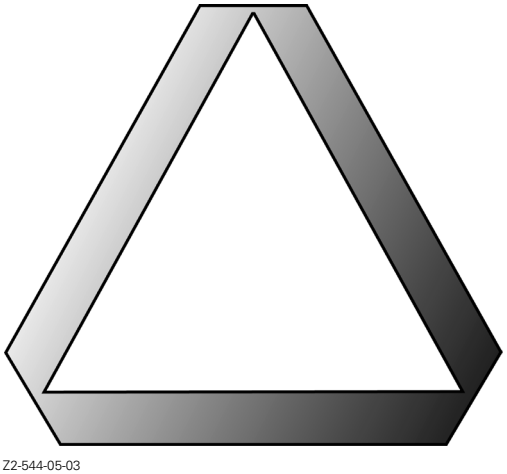

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Fig. 19

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 towed equipment.

- Know the road you are going to travel.
- Turn on hazard 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 fitted 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 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 control: Before leaving the seat it is mandatory to move the PowerShuttle control to NEUTRAL position.

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

IMPORTANT: Electromechanic ParkLock control: Move lever to locked position (symbol: closed padlock) to engage ParkLock before stopping the engine.

2.15 - DESCRIPTION OF DECALS

CAUTION
High pressure steam and hot water.
Remove filler cap with extreme care.

DO NOT REMOVE OR OBSCURE DECAL
3595685 M1

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

CAUTION
Before working on the tractor, disconnect negative leads to all Battery.

CAUTION
Before removing any battery, disconnect all negative leads before positive leads.

DO NOT REMOVE OR OBSCURE DECAL
3595679 M1

Located on the battery cover.

WARNING
Keep all shields, covers and guards fastened in place while engine is running.

CAUTION
Beware hot parts.

DO NOT REMOVE OR OBSCURE DECAL
3595678 M1

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

CAUTION
Always disengage PTO and stop engine before attaching or detaching PTO shafts or working on PTO driven equipment.
Always fit PTO cover when PTO is not in use.

WARNING
Do not stand between tractor and equipment when operating controls.

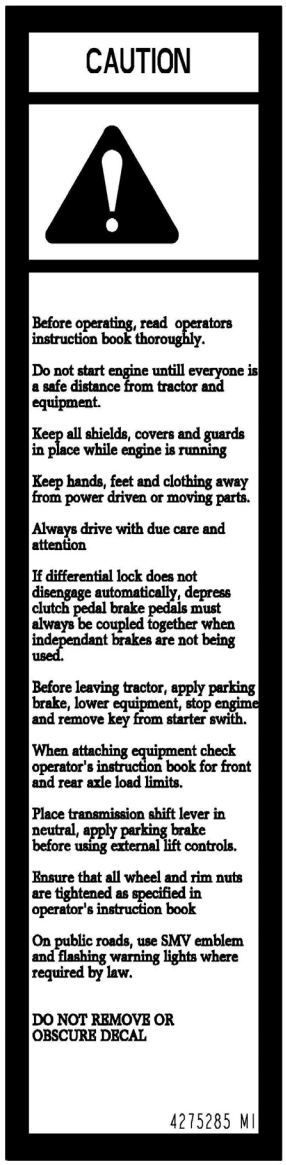
Tow only with MF approved tractor drawbar or hitch.

DO NOT REMOVE OR OBSCURE DECAL
3581563 M1

Located at the rear of the tractor

4271915M1

Located to the left and right of the radiator.



Located on the RH inner column of the cab

CAUTION
TO AVOID POSSIBLE TRACTOR OVERTURN, TOW ONLY FROM THE DRAWBAR OR LOWER LINKS OF THREE POINT HITCH.

2752579 M1

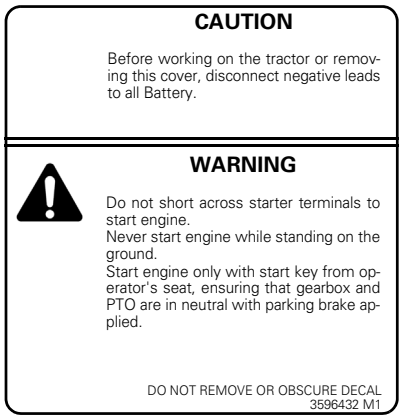
Located on the fenders to the rear of the cab

3782489 M1

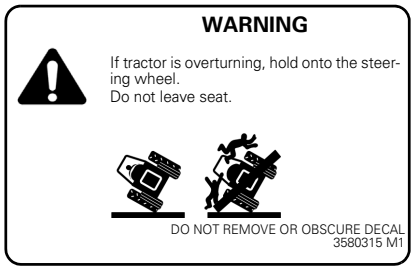
Located on the RH inner column of the cab

3777021M2

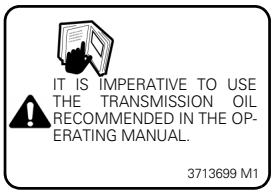
Located on the accumulator.



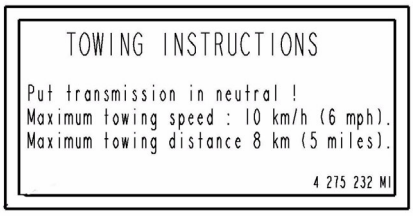
Located on the starter motor.



Located at the rear of the instructor seat.



Located on the fenders to the rear of the cab



Located on the inner side of the right-handed door.

Front linkage decals

WARNING: Read the Operator Instruction Book before starting work.

DANGER: Avoid being caught by moving parts

Chapter 3

INSTRUMENTS AND CONTROLS

CONTENTS

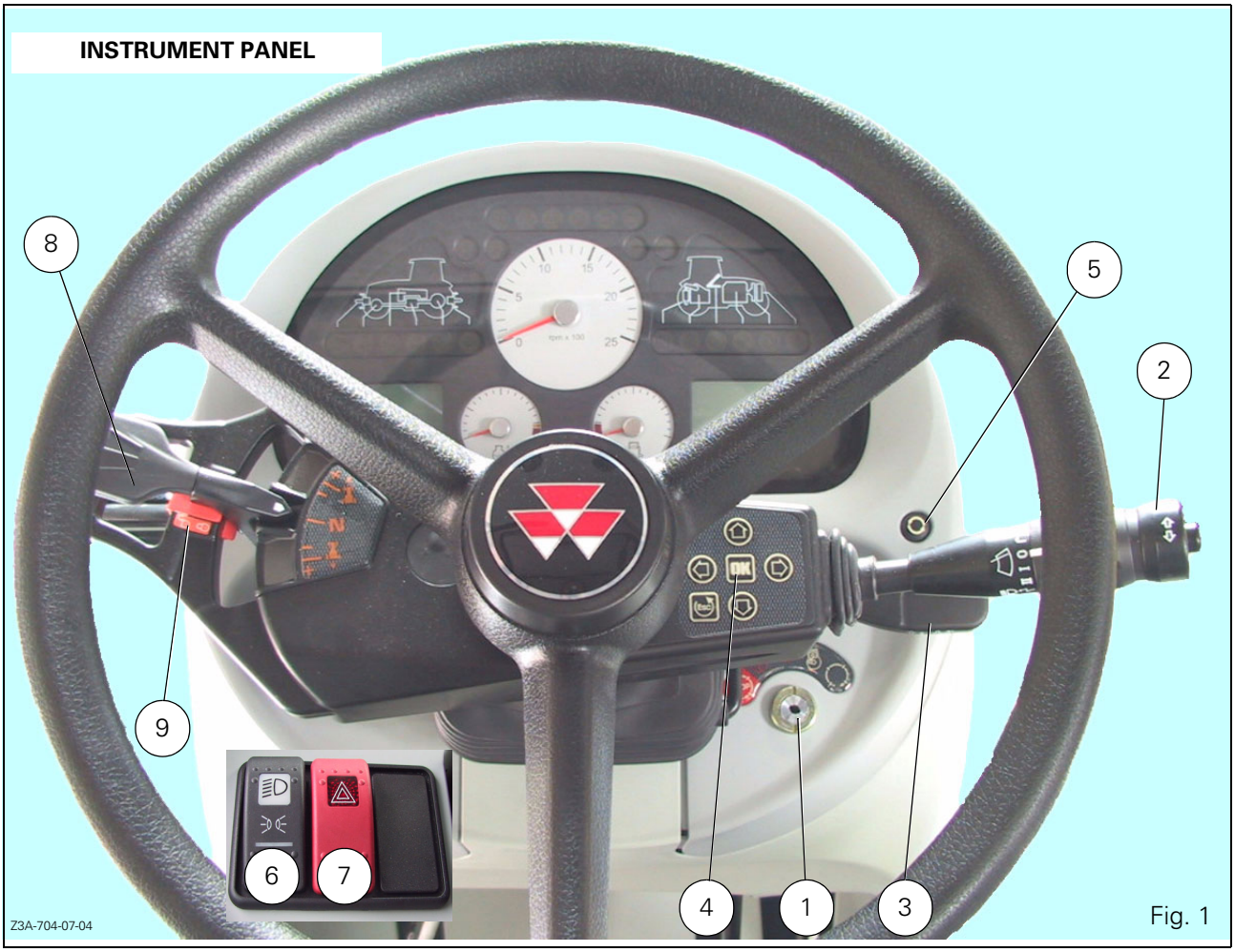


Fig. 1

3.1 - INSTRUMENT PANEL (FIG. 1)

1. Start switch (see details in Fig. 3).
2. Control unit (see details in Fig. 2).
   This assembly is comprised of the steering change, windscreen wiper, front and rear windscreen washer and horn indicator functions.
3. Steering wheel adjustment (see details in Fig. 23).
4. DOT MATRIX controls (see details in Fig. 10).
5. Parameter display selector switch (21 Fig. 4).
6. Main light switch.
7. Hazard warning lights and control switch.
8. Direction of travel and PowerShuttle control lever.
9. Electromechanical brake control (ParkLock option).

Legend:

1. Windscreen wiper
   - 0. Stop
   - J. Intermittent
   - I. Speed 1
   - II. Speed 2
2. Left-hand direction indicator
3. Right-hand direction indicator
4. Warning buzzer
5. Headlights flash
6. Headlights
7. Rear and front windscreen washer

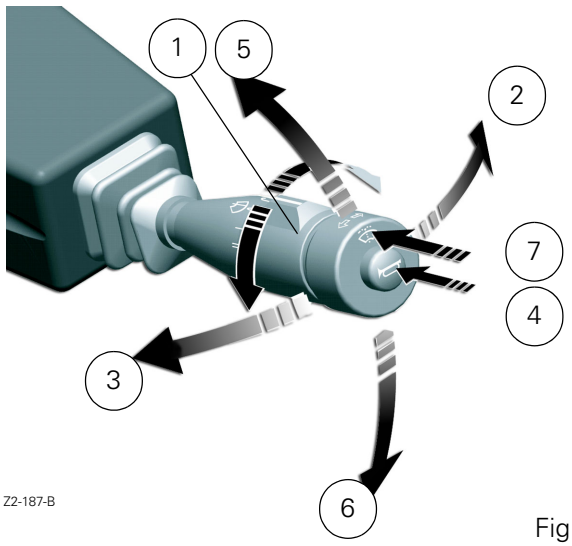


Fig. 2

Start switch details (Fig. 3):

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 (wait for instrument panel indicator lights to switch off).
5. Start-up

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

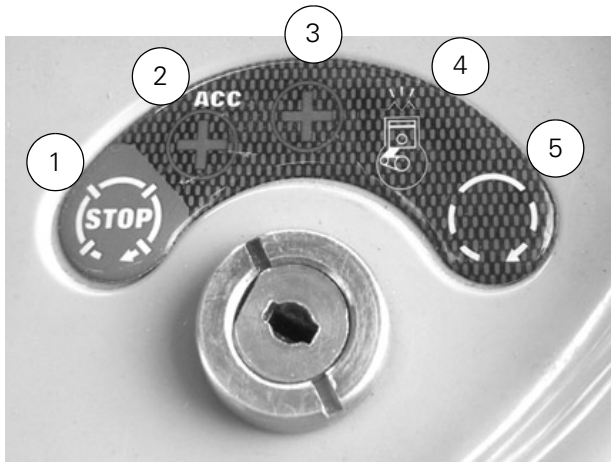


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Fig. 3

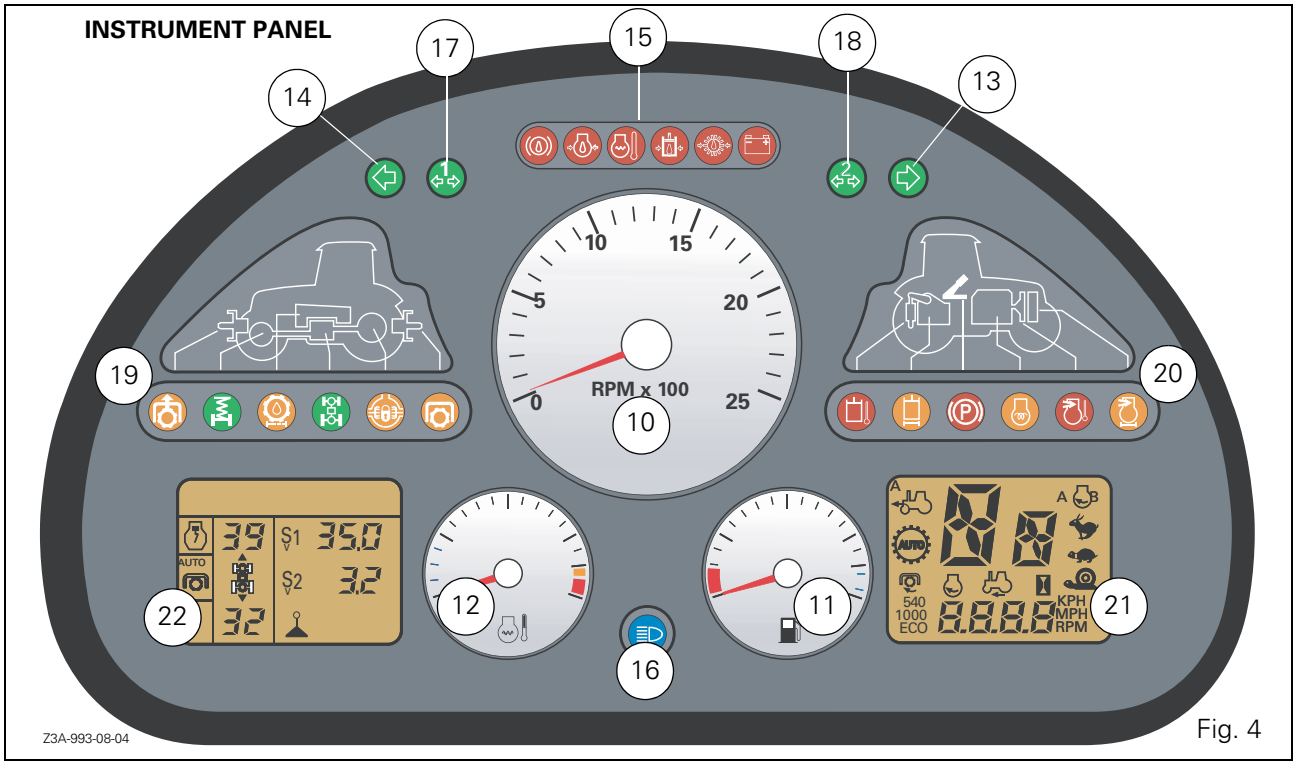

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Fig. 4

Instrument panel (Fig. 4)

10. Tachometer
    The tachometer shows the engine speed in hundreds of revolutions per minute.
11. Fuel gauge.
12. Engine coolant temperature gauge.
    Stop the engine if the needle moves into the red zone.
13. Right-hand direction indicator light (green).
14. Left-hand direction indicator light (green).
15. Failure warning lights unit.
    See details (Fig. 7)
16. Headlight indicator light (blue).
17. Direction indicator light for the first trailer (green).
18. Direction indicator light for the second trailer (green).
19. Control indicator lights for functions in use (see details in Fig. 5).
20. Failure and parking brake control indicator lights (see details in Fig. 6).
    if one of the indicator lights remains lit after the engine has started or during normal use, stop the engine and investigate the cause of the problem.
21. Digital display
    Displays the speed engaged (forward / reverse), A/B memory (electronic injection engine), Hare / Tortoise range.
22. DOT MATRIX screen (see details in Fig. 10).

3.2 - INDICATOR LIGHTS PANEL

3.2.1 - Control indicator lights for functions in use (Fig. 5)

Green and orange control indicator lights display and monitor the functioning of attachments and implements.

1. Front power take-off (orange).
2. Front axle suspension indicator light (green) (if option fitted).
3. High pressure transmission oil filter clogging indicator light (yellow).
4. Four-Wheel-Drive engaged indicator light (green).
5. Differential lock indicator light (orange).
6. Power take-off engaged (orange).

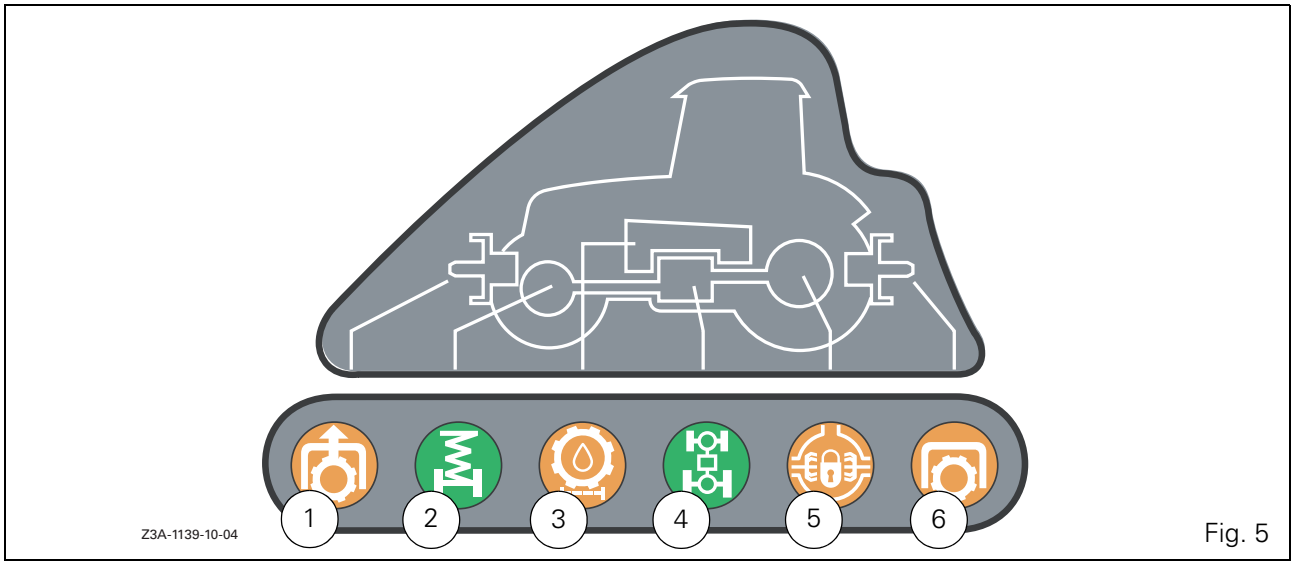


Fig. 5

3.2.2 - Failure and parking brake control indicator lights (Fig. 6)

Red control indicator lights signal problems of varying importance. They light up when the ignition key is turned in the start switch and usually go out once the engine is running.

If they light up when the engine is running normally, stop the engine at once and investigate the cause of the problem.

7. Auxiliary hydraulics oil temperature indicator light (red).
8. 15 micron auxiliary hydraulics oil filter clogging indicator light (orange).

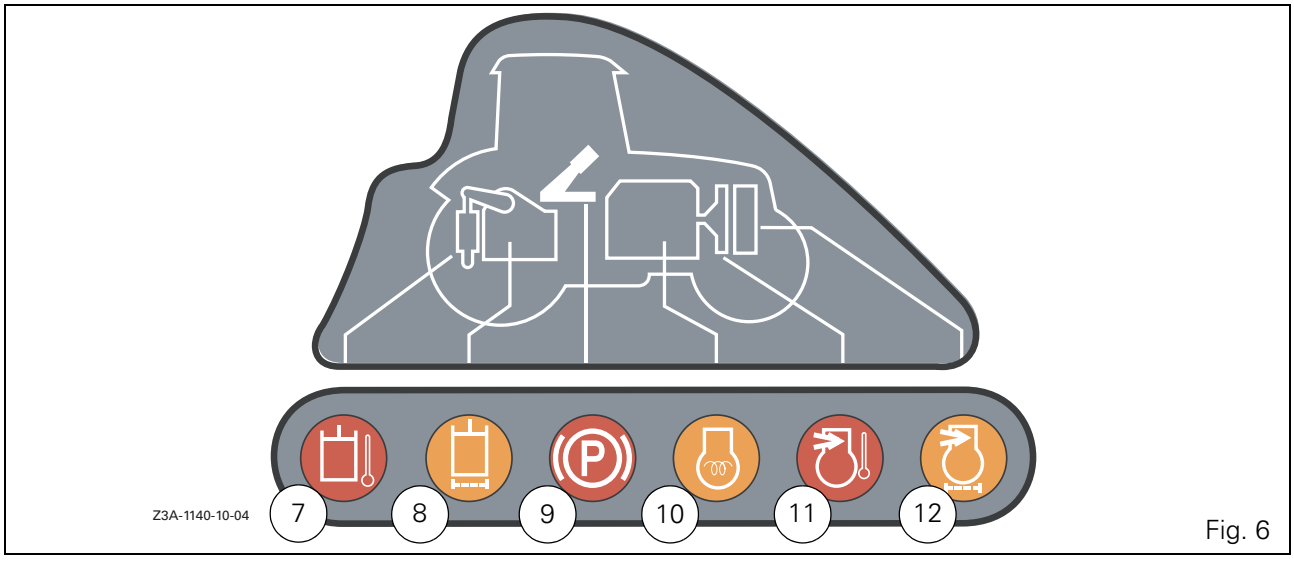


Fig. 6

9. Parking brake indicator light (red)
10. Grid Heater indicator light (red).
11. Intake air temperature indicator light (red).
    This indicator light is switched on when the ignition key is in "auxiliary" position. It switches off when the engine starts running. If the indicator light comes on when the engine is running, stop the engine and investigate the cause of the problem immediately.
12. Air filter clogging indicator light (orange).

Failure control warning lights

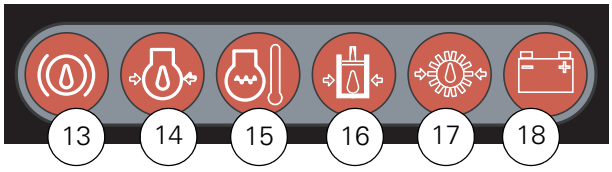


Fig. 7

13. "ParkLock" brake pressure indicator light (red).
14. Engine oil pressure indicator light (red).
    This indicator light is switched on when the ignition key is in "auxiliary" position. It switches off when the engine starts running. If the indicator light comes on when the engine is running, stop the engine and investigate the cause of the problem immediately.
    Check for low oil level or consult your dealer.
15. Coolant temperature indicator light (red).
16. Not used.
17. Gearbox oil pressure indicator light (red).
    If this warning light gets on during operation, consult your agent or dealer.
18. Alternator charge indicator light (red).

3.3 - CONTROL DISPLAY

Fig. 8 - This control screen allows the different parameter displays to be monitored:

1. Forward / neutral / reverse liquid crystal display.
2. Reverse shuttle sensitivity indicator.
3. Selected symbols display: rear PTO/engine speed/forward ground speed:
   All parameters can be displayed in the lower part of the screen and can be selected by pressing button 5 (Fig. 9) located on the instrument panel.
4. Digital display: rear PTO speed, engine speed, ground speed, hours worked.

NOTE: To reinitialise hours worked, select the relevant parameter and hold the button 5 (Fig. 8) down for approximately 5 seconds to reset the display.

5. Power take-off automation.
6. Front axle automatic functions monitor.
7. A/B speed (engine with electronic fuel injection) memorisation status.
8. Hare / Tortoise range engagement indicator lights.

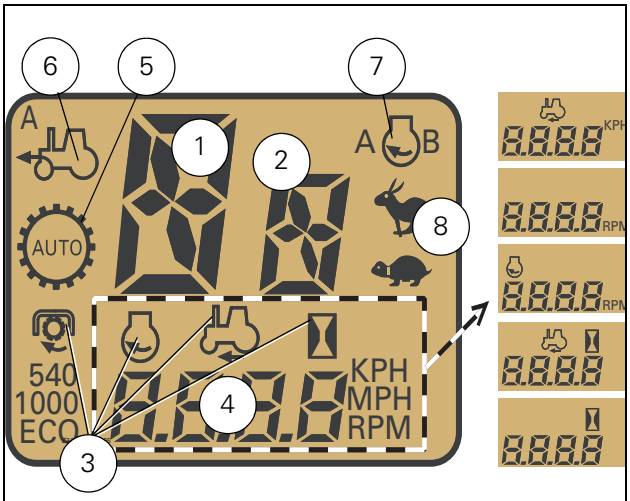


Fig. 8

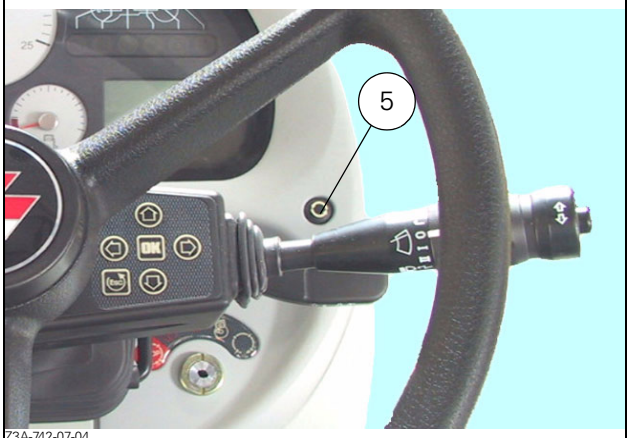
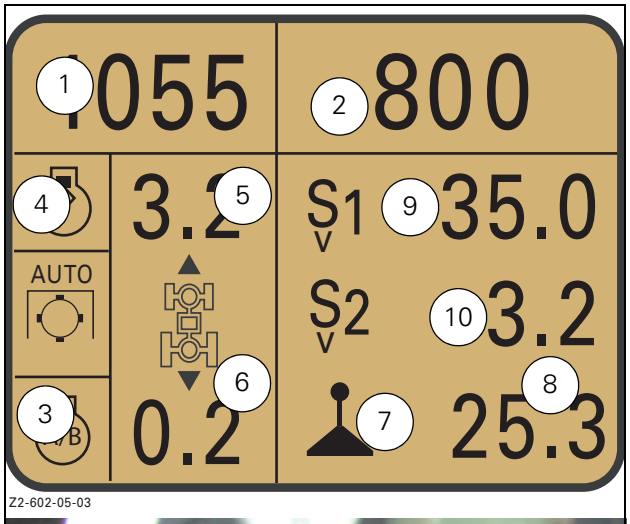


Fig. 9

3.4 - DOT MATRIX SCREEN

Fig. 10 - This control screen allows the different parameter displays to be monitored:

1. Programmed engine speed A
2. Programmed engine speed B
3. Programmed engine speed indicator
4. Engine underspeed supervisor
5. Forward shuttle speed value display
6. Reverse shuttle speed value display
7. Mode display (pedal, lever, etc.)
8. Selected mode speed display
9. SV1 speed regulator display
10. SV2 speed regulator display
11.
12. Control unit to access DOT MATRIX menus
13. Up scrolling key
14. Down scrolling key
15. Left-hand adjustment key
16. Right-hand adjustment key
17. Validation key
18. Cancel key



Z2-602-05-03

Z3A-1202-10-04

Fig. 10

3.5 - PEDALS

(Fig. 11)

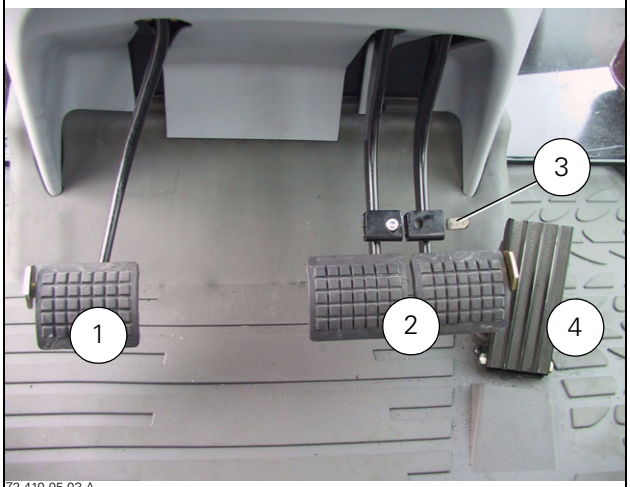
1. Clutch pedal.
   This is fitted with a safety start switch. Fully depress the clutch pedal before operating the starter.

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.

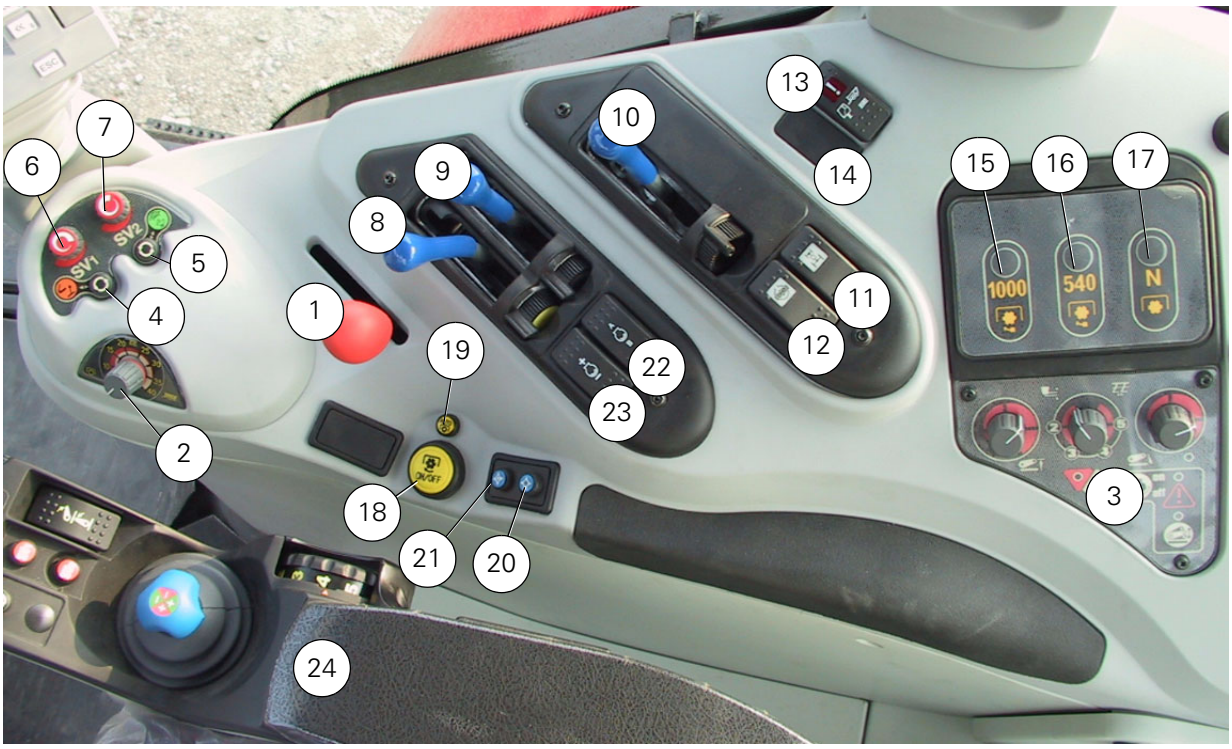
CAUTION: When travelling on the road only the foot throttle should be used, and the hand throttle lever should be brought to the idle position so that engine braking can be operational.

Check that A/B memorised speed is not activated.



Z2-410-05-03-A

Fig. 11



Z3A-771-07-04

Fig. 12

3.6 - RIGHT-HAND CONSOLE

(Fig. 12)

1. Hand throttle lever
2. Engine underspeed supervisor
3. Electronic linkage controls
4. Lever or pedal mode button
5. Hare / Tortoise range button
6. SV1 speed regulator display knob
7. SV2 speed regulator display knob
8. Third Auxiliary Spool valve lever
9. Fourth Auxiliary Spool valve lever
10. Fifth Auxiliary Spool valve lever
11. 4WD switch
12. Differential lock switch
13. Cab suspension switch.
14. Front axle suspension switch (suspended front axle option)
15. 1000 rpm PTO control switch
16. 540 rpm PTO switch
17. Neutral PTO switch
18. 540 / 540E / 1000 rpm rear PTO ON/OFF switch
19. Rear power take-off selector switch in automatic mode
20. Spool valve control on / off button.
21. Spool valve hydraulic flow rate memory or cancel button
22. A/B speed switch
23. +/- engine speed switch after selecting A/B speed
24. Multi-function armrest

Z3A-706-07-04

Z3A-1502-11-04

Fig. 13

25. 4-function control Joystick (separate or combined). (Fig. 13).
26. Height / depth setting knob.
27. Lift / Lower selector switch with “neutral” position
28. SV1 speed regulator control knob
29. SV2 speed regulator control knob
30. Transmission progressivity control
31. HEADLAND mode control knob (DATATRONIC 3 Headland option)
32. Quick soil engagement control switch
33. Four "SMS" spool valve controls ("FingerTIP" option) (Fig. 13), (see section 4.14.8).
34. Spool valve constant flow position switches (Kick out) (see section 4.14.8)
35. Datatronic 3 onboard computer (Fig. 14).

Z3A-772-07-04

Fig. 14

36. Work headlights/digital clock/temperature sensor control and indicator lights.
    Work headlights: Press the key(s) 1 to 6 (Fig. 15) to operate de desired function(s). The corresponding indicator light will come on:
    1. Front work headlights
    2. Work headlights on footsteps and handrails.
    3. Work headlights on fenders
    4. Work headlights on front of roof
    5. Flashing beacon
    6. Work headlights at rear of roof
    7. Digital clock and temperature sensor:
       Press button A to select and change the time or temperature display.
       Adjusting the clock: to change the time press buttons B or C to select the information (hr or min.) to be changed.
       Temperature control: Press button A to select the outside temperature display. To change from °Celsius to °Fahrenheit press button A for approximately 5 seconds.

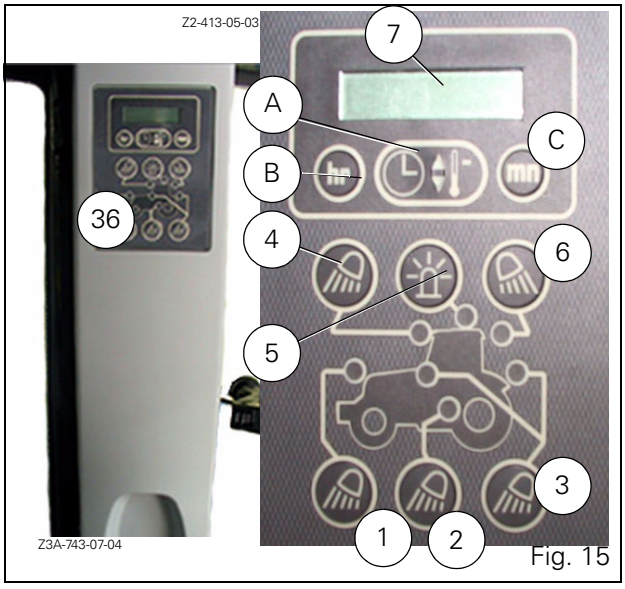
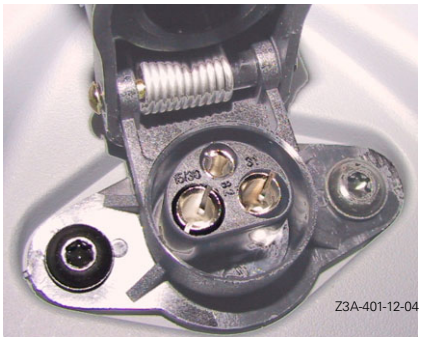
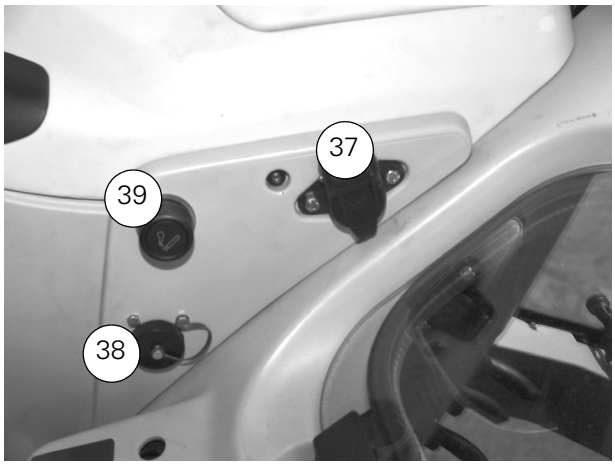


Fig. 15

37. Electrical connector for control screens, control units and other (Fig. 16).
    Maximum available power:
    15/30: "+" Permanently live (25 A).
    82: "+" with ignition key ON (5 A).
    31: "-" negative.



38. Diagnostics connector.
39. Cigarette lighter.



Z2-415-05-03 Fig. 16

3.7 - LEFT-HAND CONSOLE

(Fig. 17, Fig. 18)

40. Cigarette lighter type connector.
41. Electrical control for external rear view mirrors (optional).
42. Rear windscreen wiper.
43. Rear view mirror defrosting control (optional).

Fig. 17

44. Emergency handbrake.
45. Instructor seat (optional).
46. Storage bin
47. Can carrier.

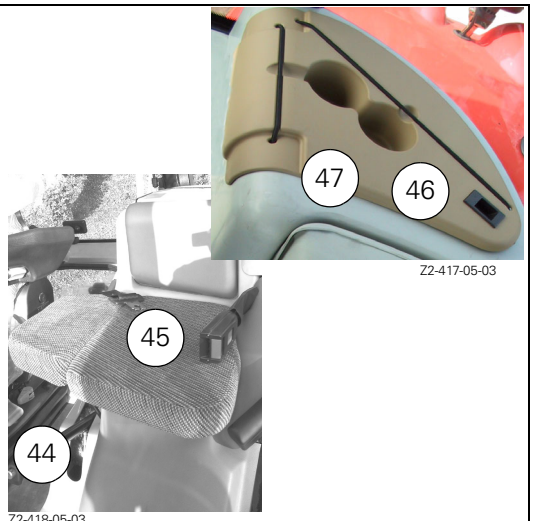


Fig. 18

3.8 - SEAT

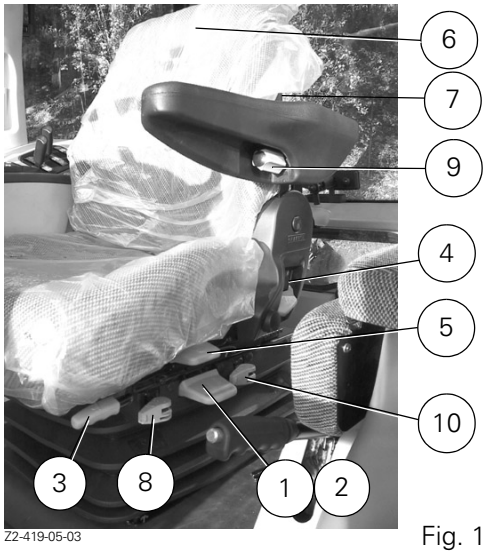


Fig. 19

Description (Fig. 19)

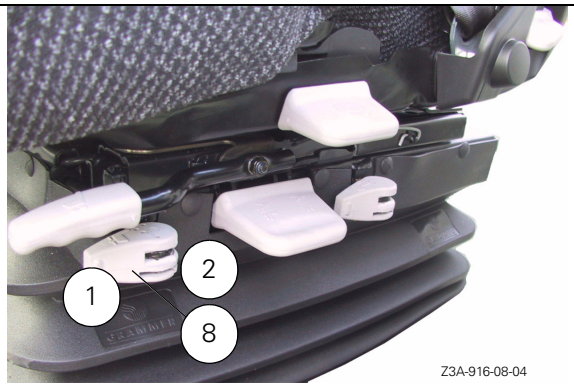
1. Weight adjustment:
   Automatic pneumatic seat
   The seat is adjusted for the driver's weight by briefly pulling the weight and seat height automatic actuator lever (1) while the driver is sitting on the seat.
   Manual adjustment seat
   The seat should be adjusted when the driver is not seated by turning the actuator lever (or adjustment thumb wheel) provided for this purpose. The indicator displays the weight which has been set.

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:
   Automatic pneumatic seat
   The seat height can be set automatically and continuously.
   The seat height can be altered by either pulling out or pushing in the actuator lever of the automatic weight and height actuator lever (2). If the adjustment reaches the top or bottom endstop, the height is adjusted automatically in order to guarantee a minimum spring travel.

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

   Manual adjustment seat
   The seat height can be set automatically and is adjustable in several steps. The seat can be raised as required until it clicks into position. If the seat is raised higher than the last notch (end of travel), it returns to its lowest position.
3. Fore / aft adjustment:
   The locking lever must latch into the desired position. It should not be possible to move the driver seat into another position when it is locked.
4. Backrest angle adjustment.
5. Swivel 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.
7. Lumbar support adjustment.



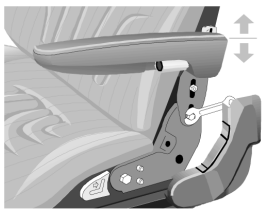


Fig. 20

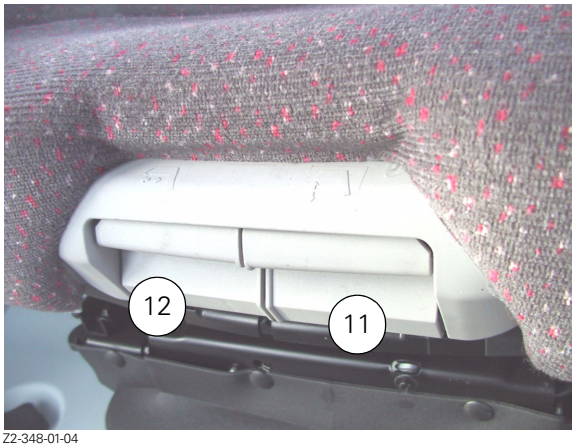
8. Fore / aft isolator (Fig. 20):
   Under certain driving conditions (for example with a trailer attached), it is useful to activate the fore / aft isolator. This means that shock impacts in the driving direction can be better absorbed by the driver seat:
   - Position 1 = fore / aft isolator on
   - Position 2 = fore / aft isolator off.

9. Armrest angle adjustment:
   The armrests can be folded up if required and the height individually adjusted.
   To adjust the armrest height (arrows) the plastic cover must be removed by pressing together the inner clips and pulling off the cover at the same time.
   The cover is refitted in the same way in reverse order.
10. Height/weight adjustment indicator.

Luxury pneumatic seat with automatic adjustment

11. Seat pan angle adjustment:
    The angle of the seat pan can be individually adjusted.
    Pull on the left-hand button (see diagram) while exerting or releasing pressure on the seat pan in order to find a comfortable position.
12. Seat depth adjustment:
    The depth of the seat pan can be individually adjusted.
    Pull on the right-hand knob (see diagram) and move the seat forwards or backwards to find the required position.
13. Lumbar support adjustment:
    Turn the handle to the left or right to move the lumbar support vertically or horizontally.
14. Seat heater:
    The seat heater is turned on by pressing the switch.

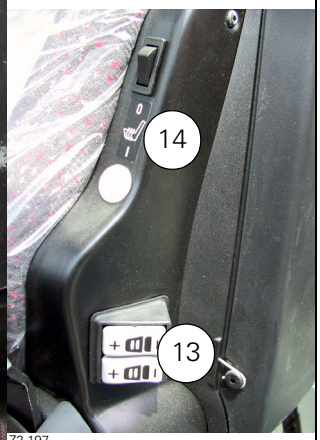
WARNING: Never adjust the seat when tractor is in motion.



Z2-348-01-04

Fig. 21

Z2-199



Z2-197

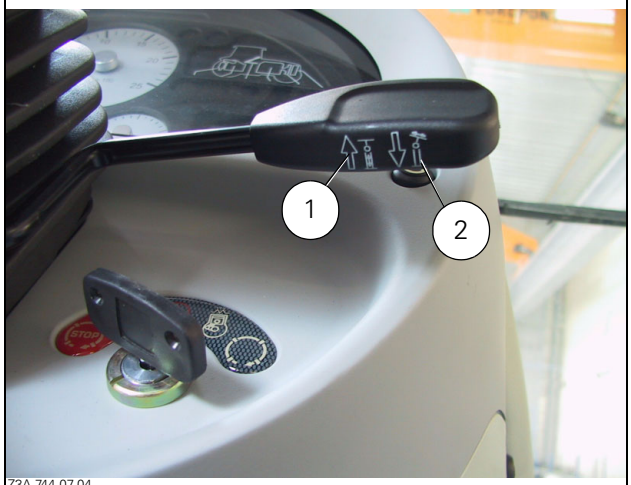
Fig. 22

3.9 - STEERING WHEEL

(Fig. 23)
The steering wheel angle and height can be adjusted (except platform versions). Both adjustments are made by a single lever.

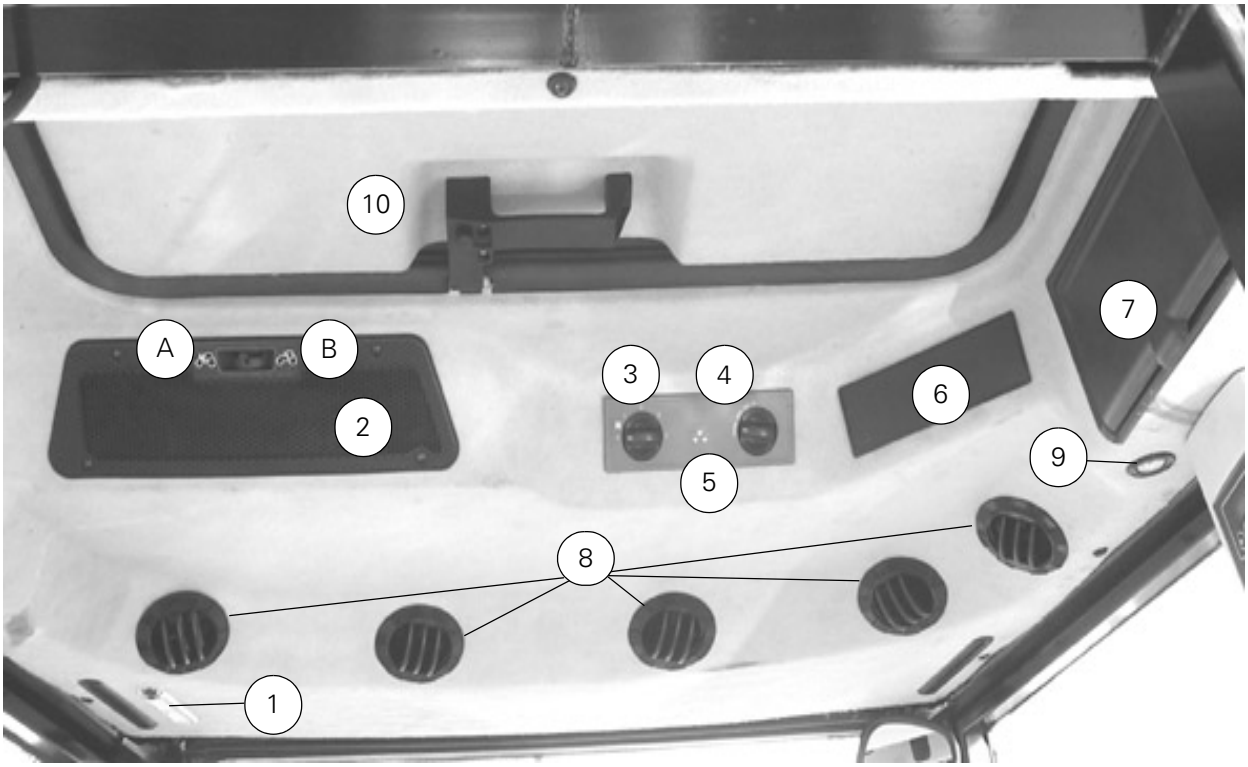
1. Height adjustment
2. Angle adjustment

DANGER: Adjustments of the steering wheel must be done with the tractor stopped.



Z3A-744-07-04

Fig. 23



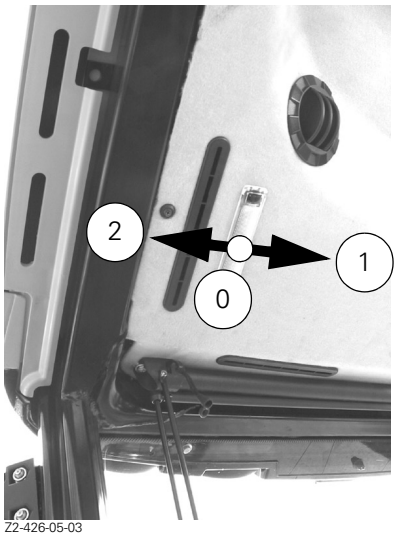
Z2-425-05-03

Fig. 24

3.10 - UPPER CONSOLE

(Fig. 25)

1. Interior light (Fig. 25).
   By rotating the 3-position switch:
   0 - off position.
   1 - light comes on when opening the left hand door.
   2 - permanently on.
2. Adjustable ventilation grille (depending on model).
   A: Outside air intake
   B: Recycling
3. 4-speed ventilator/heater fan control (if fitted).
4. Heater controls:
   Blue = cold
   Red = warm
5. Automatic air conditioning system control (optional).
6. Radio (if fitted).
7. Drink storage compartment, which is cooled when the tractor is equipped with air conditioning.
8. Adjustable air circulation vents.
9. Lighting of console.
10. Roof hatch (optional).



Z2-426-05-03

Fig. 25

3.10.1 - 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 (68°F). Switch off the system before starting up the engine. Ensure the cab air filter is clean (see chapter 5).

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.

IMPORTANT: 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.

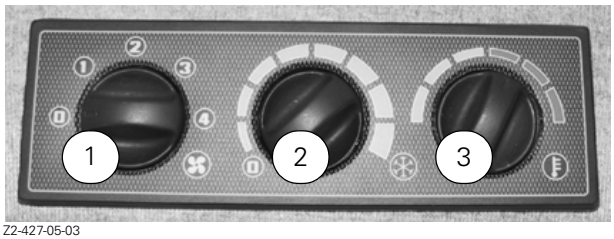
ONCE A YEAR HAVE THE CIRCUIT CHECKED BY YOUR DEALER.

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

3.10.2 - Manual air conditioning system

3.10.2.1 - Description

1. Manual ventilation control knob
2. Thermostat (minimum / maximum) control knob
3. Heating (minimum/maximum) control knob



Z2-427-05-03

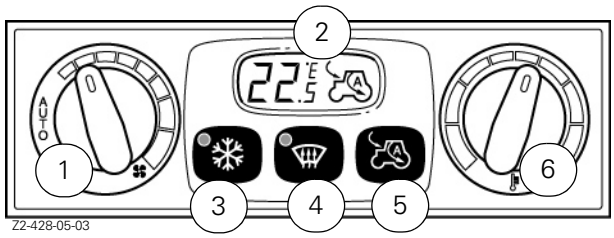
3.10.2.2 - Operation

1. When the engine is running, turn knob 3 to the left (cold) and move knob 2 to minimum position.
2. Position the fan 1 knob in fast position (fan symbol side).
3. When the required cab temperature is obtained, adjust the heating knob and rotate knob 2 if required to maintain a comfortable temperature.
4. Reduce the speed of fan 1 with the knob 3 to obtain a comfortable temperature.

Air conditioning stop: reset the fan knob 1 and temperature switch knob 2 to zero to stop the air conditioning.

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

3.10.3 - Automatic air conditioning system (optional)



Z2-428-05-03

3.10.3.1 - Description

1. Manual/automatic fan control knob
2. Digital display (LCD)
3. Compressor ON/OFF button
4. Defrosting button
5. Recycling button
6. Temperature control knob

3.10.3.2 - General characteristics

The temperature inside the cab is controlled automatically by the air conditioning system that controls the temperature at the air vents, the fan speed, recycling and the compressor operation.

The required temperature can vary by 0.5°C (1°F) between 20-24°C (68-76°F) and by 1°C (2°F) outside this temperature range.

Scale of Celcius and Farenheit temperatures:

°C - LO/18/19/20/20.5/21/21.5/22/22.5/23 23.5/24/25/26/27/28/HI

°F - LO/64/66/68/69/70/71/72/73/74/75/76/78/80/82/84/HI

The HI and LO displays and tractor icon indicate the recycling function status.

3.10.3.3 - Operation when the engine is stopped

When the tractor is started, all manual interventions carried out before stopping the vehicle are stored and are suggested at successive startings, except for the defrosting function.

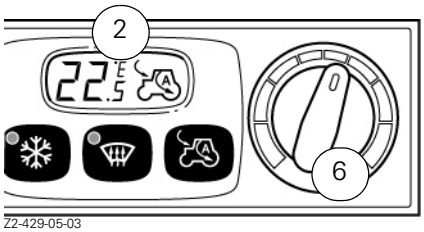
3.10.3.4 - Preselecting the cab temperature

Preselect the required temperature with knob 6. The preselected value is displayed on the LCD screen (2).

To change the display from Celsius to Fahrenheit:

- Switch off the ignition key.
- Move the fan switch 1 to OFF position.
- Move temperature knob 6 to maximum heat position (red)
- Switch on ignition key and within 5 seconds press the defrosting button 4 and air recycling button 5 simultaneously.
- The temperature symbol (°C or °F) will appear on the LCD screen.

When there is a problem or error, an "E" is displayed to warn the user (contact your dealer to determine the cause of the problem).



Z2-429-05-03

3.10.3.5 - Maximum temperature

To reach maximum temperature, adjust the cab temperature gauge to over 28°C.

Air conditioning is ON (A/C LED is lit)

- HI is displayed on the LCD screen.

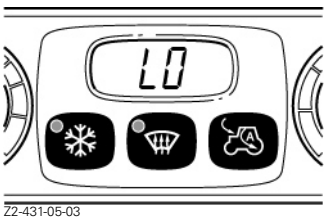
Z2-430-05-03

3.10.3.6 - Minimum temperature

To reach minimum temperature, adjust the cab temperature gauge to under 18°C.

Activating the compressor (A/C LED is lit)

- LO is displayed on the LCD screen.



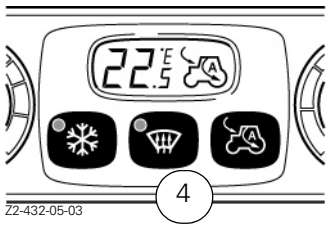
Z2-431-05-03

3.10.3.7 - Defrosting function

This function is activated by pressing button 4 (approximate time: 3 minutes).

The relevant indicator light comes on.

To switch off the defrost option and return to the previous condition, press the defrost switch again (the LED 4 is switched off), or once the 3 minutes have passed.



Z2-432-05-03

The compressor is activated (A/C LED is lit)

- HI is displayed on the LCD screen.

Z2-433-05-03

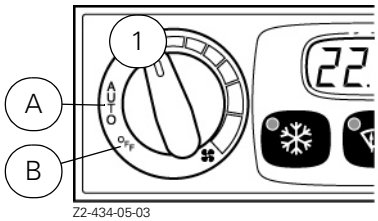
3.10.3.8 - Air flow adjustment

When fan control knob 1 is in auto position (A), air flow is selected automatically. Air flow change is gradual.

It is possible to manually select an air flow different to the air flow selected automatically. When the knob position is changed, air flow change is instantaneous.

Depending on the level of solar radiation, the air flow adjusts automatically if the required temperature is lower than the outside temperature, and the LCD temperature display flashes.

Air flow can be adjusted to maintain the temperature inside the cab at preselected levels.



Z2-434-05-03

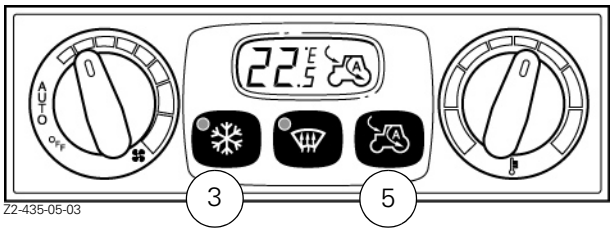
Stopping the automatic function

Move the fan button 1 to the OFF position (B).

3.10.3.9 - Air conditioning button

The tractor icon on the LCD screen indicates the recycling function selected by the button 3 and the corresponding indicator light comes on when the compressor is used.

When recycling is in ON position, the air conditioning unit is normally on, and can be switched off by pressing the button 3.



Z2-435-05-03

3.10.3.10 - Air recycling (ref. 5)

Recycling is in automatic mode and varies depending on the external temperature.

If the Recycling button 5 is pressed once (ON position) an arrow is displayed inside the tractor icon on the LCD screen.

If the Recycling button 5 is pressed twice (OFF position) an arrow is displayed outside the tractor icon on the LCD screen.

If the Recycling button 5 is pressed a third time, automatic control is restored and the letter A (automatic) appears in the tractor icon.

Each time the unit is activated, if the external temperature is higher than a pre-determined level, before overriding the recycling function wait 2 minutes to change the air inside the cab.

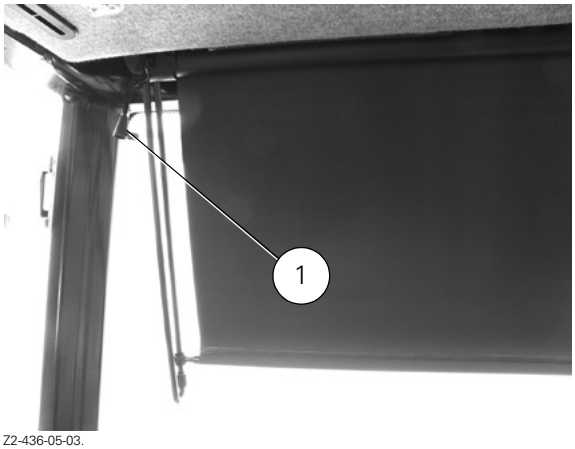
NOTE: If external temperatures are high, it is advisable to work with the system in Recycling mode, with control knob 1 in automatic position.

3.11 - SUN VISOR

(Fig. 26)

To adjust the visor pull vertically down to desired position.

To raise visor pull cord (1).



Z2-436-05-03.

Fig. 26

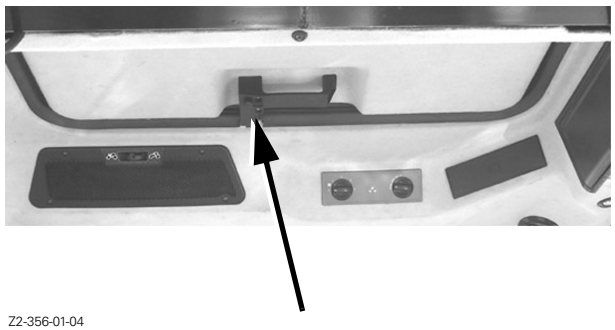
3.12 - ROOF HATCH

(optional, Fig. 27)

This hatch is normally used to ventilate the cab.

The hatch is opened by pressing the button located on the handle and pushing the hatch upwards.

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 to engage the ends of the gas cylinder rods in the supports, and continue pulling the hatch downwards until it clicks into locked position.

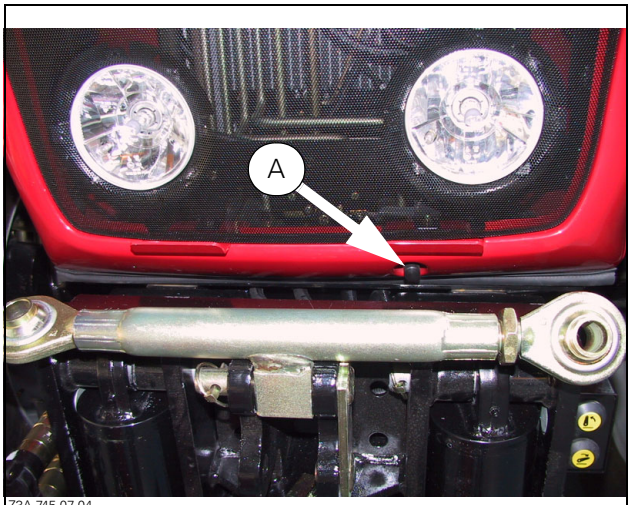


Z2-356-01-04

Fig. 27

3.13 - BODY

The bonnet can be raised to allow free access to the engine.
To open it, press the button (ref. A Fig. 28) and lift the bonnet.
To fully open it, push the locking lever (ref. B Fig. 30) located to the rear of the bonnet.
To remove the side panel of the body, pull it at the points indicated (C and D Fig. 31) and lift the panel to release it.

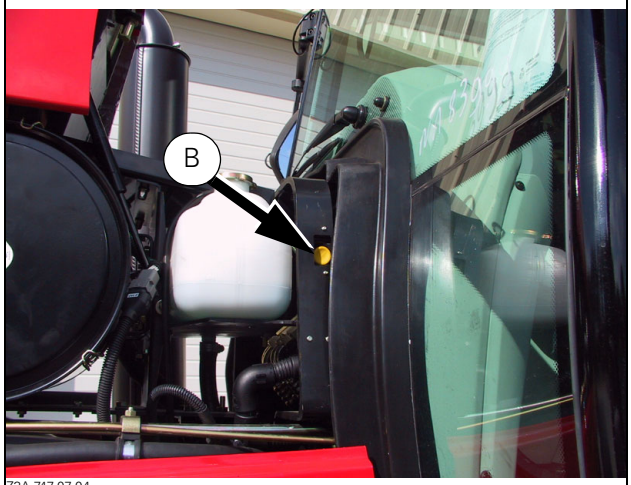


Z3A-745-07-04

Fig. 28

Z3A-746-07-04

Fig. 29



Z3A-747-07-04

Fig. 30

Z3A-748-07-04

Fig. 31

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 higher 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 6).

4.2 - START-UP

IMPORTANT: Before starting the tractor, refer to the Service Guide, 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 turbocharger bearings run the engine on the starter for about ten seconds.

4.2.1 - Starting the engine

Follow the start-up procedure as shown in Fig. 2.

DANGER: Make sure that the PowerShuttle lever is in neutral position, the handbrake is applied and the "ParkLock" control on the steering wheel is engaged.

1. When the ignition key is on, the TC and DC symbols flash on the right-hand screen of the instrument panel (Fig. 2).

NOTE: The numbers under T.C. and D.C., required for the service engineer, correspond to the installed software version.

2. All indicator lights on the instrument panel should come on. If one of the indicator lights does not come on, consult your dealer.

4.2.2 - Cold weather starting

A 1000 W heater and connection cable are fitted to help cold weather starting. The heater operates with 220 or 110 V (depending on option) and in general heats the engine coolant in two hours. Overnight operation may be required when temperatures are extremely low.

WARNING: DO NOT plug in heating element for testing unless immersed in coolant. It is dangerous to switch on a heating element in the open air, as the heat released can cause injury and the element can explode.

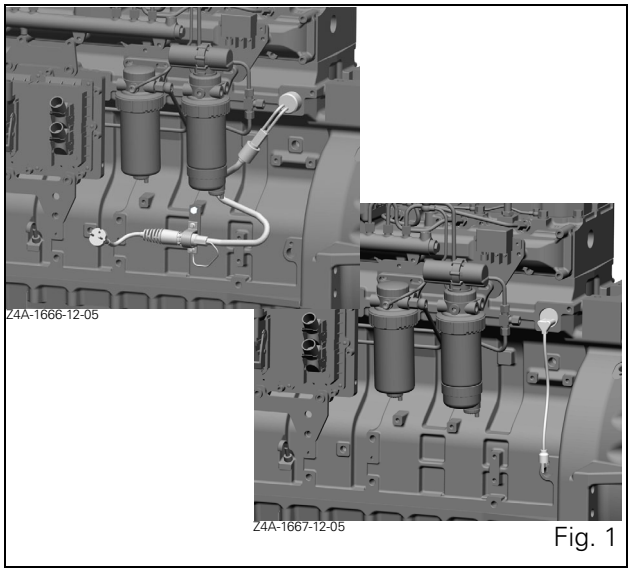


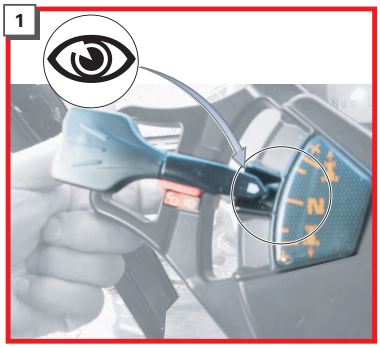
Fig. 1

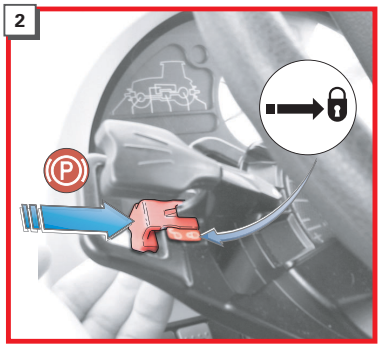
BEFORE STARTING

TO START THE ENGINE

DRIVING

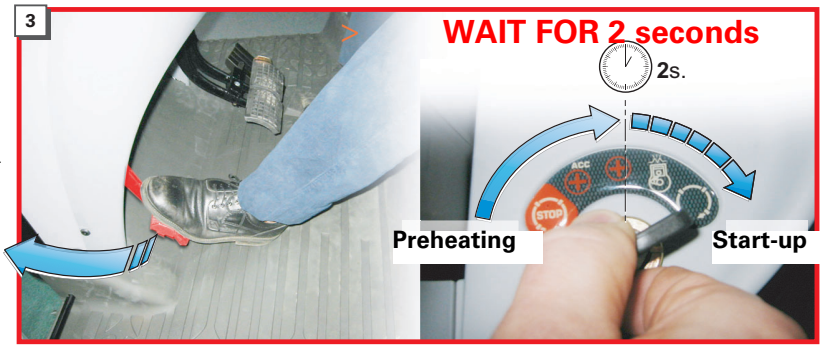
MAKE SURE the lever is in ion **NEUTRAL** position.



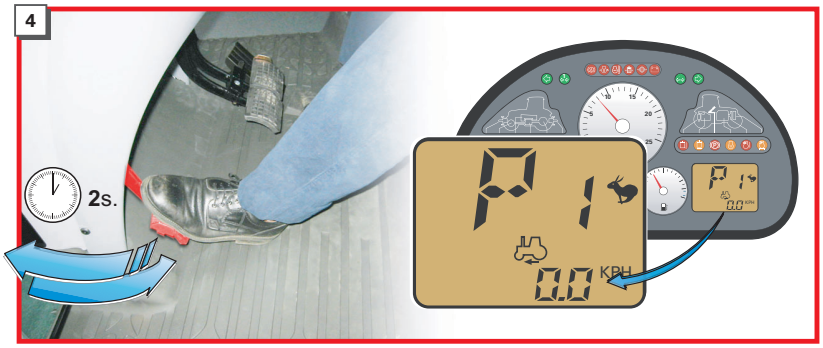


MAKE SURE the brake control (ParkLock) is **ENGAGED**

Declutch and move the switch to preheating position (wait for 2 seconds) then move it to start position

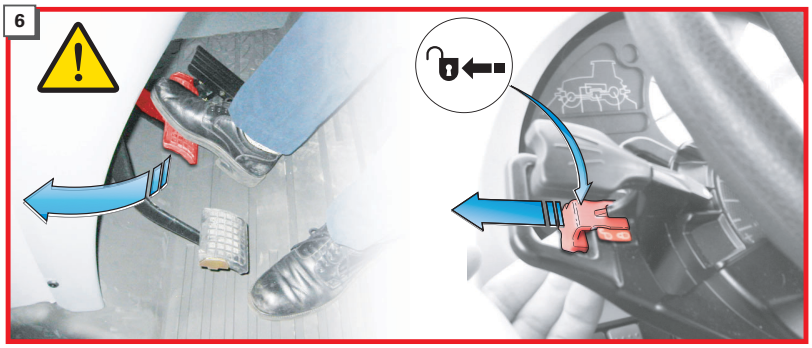


WAIT FOR 2 S Before releasing the clutch pedal

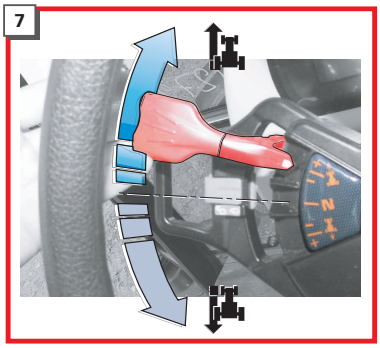


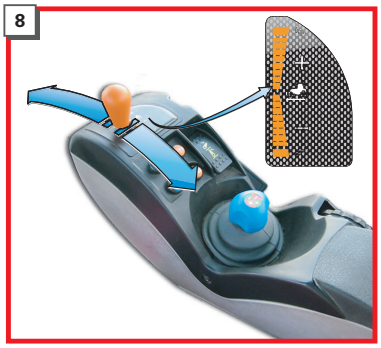
CHECK the instrument panel display

Press down both brake pedals and release the "ParkLock" brake contro



Engage the lever in the required direction of travel:





Operate the control to + or - to increase or decrease speed

Fig. 2

4.3 - STOPPING THE ENGINE

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

IMPORTANT: 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.

Move the PTO knob to neutral position before starting the engine.

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 at mid-travel.

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

When turning on headlands with heavy, mounted implements, reduce engine speeds during the manoeuvre. If the engine is not running steering is not power assisted.

4.4.2 - PowerShuttle control

Control located to the left of the steering wheel (1. Fig. 3)
The PowerShuttle control is used to quickly change direction of travel (forward or reverse), and to change the speed.

Z2-078

Fig. 3

Use:

- PowerShuttle: Move the PowerShuttle control in the required direction of travel, and the corresponding icon will be displayed on the instrument panel right-hand screen.
  When the tractor is travelling, each change to the direction is with the control (1) without declutching.

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

4.4.3 - "ParkLock" electromechanical operated brake (optional)

A Fig. 4: A control located to the left of the steering wheel allows the operator in the driver's seat to control the "activated" and "deactivated" ParkLock" electromechanical brake positions.

Z2-138

Fig. 4

IMPORTANT: For the "ParkLock" to disengage after engine start-up, the electronic control must record a switch of the control (A) from the closed padlock position to the open padlock position. If this condition is not met, the "ParkLock" remains engaged, even if the control is in the open padlock position.

DANGER: Engage the control into locked position (closed padlock symbol) before leaving the driver's seat with the engine running.

4.4.4 - Selecting the correct gear ratio

Fig. 6. Select the gear ratio that ensures the best fuel consumption without overloading the engine or the transmission; also remind that the soil conditions in a field may vary over a few metres. Select a ratio which allows the engine to operate comfortably at about 75% of its maximum power.

4.4.5 - Preselecting A / B memorised engine speeds

Fig. 5 - This function allows the operator to continuously choose between two engine speeds stabilised according to the adjustments selected.

Memorising engine speeds

1. Select the required speed using the foot or hand throttle:
   Keep the memory button (A or B (22) pressed down for 1 to 2 seconds. The speed is memorised and activated. The operation is the same for both memories (A and B), and the speed remains memorised even if the ignition is switched off.
2. No speed must be selected:
   Keep the memory button (A or B) pressed down, do not release it, and the speed increases gradually; release the button when the selected speed is reached and the speed is memorised and activated.

Press button A / B to select or deselect the engine speed predefined by button (23).

Each time button (23) is pressed, engine speed is increased/decreased by 10 rpm. A continuously applied pressure allows to rapidly increase or decrease the engine speed to be memorised.

NOTE: When driving at a preselected accelerated engine speed, press once on the key A/B or on the brake pedals, or quickly press the throttle pedal (kick down) to automatically drop to idle speed.

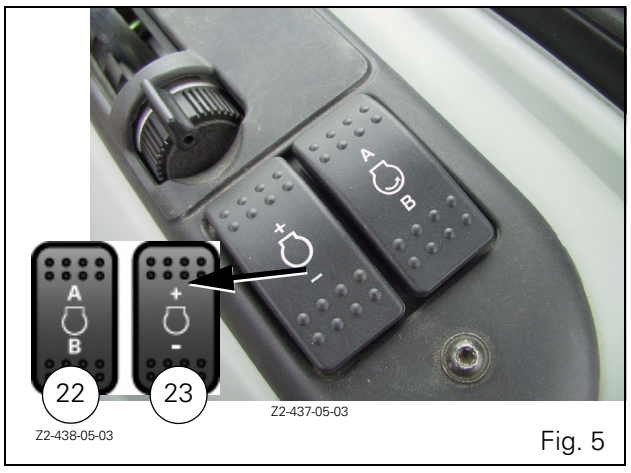


Fig. 5

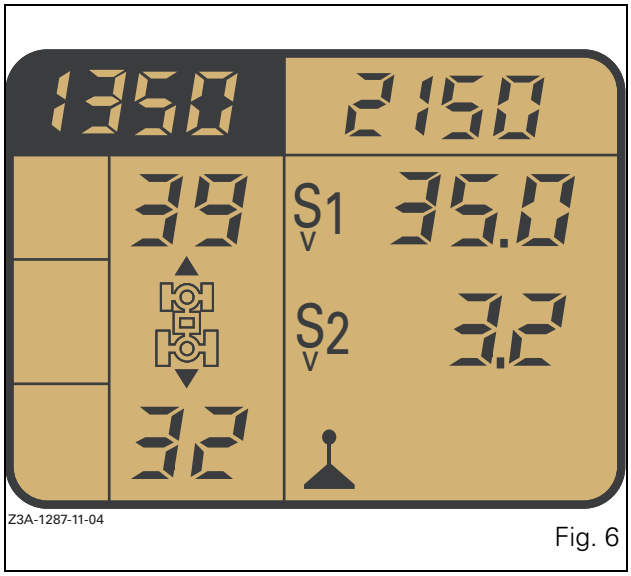


Fig. 6

- The engine symbol appears on the digital display, along with the letter A or B, indicating the active memorised engine speed (e.g.: memorised speed A (2 Fig. 7).

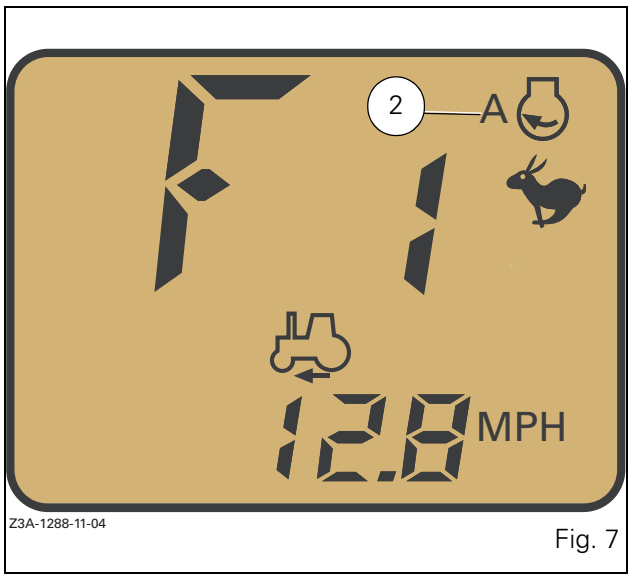


Fig. 7

4.4.5.1 - Range shifting

To shift from "Hare" range or from "Tortoise" range (button on console) engage the required range by keeping the gear shift switch (5) pressed until the ratio is fully engaged (the corresponding indicator light will light up on the instrument panel).

Fig. 8

NOTE: Do not rush when carrying out this manœuvre. The "Hare to Tortoise" synchronised range change is only possible when the tractor is stationary and the clutch pedal is pressed down. The "Tortoise to Hare" change is only possible at speeds above 5 kph.

DANGER: Before leaving the seat it is mandatory to move the PowerShuttle control (1. Fig. 9) to NEUTRAL position and engage the brake control on steering wheel ref. A ParkLock.

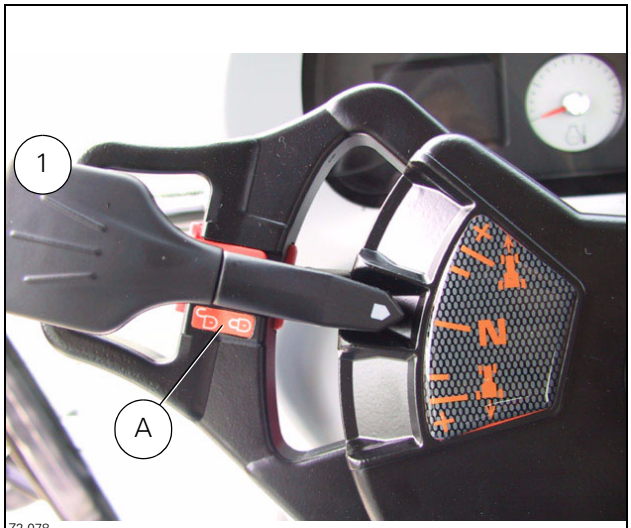


Fig. 9

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.

4.5 - DYNA VTTRANSMISSION

4.5.1 - General

Models fitted with Dyna VT transmission have continuous variable transmission in the forward and reverse positions. Power is transmitted hydrostatically or mechanically, OR hydrostatically and mechanically:

- Slow forward travel = Power transmission is hydrostatic primary / mechanical secondary
- Fast forward position = Power transmission is hydrostatic secondary / mechanical primary.

4.5.2 - Use

There are no mechanical speeds like on a standard tractor.

4.5.2.1 - Selecting direction of travel

Dyna VT transmission operation has a user interface and a specific display. The PowerShuttle lever (Fig. 10) controls direction of travel, and speed increase and decrease.

Ratio selection positions:

1. Neutral
2. Forward travel deceleration
3. Forward travel acceleration
4. Reverse travel deceleration
5. Reverse travel acceleration

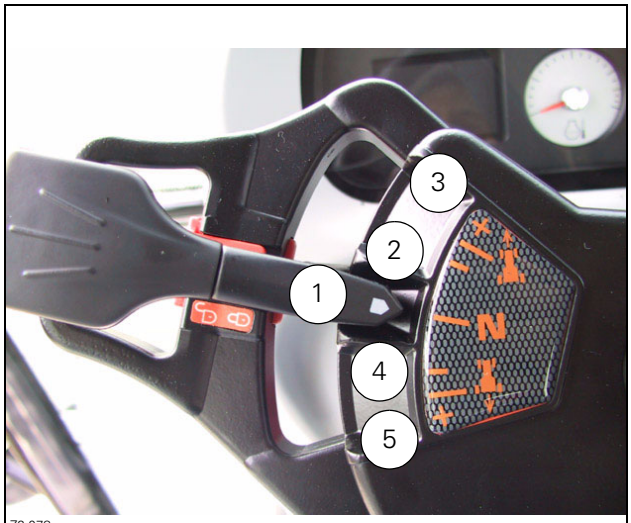
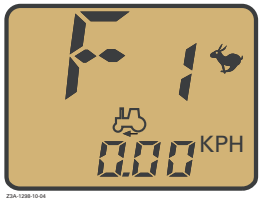
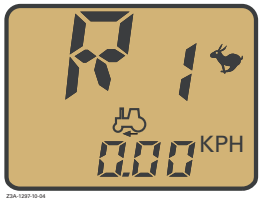
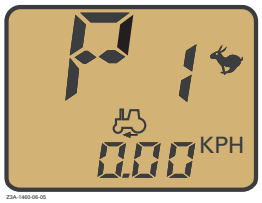


Fig. 10

As soon as you move the left-hand lever in the required direction of travel, the corresponding symbol is displayed on the instrument panel right-hand screen, as shown in the following table:

Position	Corresponding screen
1. Neutral	
2. Forward	
3. Reverse	
4. ""ParkLock" engaged	

When the tractor is operating, the direction is always changed with the left-hand lever (Fig. 10).
To start the tractor moving (forward or reverse travel), the correct transmission ratio must be selected.

4.5.2.2 - Fast reversing

When changing the direction of travel, the tractor decreases to a halt, then accelerates in the opposite direction. Shifting is inhibited but not blocked when the following functions are active:

- the underspeed supervisor
- the turbo clutch function

Z3A-749-07-04

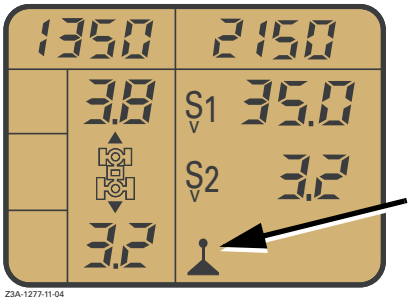
Fig. 11

During tractor movement, if the clutch pedal is activated, the transmission ratio is decreased until speed is zero.
The armrest lever (4 Fig. 11) also controls speed increases and decreases depending on the direction of travel.

4.5.3 - Different control modes

NOTE: At start-up, the tractor is in lever mode, transmission control is performed with the lever only.

4.5.3.1 - Lever mode



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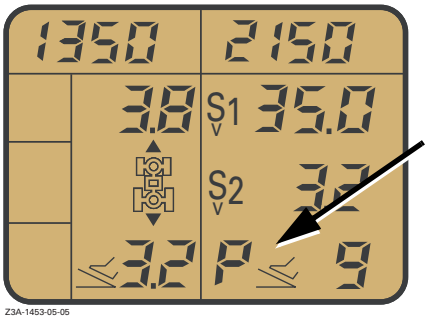
The speed depends on the position of the armrest lever (4 Fig. 11).

4.5.3.2 - Pedal mode



Z3A-1453-05-05

When the tractor is started, the throttle pedal must be released and button (5 Fig. 12) pressed.
Transmission is controlled exclusively by the pedal. To adjust the ground speed operate the SV2 potentiometer

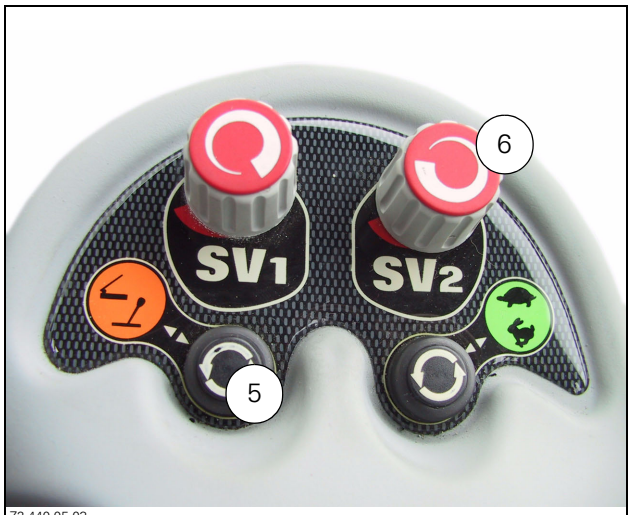
(6 Fig. 12) (max. 16 kph, min. 3 kph); the value is displayed to the right of the "pedal" icon on the DOT MATRIX screen. Engine speed is electronically adjusted depending on transmission speed. There are two possible settings in pedal mode:

- Power mode: (P is displayed)

  This is the max. speed at the max. engine speed (no programmed max. engine speed).
- Economy mode: (E is displayed)

  In this case, maximum speed at 1800 rpm engine speed (1800 is the maximum engine speed in this mode).

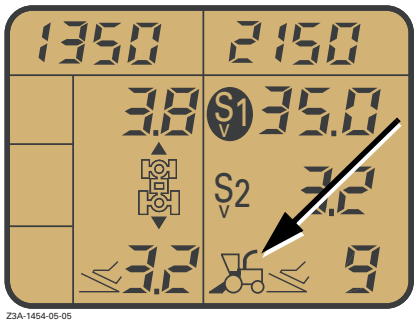
NOTE: In pedal mode, each time button (5 Fig. 12) is pressed , the setting changes between power mode and economy mode. If the lever is pressed for 2 seconds when in pedal mode, the tractor exits pedal mode.



Z2-440-05-03

Fig. 12

4.5.3.3 - Self-propelled mode



Z3A-1454-05-05

Access to self-propelled mode is possible only if engine speed A or B is selected. In this mode, the user sets the engine speed with memories A and B, and ground speed is controlled by the throttle pedal and hand throttle.

4.5.4 - Setting ground speed

To increase or decrease speed, both levers can be used.

The left-hand lever (Fig. 13) adjusts the speed by increments of 0.1 to 2 kph, depending on the length of time the lever is activated.

Z3A-709-07-04

Fig. 13

The progressivity of Dyna VT (Fig. 14) armrest lever makes transmission ratio adjustment easier. When decreasing the ratio, the tractor stops at 0 kph (dynamic stop).

Z3A-749-07-04

Fig. 14

The right-hand lever travels at varying increments depending on its position. It has 3 increment types (Fig. 15):

- Increments of 0.03 to 0.5 kph in slots 1 and 4.
- Increments of 1 kph slots 2 and 5.
- Increments of 2 kph in slots 3 and 6.

A mechanical stop is felt when shifting from slots 1 to 2 and 2 to 3 and from slots 4 to 5 and 5 to 6.

NOTE: If speed regulation is active, pressing the lever automatically deactivates it.

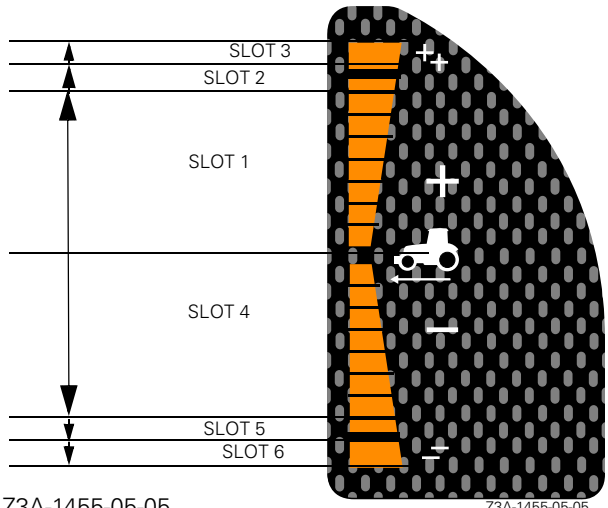


Fig. 15

4.5.5 - Selecting Hare or Tortoise range

The Dyna VT transmission possesses 2 gear ranges. Each range is limited, as shown by the following table:

	Gear range (in kph)	
	tortoise	Hare
Forward	0.03 to 28	0.03 to 50
Reverse	0.03 to 16	0.03 to 38

Button 1 on the right-hand console (Fig. 16) allows to shift from Hare to Tortoise range. Shifting is possible while the tractor is moving, but only from Tortoise to Hare range. When shifting from Hare to Tortoise, the PowerShuttle lever (Fig. 13) must be in neutral position, or the clutch pedal must be pressed down.

The range is displayed on the instrument panel right-hand screen.

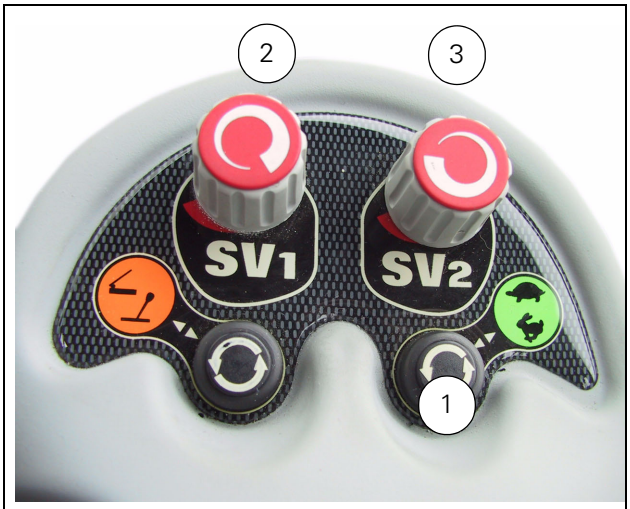


Fig. 16

4.5.6 - SV1 and SV2 Speed regulators

The ground speed is held constant.

The speed regulator function allows the user to easily store and recall a ground speed.

Two separate memory buttons (SV1 and SV2) are available (Fig. 17). This allows to store two ground speeds, e.g. working speed and transport speed).

The memorised speeds are displayed to the right of the DOT MATRIX screen (1 and 2 Fig. 18). When the speed regulator is used, the corresponding memory is highlighted on the screen. In Fig. 18, stored speed SV1 is activated.

4.5.6.1 - Presetting SV1 and SV2 speeds

The ground speed value can be adjusted using SV1 and SV2 potentiometers (2 and 3 Fig. 16). The adjusted values are automatically stored and remain in memory even after the tractor engine is stopped.

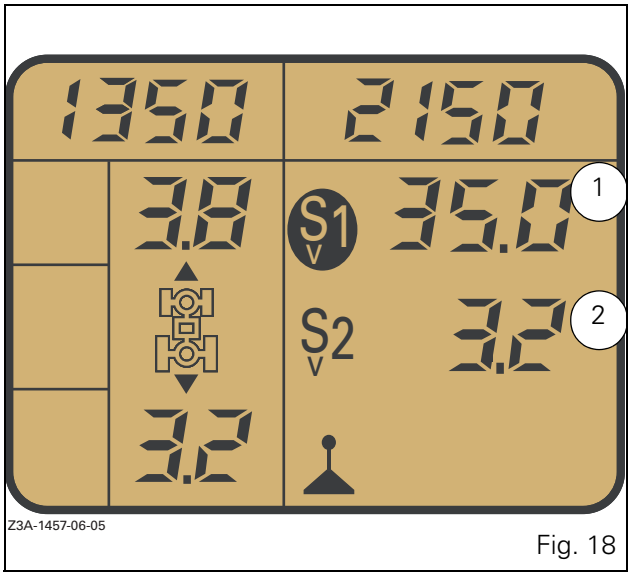
NOTE: It is also possible to change the stored speed when the tractor is driving with an activated "regulated" speed.

To shift between stored speeds, press once on the SV1 or SV2 button (Fig. 17). Press for more than 3 seconds on button SV1 or SV2 (Fig. 17) to store the actual tractor speed and replace the previous stored speed.

The speed regulator can only be activated if the following conditions are met:

- Clutch pedal not activated
- The tractor is running and has reached restart speed
- The engine speed is higher than 1100 rpm

Fig. 17



Z3A-1457-06-05

Fig. 18

If these conditions are not met the "speed regulator" function is deactivated and the instantaneous transmission ratio is maintained, with no subsequent control. Start-up with the "speed regulator" function is not possible. Stored speeds can be activated in both directions of movement.

The "speed regulator" mode is deactivated when:

- The drive lever is used
- The brake pedal or engine brake is activated
- Engine speed drops below 1100 rpm
- The neutral switch is activated
- The range is changed (Hare or Tortoise).

CAUTION: Any use of the brakes automatically deactivates the speed regulator (SV1 or SV2) as well as the stored engine speed (A or B).

4.5.7 - Engine underspeed supervisor

The underspeed supervisor is automatically activated when the engine speed drops in case of stress. The tractor speed is then decreased automatically by the gearbox control to prevent the engine speed from dropping further.

Supervisor operation

The underspeed supervisor is automatically activated when the engine speed drops below 180 rpm under load. The supervisor value is set by a potentiometer located on the right-hand console (Fig. 19). Changes take effect immediately. It is therefore possible, during use, to set tractor operation to the corresponding values. When the engine underspeed supervisor is activated, an icon is displayed on the left-hand screen (Fig. 20).

Z2-452-05-03

Fig. 19

Potentiometer set to 10:

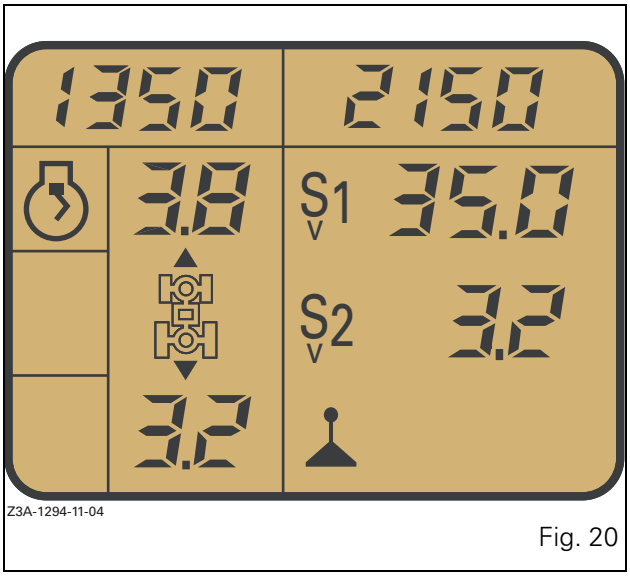
The ground speed decreases to maintain a constant engine speed.

Potentiometer set to 40:

The engine speed increases to maintain a constant ground speed.

Potentiometer set between 10 and 40:

Combination of the two previous explanations.



Z3A-1294-11-04

Fig. 20

4.5.8 - Clutch-coupler function

4.5.8.1 - Clutch function

Although the Dyna VT transmission has neither forward clutch nor coupler, the tractor possesses a clutch pedal.

This pedal allows to control the traction effort (as with standard clutch slip). When an obstacle appears suddenly, the tractor can be rapidly stopped, just like a conventional tractor, by pressing the clutch and brake pedals.

4.5.8.2 - Coupler function

Traction power is limited at low engine speed thanks to a pressure relief valve located on the transmission hydrostatic loop.

In connection with engine speed, the coupler function is achieved by modulating the pressure in the hydrostatic circuit. Thus, the coupler function replaces the measured action of a clutch pedal.

4.5.8.3 - Coupler function under traction

The coupler function is activated when the engine speed drops below 1400 rpm, as the pressure in the hydrostatic loop decreases in proportion to the drop in engine speed.

Just like a coupler, the function limits engine overload and avoids stalling.

The coupler can be validated or not from the DOT MATRIX.

NOTE: To activate (Fig. 21) or deactivate (Fig. 22) the coupler function, move the PowerShuttle lever to neutral, fully press down the clutch pedal and press the OK button for 5 seconds.

WARNING: The coupler function is "ON" by default at start-up whatever is the status when the engine stops.

Z3A-1295-11-04

Fig. 21

Z4A-1670-12-05

Fig. 22

4.5.9 - Setting restart speeds for shifting

To activate the preset values, press the clutch pedal, the tractor icon (2 Fig. 23) flashes. The required value can be set usint the PowerShuttle.

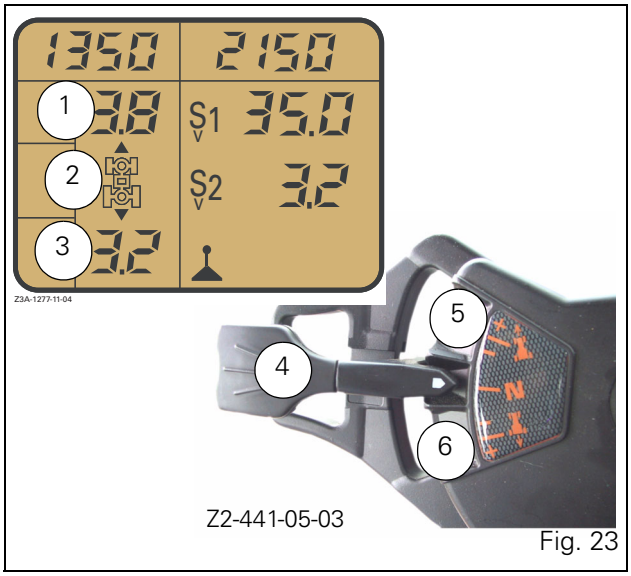


Fig. 23

To set forward value (1 Fig. 23):
Depress the clutch pedal, put the PowerShuttle lever in position 5, then move the PowerShuttle lever to + or – to adjust to the required value.

To set reverse value (3 Fig. 23):
Depress the clutch pedal, put the PowerShuttle lever in position 6, then move the PowerShuttle lever to + or – to adjust to the required value.

Presettings are different in the Hare and Tortoise ranges. They are stored when the engine is turned off. The displayed value corresponds to the speed in kph obtained when the engine speed is 1800 rpm. If the preset values are set to 0.2, reversal will occur at the same forward and reverse speeds.

NOTE: In all cases, the dynamic stop can be activated by moving the left-hand "forward to neutral" or "reverse to neutral" lever.

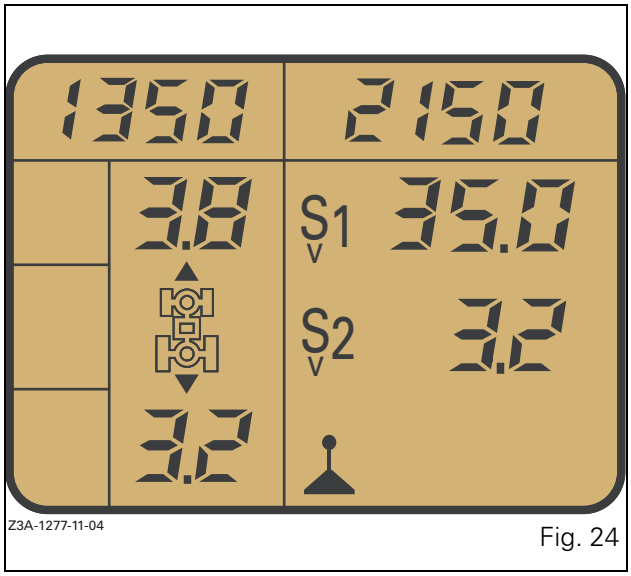


Fig. 24

Ref. 4: DOT MATRIX screen (Fig. 25)
Ref. 5: DOT MATRIX controls

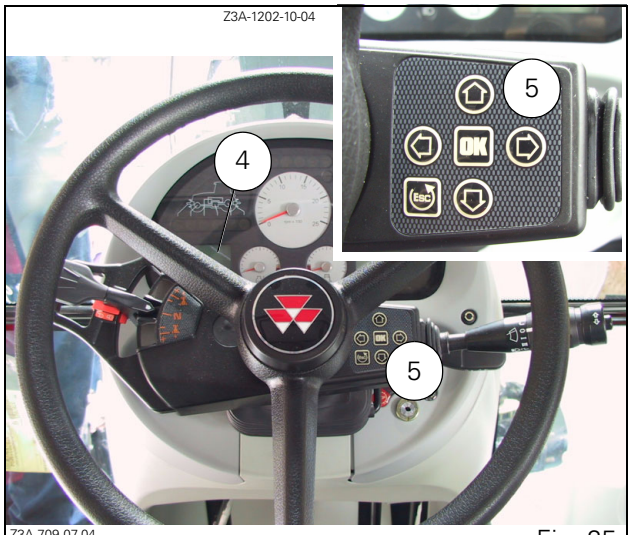
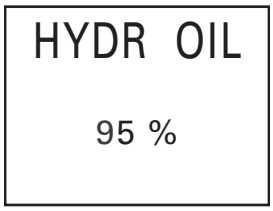
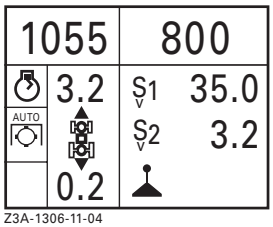
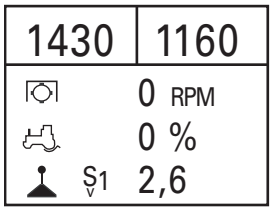
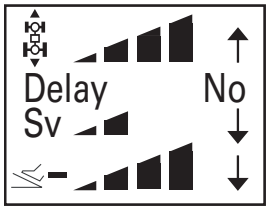
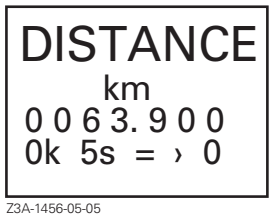
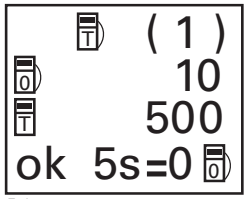
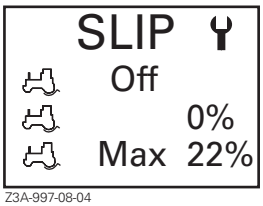
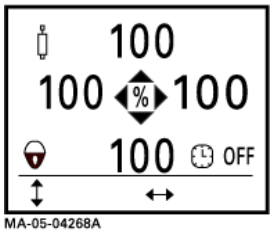
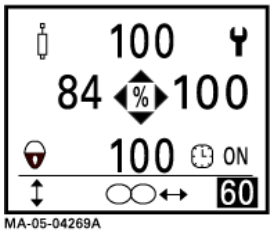
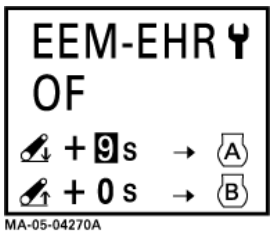
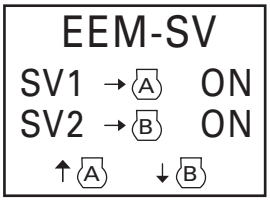


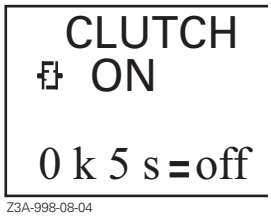
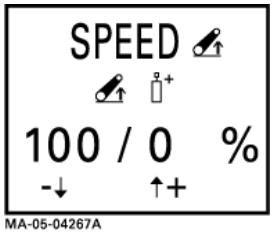
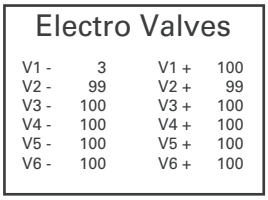
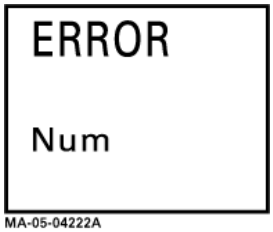
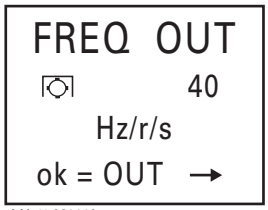
Fig. 25

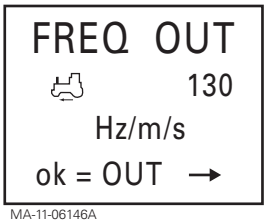
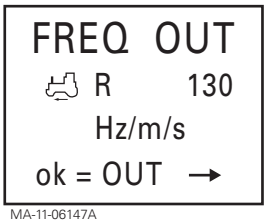
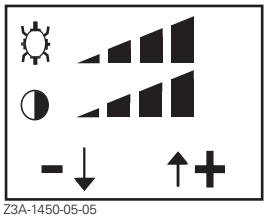
4.5.10 - Using the DOT MATRIX screen

The DOT MATRIX screen is initialised when starting the tractor (4 Fig. 25). To access the different menus, press the DOT MATRIX control buttons (ref. 5) and follow the instructions given in the table on the next page.

Screens	Access	Function
 Z3A-992-08-04	Ignition before engine start (ignition key on +ACC position)	**Auxiliary oil level screen** Displays the filling level of the auxiliary oil tank (0-100%): - 100%: tank full. - 50%: warning threshold. When the auxiliary oil tank level drops to < 50%, it is automatically displayed every 4 minutes (press ESC to return to the main screen). If sensor problem, ERROR is displayed instead of the filling level.
 Z3A-1306-11-04	Starting the tractor	**Start-up screen** Displays the restart speeds, the SV1 and SV2 speeds, engine supervisor, PTO, pedal mode, eco mode or lever mode.
 Z3A-985-08-04	 To display from the start-up screen	**Work screen** Displays memorised engine speeds, PTO speed, actual wheel slip rate,lever mode, pedal mode (power or eco), self-propelled mode and SV1 and SV2 speeds.
 Z3A-1307-11-04	 To display from the previous screen  To increase or decrease reverse shuttle sensitivity (all modes). **OK** Delay: Allows a 1.5 seconds delay to be authorised or not when reversing direction of travel  Sv: Display progressivity response time (select speed Sv1 or Sv2 and press the arrow)  Pedal mode deceleration progressivity adjustment.	**Reverse shuttle sensitivity** Allows direction reversal response time to be set. The delay starts once the PowerShuttle lever is activated If the delay is authorised, declutching takes place 1.5 seconds after the lever is activated. If not authorised, declutching takes place as soon as the lever is activated.
 Z3A-1456-05-05	 To display from the previous screen **OK** To reset distance to zero.	**Distance screen** Displays the total distance run

Screens	Access	Function
 Z3A-996-08-04	→ To display from the previous screen OK Press 5 seconds to reset	**Fuel used screen** Indicates fuel used: 0: Quantity of fuel used since last reset. T: total fuel used. This value is not interchangeable and cannot be set to zero.
 Z3A-997-08-04	→ To display from the previous screen OK Press to enter the settings menu. The symbol appears. ↑ ↓ To set the required wheel slip percentage value ESC Allows to exit the settings screen	**Wheel slip screen (optional)** Allows to adjust maximum allowable wheel slip and display current wheel slip.
 MA-05-04268A	→ To display from the previous screen OK Press to enter the menus → To select one of the displayed flow rate values or timing ↑ ↓ To modify displayed flow rate values	**Joystick setting menu (1/2) (if Datatronic 3 is not installed)** This menu allows to adjust the flow rate values of each spool valve controlled by the Joystick. If the Joystick is locked (padlock displayed on screen) press the blue armrest ON/OFF button near the PTO control.
 MA-05-04269A	→ When timing is selected, it is possible to display the type of timing (value or infinite) ↑ ↓ To adjust the timing value ESC Allows to exit the settings screen and validate settings	**Joystick setting menu (2/2) (if Datatronic 3 is not installed)** This menu allows to activate or deactivate timing, and can be adjusted from 0 to 60 seconds or to infinite mode.
 MA-05-04270A	OK Allows to activate the mode or validate the values ↑ ↓ Used to shift from one line to another → Allows to set the seconds value of the displayed time	**Headland 2 screen (if Datatronic 3 is not installed)** This menu allows to adjust the engine speed when changing linkage status (work or transport). The operating conditions are: - ON mode, - PowerShuttle lever out of neutral, - tractor moving, - When the linkage transport mode is selected, engine speed B is activated after the preset time. - When the linkage working mode is selected, engine speed A is activated after the preset time.
 Z3A-986-08-04	→ To display from the previous screen ↑ ↓ To activate or deactivate one of the two functions	**Headland 1 screen** This menu is used to vary the engine speed during activation of SV1 and SV2 memorised ground speeds.

Screens	Access	Function
 Z3A-998-08-04	→ To display from the previous screen OK Press 5 seconds to switch from On to OFF	**Clutch coupler screen** Displays whether the clutch coupler function is on or off.
 MA-05-04267A	→ To display from the previous screen ↑ ↓ To modify displayed linkage and spool valve flow rate values	**Linkage and EHS valves menu** This menu allows to give priority to the auxiliary spool valves over the linkage, and vice versa. Maximum linkage value: 100 Minimum spool valve value: 0 Minimum linkage value: 20 Maximum spool valve value: 80
	→ To display from the previous screen	**Valves display screen (option if Datatronic 3 is not installed)** Allows flow rate of each valve to be displayed
 MA-05-04222A	→ To display from the previous screen	**Error code screen** Displays all of the tractor error codes. Each error code is displayed for 4 seconds in a loop.
 MA-11-06144A	→ To display from the previous screen OK Used to change the reference speed (next screen). → To exit the FREQ OUT menu	**PTO speed output adjustment screen (models fitted with electronic injection)** Used to adjust the PTO speed reference frequency (40 to 60), (consult your dealer for details of connection and value adjustments)
 MA-11-06145A	OK Used to change the reference speed (next screen). → To exit the FREQ OUT menu	**Engine speed output adjustment screen (models fitted with electronic injection)** Used to adjust the engine speed reference frequency (40 to 60), (consult your dealer for details of connection and value adjustments).

Screens	Access	Function
 MA-11-06146A	OK Used to modify the reference speed (next screen). To exit the Frequency menu	**Ground speed output adjustment screen (models fitted with electronic injection)** Used to adjust the current speed reference frequency (36 to 144), (consult your dealer for details of connection and value adjustments).
 MA-11-06147A	OK Used to return to the PTO FREQ OUT screen. To exit the Frequency menu	**Current speed output adjustment screen (models fitted with electronic injection)** Used to adjust the current speed reference frequency (36 to 144), (consult your dealer for details of connection and value adjustments).
 Z3A-1450-05-05	To display from the previous screen To increase or decrease the value	**Brightness/contrast screen** Allows to set screen brightness and contrast

IMPORTANT: When stopping the engine, all DOT MATRIX functions except the coupler function (CLUTCH) shift to OFF position.

4.6 - BRAKES


Z2-410-05-03-A

Fig. 26

DANGER: When driving at speed or on the road, the two brake pedals must be locked together (Fig. 26). Only the foot throttle should be used, and the throttle lever must be in neutral position.

Check that A/B memorised speed is not activated.

WARNING: Trailer brakes (Fig. 27). To activate the trailer brakes, connect the trailer hose to the union at the back of the tractor and lock the brake pedals together.

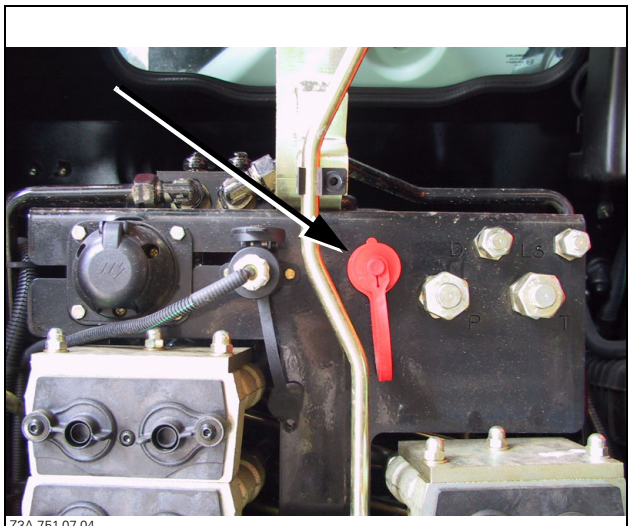
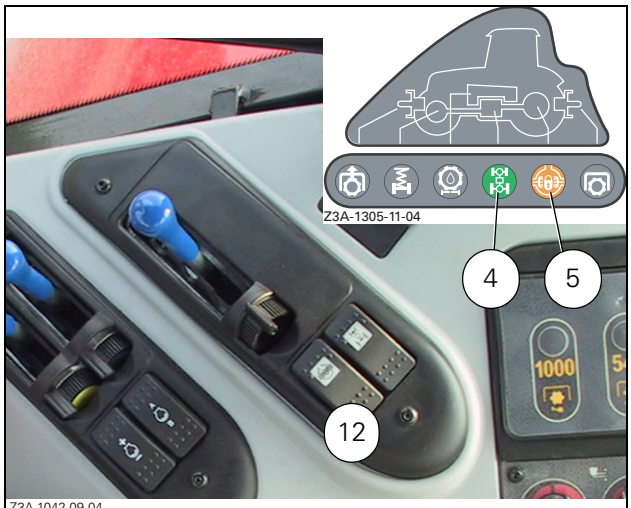

Z3A-751-07-04

Fig. 27

4.7 - DIFFERENTIAL LOCK

The differential lock is used to prevent the rear wheels from slipping in relation to one another and thus limits tractor wheel slip during field work.

CAUTION: During manoeuvres, turning is difficult with the differentials locked.



Z3A-1042-09-04

Fig. 28

To engage the differential lock, press the switch (12Fig. 28). Differential lock engagement simultaneously engages the front axle, the differential lock (5) and front axle (4) instrument panel indicator lights come on.

To disengage the differential lock, press the switch again (1).

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

Disengaging the differential lock does not disengage the front axle.

- Automatic engagement and disengagement of the differential lock:

This function is permanent and either activated or deactivated as soon as the linkage control is activated (e.g.: Operation at headlands). As soon as the linkage switch is pressed in Lift position, the differential lock disengages, then, when the linkage switch is pressed in Down position, the differential lock automatically engages.

IMPORTANT: Any use of the brakes cancels the differential lock. Press the switch (12 Fig. 28) again to re-engage it.

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

NOTE: For optimum performance, engage the differential lock when starting a run.

4.8 - FOUR WHEEL DRIVE

When 4WD is engaged, the front wheels are driven. This function is strongly advised for field work to keep wheel slip to a minimum.

IMPORTANT: To avoid damaging the front axle, it must be disengaged for road use.

There are two modes of 4WD operation:

1. Automatic mode:

At tractor start-up, the front axle is in automatic mode. To engage the front axle, press the switch (11 Fig. 29). The corresponding instrument panel indicator light comes on (4 Fig. 29) and the 4WD automatic mode symbol appears on the digital display (A Fig. 29).

When this mode is activated, the front axle is automatically disengaged at speeds exceeding 14 kph and is automatically re-engaged as soon as speed drops below 10 kph.

2. Manual mode:

To activate manual mode, first engage the front axle by pressing the switch (11 Fig. 29), then press this same switch again for 3 seconds. The indicator light (4) comes on and the front axle symbol in automatic mode disappears from the digital display.

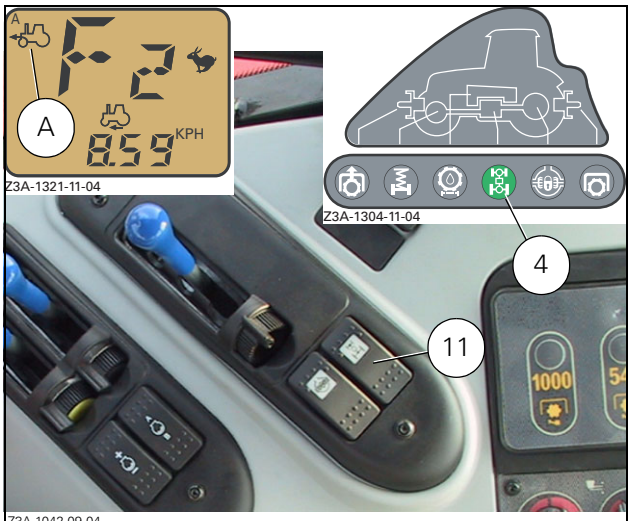


Fig. 29

NOTE: If the front axle is not engaged and the driver presses the dual brake pedals, the front axle automatically engages and the instrument panel light comes on.

When the brake pedals are released, the front axle is disengaged.

4.8.1 - Suspended front axle

The purpose of the suspended front axle (optional) is to increase the comfort for the operator by providing better suspension when driving the tractor on the road, as well as providing increased stability at higher speeds by improving tyre contact with the ground.

The front axle suspension can be activated and deactivated by a switch Ref. 1 located on the right-hand side of the console inside the cab Fig. 30.

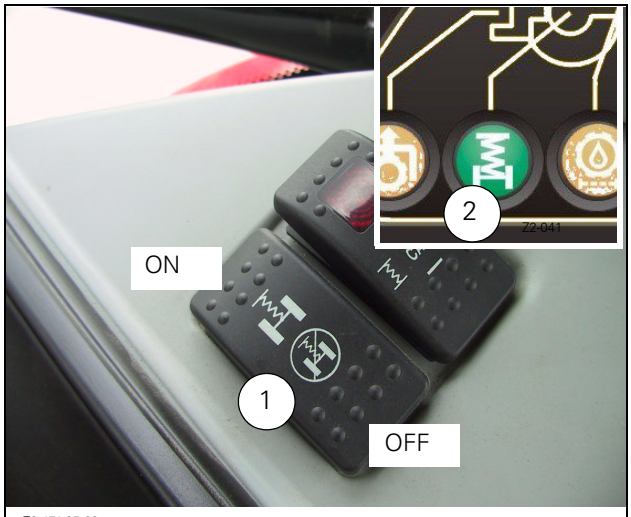


Fig. 30

Use

On starting the engine, the suspension of the front axle remains in the status (high or low) that it was in when the engine was stopped, and the relevant indicator light comes on. The suspension is activated by placing the switch in the ON position (in use). The indicator light 2 comes on and after several seconds the front axle rises.

To deactivate the suspension, place the switch in the OFF position (not in use).

4.9 - SUSPENDED CAB

Cab suspension flexibility can be adjusted depending on different comfort requirements (road or field work).

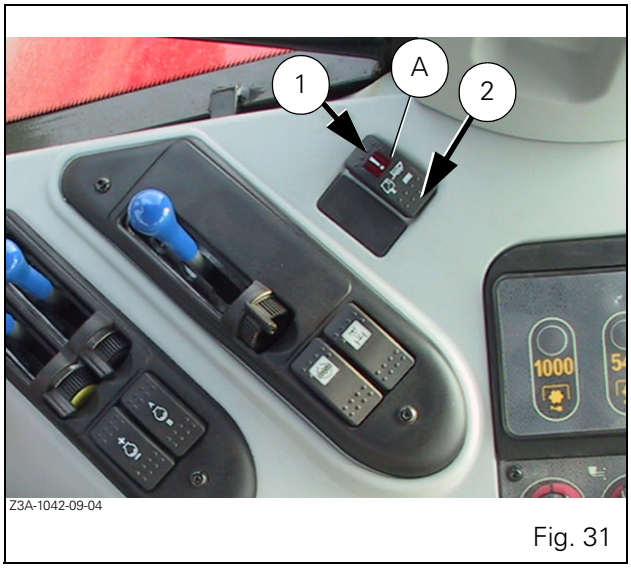


Fig. 31

Adjustment Fig. 31:

- Road position (trailer symbol on the switch):
  - Put the switch (A) in position (1) to make the suspension stiffer.
- Field position (plough symbol on the switch):
  - Put the switch (A) in position (2) to make the suspension smoother.

Maintenance: See chapter 5.

4.10 - DIRECTION

CAUTION: The steering is hydrostatic type. When the engine stops, the booster pump no longer supplies the system. Hydrostatic steering then shifts 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.***

4.11 - WHEEL SLIP CONTROL

When the Datatronic 3 option is fitted, the wheel slip function is available on the tractor.

This function is used to check the depth of implements in the soil according to the tractor wheel slip rate, when the electronic system detects a difference between the tractor specified and actual ground speeds.

To activate and adjust this function, see paragraph 4.5.10 Using the DOT MATRIX screen.

NOTE: This function can be activated by pressing the switch (1 Fig. 32), the wheel slip control icon switches to green (2 Fig. 33).

Fig. 32

Description (Fig. 33):

2 - Wheel slip control inactive (green icon if the function is active)

3 - Maximum allowed wheel slip (value adjustable by means of the DOT MATRIX)

4 - Actual tractor wheel slip

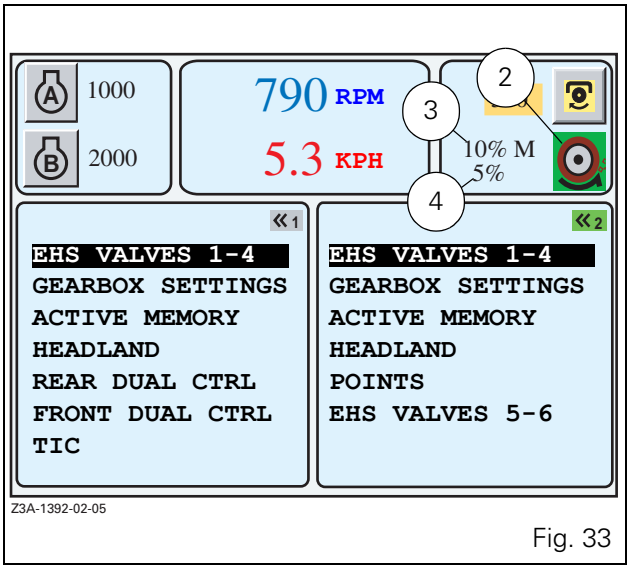


Fig. 33

4.12 - POWER TAKE-OFF

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.

DANGER: Power take-off

Never step across any shaftline.

Do not use the tractor or trailer 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.

4.12.1 - Rear power take-off

The PTO can be engaged and disengaged independently of the transmission. 540 rpm, 540E rpm and 1000 rpm speeds can be obtained by selecting the appropriate speed with buttons Ref. 3 (Fig. 34). The relevant display appears on the digital display and the instrument panel indicator light Ref.6 flashes.

Button "**N**" disengages the PTO if it is activated.

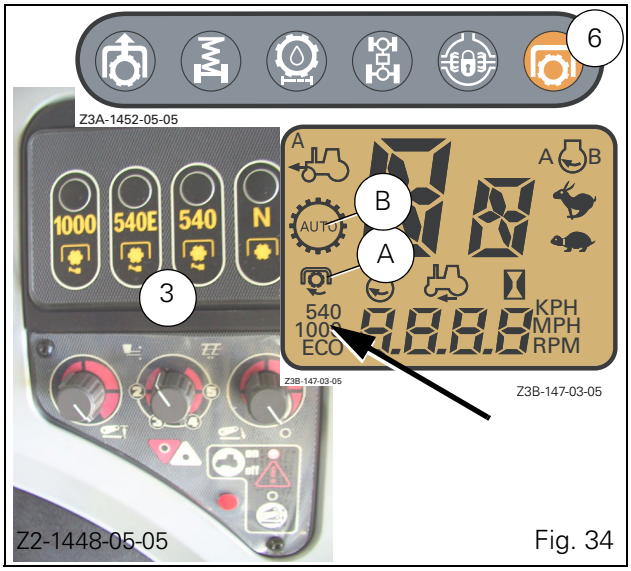


Fig. 34

PTO speed Selected	Display	Maximum engine speed
540 rpm	540	2090 rpm
540E rpm	ECO	1600 rpm
1000 rpm	1000	2030 rpm

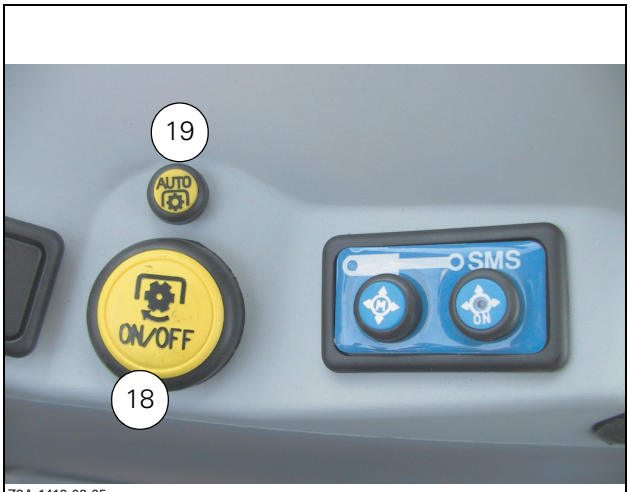


Fig. 35

- **Engaging PTO in manual mode:**

Press the push-button (18 Fig. 35). The PTO engaged indicator light (6 Fig. 34) stops flashing and stays permanently on. An engaged symbol simultaneously appears on the digital display (A Fig. 34). The clutching process depends on the length of time the push-button is pressed down:

Less than 5 seconds

Progressive starting, the PTO clutch automatically adapts to the conditions required to start the implement.

More than 5 seconds

The speed controls and default values are deleted.

NOTE: If no speed has been preselected when the PTO is activated, it is deactivated after a short pause and a warning message appears on the screen.

To stop the PTO, press the push-button (18 Fig. 35) again.

- **Engaging PTO in automatic mode:**

This function allows the PTO to be automatically stopped temporarily when the linkage control is in Lift position (e.g.: Operation at headlands).

Use:

1. Press the PTO engage switch (18 Fig. 35) after having selected a PTO speed. The PTO engaged indicator light (6 Fig. 34) remains permanently lit.
2. Move the linkage **Lift/Lower selector** to the Lower position.
3. Press the automatic mode engagement push-button (19 Fig. 35). The AUTO symbol appears on the digital display (B Fig. 34).

As soon as the linkage is in Lift position, the PTO automatically stops and the indicator light (6 Fig. 34) flashes.

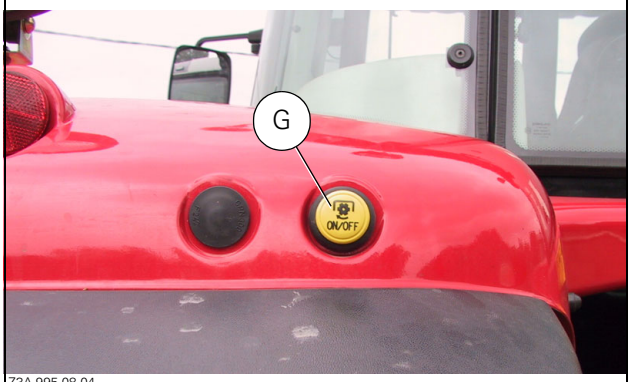
As soon as the linkage returns to the Lower position, the PTO is automatically activated and the indicator light (6) remains permanently lit.

NOTE: If the Lower control is not activated within 90 seconds or the ground speed increases to over 25 kph, the PTO is switched off definitively.

WARNING: Always place PTO knob Ref.18 in "OFF" position.

4.12.2 - External PTO stop button

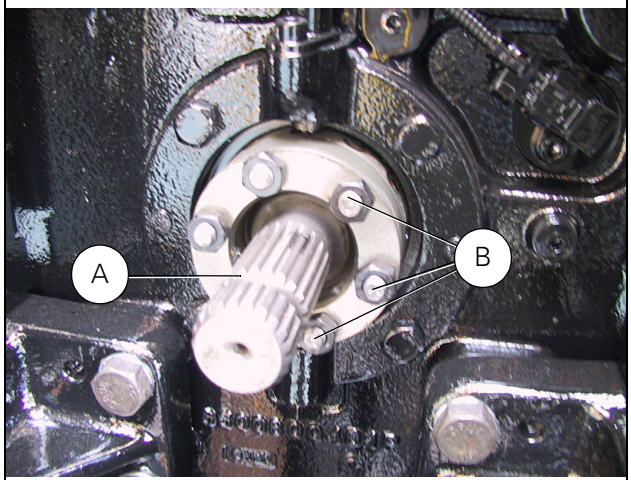
Fig. 36**:** The button (G) located on the left-hand fender allows a rear PTO safety stop, and will make the instrument panel indicator light flash.
To re-engage the power take-off, activate the button (18 Fig. 35) in the cab or the external control button (G) for 6 seconds at least.



Z3A-995-08-04

Fig. 36

4.12.3 - Interchangeable shaft end-fitting (flanged shaft)



Z3A-714-07-04

Fig. 37

End-fittings that can be mounted:
PTO end-fitting with 21 x 1 3/8" splines
PTO end-fitting with 6 x 1 3/4" splines
PTO end-fitting with 20 x 1 3/4" splines

CAUTION: When changing the spacer (A), the Allen screws (B) must be tightened to a torque of 115 (+/-15) Nm.

Fig. 38

4.13 - ELECTRONIC LINKAGE

(Fig. 38)

A. Height / depth setting knob
B. Function selector knob: Position / Intermix / Draft
C. Maximum lift height setting knob
D. Manual or automatic lowering speed setting knob
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 malfunction self-diagnostic indicator light.
J. Active transport control system indicator light
K. Lowering speed automatic control indicator light
L. Quick soil engagement
M. Active wheel slip control
N. Linkage console locking indicator light (Fig. 39)

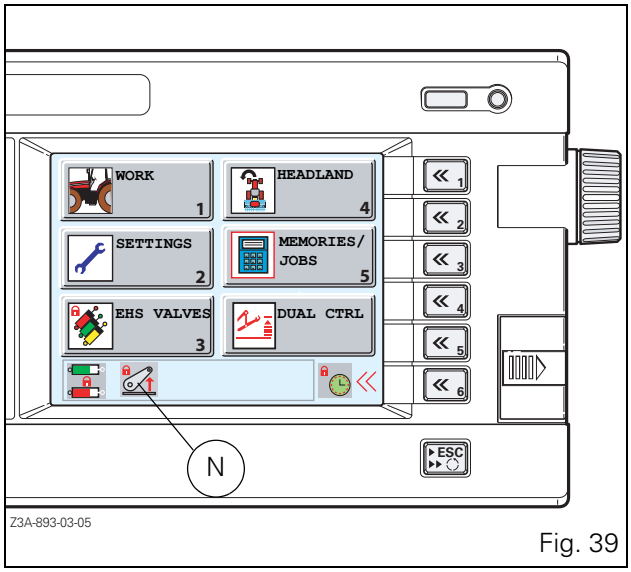
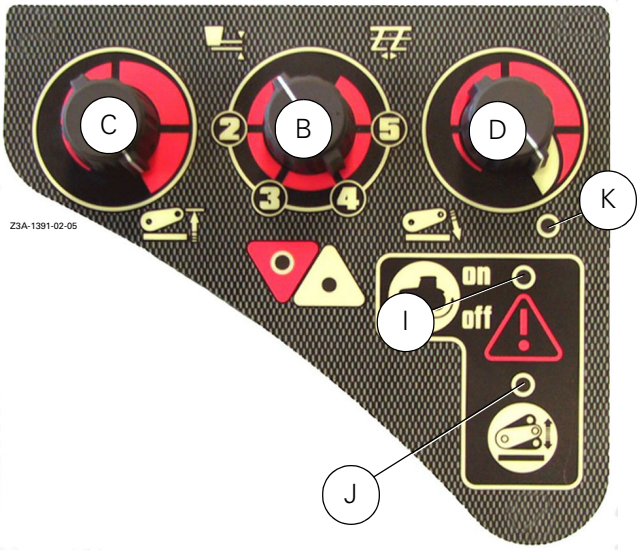


Fig. 39



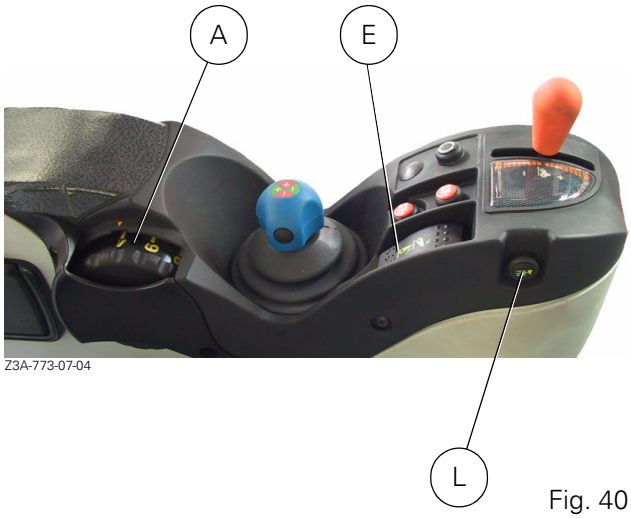


Fig. 40

4.13.1 - Attaching an implement from the driver's seat

Start the engine. Indicator lights (I), (J) and (K) come on.
- ((K) and (J) light up for 0.5 second approximately.
- ((I) stays on until the console is activated.
- Adjust the control knobs.
- Move the function selector knob (B Fig. 40) clockwise to minimum control position.
- Move the Lift / Lower selector switch (E) to the lift position.
- Adjust the linkage height in turning the control knob (A).
- The Lift indicator light (H) comes on.

4.13.2 - Lowering

To lower the linkage, turn knob (A) 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. The indicator light K comes on when this mode is selected.
Legend Fig. 41:
1. Lowering lock position
2. Lowering speed slow
3. Lowering speed fast
4. Automatic mode

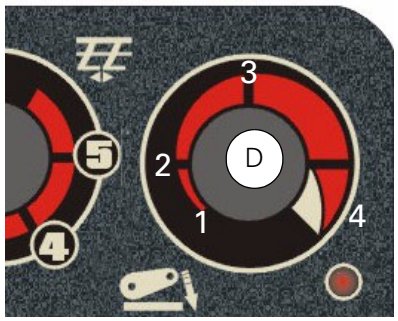


Fig. 41

4.13.3 - Lifting

To lift the linkage turn the knob (A) anti-clockwise.
The Lift indicator light (H) comes on.

4.13.4 - 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.

4.13.5 - Attaching an implement using external controls

To use the external controls (Fig. 42) the Lift / Lower selector switch (E) must be in Neutral or Lower position.

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

Activate the "ParkLock" brake control.

When selector switch (E) is in the Neutral or Down position, pressing the external control buttons will cause the linkage to be raised 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 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. 43).

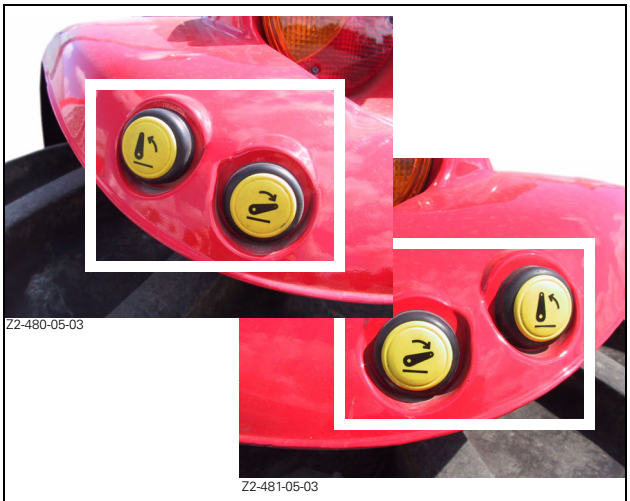


Fig. 42

Fig. 43

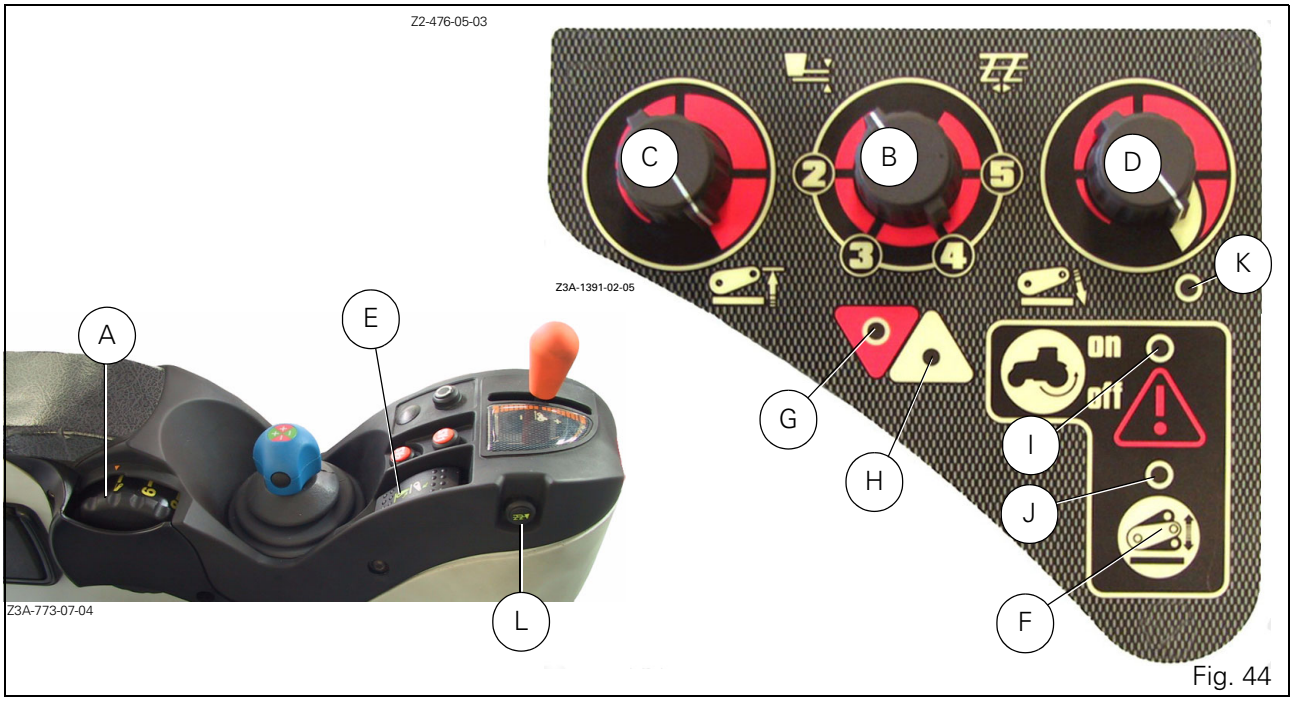


Fig. 44

4.13.6 - Transport

- Select the minimum position with the knob (B Fig. 44).
- Adjust the maximum linkage height according to the transport implement using the height setting knob (C). Start from minimum position.
  Move the knob (D) to position 1 (padlock).

4.13.7 - Activate transport control system

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

4.13.8 - Quick soil engagement

- Move the selector switch (E) to Lowering position, press and hold button (L) to trigger quick soil engagement.
- Release as soon as the plough is engaged into the soil.

4.13.9 - 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, Position or Intermix Control), according to the implement, the ground conditions and the type of work, by activating the control selector knob (B).
- Adjust the working depth using knob (A).
- The Lift and Lower indicator lights (H) and (G) allow to display the work being carried out.

4.13.10 - Operation at headlands

Put the Lift / Lower selector 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. Linkage is then brought back into operation and the padlock (N Fig. 45) in the Datatronic 3 window disappears, if this latter has been installed.

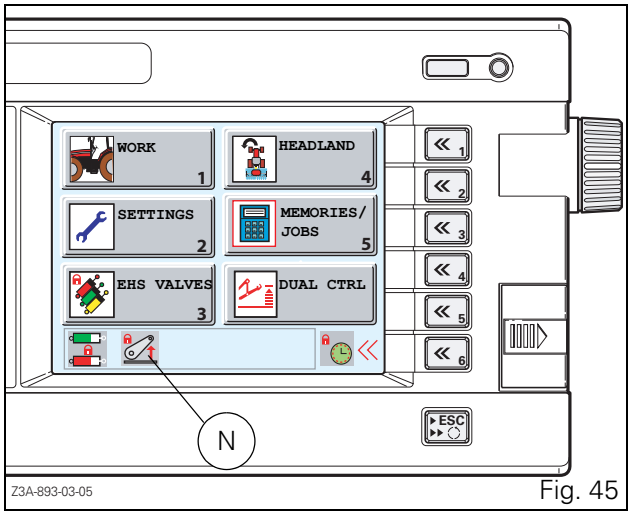


Fig. 45

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

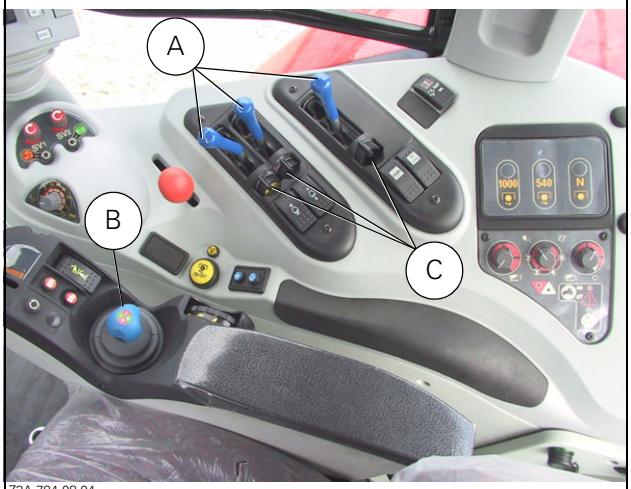
4.14 - AUXILIARY HYDRAULICS

4.14.1 - General

Tractors are designed to be fitted with up to 5 spool valves.

Types of control (Fig. 46; Fig. 47):

The Bosch SB23 electrohydraulic spool valves are controlled by a control lever inside the cab (A), or by a "Joystick B" located on the armrest or by SMS control fingers (FingerTIP D) which control the spool valves.



Z3A-784-08-04

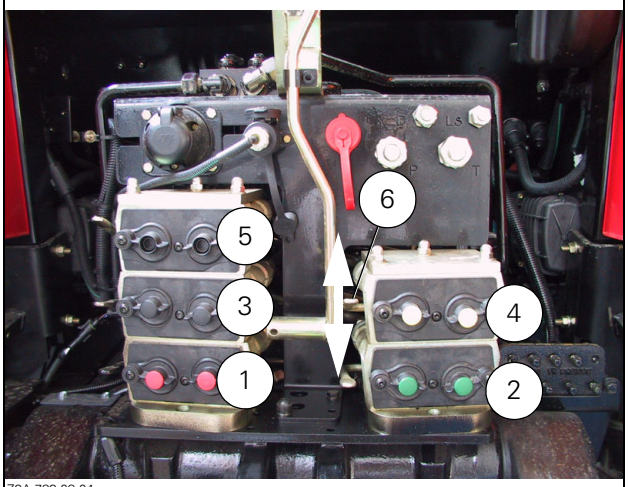
Fig. 46

Z4A-1647-11-05

Fig. 47

4.14.2 - Hose connection

A colour on the lock control of each lever (C) along with the Joystick colours, correspond to the colours on the cover of each auxiliary spool valve (Fig. 48).



Z3A-783-08-04

Fig. 48

Colours:

1. Red
2. Green
3. Black
4. Yellow
5. Blue

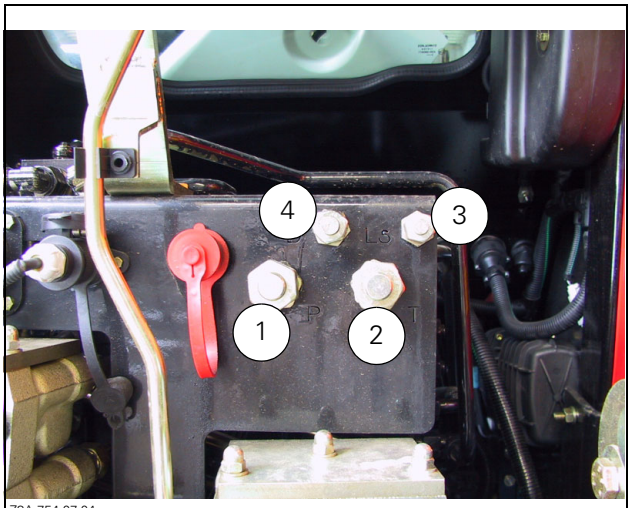
IMPORTANT: The two hoses of one ram must be connected on the same auxiliary spool valve.

To facilitate disconnecting a hose, move the lever (6) up down. This will reduce the pressure in the circuit.

Additional spool valve outlets (Fig. 49):

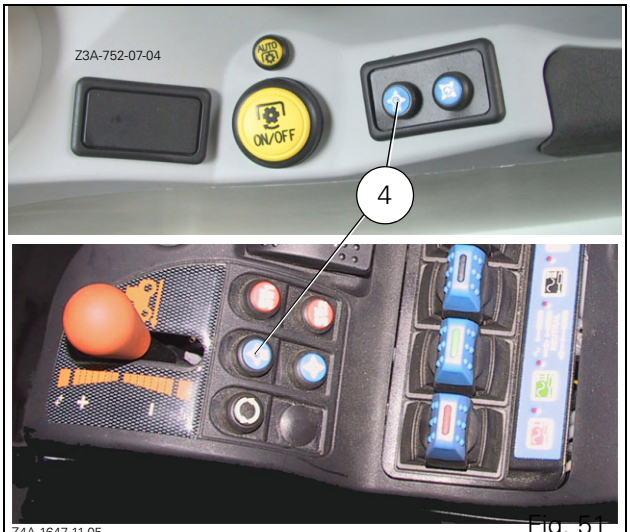
Four additional sockets are provided for cases where the hitched implement needs to use other spool valves:

1. Direct outlet pressure
2. Rear axle return
3. XLS line
4. Rear axle free return



Z3A-754-07-04

Fig. 49

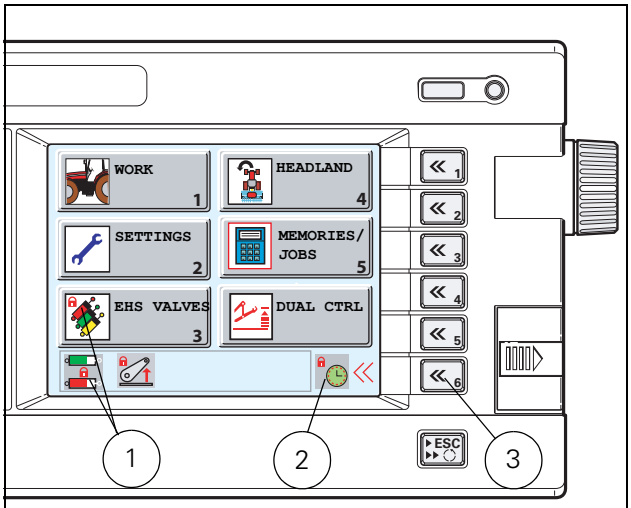


Z4A-1647-11-05

Fig. 51

4.14.3 - Unlocking hydraulic spool valve controls

When the tractor is started, the spool valve controls cannot be used. For this reason two padlocks are displayed on the first Datatronic 3 screen when the tractor is fitted with this option.



Z3A-893-03-05

Fig. 50

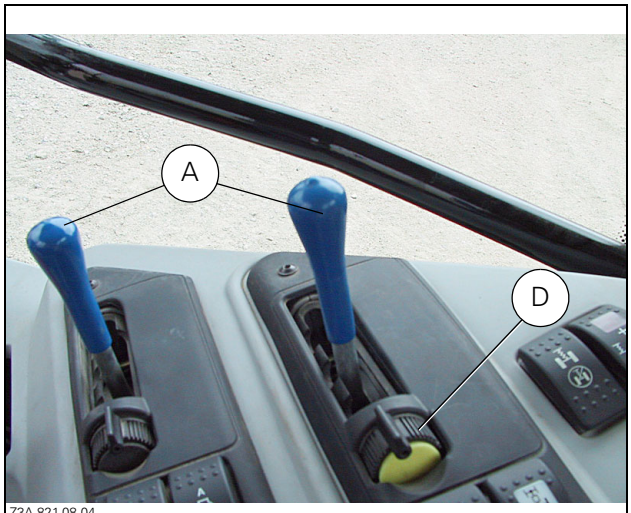
1. Locking the hydraulic spool valve controls To unlock, press the button (4 Fig. 51) (the padlock disappears and the button indicator light goes out).
2. Locking the spool valve activation times. To unlock, press the key «$_6$ (3 Fig. 50) (the padlock disappears).

NOTE: If the tractor is not fitted with the Datatronic 3, press only button 4 to unlock. The button indicator light goes out.

4.14.4 - Using the control levers (Fig. 52)

Each spool valve controlled by a lever (A), can be blocked in various positions by actuating the lock (D):

- Neutral position (Fig. 52)



Z3A-821-08-04

Fig. 52

- Ram rod extension position (for example: Fig. 53)

Z3A-822-08-04

Fig. 53

- Ram rod retraction position (for example: Fig. 54)

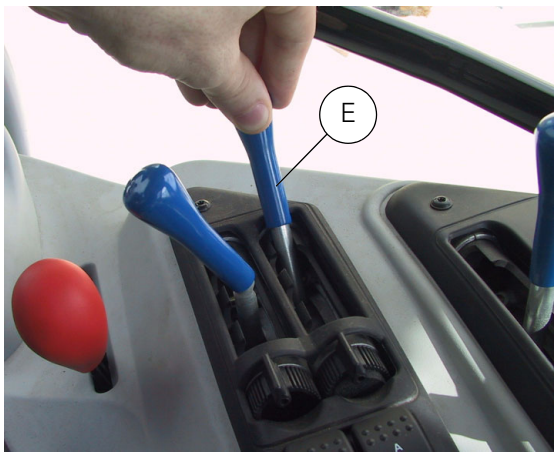
Z3A-823-08-04

Fig. 54

- Floating position (Fig. 55)

To activate the floating position, push the lever to its maximum position (E), then release it. The lever returns to its initial position, while the spool valve is in floating position.

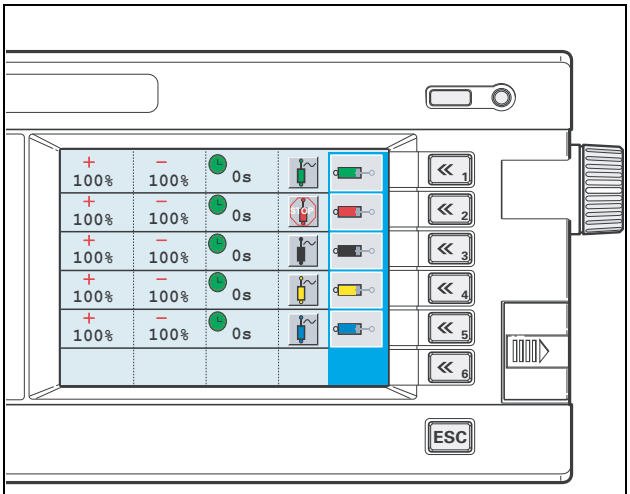
To deactivate the floating position, move the lever to any position. The spool valve switches to neutral position.



Z3A-1001-08-04

Fig. 55

NOTE: If the tractor is fitted with the Datatronic 3, ensure that the "Floating" function is available for each spool valve (Fig. 56). To activate this function, see chapter 7, section 7.8.



Z3A-1008-08-04

Fig. 56

Floating position unavailable

Floating position available

4.14.5 - "SMS" controlled by Joystick

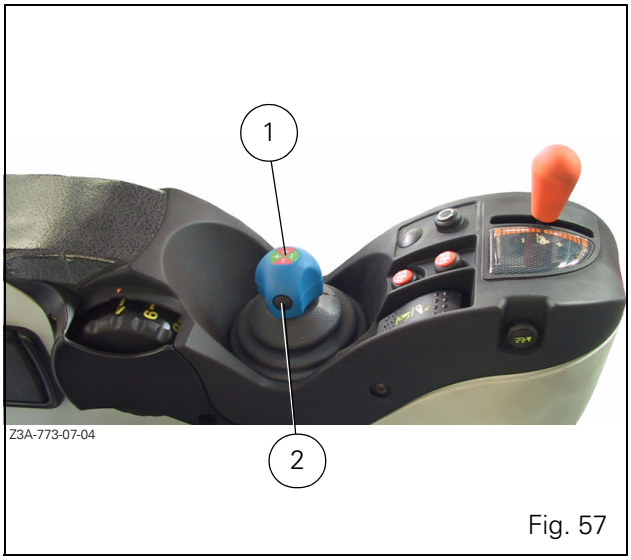


Fig. 57

1. 4-function control Joystick (separate or combined).
   Description (Fig. 58):
   A - Lift
   B - Lower
   C - Empty (bucket)
   D - Fill (bucket)
2. Extra function control button (2 Fig. 57), e.g.: bucket (open/close jaws). To use this function, press the button and move the Joystick towards C or D.

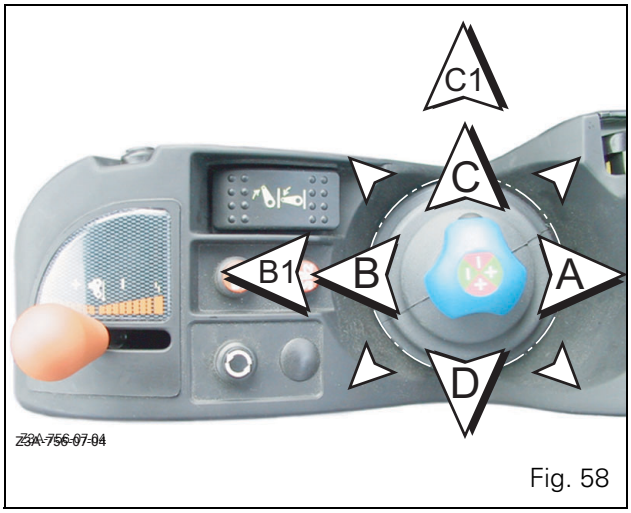


Fig. 58

3. Flow rate memorisation or memorised flow rate reset (B Fig. 59).
4. Spool valve control ON/OFF control (A Fig. 59).

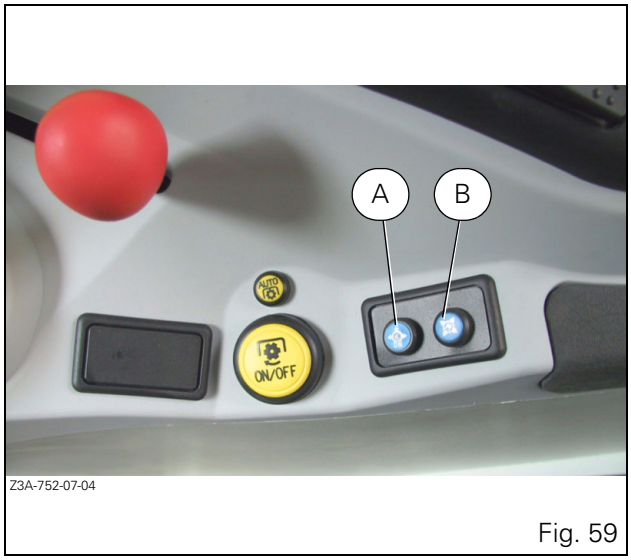


Fig. 59

4.14.6 - Memorising a flow rate

NOTE: If the tractor is fitted with the DATATRONIC 3, see chapter 7 in the EHS VALVES application for storing flow and activation time values for each spool valve.

This function memorises a flow rate (for example 30% of a spool valve maximum flow rate). Next, when the control is activated, the flow generated shall be that of the stored value.
When the engine is started, the spool valve controls are unavailable and the button red indicator light (A) is lit.

1. Press the button (A) to make the spool valve controls available. The red indicator light comes out.
2. Move and hold the Joystick in the desired direction to obtain the desired flow, the flow stops as soon as the joystick is released.
3. By moving the joystick to its limit of travel beyond its locked B1 / C1 floating position, and releasing immediately, the flow is automated, and when in OFF position the "~" icon is displayed on the lower screen.

Operation:

- When using a control and whatever the position used, the flow rate generated shall be that which was previously memorised.
- To cancel the values, press button (B Fig. 59) for approximately 5 seconds (default value 100%).

4.14.7 - Setting joystick parameters

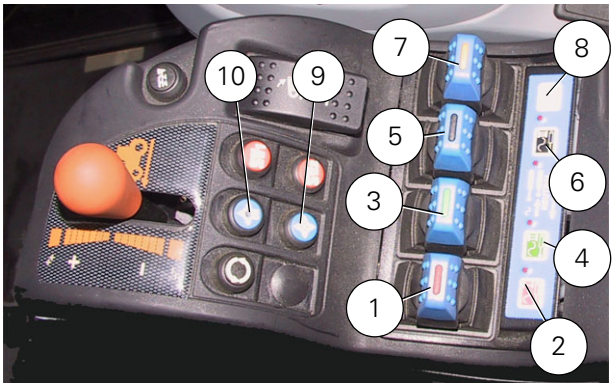
- For a correct use of Datatronic 3, refer to chapter 7.

Setting the flow rate (Versions without Datatronic 3) (Fig. 60)

1. Joystick in neutral position: the float position cannot be used, the hydraulic flow is at its maximum.
   Joystick in any other position: move the Joystick in the desired direction(s) and briefly press button 9, to memorise the flow rate.
   If a stored flow rate must be changed or cancelled, operate the joystick then press the Memory key (9. Fig. 60) for 5 seconds to restore the maximum flow rate.

All the pre-recorded flow parameters can be reset simultaneously by pressing memory button (9. Fig. 60) for approximately 5 seconds when the Joystick is in the neutral position, the indicator light 4flashes during this time.

4.14.8 - "SMS" control (FingerTIP)



Z4A-1647-11-05

Fig. 60

4.14.8.1 - Description

1. 1st spool valve "SMS" control (red).
2. 1st spool valve constant flow switch and indicator light.
3. 2nd spool valve "SMS" control (green).
4. 2nd spool valve constant flow switch and indicator light.
5. 3rd spool valve "SMS" control (black).
6. 3rd spool valve constant flow switch and indicator light.
7. 4th spool valve "SMS" control (yellow).
8. 4th spool valve constant flow switch and indicator light.
9. Flow rate memorisation or memorised flow rate reset
10. Spool valve ON / OFF control.

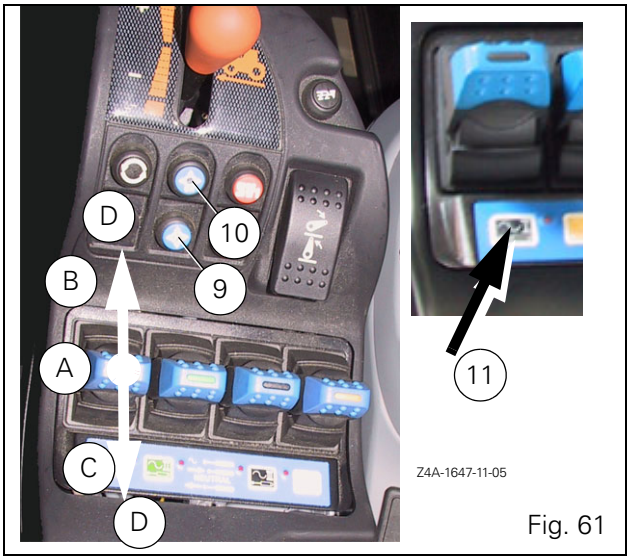
4.14.8.2 - Using the "SMS" controls

Unlock the spool valve controls (see paragraph 4.14.3).

Fig. 61:

A. Neutral position
B. Ram rod retracted position
C. Ram rod extended position
D. Control locking position: for each of the control spool valves, locked position is obtained by pushing the lever to its maximum.

11. Spool valve constant flow position switches (Kick out)
Move the "SMS" control to locked position (D) and press the switch that corresponds to its colour (matching colours). The red indicator light should come on.



Z4A-1647-11-05

Fig. 61

4.14.8.3 - Memorising a flow rate

NOTE: If the tractor is fitted with the DATATRONIC 3, see chapter 7 in the EHS VALVES application for storing flow and activation time values for each spool valve.

When the engine is started, the spool valve controls are unavailable and the red indicator light of button 10 is lit.

When the Datatronic 3 has been installed, the corresponding settings in the active window are locked (lock icon displayed).

1. Press button 10 to make the EHS controls operational, the red indicator light goes out, (on the optional Datatronic 3 fitted the lock icons disappear from the screen), adjustment of the Datatronic 3 is now possible.
2. Move and hold an EHS control in the desired direction to obtain the desired flow, the flow stops as soon as the Joystick is released.
3. Move the "Joystick" control to position B1/C1 and release it immediately to obtain floating position, and the flow rate is automated (the  icon is displayed on the Datatronic 3 screen).
4. Still holding the control in the required position, press the memory key 9 for one second. The flow rate is memorised.

NOTE: When using a control and whatever the position used, the flow rate generated shall be that which was previously memorised. To cancel the values, press the button (9 Fig. 61) for approximately 5 seconds (default value 100%).

4.14.9 - Emergency manual spool valve control

In case of malfunction of the Joystick or spool valve controls, the emergency hand controls are available to lift or lower the installed attachments.

Button 10 (ON/OFF Fig. 61) flashes and the relevant error code is displayed on the tractor performance monitor (if installed).

Operation: Move one of the levers on the spool valves by pressing as shown (1) to lower or by pulling as shown (2) to lift (Fig. 62).
Stop the engine, then restart it in order to reactivate the Joystick.

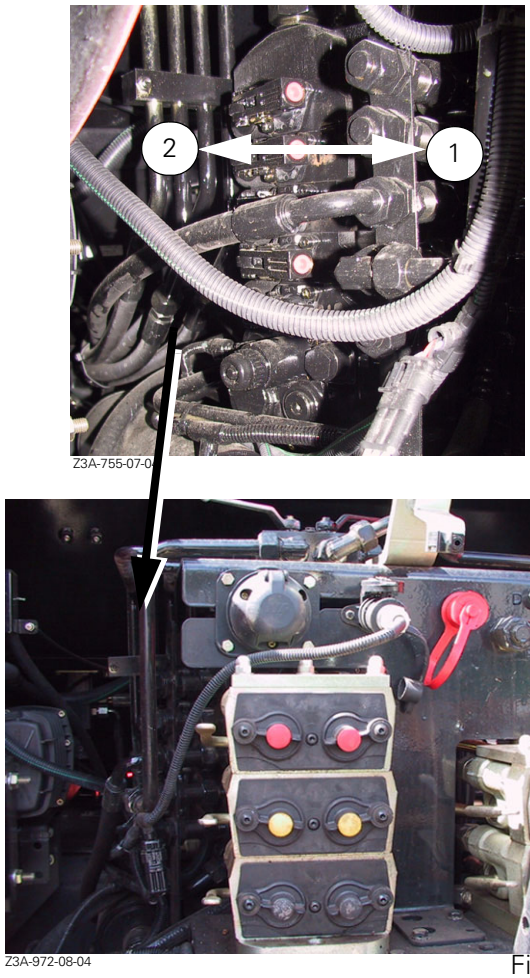
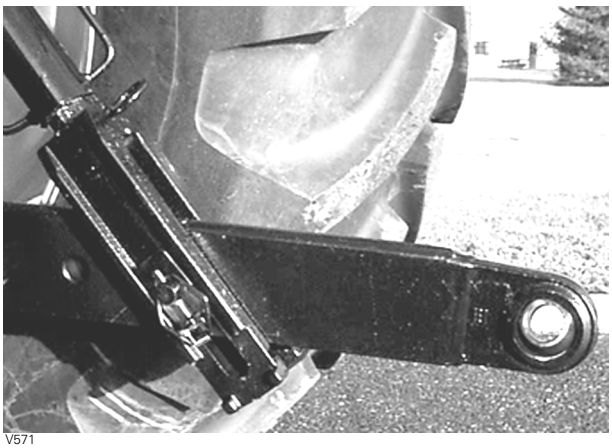


Fig. 62


V571
Fig. 63


V538
Fig. 64

4.15 - THREE-POINT LINKAGE

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

4.15.1 - Linkage

The tractor is supplied eitherwith Category 3 ball joint linkage or with optional category 3 fast linkage hitches.

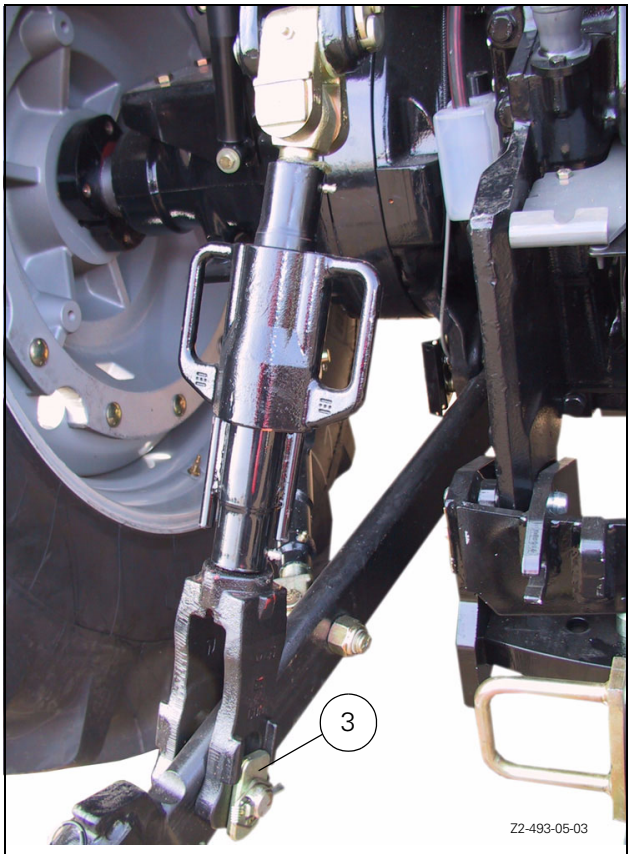
4.15.2 - Lower links

- Fixed ball end type (Fig. 63)
- Hook and ball type (Fig. 64)

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

4.15.3 - Lift rods

(Fig. 65)
The lift rods are fitted with a port (1) allowing for floating position when the pin (2) is in position (3) (for large implements or implements with a depth wheel).
A fixed low position (4) can be obtained by moving the pin (2).



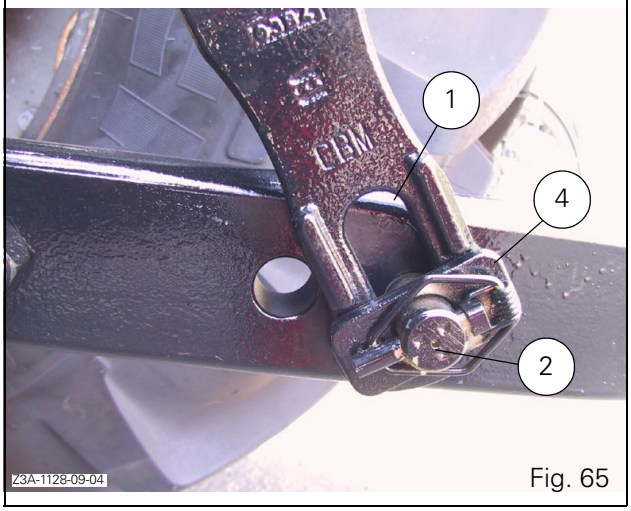


Fig. 65

4.15.4 - Stabilisers

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

The front stabiliser support has only one possible position (Fig. 66).

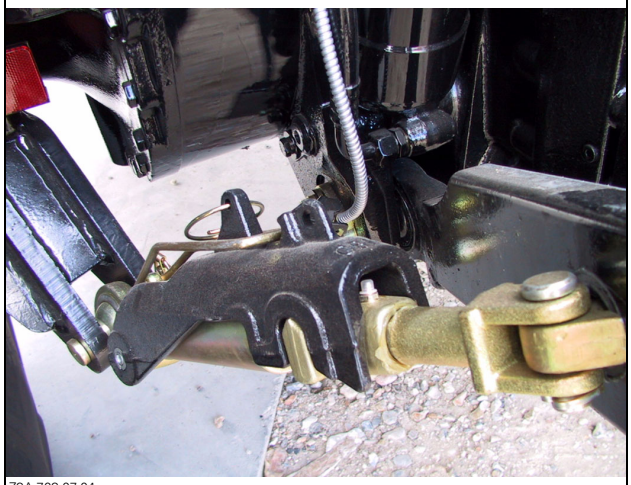


Fig. 66

4.15.4.1 - Adjustment procedures

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

- Pos. 1: Screw or unscrew centre members to obtain desired left-hand side/right-hand side sway.
- Pos. 2: Automatic no-sway at transport position.

NOTE: The side sway is to be adjusted with drawbars in transport position.

A. Install Cat. 3 linkage drawbars.
B. Set lift rods length as required.
C. Set lower link travel as shown (Fig. 67).
D. Fully screw in stabilisers.
E. Start the engine.

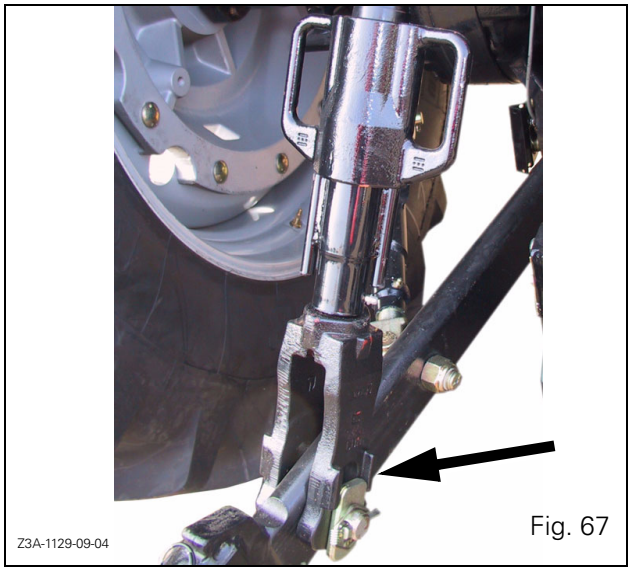


Fig. 67

F. Set the control panel hitch "Lift/Lower" switch to "Lift" then to "Neutral".
G. Press "Lift" button until lower links reach highest position.
H. Stop the engine.

I. Unscrew stabilisers (Fig. 68) until drawbars have no lateral oscillation and are centred.
J. Screw both stabilisers in 1 turn.

CAUTION: Increasing transport height, modifying lift rods length or fixing position of lift rods on drawbars once the above adjustments are completed will result in stabiliser damage.

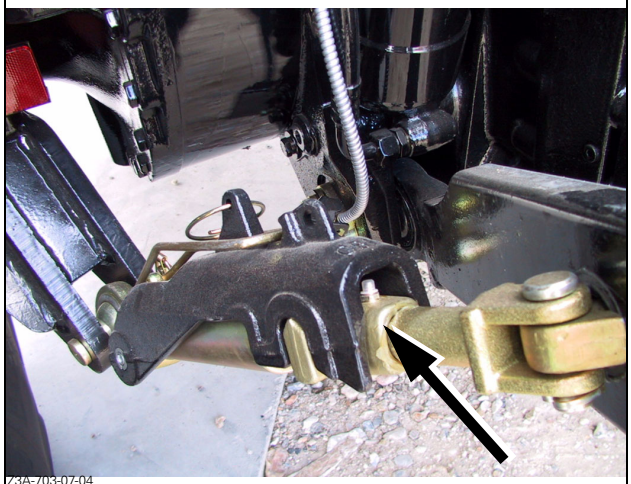


Fig. 68

4.16 - DRAWBAR AND HITCHES

Available as options, according to countries.

4.16.1 - Swinging drawbar

(Suitable for trailed implements only) (Fig. 69).

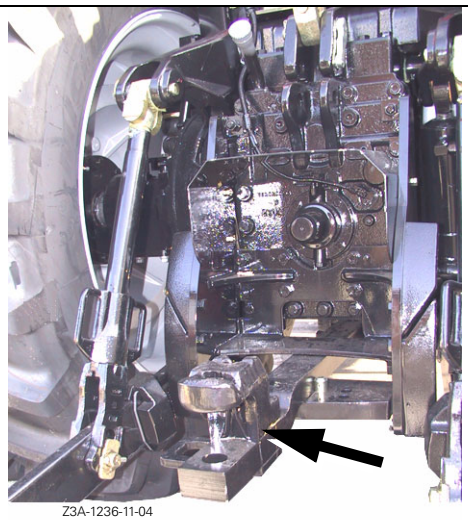


Fig. 69

Setting the offset:
- Remove the 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: 13000 Kg.
Maximum vertical load at hitch: 1700 Kg.

4.16.2 - Closed eye bolt for balanced full trailer

Suitable for heavy trailers which transfer heavy load to the tractor (Fig. 70).
It is welded to the frame of the swinging drawbar and has a safety retaining latch.
Maximum vertical load: 3000 Kg.

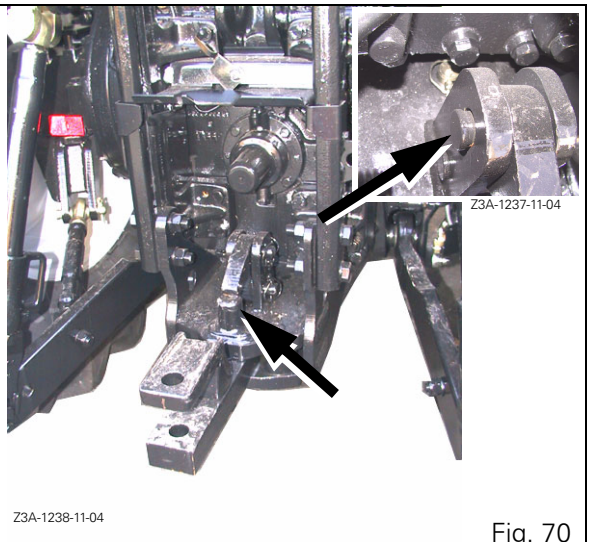


Fig. 70

4.16.3 - Perforated bar

This is fitted to the lower links and is suitable for light loads charges (Fig. 71).

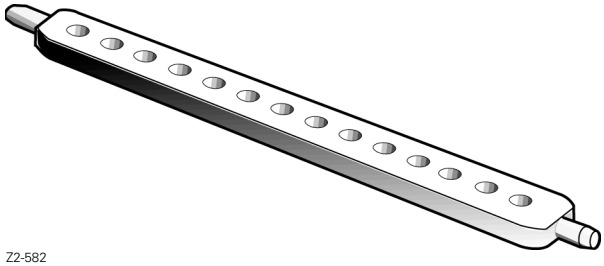


Fig. 71

4.16.4 - Swinging drawbar

(Suitable for trailed implements only) (Fig. 69).

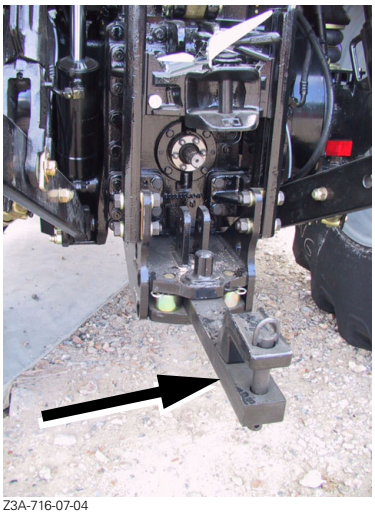


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Fig. 72

Setting the offset:

- Remove the 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: 13000 Kg.
Maximum vertical load at hitch: 1700 Kg.

4.16.5 - Closed eye bolt for balanced full trailer

Suitable for heavy trailers which transfer heavy load to the tractor (Fig. 70).

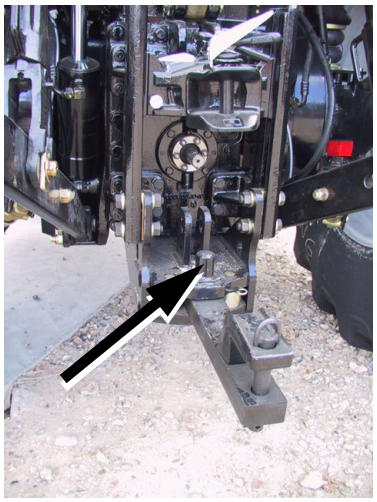

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Fig. 73

It is welded to the frame of the swinging drawbar and has a safety retaining latch.
Maximum vertical load: 3000 Kg

4.16.6 - 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.

4.16.7 - Fast setting clevis for 4-wheel type trailer

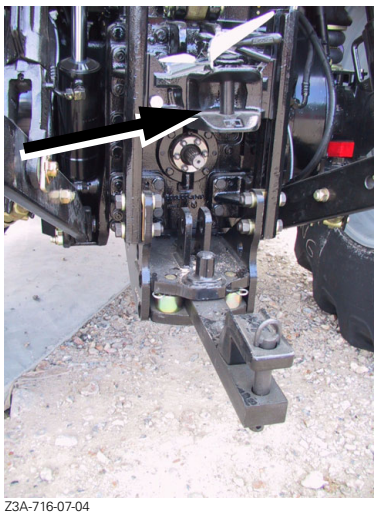

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Fig. 74

To adjust the height of the clevis, pull the lever sideways, to disengage the locking mechanism. The clevis can then be moved up or down to the required position (Fig. 74).
Release the lever to lock the clevis.
Maximum tractable weight: 25100 Kg
Maximum vertical load at hitch: 1800 Kg

4.17 - TOWING PROCEDURE AND INSTRUCTIONS

WARNING: Towing: the following instructions must be followed when towing:

If the engine is not running:

- Maximum towing speed: 10 kph.
- Maximum towing distance: 8 km.

If the engine is running:

- Towing speed is identical to that of a trailer without brakes at the speed authorised by legislation in force in the country concerned.

Towing procedure:

1. Open the cover located on the cab floor (right-hand side) (Fig. 75).

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Fig. 75

2. Remove the protective shield (Fig. 76 and Fig. 77).

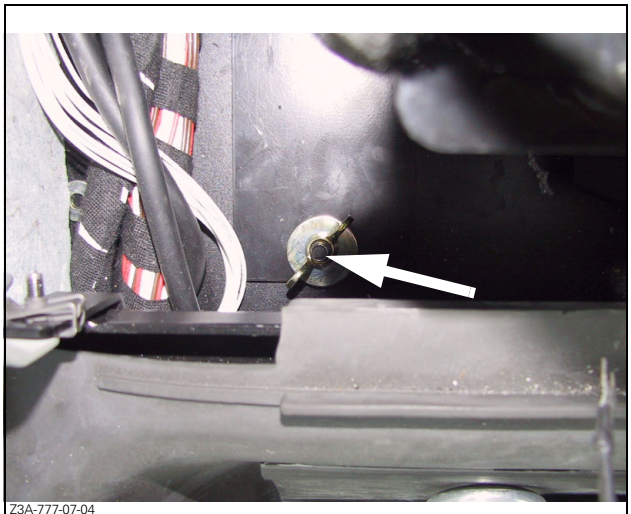

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Fig. 76

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Fig. 77

3. Position the emergency lever on the control unit (C) (Fig. 78).

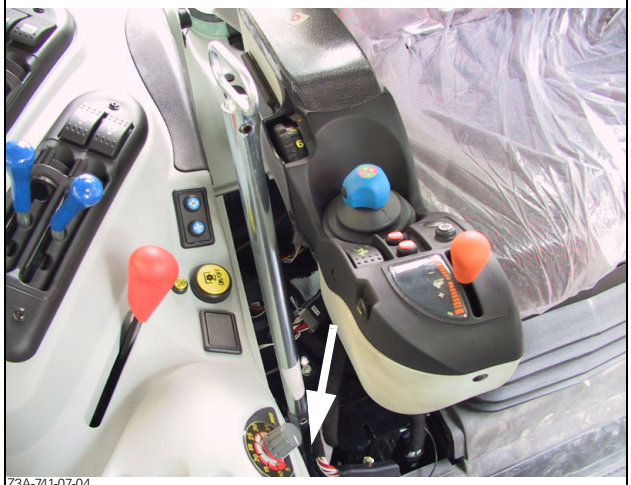

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Fig. 78

4. Move the Dyna VT transmission to neutral position (middle position Ref. 1 Fig. 79).

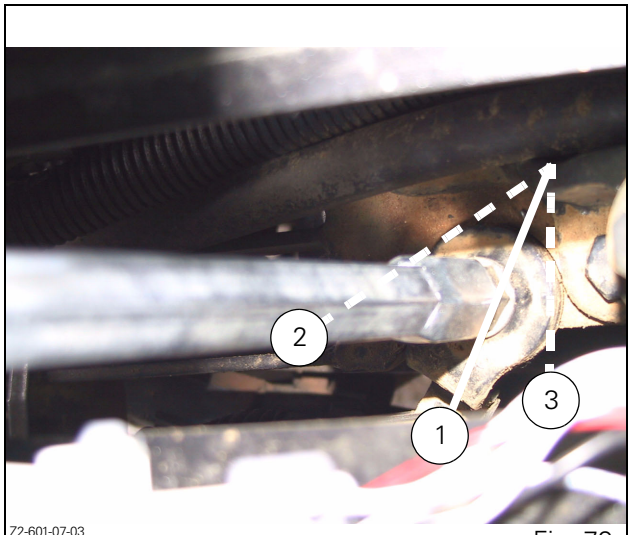

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Fig. 79

5. Release the "ParkLock" parking brake. For this purpose:
   - take off the spacer (Ref. 4 Fig. 80) after removing the screw Ref. 5,
   - refit and tighten the screw Ref. 5 and tighten (Fig. 81).

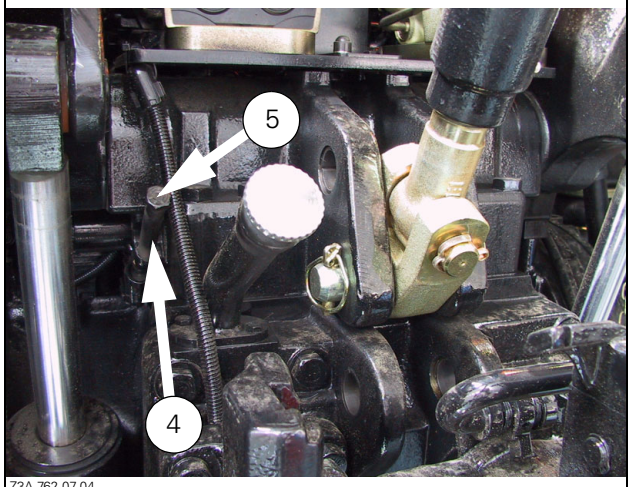

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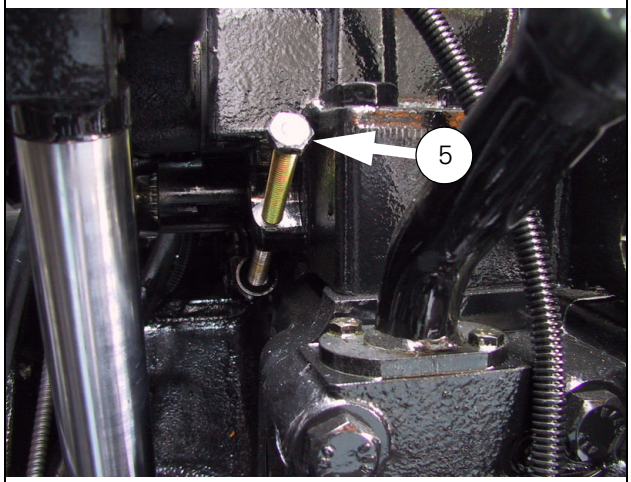
Fig. 80



Z3A-778-07-04

Fig. 81

4.17.1 - Limp home mode

DANGER: When the tractor is stopped, the gear range must be in neutral position (middle position) and the brake must be engaged.

CAUTION: Once the tractor is started, the transmission is driven totally by meshing if a gear range (hare or tortoise) is engaged. Press down the clutch pedal, because any transmission ratio can be selected.

If the transmission ratio control is not possible due to a breakdown, the tractor can be driven mechanically using a limp home lever.

Maximum speed in the "Hare" range is 34 kph in forward position and 25 kph in reverse position. For the "Tortoise" range, maximum speed is 15 kph in forward position and 11 kph in reverse position.

1. Stop the engine if it is running.
2. Open the cover located on the cab floor (right-hand side) (Fig. 75).
3. Remove the protective shield (Fig. 76 and Fig. 77).
4. Position the limp home lever on the range control (Ref. 2 Fig. 82) and select the limp home range:
   - clockwise direction, tortoise range,
   - anti-clockwise direction, hare range.

NOTE: The maximum speed when shifting range is 2 kph.

IMPORTANT: When shifting range, only use the supplied limp home lever supplied with the tractor, because the coupling mechanism in the control unit could be damaged (maximum allowed torque 10 Nm).

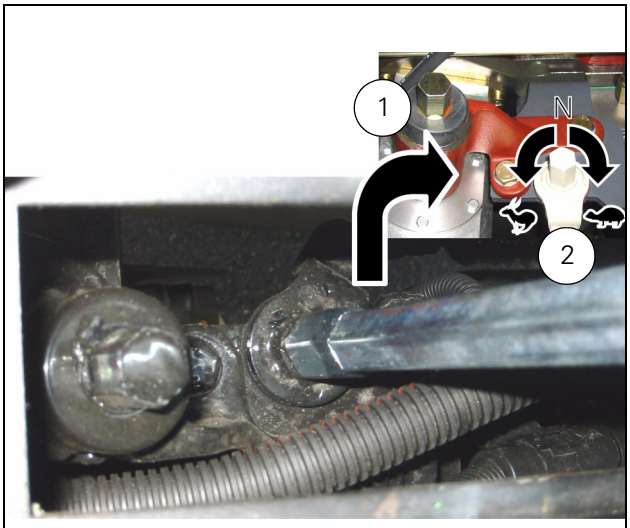


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Fig. 82

5. Start the tractor while pressing down the red button (limp home button) (Fig. 83).

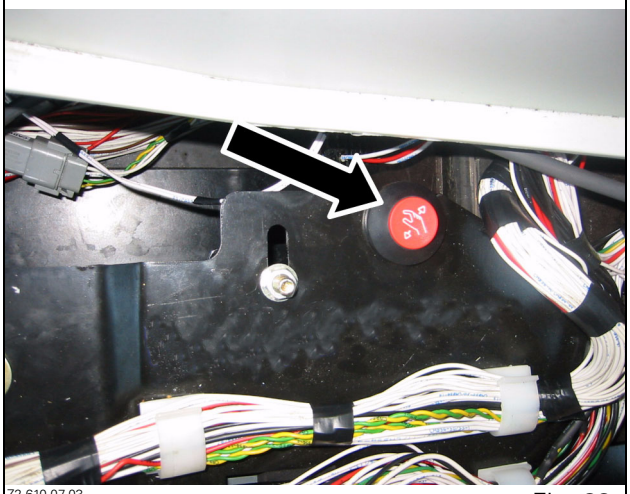
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Fig. 83

6. One of the two error codes is displayed on the left-hand screen (DOT MATRIX) (Fig. 84).

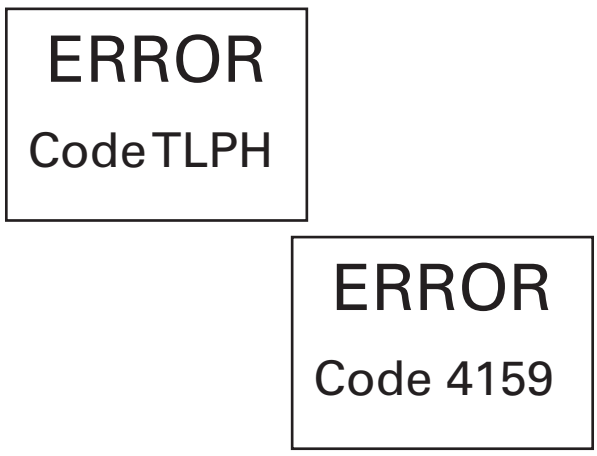

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Fig. 84

7. Position the limp home lever on the control (Ref. 1) (Fig. 85).

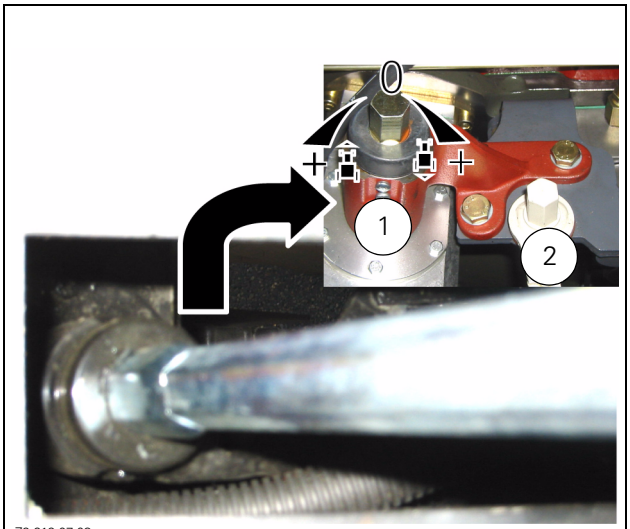

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Fig. 85

12. Turn the lever in the required direction of travel:
- anti-clockwise direction, forward travel,
- clockwise, reverse travel.

NOTE: Travel speed depends on the rotational value of the lever.

8. Carefully release the clutch pedal. The tractor moves in the previously set direction of travel and manually reaches the selected ratio.
9. To deactivate the limp home mode, stop the tractor and switch off the ignition key.

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 engine oil (for CF4 grade only)
2. Change fuel filter element(s).
3. Change fuel prefilter element.
4. Check tension and condition of air conditioning compressor belt.
5. Check/Clean dry air filter element(s).
6. Check radiator coolant level.
7. Check tension and condition of alternator/fan belt(s).

5.1.2 - Electrical system and instruments

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

5.1.3 - Front axle and steering

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

5.1.4 - Transmission and hydraulics

18. Check transmission/auxiliary hydraulics oil level.
19. Change oil level in the rear final drive units (according to model).
20. Change the transmission oil 10 micron high pressure filter element.
21. Change the 10 micron return filter (Dyna VT auxiliary hydraulics).
22. Lubricate the linkage shaft and top up only if not properly sealed.
23. Check automatic pick-up hitch for correct operation.

5.1.5 - Clutches and brakes

24. Check operation of the clutch pedal.
25. Check the clutch liquid level.
26. Check brake pipes condition.
27. Check parking brake adjustment.
28. Check trailer brake valve for correct operation.
29. Check PTO engagement function.

5.1.6 - General

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

5.2 - SERVICE GUIDE

SERVICE GUIDE	Inspections according to Service Record Book				
	50h	400h	800h	1200h	2000h
Engine, fuel and cooling systems					
1. Change engine oil.	(● CF4)	●	●	●	●
1. Change engine oil filter.		●	●	●	●
2. Change fuel filter element(s).	●	●	●	●	●
3. Change fuel prefilter element.	●	●	●	●	●
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 belts/air conditioning.	●	●	●	●	●
7. Check/Clean dry air filter element(s).	●	●	●		●
8. Change air filter elements.				●	
9. Check radiator coolant level.	●	●	●		●
10. Drain, flush and refill radiator with coolant.				●	
11. Clean main radiator and all other cooler element fins.		●	●	●	●
12. Clean air conditioning condenser.		●	●	●	●
13. Change air conditioning receiver drier.				●	
14. Observe level of smoke emission from exhaust.		●	●	●	●
15. Grease the water pump.		●	●	●	●
Electrical system and instruments					
16. Check battery condition and electrolyte level.	●	●	●	●	●
17. Check tightness of battery connections and battery safety.	●	●	●	●	●
18. Check all safety start switches for correct operation.	●	●	●	●	●
19. Check all indicator lights, sound alarms and instruments for correct operation.	●	●	●	●	●
20. Check correct operation and adjustment of all lights.	●	●	●	●	●
21. Check all other electrically powered devices (e.g. cab heater/fans, radio, wipers, etc…) for correct operation.	●	●	●	●	●
22. Check all electronically controlled systems for correct operation.	●	●	●	●	●
23. Check multi-pin "Deutsch" connectors for moisture and repack with SGB grease if necessary.		●	●	●	●
Front axle and steering					
24. Check oil level in front axle and epicyclic drive units (4WD).		●		●	●
25. Change oil in front axle and epicyclic drive units (4WD).	●		●		
26. Check front wheel hub/steering pivots/suspension clearance.		●	●	●	●
27. Grease drive shaft / front axle universal joints (4 WD).	●	●	●	●	●
28. Lubricate the steering pivots, suspended front axle.	●	●	●	●	●
29. Check steering for correct operation (with & without engine running).		●	●	●	●
30. Check steering and toe-in adjustment (including tyre wear and damage).				●	
Transmission and hydraulics					
31. Check transmission / auxiliary hydraulic oil level.			Every day		
32. Change transmission oil.					●
33. Change 150 micron transmission suction strainer.					●
34. Check oil level in the rear final drive units.		●	●	●	
35. Change the oil in the rear final drive units.	●				●
36. Change the 10 micron return filter (Dyna VT auxiliary hydraulics).	●	●	●	●	●
37. Change the transmission oil 10 micron high pressure filter element	●	●	-	●	●
38. Change the oil in the auxiliary hydraulics circuit.				●	
39. Change the 10 micron breather (Dyna VT auxiliary hydraulics).				●	
40. Lubricate the linkage shaft and top up only if not properly sealed.	●				●
41. Check automatic pick-up hitch for correct operation.	●			●	

SERVICE GUIDE	Inspections according to Service Record Book				
	50h	400h	800h	1200h	2000h
Clutches and Brakes					
42. Check operation of the clutch pedal and transmission.	●	●	●	●	●
43. Check the clutch liquid level.	●	●	●	●	
44. Change the clutch liquid/bleed the circuit.					●
45. Check brake pipes condition.	●			●	
46. Bleed brake circuit.					●
47. Check parking brake adjustment.	●	●	●	●	●
48. Check trailer brake valve for correct operation.	●			●	
49. Check PTO engagement function.	●	●	●	●	●
General					
50. Top up cab windscreen washers.	●	●	●	●	●
51. Clean cab air filter element.		●	●		●
52. Change cab air filter element.				●	
53. Check the air conditioning system operation.	●	●	●	●	●
54. Bleed compressed air circuit water from suspended cab.			Fortnightly		
55. Change cab dampers.				4800H	
56. Check tightening torque of ROPS cab / mounting bolts.	●	●	●	●	●
57. Check torque of all wheel and rim nuts and bolts.	●	●	●	●	●
58. Lubricate all points with grease or oil as specified in the Operator Instruction Book.	●	●	●	●	●
59. Check all safety guards are in place with readable stuck decals.	●	●	●	●	●
60. Road test the tractor to check all transmission controls for correct operation.	●	●	●	●	●
61. Road test the tractor to check the steering and brakes for correct operation.	●	●	●	●	●
62. Operate all PTO and hydraulic services to ensure correct operation.	●	●	●	●	●
63. After road test, check for any leaks of oil, fuel or coolant.	●	●	●	●	●
64. Enquire if the operator has any operational difficulties and correct or demonstrate solution as necessary.	●	●	●	●	●
65. 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 5.9).
2. Check radiator coolant level (section 5.10).
3. Clean main radiator and all other cooler element fins (section 5.10).
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 (4 WD) (section 5.6).
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 hydraulics oil level.

5.3.5 - Clutch

12. Check the clutch liquid level.

5.3.6 - General

13. Top up cab windscreen washers (section 5.7).
14. Lubricate all points with grease or oil as specified in the Operator Instruction Book (section 5.6).

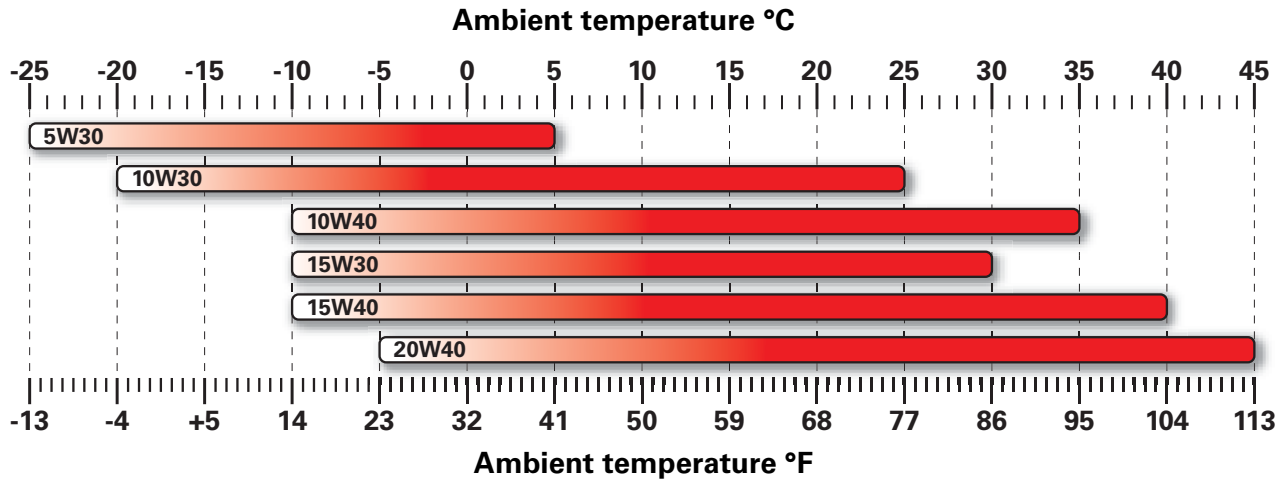
5.4 - APPROVED LUBRICANTS

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

5.4.1 - Engine oil

Use AGCO Multiguard ® (NORTH AMERICA) or equivalent engine oil meeting the following standards: API CI4.

5.4.2 - Recommended SAE viscosity grades (SAE J300d)



5.4.3 - Coolant

Antifreeze: Permanent type Ethylene/glycol meeting standard ASTM D3306 (USA) or BS 6580-1992 (Europe/UK) for Sisu engines.

5.4.4 - Dyna VT transmission and auxiliary hydraulics

Oil approved by Massey Ferguson, complying with the standard MF CMS M1145.

5.4.5 - Rear final drive units

Hipoid hydraulic oil as per API-GL5 80W90.

5.4.6 - Clutch

Pentosin CHF 11S liquid

5.4.7 - Front axle, front final drive units

API GL5 - SAE 90

5.4.8 - 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.

5.5 - 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
- Harnesses, connections and electrical units
- Safety decals

CAUTION: For your safety, all the maintenance operations must be carried out with the engine stopped, unless otherwise specified.

5.6 - LUBRICATION

5.6.1 - Lubrication points

Servicing schedule according to Service guide

1. Lift rods Ref. 1 (Fig. 1) (4 grease nipples)

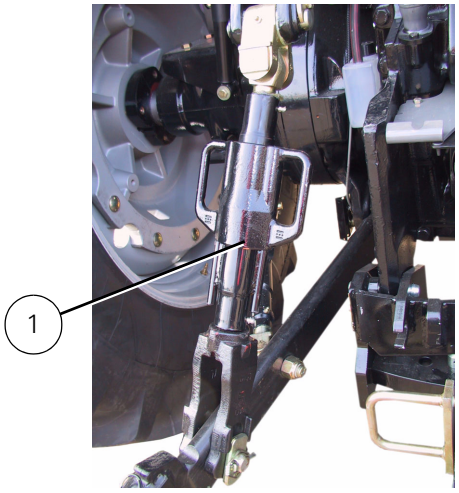


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Fig. 1

2. Stabilisers Ref. 2 (Fig. 2) (2 grease nipples)

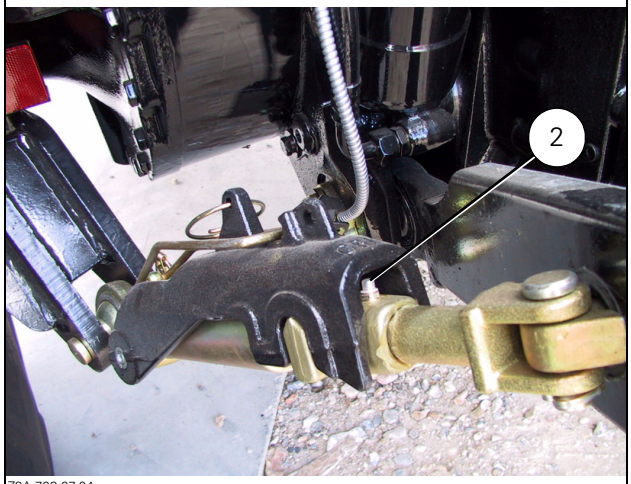

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Fig. 2

3. Clevis (Fig. 3) (1 grease nipple)

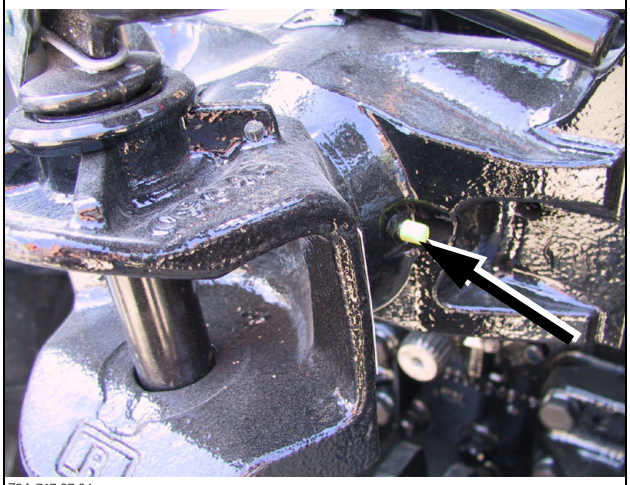

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Fig. 3

4. 3rd point top link (2 grease nipples)

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Fig. 4

5. "ParkLock" shaft (2 grease nipples)

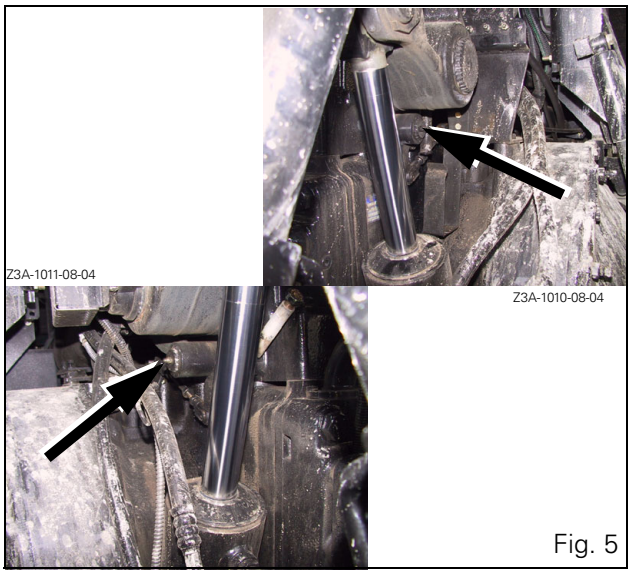

Fig. 5

6. Fixed 4WD front and rear bearings (2 grease nipples)

NOTE: Lift the front of the tractor before greasing the front axle.

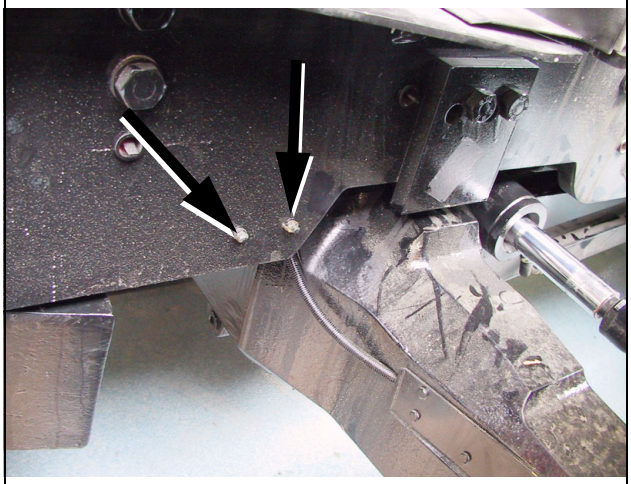

Fig. 6

7. Lower ball end of four wheel suspended front axle ram (1 grease nipple).

Fig. 7

8. 4WD front axle upper pivot pin (1 grease nipple)

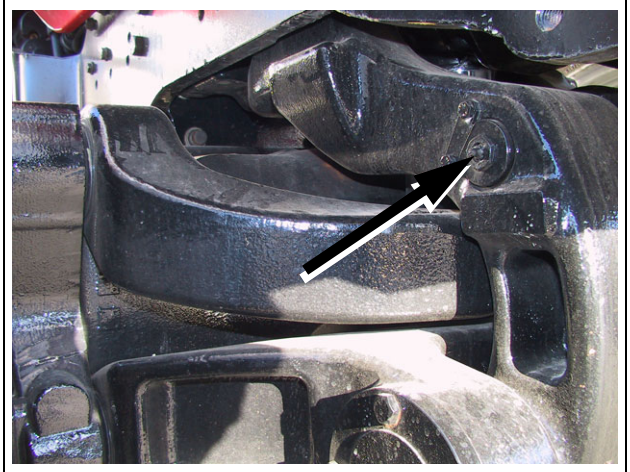

Fig. 8

5

9. Greasing the front/rear upper pivot pins and upper ball end of four wheel front axle (3 grease nipples)

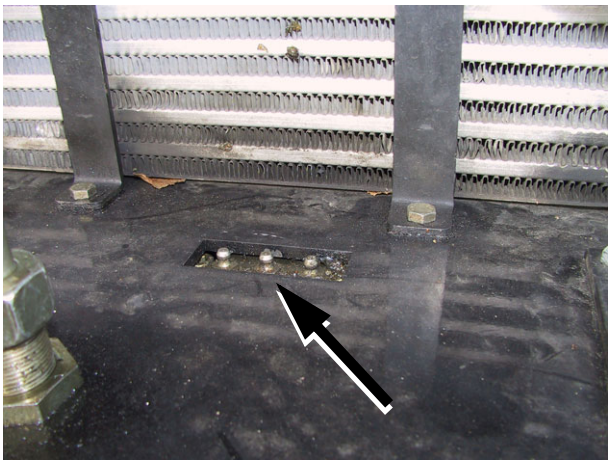

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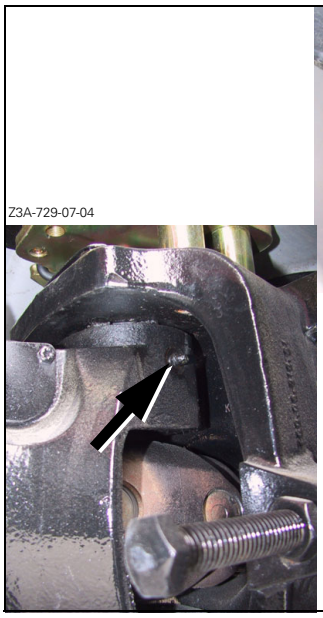
Fig. 9

10. Front stub pivot pins (4WD) (4 grease nipples)



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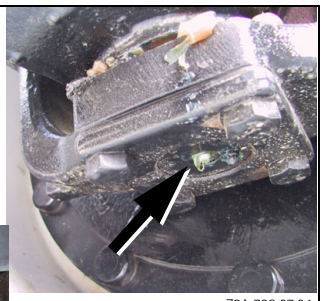

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Fig. 10

11. 4WD drive shaft (rear) (1 grease nipple)

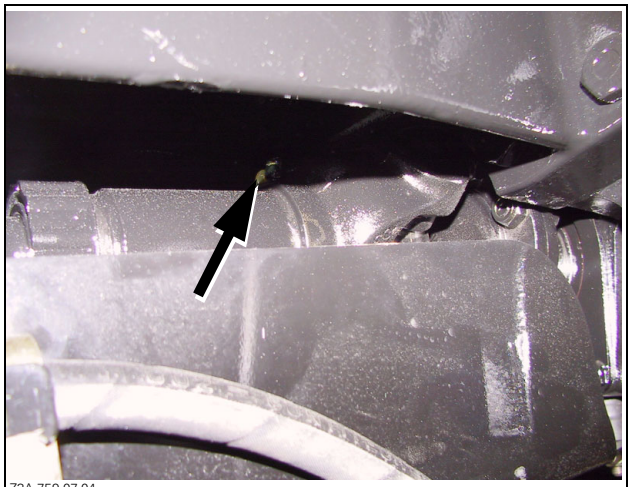

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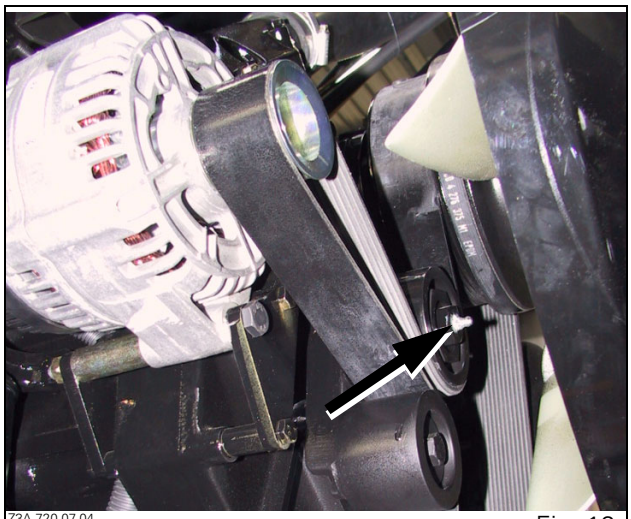
Fig. 11

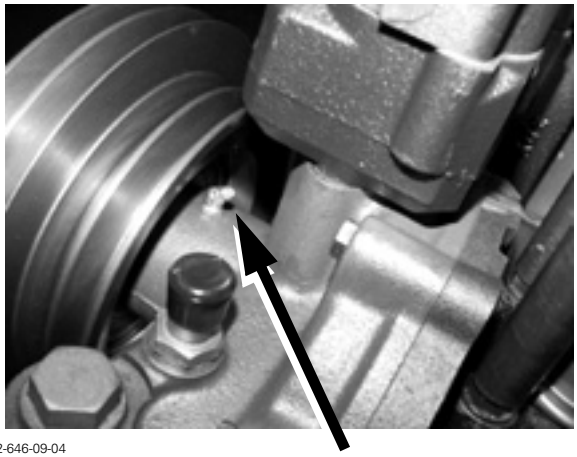
12. Fan belt self-tensioned idler (1 grease nipple)



Z3A-720-07-04

Fig. 12

13. Water pump (1 grease nipple)

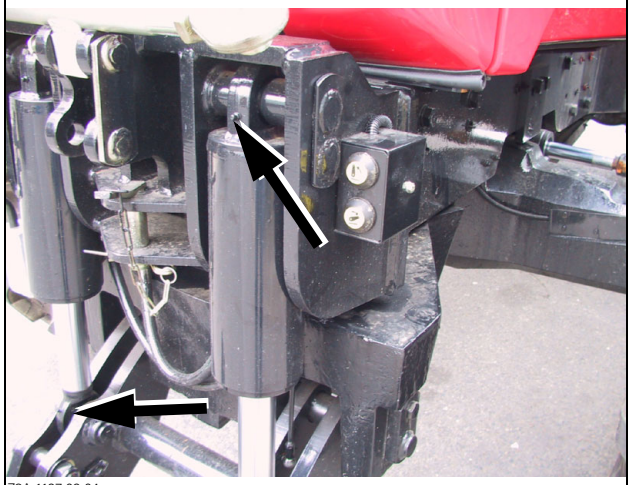


Z2-646-09-04

Fig. 13

14. Front linkage rams (2 lower grease nipples and 2 top grease nipples)

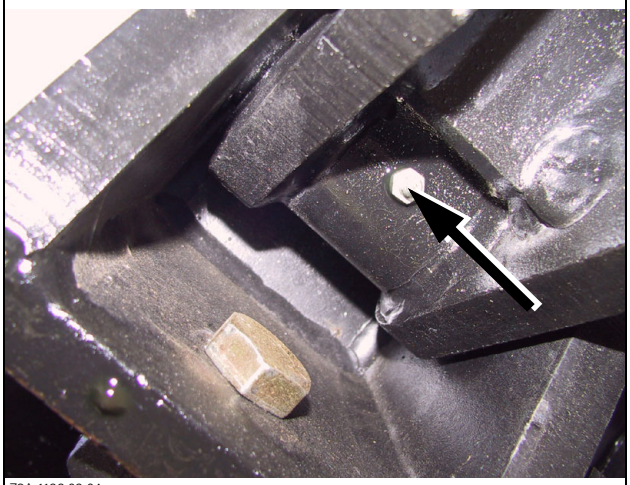
During long storage periods, ram rods should not come into contact with the air (risk of corrosion and consequent leakage). Rams should be fully retracted or greased.



Z3A-1127-09-04

Fig. 14

15. Lower front lift arm joints (2 grease nipples)



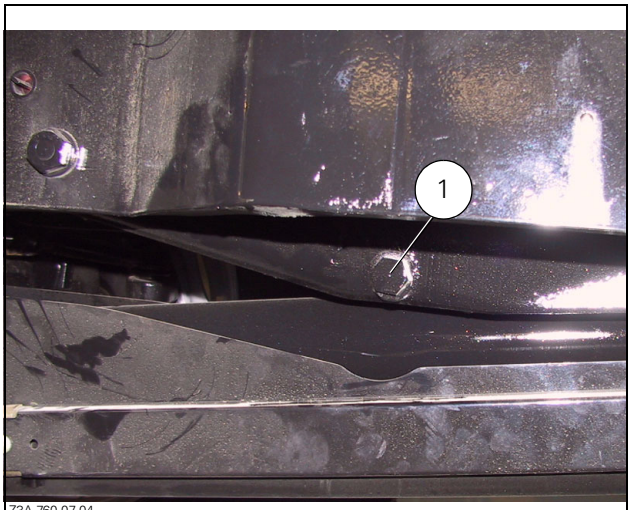
Z3A-1126-09-04

Fig. 15

5.7 - ENGINE

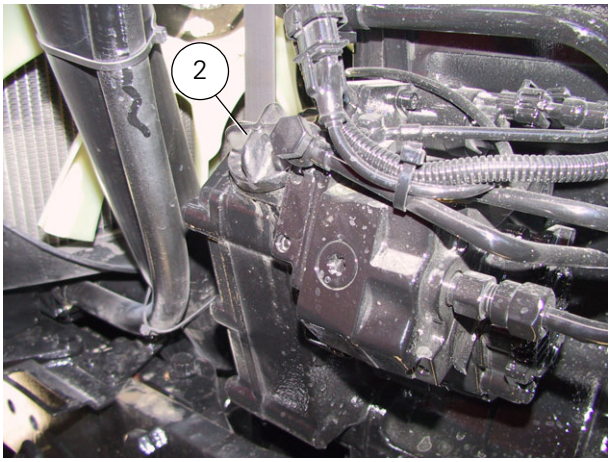
5.7.1 - 6-cylinder engine

1. engine oil drain plug (Fig. 16)
2. oil filler cap (Fig. 17)
3. engine oil dipstick (Fig. 18)
4. Oil filter (Fig. 19)
5. fuel prefilter (Fig. 19)
6. fuel filter (Fig. 19)
7. windscreen washer bottle (Fig. 20)



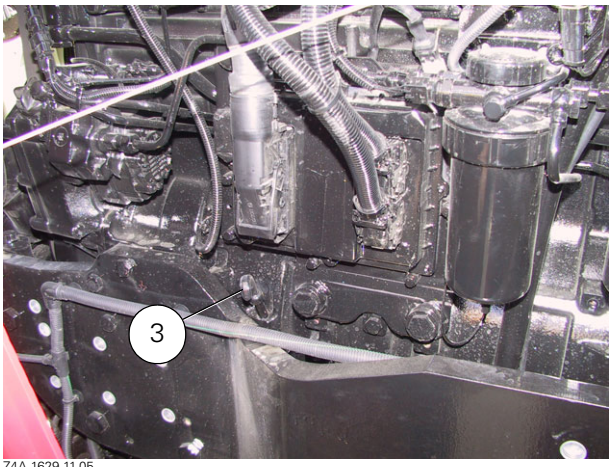
Z3A-760-07-04

Fig. 16



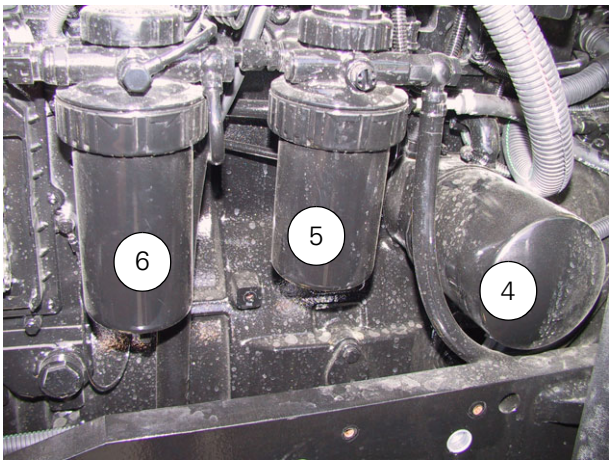
Z4A-1626-011-05

Fig. 17



Z4A-1629-11-05

Fig. 18



Z4A-1627-11-05

Fig. 19

Z3A-761-07-04

Fig. 20

5.7.2 - Oil level

IMPORTANT: Place the tractor on even ground, with the front axle suspension disabled.

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.

5.7.3 - Drain the engine oil every 400 hours

IMPORTANT: Carry out first draining at 50 h if the oil used is CF4 grade.

Place the tractor on even ground, then proceed to oil draining when the engine is warm after removing the engine sump plug (1. Fig. 16).

Refit and tighten the drain plug to a torque of 3.5 daNm.

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.

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

5.7.4 - Change the engine oil filter every 400 hours

To change the filter 4 (Fig. 21)

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 rocker arm clearance should be checked by your dealer or agent, initially after 400 hours, then once every 1200 hours.

5.8 - FUEL SYSTEM

5.8.1 - Fuel pre-filter

Check the prefilter bowl for water at regular intervals and drain as necessary (5 Fig. 21).

Change 150 micron prefilter element every 400 hours.

5.8.2 - Fuel filter

Drain the water every 100 hours.

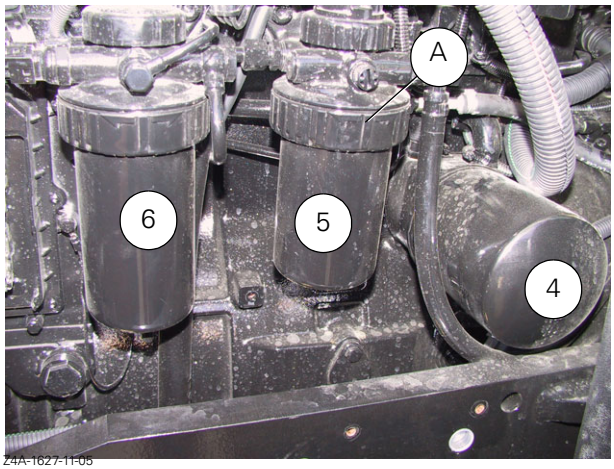
Place a receptacle beneath each element, then open the tap to allow water and sediment to run out, close the taps, then operate the fuel lift pump.

Replace the filter element every 400 hours (6 Fig. 21).

Discard the old filter element as required by environmental protection regulations.

1. Clean the filter and surrounding area.
2. Open fast fitting ring A and remove the filter element.
3. Fill and assemble the new filter element.
4. Turn the fast fitting ring until it clicks into the ON position.
5. Switch on the ignition and allow the electric fuel lift pump to operate for 30 seconds. Start the engine and check the fuel filter for tightness.
6. Bleed the fuel system.

NOTE: To avoid water condensing in the fuel tank, refill with fuel at the end of the working day.



Z4A-1627-11-05

Fig. 21

Bleeding the fuel system
To ensure correct operation of the engine, the fuel system must be in perfect condition and free of air.
The bleeding of the fuel supply system is automatic.
Do not disconnect any unions or pipes.

IMPORTANT: Only activate the starter motor once in a 30 second interval to avoid overheating.

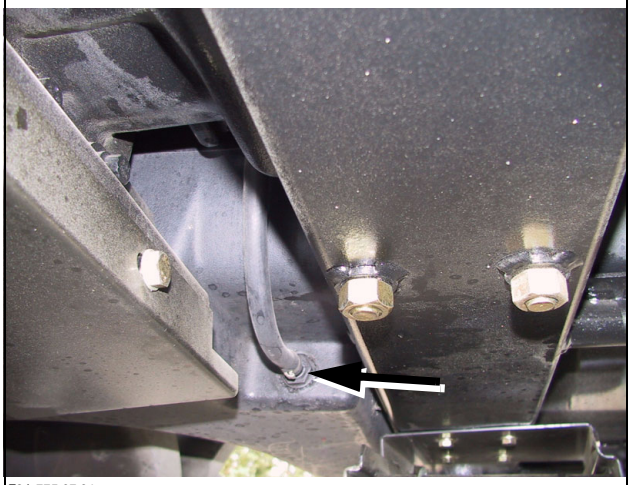
5.8.3 - Fuel injection pump, regulator and injectors

The injection pump and injectors must be adjusted and checked by your dealer or agent.

5.8.4 - Fuel tank

Drain the fuel tank every 1200 hours.

1. Empty the tank as thoroughly as possible through its filler port using a pump.
2. Drain any remaining fuel through the hose under the tank (Fig. 22).



Z3A-775-07-04

Fig. 22

5.9 - AIR FILTER

Stop the engine before changing the main element.

5.9.1 - Prefilter and main filter

Main filter (A Fig. 23 and Fig. 24)

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

Replacing prefilter (B Fig. 25)

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

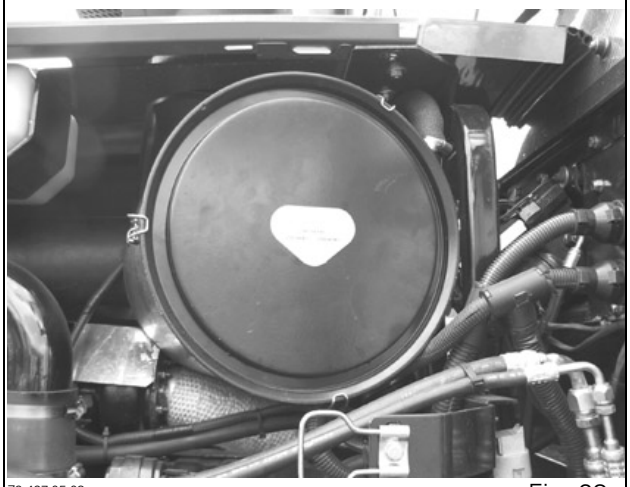
Check that the filter body is not damaged and ensure that all collars and hoses are tight.

1. Lift the left-hand bonnet panel.
2. Remove the prefilter and filter (A) and (B).
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 keeping the filter sufficiently far from the nozzle.

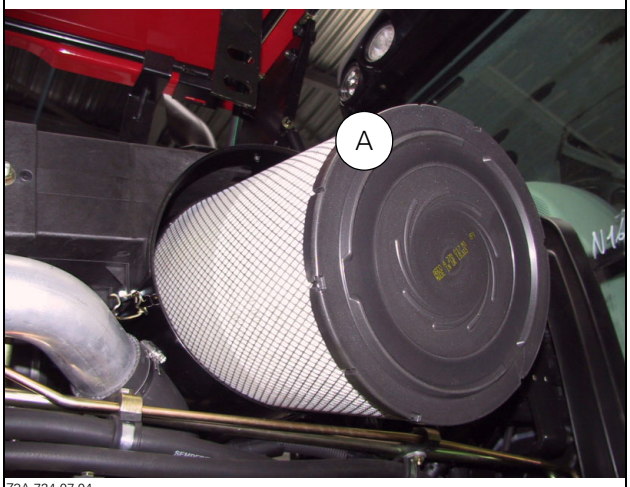
   After cleaning, ensure the prefilter is not damaged by illuminating the inside to check that there are no holes, and check the condition of the seals.
4. Before refitting the element, wipe the filter body with a damp cloth to remove any dust.
5. If the clogging indicator light comes on after a short 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.

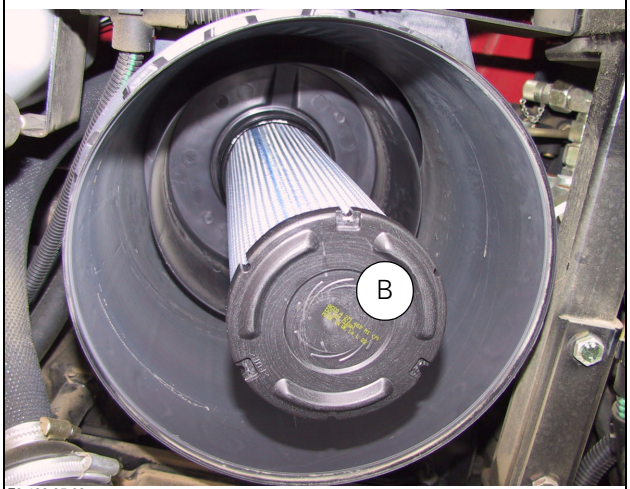
CAUTION: Do not attempt to blow the main element clean with the engine exhaust gases. Never apply oil to a dry element. Never use petrol (gasoline), paraffin or cleaning solvents to clean an element.



Z2-497-05-03 Fig. 23



Z3A-724-07-04 Fig. 24



Z2-499-05-03 Fig. 25

5.10 - 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.

Use a permanent type Ethylene/glycol mix according to the following specifications:

Coolant specifications

Use the coolant recommended by AGCO. The liquid must meet the following standards:

Sisu engines: ASTM D3306-74 (USA), BS 6580:1992 (Europe/UK)

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.

Change the coolant every 1200 hours.

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. 26)

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 reached.

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

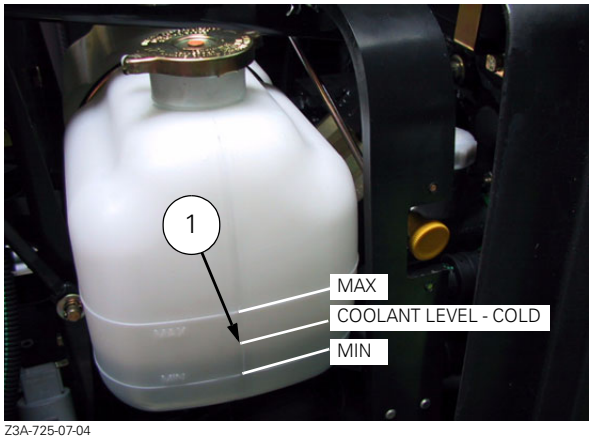
IMPORTANT: After filling, clean traces of liquid from the filling port.

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.



Z3A-725-07-04

Fig. 26

5.11 - STEERING, TRANSMISSION AND AUXILIARY HYDRAULICS

Two circuits carry out the functions. One circuit for the transmission and another for the auxiliary hydraulics.

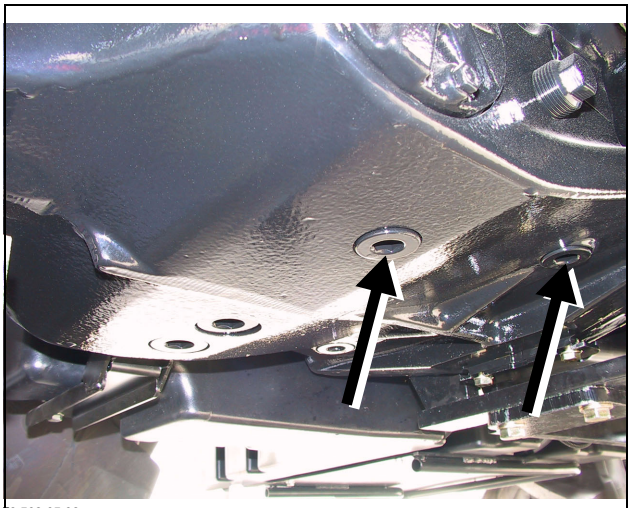
5.11.1 - Transmission and final drive unit hydraulics

5.11.1.1 - Change the transmission oil every 2000 hours

IMPORTANT: Place the tractor on even ground, with the front axle suspension disabled.

1. Do not drain until the transmission oil is hot.
2. Remove the drain plugs (Fig. 27) and the filler cap (Fig. 28).
3. Refit the drain plugs, then refill the transmission to the correct level (Fig. 29) with an approved oil.

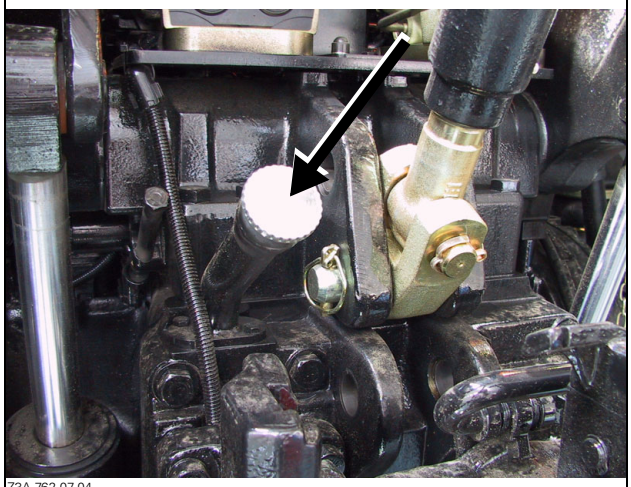
NOTE: Allow time for the oil to settle in the rear axle and transmission before rechecking the level.



Z2-503-05-03

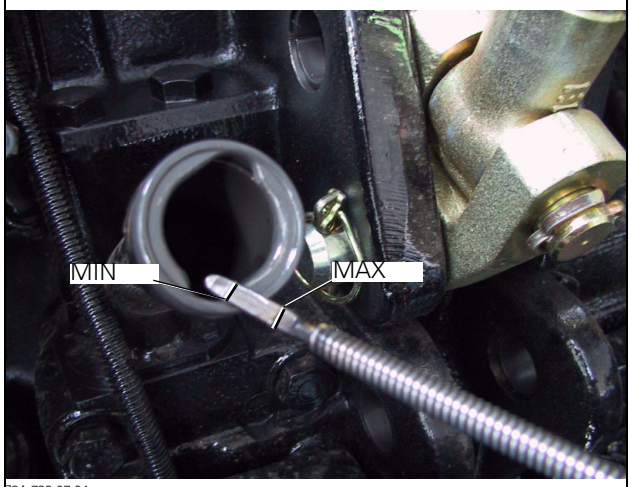
Fig. 27

IMPORTANT: When you change transmission oil, you MUST bleed the braking circuits. If necessary, ask your nearest AGCO dealer for assistance.



Z3A-762-07-04

Fig. 28



Z3A-763-07-04

Fig. 29

5.11.1.2 - Change the 150 micron suction strainer (Fig. 30) every 2000 hours

Release the three screws from the retainer plate, and extract and discard the strainer.

Fit the new strainer in its place. Fit the retainer plate and tighten the three attachment screws.

Z3A-726-07-04

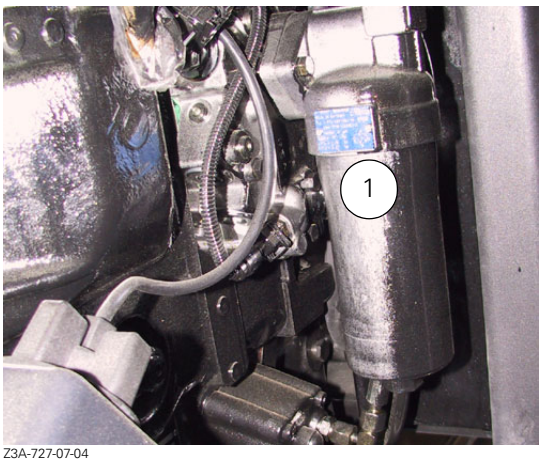
Fig. 30

5.11.1.3 - High pressure 10 micron filtering

400 hours the first time, then every 800 hours, replace the high pressure filter element located on the right-hand side of the housing (1 Fig. 31).

- Unscrew the filter body, pull out the filter element, allow to drain fully, and discard it.
- Every 800 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.



Z3A-727-07-04

Fig. 31

5.11.1.4 - Draining the oil from the final drive units

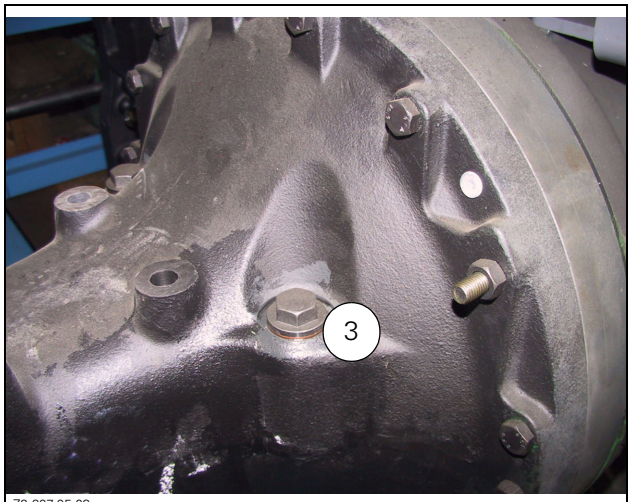
Every 2000 hours

- Unscrew the drain plug (Ref. 2, Fig. 32).

Z2-606-05-03

Fig. 32

- Refit the drain plug.
- Top up the level through the filler cap (3, Fig. 33). The oil level should be 55 mm below the filler cap.



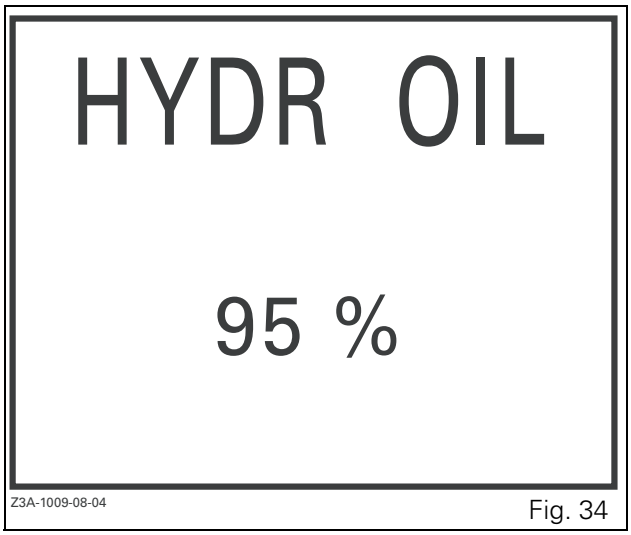
Z2-607-05-03

Fig. 33

5.11.2 - Auxiliary hydraulics

As soon as the instrument panel is powered up, the DOT MATRIX screen displays the auxiliary hydraulic oil level in percentage (Fig. 34).

IMPORTANT: Place the tractor on even ground, with the front axle suspension disabled.



Z3A-1009-08-04

Fig. 34

- 100%: tank full
- 50%: warning threshold

When the auxiliary oil tank level drops below 50%, it is displayed in priority on the DOT MATRIX screen.

IMPORTANT: When the oil level drops below 50%, top up as soon as possible.

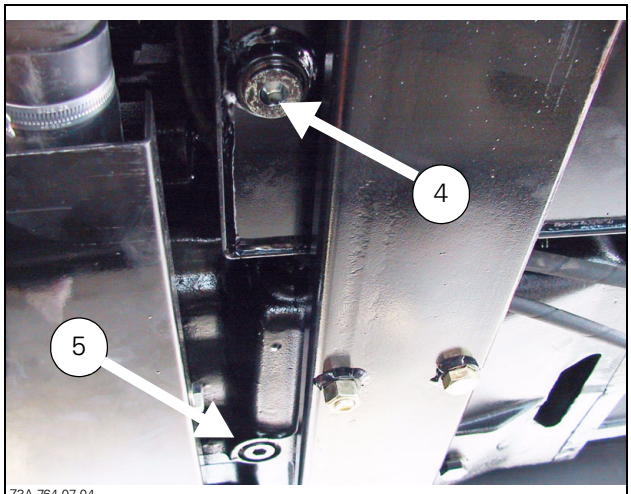
5.11.2.1 - Draining the auxiliary hydraulics

IMPORTANT: Place the tractor on even ground, with the front axle suspension disabled.

Every 1200 hours

To carry out the draining, the oil must be hot and linkage must be in lowered position with all rams retracted.

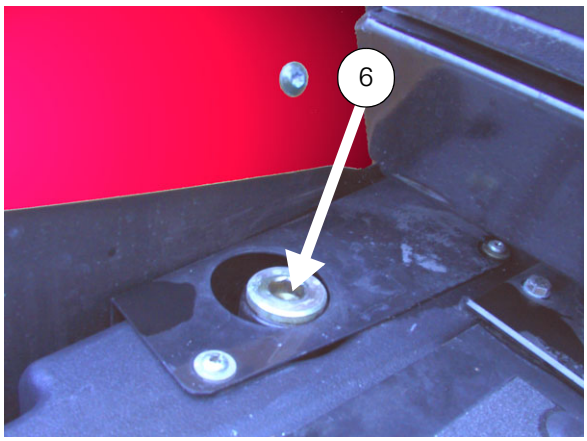
- Unscrew the drain plug (Ref. 4 and 5,Fig. 35).



Z3A-764-07-04

Fig. 35

- Fill the tank via the filler cap (Ref. 6, Fig. 36).

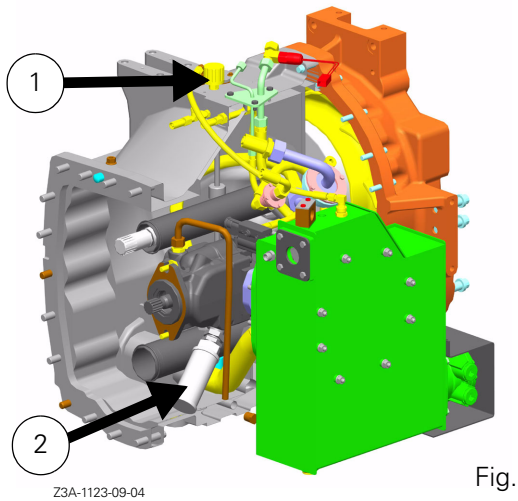


Z3A-730-07-04

Fig. 36

- Replace the breather plug every 1200 hours (1. Fig. 37).
- If the hydraulic system is polluted, change the 300 micron steering suction strainer (2. Fig. 37) and the 300 micron LS pump suction strainer (3. Fig. 38).

NOTE: the tank must be disassembled for this latter operation (see your dealer or agent).



Z3A-1123-09-04

Fig. 37

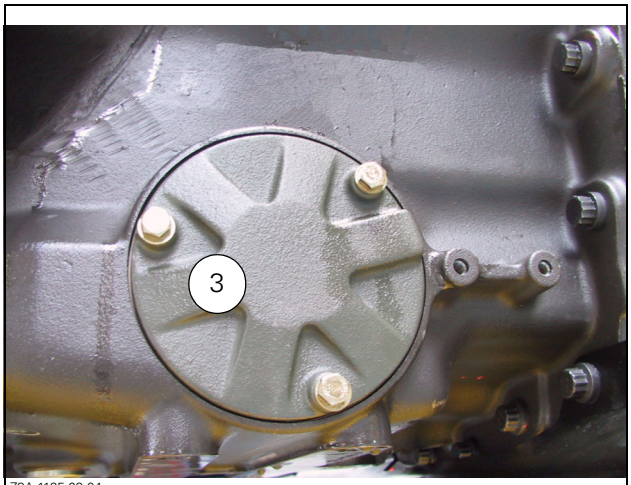


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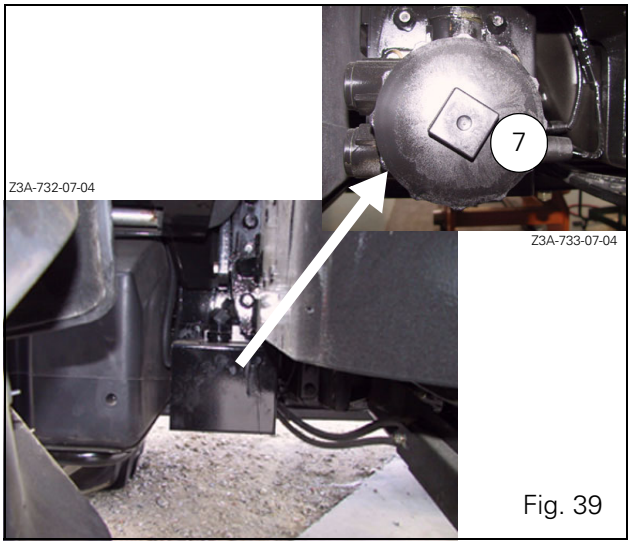
Fig. 38

5.11.2.2 - 10 micron return filter

Every 400 hours, replace the return filter (Fig. 39) located on the auxiliary hydraulics tank.



Z3A-732-07-04

Z3A-733-07-04

Fig. 39

- Unscrew the filter (Ref. 7).
- Remove the filter element, allow to drain fully, and discard it.
- Slide the new filter element into the bowl.
- Screw the cap back, fitted with its seal (replace if necessary).

CAUTION: Check for the presence of the spring.

5.11.3 - Transmission oil cooler (depending on version)

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

5.12 - FRONT AXLE - 4-WHEEL DRIVE

5.12.1 - Final drive units

Check the oil level in the front axle final reduction units every 400 hours (Fig. 40).
The oil should be level with the filler cap when the cap is in the horizontal position.

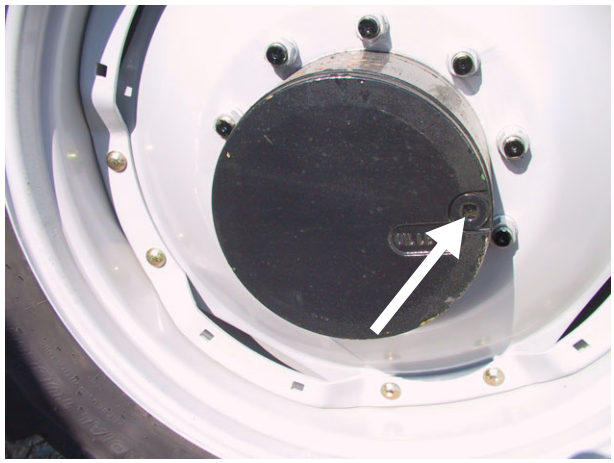

Z4A-1628-11-05

Fig. 40

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.

5.12.2 - Front axle

Check the front axle oil level every 400 hours. The oil should be level with the level plug (Fig. 41).

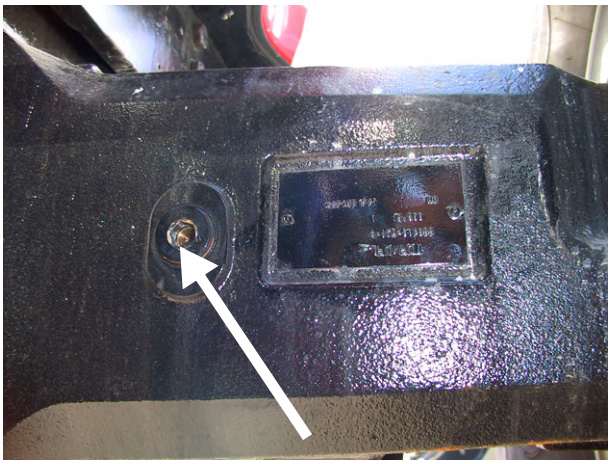


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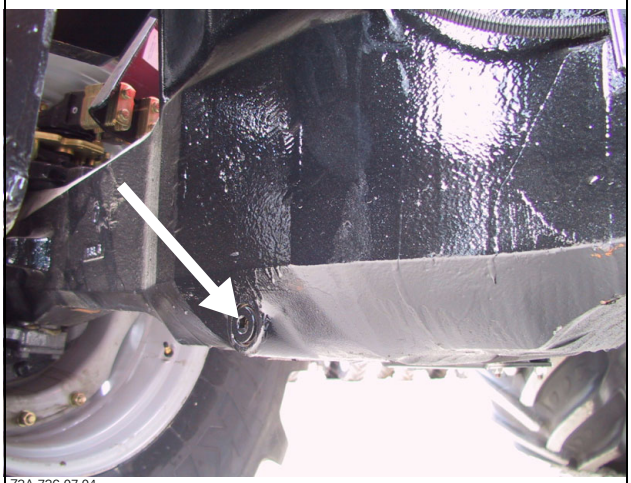
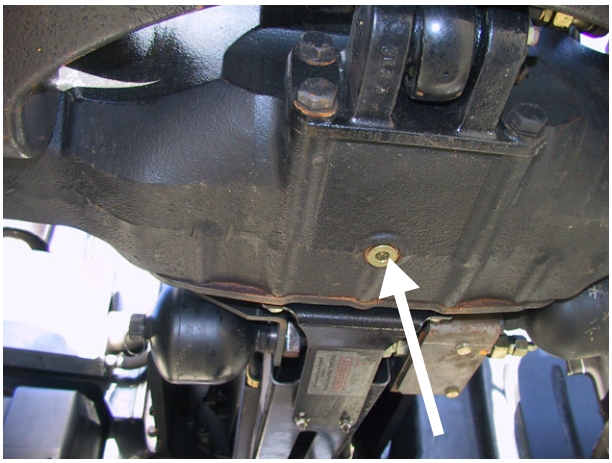
Fig. 41

Drain the oil from the front axle every 800 hours via the drain plug epending on models (not suspended, Fig. 42, suspended, Fig. 43).



Z3A-736-07-04

Fig. 42



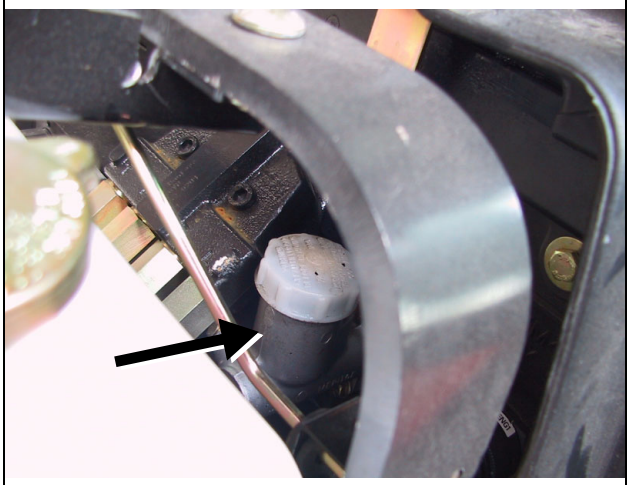
Z4A-1632-1105

Fig. 43

5.13 - CLUTCH AND BRAKES

5.13.1 - Clutch liquid level

Check the clutch liquid level (Fig. 44) at each overhaul. Drain the clutch circuit every 2000 hours.



Z3A-765-07-04

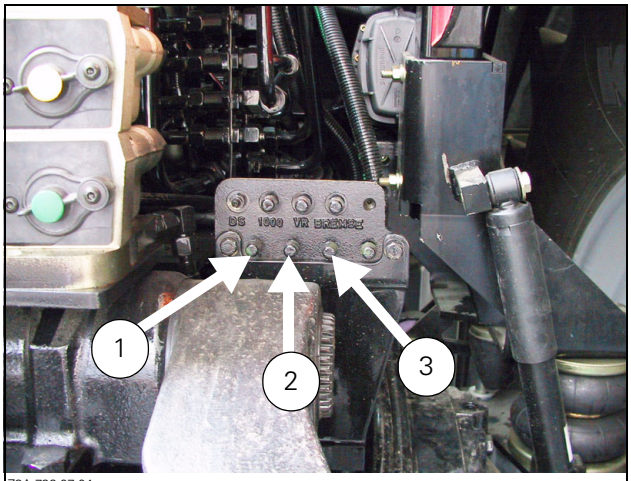
Fig. 44

5.13.2 - 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



Z3A-766-07-04

Fig. 45

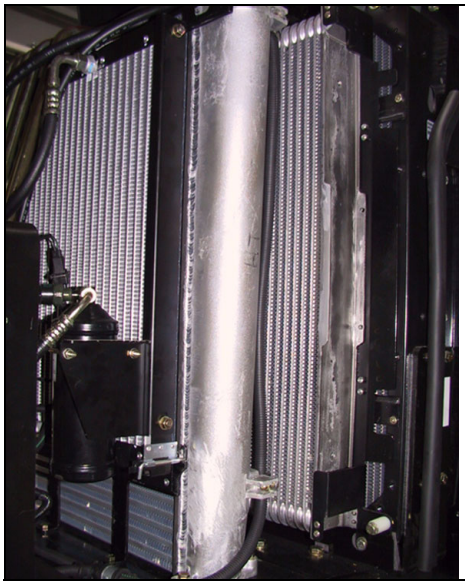
1. Bleeding the front brake,
2. Bleeding the left brake,
3. Bleeding the right brake.

5.14 - AIR CONDITIONING SYSTEM

5.14.1 - Condenser

(Fig. 46)

Clean the condenser using compressed air.



Z3A-737-07-04

Fig. 46

5.14.2 - Drier

(Fig. 47)

Replace the air conditioning receiver drier every 1200 hours (consult your dealer).

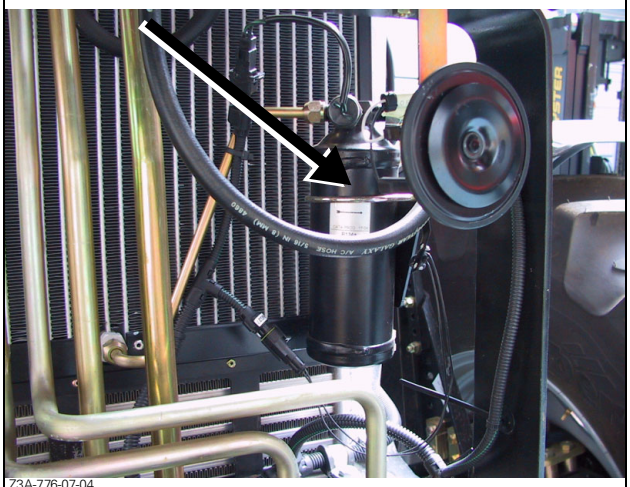


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Fig. 47

5.14.3 - 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.

The condenser and the oil cooler can be moved sidewards to make the cleaning of the radiator area easier.

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.

5.15 - CHECKING THE FAN BELT

(Fig. 48)

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

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

Longitudinal cracks (running along the length of the belt) which intersect cross cracks **are not allowed**.

Replace the belt if it is cracked in an unacceptable way, frayed or if pieces have come off.

5.15.1 - Check belt tension every 400 hours

The correct deflection value is 15 to 20 mm (Sisu engines) 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.

5.15.2 - Replacing the Poly-V belt

Change the belt when it is worn, damaged or oily.

Loosen the alternator attachment screws, remove the driving belt, assemble the new belt and tighten while manipulating the alternator so that the self-tensioned idler moves to form an angle of approximately 15° off vertical (see Fig. 48). Retighten the alternator, check belt tension and re-tighten if necessary.

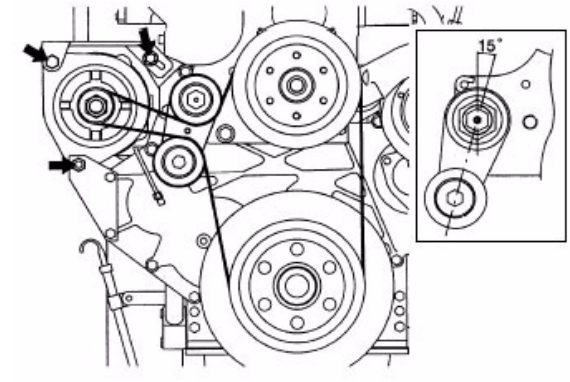
NOTE: After the tensioner has been slackened to remove/install the belt, check the torque of the tensioner capscrews.

Torque value: 43 Nm [32 ft-lb]

5.15.2.1 - Replacing the air conditioning bel

Fig.49: Change the air conditioning drive belt at the first signs of wear:

1. Loosen the belt tensioning idler pulley setscrew.
2. Replace the belt.
3. Hold the tensioner idler pulley against the belt with the hand and pretighten the lock screw (1) to 5 Nm (3.69 ft lb)
4. Bring the tensioner set screw (2) against the idler pulley and tighten by 2.5 turns.
5. Lock the locknut (3).
6. Tighten the tensioner set screw.
7. Check the tension using a frequencymeter (128 to 150 Hertz) (90 to 110 Nm (66.38 to 81.14 ft lb)).



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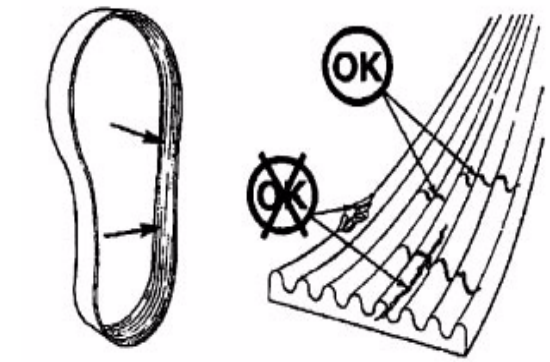

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Fig. 48

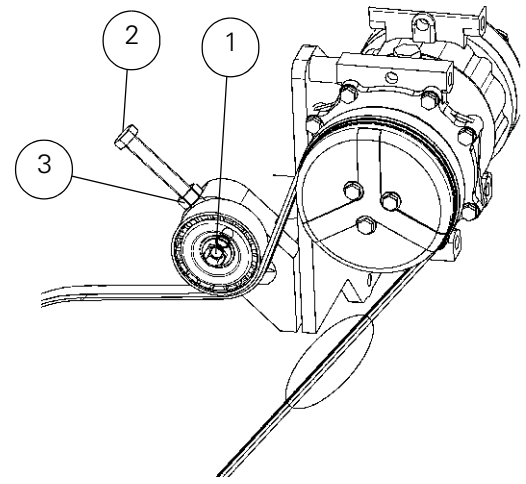

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Fig. 49

5

5.16 - CAB

5.16.1 - Cab air filter

Clean the cab air filter every 400 hours, or more frequently, if necessary.

1. To gain access to the cab air filter, open the hatch on the left-hand side of the cab roof cab (Fig. 50).
2. Turn the handle and lift out the filter element.
3. Clean the filter by blowing it with compressed air.
4. Before refitting the filter, wipe out the compartment with a damp cloth to remove dust.

Change the cab filter every 1200 hours.

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. 50

5.16.2 - Cab suspension

Regularly (once a fortnight) drain the water from the air circuit of the pneumatic cab shock absorbers by pressing the valve (Fig. 51) located beneath the arch at the rear left of the cab.

Replace the condenser filters and compressor filters located beneath the cab every 4800 hours (consult your AGCO dealer for further advice).

Replace mechanical shock absorbers every 4800 hours (consult your AGCO dealer).

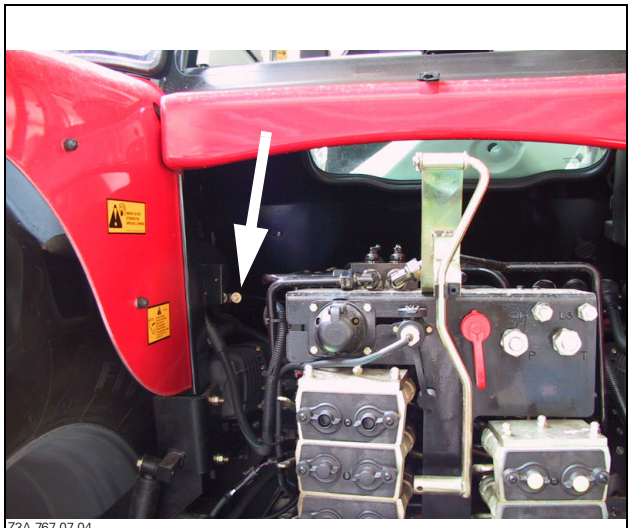


Fig. 51

5.16.3 - ROPS cab or frame

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

CAUTION: The ROPS cab or frame complies with all international safety 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 safety standards. The only components which can be fitted are AGCO original components, which must be fitted by your dealer or agent.

5.17 - TYRES

5.17.1 - 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.).

5.17.2 - Use

Set the tractor to minimum track (Fig. 52).

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. 52).

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

20.8.42 - Distance 200 mm

5.17.3 - Wheel bolts

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

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 tubes:

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.

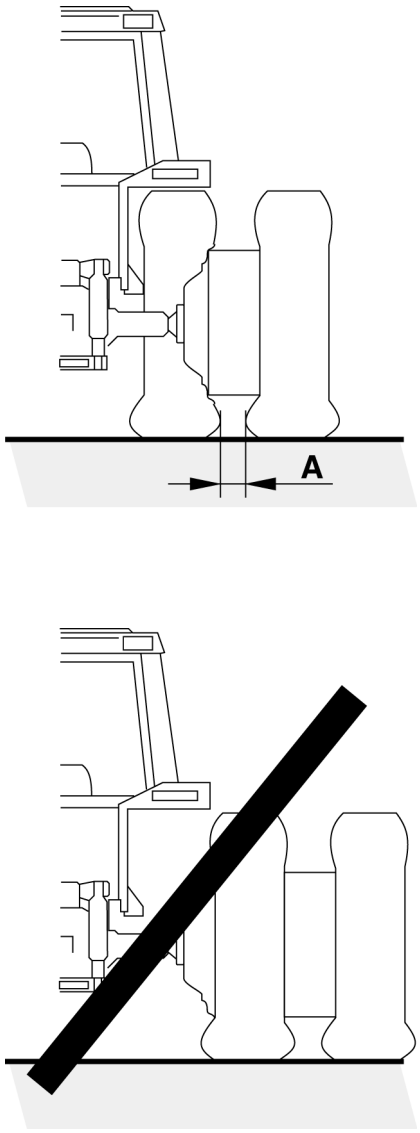


Fig. 52

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

5.17.4 - Inflation pressure:

0,2 barless on the outer tyres.

5.17.5 - 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.

Dimensions		Pressure under load (bar)					
		Kleber Super 8 - 9		Michelin		Goodyear	
		Max.	Min.	Max.	Min.	Max.	Min.
Front	16.9R30	2.1	0.6	1.9	0.4	1.6	0.6
	320-85R34	-	-	-	-	-	-
	480-70R30	2.1	0.4	1.9	0.4	2.4	0.6
	540-65R30	2.4	0.4	2.4	0.4	2	0.6
	600-65-R28	2.1	0.4	1.9	0.4	2	0.6
Rear	480-80R-46	-	-	2.7	0.4	-	-
	650-75R38	2.4	0.4	-	-	-	-
	650-85R38	2.4	0.4	-	-	3	0.6
	710-70R38	2.1	0.4	1.9	0.4	3	0.6

5.18 - 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).

5.19 - ADJUSTING TRACK WIDTH

5.19.1 - Front wheel track

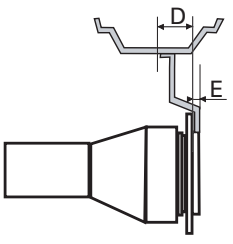
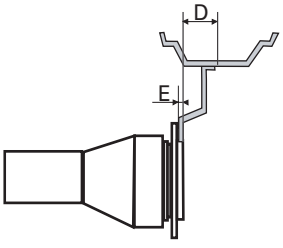
5.19.1.1 - 4-wheel drive

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

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

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

TABLE OF FRONT WHEEL TRACK VALUES in mm

Transmission type - Front Axle				
		D = wheel offset 75 mm - **E** = thickness of wheel disc 12 mm.		
		Inter-flange	**Disc facing inwards**	**Disc facing outwards**
8450/60	750/601	1892	1842	1996
8470/80	760/601	1892	1692	2116

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. 53) which can be adjusted to limit the turning lock. Set maximum front axle oscillation by changing stop 1 itself (Fig. 54). If you change stop, use securing bolt provided in the tool box.

NOTE: The axle is factory set for tractor transport.

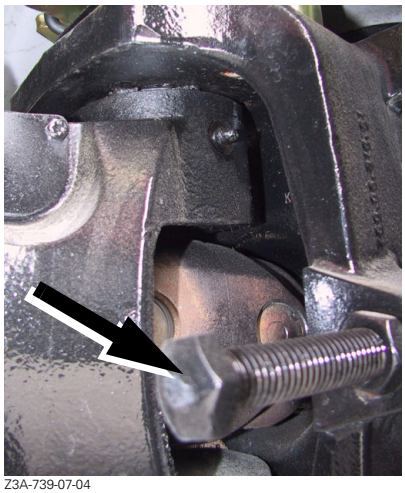


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Fig. 53

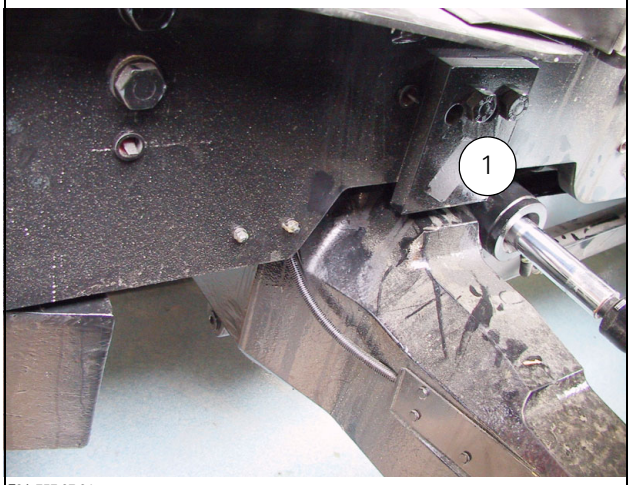

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Fig. 54

5.19.1.2 - Toe-in check

Toe-in check requires specific tooling; in case of problem, please contact your dealer.

5.19.2 - Rear wheel track (mm)

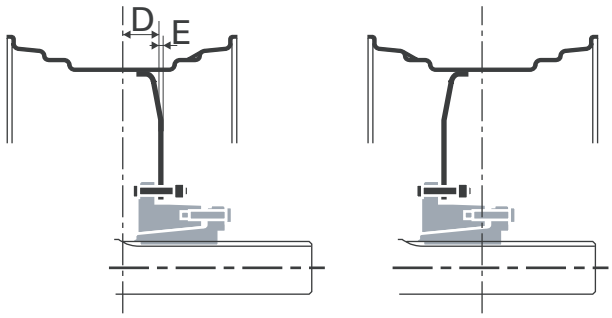
Wheels with steel flange

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

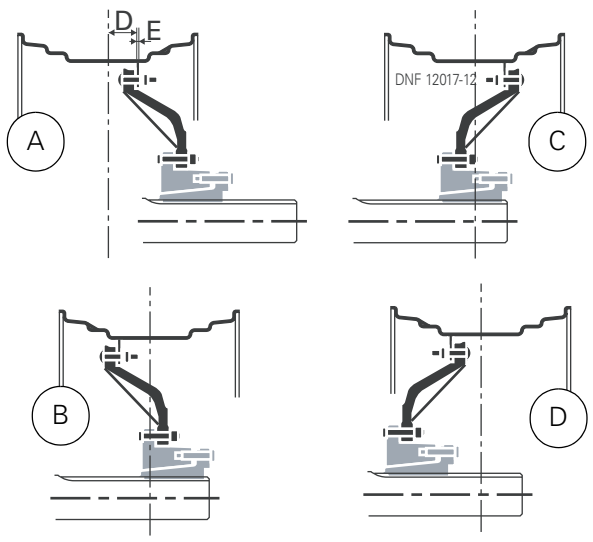
NOTE: Ensure a sufficient gap remains between the tyres and the inside of the fenders.

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).

TABLE OF REAR WHEEL TRACK VALUES in mm			
Rear Axle			
		D = wheel offset 75 mm- **E** = thickness of wheel disc 15 mm.	
		Disc facing inwards (min. - max.)	**Disc facing outwards (min. – max.)**
8450 to 8480	HA 200/260 (Short straight shaft)	1699 - 1996	2029 - 2326

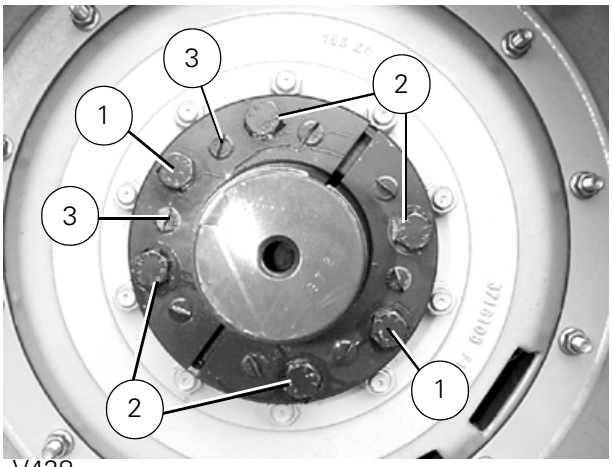
Wheels with cast iron disc

TABLE OF REAR WHEEL TRACK VALUES in mm			
Rear Axle			
		D = wheel offset 75 mm- **E** = thickness of wheel disc 15 mm.	
		Disc facing inwards (min. - max.)	**Disc facing outwards (min. – max.)**
8450 to 8480	HA 200/260	A - 1485 - 1781	C - 1815 - 2111
8450 to 8480	HA 200/260	B - 1959 - 2256	D - 2289 - 2586

5.19.3 - Changing wheel positions

Adjustment of wheel position on the shaft (half conical hub) (Fig. 55)

- Raise the rear of the tractor to lift the wheels from the ground and carefully shim the vehicle.
- Loosen the attachment screws (1) of the half conical hubs by approximately three turns.
- Remove the 4 attachment screws (2) and fit into the holes (3).
- Tighten them alternately until the half conical hubs are free of the fixed hub.
- Refit the 6 screws (3) in their original holes and retighten, taking care to align the two half cones.
- Tighten the screws alternately to the correct torque on each half cone (Fig. 55).



V428

Fig. 55

5.20 - ELECTRICAL EQUIPMENT

The 12 volts circuit is a negative ground system.

5.20.1 - Batteries

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

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.

5.20.2 - 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.

5.20.3 - Start-up assistance

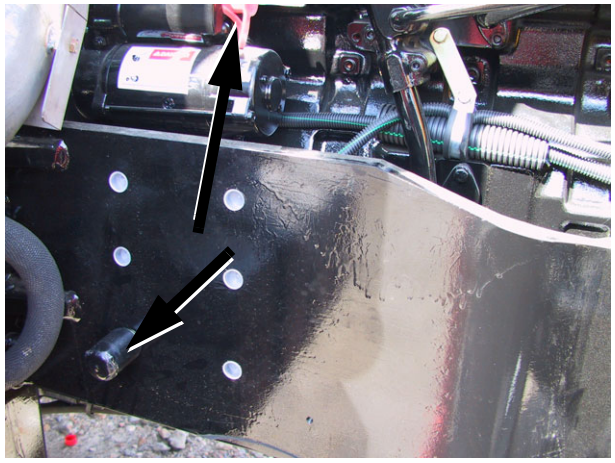


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Fig. 56

A positive (+) terminal on the starteris provided to allow for the connection of a backup battery if the original batteries fail..

DANGER: The engine should only be started from a sitting position on the driver's seat.

Use:

1. Connect the positive (+) end of the backup battery to the terminal on the starter (Fig. 56).
2. Connect the negative (-) end of the backup battery to the tractor ground.
3. Start the engine from the driver's seat, following the start-up instructions.
4. Once the engine is running, disconnect the backup battery cables in the connection reverse order.

WARNING: The backup battery voltage must be identical to that of the original batteries.

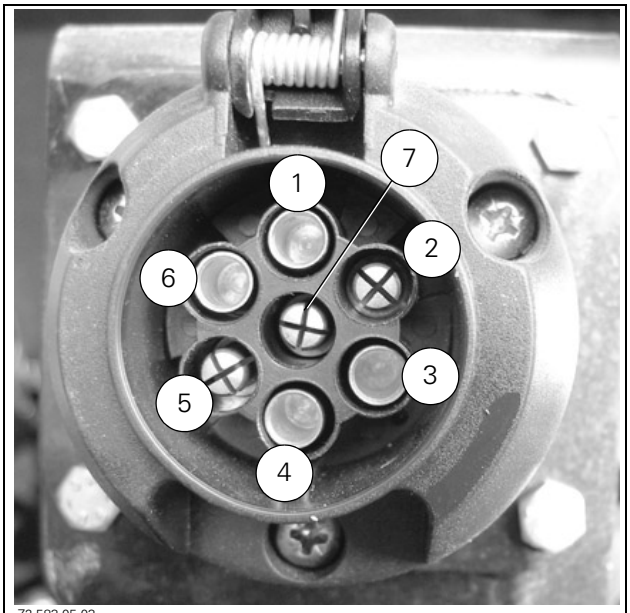
5.20.4 - Datatronic 3 clock

The Datatronic 3 can store memorised hourly data for a maximum of two weeks. If the battery goes flat or is disconnected for a greater period of time, the clock will need to reset.

5.20.5 - Trailer socket (ISO)

Connection (Fig. 57).

1. Left-hand direction indicator
2. Reversing light
3. Ground
4. Right-hand direction indicator
5. RH side light
6. Stop
7. LH side light



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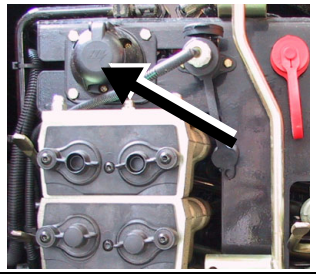

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Fig. 57

5.20.6 - 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. 58)

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.

5.20.6.1 - Headlight adjustment procedure

1. Position the tractor facing a wall or a screen 7.5 m 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.

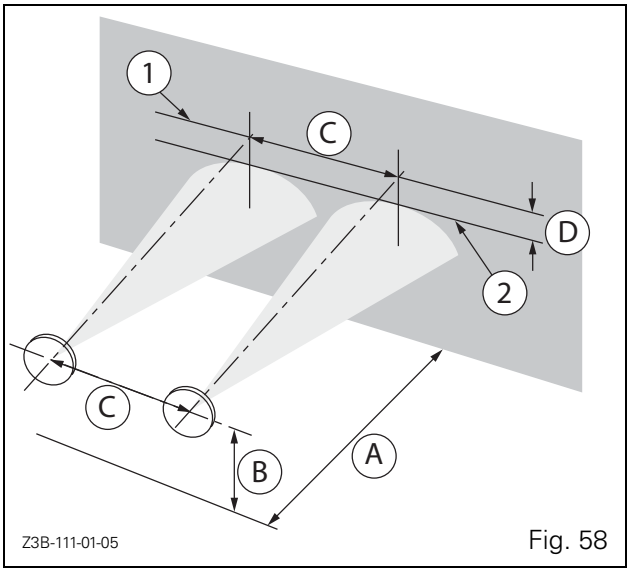

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Fig. 58

5.20.7 - Xenon work headlights (optional)

Certain precautions must be taken when replacing bulbs on models equipped with this option.

WARNING: The electrical connection between headlight and light ballast is under HIGH VOLTAGE and must not be disconnected. Before replacing the xenon bulb, always switch headlights off and disconnect from the power supply.

Never insert foreign objects or fingers into the bulb holder.

- The light ballast is to be attached next to the headlight. Install the headlight and light ballast in a way that excludes a negative effect on the engine cooling system.

- Make sure not to twist the power supply cable between headlight and light ballast by more than 90° and/or bend it by radius smaller than 20 mm (0.8 in).

5.20.7.1 - Adjusting work headlights

The work headlights are adjusted by screwing the two top screws in or out as required.

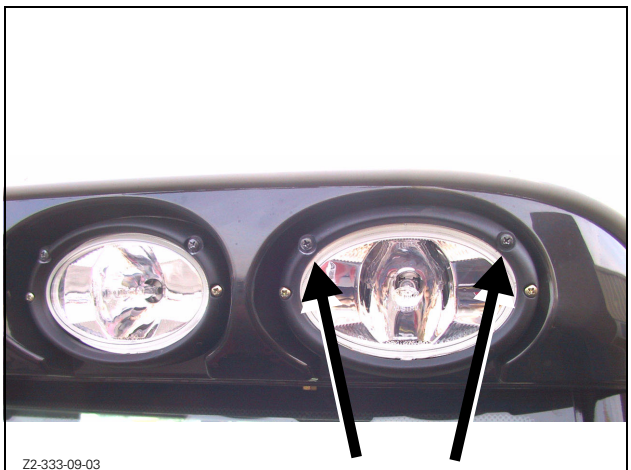


Fig. 59

5.20.8 - Batteries main switch

(Available on option)

This safety device is designed to cut-off the battery supply in case of emergency or long period of storage.

In case of emergency:

To cut-off the battery supply, **turn the switch handle** (Fig. 60) **to OFF position** (anticlockwise (Fig. 61))

In case of long storage:

If the tractor is to be stored for a long time, it is recommended to cut-off the circuit in order to avoid the batteries getting flat.

For that purpose, turn the handle anti-clockwise, and pull to remove it from its location, then take out the fuse (1Fig. 60).

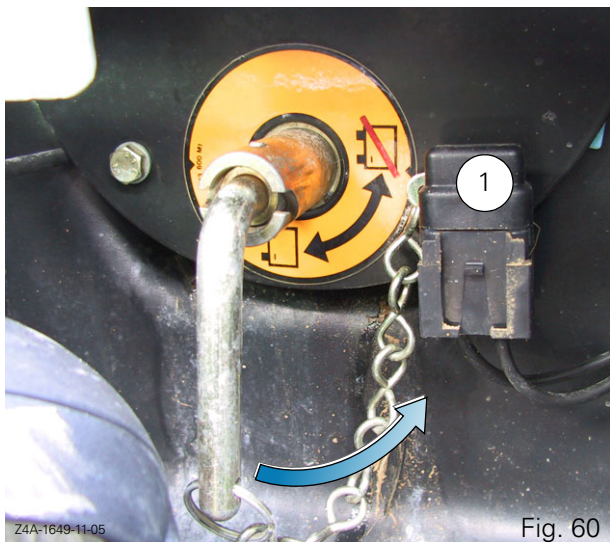


Fig. 60

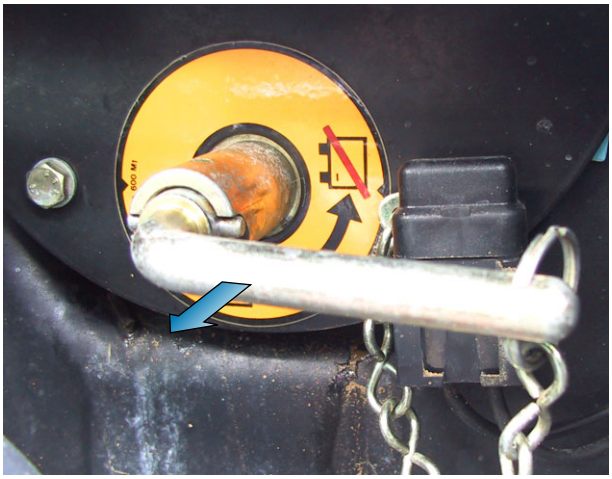


Fig. 61

NOTE: The 3A fuse, located near the cut-out switch, protects the radio and headlight module (Fig. 60)

To replace this fuse, you must:

- remove the fuse cover (1 Fig. 60) which gives access to the fuse.

IMPORTANT: replace the fuse with another fuse of the same capacity.

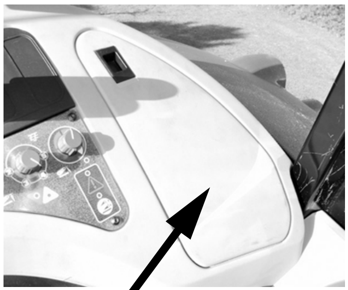
- carry out the same operations in reverse order for reassembly.

IMPORTANT: Before turning the starter key on, make sure the cut-out switch is closed (Fig. 60) otherwise, the 3A fuse might burn.

5.21 - REPLACING FUSES

(Dyna VT Europe version)

Always replace a fuse with another fuse of the same capacity.



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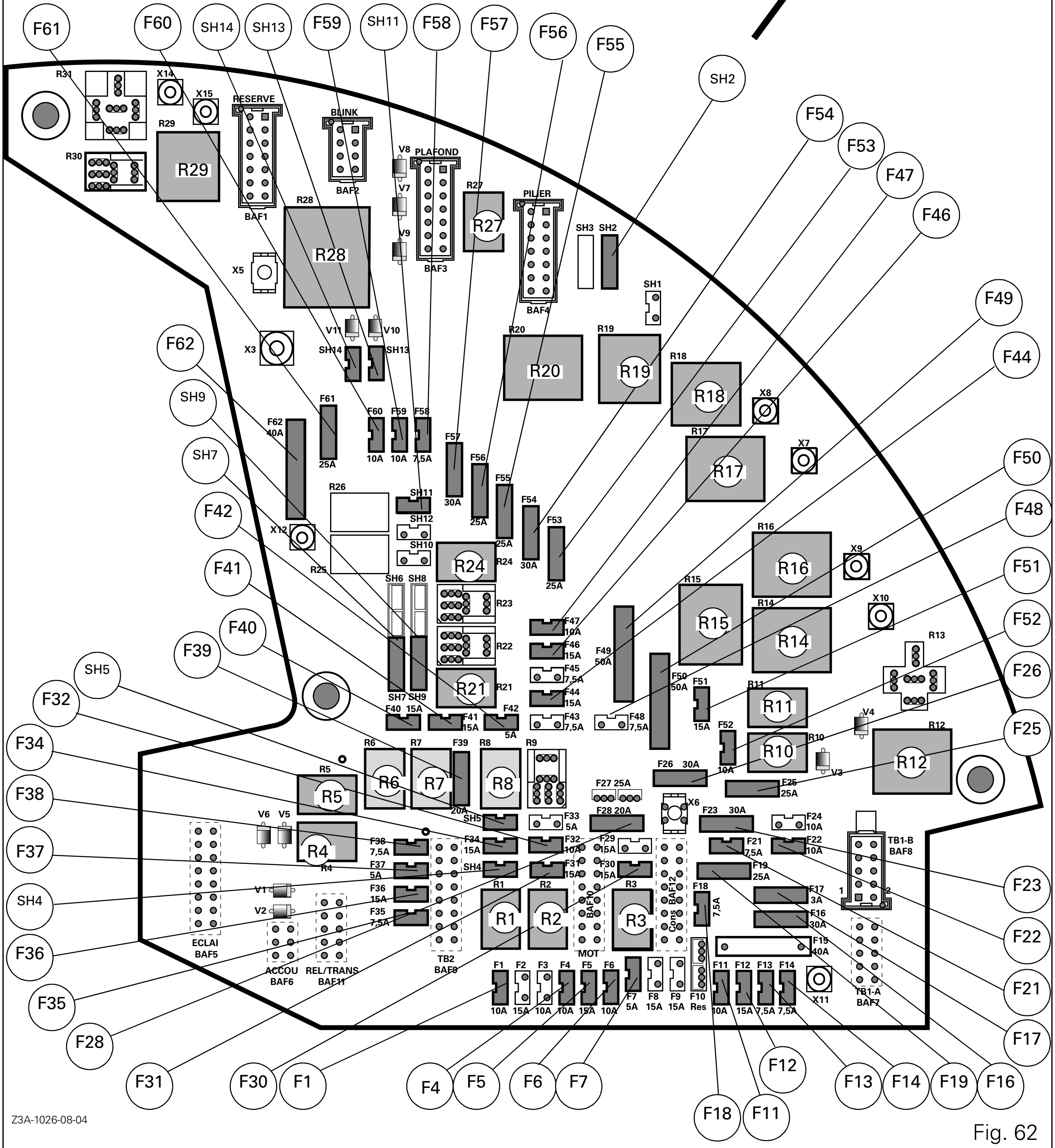


Fig. 62

Num.	Amp.	Use
F1	10	Front right and rear left side light, back lighting switches/console/cigarette lighter
F4	10	Instrument panel, gearbox/differential/4WD/cab PTO/ creeper neutral switches
F5	15	Stop lights
F6	10	Dyna VT actuator
F7	5	Electronic injection control module (ECM), reversing light relay
F9	15	Suspended front axle (Optional)/front PTO (optional)
F10	25	Front work headlights on grille
F11	10	Air conditioning compressor
F12	5	Auto IV Calculator
F13	7.5	Work headlights module
F14	7.5	Electric rear-view mirror (optional)
F16	30	Fuel injection pump solenoid valve (EEM)
F17	3	Brake switch
F18	7.5	Linkage/Diagnostics
F19	25	Pneumatic seat, fuel heater
F21	7.5	Linkage
F22	10	Start switch, BOC/TOC pedal switch, shuttle lever on steering wheel, throttle pedal position sensor, PTO switch back lighting, armrest, ParkLock switch.
F23	30	Cigarette lighter
F25	25	Hazard warning light switch, permanent 12 volts
F26	30	Power socket
F28	20	Electronic injection control module (ECM)
F30	15	Electronic injection control module (ECM), thermostart
F31	15	ECM (Sisu)
F32	10	Electronic injection control module (ECM)
F34	15	Dipped lights
F35	7.5	Horn
F36	15	Headlights
F37	5	Clutch safety start switch
F38	7,5	Front left and rear right side lights, instrument panel back lighting
F39	20	Side light switch/rail road lights
F40	15	Left-hand direction indicator
F41	15	Control button on Joystick (Optional)
F42	5	ECM (Sisu)
F44	15	Right-hand direction indicator
F46	15	Rear windscreen wiper
F47	10	Radio
F48	7.5	Suspended front axle (optional)
F49	50	Cab suspension (optional)
F50	50	Air conditioning, radio
F51	15	Instrument panel
F52	10	Power socket
F53	25	Front windscreen wiper
F54	30	Front work headlights
F55	25	Rear work headlights
F56	25	Work headlights on handrails and/or rear fenders
F57	30	Work headlights on handrails and/or footstep
F58	7.5	Work headlights module
F59	10	Flashing beacon (optional)
F60	10	+ ignition on relay control
F61	25	Hazard warning lights
F62	40	Auto IV Calculator
SH2	30	Handrail work headlights
SH4	15	Without handrail road lights
SH5	10	Without handrail road lights
SH7	15	Direction indicators
SH9	15	Direction indicators
SH11	15	Direction indicators
SH13	15	Direction indicators
SH14	15	Direction indicators
R1		Handrail road lights
R2		ECM Fuel lift pump (Sisu)
R3		Electronic injection control module (ECM)
R4		Reversing lights (optional)
R5		Stop lights
R6		Control button on Joystick (optional)
R7		Control button on Joystick (optional)
R8		Handrail road lights
R10		Power socket
R11		Dyna VT
R12		Wiper timer
R14		Air conditioning, radio
R15		+ ignition on
R16		Cab suspension (optional)
R17		Front work headlights
R18		Rear work headlights
R19		Work headlights on handrails and/or rear fenders
R20		Footstep work headlights
R21		Left-hand direction indicator
R24		Right-hand direction indicator
R27		Flashing beacon (optional)
R28		Hazard warning light unit
R29		Manual air conditioning
R31		Front work headlights on grille

A 225A fuse, located near the starter (in a sheath), protects the power supply.

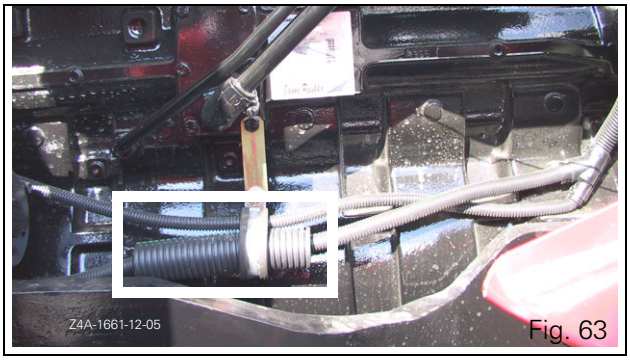


Fig. 63

A 150A fuse, located near the starter, protects the cab power supply.

Battery main switch option: A 3A fuse, located near the battery main switch, supplies the headlight module and radio.

5.22 - FUEL HANDLING, STORAGE AND SPECIFICATIONS

5.22.1 - 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 does not guarantee safety.
- Keep equipment properly maintained.

CAUTION: Diesel fuel is very flammable. 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.

5.22.1.1 - 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 2,0...4,5 mm²/s at 40°C.
- ensity 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-up 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

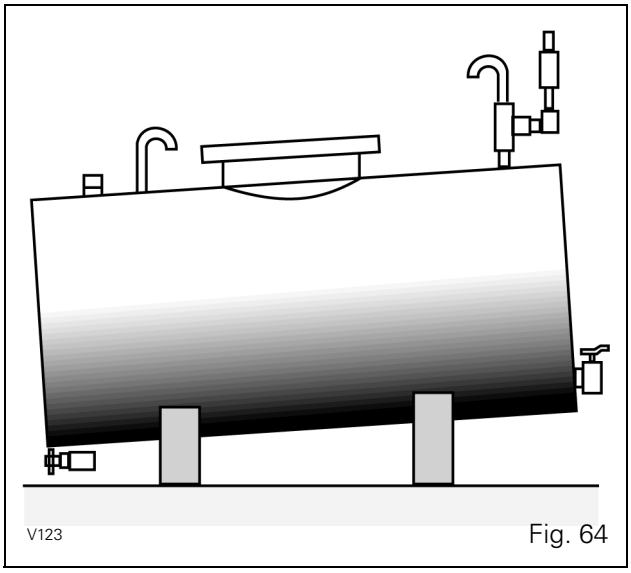
Special winter fuels may be available for engine operation at temperatures below 0°C. These fuels have a lower viscosity and also limit the wax formation in the fuel at low temperatures. If wax formation occurs, this could stop the fuel flow through the filter. If you need advice on engine setting or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

5.22.2 - Cleanliness

(Fig. 64)

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. 64

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.

5.23 - 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	8450	8460	8470	8480
Sisu engine	74 CTA		84 CTA	
Number of cylinders	6		6	
Turbocharger	Air / air		Air / air	
Bore (mm)	108	108	111	111
Stroke (mm)	134	134	145	145
Cubic capacity (l)	7.4	7.4	8.4	8.4
Nominal power at 2200 rpm *(ISO hp) (kw)	215 (158)	235 (173)	260 (191)	290 (213)
Maximum power at 2000 rpm *(ISO hp) (kw)	235 (173)	260 (191)	290 (213)	315 (231)
Maximum torque *(ISO Nm) Engine speed at maximum torque	970 1500	1071 1500	1195 1500	1280 1500
Idle speed Max. speed at no load (rpm)	800 2250			
Lubrication	by gear pump - suction strainer and replacable cartridge type filters			
Valves	Overhead, push-rod operated			
Valves clearance (Cold): Inlet (mm) Exhaust (mm)	 0.35 0.35			
Engine oil cooler	yes			

*ISO 14396

6.1.1 - Fuel system and air filter

Specifications	8450	8460	8470	8480
Fuel filter	yes			
Number of elements	1			
Fuel prefilter	yes			
Number of elements	1			
Injection pump	Bosch CP3.3			
Injectors and nozzle holders	Bosch			
Cold weather starting	Grid Heater			
Air cleaner: two-stage, dry element with clogging indicator.				

6.2 - GROUND SPEEDS

6.2.1 - Ground speed with Dyna VT continuous transmission

Range		Forward	Reverse
Tortoise Field speeds	kph	0.02 - 32	0.02 - 20
Hare Road speeds	kph	0.02 - 50*	0.02 - 38

*NOTE: *Speeds are limited as required by legislation in force in the relevant countries. Speed is limited electronically.*

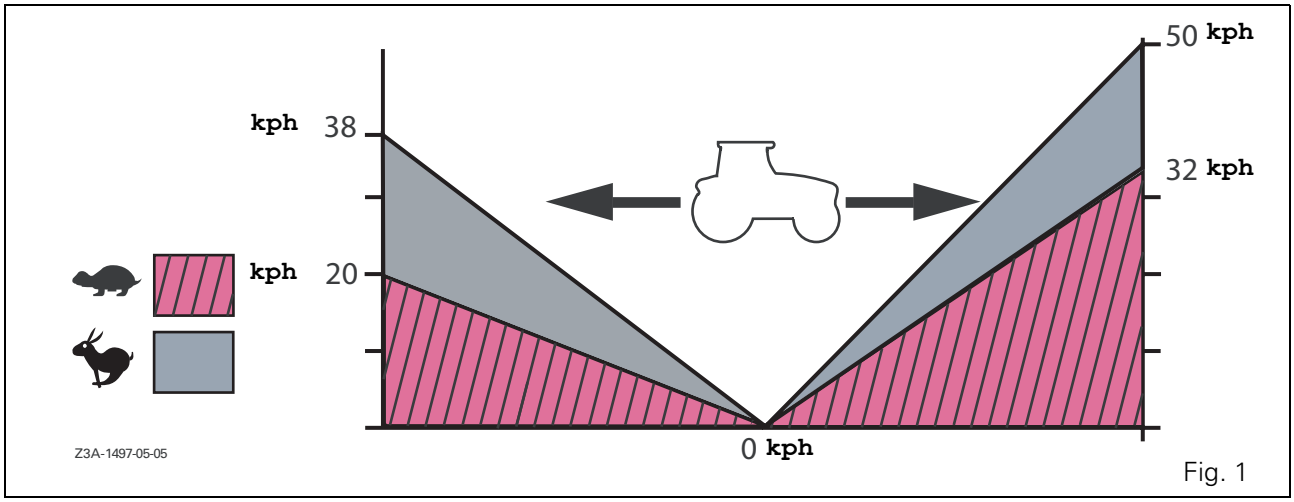


Fig. 1

6.3 - ELECTRICAL SYSTEM

Voltage:	12 volts negative ground
Batteries:	2 maintenance free batteries
Alternator:	150 A
Safe start-up:	Operated by the clutch pedal
Headlights:	European code 60/55 W - H4
Sidelights:	5 W
Direction indicators:	21 W
Number plate light:	10 W
Work headlights:	55 W - H3 35 W (bulbs Xenon optional)
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. Thermostat regulation. Opening temperature (start/full): 83°C/93°C (181.4/199.4°F). Thermostat controlled.
Fan:	Viscostatic or vistronic disengagement according to models. Fan driven water pump.
Belt:	Fan: "Poly V"-ribbed belt: Air conditioning compressor: "Poly V"-ribbed belt

6.5 - TRANSMISSION

- Dyna VT Transmission: - continuous speed variation from 0 to 50 kph in forward and reverse positions (maximum speed limited to 30, 35, 40 or 50 kph depending on country).
- Filtration: - 150 micron suction strainer, located to the right of the centre housing.
  - External main high-pressure 10 micron filter, to the right of the centre housing.
- Bevel gear / differential reduction ratios: - 8450 and 8460 normal assembly (HA 200): 3.58
  - 8470 and 8480 reinforced assembly (HA 260): 3.81

6.6 - FINAL DRIVE UNITS

Drive units:	Epicyclic, located in the rear axle housings.
Reduction ratios:	8450 and 8460 normal assembly (HA 200): 8.25 8470 and 8480 reinforced assembly (HA 260): 9.2

6.7 - REAR POWER TAKE-OFF

Flanged shaft:	540/1000 rpm at 2000 engine rpm (Ø35 mm 6 or 21 splines). 540/540E/1000 rpm at 2000 engine rpm (Ø35 mm (6, 20 or 21 splines).
Control:	By switches located in the cab, with PTO brake. With or without PTO stop button on rear fenders.

6.8 - FOUR WHEEL DRIVE

Clutch mechanism:	Electrohydraulic, electrically actuated by push-button in the cab.
Differential lock:	Multidisc differential lock with electrohydraulic control.
Gear ratios:	8450 and 8460: 750/601 (750/522): 15.75 8470 and 8480: 760/601 (760/521): 16.8

6.9 - HYDRAULICS (ACCORDING TO MODEL OR COUNTRY)

Closed centre hydraulic system with flow and pressure control

- **Primary circuit:** (flow 48 l/mn at 2200 rpm) supplies:
  steering, cooling system.
- **High-pressure system:** (152 l/mn max. flow rate at 2200 rpm, 200 bar max. pressure) supplies:
  trailer brake, tractor braking valve, brake lock (ParkLock), auxiliary hydraulics, linkage.

Filtration:	a 300 micron suction strainer, located inside the centre housing. a 10 micron return filter, located in front of the hydraulic tank.

6.10 - LINKAGE

6.10.1 - Rear

Type: 3-point, Cat. 3 or 3.2, with fixed or telescopic drawbars, hook or ball end type.
Capacity (Kg).

CAPACITY	8450 - 8460 - 8470 - 8480
Rams	2 x Ø100
At ball ends*	10500

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

6.10.2 - Front

Type: 3rd point with or without nitrogen balls.
Rams: number 2 - Lifting force (kg) (lbs) (see tables).

CAPACITY	8450 - 8460	8470 - 8480
At ball ends*	3500	5000 (4,999.95 kg)

6.11 - BRAKES

Type: multidisc, diameter 223 mm at rear and 170 mm at front, hydraulically operated.
Number of discs per side: 6 discs.
Parking brake: activates the main brakes.
Trailer brake: via a hydraulic spool valve.

6.12 - REAR DIFFERENTIAL LOCK

Type: Discs
Control: Hydraulic, with electrical control

6.13 - STEERING

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

Specified turning radius	8450 - 8460	8470 - 8480
Front tyre dimensions	480-70 R30	600-70R28
Outer tyre radius * Without braking (m)	5.75	5.75

* with front axle disengaged

6.14 - WHEELS

FRONT	4-wheel drive pressed steel
REAR	Manual adjustment steel Cast iron with automatic or manual adjustment

6.15 - TYRES

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

Front	Rear	Front	Rear
600/65 R28	650/75 R38	540/65 R30	650/65 R42
600/65 R28	710/70 R38	710/55 R30	900/50 R42
600/70 R28	650/85 R38	380/85 R34	480/80 R46
420/85 R30	520/85 R42	480/70 R34	520/85 R46
480/70 R30	620/70 R42	320/85 R38	320/90 R54

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 - WHEEL TRACKS

See chapter 5.

6.18 - NOISE LEVELS (DBA) AT OPERATOR EARS

Measured according to: directive 77/311 CEE.

Type	CEE 77/311 - Annex II	
	Windows closed	Windows open
8450	71	79
8460	70	79
8470	71	80
8480	71	81

6.19 - CAPACITIES

Type	Model	Capacity
Main fuel tank		350 l
Additional fuel tank		250 l
Cooling system		34 l
Engine sump	8450/8460 8470/8480	20 l 19 l
Auxiliary hydraulics		100 l
Clutch hydraulics		0.6 l
Transmission hydraulics		85 l
Rear final drive units (per side)	8450/8460 8470/8480	12 l 16 l
Fixed front axle	8450/8460	14,8 l
	8470/8480	16 l
Front final drive units (each), fixed front axle	8450/8460	1,7 l
	8470/8480	2,7 l
Suspended front axle	8450/8460	15 l
	8470/8480	15,5 l
Front final drive units (each), suspended front axle	8450/8460	1,7 l
	8470/8480	2,5 l
Windshield washer		4 l
Air conditioning		1550 grammes

6.20 - TIGHTENING TORQUES

6.20.1 - Wheels

	DISC ON HUB	CAST IRON DISC ON STEEL RIM
Front axle	(M22) 640 to 680 Nm	
Rear axle	640 to 680 Nm	250 to 350 Nm

6.20.2 - Miscellaneous

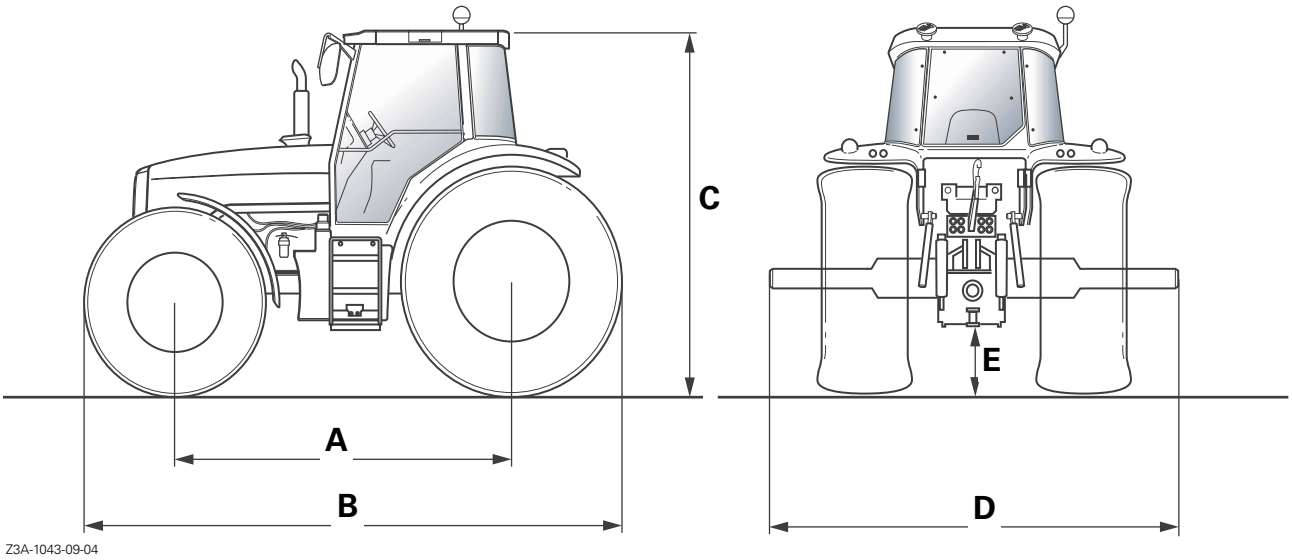
Power take-off shaft: 69 Nm

Engine oil drain plug: 35 Nm

6.21 - DIMENSIONS AND WEIGHTS

SPECIFICATIONS	8450/8460	8470/8480
A. Wheel base	3069	
B. Overall length with lower links without front weights	5068	
C. Height at roof (with rear tyres 650/85R38)	3197	
D. Max. overall width	2550	
E. Max. - min. ground clearance (under swinging drawbar support)	335 to 477	
Weight in running condition (with full tank, without counterweight steel wheels)	8500 to 9200	
C. and E.: Dimensions vary according to tyre assembly.		

	Rear axle		Front axle	
	HA 200 8450/8460	HA 260 8470/8480	750/601 8450/8460	760/601 8470/8480
F. Stud distance:	335		335	425
G. Centring diameter:	280.8		280.6	370.8
H. Stud length:	43		41	47
I. Stud or screw diameter:	M22x1.5			
J. Number of studs or screws:	10		10	12



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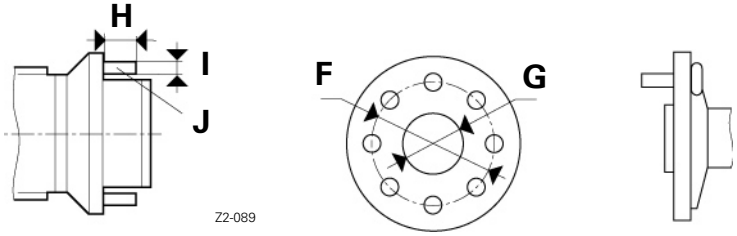

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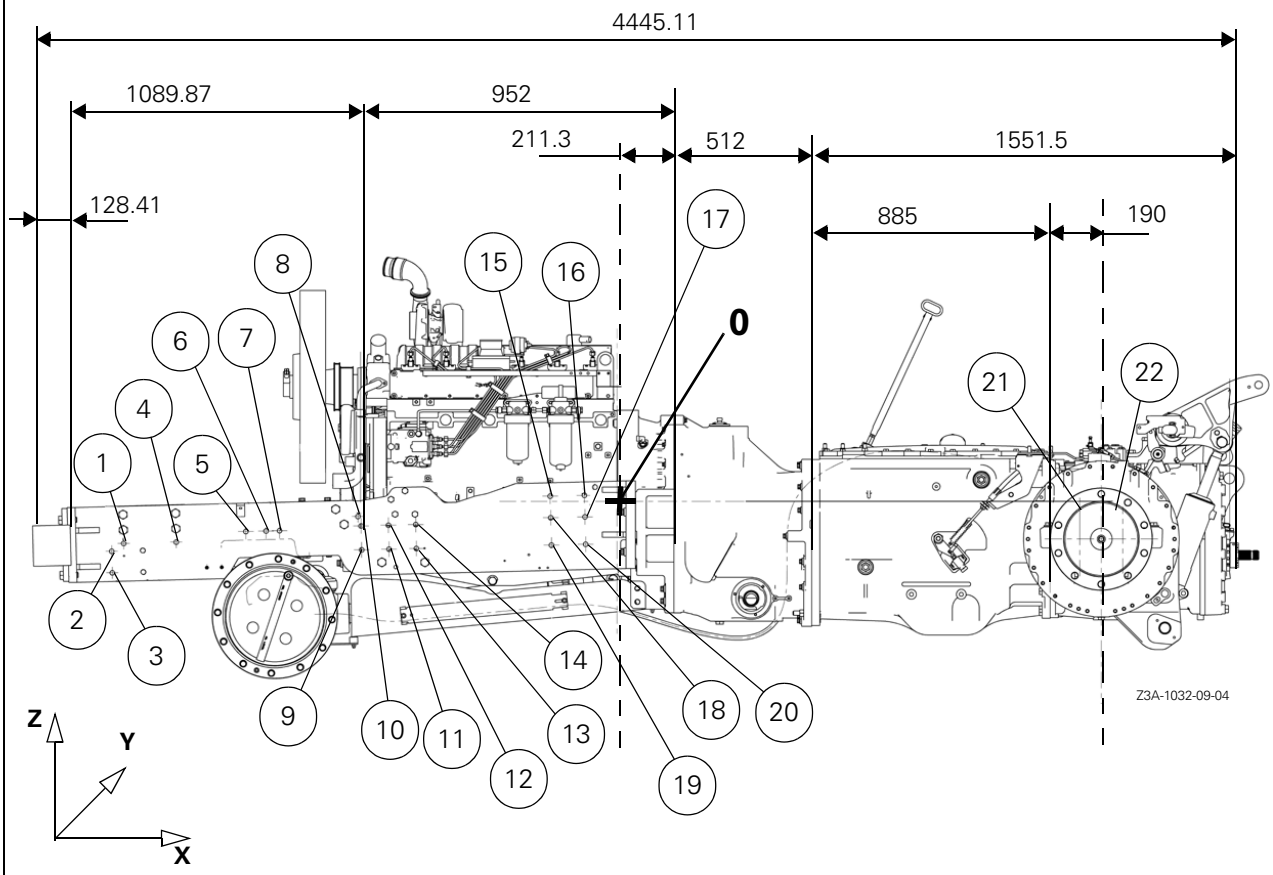
Fig. 2

6.22 - DIMENSIONS AND ATTACHMENT POINTS



REFERENCE 0 = Engine axis		DIMENSIONS mm x	y	z
1	M 20	-1831.54	+/-193.504	-157.14
2	M 20	-1875.9	+/-193.504	-185.17
3	M 20	-1873.89	+/-193.504	-265.14
4	M 20	-1636.6	+/-193.504	-151.24
5	M 20	-1377.98	+/-193.504	-112.08
6	M 20	-1303.05	+/-193.504	-111.19
7	M 20	-1253.07	+/-193.504	-109.93
8	M 20	-961.67	+/-193.504	-57.25
9	M 20	-947.97	+/-193.504	-181.11
10	M 20	-950.21	+/-193.504	92.24
11	M 20	-846.41	+/-193.504	-178.55
12	M 20	-848.64	+/-193.504	-89.98
13	M 20	-118.89	+/-193.504	-176
14	M 20	-747.07	+/-193.504	-87.13
15	M 20	-247.86	+/-308.504	18.15
16	M 20	-120.9	+/-308.504	-21.34
17	M 20	-118.89	+/-308.504	-59.63
18	M 20	-245.85	+/-308.504	-61.83
19	M 20	-243.3	+/-308.504	-163.39
20	M 20	-116.34	+/-308.504	-160.2

REFERENCE 0 = Engine axis		DIMENSIONS mm x	y	z
21	M 20	1718.33	+/-775	-35
22	M 20	1878.33	+/-775	-35

Fig. 3

Chapter 7

ACCESSORIES AND OPTIONS

CONTENTS

7.1 - ACCESSORIES AND OPTIONS

- Rear wheel weights: 1 to 4 external wheel weights
- Front mounted weights: 10/12 or 14x55kg
- Centre weight: 800 kg

The centre weight is not compatible with the front PTO.

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

- Front linkage: 3T5 or 5T (section 7.2)
- Rear linkage (Chapter 4).
- Rear screen wiper and washer.
- Passenger seat.
- Front fenders.
- PTO - different types (Chapter 4).
- Fittings for radio (loudspeakers, aerial and wiring).
- Radio.
- Safety belt.
- Batteries main switch.
- "Datatronic 3" onboard computer.
- FRONT DUAL CONTROL.
- REAR DUAL CONTROL.
- Trailed Implement Control (TIC).

7.2 - FRONT LINKAGE

7.2.1 - General

The front linkage should be used in compliance with safety instructions. It should be used exclusively for agricultural purposes, i.e. for hitching mounted and pushed agricultural machinery.

The front linkage can carry or push an implement.

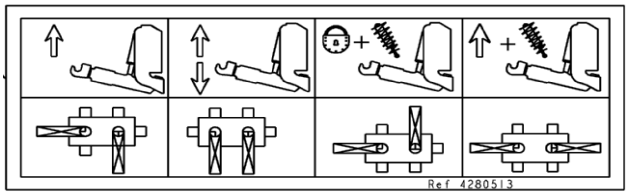
The design of the linkage and tractor allows the use of heavy implements, but it is advisable to avoid submitting the linkage to excessive loads.

Z3A-1028-09-04

Fig. 1

7.2.2 - Use

IMPORTANT: Position the circuit valves located at the rear of the tractor as shown on the decal.



The front linkage is controlled by joystick 1, Fig. 2 or the spool valve controls located in the cab (depending on options fitted).

For details on adjusting the linkage flow rate, see chapter 4, paragraph 4.5.10: Using the DOT MATRIX screen.

If the tractor is fitted with Datatronic 3, refer to its specific book.

Controlling the depth:

For toothed implements, the depth is controlled by of the implement depth wheels; in this case set the spool valve to floating position (no load transfer takes place).

Controlling the work depth of the implement after setting the position:

An average depth level should be set using the height / depth control (load transfer is recommended to improve tractor tyre grip).

It is then possible to use the draft control mode of the FRONT DUAL CONTROL to adjust the work depth depending on the traction load applied to the rear linkage, especially when using a front and rear plough.

For crushing implements, the tractor load must be transferred to the implement. This is obtained by pushing the lever or Joystick forwards, as long as the linkage is double acting.

Mounted implements (ballasting, hoppers, etc.) are raised to avoid decreasing ground clearance.

- External controls

The external lifting / lowering controls (3 Fig. 2) can only operate with the engine running.

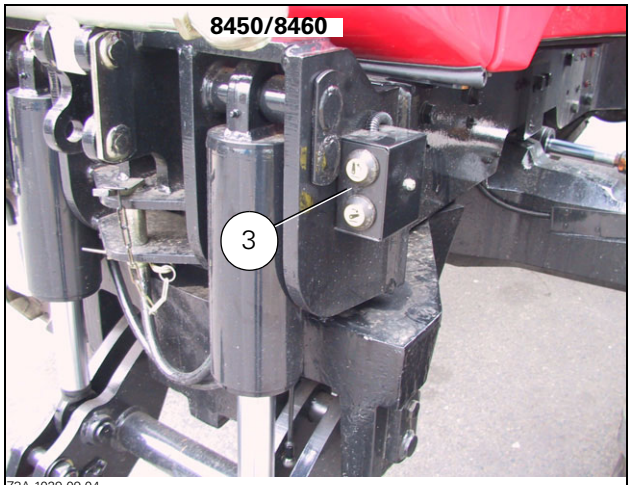


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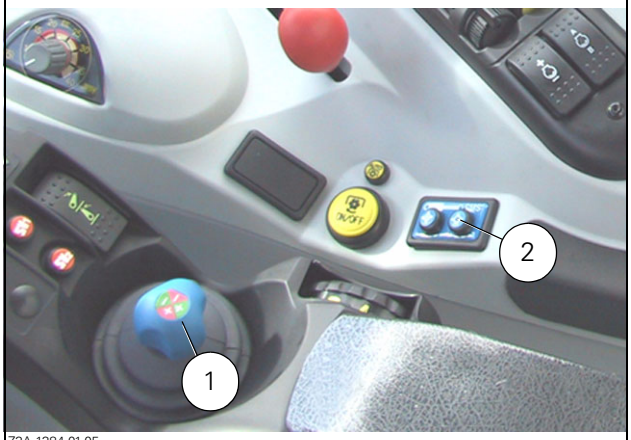
Fig. 2

Z3A-1030-09-04

Fig. 3

DANGER: Operate the external controls with care, keeping a safe distance from the lift arms.

Apply the following procedure before use:
Before using the external controls, activate the SMS controls (indicator light 2 Fig. 4 off) and move the rear linkage switch to Neutral or Lower position.
After each use of the external controls the SMS controls are locked (indicator light fixed on).
To use the cab controls again, the Joystick must be activated (indicator light off).
NOTE: The external controls do not operate if the Joystick is not activated after starting the tractor.



Z3A-1384-01-05
Fig. 4

The oil ports (5 Fig. 5) are controlled by the spool valve control located in the cab (6 Fig. 6). These ports have the same characteristics as those used at the rear.

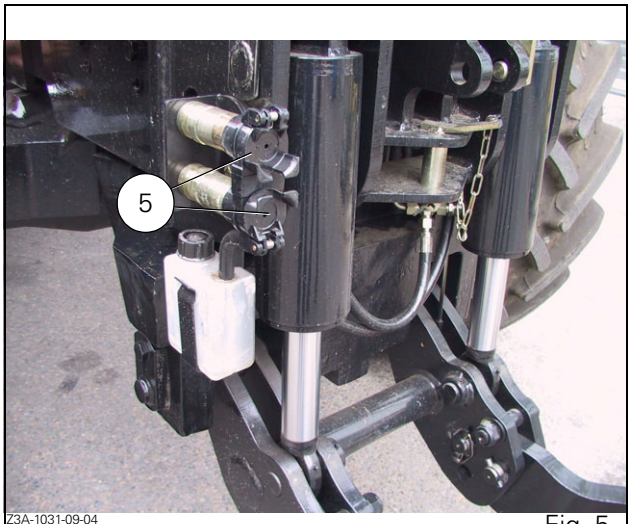


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Fig. 5

Z3A-715-07-04
Fig. 6

7.2.3 - Loads allowed on the front axle beam

The load allowed on the tractor is limited by the following two factors:
- axle beam
- tyres.

Using a long heavy implement can cause an overload on the front axle.
The loads allowed on the front axle beam should be complied with. To measure the maximum load allowed by the front axle, place the front axle on a scale, lift the front implement and lower the rear implement.

Nominal load allowed on the front axle:

Model	Load
8450/8460	3500 Kg
8470/8480	5000 Kg

IMPORTANT: A front implement weighing one ton overloads the axle by more than one ton due to chassis frame overhang (allow on average 1.5 times the weight). The wheelbase length is usually double the implement overhang.

7.2.3.1 - Load allowed by the tyres

The load allowed by the tyres depends on their inflation pressure, maximum travel speed and the torque to be transmitted. In general, the greater the load the tyre must support, the greater its volume should be.

IMPORTANT: This is the most common factor limiting front axle capacity. Tyre manufacturers offer charts detailing loads allowed for a tyre type depending on operating conditions. Failure to respect these limits can lead to tyre damage, an unstable machine, and poorer performance.

Examples for standard agricultural tyres:

Dimension Tyre	Load on axle beam	Speed	Pressure
480/70R34	5T	30 kph	1.4 bar
600/65R28	3 T	30 kph	0.4 bar

7.2.4 - Hitching an implement

Three positions can be used depending on requirements:
- fixed position
- floating position
- transport position for 8450 and 8460 tractors.

(Fig. 7)

1. Fixed position:
   Position the lift arms horizontally and fit the pin in position 7.
2. Floating position:
   Position the lift arms horizontally and fit the pin in position 8.
   This position can be used to compensate for sloping ground, thus allowing the implement to follow the natural lie of the land.
   Example: Implement with one depth wheel to either side of a roller.
3. Transport position (for 8450 and 8460 tractors):
   No hitched implement: Position the lift arms vertically to reduce bulkiness and fit the pin in position 9.

• The linkage is fitted with automatic lower jaws, allowing an implement to be hitched safely from the tractor cab.

Apply the following procedure when hitching an implement.

1. Move the lift arms to working position (fixed or floating), and fit the hitch ball joints to the implement using suitable stop pins.
2. Drive the tractor forwards towards the implement and lower the lower arms.
3. Drive the tractor forwards to position the jaws under the balls, and raise the lower arms carefully until the jaws lock.
4. Activate the parking brake (ParkLock) and switch off the engine before getting out of the tractor.
5. Install the third-point linkage, adjusting its length to ensure correct implement height and couple the hydraulic unions.
6. Store implements on flat ground to keep them stable. This makes hitching and unhitching easier.

Unhitching: carry out the operations in reverse order.

The external controls can also be used to adjust the linkage.

• Storing the third-point linkage

Store the top link on its support when not in use.

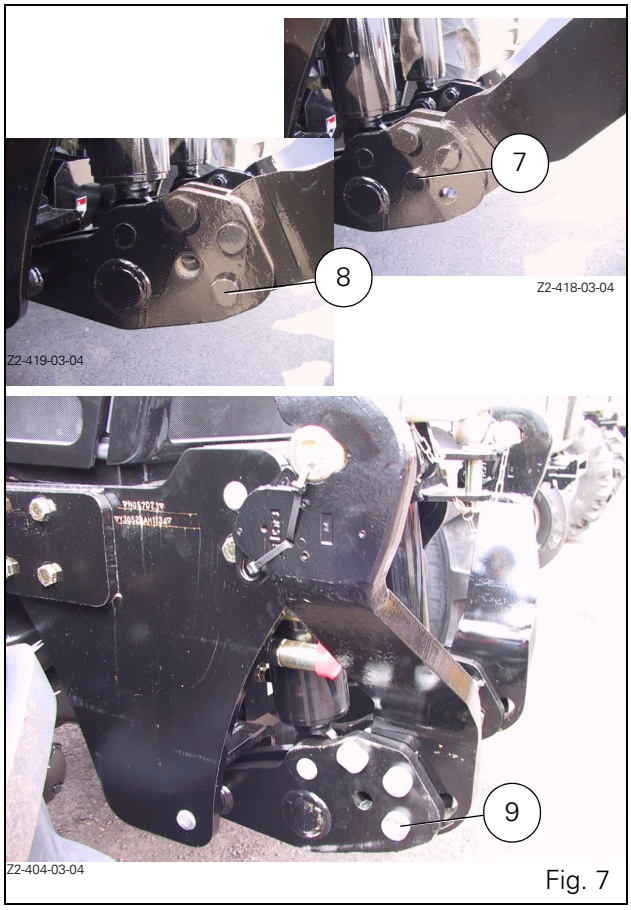

Fig. 7

7.2.5 - Driving on the road

• Controlling the active transport control system

This makes driving with lift implements at high speeds more comfortable. It cannot be used for field work. Implement height cannot be adjusted when the transport control system is operating.

To switch on the transport control system, lift the implement, leaving 40 to 50 mm of cylinder travel to allow the transport control system to operate (release).

WARNING: The valves must be positioned at "transport control system" (see decal) to deactivate the spool valve action and avoid accidental lowering of the implement.

• Servicing the linkage

In addition to taking good care of equipment during use, it should be maintained at regular intervals. This helps ensure manufacture quality performance and reliability for a number of years.

Regularly check the tightness of attachment screws, especially the first few times the linkage is used.

Change hydraulic feed hoses in poor condition as a preventive measure, even if there is no leak (danger of bursts during use).

Breakdowns and accidents always cost more.

• Lubrication

See section 5.6

Appendix

CONVERSION TABLES

LENGTH		
multiply by		
mm	x 0.0394	in
in	x 25.400	mm
m	x 3.2808	ft
ft	x 0.3048	m
km	x 0.6214	mile
mile	x 1.6093	km

AREA		
multiply by		
mm^2	x 0.0016	in^2
in^2	x 645.16	mm^2
m^2	x 10.764	ft^2
ft^2	x 0.0929	m^2
ha	x 2.4711	acre
acre	x 0.4047	ha

VOLUME		
multiply by		
cm^3	x 0.06102	in^3
in^3	x 16.387	cm^3
m^3	x 35.315	ft^3
ft^3	x 0.0283	m^3

CAPACITY		
multiply by		
ml	x 0.0351	fl oz
fl oz	x 28.413	ml
l	x 0.2200	gal
gal	x 4.5640	l
l	x 0.2640	US gal
US gal	x 3.7850	l
gal	x 1.2010	US gal
US gal	x 0.8330	gal

POWER		
multiply by		
ps	x 0.9863	hp
hp	x 1.0139	ps
kW	x 1.3410	hp
hp	x 0.7457	kW

TORQUE		
multiply by		
Nm	x 0.738	lbf ft
lbf ft	x 1.356	Nm

PRESSURE		
multiply by		
bar	x 14.504	lbf/in^2
lbf/in^2	x 0.0690	bar

SPEED		
multiply by		
km/h	x 0.6214	mph
mph	x 1.6093	km/h

WEIGHT		
multiply by		
g	x 0.0353	oz
oz	x 28.350	g
kg	x 2.2046	lb
lb	x 0.4536	kg
kg	x 0.00098	UK ton
UK ton	x 1016.1	kg
t	x 0.9842	UK ton
UK ton	x 1.016	t
t	x 1.1023	US ton
US ton	x 0.9072	t

TEMPERATURE		
°C	°C x 1.8 + 32	°F
°F	(°F - 32)/1.8	°C

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