

ORIGINAL INSTRUCTIONS

**Farmall® 90C**  
**Farmall® 100C**  
**Farmall® 110C**  
**Farmall® 120C**  
Tractor

*PIN HLRF\*\*\*C\*\*A85\*\*\*\* and above*

**OPERATOR'S MANUAL**

**Part number 92661563**


2<sup>nd</sup> edition English

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*Replaces part number 91878051*

**CASE *III***

This Notice is provided in accordance with a prior Legal settlement:

 **WARNING:** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to [www.P65warnings.ca.gov/diesel](http://www.P65warnings.ca.gov/diesel).



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# 1 - GENERAL INFORMATION

## Note to the Owner

This manual contains information concerning the adjustment and maintenance of your new equipment. You have purchased a dependable machine, but only by proper care and operation can you expect to receive the performance and long service built into this equipment. Ensure that all operators read this manual with care and always leave it at their disposal for immediate reference.

The CASE IH dealer will provide you with the general operating instructions for your new machine. Your dealer's service technicians were trained directly by the manufacturer. The service technicians will be able to provide any further clarification that you need regarding the operation of your machine.

Case IH Max Service is also available. Call 1-877-4CASEIH (1-877-422-7344) or email: maxservice.na@cnh.com.

Your CASE IH dealer carries a complete line of genuine CASE IH service parts. These parts are manufactured and carefully inspected to insure high quality and accurate fitting of any necessary replacement parts. Contact your CASE IH dealer for the correct identification of replacement parts of the machine. Be prepared to give your dealer the model and product identification number of your new equipment when ordering parts. Locate these numbers now and record them below. Refer to the 'General Information' section of this manual for the location of the model code and product identification numbers of your machine.

PLEASE RECORD THE FOLLOWING INFORMATION
Model :
Product Identification Number (PIN):



Warning symbol. It is used with and without signal words to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

### **⚠ WARNING**

**Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.**

**Replace all shields before operating the machine.**

**Failure to comply could result in death or serious injury.**

W0012A

The machine has been designed and built according to the highest standards of quality and it complies with all current safety regulations. However, the risk of accidents can never be completely excluded. That is why it is essential to observe elementary safety rules and precautions.

Read this manual carefully, paying particular attention to the instructions concerning safety, operation and maintenance so as to avoid the risk of injury while operating or servicing the machine.

Do not use this machine for any application or purpose other than those described in this manual. If the machine is to be used for work involving the use of special attachments, accessories or equipment, consult your CASE IH Dealer in order to make sure that any adaptations or modifications made are in keeping with the machine's technical specifications and with prevailing safety requirements.

Any modification or adaptation which is not approved by the manufacturer may invalidate the machine's initial conformity with safety requirements.

The machine is guaranteed in accordance with current legislation in your country and in line with contractual agreements reached with the dealer at the time of sale. However, the warranty is no longer valid if the rules and instructions for the use and maintenance of the tractor, described in this Operator's Manual, are not observed.

The machine must undergo regular inspections, the frequency of which varies according to the type of use. Consult your authorized CASE IH dealer.

Always keep this manual in the operator's compartment (in the seat back, behind the operator's seat). Make sure it is always complete and in good condition. To receive extra copies of the manual or copies in languages other than that of your country of residence, please contact your CASE IH dealer.

**NOTICE:** *The information in this manual is provided on the basis of information that was available at the time the manual was written. Settings, procedures, part numbers, software and other items may change, which may affect the maintenance of the machine. Ensure that you have complete and current information from your dealer before you start any machine operation. All data given in this book is subject to production variations.*

### **Engine tampering statement:**

**ATTENTION:** *The fuel system and engine on your machine are designed and built to government emissions standards. Tampering by dealers, customers, operators and users is strictly prohibited by law. Failure to comply could result in government fines, rework charges, invalid warranty, legal action, and possible confiscation of the machine until it is restored to original condition. Engine service and/or repairs must be done by a certified technician only!*

### **Speed anti-tampering statement:**

**NOTE:** *Your tractor is fitted with a logic that works against any tampering, this stops the tractor at speeds that exceed the limit your transmission can handle. The logic is linked to the maximum wheel spoke used by the tire group for your tractor. For mechanical transmission, the logic on your machine is tested and checked every time the tractor's instrument cluster is replaced. For electro-hydraulic transmission, the logic on your machine is tested and checked every time the tractor's central control unit is replaced. Normally you will never come into contact with this logic, unless you wish to change the tire group on your tractor. Contact your CASE IH dealer. Your dealer has the instrument software to change the configuration of your tractor and register your tractor with the new group of tires.*

### **Improvements**

CNH America LLC applies a policy of continuous product development and improvement. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to equipment sold previously.

## Intended use

**NOTE:** *The machine is designed and constructed in accordance with the directives and standards on the prevention of health and safety risks; although it has been designed to minimize possible hazards, in order to avoid any possible exposure to hazards or risks, it is essential that you carefully read, understand, and observe the indications and warnings on all decals, nameplates, and labels, as well as the information and guidance provided in this manual. If you need further assistance please do not hesitate to contact your dealer.*

Your tractor is designed and made to pull, to carry and to power a variety of mounted or towed equipment, although within some physical limits. The working speed and performance may depend on a number of various parameters, such as weather and terrain conditions. Though the tractor is designed to perform in combination with a variety of equipment, there may be a number of combinations of above parameters, for which there is severe degradation of performance of the tractor and/or its mounted or trailed equipment. If you notice degradation of performance, contact your dealer for assistance, he may have useful information for improvements, or a kit may be available to enhance the performance.

Please carefully read and consider following precautions:

- Do not use the tractor for purposes other than those intended by the manufacturer and outlined in this manual.
- Do not use the tractor beyond its limits of terrain gradient and stability. Using the tractor beyond these limits may result in roll-over or a tip-over. Observe the recommendations in this manual.
- Do not use the tractor on higher speeds than allowed by the load and the environment. A wet surface or other low adherence conditions may increase the braking distance or result in vehicle instability. Always adapt your travelling speed according to the load of the vehicle and the characteristics of the road.
- Do not use the tractor near or on soft verges of canals and brooks or banks and verges that are undermined by rodents. The tractor may sink sideways and roll over.
- Do not use the tractor on unstable bridge heads and poor bridge floors. These constructions may collapse and cause roll-over of the tractor. Always check the conditions and load capacity of bridges, crossings and ramps before driving over them.
- Do not use equipment mounted on the tractor which is not correctly matching and firmly fixed. The use of implements or accessories that have not been approved or are not correctly connected may increase the risk of roll-over of the tractor if they come loose. Ensure that the dimensions of the three-point hitch of the tractor and the implement correspond to the categories defined in standard ASABE AD 3600 2016. Ensure that the dimensions and speed of the PTO shaft on the tractors are matching those of the equipment.
- Do not use the tractor in combination with equipment, without having consulted the specific Operator's Manual provided with the equipment. The tractor is a universal tool to carry, tow and drive a variety of equipment. This manual alone cannot provide you with all the information required for the safe operation of the several configurations.
- Do not use the machine for pulling work, in cases where you do not know whether the load will yield, for instance when pulling stumps; The tractor may flip over backwards when the stump is not yielding.
- Be cautious that the centre of gravity of the tractor may increase when loads on the front-end loader or the three point linkage are raised. In these conditions, the tractor may roll - over earlier than expected.
- Do not step down from the tractor without shutting down the PTO, shifting the transmission to park or neutral and applying the park brake, unless continued PTO operation is required for some equipment, such as pumps or wood chippers. The latter equipment may have an emergency stop device on the equipment itself, as human intervention is needed during operation. But other equipment, engaged and driven by the tractor will have no means to stop the power transmission, other than the PTO clutch of the tractor.
- You must take the necessary precautions (e.g. assistance) to always be aware of the possible presence of bystanders, especially when manoeuvring in confined areas, such as the farm yard and sheds. Keep people away from the tractor during work. Ask bystanders to leave the field. There is not only the risk to be overrun by the tractor, but objects ejected by some equipment mounted on the tractor, such as a rotary mower, may cause harm. Stones may be thrown further than the mowed crop. Pay the necessary attention while operating next to public roads or footpaths. Thrown objects can get projected outside the field and hit unprotected people like bikers or pedestrians. Wait to cut the edge of the field till it is clear of bystanders.
- Do not allow others to get on the tractor; do not allow anyone to stand on the access ladder or step with the tractor in motion. Your view to the left will be obstructed and a rider risks falling from the tractor during unexpected or abrupt movements.
- Always keep a safe distance from the working area of implements, and in particular do not stand between the machine and the implement or towed vehicle while operating the external controls of the lift; make sure that nobody is within the machine operating range.
- Certain functions of your tractor are controlled by software and some of them are safety-related. Do not attempt to modify or download software not certified and distributed by the manufacturer. Electronic settings and logics may be destroyed and seriously affect the function of the tractor. This may result in unpredictable and unsafe behaviour of the tractor. Always refer to your dealer; he has the appropriate tools and data sets and

owns the officially released software versions and updates for your tractor.

- Your tractor may be equipped with a number of sensors to control safety functions. Tripping these sensors will result in a safe operation mode. Do not attempt to bypass any function on the tractor. You will be exposed to serious hazards, and moreover, the behaviour of the tractor may become unpredictable.
- The tractor has only one operator station and this is a one man operated vehicle. There is no need for other

people on or around the tractor during normal operation. Never allow riders on tractor; Do not allow people standing on the access way to the cab when the tractor is moving. Your view to the left will be obstructed and a rider risks to fall from the tractor during unforeseen or abrupt movements.

**NOTE:** *The list of warnings given is by way of example only.*

## Electro-Magnetic Compatibility (EMC)

Interference may arise as a result of add-on equipment that may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

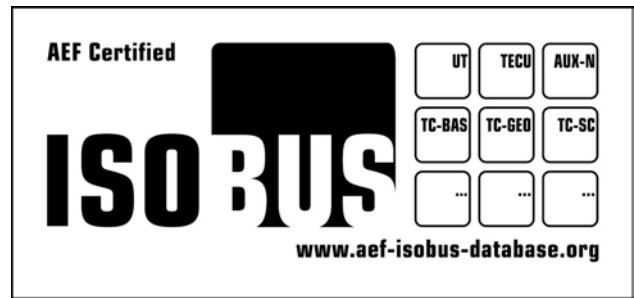
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components
- The add-on equipment must not interfere with the functioning of the on board electronics

Failure to comply with these rules will render the CASE IH warranty null and void.

## ISOBUS certification

The Agricultural Industry Electronics Foundation (AEF) certified label indicates that various system components are in compliance with the ISOBUS 11783 standard and the AEF guidelines. The most up to date information on AEF ISOBUS certified products can be found in the AEF ISOBUS Database, a resource open to farmers. The software in your tractor ISOBUS control module – the Tractor Electronic Control Unit (TECU) – has been independently tested and certified.

An ISOBUS system is the combination of an ISOBUS tractor with one or more ISOBUS implements that use the service of the tractor. Class 1 and 2 ISOBUS levels are available for your tractor. For further information, see **6-18**



RAIL14TR02690AA 1

## Manual scope and required training level

### Introduction to this manual

This manual gives information about the use of your CASE IH machine as intended and under the conditions foreseen by CASE IH during normal operation, routine service, and maintenance.

This manual does not contain all the information that relates to periodic service, conversions, and repairs that only trained service personnel can perform. Some of these activities may require appropriate facilities, technical skills, and/or tools that CASE IH does not supply with the machine.

The manual contains the chapters as shown on the Contents pages. See the Index at the end of this manual to locate specific items about your CASE IH machine.

### Normal operation

Normal operation consists of the use of this machine for the purpose CASE IH intends by an operator that:

- Is familiar with the machine and any mounted equipment or towed equipment
- Complies with the information on operation and safe practices as specified by CASE IH in this manual and by the signs on the machine

Normal operation includes:

- Preparation and storage of the machine
- Addition and removal of ballast
- Connection and disconnection of mounted equipment and/or towed equipment
- Adjustment and configuration of the machine and equipment for the specific conditions of the job site, field, and/or crop
- Movement of components into and out of working positions

### Routine service and maintenance

Routine service and maintenance consists of the daily activities necessary to maintain the proper machine function. The operator must:

- Be familiar with the machine characteristics
- Comply with the information on routine service and safe practices as specified by CASE IH in this manual and by the signs on the machine

Routine service can include:

- Fueling
- Cleaning
- Washing
- Topping up fluid levels

- Greasing
- Replacing consumable items such as light bulbs

### Periodic service, conversions, and repairs

Periodic service consists of activities that are necessary to maintain the expected life of the CASE IH machine. These activities have defined intervals.

Trained service personnel familiar with the machine characteristics must perform these activities at the defined intervals. Trained service personnel must comply with the information on periodic service and safe practices as partly specified by CASE IH in this manual and/or other company literature.

Periodic service includes:

- Oil change service for the engine, hydraulic circuits, or transmission
- Periodic exchange of other substances or components as required

Conversion activities rebuild the CASE IH machine in a configuration that is appropriate for a specific job site, crop, and/or soil conditions (e.g., installation of dual wheels). Conversion activities must be done:

- By trained service personnel familiar with the machine characteristics
- By trained service personnel that comply with the information on conversion as partly specified by CASE IH in this manual, assembly instructions, and/or other company literature

Repair activities restore proper function to a CASE IH machine after a failure or degradation of performance. Dismantling activities occur during the scrapping and/or dismantling of the machine.

Trained service personnel familiar with the machine characteristics must perform these activities. Trained service personnel must comply with the information for repair as specified by CASE IH in the service manual.

### Before you operate

Read this manual before you start the engine or operate this CASE IH machine. Contact your CASE IH dealer if:

- You do not understand any information in this manual
- You need more information
- You need assistance

All persons training to operate, or who will operate this CASE IH machine should be old enough to possess a valid local vehicle operating permit (or meet other applicable local age requirements). These persons must demonstrate the ability to operate and service the CASE IH machine in a correct and safe manner.

**Additional documents**

When required, the machine is delivered with an assembly instruction. The assembly instruction shows the pack-

aging depending on the kind of shipment and the related procedure to assemble the received components.

## Metric and imperial units abbreviations

TYPICAL APPLICATIONS	RECOMMENDED SI (METRIC) UNITS		IMPERIAL UNIT	
	NAME	SYMBOL	NAME	SYMBOL
<b>AREA</b>				
	hectare	ha	acre	ha
	square meter	m <sup>2</sup>	square foot	ft <sup>2</sup>
			square inch	in <sup>2</sup>
	square millimetre	mm <sup>2</sup>	square inch	in <sup>2</sup>
<b>ELECTRICITY</b>				
	ampere	A	ampere	A
	volt	V	volt	V
	microfarad	μF	microfarad	μF
	ohm	Ω	ohm	Ω
<b>FORCE</b>				
	kilonewton	kN	pound	lb
	newton	N	pound	lb
<b>FORCE PER LENGTH</b>				
	Newton metres	Nm	pound inch	lb in
<b>FREQUENCY</b>				
	megahertz	MHz	megahertz	MHz
	kilohertz	kHz	kilohertz	kHz
	hertz	Hz	hertz	Hz
<b>FREQUENCY - ROTATIONAL</b>				
	revolution per minute	r/min rpm	revolution per minute	r/min rpm
<b>LENGTH</b>				
	kilometre	km	mile	mi
	meter	m	foot	ft
	centimetre	cm	inch	in
	millimetre	mm	inch	in
	micrometer	μm		
<b>MASS</b>				
	kilogram	kg	pound	lb
	gram	g	ounce	oz
	milligram	mg		
<b>POWER</b>				
	kilowatt	kW	horsepower	Hp
	watt	W	Btu/hour	Btu/hr
			Btu/minute	Btu/min
<b>PRESSURE or STRESS (FORCE PER AREA)</b>				
	kilopascal	kPa	pound per square inch	psi
			inch of mercury	inHg
	pascal	Pa	inch of water	inH <sub>2</sub> O
	megapascal	MPa	pound per square inch	psi

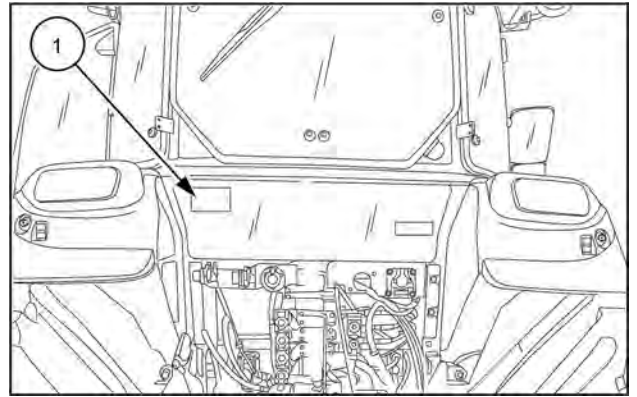
1 - GENERAL INFORMATION

TYPICAL APPLICATIONS	RECOMMENDED SI (METRIC) UNITS		IMPERIAL UNIT	
	NAME	SYMBOL	NAME	SYMBOL
TEMPERATURE (other than THERMODYNAMIC)				
	degrees Celsius	°C	degrees Fahrenheit	°F
TIME				
	hour	h	hour	h
	minute	min	minute	min
	second	s	second	s
TORQUE (includes BENDING MOMENT, MOMENT OF FORCE, and MOMENT OF A COUPLE)				
	newton meter	N m	feet-pounds	lb ft
			inch-pound	lb in
VELOCITY				
	kilometre per hour	km/h	mile per hour	mph
	meter per second	m/s	foot per second	ft/s
	millimetre per second	mm/s	inch per second	in/s
	meter per minute	m/min	foot per minute	ft/min
VOLUME (includes CAPACITY)				
	cubic meter	m <sup>3</sup>	cubic yard	yd <sup>3</sup> (cu yd)
	litre	L	cubic inch	in <sup>3</sup>
	litre	L	US gallon	US gal
			U.K. gallon	UK gal
			US quart	US qt
			U.K. quart	UK qt
	millilitre	ml	fluid ounce	fl oz
VOLUME PER TIME (includes DISCHARGE and FLOW RATE)				
	cubic meter per minute	m <sup>3</sup> /min	cubic foot per minute	ft <sup>3</sup> /min
	litre per minute	L/min	US gallon per minute	US gal/min
	millilitre per minute	ml/min	UK gallon per minute	UK gal/min
SOUND POWER LEVEL and SOUND PRESSURE LEVEL				
	decibel	dB	decibel	dB

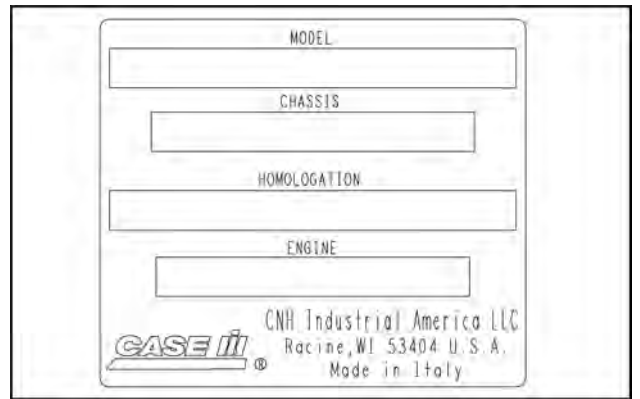
# Approval data plate

Tractor type approval plate (1)

MODEL
CHASSIS NUMBER
HOMOLOGATION
ENGINE FAMILY



MOIL24TR00685AA 1

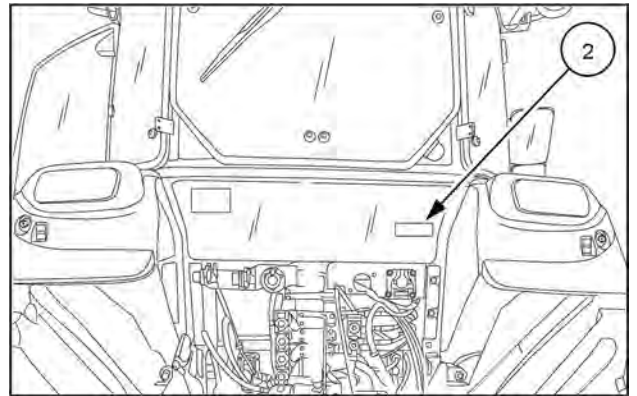


MOIL23TR00093AA 2

Cab type approval plate

SAFETY STRUCTURE	TYPE MODEL
STRUCTURE TESTED	
O.E.C.D. REPORT	O.E.C.D. REPORT
SAE-	OSHA-
EN 15695-1 (CAT2*)	
VEHICLE WEIGHT FOR SAE TEST / KG	
STRUCTURE SERIAL / N°	

* cab category:	
Category 2 cab	CAT2



MOIL24TR00685AA 3

To identify the cab category see 9-11

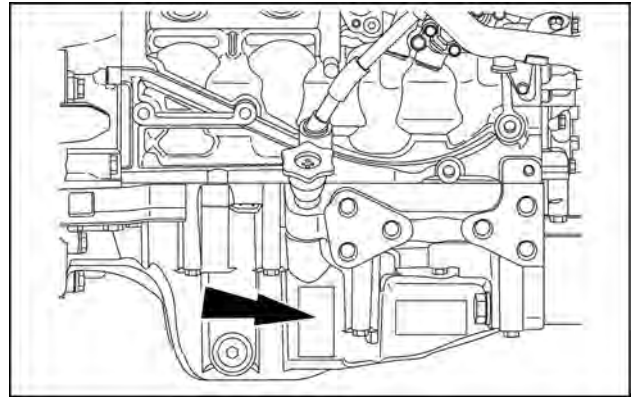
SAFETY STRUCTURE	TYPE /MODEL
STRUCTURE TESTED	
O.E.C.D. REPORT-	O.E.C.D. REPORT-
SAE-	OSHA-
EN 15695-1	
VEHICLE WEIGHT FOR SAE TEST      Kg      LB	
STRUCTURE SERIAL	N°

DCAPLT5NE008S1A 4

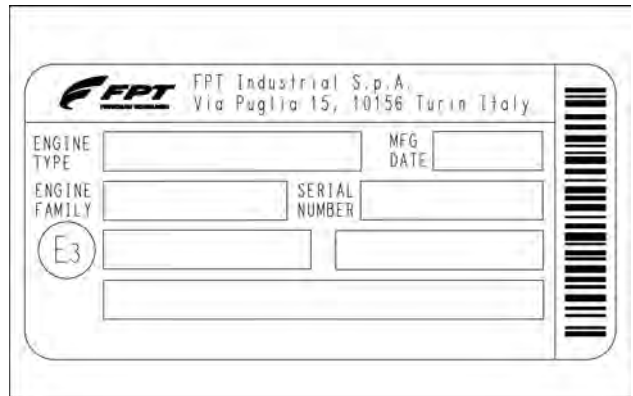
# Identification plates

Engine identification data plate

FTP LOGO	ADDRESS	B-a-r-c-o-d-e-m-o-t-o-r
ENGINE TYPE	MANUFACTURE DATE (month-year)	
ENGINE FAMILY	SERIAL NUMBER	
Identification code	Dimensions	
Specifications		
Country of manufacture of the engine		



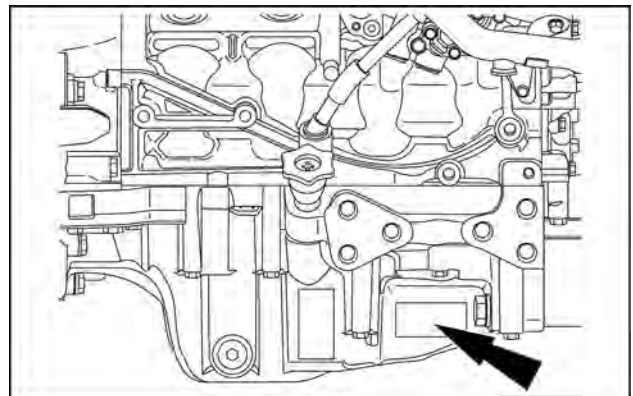
MOIL17TR01077AA 1



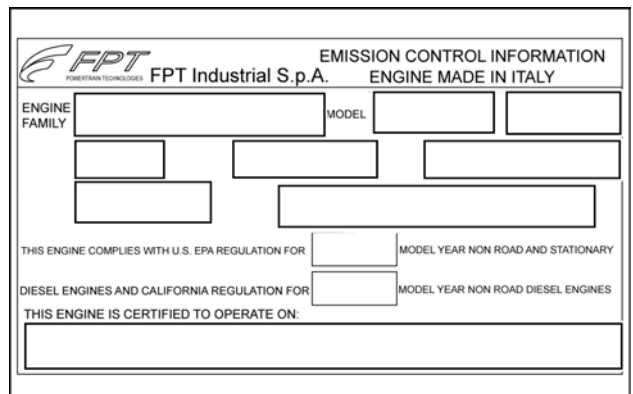
MOIL21TR00064AA 2

Engine data plate

ENGINE MADE IN ITALY		EMISSION CONTROL INFORMATION	
ENGINE FAMILY	ENGINE MODEL	MANUFACTURE DATE (month-year)	
DISPLACEMENT.	CATALOGUE POWER	ENGINE POWER CATEGORY	
SERIAL NUMBER	ECS FAMILY EMISSION LIMIT		
THE ENGINE COMPLIES WITH US EPA REGULATIONS FOR DIESEL ENGINES IN NON-ROAD AND STATIONARY VEHICLES YEAR MODEL			
CALIFORNIAN REGULATIONS FOR NON-ROAD DIESEL ENGINES YEAR MODEL			
THIS ENGINE IS CERTIFIED TO OPERATE ON: ULTRA LOW SULPHUR FUEL ONLY, DELEGATED ASSEMBLY - APPROVED EMISSION CONTROL SYSTEM (ECS).			

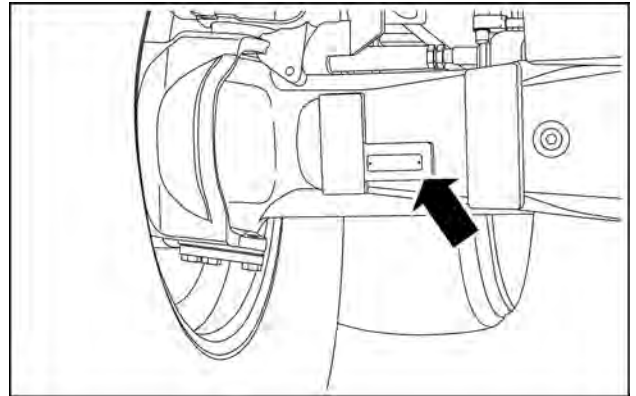


MOIL17TR01077AA 3

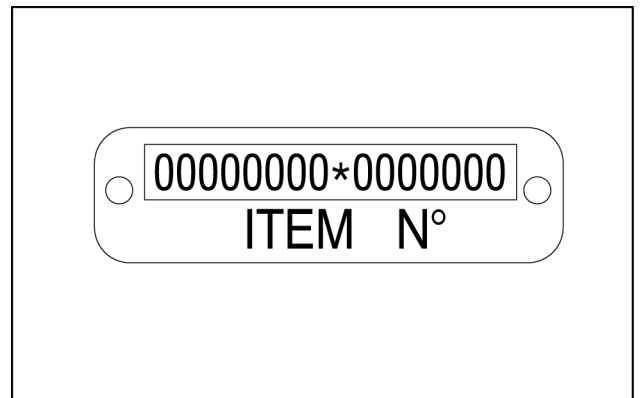


MOIL13TR01403AA 4

Front axle serial number



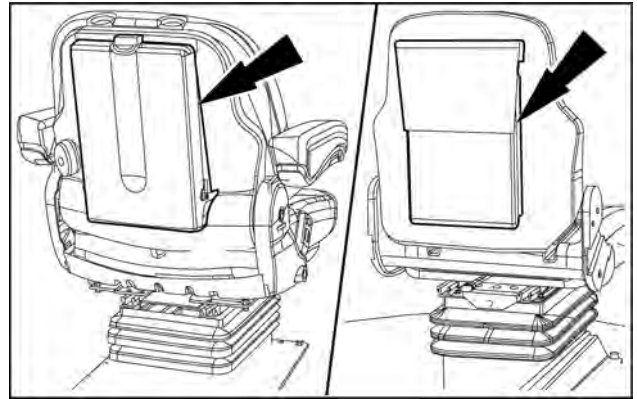
MOIL15TR01670AB 5



MOIL16TR03484AA 6

## Operator's manual storage

Keep the tractor operator's manual, in the compartment behind the operator's seat. The operator's manual must always be at every operator's disposal.

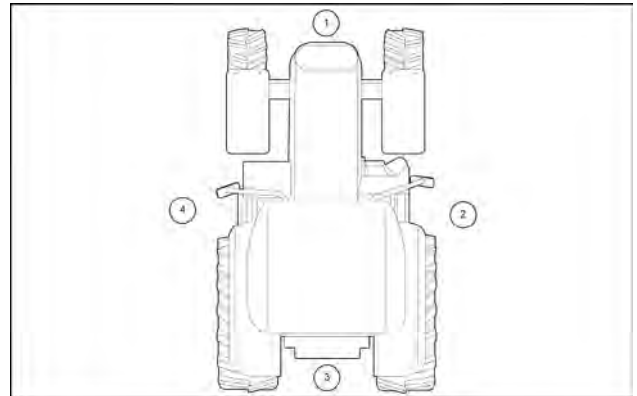


DCUTLNEIT001S1A 1

## Machine orientation

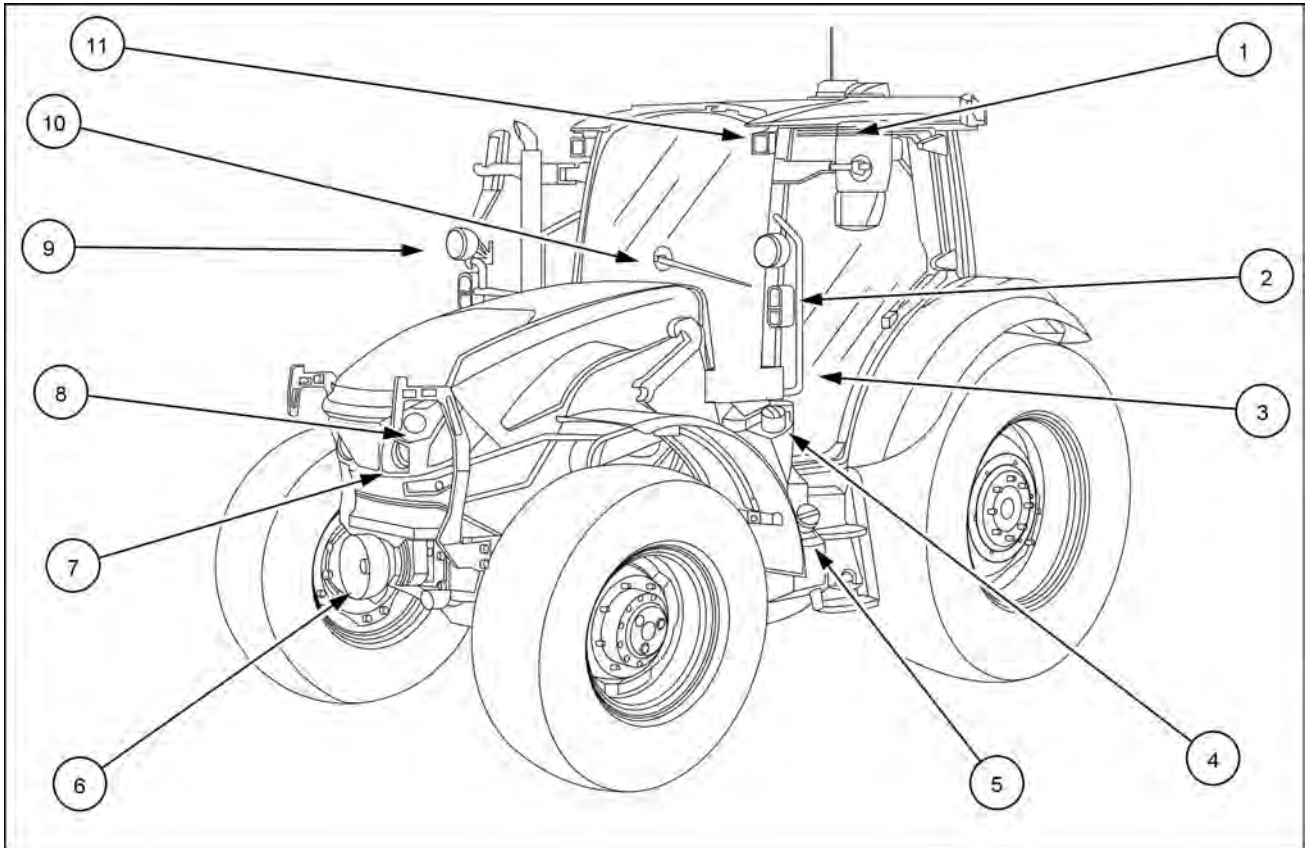
The following terms are used in this manual in order to indicate direction, as seen from the operator's seat:

- (1) Front
- (2) Right
- (3) Rear
- (4) left

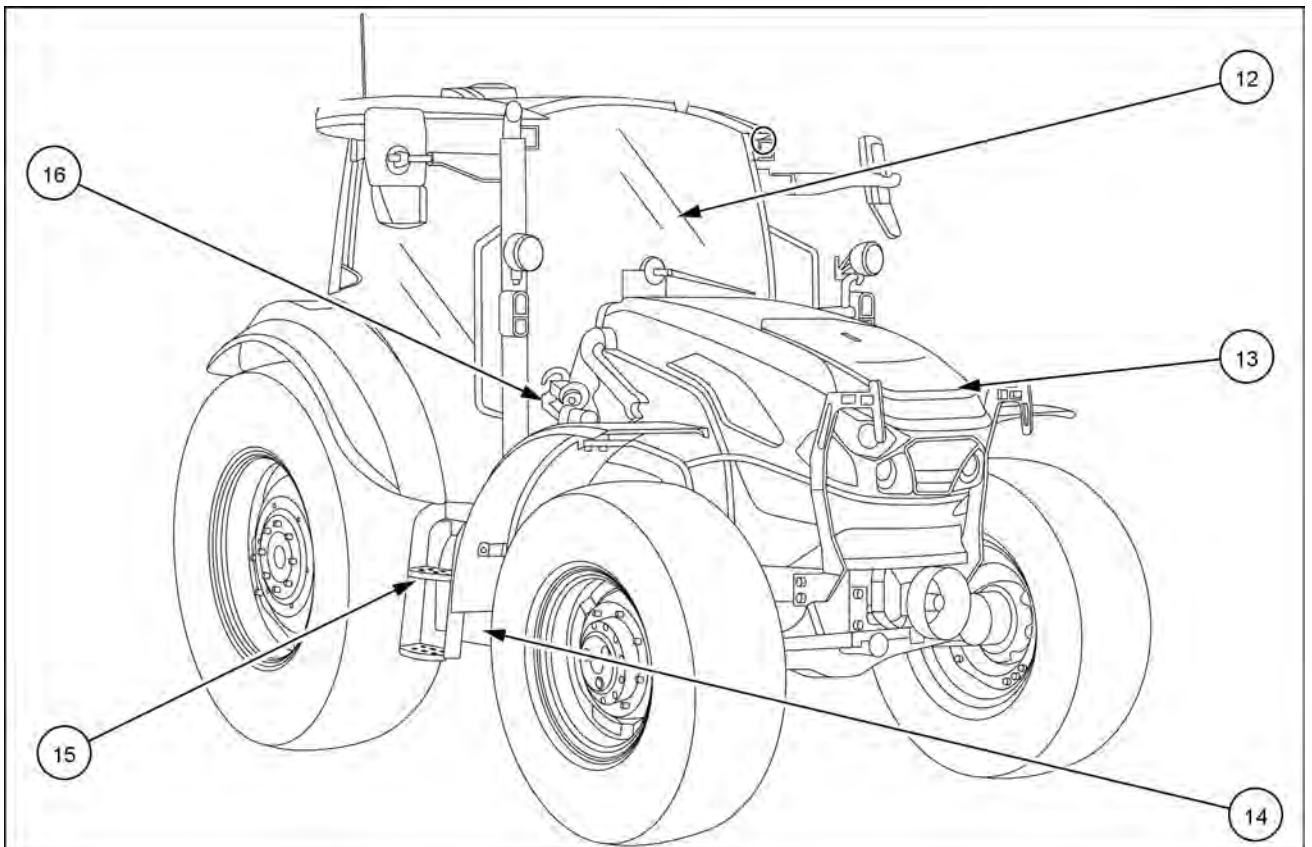


MOIL20TR00725AA 1

## Component identification

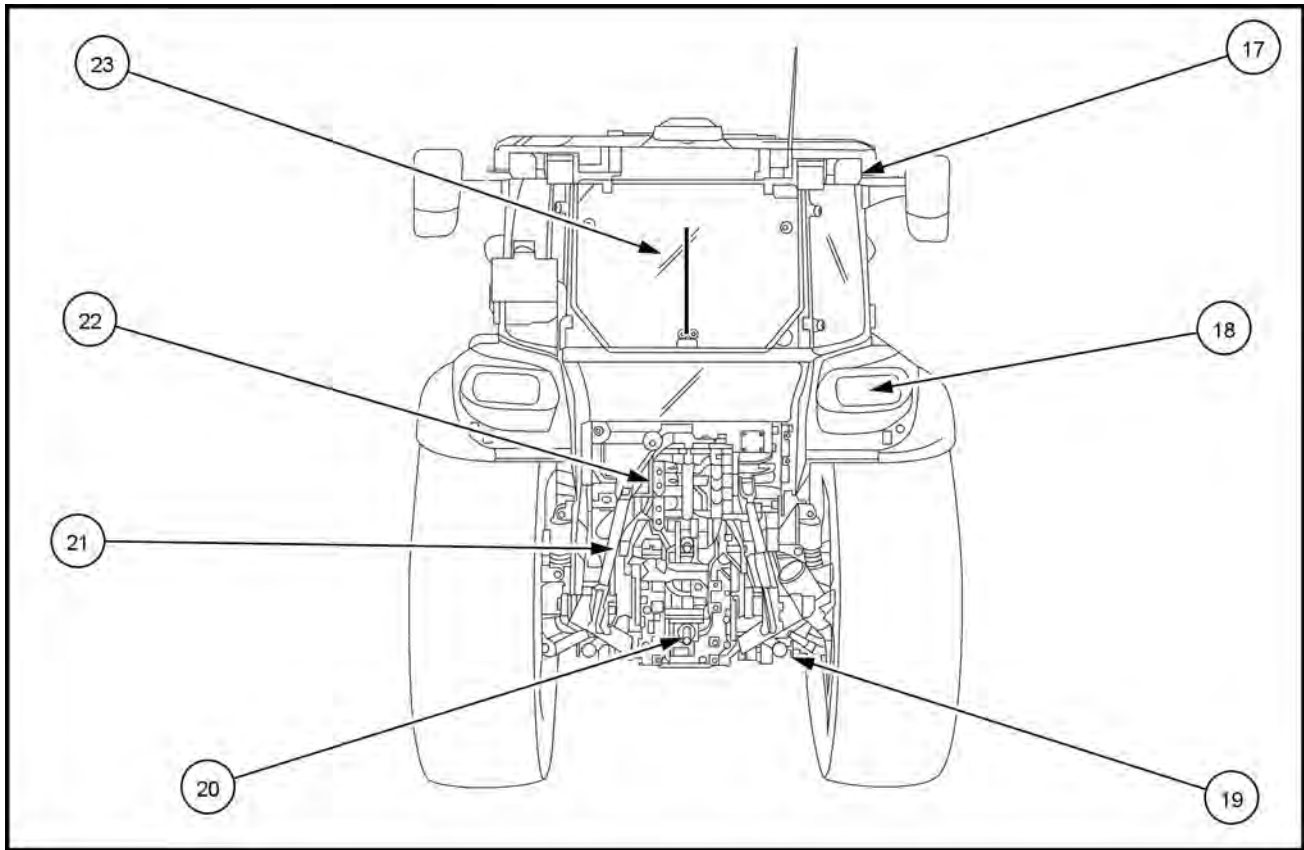


MOIL23TR01066FA 1



MOIL23TR01067FA 2

## 1 - GENERAL INFORMATION



MOIL23TR01060FA 3

- |   |   |
|---|---|
| 1. External rear view mirror (both sides)   | 13. Hood  |
| 2. Front turn indicator lights (both sides) | 14. Battery compartment                                 |
| 3. Hand rail (both sides)                   | 15. Ladder (both sides)                                 |
| 4. Fuel tank                                | 16. Front loader (if fitted)                            |
| 5. Reservoir tank <b>DEF/AdBlue®</b>        | 17. Rear roof work lights (both sides)                  |
| 6. Front Power Take Off (PTO)               | 18. Light: turn indicator/side/stop lights (both sides) |
| 7. Front lights on hood (both sides)        | 19. Reflectors (both sides)                             |
| 8. Side work lights (both sides)            | 20. Rear Power Take-Off (PTO)                           |
| 9. Auxiliary lights (both sides)            | 21. Rear lift arms                                      |
| 10. Front window wiper                      | 22. Aux remote valves                                   |
| 11. Front roof work lights (both sides)     | 23. Rear window wiper                                   |
| 12. Cab                                     |   |

## Emissions overview

### US Environmental Protection Agency (EPA) Warranty Statement

FPT Industrial S.p.A. warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform with US Environmental Protection Agency (EPA) regulations applicable at the time of manufacture and that it is free from defects in workmanship or material which would cause it not to meet these regulations for a period of:

- 2 years or 1,500 hours of operation, whichever occurs first, for engines less than **19 kW (25 Hp)**
- 5 years or 3,000 hours of operation, whichever occurs first, for engines greater than or equal to **19 kW (25 Hp)**

**NOTE:** This warranty applies to all units operated in the United States or Canada.

### Coverage

The model year, class of diesel engine, and emission application determination for your engine are identified on the Emission Control Information Label. The warranty period begins on the date the new equipment is sold to the first retail purchaser. The presence of the emission control label is the indication that the engine conforms to the applicable standards. Any emission control system parts which are proven defective during normal use will be repaired or replaced during the warranty period.

The engine owner has responsibility to perform all the required maintenance listed in the Owner's Manual. FPT Industrial S.p.A. will not deny an emission warranty claim solely because no record of maintenance exists; however, a claim may be denied if failure to perform maintenance resulted in the failure of a warranted part.

It is recommended that replacement parts used for maintenance or repairs be FPT Industrial S.p.A. Service Parts to maintain the quality originally designed into your emission certified engine. The use of non- FPT Industrial S.p.A. parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

FPT Industrial S.p.A. is not liable for consequential damages to other engine components caused by the failure of any warranted emission control system part. FPT Industrial S.p.A. is not responsible for failures resulting from improper repair or the use of parts that are not genuine FPT Industrial S.p.A. or FPT Industrial S.p.A. approved parts.

### Component Coverage

New engines certified for sale and registered will have the following items covered by the emission warranty, depending on the emission level of the engine, if the items were first installed on the new engine as original equipment:

#### EMISSION CONTROL WARRANTY PARTS LIST

##### Fuel injection system

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

##### Air induction system

- Intake manifold
- Turbocharger system (includes exhaust manifold)
- Charge air cooler

##### Positive Crankcase Ventilation (PCV) system (if applicable)

- PCV valve
- Oil fill cap

##### Exhaust after treatment Devices (if applicable)

- Diesel Oxidation Catalyzt (DOC)

- Diesel Particulate Filter (DPF)

- Selective Catalytic Reduction (SCR)

- Diesel Exhaust Fluid (DEF) tank and dispensing systems

##### Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

##### Cold Start Enrichment Systems

Electronic Control Units, Sensors, Solenoids, and Wiring harnesses used in above systems

Miscellaneous items used in above systems, such as hoses, belts, connectors, tubing, gaskets, and mounting hardware.

Emission Control Information Labels

## **Emissions Warranty Does Not Cover**

- Repairs arising from storage deterioration, failure to maintain the equipment, negligence, alteration, improper use of the equipment, collision or other accident, vandalism, or other casualty, or operation beyond rated capacity or specification.
- Repairs arising from abuse or neglect, including but not limited to: operation without adequate coolant or lubricants, adjustments to the fuel system outside equipment specifications, over-speeding, improper storage, starting, warm-up, or shutdown practices, incorrect fuel or contaminated fuel, oil or other fluids.
- Normal maintenance services, such as engine tune-ups, engine fuel system cleaning, checks, adjustments, shimming, etc.
- Items replaced due to customer demand.
- Labor charges performed by anyone except a dealer authorized by contract to repair the equipment, unless they qualify under special provisions (i.e. outside labor).
- Any and all travel costs for items such as towing, service calls, or transporting a unit to and from the place where the warranty service is performed.
- Normal maintenance costs, including but not limited to: lubricants, coolants, fluids, fuel, filters, and associated labor. Lubricants, filters, and coolants may qualify for warranty reimbursement if they require replacement as a DIRECT RESULT of a defect in material or workmanship.
- Claims involving the inspection or reconditioning of units after storage or prior use.
- Repairs arising from service performed by agents not approved by FPT Industrial S.p.A..
- Repairs arising from any unauthorized modification to the product or the use of non-FPT Industrial S.p.A. parts, implements or attachments.
- Removal, replacement, or installation of non-FPT Industrial S.p.A. optional equipment, attachments or components.
- Premiums charged for overtime labor costs or out of shop expenses.
- Economic loss including lost profits, crop loss, equipment rental, or other expense.
- Unauthorized modification or updating machines without a warrantable failure.
- Any and all costs of dealer shop supplies incurred with repairs, including but not limited to: solvents, cleaners, anti-seize lubricants, loctite™, sealant, adhesive, oil-dry, shop towels, etc.
- Failure of the machine, its implements or attachments caused by improper field application or loading.
- Any and all costs for coolant, fuel, or lube (oil) analysis including supplies and lab recommendations.
- Cost associated with cleaning of machine in preparation for servicing.

## **California Emission Control Warranty Statement**

### **Your warranty rights and obligations**

California Air Resources Board and FPT Industrial S.p.A. are pleased to explain the emission control system warranty on 2021 through 2023 off-road diesel engines. In California, new heavy-duty off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. FPT Industrial S.p.A. must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, FPT Industrial S.p.A. will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts and labor.

### **MANUFACTURER'S WARRANTY COVERAGE:**

The 2021-2023 heavy-duty off-road engines are warranted for 5 years or 3000 hours, whichever comes first. If any emission-related part on your engine is defective, the part will be repaired or replaced by FPT Industrial S.p.A.

## OWNER'S WARRANTY RESPONSIBILITIES:

- As the off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. FPT Industrial S.p.A. recommends that you retain all receipts covering maintenance on your off-road engine, but CASE IH cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the off-road engine owner, you should however be aware that FPT Industrial S.p.A. may deny you warranty coverage if your off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- Your engine is designed to operate on Ultra Low Sulfur Diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.
- You are responsible for initiating the warranty process. The ARB suggests that you present your off-road engine to a CASE IH dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact North American FPT Technical Service Group at (833) 458-1378 or email: [fpt-na-warranty@fptindustrial.com](mailto:fpt-na-warranty@fptindustrial.com).

## CALIFORNIA EMISSION CONTROL WARRANTY PARTS LIST

### Fuel injection system

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

### Air induction system

- Intake manifold
- Turbocharger system (includes exhaust manifold)
- Charge air cooler

### Positive Crankcase Ventilation (PCV) system (if applicable)

- PCV valve
- Oil fill cap

### Exhaust after treatment Devices (if applicable)

- Diesel Oxidation Catalyst (DOC)

- Diesel Particulate Filter (DPF)

- Selective Catalytic Reduction (SCR)

- Diesel Exhaust Fluid (DEF) tank and dispensing systems

### Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

### Cold Start Enrichment Systems

### Electronic Control Units, Sensors, Solenoids, and Wiring harnesses used in above systems

Miscellaneous items used in above systems, such as hoses, belts, connectors, tubing, gaskets, and mounting hardware.

### Emission Control Information Labels

## Selective Catalytic Reduction (SCR) exhaust treatment - Overview

### What is Selective Catalytic Reduction (SCR)?

Your CASE IH machine is equipped with additional components to comply with national and local exhaust emissions requirements. The main components of the SCR system include the SCR catalyst, the Diesel Oxidation Catalyst (DOC) the **DIESEL EXHAUST FLUID (DEF)/AdBLUE®** dosing module, and the **DEF/AdBLUE®** tank.

### How does Selective Catalytic Reduction (SCR) work?

During combustion, harmful nitrogen oxide (NO<sub>x</sub>) molecules are formed in the exhaust. By injecting a **DEF/AdBLUE®** solution into the exhaust prior to a catalyst, the NO<sub>x</sub> can be converted to harmless elemental nitrogen and water. This happens when the NO<sub>x</sub> molecules react inside the catalyst with the heat generated by the engine and the ammonia in the **DEF/AdBLUE®** solution. The DOC is used to maximize the SCR catalyst efficiency by maintaining a 50/50 ratio of nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) prior to exhaust gases entering the SCR chamber.

**NOTICE:** Do not idle the machine with no load for more than **6 h**, or damage to the SCR catalyst will occur.

During cold engine operation at low engine coolant and ambient air temperatures, water vapor will be visible from the exhaust. This water vapor will resemble steam or light white smoke, and will dissipate as the engine and machine components warm. This water vapor is considered normal.

**NOTE:** After engine shutdown, the SCR system will perform a purge cycle, which permits the supply module to continue to run for up to 90 seconds. This is considered normal and requires no action from the operator.

### What is DIESEL EXHAUST FLUID (DEF)/AdBLUE®?

**DEF/AdBLUE®** is a clear, colorless, non-toxic, aqueous urea solution ( **32.5%**) with a slight ammonia odor. It is used to chemically reduce NO<sub>x</sub> emissions from heavy-duty diesel-powered vehicles. **DEF/AdBLUE®** is neither explosive nor harmful to the environment. **DEF/AdBLUE®** is classified under the minimum-risk category of transportable fluids.

International standard **ISO 22241-1** defines **DEF/AdBLUE®** quality.

## Storage, handling, and transport

**NOTICE:** Storage temperatures above 30 °C (86 °F) greatly reduce the shelf life of DEF/AdBLUE®.

DEF/AdBLUE® has a typical shelf life of 6-12 months. See the “Shelf life” table below. In order for DEF/AdBLUE® to remain in a useable condition, storage requirements must be met.

- Store between -11 °C (12 °F) and 30 °C (86 °F).
- Use only an approved DEF/AdBLUE® container. Contact your dealer to obtain proper storage container(s).
- Keep container tightly closed.
- Keep container in a cool, well-ventilated area.
- Keep away from heat and direct sunlight.

If the machine will exceed a three month shut down period:

1. Key OFF.

**NOTE:** Allow 2 – 5 min after Key OFF before disconnecting the batteries.

2. Drain the DEF/AdBLUE® tank.
3. Flush the tank with deionized water.
4. Drain the deionized water

**NOTICE:** Do not disconnect any electrical connections from the DEF/AdBLUE® system.

Machine start-up after extended shutdown:

1. Fill the DEF/AdBLUE® tank.
2. Replace the main filter in the supply module.
3. Start the machine.

### Thawing

- Your CASE IH machine is equipped with an internal tank heater to thaw frozen DEF/AdBLUE®. Your machine will still function until the DEF/AdBLUE® begins to flow. The SCR system will then function normally.

**NOTE:** You may notice a slight reduction in engine torque in high demand situations until the DEF/AdBLUE® is fully thawed.

- Do not heat DEF/AdBLUE® for long periods of time at temperatures above 30 °C (86 °F). This causes the solution to decompose, which very slowly decreases the expected shelf life.

**NOTICE:** Do not use an anti-gelling or freeze point improver in your DEF/AdBLUE®. The 32.5% solution is specifically designed to provide the optimum NOx reduction properties. Any further blending or adjusting of the DEF/AdBLUE® mixture will lessen its ability to perform correctly and may cause damage to the SCR components.

Handling and supply of additives, if any.

- Personal Protective Equipment (PPE) is not required under normal conditions. If splashing is likely, wear eye protection. For prolonged or repeated contact, impervious gloves are recommended. Follow the precautions listed in the SAFETY INFORMATION chapter when handling any service fluid.
- No additives are required.

**NOTICE:** Contaminated DEF/AdBLUE® can affect the performance of your machine. Follow all instructions in this manual when handling DEF/AdBLUE®.

**Shelf life**

Constant ambient storage temperature	Minimum shelf life
Less than or equal to <b>10 °C (50 °F)</b>	36 months
Less than or equal to <b>25 °C (77 °F)</b> <sup>1</sup>	18 months
Less than or equal to <b>30 °C (86 °F)</b>	12 months
Less than or equal to <b>35 °C (95 °F)</b>	6 months
Greater than <b>35 °C (95 °F)</b>	- <sup>2</sup>
<sup>1</sup> To prevent decomposition of <b>DEF/AdBLUE®</b> , prolonged transportation or storage above <b>25 °C (77 °F)</b> should be avoided.	
<sup>2</sup> Significantly reduced storage life: check every batch before use. See your CASE IH dealer for more information on testing.	

**NOTE:** The main factors taken into account to define the shelf life in the table above are the ambient storage temperature and the initial alkalinity of **DEF/AdBLUE®**. The difference in evaporation between vented and non-vented storage containers is an additional factor.

**NOTE:** The information in the Shelf life table is for reference only. Source: Diesel engines **ISO 22241-3** - NOx reduction agent AUS 32 - Part 3: management, transport and storage.

**NOTE:** **DEF/AdBLUE®** that remains in the tank of the machine after the season does not require any special precautions unless storage exceeds the shelf life table above.

**Disposal**

- Dispose of **DEF/AdBLUE®** and any filter accumulations in accordance with all applicable Federal, State, and local laws governing waste disposal.

**Catalyst management**

Your machine is programmed with 3 different modes to manage various types of accumulation in the catalyst.

**Active Catalyst Management**

This mode is fully executed by the engine controller. The engine speed and exhaust flap will be automatically controlled to generate heat. This mode is used to control:

- De-sulfurization
- Hydrocarbon management
- **DEF/AdBLUE®** deposit removal
- Soot removal

**Manual Catalyst Management**

This mode of operation is required to burn off excessive soot accumulation in the catalyst.

1. Place the machine in a safe area to accommodate hot exhaust prior to starting the Parked Catalyst Management.
2. Do not attempt to move or operate the machine during the process as this will abort the management cycle. Failure to comply may cause damage to the exhaust system.
3. Verify the fuel level is at least half tank prior to starting the process.

**Catalyst Service**

This mode requires the use of a dealer service tool and is only to be performed by your authorized CASE IH dealer.

## International symbols

As a guide to the operation of the machine, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.

 Thermostart	 Roof beacon	 Power Take-Off (PTO)	 Hydraulic lift -operating inposition control
 Alternator charging	KAM Keep alive memory	N Drive line in neutral position	 Accessory power socket
 Fuel level	 Turn signals	 Creeper speeds	 Implement power socket
 Automatic fuel exclusion device	 Turn signals trailer 1	 Slow or low speed adjustment	 Percentage of rear wheel slip
 Engine speed (rpm x 100)	 Turn signals trailer 2	 Fastor high speed adjustment	 Raise lift arms
 Total working hours	 Windshield wiper/washer	 “Ground Speed”	 Lower arms.
 Engine oil pressure	 Rear window windshield wiper/washer	 Differential locking	 Maximum boom lift height
 Engine Coolant Temperature	 Heated air temperature	 Rear axle oil temperature	 Boom height limit (front)
 Engine Cooling Fluid Level	 Heater fan	 Transmission Oil Pressure	 Hydraulic lift disconnected
 Side lights	 Air conditioning system temperature	 4WD engaged	 Transmission Oil Filter
 Front headlights full beam	 Dry air cleaner	 Caution!	 Remote Valve Extend
 Low beam headlights	 Parking Brake	 Hazard lights	 Control valve retraction
 Front auxiliary lights	 Brake fluid level	 Adjustment control	 Control valve in floating position
 Brake lights (STOP)	 Trailer brake	 Caution, pressurised! Open carefully	 Malfunction! See the Operator's Manual
 Horn	 Caution! Corrosive substance	 Hydraulic lift -operating inposition control	 Caution! See the Operator's Manual



## 2 - SAFETY INFORMATION

### Safety rules and signal word definitions

#### Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual and on machine safety signs, you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

**!** DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury. The color associated with DANGER is RED.

**!** WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

**!** CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

### FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

#### Machine safety

**NOTICE:** Notice indicates a situation that, if not avoided, could result in machine damage or property damage. The color associated with Notice is BLUE.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine damage or property damage. The word Notice is used to address practices not related to personal safety.

#### Information

**NOTE:** Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

## Safety regulations

### General safety rules

Use caution when operating the machine on slopes. Raised equipment, full tanks and other loads can change the centre of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

The tractor must only be used by responsible personnel, trained in tractor use and authorised to operate the machine.

Do not use the machine when inebriated, under the influence of drugs or in any other condition of physical or mental impairment.

When digging or using ground engaging attachments, be aware of buried cables. To determine the location of the utilities, contact your local authorities.

Pay special attention to overhead power lines and hanging obstacles. High voltage power lines may require considerable safety distances.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin and cause severe skin infection or injury.

- Do NOT use your bare hands to check for leaks. Use a piece of cardboard or paper.
- Stop the engine, remove the key and relieve the pressure before connecting or disconnecting fluid lines
- Make sure that all components are in good condition and tighten all connections before starting the engine or pressurizing the system.
- Should hydraulic fluid or diesel fuel penetrate the skin, seek medical attention immediately.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid lengthy contact and wash the skin immediately with soap and water.

Keep well clear of all moving parts. Loose clothing, jewelry, watches, long hair, and other loose or hanging items can entangle in moving parts.

Always wear the Personal Protective Equipment (PPE) when appropriate.

Do NOT attempt to remove the material from any part of the machine while the machine is operated or its components are running.

Make sure that all guards and shields are in good condition and properly installed before you operate the machine. Do not operate the machine without the safety devices and guards.

Do NOT allow any person or animal to enter the working area of the machine.

Enter and leave the tractor using the steps and handles provided. Dirty or slippery steps, ladders, walkways, and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

Always operate with the cab or seat bar correctly and securely fitted on the tractor: check periodically that the relevant fastenings are not loose and that all parts are not damaged or deformed. Do not modify the roll bar by welding parts, drilling holes, etc., as this could adversely affect the rigidity of the structure.

Never operate the engine in enclosed spaces as harmful exhaust gases may build up.

Before you start the machine, be sure that all controls are in neutral or park lock position.

Start the engine only from the operator's seat. Before starting the engine, make sure the hand brake is locked and that all the operating controls are in neutral. The tractor is equipped with a device to enable starting. Never disconnect the start-up safety switch. If the switch does not work correctly, contact your local dealer for any repair operations.

Always keep windows, mirrors and all the lights clean to provide the best possible visibility while you operate the machine.

If the vehicle is parked or stationary, proceed as follows:

- Park the machine on the most solid, level ground.
- Put all controls in neutral or park lock position.
- Apply the parking brake Use wheel chocks if required.
- Lower all the equipment.
- Switch off the engine and remove the key (if the drive line is mechanical, leave it in gear).

## **General maintenance safety rules**

Park the machine on a firm level surface.

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Before doing any maintenance work, carefully read the specific maintenance procedures for the components on which you are going to work.

Before doing any lubrication, maintenance or technical support work on the machine:

- Set all the controls into neutral.
- Engage the Parking Brake.
- Lower any implements connected to the machine.
- Switch off the engine.
- Take out the starter key.
- Affix a "Do Not Operate" warning sign to a visible area of the machine.
- Switch off battery.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care during maintenance operation of such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment where appropriate.

In order to reach parts of the tractor which are up high (such as mirrors, rotating beacons, air filters, etc.), use a mobile platform which is certified for operations of this type.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during maintenance operation, unless the equipment is securely supported.

Pressurised fluids coming out can cause serious injuries. Therefore, when looking for leaks use the appropriate safety equipment: screens, safety glasses and gloves.

If hydraulic fluid or diesel fuel penetrates the skin, seek medical attention immediately.

Do not use your hand to check for leaks. Use a piece of cardboard or paper.

Before removing any hydraulic tubing, check that the system is not pressurised.

Continuous lengthy contact with hydraulic fluid may cause skin damage. Avoid long term contact and wash the skin promptly with soap and water.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When towing a disabled machine follow the procedure in this manual. Use only rigid drawbars.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

Make sure that all the components are in good condition. Tighten all connections before you start the engine or pressurize the system.

Never carry out welding on damaged components.

Any damaged components must be replaced with genuine replacement parts.

Do not perform welding on the wheel rims, wheel discs, protective frame, or cab.

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Install guards and shields after maintenance operation on the machine.

Make sure that the work area is free of tools, parts, other persons, and pets before you operate the machine.

## **Wheels and tires**

The tyre must be replaced by qualified personnel with suitable tools and adequate technical skills. Wheels or tyres replaced by unqualified personnel may result in serious injury, damage to the tyres and/or deformation of the wheels. Always have a qualified tyre mechanic service wheels and tyres.

Tyres are heavy. Handling tyres without proper equipment could cause death or serious injury.

DO NOT perform welding on the wheel rims, wheel discs, protective frame, or cab.

When changing tyres, select suitable tyres for the actual tractor use, taking account of the recommended combinations.

Make sure that tyres are correctly inflated. Do not exceed any recommended load or pressure. Follow the instructions in the manual for proper tyre inflation.

Do not exceed the speeds shown on the tyres, as this both overheats and causes premature tyre wear.

After fitting tyres, check that the wheel nuts are tight after three hours in operation.

Do not stand tyres on hydrocarbons (oil, diesel, grease, etc.).

The tyres fitted on the tractor must be checked periodically, with special care given to:

- the tread, which should wear uniformly.
- the walls, which must not have cracks, bulges or abrasions.

Have the tyres checked by a specialist if one or more of the problems mentioned above should occur.

Cracks on the walls, sometimes accompanied by bulges, are a sign of ageing.

Tyres fitted on tractors which are not used for extended periods tend to age more rapidly than those used more frequently. In this event, it is advisable to raise the tractor from the ground and protect the tyres from direct sunlight.

Do not use tyres ballasted with liquid when driving on roads.

If using a solution of calcium chloride for filling the tyres with liquid ballast.

- SLOWLY add the calcium chloride flakes to the water, stirring continuously.
- To avoid a violent reaction, NEVER add water to the calcium chloride.
- If the flakes should come into contact with the eyes, wash the eyes immediately with clean, cold, running water for at least 15 minutes. Consult a doctor promptly.

**⚠ Safety regulations for driving on public roads and transportation in general ⚠**

Comply with local laws and regulations.

Use appropriate lighting to meet local regulations.

Make sure that when tractors are fitted with the SMV emblem and the Speed Identification Symbol (SIS) that these are visible.

Make sure that the brake pedal latch is engaged. You must lock brake pedals together for road travel.

Use safety chains for trailed equipment when safety chains are provided with the machine or equipment.

Lift implements and attachments high enough above ground to prevent accidental contact with road.

When you transport equipment or a machine on a transport trailer, make sure that it is properly secured. Be sure the SMV and SIS on the equipment or machine are covered while being transported on a trailer.

Be aware of overhead structures or power lines and make sure that the machine and/or attachments can pass safely under.

Travel speed should be such that you maintain complete control and machine stability at all times.

Slow down and signal before turning.

Pull over to allow faster traffic to pass.

Follow correct towing procedure for equipment with or without brakes.

Make sure the field of visibility is not obstructed or reduced by accessories such as monitors or cables.

Do not alter the cab glass by painting, applying self-adhesive films to make the glass opaque, or any other modification. The glass must not show fractures, lesions, widespread scratches, breakage points, or defects of any kind.

Always keep the rear-view mirrors and rear glass clean to ensure perfect visibility.

Operate the windshield wipers and use the washer jets on the windshield and rear glass to keep the glass clean. Use the cab climate control system to defrost and demist the windshield and side glass.

**⚠ Fire and explosion prevention ⚠**

Fuel or oil leaked or spilled on hot surfaces or electrical components can cause a fire.

Crop material, dead branches, debris, bird nests or flammable material can ignite on hot surfaces

Remove dead branches and debris from the machine at least once a day and in any case at the end of the working day, especially in the areas surrounding the hot components such as the engine, transmission, exhaust, battery, etc. Depending on the working conditions and environment, more frequent cleaning may be needed.

Always have a fire extinguisher on the machine or nearby.

Make sure that the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.

Inspect the electrical system for loose connections and frayed insulation. To repair or replace loose or damaged parts, contact your authorized dealer.

Do not store oily rags or other flammable material on the machine.

Never perform welding or flame cutting on the cab, protective frame, wheel rims, or wheel discs

Do not expose the machine to flames, brushwood fires or explosives.

Use non-flammable cleaning solvent to clean parts.

Promptly investigate any unusual smells or odours that may occur during operation of the machine.

### **Fire extinguisher**

If provided, carry an approved fire extinguisher on the tractor. The correct position for the fire extinguisher is shown on the sticker on the tractor.

Never alter its position or remove it.

Make sure to only install a suitable, approved fire extinguisher.

Ensure to replace it or have it checked or refilled after every usage and/or date of expiry according to manufacturer's maintenance prescriptions.

It is not intended for use on an out-of-control fire, such as one which has reached the ceiling, or the operator ; it is meant only to help you.

To check if the extinguisher is still under pressure, proceed as follows:

- Loosen the pressure gauge from the valve.

- The needle will go from the green area to "0" in the red area.
- Rescrew the pressure gauge on the valve. The needle will go from "0" in the red area to the green area.

Using the fire extinguisher

- Operate the extinguisher from a safe distance.
- Pull the Pin at the top of the extinguisher.
- Aim at the base of the fire, not the flames.
- Squeeze the lever slowly.  
Pressing the lever dispenses the extinguishing agent. Releasing the lever stops the supply of extinguishing agent.
- Using a sweeping motion, crossways, move the fire extinguisher back and forth until the fire is completely out.
- Check for re-ignition of fire.

### **General safety rules for the battery**

Always wear eye protection when working on the batteries.

Do not create sparks or have open flame near a battery.

Ventilate when charging or using in enclosed area.

The negative terminal (-) must be disconnected first and reconnected last.

Do not weld, grind or smoke near a battery.

To start the engine with auxiliary batteries or jumper wires, follow the steps outlined in the instruction manual. Do not short across terminals.

When storing and handling the batteries, keep to the manufacturer's instructions.

Battery posts, terminals and related accessories contain lead or lead compounds. Wash your hands after maintenance work.

Keep batteries out of reach of children and other unauthorized persons.

Battery acid can cause burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing.

Antidote (in case of external contact):

- Rinse with water.

Antidotes (eyes):

- Rinse with water for 15 minutes.
- Consult a doctor promptly.

Antidote (if swallowed)

- Drink large quantities of water or milk.
- Do not induce vomiting.
- Seek medical attention immediately.

### **Operator presence system**

Your machine is equipped with an operator presence system to prevent the use of some features while the operator is not in the operator's seat.

If the operator presence system is inoperable, then it must be repaired.

Never disconnect or bypass the operator presence system.

### **Power Take-Off (PTO)**

PTO driven machinery can cause death or serious injury. Before you work on or near the PTO shaft or service or clear the driven machine, put the PTO lever in the disengage position, stop the engine, and remove the key.

When using the Power Take-Off, and especially when changing speeds, always make sure that the tractor is fitted with the correct shaft for the speed selected.

To avoid serious or fatal injury to the operator or anyone nearby DO NOT remove the PTO guard.

Before you use the PTO, ensure that there are no people or objects in the work area.

Do not wear loose clothing when you use PTO-driven equipment. Failure to comply could result in death or serious injury.

### **Reflectors and hazard warning lights**

You must use flashing amber warning lights when you operate equipment on public roads.

### **Seat belts**

Seat belts must be worn at all times.

Seat belt inspection and maintenance

- Keep seat belts in good condition.
- Keep sharp edges and items that can cause damage, away from the belts.

- Inspect all seat belt parts for wear and/or damage. Replace all parts that have damage or wear.
- Check that the bolts securing the belts are tight.
- Keep the belts in a good state of repair.
- Clean belts only with soap solution and warm water. Do not use any other detergents so as not to weaken them.

## Operator protective structure

### Roll Over Protective Structure (ROPS)

This tractor is provided with a ROPS cab, offering protection against roll over related hazards. In addition, always consider the following precautions:

- Do not use the tractor beyond its limits of terrain gradient and stability. Using the tractor beyond these limits may result in roll-over or a tip-over. Observe the recommendations in this manual and pay particular attention when going down steep hills in a loaded condition.
- Do not drive the tractor on or near the edge of ditches, canals, dykes, or embankments with ground that is unstable or dug out by rodents. The tractor may sink sideways and roll over.
- Do not use the tractor on unstable bridge heads and poor bridge floors. These constructions may collapse and cause the tractor to roll over. Always check the conditions and load capacity of bridges, crossings and ramps before driving over them.
- Always fasten the seatbelt when using the tractor. The ROPS safety cab will only be fully effective while the driver is correctly fastened in the seat.
- Do not use the tractor beyond the respective limits of dynamic stability. High speed, abrupt manoeuvres and fast and tight cornering will increase the risk of roll-over.
- Do not use the tractor for pulling work, in cases where you do not know whether the load will yield, for instance, when pulling stumps. The tractor may flip over backwards if the stump does not yield.
- Be extremely cautious when working with the tractor on forage silos without side concrete walls. Dual wheels or a wide track setting may improve the sideways stability of the tractor.

- Be cautious that the centre of gravity of the tractor may increase when loads on the front-end loader or the three-point linkage are raised. In these conditions, the tractor may roll over earlier than expected.

**NOTE:** *the list provided is not exhaustive and does not include every possible risk associated with tipping over.*

Do not attach any device to the protective structure for pulling purposes. Do not drill holes into the protective structure.

The Protective Structure and its interconnecting components are a certified system. Any damage, fire, corrosion or modification will weaken the structure and reduce protection. If this occurs, the protective structure must be replaced so that it will provide the same protection as a new Protective Structure. Contact your dealer for protective structure inspection and replacement.

After an accident, fire, tip or roll over, the following must be performed by a qualified technician before returning the machine to field or job site operation

- The protective structure must be replaced.
- The mounting or suspension for the Protective Structure, operator seat and suspension, seat belts and mounting components and wiring within the operator's protective system must be carefully inspected for damage.
- All damaged parts must be replaced.

Do not weld, drill holes, attempt to straighten or repair the protective structure. Modification in any way can reduce the structural integrity of the structure which could cause death or serious injury in the event of fire, tip, roll over collision or accident.

### **Falling Objects Protective Structure (FOPS)**

A FOPS-certified cab provides protection against falling objects according to OECD code 10 standard. It is recommended to use a certified FOPS when you work with front-end loaders or in forestry applications. A cab that is not FOPS-certified offers insufficient protection against falling rocks, bricks, or pieces of concrete.

FOPS level on your tractor cab is certified according to **OECD CODE 10**.

### **Installation and working with a front-end loader on tractors equipped with a cab**

Do not use the front-end loader without taking precautions against falling objects.

Please consider the following precautions when working with a front-end loader:

- Do not lift the front loader to a height from which objects may fall or roll on the driver.
- Use always the correct attachment (grab forks, buckets, etc) for the specific task to perform and ensure that the load is securely kept in place.
- Install only a front-end loader with a parallel guidance system and use it all the time; this system will ensure that the load in the bucket will remain horizontal, regardless of the height of the lifting booms.

### **General precautions to be followed when working with a front-end loader**

- Do not allow bystanders in the manoeuvring zone of the tractor that is equipped with a front-end loader. Do

not allow bystanders to stand near or under the lifted bucket of a front-end loader.

- Do not use the front-end loader as a lift for persons for activities that must be done at a certain height (for example, cleaning eaves).
- Do not use the front-end loader in an area with overhead power lines. In case of contact with overhead power lines, jump from the tractor without making simultaneous contact between the tractor and the ground. When possible, disconnect the power lines from the grounds.
- Read the front loader instruction manual and follow the safety instructions provided

### **Operator Protective Structures (OPS)**

This tractor is not provided with a structure (OPS). Carefully read the following important information, especially when working in a forestry environment.

### **Forestry**

This tractor is not designed for heavy forestry applications. Usage is prohibited unless a certified FORESTRY KIT is installed. Contact your dealer to verify whether a forestry kit exists for this tractor model. Only a forestry specific kit will provide necessary protection against falling trees.

Protection against penetrating objects (OPS) can be obtained only by fitting a specific KIT. Contact your dealer to verify whether an OPS-certified KIT is available for your tractor.

## Operator protective structure

### Definition of cab category 2

The cab category 2 provides protection against dust. For application of Plant Protection Products (PPP) e.g. pesticides, fungicides, herbicides, etc., please refer to the instructions provided by the supplier of the chemical agent as well as instructions provided by the sprayer's manufacturer. Use the special devices and Personal Protective Equipment (PPE) also when inside the cab and, particularly, on tractors without a cab.

Although the air delivery system cannot offer full protection, partial protection can be achieved by following some basic rules:

- Always use Personal Protective Equipment (PPE) and protective clothing.
- Keep doors, windows, and hatches closed during the spraying operation.
- Keep the cab interior clean.

- Do not enter the cab with contaminated shoes and/or clothing.
- Keep all used Personal Protective Equipment (PPE) outside the cab.
- Bring the wiring harness of the remote sprayer control box into the tractor cab.
- Use only genuine filters and ensure that the filter is correctly installed.
- Check the condition of the sealing material and filters, replacing them if damaged.

CASE IH cannot be held responsible for personal injury or damage to health due to dermal contact or inhalation of Plant Protective Products (PPP), when the machine has been used in a condition deviating from the instructions in this section of the operator's manual.

### **Air-conditioning system**

The air-conditioning system is under high pressure. Do not disconnect any lines. The release of high pressure can cause serious injury.

Only trained service technicians can service, repair, or recharge the air-conditioning system.

The air-conditioning system contains gases that are harmful to the environment when released into the atmosphere. Do not attempt to service or repair the system.

### **Personal Protective Equipment (PPE)**

Personal protective equipment (PPE) is any equipment intended to be put on and kept by the worker for protection against one or more risks at work, liable to threaten safety or health during work, as well as all the complements or accessories intended for this purpose.

PPE must be used when, in spite of the risk being reduced to a minimum at source, there are however risks that cannot be eliminated and therefore it becomes nec-

essary and obligatory when there are so-called "residual" risks.

When assembling, operating, or servicing the machine, wear protective clothing and PPE necessary for the particular procedure. Some PPE that may be necessary includes protective shoes, eye and/or face protection, hard hat, heavy gloves, filter mask, and hearing protection.

### **"Do not use" sign**

Before you start servicing the machine, attach a "Do Not Use" warning sign to the machine in an area that will be visible.

### **Hazardous chemicals**

If you are exposed to or come in contact with hazardous chemicals, you can be seriously injured. The fluids, lubricants, paints, adhesives, cooling liquids, etc. required for the machine's operation can be harmful. They may be attractive and harmful to domestic animals, as well as humans.

The materials safety data sheets (MSDS) provide information on the chemical substances contained in a product, on the methods of safe storage and handling and on the first aid procedures to follow should such a product get accidentally spilled. MSDS are available from your dealer.

Before doing any maintenance work, read the materials safety data sheets (MSDS) for each single lubricant, liquid, etc. used on the machine. The information provided on the sheets indicates the associated risks and enables maintenance work to be carried out safely. Follow the in-

formation in the MSDS, on manufacturer containers, as well as the information in this manual when servicing the machine.

Dispose of all fluids, filters, and containers in an environmentally safe manner according to local laws and regulations. Check with your local environmental, recycling centre or your Dealer for correct disposal information.

Store fluids and filter in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.

Keep out of reach of children or other unauthorized persons.

Further precautions are necessary for the applied chemical substances. Before using chemical substances, ask the producer or retailer for detailed information.

### Utility safety

When digging or using ground engaging equipment, be aware of buried cables or other utilities. Contact your local utilities or authorities, as appropriate, to determine the locations of services.

Make sure that the machine has sufficient clearance to pass in all directions. Pay special attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories.

Should contact between the machine and an electric power source occur, the following precautions must be taken:

- Stop the machine movement immediately.
- Apply the parking brake, stop the engine, and remove the key.
- Check if you can safely leave the cab or your actual position without contact with electrical wires. If not, stay in your position and call for help.
- If you can leave your position without touching lines, jump clear of the machine to make sure that you do not make contact with the ground and the machine at the same time.
- Do not permit anyone to touch the machine until power has been shut off to the power lines.

### Electrical storm safety

Do not operate the machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm strikes during operation, remain in the cab. Do not leave the cab or operator's platform. Do not make contact with the ground or with objects outside the machine.

### Mounting and dismounting

Mount and dismount the machine only at designated locations that have hand-holds, steps, or ladders.

Do not jump off of the machine.

**NOTICE:** *except in the event that parts of the machine come into contact with high-voltage electrical wires.*

Make sure that steps, ladders, and platforms remain clean and clear of debris and foreign substances. Injury may result from slippery surfaces.

Face the machine when you mount and dismount the machine.

Maintain a three-point contact with steps, ladders, and handholds.

Never mount or dismount from a machine that is in motion.

Only use the steps and the ladders to mount or dismount the tractor when the tractor is stationary. Never stand on the steps or the ladders when the tractor is moving.

Do not use the steering wheel or other controls or accessories as hand-holds when entering or exiting the cab or operator's platform.

### **Working at heights**

When the normal use and maintenance of the machine requires to work at heights:

- Correctly use installed steps, ladders, and railings.
- Never use ladders, steps, or railings while the machine is moving.

- Do not stand on surfaces that are not designated as steps or platforms.

Do not use the machine as a lift, ladder, or platform for working at heights.

### **Lifting and overhead loads**

Never use buckets, forks, or any other loader equipment or lifting, handling or digging equipment to lift persons.

Do not use any raised equipment as a work platform.

Locate the entire area for handling the machine and equipment and do not allow anyone to access this area while the machine is running.

Do not allow anyone to access the area below suspended equipment or stand there. Equipment and/or loads can fall unexpectedly and crush anyone underneath.

Do not leave equipment in a raised position while the machine is parked or during service, unless securely supported. Should it be necessary to keep the hydraulic cylinders in a raised position, for maintenance work or for access, lock them mechanically or support them.

Buckets, forks or other loader equipment or lifting equipment, handling or digging together with the load change the machine's centre of gravity. This can cause the machine to tip over on slopes or uneven ground.

Hanging loads can fall off the loader bucket or lifting equipment and crush the operator. Be extremely careful when you lift a load. Use the correct lifting equipment.

Do not lift loads to any greater height than necessary. Lower loads to transport. Remember to keep an appropriate clearance from the ground or other obstacles.

The equipment and loads carried can obstruct visibility and cause an accident. Do not operate the machine in conditions of poor visibility.

## Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. If no legislation exists, request information from suppliers of oil, filters, batteries, fuel, anti-freeze, cleaning agents, etc. regarding the effect of these substances on humans and the environment; request information regarding how to store, use and dispose of them in the most appropriate manner. Your CASE IH dealer can also provide assistance.

### HELPFUL TIPS

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuel, oils, acids, solvents, etc. Most of these products contain harmful substances.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid leakage when draining fluids such as spent mixtures of engine coolant, engine oil, hydraulic fluid, brake fluid, etc. After draining, do not mix brake fluid or fuel with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- Do not open the air-conditioning system yourself. It contains gases which should not be released into the atmosphere. Your CASE IH dealer or air-conditioning specialist has a special extractor for this purpose and can recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.

### Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. CASE IH strongly recommends that you return all used batteries to a CASE IH dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.



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### Mandatory battery recycling

**NOTE:** The following requirements are mandatory in Brazil.

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 as amended by CONAMA Resolution 424/2010 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

## Noise levels

### Noise level at operator's ear with fixed fan

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@90C, Farmall@100C, Farmall@110C, Farmall@120C	<b>83 dB (A)</b>	<b>82 dB (A)</b>	<b>86 dB (A)</b>	<b>85 dB (A)</b>

### External noise level with fixed fan

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@90C, Farmall@100C, Farmall@110C, Farmall@120C	<b>86 dB (A)</b>	<b>86 dB (A)</b>	<b>84 dB (A)</b>	<b>81 dB (A)</b>

### Noise level at operator's ear with viscostatic fan

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@100C, Farmall@110C, Farmall@120C	<b>77 dB (A)</b>	<b>78 dB (A)</b>	<b>79 dB (A)</b>	<b>80 dB (A)</b>
Farmall@90C	<b>77 dB (A)</b>	<b>77 dB (A)</b>	<b>77 dB (A)</b>	<b>79 dB (A)</b>

### External noise level with viscostatic coupling

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@100C, Farmall@110C, Farmall@120C	<b>77 dB (A)</b>	<b>77 dB (A)</b>	<b>78 dB (A)</b>	<b>80 dB (A)</b>
Farmall@90C	<b>77 dB (A)</b>	<b>78 dB (A)</b>	<b>76 dB (A)</b>	<b>78 dB (A)</b>

### Noise level at operator's ear with reversible fan

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@100C, Farmall@110C, Farmall@120C	<b>79 dB (A)</b>	<b>78 dB (A)</b>	<b>80 dB (A)</b>	<b>80 dB (A)</b>
Farmall@90C	<b>79 dB (A)</b>	<b>79 dB (A)</b>	<b>80 dB (A)</b>	<b>82 dB (A)</b>

### External noise level with reversible fan

Noise level in dB (A)				
Models	Closed cab		Cab open	
	Horizontal exhaust	Vertical spout	Horizontal exhaust	Vertical spout
Farmall@100C, Farmall@110C, Farmall@120C	<b>83 dB (A)</b>	<b>83 dB (A)</b>	<b>79 dB (A)</b>	<b>79 dB (A)</b>
Farmall@90C	<b>82 dB (A)</b>	<b>83 dB (A)</b>	<b>77 dB (A)</b>	<b>81 dB (A)</b>

**NOTE:** The test was carried out at 2400+/-10 RPM.

## Vibration levels

### Hazards related to vibration exposure

**⚠ WARNING**

**Machine vibration caused by improper machine maintenance could injure an operator. Make sure the machine is in good condition and that the service interval work has been carried out correctly to minimize the risk caused by machine vibrations. Failure to comply could result in death or serious injury.**

W0042A

**NOTE:** *the vibration level of the whole body depends on several parameters. Some of these parameters are machine-related, others are related to the terrain or surface on which you use the machine, while many others are specifically driver-related. The properties of the track or field surface and the driving speed will be the predominant parameters.*

Machine vibrations cause discomfort to the operator and in some cases his health and safety may be at risk.

- Make sure the machine is in good condition and that the service interval work has been carried out correctly.
- Check the tire pressure, check the efficiency of the steering, and check the efficiency of the brakes.
- Check that the operator's seat and adjustment controls are in good condition and then adjust the seat to suit the operator's size and weight.
- Operate all controls consistently so the tractor works smoothly and modify your driving to suit working conditions.
- During travel, adjust your speed and slow down if necessary.

**NOTE:** *for more information about the vibrations that agricultural tractors transmit to the whole body, Whole Body Vibration (WBV), refer to dedicated publications and relevant local regulations. To correctly estimate the statistical values based on your everyday activity, use a triaxial seat accelerometer to make measurements.*

Seat model / type		Level of vibration* measured on (test mass)	
		Operator of light build	Operator of heavy build
PILOT	33/SM80X	<b>1.08 m/s<sup>2</sup> (3.54 ft/s<sup>2</sup>)</b>	<b>0.74 m/s<sup>2</sup> (2.43 ft/s<sup>2</sup>)</b>
PILOT	33/A140	<b>1.10 m/s<sup>2</sup> (3.61 ft/s<sup>2</sup>)</b>	<b>0.96 m/s<sup>2</sup> (3.15 ft/s<sup>2</sup>)</b>
GRAMMER	MSG 93/721	<b>1.21 m/s<sup>2</sup> (3.97 ft/s<sup>2</sup>)</b>	<b>1.05 m/s<sup>2</sup> (3.44 ft/s<sup>2</sup>)</b>

\* Corrected weighted vibration acceleration.

## Towing the tractor for recovery

The tractor must only be towed for short distances, for example from inside a building to the outside.

Towing on public roads is permitted only for short distances useful to restore safe conditions and normal movement of other vehicles.

Only tow at safe speeds. Use caution when making corners or meeting traffic.

Tow the tractor from the rear, using only the drawbar, the rear tow hitch or the three-point linkage device.

Tow the tractor from the front using the tow pin in the front ballast weights or front support.

Have an operator steer and brake the tractor when necessary.

During towing operations, only the operator must be on the machine. Make sure that no one is on the machine or in the working area of the machine.

Do not use chains, cables or ropes to tow the machine. If the chain, cable or rope break or slip, they can strike with force. Use only rigid drawbars or tow bars for towing the machine.

Make sure you use a towing vehicle with adequate weight. Towing with an underweight vehicle could cause a loss of control during transport or braking

To avoid damaging the transmission or other components that turn but are not lubricated during towing, observe the following:

- Position all the levers in neutral.
- Only tow for short distances.
- Keep speed below **8 km/h (5 mph)**.
- If possible, run the engine to provide lubrication and power steering.

## Tractor jacking points

### ⚠ WARNING

Equipment failure could cause accident or injury!

Only use rigging equipment that has the capacity to lift the loads that you are moving. Always check the rigging equipment each day for damaged or missing parts. Make sure other workers or bystanders are not under the load while it is moving.

Failure to comply could result in death or serious injury.

W0205A

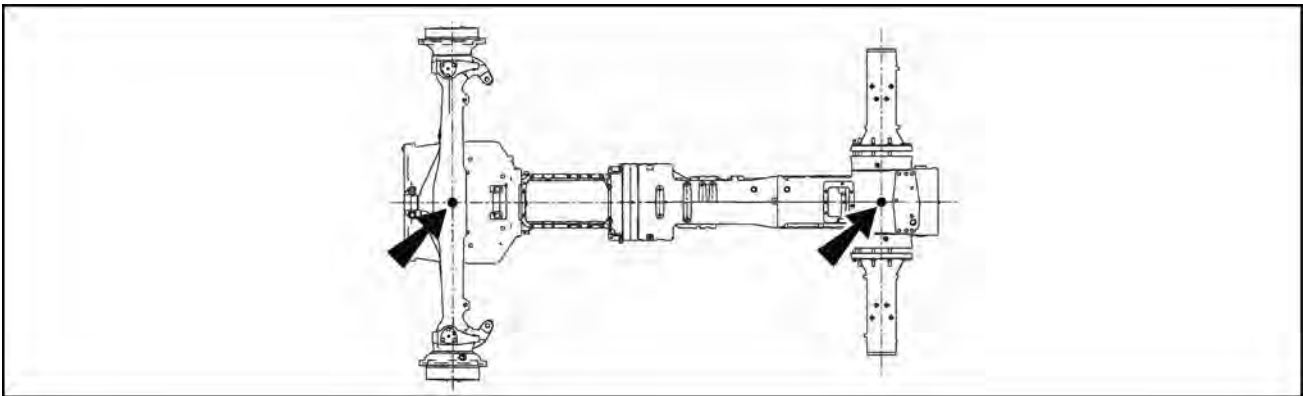
### ⚠ WARNING

Jack stands can slip or fall over. Dropping, tipping, or slipping of machine or its components is possible.

DO NOT work under a vehicle supported by jack stands only. Park machine on a level surface. Block wheels. Support machine with safety stands.

Failure to comply could result in death or serious injury.

W0069A



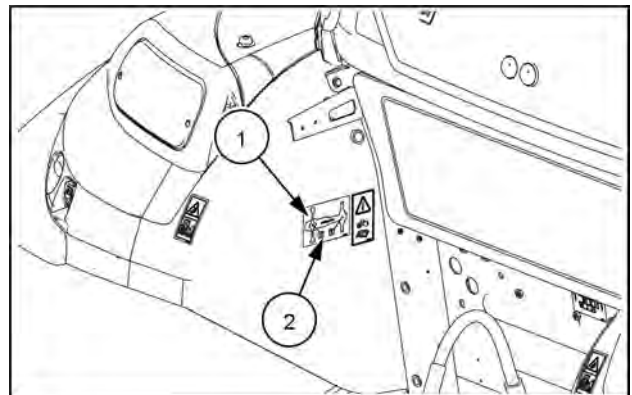
DCAPLT5NE019S2E 1

To lift the tractor use only the points shown in the figure.

ALWAYS raise only the back or the front, NEVER both together.

ALWAYS put chocks in front of or behind the wheels of the axle that is not to be lifted.

The lifting points are indicated on the label (1) on the left-hand side fender and by a special symbol (2) on the axle at the lifting point.



MOIL20TR01811AA 2

## Burn prevention

### WARNING

Hot surface possible!  
Wait for all components to cool before performing any operation.  
Failure to comply could result in death or serious injury.

W0251A

### WARNING

Burn hazard!  
Be very careful to avoid contact with hot fluids. If fluid is extremely hot, allow it to cool to a moderately warm temperature before proceeding.  
Failure to comply could result in death or serious injury.

W0362A

### CAUTION

Hot area!  
Use care when working near hot components. Wear protective gloves.  
Failure to comply could result in minor or moderate injury.

C0034A

### CAUTION

Burn hazard!  
During the Diesel Particulate Filter (DPF) regeneration process the exhaust stack and fixed hood area becomes extremely hot. Allow area to cool before servicing or working near the exhaust system components.  
Failure to comply could result in minor or moderate injury.

C0102B



There are parts on the tractor whose outside surfaces reach high temperatures with the consequent danger of burns by contact with the skin.

The hot parts of farm tractors that may pose a potential burn risk comprise:

1. The exhaust system (manifold, muffler, etc.).
2. Parts of the engine.
3. The gearbox and clutch housing.
4. The hydraulic distributors.
5. Pipes carrying hot fluids.
6. The air compressor.

Wherever possible, guards have been installed to prevent direct contact between the operator and the hot areas. For other parts that for reasons of construction and operation cannot be protected, it is necessary to take the due safety precautions and use the appropriate protective clothing for the type of work to be carried out.

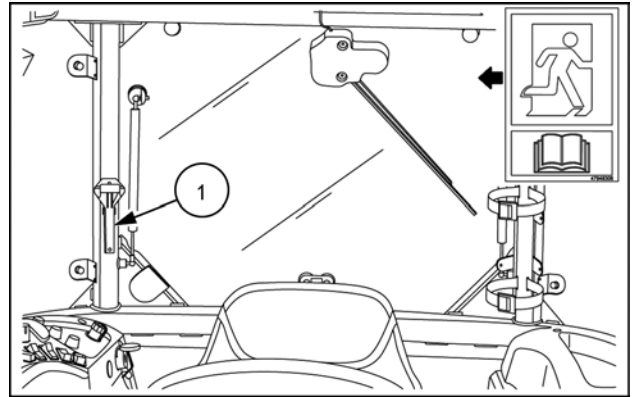
## Prevention of fire or explosions

1. Crop materials, trash, debris, bird nests or flammable material can ignite on hot surfaces. This risk can be minimized by frequent removal of accumulated crop material from the machine. If oil leaks appear, correct the fault by re-torquing the bolts or replacing the gaskets as necessary.
2. Fuel or oil leaked or spills on hot surfaces or electrical components can cause a fire.
3. At least once each day and at the end of the day remove all trash and debris from the machine especially around hot components such as engine, transmission, exhaust, battery, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions. At least once each day, remove debris accumulation around moving components such as bearings, pulleys, belts, gears cleaning fan, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.
4. Do not create sparks or have open flame near battery. To prevent an explosion carry out the following:
  - Disconnect Negative (-) first and reconnect Negative (-) last.
  - When using auxiliary batteries or connecting booster cables to start the engine, use the procedure shown in Section 4 of this manual. Do not short across terminals.
  - Do not short circuit the battery terminals with a metal object.
  - Do not weld, grind or smoke near a battery.
5. Inspect the electrical system for loose connections or frayed insulation. Repair or replace loose or damaged parts.
6. Sparks from the electrical system or engine exhaust can cause an explosion and fire. Before you operate the machine in an area with flammable dust or vapors, use a good ventilation system to remove the flammable dust or vapors.
7. Use a non flammable cleaning solvent when cleaning parts on the machine.
8. A fire can cause injury or death. Always have a fire extinguisher on or near the machine. Make sure the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.
9. If a fire extinguisher has been used, always recharge or replace the extinguisher before operating the machine in conditions where a fire may occur.
10. Do not store oily rags or other flammable material on the machine.
11. Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with non-flammable solvent before welding or flame cutting.
12. Do not expose the machine to flames, burning brush or explosives.
13. Promptly investigate any unusual smells or odors that may occur during operation of the machine.

## Emergency escape from cab

In an emergency, if the cab doors are blocked, use the rear window as an emergency exit. There is a decal on it indicating that the rear window is an emergency exit.

In case of emergency, use the hammer (1) to break the rear glass. For tractors provided with a hammer, this is located on the rear right-hand corner pillar.



MOIL16TR03490AA 1

## Seat and seat belt

### **▲ WARNING**

**Run-over hazard! Never carry people on fenders, steps, platform, rails, or other locations. Passengers are not permitted, even inside the cab. Another adult may ride in the cab only if a manufacturer-supplied passenger seat is present. Passengers are not permitted while towing. Do not carry passengers if national legislation forbids it. Comply with workplace accident insurance provisions. Failure to comply could result in death or serious injury.**

W1701A

### Passenger seat safety

Use on public roads:

The passenger seat can be used for short term and occasional transport of only one person from the farm to the field.

**NOTE:** Children are not allowed to ride on the tractor.

Use in the field:

The passenger seat can be used for only one person when training a new operator or when a service technician is diagnosing a mechanical problem.

When the passenger seat is occupied, the following precautions must be taken:

- Tractor should be driven only at slow speeds and over level ground.
- Avoid quick starts and stops.
- Avoid sharp turns.
- Always wear correctly adjusted seat belts.
- Keep doors closed at all times.

## Protection offered by the tractor

### Safety inside the cab

The cab of this tractor corresponds to category 2 as indicated on the cab ID tag (see **1-12**). This category is specified in **EN 15695-1:2009** and defines the protection level of the operator against potential hazardous substances, such as fertilizers or plant protection products.

### Definition of cab Category 1

Cab which does not provide a specified level of protection against hazardous substances.

### Definition of cab category 2

Cab providing a level of protection against dust. Tractors equipped with a cab category 2 shall not be used in conditions requiring protection from aerosols and vapors. Spraying operations with aerosols and vapours are not in the intended scope of use of this tractor.

### Observe following basic rules

- Use only genuine CNH filters and ensure that the filter is correctly installed.
- Check the condition of the sealing material and have it repaired when required.

**NOTE:** For further information, see **6-64**.

### ROPS (Roll Over Protective Structure)

This tractor is provided with a ROPS cab, offering protection against roll over related hazards all the same please consider the following:

- Do not use the tractor without wearing the seat restraint system during activities where roll over or tip over hazards exist. The ROPS cab will only be fully effective when the driver remains attached to his seat.
- Do not use the tractor beyond its limits of terrain gradient and stability. If used beyond these limits the tractor can overturn. Observe the recommendations in this manual and pay particular attention when going down steep hills in a loaded condition.
- Be extremely cautious when working with the tractor on forage silos without side concrete walls. Dual wheels or a wide track setting may improve the sideways stability of the tractor.
- The mounting or suspension for the protective structure, operator seat and suspension, seat belts and mounting components and wiring within the operator's protective system must be carefully inspected for damage.
- All damaged parts must be replaced.
- The protective structure must be replaced.

**ATTENTION:** Do not weld, drill holes, attempt to straighten or repair the protective structure modification in any way can reduce the integrity of the structure which could cause in death or serious injury in the event of fire, tip, roll over, collision or accident. In the event of damage to the structure, consider the following options:

## **FOPS (Falling Objects Protection System)**

FOPS level on your tractor cab is certified according to **OECD CODE 10**

The cab with a certified FOPS, provides protection against falling objects according to **OECD CODE 10**; It is recommended to use a certified FOPS when you work with front-end loaders or in forestry applications. A cab that is not FOPS-certified offers insufficient protection against falling rocks, bricks, or pieces of concrete.

## **OPS (Objects Penetrating System)**

This tractor is not provided with an OPS structure; Please carefully read the following important information especially when working in a forestry environment.

Protection against penetrating objects (OPS) can be obtained only by installing a specific KIT; Contact your dealer to verify whether an OPS-certified KIT is available for your tractor.

## **Forestry**

This tractor is not designed for heavy forestry applications; Usage is prohibited unless a certified FORESTRY KIT is installed. Contact your dealer to verify whether a forestry kit exists for this tractor model. Only a forestry specific kit will provide necessary protection against falling trees.

## **Installation and working with front loader on tractors**

Please consider following precautions when working with a front loader:

- Do not use the front loader without taking precautions against falling objects.
- Do not lift the front loader to a height from which objects may fall or roll on the driver. Load items can fall off the Loader bucket or lifting attachment and crush the operator. Care must be taken when lifting a load. Use proper lifting attachments. Do not lift load higher than necessary. Lower loads to transport. Remember to leave appropriate clearance to the ground or other obstacles.
- Always use the correct attachment (grab forks, buckets, etc.) for the specific task to ensure that the load is securely kept in place.
- It is recommended to install a front loader with a parallel guidance system and use it all the time; this system will ensure that the load in the bucket will remain horizontal, regardless of the height of the lift arms.
- Know the full area of movement of the machine and equipment and do not enter or permit anyone to enter the area of movement while the machine is in operation. Never enter or permit anyone to enter the area underneath raised equipment. Equipment and/or loads can fall unexpectedly and crush persons underneath it.
- Never use front loaders, loader buckets, forks, etc. or other lifting, handling or digging equipment to lift persons. Do not use raised equipment as a work platform.
- Do not use the front loader in an area with overhead power lines. In case of contact with overhead power lines, jump from the tractor without making instant contact between tractor and ground. When possible, disconnect the power lines from the grounds.
- Do not leave equipment in raised position while parked or during service, unless securely supported. Hydraulic cylinders must be mechanically locked or supported if they are left in a raised position for service or access.
- Loader buckets, forks, etc. or other lifting, handling or digging equipment and its load will change the centre of gravity of the machine. This can cause the machine to tip on slopes or uneven ground.
- Equipment and associated loads can block visibility and cause an accident. Do not operate with insufficient visibility.

**NOTE:** *This list is by way of example only.*

## Wheel chock

### **⚠ DANGER**

**Unexpected machine movement!**

When using implements that require the tractor to be stationary with the engine running, keep the gear, range, and reverse levers in the neutral position, and apply the handbrake and the parking brake (if equipped). For added security, use suitable wheel chocks.

Failure to comply will result in death or serious injury.

D0089A

### **⚠ CAUTION**

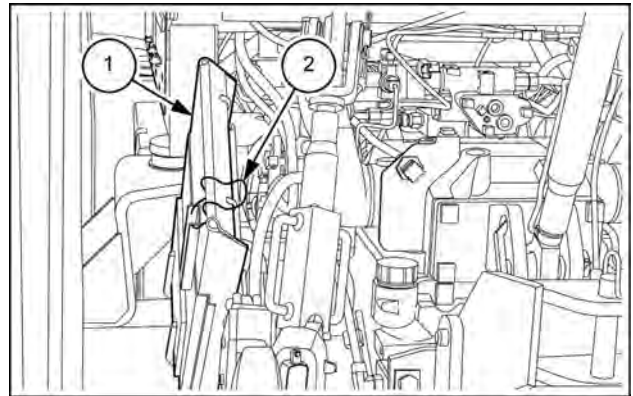
**Unexpected machine movement!**

When the machine is parked and the engine is switched off, the parking brake must be applied. Use wheel chocks if parking on a steep slope.

Failure to comply could result in minor or moderate injury.

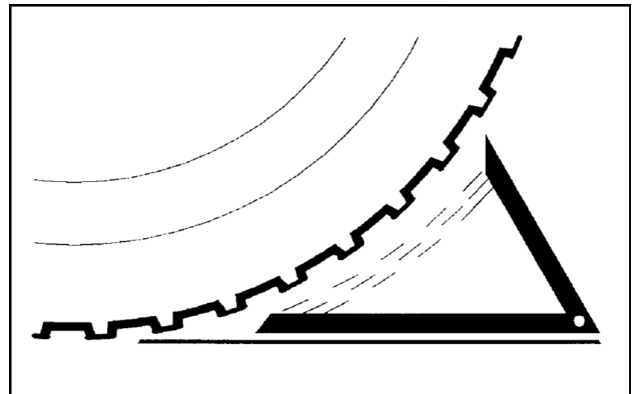
C0014A

Place the chocks (1) in front or behind one of the rear wheels, depending on the direction with respect to the slope. When the chock is resting in its seat, check it is locked with its locking hook (2).



MOIL12TRO0125AA 1

**NOTICE:** Pay attention when fitting the chock under the wheel so as not to get your hands crushed between the folding metal parts.



DCAPLT5NE023S2A 2

## Safety signs

The following safety signs are affixed on the machine for the personal safety of the operators and other employees. Walk around the machine and note the content and location of these safety signs before operating your machine.

Keep the safety signs clean and decipherable. Clean the safety signs with a soft cloth, water and a delicate detergent. Do not use solvents, petrol or other harsh chemicals. Solvents, petrol or other aggressive chemical products can damage or remove the safety signs.

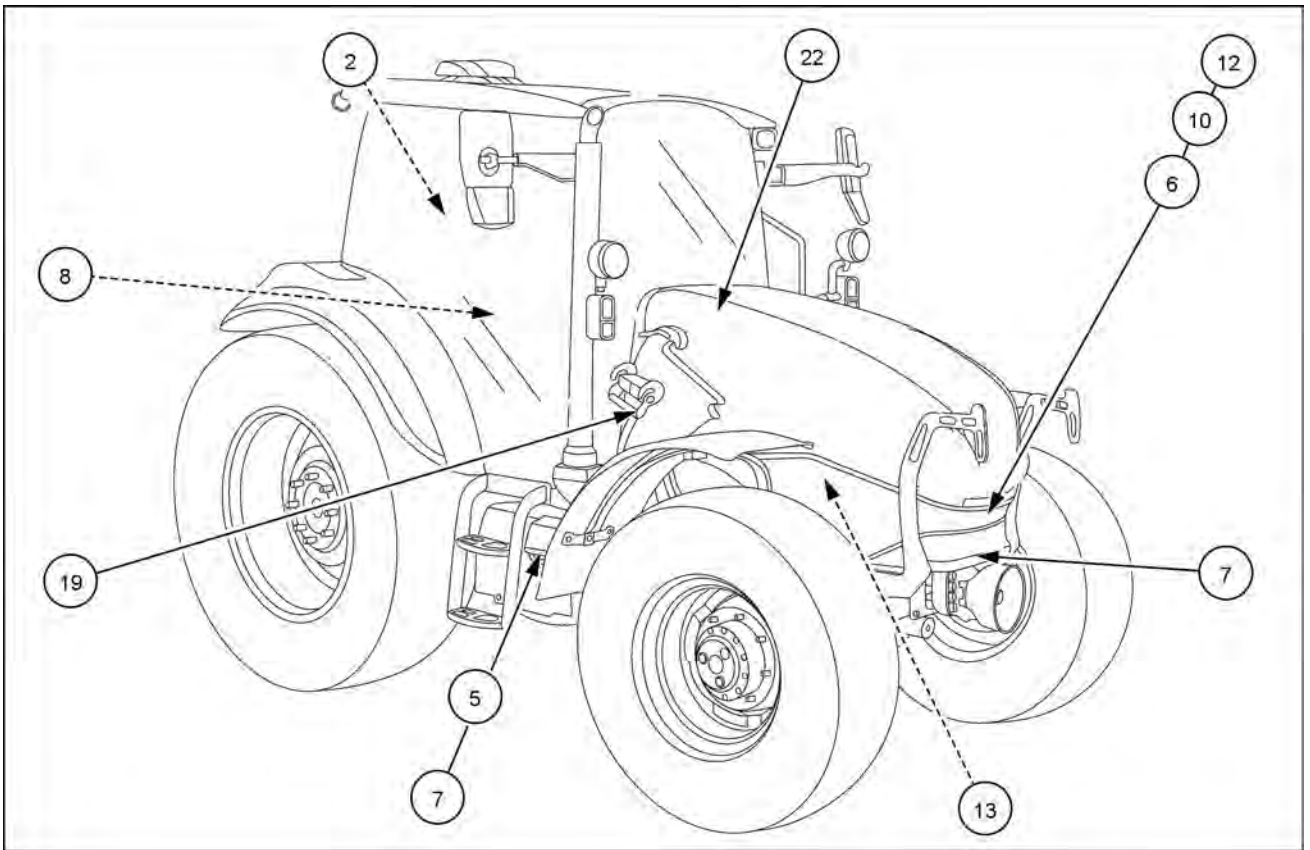
Replace all safety signs that are damaged, missing, painted over or illegible. If a safety sign is affixed to a part to be replaced, ensure that it gets affixed onto the new part. Contact your dealer for spare safety signs.



Safety signs with the "Read the operator's manual" symbol encourage the operator to read the operator's manual for further information regarding maintenance, adjustments or procedures for specific areas of the machine. When a safety sign shows this symbol, refer to the appropriate page of the operator's manual.

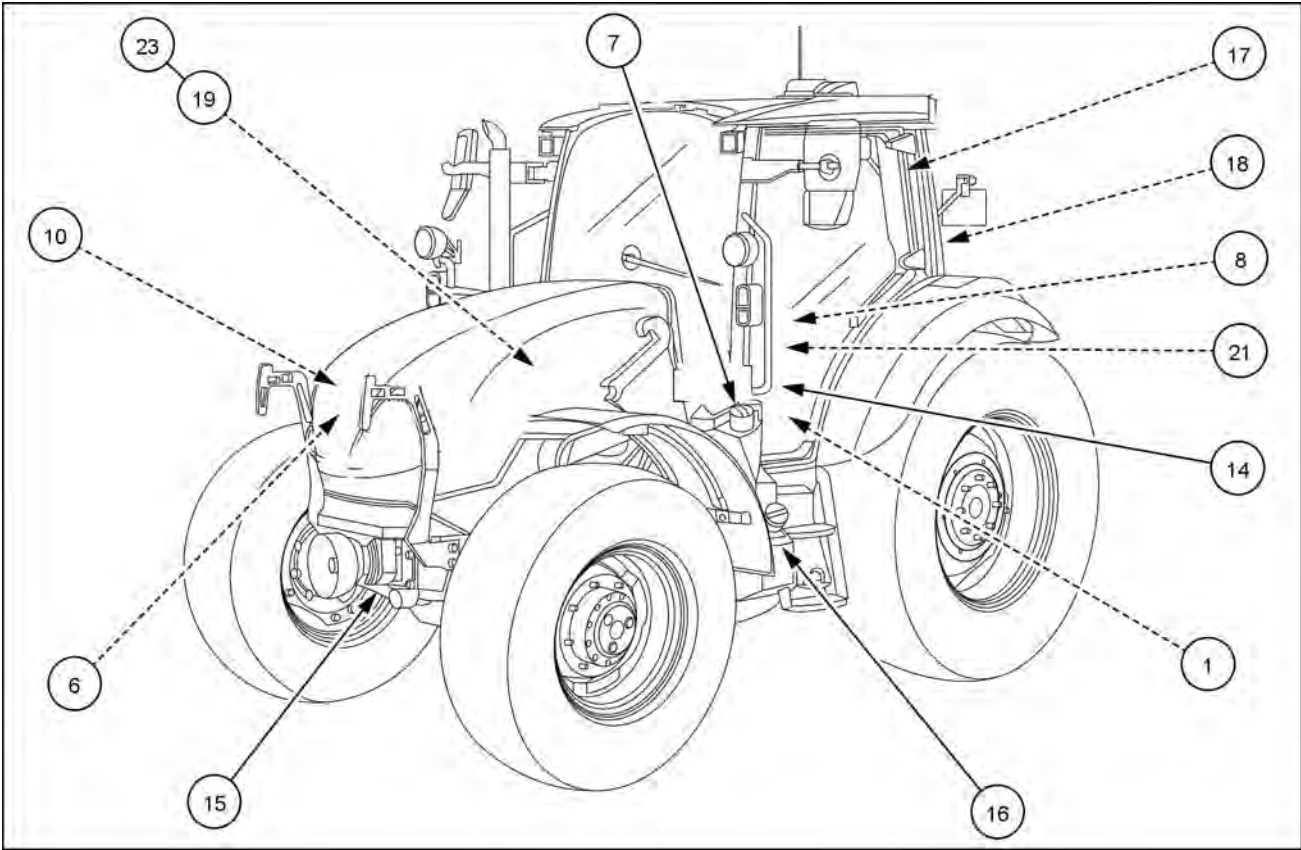


Safety signs with the symbol 'Read service manual' direct you to the service manual. If you doubt your ability to carry out maintenance work, contact your dealer.

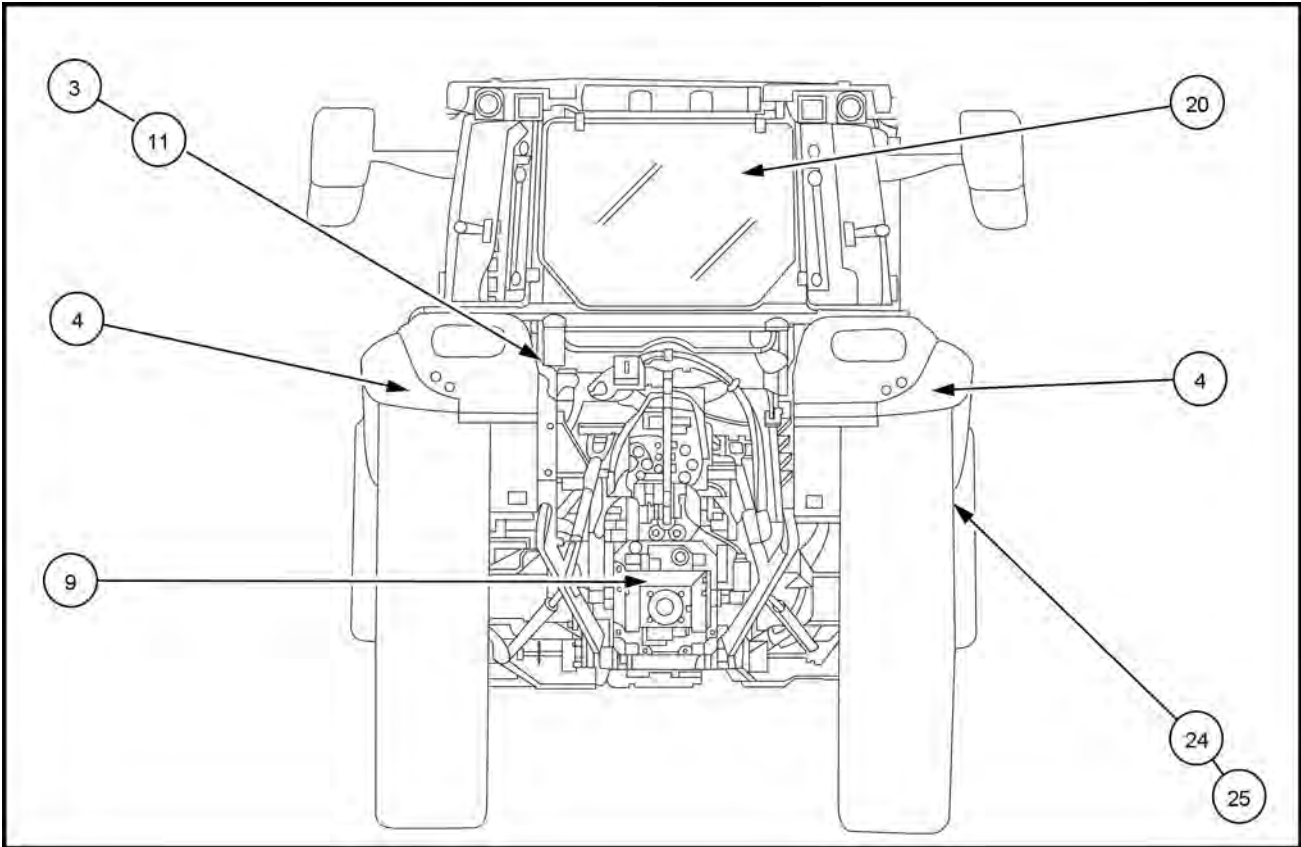


MOIL23TR01061FA 1

2 - SAFETY INFORMATION



MOIL23TR01062FA 2



MOIL23TR00902FA 3

**(1)** Position: affixed outside on the left-hand door.  
Part Number: 47949394

**CAUTION**  
Personal Protective Equipment (PPE).  
Wear all the appropriate Personal Protective Equipment (PPE) suited to the task to be carried out.

Failure to comply could result in minor or moderate injury.

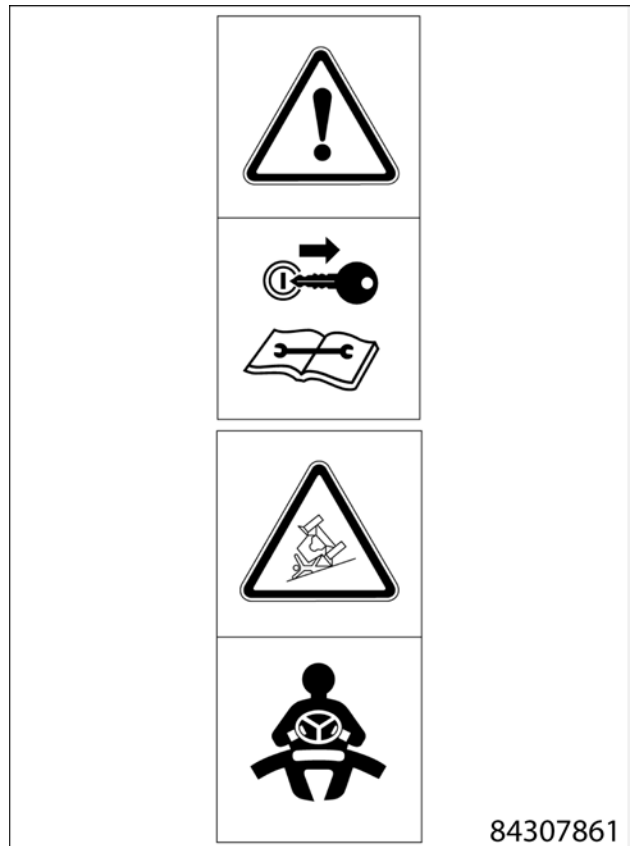


47949394 4

**(2)** Position: affixed to the right central pillar inside the cab.  
Part Number: 84307861

**WARNING**  
Overturning.  
Seat belts must be worn at all times. In the event of an overturn, hold on tightly to the steering wheel.

Failure to comply could result in death or serious injury.



84307861

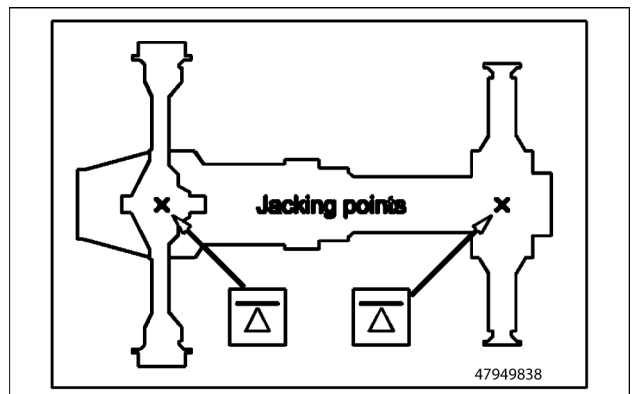
84307861 5

**(3)** Position: applied to the internal part of the left-hand rear fender.  
Part Number: 47949838

**WARNING**  
Crushing hazard!

Refer to the Operator's Manual about jacking the tractor and the correct jacking points. Never jack the tractor with the engine running, always switch off the tractor prior to operation.

Failure to comply could result in death or serious injury.



47949838

47949838 6

**(4)** Position: applied to the rear part of both rear mud-guards.  
Part Number: 48056971

**DANGER**

Danger. Moving parts.

To avoid injury, do not stand on implement or between implement and tractor while operating external controls.  
Activate the external switches only while standing to the side of the machine (outboard of the tyres).

Failure to comply will result in death or serious injury.



48056971 7

**(5)** Position: affixed near the rear lift and on the protective guard of the ISOBUS socket.  
Part Number: 47942942

**DANGER**

Safety alert symbol

Failure to comply will result in death or serious injury.



47942942 8

**(6)** Position: affixed to the left and right-hand side of the radiator.  
Part Number: 84269904

**WARNING**

Danger. Rotating parts.

When the engine is running, do not open or remove the safety guards.

Failure to comply could result in death or serious injury.



84269904 9

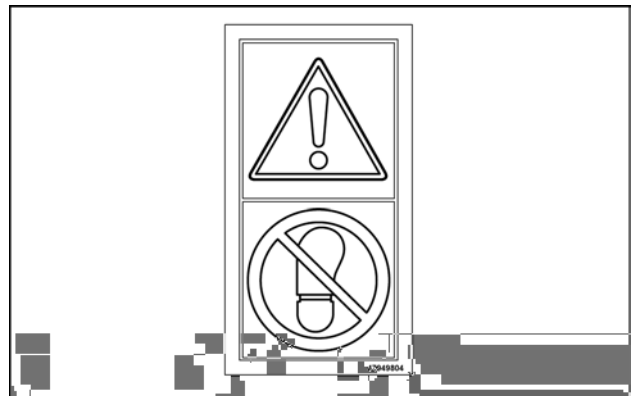
**(7)** Position: affixed to the protective guard of the front power take-off (PTO) and above the battery compartment.  
Part Number: 47949804

**WARNING**

Risk of falling.

DO NOT climb onto the object to which the sticker refers.

Failure to comply could result in death or serious injury.



47949804 10

**(8)** Position: affixed to the right-hand and left-hand side of the console.  
Part Number: 48009866

**WARNING**  
Risk of falling.  
Always use the grab handles when entering or leaving the tractor. Do not use the steering wheel or other controls as hand rails.

Failure to comply could result in death or serious injury.

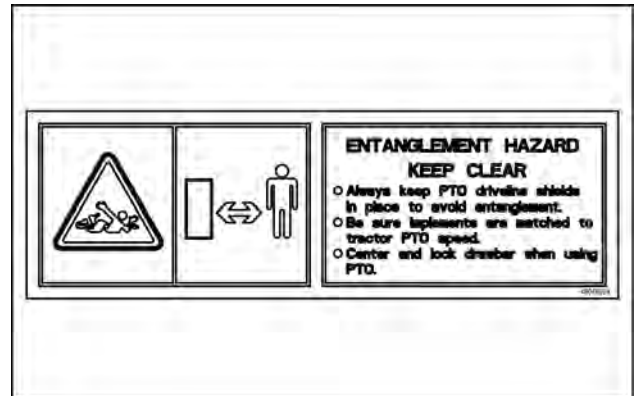


48009866 11

**(9)** Position: affixed to the rear Power take-off (PTO) protective guard, close to the front Power take-off (PTO).  
Part Number: 48049624

**WARNING**  
Rotating parts.  
Keep clear of rotating parts to avoid injury.

Failure to comply could result in death or serious injury.



48049624 12

**(10)** Position: affixed to the left and right-hand side of the radiator.  
Part Number: 47969960

**WARNING**  
Risk of burns.  
Never remove the radiator cap or the expansion tank with the engine running or when the coolant is hot. Stop the engine and let the system cool.

Failure to comply could result in death or serious injury.



47969960 13

**(11)** Position: applied to the internal part of the left-hand rear fender.  
Part Number: 84269928

**WARNING**  
Unexpected machine movement.  
Before carrying out any maintenance or repairs, stop the engine and remove the ignition key.

Failure to comply could result in death or serious injury.



84269928 14

**(12)** Position: affixed to the right-hand side of the radiator.  
Part Number: 47967447

**WARNING**

Risk of explosion.  
Do not use ether or other flammable starting aids.

Failure to comply could result in death or serious injury.



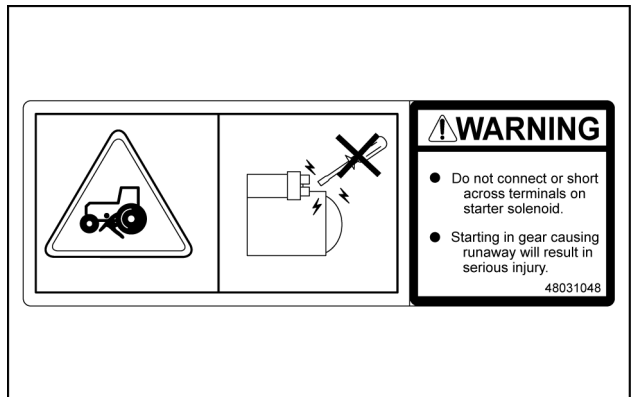
MOIL16TR02705AA 15

**(13)** Position: affixed to the starter motor.  
Part Number: 48031048

**DANGER**

Unexpected machine movement.  
Only start the engine from the driver's seat.

Failure to comply will result in death or serious injury.



48031048 16

**(14)** Location: affixed to the outside of the left front pillar.  
Part Number: 87478089

Only use fuel with low or very low sulphur content.



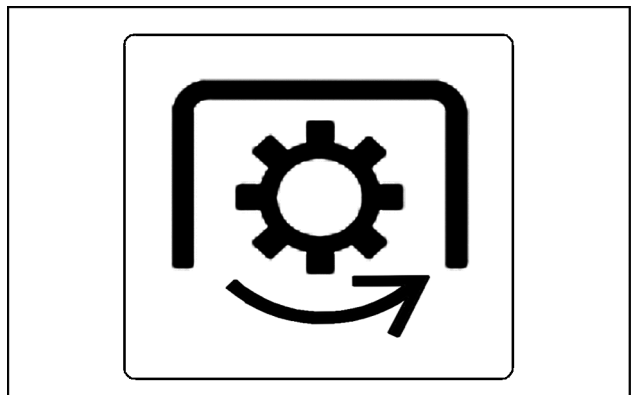
87478089\_A 17

**(15)** Position: affixed near the front Power Take-Off (PTO) (if present).  
Part Number: 47967751

**WARNING**

Unexpected movement.  
Disengage the Power Take-Off after each use. This prevents an attached implement from moving unintentionally.

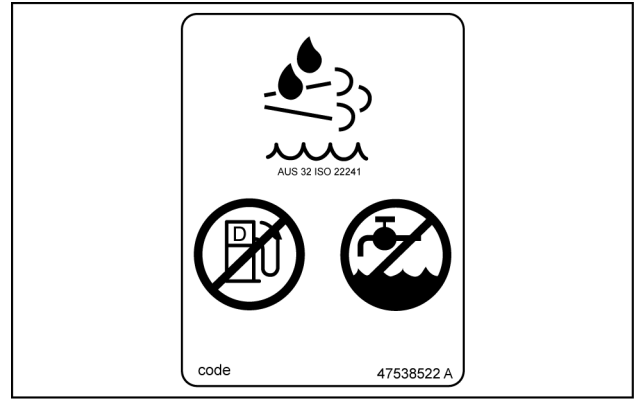
Failure to comply could result in death or serious injury.



47967751 18

**(16)** Location: affixed to the **DEF/AdBlue®** tank filler neck.  
Part Number: 47538522

**NOTICE:** Only fill the **DEF/AdBlue®** tank with approved **DEF/AdBlue®** solution. Do not fill with diesel fuel or water. Refer to the operator's manual.



47538522 19

**(17)** Position: affixed to the left-hand pillar inside the cab.  
Part Number: 84270888

**WARNING**

Read the operator's manual carefully before operating the machine. Observe the safety rules and instructions during operation.

Failure to comply could result in death or serious injury.



84270888 20

**(18)** Position: affixed to the left-hand C-pillar inside the cab.  
Part Number: 47967749

**WARNING**

Fire risk.

Always carry a fire extinguisher at the space provided for your own and others safety.

Failure to comply could result in death or serious injury.



47967749 21

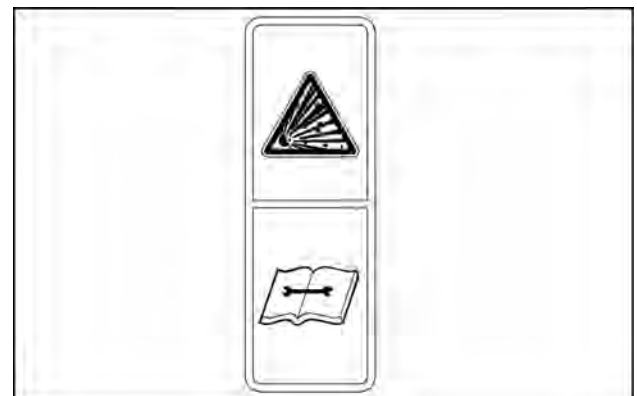
**(19)** Location: affixed to the hydraulic/gas accumulators (when present) on the front and rear sides and on the right side member of the front loader (if present).  
Part Number: 82029751

**ATTENTION:**

Explosion hazard.

The hydraulic accumulator contains gas and oil under pressure. To remove and repair, closely follow the instructions of the technical manual

Failure to comply could result in death or serious injury.



82029751 22

**(20)** Position: Located on rear window.  
 Part Number: 47948306

**WARNING**

Emergency exit.

This decal identifies the emergency exit on your tractor; use the hammer provided, located on the rear pillar, to break the rear window glass.

Failure to comply could result in death or serious injury.



47948306 23

**(21)** Position: affixed in the vicinity of the passenger seat backrest.  
 Part Number: 84270900

**WARNING**

Risk of bodily injury.

The presence of a passenger is permissible for road use, while for working in the field the seat should be used by an instructor for training new operators or by service technicians for fault diagnosis and checking problems. The occupant must always wear a seat belt.

Failure to comply could result in death or serious injury.



84270900 24

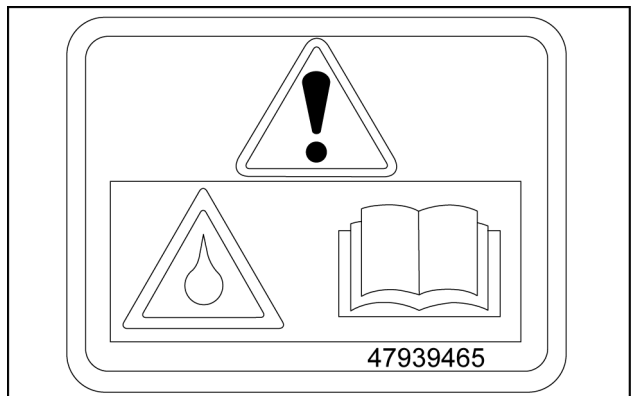
**(22)** Location: applied to the oil tank, under the right-hand side of the hood.  
 Part Number: 47939465

**WARNING**

Braking risk

If the red warning indicator on the instrument cluster lights up, there is a fault in the braking system.

Failure to comply could result in death or serious injury.



47939465 25

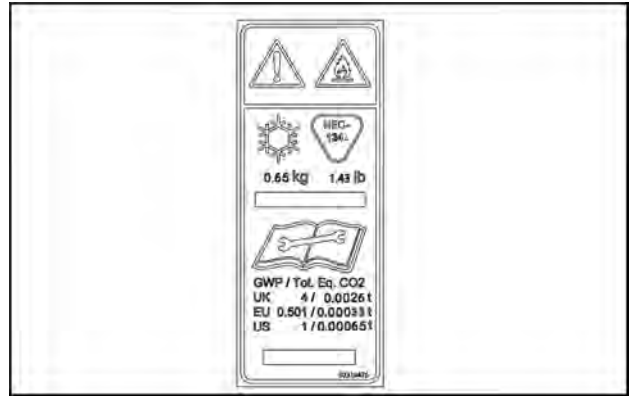
**(23a)** Position: affixed to the left-hand side of the conveyor.  
Part Number: 92319476

**WARNING**

Pressurized refrigerant (HFC-134a).  
Recommended refrigerant charge: **0.65 kg (1.43 lb)**

Global warming potential, Global Warming Potential (GWP)/Amount of CO2 emissions:

UK: **4/0,0026 t**  
EU: **0,501/0,00033 t**  
US: **1/0,00065 t**



92319476 26

Maintenance, repair, or recharging must be performed only by trained service technician. Always contact your local authorized dealer.

Failure to comply could result in death or serious injury.

**(23b)** Position: affixed to the left-hand side of the conveyor.  
Part Number: 92319474

**WARNING**

Refrigerant (HFO-1234yf) under pressure.  
Recommended refrigerant charge: **0.55 kg (1.21 lb)**

Global warming potential, Global Warming Potential (GWP)/Amount of CO2 emissions:

UK: **4/0,0022 t**  
EU: **0,501/0,00028 t**  
US: **1/0,00055 t**



92319474 27

Maintenance, repair, or recharging must be performed only by trained service technician. Always contact your local authorized dealer.

Failure to comply could result in death or serious injury.

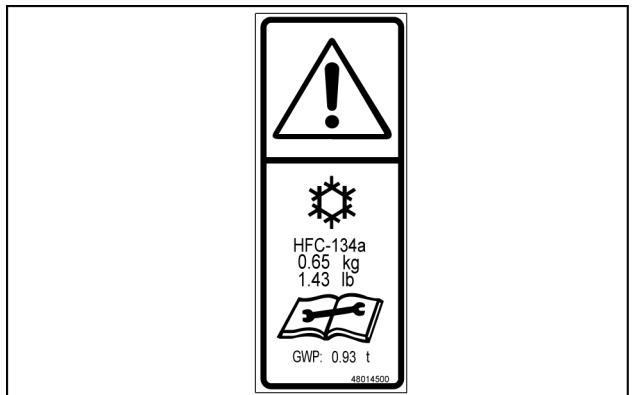
**(23c)** Position: affixed to the left-hand side of the conveyor.  
Part Number: 48014500

**WARNING**

Pressurized refrigerant (HFC-134a).  
Recommended refrigerant charge: **0.65 kg (1.43 lb)**

Global Warming Potential (GWP): **0.93 t (2050 lb)**

Maintenance, repair, or recharging must be performed only by trained service technician. Always contact your local authorized dealer.



48014500 28

Failure to comply could result in death or serious injury.

**(23d)** Position: affixed to the left-hand side of the conveyor.

Part Number: 51546158

**WARNING**

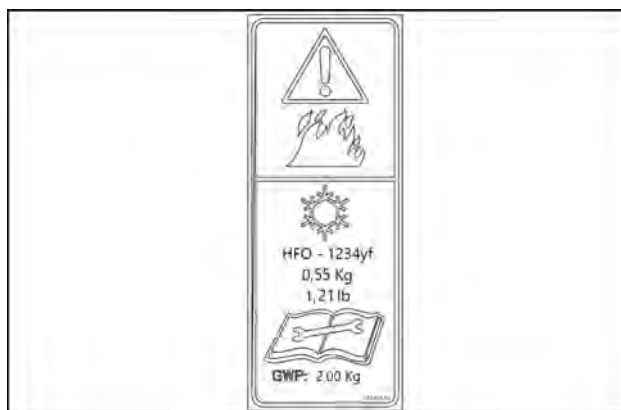
Refrigerant (HFO-1234yf) under pressure.

Recommended refrigerant charge: **0.55 kg (1.21 lb)**

Global Warming Potential (GWP): **2.00 kg (4.41 lb)**

Maintenance, repair, or recharging must be performed only by trained service technician. Always contact your local authorized dealer.

Failure to comply could result in death or serious injury.



51546158\_3 29

**(24)** Position: applied to the battery bracket on the right side.

Part Number: 86402367

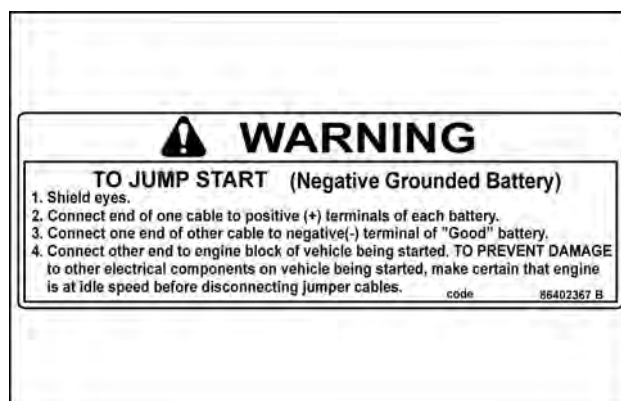
**WARNING**

Unexpected machine movement!

**TO JUMP START (Negative Grounded Battery)**

1. Shield eyes.
2. Connect end of one cable to positive (+) terminals of each battery.
3. Connect one end of other cable to negative (-) terminal of "Good" battery.
4. Connect other end to engine block of vehicle being started. TO PREVENT DAMAGE to other electrical components on vehicle being started, make certain that engine is at idle speed before disconnecting jumper cables.

Failure to comply could result in death or serious injury.



86402367 30

**(25)** Location: applied to the battery support.

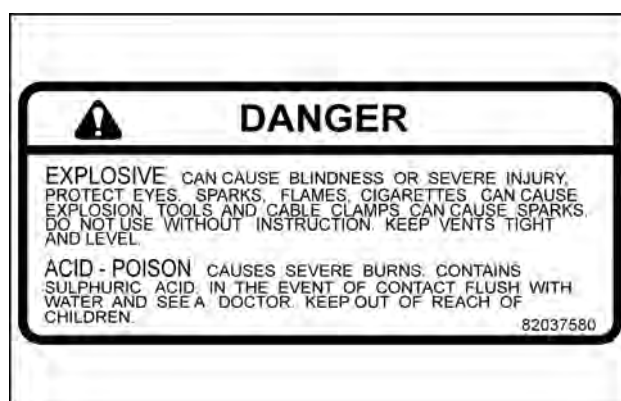
Part Number: 82037580

**DANGER**

Risks: Chemical substances, explosion, bodily injury. EXPLOSION CAN CAUSE BLINDNESS OR SERIOUS INJURY; SHIELD EYES. SPARKS, FLAMES AND CIGARETTES CAN CAUSE EXPLOSIONS. TOOLS AND CABLE CLAMPS CAN CAUSE SPARKS. DO NOT USE UNLESS YOU HAVE READ THE INSTRUCTIONS. KEEP THE OUTLETS SEALED AND AT THE CORRECT LEVEL.

ACID POISONING CAUSES SEVERE BURNS; CONTAINS SULPHURIC ACID. IN THE EVENT OF CONTACT FLUSH WITH WATER AND SEE A DOCTOR. KEEP OUT OF REACH OF CHILDREN.

Failure to comply will result in death or serious injury.



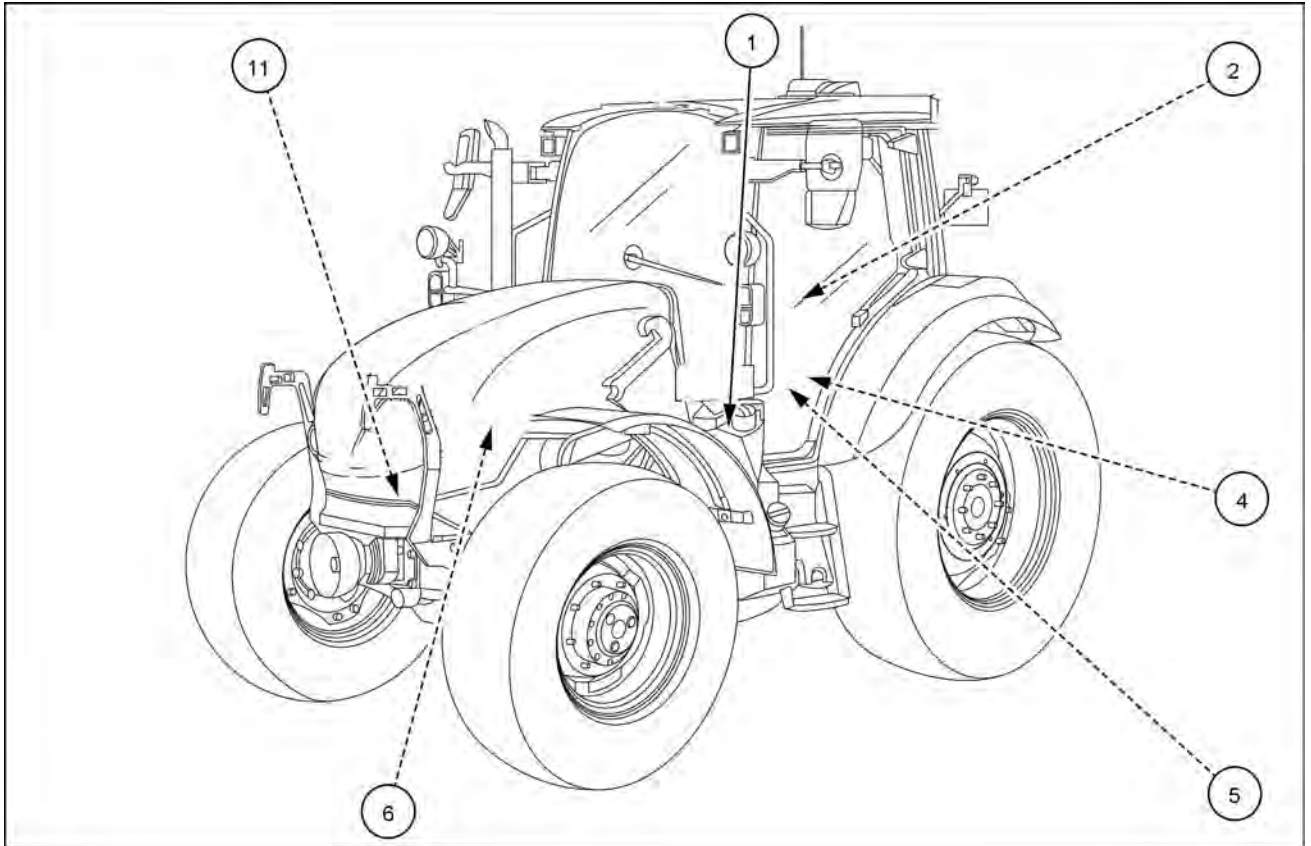
82037580 31

## Instructional signs

The following instructional signs are affixed to the tractor for the personal safety of the operators and other employees. Walk around the machine and observe the content and position of these safety signs before operating the machine.

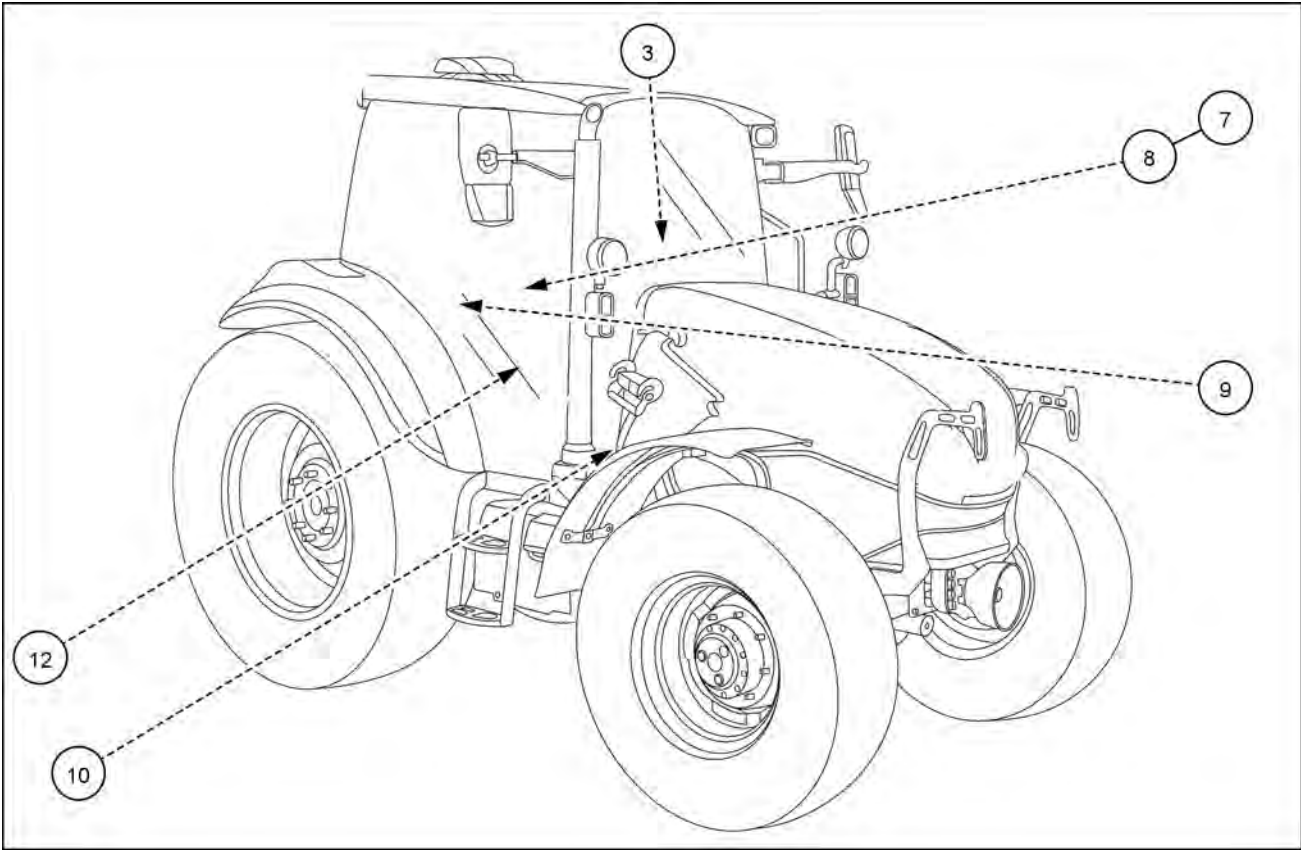
Keep the safety signs clean and decipherable. Clean danger signs with a soft cloth, water, and a gentle cleaning agent. Do not use solvents, benzene or other harsh chemicals. Solvents, benzene or other aggressive chemical products can damage or remove the safety signs.

Replace all safety signs that are damaged, missing, painted over or illegible. If a safety sign is affixed to a part to be replaced, ensure that it gets affixed onto the new part. Contact your dealer for spare safety signs.

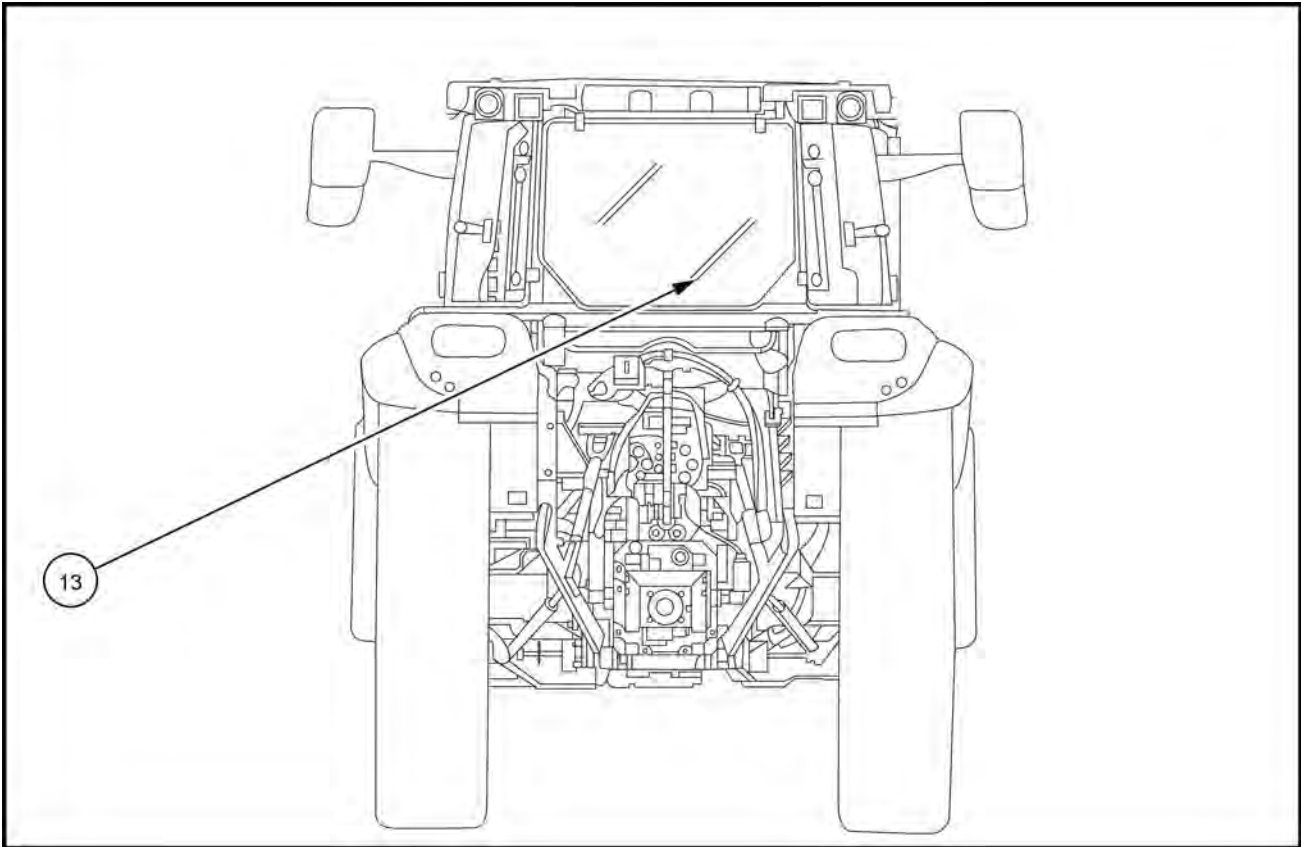


MOIL23TR01062FA 1

2 - SAFETY INFORMATION



MOIL23TR01061FA 2



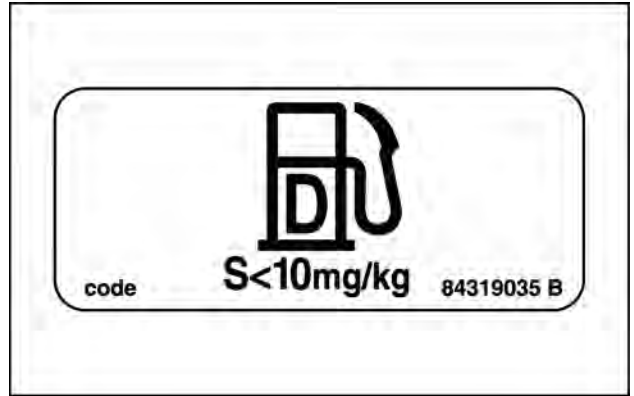
MOIL23TR00902FA 3

**(1) Low-sulphur diesel fuel decal**

Location: affixed to the fuel tank

Part Number: 84319035

Use only low sulphur fuel or ultra low sulphur fuel on your machine

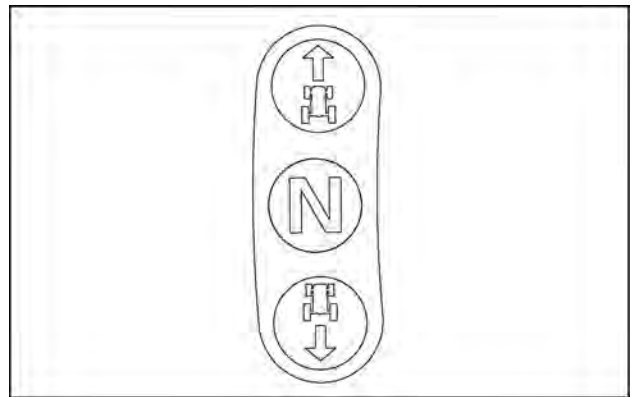


84319035 4

**(2) Electro-hydraulic reversing mechanism control lever decal**

Location: affixed to the steering column

Part Number: 47564530

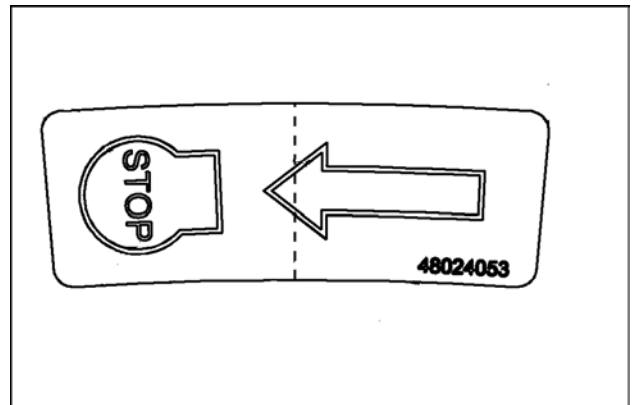


47564530 5

**(3) Engine shutdown decal**

Location: affixed to the centre console next to the starter switch

Part Number: 48024053



48024053 6

**(4) Hand brake lever decal**

Location: affixed to the hand brake lever  
"EMERGENCY STOP AND PARKING BRAKE"

Part Number: 5163560



MOIL16TR02285AA 7

**(5) Parking block decal (if present)**

Location: affixed on the inside of the cab on the lower left side below the parking lock lever

"DO NOT ENGAGE THE PARKING LOCK WHILE TRACTOR IS MOVING

NON-COMPLIANCE MAY CAUSE DAMAGE TO THE VEHICLE"

Part Number: 47739782

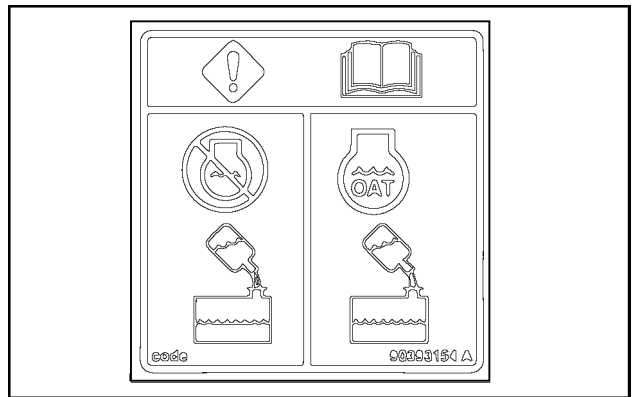


47739782 8

**(6) Coolant decal**

Location: affixed to the radiator fluid reservoir

Part Number: 90393154

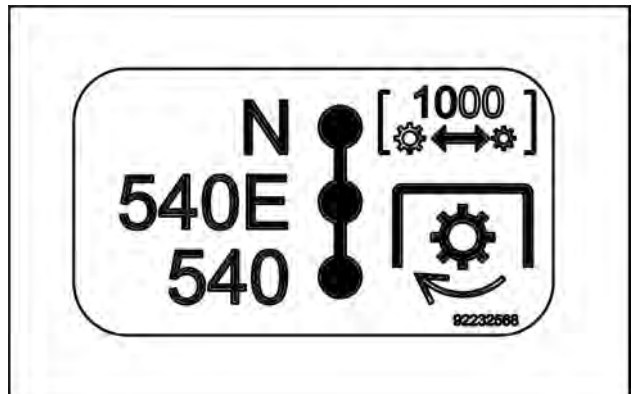


90393154\_B 9

**(7) Independently activated power take-off (PTO) speed decal.**

Location: affixed inside the cab on the right-hand side near the power take-off speed selection lever (PTO)

Part Number: 92232568

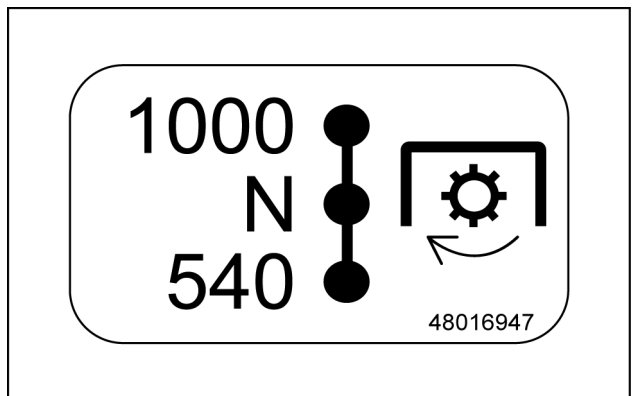


MOIL24TR00680AA 10

**(8) Independently activated power take-off (PTO) speed decal.**

Location: affixed inside the cab on the right-hand side near the power take-off speed selection lever (PTO)

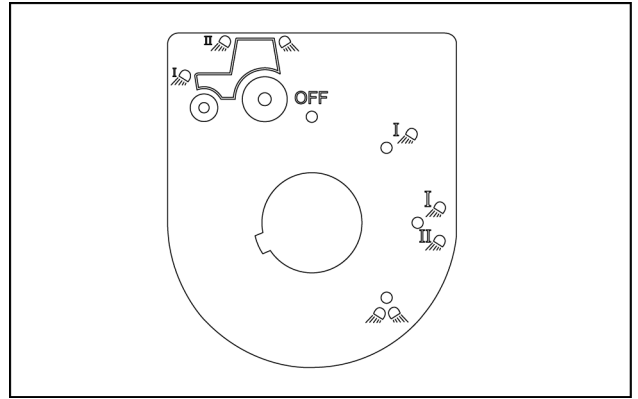
Part Number: 48016947



MOIL16TR03063AA 11

**(9) Work light switch decal**

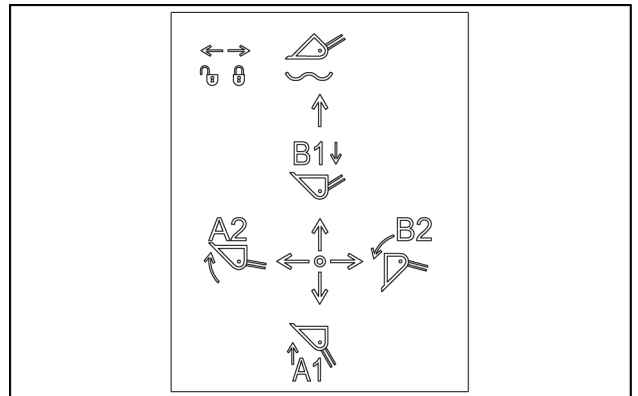
Location: affixed to the front right pillar inside the cab  
 Part Number: 90478740



MOIL16TR02590AA 12

**(10) Auxiliary control valve movement decal (if fitted)**

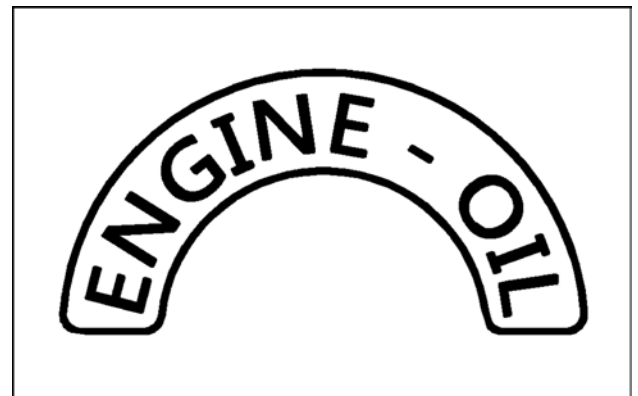
Location: affixed inside the cab at the joystick with advanced functions (if fitted)  
 Part Number: 48084809



MOIL16TR03958AA 13

**(11) Engine oil decal**

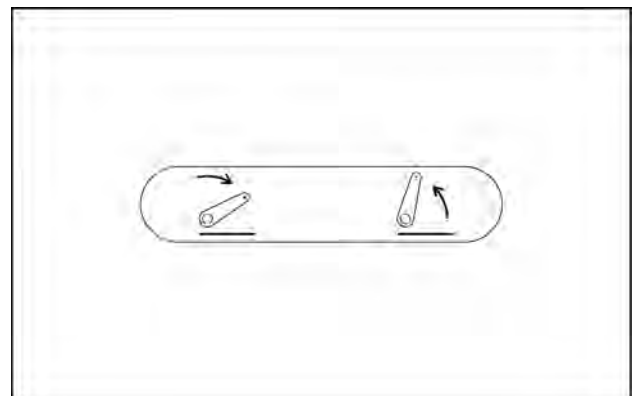
Location: affixed to the engine oil filler plug  
 Part Number: 47137032



47137032 14

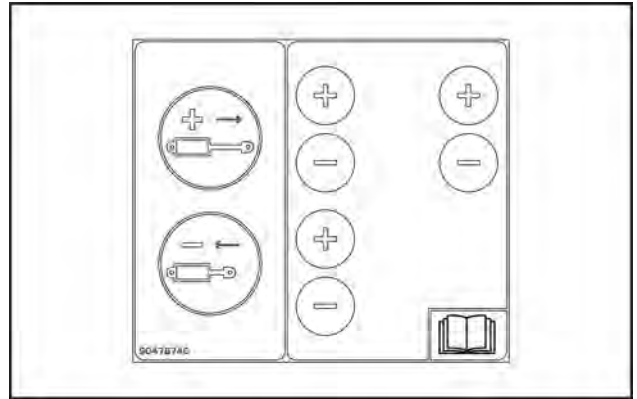
**(12) Mechanical lift decal (if fitted)**

Location: affixed on the right-hand side console under the  
 Part Number: 47939461



MOIL24TR00235 15

**(13)** Auxiliary hydraulic control valves decal  
Location: affixed to the outside of the rear window  
Part Number: 90478740



90478740 16

## 3 - CONTROLS AND INSTRUMENTS

### Access to operator's platform

### Mounting and dismounting

#### ▲ WARNING

**Fall hazard!**

Jumping on or off the machine could cause an injury. Always face the machine, use the handrails and steps, and get on or off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps.

Failure to comply could result in death or serious injury.

W0141A

#### ▲ CAUTION

**Fall hazard!**

When entering or exiting the cab, never use the control levers as handholds. Always mount and dismount the machine in a safe way. Maintain a three-point contact with steps, ladders, and/or handholds.

Failure to comply could result in minor or moderate injury.

C0075B

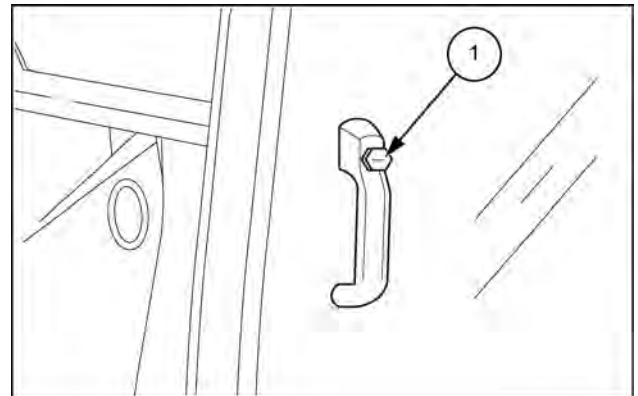
### Opening doors from outside

Wide-opening doors on the left and right side allow access to the cab, facilitated by convenient grab handles and steps with anti-slip treads.

Use the ignition key to lock or unlock the cab door from the outside. With the door unlocked, press button (1) and pull the door toward you. The door has gas struts to hold the door in the fully open position.

Before you climb on, check that the step treads are clean and free of dirt and foreign substances. Slippery areas can be a cause of accidents.

Climb the steps facing inward and enter the cab. Sit in the driver's seat and fasten the safety belt.



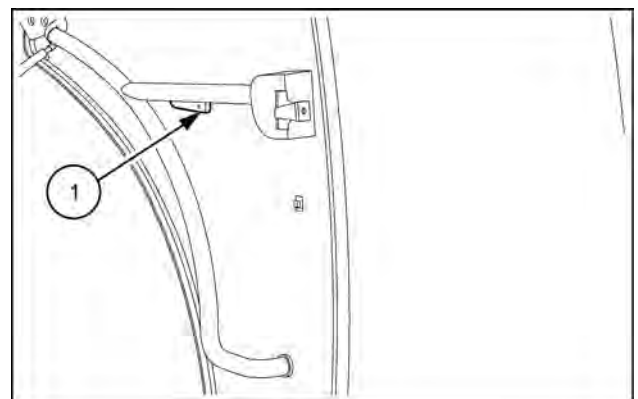
MOIL13TR01420AA 1

### Opening the doors from the inside

Wide-opening doors on the left and right side allow the operator to exit the cab.

To leave the cab, release the safety belt and press the release lever (1) under the grab handle. Use the grab handle to push the door open.

Climb down the steps facing inward.

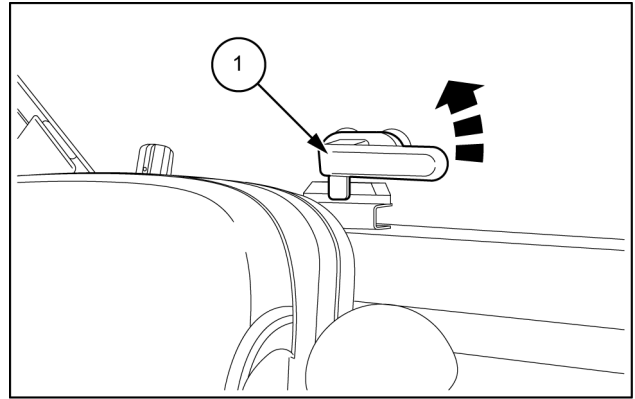


MOIL12TR00130AA 2

## Getting to know the internal parts of the cab

### Rear Window

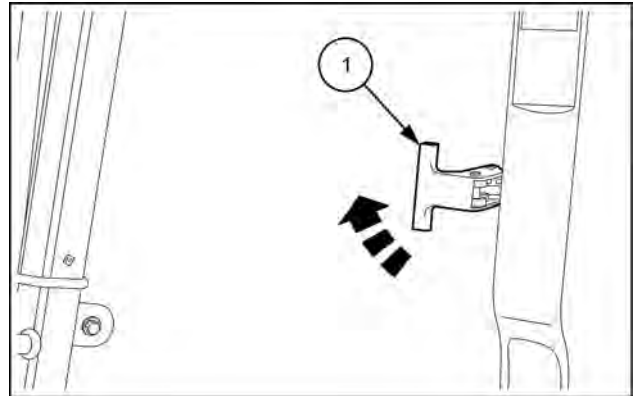
To open the window, pull the handle (1) upwards and push outwards. The window is kept completely open with specific struts.



MOIL13TR02250AB 1

### Openable side window

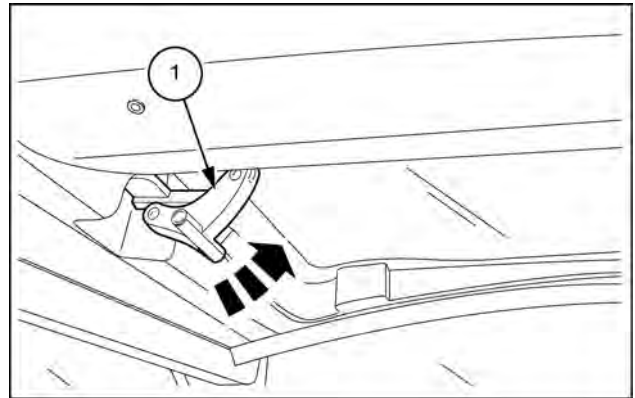
To open the window, pull the handle (1) in the direction indicated by the arrow and push outwards



MOIL12TR00114AA 2

### Roof hatch

To open the roof hatch, turn the handle (1) and push upwards. The canopy will be held open by two dampers on special pneumatic struts. To close the canopy, repeat the operation but in the reverse order.

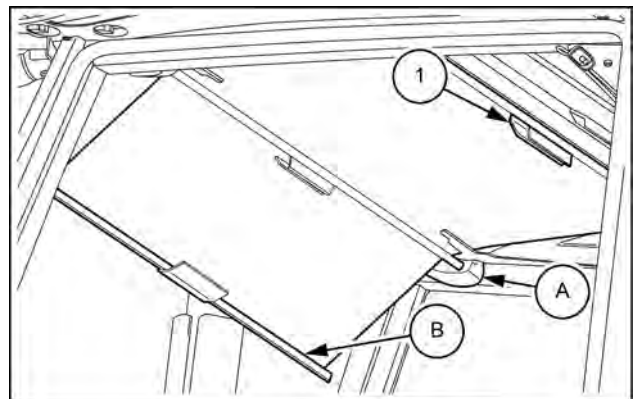


DCUTLNEIT011S3A 3

### Sun blind

To use the sunshield, pull it down with the tab (1). The sunshield can be fixed in two different positions, (A) or (B). It retracts automatically when you free it from its catch.

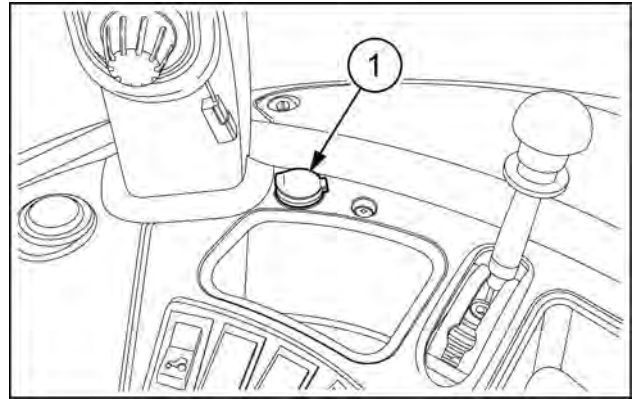
**NOTICE:** On the standard version the sunshield only has one position (B).



DCUTLNEIT035S3A 4

### Cigarette Lighter

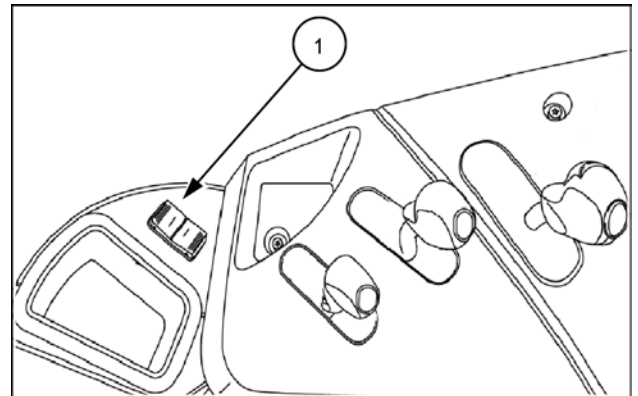
The cigar lighter is located on the right-hand cab mud-guard. To turn it on, press button **(1)**. When the heating element has reached the right temperature, the cigarette lighter disconnects automatically.



MOIL13TR02281AB 5

### Double USB port

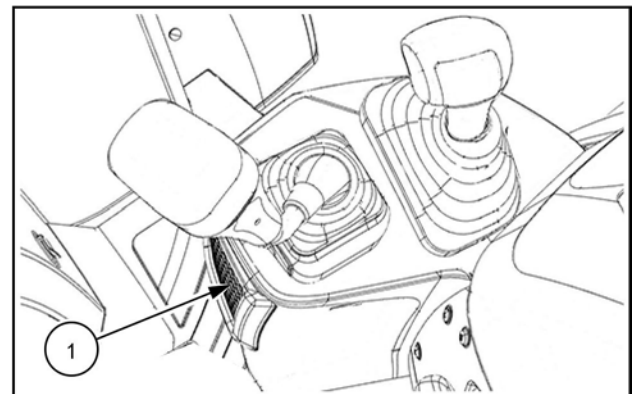
On the right-hand side fender of the cab is the double USB port **(1)**, which is only a recharging point for multimedia equipment.



MOIL19TR02216AB 6

### Telephone storage compartment

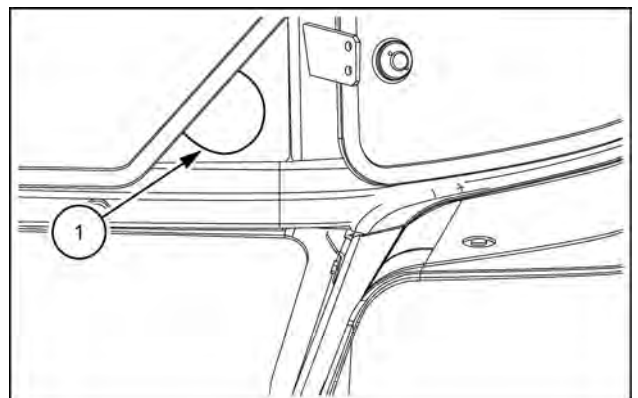
The telephone storage compartment **(1)** is located on the right-hand cab fender.



MOIL22TR02625AA 7

### Remote control cables passage setup

On the rear right-hand side, near the window, there is an opening for the control cables of equipment installed on the tractor. Remove the cover **(1)** to let the control cables pass through into the cab.



DCUTLNEIT032S3A 8

## Monitor fixing bracket

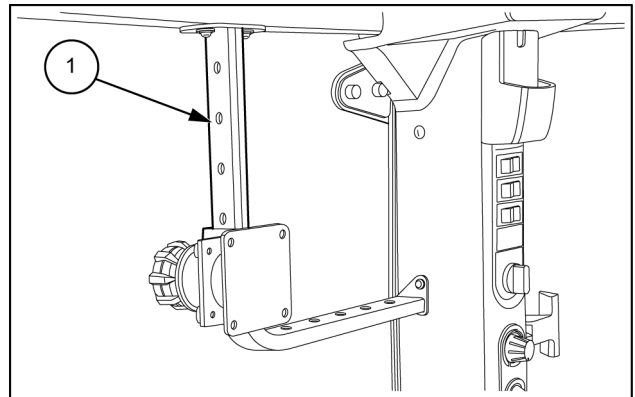
### **⚠ WARNING**

**Driving hazard!**

**Always make sure that the monitor is in the rear-most position while you drive on public roads.  
Failure to comply could result in death or serious injury.**

W1661A

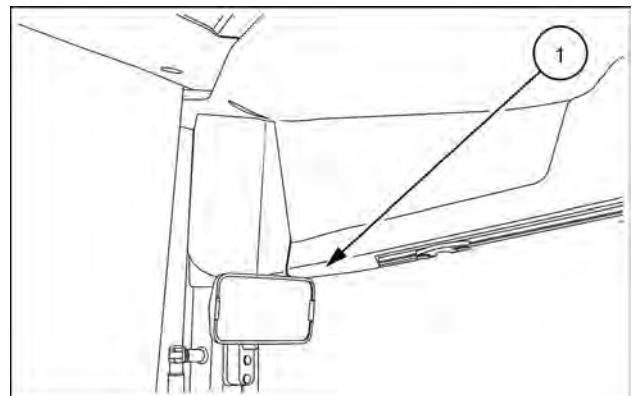
To facilitate installation of the implement control monitor, on request, the monitor bracket (1) is installed on the right-hand cab pillar.



MOIL13TR02123AB 9

## Rear-view inside mirror

Adjust the mirror (1) turning it into position on its supporting arm.



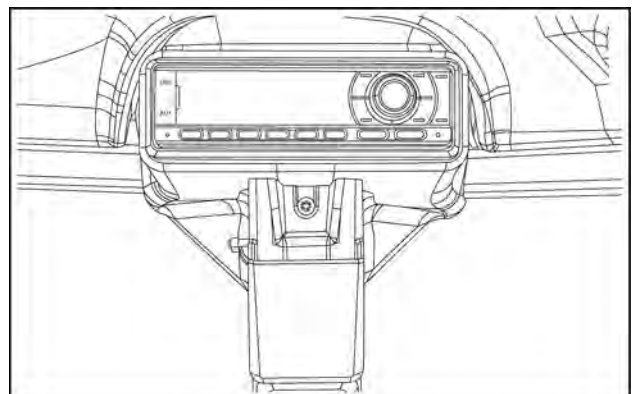
MOIL22TR00222AB 10

## Audio system

The cab has two speakers installed on the roof. Dealer-installed accessories include a range of AM/FM stereo car radios with automatic search, player and USB and AUX connectors.

Separate operating instructions will be supplied with the radio.

**NOTE:** the radio only works with the ignition switch set to ON or in the 'accessories' position.



MOIL24TR00012AA 11

## Rear-view outside mirrors

### ⚠ WARNING

Fall hazard!  
Do not ride on the machine. Do not stand on the tank.  
Failure to comply could result in death or serious injury.

W1309A

### ⚠ WARNING

Avoid injury and/or machine damage!  
Keep the mirrors clean and properly adjusted.  
Failure to comply could result in death or serious injury.

W1078A

### ⚠ CAUTION

Fall hazard!  
To position the manually adjustable mirrors, get help from a second person. Use an individual rolling platform of suitable height to reach the rear-view mirrors. From the operator's seat, tell the second person how to adjust the mirror(s).  
Failure to comply could result in minor or moderate injury.

C0241B

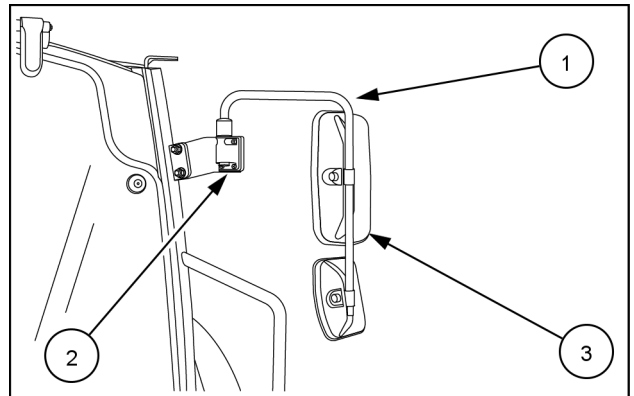
The rear-view mirror must be kept clean at all times.

The rear-view mirror must be oriented in such a way that the driver, properly seated in the driver's seat, can check the flat portion of the road up to the horizon of the single tractor or tractor-trailer combination.

### Fixed wing mirrors, basic model

Adjust correctly as follows:

1. Rotate the support arm (1) in its hinge (2)
2. Rotate the mirror (3) to the desired position

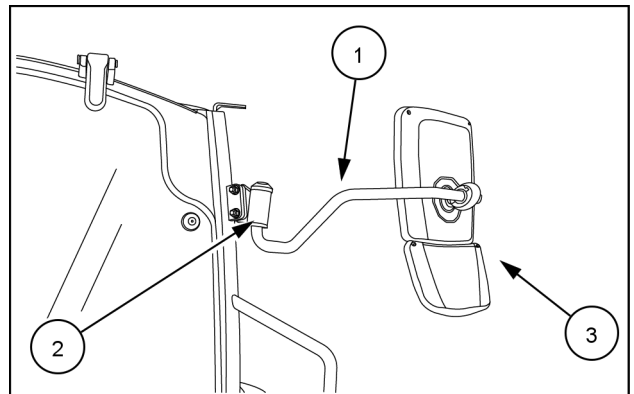


MOIL24TR00002AA 1

### Fixed rear-view mirrors, Premium model

Adjust correctly as follows:

1. Rotate the support arm (1) in its hinge (2)
2. Rotate the mirror (3) to the desired position

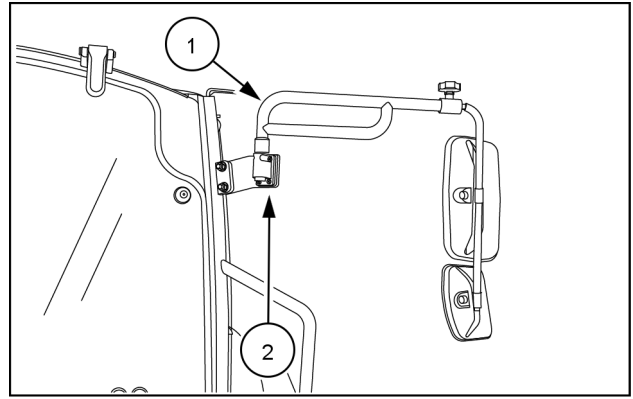


MOIL24TR00003AA 2

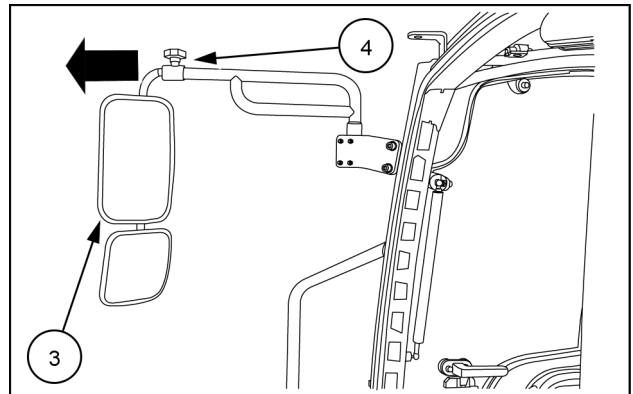
### Telescopic rear-view mirrors, basic model

Adjust correctly as follows:

1. Rotate the support arm (1) in its hinge (2).
2. Rotate the mirror (3) to adjust its vertical and horizontal angle.
3. Loosen the knob (4) to remove the mirror (3) from the support arm (1)  
This feature will be beneficial when towing wide trailers or equipment.
4. Tighten the knob (4) when the mirror (3) is correctly positioned.



MOIL24TR00005AA 3

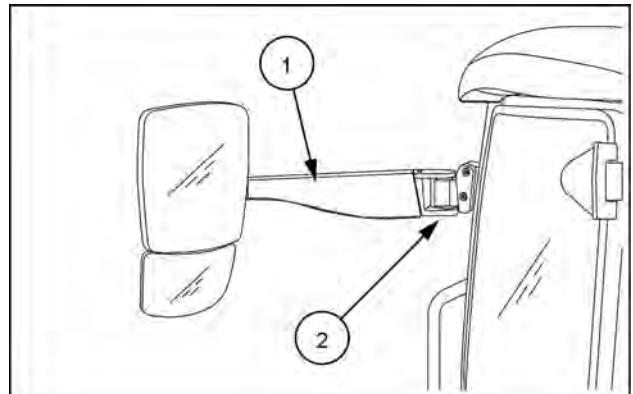


MOIL24TR00004AA 4

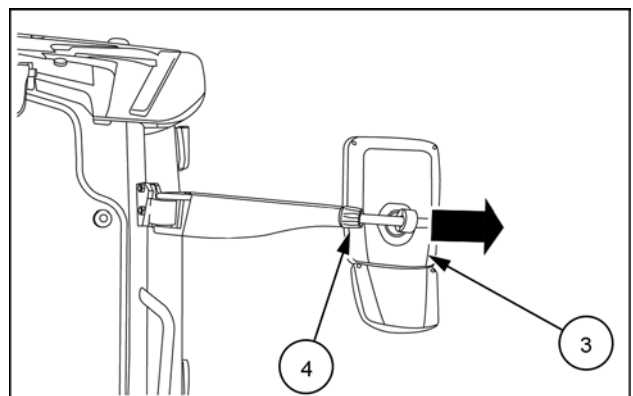
### Premium telescopic rear-view mirrors with extendible arm

Adjust correctly as follows:

1. Rotate the support arm (1) in its hinge (2).
2. Rotate the mirror (3) to adjust its vertical and horizontal angle.
3. Loosen the knob (4) to remove the mirror (3) from the support arm (1)  
This feature will be beneficial when towing wide trailers or equipment.
4. Tighten the knob (4) when the mirror (3) is correctly positioned.



MOIL16TR03412AA 5



MOIL17TR01039AA 6

Operator's seat

Operator Seat

**▲ WARNING**

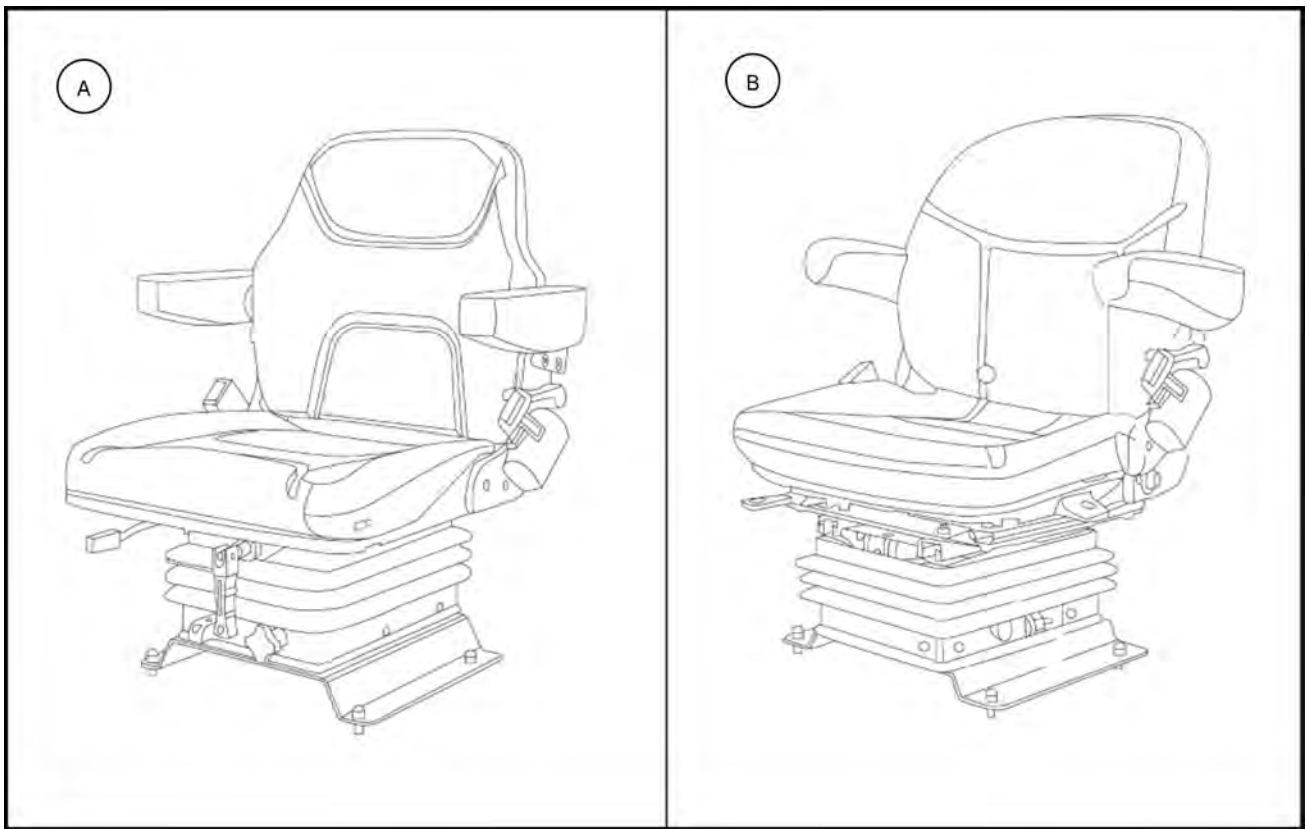
Loss of control hazard!

**DO NOT** make seat adjustments while the machine is in motion. All seat adjustment should be made with the machine stationary and the parking brake applied. Failure to comply could result in death or serious injury.

W0293A

The operator's seat has a comprehensive range of adjustments for height, weight and position. Before operating the tractor, it is important to adjust the seat to the most comfortable position.

Seat options



MOIL24TR00006FB 1

	Seat option	Manufacturer description	Information
(A)	BASE	Mechanical suspension seat (33/SM80X)	See 3-8
(B)	PREMIUM	Air-suspended seat (33/EA140D/140A)	See 3-9

## Mechanical suspension seat

### ⚠ WARNING

**Loss of control hazard!**

**DO NOT make seat adjustments while the machine is in motion. All seat adjustment should be made with the machine stationary and the parking brake applied.**

**Failure to comply could result in death or serious injury.**

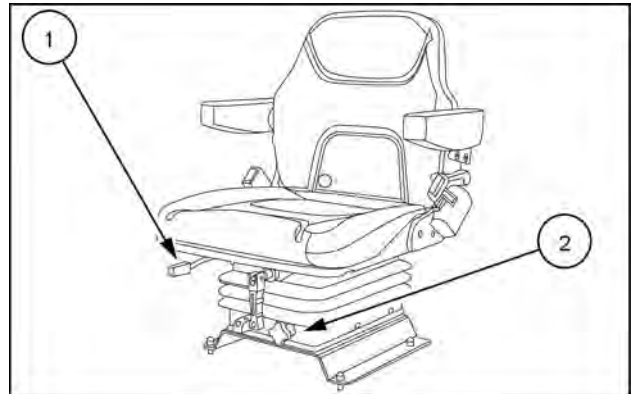
W0293A

The driver's seat has adjusters for its suspension, height and distance from the controls. Select the most suitable position for driving.

### Forward/backward adjustment of the seat position



From the driver's seat, pull the lever **(1)** upwards and move the seat forwards or backwards. After moving the seat, release the lever and check that the seat is locked in the correct position.



MOIL23TR01116AA 1

### Seat height adjustment

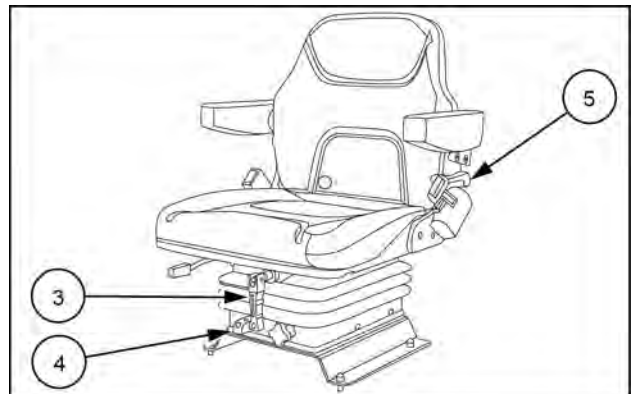


Rotate the knob **(2)** counter-clockwise to increase the seat height and clockwise to decrease the seat height.

### Suspension adjustment



Adjust the suspension with the operator seated, so that the seat is loaded. Turn the handle **(3)** to increase or decrease the seat suspension. The correct setting is reached when your approximate weight appears in the window **(4)**.



MOIL23TR01116AA 2

### Backrest inclination adjustment



Push down the lever **(5)**, find the ideal position and release the lever to lock the backrest in position.

## Air seat

### ⚠ WARNING

**Loss of control hazard!**

**DO NOT** make seat adjustments while the machine is in motion. All seat adjustment should be made with the machine stationary and the parking brake applied.

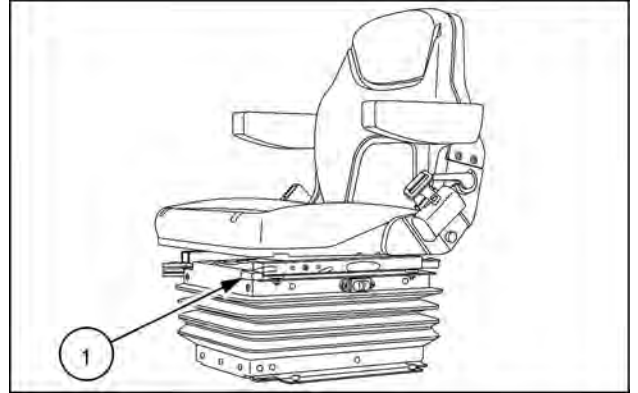
Failure to comply could result in death or serious injury.

W0293A

### Forward/backward adjustment of the seat position



From the driver's seat, pull the lever (1) upwards and move the seat forwards or backwards. After moving the seat, release the lever and check that the seat is locked in the correct position.



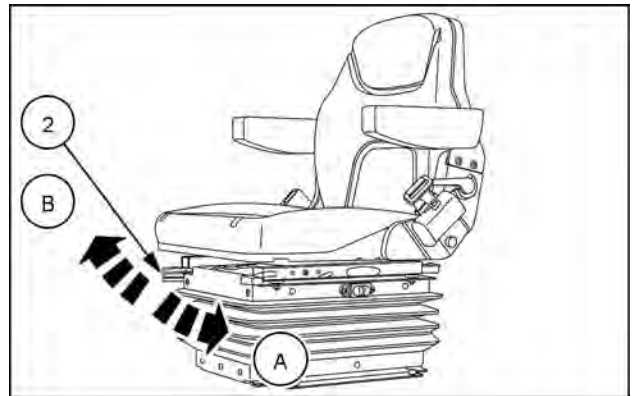
MOIL16TR03505AA 1

### Adjustment of the longitudinal suspension of the seat

The longitudinal direction floating movement is useful when working on uneven terrain or when connected to a trailer, in situations where having the seat locked in position could be uncomfortable.



Turn the lever (2) 180° to the left (position (A)) to activate the floating movement. Return the lever (2) to position (B) to deactivate the floating movement.



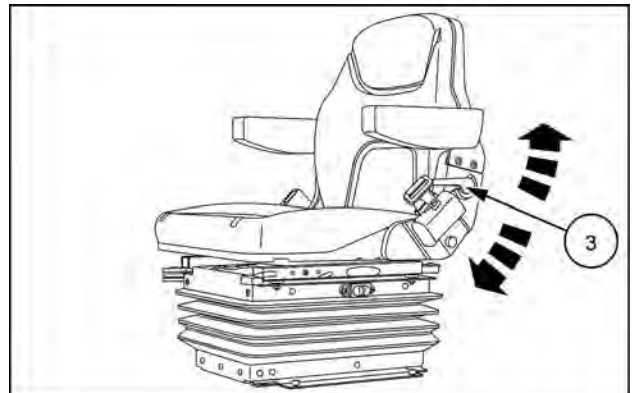
MOIL16TR03505AA 2

### Backrest tilt adjustment

You can tilt the backrest to the most comfortable position.



To adjust the inclination of the backrest, pull the lever (3) upwards, find the ideal position for the backrest and release the lever (3) to lock the backrest in position.

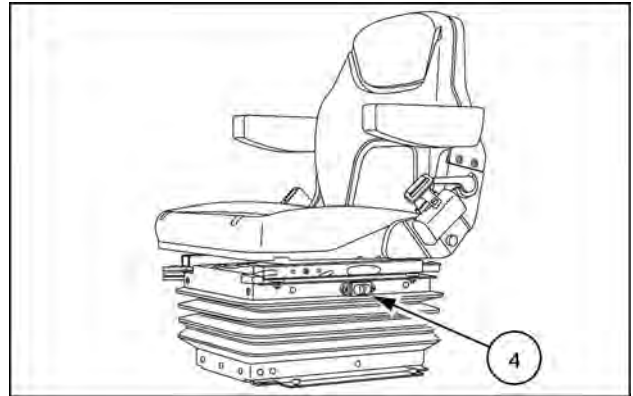


MOIL16TR03505AA 3

## Adjustment of the pneumatic suspension



Adjustments to the air suspension are made by acting on the control slide of the air supercharger **(4)** with the operator seated. To raise the seat, push the slider **(4)** forwards. To lower the seat, push the slider **(4)** backwards. When the ideal height has been reached, move the slider to the centre position to switch off the compressor.



MOIL16TR03505AA 4

## Seat belt

### ⚠ WARNING

Equipment failure could cause accident or injury!

Always fasten the seat belt securely before you operate the machine. Inspect seat belt parts for wear and damage. Replace any and all worn or damaged parts of the seat belt prior to operation.

Failure to comply could result in death or serious injury.

W0046C

### ⚠ WARNING

Run-over hazard! Never carry people on fenders, steps, platform, rails, or other locations.

Passengers are not permitted, even inside the cab. Another adult may ride in the cab only if a manufacturer-supplied passenger seat is present. Passengers are not permitted while towing. Do not carry passengers if national legislation forbids it. Comply with workplace accident insurance provisions.

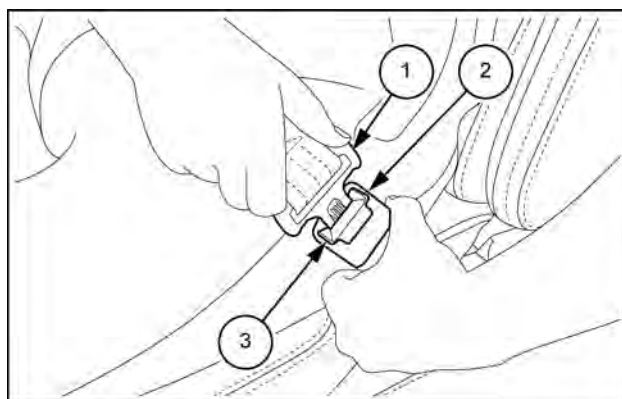
Failure to comply could result in death or serious injury.

W1701A

Before using the tractor, fasten the seat belt. At regular intervals, carefully inspect the seat belts to check that there are no worn parts and replace them when necessary.

Adjust the position of the operator's seat. Pull the seat belt onto your body, into the lowest position possible over the abdomen. Push the metal eyelet of the insert **(1)** into the buckle **(2)** until you hear it click to indicate that it has coupled correctly.

To unfasten the seat belt, press the red button **(3)** in the middle of the buckle, then separate the buckle and the metal eyelet.



DCUTLNEIT048S3A 1

## Instructional seat

### Instructional seat

#### **⚠ WARNING**

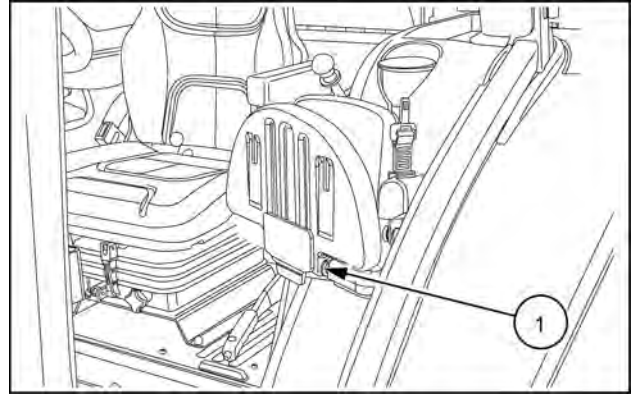
Equipment failure could cause accident or injury!  
**Always fasten seat belt securely before operating the machine. Inspect seat belt parts for wear and/or damage. To ensure operator safety, replace any and all damaged parts of the seat belt prior to operation.**  
**Failure to comply could result in death or serious injury.**

W0046A

The instructor's seat is located on the left side of the cab.

Refer to page **2-21** in this manual for additional information.

A folding instructional seat is available where local legislation permits. To raise the seat backrest, lift to the upright position. The seat will be retained in the upright position by the gas strut **(1)**. If the seat is not required, fold the backrest down. In this position the shelf is used as a drinks holder.



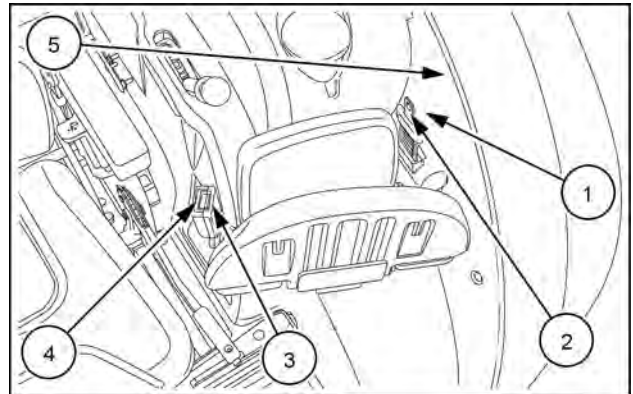
MOIL23TR01120AA 1

The instructor's seat is equipped with a seat belt.

Always securely fasten your seat belt before operating the tractor. At regular intervals, carefully inspect the seat belts to check that there are no worn parts and replace them when necessary.

Lift the backrest of the seat into an upright position. Pull the seat belt over the abdomen. Push the metal eyelet of the insert **(2)** into the buckle **(3)** until you hear it click to indicate that it has coupled correctly.

To unfasten the seat belt, press the red button **(4)** in the middle of the buckle, then separate the buckle and the metal eyelet.

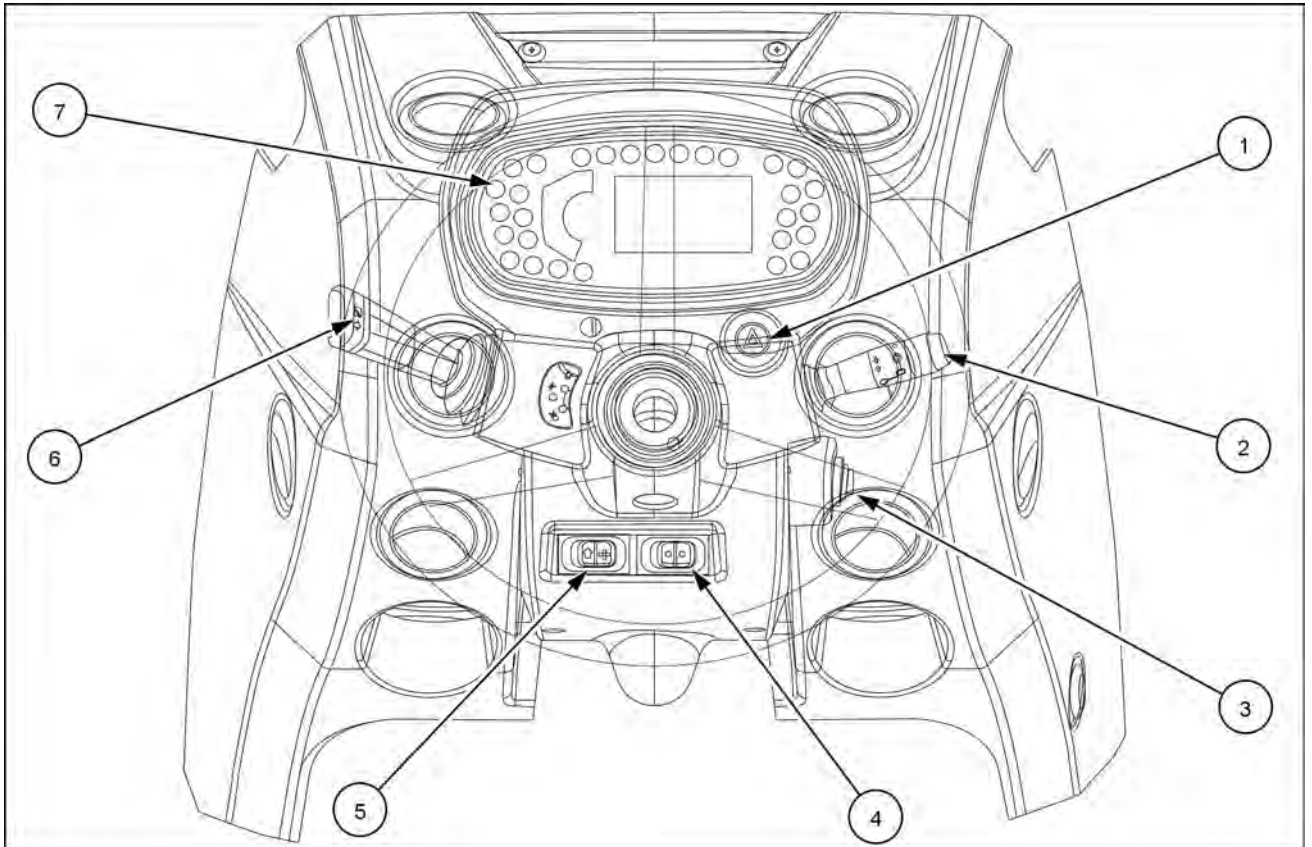


MOIL23TR01119AA 2

When the instructor seat is used, the operator can use the handle **(5)** shown in the figure to anchor himself while driving the tractor.

**Forward controls**

**Front controls**



MOIL23TR01124FB 1

1. Hazard light switch
2. Multi-function control lever (steering column stalk switch for high/low-beam headlights, side lights, turn indicators, horn)
3. Start switch
4. Navigation menu up/down scroll switch
5. Navigation menu switch
6. Shuttle lever
7. Instrument cluster

### Menu selection and scroll switches of the central display

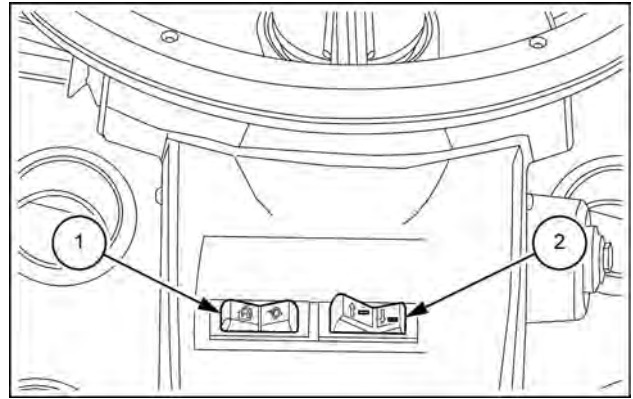
Navigating the LCD menu of the central screen on the instrument cluster is possible via the navigation menu switch (1) and the navigation menu scroll switch (2).

Press the switch to (A) to cancel or quit the setting and programming modes. Any information that has not been saved will be lost.

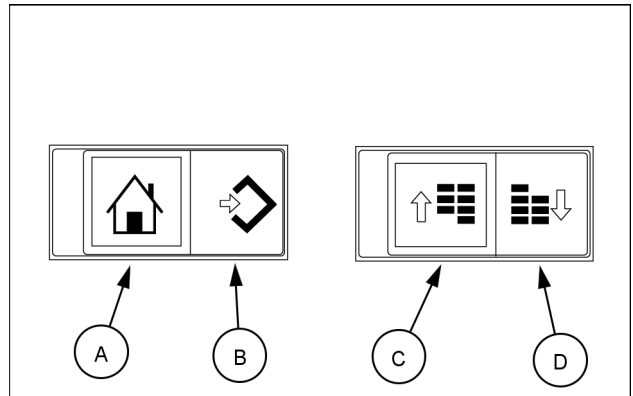
Press the switch to (B) to enter the menu or confirm the settings.

Press the switch to (C) to scroll upwards within a menu or to increase the value of a selected digit during a procedure.

Press the switch (D) to scroll downwards within a menu or to move to the right of a position when a value is selected.



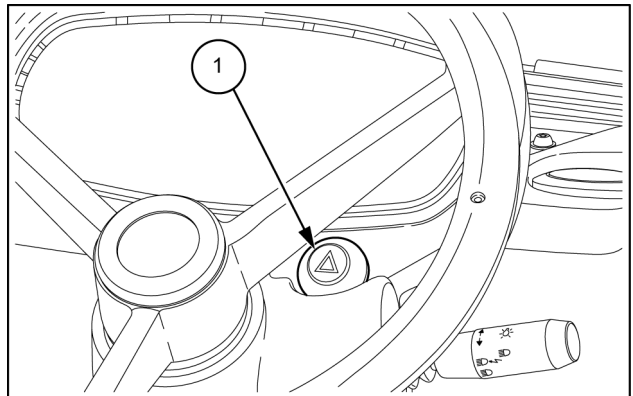
DCUTLBRNE036S3A 2



MOIL21TR00013AA 3

### Hazard switch

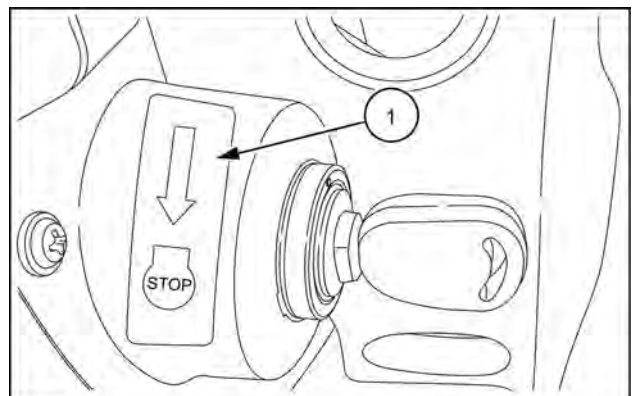
Press the switch (1) on the red part to operate all indicators simultaneously; when pressed, the switch also flashes. The indicator will flash at the same time as the turn signals and also the indicator lights on the instrument cluster.



MOIL14TR00025AB 4

### Start switch

There is a sticker (1) showing the key positions for the switching on and off phase. For further information, see 4-4



MOIL16TR02345AA 5

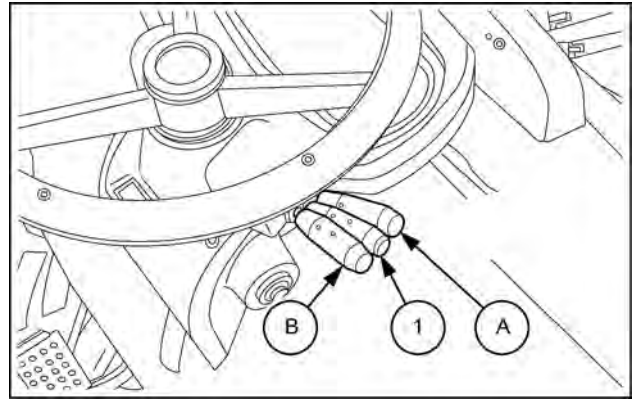
**Multi-function control lever (steering column stalk switch for high/low-beam headlights, side lights, turn indicators, horn)**

The multi-function lever controls the horn, the turn indicators, headlight full beam flasher, and switching from dipped to full beam front headlights.

**Turn indicators**

To indicate a left-hand turn, push the lever (1) forwards to position (A).

To indicate a right-hand turn, pull the lever backwards into position (B).



DCUTLBRNE040S3A 6

**Four way flashers**

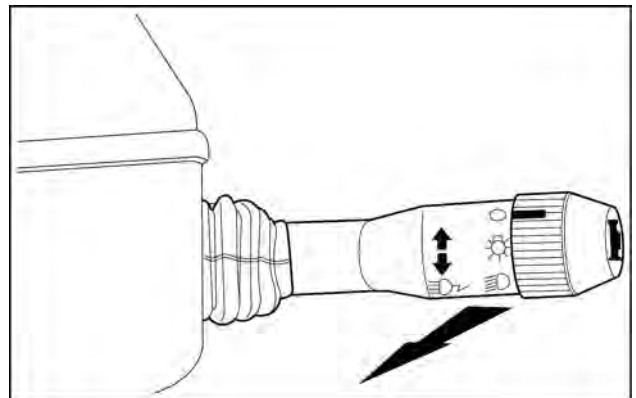
With the lights off or dipped, pull the lever (1) toward you to flash full beam lights. When released, the lever will automatically return to the original position.

**Side lights**

Turn the rotary switch (3) so that its pointer (4) is aligned with the symbol (1).

**Dipped beams**

Turn the rotary switch (3) so that its pointer (4) is aligned with the symbol (5).



DCUTLNEIT025S3A 7

**Main beams**

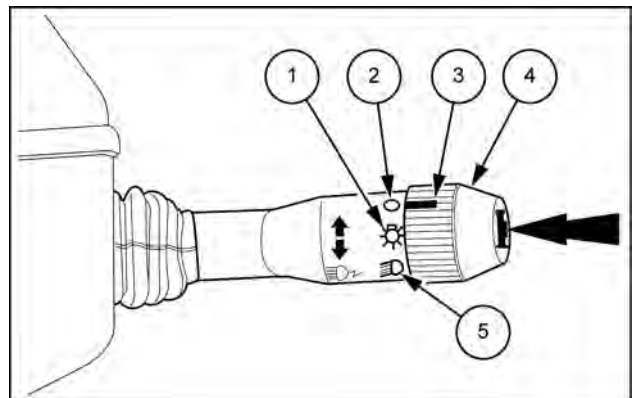
With the lights on dipped beam, move lever downwards.

**NOTE:** The multi-function control lever operates with the key-start switch in "ON" position.

**Horn**

Press the end of control (4) on the stem as shown by the arrow in figure.

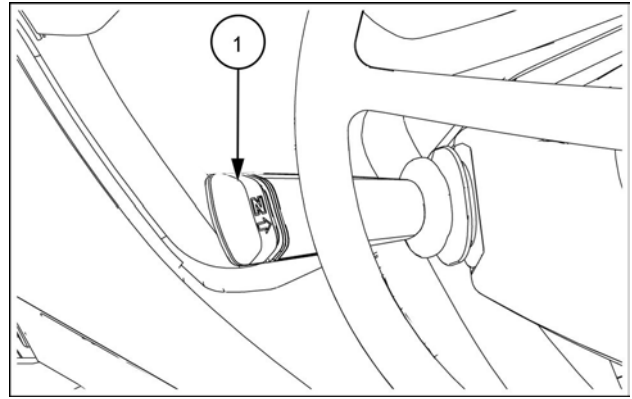
**NOTICE:** when the pointer (3) is aligned with the symbol (2) all the lights are off.



DCUTLNEIT026S3A 8

### Electrohydraulic shuttle control lever

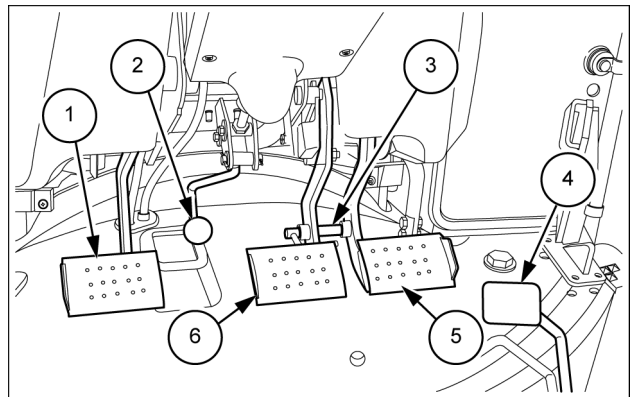
The reversing mechanism control handle (1), located to the left-hand side of the steering wheel, is used to select the forward or reverse direction of travel of the tractor.



MOIL21TR00099AA 9

### Movement pedals

- (1) Clutch pedal
- (2) Steering wheel position adjustment pedal
- (3) Brake pedal latching pin
- (4) Foot accelerator pedal
- (5) Right brake pedal
- (6) Left brake pedal

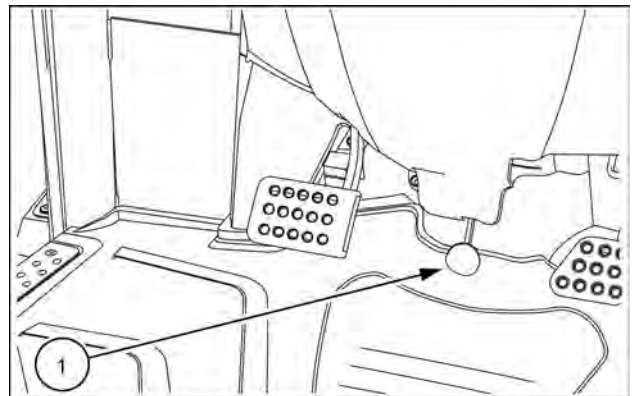


MOIL13TR02290AD 10

### Steering wheel position adjustment pedal

The steering wheel is fitted with a pedal to adjust the angle. Press the pedal (1) to free the steering wheel and determine the most suitable position for driving. Release the pedal after making the adjustment.

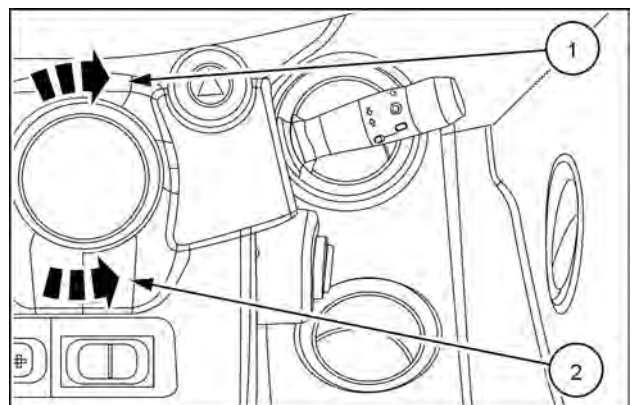
**NOTICE:** The position of the steering wheel must only be adjusted when the tractor is at a standstill.



MOIL22TR00190AB 11

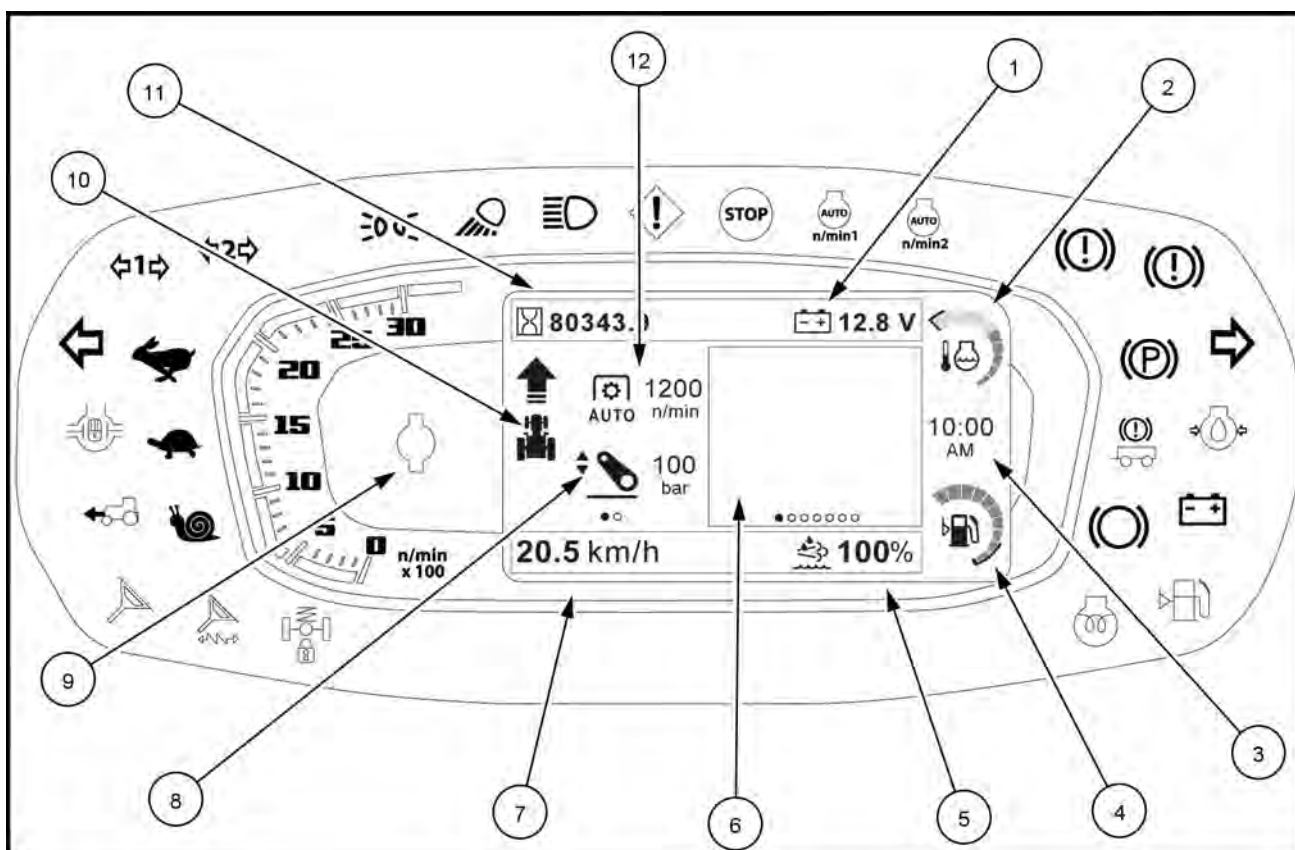
### Height adjustment handle for the steering wheel

To adjust the height of the steering wheel, turn the knob clockwise (1). When the adjustment is complete, turn the knob counter clockwise (2).















MOIL24TR00231AA 12

## Dashboard

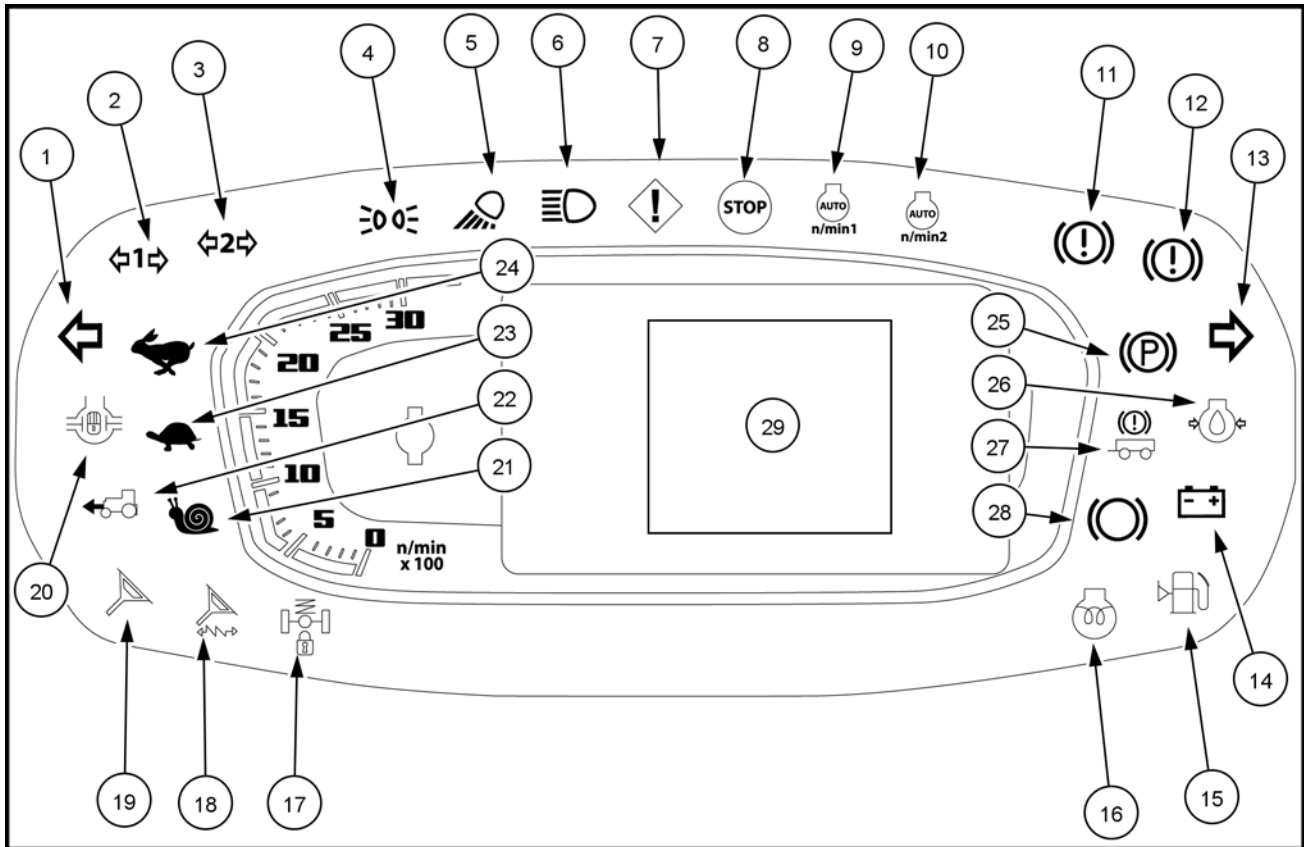


MOIL23TR01125FC 1

The main screen on the instrument cluster displays the following functions:

(1)		Battery voltage information
(2)		Coolant temperature gauge
(3)		Digital clock
(4)		Fuel level meter
(5)		level indicator <b>Diesel Exhaust Fluid (DEF)/AdBlue®</b>
(6)		Navigation menu
(7)		Tractor ground speed
(8)		Operational status of the rear hitch
(9)		Engine rpm indicator
(10)		Tractor direction of travel
(11)		The engine hours
(12)		Operating condition of the rear power take-off (PTO) and, if fitted, the front power take-off (PTO)

Status and warning indicator panel






















MOIL23TR01125FA 2

The coloured warning indicators on the instrument cluster provide information on system operation, or warnings relating to system malfunctions. Activation of a warning light may be accompanied by an audible alarm. See 3-36 for more information

**NOTE:** All indicator and warning lights will activate for a short period at "key-on" as the electrical system carries out a self-diagnostic check. Check that all warning indicators are lit. If one or more warning indicators do not come on, contact the CASE IH dealer

(1)		Turn left indicator
(2)		Turn signals trailer 1
(3)		Turn signals trailer 2
(4)		Side lights warning indicator
(5)		Work Light Ind.
(6)		Head Light High Beam Indicator Light
(7)		Warning indicator
(8)		"Stop" warning indicator

3 - CONTROLS AND INSTRUMENTS

(9)		Warning indicator for constant engine rpm 1
(10)		Warning indicator for constant engine rpm 2
(11)		Fault warning indicator brakes 1
(12)		Fault warning indicator brakes 2
(13)		Turn right indicator
(14)		Alternator charge warning light
(15)		Fuel level warning lamp
(16)		Cold start device warning indicator
(17)		Warning light not used on this vehicle
(18)		Advanced steering system activation warning indicator
(19)		Variable ratio steering warning indicator
(20)		Differential lock warning light
(21)		Creeper warning indicator
(22)		Four-wheel drive light
(23)		Lo function warning indicator
(24)		Hi function warning indicator
(25)		Park brake indicator light
(26)		Engine oil pressure warning light
(27)		Warning light not used on this vehicle
(28)		Brake pedal warning light
(29)		Navigation and information menu

### Central display

The front controls include selection **(A)** and scrolling **(B)** switches.

The instrument cluster **(C)** is used as an interface for on-board diagnostics.




Pressing the 'Enter' command **(1)** takes you to the pop-up menu of display and status information.

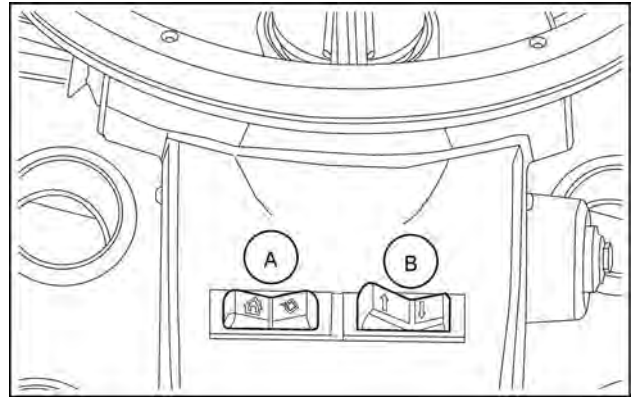
Pressing the 'Enter' command **(1)** for **3 s** takes you to the first level menu screen in the central part of the display. To select the desired information, press 'Enter' **(1)**. To return to the previous navigation level, press the 'Home' command **(2)**.

To navigate through the first level menus, press the **(3)** or **(4)** controls in the menu navigation slider, then select the menu level by pressing the switch **(1)**

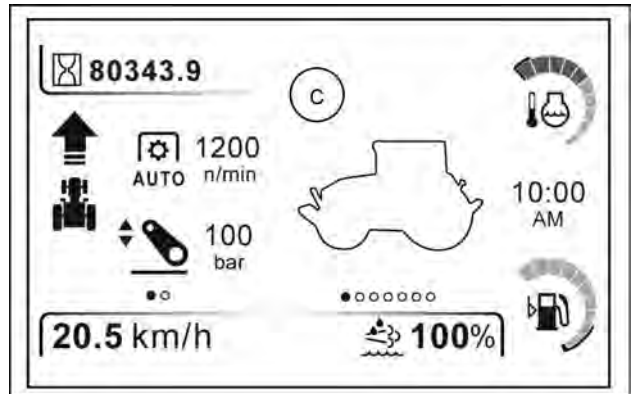
**NOTE:** When on the engine is switched on, the last selection made is displayed.

The menus are listed below:

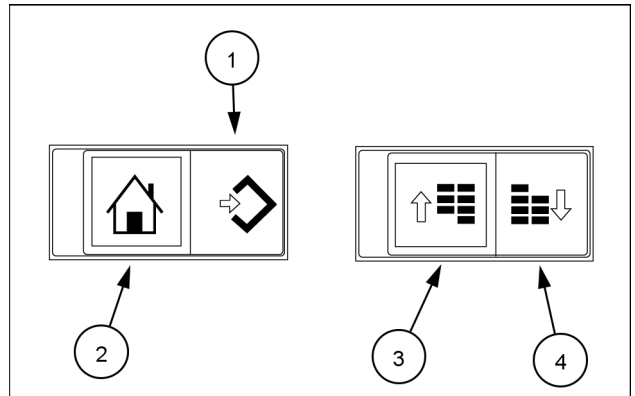
	Settings	See <b>3-43</b>
	Diagnostics	See <b>3-53</b>
	Calibration	See <b>3-55</b>



MOIL16TR03489AA 3



MOIL24TR00119AA 4

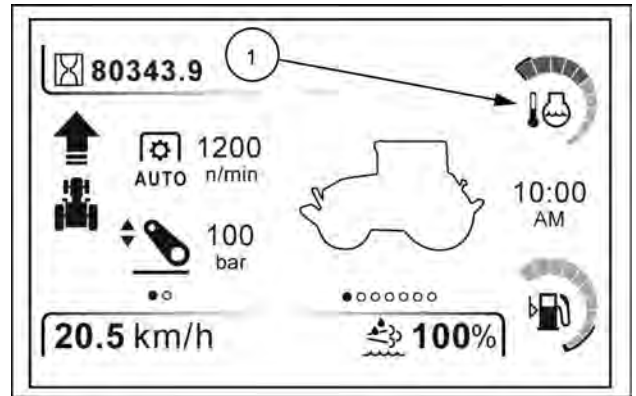


MOIL21TR00013AA 5

**Level indicators**

**Engine coolant temperature gauge**

The coolant temperature bar graph (1) indicates the temperature of the engine coolant. The bars on the graph change color as coolant temperature rises in the pattern shown in the table below. If, with the engine running, the coolant temperature approaches the red zone, the icon turns red. In this case, idle the engine (do not turn it off) and, if the warning persists, check the cooling system. Stop the engine and investigate the cause.

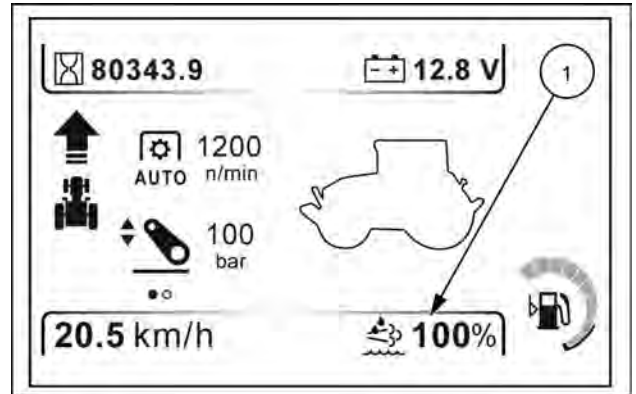


MOIL24TR00119AA 6

Color	Coolant temperature range	Bars affected
Blue	<40 – 106 °C (<104 – 223 °F)	0–9
Red	107 – 120 °C (225 – 248 °F)	9.5-10

**Level DEF/AdBlue®**

The symbol DEF/AdBlue® (1) indicates the amount of liquid inside the tank. If the level of DEF/AdBlue® falls below 10% or less, the icon turns red. If the engine signals a serious or dangerous alert regarding the level of DEF/AdBlue®, the symbol turns red. Stop the engine and investigate the cause.

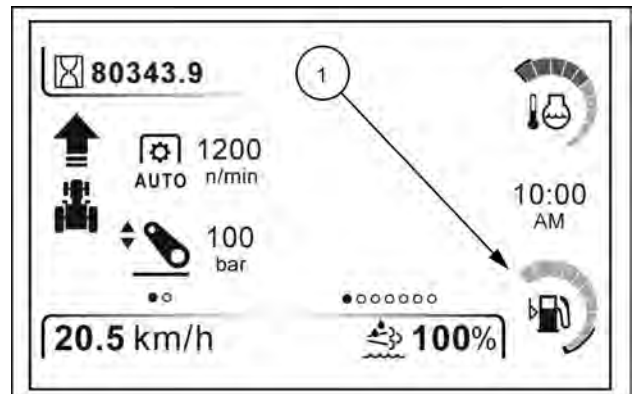


MOIL24TR00119AA 7

**Fuel level indicator**

The fuel bar graph (1) indicates the fuel level in the tank. When the fuel level is lower than around 1/5 of the volume of the tank, the icon turns amber. If the fuel level sensor malfunctions, the bar graph shows empty and the icon turns amber.

**NOTE:** wait a few minutes to get an indication of the actual fuel level.



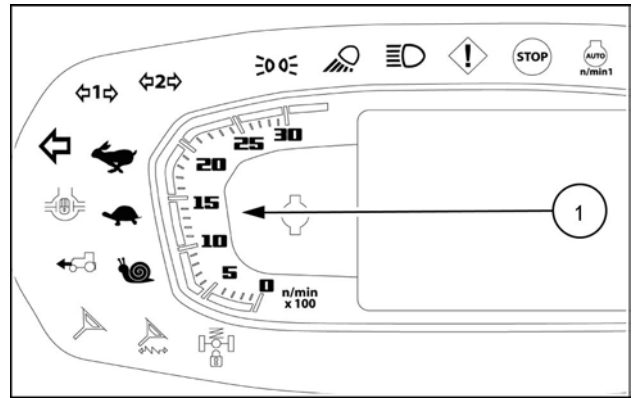
MOIL24TR00119AA 8

## Engine Tachometer

The Engine Tachometer **(1)** indicates the engine rpm. Each division on the scale represents 100 rev/min., therefore, with the needle indicating 20, the engine is running at **2000 RPM**.

## Engine speed

With the engine running, the number of rpms is shown on the main screen by the rev counter **(1)**. To calculate the number of engine rotations, multiply the value shown by the pointer **(1)** by one hundred.



MOIL24TR00172AA 9

**NOTICE:** never use the engine continuously for a long time at speeds between **2600 – 3000 RPM** (yellow area on the rev counter) to avoid damage to the engine and **NEVER** exceed **3000 RPM** (red area on the rev counter). For appropriate use, always operate under the speed corresponding to **2300 RPM**.

## Transmission status and settings

The following information is displayed on the right-hand area of the instrument cluster.

### Travel direction

Information on the direction of the travel of the tractor.



(1) Forward position – The arrow flashes when forward travel is selected and displays steady when travel begins. Select forward travel with the shuttle lever or the buttons on the joystick, if fitted.



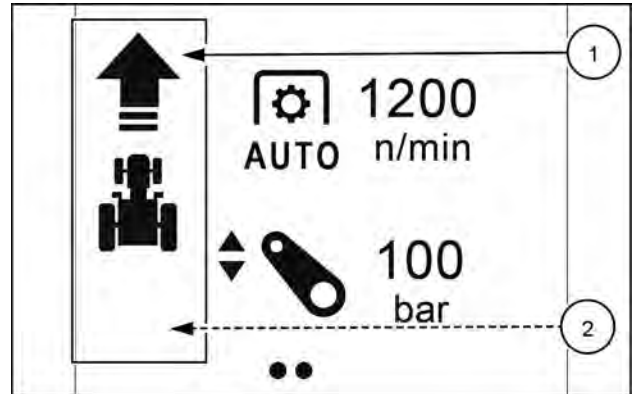
(2) Reverse travel – The arrow flashes when reverse travel is selected and displays steady when travel begins. Select reverse travel with the shuttle lever or the buttons on the joystick, if fitted.



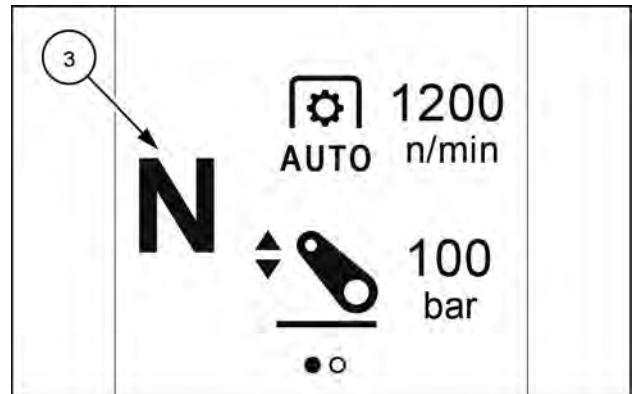
(3) Neutral position - Select the neutral position by pressing the button on the end of the shuttle lever, with the lever in the rest position.



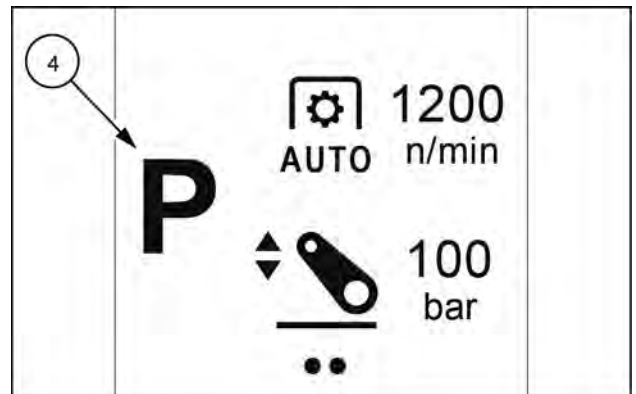
(4) Parking position - The parking position can only be selected using the park lock lever.



MOIL24TR00123 1



MOIL24TR001212 2



MOIL24TR001222 3

## Ground speed and transmission information

(1) Current tractor ground speed shown in km/h or mph.

Hi-Lo function indications and additional creeper (if fitted)



(3) Hi function – Flashes when the button is selected on the gear lever and turns fixed when the gear is engaged.



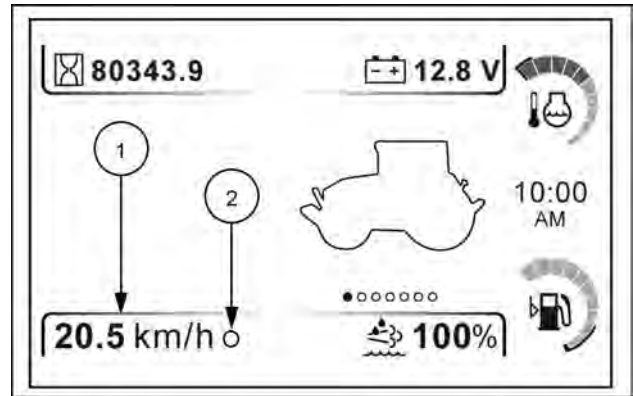
(4) Lo function – Flashes when the button is selected on the gear lever and turns fixed when the gear is engaged.



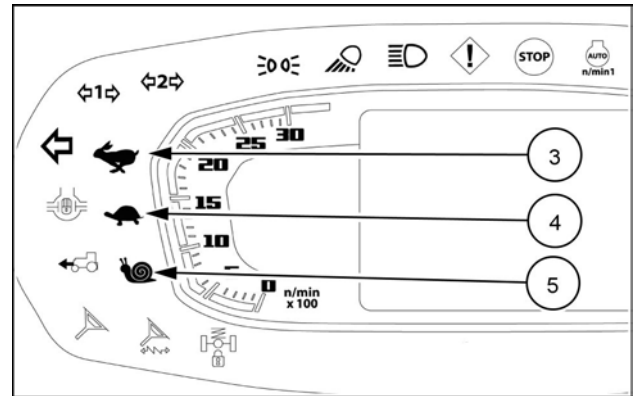
(5) Super additional creeper - Flashes during range selection and lights up steady when the super creeper is engaged.



The icon is displayed to the right of the ground speed indicator when the tractor is working in very cold conditions (2). Ground speed and engine speed are limited while the transmission warms up. Transmission response may be sluggish while the symbol displays. When the oil is hot, normal operation resumes (for more information see 4-9).



MOIL24TR00119AA 4



MOIL24TR00172AA 5

## Condition of the electronically controlled rear elevator (if fitted)

Rear lift (where applicable):



The rear elevator works in position control mode.



The rear elevator works in load/draught control mode. The icon is white when draft mode is enabled and gray during draft override.



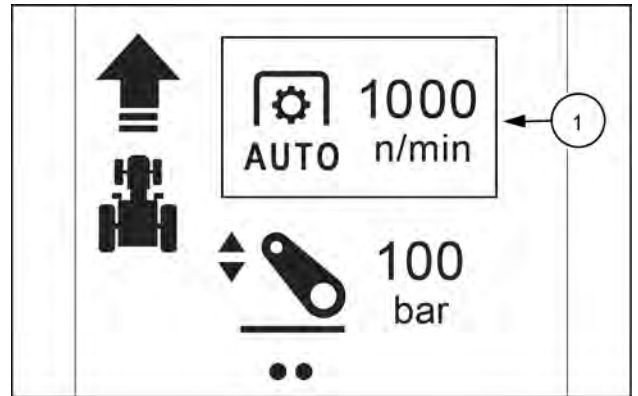
The rear elevator works in travel control mode.

The instrument cluster displays the current position of the rear elevator as a percentage compared to the full range. This value updates when the position of the elevator changes.

### Power take-off (PTO), front and rear

Lift information is shown on the left (1) of the central display.

If engaged, the PTO icon turns amber on the instrument cluster.



MOIL24TR00123AB 6



Current rear PTO speed: This value updates as engine rpm changes.



Current front PTO speeds: This value updates as engine rpm changes.



Rear/Front PTO stationary: For further information, see **6-70**



“AUTO” (if fitted): is displayed when the PTO is operating in automatic mode. is not displayed when PTO engagement/disengagement is manual. For further information, see **6-71**

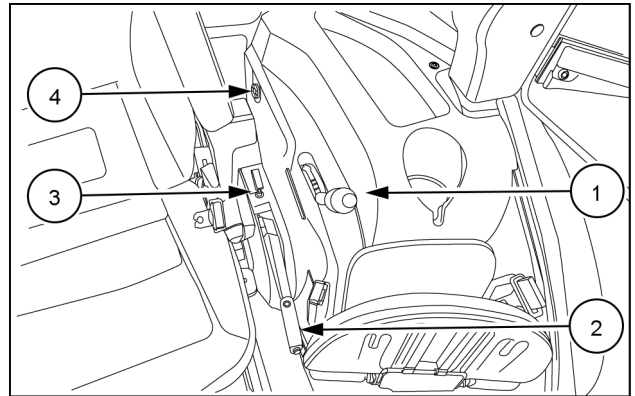
Rear PTO speed: For further information, see **6-70**

Front PTO speed: For more information see **6-77**

## Left-hand side controls

### Left-hand side controls

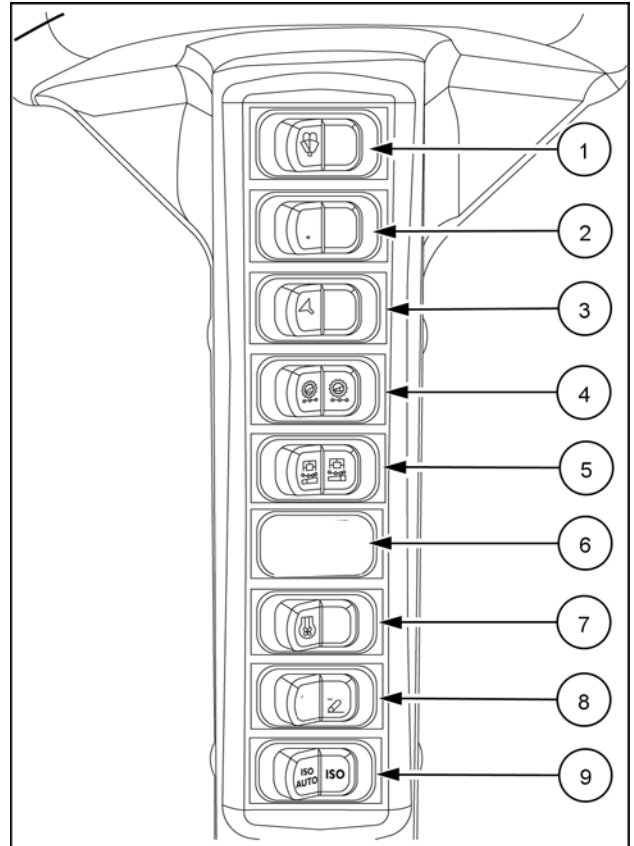
- (1) Supplementary creeper or splitter control handle.
- (2) Hand brake control handle.
- (3) Power take-off selection handle, independent or synchronized with the gearbox.
- (4) Diagnostic socket



MOIL24TR00425AA 1

## Left side post controls

- (1) Front windshield washer-wiper switch
- (2) Rear window washer/wiper switch
- (3) “Adaptive steering” advanced steering control activation switch (if fitted)
- (4) Electro-hydraulic reversing mechanism reactivity switch
- (5) Rear Power Take-Off (PTO) aggressivity switch
- (6) Switch not used on this vehicle
- (7) Reversible fan switch (if fitted)
- (8) Rear hydraulic lift master switch.
- (9) Autoguidance/ISOBUS function switch (if present)

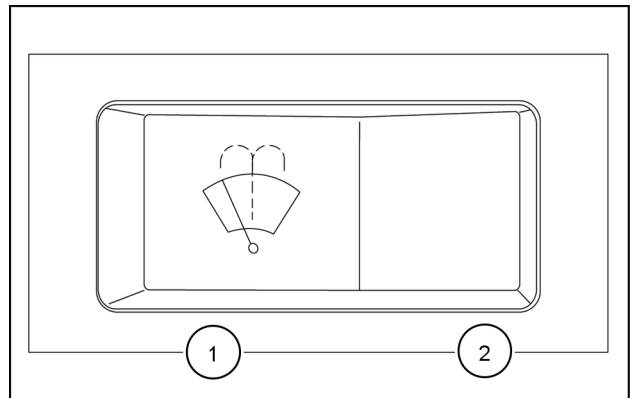


MOIL23TR01121BA 1

### Front windshield washer-wiper switch

To activate the front windshield washer - wiper, press the switch to position (1). Press and hold the switch in position (1) to spray a jet of cleaning solution.

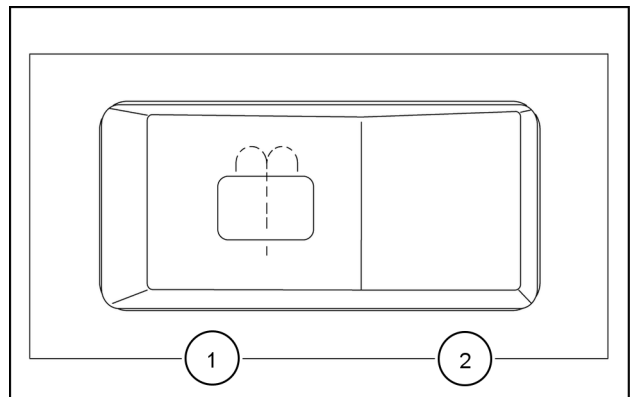
To deactivate the front windshield washer - wiper, press the switch to position (2).



MOIL13TR02183AA 2

To activate the rear windshield washer - wiper, press the switch to position (1). Press and hold the switch in position (1) to spray a jet of cleaning solution.

To deactivate the rear windshield washer - wiper, press the switch to position (2).

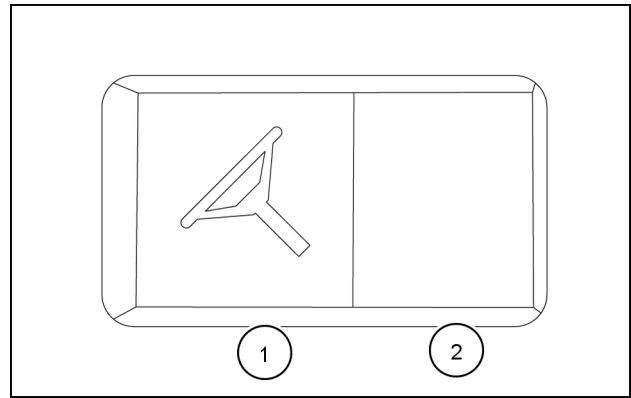


MOIL13TR02181AA 3

**“Adaptive steering” variable-ratio steering activation switch (if fitted)**

To activate the “Adaptive steering” control, press the switch to position **(1)**.

To deactivate the “Adaptive steering” control, press the switch to position **(2)**.



MOIL24TR00228AA 4

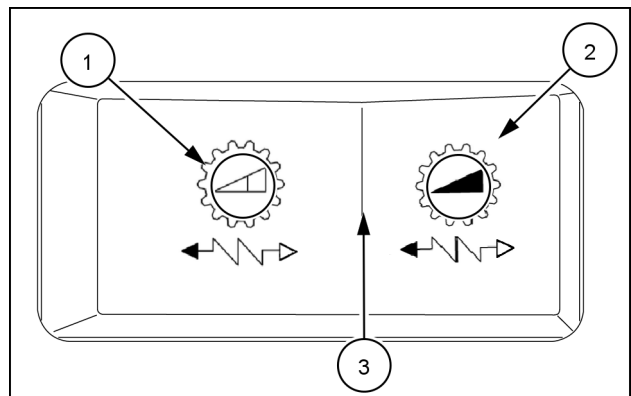
**Electro-hydraulic reversing mechanism re-activity switch**

Press the switch in one of the two positions.

**(1)** Increase reactivity

**(2)** Reduce reactivity. When the switch is released, it automatically returns to the central rest position **(3)**

For further information, see



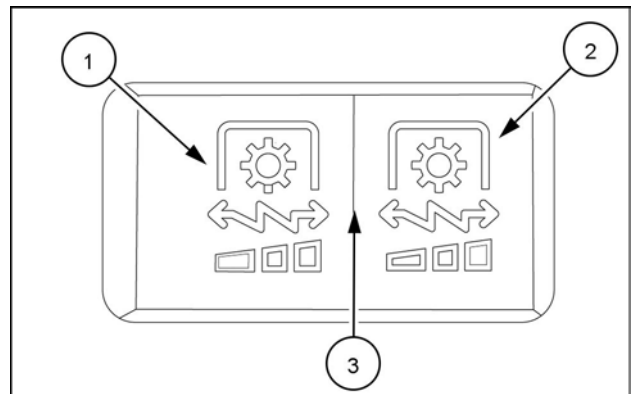
MOIL16TR02416AC 5

**Rear Power Take-Off (PTO) aggression switch**

Press the switch in one of the two positions.

**(1)** Increase aggression

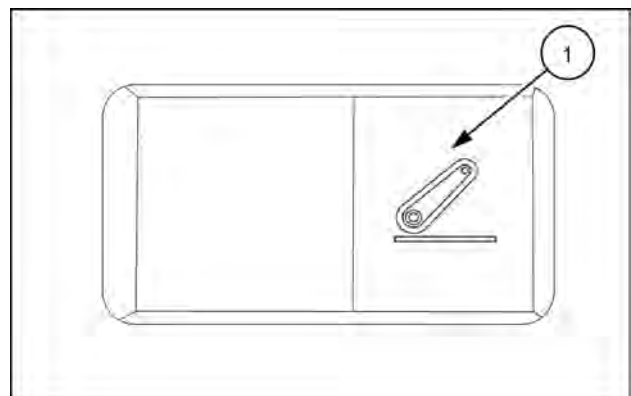
**(2)** Reduce aggression. When the switch is released, it automatically returns to the central rest position **(3)**



MOIL24TR00215AA 6

**Rear hydraulic lift master switch**

Press the switch **(1)** to activate/deactivate the rear hydraulic lift.

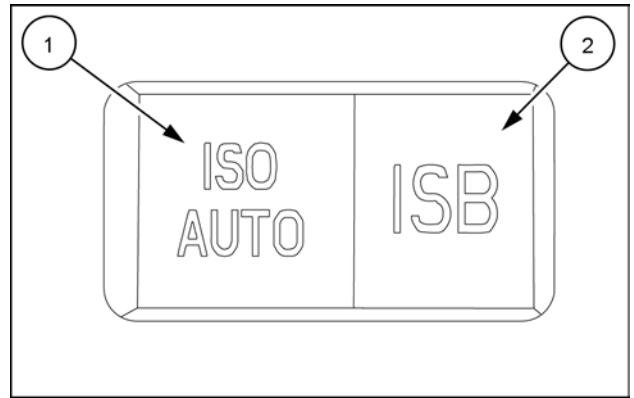


MOIL24TR00216AB 7

### Autoguidance/ISOBUS function switch

Press the switch to position **(1)** to activate/deactivate the automatic guidance function (if present)

Press the switch to position **(2)** to activate/deactivate the ISOBUS function.



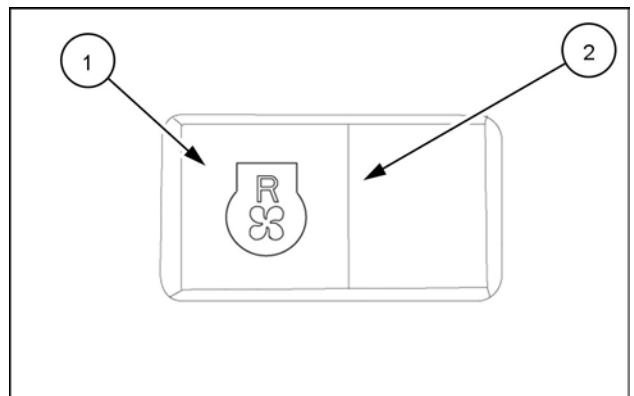
MOIL24TR00472AA 8

### Reversible fan activation switch (if fitted)

Press the switch to position **(1)** to activate the reversible fan.

When the switch is released, it automatically returns to the central rest position **(2)**.

Press the switch to position **(1)** again to deactivate the reversible fan. When the switch is released, it automatically returns to the central rest position **(2)**.

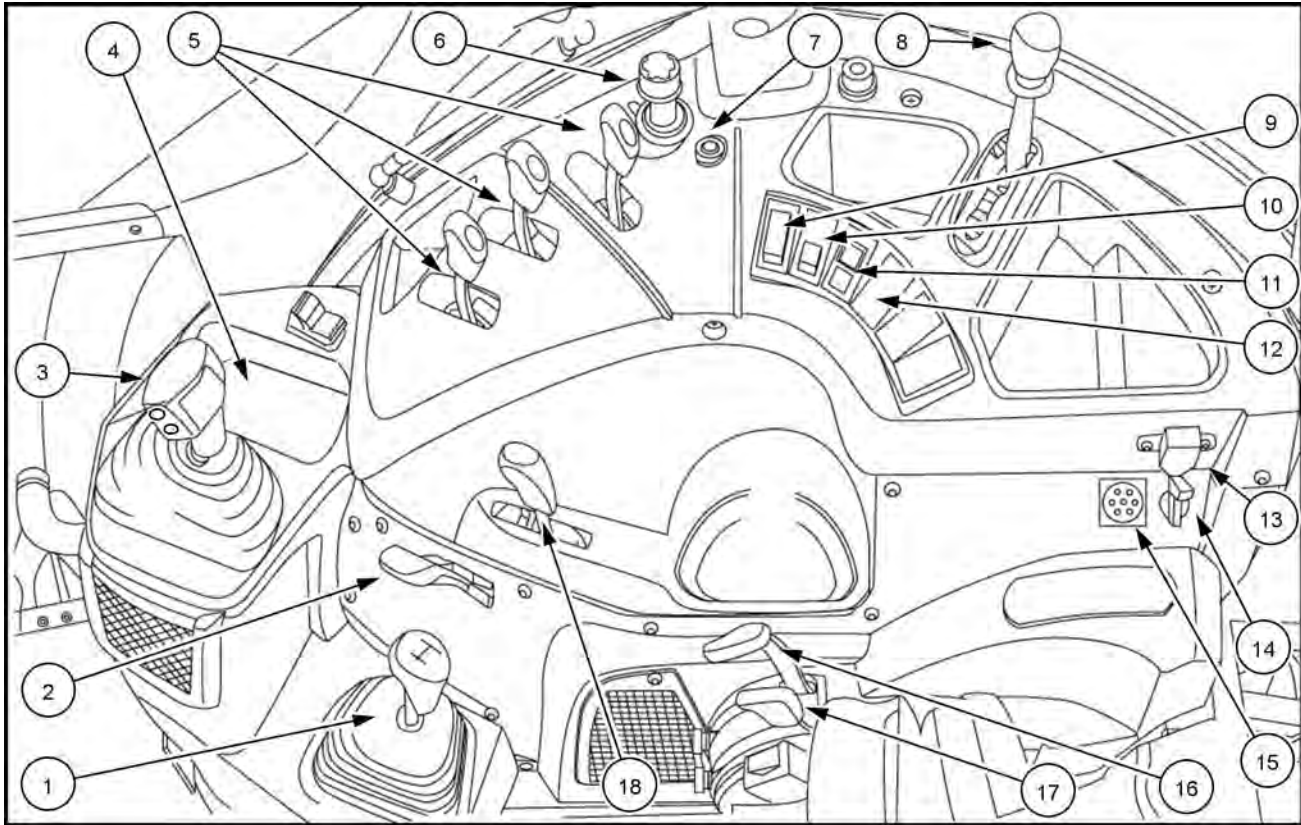


MOIL24TR00232AA 9

Right-hand side controls

Right-hand side controls

Basic model configuration with mechanically controlled rear hydraulic lift



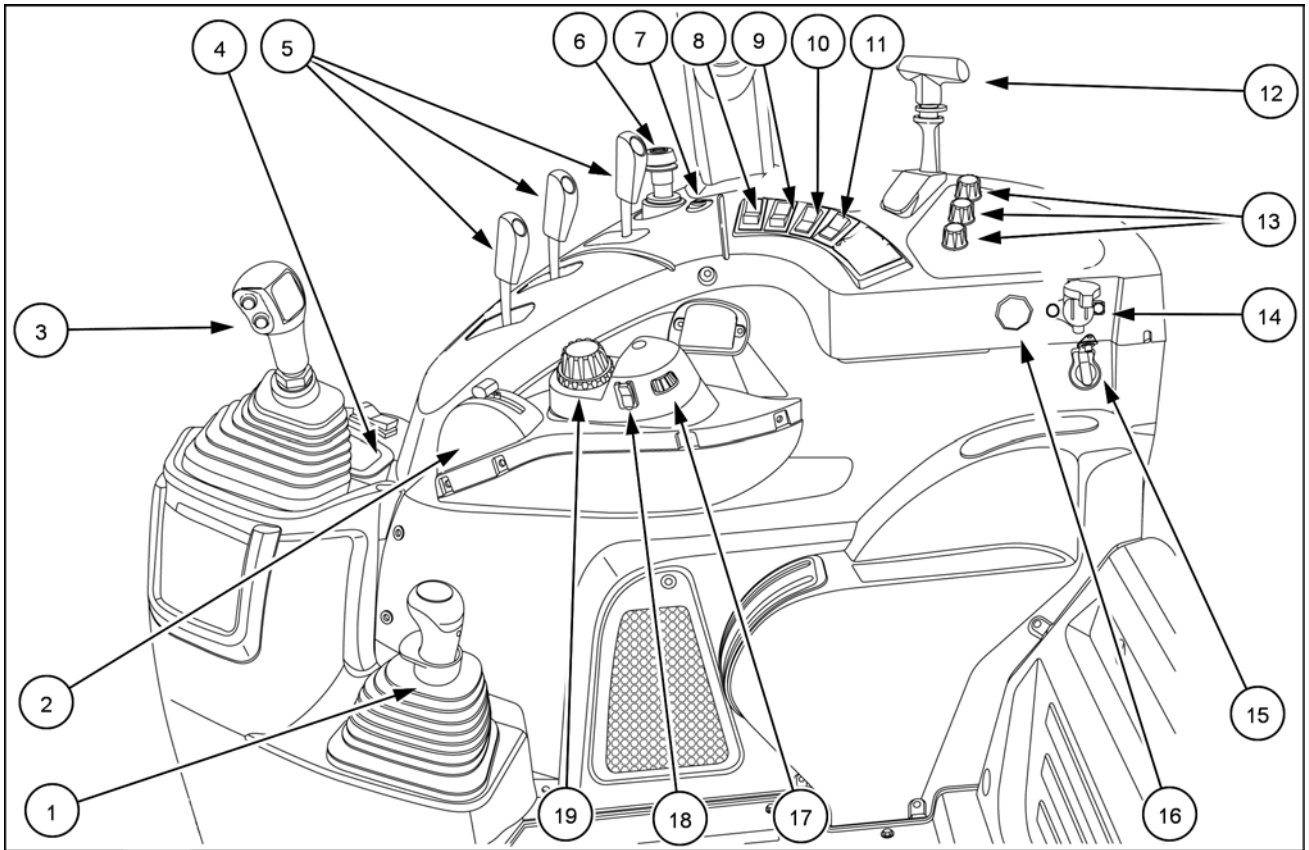
MOIL24TR00705FA 1

- (1) Gear range lever with parking lock
- (2) Hand throttle lever.
- (3) Gear lever with Hi-Lo selection push button
- (4) Storage box
- (5) Auxiliary control valve levers
- (6) Knob for engaging rear electro-hydraulically operated power take-off
- (7) Stationary power take off operation switch
- (8) Independent Rear Power Take-Off (PTO) speed selection lever
- (9) Four-wheel drive engagement selection switch
- (10) Differential lock selection switch
- (11) Switch for setting constant engine revolution function 1/2
- (12) Auto steer/steering variable ratio feature selection switch (if present)

- (13) Implement power socket for **30 A** or **40 A** always powered
- (14) **8 A** Single-pole auxiliary socket; powered on with the key set to 'ON'
- (15) **ISO 11783** socket for AFS PRO 1200 monitor power supply
- (16) Lever for controlling rear hydraulic lift position
- (17) Lever for controlling rear lift hitch draught
- (18) Proportional control handle for mechanically operated rear hydraulic lift.

**NOTE:** a detailed description of the controls is given in the relevant sections.  
Some of the controls might not be present depending on the tractor configuration.

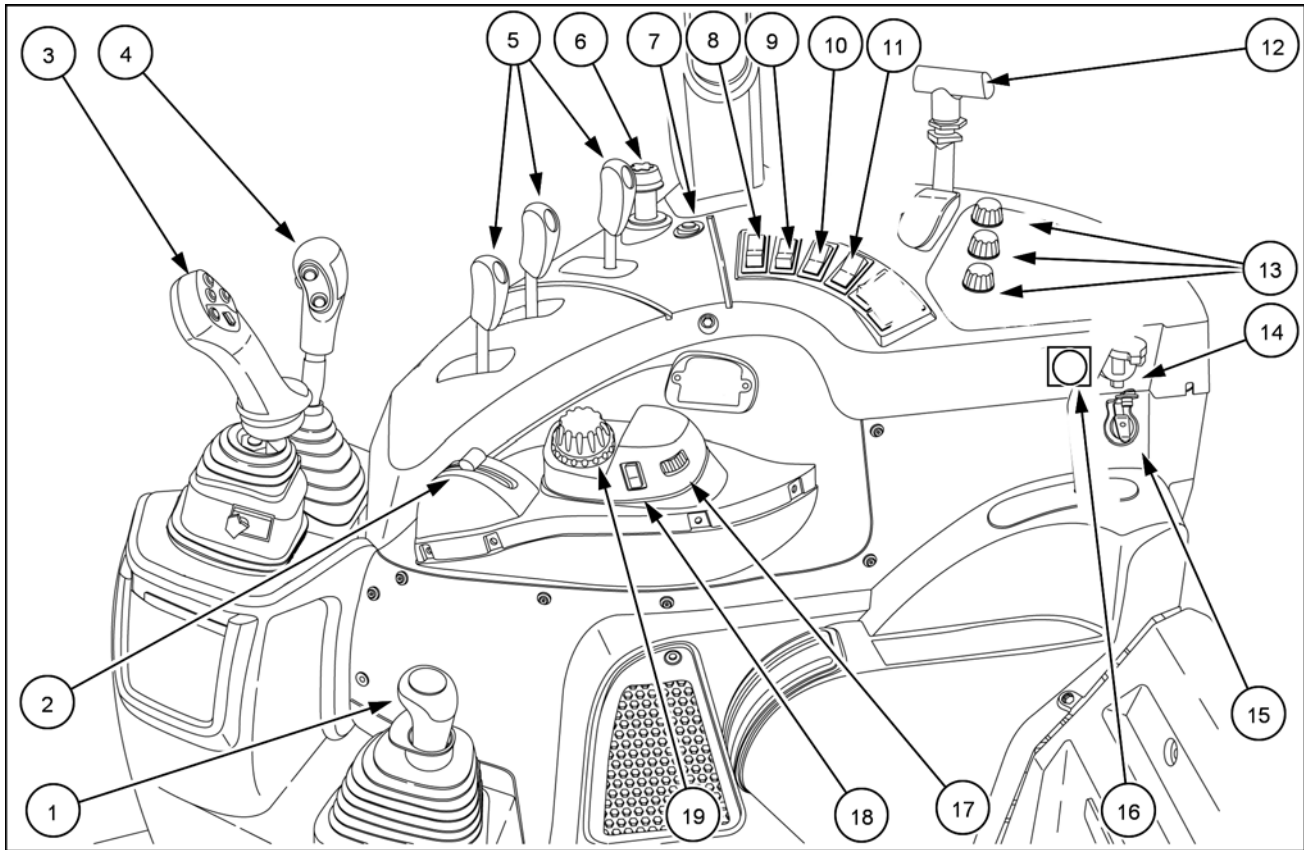
**Basic model configuration with electro-hydraulic rear hydraulic lift**



MOIL19TR00493FA 2

- |   |   |
|---|---|
| <p>(1) Gear range lever with parking lock</p> <p>(2) Hand throttle lever</p> <p>(3) Gear lever with Hi-Lo selection push button</p> <p>(4) Storage box</p> <p>(5) Auxiliary control valve handles</p> <p>(6) Knob for engaging rear electro-hydraulically operated power take-off (PTO)</p> <p>(7) Stationary power take-off operation switch</p> <p>(8) Four-wheel drive engagement selection switch</p> <p>(9) Differential lock selection switch</p> <p>(10) Switch for setting constant engine revolution function 1/2</p> <p>(11) Auto steer/steering variable ratio feature selection switch (if present)</p> | <p>(12) Independent PTO speed selection lever</p> <p>(13) Potentiometers for adjusting rear hydraulic lift parameters</p> <p>(14) 8 A Single-pole auxiliary socket; powered on with the key set to 'ON'</p> <p>(15) Implement 25 A or 40 A power socket, always powered</p> <p>(16) ISO 11783 socket for AFS PRO 1200 monitor power supply</p> <p>(17) Rear hydraulic lift draft control potentiometer</p> <p>(18) Rear hydraulic lift quick lift/lower switch</p> <p>(19) Rear hydraulic lift position control potentiometer</p> |
|---|---|

**Model configuration with multifunctional joystick**



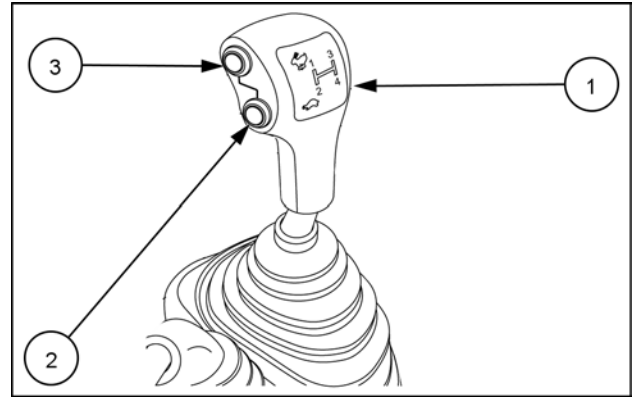
MOIL19TR00230FA 3

- (1) Gear range lever with parking lock
- (2) Hand throttle lever
- (3) Joystick with advanced functions
- (4) Gear lever with Hi-Lo selection push button
- (5) Auxiliary control valve handles
- (6) Knob for engaging rear electro-hydraulically operated power take-off (PTO)
- (7) Stationary power take-off operation switch
- (8) Four-wheel drive engagement selection switch
- (9) Differential lock selection switch
- (10) Switch for setting constant engine revolution function 1/2
- (11) Auto steer/steering variable ratio feature selection switch (if present)
- (12) Independent PTO speed selection lever
- (13) Potentiometers for adjusting rear hydraulic lift parameters
- (14) 8 A Single-pole auxiliary socket; powered on with the key set to 'ON'
- (15) Implement 25 A or 40 A power socket, always powered
- (16) ISO 11783 socket for AFS PRO 1200 monitor power supply
- (17) Rear hydraulic lift draft control potentiometer
- (18) Rear hydraulic lift quick lift/lower switch
- (19) Rear hydraulic lift position control potentiometer

**NOTE:** a detailed description of the controls is given in the relevant section. Some of the controls might not be present depending on the tractor configuration.

**Gear lever.**

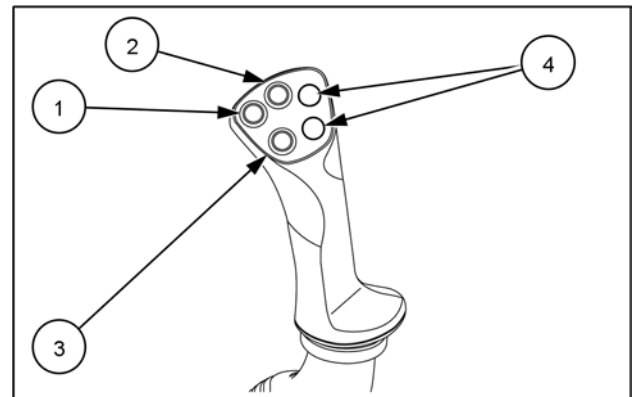
- (1) Gear selection lever
- (2) Low gear select switch Hi
- (3) Low gear select switch Lo



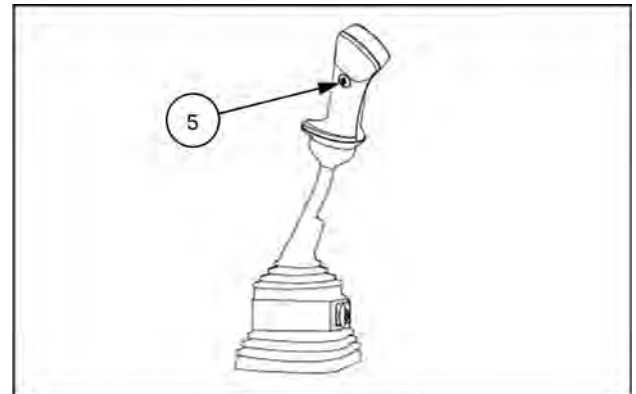
MOIL16TR02010AA 4

**Advanced function joystick (if present)**

- (1) Low gear select switch Hi-Lo
- (2) Direction of travel selection switch
- (3) Alternating selection switch for constant engine revolution function (CRPM)
- (4) Front loader switch (if fitted)
- (5) Automatic clutch pick-up switch



MOIL22TR00210AA 5



MOIL19TR00331AA 6

**NOTE:** For more information on operation modes see **6-26** and **6-38**.

## Right side post controls

### ⚠ WARNING

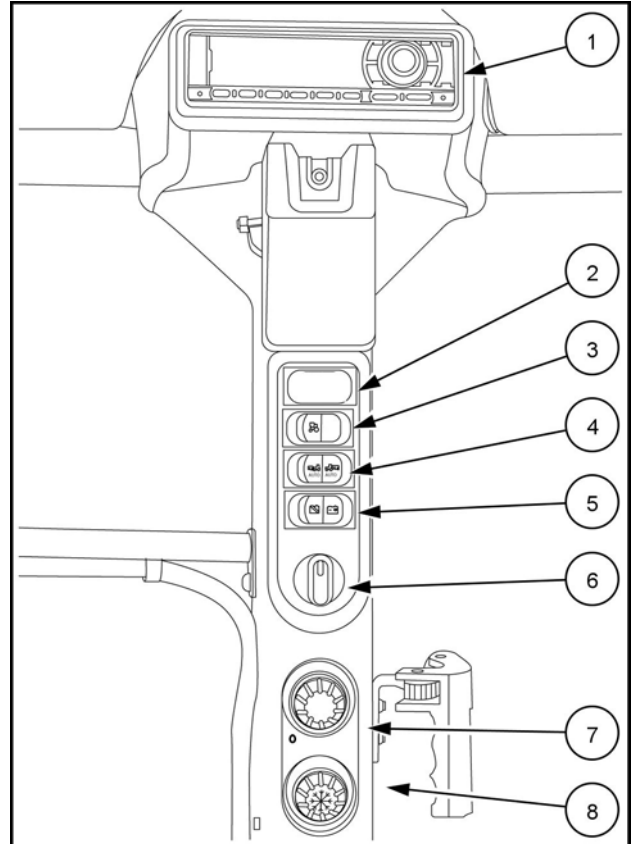
#### Driving hazard!

When traveling on public roads, only use the headlights and hazard warning lights. **DO NOT** use the work lights. An oncoming vehicle may confuse the rear work lights with the headlights. Failure to comply could result in death or serious injury.

W0211A

- (1) Radio controls
- (2) Switch not used on this vehicle
- (3) Pillars/hood deviation light switch
- (4) Automatic power take-off function activation switch (PDF)
- (5) Electronic battery isolator switch
- (6) Work lights control knob
- (7) Temperature control knob
- (8) Knob for selecting the electric fan speed and activating the A/C system

**NOTE:** All controls are operational when the starter key is set to ON; energised control panel

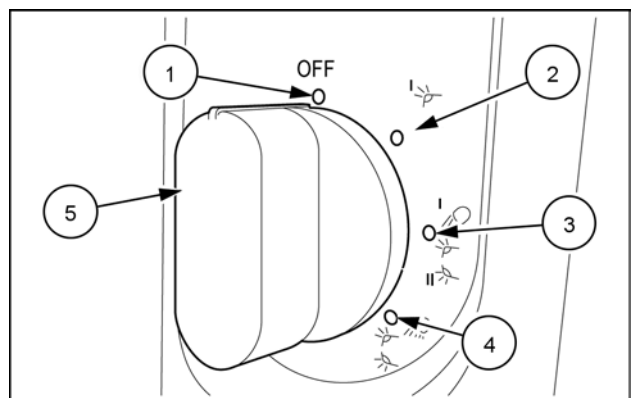


MOIL23TR01127BA 1

### Working lights switch

Set the knob (5) to the following positions:

- (1) Lights off
- (2) Hood work lights on.
- (3) Front cab and hood work lights on.
- (4) Front cab, rear cab and hood work lights on.



MOIL13TR02251AC 2

### Control switch for road lights or work lights (if fitted)

With implements connected at the front, the switch serves to divert the road traffic lights (high beam / low beam) from the auxiliary lights located on the pillars.

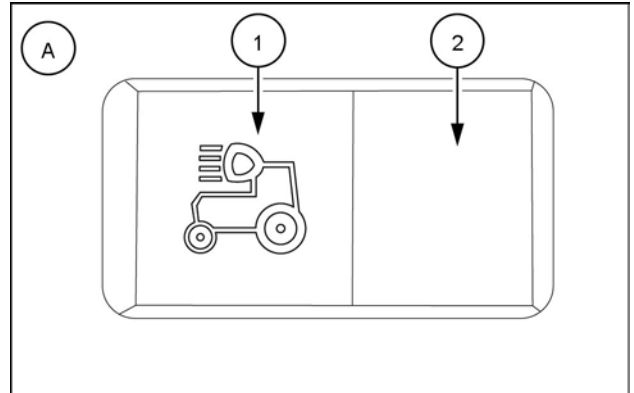
**NOTE:** To switch on the auxiliary lights on the pillars, the lights must first be switched on using the multifunctional control knob (light switch) (6).

**NOTE:** When the side auxiliary headlights come on, the hood lights automatically switch off and vice versa.

Light configuration (A):

(1) Auxiliary lights on the pillars switched on and road traffic lights (high/low beam) on the engine hood switched off.

(2) Road lights (high/low beam) on the engine hood switched on and auxiliary lights on the pillars switched off.



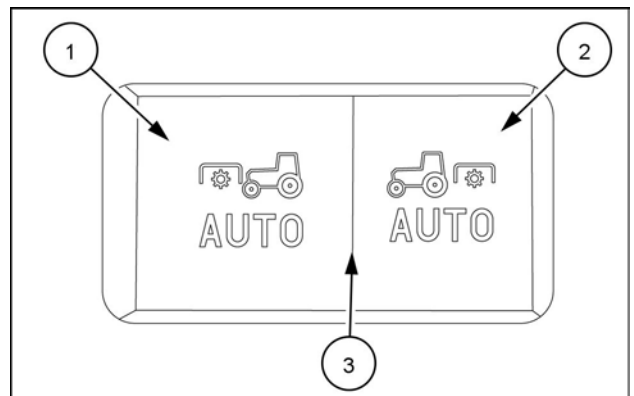
MOIL24TR00221AA 3

### Automatic power Take-Off (PTO) switch

(1) Engage automatic front Power Take-Off (PTO) control

(2) Engage automatic Power Take-Off (PTO) control

(3) Central rest position



MOIL24TR00219AA 4

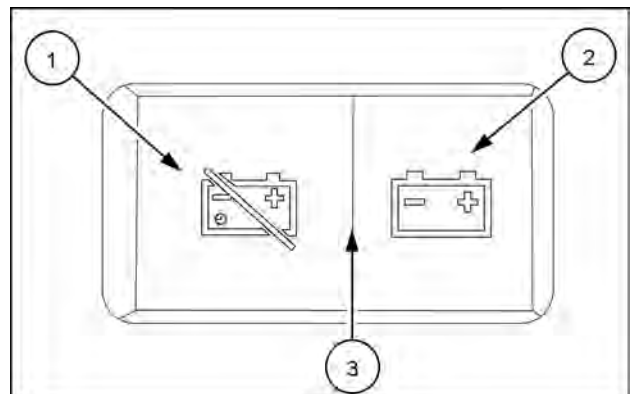
### Electronic battery cut-off switch

With the ignition switch in the "OFF" position, press and release the switch in one of the two positions.

(1) Battery not connected

(2) Battery connected

(3) Central rest position



MOIL24TR00220AA 5

## Exterior controls

### Exterior controls

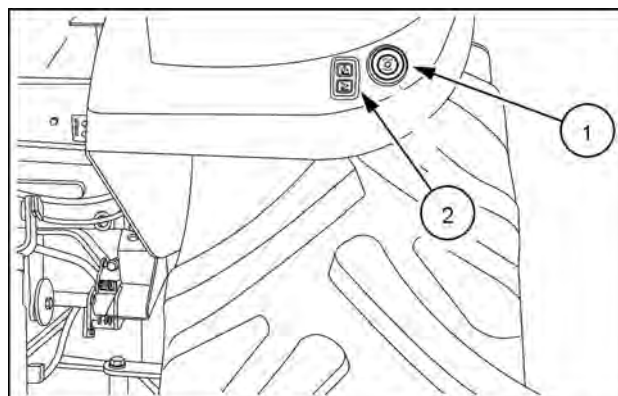
(1) Switches for engaging/disengaging the rear power take-off (PTO) )For further information, see **6-73**).

**NOTE:** The switch (1), if fitted, can be present on both sides of the tractor.

(2) Control switch for lifting/lowering the rear elevator.

(For further information, see **6-86**).

**NOTE:** The switch (2), if fitted, can be present on both sides of the tractor.



MOIL13TR02126AA 1

## Display

### Warning and status indicators

The warning and indicator lights on the panel, see page **3-17**, provide information on the operating conditions of the machine. Some of these indicate subsequent fault conditions during operation. A warning indicator coming on may be followed by a continuous or intermittent buzzer. Depending on the severity of the trouble, the alarm will sound.



**NOTE:** All indicators illuminate for a short time period when the tractor is powered on while the various systems perform a self test.

Icon	Color	Name	Description
	Green	Turn left indicator	This warning indicator flashes at the same time as the tractor's left direction indicator. With the tractor in movement, if the turn signal is not switched off within <b>60 s</b> an intermittent alarm is activated. With the tractor stationary, this audible warning is activated if the turn signal is not turned off within <b>5 min</b> .
	Amber	Warning light	One or more systems or functions are operating outside normal parameters which require further attention. Investigate the cause. A warning pop-up window appears on the instrument cluster saying where the problem originates.
	Red	Stop warning light	One or more systems or functions are operating outside normal parameters. Stop the tractor immediately and investigate the cause. A warning pop-up window appears on the instrument cluster saying where the fault originates.
	Green	Turn right-hand indicator	This warning indicator flashes at the same time as the tractor's right direction indicator. With the tractor running, if the turn signal is not switched off within 60 seconds an intermittent alarm comes on. With the tractor stationary, this audible warning is activated if the turn signal is not turned off within <b>5 min</b> .
	Green	Indicator light warning light	The warning indicator activates when the tractor side lights are on.
	Red	Low engine oil pressure warning light	The warning indicator activates if the engine oil pressure falls below safe operating limits when the engine is running.
	Blue	Headlight high beam indicator	The warning indicator activates when the tractor headlights switch to high beam or are flashed.
	Green	Trailer 1 position indicator	The warning indicator activates when one trailer is connected to the trailer auxiliary power connector, and the trailer side lights are on.

### 3 - CONTROLS AND INSTRUMENTS

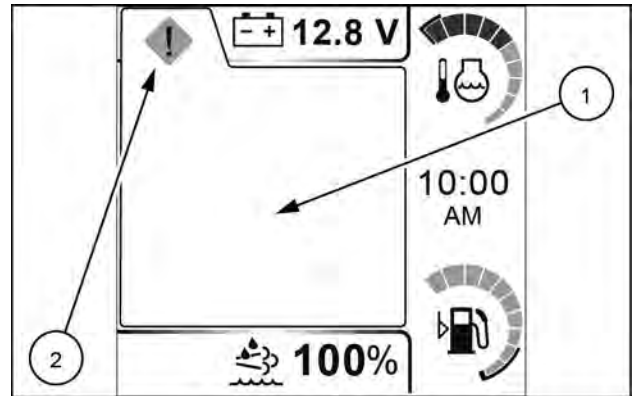
Icon	Color	Name	Description
	Red	Red brake system indicator	The warning indicator activates when the braking system is faulty or not working correctly. It also turns on when the liquid level for the service brakes is low.
	Amber	Amber brake system indicator	This indicator is not active on this vehicle.
	Amber	Field lights indicator	The warning indicator activates when the tractor field (work) lights are on.
	Green	Trailer 2 position indicator	The warning indicator activates when a second trailer is connected to the auxiliary power connector, and the side lights are on.
	Amber	Trailer brake system indicator	Warning light not used on this vehicle
	Amber	Variable ratio steering warning indicator	The warning indicator comes on when the variable ratio steering control is active
	Green	Variable ratio steering warning indicator	The warning indicator is activated when the electronic proportionality mode between steering wheel turns and wheel turns is active
	Green	Front axle suspension warning indicator	Warning light not used on this vehicle.
	Green	Four-wheel drive light	The warning indicator activates when front wheel drive is engaged. The warning indicator flashes when automatic drive is engaged and front wheel drive is disengaged.
	Red	Alternator indicator	The warning indicator activates if the alternator stops charging when the engine is running.
	Amber	Rear differential lock indicator	The warning indicator activates when the rear differential lock is engaged. The warning light flashes when the differential lock is automatically disengaged.
	Red	Brake pedal warning light	The warning indicator activates steady on when the brake pedals are released. <b>NOTE:</b> This warning light is only active for markets that require failed brake pedal latching to be signalled.
	Green	Super creeper	The warning indicator activates when the additional gear range is engaged The warning indicator flashes during gear range selection
	Green	Lo warning indicator	The warning indicator comes on when the additional gear range is engaged The warning indicator flashes yellow when selecting gear ranges
	Green	Hi warning indicator	The warning indicator comes on when the additional gear range is engaged The warning indicator flashes yellow when selecting gear ranges
	Amber	Warning indicator for constant engine rpm 1	The warning indicator activates when the constant engine rpm function 1 is active
	Amber	Warning indicator for constant engine rpm 2	The warning indicator activates when the constant engine rpm function 2 is active
	Amber	Fuel level warning lamp	The warning indicator activates when the fuel level is below <b>20%</b> of the total tank capacity or in the event of a fuel sensor failure The warning indicator goes out when the fuel level is above <b>20%</b> of the total tank capacity

### 3 - CONTROLS AND INSTRUMENTS

Icon	Color	Name	Description
	Amber	Cold start device warning indicator	The warning indicator activates when engine preheating is activated.
	Red	Park brake indicator light	The warning indicator activates: with the ignition switch in the On position and the hand brake or parking brake engaged; For <b>10 s</b> with the ignition switch in the On position and the hand brake or park lock engaged;. Indicator light flashes: with the ignition switch in the On position and the parking brake in an error condition; with the buzzer active <b>10 s</b> with the ignition switch in the OFF position and the hand brake not engaged.

## Settings pop-up visualization

When changing certain parameters, the right-hand side of the instrument cluster displays the settings pop-up windows (1) which can be identified by the blue icon (2). The following tables list the possible settings pop-up windows.



MOIL24TR00297 1




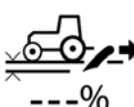





### Reactivity of reversing mechanism

	Low reactivity	See Page <b>6-26</b>
	Average reactivity	
	High reactivity	




### Rear power take-off (PTO) aggressiveness

	Low aggressiveness	See Page <b>6-69</b>
	Medium aggressiveness	
	High aggressiveness	







Information on the electronic rear elevator (if fitted)

		
	Lifting limit	
		
	Towing force	
		See page <b>6-83</b>
	Draft Sensitivity	
		
	Drop rate	
	Auxiliary control valve switch in the locked position	See Page <b>6-55</b>




**Parking Brake**

	Parking brake shut down	See pages <b>6-516-52</b>
	Handbrake applied	
	Hand brake applied with the tractor in motion	




**Variable ratio steering**

	Slow steering ratio in forward gear	See Page <b>6-16</b>
	Medium steering ratio with reverse drive	
	Fast steering ratio with reverse drive	
	Slow steering ratio with reverse drive	
	Medium steering ratio with reverse drive	
	Fast steering ratio with reverse drive	


**Drive line and gearbox**

	Engage the neutral of the reversing mechanism lever	See Page <b>6-26</b>
	Automatic neutral position engagement with operator not present in the driving seat	
	Logical setting of shift to neutral position on reversing mechanism	

**Automatic gearbox control**

	Low aggressiveness	See Page <b>6-26</b>
	Medium aggressiveness	
	High aggressiveness	

**Diesel Particulate Filter**

	Particulate filter regeneration	See Page <b>6-41</b>
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**Battery Isolator**

	Battery Isolator	See Page <b>4-7</b>
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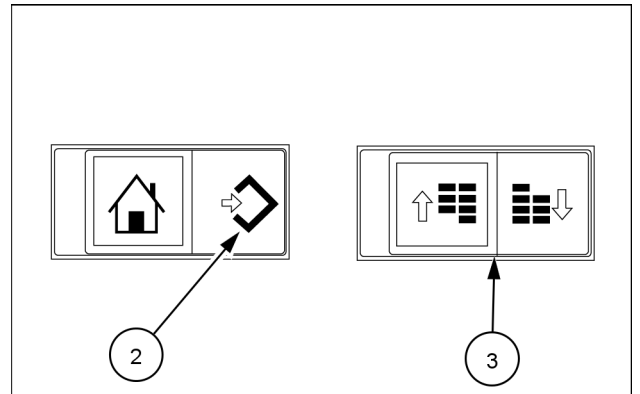
## Menu - Settings

From the first-level menu screen , see page 3-17, use the navigation control (2) to select the second-level settings menu (1)

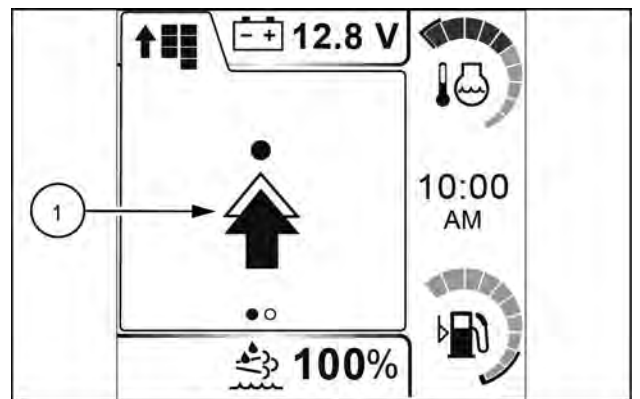
The second-level menus are displayed by scrolling with the push button (3) and are listed below:

	instrument cluster settings
	Engine settings
	Front power take-off (PTO) settings
	Wheels calibration settings
	Rear power take-off (PTO) / rear lift settings
	Implement width settings
	Steering sensitivity settings
	Gearbox sensitivity settings

Once the desired second-level menu has been selected, access the third-level menus described below.



MOIL21TR00013AA 1



MOIL24TR00376 2

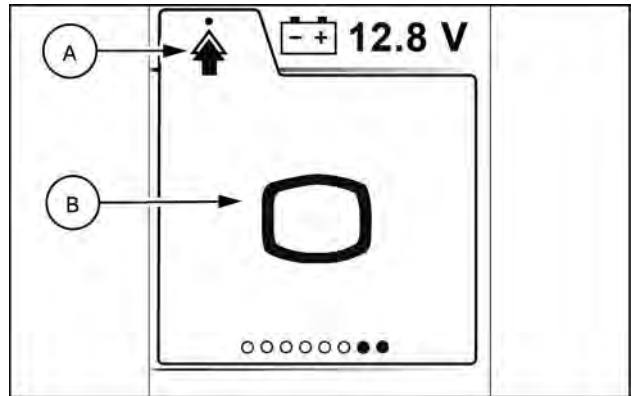
### Third-level menu instrument cluster settings

On the screen for the settings menu (A), use the navigation control to select (B)

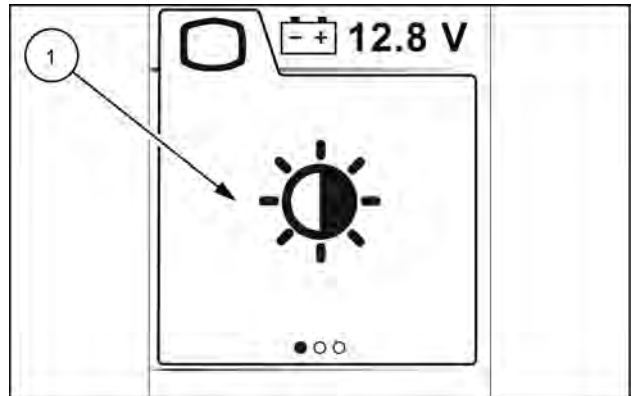
The following information is displayed:

1. Brightness adjustment menu
2. Clock adjustment menu
3. Speed measurement unit setting

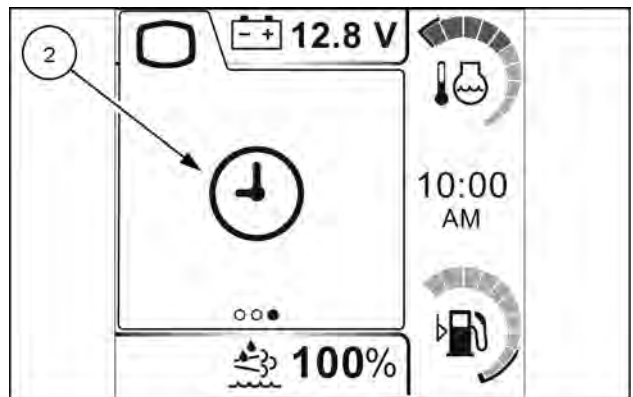
**NOTE:** for adjustment and operating instructions, see page 6-6.



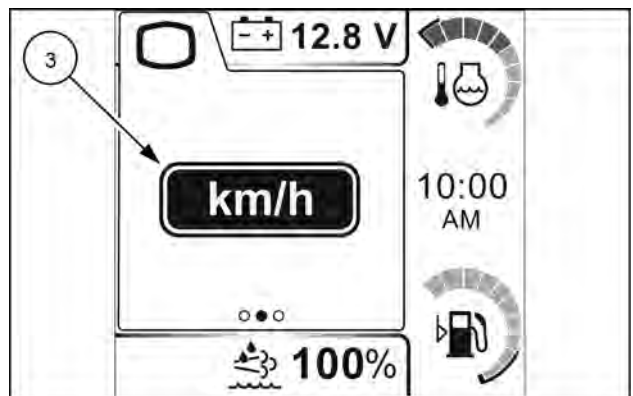
MOIL24TR00125AA 3



MOIL24TR00442AA 4



MOIL24TR00441AA 5

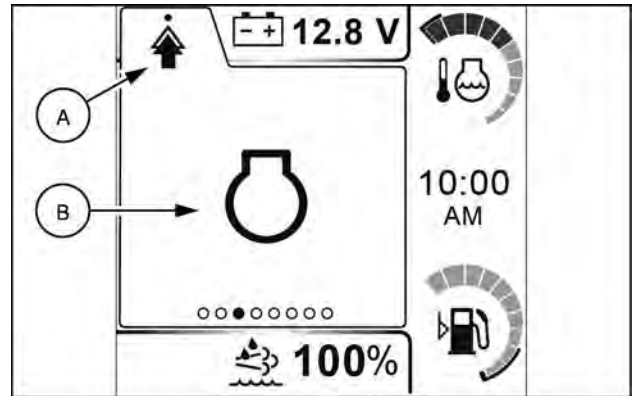


MOIL24TR00443AA 6

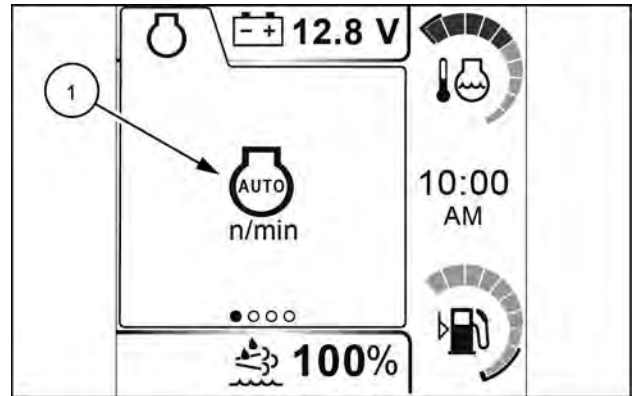
### Third-level engine menu

On the screen for the settings menu (A), use the navigation control to select engine level. (B)  
The following information is displayed:

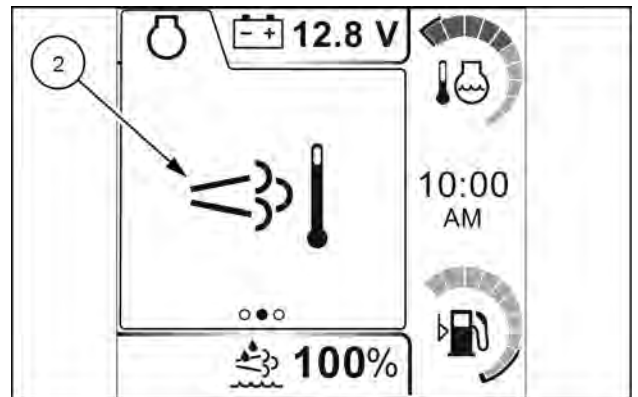
1. Constant engine speed function management - see page 6-38
2. Preventing automatic regeneration - see page 6-41
3. Catalyst management - see page 7-8



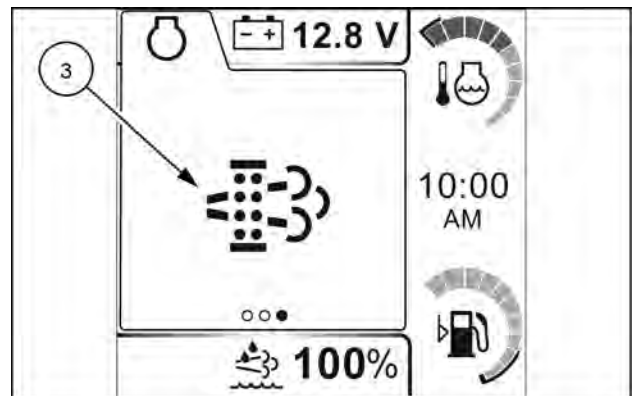
MOIL24TR001282 7



MOIL24TR00129A 8



MOIL24TR00440AA 9



MOIL24TR00445AA 10

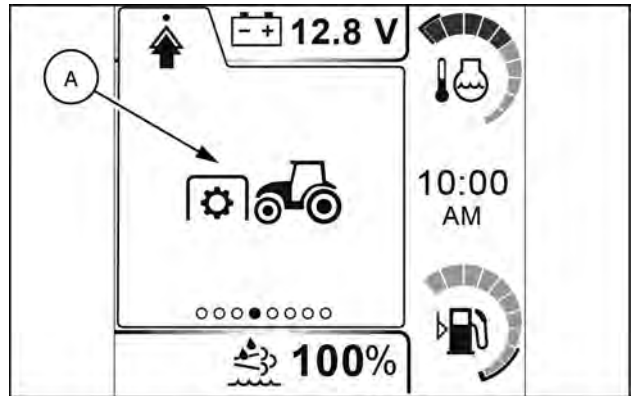
### Third-level menu front Power Take-Off (PTO)

On the screen for the settings menu (A), use the navigation control to select the PTO second level menu. (B)

The following third-level menus will be displayed

1. Adjusting the upper limit of the front PTO
2. Adjusting the lower limit of the front PTO

**NOTE:** for operating instructions, see page 6-77



MOIL24TR00132A 11

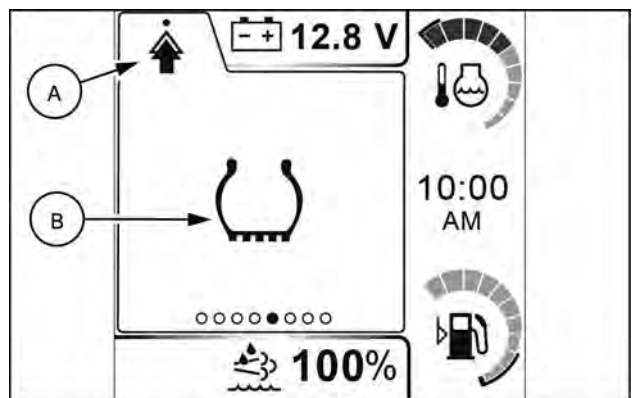
### Wheel calibration third-level menu

On the screen for the settings menu (A), use the navigation control to select (B)

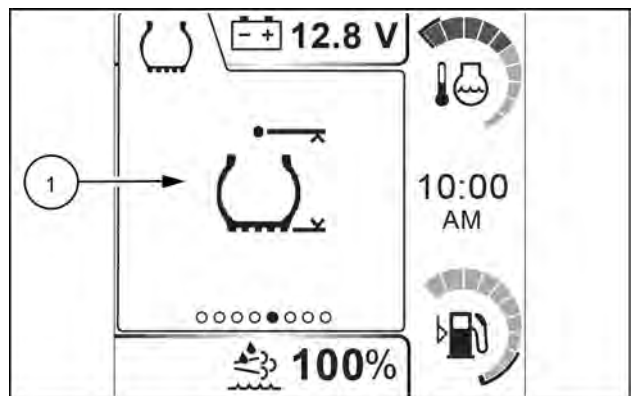
The following information is displayed:

1. Wheel manual calibration menu
2. Wheel calibration menu in 100 m (3937 in)

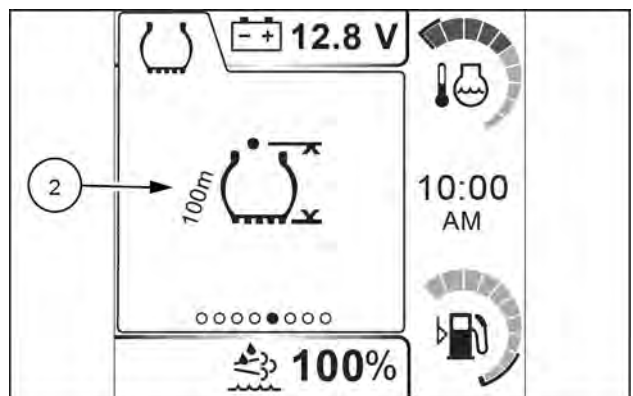
**NOTE:** for operating instructions, see page 6-10.



MOIL24TR00133A 12



MOIL24TR00133B 13



MOIL24TR00133C 14

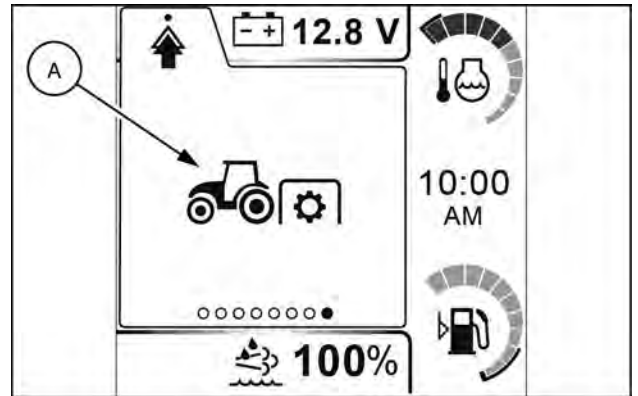
**Rear power take-off (PTO) third-level menu (if fitted)**

On the screen for the settings menu (A), use the navigation control to select (B)

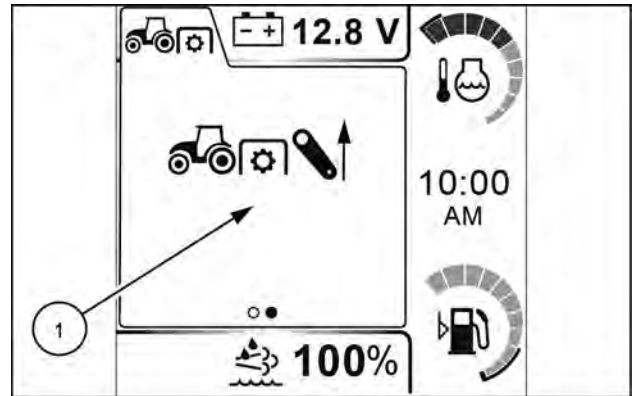
The following information is displayed:

1. Height limit adjustment for rear lift
2. Rear lift lowering limit adjustment

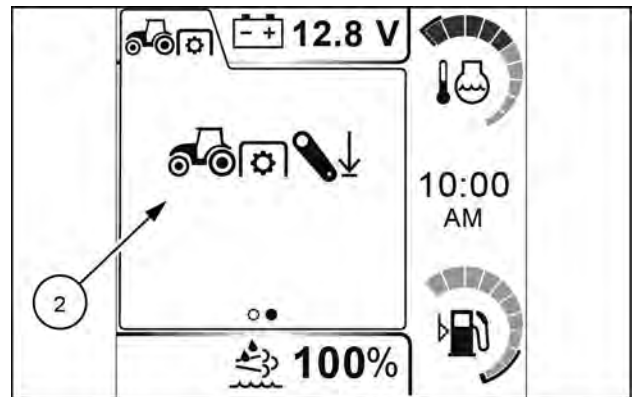
**NOTE:** for operating instructions, see page 6-69



MOIL24TR00139A 15



MOIL24TR00140A 16



MOIL24TR00140A 17

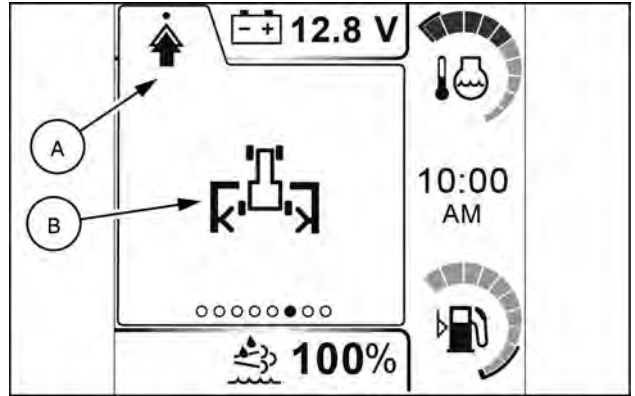
### Third-level menu for implement width calibration

On the screen for the settings menu (A), use the navigation control to select (B)

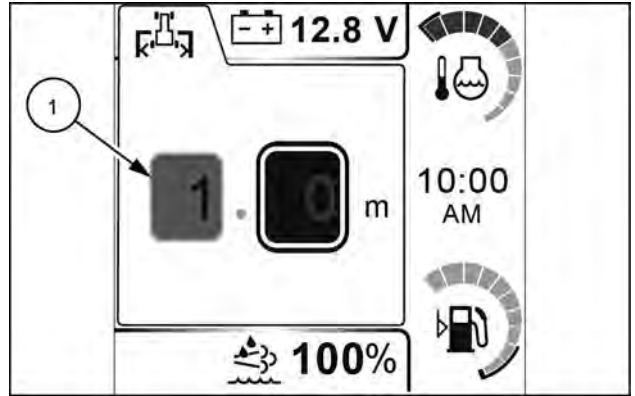
The following information will be displayed:

1. Implement width values

**NOTE:** for operating instructions, see page 6-9.



MOIL24TR00135A 18



MOIL24TR00136A 19

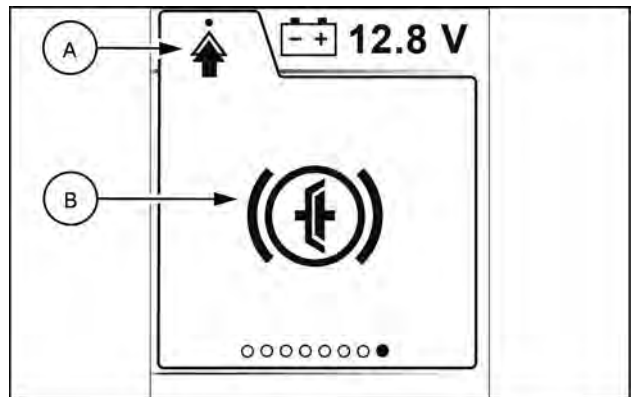
### Third-level menu for gearbox sensitivity settings

On the screen for the settings menu (A), use the navigation control to select (B)

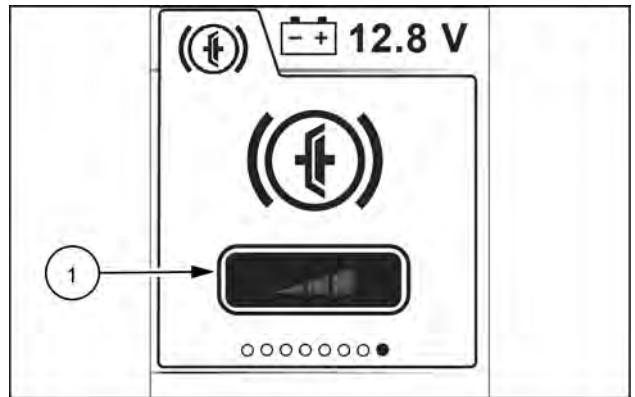
The following information will be displayed:

1. Gearbox sensitivity selection values (1)

**NOTE:** for operating instructions, see page 6-26



MOIL24TR00124 20



MOIL24TR00124C 21

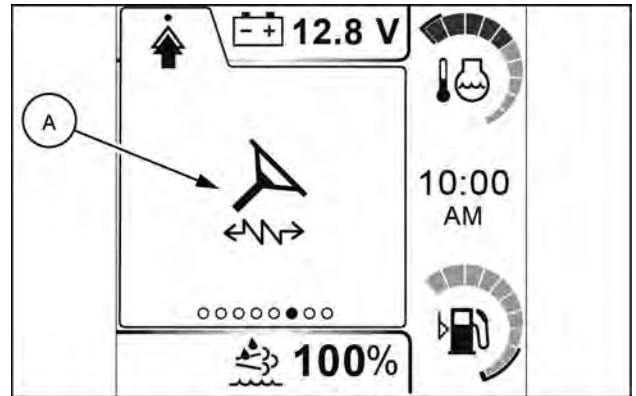
**Third level variable ratio steering menu (if present)**

On the screen for the settings menu (A), use the navigation control to select (B)

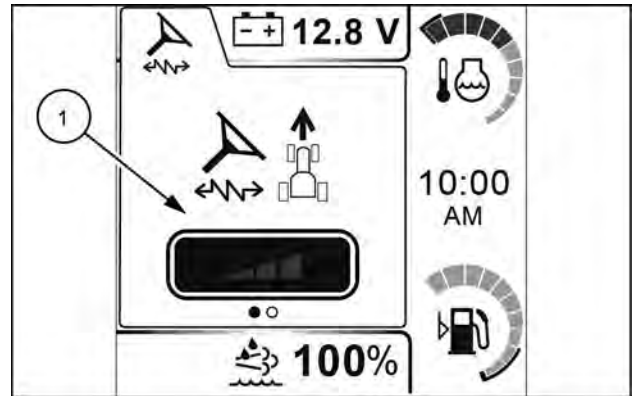
The following information will be displayed:

1. Variable ratio steering adjustment values

**NOTE:** for operating instructions, see page 6-16



MOIL24TR00138A 22



MOIL24TR0013A7 23

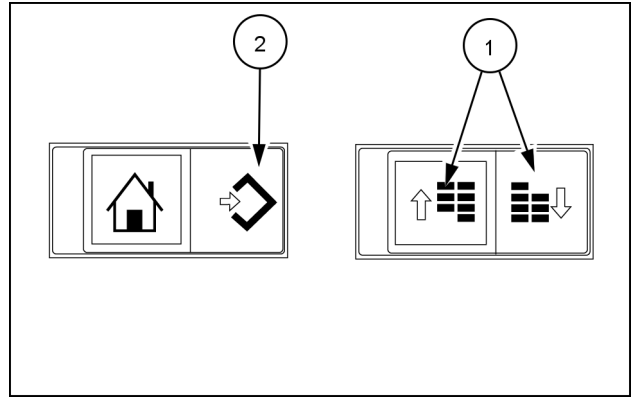
## Performance windows

From the main screen of the central display, scroll through the performance menu of the navigation control **(1)** to access the screens with the relevant information below.

The following information is displayed:

1. Area accumulator
2. Odometer
3. Engine load
4. Fuel consumption per hour
5. Hectares/acres worked per hour

To reset the recorded performance values, press the 'RESET' push button **(2)**.



MOIL21TR00013AA 1

### Area accumulator

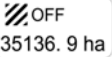
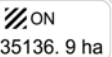

**NOTE:** Before activating this function, set the correct implement width.

Based on the unit of measurement selected (kilometres or miles), the value of the total area worked **(1)** will be displayed in hectares or acres. The accumulated area (total area worked) is calculated by the instrument cluster multiplying the implement width by the distance travelled since the function has been activated. If the operator changes the implement width value, the area accumulated up to that time is saved, and the area worked using the new implement width is added to it.



MOIL24TR00369B 2

Use the navigation control to select one of the three settings for the accumulated area, as described below.

 OFF 35136.9 ha	OFF - The area accumulator function is off.
 ON 35136.9 ha	ON - The area accumulator function is on. The worked area is calculated while the tractor is moving, irrespective of the position of the implement.
 AUTO 35136.9 ha	AUTO - The area accumulator function is on in automatic mode. The area worked is only calculated when the tractor is moving and the implement is lowered. The area calculation stops when the implement is raised.

The total area worked is displayed with the following increments:

- |                              |                   |
|------------------------------|-------------------|
| 0 to 199.99 hectares/acres   | 0.01 hectare/acre |
| 200 to 1999.9 hectares/acres | 0.1 hectare/acre  |

### Odometer

The odometer **(1)** provides a visual record of the distance travelled in kilometres or miles depending on the unit of measurement selected.

The distance driven appears in increments of:

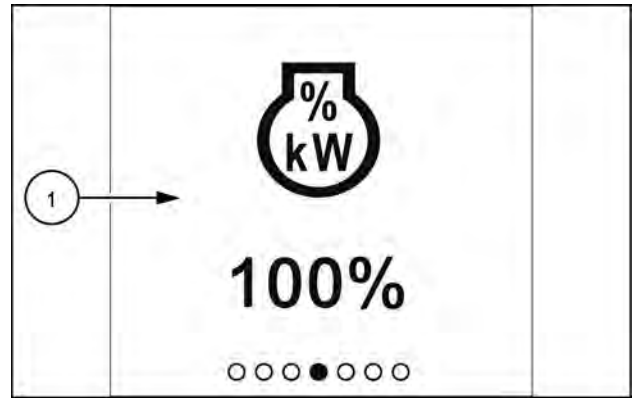
- |                       |               |
|-----------------------|---------------|
| 0 to 19.999 km/miles  | 0.001 km/mile |
| 20 to 199.99 km/miles | 0.01 km/mile  |
| 200 to max km/miles   | 0.1 km/mile   |



MOIL24TR00369 3

### Engine load

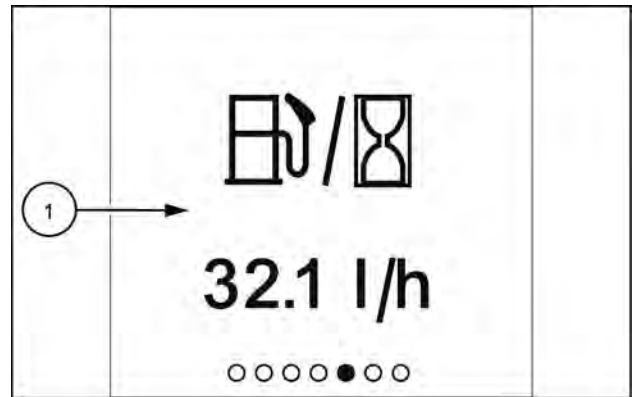
Percentage value of engine load. Maximum reading **100% (1)**



MOIL24TR00370 4

### Fuel consumption per hour

Indication of hourly fuel consumption in litres per hour or gallons per hour **(1)**, depending on the selected unit of measurement.



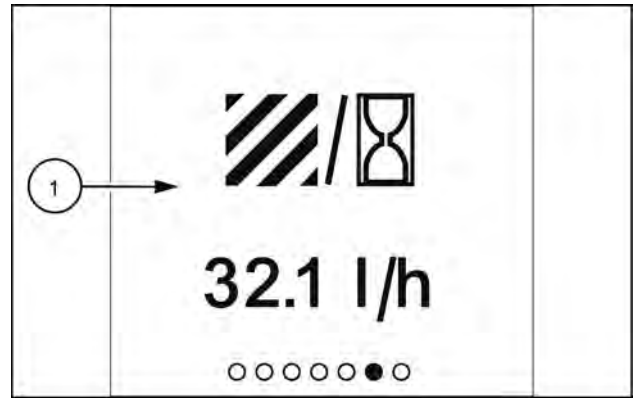
MOIL24TR00371 5

### Hectares/acres worked in one hour

This is a forecast of the area that will be worked in one hour if the current rate of work is maintained. Based on the unit of measurement selected (kilometres or miles), the forecast value of the area (1) that will be worked in one hour will be displayed in hectares or acres. The value of the area worked in one hour is displayed with increments of 0.01 hectare/acre if the area worked rate is less than 1 hectare/acre per hour. For higher rates, the increment will be 0.1 hectare/acre per hour.

**NOTE:** If the area accumulator function is not in use, the value displayed will be zero.

**NOTE:** Distance calculations are based on axle rotation and are subject to inaccuracies caused by any wheel slip that may occur.

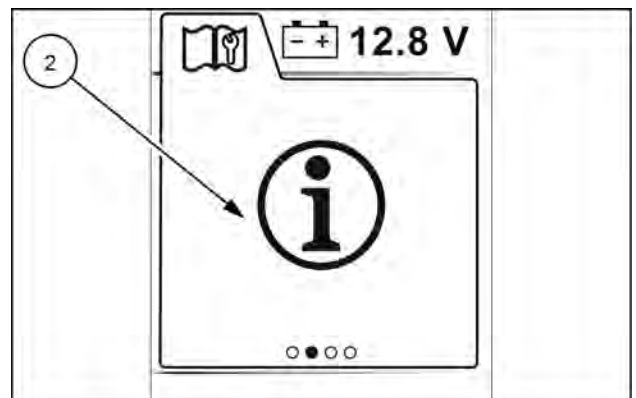
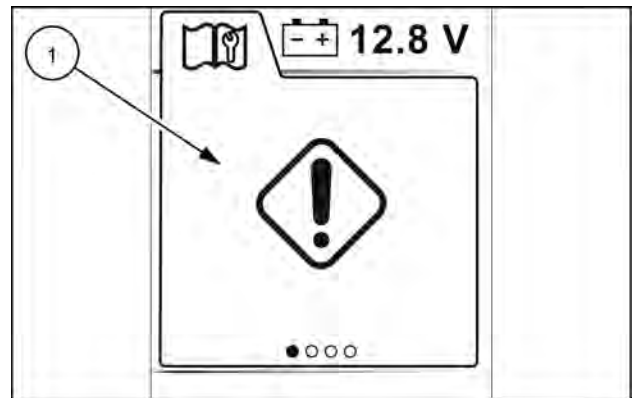
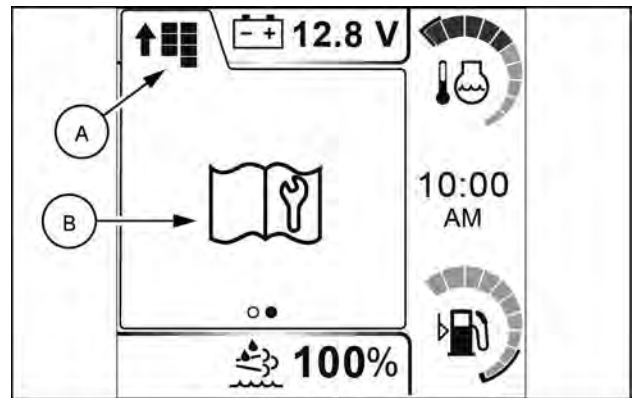


MOIL24TR00372 6

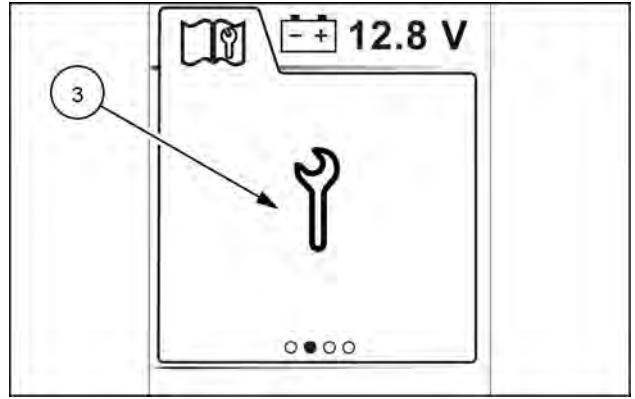
## Menu - Diagnostics

From the first-level menu screen **(A)**, use the navigation control to select the diagnostic menu **(B)** to access the screen in the figure with the second-level menus, as shown below:

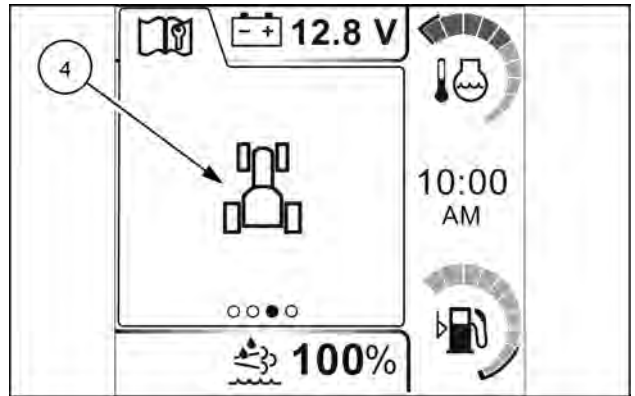
1. Error codes and active warnings menu - see pages **8-13** and **3-17**
2. System information menu - see page **6-1**



1. Maintenance menu - see page **6-2**
2. Vehicle configuration menu - see page **6-5**



MOIL24TR00468AA 4



MOIL24TR00446AA 5

## Calibrations menu

### ⚠ WARNING

#### Unexpected machine movement!

The machine could move automatically during calibration. Park on a flat surface, engage the parking brake, and be sure that the area around the machine is clear before starting the calibration process. Failure to comply could result in death or serious injury.

W0300A

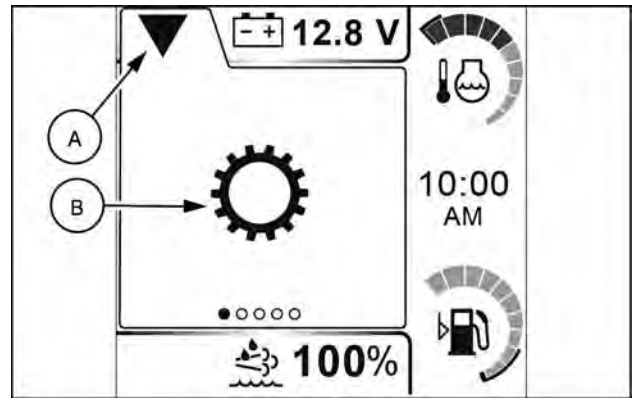
From the calibration menu (A) the operator can perform various control unit mapping procedures in order to work with an optimised set of control unit parameters for the vehicle.

Unlike the settings and diagnostics menu, the calibration menu can be accessed directly using the relevant shortcut buttons required for the specific calibration procedure

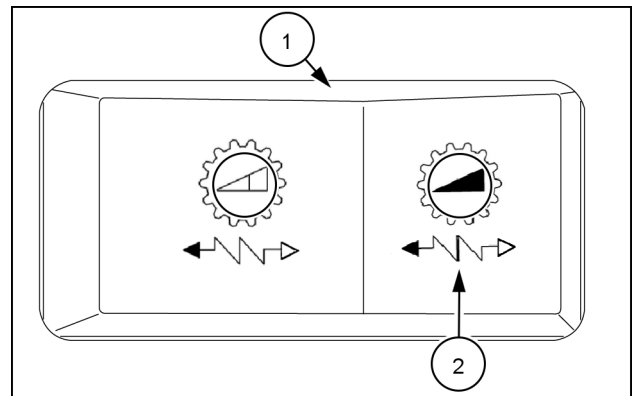
Observe the following warnings:

1. Switch off the engine.
2. Pull the hand brake as far as it will go.
3. Depress the clutch pedal
4. Place the range lever to the "High" position
5. Set the gear lever to position four
6. Move the hand throttle control to the start point and release the clutch pedal

Press and hold the reverse reactivity switch (1) in position (2) and simultaneously start the engine. Enter the calibration menu by pressing the "HOME" control






MOIL24TR00141 1



MOIL16TR02416AC 2

The following second-level menus are present in the calibration menu (A):

	Clutch calibration	See 7-94
	Rear lift calibration	See 7-102
	Advanced steering calibration (if present)	See 7-108



## 4 - OPERATING INSTRUCTIONS

### Commissioning the unit

### Basic operating safety rules

#### **⚠ WARNING**

**Inhalation/asphyxiation hazard!**  
Make sure there is proper ventilation before starting the engine.  
Failure to comply could result in death or serious injury.

W0091A

#### **⚠ WARNING**

**Unexpected machine movement!**  
Before starting the engine, move all operating controls to neutral or park lock position. This prevents accidental movement of the machine or start up of power-driven equipment.  
Failure to comply could result in death or serious injury.

W0302A

#### **⚠ WARNING**

**Hazard to bystanders!**  
**ALWAYS** make sure the work area is clear of bystanders and domestic animals before starting this procedure. Know the full area of movement of the machine. Do not permit anyone to enter the area of movement during this procedure.  
Failure to comply could result in death or serious injury.

W0245A

#### **⚠ WARNING**

**IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY.**  
**MAKE SURE THAT EVERY OPERATOR:**  
-is instructed in the safe and proper use of this machine.  
-reads and understands the operator's manual for this machine.  
-reads and understands ALL safety signs on the machine.  
Failure to comply could result in death or serious injury.

W0188A

#### **⚠ WARNING**

**Avoid injury!**  
Carefully read and observe all the precautionary advice contained in this manual.  
Failure to comply could result in death or serious injury.

W0044A

#### **⚠ WARNING**

**Misuse hazard!**  
Before starting the engine, make sure you are fully aware of the location and the function of each control.  
Failure to comply could result in death or serious injury.

W0226A

## Refueling

### ⚠ WARNING

#### Fire hazard!

When handling diesel fuel, observe the following precautions:

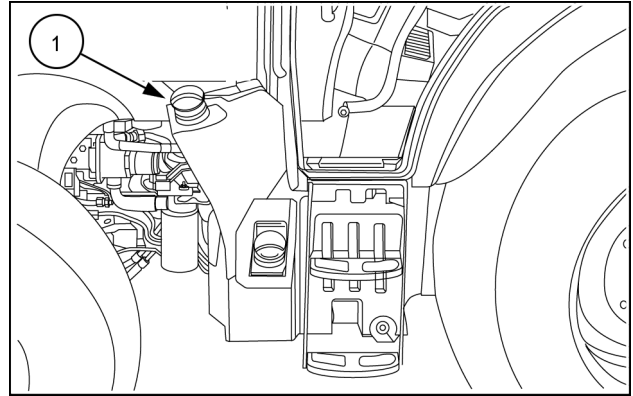
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.

Failure to comply could result in death or serious injury.

W0099A

To fill the fuel tank, proceed as follows:

- Fill the tank at the end of each day to reduce the formation of condensation overnight.
- Clean the area around the fuel cap (1) to prevent dirt from entering tank and contaminating the fuel.
- Remove the cap (1). Place the cap on a clean surface during refuelling.
- Never take the cap off or refuel with the engine running.
- While the tank is being filled, keep control of the filler nozzle.



MOIL24TR00426AA 1

- Don't fill the tank to capacity. Allow room for expansion.
- After filling the tank, replace and tighten the fuel cap.
- Immediately dry off any spilled fuel.
- If the original fuel tank cap is lost, replace the original fuel tank cap with an original spare part.

For oil grade and quantity see **7-15**.

**NOTICE:** Under no circumstances should benzine or alcohol be added to diesel fuel. Ensure that good quality fuel is used from a reliable source. The quality of fuel used is an important factor for the engine's subsequent performance and service life.

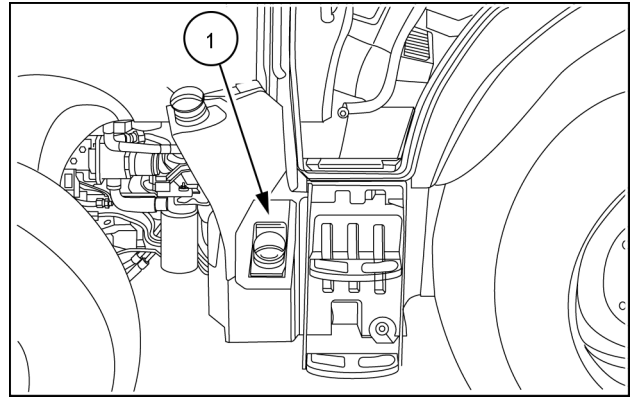
## Filling the Diesel Exhaust Fluid (DEF)/AdBlue® tank

The **DEF/AdBlue®** tank is located on the left-hand side of the machine next to the fuel filling port.

The **DEF/AdBlue®** tank cap (1) can be identified by its blue color.

The diameter of the reservoir filler neck helps to prevent the insertion of a diesel fill nozzle.

The operator must maintain the appropriate Diesel Exhaust Fluid **DEF/AdBlue®** levels at all times.



MOIL24TR00426AA 1

When refilling the **DEF/AdBlue®** tank, it is recommended that equipment with a fuel-filling nozzle and pump of a suitable length and diameter be used. This equipment should be triggered by the magnet in the reservoir filler neck and have a shut off device for overfill.

This will ensure that:

- The screen in the filler neck will not be damaged.
- Impurities do not enter the **DEF/AdBlue®** tank. The standardized **DEF/AdBlue®** nozzle matches the fill neck diameter.
- **DEF/AdBlue®** is not accidentally pumped into the fuel tank as the **DEF/AdBlue®** nozzle cannot pump when the magnet in the neck is not detected.
- The **DEF/AdBlue®** tank is not over filled, as the **DEF/AdBlue®** pump stops when the tank is full.

**NOTICE:** Overfilling the tank may cause irreparable damage to the **DEF/AdBlue®** supply system. Overfilling may also cause the tank to break if the fluid freezes.

**DEF/AdBlue®** may freeze at temperatures below **-11.0 °C (12.2 °F)**. If such temperatures are reached, the tractor should not be left in the following concurrent conditions:

- If the engine has not been run for an extended time
- Parked on a slope
- With the level of **DEF/AdBlue®** in the tank more than **75%** (this can be seen on the central display of the instrument cluster)

See **7-15** for more information

**NOTE:** The value on the instrument cluster that indicates how full the tank is will stabilize approximately **60 s** after the most recent change in the level of **DEF/AdBlue®**.

**NOTICE:** If any **DEF/AdBlue®** overflows or comes into contact with any surface other than the storage tank, immediately clean the surface with clean water. The fluid corrodes painted and unpainted metallic surfaces and distorts some plastic and rubber components.

**NOTE:** **DEF/AdBlue®** consumption is highly dependent on engine loads, humidity levels, fluid concentration level and engine speed. The “typical” consumption is only a guideline to verify proper function of the Selective Catalytic Reduction (SCR) system. CASE IH recommends filling the **DEF/AdBlue®** tank at every fuel refill interval.

## Starting the unit

### Starting engine

#### ⚠ WARNING

**Hazard to bystanders!**  
**Make sure the area surrounding the machine is clear of all persons before starting the engine.**  
**Failure to comply could result in death or serious injury.**

W0090A

#### ⚠ WARNING

**Avoid injury!**  
**Start the tractor only from the operator's seat. Do not try to bypass the operator presence safety system by placing heavy objects on the seat.**  
**Failure to comply could result in death or serious injury.**

W1646A

Operate the machine only when seated in the operator's seat.

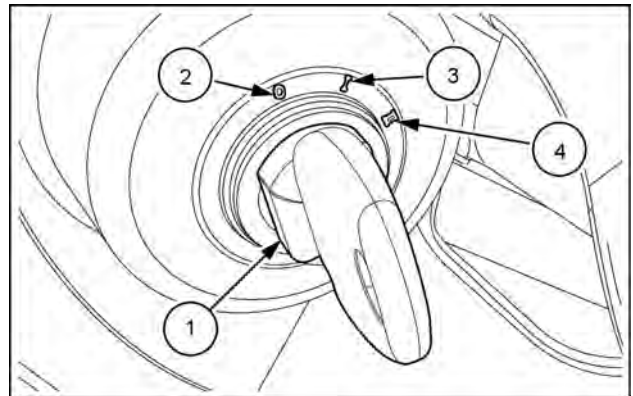
Do not try to bypass the operator presence safety system by placing heavy objects on the seat.

Never start the tractor and/or the engine from any position unless properly seated in the operator's seat.

#### Starter switch

To obtain the three starter key functions (1), turn the key to the following positions:

- (2) 0 "STOP" position  
No power supply to any of the circuits (key can be removed). Stopping the engine.
- (3) I Standby for engine start up.  
Operation of the indicators, instrument cluster and pre-heating glow plugs. Power supplied to various circuits.
- (4) II Starting the engine  
if released, the key returns automatically to position ( 3).



DCUTLBRNE001S4A 1

**NOTE:** If the engine fails to start on the first attempt, it is necessary to turn the starter key back onto "STOP" and repeat starting. To avoid running down the battery, do not make more than six attempts to start the engine.

## Starting the engine

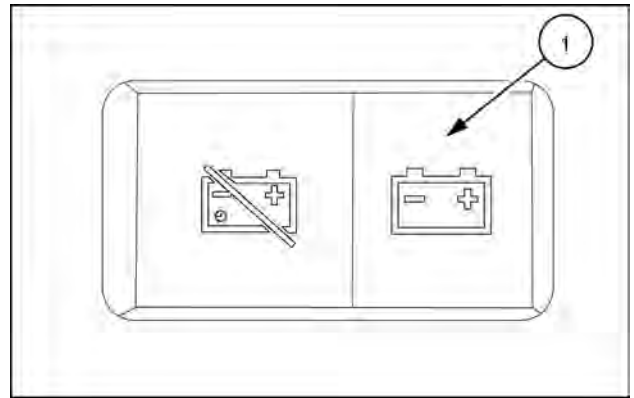
If the tractor has remained inactive for long time or if it is being started for the first time at low ambient temperature and the engine fails to start after the first few attempts it is necessary to bleed the fuel system as described in the maintenance section of the "Renewing the fuel filters" chapter.

1. Sit down on the operator's seat.
2. Make sure that the hand brake and/or the park lock are applied.
3. Make sure that the hand throttle is in low idle position.
4. Make sure that all auxiliary control valve levers are in neutral position.
5. If installed, press the battery isolator switch on symbol **(1)** to reconnect the battery.
6. Depress both of the service brake pedals.
7. With a mechanical transmission, press the clutch pedal down and put the control handles for the reversing mechanism and the power take-off (PTO) in the neutral position. With a electrohydraulic transmission, put the control handles for the reversing mechanism and PTO in the neutral position.
8. Move the gear and range levers to the neutral position.
9. Move the position lever and lift draft forwards.
10. Put the key in position **(4)**.

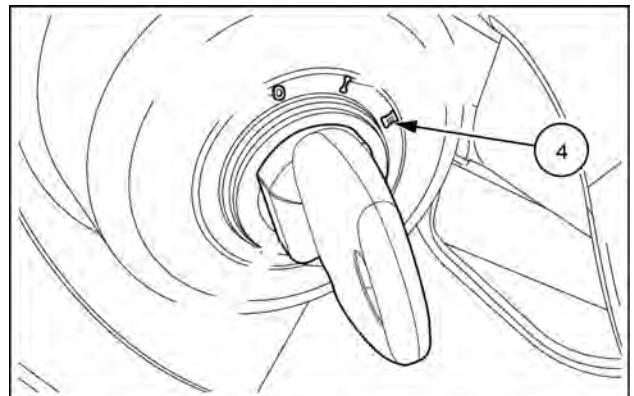
As soon as the engine starts, release the key socket.

**NOTICE:** Do not start the tractor from any position other than the proper driver's seat.

**NOTE:** With the key in position **(3)**, check that all instrument cluster warning lights are on. If one or more warning indicators do not come on, contact the CASE IH dealer.



MOIL24TR00220AA 2



DCUTLBRNE001S4A 3

## Engine speed

**NOTICE:** Never use the engine continuously for a long time at speeds between **2500 – 3000 RPM** (yellow area on the tachometer) to avoid damage to the engine and **NEVER** exceed **3000 RPM** (red area on the tachometer). For appropriate use, always operate under the speed corresponding to **2300 RPM**.

## Start-up at low environmental temperature

When starting the engine with low outside temperatures and when the engine is cold, take note of the following:

- Any single engine starting attempt should not last longer than **15 s** to prevent discharging the battery if the engine makes no sign of starting, continue the attempt up to a maximum of **30 s**.
- Wait at least one minute before trying to start-up again.
- To avoid excessively running down the battery, do not make more than six attempts to start the engine.

Especially when the external temperature approaches **0 °C (32.0 °F)**, run the engine at **1300 – 1500 RPM** for approximately 5 minutes in order to heat the oil in the rear transmission to operating temperature.

With outside temperatures below **0 °C (32.0 °F)**, in order to prevent separation of the paraffin components in the diesel fuel, leading to a reduction in fluidity and subsequent fuel supply problems (especially when starting the engine), mix the diesel fuel with the antifreeze (or a similar product) in the proportions described on the container.

The antifreeze must be mixed with the diesel fuel before there is any sign of paraffin separation; a late addition would be ineffective for an engine which is already blocked by the cold.

Put the antifreeze in the tank first, followed by the diesel fuel.

The antifreeze will ensure that there is an optimum fuel supply to the engine without reducing performance, even where the external temperature drops below **-20 °C (-4.0 °F)**. For further information, see **4-9**

## Starting with pre-heating glow plugs

### ▲ WARNING

**Explosion hazard!**

**DO NOT use ether starting fluid. Explosion, death, serious personal injury, or serious engine damage could occur.**

**Failure to comply could result in death or serious injury.**

W0148B

**NOTICE:** Do not start the tractor from any position other than the proper driver's seat.

The pre-heating glow plugs activate automatically when the key start switch is turned onto the first click, into position **(B)** figure 1.



The relevant indicator on the instrument cluster comes on to indicate activation.

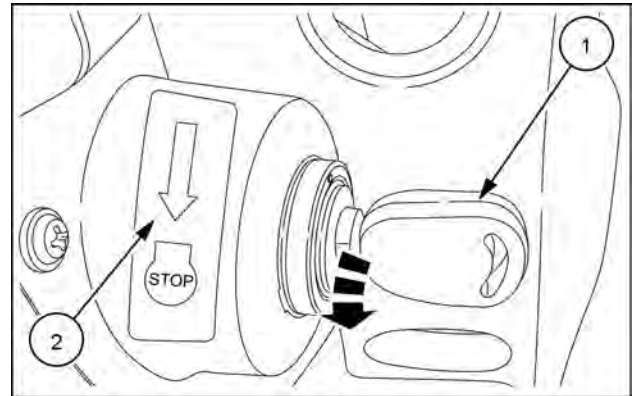
Wait for the warning light to switch off, then turn the key start switch onto the start position **(C)** figure 1. Release the key as soon as the engine starts.

## Stopping the unit

### Stopping the engine

**NOTICE:** Before stopping the engine, let it run at **1000 RPM** for at least **3 min**. This will allow the turbocharger and manifold to cool down, preventing possible deformation of the components.

Turn the ignition key (1) to "STOP" indicated by the arrow on label (2), shown in the figure.



MOIL16TR02345AA 1

## Battery isolator switch

### Electronic battery isolator switch

With the ignition switch in the "OFF" position, press and release the switch in one of the two positions.

- (1) Battery not connected
- (2) Battery connected
- (3) Central rest position

The battery isolator switch has two operating modes:

- Automatic
- Manual

#### Automatic mode

In this mode, with the emergency lights off, when you turn the ignition key to the "STOP" position, a countdown starts. When the countdown ends, the correct automatic shutdown procedures are carried out and the battery is disconnected.

To stop the countdown, perform one of the following operations:

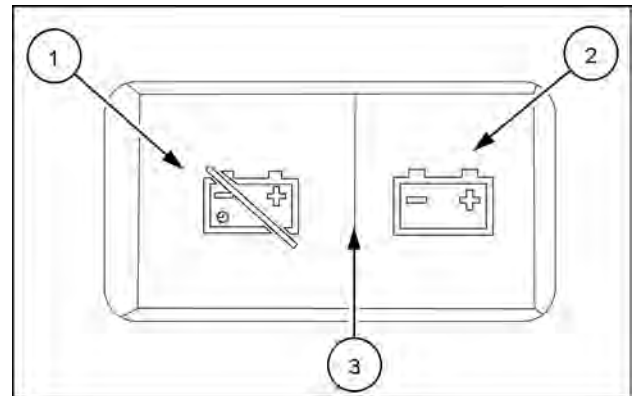
- Turn the starter key
- Press the switch on the position (1) and release it.
- Engage the emergency lights.

To make the countdown continue:

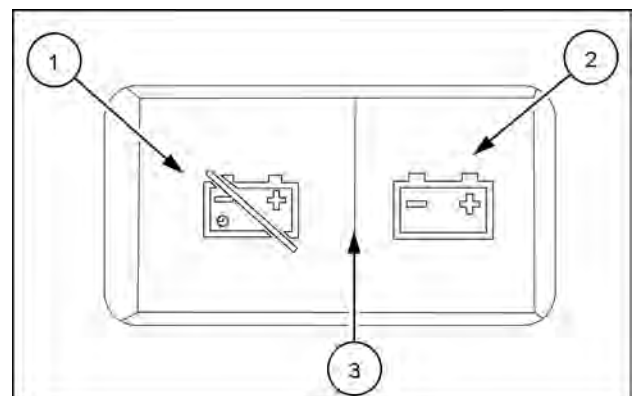
- Switch off the hazard warning lights

#### Manual mode

In this mode, when you turn the ignition key to the "STOP" position, you must press the switch on position (1) and release it to start a countdown. When the countdown ends, the correct automatic shutdown procedures are carried out and the battery is disconnected.



MOIL24TR00220AA 1



MOIL24TR00220AA 2

To stop the countdown, perform one of the following operations:

- Turn the ignition key.
- Press the switch on the position **(1)** and release it.

## Connect the battery

Press and release the switch on position **(2)** to connect the battery.

## Moving the unit

# Machine movement start-up

## Running-in procedure

Your tractor will guarantee reliable service if:

- care is taken during the running-in period (first 50 hours of work).
- If the maintenance recommendations in section 7 (Maintenance) are carefully followed.

Vary the type of operation undertaken so that the engine is subjected to heavy as well as light loads during the running- in period.

Before operating the tractor, ensure that you are thoroughly familiar with the location and operation of the controls.

## Checks to be carried out before using the tractor

Before operating the tractor, ensure that you are thoroughly familiar with the location and operation of the controls.

Perform all of the maintenance and lubrication operations on a daily basis, as described in Section 7 of this operator's manual.

After daily maintenance, carry out a visual inspection of the outside of the tractor, paying particular attention to the following points :

- Signs of cracking on the fan belt.
- Accumulation of dirt around the engine.
- Signs of leaks or damaged components connected to pressure tubes, hoses and connectors.
- Damaged tires.
- Hardware for looseness.

- Accumulation of foreign matter or leaks on the hydraulic pump and relative hoses.

Always carry out any necessary repairs before using the tractor again

## Driving the tractor

Sit correctly in the driver's seat. Fasten the safety belt. Proceed as follows:

1. depress the brake pedal to disengage the park lock.
2. Press the transmission clutch pedal and move the gear lever and range lever to the required driving position.
3. Release brake pedal.
4. Lift the Power shuttle lever and gently position it in the desired travel direction, then slowly release the clutch pedal.
5. Accelerate appropriately to increase the tractor speed.

## Stopping the tractor

1. Reduce the engine speed.
2. Press the brake pedal and the clutch pedal.
3. When the tractor is stationary ,
  - A. place shift lever in neutral.  
Press the neutral button on the Power shuttle lever.
  - B. position the shift lever and the range lever in neutral.
4. Release the clutch pedal.
5. Apply the park lock.

## Cold temperature operation

### Drive oil temperature

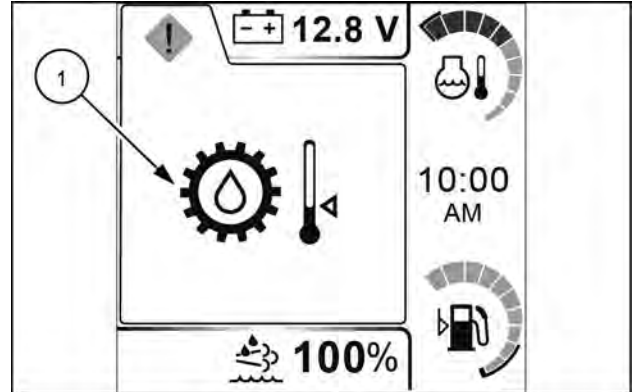
When operating at low temperatures, the engine speed is limited and a warning symbol (1) appears on the instrument cluster.

Engine speed limits when the transmission is cold:

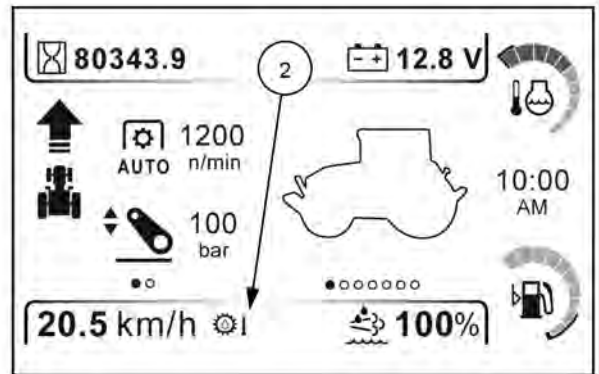
- If the oil temperature is below **-10.0 °C (14.0 °F)**, the maximum engine speed is **1500 RPM**.
- If the oil temperature is between **-10.0 °C (14.0 °F)** and **0.0 °C (32.0 °F)**, the maximum engine speed is **1900 RPM**.
- If the oil temperature is above **0.0 °C (32.0 °F)**, there is no limitation.

**NOTICE:** With cold transmission oil, avoid shuttle operations, as far as practicable, until the oil has warmed up.

**NOTE:** when the warning symbol (2) disappears, the transmission is fully operable and the engine speed will be consistent with the position of the hand throttle or the foot throttle pedal.



MOIL24TR00353 1



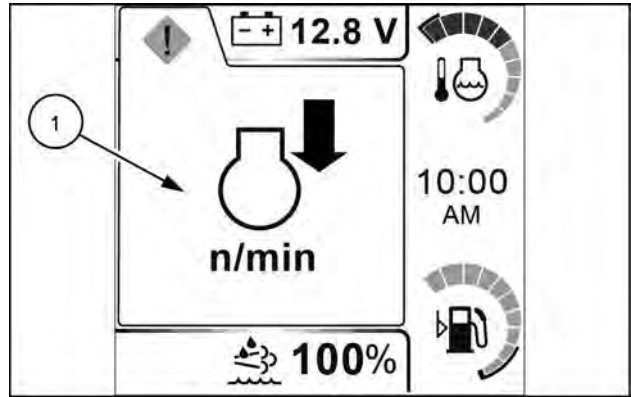
MOIL24TR00119AB 2

## Low idle speed management

The function (1) reduces fuel consumption and operating costs.

The logic will be able to reduce the low idle speed from **800 RPM** to **700 RPM** when the following conditions are satisfied:

- Operator not present
- Transmission in neutral and clutch released
- Vehicle speed = **0 km/h (0 mph)**
- Both hand and foot throttle at minimum position (low idle request)
- Coolant temperature **60 – 95 °C (140 – 203 °F)**
- PTO not engaged



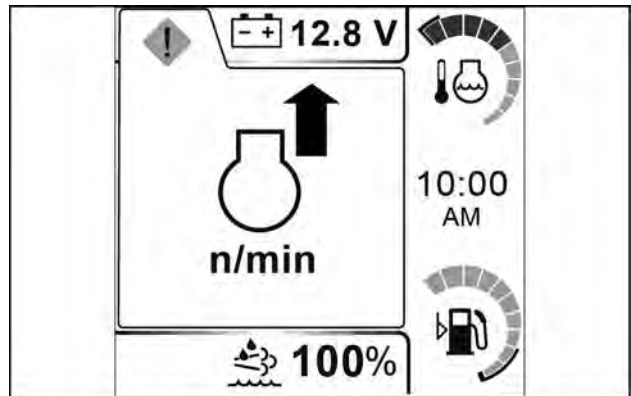
MOIL24TR00362 1

- Electronic remote control valves not active (where fitted)
- Hydraulic lift not in lifting phase
- Battery voltage over **11 V**
- Transmission oil temperature > **40 °C (104.0 °F)**
- Engine oil temperature > **60 °C (140.0 °F)**
- Engine oil pressure not too low
- Air conditioning disabled

## High idle engine speed

The function (2) allows the engine rpm to be increased from **700 RPM** to **1000 RPM** when the low idle logic is already in operation for **60 min**. This is to prevent problems in the after-treatment and electrical system. This logic remains active for **5 min** before returning back to **700 RPM**.

**NOTE:** The Engine speed will change automatically without warning.



MOIL24TR00362 2

The low idle management logic is enabled from the factory but can be disabled if not worth having by your authorized dealer.

## 5 - TRANSPORT OPERATIONS

### Road transport

### Machine transport

#### ⚠ WARNING

##### Transport hazard!

The machine can slip or fall from a ramp or trailer. Make sure the ramp and trailer are not slippery. Remove all oil, grease, ice, etc. Move the machine on or off the trailer with machine centered on the trailer or ramp.

Failure to comply could result in death or serious injury.

W0152A

#### ⚠ WARNING

##### Transport hazard!

Collision of high speed road traffic and slow moving machines can cause death or personal injury. On roads use transport lighting according to local laws. Make sure the Slow Moving Vehicle (SMV) emblem is visible.

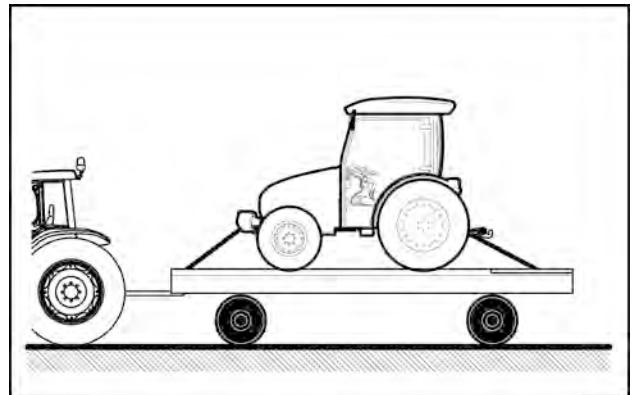
Failure to comply could result in death or serious injury.

W0244A

To transport the tractor, it is necessary to use a suitable means of transportation, such as a truck with a platform or a trailer with a double axle.

Engage Park Brake.

Secure the tractor to the means of transport, using suitable anchoring straps or chains. Secure the rear of the tractor using the drawbar or drawbar supports. Secure the front of the tractor using the towing hook.



DCUTLNEIT012S5A 1

**NOTICE:** Do not hook or connect chains around the front axle drive shaft, the power steering cylinders, the front axle itself or other parts of the tractor which could be damaged either by the chains or excessive strain.

wind, damaging the bearings. The turbocharger turbine must be prevented from rotating freely (with the engine off), as the shaft bearings will not be lubricated in that condition.

On models fitted with the turbocharger, cover the exhaust outlet to prevent the turbocharger from rotating in the

## Safe transport speed

Your tractor is capable of operating at speeds that exceed the maximum allowable transport speed for most towed equipment.

maximum transport speed may result in reduced braking performance and/or loss of control of the tractor and its towed equipment.

Before transporting towed equipment, read the operator manual for the equipment. Ensure that equipment is correctly installed, know how to transport it safely.

Unless otherwise specified by the equipment manufacturer or legislation, observe the following when towing.

Never transport at speeds that exceed the equipment's maximum transport speed. Exceeding the equipment's

For towed equipment without brakes:

- do not tow equipment that does not have brakes at speeds over **32 km/h (20 mph)**.

## Recovery transport

### Recovery and towing

#### **▲ WARNING**

##### **Flying object!**

**Do not use chains, cables, or rope to pull the machine. If the chain, cable, or rope breaks or slips, it may whip with great force. Use only rigid drawbars or tow bars to pull your machine. Failure to comply could result in death or serious injury.**

W0328A

#### **▲ WARNING**

##### **Roll-over hazard!**

**Attempting to free a stuck machine can involve safety hazards: the stuck machine or the towing vehicle may tip or overturn, or the tow bar may fail. Always use the proper towing equipment to free a stuck machine.**

**Failure to comply could result in death or serious injury.**

W0327A

To free a stuck tractor:

- Always attempt to back the tractor out if it gets stuck.
- Unhitch any towed implements or equipment.
- Clear mud from behind the rear wheels. Back the tractor out slowly.
- If necessary, clear mud from in front of all wheels and drive ahead slowly.

If it becomes necessary to pull with another vehicle:

- Use a tow bar hitched to the rear drawbar of the towing vehicle.
- Make sure that the towing devices are of adequate size and strength.
- Before moving or attempting to pull, ALWAYS make sure the area is clear of persons. When you are certain that it is safe to do so, drive ahead slowly and smoothly.

## Towing the tractor

### WARNING

**Loss of control!**

**Only tow at safe speeds. Use caution when making corners or meeting traffic.  
Failure to comply could result in death or serious injury.**

W0126A

### WARNING

**Hazard to bystanders!**

**The operator must be the only person on the machine when towing. Make sure that nobody else is on the machine or within its working range.  
Failure to comply could result in death or serious injury.**

W0259A

### WARNING

**Roll-over hazard!**

**Attempting to free a stuck machine can involve safety hazards: the stuck machine or the towing vehicle may tip or overturn, or the tow bar may fail. Always use the proper towing equipment to free a stuck machine.  
Failure to comply could result in death or serious injury.**

W0327A

### WARNING

**Flying object!**

**Do not use chains, cables, or rope to pull the machine. If the chain, cable, or rope breaks or slips, it may whip with great force. Use only rigid drawbars or tow bars to pull your machine.  
Failure to comply could result in death or serious injury.**

W0328A

**NOTICE:** *the tractor should only be towed short distances, such as out of a building. Do not tow the tractor on public roads or as a method of transport.*

Use a tow bar when towing the tractor. Tow the tractor from the rear using only the drawbar, rear tow hitch or the three-point hitch. Tow the tractor from the front using the tow pin in the front weights or front support. Have an operator steer and brake the tractor.

To avoid damaging the transmission or other components that turn but are not lubricated during towing, observe the following:

- Only tow a short distance
- Keep speed below **8 km/h (5 mph)**
- If possible, run the engine to provide lubrication and power steering.

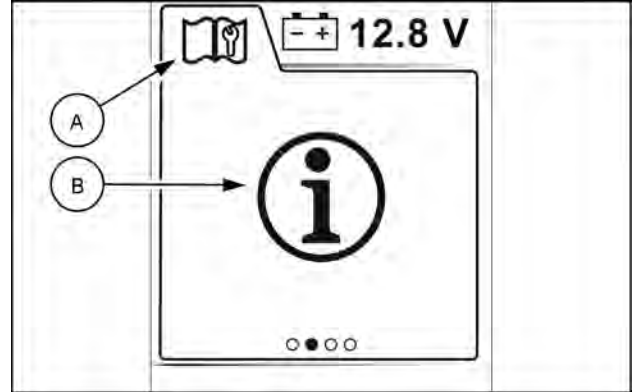
**NOTE:** *Four wheel drive will be engaged if the engine is not running, regardless of the position of the 4WD activation switch.*

# 6 - WORKING OPERATIONS

## General information

### System Information

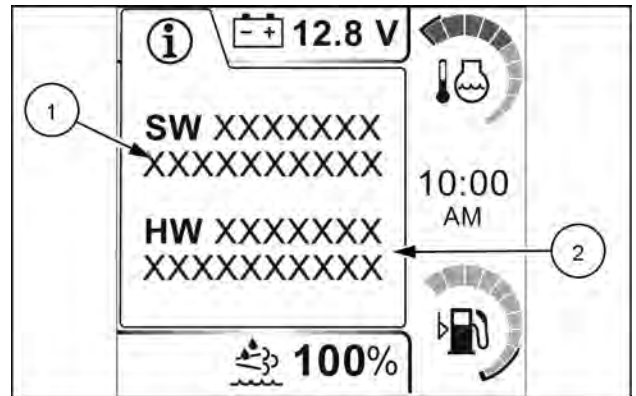
Accessing the first-level diagnostics menu (A), see page 3-53, use the navigation control to select the system information menu (B).



MOIL24TR00449AA 1

The following information is displayed:

- Instrument Cluster Hardware Part Number (1)
- Instrument Cluster Software Version (2)



MOIL24TR00453AA 2

## Programming maintenance work

On the diagnostics menu screen (A), see page 3-53, use the navigation control to select the maintenance menu (B). This function allows the operator to schedule maintenance operations

**NOTE:** Programming operations can only be carried out with the engine switched off

### Routine maintenance

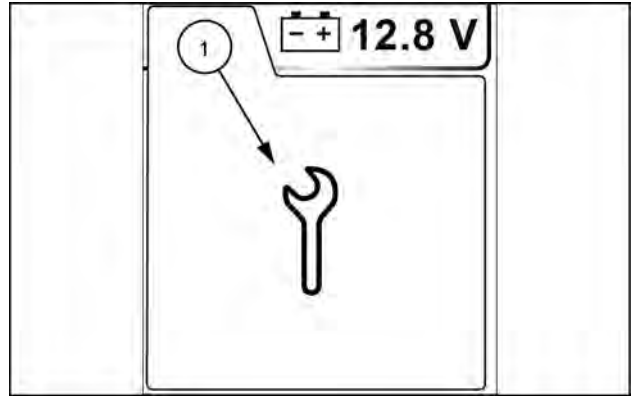
In the selected box (1), press the navigation control to set the routine maintenance counter (3)

**NOTE:** the instrument cluster will only activate the counter when the engine is running (> 500 RPM).

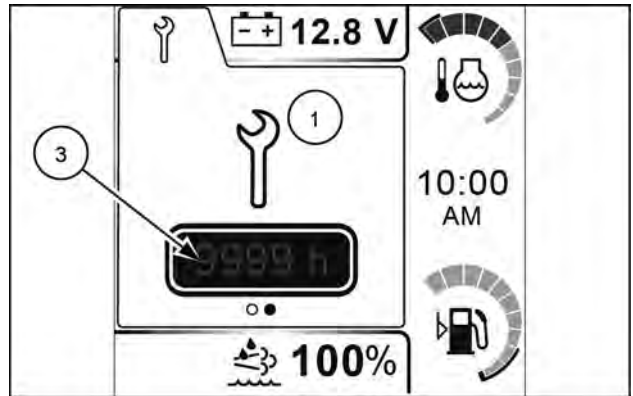
### Important maintenance

In the selected box (2), press and then turn the navigation control to set the important maintenance counter

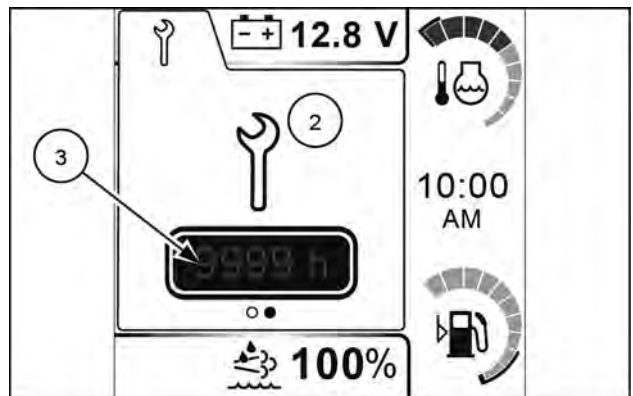
**NOTE:** the instrument cluster will only activate the counter when the engine is running (> 500 RPM).



MOIL24TR00364 1



MOIL24TR00146 2



MOIL24TR00146 3

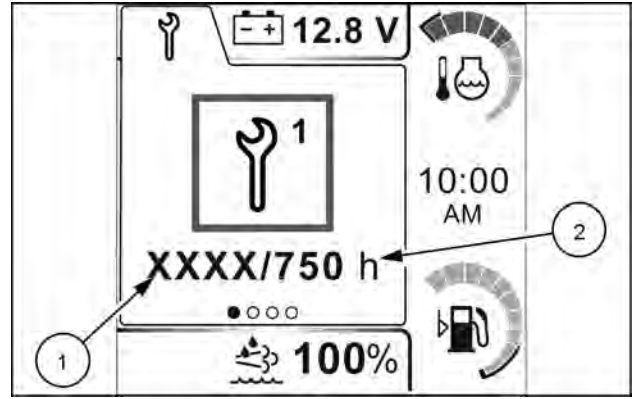
### Service notice settings

By accessing the maintenance menu (B) you can view:

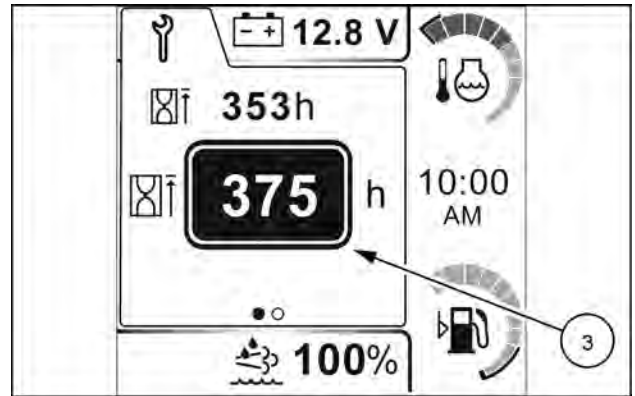
1. Hours since last service (1)
2. Actual service interval. (2)

By pressing the “ENTER” key you can access the modification of the following parameters:

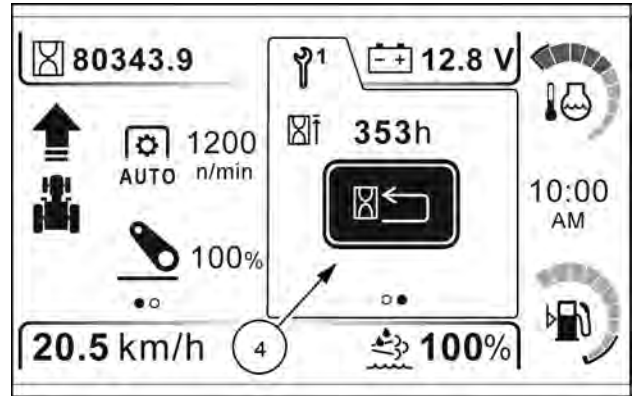
1. Actual service interval. (3)
2. Reset actual service interval. (4)



78 4



MOIL24TR00454AA 5

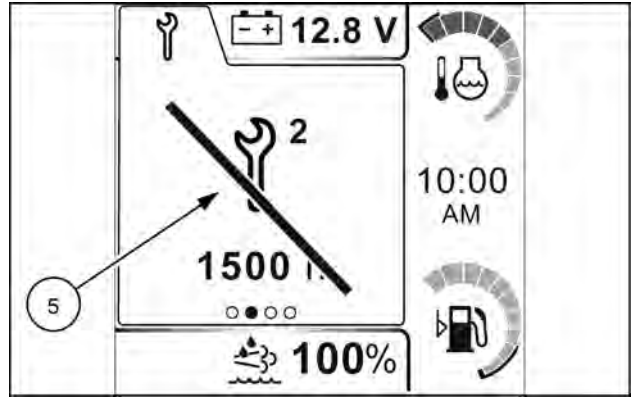


MOIL24TR00456AA 6

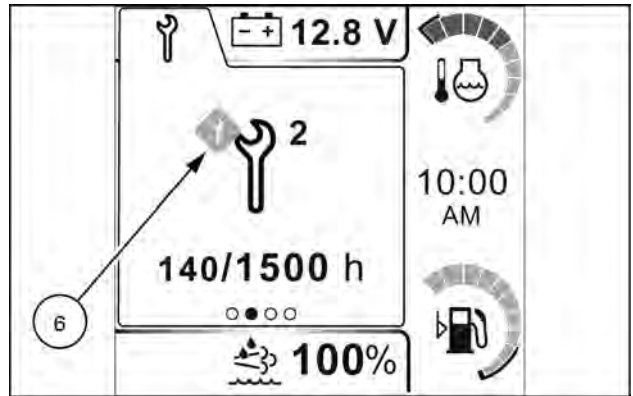
For both routine maintenance and major maintenance, if the actual maintenance interval is restarted, the icon (5) will appear on the display to indicate that the notice setting is disabled.

The icon (6) indicates that the service value needs to be set.

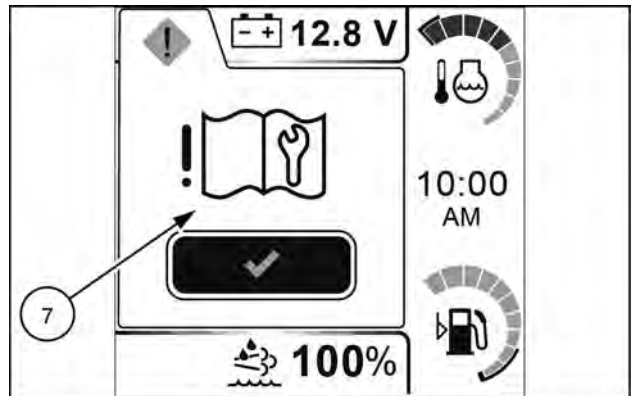
If the service intervals have been carried out correctly, pressing the "ENTER" key will show the icon (7) on the display.



79 7



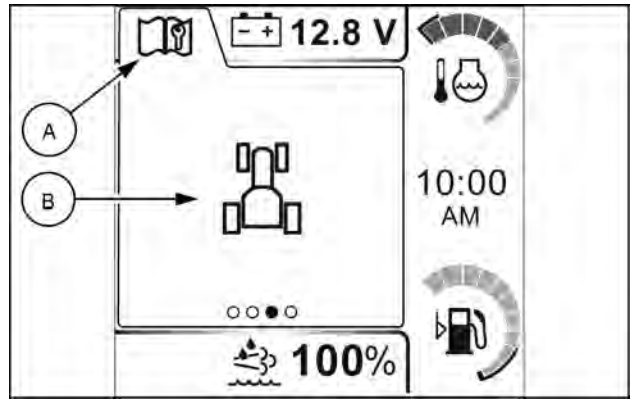
82 8



MOIL24TR00280 9

## Vehicle configuration

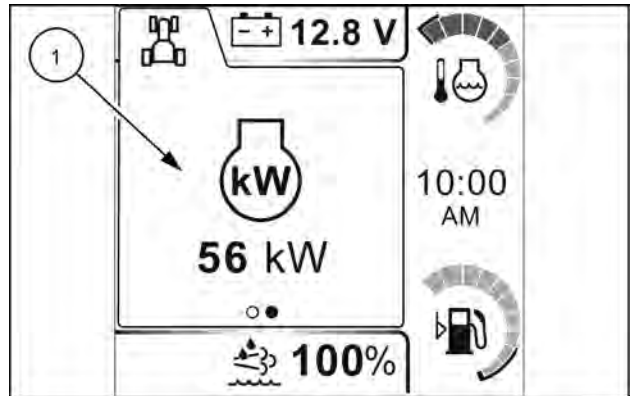
On the diagnostics menu screen **(A)**, see page 3-53, use the navigation control to select the vehicle configuration menu **(B)**.



MOIL24TR00444AA 1

The following information is displayed:

- Nominal engine power **(1)**

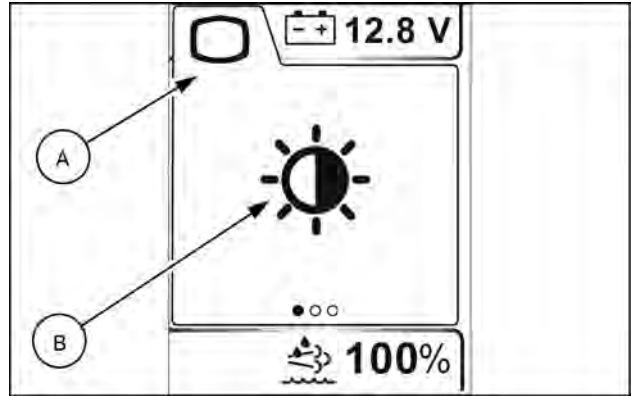


MOIL24TR00447AA 2

## Configuration of brightness, time and units of measurement - Operation

### Brightness adjustment

On the instrument panel settings sub-menu screen (A), see page 3-43, use the navigation control to select the brightness adjustment menu (B).

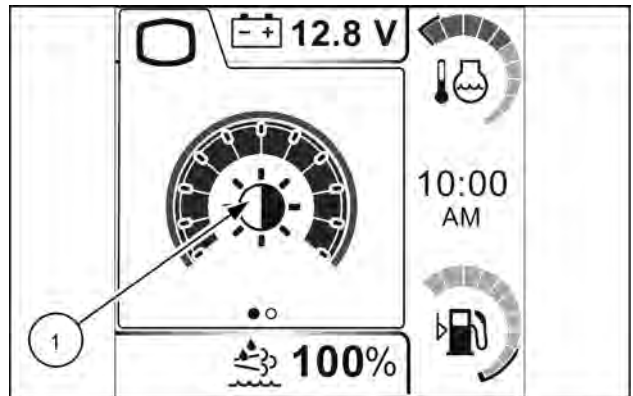


MOIL24TR00482AA 1

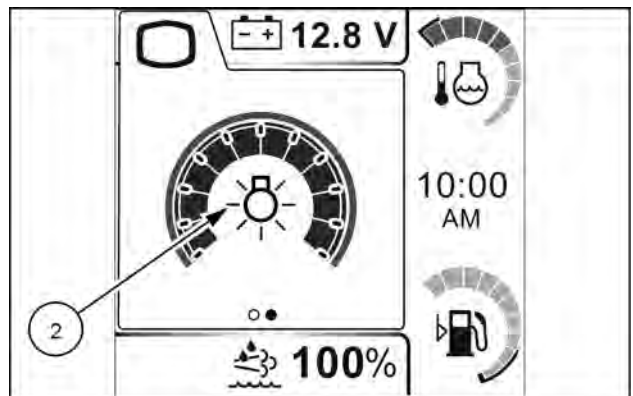
Press the navigation control to increase or reduce the brightness:

- (1) of the instrument cluster
- (2) The warning lights on the instrument cluster and the rear hydraulic lift position control knob.

10% brightness is the minimum level. The brightness is adjusted with the road lights on. With the road lights off, the brightness is set to the maximum.



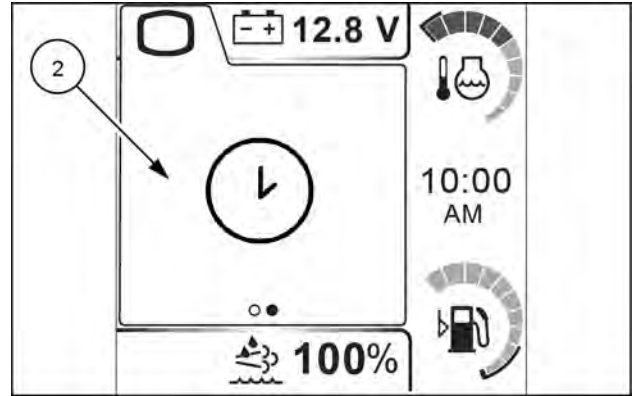
MOIL24TR00480AA 2



MOIL24TR00483AA 3

### Clock adjustment

On the instrument panel settings submenu screen, see page 3-43, use the navigation control to select the clock adjustment menu (1).



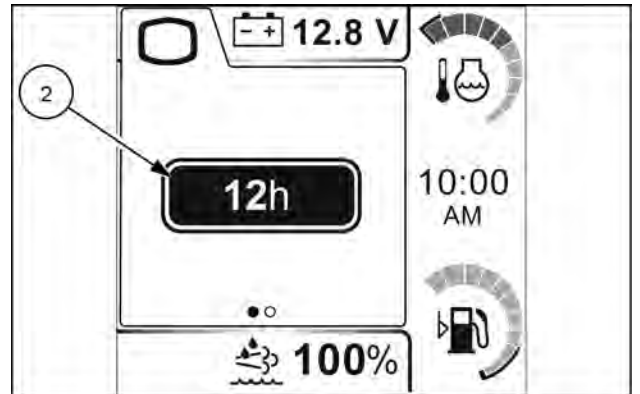
MOIL24TR00127C 4

This menu is used to set the clock format (2), the hour (3) and minutes (4).

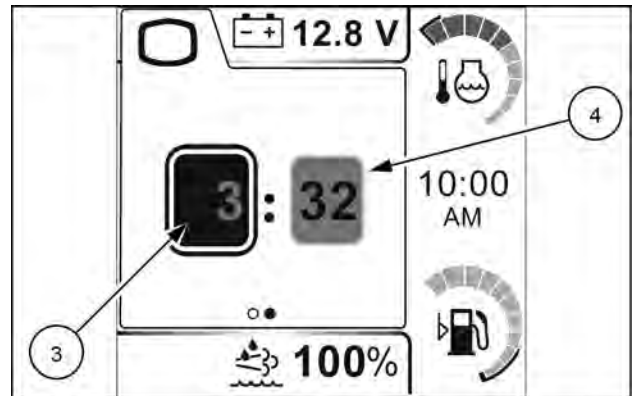
In the box (2) selected, press the navigation control to set the 12-hour or 24-hour clock format.

In the box (3) selected, press the navigation control then turn it to set the hour.

In the box (4) selected, press the navigation control then turn it to set the minutes.



MOIL24TR00484AA 5

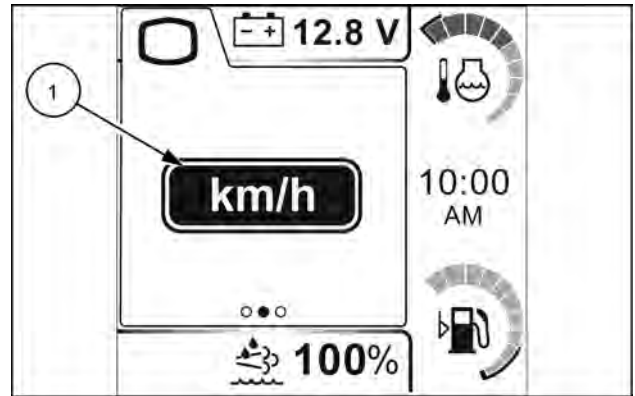


MOIL24TR00487AA 6

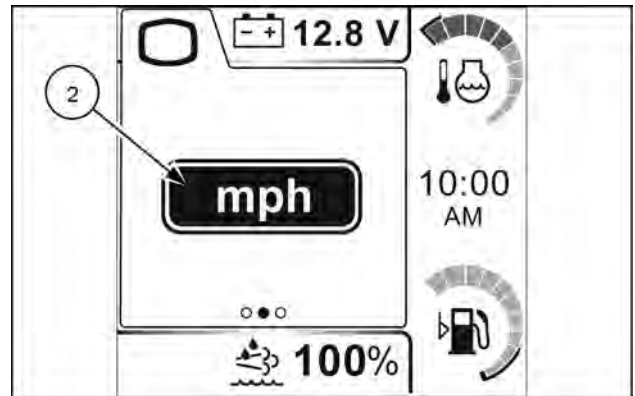
### Setting units of measurement

On the instrument panel settings submenu screen, see page 3-43, you can choose km/h (1) or mph (1) as the unit of measurement for speed.

Press the navigation control on the control to set the unit of measurement, then press the "ENTER" control to record the setting.



MOIL24TR00443AA 7

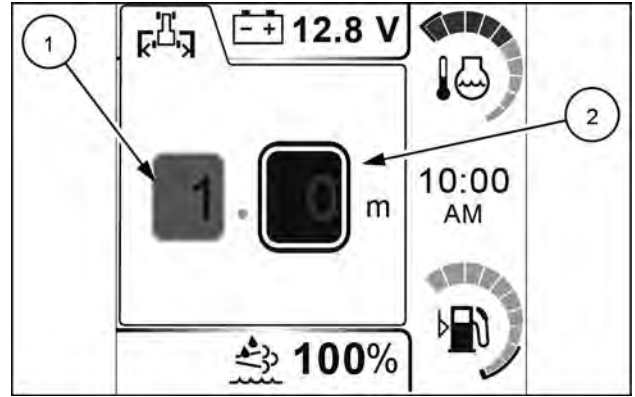


MOIL24TR00486AA 8

## Calibrating tool width

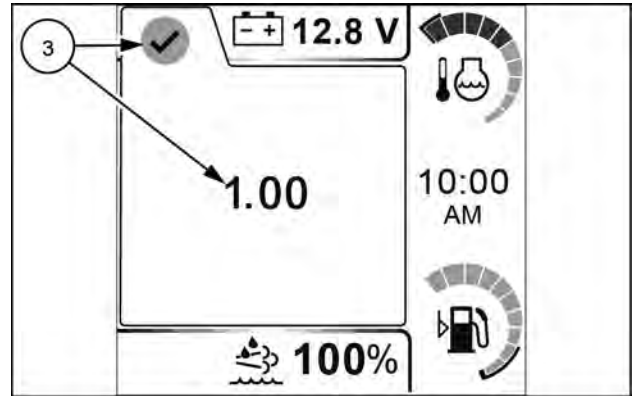
To calculate the total area worked, the working width of the implement in use must be entered into the memory. The implement width can be calibrated on the implement width third-level menu screen, see page 3-43.

Select box (1) or (2) and then press “ENTER” to change the implement width value.  
Press “ENTER” to store the new implement width value.



MOIL24TR00136A 1


The new value will be shown in a confirmation pop-up window (3).  
After 3 s, the initial implement width third-level menu is shown again on screen.




MOIL24TR00257 2

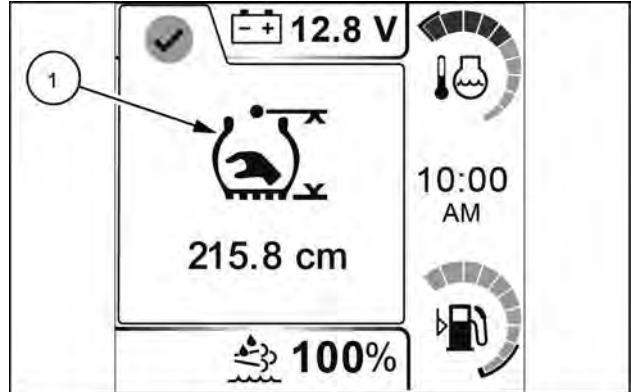
# Ground speed calibration

## Manual wheel calibration

On the wheel calibration menu screen, see page 3-43, use the navigation control  to select the manual wheel calibration menu (1). In this menu, you can manually change the wheel circumference value, expressed in mm or in cm.

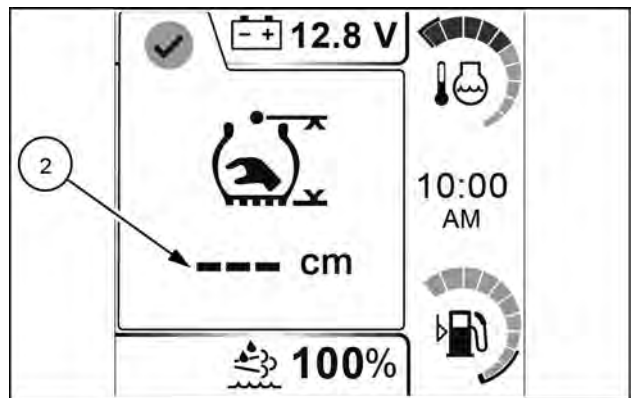
Press the navigation control  to change the value of the wheel circumference.

Press the navigation control  to start the procedure.




MOIL24TR00249 1

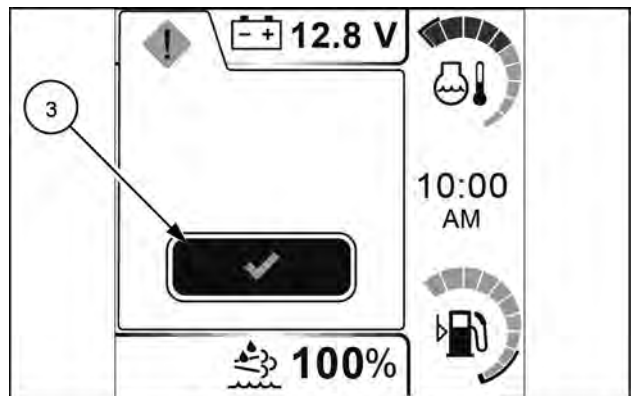
After completing the calibration procedure, the new value will be shown in a confirmation pop-up window (2). After 3 s, the initial wheel calibration menu is shown again on screen.



MOIL24TR00250 2

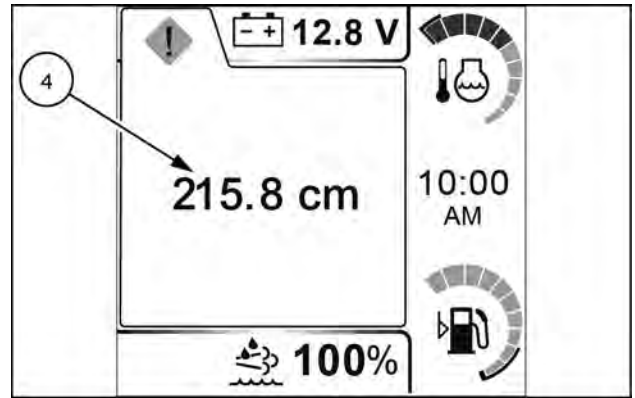
If the procedure is completed successfully, a pop-up window will initially appear (3). Press the navigation control  to return to the home screen of the wheel calibration sub-menu.

**NOTE:** if a value greater than expected is inserted (or smaller than the smallest), the system sets the maximum (or minimum) possible value.



MOIL24TR00255 3

If the calibration procedure is not completed correctly, an error pop-up window (4) appears. After 3 s, the initial wheel calibration menu is shown again on screen.




MOIL24TR00251 4

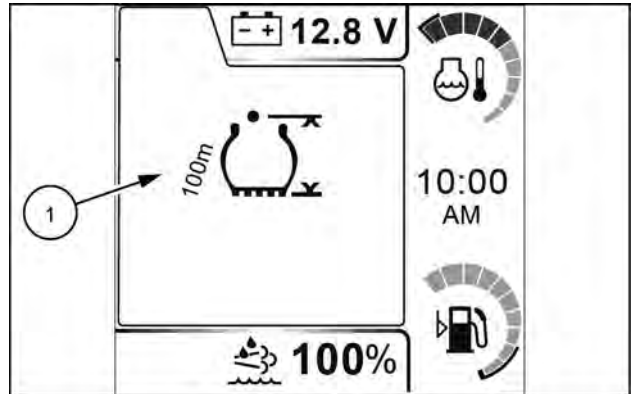
### Wheel calibration over a distance of 100 m (3937 in)

**NOTE:** it is recommended to carry out the procedure each time the rear wheels are changed and the inflation pressure is changed.


On the wheel calibration menu screen, see page 3-43, use the navigation control to select the wheel calibration menu **100 m (3937 in) (1)**.

Select a stretch of dry, firm, level ground (preferably concrete) and carefully measure out a distance of exactly **100 m (3937 in)**. Mark the start and finish of this measured distance with a bold chalk line.

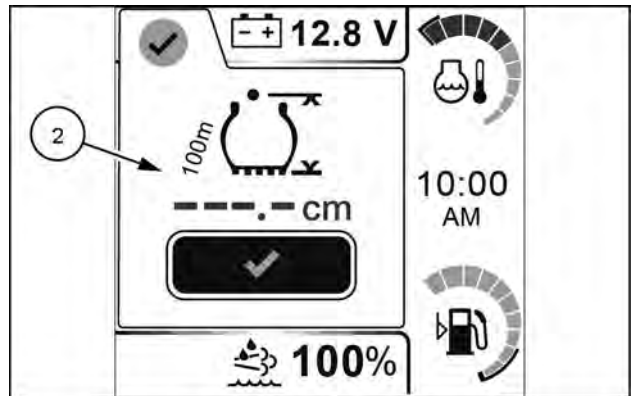
At this point, select a suitable gear to ensure a constant speed above **2 km/h (1.2 mph)** and, at the start of the line previously marked out, press the navigation control  .



MOIL24TR00255 5

When the central part of the front tyres goes over the finish line, press the navigation control  to start the automatic calibration procedure.

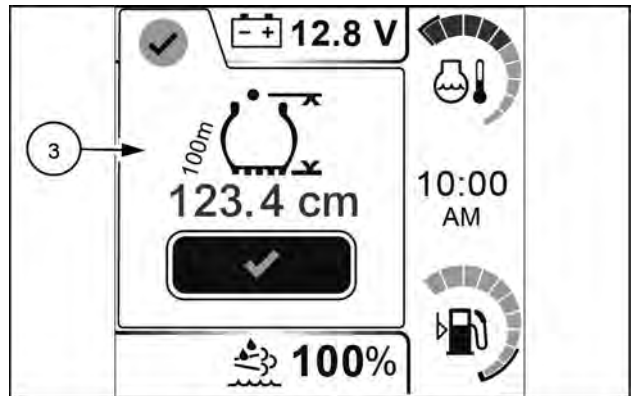
**NOTE:** The ground speed must be constant and must not fall below **2 km/h (1.2 mph)**. If the speed is less than that specified, calibration will not be successful.




MOIL24TR00253 6

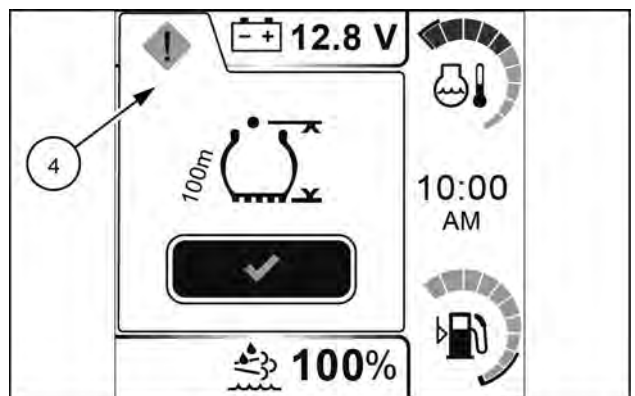
After completing the calibration procedure, the new value, expressed in mm or in cm, will be shown in a confirmation pop-up window **(3)**.

Press the navigation control  to return to the home screen of the wheel calibration menu.



MOIL24TR00256 7

In the event of an error, a fault status pop-up window **(4)** is initially shown. Press the navigation control  to return to the home screen of the wheel calibration menu.



MOIL24TR00255 8

## **Ground speed calibration numbers**

The rolling circumference for any given tire size will vary depending on tire manufacturer. The figures are an average based on rolling circumference data supplied by several manufacturers. To obtain an accurate figure for your rear tires, consult your authorised dealer or tire supplier.

The road speed calibration may be carried out using one of the following procedures.

Carry out the auto calibration as previously described or measure the rear tire rolling circumference.

1. To measure the rolling circumference of the rear tires, park the tractor on a level surface and make a vertical chalk mark on the sidewall where the tire tread contacts the ground. Make a second chalk mark on the ground aligning with the mark on the tire.
2. Slowly drive the tractor forward until the rear wheel has made one revolution and the chalk mark on the tire is again in contact with the ground. Make a second mark on the ground. Measure the distance between the two marks.

## Advanced Steering Control activation switch

### ⚠ WARNING

#### Loss of control!

Always make sure that the Field/Road switch is set to Road mode while operating the vehicle on public roads. Do not engage autoguidance while operating the vehicle on public roads.

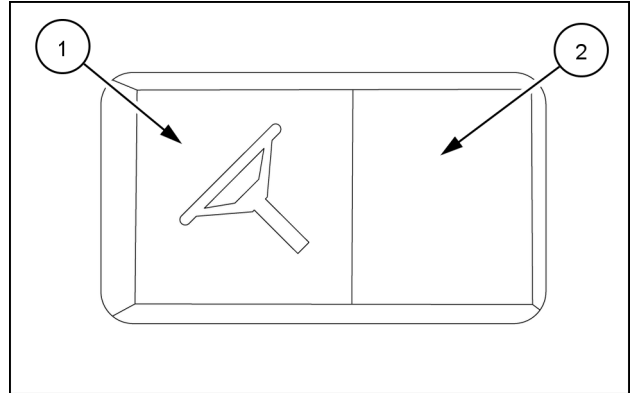
Failure to comply could result in death or serious injury.

W1588A

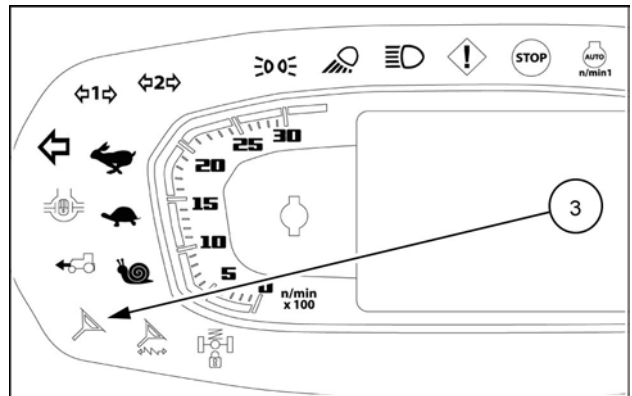
Press the “Adaptive steering” advanced steering control system activation switch on the left-hand pillar to position **(1)** to activate the advanced steering field driving mode

Press the switch to position **(2)** to activate the road mode. This automatically disables any advanced steering systems.

The advanced steering control system warning indicator **(3)** in the instrument cluster will activate for as long as the advanced steering control activation switch is in field mode.



MOIL24TR00228AA 1



MOIL24TR00172AA 2

## Autoguidance system (where fitted)

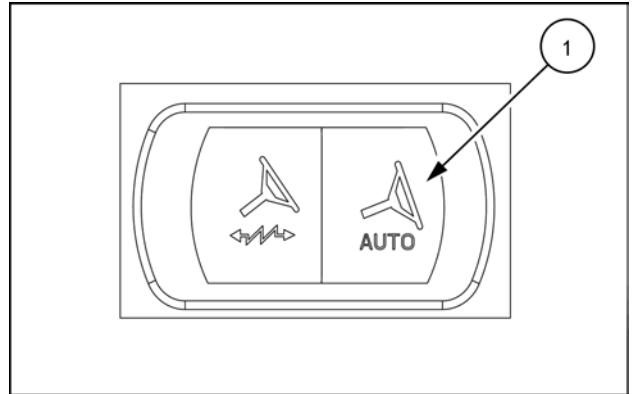
**NOTE:** Make sure the Advanced Steering Control activation switch is set to the advanced field steering mode'.

The main switch for the auto steer system is located on the right side of the console. (See 3-30 and 6-14)

Press the switch to position **(1)** to activate/deactivate the auto steer mode

Press the switch to position **(2)** to activate the electronic proportionality mode between steering wheel turns and wheel turns.

**NOTE:** Do not use the features of the auto steer system when driving on public roads.



MOIL24TR00450AA 1

## Variable Ratio Steering (VRS)

**NOTE:** Ensure that the Advanced Steering Control activation switch is set to 'field mode', see page 6-14.

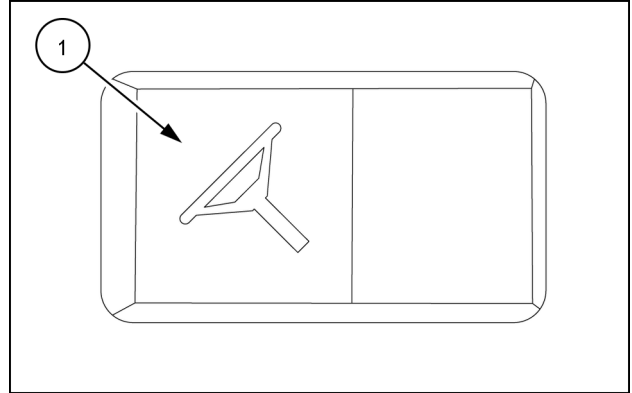
The "Adaptive steering" variable ratio steering is a system that allows the customer to set the desired number of rotations, end-to-end, on the steering wheel at a given tractor speed.

**NOTE:** Do not use "Adaptive steering" functionality when driving on public roads.

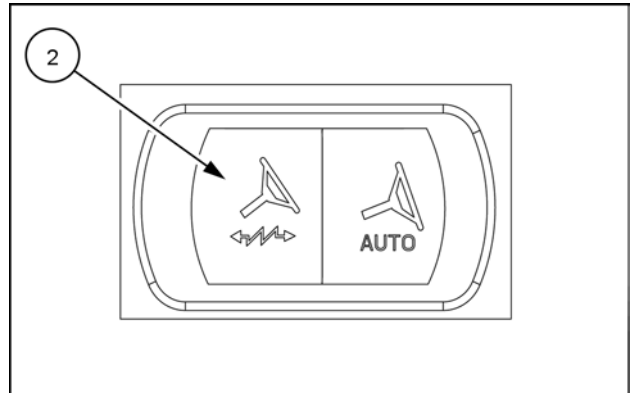
### Activating the "Adaptive steering" control

Press the switch (1) on the left-hand pillar to enable the field driving mode.

Press the switch (2) to activate the "Adaptive steering" variable-ratio steering control.



MOIL24TR00228AA 1

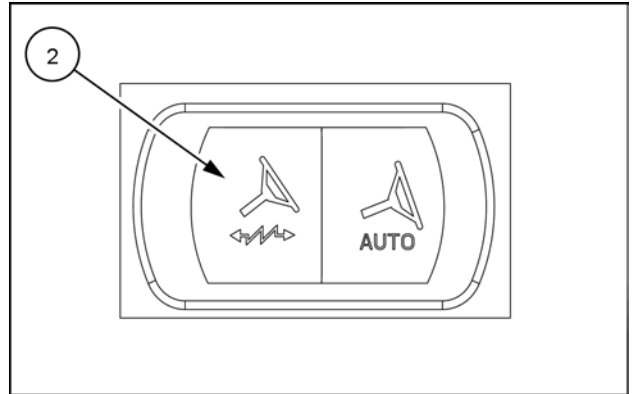


MOIL24TR00450AA 2

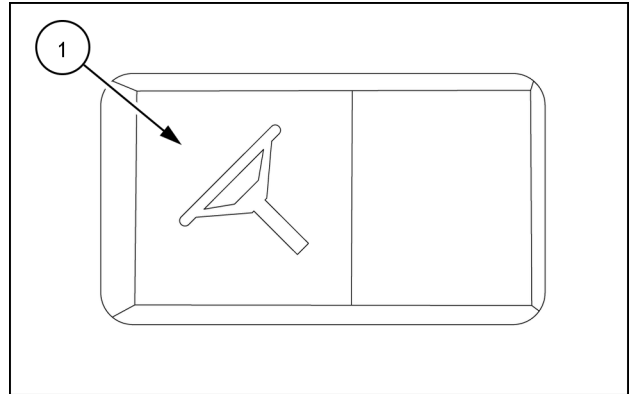
### Deactivating the “Adaptive steering” control

Press the switch (2) to deactivate the “Adaptive steering” variable-ratio steering control.

Press the switch (1) on the left-hand pillar to disable the field driving mode.



MOIL24TR00450AA 3



MOIL24TR00228AA 4

## ISOBUS classes

An ISOBUS system is intended as the combination of an ISOBUS tractor and one (or more) ISOBUS implements that use the services of the tractor. There are two levels of ISOBUS systems available: class 1, 2.

### ISOBUS class 1

The ISOBUS implement uses tractor information coming over the ISOBUS and the ISO connector.

**This basic information includes:**

Power Management	Key switch state Maximum time of tractor power Maintain power request
Speed information	Wheel- based request Ground- based speed Engine speed
Hitch information	rear hitch position rear implement in- work indication
PTO information	rear PTO output shaft speed rear PTO output shaft engagement
Illumination	Left turn signal lights right turn signal lights marker light left stop light right stop light implement rear flood light
Identification	Component ID software ID
Language specific parameter storage in TECU or Virtual Terminal	

**ISOBUS class 2**

The tractor information for class 2 includes all information of class 1 plus:

Time and date	
Speed and distance	Ground-based distance Ground-based direction Wheel-based distance Wheel-based direction
Additional hitch parameters	Rear draft
Full implement (non tractor) lighting message set	
Estimated or measured auxiliary valve status	
Guidance option	Estimate curvature Curvature command status Request reset command status Steering input position status Steering system readiness Mechanical system lockout
Front option	Front hitch position Front hitch in-work indication Front PTO output shaft speed Front PTO engagement

**ISOBUS Additional management**

Additional management enables the tractor and the CASE IH approved implement to work together in order to optimize the job.

The implement uses tractor information as described above. In addition, the implement can send via the ISOBUS to the tractor commands to control specific tractor functions. If the command is accepted, the tractor will actuate the command requested by the implement.

- Tractor steering:
  - adjusts the steering curvature

## ISOBUS automation and Tractor Implement Management (TIM) activation

The automation permits the tractor and some compliant implements to uniquely work together. This optional capability requires activation on your tractor. See your dealer for more information and activation.

The implement uses the steering position as tractor information. The implement can send commands over the ISOBUS to the tractor to control specific tractor functions. If the tractor accepts the command, the tractor acts on the command from the implement.

Steering control is available.

The areas of automation specific to your tractor is that with ISOBUS Automation. The implement:

- adjusts steering curvature.

### Activation of automation

Working	Dial colour	Icon
ISO auto switch activation transition	White	
Automation enabled, not ready	Gray	
Automation enabled and ready; waiting for implement to request tractor function	Amber	
Automation enabled and ready; conditions to enter tractor function automation not satisfied.	Amber	
Automation pre-active; implement intends to control the tractor facility, waiting for operator acknowledge.	Green	
Automation active.	Green	
Limited low; request from implement cannot be achieved due to low limit imposed by the tractor.	Green	
Limited high; request from implement cannot be achieved due to high limit posed by the tractor.	Green	
Automation faulted	White with red icon	

### Tractor Implement Management (TIM) activation

TIM can be used with all implements that are AEF certified or use the AEF TIM protocol.

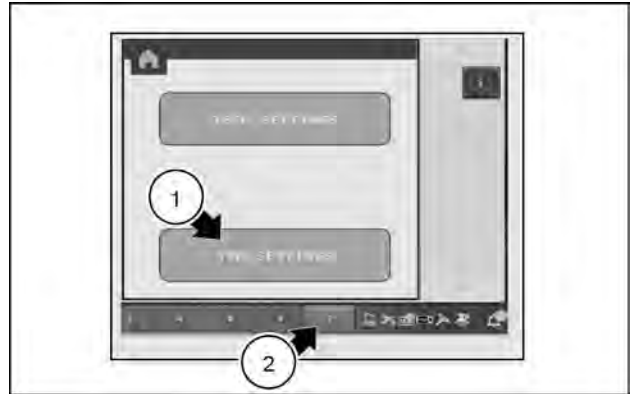
Open the universal terminal

**NOTE:** .

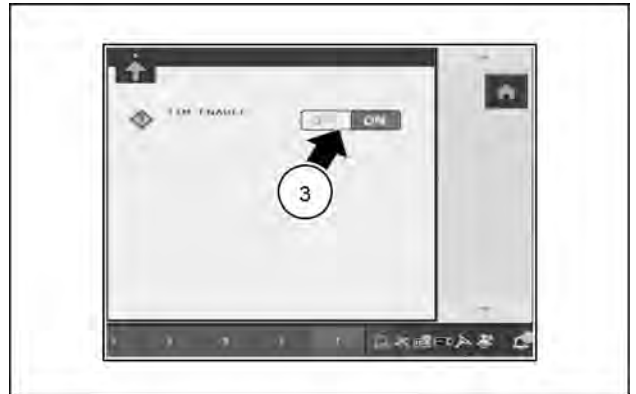
Select the **(1)** icon on the screen.

Use tab 7 **(2)** on the run screen navigation

Click on the field **(3)** to switch on TIM.



MOIL24TR00478AA 1

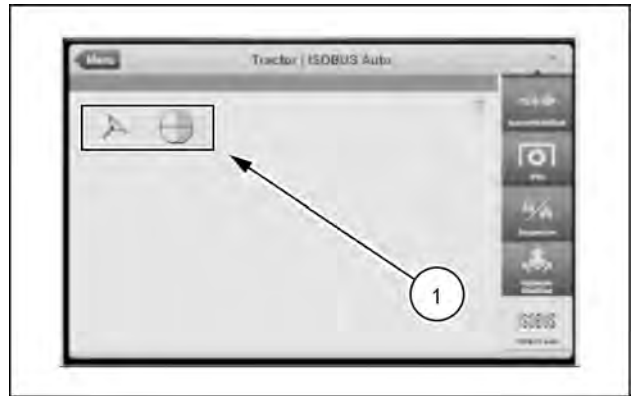


MOIL24TR00477AA 2

## Navigation

Use the ISOBUS AUTO screen to check the status of automation operations. The icon represents the steering control function.

Each function (1) has a status icon to its right. The table below explains the icons.



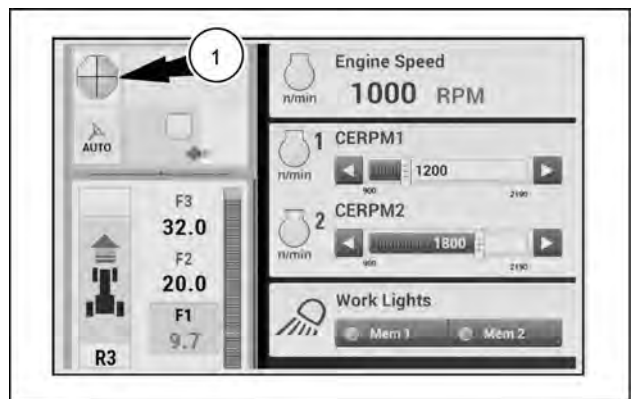
MOIL24TR00475AA 3

## Deactivation conditions for steering automation

- The steering valve is in field drive mode (advanced steering switch)
- The steering valve is configured for ISOBUS control
- Steering wheel is not controlled by operator

In the left hand area, the top icon (1) shows the highest state of automation for all functions.

Pressing this icon opens the ISOBUS screen



MOIL24TR00474AA 4

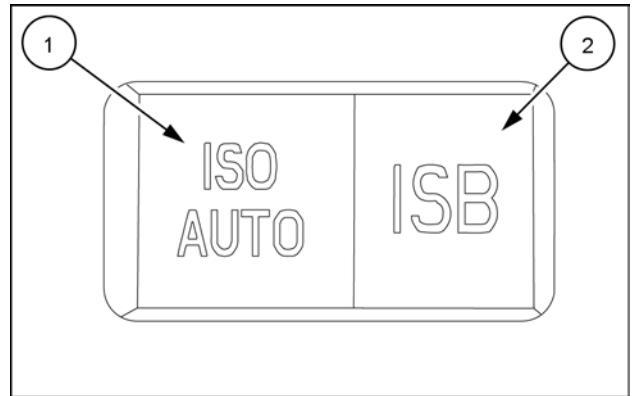
## Controls ISOBUS

A rocker switch on the left-hand side pillar has an upper (1) and lower (2) momentary switch for ISOBUS controls

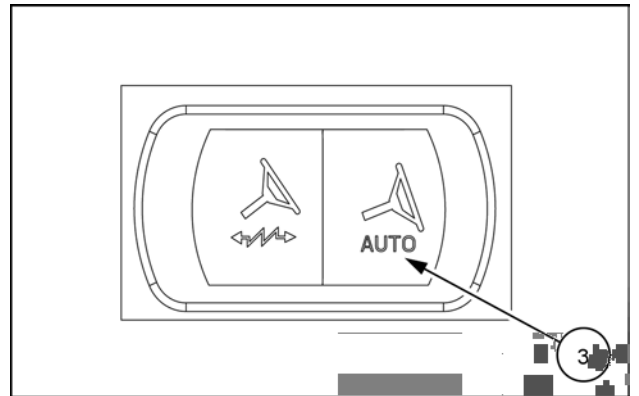
- Press the switch (1) to enable the ISOBUS Automation feature (if equipped) and the switch (3) on the right-hand console to activate autoguidance.
- Press the switch (2) to deactivate any function activated by an ISOBUS command. (only works if the implement also supports the ISOBUS function).

**NOTE:** This feature is not supported by all implements.

**NOTE:** If using the ISOBUS AUTO switch, ensure that Autoguidance is disabled on the designated menu on the colour display.



MOIL24TR00472AA 5



MOIL24TR00450AA 6

These conditions cancel steering automation:

- the operator is turning the steering wheel
- Engine OFF
- Ground speed above **25 km/h (16 mph)**,
- the operator is out of the operator's seat for **7 s** while the tractor is moving
- the operator is out of the operator's seat for **2 s** while the tractor is stationary
- the steering mode switch changes to on-road mode, or a critical steering fault becomes active

## Steering automation (for third-party guidance)








Third-party guidance systems use the ISOBUS Automation steering interface to operate tractor steering.

These requirements should be fulfilled before you attempt to use a third-party system:

- The ISOBUS Automation steering must be activated by your dealer.
- You must use a third party guidance system kit from a supported supplier.
- Steering valve calibration and wheel angle sensor calibration have completed successfully.
- The tractor's advanced steering mode switch, located on the left-hand pillar, must be in field driving mode.
- No steering fault codes can be active.

## Activation of steering automation

The steering system progresses rapidly through 6 states, represented by six icons, to reach ISOBUS active:

Working	Dial colour	Icon
At keyswitch on, steering begins at Unavailable.	White	
Steering transitions to Disable when these conditions are met: <ul style="list-style-type: none"> <li>• the steering subsystem is installed on the tractor,</li> <li>• No faults are detected in the steering subsystem.</li> </ul>	Gray	
Steering transitions to Ready when the these conditions are met: <ul style="list-style-type: none"> <li>• the steering mode switch is in the field driving position,</li> <li>• no other guidance system is active,</li> <li>• and the steering system is ready.</li> </ul>	Amber	
Steering transitions to Not Ready when the these conditions are met: <ul style="list-style-type: none"> <li>• when the Auto headliner switch is pressed,</li> <li>• the steering subsystem is calibrated,</li> <li>• there are no critical steering-related faults,</li> <li>• the tractor engine is running,</li> <li>• the operator is in the seat,</li> <li>• the operator is not manually operating the steering wheel,</li> <li>• and tractor speed is within the allowable engagement range.</li> </ul>	Amber	
Steering transitions to enabled if the third party controller has successfully established communication with the tractor and is ready to begin sending steering commands.	Green	
Steering transitions to Active if the operator presses the Auto button or the second function switch on the Multi-Function Handle.	Green	
When the third party guidance is ready to control steering, it communicates its readiness. This icon in the lower left-hand area of the display indicates that third party guidance is waiting for the operator's acceptance.	White with red icon	

## Telematics and connectivity setup

### TELEMATICS – Connectivity portal

The machine can be equipped with basic telematics or with advanced telematics which involves the use of an additional screen. The information deriving from the use of telematics is available on the brand's official channel.

Contact your local dealer for any information regarding navigation.

Services available for basic telematics:

Equipment location	Through the use of satellite signals and earth stations, it calculates and shows the exact positioning of the implement on the navigation map.
Engine hours	Shows the total number of hours the vehicle's engine has been operating.
Equipment Status/Usage	It shows the current status of the equipment, therefore whether it is working or not, the status of the power take-off, the hydraulic sockets and any other feature present, as well as warnings indicating the need for intervention by the operator or the dealer .
Monitoring and tracking of Geofence functions and permitted hours of operation	The process of determining a vehicle's current and past locations, including virtual perimeters for real-world geographic areas (Geofencing) and no-use rules (during the relevant hours) used to set time windows for operation and keep track of when vehicles operate beyond the predetermined hours.
Breadcrumb	Shows a series of recorded geographic location data that tracks the vehicle's path over time.
CAN parameter reports	Shows vehicle parameters present on the CAN line, such as engine oil temperature, battery charge level, fuel level and many others.
Fault codes report	Shows fault codes generated by the machine's computer system to indicate specific problems or malfunctions.
Direct integration with the connectivity portal	Vehicle integration with the brand portal for technical services, technical information, manuals and other services such as fleet management, weather forecasts and training.
IntelliCentre	The digital intelligence center that connects dealers with all connected machines in real time, identifying potential problems in advance and maximizing intervention times in the event of a breakdown.

For advanced telematics there are also:

NTRIP (Networked Transport of RTCM via Internet Protocol)	In addition to satellite navigation, it uses the cellular network to triangulate the information and have a much more precise degree of measurement.
Bring your connectivity ("Bring your own connectivity (BYOC)")	Allows connected vehicles to use WiFi (farm network, mobile phone tethering) in areas with 4G/3G connectivity other than the cellular network.
Monitor and support for Precision Agriculture	Display integration allows the operator to view telemetry and operational data transmitted from the vehicle on an in-cab precision agriculture display while operating the machine.
Agronomic file/data transfer	Digital farm management systems that securely collect, display and share vehicle and crop information from all agricultural operations.
AFS AccuSync	Intuitive functionality that allows multiple vehicles to work in the same field and on the same operations while simultaneously sharing boundaries, straight lines and real-time coverage data.
Remote support	Remote support allows a technical support person, such as a farmer or dealer, to interact with the vehicle remotely. This includes viewing display images, collecting data, changing vehicle settings, and updating the Precision Farming and vehicle software.

Drive

Electrohydraulic transmission

**⚠ WARNING**

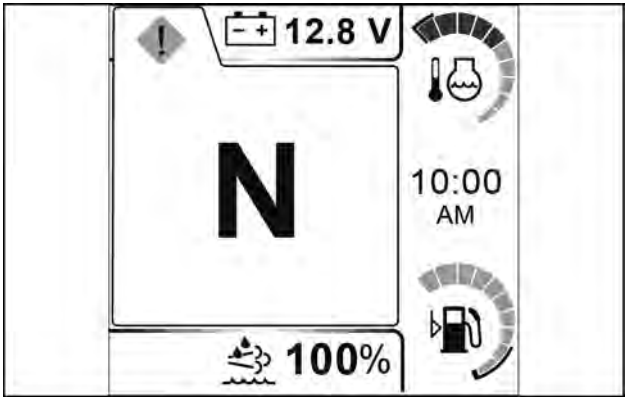
**Unexpected machine movement!**  
 With the engine running and only the gear lever in neutral, the machine can engage and move suddenly if someone accidentally operates this lever. Place all levers in neutral, disengage the power take-off, lower any implements, and set the parking brake before exiting the machine. Use wheel chocks when parking on slopes.  
 Failure to comply could result in death or serious injury.

W0057B

**NOTE:** To start the engine you need to put the shuttle and power take-off (PTO) control handles into neutral, additionally you need to press the clutch pedal fully down.

The tractor features many transmission ratios thanks to the combined use of different levers, so that for each main gear it is possible to obtain different speeds. Section 9 (Specifications) will contain tables of the various speeds for different combinations.




With the tractor stationary and the shuttle lever in forward or reverse drive, moving the main shift lever from neutral without first depressing the clutch pedal will result in the drive not being engaged. In this case, the error code (1) will appear on the central display with a simultaneous audible warning signal. Depress the clutch pedal and shift the shuttle lever to neutral to clear the display and re-engage the drive.

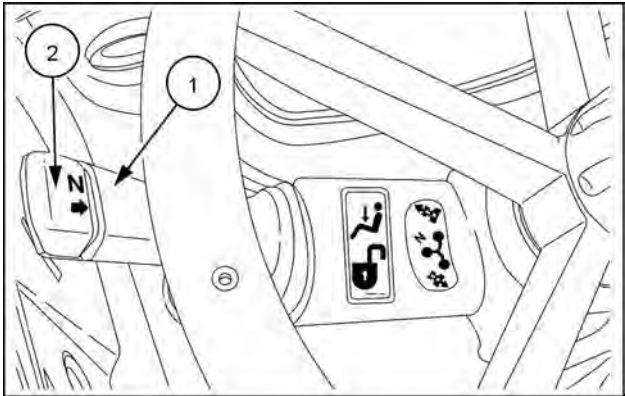


MOIL24TR00311 1

Electrohydraulic shuttle control lever

The shuttle control lever (1), located to the left-hand side of the steering wheel, is used to select the forward or reverse direction of travel, with a gear ratio engaged.

-  To select forward travel, move the lever upwards towards the steering wheel and forwards.
-  To select reverse travel, move the lever upwards towards the steering wheel and backwards.
-  To select neutral, press the button (2) on the end of the lever.



MOIL16TR01906AA 2

**NOTE:** with the tractor in motion, to change the direction of travel, it is not necessary to press the clutch pedal. Use of the shuttle lever without the clutch pedal should be limited to places with wide manoeuvring spaces. In confined spaces, combined use of the clutch pedal and shuttle lever is recommended.

After selecting the direction of travel, the shuttle lever returns to the central rest position. This is NOT the neutral position.



It is not possible to select the direction of travel if the operator is not sitting on the driving seat.

If the vehicle is driven in either direction with the parking brake engaged, an audible alarm will sound and the letter "P" will be displayed on the central display of the instrument cluster.

To increase safety during the operation of reversal reduce the tractor speed by means of the service brakes before operating the shuttle lever.

### Transmission and range gear lever

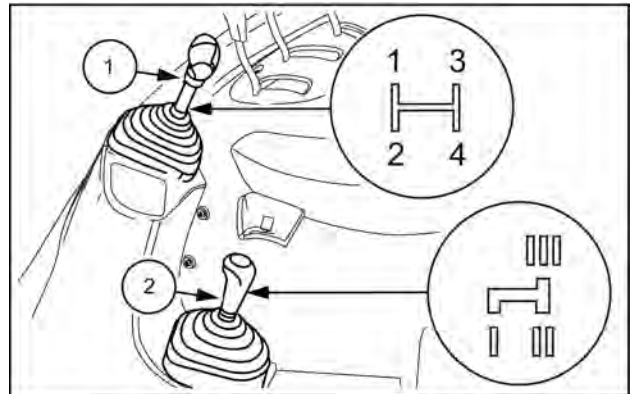
By means of the shift lever **(1)** it is possible to select the four gear ratios (1, 2, 3, 4).

By means of the range gear lever **(2)** it is possible to select the different ranges.

- I Low (Slow) range
- II Mid range
- III High (Fast) range

To switch from one range to another, always stop the tractor.

To change from one gear to another, operate the main gear lever after pressing the clutch pedal (it is not necessary to stop the tractor as the gears are syncro-engaged).



DCUTLBRNE009S4A 3

### Creep control lever

An additional creeper control handle **(1)** allows you to select additional reduced gears, in both forward and reverse drive. The operation must be carried out with the engine running, the tractor in stationary position and the clutch pedal depressed.

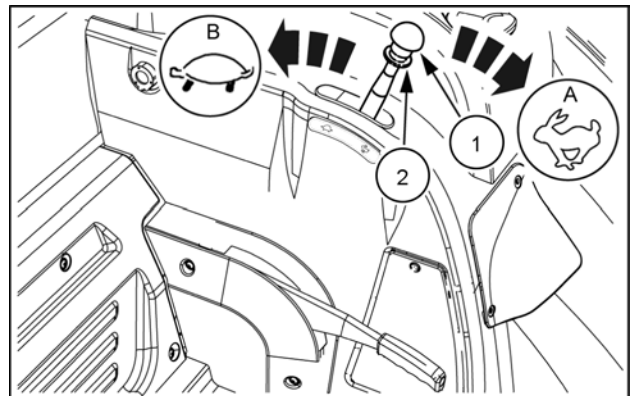
To move the lever **(1)** you need to pull the retaining ring upwards **(2)**.



Position **(A)**, creeper disengaged (normal gears)



Position **(B)**, creeper engaged (underdrive)



MOIL16TR01951AA 4

### Splitter control handle

A further splitter control handle (1) allows to double the gears, in both forward and reverse.

The operation must be performed with the engine running, the tractor stationary and the clutch pedal depressed.

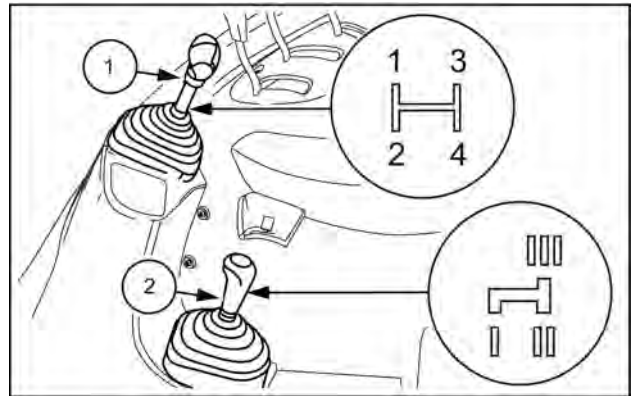
To move the lever (1) you need to pull the retaining ring upwards (2).



Position (A), to obtain high speed in the selected gear.



Position (B), to obtain low speed in the selected gear.



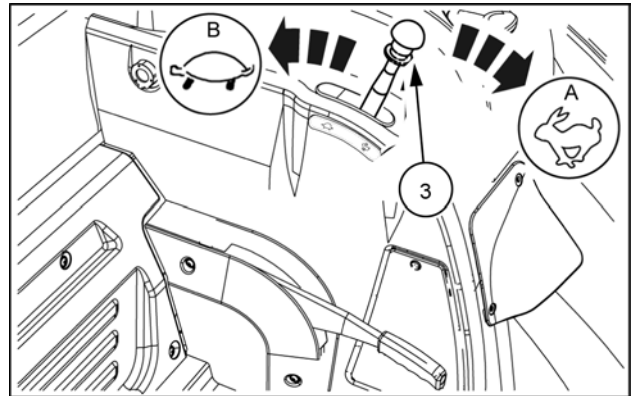
DCUTLBRNE009S4A 5

### Gearbox 24 x 24

The combined use of the following commands:

- reversing mechanism shift lever (1)
- gear range selection lever (2)
- Splitter lever (3)

allow the selection of 24 forward gears and 24 reverse gears.



MOIL16TR01951AA 6

## Drive line and manual gear setting switches

### Gear lever with low or fast gear switches

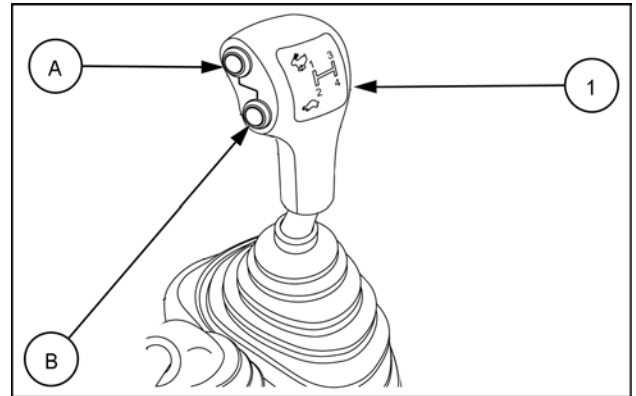
The main gear shift lever, fitted with the two switches (A) and (B), which provide two speeds in the same gear ratio.

(A)  Fast speeds (HI)

(B)  Creeper speeds (LO)



When the button (A) is pressed, the green hare symbol is illuminated indicating engagement of the high gear range.



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### Shift logic switch to neutral position on reversing mechanism

The logical shift to neutral feature (3) allows the driver to change gear without using the clutch pedal whilst the vehicle is moving, as long as the following conditions are met:

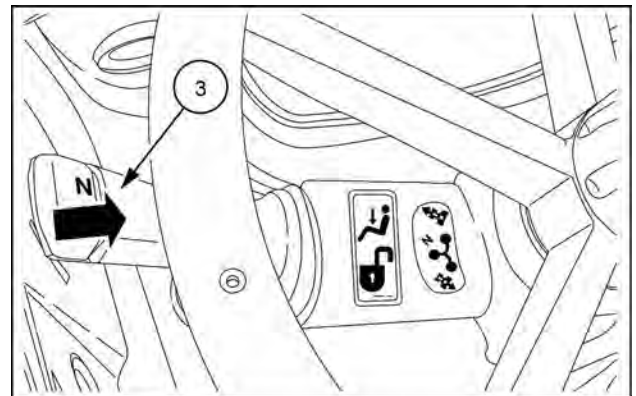
- the operator is present;
- the switch (3) is pressed and held;

The driver can adjust the gear ratio by moving the lever and releasing the switch as long as the vehicle speed does not fall below **0,5 km/h**, otherwise the function will be deactivated.

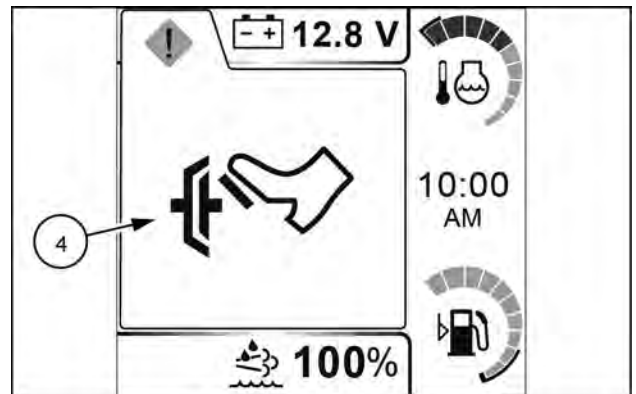
The logical shift to neutral feature (3) will be interrupted if one of the following conditions is met:

- the switch (3) is pressed for more than **15 s** (the disabled function will appear on the central display with error code N (4), with a simultaneous audible warning signal. To re-enable the function turn the tractor on and off);
- While the logical shift to neutral feature is active and the operator is not in their seat. To re-enable the function, (3) must be pressed.
- if the tractor stops and the button (4) is pressed, the error is displayed on the central display.  To re-enable the function press the clutch control pedal.

**NOTE:** the requested action appears only if the driver tries to start the tractor with the gear or range not correctly engaged.



MOIL16TR01906AA 8



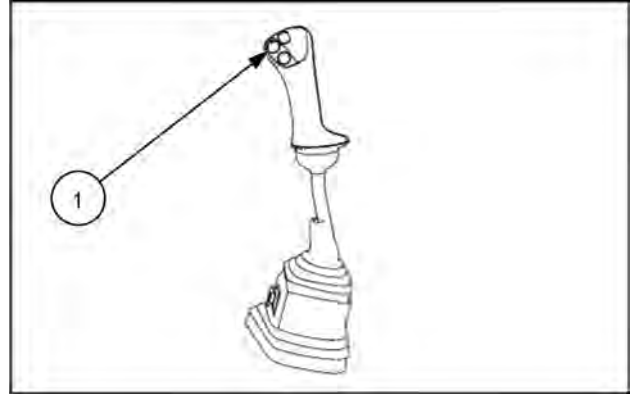
MOIL24TR00312 9

## transmission with advanced joystick functions

The advanced function joystick is equipped with the switch (1) through which two speeds can be provided in the same gear ratio.



When the button (1) is pressed, the green hare symbol is illuminated indicating engagement of the high gear range.

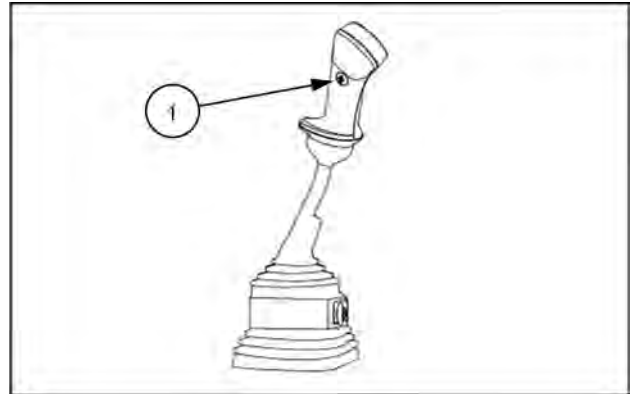


MOIL19TR00330AA 10

The auto take-off function (1) allows the driver to disengage the clutch as long as the switch is pressed and held and the following conditions are met:

- the operator is present;
- the transmission is in forward or reverse travel;

While the vehicle is moving with a speed exceeding **0.5 km/h**, the driver can press and hold the switch to change the desired direction, via the shuttle lever, and/or keep the clutch disengaged, until the switch is released. When the switch is released the vehicle performs an auto take-off.

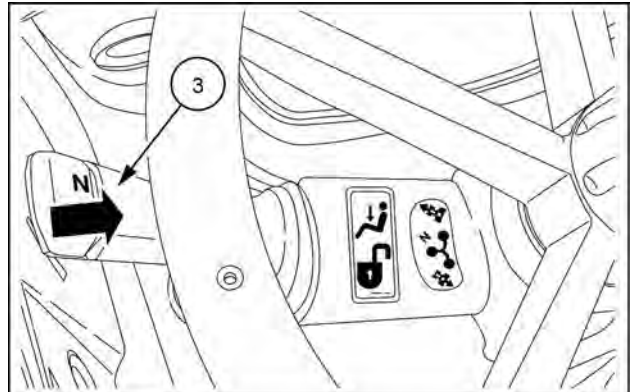


MOIL19TR00331AA 11

The auto take-off functionality (1) will be interrupted if, while the switch is pressed and held, one of the following conditions occurs:

- push button N (3) on the reversing mechanism lever is pressed (in this case the drive line will be put in neutral and the N will be displayed on the central display);
- the operator leaves their seat (press N to re-enable the function);
- **300 s** have passed (pressing of N must be requested);(3)

**NOTE:** the requested action appears only if the driver tries to start the tractor with the gear or range not correctly engaged.



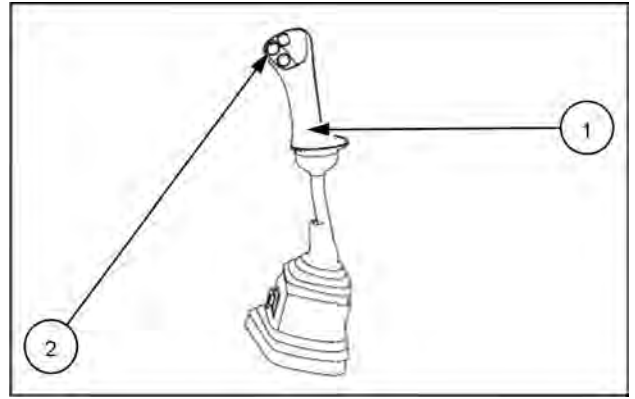
MOIL16TR01906AA 12

### Gearbox 24 x 24

The combined use of the following commands:

- shift lever with advanced joystick functions (1)
- gear range selection lever
- switch for the high-speed gears and low-speed gears (2)
- shuttle lever

allow the selection of 24 forward gears and 24 reverse gears.



MOIL19TR00330AA 13

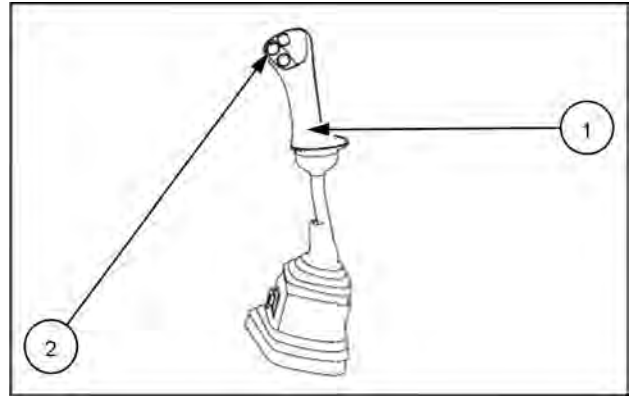
### Gearbox 40 x 40

The combined use of the following commands:

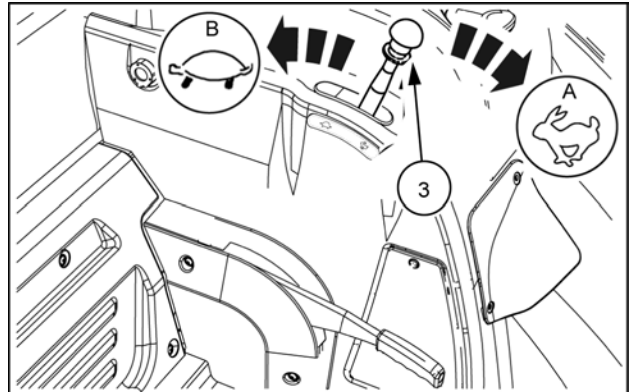
- shift lever with advanced joystick functions (1)
- gear range selection lever
- switch for the high-speed gears and low-speed gears (2)
- shuttle lever
- creeper lever (3)

allow the selection of 40 forward gears and 40 reverse gears.

The creeper unit lever in the underdrive position inhibits operation of the third range.



MOIL19TR00330AA 14



MOIL16TR01951AA 15

### Transmission disabled

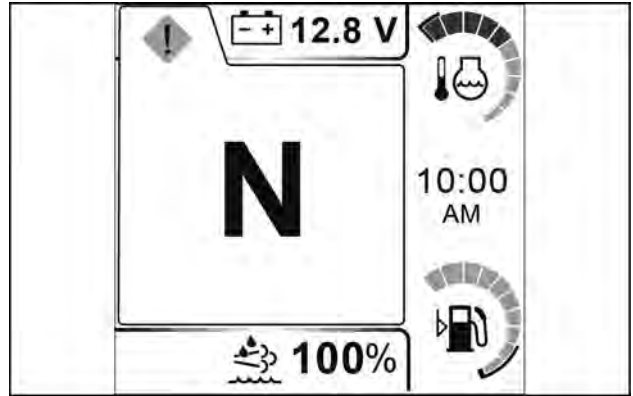
If the control unit detects an improper sequence of operator controls, or problems in the system, it disables the transmission.

**N** The pop-up window will appear on the instrument cluster to indicate that you need to press the neutral button on the electro-hydraulic shuttle lever.

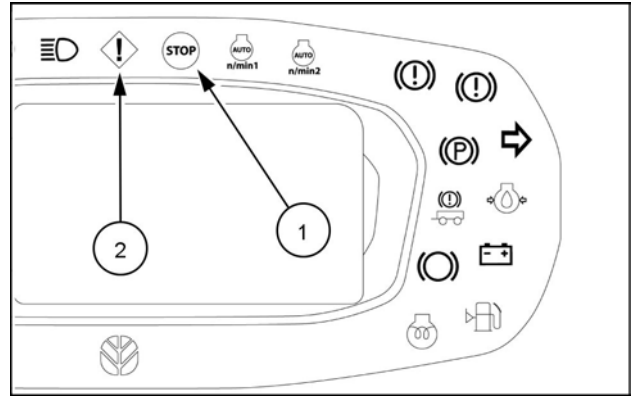
If the red “ Stop” warning light (1) comes on, switch off the tractor immediately and look for the cause. An error pop-up window, see page 3-39, will appear on the instrument cluster to confirm the anomaly.

Activation of the warning indicator (2) is accompanied by an error pop-up window on the instrument cluster, see page 8-11 and 8-13. The light flashes for 4 s, after which the pop-up window on the instrument cluster disappears and the light remains on. To display the trouble it is necessary to enter the menu, stop the tractor and search for the cause.

**NOTE:** the requested action appears only if the driver tries to start the tractor with the gear or range not correctly engaged.



MOIL24TR00311 16



MOIL24TR00173AA 17

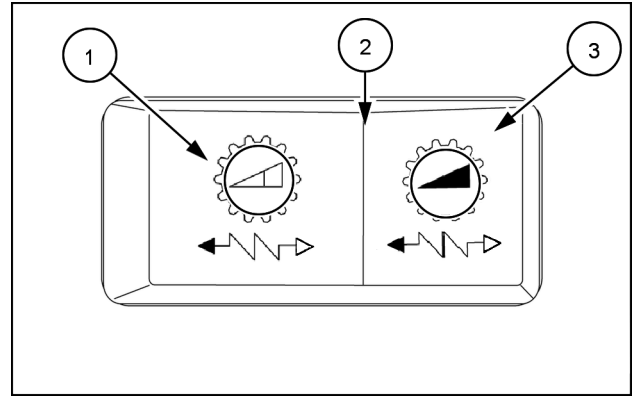
### Shuttle reactivity selection switch

On the left-hand upright there is a switch to select the reactivity of the electro-hydraulic shuttle. Depending on the position of the button there is a different response in the speed of inversion of the direction of travel

- Position **(1)** decreased reactivity
- Position **(2)** rest position
- Position **(3)** increased reactivity

To optimize different working applications it is possible to set three levels for the reactivity levels of the reversing mechanism.

- Level **(A)** minimum reactivity
- Level **(B)** intermediate reactivity
- Level **(C)** maximum reactivity



MOIL16TR02416AB 18

	<b>(A)</b> Minimum reactivity
	<b>(B)</b> Average reactivity
	<b>(C)</b> High reactivity

To change the lever reactivity speed, press the selection switch **(1)** on the Armrest Switch Panel (ASP) located on the right side of the cab.

Pressing the switch increases the rate by one step. The reactivity value is indicated by the number of LEDs illuminated on the switch. If the switch **(3)** is activated at level 3 (high reactivity) **(C)**, the speed returns to level **(A)** (low reactivity). The settings pop-up windows listed in the table will be displayed in the central part of the instrument cluster.

**NOTE:** The selected level of the lever reactivity is stored and active at each key-ON.

**NOTE:** The reactivity levels indicated below (transport, field, front loader) are only a recommendation for applications. It is possible to perform each kind of application with each level setting.

### Gearbox deactivation indicator

The transmission can be disabled in one of three ways:

1. Initial test
2. Temporary disabling of the transmission
3. Permanent disabling of the transmission.

#### Initial Test

During the tractor start-up phase, the control unit can detect conditions that block operation, for example:

- excessive oil viscosity at low temperatures;
- problems of a hydraulic or mechanical nature.

If the oil temperature is low because of the weather conditions, the test performed automatically by the control unit can take several seconds. In this case, wait for the automatic test to end and leave the engine idling until the oil reaches its normal operating temperature.

## Four-wheel drive

### ⚠ WARNING

#### Overturning hazard!

Four-wheel drive (4WD) greatly increases traction. Extra caution is needed on slopes. Compared to two-wheel drive, a 4WD machine maintains traction on steeper slopes, increasing the possibility of overturning.

Failure to comply could result in death or serious injury.

W0453A

Four-wheel drive increases the tractor's grip on the ground: the benefits are considerable when working on rough, muddy, slippery terrain, when ploughing or in difficult working conditions.

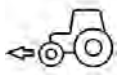
Four-wheel drive engagement and disengagement must be carried out with the tractor moving slowly and with the engine decelerating.

**NOTICE:** Do not use four-wheel drive when driving on roads with a hard surface, as this increases wear on the front tyres. Abnormal tire wear may also be caused by incorrect tire pressures.

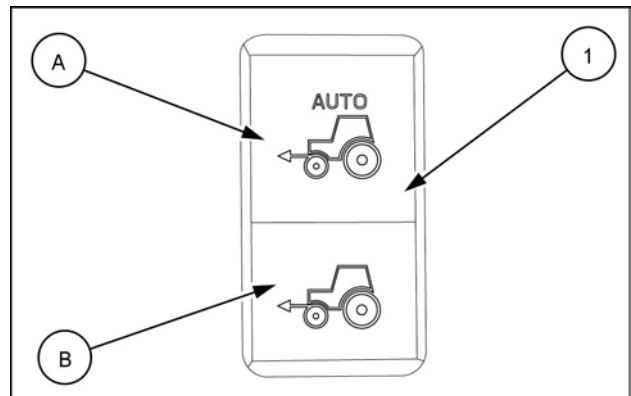
### Working in automatic mode

Press the switch to position (A) to engage four-wheel drive in automatic mode.

In this mode, an electronic control unit governs four-wheel drive engagement and disengagement according to the conditions under which the tractor is operating (speed, steering angle, slip).



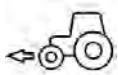
Four-wheel drive engagement is highlighted with the green warning light on the instrument cluster coming on.



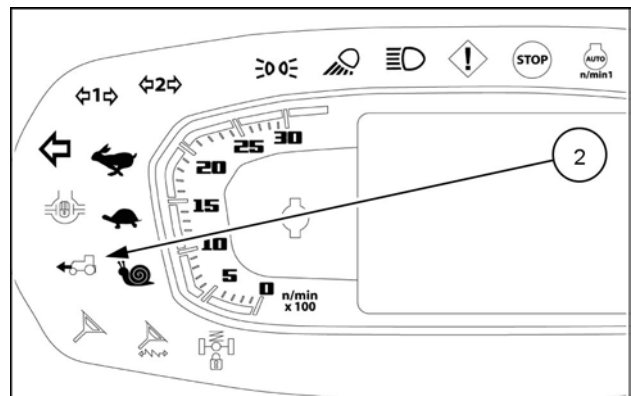
MOIL24TR00223AA 1

### Operating in manual mode

Press the switch to position (B) to engage four-wheel drive. In this mode four-wheel drive will remain permanently engaged.



Four-wheel drive engagement is highlighted by activation of the green warning light (2) on the instrument cluster.



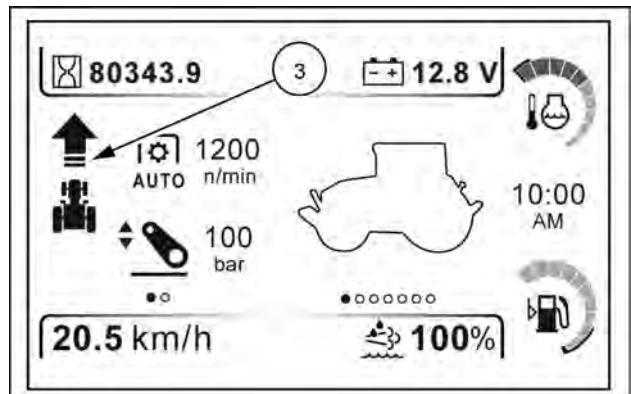
MOIL24TR00172AA 2

The following information will be displayed on the instrument cluster (3)

**NOTE:** four-wheel drive is engaged automatically also with the switch in position (B) if, at a certain speed, you depress the brake pedals joined together with the coupling pin.

Four-wheel drive is automatically disengaged when the brake pedals are released.

**NOTICE:** any faults in the system will be displayed on the central liquid crystal display in the form of error codes. See Page 8-11.



MOIL24TR00119AA 3

## Transmission oil heater (where fitted)

This accessory consists of a **110 V** or **220 V** AC heating element fitted on the transmission housing.

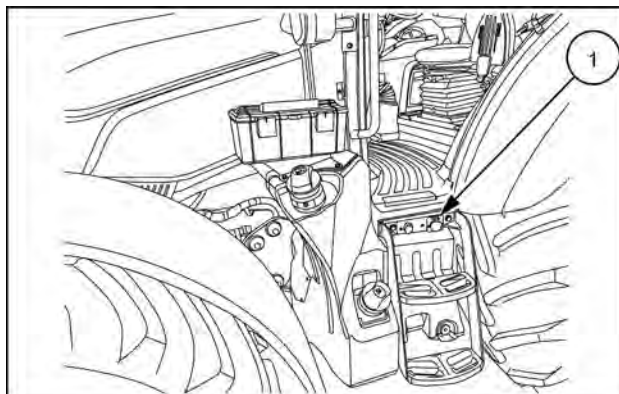
This accessory provides for faster warm up of the transmission/ hydraulic oil when operating in low ambient temperatures.

Connect the **110 V** heater extension cable to the plug at **(1)**.

Connect the **220 V** heater extension cable to the plug at **(1)**.

To operate the heater, connect the plug on the free end of the heater cable to a suitable outlet (using a voltage transformer, if necessary) for up to four hours before starting the engine.

**NOTE:** Do not use the heater when the oil is very cold as this may 'scorch' the oil. Use the heater after the tractor has been operated and the transmission oil is still warm. This will maintain oil temperature for easier starting in very cold weather.



MOIL24TR00434AA 1

## Engine accelerator controls

### Manual Accelerator

#### **⚠ WARNING**

**Avoid injury!**

**When you release the foot throttle, the engine speed will lower to the level set by the hand throttle.**

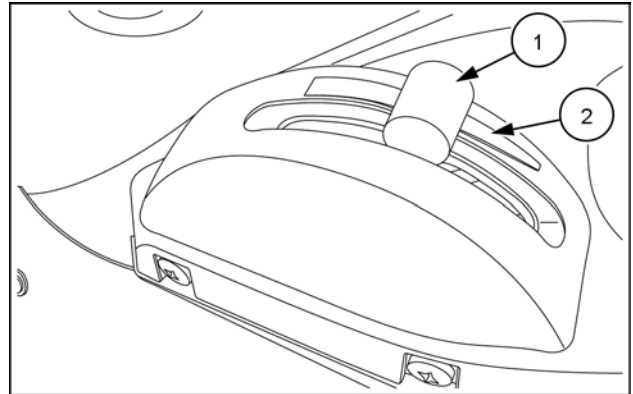
**When you use the foot throttle, place the hand throttle control lever in the idle speed position. Only use the foot throttle when you drive the tractor on a road.**

**Failure to comply could result in death or serious injury.**

W1624A

With the manual accelerator, the engine speed can be set to the desired rpm.

Move the lever (1) forward to increase engine speed, or move it backwards to decrease engine speed, as shown by the decal (2).



MOIL16TR01298AA 1

## Foot throttle pedal

### **⚠ WARNING**

#### **Avoid injury!**

**When you release the foot throttle, the engine speed will lower to the level set by the hand throttle.**

**When you use the foot throttle, place the hand throttle control lever in the idle speed position. Only use the foot throttle when you drive the tractor on a road.**

**Failure to comply could result in death or serious injury.**

W1624A

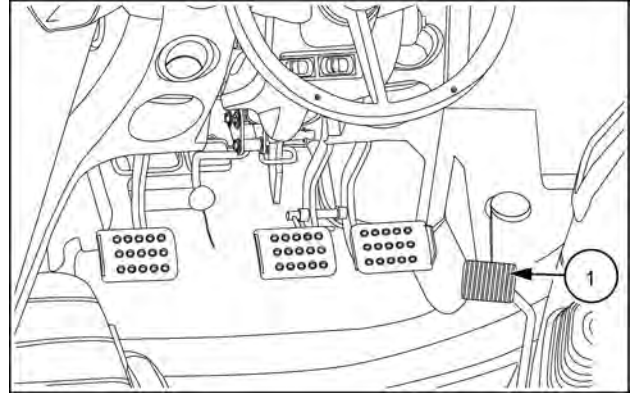
The foot throttle (1) is located on the right-hand side of the footboard and has an electronic potentiometer controlled by a lever with a pedal.

To control the engine rpm, simply depress the pedal to increase the rpm and release to reduce.

The accelerator pedal (1) is designed for normal vehicle use and acts independently of the hand throttle.

However, operation of the accelerator pedal (1), when released, is influenced by the engine rpm threshold set by the hand throttle - See **6-36**.

**NOTE:** when moving onto public roads, the hand throttle must be set and remain at the minimum engine rpm.



MOIL24TR00685AB 1

## Engine

### Constant engine speed

#### ⚠ WARNING

##### Avoid injury!

The Constant Engine Speed (CES) function shall not be used to provide a constant ground speed during road operation. Only use the Constant Engine Speed (CES) function during field operations. Always use the engine speed management function as instructed in this manual. Failure to comply could result in death or serious injury.

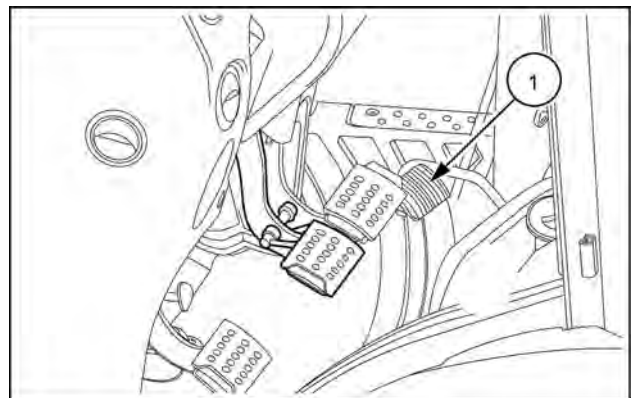
W1608A

The Constant Engine Speed (CES) system is used to programme one or two constant engine speeds suited to the work to be done.

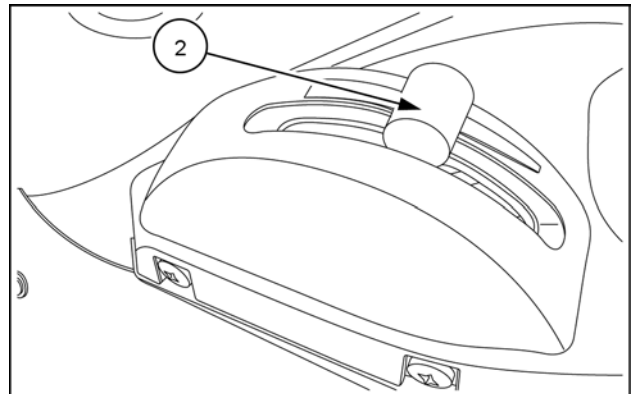
When enabled, the CES system constantly monitors any variations in load and engine rpm. If the engine load increases and the rpm reduces, the CES system automatically compensates for any variations in engine load and speed by regulating the engine rpm control system so as to maintain a constant speed in line with the value set. It must not be used as a cruise control to ensure a constant ground speed.

To set a program, proceed as follows:

- Turn the vehicle engine on.
- Using the foot throttle pedal **(1)** or the hand throttle **(2)**, set the engine to the required speed.



MOIL16TR03492AA 1



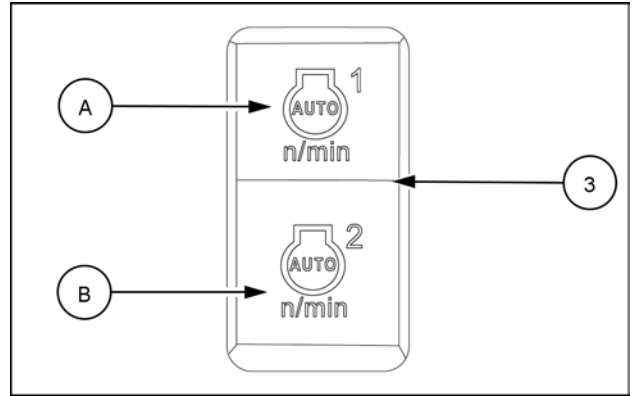
MOIL16TR01298AA 2

- Press the switch **(3)** to position **(A)** for more than **3 s** to save the engine rotation speed value. When saving, the warning light **(4)** in figure on the instrument cluster will flash until it remains fixed. If the switch **(3)** is released before **3 s**, the engine rpm value will not be saved and the warning light **(4)** shown in the figure will go out.
- To set the second program, follow the same instructions by pressing the switch **(3)** to position **(B)** for more than **3 s** to save the engine rotation speed value.

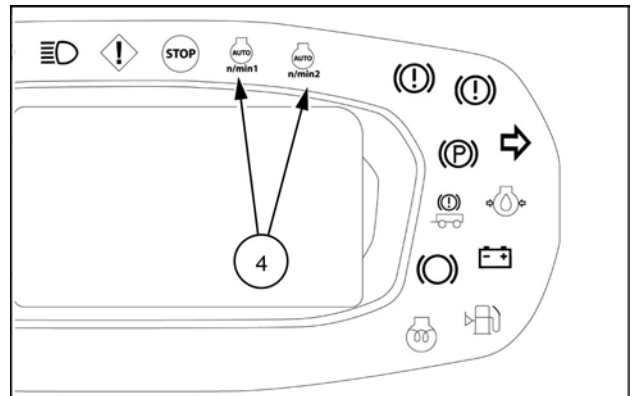
To modify one or both of the set rotation speeds, use the foot throttle pedal **(1)** or the hand throttle **(2)** and save the new values by pressing and holding switch **(3)** in position **(A)** or **(B)** for more than **3 s**.

To activate a program, proceed as follows:

- With the engine running, press the switch **(3)** to position **(A)** to activate the first program.
- With the engine running, press the switch **(3)** to position **(B)** to activate the second program.



MOIL24TR00469AA 3



MOIL24TR00173AA 4

To deactivate the constant engine speed system, proceed as follows:

- press the switch **(3)** to position **(A)** or **(B)** based on the program in use;
- move the hand throttle;
- stop the tractor and turn off the engine.

On the central display the symbol will appear with the word "OFF" next to it, to indicate that both programs are inactive.

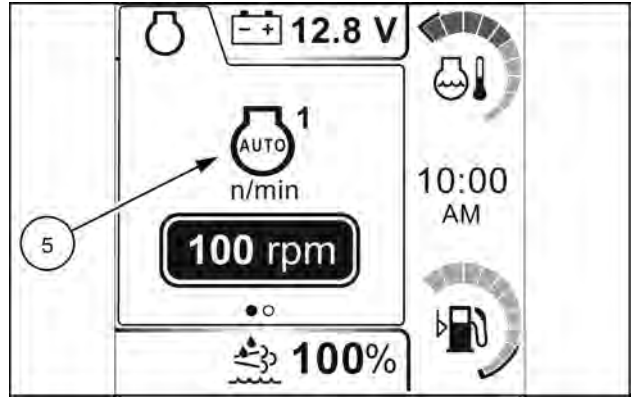
The symbol **(5)** will appear on the central display when the first program is activated. Similarly, the corresponding symbol will appear when the second program is activated.

**(6)**

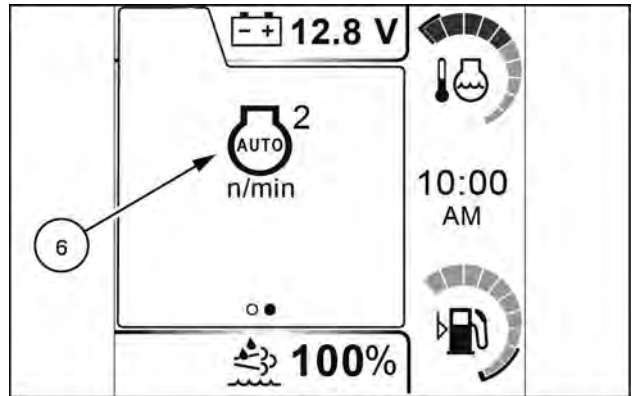
Together with the symbol **(5)** appearing on the central display, the warning light **(4)** will also appear on the instrument cluster.

**NOTE:** if both programs are activated, the last one activated will be displayed on the central display.

The CES system settings can be temporarily bypassed using the foot throttle pedal without affecting the program.



MOIL24TR00490AA 5



MOIL24TR00131 6

**NOTE:** moving the engine rpm control disables the speed storage function and returns control of the engine speed to the control or the foot throttle pedal.

## Regenerating the diesel particulate filter (DPF) automatically/ manually

### ▲ WARNING

**Fire hazard!**

During the Diesel Particulate Filter (DPF) forced regeneration process the exhaust stack and fixed hood area becomes extremely hot. Park the machine outside and away from combustible or highly flammable material.

Failure to comply could result in death or serious injury.

W1165B

### ▲ CAUTION

**Burn hazard!**

During the Diesel Particulate Filter (DPF) regeneration process the exhaust stack and fixed hood area becomes extremely hot. Allow area to cool before servicing or working near the exhaust system components.

Failure to comply could result in minor or moderate injury.

C0102B

A particulate filter (DPF) is a device designed to remove particulate pollutants produced by diesel engines from diesel engines; when it is clogged, it must be regenerated.

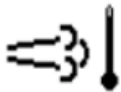
The particulate filter can be regenerated automatically or through force.

**NOTE:** during the regeneration process there may be a smell of burning or "overheating".

### Automatic regeneration

The start of the regeneration process is signalled to the operator on the instrument cluster accompanied by an acoustic signal. The indication is necessary for reasons of safety to warn the operator about the high exhaust temperature reached during the process.

The automatic regeneration shall not affect engine performance. During the procedure, the operator can continue working normally. Under certain operating conditions automatic regeneration may not be completed (engine continually stopping and starting, long periods at idle speed).



The start of automatic regeneration, if initiated, is indicated on the instrument cluster display. The left-hand symbol is shown as long as regeneration is active.

If the following signals are displayed on the instrument cluster, it is necessary to proceed as follows:

Condition	Soot level	Pop-up with status and warning indicators		Instrument cluster
Normal operation	Level 1	-	-	Low soot accumulation. No actions needed.
Automatic regeneration activation	Level 2			Average-low soot accumulation. Automatic regeneration on.
Average soot accumulation	Level 3			Average soot accumulation. Automatic regeneration on. Force regeneration advised.
Performance limitation	Level 4			Average-high soot accumulation. Soft engine derate. Forced regeneration required.
Performance limitation	Level 5			Critical soot accumulation. Hard engine derate. Forced regeneration disabled. See your dealer.

### Inhibition of automatic regeneration

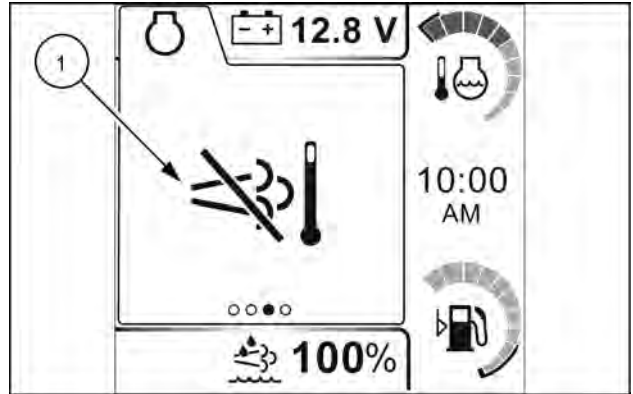
In certain special situations, it is possible to inhibit automatic soot regeneration.

In the engine sub-menu screen, see page 3-43, use the navigation control to select the control (1) to inhibit automatic regeneration.



Pop-up window indicating inhibition of automatic regeneration.

**NOTICE:** It is always advised to keep the automatic regeneration function **ENABLED**.



MOIL24TR00461AA 1

### Forced regeneration

Even if the automatic regeneration is enabled, when the level of soot exceeds a certain level, the electronic control unit invites you to proceed with forced filter regeneration.

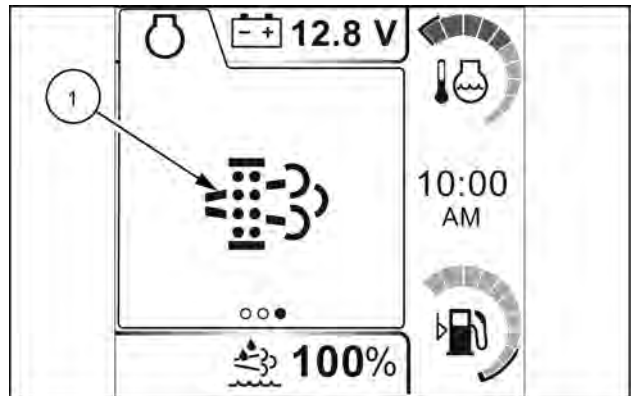
To activate manual regeneration when it becomes necessary, it is necessary to stop work for the entire duration of the procedure ( 15 – 20 min) and establish the following conditions:

- engine running, machine stationary and hand brake on
- engine at normal operating temperature.
- hand throttle at minimum position
- foot throttle released
- Power Take-Off (PTO) not engaged
- hydraulic system not active
- constant engine speed function deactivated

**NOTE:** ensure that the vehicle is not low on fuel.

**NOTE:** should the above-mentioned conditions change during the entire process of regeneration, the operation is stopped.

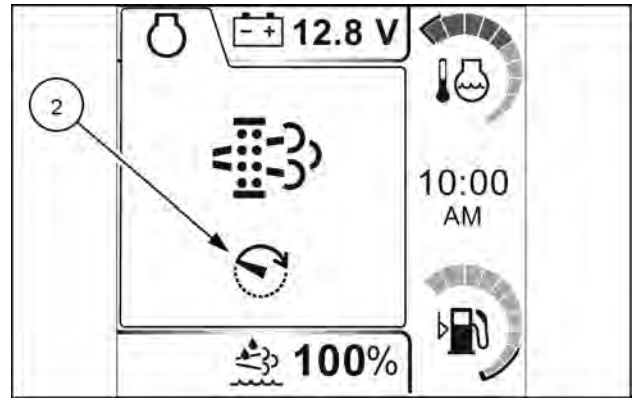
In the engine sub-menu screen, see page 3-43, use the navigation control to select the catalytic converter switch (1) to activate the forced regeneration procedure, while the engine rpm is increased to **2000 RPM**. When regeneration is not required, the catalytic converter management switch cannot be selected.



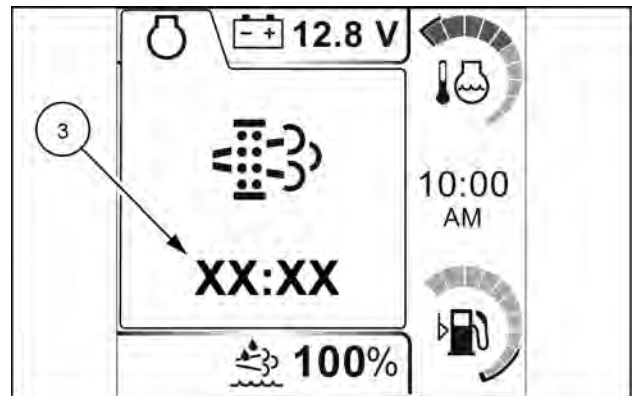
MOIL24TR00445AA 2

The countdown pointer (2) goes round, indicating a pause before the procedure starts.

Then a procedure timer begins (3).



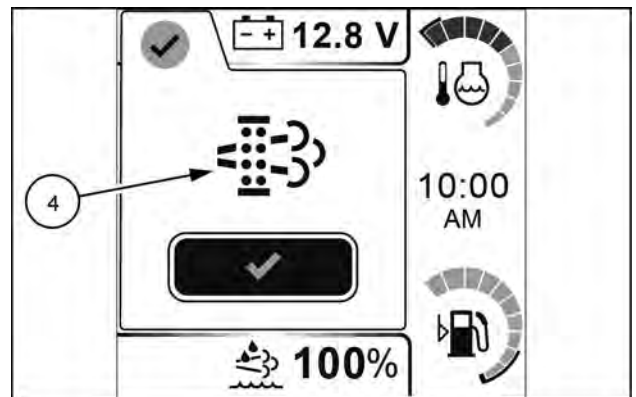
MOIL24TR00462AA 3



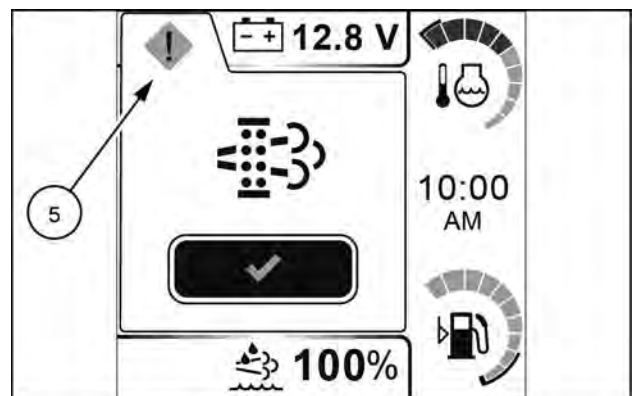
MOIL24TR00463AA 4

When the procedure ends, a pop-up window appears confirming the success of the procedure with the symbol (4). Press the 'ENTER' switch to return to the engine sub-menu screen.

If during regeneration the operator modifies the conditions described above, or other engine-related conditions are not satisfactory, regeneration is interrupted. Interruption is indicated to the operator by the drop-down window with the symbol (5) accompanied by an acoustic signal. Press the 'ENTER' switch to return to the engine sub-menu screen.



MOIL24TR00247 5



MOIL24TR00248A 6

**NOTICE:** if, when requested, you do not proceed with forced regeneration of the filter, its functionality will be impaired. If you continue to ignore this request, besides a considerable reduction in engine horsepower, the filter will be damaged to such an extent as to require it to be replaced by the dealer.

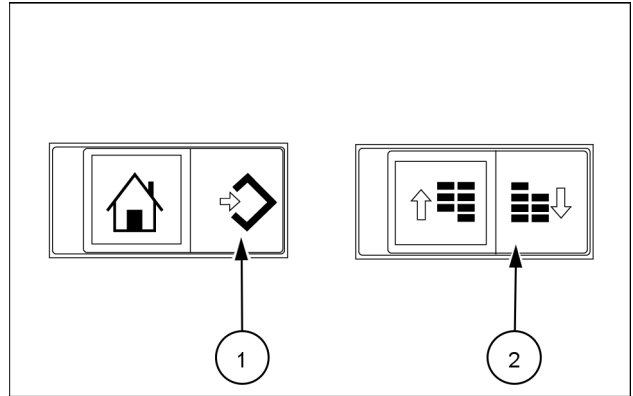
## Resetting the oil change counter

The regeneration of the DPF particulate filter at high temperature causes accelerated deterioration of the lubricant oil. If the deterioration is too severe, it is recommended to change the lubricating oil before expiry of the normal maintenance interval.

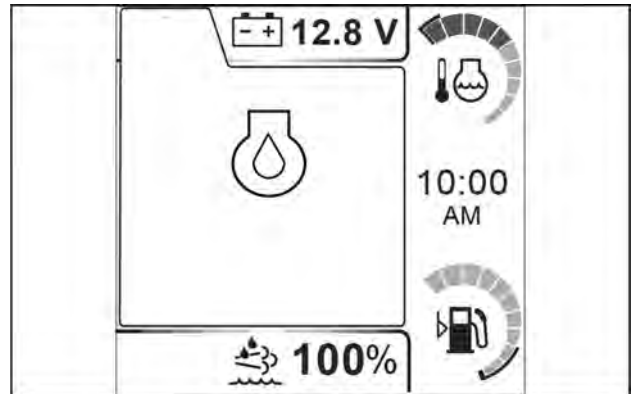
**NOTE:** For this procedure the engine must be switched off.

**NOTICE:** Whenever changing oil it is indispensable to reset the engine oil working hours counter, as described below:

In the engine sub menu screen, see page 3-43, select the engine oil reset icon with the **(2)** button. Press and release the push button **(1)** to activate the procedure.

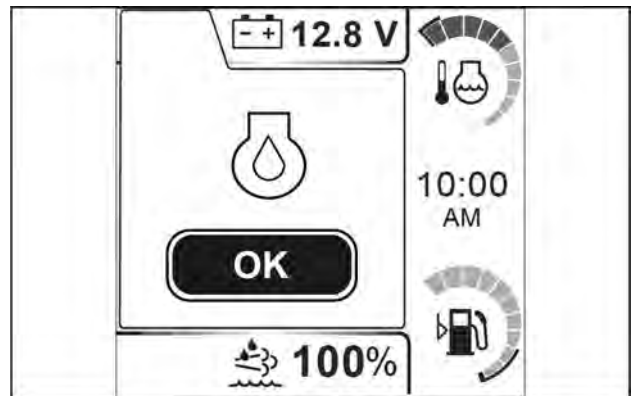


MOIL21TR00013AA 1



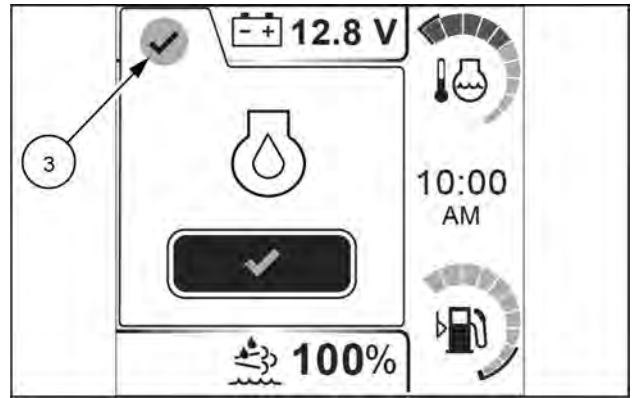
MOIL24TR01107AA 2

Press and release the push button **(1)** again to start the procedure.



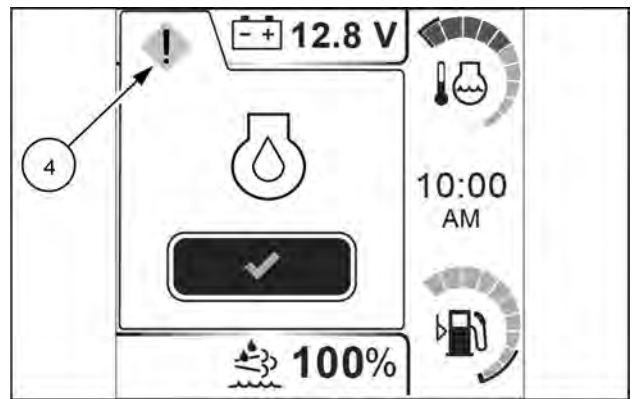
MOIL24TR01108AA 3

A pop-up window appears, with a green symbol **(3)** confirming the success of the procedure.  
Press button **(1)** to return to the engine submenu screen.



MOIL24TR01107AA 4

If the procedure is interrupted, the error pop-up window will appear with the red symbol **(4)**.  
Press button **(1)** to return to the engine submenu screen.



MOIL24TR01109AA 5

## Reversible engine fan (if installed)

### ⚠ WARNING

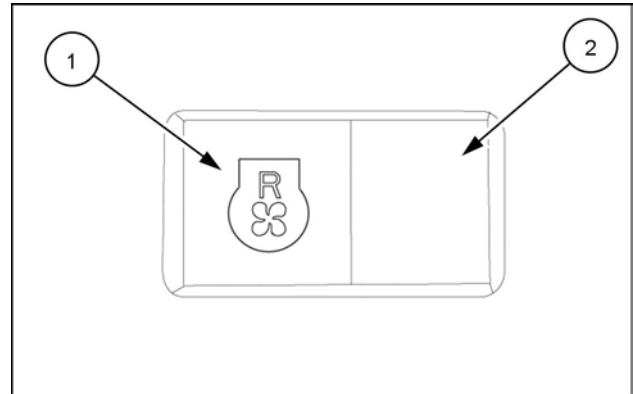
**Avoid injury!**  
Follow **ALL** of the precautions listed below.  
Failure to comply could result in death or serious injury.

W1091A

The reversible engine cooling fan allows the operator to reverse the air flow to clean the radiator/ coolers and front grille.

**ATTENTION:** Reversing the air flow ejects debris from the engine hood towards the outside. Maintain a safe distance whilst air flow reversal is active.

Pressing the switch in position **(1)** will cause the fan blades to rotate by **180°** on the hub thereby reversing the flow of air. The complete process takes approximately **30 s** and during that time the light in the switch will remain illuminated.



MOIL24TR00232AA 1

**NOTE:** As the engine fan generates a considerable air flow, it is recommended the engine speed be reduced when reversing the fan. This will prevent unnecessary strain on the Poly- V belt as the air flow is reversed.

At the end of the process the fan blades will automatically return to their normal working position and the light will extinguish.

The process can be stopped at any time by pressing the fan switch again in position **(2)**

Operation of the reversible fan can be included in a Headland Management Control programme.

## Coolant Immersion Heater (where fitted)

### ⚠ WARNING

**Electrical shock hazard!**

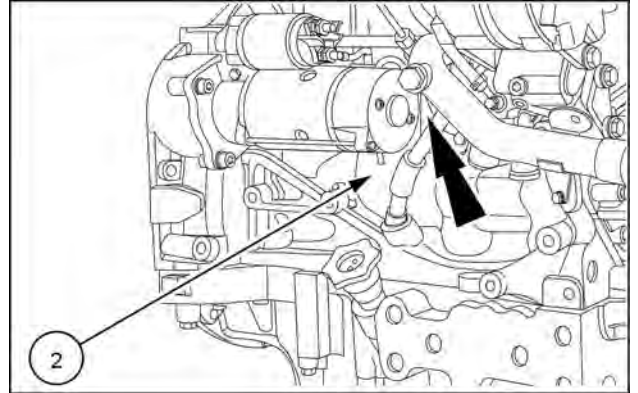
**NEVER** use an ungrounded or inadequate extension cord. Always use a functional (three-wire), grounded extension cord rated for the appropriate voltage and current (15 A), with circuit protection of either a standard circuit breaker or a Ground Fault Circuit Interrupter (GFCI).

Failure to comply could result in death or serious injury.

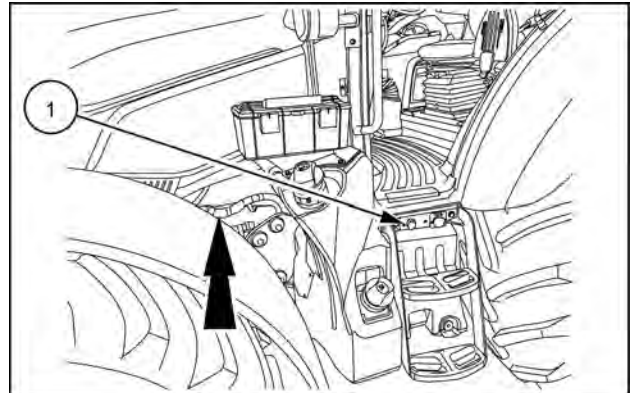
W0400A

This accessory consists of a heating element fitted into one of the core plug apertures on the right-hand side of the block. The heater is available in version **110 V** or **220 V** A.C. This accessory provides easier starting down to **-29 °C (-20 °F)**.

To operate the heater, connect the heater extension cable to the socket **(1)** adjacent to the left-hand cab steps. Plug the free end of the heater cable **(2)** into a suitable **110 V** (or **220 V**) socket, for up to four hours before carrying out the cold weather starting procedure.



MOIL14TR01447AA 1



MOIL24TR00434AA 2

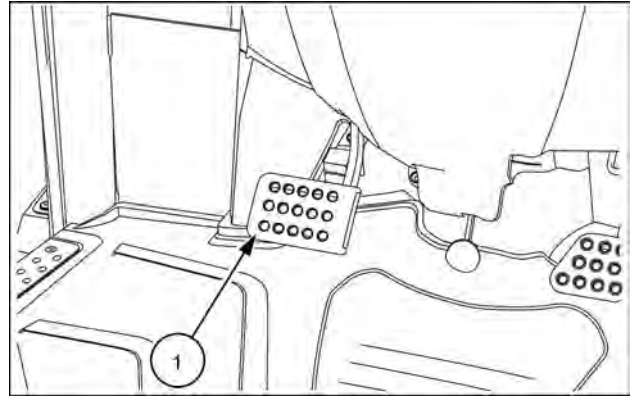
## Clutch

### Gearbox engine clutch control pedal

The clutch pedal (1) enables gradual transfer of engine power to the drive wheels when starting to move from a standstill.

**NOTICE:** before you start the engine, fully depress the clutch pedal.

**NOTICE:** To avoid premature clutch wear, do not rest your foot on the clutch pedal when the tractor is on and moving.



MOIL22TR00190AB 1

## Brakes

### Brake pedals

#### **▲ DANGER**

**Overturning hazard!**

As a safety measure, always use both brake pedals in the following situations:

- If the machine is on sloping ground.
  - If the machine is on hillsides.
  - If the machine is descending steep gradients with a rear load pushing the machine downhill.
- Failure to comply will result in death or serious injury.

D0134A

#### **▲ WARNING**

**Loss of control hazard!**

Uneven brake force exists on left-hand and right-hand brakes. Always use brake pedal coupler when traveling on public roads to ensure brakes are actuated together.

Failure to comply could result in death or serious injury.

W0081A

#### **▲ WARNING**

**Loss of control hazard!**

Brake pedals shall be locked together for road travel. This ensures uniform brake application and maximum stopping ability.

Failure to comply could result in death or serious injury.

W0308A

#### **▲ WARNING**

**Loss of control hazard!**

One-sided brake force exists if you do not use the brake pedal latch, and if you do not depress the left and right pedals at the same time. **ALWAYS** use the brake pedal latch when traveling at transport speeds and/or when a trailer with hydraulic or air-applied brakes is attached to the machine.

Failure to comply could result in death or serious injury.

W0375A

#### **▲ WARNING**

**Loss of control hazard!**

When towing an implement without brakes, make sure the weight of the implement never exceeds the weight of the towing machine. Stopping distance increases with increased weight, especially on hills and slopes.

Failure to comply could result in death or serious injury.

W1243A

#### **▲ WARNING**

**Loss of control hazard!**

When the machine is transported on a trailer, always lock the brake pedals together during the loading and/or unloading operations.

Failure to comply could result in death or serious injury.

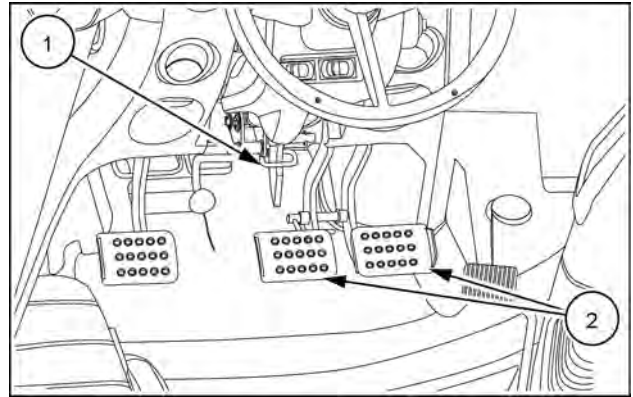
W1329A

## Service brakes

The service brakes are operated by the pedals (2).

The tractor is fitted with oil-immersed disc service brakes in each rear axle trumpet housing.

**NOTE:** The service brakes, fitted as standard, allow operation of the rear brakes only. On variants with 4-wheel drive, the tractor can be optionally equipped with service brakes in the hubs of the front wheels.



MOIL24TR00685AB 1

The brakes are controlled by two pedals which can be used together, via a coupling pin (1), or individually to facilitate manoeuvres when working in the field. Operating the single, left-hand brake pedal means that the left-hand brake pump only sends pressure to the left-hand brake. Operating the single, right-hand brake pedal means that the right-hand brake pump only sends pressure to the right-hand brake. The action of both brake pedals allows the operation of integral braking, if fitted. In this case, the brake control pumps send pressure to a logic valve that allows the front brakes to operate as well.

**NOTE:** With four-wheel drive disengaged, front-wheel drive engages automatically on both brakes.

**NOTE:** with automatic engagement of 4WD, the brakes function much more efficiently. Appropriate care should be exercised during hard braking.

## Handbrake

The hand brake handle (1) is located to the left-hand side of the driver's seat.

To apply the hand brake, press the button on the top of the lever (2). Pull the lever upward. The hand brake should begin to slow the tractor down from the third catch. To release the hand brake, pull the lever slightly upwards, press the button (2) and then fully lower the lever.

If the handbrake exceeds the third catch it will need to be adjusted, as described in the maintenance section.

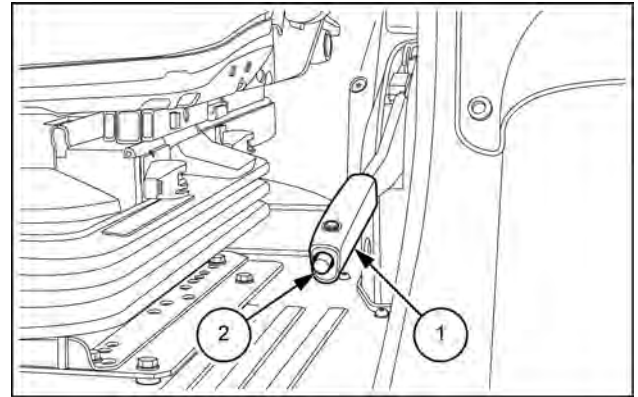
The label (3) is present on the hand brake handle.

Activation of the red light (4) indicates that the hand brake is engaged accompanied by the pop-up window (4) on the central display

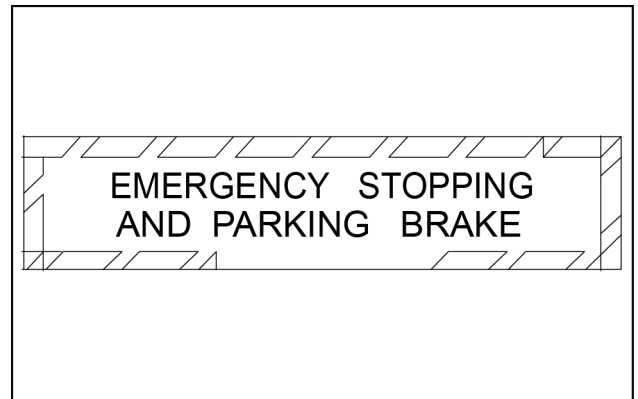
**NOTICE:** with the hand brake applied and the tractor moving faster than 1.0 km/h (0.6 mph), there is an audible warning that stops only after disengaging the hand brake.

**NOTE:** if the hand brake is not engaged, an audible warning activates and only stops after the hand brake is applied.

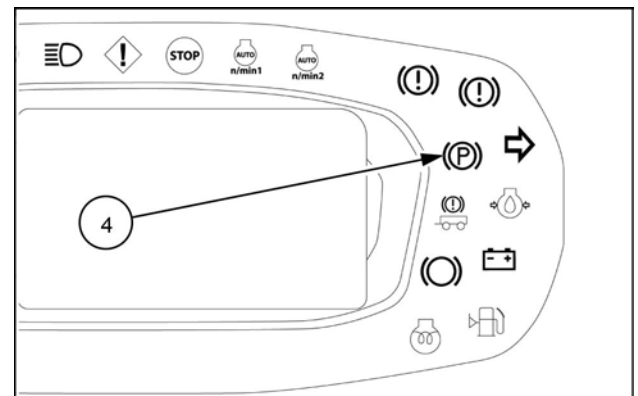
**NOTE:** only leave the vehicle or the driver's seat after engaging the hand brake.



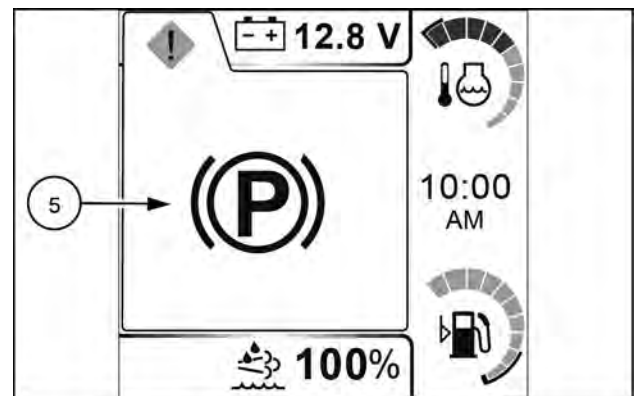
MOIL13TR00408AA 1



MOIL16TR02285AA 2



MOIL24TR00173AA 3



MOIL24TR00310 4

## Park lock

The parking brake handle (1) is located to the left-hand side of the driver's seat

### Engagement


The park lock is operated with the same lever (1) that controls the range gear.

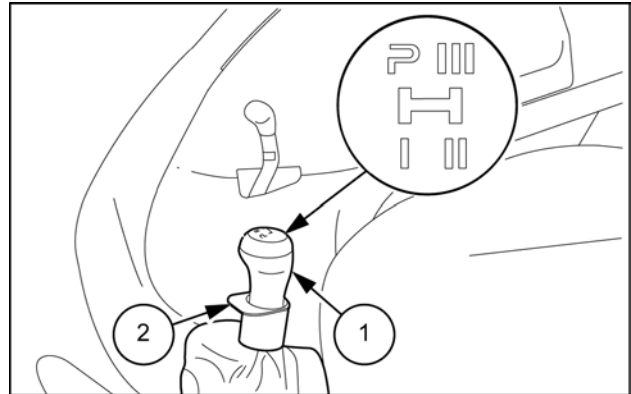
The warning is shown on a sticker (3), present in the area over the lever.

To engage the park lock:

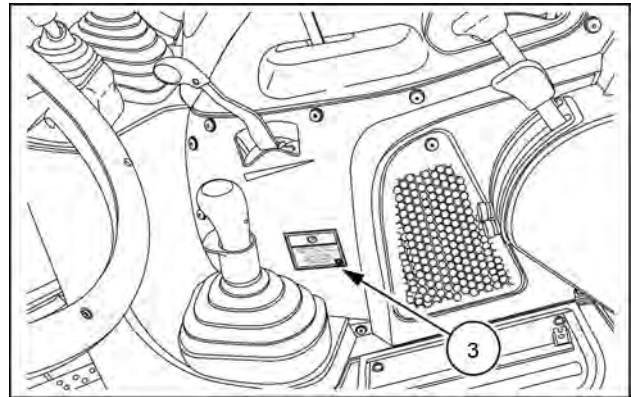
1. Stop the tractor applying the brake pedals.
2. Pull up the safety collar (2).
3. Move the lever (1) to the left and then forwards into the position (P) park lock.
4. Release the brake pedals.

The park lock acts directly on the transmission drive shaft. If the park lock is not engaged and the warning light does not come on, it is necessary to move the tractor slightly to make the stop tooth enter the transmission gear and then the warning light comes on.

 Pop-up window indicating park lock engaged with transmission not disengaged.



MOIL13TR02927AA 1



MOIL16TR01965AA 2

**NOTICE:** ALWAYS apply the park lock as described before leaving the tractor. With the ignition key inserted, always check that the red warning light (A) on the dashboard is illuminated, to confirm that the park lock is correctly applied. If you leave the driver seat without having applied the park lock, an acoustic signal will sound that only stops when the park lock is applied.

**NOTE:** For tractors equipped with pre-selection control, moving the range selection lever to position (P), the warning indicator comes on even if the park lock is not mechanically engaged. In this condition, the tractor may be subject to a small displacement before the stop tooth fits into the gear.

**NOTICE:** The park lock function should only be engaged when the tractor is completely stationary and with the hand brake already applied, to avoid any damage.

**NOTE:** Before getting out of the tractor or the driver's seat, engage a gear.

**NOTE:** The park lock acts directly on the transmission drive shaft.

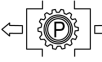
If the park lock is not engaged, the tractor must be moved slightly and the park lock engagement procedure repeated, to enable the pawl to engage with the transmission gear.

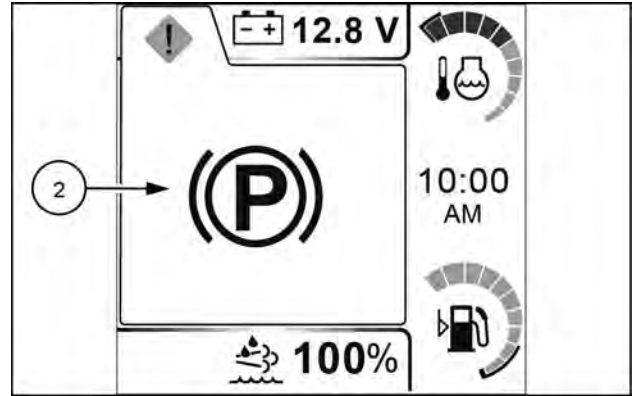
**NOTE:** Chocks should be used when the tractor is parked on a slope and in any other circumstances where this proves necessary.

**NOTE:** The tractor may have to move slightly before the pawl engages with the gear.

To check the park lock is properly engaged, select the direction and put into gear. Carefully lift the clutch and try to move the vehicle. The indicator light **(1)** on the warning panel and the "P" symbol **(2)** on the instrument cluster indicate correct engagement.

**NOTE:** the indicator light does not come on when the transmission is in neutral.

 Pop-up window indicating park lock engaged with transmission not disengaged.



MOIL24TR00310 3

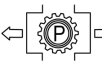
## Disengagement

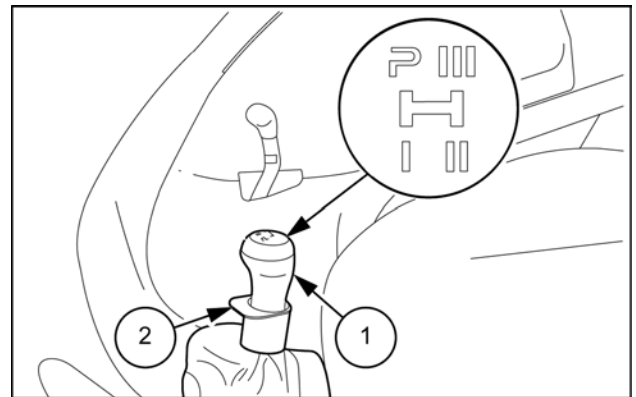
To disengage the park lock:

1. Pull up the safety collar **(2)**.
2. Move the lever **(1)** from the position **(P)**.

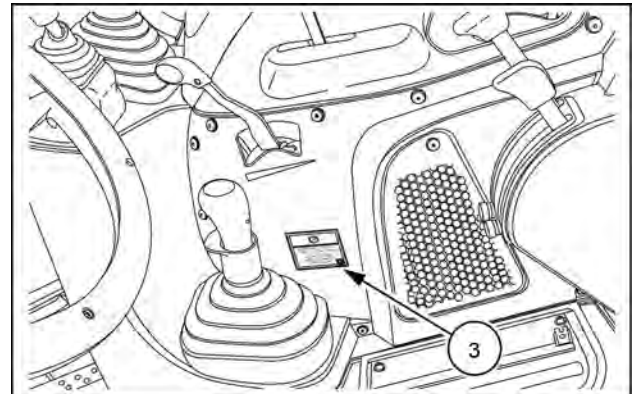
**NOTE:** with the tractor parked on a slope, act with force to move the lever **(1)** from the position **(P)**.

If the indicator light **(1)** is on after the gear has been engaged, accompanied by the acoustic signal, this means that the park lock has not been disengaged. In that case, repeat the disengagement procedure. If, after a few attempts, the warning indicator does not turn off, move the vehicle and contact a local dealer.

 Pop-up window indicating park lock still engaged with transmission not disengaged.



MOIL13TR02927AA 4



MOIL16TR01965AA 5

## Rear remote control valves

### Remote control valves - safety rules

#### **⚠ WARNING**

**Unexpected movement!**

When starting the machine engine, make sure the remote valve levers are in the correct position **BEFORE** you operate the key switch. This prevents an attached implement from moving unintentionally. Failure to comply could result in death or serious injury.

W0433A

#### **⚠ WARNING**

**Escaping fluid!**

Do not disconnect hydraulic quick coupler under pressurized conditions. Make sure all hydraulic pressure is removed from the system before disconnecting hydraulic quick coupler. Failure to comply could result in death or serious injury.

W0095A

#### **⚠ WARNING**

**Pressurized system!**

Before disconnecting the couplers, you must:

- lower the connected attachments,
  - stop the engine,
  - move the control levers forward and backward to discharge pressure from the hydraulic system.
- Failure to comply could result in death or serious injury.

W0389A

#### **⚠ WARNING**

**Pressurized fluid can penetrate the skin and cause severe injuries.**

Keep hands and body away from any pressurized leak. **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper. If fluid penetrates the skin, seek medical attention immediately. Failure to comply could result in death or serious injury.

W0158A

#### **⚠ WARNING**

**Escaping fluid!**

If a hydraulic hose, line, or pipe shows signs of wear or damage, replace the component **IMMEDIATELY**. Failure to comply could result in death or serious injury.

W0297A

#### **⚠ WARNING**

**Pressurized fluid can penetrate the skin and cause severe injuries.**

Make sure all hydraulic hoses are properly secured, and not in danger of binding or being pinched. This could cause a hose to break, allowing pressurized fluid to escape. Failure to comply could result in death or serious injury.

W0439A

The main causes for poor operation or breakage of the quick couplers are:

- dirt
- type of male quick coupler not compatible, or damaged (dents, for instance)

## Rear remote hydraulic valve(s)

**NOTICE:** Remote cylinders are operated by oil drawn from the tractor hydraulic system, therefore, always check and replenish the hydraulic system oil after remote cylinder equipment has been connected and cycled a few times. Operating the tractor with a low oil level may result in damage to the rear axle and transmission components.

**NOTE:** Do not hold the lever in the extend or retract position once the remote cylinder has reached the end of the stroke as this will cause the relief valve to 'blow'. If allowed to continue for long periods of time the oil will overheat, which may lead to problems with hydraulic and drive line components.

One, two or three control valves using the same oil as the hydraulic lift circuit to which they are connected can be fitted to your tractor for remote control of single-acting and double-acting cylinders.

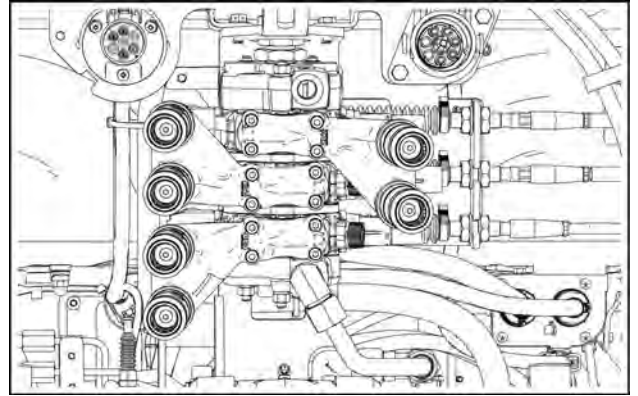
Each valve has two 1/2" quick-fitting female "Push-Pull" couplers which can be connected to pressurised male couplers, available as an optional. You can thus connect the control cylinder lines with two hands.

Push them in to fit them and pull them out to release them from the female couplers, but only after first:

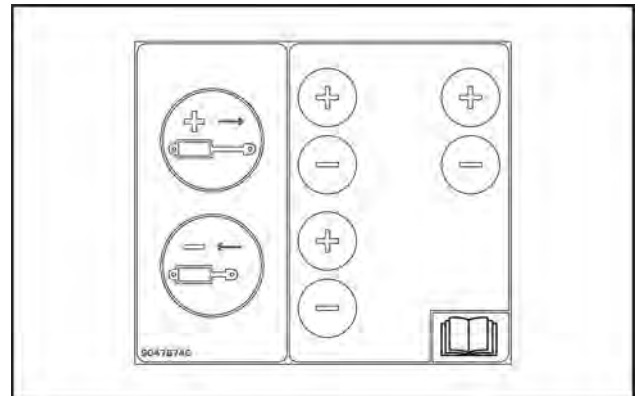
- stopping the engine
- lowering any implements connected to the lift
- thoroughly cleaning the two mating parts.

**NOTICE:** When not using the female couplers, protect them with the plastic caps.

The decal shown, located near the rear hydraulic valves, shows the oil delivery and return couplings and the colour corresponding to the control lever in the cab.







MOIL22TR01882AA 1

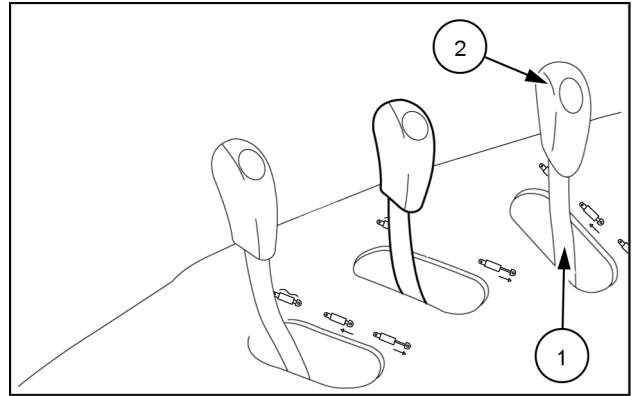


90478740 2

### Auxiliary control valve levers

The control valves are operated by levers which are located on the right-hand side of the operator's seat. The control levers can take on the following positions:

-  Lever back - raise tool
-  Lever in the central position - neutral position
-  Lever forward - lower tool
-  Lever fully forward - float function



MOIL16TR02223AA 3

To select the floating position (1), push the lever (2) fully forward, beyond the first retention stop and then to the end of travel. A catch keeps the lever hooked in the float position.

To release the lever (2) from the floating position (1), pull it backwards to return it to the neutral position.

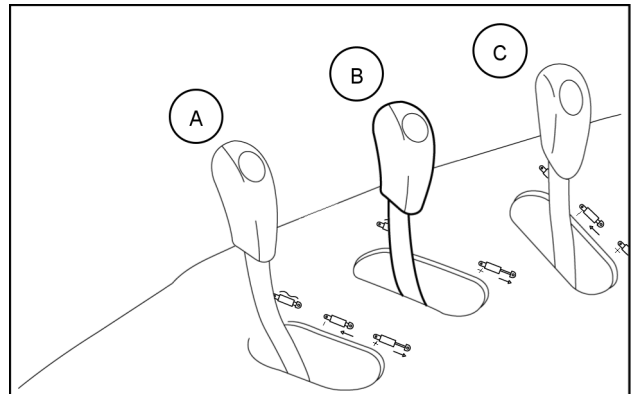
In this position for implements that require it, the coupler can swing freely upwards and downwards, allowing the implement to follow the contours of the ground.

**NOTE:** The float function requires there to be at least two distributors on the tractor for remote controls.

### Three control valve configuration

If there are three control valves, the following configurations are available for the levers

- A. Raise/neutral/lower/floating
- B. Raise/neutral/lower
- C. Raise/neutral/lower/floating

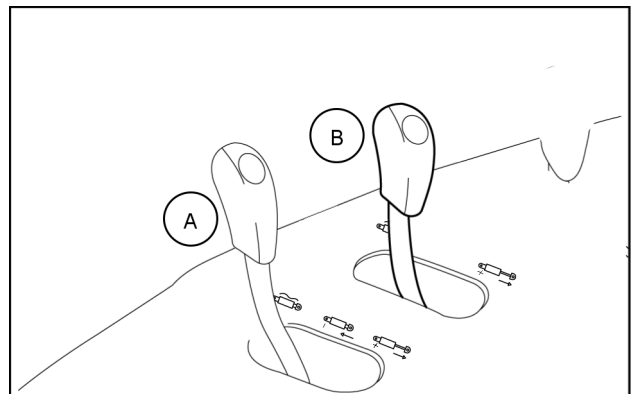


MOIL16TR02223AB 4

### Two control valve configuration

If there are three control valves, the following configurations are available for the levers

- A. Raise/neutral/lower/floating
- B. Raise/neutral/lower



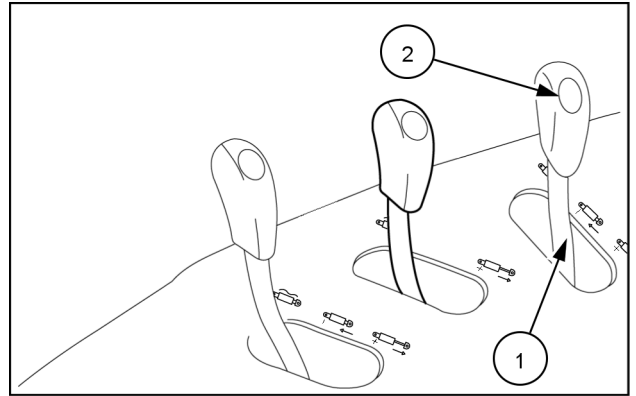
MOIL16TR02223AB 5

### "Diverter" split control valves

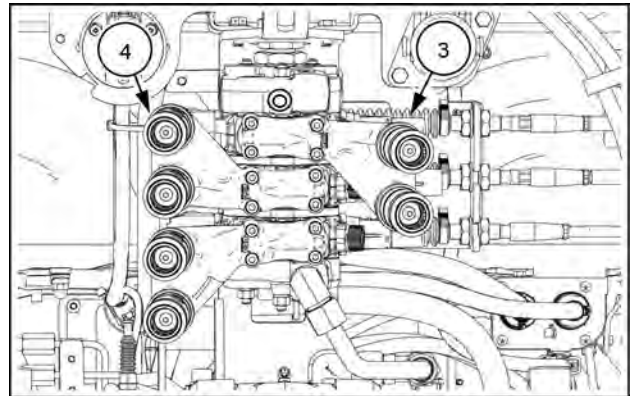
The control lever (1) can be equipped with the button (2) to govern the two distributors simultaneously.

- The lever (1), when moved backwards or forwards, governs the implement connected to the valves (3).
- Press the push-button (2) on the lever and move it backwards or forwards to control the implement connected to the valves (4).

**NOTICE:** The function "DIVERTER" requires there to be three pairs of distributors on the tractor.



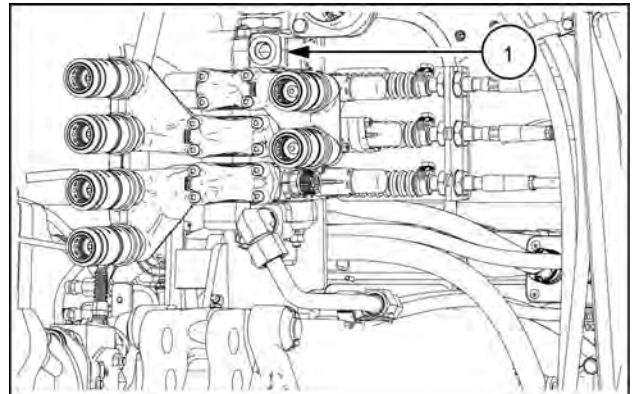
MOIL16TR0223AB 6



MOIL22TR01882AA 7

### Coupling for auxiliary implement rapid oil drainage for hydraulic lift with mechanical control

For implements with their own hydraulic motor, the oil drainage pipe will need to be connected to the fitting (1).



MOIL22TR01886AA 8

## Single/double action hydraulic valves

### Single/double acting switching

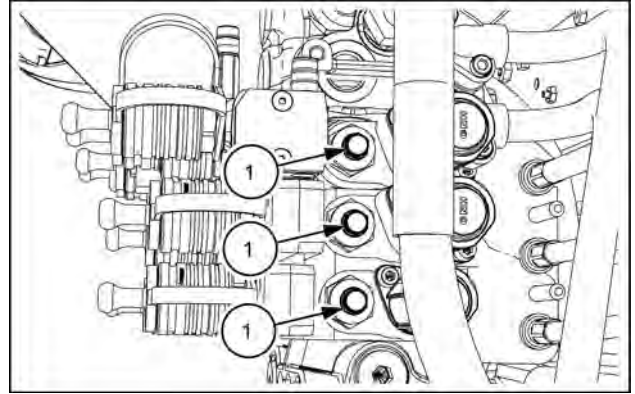
To switch the control valves to:

- Single-acting, slacken screw **(1)** near to the distributor control lever pivot until it stops.
- Double-acting, tighten the screw **(1)** fully.

When using single-acting, in order to quickly identify the coupler to which the implement is to be connected, actuate the distributor lever and observe the two lines to which the couplers are connected: the line carrying the oil should move.

For greater safety, check that the line to which the implement is connected using single-acting is the line on the distributor body connected furthest from the change-over screw.

**NOTICE:** Each control lever is provided with a coloured plastic cap, making it possible to identify the coupler to which it is connected (fitted with a plastic cap of the same colour).

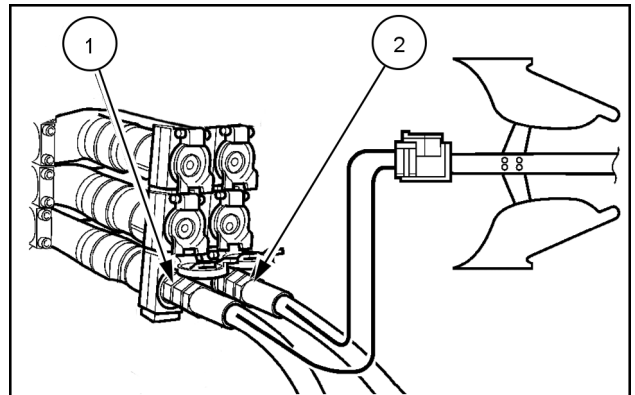


DCUTLNEIT037S6A 1

### Double-acting cylinder operation

Connect the delivery hose **(1)** on the left coupling of the auxiliary distributor. Connect the outlet hose **(2)** on the right coupling of the auxiliary distributor.

To extend a double-acting cylinder, move the control lever into the 'extension' (raise) position; to retract the cylinder, move the lever into the 'retraction' (lower) position.

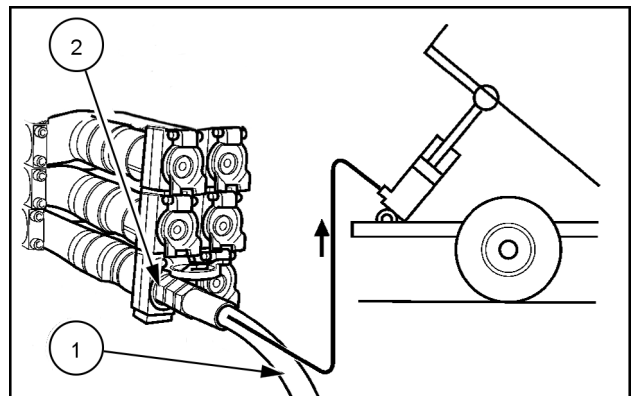


DCAPLT5NE012S6A 2

### Single-acting cylinder operation

Connect the hose **(1)** from the single acting cylinder to the left-hand coupling **(2)** of the auxiliary control valve.

To extend a single acting cylinder, move the control lever into the 'extension' (raise) position; to retract the cylinder, move the lever beyond the 'retraction' (lower) position into the 'float' position.



DCAPLT5NE013S6A 3

## Hydraulic oil level when using remote hydraulic equipment

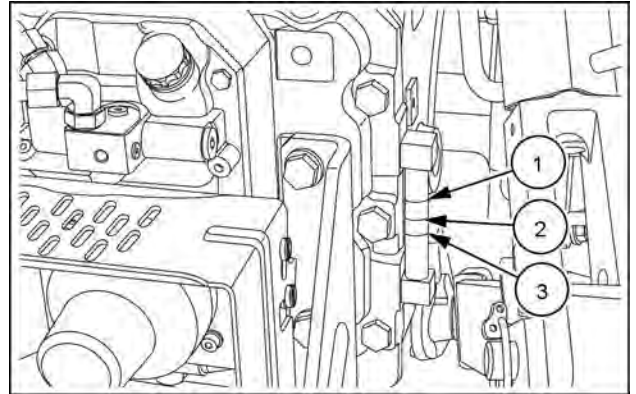
When connecting auxiliary equipment to the control valves it should be remembered that the equipment uses oil from the rear transmission and could drastically reduce the oil level in it. Operating the tractor with a low oil level may result in damage to the rear axle and transmission components.

With the hydraulic oil level at the marks on the sight glass, equivalent to:

1. Min. level
2. Max. level
3. Extra Level

### Operating Parameters

- A. Operation with tractor parked on level ground.
- B. Operation while driving in normal conditions (flat fields) for short periods only.
- C. Operation while driving in normal conditions, including long periods of use.



MOIL16TR03399AA 1

it is possible to take the maximum volumes of oil indicated in the tables below to supply the auxiliary equipment without having to top up the system.

### Maximum oil volumes that can be taken

Parameters	(A)	(B)	(C)
(1) Extra Level	29 L (8 US gal)	23 L (6 US gal)	17 L (4 US gal)
(2) Max. level	26 L (7 US gal)	20 L (5 US gal)	14 L (4 US gal)
(3) Min. level	22 L (6 US gal)	16 L (4 US gal)	10 L (3 US gal)

## Differential lock system

### Electrohydraulic differential lock

#### **⚠ DANGER**

Steering is difficult with the differential lock engaged. An accident could result. During field operation, use the differential lock for traction improvement but release for turning at row end. Do not drive at high speeds or on roads with the differential lock engaged. Failure to comply will result in death or serious injury.

D0023A

The differential allows the drive wheels to rotate at different speeds when the tractor is turning.

Is it advisable to lock the differential in the following situations:

- When ploughing, to prevent the wheel that is not in the furrow from slipping.
- When one of the drive wheels is on uneven, muddy or slippery ground and tends to slip.

**NOTICE:** only lock the differential in the event of one of the two wheels slipping excessively. Do not keep the differential locked unnecessarily as this wastes power and can cause damaging stresses in the transmission system, tyre wear and steering problems.

### Manual front differential lock

To activate differential lock permanently, put the switch into position (1). On release, the switch remains held in position (1).

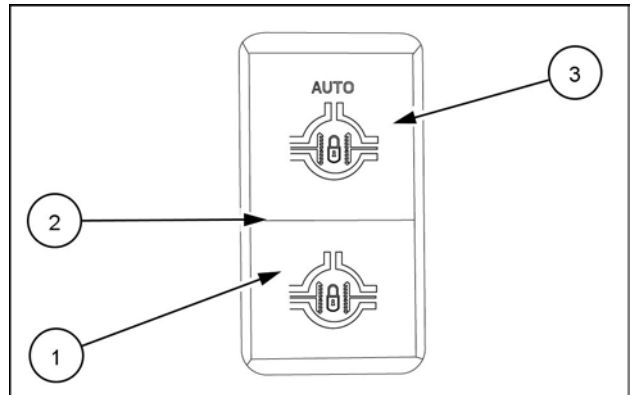
**NOTE:** If the switch is in position (3), to activate the differential lock it is necessary to move onto the middle position (2) and put it into position (1).



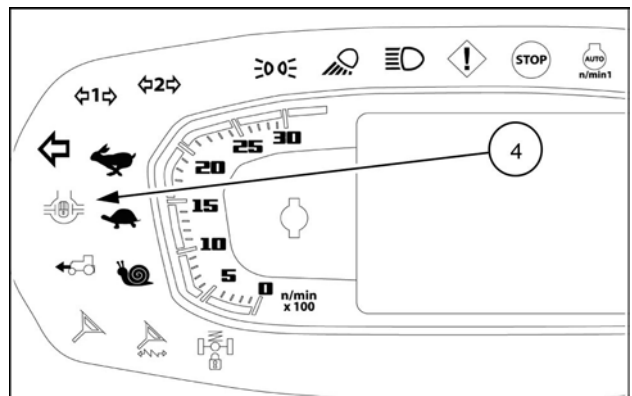
Differential lock engagement is highlighted with the amber warning indicator (4) activating on the instrument cluster.

To disengage permanently the differential lock:

- Press one brake pedal.
- Reduce the tractor speed and put the switch into position (2). The switch remains held in position (2).



MOIL24TR00222AA 1



MOIL24TR00172AA 2

### Automatic front differential lock

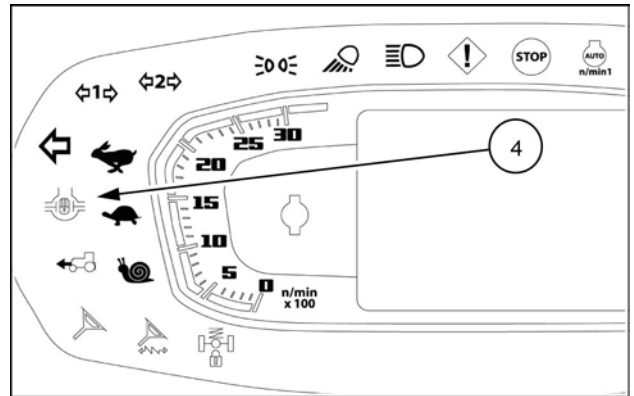
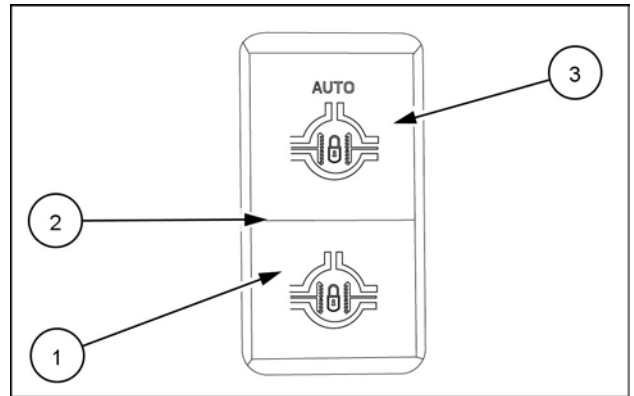
To activate the automatic differential lock, reduce the tractor speed to below **15 km/h** and press the switch to position **(3)**. The warning indicator **(4)** in the warning and status indicator panel activates indicating that the automatic front differential lock function is active but the differential lock is not engaged. The warning light **(4)** becomes steady when the front differential lock engages automatically.

To disengage the differential lock, press the switch to position **(2)**. The indicator light **(4)** will go off.

With the automatic front differential lock function enabled:

- The differential lock (if engaged) temporarily disengages when only one of the two brake pedals is depressed, or if the rear lift is operated to the height limit in transport/work mode.

**NOTE:** the automatic front differential lock function fully deactivates for speeds above **15 km/h**.



### Air conditioning

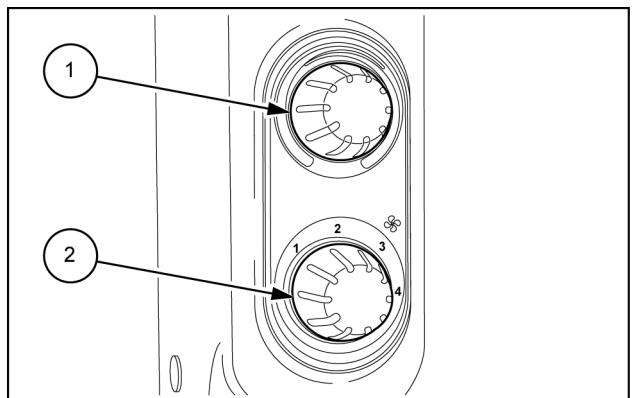
### Air-conditioning system

#### Warm-up

Knob **(1)** controls the air temperature, knob **(2)** varies the quantity of air entering the cab through the vents **(1)**, figure 2.

Turning the temperature adjustment knob **(1)** counter-clockwise (blue zone) selects cold air into the cab, while turning it clockwise (red zone) selects hot air.

Knob **(2)** controlling the amount of air entering the cab has four positions. Each position corresponds to a different fan speed.

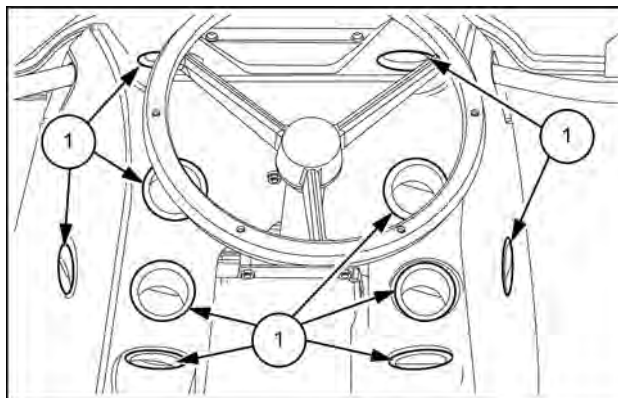


## Adjustable air vents

Adjustable air vents **(1)** are provided throughout the cab for even distribution of heated or cooled air. The vents are located at the front, on the sides and above the instrument panel. Each vent may be independently adjusted to direct the air flow (with the fan control actuated) onto the side windows or the operator.

To open the circular vents **(1)**, press one side of the disc and then turn it, as required, to direct the air flow.

The two vents located on the upper part of the instrument panel may be adjusted to demist the windshield.



MOIL12TRO0026 2

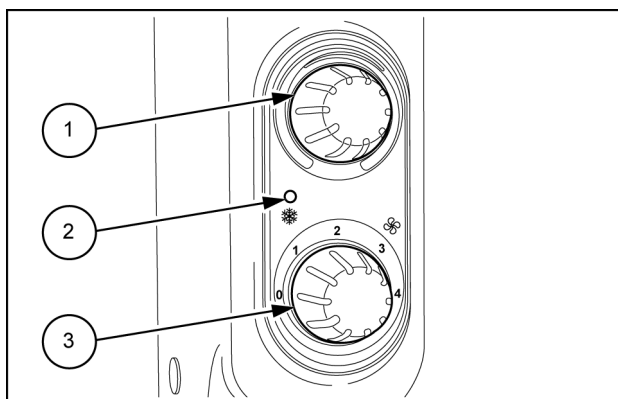
## Air conditioning

The air-conditioning system can supply either cool or warm dehumidified air.

**NOTICE:** Before starting or stopping the engine, check that the air conditioning is OFF.

The knob **(3)** incorporates two different functions:

- Adjusting the speed of the electric fan: four different speeds are available, which can be obtained by simply turning the knob.
- Switching on the air conditioning.



MOIL13TR02094AB 3

To switch on the air conditioning function, it is necessary to perform the following actions in sequence:

1. Turn on the electric fan to one of the four possible speeds, from 1 to 4.
2. With the electric fan running, press the knob **(3)** and check that the warning light **(2)** is on, confirming that the air conditioning has started.
3. Select cold air using knob **(1)**.

**NOTE:** Do not invert the air conditioner activation procedure. Press the knob **(3)** before activating the electric fan, it could damage the knob.

**NOTE:** The air conditioning starts up only if the electric fan is activated in one of the four positions. The air-conditioning cannot work when the electric fan is off. The indicator light **(2)** comes on to signal the air conditioner has started up.

After a few minutes of operation, the air coming out of the vents must be cold. If this does not occur, switch off the air-conditioning and seek specialist help.

To quickly reduce in cab temperature operate the air conditioner with the blower speed set to maximum and the heater control fully off. When the air has cooled sufficiently, adjust the fan control to maintain the desired temperature. The windows and doors should remain closed.

Under certain conditions, it may be desirable to operate both the air conditioner and heater together, e.g. to demist the windshield and interior door glass on a cold morning. (The air conditioner, as well as cooling, also removes moisture from the air in the cab). Run the engine to normal operating temperature, select hot air using knob **(1)** and fan **(3)** on maximum setting (fully clockwise). Turn on the air conditioner and adjust the air vents to direct the air flow, as required.

When the windows are clear, turn the air conditioner off and adjust the heater controls to maintain the desired cab air temperature.

**NOTICE:** Run the engine at idle speed for at least 3 minutes after switching on the air conditioner, if the air conditioner has been out of use for more than 30 days.

Always turn the air conditioner off when cooled or dehumidified air is not required. For proper operation of the air conditioner, ensure that the cab air filters are serviced regularly.

### **Routine inspections**

At least once every three months :

- Eliminate any foreign bodies from the condenser fins and evaporator;
- check the tension of the compressor belt;
- check the condition of the tubing, connections and mounting brackets;
- check that the fixing screws and nuts, pulleys and compressor are correctly tightened.

### **Annual maintenance**

At the start of the season, have the specialist personnel from the CASE IH service network carry out the following operations:

- check the oil level in the compressor
- check system pressure and, if necessary, fill the system with;. (for type of gas and quantity see **7-15**)
- drain the air conditioning system and replace the dehydration filter, only if strictly necessary;
- functional system checks.

## Cab air filters

### Cab air filters

#### **⚠ DANGER**

##### **Chemical hazard!**

The cab air filters are designed to remove dust from the air, but will not keep out chemical vapor. Extended periods of exposure to pesticides could cause death or personal injury. Follow the chemical manufacturer's directions for protection from dangerous chemicals. Failure to comply will result in death or serious injury.

D0060A

### Blue Cab™ (standard)

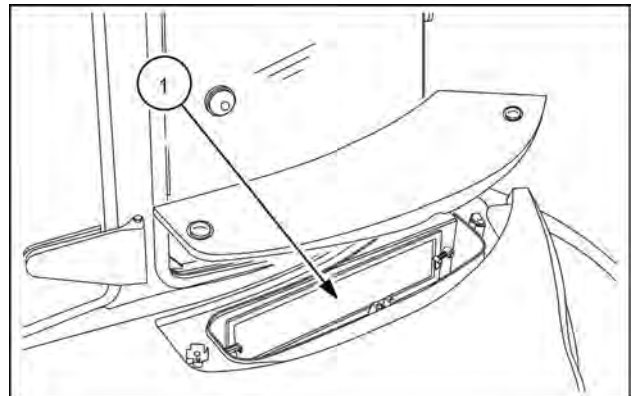
The cab ventilation system in the standard category 2 version is equipped with two pairs of filters.

#### External cab filters

On both sides of the cab, near the rear wheel arches, there are type-approved filters (1) with protection level 2, in accordance with the **EN 15695-1** regulation.

**NOTICE:** Cab air filters approved with protection level 2 are not effective against chemical vapours. Follow the chemical manufacturer's directions regarding the precautions to take.

**NOTE:** For maintenance follow the instructions given on pages 7-42, and 7-61.



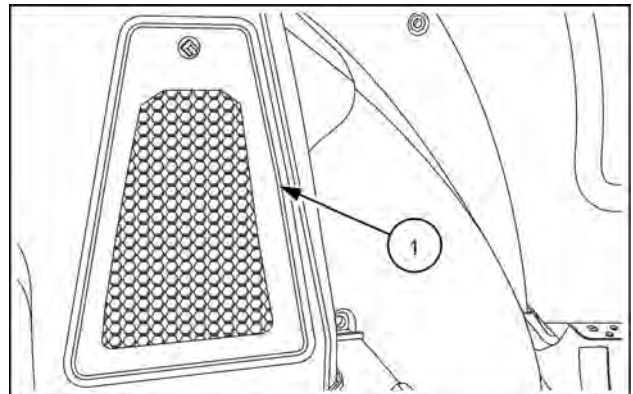
MOIL15TR01625AA 1

#### Air recirculation air filters

The filters (1) for air recirculation inside the cab are present on both sides.

For maintenance follow the instructions given on pages 7-43, and 7-61.

**NOTE:** To prevent or reduce the risk related to exposure to hazardous substances, follow the instructions on page 2-2



MOIL15TR00347AA 2

## Rear Power Take-Off (PTO)

### Rear Power Take-Off (PTO) - Safety rules

#### **⚠ WARNING**

Entanglement hazard!

Before attaching or detaching equipment or changing the Power Take-Off (PTO) shaft: 1) Apply the parking brake. 2) Move all controls to neutral and PTO control knob to the disengaged position. 3) Stop the engine and remove the key. 4) Wait for the PTO shaft to stop turning before leaving the cab. Failure to comply could result in death or serious injury.

W0323A

#### **⚠ WARNING**

Entanglement hazard!

The Power Take-Off (PTO) guard must be installed when operating PTO-driven equipment. Failure to comply could result in death or serious injury.

W0322A

#### **⚠ WARNING**

Entanglement hazard!

Do not wear loose clothing when operating Power Take-Off (PTO) driven equipment. Failure to comply could result in death or serious injury.

W0337A

#### **⚠ WARNING**

Flying objects!

Do not use the implement at a higher Power Take-Off (PTO) RPM than recommended. Machine damage due to vibration may occur, resulting in loose parts and flying debris.

Failure to comply could result in death or serious injury.

W0192A

#### **⚠ WARNING**

Moving parts!

Disengage the Power Take-Off (PTO), turn off the engine, and remove the key. Wait for all movement to stop before leaving the operator's position. Never adjust, lubricate, clean, or unplug machine with the engine running.

Failure to comply could result in death or serious injury.

W0112A

#### **⚠ WARNING**

Unexpected movement!

Disengage the Power Take-Off (PTO) after each use. This prevents an attached implement from moving unintentionally.

Failure to comply could result in death or serious injury.

W0423B

## Power Take-Off (PTO) shield - Rear

The power take-off fitted on your tractor is used to transfer power from the engine to the implement.

It can be driven:

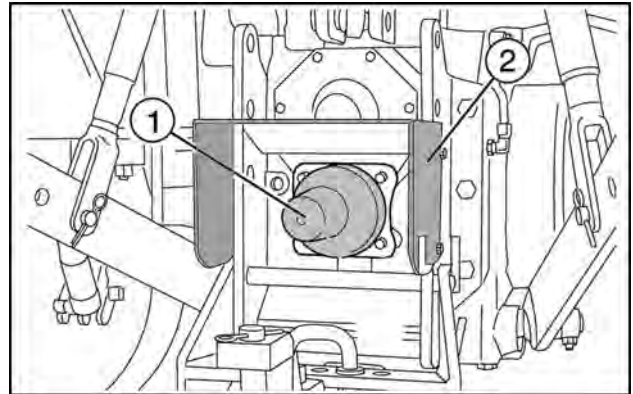
- Directly from the engine, independent power take-off.
- Directly from the gearbox, synchronized power take-off.

Power take-off engagement and disengagement can be mechanically or electrohydraulically controlled.

**NOTE:** When changing speeds, always check that the tractor is fitted with the correct shaft for the speed selected.

When the power take-off is not in use, always fit the safety cover (1) on the splined output shaft

Never climb on the power take-off guard (2) when in operation.



DCAPLNEGB017S3A 1

## Replace the Power Take-Off (PTO) shaft

### ⚠ WARNING

Entanglement hazard!

Before attaching or detaching equipment or changing the Power Take-Off (PTO) shaft: 1) Apply the parking brake. 2) Move all controls to neutral and PTO control knob to the disengaged position. 3) Stop the engine and remove the key. 4) Wait for the PTO shaft to stop turning before leaving the cab. Failure to comply could result in death or serious injury.

W0323A

### ⚠ WARNING

Personal Protective Equipment (PPE) required.

When assembling, operating, or servicing the machine, wear protective clothing and PPE necessary for the particular procedure. Some PPE that may be necessary includes protective shoes, eye and/or face protection, hard hat, heavy gloves, filter mask, and hearing protection.

Failure to comply could result in death or serious injury.

W0353A

The power take-off fitted on your tractor is used to operate the mounted or towed implements.

Using a suitable tool, squeeze the lugs (1) on the circlip together and remove the circlip from the PTO housing. Then carefully withdraw the PTO shaft (2) from the housing.

With the shaft (2) removed, check the O-ring seal in the PTO housing for any damage. Replace 'O' ring if worn or damaged.

**NOTE:** To facilitate the removal and fitting of the circlip (1), close the O-ring in the appropriate groove (3).

Thoroughly clean the replacement stub shaft before inserting it into the housing. Reposition the circlip. Ensure that the circlip fully enters the groove in the PTO housing.

Turn the circlip into its seat to prevent leakage.

Protect the removed shaft by wrapping in a clean cloth and place in the toolbox.

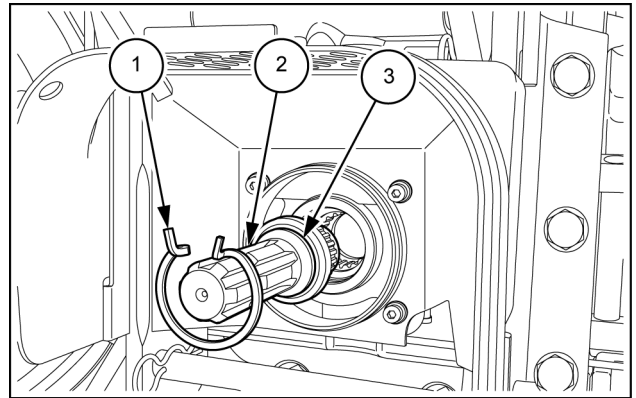
**NOTICE:** Never climb on the power take-off guard when the power take-off is in motion.

### Power take-off splined output shafts

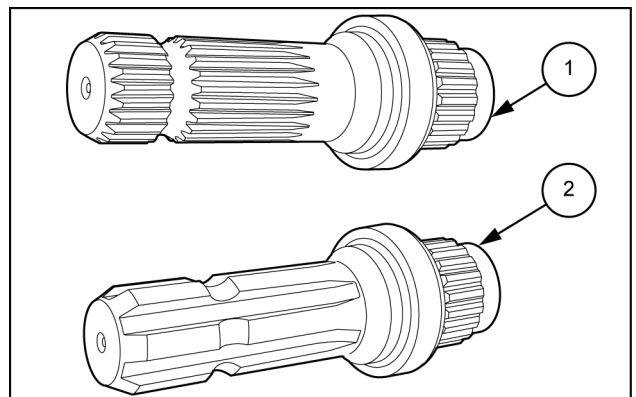
Two splined output shafts are available:

1. 34.75 mm (1.37 in) output shaft with 21 splines for 1000 RPM power take-off
2. 34.75 mm (1.37 in) output shaft with 6 splines for 540/540E- 500/540E RPM power take-off

**NOTE:** With power take-off working on 1000 RPM, it is obligatory to fit the output shaft with 21 splines.



MOIL14TR01425AB 1



MOIL14TR01427AB 2

## Attaching Power-Take Off (PTO) driven equipment

### ⚠ WARNING

#### Entanglement hazard!

Before attaching or detaching equipment or changing the Power Take-Off (PTO) shaft: 1) Apply the parking brake. 2) Move all controls to neutral and PTO control knob to the disengaged position. 3) Stop the engine and remove the key. 4) Wait for the PTO shaft to stop turning before leaving the cab. Failure to comply could result in death or serious injury.

W0323A

With the engine stopped, the PTO brake is released and the shaft can be turned by hand to assist alignment of the tool shaft.

The PTO shaft has a safety cap which also serves as a support for the safety guards of the transmission used by the tools operated by the PTO and ensures operator safety. Do not tamper with the guard.

**NOTE:** tractors with sliding towbars, which can be adjusted vertically, are fitted with a folding PTO guard plate fixed to the slide frame.

Figure 1.

- (1) PTO guard in place.
- (2) PTO splined shaft guard.

To connect the tool driven by the PTO to the PTO shaft, remove the safety cap (2) from the shaft and store it in the tractor toolbox.

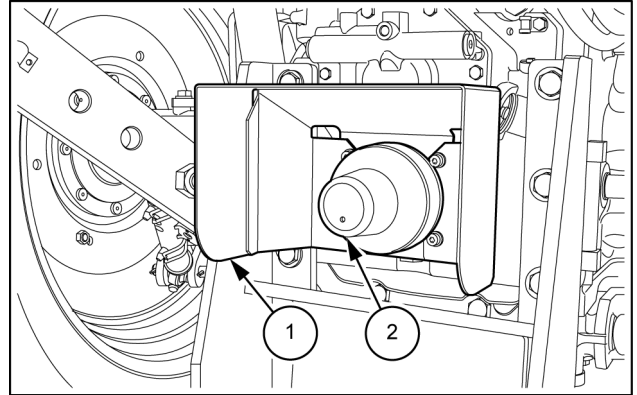
**NOTICE:** When the power take-off is not in use, always fit the safety cover (2) on the splined output shaft. Never climb on to the PTO guard (1) when the PTO is in operation.

### Attachment of the tool to the PTO

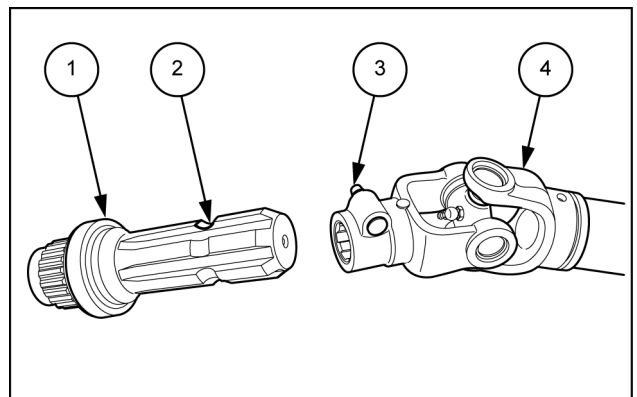
Connect the tool to the PTO shaft (1), ensuring that the locking pin (3) or detent balls of the universal joint (4) transmitting drive to the tool engage in the spline (2) of the PTO shaft.

**NOTICE:** after attaching the tool, carefully raise and lower using position control and check clearances and PTO shaft slide range and articulation. When attaching trailed equipment, ensure that the drawbar is correctly set.

**NOTICE:** for correct use of the universal joint (4), refer to the technical specifications and the safety procedures provided by the joint supplier.



MOIL14TR01428AB 1



MOIL14TR01424AC 2

## Electrohydraulically controlled power take-off - Independent operated with electro-hydraulic control

The speed of the power take-off depends directly on the engine rpm and not on the gearbox. You can therefore:

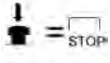
- To stop the tractor without stopping the PTO;
- Stop the PTO without shutting down the tractor (by disengaging the PTO clutch).

**NOTICE:** before operating the PTO, make sure you have fitted the correct splined output shaft for the speed you want to select.

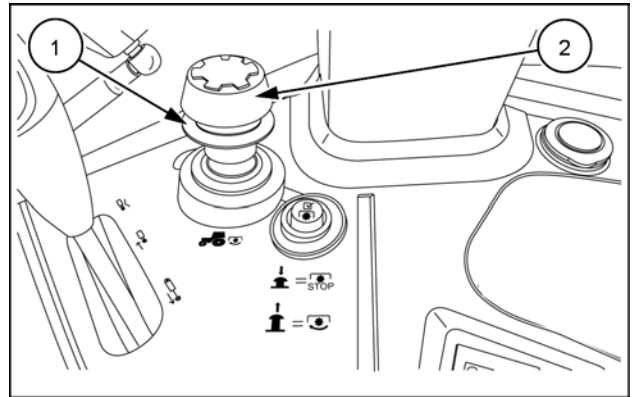


On the right side console is the control for the rear PTO

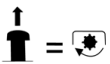
To operate the power take-off, proceed as follows:



1. To engage the power take-off, lift the collar (1) and press the yellow knob (2).
2. Turn the vehicle engine on.



MOIL16TR02352AA 1

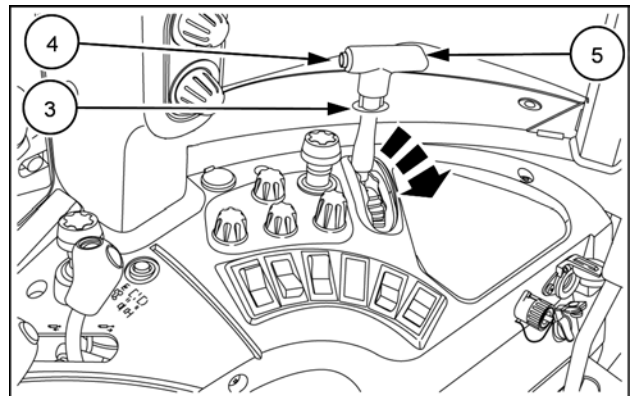


3. Pull the collar (3) up, simultaneously press the PTO brake release button (4) and move the selection lever (5) to gradually increase the engine rpm until the selected PTO speed is reached.

**NOTE:** The selectable speeds are indicated on the label (6) located at the lever.

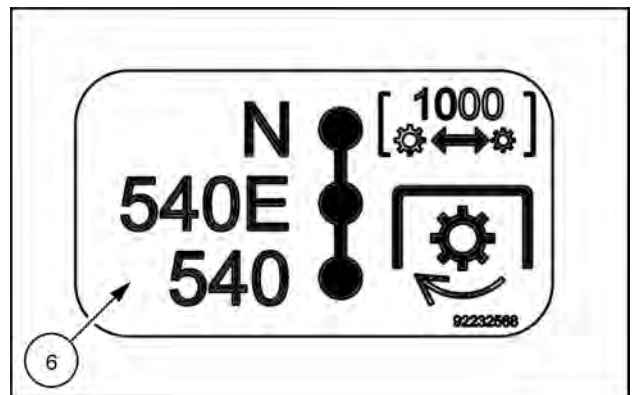


Power take-off engagement is shown by activation of the orange warning light on the instrument cluster.



MOIL16TR02485AB 2

The nominal power take-off speeds and the respective engine rpm are shown on page 6-70.



MOIL24TR00680AA 3

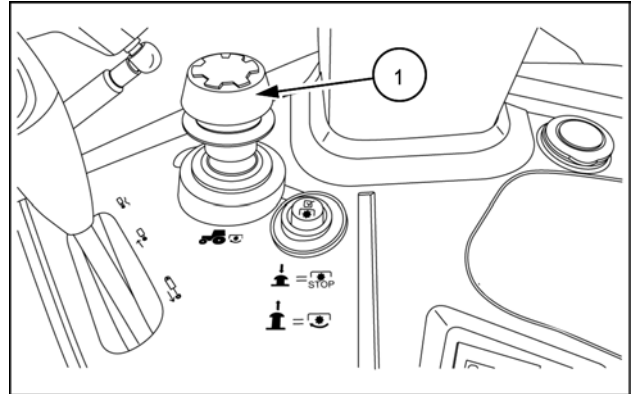


**NOTICE:** When the speed of the power take-off exceeds the nominal speed by **17%**, the orange power take-off warning light on the instrument cluster flashes for a few seconds. Should this occur, reduce the engine rpm to come back within the required values.

To disengage the power take-off:



4. Press the yellow knob (1).



MOIL16TR02352AA 4

**NOTE:** if the engine is switched off with the PTO engaged, when the engine is restarted the PTO does not start automatically. Press the yellow knob (1) to the disengaged position and then re-engage the PTO as described previously.

## Power take-off speeds

### Independent power take-off

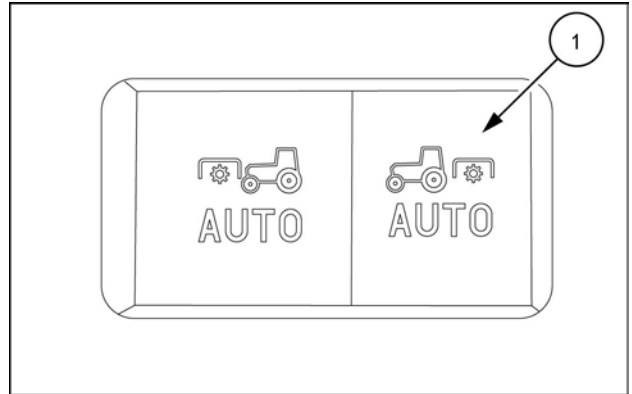
Power Take-Off Speed	Engine rpm
540 RPM	1938 RPM
540E RPM	1535 RPM
1000 RPM	1926 RPM

## Auto Power Take-Off (PTO) operation

**NOTE:** This function is only available with an electronically controlled rear lift.

The automatic PTO function is used to automatically engage and disengage the rear PTO depending on the position of the rear lift, by means of adjustable thresholds on the instrument cluster.

With the rear PTO activated, press the automatic PTO switch to position **(1)** on the right-hand console to activate/deactivate automatic PTO operation.

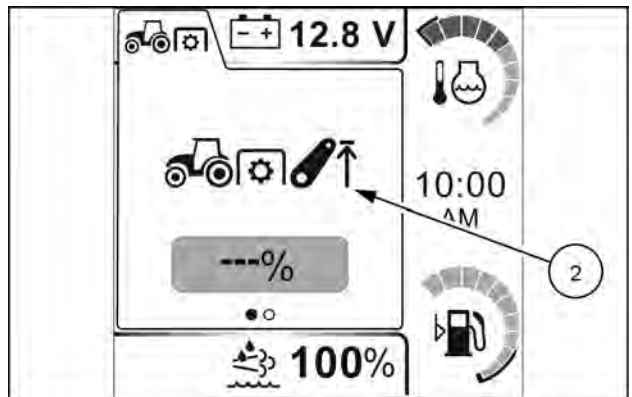


MOIL24TR00219AA 1

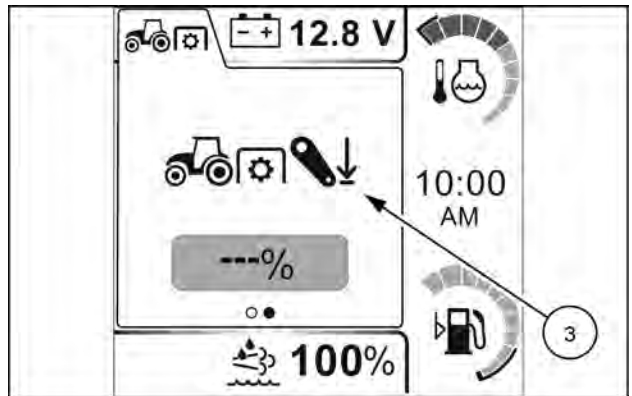
In the rear PTO sub-menu screen, see page 3-50, the upper **(2)** and lower **(3)** limit of the rear lift can be adjusted.



With automatic PTO mode enabled, the word “AUTO” is added to the rear PTO icon on the instrument cluster. “AUTO” is on steady when the PTO is operating and flashes when it is not.



MOIL24TR00457AA 2



MOIL24TR00458AA 3

To clear the current automatic PTO settings:

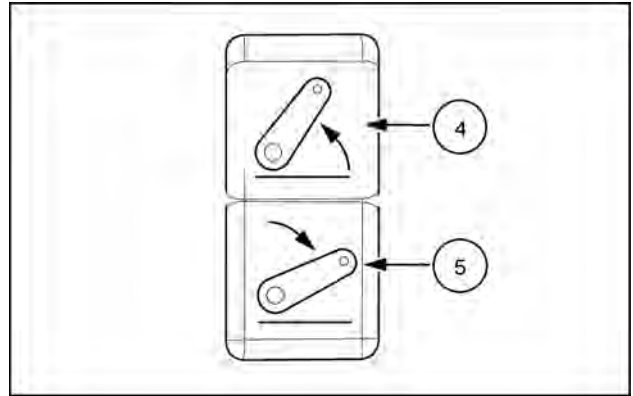
- Press the switch on the rear lift control mouse to position **(4)** for disengagement when lifting the implement, press the switch to change the stroke percentage (height) to disengage the PTO.
- Press the switch on the rear lift control mouse to the position **(5)** relating to engagement when lowering the implement, press the navigation control to change the stroke percentage (height) for PTO engagement.

When the implement is lowered into working position using the rapid lowering switch of the lift, the PTO is engaged when the quick coupling travel reaches the setting selected on the instrument cluster.

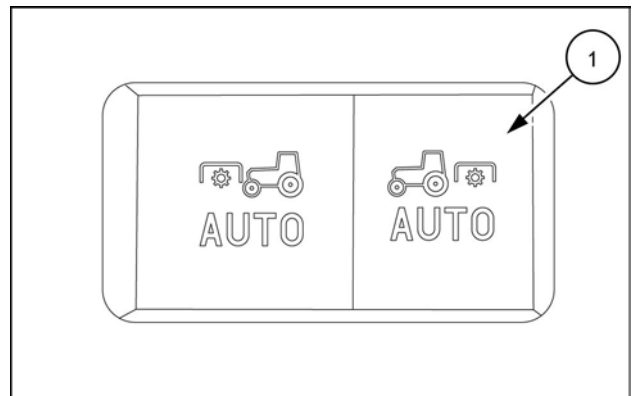
When the implement is raised from the working position using the rapid lifting switch, the PTO is disengaged when the quick coupling travel reaches the setting selected on the instrument cluster.

The automatic PTO function is disabled if any of the following conditions are present:

- The automatic PTO switch is pressed in position **(1)**.
- The PTO is disengaged
- The hitch is in the raised position for more than **5 s** while the operator is out of the seat
- The hitch remains in the raised position for more than **120 s**



DCUTLNEIT009S6A 4



MOIL24TR00219AA 5

## Power Take-Off (PTO) external controls

### ⚠ WARNING

**Hazard to bystanders!**

**Before using the external Power Take-Off (PTO) switches, make sure no persons or objects are in the area of the implement or three-point linkage.**

**Failure to comply could result in death or serious injury.**

W0060B

### ⚠ WARNING

**Avoid injury!**

**Observe ALL precautions listed below when operating Power Take-Off (PTO) driven equipment.**

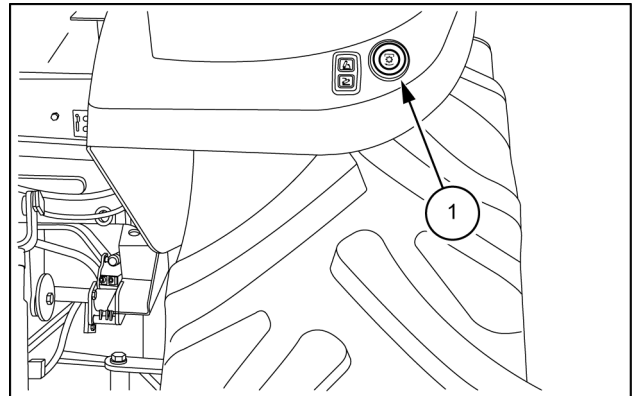
**Failure to comply could result in death or serious injury.**

W0435A

On both rear fenders it is possible to fit, upon request, a power take-off control switch (1). The switch has the function to facilitate the alignment of the grooved end of the power take-off with the implement and to facilitate power take-off static applications.

With the engine running, before getting off the tractor to operate the external PTO switches (1):

1. Move the gear lever to the neutral position.
2. Disengage the PTO.
3. Apply the hand brake and/or park lock.
4. Move the hand throttle lever to minimum engine rpm position.



MOIL13TR02126AA 1

- Briefly press the switch (1) to gradually rotate the PTO shaft and align the grooves.
- If the switch (1) is pressed for less than five seconds, the shaft will stop turning when the switch is released.
- If the switch (1) is pressed for more than five seconds, the PTO will engage continuously.
- To disengage the PTO set in continuous operation mode, press the switch (1) again or use the control in the cab.
- 

The error message shown in the margin will appear on the central display of the control panel if the following events occur:



- The switch (1) is pressed for more than **10 s**
- The external switch (1) and the PTO engagement switch in the cab are pressed at the same time.

Switch off the engine and restart it to cancel the error message and restore PTO control.

**NOTE:** The PTO warning indicator on the instrument cluster turns on every time the PTO is engaged.

When operating the external PTO switches (1) the operator must be standing to the side of the tractor.

Before using the PTO external switch:

- Verify that there are no persons or objects within the radius of action of the PTO shaft.

## Stationary Power Take-Off (PTO) switch

### **⚠ DANGER**

#### **Unexpected machine movement!**

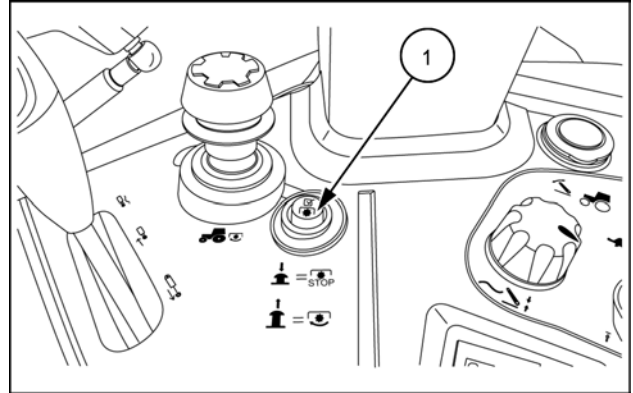
**When using implements that require the tractor to be stationary with the engine running, keep the gear, range, and reverse levers in the neutral position, and apply the handbrake and the parking brake (if equipped). For added security, use suitable wheel chocks.**

**Failure to comply will result in death or serious injury.**

D0089A

The switch for operating the power take-off (PTO) with the vehicle stationary (1), serves to keep the rear and front power take-offs in operation if the operator has to leave his seat. It is located on the right-hand side of the control console.

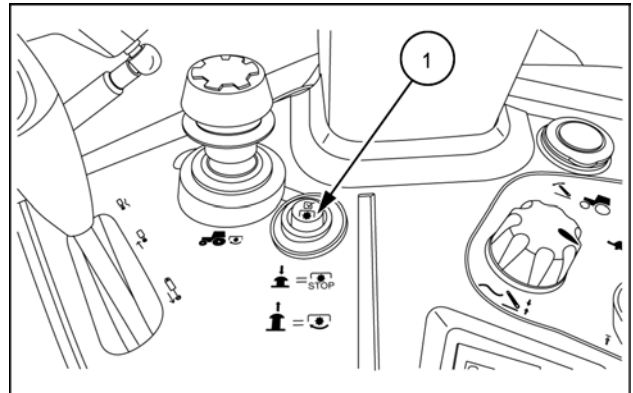
If the switch has not been pressed and the operator leaves his seat with the power take-off on, the power take-off light turns off.



MOIL16TR02352AA 1

To leave the operator's seat and keep the PTO operating, proceed as follows:

1. Engine ON
2. vehicle in standstill
3. Operator in seat
4. No error code on the display
5. Engage the PTO
6. Press the button (1)
7. Leave the driver's seat safely



MOIL16TR02352AA 2

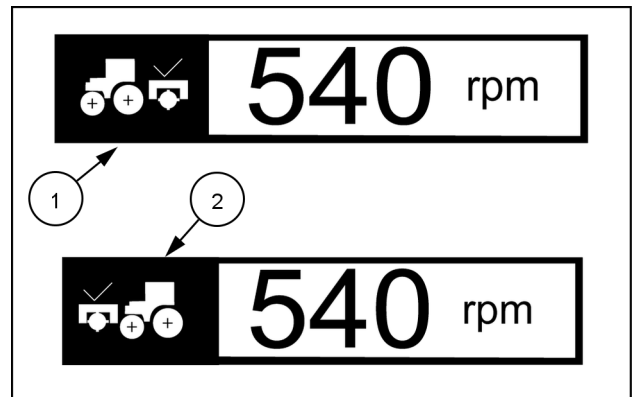
## Intentional switch engagement

To leave the operator's seat while keeping the PTO in operation, proceed as follows:

1. Make sure there are no people or animals in the area
2. Keep the engine "ON"
3. Make sure that the vehicle is stationary
4. Apply the hand brake and, if fitted, the parking brake before leaving the driver's seat with the engine on and the PTO in operation
5. Put all drive line controls in the Neutral position
6. Stay seated on the operator's seat
7. Check that there is no error code on the display
8. Press the intentional switch to keep the PTO operating when you leave the driving seat
9. If necessary, place chocks under the wheels
10. Do not leave the tractor unattended with the engine running and the PTO in operation
11. Do not allow anyone to approach the tractor and attached implements

To confirm that the power take-off has been enabled to operate with the vehicle stationary, the symbol **(1)** is shown on the central display for the rear power take-off or the symbol **(2)** for the front power take-off.

**NOTE:** Never leave the tractor unattended with implements connected to the moving PTO. Do not allow anyone to approach the tractor and attached implements while working with the tractor stationary, the engine running and the PTO in motion.



MOIL16TR02692AB 3

## Front Power Take-Off (PTO)

### Safety rules

#### **⚠ WARNING**

Entanglement hazard!

Before attaching or detaching equipment or changing the Power Take-Off (PTO) shaft: 1) Apply the parking brake. 2) Move all controls to neutral and PTO control knob to the disengaged position. 3) Stop the engine and remove the key. 4) Wait for the PTO shaft to stop turning before leaving the cab. Failure to comply could result in death or serious injury.

W0323A

#### **⚠ WARNING**

Entanglement hazard!

The Power Take-Off (PTO) guard must be installed when operating PTO-driven equipment. Failure to comply could result in death or serious injury.

W0322A

#### **⚠ WARNING**

Entanglement hazard!

Do not wear loose clothing when operating Power Take-Off (PTO) driven equipment. Failure to comply could result in death or serious injury.

W0337A

#### **⚠ WARNING**

Flying objects!

Do not use the implement at a higher Power Take-Off (PTO) RPM than recommended. Machine damage due to vibration may occur, resulting in loose parts and flying debris. Failure to comply could result in death or serious injury.

W0192A

#### **⚠ WARNING**

Moving parts!

Disengage the Power Take-Off (PTO), turn off the engine, and remove the key. Wait for all movement to stop before leaving the operator's position. Never adjust, lubricate, clean, or unplug machine with the engine running. Failure to comply could result in death or serious injury.

W0112A

#### **⚠ WARNING**

Unexpected movement!

Disengage the Power Take Off (PTO) after each use. This prevents an attached implement from moving unintentionally. Failure to comply could result in death or serious injury.

W0423A

## Front Power Take-Off (PTO)

The front Power Take-Off (PTO) transfers engine power directly to front-mounted equipment via a 6-spline shaft. The PTO shaft rotates anti clockwise (as viewed from the front).

Front PTO	Engine speeds
1000 RPM	1920 RPM

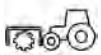
The front power take-off is equipped with a plastic guard (1) fig. 1 to protect the (output) shaft.

**NOTE:** when the engine is not running, the PTO brake is disengaged and the shaft can be turned by hand to facilitate alignment with the implement.

**NOTICE:** the PTO guard (1) must be fitted at all times and in perfect working order.

The front power take-off is electrohydraulically controlled via a knob (1) fig. 2 control on the right-hand console.

To engage the PTO, with the engine running at approximately **1000 RPM**, press the knob (1), lift the collar (2) and then pull the knob upwards. For as long as the PTO is engaged, the knob will remain in the raised position and the corresponding indicator light on the control panel will be illuminated.

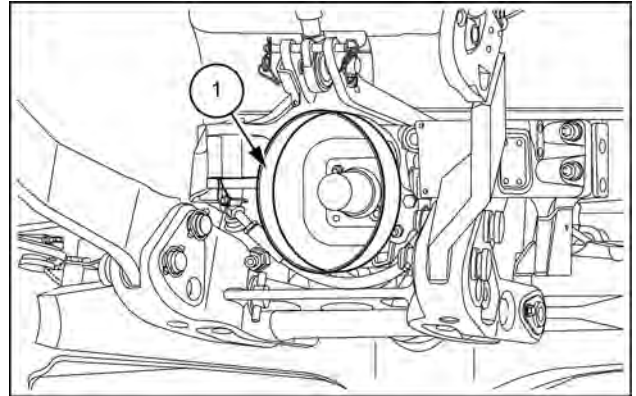


Front power take-off warning light

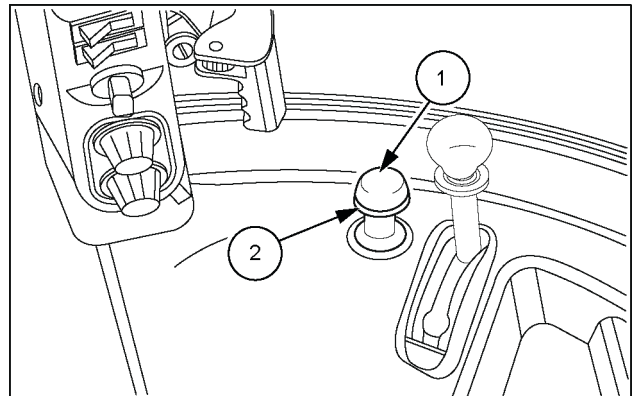
**NOTICE:** Do not engage the PTO at engine speeds above **1200 RPM**.

When the PTO is engaged, accelerate to bring the engine speed up to **1920 RPM** in order to achieve a PTO shaft rotation speed of **1000 RPM**.

To disengage the PTO, press the knob downwards. It is not necessary to raise the collar when disengaging the PTO



MOIL13TR01180AA 1



MOIL13TR00790AB 2

## Rear hydraulic lift

### Safety rules

#### **⚠ WARNING**

**Avoid injury!**

**Always stay clear of the implement operating area. In particular, DO NOT stand between the tractor and the trailed vehicle or either three-point linkage when operating lift controls. Make sure no bystanders are within or near these operating areas.**

**Failure to comply could result in death or serious injury.**

W1087A

#### **⚠ WARNING**

**Crushing hazard!**

**Always lower the machine hydraulic lift and all other hydraulic equipment to the ground before shutting off the engine and removing key.**

**Failure to comply could result in death or serious injury.**

W0063C

The rear hydraulic lift enables selecting three different work modes:

- Position control
- Draft Control
- Float function

### For working safely

- Never leave the implement in the raised position when the tractor is stationary.
- With the tractor stationary and the engine running, the external controls located on the mudguards remain enabled. Take not to operate them inadvertently take care not to operate them inadvertently.
- Before operating them, make sure the control settings of the electronically controlled lift are as desired.
- The control unit is provided with self-diagnosis functions that signal any abnormalities in the control system.

The electronically controlled hydraulic lift offers considerable advantages over mechanical lifts as it features higher levels of working precision and sensitivity and it is controlled by microprocessors.

Unlike a conventional hydraulic lift, which is fitted with complicated lever mechanisms, the electronically controlled hydraulic lift is equipped with electronic sensors that transmit variations in conditions to the electronic control unit, which via the hydraulic system operates the lift arms.

## Rear hydraulic lift with mechanical control

### ⚠ WARNING

#### Crushing hazard!

Always lower the machine hydraulic lift and all other hydraulic equipment to the ground before shutting off the engine and removing key.

Failure to comply could result in death or serious injury.

W0063C

### Rear hydraulic lift proportional control handle

The proportional control handle of the rear hydraulic lift **(1)** allows the implement to be positioned in an infinite number of positions. In both the lowering and raising phases, the implement stops at the height corresponding to the position where the lever is stopped.

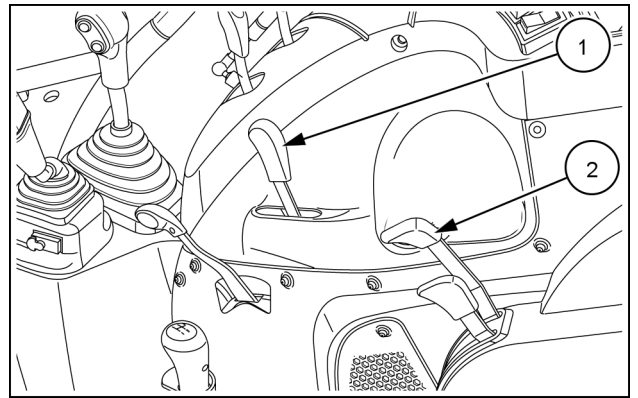
implement lifting

- Fixed neutral position of the handle

The proportional control handle of the rear hydraulic lift **(1)**, when moved gradually backwards, controls the lifting of the implement. In this condition, when the handle is released it goes back automatically into the central neutral position, while the lift keeps the new set position.

- Fixed position of the lever on full height

The handle **(1)** moved fully back, quickly raises the implement to its full height. In this condition the handle is held in the fully back position.



MOIL16TR03028AA 1

**NOTE:** If the control handle **(2)** is moved all the way back to the stroke end, the control handle **(1)** is disabled.

### implement lowering

- Fixed neutral position of the handle

The handle **(1)**, when moved gradually forwards, causes the implement to lower. In this condition, when the handle is released it goes back automatically into the central neutral position, while the lift keeps the new set position.

- Fixed position of the handle on full lowering

The handle **(1)** moved fully forwards, quickly lowers the implement down to the limit set beforehand with the position control lever **(2)**. In this condition the handle is held in the fully forward position.

## Adjusting the height limit of lift arm travel

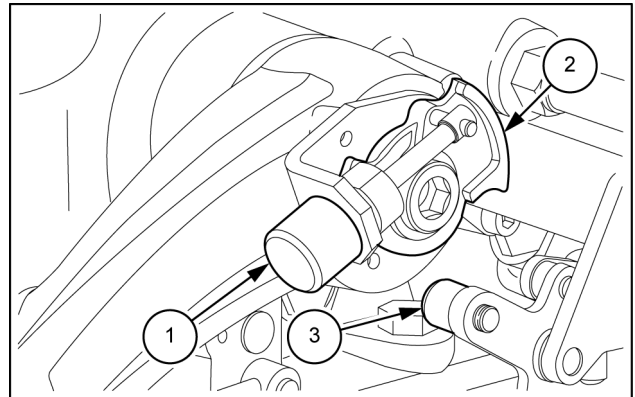
**ATTENTION:** *Crushing hazard! The engine must be OFF when you do this adjustment. Failure to comply will result in serious injury or death*

To achieve full lift height, turn the adjuster (1) fully clockwise until the cam (2) is clear of the roller (3).

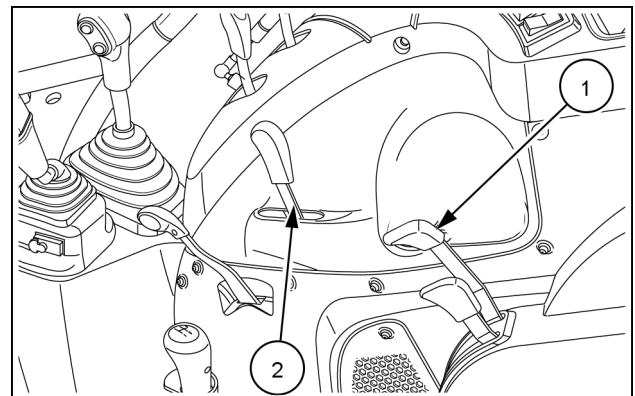
To adjust the upward travel of the implement, follow these guidelines:

1. Connect the implement to the lift arm swivel bushings.
2. Move the handle (2) forwards as shown in the figure. 3 to fully lower the implement.
3. Using the position control handle (1) figure 3, raise the implement up to the desired height.
4. Switch off the engine.
5. Turn the adjuster (1) fig. 2 counter-clockwise to bring the cam (2) into contact with the stop lever (3).

When you use the handle to raise the implement, the cam (2), Figure 2, comes into contact with the roller (3), the implement stops moving upwards.



MOIL13TR02548AB 2



MOIL16TR03028AA 3

**NOTICE:** *When moving with the implement raised, the adjustment system described above will not prevent any jolting of the implement due to passing over obstacles or rough ground. It is therefore recommended to travel at such a speed as to avoid the problem of the implement hitch jolting.*

**NOTE:** *The arm upward stroke limit adjustment only affects the operation of the rear boom. If it were necessary to raise the arms further, beyond the set limit, lift using the lift control handles.*

The hydraulic lift system uses the transmission oil, which is supplied by a gear pump driven by the engine timing gears.

**NOTICE:** *If there is no device to control the flow, the rear lift may not work when the rear control valves are functioning*

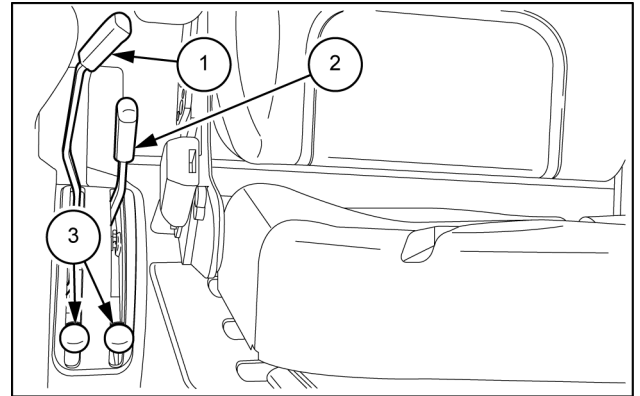
## Position and draft control handles

1. Position control lever
2. Draft control lever

With the manually-operated hydraulic lift, there can be the following operating conditions.

### Position control

Move draft control lever **(2)** fully forward. Set the position of the implement, either under or above the ground, move the lever **(1)** forward to lower the implement and backwards to raise it. The movement of the implement is proportional to the movement of the lever.



MOIL13TR02549AB 4

To raise and lower the implement at the headland or when necessary, use the lever **(1)**, do not change the position of the lever **(2)**. When the implement is lowered, to restart work move the lever into contact with the reference catch **(3)** to work with the same settings.

### Draft control

Move position control lever **(1)** fully forward; Set the desired implement depth in the ground by gradually shifting the draft control lever **(2)** forwards. The depth reached by the implement is proportional to the tractive effort which, in turn, is determined by the firmness of the ground. In these conditions, the lift will automatically maintain the traction power required from the tractor at a constant level.

To raise and lower the implement at the headland or when necessary, use the lever **(1)**, do not change the position of the lever **(2)**. When the implement is lowered, to restart work move the lever into contact with the reference catch **(3)** to work with the same settings.

### Float function

To operate the lift in float mode, i.e. with free movement of the arms for their full travel, move both levers **(1)** and **(2)** fully forward; The lift should only be used to lower and raise the implement at the headland; to carry out this operation, use only the lever **(1)**.

### Combined position and Draft control

Set the desired implement depth in the ground and find the working depth required, as described for draft control.

When the implement is set at the desired depth, gradually shift the position control lever backward **(1)** until the lift arms start to rise.

Block the catch **(3)** in contact with the lever as a reference to bring it back always into the same position.

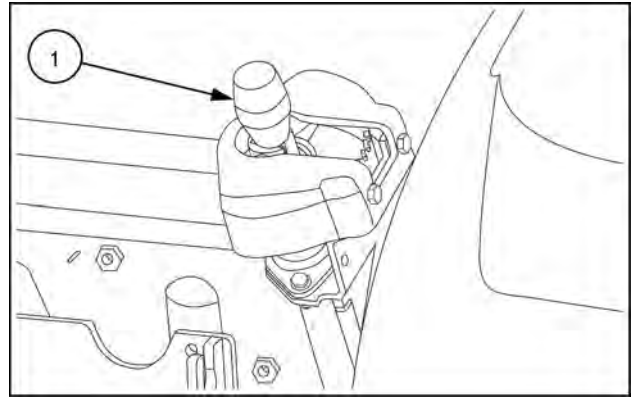
The lift operates in draft control but, at the same time, prevents the implement from going too deep if less ground resistance is encountered, which could result in unsuitable soil being brought to the surface.

**NOTICE:** any loss of lift performance may be due to the simultaneous operation of other hydraulic actuators.

## External control handle

On the right rear side of the tractor is an outside position control lever that can be used to raise or lower the implement. Pull the lever **(1)** out of the housing and turn the knob to the right to raise or to the left to lower the tool.

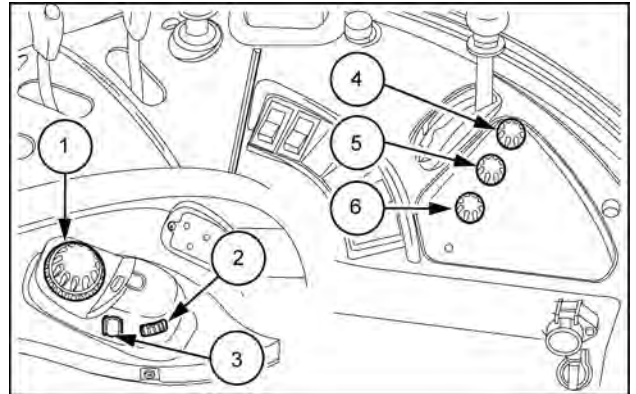
**NOTICE:** When operating the lever stand to the side of the tractor. Always make sure that there are no people within range of the tool.



MOIL24TR01105AA 5

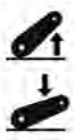
## Electronically controlled rear hydraulic lift

- (1) Position control potentiometer
- (2) Draft adjustment control
- (3) Rapid raise/lower switch
- (4) Position/draft sensitivity adjustment potentiometer
- (5) Lift arm drop rate adjustment potentiometer
- (6) Arm lifting limit adjustment potentiometer



DCUTLNEIT0012S6 1

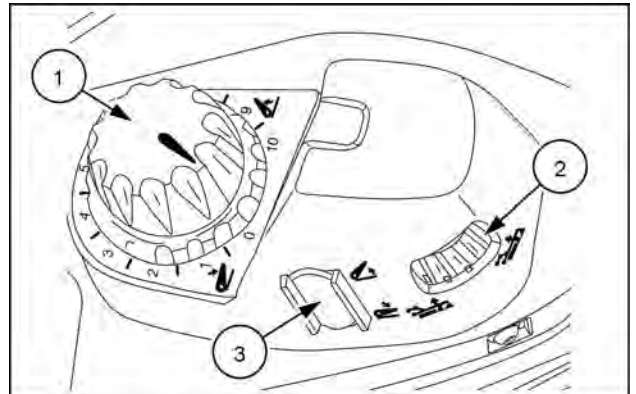
### Description of the single controls



The position control potentiometer (1) is used to set the implement height for operation in position control mode. Use it to set the maximum implement depth when operating in draft control mode.

#### (2) Draft adjustment control

The control (2) is used to adjust the towing force and therefore the working depth of the implement



MOIL15TR02916AA 2

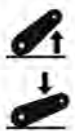


Rotating the draft loading wheel on the upper notch will provide maximum force and therefore the maximum working depth of the implement.



Rotating the draft loading wheel on the lower notch will provide minimum force and therefore the minimum working depth of the implement.

#### (3) Rapid raise/lower switch



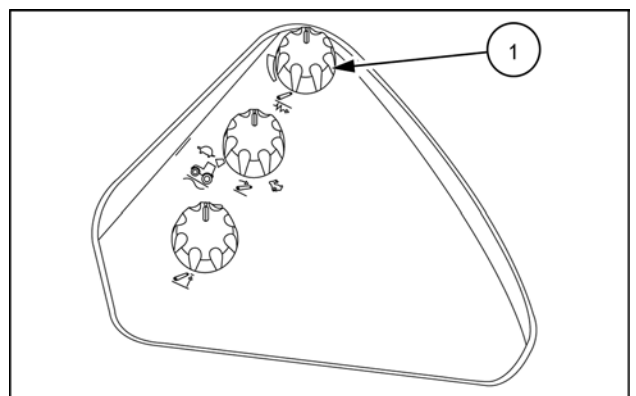
The raise/lower switch (3) enables the operator to rapidly raise the implement to the position set by the height limit control and to lower the implement again to the working depth/height set by the position or tow force controls, without altering the settings. The switch also provides for faster ground engagement.

### Control panel

#### (1) Draft sensitivity adjustment potentiometer



The draft sensitivity control potentiometer (1) is used to make the system more sensitive or less sensitive to changes in tow load. Maximum sensitivity is obtained by rotating the potentiometer fully clockwise.

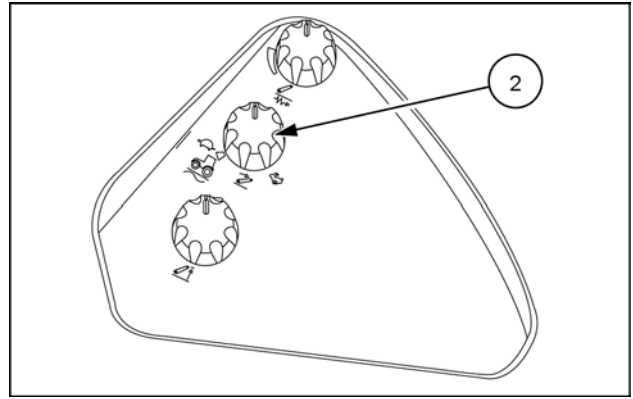


MOIL16TR02015AC 3

**(2) Drop rate adjustment potentiometer**



The potentiometer **(2)** adjusts the speed at which the three-point hitch drops during the lowering cycle. Turn it towards the tortoise symbol for slower lowering of the 3-point hitch. Turn it towards the hare symbol for faster lowering of the 3-point hitch.

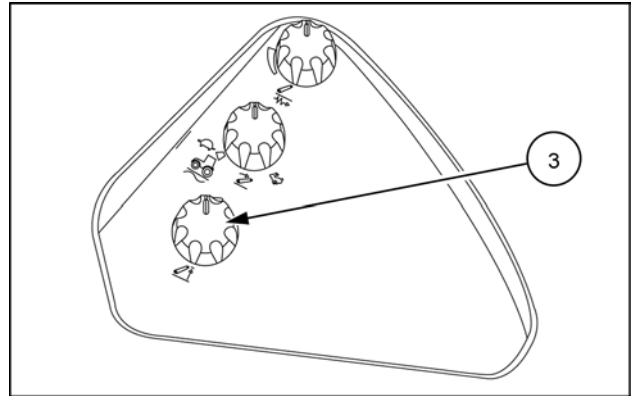


MOIL16TR02015AC 4

**(3) Arm lifting limit adjustment potentiometer**



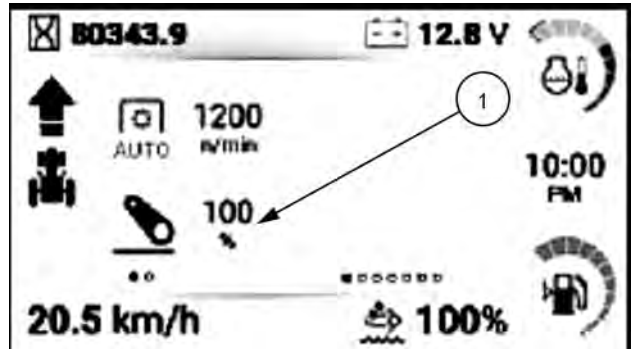
The lifting limit adjustment potentiometer **(3)** sets the maximum implement lifting height. Adjust this potentiometer to avoid damaging the tractor when the implement is fully raised.



MOIL16TR02015AC 5

**Hitch position display**

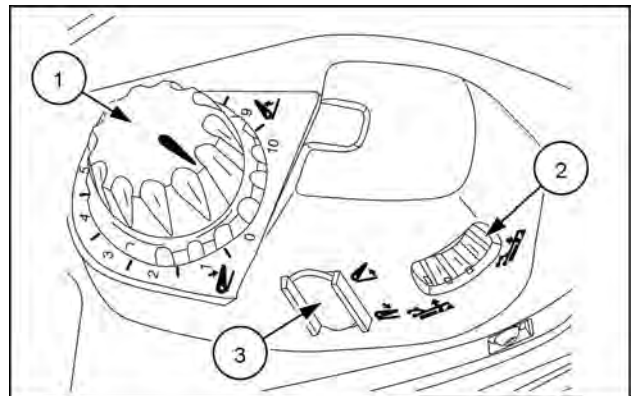
The icon **(1)** on the display indicates the position of the lower arms in percentage terms on a scale from 0 to 100. A display of 0 indicates that the links are fully lowered. The number 100 indicates they are fully raised.



MOIL23TR01125AA 6

**Pre- operation settings**

Attach the implement to the three-point. Rotate the draft loading wheel **(2)** on the upper notch. This is the position control setting. Start the engine and using the Position Control potentiometer **(1)**, raise the implement in stages, ensuring there is at least **100 mm (3.9 in)** clearance between the implement and any part of the tractor. Note the digital display reading on the instrument cluster. If the reading is less than 99 it means that the implement is not fully raised.

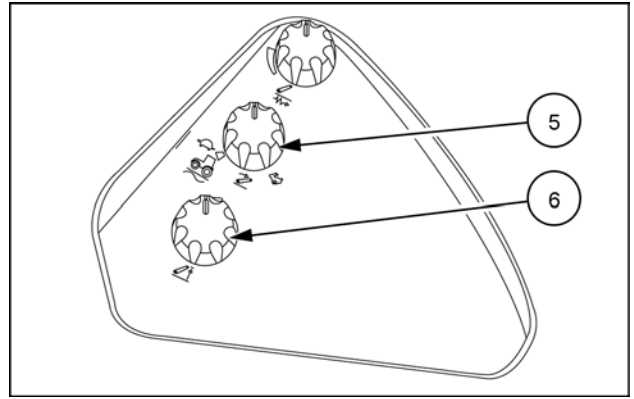


MOIL15TR02916AA 7

Adjust the lifting limit adjustment potentiometer (6) to prevent the hitch being raised further and so avoid the possibility of the implement damaging the tractor when fully raised.

When the raise/lower switch (3) or the position control potentiometer (1) is used to raise the implement, it will only raise to the height set by the height limit control, as determined in the previous step.

Adjust the rate of drop, to suit the size and weight of the attached implement, by rotating the drop rate control potentiometer (5). Turn the potentiometer clockwise to speed up the drop rate or counter-clockwise to slow down the drop rate.



MOIL16TR02015AC 8

**NOTICE:** When first setting the implement up for work, keep the drop rate control potentiometer in the slow drop position ('tortoise' symbol).

When the raise/ lower switch is used to lower the implement, it will lower at a controlled rate as determined in the previous step.

## Hydraulic lift external controls

### ⚠ DANGER

#### Crushing hazard!

Activate the external hydraulic control switches only while standing to the side of the machine (out-board of the rear tires). **DO NOT** climb on the implement or between the implement and the machine when the external hydraulic controls are enabled.

Failure to comply will result in death or serious injury.

D0009B

### ⚠ WARNING

#### Avoid injury!

Observe **ALL** precautions listed below when using external controls.

Failure to comply could result in death or serious injury.

W0420A

Before getting off the tractor to operate the external switch:

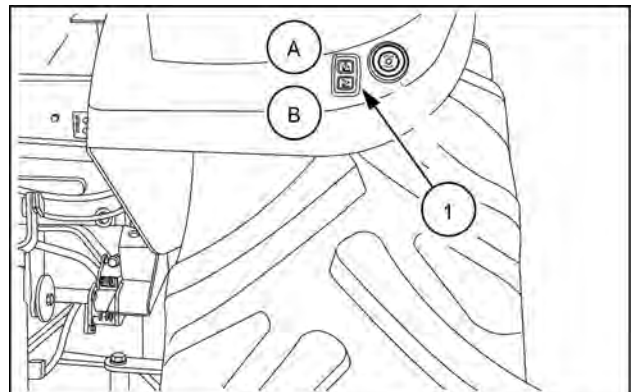
1. Move the gearshift levers to neutral.
2. Disengage the PTO.
3. Apply the parking brake.
4. With the engine running move the hand throttle lever to the low idle position (fully rearwards).
5. Ensure that no person or object is in the area of the implement or three-point linkage.
6. Never extend arms, legs, any part of the body or any object into the area near the three-point linkage or implement while operating the external switch.
7. Never have an assistant working the opposite set of controls. When moving to the opposite set of controls, move around the tractor or implement.
8. Do not cross between the implement and tractor.

On each rear mudguard there is a switch to govern the electronically controlled hydraulic lift from outside the tractor.

- A. Lifting the three point linkage.
- B. Lowering the three point linkage

**NOTE:** The switch (1) may be present on both sides of the tractor.

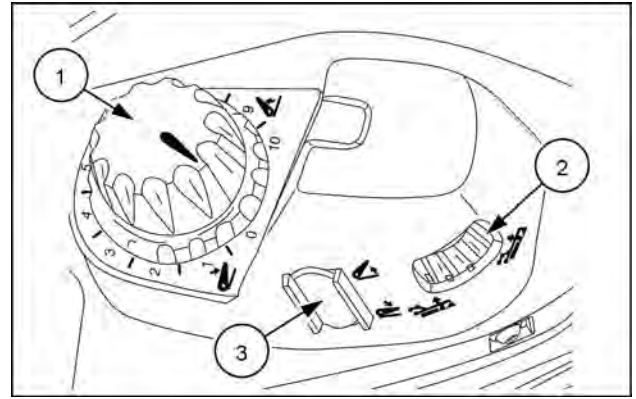
**NOTE:** The switch (1) is only on versions with an electronic rear elevator



MOIL13TR02126AA 1

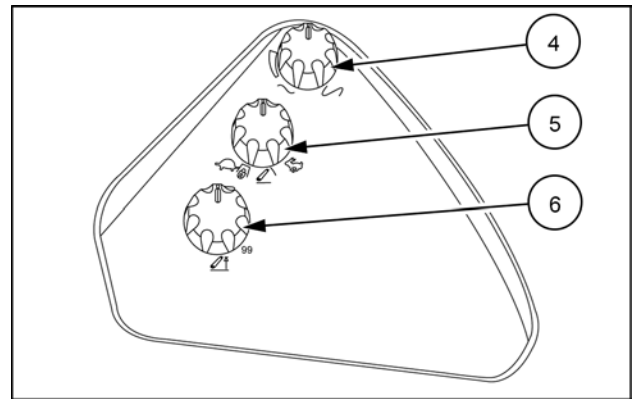
### Procedure to transfer controls from outside to inside the cab

To transfer control of the hydraulic lift back to the position control potentiometer (1), rotate the control fully clockwise and then counter-clockwise, more slowly. The 'hitch enabled' symbol will display in the instrument panel, indicating that the three-point linkage is in phase with the hydraulic lift control lever.



MOIL15TR02916AA 2

When control of the three-point linkage is transferred back inside the cab, an attached implement may raise fully and damage the rear of the cab. Operator's should be aware of this and take appropriate action to stop raising before full lift height is reached. Set the lift limit control potentiometer (6) as described previously.



MOIL16TR02015AA 3

### Transport locks

During transfer, with implements connected at the rear to the implement hitch, turn the down speed adjustment potentiometer (5) fully counter-clockwise onto the transport lock position shown by the padlock symbol. This will prevent the implement from accidentally lowering.

**NOTICE:** Always engage the transport lock when travelling by road with implements connected to the implement hitch.

### Ride control system

With an implement connected to the hitch, jolting of the implement at transport speeds can cause the driver to lose control of the tractor. With ride control selected, when the front wheels hit a bump, causing the front of the tractor to rise, the hydraulic system will immediately react to counter the movement and minimise implement bounce to provide a smoother ride.

To engage ride control, turn the draft sensitivity potentiometer (2) fully counter-clockwise. Using the raise/lower switch (3), raise the implement to the height set with the height limit control (6).

Turn the drop rate control potentiometer (5) fully counter-clockwise to the transport lock position (padlock symbol).

Ride control will only operate at speeds above 8 km/h (5.0 mph). When tractor speed exceeds 8 km/h (5.0 mph), the implement will drop by 4 - 5 points (as displayed on the instrument panel) as the hydraulic system makes corrections to counteract implement bounce. When tractor speed falls below 8 km/h (5.0 mph) the implement will raise again to the height set with the height limit control potentiometer (6) and ride control will become inoperative.

## Tires and wheels

### Wheels and tires

#### **⚠ WARNING**

##### **Explosion hazard!**

**Tires must be replaced by skilled personnel with the proper tools and technical knowledge. Unskilled personnel replacing wheels or tires could result in serious physical injuries, tire damage, and/or wheel distortion. Always have a qualified tire mechanic service wheels and tires.**

**Failure to comply could result in death or serious injury.**

W0171A

#### **⚠ WARNING**

##### **Explosion hazard!**

**When inflating tires, use a clip-on air chuck with a gauge, remote valve, and hose long enough to allow you to stand to one side and NOT in front of or over the wheel assembly. Keep others out of the DANGER AREA. Never inflate a tire beyond the maximum allowable pressure printed on the tire.**

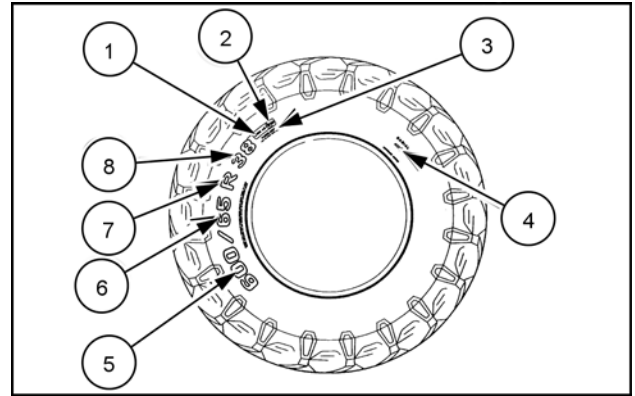
**Failure to comply could result in death or serious injury.**

W0059A

- When changing tyres, select tyres suitable for the actual tractor use, taking into account the recommended combinations.
- Do not exceed the permitted load shown on the tyres themselves.
- Do not exceed the speeds shown on the tires, as this both overheats and causes premature tire wear.
- Do not fit used tires where their previous use is unknown.
- Ask the manufacturer or a tire specialist for advice.
- After fitting tires, check that the wheel nuts are tight after 3 hours in operation and then periodically.
- Following this, check the tightness on a regular basis.
- Do not stand tires on hydrocarbons (oil, diesel, grease, etc.).
- The tires fitted on the tractor must be checked periodically, with special care given to:
  - tread, must have regular consumption;
  - flanks, must not have any cracks, swellings or abrasions.
- Have the tires checked by a specialist if one or more of the problems mentioned above should occur.
- Consult an expert if a tire is subject to violent shocks, even if there are no visible signs of damage.
- Tires age, even if used infrequently or not at all.
- Cracks on the walls, sometimes accompanied by bulges, are a sign of ageing.
- Tires fitted on tractors which are not used for extended periods tend to age more rapidly than those used more frequently. In this event, it is advisable to raise the tractor from the ground and protect the tires from direct sunlight.

**Tire marking**

To indicate, dimensions, structure and specifications of use of a tire, the manufacturers have internationally adopted standard abbreviations and numbers. The drawing shows an example of the marking on a tire used for agricultural work. Example of reading the abbreviation 600/65 R 38.



DCUTDNEGB076S3A 1

1	157	Loading index.
2	A8	Speed code. High speed.
3	TUBELESS	Tubeless tires. Tires with inner tubes are marked TUBE TYPE or left blank.
4	→	The arrow shows the direction of tire travel.
5	600	Nominal cross-section width in mm.
6	65	Ratio between height and width of cross-section.
7	R	Indicates the radial structure. On a conventional tire, the R is replaced by a hyphen (-).
8	38	Rim keying diameter.

**Another example of the marking on a tire: example (7.50-16 8 PR)**

1	7,50	Nominal width of section in inches.
2	-	Conventional structure.
3	16	Rim keying diameter.
4	8 PR	Resistance index of tyre or number of ply that make up the tyre. (this code is normally shown on conventional tyres, whereas radial tyres show the load capacity index).

## Loading index

The load index is a numerical index indicating the maximum permissible load on the tire, for the speed indicated by the relevant speed code, under the conditions specified by the manufacturer.

Load- ing in- dex	• kg	• lb	Load- ing in- dex	• kg	• lb	Load- ing in- dex	• kg	• lb	Load- ing in- dex	• kg	• lb
100	800	1764	120	1400	3086	140	2500	5512	160	4500	9921
101	825	1819	121	1450	3197	141	2575	5677	161	4625	10196
102	850	1874	122	1500	3307	142	2650	5842	162	4750	10472
103	875	1929	123	1550	3417	143	2725	6008	163	4875	10748
104	900	1984	124	1600	3527	144	2800	6173	164	5000	11023
105	925	2039	125	1650	3638	145	2900	6393	165	5150	11354
106	950	2094	126	1700	3748	146	3000	6614	166	5300	11684
107	975	2150	127	1750	3858	147	3075	6779	167	5450	12015
108	1000	2205	128	1800	3968	148	3150	6945	168	5600	12346
109	1030	2271	129	1850	4079	149	3250	7165	169	5800	12787
110	1060	2337	130	1900	4189	150	3350	7385	170	6000	13228
111	1090	2403	131	1950	4299	151	3450	7606	171	6150	13558
112	1120	2469	132	2000	4409	152	3550	7826	172	6300	13889
113	1150	2535	133	2060	4542	153	3650	8047	173	6500	14330
114	1180	2601	134	2120	4674	154	3750	8267	174	6700	14771
115	1215	2679	135	2180	4806	155	3875	8543	175	6900	15212
116	1250	2756	136	2240	4938	156	4000	8818	176	7100	15653
117	1285	2833	137	2300	5071	157	4125	9094	177	7300	16094
118	1320	2910	138	2360	5203	158	4250	9370	178	7500	16535
119	1360	2998	139	2430	5357	159	4375	9645	179	7750	17086

## Speed code

The speed code indicates the speed at which the tire can transport a load corresponding to its loading index, under the conditions specified by the manufacturer:

**NOTICE:** Respecting the limits in the tables will ensure that the tyres both perform well and are long--lasting. Overloading tyres substantially reduces their service life.

**NOTE:** The values in these tables are also marked on the walls of the tires themselves.

Speed codes		
Symbol	• km/h	• mph
A1	5	3.10
A2	10	6.21
A3	15	9.32
A4	20	12.42
A5	25	15.53
A6	30	18.64
A7	35	21.74
A8	40	24.85
B	50	31.06
C	60	37.28
D	65	40.38

## Inflating pressure

### **⚠ WARNING**

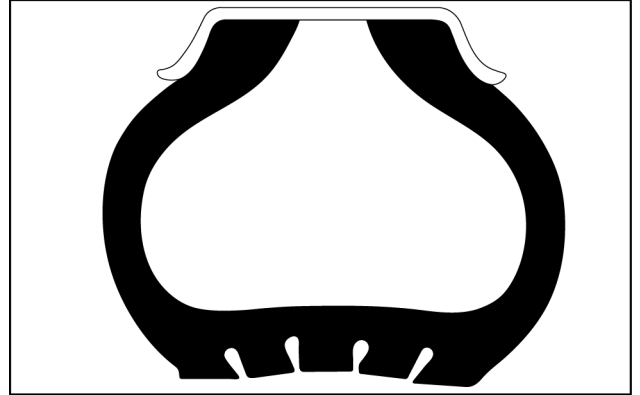
**Explosion hazard!**

**Always maintain correct tire pressure as indicated in this manual. DO NOT inflate tires above the recommended pressure. Excessive pressure could result in tire failure. Failure to comply could result in death or serious injury.**

W0109A

For safe and long-lasting tire use, the following instructions must be closely observed.

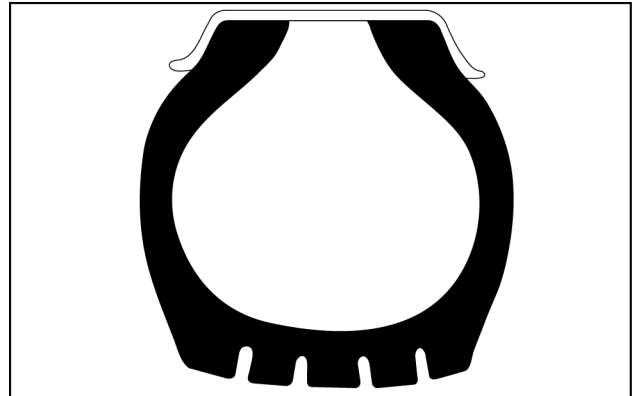
- Use the correct pressures for each axle and for the type of use planned.
- Ensure tire pressures are not lower than the correct values, to prevent overheating of the tires, which can lead to:
  - tire bursting;
  - coming off rim;
  - internal damage;
  - irregular wear and short service life.



MOIL13TR02373AA 2

Low pressure

- Do not over-inflate the tires, as this may lead to damage in the event of impact and, in extreme conditions, the tire rim may be deformed or the tire may burst.
- Check tire pressures at least every two weeks, especially when liquid ballast is used. Tire pressures should be checked only when the tires are cold, as pressures rise during use, as a result of the tires heating up. Tyres can be assumed to be cold if they have not been used for at least one hour, or have not covered more than two to three kilometers. Never reduce tyre pressures when the tyres are hot.

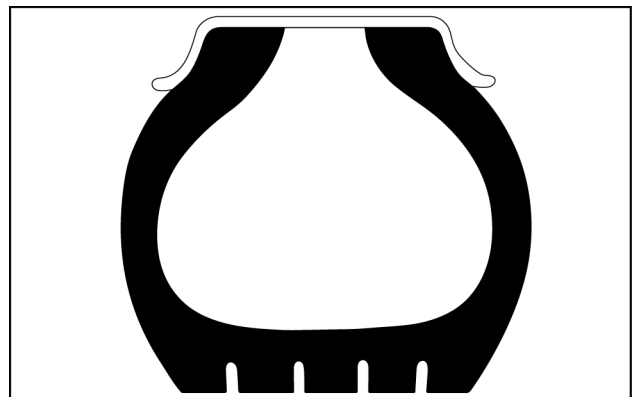


MOIL13TR02374AA 3

pressure too high

When checking tire pressures, keep the body away from the valve mechanism or cap.

**NOTICE:** *The tire inflating pressure varies according to the load weighing on the axles.*



MOIL13TR02375AA 4

Correct pressure

**Tires size**

Tires	Speed code	Index Radius	Rim
380/70R24	A8	575	W12x24
440/65R24	A8	575	W14Lx24
440/65R28	A8	625	—
340/85R24	A8	575	—
280/85R28	A8	625	—
340/85R28	A8	625	—
380/70R28	A8	625	—

**REAR TYRES**

Tires	Speed code	Index Radius	Rim
480/70R34	A8	750	DWW15Lx34
540/65R34	A8	750	DWW16Lx34
420/85R34	A8	750	—
540/70R34	A8	750	—
420/85R38	A8	800	—
540/65R38	A8	800	—
480/70R38	A8	800	—

**Required tyre combinations**

Rear tires	Front tires	Pressure	
		Front	Rear
540/65R38	440/65R28	<b>1.6 bar (23.2 psi)</b>	
480/70R38	380/70R28		
380/85R38	320/85R28		
420/85R38	340/85R28		
480/70R34	380/70R24		
540/65R34	440/65R24		
420/85R34	340/85R24		
	280/85R28		

## Tread and fender settings

## Track adjustment

### ⚠ WARNING

#### Heavy parts!

The wheels are very heavy. Handle with care. Make sure that the wheels, when stored, cannot fall over and cause injury.

Failure to comply could result in death or serious injury.

W0403A

### ⚠ WARNING

#### Roll-over hazard!

Never operate the machine with a loose wheel rim or disc. Always tighten nuts and/or bolts to the specified torque value and at the recommended intervals.

Failure to comply could result in death or serious injury.

W0346B

## Adjusting the front track and adjusting the rear track

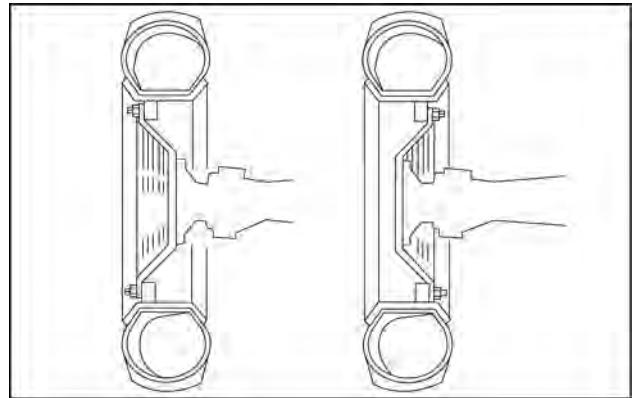
You can fit the wheel disk with the camber directed inwards or outwards.

Each of these two disc positions provides a different track width, as shown on the following pages.

When adjusting the wheel track, ensure that the points of the tyre treads are still facing in the direction of forward travel, indicated by an arrow on the tyre walls.

Always check that the front and rear wheels are symmetrically aligned in relation to the longitudinal axis of the tractor.

**NOTICE:** Select the appropriate rear track before changing the front one.

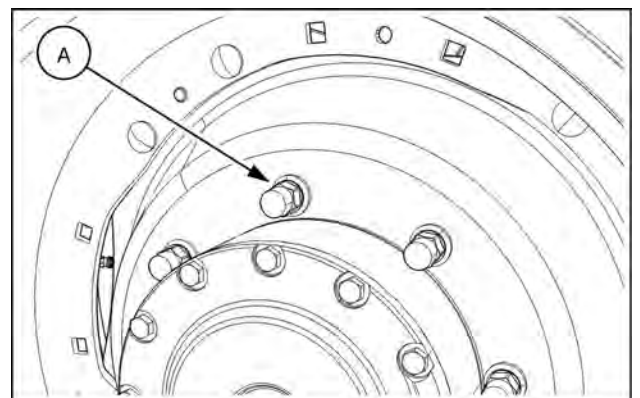


DCUTLNEIT056S6A 1

## Wheel nut tightening torques

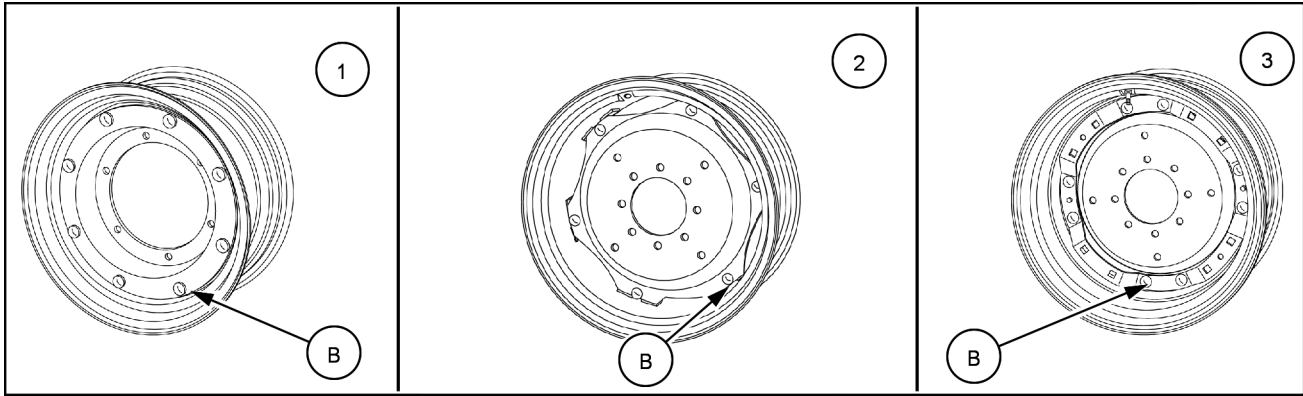
Wheel hub tightening torques (A)	
Front M16	215 N·m (159 lb ft)
Rear M18	310 N·m (229 lb ft)

**NOTE:** Based on the intended market and the tractor's set-up, it can be fitted with different types of rims, as shown in the image below.



MOIL23TR00918AA 2

## 6 - WORKING OPERATIONS



MOIL24TR02730EA 3

Disc rim tightening torque (B)		
<b>(1)</b>	Front	<b>280 N·m (207 lb ft)</b>
<b>(2)</b>	Front Rear	
<b>(3)</b>	Front Rear	<b>310 N·m (207 lb ft)</b>

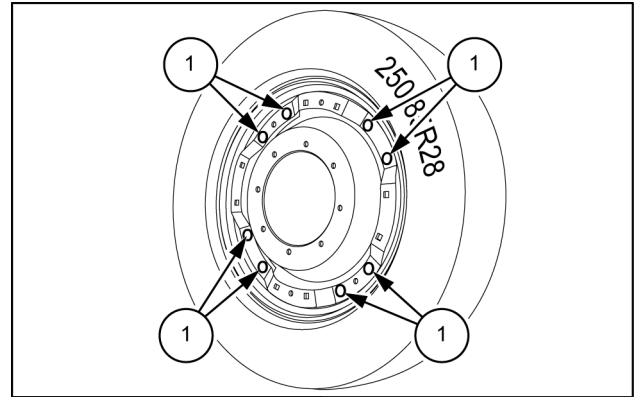
## Disc-to-rim coupling for front 4WD tires

To adjust the track, it is recommended that you adhere to the following instructions.

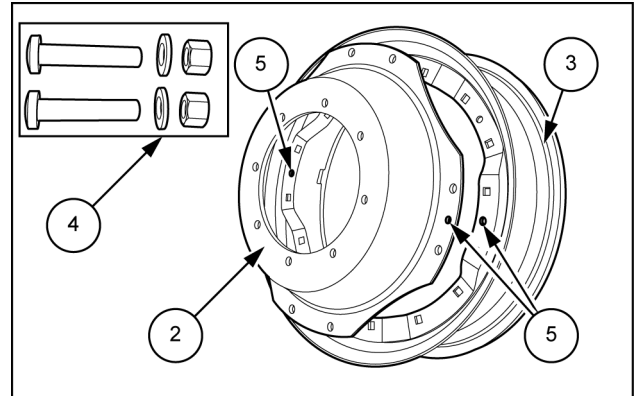
1. Remove the wheels from the hub of the tractor. Rest the wheels on the ground.
2. Remove the screws (1) that secure the disc to the rim.
3. Remove the disc (2). Reposition the disc in the position that corresponds to the new track that you want to set.
4. Centre the disc on the rim in the holes (5) using the two centring screws (4) complete with washers and nuts.

**NOTE:** In place of the centring screws (4), you need a pin with a length of **58.0 mm (2.3 in)** and a diameter of **12.7 mm (0.5 in)**.

5. Re-install the screws (1) that secure the disc to the rim. Tighten the screws to the specified torque.
6. Remove the centring screws (4) and store them in a container.



MOIL14TR01277AB 1



MOIL14TR01278AB 2

## Adjustment of the front mudguards

### Fixed front fenders

The front fenders (optional) have a wide range of adjustments to suit different track widths and tyre sizes.

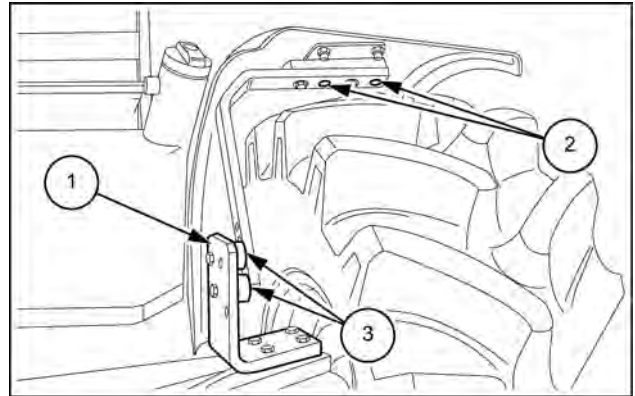
#### Lateral adjustment

This double adjustment permits centering the fender to the tire.

Move the fender nearer to or further away from the tractor, re-positioning the metal shims (3) on the outer wall of the fender support (1).

or

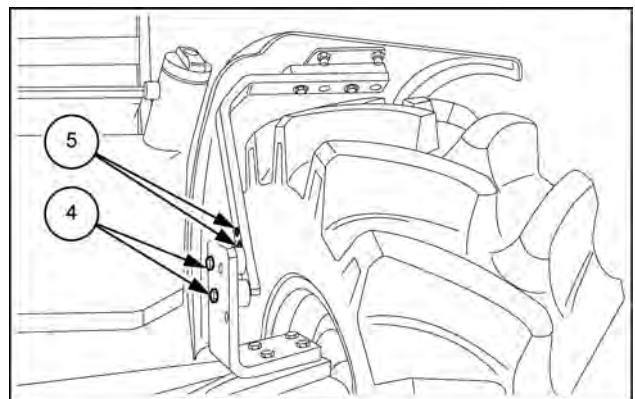
Move the fender nearer to or further away from the tractor, securing it to the holes (2) of the support.



DCUTLNEIT059S6A 1

#### Vertical adjustment

The fender may be moved vertically by relocating the bolts (4) in the holes (5) in the fender support.

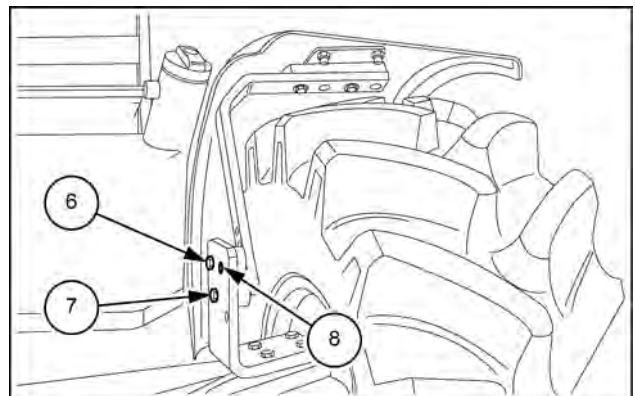


DCUTLNEIT060S6A 2

#### Rotation adjustment, mudguards

The fender may be turned forwards or backwards by loosening the bolt (7) and relocating the bolt (6) in the hole (8) of the support.

**NOTE:** Ensure all fixing bolts are properly tightened after adjustment.



DCUTLNEIT061S6A 3

## Dynamic front fenders

The dynamic mudguards turn with the front wheels as the tractor is steered.

A pin secured onto the axle housing limits the rotation of the fenders, which is especially useful when using the narrowest front wheel tracks.

This results in a tighter turn than would otherwise be possible with fixed mudguards, particularly at narrower track settings.

Both offer further adjustments to suit varying tire sizes and track widths.

### Vertical adjustment

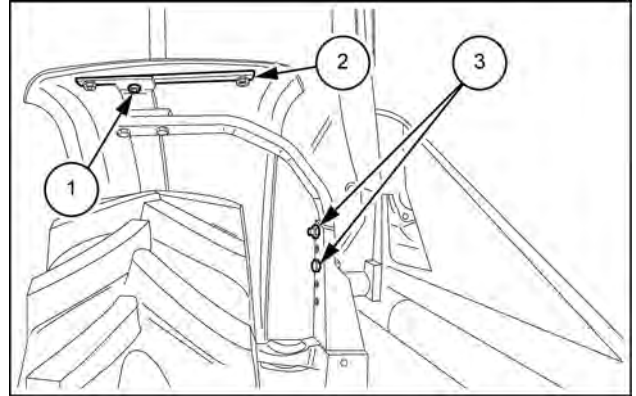
Fenders may be moved vertically by relocating the bolts (3) in the appropriate holes in the fender support.

### Lateral Adjustment, Fender

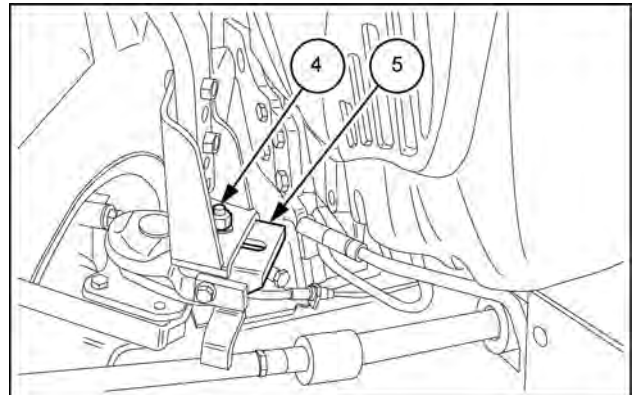
Loosen the screw (1), and make the fender slide sideways in the slot of the support (2).

Another side adjustment is possible by loosening the screw (4), to move it in the slot (5) on the support.

This double adjustment permits centering the fender to the tire.



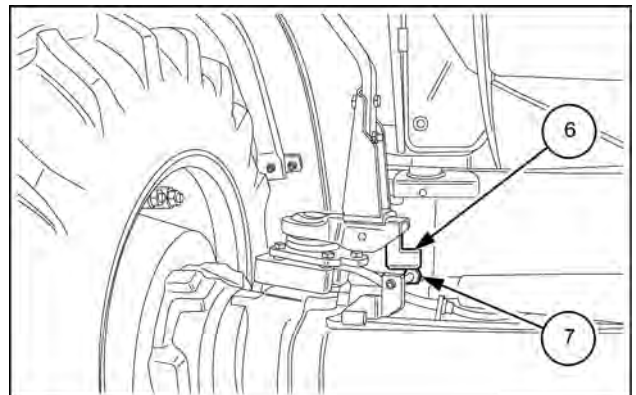
DCUTLNEIT062S6A 4



DCUTLNEIT063S6A 5

### Mudguard turn stop

Secured on both sides there are two brackets with an adjustable bolt (7) and on the fenders there is the stop bracket (6). When steering, when the bracket comes up against the retainer (7), the fender stops turning, allowing the wheels beneath it to continue steering. The stops may require adjusting if the track width or tire size is changed.



DCUTLNEIT064S6A 6

## Adjustment of the steering angles

### Steering angle adjustment

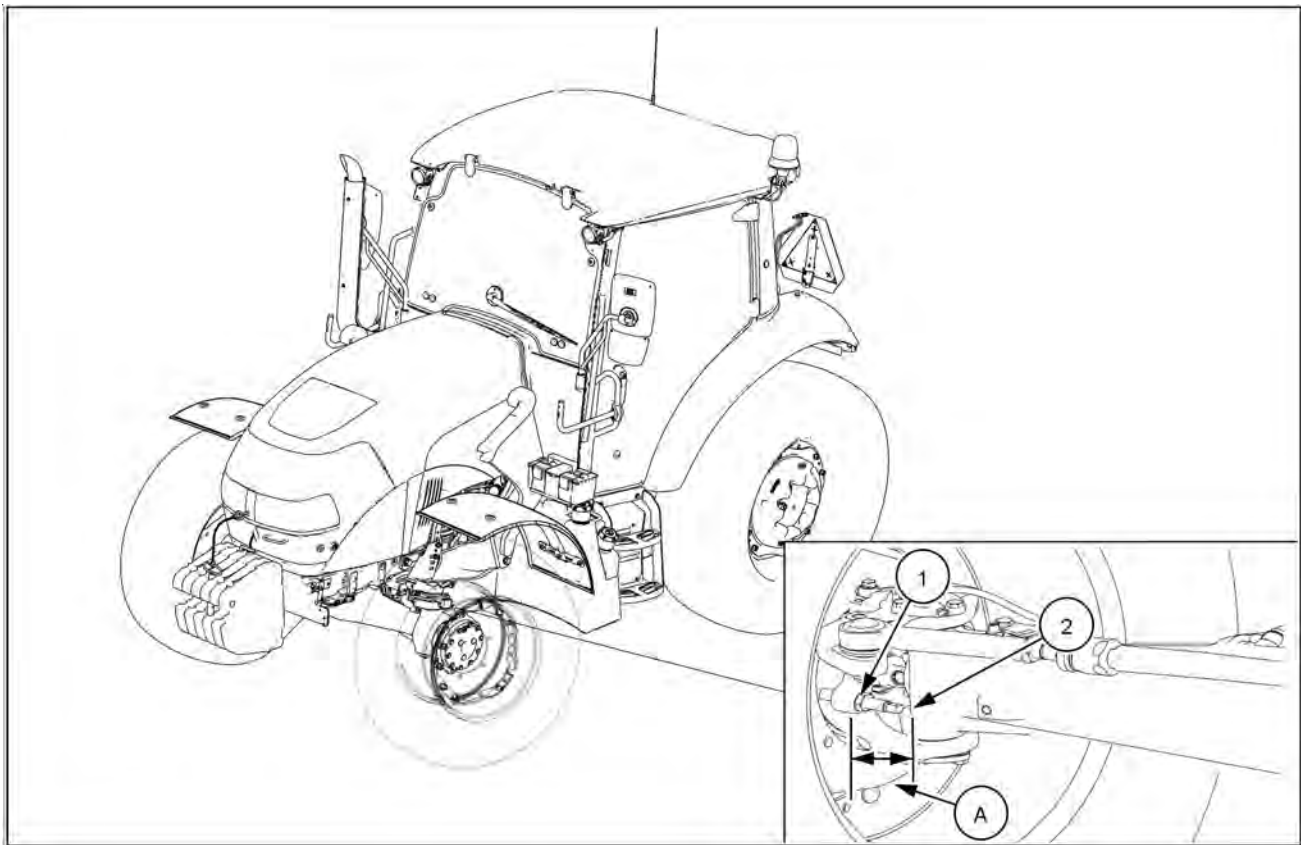
When using the narrowest tracks, the tyres may touch any part of the tractor when the steered wheels are at full lock and the front axle is at maximum pivot position. E.g. when entering and exiting furrows during deep ploughing work. To avoid this problem, the front axle is fitted with a steering angle limiting screw (2) at each end that can be adjusted to reach the best maximum steering angle for each track.

**NOTE:** after adjusting the steering angle make sure that, with the steered wheels all the way to left and right and with the front axle at the maximum pivot position, there is a free opening of at least **20 mm (0.8 in)** between any part of the tractor and the wheel, or the fender, if fitted.

To adjust the maximum steering angle, proceed as follows:

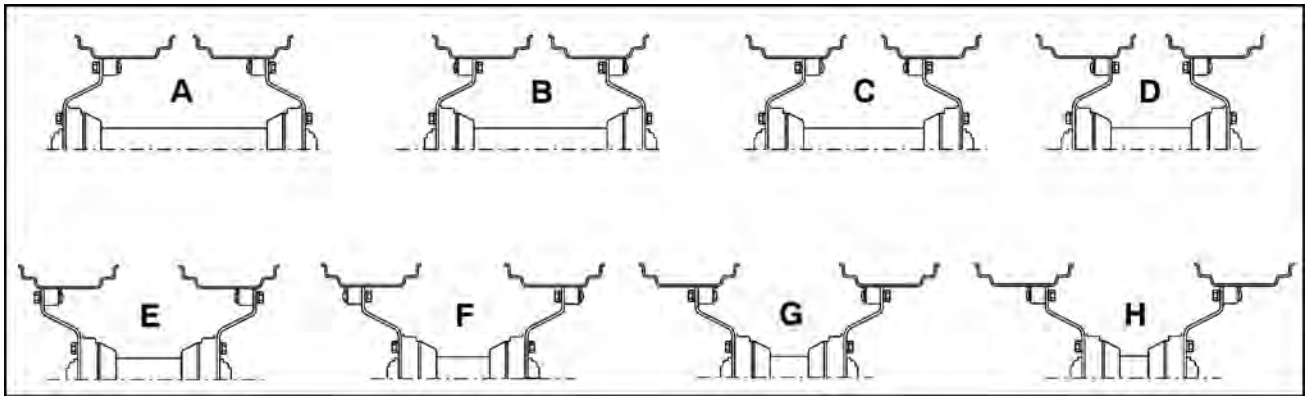
- Steer the wheels to the maximum position.
- Adjust the protrusion of the screw (2) turning clockwise to reduce or counter-clockwise to increase the steering angle, so that the wheels cannot come into contact with any other part of the tractor.
- Lock the screw (2) with the lock nut (1), tightening it to a torque of **80 – 90 N·m (708.1 – 796.6 lb in)**.

**NOTE:** perform the operation on the left-hand and right-hand steering stops, making sure that the adjustment is symmetrical (the length of the screw (A) must be the same in millimetres for the right-hand stop and the left-hand stop. If the distance (A) between the two sides differs, set both at the greater measurement).



MOIL21TR02761FA 1

## Front tracks diagram



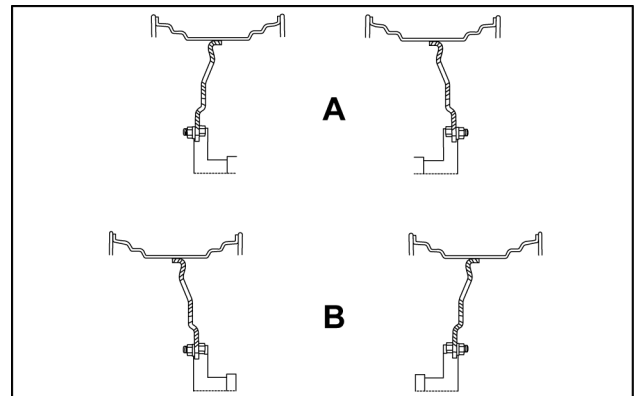
DCUTDNEGB100S3F 1

### Tires with adjustable rims

Size	A	B	C	D	E	F	G	H
340/85R28	1446 mm (57 in)	1550 mm (61 in)	1650 mm (65.0 in)	1752 mm (69.0 in)	1846 mm (72.7 in)	1948 mm (76.7 in)	1950 mm (76.8 in)	2052 mm (80.8 in)
380/70R28	1446 mm (57 in)	1550 mm (61 in)	1650 mm (65.0 in)	1752 mm (69.0 in)	1846 mm (72.7 in)	1948 mm (76.7 in)	1950 mm (76.8 in)	2052 mm (80.8 in)
440/65R28	1446 mm (57 in)	1550 mm (61 in)	1650 mm (65.0 in)	1752 mm (69.0 in)	1846 mm (72.7 in)	1948 mm (76.7 in)	1950 mm (76.8 in)	2052 mm (80.8 in)
380/70 R 24	-	1648 mm (64.9 in)	1650 mm (65.0 in)	1752 mm (69.0 in)	1846 mm (72.7 in)	1948 mm (76.7 in)	1950 mm (76.8 in)	2052 mm (80.8 in)

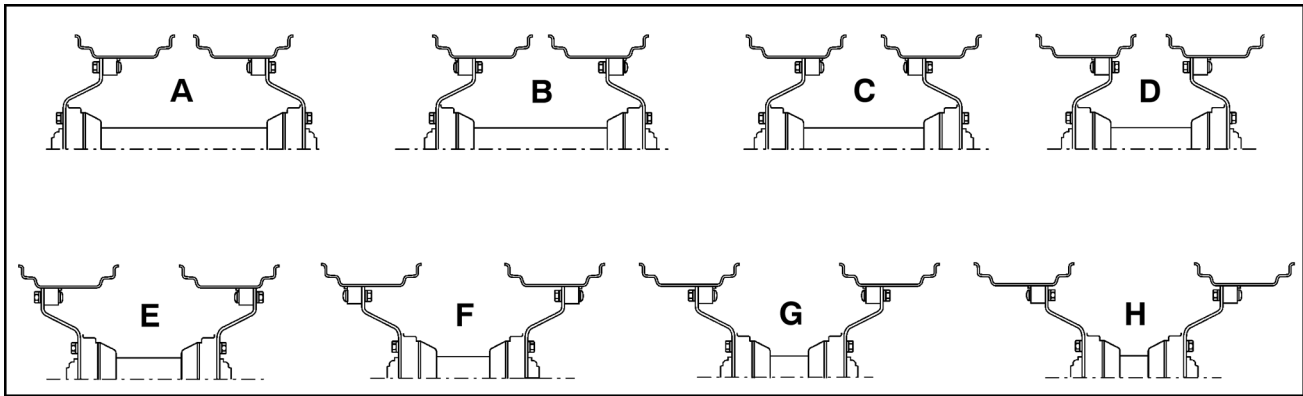
### Tires with fixed rims

Size	A	B
380/70 R 24	1750 mm (68.9 in)	1850 mm (72.8 in)
440/65 R 24	1750 mm (68.9 in)	1850 mm (72.8 in)



MOIL13TR02732AA 2

## Rear tracks diagram



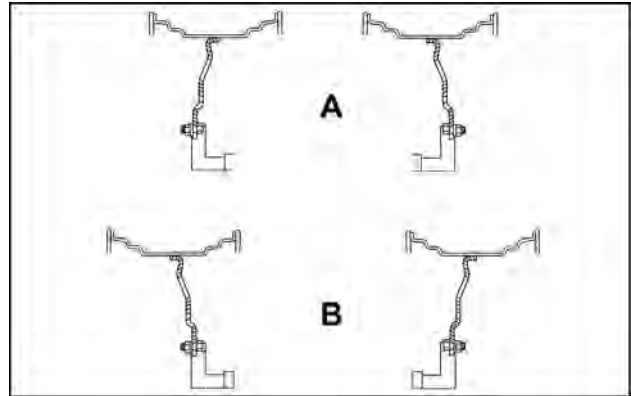
DCUTDNEGB100S3F 1

### Tires with adjustable rims

Size	A	B	C	D	E	F	G	H
420/85 R 38	-	1534 mm (60.4 in)	1630 mm (64.2 in)	1736 mm (68.3 in)	1826 mm (71.9 in)	1932 mm (76.1 in)	2030 mm (79.9 in)	2136 mm (84.1 in)
480/70 R 34	-	1532 mm (60.3 in)	1630 mm (64.2 in)	1736 mm (68.3 in)	1826 mm (71.9 in)	1932 mm (76.1 in)	2030 mm (79.9 in)	2136 mm (84.1 in)
480/70 R 38	-	1534 mm (60.4 in)	1630 mm (64.2 in)	1736 mm (68.3 in)	1826 mm (71.9 in)	1932 mm (76.1 in)	2030 mm (79.9 in)	2136 mm (84.1 in)
540/65 R 34	-	-	1630 mm (64.2 in)	1736 mm (68.3 in)	1826 mm (71.9 in)	1932 mm (76.1 in)	2030 mm (79.9 in)	2136 mm (84.1 in)
540/65 R 38	-	-	1630 mm (64.2 in)	1736 mm (68.3 in)	1826 mm (71.9 in)	1932 mm (76.1 in)	2030 mm (79.9 in)	2136 mm (84.1 in)

### Tires with fixed rims

Size	A	B
480/70 R 34	1730 mm (68.1 in)	1832 mm (72.1 in)
540/65 R 34	1730 mm (68.1 in)	1832 mm (72.1 in)



MOIL13TR02732AA 2

## Ballasting

### Safety rules

**▲ WARNING**

**Heavy object!**

Clear the area around and under the counterweight removal and installation system before installing or removing counterweights. Keep all unauthorized personnel clear of the area. Make sure all lifting devices are in good condition and capable of handling the counterweight mass.

Failure to comply could result in death or serious injury.

W0037A

**▲ WARNING**

**Driving hazard!**

Be aware that extra weight and bad traction conditions such as mud or ice increase your stopping distance. Liquid in the tires, weights on the machine or wheels, tanks filled with fertilizer, herbicides, or insecticides - all these add weight and increase the distance you need to stop.

Failure to comply could result in death or serious injury.

W0338A

**▲ WARNING**

**Crushing hazard!**

Counterweights are very heavy. Always use certified lifting equipment to remove and install the counterweights. Make sure the hardware securing the counterweight(s) to the machine is installed correctly and the clamp bolts are tightened fully before operating the machine.

Failure to comply could result in death or serious injury.

W0402A

## Ballasting

### **⚠ WARNING**

#### **Driving hazard!**

**Additional front ballast may be needed when transporting heavy three-point mounted equipment. Always drive slowly over rough terrain, no matter how much front ballast is used.**

**Failure to comply could result in death or serious injury.**

W0386A

Maximum tractor performance is dependent upon proper ballasting and tire selection. Maximum efficiency will be achieved when tractor weight is correct for the application.

### **Factors affecting tire performance**

- Correct air pressure for the load
- Correct wheel slip
- Correct tire size for expected load
- Correct fill of liquid ballast
- Maintaining equal tire pressure in both tires of the same axle

### **Selecting ballast**

When tractor horsepower loads vary, the optimum weight of the tractor will change. This means that ballast may have to be added or removed to maintain the best tractor performance. Proper ballast will greatly improve tractor operation and ride.

The amount of ballast required is affected by:

- Weight of tractor
- Soil and traction conditions
- Type of implement: fully-mounted, semi-mounted or towed
- Working speed
- Tractor horsepower load
- Type and size of tyres
- Tire pressure

Do not use more ballast than needed. Excess ballast should be removed when it is not required.

Too little ballast:

- Rough ride
- Excessive wheel slip
- Power loss
- tire wear
- Excessive fuel consumption
- Lower productivity

Too much ballast:

- Higher maintenance costs
- Increased drive line wear
- Power loss
- Increased soil compaction
- Excessive fuel consumption
- Lower productivity

For maximum performance in heavy draft conditions weight should be added to the tractor in the form of liquid ballast, cast iron weights or a combination of both.

Front end ballast may be required for stability and steering control when weight is transferred from the front to the rear wheels as rear mounted implement is raised by the tractor three-point hitch.

When a rear mounted implement is raised to the transport position, the weight on the front wheels should be at least **20%** of total tractor weight.

For optimum performance and efficiency, two wheel drive tractors should be ballasted so that approximately one third of the total tractor weight (less implement) is on the front wheels. Four wheel drive tractors should be ballasted so the weight on the front wheels is approximately **40 – 45%** of the total tractor weight.

Add additional front end ballast, as required, for stability during operation and transport. Ballasting of the front end may not always provide adequate stability if the tractor is operated at high speed on rough terrain. Reduce tractor speed and exercise caution under these conditions.

When using front mounted implements it may be necessary to add weight to the rear wheels to maintain traction and stability.

### **Ballast limitations**

Ballast should be limited by the tire capacity or tractor capacity. Each tyre has a recommended load capacity, which should not be exceeded.

If a greater amount of weight is needed for traction, larger tyres should be used.

Ballast can be added by bolting on cast iron weights or by adding liquid calcium chloride in the tyres. Bolted cast iron weights are recommended because they can easily be removed when not needed.

## Front ballast

If the tractor requires high traction power, the drive wheels may slip due to insufficient grip on the ground, causing loss of power and speed, increased fuel consumption and premature tyre wear.

We therefore advise fitting cast-iron rings as ballast on the drive wheels, or ballasting wheels with cast iron discs.

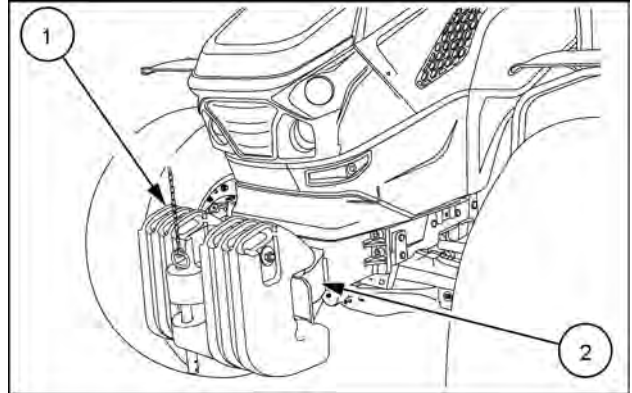
When using very long and heavy implements, which could affect the longitudinal stability of the tractor, ballast the front axle by fitting the appropriate cast-iron counterweights.

### Front axle ballast

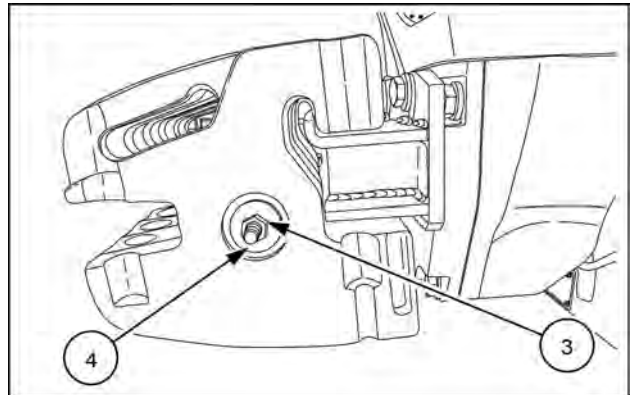
It is possible to ballast the front axle with cast-iron plates with a handle (1) and its support (2)

To ballast the front axle, proceed as follows:

1. Loosen the nut (3) and pull out the threaded bar to release the front ballast plates (1).
2. Manually extract the front ballast plates (1) from their seat sliding them on the support bracket (2).
3. Once the required weight has been reached, insert the threaded bar into the relative hole (4) of the front ballast plates .
4. Tighten the nut (3) and lock the front ballast plates (1)



MOIL24TR00291AA 1



MOIL16TR01403AA 2

For the number of plates and their weight see 9-1.  
Do not exceed the maximum permissible loads (see 9-3, and ).

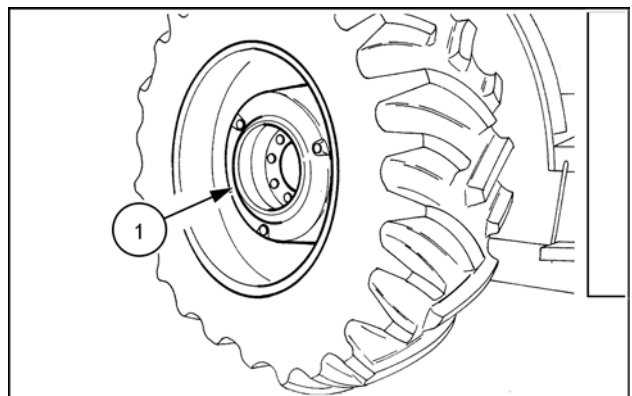
## Rear ballast

It is possible to ballast the rear wheels with cast-iron rings (1).

For the number of plates and their weight see 9-1.  
Do not exceed the maximum permissible loads (see 9-3, and ).

**NOTICE:** Do not use the tractor until the ballast weights are correctly secured.

**NOTICE:** Periodically check the tightness of the ballast locking bolts.



DCSPVEGB009S5F 1

## Liquid Ballast

There follow helpful tips for filling the tires with liquid ballast.

**NOTE:** For correct filling operations, consult the manufacturer's specialized personnel of the tires fitted on your tractor.

### Technical tips

In some cases it is necessary to ballast the machine, especially to increase their force of traction but also to lower the centre of gravity so as to improve stability.

Additional weights are usually mounted on the wheels or frames; When this is not possible or not sufficient, the tyres can be filled with liquid ballast.

Ballasting with liquids alters the characteristics of the tires:

- the tire becomes more rigid and less flexible;
- the rolling resistance increases;
- the risk of damage to the tires, rims and axles increase.

**NOTICE:** Do not use tires ballasted with liquid when driving on roads.

### Filling tires

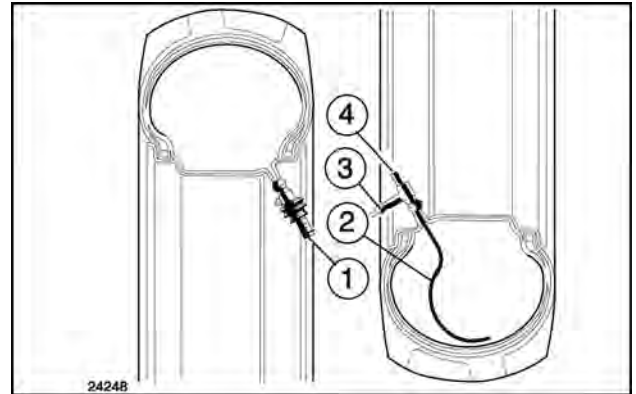
In zones with no risk of freezing:

- Tyres with inner tube: water.
- Tubeless tyres: water + ethylene glycol anticorrosion liquid.

### Water inlet and outlet connectors

1. Water inlet point.
2. Water drainage pipe.
3. Air line connector.
4. Water drainage pipe.

Water can be used to ballast the rear tires if there is no danger of freezing.



DCAPLINEGB089S3A 1

### Filling the tires with water

- Raise the wheel off the ground and move the tire valve to its highest position;
- Loosen the valve inner and wait for the tire to deflate;
- lower the wheel until the tire is around 30% flat to prevent the weight of the water damaging the inner tube;
- Tighten the coupling CASE IH no. 291885 onto the valve seat and attach the water pipe to the coupler (1), remembering to detach the pipe to release air when the tire begins to inflate;
- When water escapes from the filling (1) the tire is 75% full. If you wish to fill-up less water, or achieve a lower weight, position the wheel so that the valve is lower;
- Remove the fitting (1), tighten the tire valve and inflate to the specified pressure.

**NOTICE:** Water pressure filled-up must never exceed 4 bar (58.0 psi).

### Draining water from the tires

- Raise the wheel from the ground and position the inflation valve at the lowest point;
- Loosen the valve seal and drain off the water;
- Tighten the coupling no. 291886 onto the valve seat, tubes (2) and (4) will make contact with the inner tube;
- Introduce pressurized air via connection (3), the remaining water will come out through the tubes (2) and (4);
- Remove the connector and replace it with the valve seal, then inflate the tire to the specified pressure.

## Filling tires with anti-freeze solutions

In order to prevent freezing water from damaging the tires, instead of using pure water, use a solution of neutralized calcium chloride (in flakes).

Prepare the solution by filling the water required into a container and adding the calcium chloride a little at a time, stirring continuously.

In zones with a risk of freezing:

- Tyres with inner tube: water + neutral calcium chloride (CaCl<sub>2</sub>).
- Tubeless tyres: water + ethylene glycol anticorrosion liquid.

These solutions lower the freezing temperature of the water and are not harmful for the tire. Calcium chloride also helps increase the ballasting.

### **▲ WARNING**

**Hazardous chemicals!**

**SLOWLY** add calcium chloride flakes to water, stirring continuously. To avoid a violent reaction, **NEVER** add water to calcium chloride.

**If any flakes contact the eyes, flush the eyes immediately with clean, cold water for at least 15 minutes.**

**Seek medical assistance immediately.**

**Failure to comply could result in death or serious injury.**

W0388A

## Tables for filling with water and antifreeze solution

### Refilling with water and calcium chloride

Front tires	Filling with water only*	Solution for temperatures up to -20 °C (-4.0 °F)	
		Water*	Calcium chloride
280/85R28	120.0 L (31.7 US gal)	108.0 L (28.5 US gal)	29.0 kg (63.9 lb)
380/70R24	130.0 L (34.3 US gal)	117.0 L (30.9 US gal)	31.0 kg (68.3 lb)
440/65R24	150.0 L (39.6 US gal)	135.0 L (35.7 US gal)	36.0 kg (79.4 lb)
440/65R28	169.0 L (44.6 US gal)	152.0 L (40.2 US gal)	46.0 kg (101.4 lb)
380/70R28	144.0 L (38.0 US gal)	130.0 L (34.3 US gal)	38.0 kg (83.8 lb)
340/85R28	136.0 L (35.9 US gal)	122.0 L (32.2 US gal)	37.0 kg (81.6 lb)

Rear tires	Filling with water only*	Solution for temperatures up to -20 °C (-4.0 °F)	
		Water*	Calcium chloride
420/85R34	280.0 L (74.0 US gal)	246.0 L (65.0 US gal)	84.0 kg (185.2 lb)
480/70R34	285.0 L (75.3 US gal)	251.0 L (66.3 US gal)	86.0 kg (189.6 lb)
540/65R34	317.0 L (83.7 US gal)	285.0 L (75.3 US gal)	86.0 kg (189.6 lb)
420/85R38	280.0 L (74.0 US gal)	246.0 L (65.0 US gal)	84.0 kg (185.2 lb)
540/65R38	317.0 L (83.7 US gal)	285.0 L (75.3 US gal)	86.0 kg (189.6 lb)
480/70R38	285.0 L (75.3 US gal)	251.0 L (66.3 US gal)	86.0 kg (189.6 lb)
380/85 R38	91.0 L (24.0 US gal)	82.0 L (18.0 UK gal)	86.0 kg (189.6 lb)

(\*) The quantities of water for each tire shown in the table are approximate and may differ depending on the tire manufacturer.

The filling values with water and anti-freeze for temperatures up to **-20 °C (-4.0 °F)** shown in the table are only guidelines, and may vary according to the tire brand. It is advisable to contact skilled personnel.

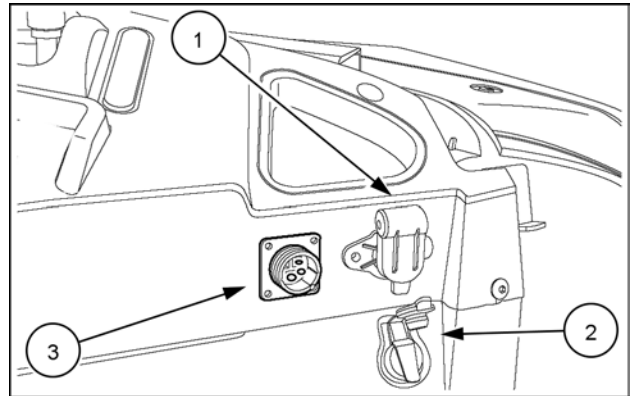
## Power sockets

### Power sockets

The single pole power socket **(1) 8 A** is located inside the cab on the right-hand side.

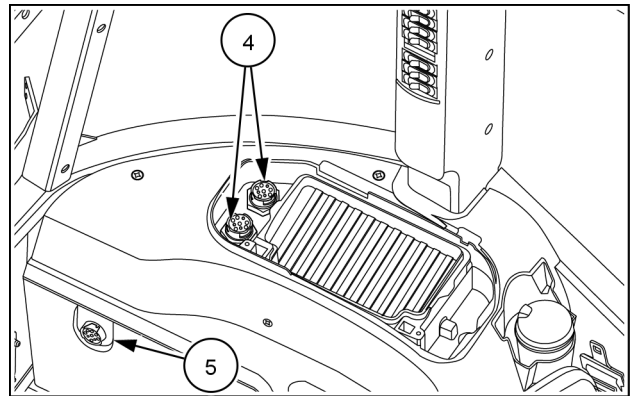
The **30 A** implement power socket **(2)** is located inside the cab on the right-hand side.

The **ISO 11783** connector **(3)** is installed inside the cab on the right-hand side and powers the AFS PRO 1200 monitor



MOIL15TR00565AA 1

The diagnostic sockets **(4)** and, if installed, the power socket for the automatic steering system **(5)** are installed inside the cab on the left-hand side.



MOIL24TR00684AA 2

**NOTICE:** The sockets are provided for dealers to connect diagnostic equipment to the tractor electrical control systems. Any attempt to connect other equipment to the diagnostic sockets may cause damage to the tractor electrical system or its components.



## 7 - MAINTENANCE

### General information

### General safety before you service

#### **⚠ DANGER**

Improper operation or service of this machine can result in an accident.  
Do not operate this machine or perform any lubrication, maintenance, or repair on it until you have read and understood the operation, lubrication, maintenance, and repair information.  
Failure to comply will result in death or serious injury.

D0010A

#### **⚠ DANGER**

Improper operation or service of this machine can result in an accident.  
Any unauthorized modifications made to this machine can have serious consequences. Consult an authorized dealer on changes, additions, or modifications that may be required for this machine. Do not make any unauthorized modifications.  
Failure to comply will result in death or serious injury.

D0030A

#### **⚠ WARNING**

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.

1. Disengage all drives.
2. Engage parking brake.
3. Lower all attachments to the ground, or raise and engage all safety locks.
4. Shut off engine.
5. Remove key from key switch.
6. Switch off battery.
7. Wait for all machine movement to stop.

Failure to comply could result in death or serious injury.

W1023A

#### **⚠ WARNING**

**Maintenance hazard!**

Before you start servicing the machine, attach a **DO NOT OPERATE** warning tag to the machine in a visible area.

Failure to comply could result in death or serious injury.

W0004A

#### **⚠ WARNING**

**Maintenance hazard!**

Always perform all service procedures punctually at the intervals stated in this manual. This ensures optimum performance levels and maximum safety during machine operation.

Failure to comply could result in death or serious injury.

W0132A

#### **⚠ WARNING**

Improper operation or service of this machine can result in an accident.

Read and understand the **SAFETY INFORMATION** Section before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.

Failure to comply could result in death or serious injury.

W0138A

**⚠ WARNING**

Improper operation or service of this machine can result in an accident.  
If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.  
Failure to comply could result in death or serious injury.

W0157A

**⚠ WARNING**

Personal Protective Equipment (PPE) required.  
When assembling, operating, or servicing the machine, wear protective clothing and PPE necessary for the particular procedure. Some PPE that may be necessary includes protective shoes, eye and/or face protection, hard hat, heavy gloves, filter mask, and hearing protection.  
Failure to comply could result in death or serious injury.

W0353A

**⚠ WARNING**

Moving parts!  
Install all covers, panels, and guards after servicing or cleaning the machine. Never operate the machine with covers, panels, or guards removed.  
Failure to comply could result in death or serious injury.

W0135A

**⚠ WARNING**

Avoid injury and/or machine damage!  
After installation or service, make sure you remove all tools from the machine.  
Failure to comply could result in death or serious injury.

W0902A

## Introduction

This section gives full details of the maintenance procedures required to keep your tractor in optimal working conditions. The lubrication and maintenance table provides rapid reference for this purpose.

### Maintenance frequency

The maintenance intervals at set times, given in this section, apply when the tractor is used under normal and not harsh conditions.

These maintenance intervals should be reduced even on a daily basis if necessary when there are adverse conditions (humidity, mud, sand, great dustiness, etc.).

Shortening the maintenance interval is particularly recommended for the following parts:

- Cleaning the cab air filters (use in humid or particularly dusty places).
- Radiator cores (use in particularly dusty places).
- Lubricators (use in particularly muddy places).

### Environmental protection

Always bear in mind the environmental protection rules before servicing this machine and before disposing of old fluids, lubricants and filters.

- Do not pour oil or fluids on the ground, down drains or into containers that can leak.
- Dispose of all old fluids, lubricants and filters in accordance with local regulations.
- Check with your local environmental recycling center or your local dealer for correct information.

When it is necessary to refill the fuel tank, or top up or change the oil, always place a container under the component to collect any spillage.

The products mentioned are pollutants and we must therefore prevent them from contaminating the environment in which we live.

### Preventing system contamination

To prevent contamination when changing oils, filters, etc., always clean the area around filler caps, level and drain plugs, dipsticks and filters prior to removal.

Before connecting auxiliary cylinders, ensure that oil contained within them is clean, has not degenerated due to long storage and is of the correct type. To prevent dirt entering, clean the lubricating fittings before lubrication.

Wipe excess grease from the fitting after greasing.

## Dealer service and parts

**NOTICE:** While any company can perform necessary service or repair on your equipment, CASE IH strongly recommends that you use only authorized CASE IH dealers and products that meet the given specifications. Improperly or incorrectly performed maintenance and repair voids the equipment warranty and may affect service intervals.

## Body maintenance

### Protection against atmospheric agents

Over the years, CASE IH has introduced a series of measures to protect the tractor from the deterioration and corrosion which can be caused by various external elements, such as those listed below:

- salinity and atmospheric humidity
- atmospheric pollution (industrial areas);
- abrasive action of solid substances;
- using tractor in the presence of aggressive chemical and/or organic substances;
- physical damage such as dents, abrasions or deep scratches.

The technical response to these problems was:

- highly corrosion-resistant zinc plating;
- paint systems and paints which help the tractor resist corrosion and abrasion;
- application of suitable hardened plastic coatings at points which are particularly vulnerable to corrosion (edges, projections and sheet-metal welded joints).

Unfortunately, external agents act in various ways according to environmental conditions and tractor use. However, if the user takes enough care, the tractor can be maintained better and for longer.

### Bodywork and cab

Where there are abrasions or deep scratches, which expose the underlying metal, they need to be retouched immediately with genuine products as follows:

- rub down the area thoroughly;
- apply the primer;
- leave to dry and then rub down once more;
- apply the paint;
- lastly, polish.

### Cab maintenance

- Periodically check that no water remains in areas covered with mats or padding.
- Protect the hinges and locks on the doors, roof and opening windows with lubricants and water-repellents.
- Clean the windows with suitable detergents. If necessary, use sulphuric ether.
- Remove the windscreen wiper blade and sprinkle talcum powder on the rubber surfaces.

## Cleaning the tractor

### **▲ DANGER**

**Hazardous chemicals!**

Excessive moisture and water infiltration into a Category 2 or 4 cab air filter housing may cause mold and bacterial growth in the air-conditioning system. This may cause rapid filter deterioration, resulting in the inability to purify the air of dust and Plant Protection Products (PPP). If this occurs, follow the instructions in this manual to replace the filter and/or sanitize the cab air ducts.

Failure to comply will result in death or serious injury.

D0178A

### **▲ WARNING**

**Fire hazard!**

When working with crop materials that may become airborne, frequently check for debris accumulation around the radiator, engine, and exhaust system. Stop the engine and wait for all movement to stop before clearing debris.

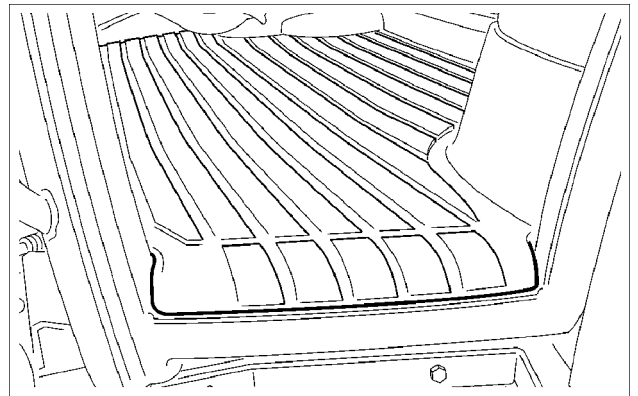
Failure to comply could result in death or serious injury.

W0294A

### Cab Interior

To avoid the accumulation of chemical residues inside the cab, clean the cab interior regularly using appropriate methods, following the requirements and guidelines set out in the relevant national laws.

The rubber floor covering is designed to allow water to flow out through the open doors. Wash the covering carefully and allow to dry naturally. Avoid getting water under the mat.



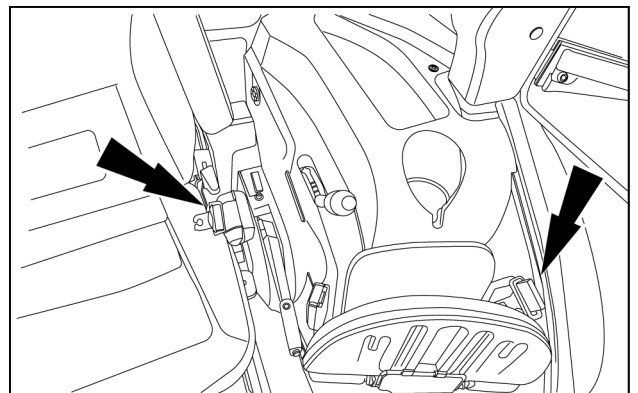
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### Cleaning the seat and seat belt

The belt may be sponged with clean, soapy water. Do not use solvents, bleach or dye on the belt as these chemicals will weaken the webbing.

Replace the belt when it shows signs of fraying, damage or general wear.

Do not use solvents to clean the seat. Use only warm water with a little detergent added or a proprietary brand of automotive upholstery cleaner. Avoid wetting the seat more than is absolutely necessary.



MOIL24TR00425AA 2

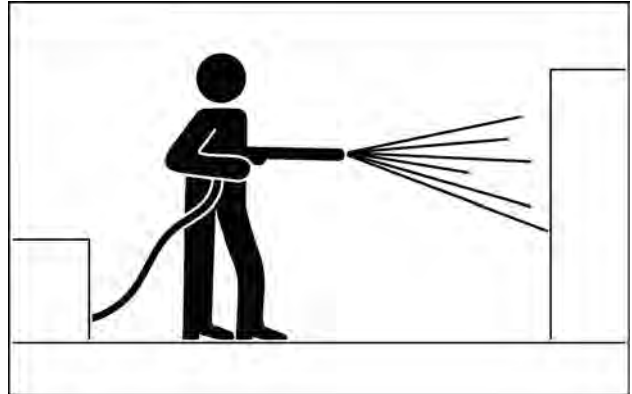
## Pressure washing the tractor

**NOTE:** Do not use soaps, chemical detergents, or cleaning agents that contain acids, caustics, or abrasives. Do not direct high-pressure spray at electronic or electrical components. Use a top-to-bottom wash sequence. Wash behind panels and in hidden areas. Adjust the water temperature to a maximum of 50 °C (122 °F).

1. Position the tractor on a solid level and horizontal surface. Engage the handbrake and/or parking lock. Shut down the engine and remove the key from the ignition. Make sure the doors and windows are closed.

Cab wash:

- Water spray to be applied in a sweeping action at a distance of more than 1.2 m (47.2 in).
- Use a top-to-bottom wash sequence. Water temperature above freezing.
- Your tractor is fitted with a number of Electronic Control Units (ECUs) that are linked to various sensors throughout the vehicle. These units electronically control many tractor functions including engine, transmission, Power Take-Off (PTO) and hydraulic systems.

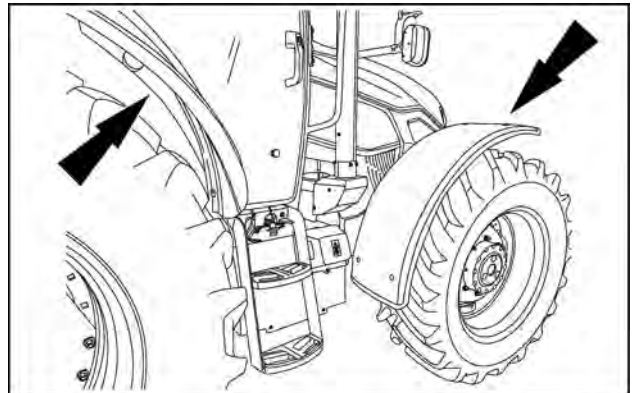


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It is very important therefore, when cleaning the tractor body or chassis with a high pressure water jet, that care should be taken not to aim the jet directly at any electrical component, wiring harness or connector.

## Washing fenders

Regularly clean the areas around the fenders using appropriate methods, following the prescriptions and guidelines set out in the relevant national laws, in order to avoid the accumulation of dirt.



MOIL24TR00435AA 4

## Hydraulic tubes

Periodically carry out the maintenance work on hydraulic pipes described below:

- Check periodically that the oil hoses and fittings are not damaged or deformed in the event of an impact and that there are no oil leaks.
- Check that the hydraulic connections are not loose due to vibration or damage.
- Place a clean carton under the tractor and wait as long as necessary to detect any fluid leaks. If oil stains are found on the carton, please contact an authorised CASE IH workshop, which must replace damaged hoses and fittings with original spare parts. Do not use the tractor in the event of oil leaks.
- Do not uncouple any hydraulic lines as they may be under pressure. Leaks of pressurized oil can cause serious injuries.
- Searching for leaks should only be carried out by experienced personnel. Oil leaks can cause accidents.

## Selective Catalytic Reduction (SCR) exhaust treatment - Basic instructions

### Requirements

The operator must maintain appropriate **DIESEL EXHAUST FLUID (DEF)/AdBLUE®** levels at all times. No additional maintenance is required.

**NOTICE:** Prolonged idling of the machine with no load for more than **6 h** will cause damage to the SCR catalyst.

**NOTE:** See your CASE IH dealer for replacement components and cleaning agents.

See “Engine oils” for recommended engine oils, their operating temperature ranges, and their maximum engine oil service change interval.

See “General specification - Biodiesel fuels” for details on biodiesel fuel usage in your CASE IH machine.

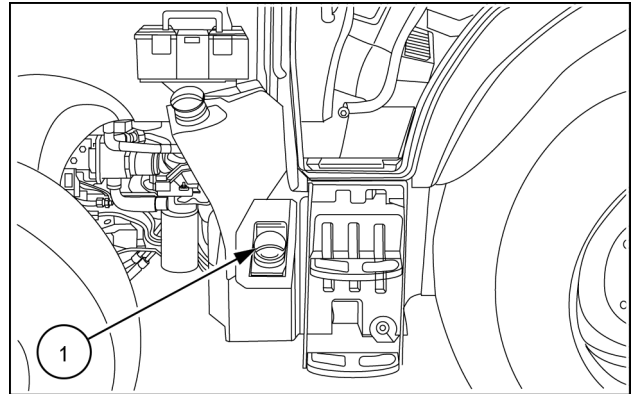
**NOTICE:** While any company can perform necessary maintenance or repairs on your equipment, CASE IH strongly recommends that you use authorized CASE IH dealers and products that meet given specifications. Improperly or incorrectly performed maintenance and repair voids the equipment warranty and may affect service intervals.

### DIESEL EXHAUST FLUID (DEF)/AdBLUE® refilling

The **DEF/AdBLUE®** tank is located on the left-hand side of the machine, next to the diesel filling port.

The **DEF/AdBLUE®** tank cap (1) can be identified by the “blue” color of the cap. A fitting under the cap prevents the insertion of a diesel fill nozzle.

**NOTICE:** If any **DEF/AdBLUE®** spills or contacts any surface other than the storage tanks, immediately clean the affected surface with clear water. **DEF/AdBLUE®** will cause corrosion on painted and unpainted metallic surfaces, and may distort some plastic and rubber components.



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It is recommended that **DEF/AdBLUE®** filling equipment should be used that has a fill nozzle/pump with the correct length and diameter, triggered by the magnet in the tank filler neck and with overflow flow cut out. This will ensure that:

- The screen in the filler neck will not be damaged.
- Impurities are not entering the **DEF/AdBLUE®** tank. The standardized **DEF/AdBLUE®** nozzle matches the filler neck diameter.
- The **DEF/AdBLUE®** tank is not overfilled, as the **DEF/AdBLUE®** pump will stop when the **DEF/AdBLUE®** tank is full.
- **DEF/AdBLUE®** is not pumped in the fuel tank, as the **DEF/AdBLUE®** nozzle cannot pump when the magnet is not sensed.

**NOTICE:** If a warning light has been triggered for low or empty **DEF/AdBLUE®**, the system must be reset by cycling the key switch OFF then ON after refilling the **DEF/AdBLUE®** tank.

**NOTICE:** Refilling with a funnel is not recommended, as this may lead to damage of the screen in the filler neck.

**NOTE:** The information above has been provided by the International Organization for Standardization (ISO), Document number **ISO 22241-4** Diesel engines - NOx reduction agent AUS 32 - Part 4: filling interface.

### DIESEL EXHAUST FLUID (DEF)/AdBLUE® consumption

**DEF/AdBLUE®** consumption is figured against the amount of fuel consumed. Typical **DEF/AdBLUE®** consumption is approximately **6%** of fuel consumption when you operate the machine at rated engine speed. **DEF/AdBLUE®** consumption can be as high as **15%** when NOx output increases. The consumption rate of **DEF/AdBLUE®** and fuel also depends on:

- Engine load

- Ambient humidity
- **DEF/AdBLUE®** fluid concentration
- Gear selections
- “Ground Speed”
- Engine speed during operation

**NOTE:** The “typical” consumption is only a guideline to verify proper function of the SCR system. CASE IH recommends to fill the **DEF/AdBLUE®** tanks at every fuel refilling interval.

## General specification - Biodiesel fuels

### Biodiesel usage in CASE IH products

#### Introduction to Fatty Acid Methyl Ester (FAME) biodiesel

FAME biodiesel, called biodiesel fuel in the following section, consists of a family of fuels derived from vegetable oils treated with methyl esters.

There are two main biodiesel fuel types: Rapeseed Methyl Ester (RME) and Soybean Methyl Ester (SME). RME is a blend of rapeseed and sunflower methyl ester, and is the preferred crop in Europe. SME is the preferred crop in the United States.

Biodiesel fuel is a renewable alternative fuel source. Its use and development is promoted worldwide, especially in Europe and in the United States.

**NOTICE:** *Your emissions control system is compatible with up to 7% biodiesel fuel (B7). Be aware that the use of biodiesel fuel that does not comply with the standards mentioned in this section could lead to severe damage to the engine, fuel system or aftertreatment system of your machine. The use of non-approved fuels may void CASE IH Warranty coverage.*

Biodiesel can be used to run Tier 4B (final), Stage IV and Stage V diesel engines only when blended with standard diesel fuel:

- B7: indicates the blend of **7%** biodiesel and **93%** diesel fuels.
- B20: indicates the blend of **20%** biodiesel and **80%** diesel fuels. Do not use.

Biodiesel fuel has several positive features in comparison with diesel fuel:

- Biodiesel adds lubricity to the fuel, which is beneficial in many circumstances, particularly as sulfur and aromatics are removed from the fuel.
- Biodiesel has a greater cetane number and burns cleaner.
- Biodiesel produces less particulate matter and reduces smoke emissions.
- Biodiesel is fully biodegradable and non-toxic.

#### Diesel and biodiesel fuel specifications

Tier 4B (final), Stage IV and Stage V diesel fuel specifications are covered by the following:

- **EN 590** - Specification of Diesel fuel. (10 ppm sulfur maximum.)

Biodiesel blends are covered by:

- European Diesel Fuel Specification **EN 590** allows up to **7%** biodiesel since 2009. European fuel suppliers are

allowed to use up to **7%** biodiesel fuel (B7) to supply the network.

Pure biodiesel blend stock (B100) specification is covered by the following requirements:

- Europe: **EN14214** - Automotive fuels. Fatty Acid Methyl Ester (FAME) for diesel engines. Requirements and test methods.
- **DIN V 51606** - German standard for biodiesel.

Before raw oil can be converted into usable biodiesel fuel, it must undergo transesterification to remove glycerides. During the transesterification process, the oil reacts with an alcohol to separate the glycerine from the fat or vegetable oil. This process leaves behind two products: methyl ester (the chemical name for biodiesel) and glycerine (a byproduct usually sold for use in soaps or other products).

**NOTICE:** *Biodiesel fuels approved for use in the CASE IH equipment must be transesterified and comply with the European Standard **EN14214** or the German standard **DIN V 51606**.*

**NOTICE:** *Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel, are fuels that are normally made from Rapeseed oil or similar high oil content crops. These kinds of fuel are not transesterified, so they do not fulfil the **EN14214** requirements. There is no recognized quality standard available for these types of fuel. Therefore the use of Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel are **NOT APPROVED** at any blend in any CASE IH product.*

**NOTICE:** *Any engine and fuel injection equipment fitted to a CASE IH vehicle found to have run with any blend of **NON-APPROVED** fuel (fuel not fulfilling the specification described in the requirement **EN14214**) will no longer be covered for Warranty by CASE IH.*

#### Biodiesel fuel usage conditions

You must stringently follow the biodiesel fuel usage conditions. Incorrect application of the biodiesel fuel usage conditions could lead to severe damage to the engine, fuel injection equipment and aftertreatment system.

The main concerns related to operation with biodiesel fuels are:

- Filters and injector blockage caused by poor fuel quality.
- Wear and corrosion of internal components due to water content, which affects lubricity.
- Deterioration of some rubber sealing compounds in the fuel system.
- Biodiesel oxidation, which can lead to the formation of deposits that can harm the fuel injection system.

**NOTICE:** Any problem in the engine fuel injection equipment associated with non-compliance to the following conditions for biodiesel fuel handling and maintenance will not be covered for Warranty by CASE IH.

Purchase biodiesel fuel from a trusted supplier who understands the product and maintains acceptable fuel quality.

The use of biodiesel blends up to B7 will not void the CASE IH warranty as long as the following conditions for biodiesel fuel handling and maintenance are stringently followed:

Biodiesel fuel must be pre-blended by the supplier. Mixing biodiesel fuels on-site can result in an incorrect mixture that could damage the engine and/or fuel system.

**NOTICE:** CASE IH may void your warranty if the problem is associated with poor fuel quality due to improper blending. It is the responsibility of the fuel supplier and/or yourself to ensure the right type of fuel and blend is delivered and used.

## Storage

The machine should not be stored for more than 6 months with biodiesel in the fuel system. For longer storage time, it is strongly suggested that only regular **EN 590** or #2 diesel fuel is used.

**NOTE:** If storage for longer than 6 months is necessary, the engine must be run on regular **EN 590** or #2 diesel for a minimum of 20 hours to flush the biodiesel fuel out of the fuel system prior to storage.

Biodiesel is highly hygroscopic and tends to collect water more than diesel fuel. This increases the risk of algae and bacteria growth which can cause severe damage to the fuel injection system. Keep the machine fuel tanks and on-site storage tanks as full as possible to limit the amount of air and water vapors inside the tank. Drain water from the tanks at least once a week.

**NOTICE:** Use only CASE IH approved biocide additives on Tier 4B (final), Stage IV and Stage V engines with an exhaust aftertreatment system.

## General specification - Diesel fuel

Only use diesel fuel that conforms to European standard **EN 590** or equivalent in your engine. Do not use any other low grade diesel fuel.

**NOTICE:** Use of other low grade diesel fuels will result in loss of engine power, high fuel consumption, and damage to the exhaust aftertreatment system (if equipped).

**NOTE:** When operating the machine in very cold climates, the use of winter blended fuel is permitted for a short period of time. See your fuel supplier for winter fuel requirements in your area.

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## Fuel conditioner

Diesel fuel conditioner is available from your CASE IH dealer. Instructions for the use of the fuel conditioner is on the container.

The use of diesel fuel conditioner will:

- Clean fuel injectors, valves, and manifolds for increased service life
- Disperse insoluble gummy deposits that form in the fuel system

- Separate moisture from the fuel
- Stabilize fuel in storage

**NOTICE:** Use only CASE IH approved biocide additives to prevent damage to the exhaust aftertreatment system (if equipped).

## Organic Acid Technology (OAT) coolant

CASE IH requires the use of a fully formulated Organic Acid Technology (OAT) based coolant. The coolant must meet the specifications outlined in the CNH Industrial material specification MAT3724. Use of coolant not meeting this specification is not allowed. Mixing of different coolant brands is not recommended.

**NOTICE:** OAT coolant is mandatory for all FPT engines compliant to Tier 4B (final) or Stage V emissions using Selective Catalytic Reduction (SCR). NEVER mix OAT coolant with IAT coolant. Under no circumstances should you top off a cooling system with only water.

Use distilled or demineralized water for diluting when using OAT coolant concentrate. The optimum OAT coolant to water concentration is 50/50. This concentration will protect the cooling system to **-37 °C (-35 °F)**. Do not exceed **60%** by volume ethylene glycol-based coolant. The heat dissipation and antifreeze properties may otherwise be negatively affected. You can use a refractometer to check the concentration level. If distilled or demineralized water is not available, use water for dilution with the following properties:

Property	Limit Maximum
Total Solids	<b>340 ppm</b>
Total Hardness	<b>170 ppm</b>
Chloride (Cl)	<b>40 ppm</b>
Sulfate (SO <sub>4</sub> )	<b>100 ppm</b>
Acidity pH	5.5 to 9.0

You should not use Supplemental Coolant Additives (SCA). Do not add rust inhibitors or other additives to your vehicle's cooling system. Contact your CASE IH dealer for approved additives and coolant analysis test package information.

### Service intervals

See **7-17** for the proper service intervals. Drain and flush the cooling system at the recommended drain interval, then fill with fresh coolant.

### Definitions

Inorganic Acid Technology (IAT) coolant:

A coolant that relies on inorganic inhibitors such as silicates, nitrites, and phosphates for corrosion and cavitation protection

Organic Acid Technology (OAT) coolant:

A coolant that relies on inhibitors such as organic acid salts for corrosion and cavitation protection.

## Engine oils

CASE IH prefers the use of engine oils that meet CNH Industrial standard **MAT3571** in your engine.

You may also use engine oils that meet CNH Industrial standard **MAT3572** in your engine.

You may use other engine oils if the engine oils meet **API CK-4** or **ACEA E6** or **ACEA E9** performance requirements.

CASE IH engine oils exceed API and ACEA performance requirements.

**NOTE:** Do not put performance additives or other oil additive products in the engine crankcase. See your CASE IH dealer for approved engine oil additives, engine oil analysis test package information.

RECOMMENDED VISCOSITY GRADES AT VARYING AMBIENT TEMPERATURE LIMITS												
	(H)	SAE 0W-40										
		(H)	SAE 10W-40									
		(H)	SAE 10W-30									
			(H)	SAE 15W-40								
-40 °C	-30 °C	-20 °C	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C			
-40 °F	-22 °F	-4 °F	14 °F	32 °F	50 °F	68 °F	86 °F	104 °F	122 °F			
(H) = Engine oil pan or coolant block heater recommended in this range												

## Engine oil and filter service intervals

CASE IH develops the oil/filter change intervals given in this manual from tests with CASE IH lubricants/filters.

Engine oil and filter service interval recommendations are based on type of engine oil, oil filter used, sulfur, bio-diesel content of diesel fuel. See diesel fuel recommendations for the approved Diesel fuel sulfur content, Bio-Diesel blends, and fuel specification information.

Always change engine oil and oil filter at the service intervals described in your maintenance chart. See **7-17**.

**NOTICE:** Service intervals must be reduced by **50%** (Maximum **300 h**) when using engine oils that do not meet CNH Industrial standards **MAT3571** or **MAT3572**.

Service intervals must be reduced by **20%** (Maximum of **500 h**) when using engine oils that meet CNH Industrial standard **MAT3572**.

## Fluids, lubricants and capacities

APPLICATION	CAPACITIES	PRODUCT NAME	SPECIFICATIONS
Engine (cooling)	16.0 L (4.2 US gal)	<b>EXTENDED LIFE OAT COOLANT/ANTIFREEZE</b> (If the premixed coolant is not available, mix the concentrate with 50% distilled water) ( <b>MAT3724</b> )	<b>ASTM D6210</b>
Engine (lubrication)	Filter included: 9.50 L (2.51 US gal) Only oil sump (MIN-MAX) 6.40 – 8.1 L (1.69 – 2.1 US gal)	<b>No.1 ENGINE OIL™ SAE 10W-40 CK-4 SEMI-SYNTHETIC</b> ( <b>MAT3571</b> ) Or <b>No.1 ENGINE OIL™ SAE 0W-40 CK-4 FULL SYNTHETIC</b> ( <b>MAT3571</b> )	<b>API CK-4</b>
Front axle housing	Front axle 4WD 1.5 HD 9.5 L (2.5 US gal)	<b>HY-TRAN® - PREMIUM HYDRAULIC TRANSMISSION OIL</b> ( <b>MAT3552-A</b> )	<b>API GL-4</b> <b>ISO VG-68</b> <b>SAE 10W - 30</b>
Front final drives each with and without brakes	Front axle 4WD 1.5 HD 2.5 L (0.7 US gal)		
Front Power Take Off (PTO)	0.4 L (0.1 US gal)		
Drive	Without front loader: 68 L (18 US gal) With front loader: 71 L (19 US gal)		
Air-conditioning system	650 g (23 oz)	<b>R134A</b>	ISO 13043
	550 g (19 oz)	<b>R1234YF</b>	ISO 13043 SAE J639
Air conditioning supercharger	0.250 L (0.066 US gal)	<b>SANDEN SP-10 LUBRICANT</b>	SP10
Windscreen wash reservoir	2.0 L (0.5 US gal)	<b>CONCENTRATED WINDSCREEN WASH</b>	-
<b>DIESEL EXHAUST FLUID (DEF)/AdBLUE® tank</b>	1.6 – 13.0 L (0.4 – 3.4 US gal)	<b>DEF/AdBLUE®</b>	<b>ISO 22241-1</b>
Fuel tank	129.5 L (34.2 US gal)	Diesel	<b>EN 590</b>
Grease fittings and bearings	-	<b>MULTI-PURPOSE GREASE EP / AW / NLGI 2</b> ( <b>MAT3555-A</b> )	<b>NLGI 2</b>

## Opening the hood

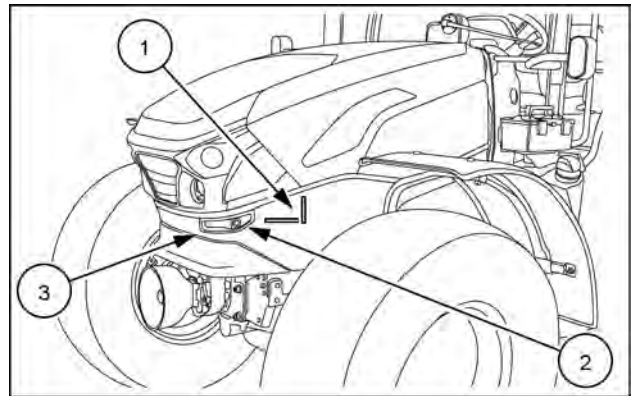
To access the engine components and carry out inspection, lubrication and maintenance operations, the hood must be opened.

To open the hood, proceed as follows:

1. To lock the hood, insert the specific opening tool **(1)** (supplied) in the hole **(2)**.
2. Push the tool **(1)** and simultaneously lift the hood using the dedicated handle **(3)**.

To close the hood proceed as follows:

1. Grasp the handle **(3)** and pull the hood down fully.
2. When the hood is closed, an audible click will signal engagement of the hood's self-locking system.
3. Check that the hood is properly closed.



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## Maintenance planning

## Maintenance chart

Maintenance action	Replace					Change fluid					Page Nr.
	Check	Drain fluid				Tightening	Test				
		Filling operation	Cleaning				Grease	Adjust			
As required											
Radiator - Check - Liquid level	x										7-20
Windshield washer fluid reservoir - Filling		x									7-20
Air conditioning - Check	x										7-21
Hand brake lever - Check	x										7-21
Remote control valve reservoir - Check	x										7-21
Radiator - Cleaning			x								7-22
Brake pedals - Check	x										7-22
Hydraulic steering line - Check	x										7-23
External lighting - Check	x										7-24
Wheels - Check	x										7-24
Master clutch release control - Check	x										7-24
Fuel tank - Cleaning - Filler neck filter			x								7-25
Diesel exhaust fluid (DEF)/AdBlue®/ARLA tank – Clean – Filler neck filter			x								7-25
On display of an alarm message											
Air cleaner - Clean			x								7-26
Particulate filters - Clean			x								7-27
Brake fluid reservoir - Filling	x										7-28
Fuel filters - Fluid draining			x								7-28
Engine - Replace - Oil and filter					x						7-29
Diesel exhaust fluid (DEF)/AdBlue®/ARLA tank – Replace fluid						x					7-32
Every 10 hours or daily											
Engine - Check - Oil level	x										7-33
Air tanks - Drain fluid			x								7-33
Remove all trash or organic debris material accumulation		x									7-34
After the first 50 hours of use											
Maintenance - Tighten						x					7-36
Maintenance - Check	x										7-36
Maintenance - Replace				x							7-36
Maintenance - Clean			x								7-37
Maintenance - Test							x				7-37
Maintenance - Grease								x			7-37
Every 50 hours											
All-wheel drive shaft (4WD) - Grease								x			7-38
Rear three-point hitch - Grease								x			7-38
Rear hitch - Grease - Mechanical lift								x			7-38
Front hitch - Grease								x			7-39
Front hitch - Grease - Hitch fitted to axle								x			7-39
Every 100 hours											
Air conditioning condenser – Cleaning			x								7-40
Transmission cooler – Cleaning			x								7-40
Aftercooler – Cleaning			x								7-41
Cab air cleaners - Cleaning			x								7-42

7 - MAINTENANCE

Maintenance action	Replace				Change fluid				Page Nr.
	Drain fluid				Tightening				
	Cleaning				Test				
	Filling operation				Grease				
	Check				Adjust				
Cab air cleaners - Cleaning - Recirculation Filters			x						7-43
Accessory belt - Check - Alternator belt	x								7-44
Compressor drive belt - Check	x								7-44
Check the front loader screws - hardware	x								7-45
Front hitch support - Check	x								7-45
Every 300 hours									
Lift oil filters - Replace				x					7-46
Transmission housing oil filter - Replacement - Auxiliary services				x					7-47
Transmission housing - Check - Oil level	x								7-47
Air cleaner - Clean			x						7-48
Final drive – Check	x								7-49
All-wheel drive (4WD) axle - Check	x								7-49
Steering knuckle and king pin - Grease – (4WD)							x		7-50
Front PTO housing - Check - Oil level	x								7-50
Accumulator - (if present)				x					7-52
Every 600 hours									
Engine - Replace - Oil and filter				x					7-29
Fuel filters - Replace				x					7-56
Suction strainer - Clean			x						7-57
Clean the DEF/AdBlue in-line filter			x						7-58
Wheels - Bolts and Nuts - Tighten							x		7-59
Driving wheel shaft – Grease – Bearing							x		7-60
Every 1200 hours or annually									
Cab air cleaners - Replace				x					7-61
Cab air cleaners - Replace - Recirculation Filters				x					7-61
Air filter - Replace - External cartridge				x					7-62
Air filter - Replace - Internal cartridge				x					7-63
Fuel tank – Drain fluid				x					7-64
Every 1200 hours or two years									
All-wheel drive axle (4WD) - Replace fluid				x					7-65
Final Drive oil – Replace- (4WD)				x					7-65
Transmission/drive line housing - Fluid change				x					7-65
Accessory belt - Replace - Alternator belt				x					7-66
Compressor drive belt - Replace - Air conditioner belt				x					7-66
Front PTO housing - Replace fluid				x					7-66
Diesel Exhaust Fluid (DEF)/AdBlue®/ARLA - Replacement - Tank level sensor and heater assembly suction filter				x					7-68
Rear lift arm - Greasing							x		7-69
Every 1800 hours or every 2 years									
Crankcase ventilation system - Replacement				x					7-71
Every two years									
Receiver-drier - Replace				x					7-71
Every 3600 hours or two years									
Diesel exhaust fluid (DEF)/AdBlue®/ARLA filters – Replace – Main filter				x					7-71
Every 3600 hours or four years									
Radiator - Replace fluid - OAT coolant				x					7-72

7 - MAINTENANCE

Maintenance action	Replace				Change fluid				Page Nr.	
	Drain fluid				Tightening					
	Cleaning				Test					
	Filling operation				Grease					
	Check				Adjust					
	Electricity									
Battery – Check	x									7-73
Road lights - Adjust									x	7-76
Road light - Replace						x				7-77
Turn signal and/or hazard lights - Replace						x				7-78
Headlight - Replace						x				7-78

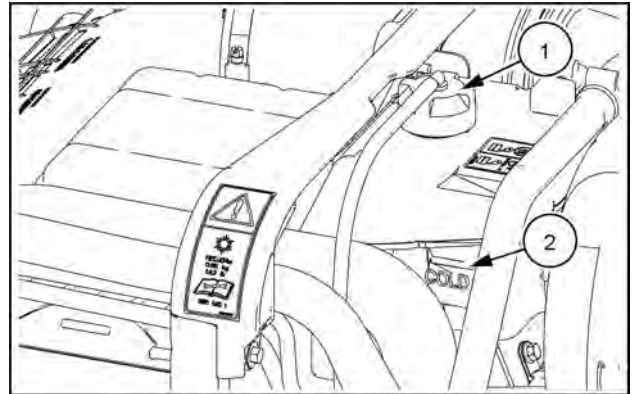
As required

## Radiator - Check – Liquid level

The coolant level when the engine is cold must always comply with the reference mark (2).

If necessary:

- Remove the cap (1).
- Top up with **EXTENDED LIFE OAT COOLANT/ANTIFREEZE** coolant.
- Refit the plug (1).



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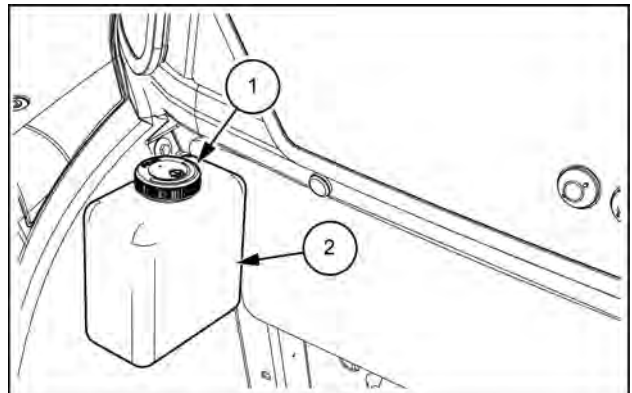
**NOTE:** For the type of engine coolant see page 7-13.

## Windshield washer fluid reservoir - Filling

To add liquid to the windshield washer tank:

- Remove the cap (1).
- Fill up the tank (2) with washing liquid.
- Re-install the plug (1).

**NOTICE:** Mix antifreeze with the water in the winter.

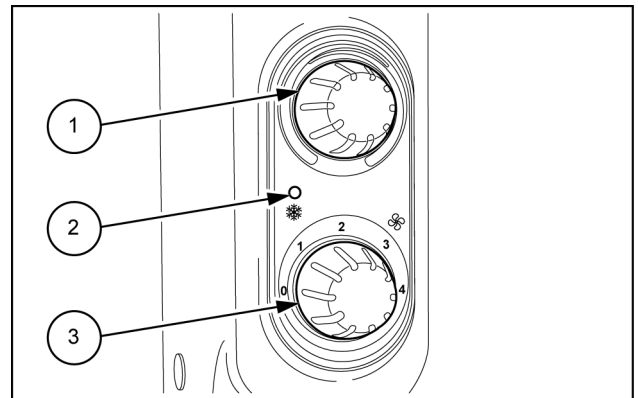


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## Air conditioning - Check

At the start of the period of use, check that the air-conditioning system is working properly following the procedure described below.

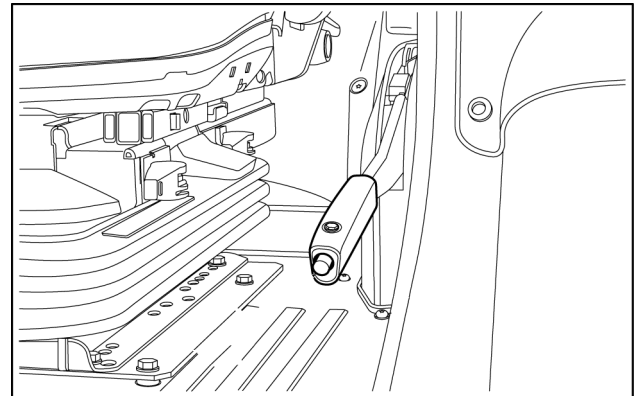
- Turn the engine ON.
- Turn the temperature control knob **(1)** fully counter-clockwise, toward the cooler part (blue area).
- Turn the electric fan control knob **(3)** to the first low-speed setting.
- 
- Press the knob **(3)** to turn on the air-conditioner. Check that the indicator light **(2)** is illuminated.
- Run the engine for a few minutes so that cold air comes out from the vents of the air conditioner.
- Hold a thermometer next to the air outlet vents. Check that the temperature readings are between **15.0 – 20.0 °C (59.0 – 68.0 °F)**.
- If not, consult your authorized dealer.
- Shut down the engine.



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## Hand brake lever - Check

If the handbrake locks the wheels over nine clicks, contact the authorised dealer to reset the hand braking stroke.

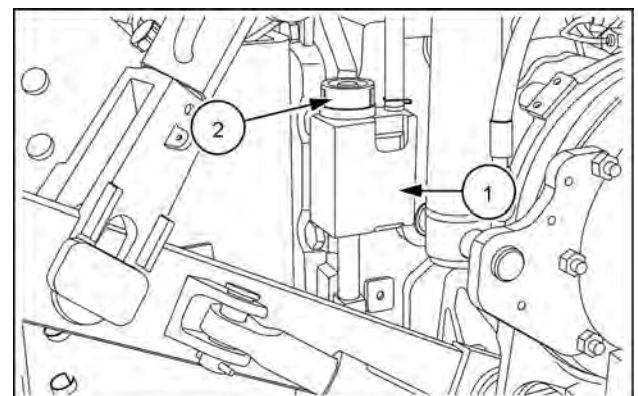


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## Remote control valve reservoir - Check

Visually check the oil level in the reservoir **(1)**. If necessary, empty it as follows:

1. Remove the reservoir **(1)** from its housing.
2. Remove cap **(2)**.
3. Empty the oil into a suitable collection container.
4. Re-install the plug **(2)**.
5. Refit the reservoir **(1)** into its housing, taking care to position it correctly.
6. Dispose of the oil in accordance with the regulations in force.



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## Radiator - Cleaning

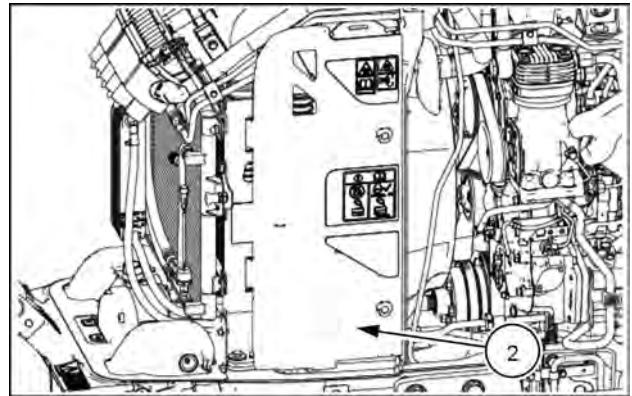
Check that no dirt has accumulated on the fins (1) and that they are not obstructed. If necessary, clean them as follows:

- Remove the bulkhead (2).
- Rotate the retaining clamp (3).
- Slide out the heat exchanger (4) in the direction of the arrow.
- Clean the radiator (5) with a jet of air or water from the back towards the front.

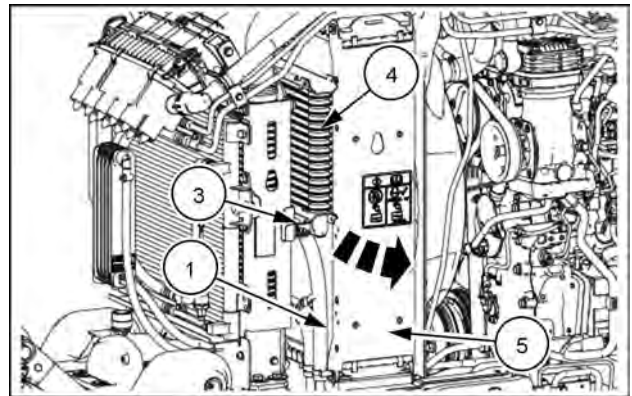
**NOTE:** For cleaning, use compressed air or a pressure washer not exceeding 7 bar (101.5 psi). Do not aim at the air filter.

- Check that the fins are not out of shape.
- Position the heat exchanger (4) back in its seat and lock it with the retaining clamp (3).
- Refit the bulkhead (2).

**NOTE:** If the grilles are blocked with any oily substances, apply a detergent solution and remove it with a pressure washer.



MOIL20TR01778AA 1



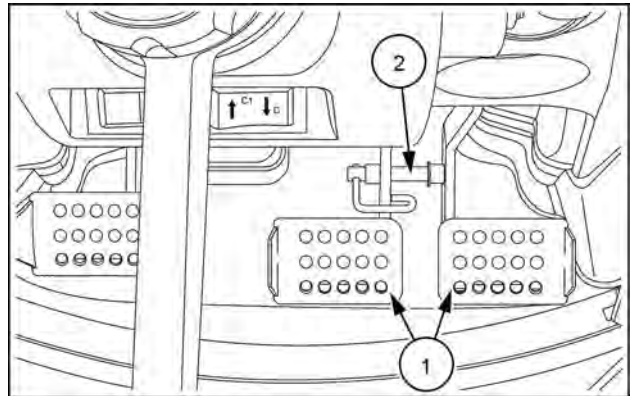
MOIL20TR01779AA 2

## Brake pedals - Check

Periodically:

- Visually check that the articulations and brake pedals drive linkage (1) are not damaged.
- Check that the pin (2) joining the pedals engages properly.

**NOTICE:** The braking members protect your safety too, you are recommended not to try and resolve any trouble on your own. If you notice any trouble with the operation of the brakes, have them checked by your dealer's specialized personnel.

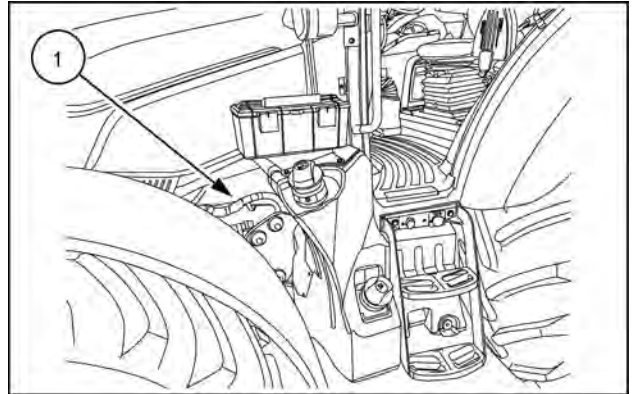


MOIL15TR02338AA 1

## Hydraulic steering line - Check

Visually inspect the hoses (1) on the vehicle and in particular the hoses of the steering system. Check for the presence of cracking and seepage along the lines surface and on their fittings.

**NOTE:** for hoses that are not visually accessible contact your authorized dealer.



MOIL24TR00434AA 1

## External lighting - Check

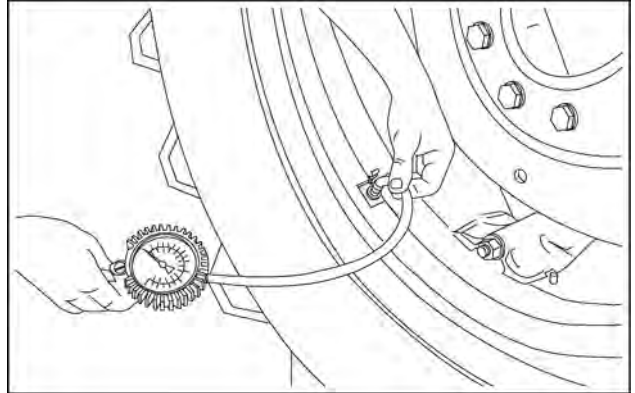
1. Make sure the light beam produced by the various lights is directed correctly to prevent dazzling drivers of on-coming vehicles. The procedure for adjusting them is given in the paragraph on the electrics.

## Wheels - Check

Connect a pressure gauge to the tyre valve and check that the pressure is as prescribed.

Check and adjust the front and rear tire pressures. Inspect the tread and sidewalls for damage.

Adjust the tire pressures to suit the load being carried.



DCUTLNEIT006S7A 1

**NOTE:** If the tires are ballasted with a calcium chloride/ water solution, use a special tire gauge as the solution will corrode a standard- type gauge. Check pressure with the valve stem at the bottom.

## Master clutch release control - Check

### Version with mechanical transmission

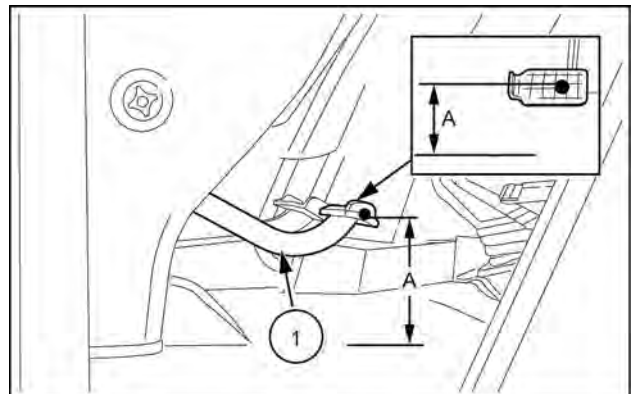
If the clutch pedal position is uncomfortable (too high) or it will not reach its upper rest position (to prevent the clutch slipping) check that the stroke (**A**) of the clutch pedal (**1**), depending on the model, is:

**160 mm (6.8 in) ± 2.0 mm (0.1 in)** without cab and without mat,

**155.0 mm (6.1 in) ± 2.0 mm (0.1 in)** without cab and with mat

**145.0 mm (5.7 in) ± 2.0 mm (0.1 in)** with cab

If not, refer to your dealer to have it checked and adjusted if necessary.

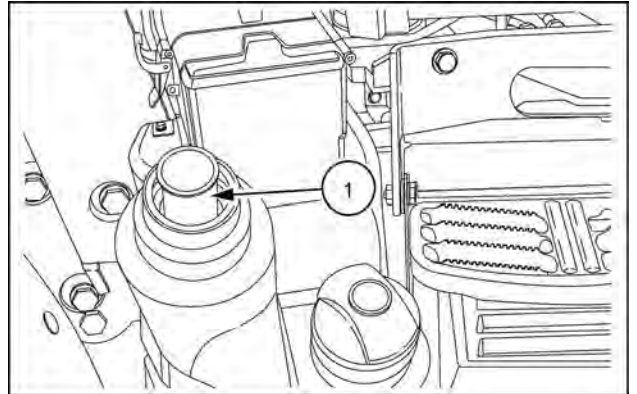


DCUTLNEIT055S7A 1

## Fuel tank - Cleaning - Filler neck filter

Periodically check for dirt inside the filter present in the fuel tank filler neck.

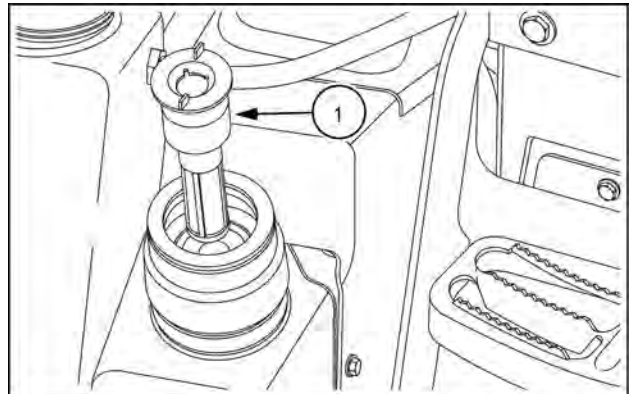
1. Extract the filter **(1)** from its seat.
2. Clean the filter with low pressure compressed air to remove any impurities present in it.
3. Refit the filter in its housing.



MOIL15TR01948AA 1

## Diesel Exhaust Fluid (DEF)/AdBlue®/ARLA tank - Cleaning - Filler neck filter

1. Periodically check the filter in the reservoir filler neck **DEF/AdBlue®** for dirt.
  1. Turn the filter **(1)** counter-clockwise. Remove the filter from its seat.
  2. Clean it with low pressure compressed air to remove any impurities present in it.
  3. Reposition the filter in its seat. Turn the filter clockwise to lock the filter.



MOIL14TR00456AA 1

## At warning message display

## Air cleaner - Cleaning

**CAUTION****Hot area!**

Use care when working near hot components. Wear protective gloves.  
Failure to comply could result in minor or moderate injury.

C0034A



When the central display of the instrument cluster shows the following symbol it means that the filter is clogged; do the job within an hour of operation.

To clean the engine air filter, proceed as follows:

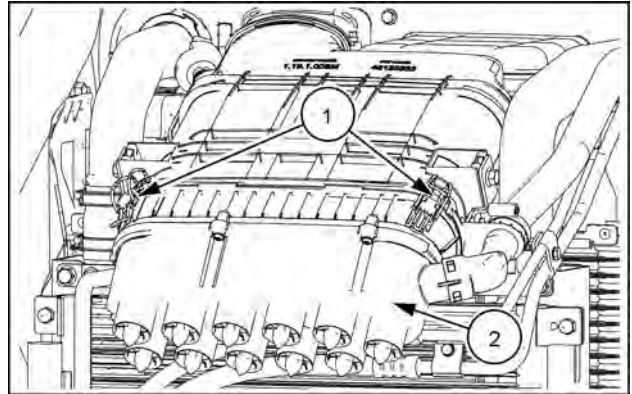
1. Open the locking hooks (1) of the cover (2).
2. Remove the (2) cover.
3. Remove the external cartridge (3) of the engine air cleaner.

**NOTE:** never remove the internal safety cartridge to clean it with compressed air, but replace it together with the external cartridge at the prescribed time.

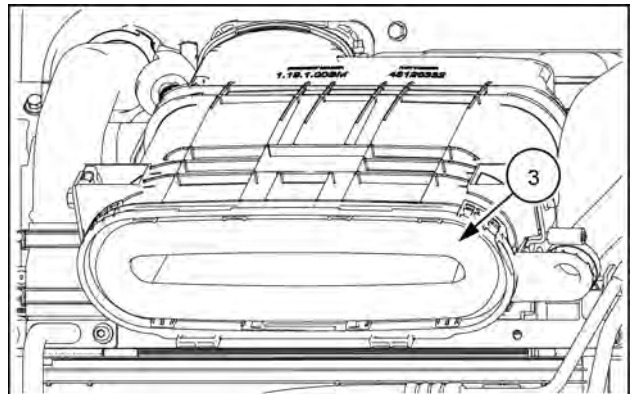
4. Place the external cartridge facing downwards on a flat surface (figure A).
5. Smack the cartridge a few times with the palm of your hand to eliminate any residues of dust, paying attention not to damage it. Alternatively, clean it with a jet of compressed air at a pressure less than **5 bar (72.5 psi)** in the direction shown in figure B, at a distance of at least **20 cm (7.9 in)**.

**NOTE:** When cleaning, never use diesel, petrol, solvents or water so as not to damage the filtering cartridge.

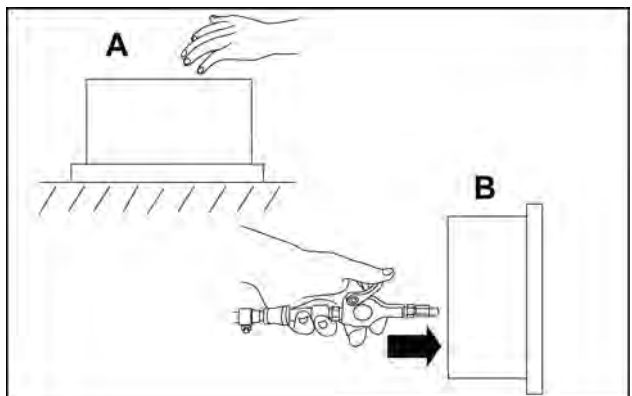
6. After cleaning, check that the pleated paper part of the cartridge is intact and has no cuts or holes in it. Otherwise replace.
7. Clean the inside parts of the filter housing carefully with a damp cloth.
8. Reinstall the clean filter.
9. Refit the cover (2) on the filter housing, making sure that it seals perfectly and lock it in position with the hooks (1).



MOIL20TR01781AA 1

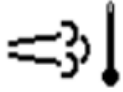


MOIL20TR01782AA 2

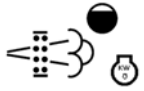


MOIL15TR00185AB 3

## Diesel Particulate Filters (DPF) - Cleaning



When one of these symbols appears on the instrument panel's central display, proceed as described in paragraph **6-41**



## Brake fluid reservoir - Filling

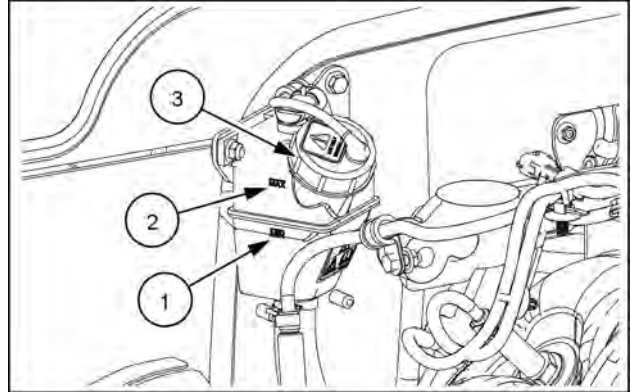


When the central display of the instrument cluster shows the symbol shown at the side, this means that the brake fluid level has dropped below the minimum level (1). Top up the level.

Check that the level of the fluid is always above the minimum level (1) indicated on the reservoir. If necessary, proceed as follows:

1. Loosen the cap (3).
2. Fill with brake oil **HYDRAULIC ACTUATOR FLUID LHM BRAKE FLUID**
3. Screw the cap (3) back in place.

**NOTE:** do not overfill the tank beyond the maximum oil level (2).



MOIL20TR01783AA 1

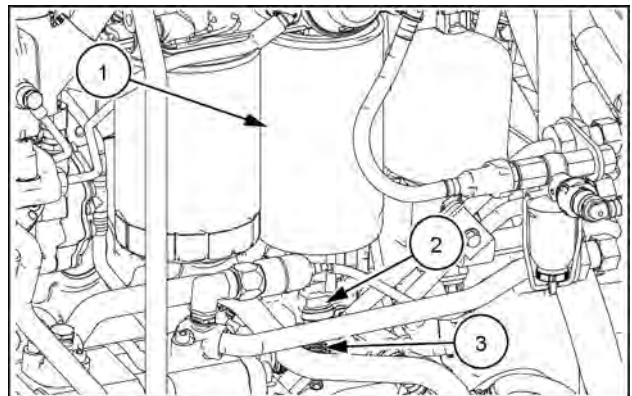
**NOTICE:** if the light remains illuminated, even after adding fluid, contact your dealer to have the trouble resolved. The braking members protect your safety too, you are recommended not to try and resolve any trouble with the hydraulic system on your own.

## Fuel filters - Drain fluid



When the central display of the instrument panel shows the following symbol it means that there is water in the fuel, drain the fuel filter immediately.

- Place a container under the filter (1).
- Remove the sensor wire (3) from the drain plug.
- Open the drain plug (2) on the separator filter by loosening the knob.
- Allow contaminated fuel to drain until only clean fuel runs out.
- Close the drain plug and replace the sensor wire.
- Dispose of the drained fuel appropriately.



MOIL20TR01784AA 1

**NOTE:** Dispose of the drained fuel according to current regulations.

## Engine - Replace - Oil and filter

### ⚠ WARNING

#### Burn hazard!

Be very careful to avoid contact with hot fluids. If fluid is extremely hot, allow it to cool to a moderately warm temperature before proceeding.

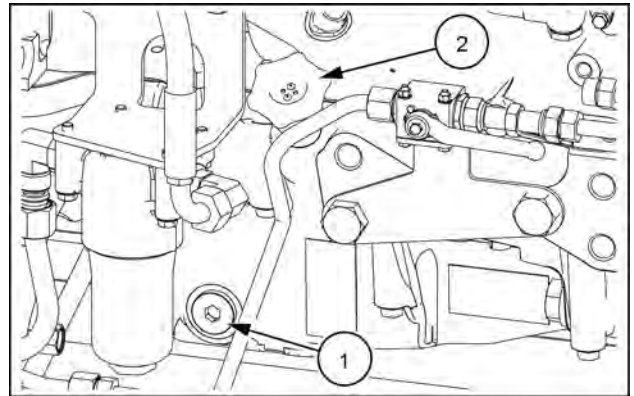
Failure to comply could result in death or serious injury.

W0362A

### Engine oil Drain

To drain the engine oil, proceed as follows:

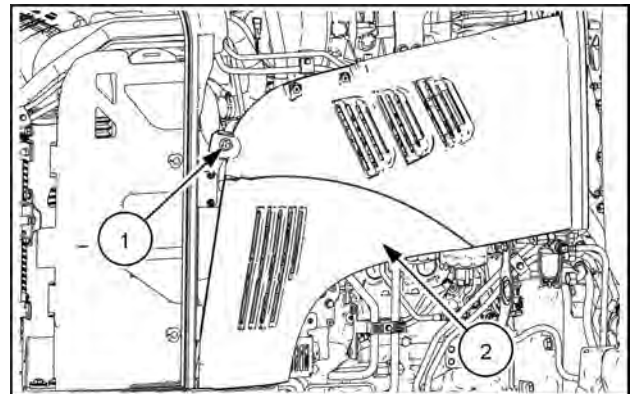
1. The engine must be brought to normal operating.
2. Switch off the engine.
3. Allow at least five minutes for the oil to settle in the engine sump.
4. Place a container of a suitable size under the engine oil sump.
5. Loosen and remove the plug (2).
6. Remove the drain plugs (1) from the sump (one on each side). Drain all the oil.



MOIL20TR01785AA 1

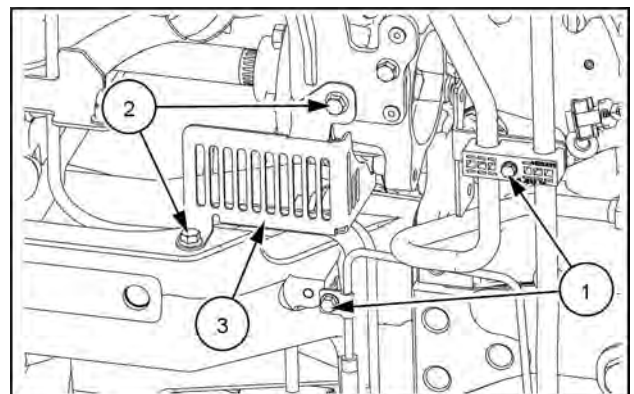
Remove the side panel.

1. Remove the fastener (1).
2. Remove the side panel (2).



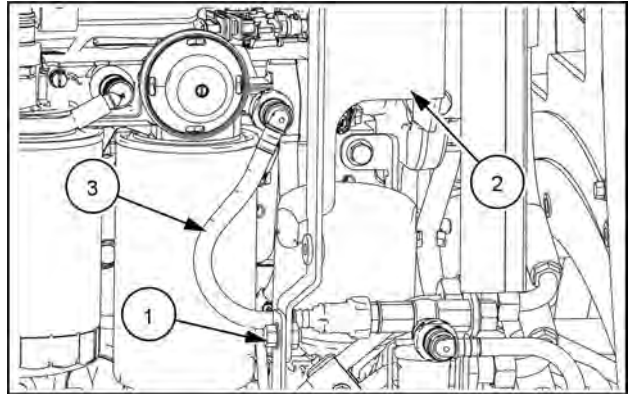
MOIL20TR01803AA 2

1. Loosen the hexagon head bolts (1). Remove the relative clips.
2. Loosen the hexagon head bolts (2). Remove the protective grill (3).



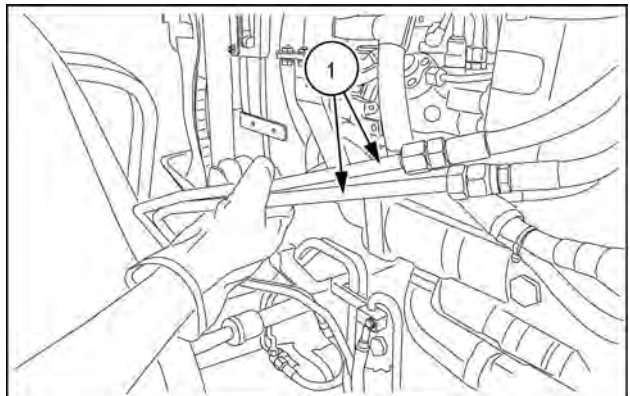
MOIL20TR01800AA 3

3. Place a container under the engine oil filter.
4. Slacken off bolt (1). Remove the bracket (2).
5. Remove the tube (3).



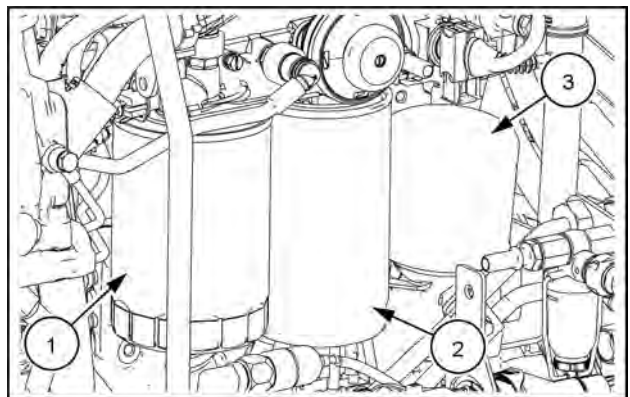
MOIL20TR01801AA 4

6. Move the tubes (1) to facilitate access to the filters. Take care not to damage the tubes.



MOIL14TR01264AA 5

7. Use a strap wrench to remove the fuel filter (1).
8. Disconnect the sensor of the fuel pre-filter (2). Use a strap wrench to remove the filter.
9. Use a strap wrench to remove the engine oil filter (3).
10. Drain the filter. Dispose of the filter in accordance with current local regulations.
11. Clean the surface of the engine oil filter seat.
12. Lightly oil the seal of the new engine oil filter. Screw the filter into contact with the support. Tighten the filter by hand by 3/4 of a turn or by a maximum of one full turn.

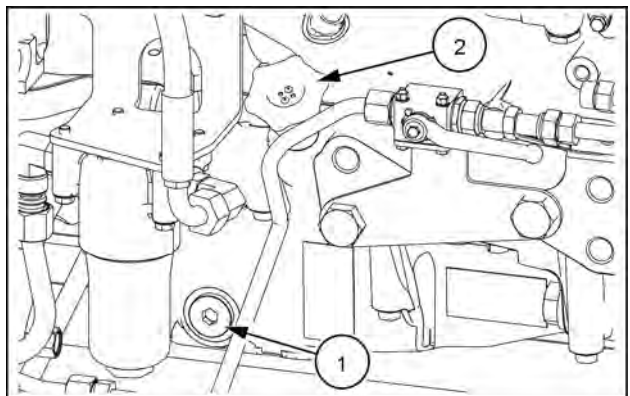


MOIL20TR01802AA 6

## Change eng oil

After having drained the engine oil as previously described, change the engine oil as follows:

1. Retighten the drain plugs (1) previously removed.
2. Top up with oil (see 7-15 via the filler neck (2)).
3. Start engine. Leave the engine to run at idle speed for at least **3 min**.
4. Switch off the engine.
5. Wait **5 min** to allow the oil to return to the sump.
6. Check that the oil level is between MIN and MAX marks on the rod below the filler cap.
7. If necessary, top up the oil.
8. Reinstall the filler cap.



MOIL20TR01785AA 7

**NOTICE:** Whenever changing oil it is indispensable to reset the engine oil working hours counter, as described at page 3-53.

**NOTE:** replace the fuel filters before refitting the bracket (2) figure 4 and side panel (2) figure 2

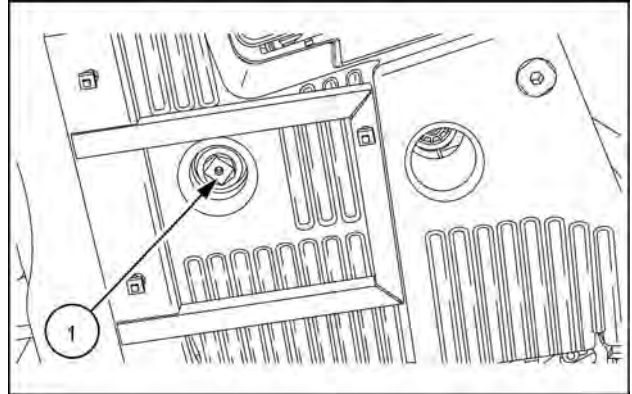
**NOTE:** Do not fill beyond the MAX mark on the dipstick. Excess oil will burn off, create smoke and give a false indication of oil consumption. Do not start the engine with the oil level below the MIN mark on the rod.

## Diesel Exhaust Fluid (DEF)/AdBlue®/ARLA tank - Change fluid



When the central display of the instrument cluster shows the following symbol relating to the poor quality of the **DEF/AdBlue®** fluid, it must be replaced as follows.

1. To change the **DEF/AdBlue®** fluid, proceed as follows:
  1. Place a container under the tank.
  2. Remove the plug **(1)** and drain all the fluid.
  3. Refit the plug **(1)**.
  4. Fill the tank with new **DEF/AdBlue®** fluid.
  5. Dispose of the **DEF/AdBlue®** fluid according to current regulations.



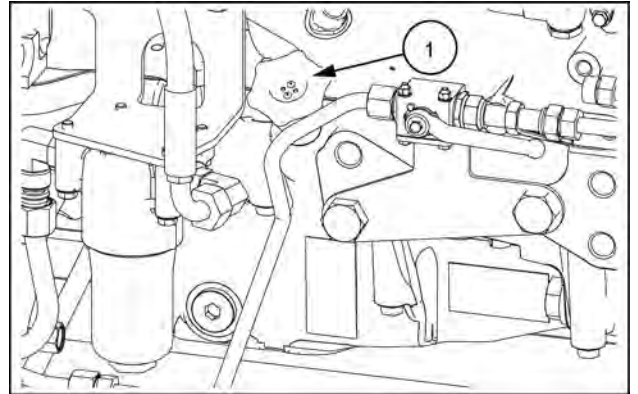
MOIL15TR03430AA 1

## Every 10 hours or daily

### Engine - Check — Oil level

To check the engine oil level, proceed as follows.

- Park the tractor on flat ground.
- Switch off the engine.
- Allow at least five minutes for the oil to settle in the sump:
- Loosen and remove the cap **(1)** provided with dipstick, clean it with a cloth and replace it in its filler neck .
- Remove the dipstick again and check that the oil level is between the " MIN and MAX" marks.
- If necessary, add oil **No.1 ENGINE™ OIL SEMI-SYNTHETIC 10W-40** or **No.1 ENGINE™ OIL FULL SYNTHETIC SAE 0W-40** from the filler until the level is reached.
- Put the dipstick back into its union and close it properly.



MOIL20TR01785AA 1

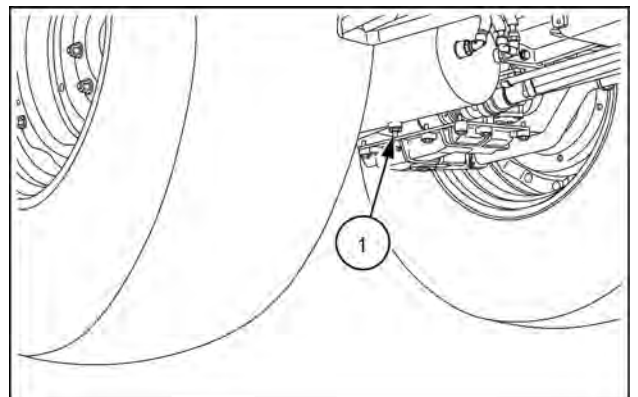


A red warning light on the instrument cluster shows when the oil level is low.

Do not fill above the zone between the MIN and MAX marks on the dipstick. Excess oil burns, creates smoke and gives a false indication of oil consumption.

### Air tanks - Drain fluid

At the end of the working day, drain the condensation water from the compressed air reservoir using the valve **(1)**.



MOIL14TR00274AA 1

## Remove all trash or organic debris material accumulation

### ⚠ WARNING

#### Fire hazard!

When working with crop materials that may become airborne, frequently check for debris accumulation around the radiator, engine, and exhaust system. Stop the engine and wait for all movement to stop before clearing debris.

Failure to comply could result in death or serious injury.

W0294A

### ⚠ WARNING

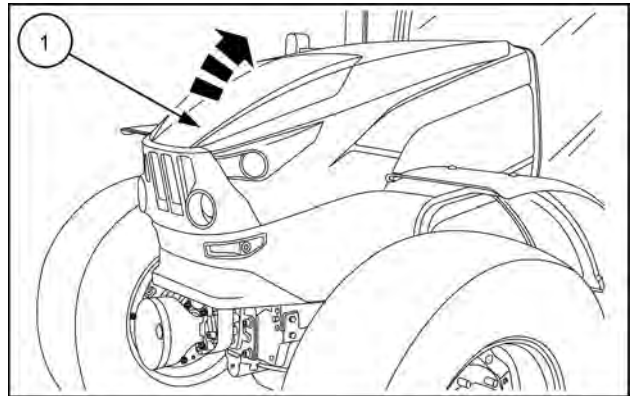
#### Flying debris!

Wear eye protection and protective clothing during the cleaning process. Clear the area of bystanders. Failure to comply could result in death or serious injury.

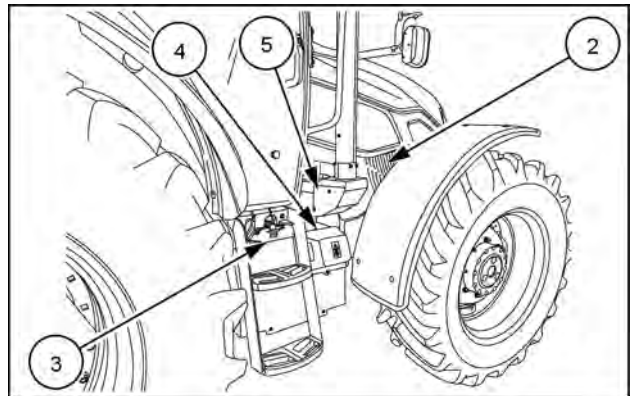
W0364A

1. Check the tractor for the presence of any trash or organic debris material accumulation. Remove the covers and shields around the exhaust system components to have better visibility. Fire risk can be minimized by keeping the machine clean. Refer to the Safety Information (Chapter 2) in this manual for additional instructions. When working in debris conditions:

- Raise the engine hood (1)
- remove the side panels (2)
- remove the right-hand side step cover (3),
- remove the SCR catalyst covers (4), (5),
- check that there is no build-up of deposits and clean the tractor thoroughly if necessary.
- Check at least once a day for the accumulation of material, dirt or debris on the surface of the engine hood and front grille.

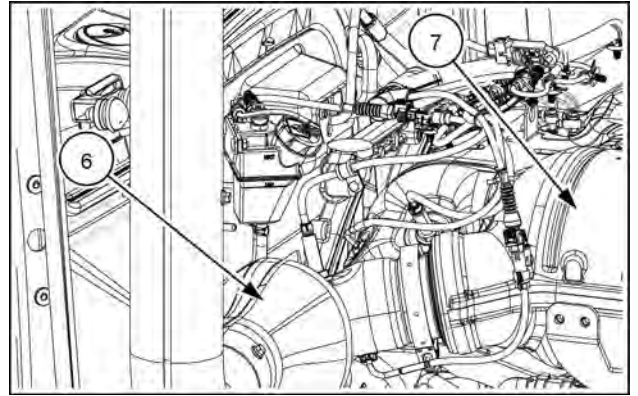


MOIL24TR00287AA 1



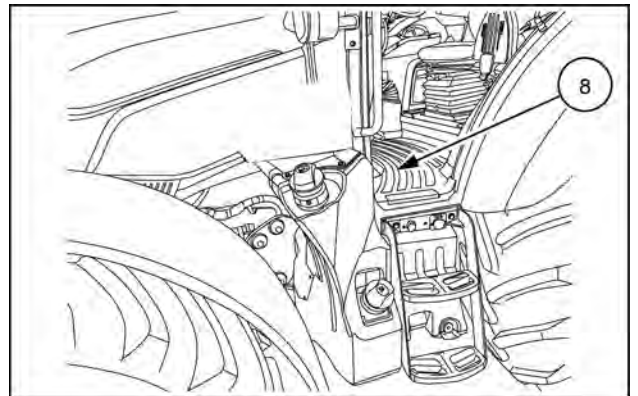
MOIL24TR00435AA 2

2. Check for debris in the area around the exhaust protection (6) and catalyst (7).



MOIL21TR00884AA 3

3. In the cab area:
  1. Check at least once a day for (8) dirt or debris from the machine, then remove the accumulation of material in the cab (8).  
The operator is responsible for removing and/or cleaning the machine of such debris.



MOIL24TR00434AA 4

- Promptly repair leaks and clean up fuel and oil spills.
- Investigate any unusual noises, smells, vibrations, or functional abnormalities. Contact your authorized dealer if repairs are needed.
- Remove all rubbish and debris from the tractor, especially around hot components such as the engine, drive line, exhaust, battery, wheel chock storage compartment, engine side rails and front loader area
- Remove all debris accumulation around moving components such as bearings, pulleys, belts, cleaning fans, etc.

**NOTE:** Remember to re-install everything prior to starting or operating the tractor.

**NOTE:** More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

## After the first 50 hours of operation

### Maintenance - Tighten

1. Bolts and lock nuts tightening
  - Cab
  - Disc to hub
  - Disc to rim
  - Ballast
  - Exhaust manifold
  - Front loader
  - Front hitch

### Maintenance - Check

1. Level check
  - Cooling fluid
  - Front axle differential and hub oil
  - Engine oil
  - Transmission oil
  - Liquid to the windshield washer reservoir
2. Functionality and integrity
  - Radiator
  - Charge air cooler
  - Air conditioning condenser
  - Transmission oil heat exchanger
  - Air conditioning compressor belt
  - Poly-v belt
  - Fluid & Oil Leaks
  - Hose and hose connections
  - Compressor belt for the air brakes on the trailer
  - Tire and tire pressure
  - Seatbelt
  - Safety signs (make sure decals are perfectly legible)
3. Adjust
  - Park Brake
  - Stroke pedal brake

### Maintenance - Replace

1. Replace
  - Transmission oil screen
  - Hydraulic oil filter
  - Primary Fuel Filter
  - Secondary Fuel Filter

## **Maintenance - Cleaning**

1. Cleaning
  - Dry air cleaner - External cartridge
  - Cab air filters
  - Cab recirculated air filter
  - Fuel Pre-Filter

## **Maintenance - Test**

1. Operation
  - Lights and instruments
  - Calibrate transmission clutches
  - Transmission and gear selection
  - Power Take-Off (PTO)
  - Hydraulic system (lift and remote control valve)
  - Joystick
  - Engine including throttle
  - Steering
  - Differential lock engagement and disengagement
  - 4WD engagement and disengagement
  - Brake and brake pedal latching pin
  - Neutral start switches

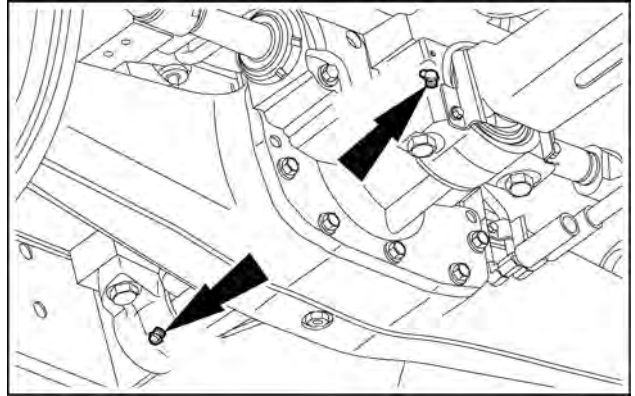
## **Maintenance - Grease**

1. Greasing
  - All grease fittings

Every 50 hours

## Four-Wheel Drive (4WD) axle - Grease

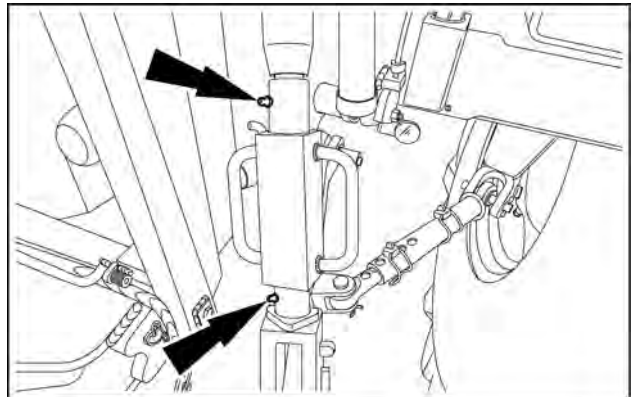
Using a grease gun, pump **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease into the two lubrication fittings shown.



DCUTLNEIT014S7A 1

## Rear three-point hitch - Grease

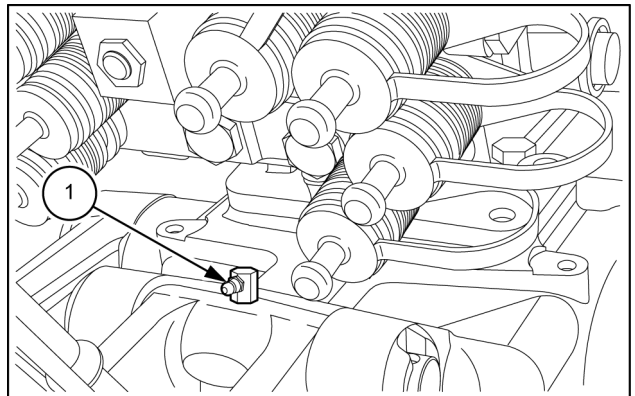
1. Using a grease gun, pump **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease into the grease fittings shown (two on each side).



MOIL13TR00158AA 1

## Rear hitch - Grease – Mechanical lift

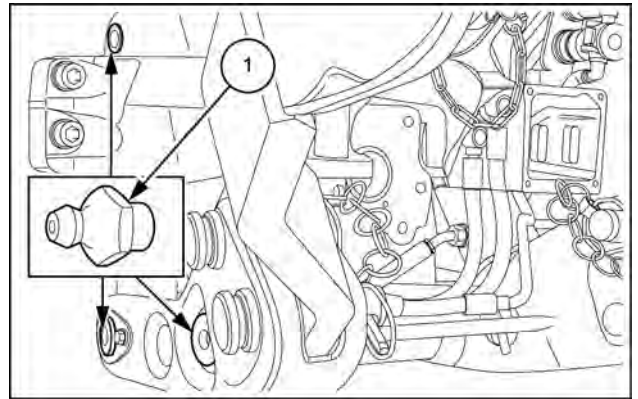
Using a grease gun, pump **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease into the grease fitting (1).



MOIL13TR02516AB 1

## Front hitch - Grease

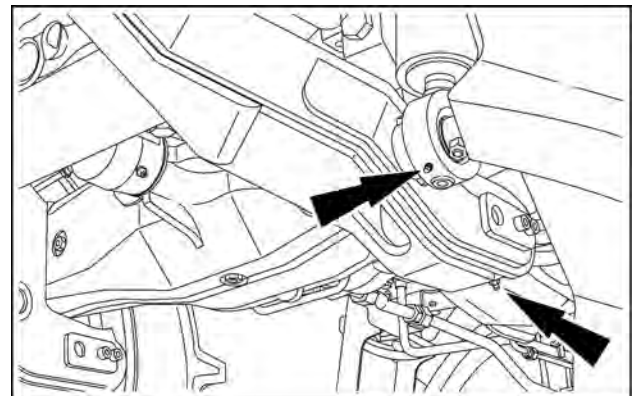
1. Using a grease gun, pump grease **MULTI-PURPOSE GREASE EP / AW / NLGI 2** into the grease fittings shown (three on each side).



MOIL12TRO0589AA 1

## Front hitch - Grease - Coupling mounted on the axle

1. Using a grease gun, pump **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease into the grease fittings shown (two on each side).



MOIL16TR03551AA 1

## Every 100 hours

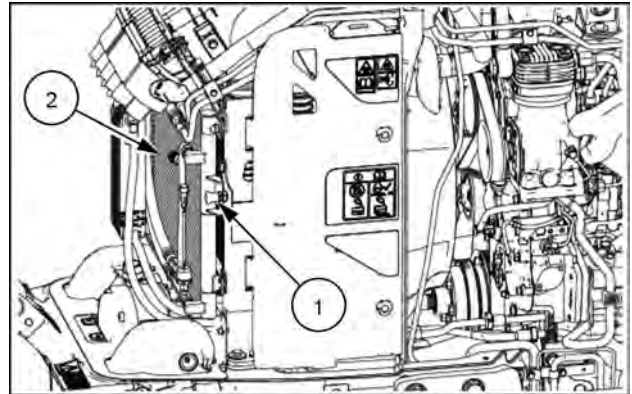
### Air-conditioning condenser - Cleaning

Check no dirt has accumulated on the fins and that they are not obstructed. If necessary, clean them as follows:

- Pull the retaining clamp (1).
- Move the condenser (2) to one side.
- Clean the condenser with a jet of air or water from the back towards the front.

**NOTE:** For cleaning, use compressed air or a pressure washer with a pressure that does not exceed **7 bar (101.5 psi)**. Do not aim at the air filter.

- Check that the fins are not out of shape; if necessary carefully straighten them.
- Repeat the previous operations for the opposite side.
- Reposition the condenser (2) in its seat and lock it using the retaining clamp (1).



MOIL20TR01778AA 1

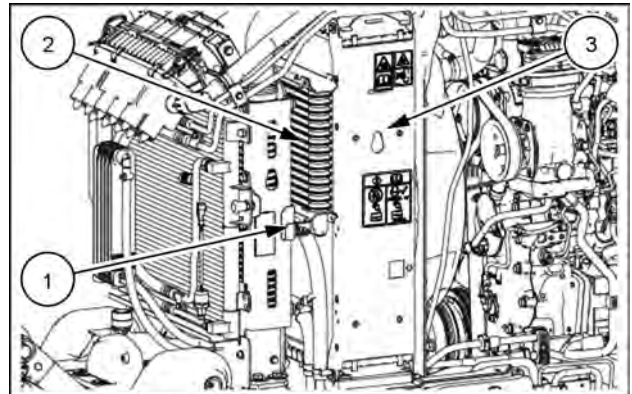
### Transmission cooler - Cleaning

Check no dirt has accumulated on the fins and that they are not obstructed. If necessary, clean them as follows:

1. Remove the bulkhead (3).
2. Rotate the retaining clamp (1).
3. Extract the heat exchanger (2) from the left-hand side.
4. Clean the exchanger with a jet of air or water from the back towards the front.

**NOTE:** For cleaning, use compressed air or a pressure washer with a pressure that does not exceed **7 bar (101.5 psi)**. Do not aim at the air filter.

5. Also check that the fins are not deformed; if so, straighten them carefully.
6. Position the heat exchanger (2) back in its seat and lock it with the retaining clamp (1).
7. Refit the bulkhead (3).



MOIL20TR01779AA 1

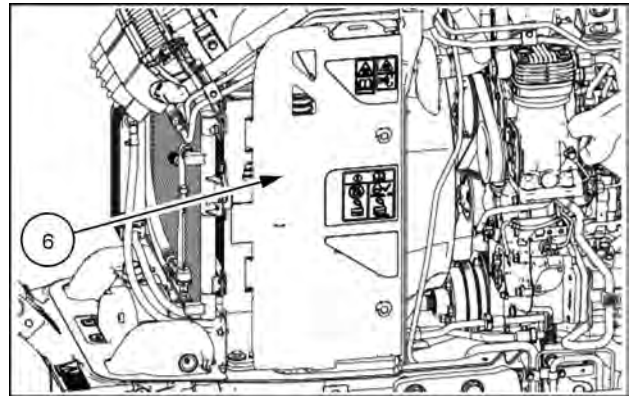
## Aftercooler - Cleaning

Check that no dirt has accumulated on the fins of the aftercooler (1) and they are not obstructed. If necessary, clean them as follows:

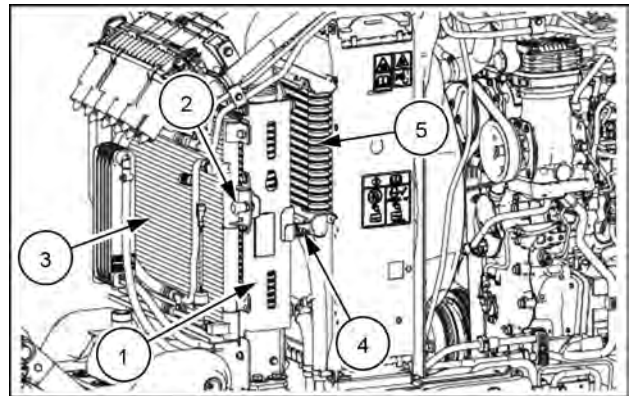
1. Remove the bulkhead (6).
2. Pull the retaining clamp (2).
3. Move the condenser (3) to one side.
4. Rotate the retaining clamp (4).
5. Extract the heat exchanger (5) from the left-hand side.
6. Clean the intercooler (1) directing a jet of air or water from the back towards the front.

**NOTE:** For cleaning, use compressed air or a pressure washer with a pressure that does not exceed **7 bar (101.5 psi)**. Do not aim at the air filter.

7. Position the heat exchanger (5) back in its seat and lock it with the retaining clamp (4).
8. Reposition the condenser (3) in its seat and lock it using the retaining clamp (2).
9. Refit the bulkhead (6).



MOIL20TR01778AA 1



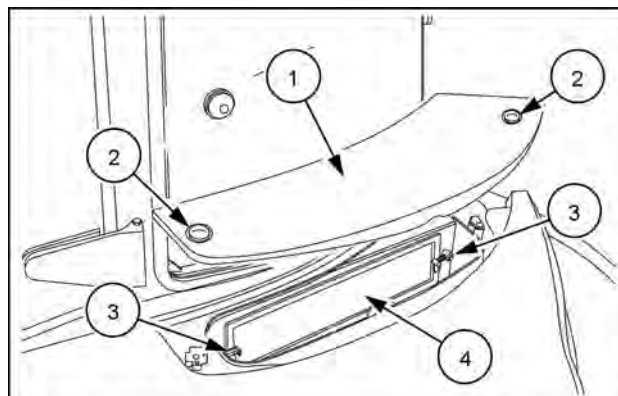
MOIL20TR01779AA 2

## Cab air filters - Cleaning

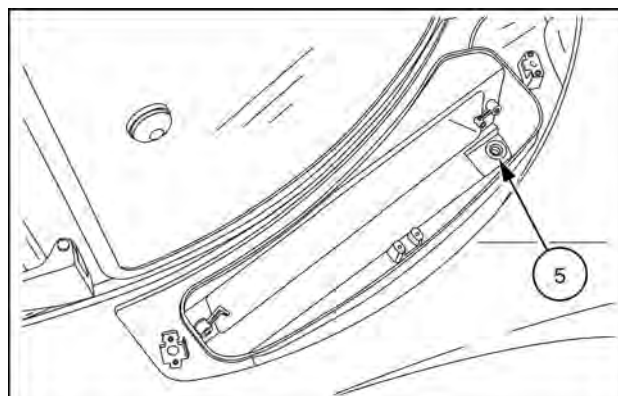
To clean the cab air cleaners proceed as follows:

1. Unscrew the retaining bolts (2) to remove the cover (1) from the rear fender.
2. Open the two filter retaining clips (3).
3. Remove the filter (4)
4. Clean the filter (4) by one of two methods:
  - Tap the filter gently on a flat surface with the outward-facing part downwards
  - Clean with a jet of compressed air with a maximum pressure of **2.0 bar (29.0 psi)** at a minimum distance of **10.0 cm (3.9 in)**
5. Clean the filter seat with a cloth.
6. Check that the (5) drain hole is not clogged.
7. Refit the clean filter with the arrows on the label pointing towards the inside of the fender.
8. Close the two filter retaining clips (3).
9. Refit the cover (1).

**NOTE:** repeat the same operations on the opposite fender.



MOIL15TR01625AA 1

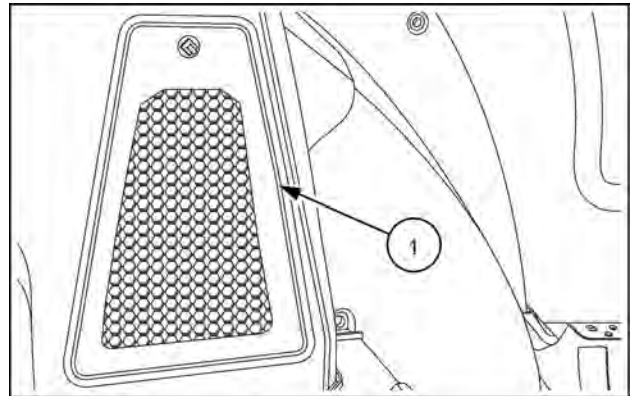


MOIL15TR01626AA 2

**NOTE:** If necessary, the maintenance operations required after 100 hours of work should be carried out even on a daily basis when there are adverse conditions (wetness, mud, sand, large amounts of dust, etc.). Under these conditions, it is recommended that filter elements are replaced after every 50 cleaning operations.

## Cab air filters - Cleaning - Recirculation Filters

Remove the grille (1) and clean the air recirculation filter contained inside (to be done on both sides).



MOIL15TR00347AA 1

## Accessory belt - Check - Alternator belt

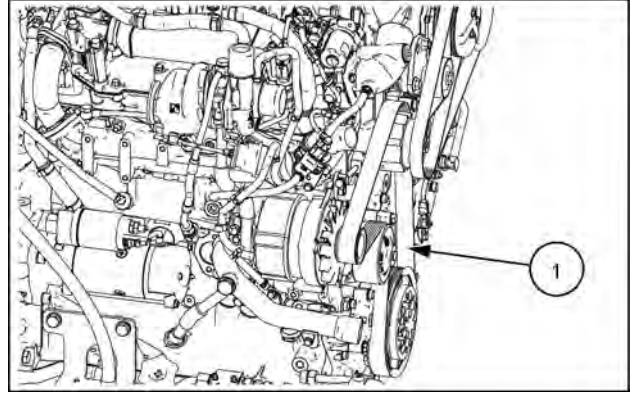
### ⚠ WARNING

#### Entanglement hazard!

Always stop the engine and engage the parking brake, unless otherwise instructed in this manual, before checking and/or adjusting any drive belt or chain. Failure to comply could result in death or serious injury.

W0097A

Inspect the belt (1) over its entire length, checking for chafing, cracking, cuts and general wear. If in doubt, contact the authorised dealer to install a new belt.



MOIL20TR01786AA 1

## Compressor drive belt - Check - Air conditioner belt

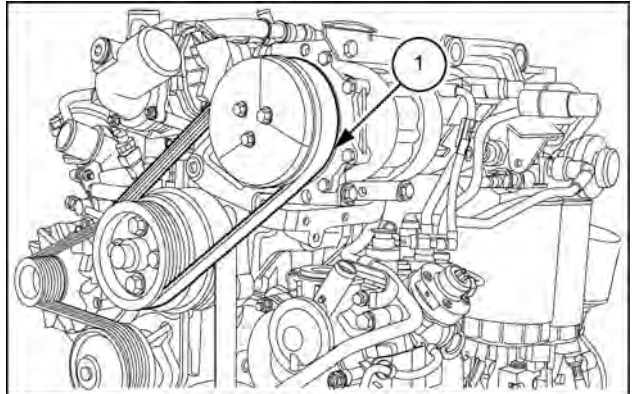
### ⚠ WARNING

#### Entanglement hazard!

Always stop the engine and engage the parking brake, unless otherwise instructed in this manual, before checking and/or adjusting any drive belt or chain. Failure to comply could result in death or serious injury.

W0097A

Inspect the belt (1) over its entire length, checking for chafing, cracking, cuts, and general wear. If in doubt, contact the authorized dealer to install a new belt.

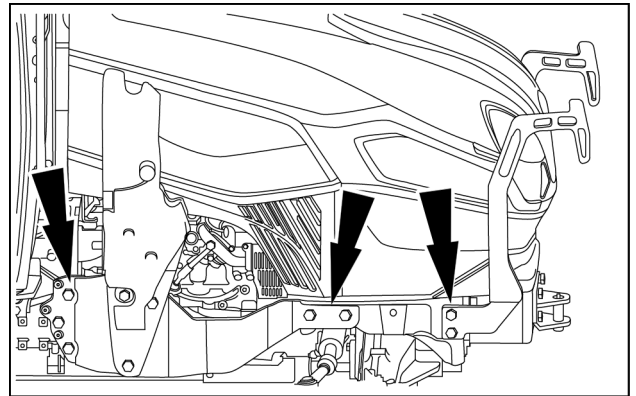


MOIL13TR00308AA 1

## Check the front loader screws - hardware

Contact an authorised dealer to check the tightening of the front loader screws, in line with the points indicated in the figure 1.

**NOTE:** see 10-4.

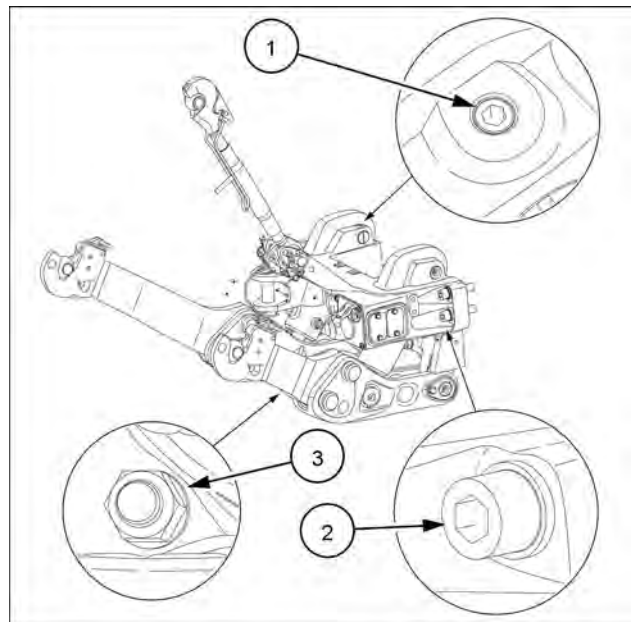


MOIL24TR00551AA 1

## Front hitch support - Check

Contact an authorised dealer to check the tightening of the fastening screws, as follows, for the front hitch support:

1. Fastening screw (1) for the hydraulic cylinders: **20 – 30 N·m (177 – 266 lb in)**
2. Rear fastening screw (2) for the axle support: **350 – 410 N·m (3098 – 3629 lb in)**
3. Nut (3) fastening the front axle support: **247 – 275 N·m (2186 – 2434 lb in)**



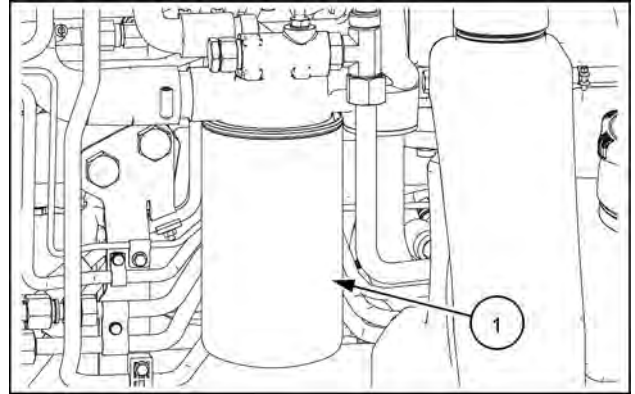
MOIL16TR01137GA 1

## Every 300 hours

### Lift oil filters - Replace

To replace the lift's oil filter, proceed as follows:

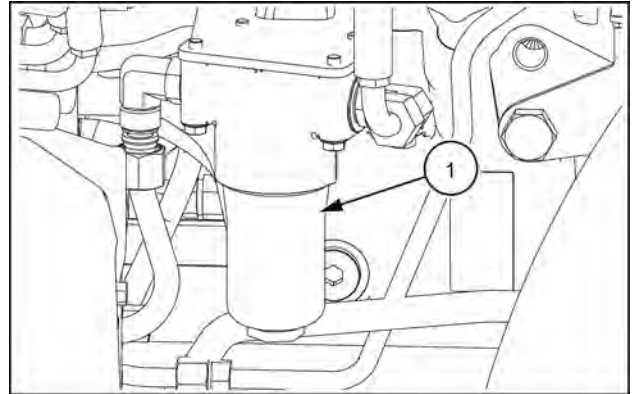
1. Position a container under the oil filter of the hydraulic circuit **(1)** to collect the oil that flows out during maintenance.
2. Loosen the filter **(1)**.
3. Empty the filter **(1)** in accordance with current regulations.
4. Carefully clean the filter housing **(1)** on the vehicle
5. Prepare the new filter **(1)** and refill with hydraulic fluid without re-using the fluid that was drained beforehand
6. Apply a light coating of oil to the seal of the new filter.
7. Manually screw the filter onto the housing until the seal is in contact with the mounting surface. Then tighten another 3/4 of a turn by hand.
8. Dispose of the filter replaced and the oil that flowed out during the operation according to current regulations.
9. Top up the oil level, without re-using the oil that was drained beforehand (see type and quantity of oil on page **7-15**)



MOIL20TR01787AA 1

## Transmission oil filter - Replace – Auxiliary services

1. Place a container under the filter (1) to collect the overflow oil during the operation.
2. Replace the filter located inside the container (1). Dispose of the filter in accordance with local regulations.
3. Oil the sealing gasket lightly.
4. Screw until the sealing gasket is not in contact with the assembly surface then tighten by a 3/4 turn.



MOIL20TR01788AA 1

5. Dispose of the replaced filter and the oil that flowed out during the operation according to current regulations.

## Transmission drive housing - Check — Oil level

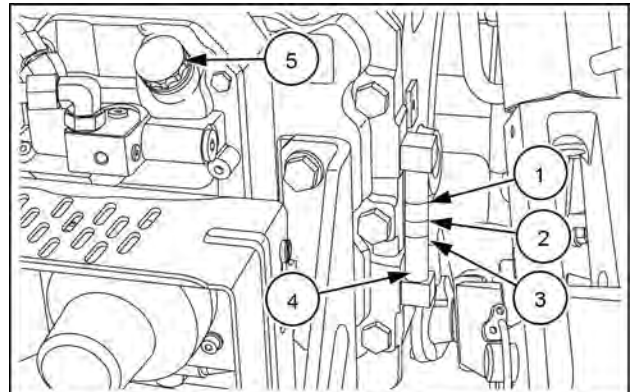
Check the hydraulic oil level as follows:

1. Park the tractor on level ground.
2. Turn off the engine and wait at least five minutes so that the oil in circulation can deposit.
3. Check through the sight glass (4) that the oil level is between levels intermediate level (maximum) (2) and normal level (3) marks.

**NOTE:** when you connect auxiliary implements to the control valve, the maximum oil level corresponds to the mark (1). For normal operation, the level must not exceed the mark (2).

4. If necessary, remove the filler cap (5) and fill up with oil **UNIVERSAL TRANSMISSION OIL - PREMIUM** as necessary.

**NOTE:** with some front/ rear wheel combinations, it may be necessary to raise the front or rear of the tractor to ensure it is level before checking the oil.



MOIL16TR03399AA 1

## Air cleaner - Cleaning

To clean the engine air filter, proceed as follows:

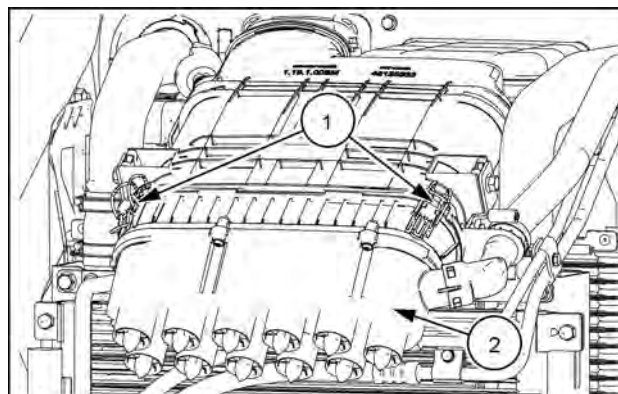
1. Open the locking hooks (1) of the cover (2).
2. Remove the (2) cover.
3. Remove the external cartridge (3) of the engine air cleaner.

**NOTE:** never remove the internal safety cartridge to clean it with compressed air, but replace it together with the external cartridge at the prescribed time.

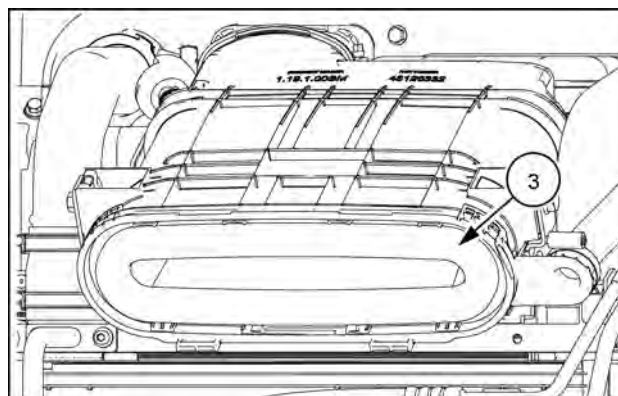
4. Place the external cartridge facing downwards on a flat surface (figure A).
5. Smack the cartridge a few times with the palm of your hand to eliminate any residues of dust, paying attention not to damage it. Alternatively, clean it with a jet of compressed air at a pressure less than **5 bar (72.5 psi)** in the direction shown in figure B, at a distance of at least **20 cm (7.9 in)**.

**NOTE:** When cleaning, never use diesel, petrol, solvents or water so as not to damage the filtering cartridge.

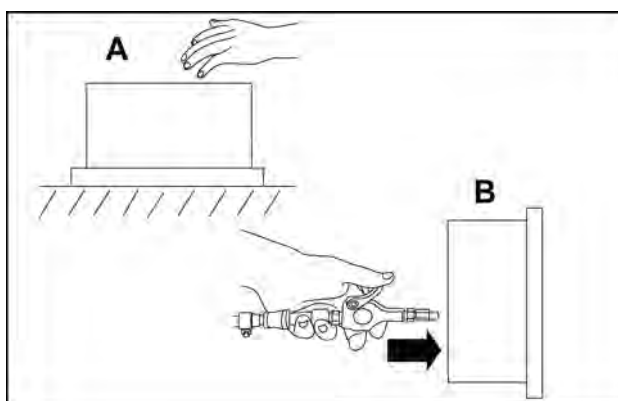
6. After cleaning, check that the pleated paper part of the cartridge is intact and has no cuts or holes in it. Otherwise replace.
7. Clean the inside parts of the filter housing carefully with a damp cloth.
8. Reinstall the clean filter.
9. Refit the cover (2) on the filter housing, making sure that it seals perfectly and lock it in position with the hooks (1).



MOIL20TR01781AA 1



MOIL20TR01782AA 2



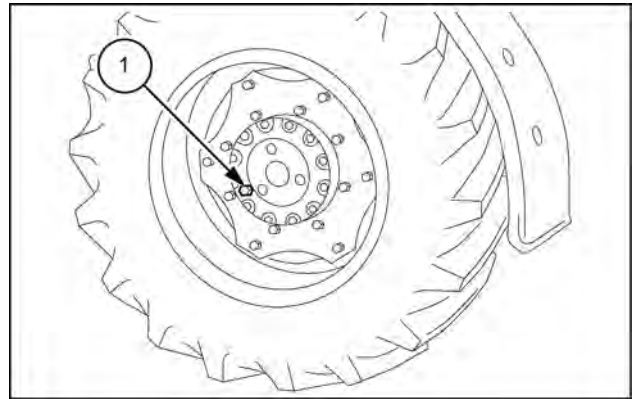
MOIL15TR00185AB 3

## Final drive - Check

Check the oil level as follows:

1. Park the tractor on level ground.
2. Move the cap (1) to the horizontal position and check the oil comes out of the hole.
3. Unscrew and remove the cap (1). Oil should flow out of the underneath hole.
4. If necessary top up with **UNIVERSAL TRANSMISSION OIL - PREMIUM** oil in the same hole until oil flows out.
5. Reinstall the plug (1) into the hole.

**NOTE:** Before replacing the cap (1), clean off any metallic residue caught by the magnet on the cap.

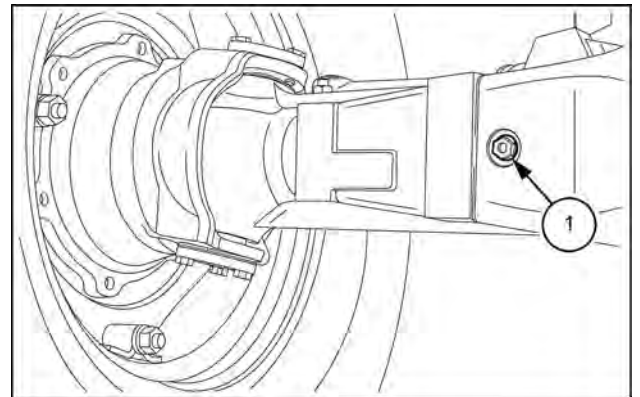


DCUTLNEIT023S7A 1

## Four-Wheel Drive (4WD) axle - Check

Check the oil level as follows:

1. Park the tractor on flat ground.
2. Remove the cap (1). Oil should flow out of the underneath hole.
3. If necessary, top up with **UNIVERSAL TRANSMISSION OIL - PREMIUM**.
4. Clean any iron deposits from the magnetic section on the cap.
5. Reinstall the plug (1) into the hole.

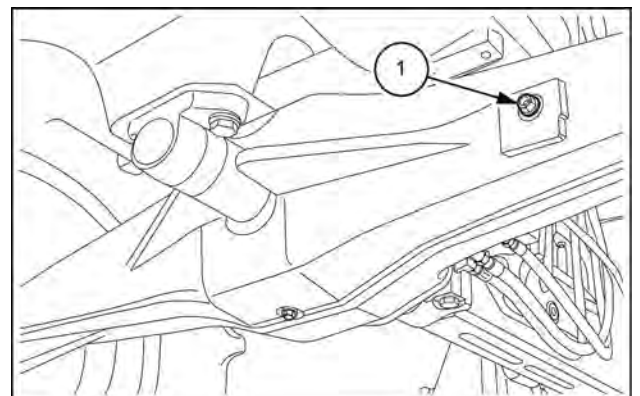


MOIL13TR02390AB 1

## Four-wheel drive (4WD) axle 1.5

Check the oil level as follows:

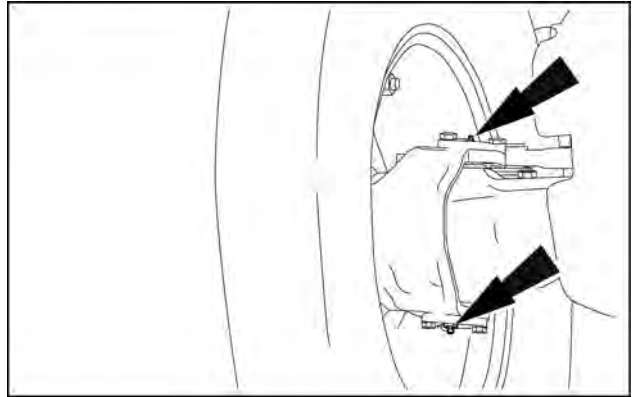
1. Park the tractor on flat ground.
2. Remove the cap (1). Oil should flow out of the underneath hole.
3. If necessary, top up with **UNIVERSAL TRANSMISSION OIL - PREMIUM**.
4. Clean any iron deposits from the magnetic section on the cap.
5. Reinstall the plug (1) into the hole.



MOIL14TR00062AA 2

## Steering knuckle and king pin - Grease – (4WD)

Use a pump to inject **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease into the two grease fittings (two on each side).

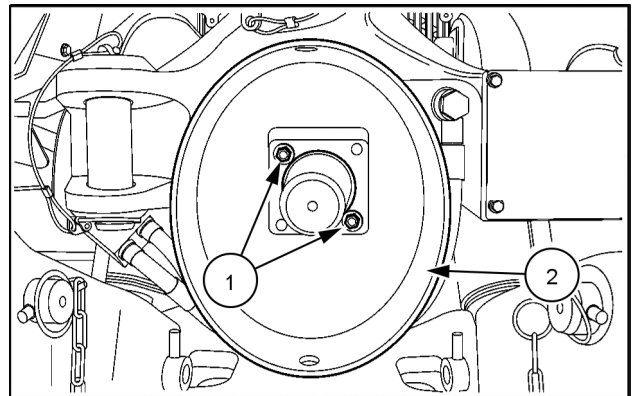


DCUTLNEIT024S7A 1

## Front Power Take-Off (PTO) housing - Check - Oil Level

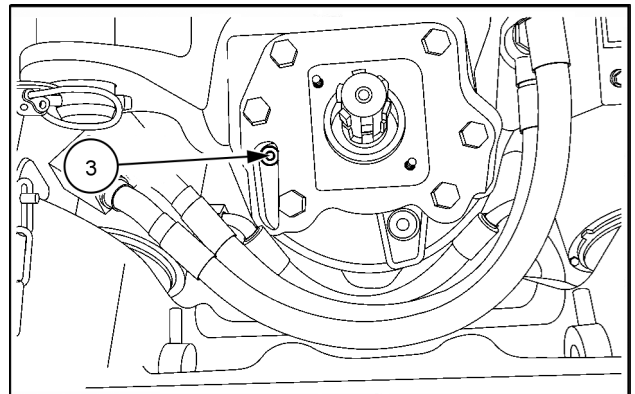
To check the oil level for the front PTO, proceed as follows:

1. Park the tractor on level ground and engage the handbrake and/or locking brake.
2. Remove both nuts (1).
3. Remove the guard from the front PTO (2).



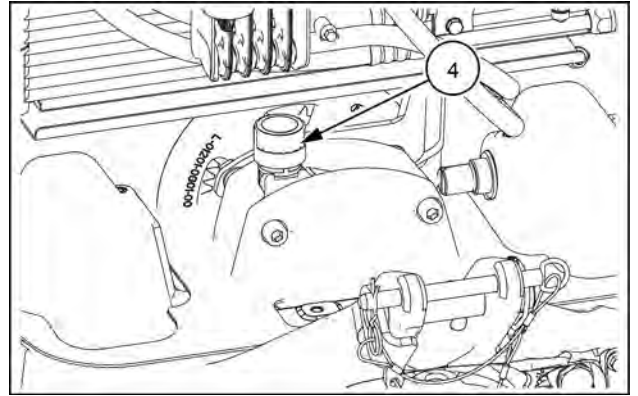
MOIL16TR02062AA 1

4. Remove the level plug (3) and check that the oil reaches the bottom of the hole.



MOIL16TR02063AA 2

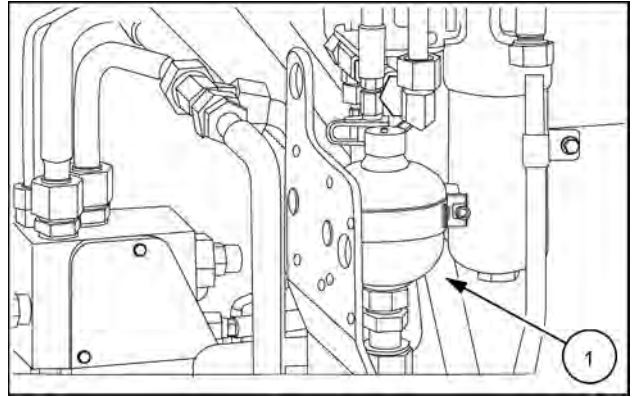
5. If there is insufficient oil, remove the breather screw (4).
6. Top up the **UNIVERSAL TRANSMISSION OIL - PREMIUM** oil through the hole for the breather screw (4) until the oil reaches the bottom of the hole for the level plug (3).
7. Reinstall the level plug (3).
8. Refit the breather screw (4).
9. Refit the guard to the PTO (2) and lock it with the nuts (1).



MOIL20TR01789AA 3

## Accumulator — (if present)

1. Depending on the options fitted, the tractor can be equipped with an accumulator **(1)**. Contact your local CASE IH authorised dealer for a pressure check.



MOIL24TR00686AA 1

Every 600 hours

## Engine - Replace - Oil and filter

### ⚠ WARNING

**Burn hazard!**

Be very careful to avoid contact with hot fluids. If fluid is extremely hot, allow it to cool to a moderately warm temperature before proceeding.

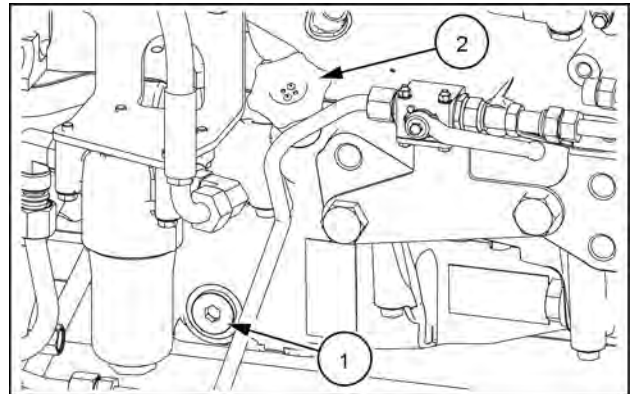
Failure to comply could result in death or serious injury.

W0362A

### Engine oil Drain

To drain the engine oil, proceed as follows:

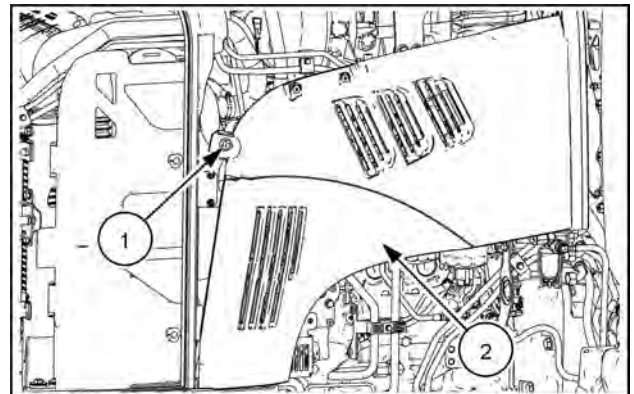
1. The engine must be brought to normal operating.
2. Switch off the engine.
3. Allow at least five minutes for the oil to settle in the engine sump.
4. Place a container of a suitable size under the engine oil sump.
5. Loosen and remove the plug (2).
6. Remove the drain plugs (1) from the sump (one on each side). Drain all the oil.



MOIL20TR01785AA 1

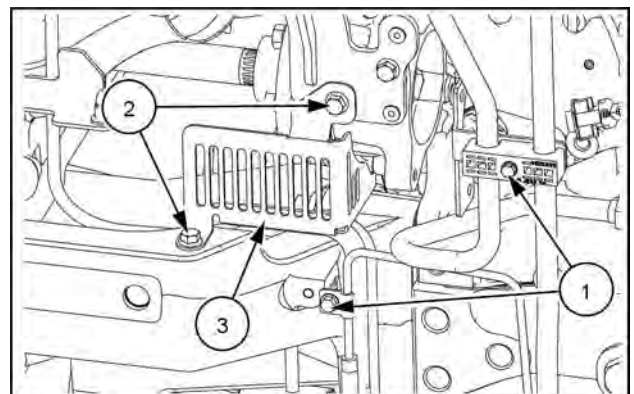
Remove the side panel.

1. Remove the fastener (1).
2. Remove the side panel (2).



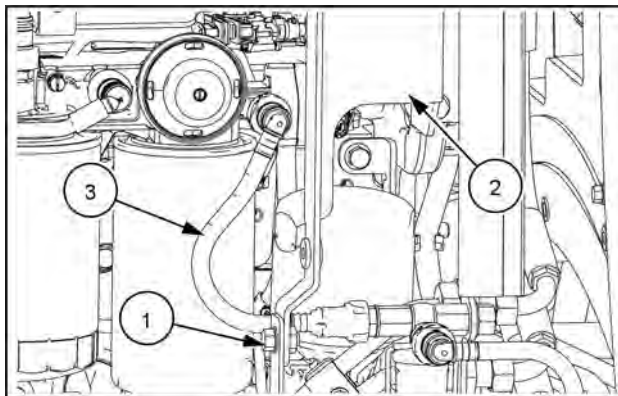
MOIL20TR01803AA 2

1. Loosen the hexagon head bolts (1). Remove the relative clips.
2. Loosen the hexagon head bolts (2). Remove the protective grill (3).



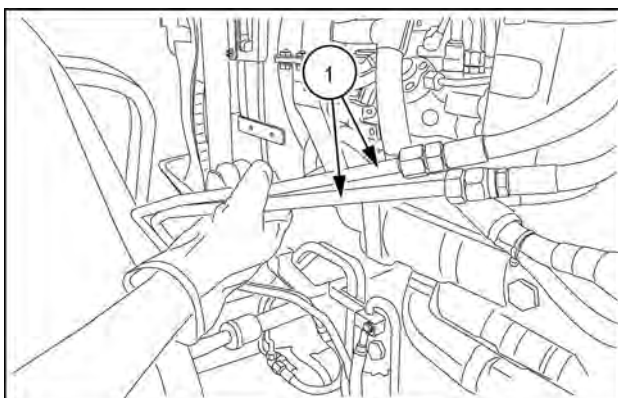
MOIL20TR01800AA 3

3. Place a container under the engine oil filter.
4. Slacken off bolt (1). Remove the bracket (2).
5. Remove the tube (3).



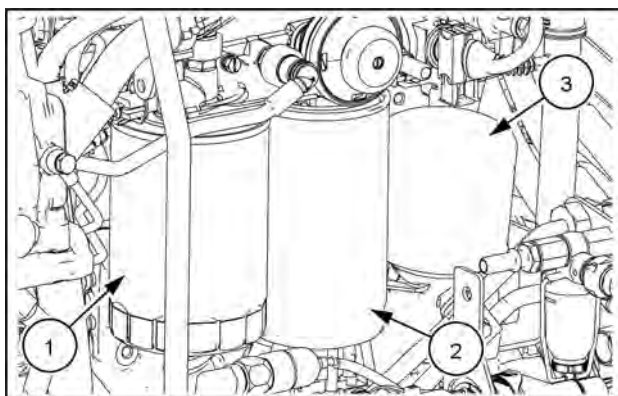
MOIL20TR01801AA 4

6. Move the tubes (1) to facilitate access to the filters. Take care not to damage the tubes.



MOIL14TR01264AA 5

7. Use a strap wrench to remove the fuel filter (1).
8. Disconnect the sensor of the fuel pre-filter (2). Use a strap wrench to remove the filter.
9. Use a strap wrench to remove the engine oil filter (3).
10. Drain the filter. Dispose of the filter in accordance with current local regulations.
11. Clean the surface of the engine oil filter seat.
12. Lightly oil the seal of the new engine oil filter. Screw the filter into contact with the support. Tighten the filter by hand by 3/4 of a turn or by a maximum of one full turn.

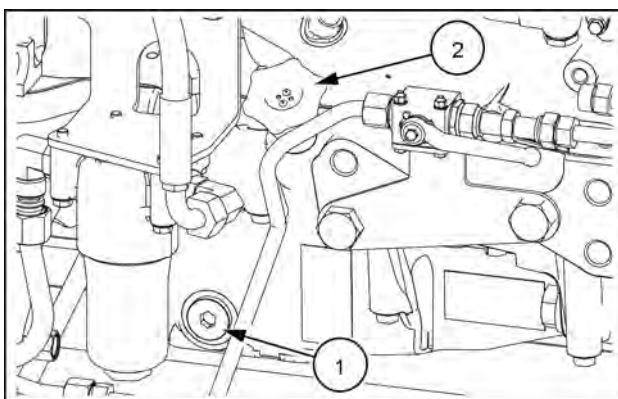


MOIL20TR01802AA 6

## Change eng oil

After having drained the engine oil as previously described, change the engine oil as follows:

1. Retighten the drain plugs (1) previously removed.
2. Top up with oil (see 7-15 via the filler neck (2)).
3. Start engine. Leave the engine to run at idle speed for at least **3 min**.
4. Switch off the engine.
5. Wait **5 min** to allow the oil to return to the sump.
6. Check that the oil level is between MIN and MAX marks on the rod below the filler cap.
7. If necessary, top up the oil.
8. Reinstall the filler cap.



MOIL20TR01785AA 7

**NOTICE:** Whenever changing oil it is indispensable to reset the engine oil working hours counter, as described at page 3-53.

**NOTE:** replace the fuel filters before refitting the bracket (2) figure 4 and side panel (2) figure 2

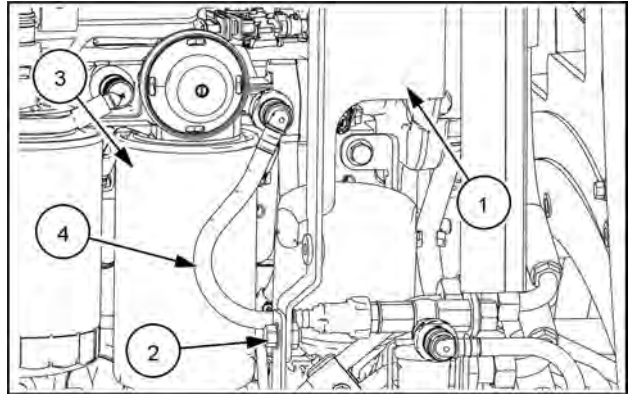
**NOTE:** Do not fill beyond the MAX mark on the dipstick. Excess oil will burn off, create smoke and give a false indication of oil consumption. Do not start the engine with the oil level below the MIN mark on the rod.

## Fuel filters - Replace

**NOTICE:** Before loosening or disconnecting any part of the fuel injection system, thoroughly clean the area to be worked on to prevent contamination.

Replace the fuel filters as follows:

1. Empty the fuel filters which have been removed previously. Dispose of the filters in accordance with current local regulations.
2. Clean the surface of the fuel prefilter seat.
3. Lightly oil the seal of the new first stage fuel filter (3). Screw the pre-filter into contact with the support. Tighten the pre-filter by hand by 3/4 of a turn or by a maximum of one full turn.
4. Reconnect the fuel prefilter sensor.
5. Re-install the tube (4).
6. Reinstall the bracket (1). Fix the bracket with the corresponding bolt (2).



MOIL20TR01801AA 1

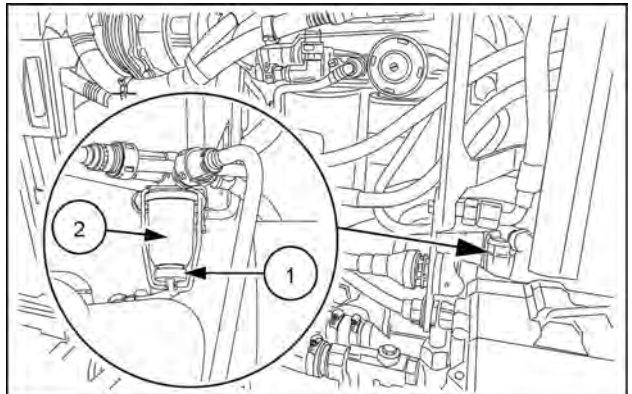
**NOTE:** in this phase, the filter (1) figure 4 must be removed.

Check that there are no deposits of impurities in the cup filter. If there are deposits of impurities inside the cup filter, proceed as follows:

7. Loosen the screw (1).
8. Remove the glass container (2).
9. Remove the internal strainer screen. Clean the filter.

**NOTE:** If, after cleaning, the filter is still dirty, it will need to be replaced.

10. Refit the strainer screen.
11. Reinstall the glass container (2). Secure the glass container with the screw (1).



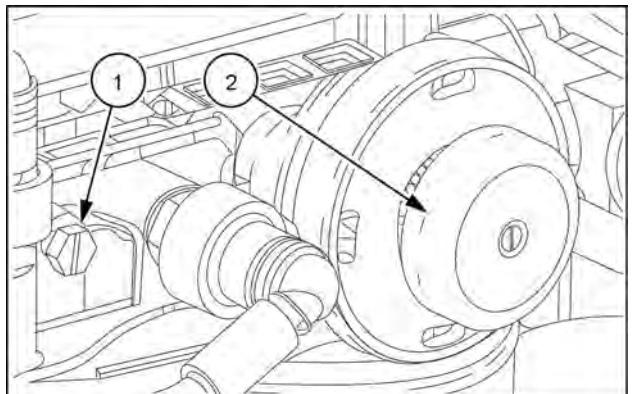
MOIL14TR01269AA 2

Bleed the system as follows:

12. Loosen the bleed screw (1).

**NOTE:** one turn of the bleed screw is sufficient (1) to let out the air and fuel.

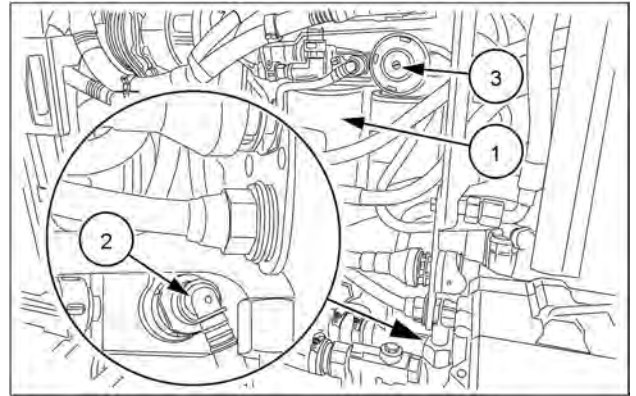
13. Push the priming pump (2) until the fuel starts to come out of the bleed screw (1).
14. Tighten the bleed screw (1).



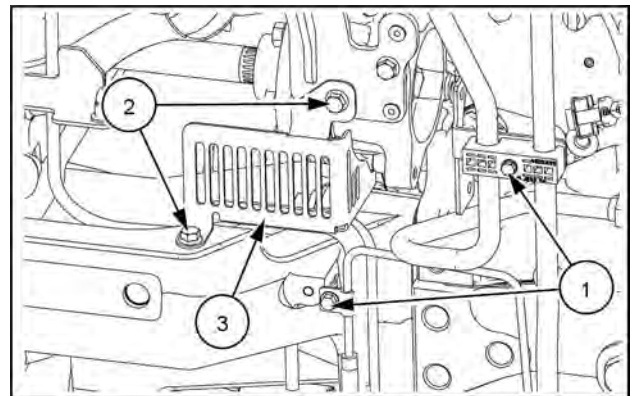
MOIL14TR01267AA 3

### Replace the fuel filter (1)

15. Clean the surface of the fuel filter seat.
16. Lightly oil the seal of the new fuel filter (1). Screw the filter into contact with the support. Tighten the filter by hand by 3/4 of a turn or by a maximum of one full turn.
17. Disconnect the fuel return line (2).
18. Push the priming pump (3) until the fuel starts to come out of the connector of the fuel return line (2).
19. Reconnect the fuel return pipe (2).
20. Reposition the tube spring clips. Fasten the bolts (1).
21. Reposition the protective grill (3). Secure the protective grill with the bolts (2).



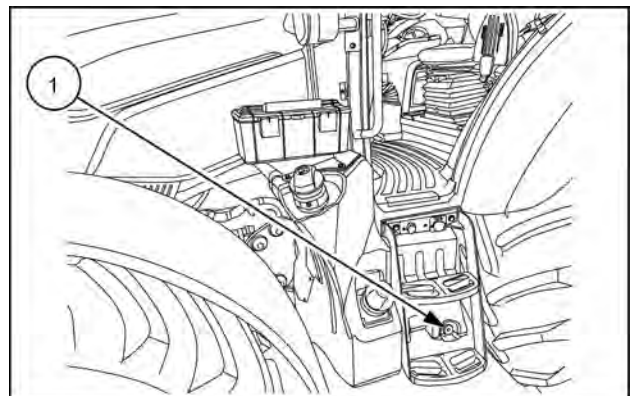
MOIL14TR01268AA 4



MOIL20TR01800AA 5

## Suction strainer filter - Cleaning

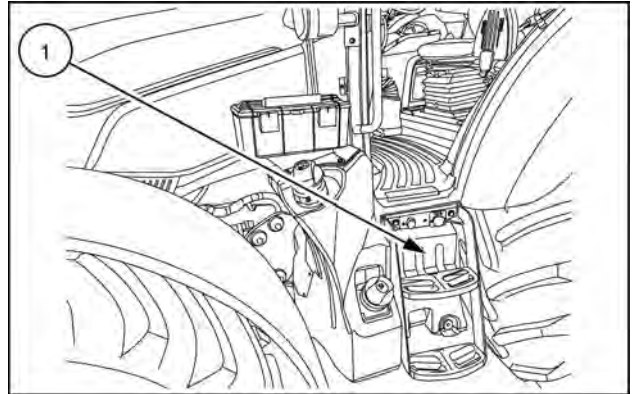
Go to an authorised dealer to have the suction strainer (1), in the bottom of the fuel tank, cleaned.



MOIL24TR00434AA 1

## Clean the DEF/AdBlue in-line filter

The 103 µm inline filter is located in the **DEF/AdBlue®** supply module behind the cover (1). This filter should be cleaned by your authorized dealer.



MOIL24TR00434AA 1

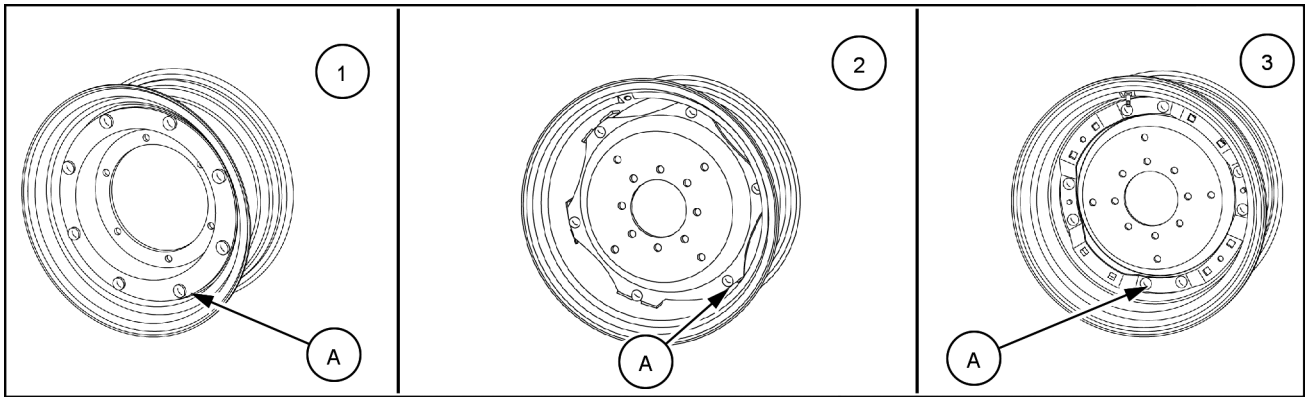
## Wheels - Bolts and Nuts - Tighten

Check the front and rear wheel nuts for tightness using a torque wrench (with a torque multiplier, where necessary). Always make sure that the front and rear wheels are symmetrically aligned in relation to the longitudinal axis of the tractor.

### Disc to hub nuts

Axle and nut	Wheel/hub tightening torques
Front — <b>M16</b>	<b>215 N·m (159 lb ft)</b>
Rear — <b>M18</b>	<b>310 N·m (229 lb ft)</b>

**NOTE:** Based on the intended market and the tractor's set-up, it can be fitted with different types of rims, as shown in the image below.



MOIL24TR02730EA 1

### Disc to rim nuts

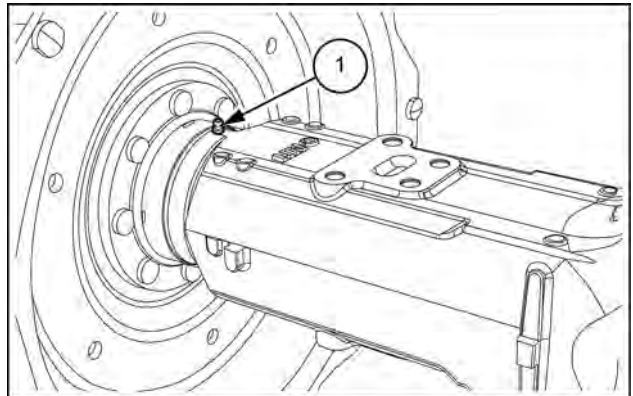
Figure	Axle	Tightening torque
(1)	Front	<b>280 N·m (207 lb ft)</b>
(2)	Front Rear	
(3)	Front Rear	<b>310 N·m (207 lb ft)</b>

## Driving wheel shaft - Grease - Bearing

1. Using a pump inject **MULTI-PURPOSE GREASE EP / AW / NLGI 2** grease and pump just a few times to avoid damaging the internal seal. For best results, inject the grease, then rotate the wheels through 120 ° and then inject grease again, then rotate a further 120 ° for final application; this will ensure grease is evenly distributed around the bearing (to rotate the wheels, simply drive forward slightly after each application).

**NOTE:** Grease will *NOT* emerge from the seal, surplus will be dispersed within the transmission housing.

**NOTE:** Apply grease on both sides of the axle.



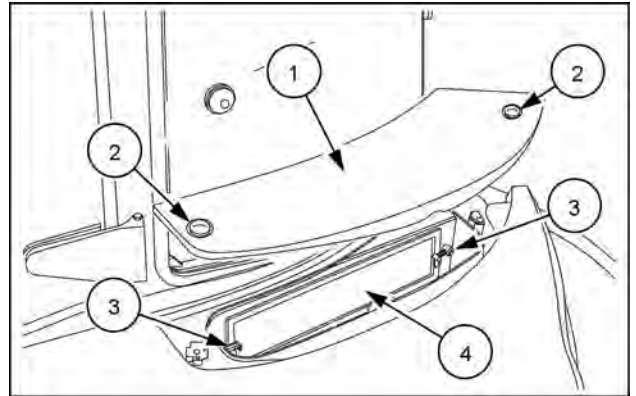
DCUTLNEIT012S7A 1

Every 1200 hours or annually

## Cab air filters - Replace

To install the cab air cleaner, proceed as follows:

1. Unscrew the retaining bolts (2) to remove the cover (1) from the rear fender.
2. Open the two filter retaining clips (3).
3. Remove the filter (4)
4. Clean the filter seat with a cloth.
5. Install the new filter with the arrows on the label pointing towards the inside of the fender.
6. Close the two filter retaining clips (3).
7. Refit the cover (1).

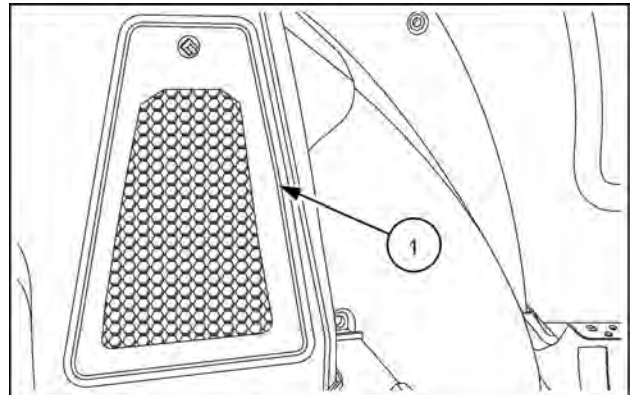


MOIL15TR01625AA 1

**NOTE:** repeat the same operations on the opposite fender.

## Cab air filters - Replace - Recirculation Filters

Remove the grill (1), remove the cab air recirculation filter contained inside and replace it with a new genuine one (to be done on both sides).



MOIL15TR00347AA 1

## Air cleaner - Replace - External cartridge

### ⚠ CAUTION

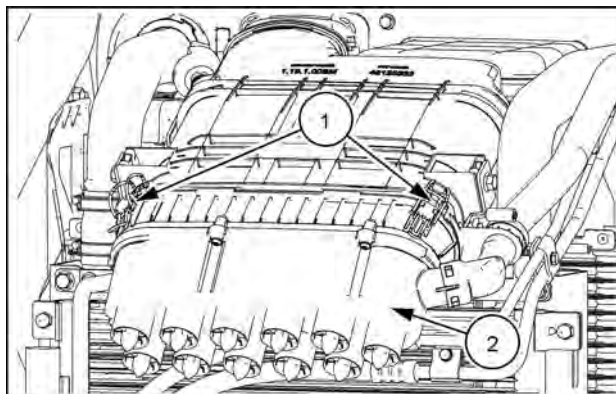
Hot area!

Use care when working near hot components. Wear protective gloves.  
Failure to comply could result in minor or moderate injury.

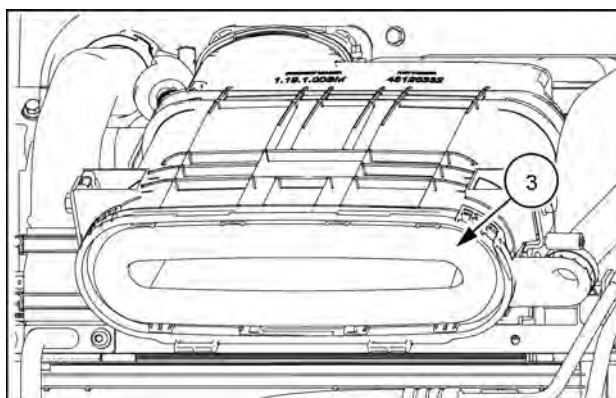
C0034A

To replace the external cartridge of the engine air filter, proceed as follows:

1. Open the locking hooks (1) of the cover (2).
2. Remove the (2) cover.
3. Remove the external cartridge (3) of the engine air cleaner.
4. Clean the inside parts of the filter housing carefully with a damp cloth.
5. Refit the new cartridge.
6. Refit the cover (2) on the filter housing, making sure that it seals perfectly and lock it in position with the hooks (1).



MOIL20TR01781AA 1



MOIL20TR01782AA 2

## Air cleaner - Replace - Internal cartridge

### ⚠ CAUTION

Hot area!

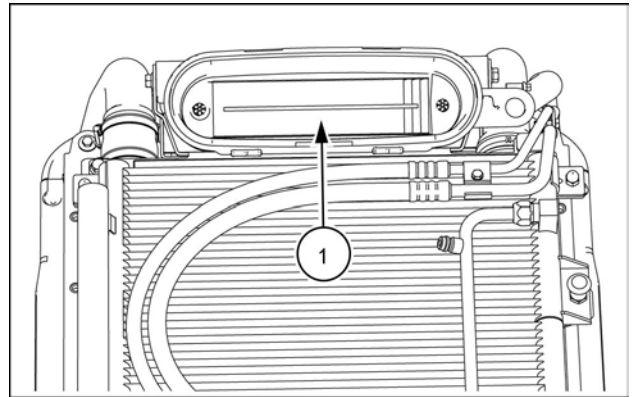
Use care when working near hot components. Wear protective gloves.  
Failure to comply could result in minor or moderate injury.

C0034A

### Prior operation: 7-62.

To replace the internal cartridge of the engine air filter, proceed as follows:

1. Remove the internal cartridge **(1)**.
2. Clean the inside parts of the filter housing carefully with a damp cloth.
3. Fit the new cartridge.



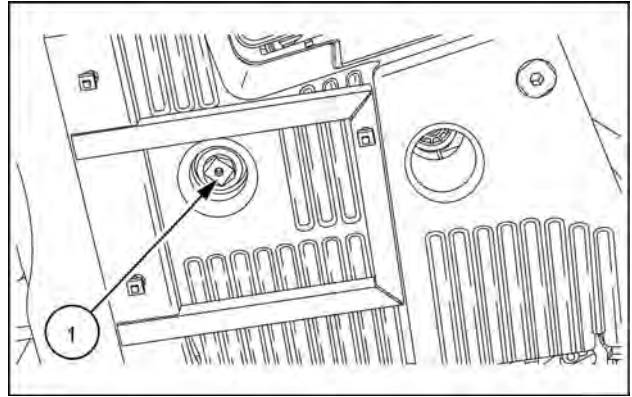
MOIL21TR00105AA 1

## Fuel tank - Drain fluid

With the tractor on a level surface and the engine off, drain the fuel as described below:

1. Place a suitable container under the tank.
2. Remove the plug **(1)** and drain the fuel to eliminate any impurities in the tank.
3. Re-install the plug **(1)**.
4. Fill the tank with clean fuel.
5. Dispose of the fuel according to current regulations.

**NOTE:** if necessary, drain the fuel as described on page 7-56.



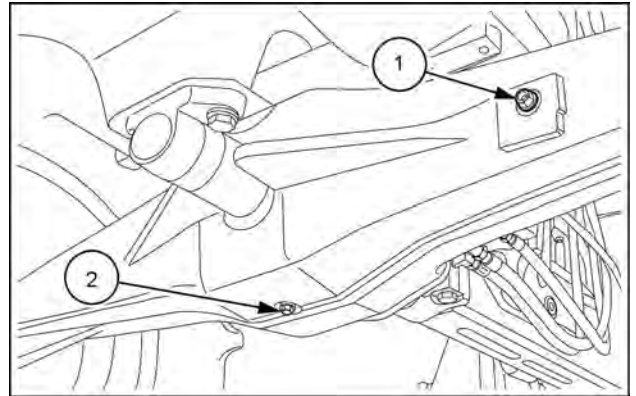
MOIL15TR03430AA 1

Every 1200 hours or two years

## Four-Wheel Drive (4WD) axle - Change fluid

To change the oil, proceed as follows:

1. Park the tractor on level ground.
2. Place a suitable container under the cap (2).
3. Unscrew and remove the cap (2).
4. Allow the oil to completely drain out.
5. Screw in the plug (2).
6. Loosen the cap (1).
7. Top up with new oil via the hole, until it seeps out (for the type and quantity, see 7-15).
8. Reinstall the plug (1) into the hole.

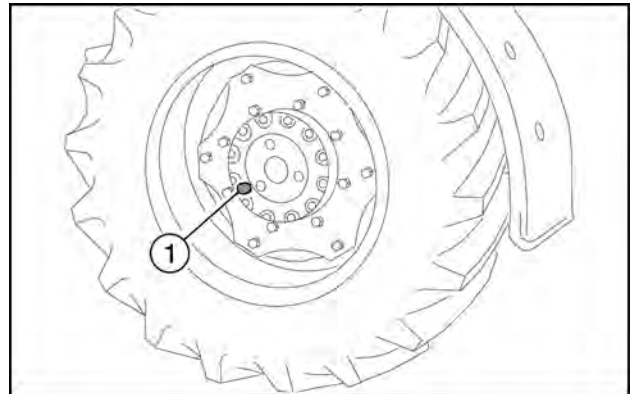


MOIL14TR00062AA 1

## Final drive - Change fluid – (4WD)

To change the oil, proceed as follows:

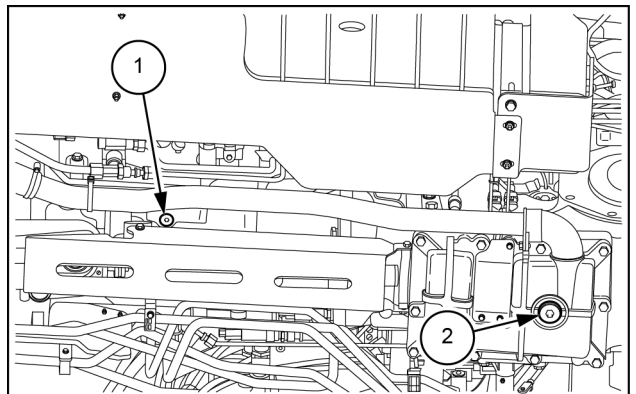
1. Move the cap (1) in the lowest point.
2. Place a container under the hole.
3. Loosen and remove the cap (1).
4. Fully drain the oil from the hole under the cap.
5. Place the hole in horizontal position.
6. If necessary top up with new oil **UNIVERSAL TRANSMISSION OIL - PREMIUM** in the same hole until oil flows out.
7. Reinstall the plug (1) into the hole.



DCAPLNEGB044S4A 1

## Transmission drive housing - Change fluid

1. Place a suitable container under the caps (1) and (2).
2. Unscrew and remove the caps (1) and (2).
3. Allow the oil to completely drain out.
4. Screw back in and tighten the two caps (1) and (2).

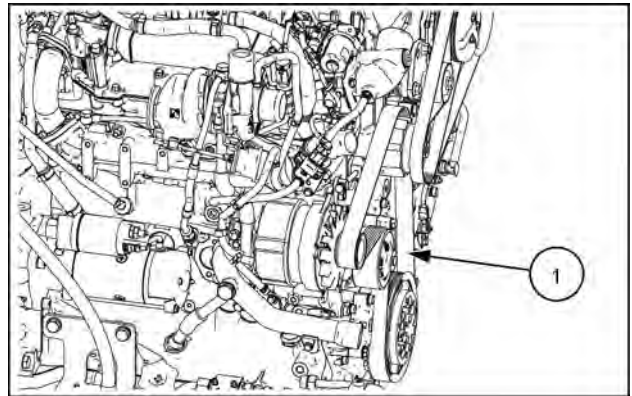


MOIL13TR02407AB 1

5. Fill up with new oil to the level as shown on page 7-47

## Accessory belt - Replace - Alternator belt

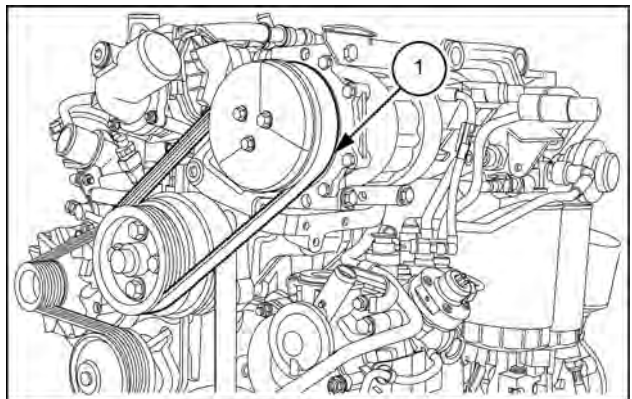
Go to an authorized dealer for the belt replacement (1).



MOIL20TR01786AA 1

## Compressor drive belt - Replace - Air conditioner belt

Go to an authorized dealer for the belt replacement (1).

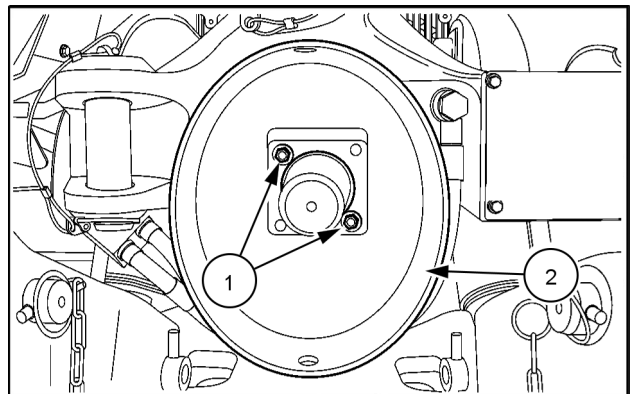


MOIL13TR00308AA 1

## Front Power Take-Off (PTO) housing - Change fluid

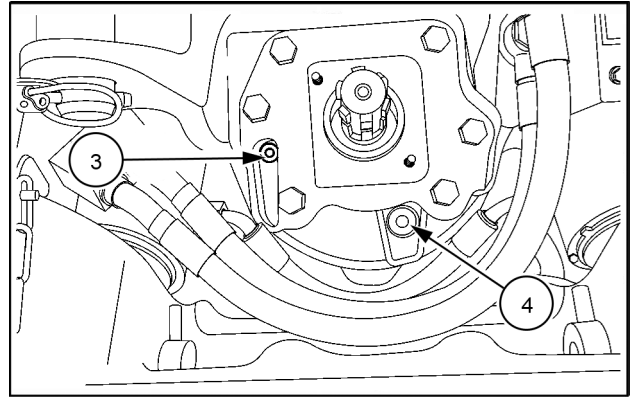
To change the oil in the front PTO, proceed as follows:

1. Park the tractor on level ground and engage the handbrake and/or locking brake.
2. Remove both nuts (1).
3. Remove the guard from the front PTO (2).



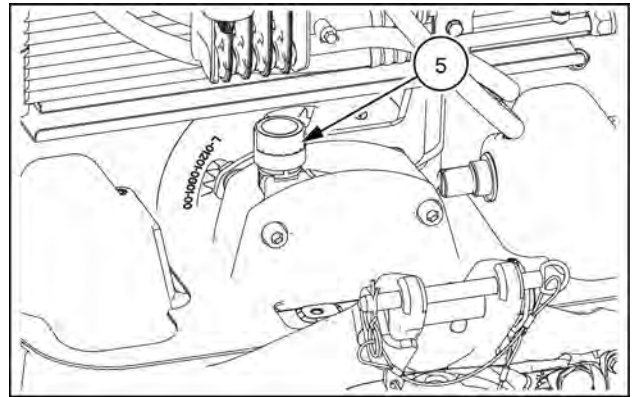
MOIL16TR02062AA 1

4. Remove level plug (3).
5. Place a suitable container under the drain plug (4) to collect the oil.
6. Remove the (4) drain plug.
7. Allow the oil to completely drain out.
8. Dispose of the oil drained during the operation in accordance with current regulations.
9. Reinstall the rain cap (4).



MOIL16TR02063AA 2

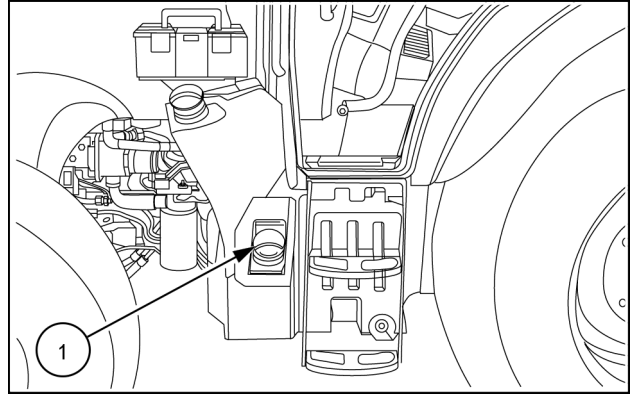
9. Remove the breather screw (5).
10. Refill with **UNIVERSAL TRANSMISSION OIL - PREMIUM** oil through the hole for the breather screw (5) until the oil reaches the bottom of the hole for the level plug (3).
11. Reinstall the level plug (3).
12. Refit the breather screw (5).
13. Refit the guard to the PTO (2) and lock it with the nuts (1).



MOIL20TR01789AA 3

## Diesel Exhaust Fluid (DEF)/AdBlue®/ARLA filters - Replace - Tank level sensor and heater assembly suction filter

1. The filter is located inside the tank (1). Please contact an authorised dealer to help with the replacement.



MOIL24TR00426AA 1

## Rear lift arm - Grease

### ⚠ WARNING

**Avoid injury!**

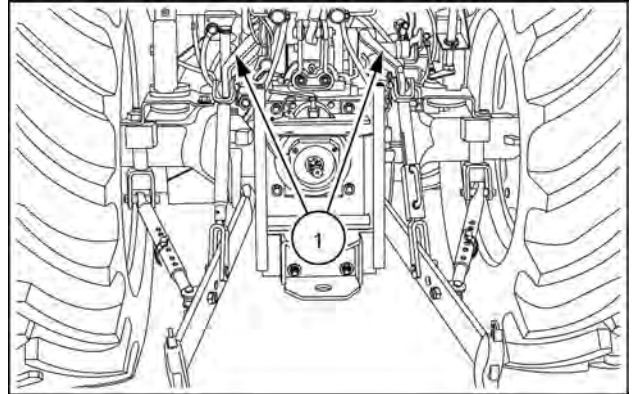
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.

Failure to comply could result in death or serious injury.

W0208A

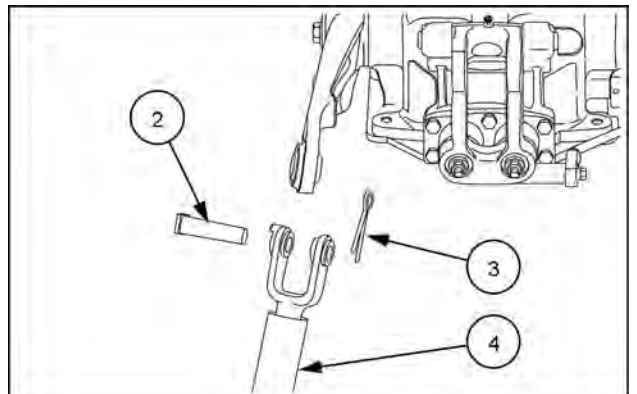
**NOTE:** The procedure describes greasing of the left lift arm. Operate both lift arms in the same way.

1. Fully lower the arms (1) of the rear lift.



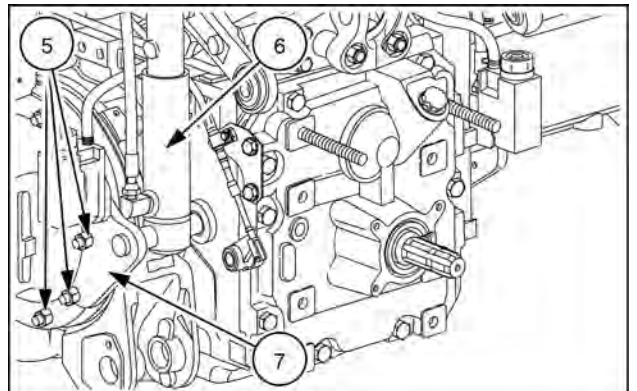
MOIL14TR01279AA 1

2. Remove the cotter pin (3), remove the upper connecting pin (2) and disconnect the vertical link rod (4).



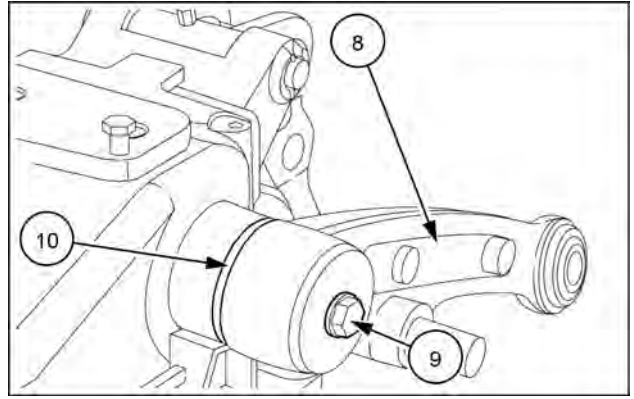
MOIL14TR01281AA 2

3. If fitted, remove the three nuts (5) from the lower mount (7) of the additional hydraulic cylinder (6).



MOIL17TR00458AA 3

4. Remove the screw (9), use a special tool to separate the lift arm (8) by about **1.0 – 2.0 cm (0.4 – 0.8 in)** from the main body of the lift and apply grease such as **MULTI-PURPOSE GREASE EP / AW / NLGI 2** to both sides of the washer (10).

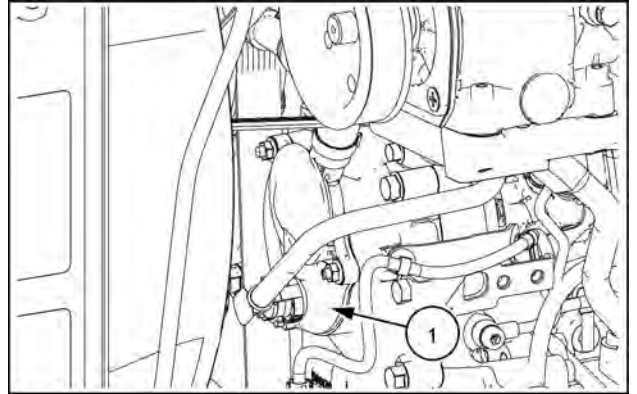


MOIL24TR00293AA 4

Every 1800 hours or every 2 years

## Crankcase ventilation system - Replace

Go to an authorised dealer to replace the engine breather filter located beneath the crankcase (1).

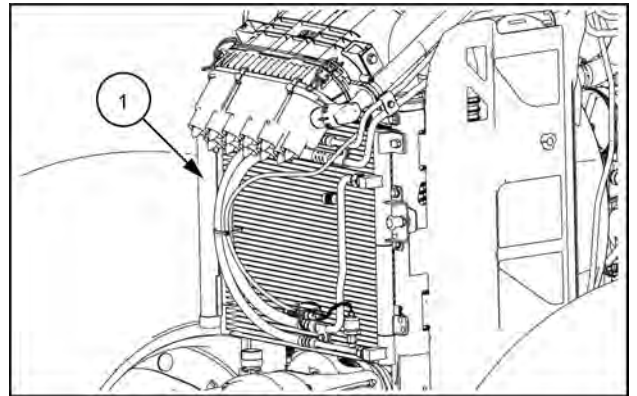


MOIL20TR01791AA 1

Every two years

## Receiver-dryer - Replace

1. Every two years to go to an authorized dealer for replacement of the drier filter (1) of the air conditioning system.

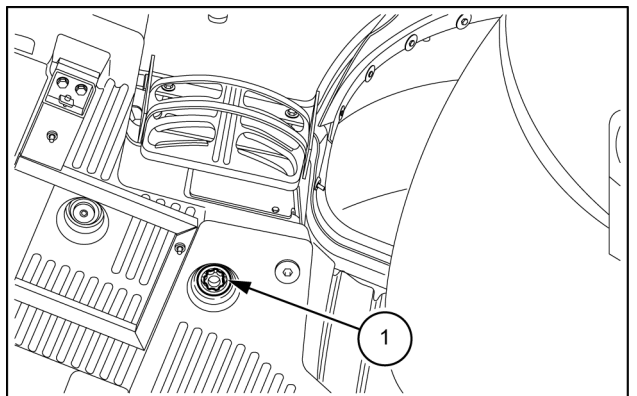


MOIL20TR01797AB 1

Every 3600 hours or two years

## Diesel Exhaust Fluid (DEF)/AdBlue®/ARLA filters - Replace - Main Filter

1. The main filter for the DEF/AdBlue® fluid (1), (10 µm), is located under the supply module. This filter must be replaced by an authorized dealer.



MOIL14TR00918AB 1

Every 3600 hours or four years

## Radiator - Change fluid - OAT coolant

### **▲ WARNING**

**Hazardous chemicals!**

**Coolant can be toxic. Avoid contact with skin, eyes, and clothing. Antidotes:**

**EXTERNAL - Rinse thoroughly with water. Remove soiled clothing.**

**INTERNAL - Rinse the mouth with water. DO NOT induce vomiting. Seek immediate medical attention.**

**EYES - Flush with water. Seek immediate medical attention.**

**Failure to comply could result in death or serious injury.**

W0282A

### **▲ CAUTION**

**Burn hazard!**

**Hot coolant can spray out if you remove the filler cap while the system is hot. After the system has cooled, turn the filler cap to the first notch and wait for all pressure to release before proceeding.**

**Failure to comply could result in minor or moderate injury.**

C0043A

During manufacture, the engine cooling system is filled with a high-quality coolant. The coolant contains a chemical or organic anti-oxidant that increases and extends the protection of conventional antifreeze.

The coolant fluid will:

Increase rust prevention.

Reduce scale formation.

Minimize cylinder wall erosion (pitting).

Reduce foaming of the coolant.

The coolant must be replaced regularly to maintain an optimum level of protection. This protection is achieved by emptying and cleaning the system and filling it with new coolant.

**NOTICE:** *Never put cold coolant in a hot engine. The difference in temperature could cause the engine block or head to crack.*

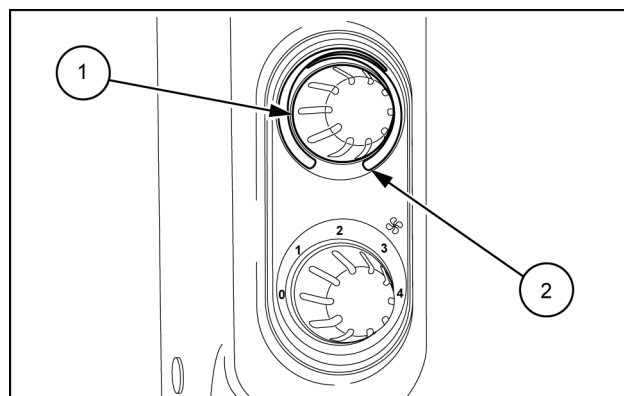
**NOTICE:** *Allow the engine to cool before draining the coolant. The cooling system operates under pressure which is controlled by the radiator pressure cap (1) in figure 2. It is dangerous to remove the pressure cap while the system is hot. When cool, use a thick cloth and turn the cap slowly to the first retainer and allow the pressure to escape before fully removing the cap. Coolant should be kept off the skin. Observe all the precautions indicated on the coolant container.*

**NOTE:** *When changing the type of engine coolant from IAT COOLANT 11 – CLASSIC to EXTENDED LIFE OAT COOLANT/ANTIFREEZE or vice versa, refer to the indications present in 7-13 and 7-15.*

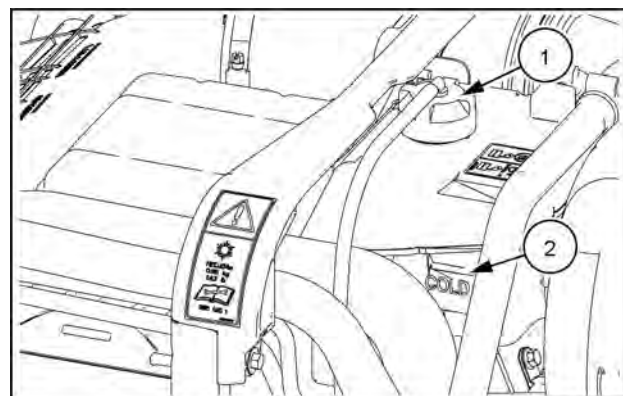
## Flushing the cooling system

To flush the system, proceed as follows:

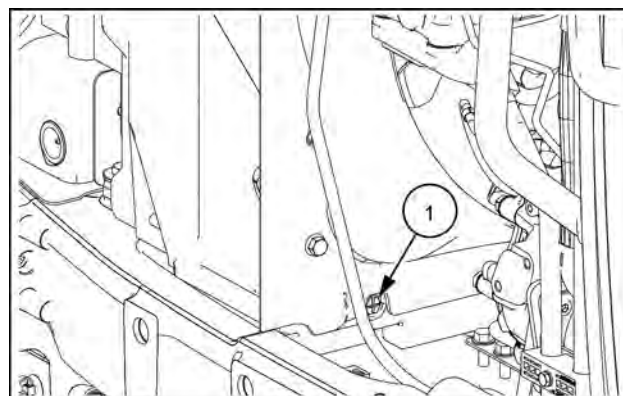
1. In models fitted with cab, the first operation consists in turning the temperature control knob (1) onto the red sector position (2) figure 1. This ensures the complete drain of the coolant.
2. With the engine cold, loosen and remove the plug (1) figure 2 of the expansion tank.
3. Remove the plug (1) figure 3 of the radiator and empty the coolant. Replace the radiator plug (1).
4. Fill the expansion tank up to the notch (2) figure 2 with a filtered soda solution Solvay and water at a ratio of **250 g (8.8 oz)** of soda for every **10 L (2.20 UK gal)** of water.
5. Rescrew the plug (1) figure 2 of the expansion tank.
6. Run the tractor for about an hour.
7. Switch off the engine.
8. Wait for the engine to cool down then remove the drain plug (1) figure 3 of the radiator and empty the washing liquid.
9. Make the pure water circulate by pouring it into the expansion tank and letting it out through the radiator's outlet hole.
10. Replace the drain plug (1) figure 3 of the radiator and fill the expansion tank with water up to the notch (2) figure 2.
11. Start the engine for a few minutes and empty the system again, as per previous directions.
12. Fill the radiator through the expansion tank with new coolant up to the notch (2) figure 2 and leave the expansion tank open.
13. Start the engine and allow it to run until the engine's thermostatic valve will be opened and all the air will be ejected by the cooling system (the coolant level in the expansion tank should decrease).
14. Stop the engine, wait for the coolant to cool down and top it up to the notch (2) figure 2.
15. Refit the cap (1) figure 2.



MOIL13TR02185AB 1



MOIL20TR01777AA 2



MOIL20TR01792AA 3

## Electrical system

### Battery - Check

#### **⚠ WARNING**

**Explosive gas!**

**Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.**

**Failure to comply could result in death or serious injury.**

W0005A

**⚠ WARNING**

**Hazardous chemicals!**

Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.

Failure to comply could result in death or serious injury.

W0006A

**⚠ WARNING**

**Battery gas can explode!**

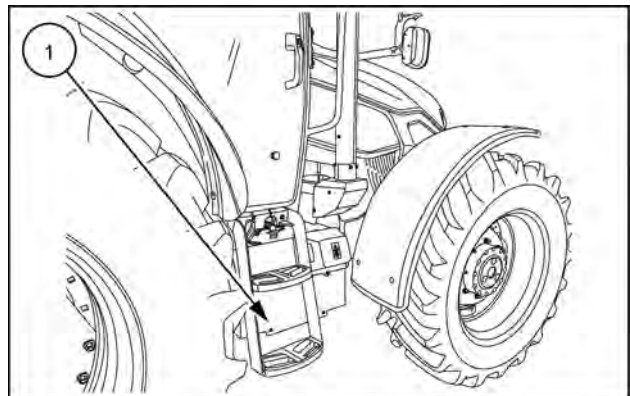
To prevent an explosion: 1. Always disconnect the negative (-) battery cable first. 2. Always connect the negative (-) battery cable last. 3. Do not short circuit the battery posts with metal objects. 4. Do not weld, grind, or smoke near a battery.

Failure to comply could result in death or serious injury.

W0011A

To access the battery, proceed as follows:

1. Rotate the retaining block (1).
2. Remove the cover (2) to access the battery.



MOIL24TR00435AA 1

The tractors are fitted with maintenance-free batteries. Keep the top part clean and dry.

Check the charge with a digital voltmeter in the following way:

Connect the voltmeter to the battery's two terminals, matching the terminal symbols (negative to negative and positive to positive) and read the value from the instrument.

Compare the figure with the values in the table below to establish the battery charge level.

Voltage	Charge level
12,66 V	100%
12,45 V	75%
12,30 V	50%
12,00 V	25%

If the voltage is around **12,30 V**, immediately recharge the battery with a current equivalent to 1/10 of the amperage in Ah (a 50 Ah battery is to be charged to **5 A**).

**NOTICE:** Before recharging the battery, always disconnect the cables. The battery should be removed from its location and recharged at a safe distance from the tractor.

**NOTE:** Batteries and storage batteries contain components that may be damaging to the environment if incorrectly disposed of after use. The manufacturer strongly advises that all "dry" batteries, used in electrical or electronic systems, are returned to the local dealer. The dealer will dispose of (or recycle) the batteries correctly. This procedure is requested by law in certain countries.

### **Replacement of the battery**

If an old battery needs to be replaced with a new one, proceed as follows:

- First disconnect the terminal marked with the negative sign (-), then the terminal with the positive sign (+).
- Fit the new battery in its housing.
- Clean the terminals and connect them to the battery terminals, ensuring that the negative terminal is connected last (-).
- Tighten the terminals on the battery terminals and apply petroleum jelly to protect them.

### **Advice on starting the engine with a flat battery, or no battery**

To prevent damage to the alternator and its incorporated voltage regulator follow the procedure below.

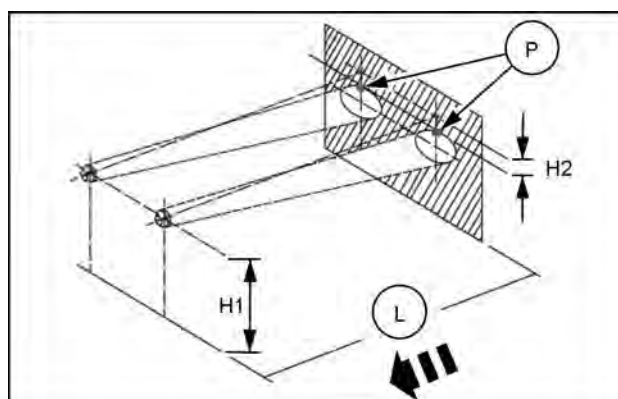
When the tractor battery is partially discharged, and an auxiliary battery has to be used to start the engine, connect the auxiliary battery to the tractor battery ensuring that the terminal symbols match (positive to positive and negative to negative). This rule must also be observed when recharging the battery externally.

If it is necessary to start the engine with a totally flat battery or where the tractor does not have a battery remember that:

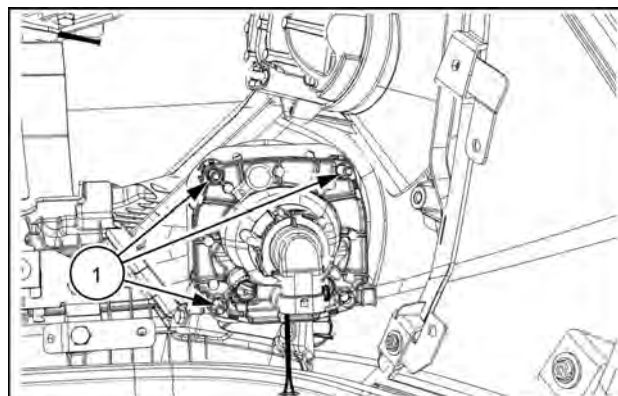
- It is not possible to jump start the tractor by towing, as the electro-magnetically operated injection pump cut-off device will prevent the engine from starting.
- It is possible to start the tractor with an auxiliary battery after having first disconnected plug D+, terminal screw B+ and condenser but to no avail given that the engine will stop as soon as the external battery supply to the electromagnetic cut-off device is interrupted.
- Avoid starting with an auxiliary battery with plug D+ terminal screw B+ and condenser connected to the alternator.
- Instead, it is necessary to connect a **12 V** battery, capable of starting the tractor, and then to replace it with the battery that is to be fitted on the tractor.
- Under normal conditions, the engine must never run without plug D+, terminal screw B+ and condenser disconnected from the alternator.

## Road lamp – Adjustment

1. Remove all the implements and front and rear ballasts fitted on the vehicle.
2. Make sure all tires are properly inflated.
3. Thoroughly clean the outer surfaces of the headlamps using a suitable cleaning agent.
4. Position the vehicle on solid, level ground, by a white wall and in the shade.
5. Park the vehicle as close as possible to the wall, turn off the engine and insert the parking brake. Turn on the low beams.
6. Mark where the beam of the low beam headlights hits the wall in front of the vehicle with an X.
7. Reverse the vehicle by a distance (**L**) equal to **15.0 m (590.6 in)** from the wall illuminated by the low beam lights. Now stop the engine. Activate the parking brake.
8. Check that the two points (**P**) corresponding to the top of the low beams shown in the figure are **10% (H2)** lower than the height (**H1**) of the headlamps. If the position of points (**P**) is incorrect, adjust as described below:
9. Open the hood, (see **7-16**).
10. Manually use the adjusting ring (**1**) to adjust the light beam on the horizontal and vertical axes, until they are pointed in the proper direction.
11. Close the hood (see **7-16**) and recheck the position of the points (**P**) in relation to each X.



MOIL22TR01881AA 1



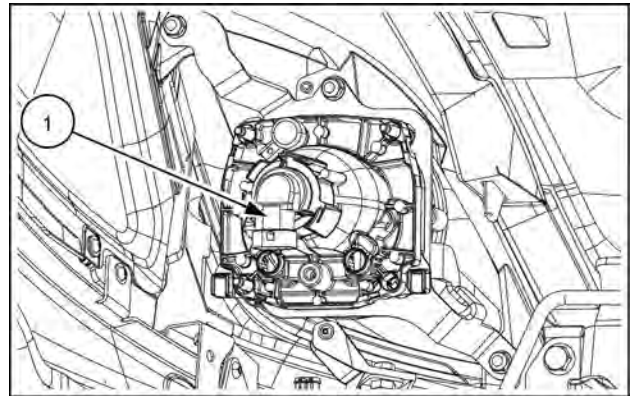
MOIL22TR00327AA 2

## Road lights – Replacement

**NOTICE:** avoid handling halogen lamps and touching the glass bulb directly with your fingers, which leave organic residue and may compromise operation and length of life. If the bulb is touched, clean with a cloth and alcohol and leave to dry.

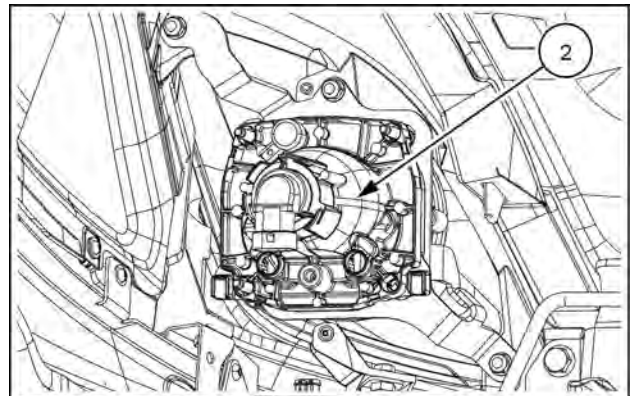
### Replacing front low-beam and high-beam lights

1. Open the hood, see 7-16.
2. Disconnect the battery, see 7-73
3. Remove the connector (1).
4. Rotate and remove the damaged bulb (2).
5. Properly install the new bulb (2) in its slot.



MOIL21TR01979AA 1

6. Connect connector (1).



MOIL21TR01979AA 2

7. Connect the battery - See 7-73.
8. Close the hood - See 7-16.
9. Check the headlamps are working properly.

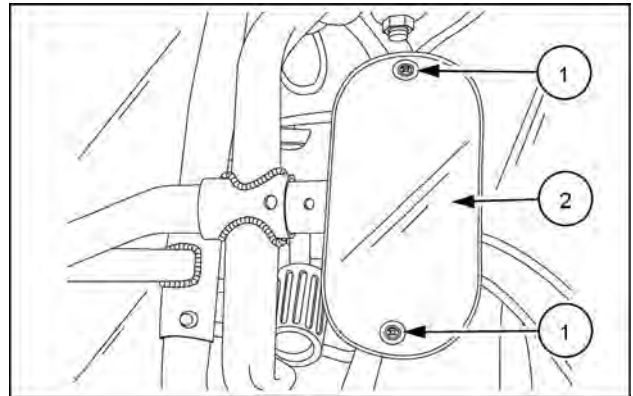
**NOTE:** perform the same procedure for both lights on both sides, if necessary.

**NOTE:** if after replacing the bulb, the lights do not work, contact your local dealer.

**NOTE:** for replacement use only new parts with the same specifications as those provided by the manufacturer.

## Turn signal and/or hazard lights - Replace

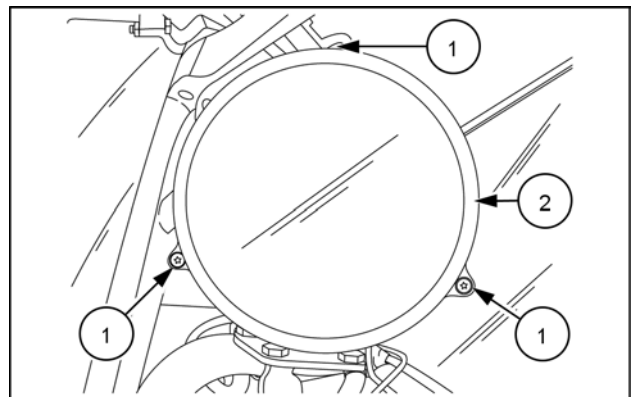
1. Replace blown bulbs as follows:
  1. Loosen the screws **(1)** and remove the transparent part **(2)**.
  2. Loosen and replace the old bulb with another one of the same power.
  3. Refit the transparent part **(2)** and tighten the screws **(1)**.



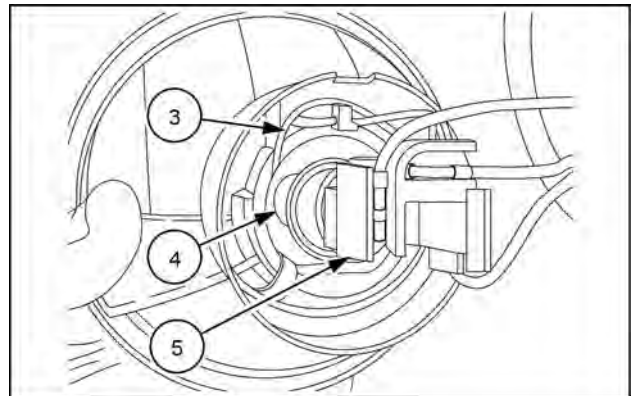
MOIL15TR01717AA 1

## Headlight - Replace

1. Replace blown bulbs as follows:
  1. Loosen the screws **(1)** and remove the seal **(2)**.
  2. Remove the headlight.
  3. Unclamp the clip **(3)** and remove the bulb **(4)**.
  4. Disconnect the electrical connection **(5)**.
  5. Replace the bulb with a new one of the same power.
  6. Reconnect the electrical connection **(5)**.
  7. Refit the bulb and lock it with the clip **(3)**.
  8. Refit the headlight in its housing.
  9. Install the ferrule **(2)** and secure it with the screws **(1)**.



MOIL15TR01716AA 1



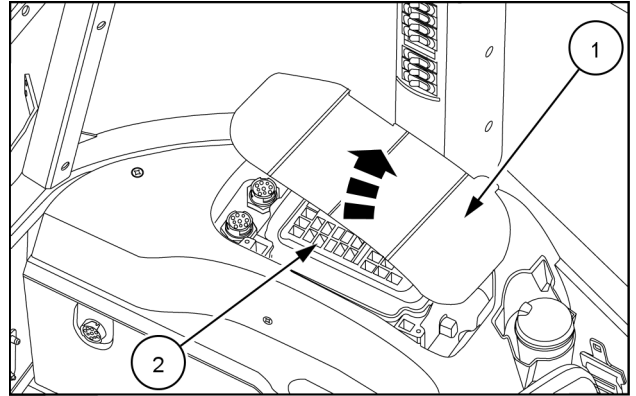
MOIL15TR01718AA 2

## Fuse and relay locations

### Fuses and relays - Replace - Fuse and relay

#### Main fusebox

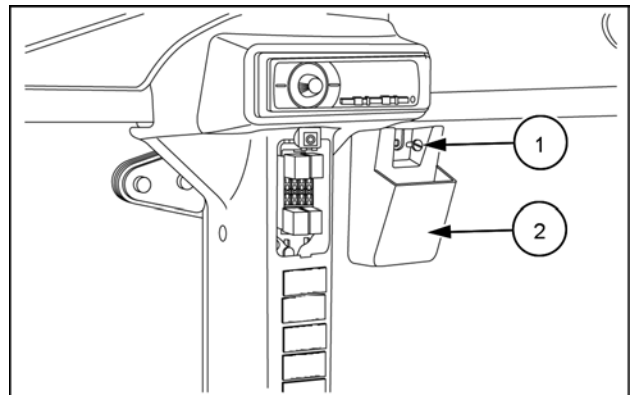
To access the main fuse box (2), it is necessary to remove the cover (1) from the console on the left-hand of the cab.



MOIL24TR00684AB 1

#### Pillar trim fuse compartment

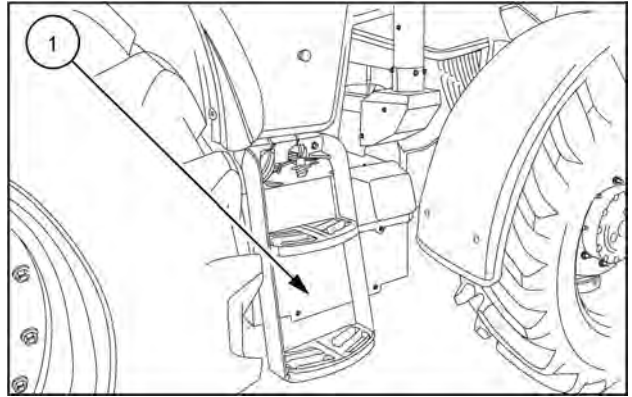
To access the fuse box, located on the right-hand side strut, loosen the screw (1) and remove the cover (2).



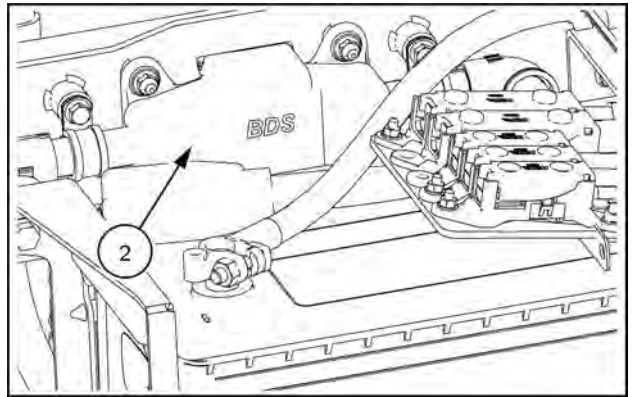
MOIL16TR02344AA 2

### Battery Disconnect Switch (BDS) relay fuse box

Remove the battery box cover (1) to access the fuses (2).



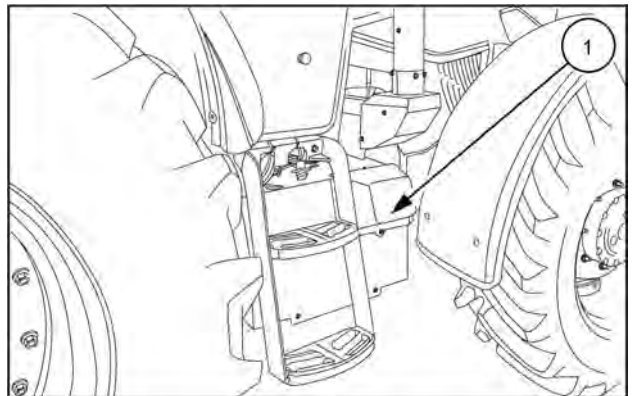
MOIL24TR00684AC 3



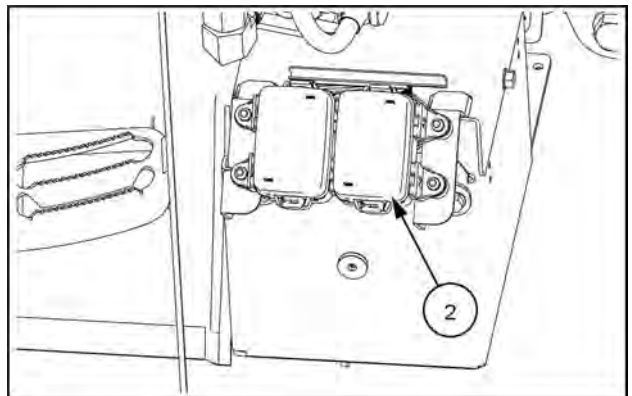
MOIL20TR01808AA 4

### Selective Catalytic Reduction (SCR) fuse compartment

Remove the cover (1) to access the Selective Catalytic Reduction (SCR) fuse box (2).



MOIL24TR00684AC 5



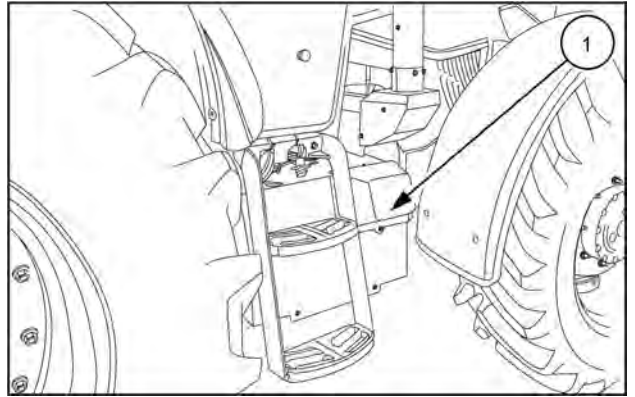
MOIL20TR01806AA 6

## Power Distribution Unit (PDU) fuse compartment

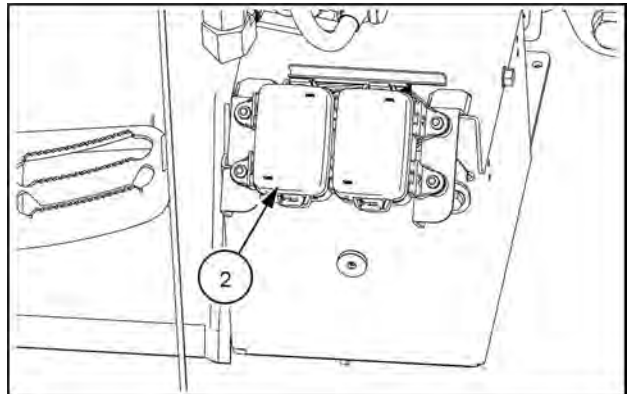
The Power Distribution Unit (PDU) fuses have the job of protecting the main fuse box and the electrical circuits. A large drop in voltage, such as that produced by the inefficiency of many electrical circuits, may signify a blown maxi fuse.

The engine fuses are installed in the Power Distribution Unit (PDU) fuse box.

Remove the cover (1) to check or change the Power Distribution Unit (PDU) fuse box (2).



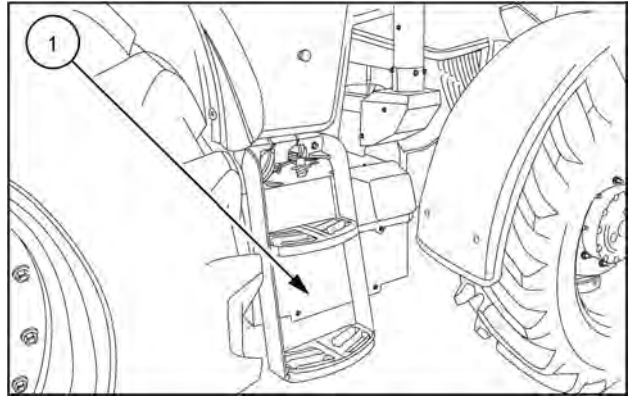
MOIL24TR00684AC 7



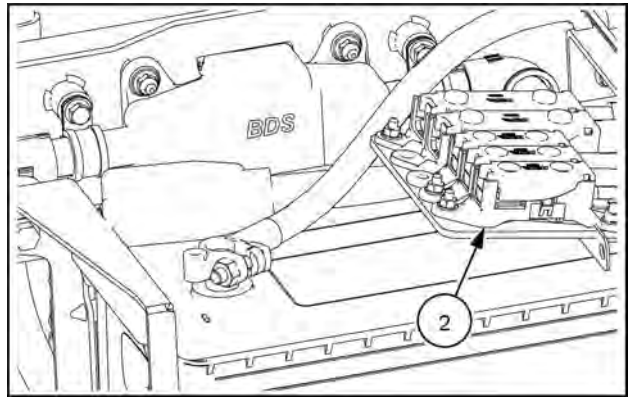
MOIL20TR01806AA 8

## PDM module

Remove the battery box cover (1) to access the fuses and relays (2).



MOIL24TR00684AC 9



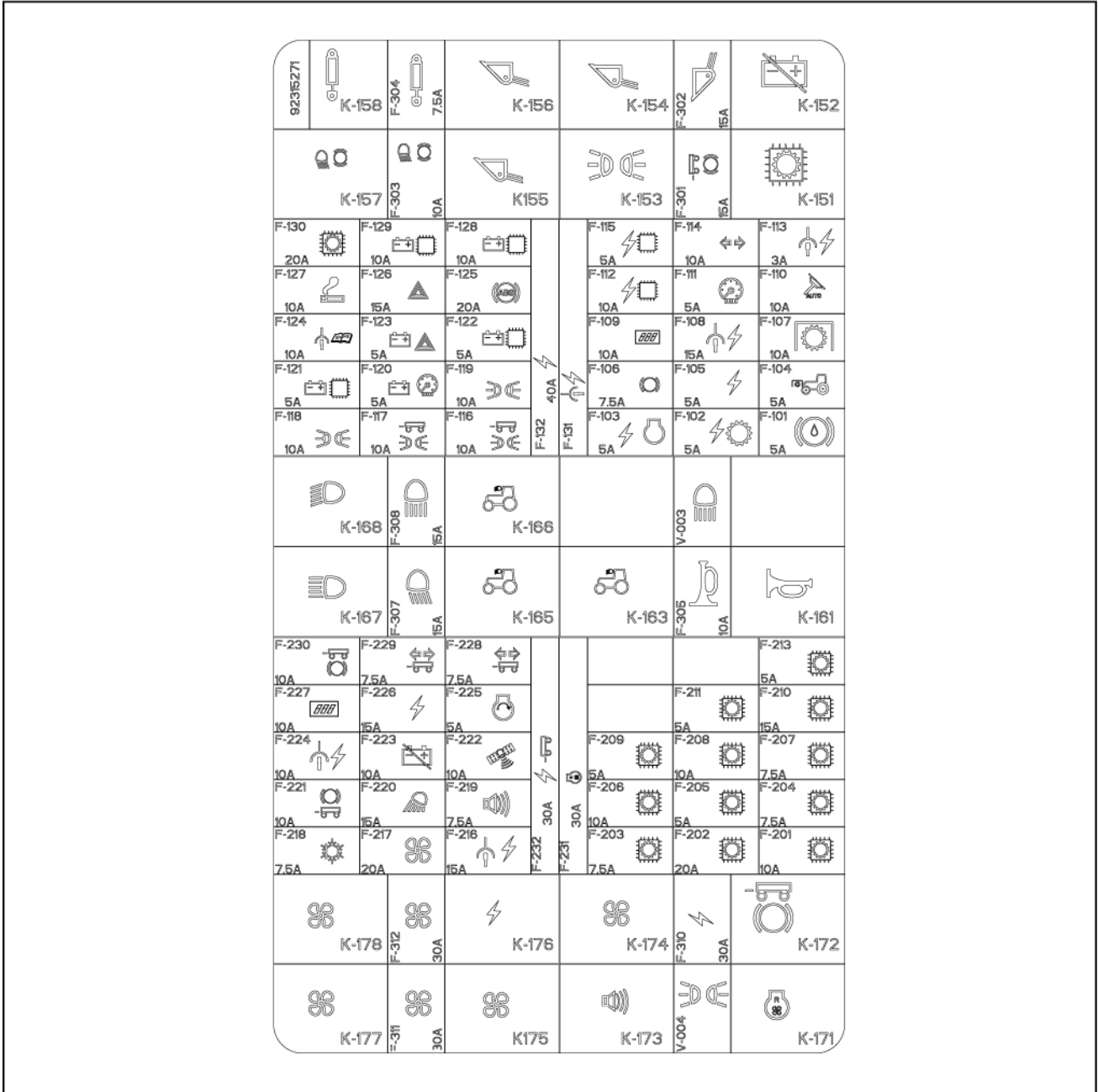
MOIL20TR01808AA 10

**NOTICE:** if electrical system relays need to be changed, check that correct spare parts are used and that they are fitted in the correct positions. The use of structurally or functionally different relays - even if interchangeable - could seriously compromise tractor control with dangerous results.

**NOTE:** for the location of fuses and relays inside the various compartments, see page 7-83 .

# Fuse and relay box

## Main fuse and relay box



MOIL24TR00840GA 1

### Relay

Label Name	Component Name	Protector
K151	K151	UCM power
K152	K152	Battery cut-out
K153	K153	Side light
K154	K154	Loader 1
K155	K155	Loader 2
K156	K156	Loader 3
K157	K157	Stop lights
K158	K158	3 distributor
K161	K161	Horn
K163	K163	High beam light auxiliary relay

## 7 - MAINTENANCE

Label Name	Component Name	Protector
K165	K165	Low beam light auxiliary relay
K166	K166	Low beam light auxiliary relay
K167	K167	Low beam light relay
K168	K168	Main beam relay
K171	K171	Reversible fan relay
K172	K172	Trailer brake relay 1
K173	K173	Reversing mechanism alarm
K174	K174	3rd speed right-hand FAN
K175	K175	3rd speed left-hand FAN
K176	K176	+30 wrench
K177	K177	4th speed left-hand fan
K178	K178	4th speed right-hand fan

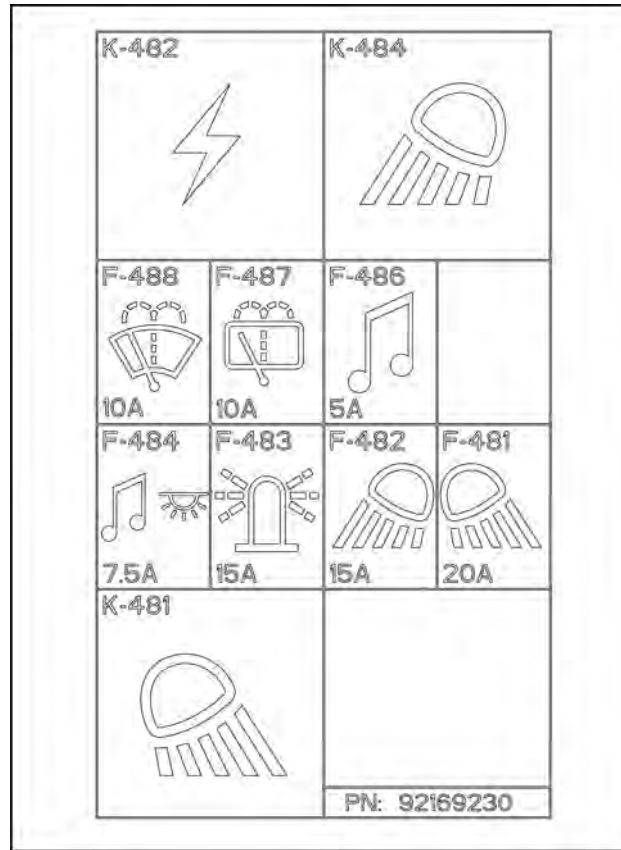
## Fuses

Label Name	Component Name	Size of the fuse	Protector
F101	F101	5.0 A	Oil brake fuse
F102	F102	5.0 A	Drive line key-activated power supply fuse
F103	F103	5.0 A	Engine fuse
F104	F104	5.0 A	Front PTO fuse
F105	F105	5.0 A	Accelerator pedal fuse
F106	F106	7.5 A	Cab slope brake fuse
F107	F107	10.0 A	Front/rear PTO fuse
F108	F108	15.0 A	Front HPL socket fuse
F109	F109	10.0 A	Display fuse
F110	F110	10.0 A	Autoguidance fuse
F111	F111	5.0 A	GADIC Fuse
F112	F112	10.0 A	Right side fender control electronic control unit fuse
F113	F113	3.0 A	USB socket fuse
F114	F114	10.0 A	Turn indicators control power supply
F115	F115	5.0 A	Telematics control unit fuse
F116	F116	10.0 A	LH trailer socket
F117	F117	10.0 A	Right side trailer socket
F118	F118	10.0 A	Side lights 1 fuse
F119	F119	10.0 A	Side lights 2 fuse
F120	F120	5.0 A	KAM Adic
F121	F121	5.0 A	Fuse KAM PCM
F122	F122	5.0 A	Fuse KAM ACML
F123	F123	5.0 A	Fuse KAM HANDBRAKE/HAZARD SW
F124	F124	10.0 A	Fuse KAM DIAG SOCKETS
F125	F125	20.0 A	ABS - socket
F126	F126	15.0 A	Turn indicator lights control unit
F127	F127	10.0 A	Cigar lighter fuse
F128	F128	10.0 A	Right side fender control electronic control unit fuse
F129	F129	10.0 A	Telematics control unit fuse
F130	F130	20.0 A	Fuse UCM VP/VR
F131	F131	40.0 A	Cab interior power socket fuse
F132	F132	40.0 A	Starter switch fuse
F201	F201	10.0 A	Fuse UCM VS
F202	F202	20.0 A	Fuse UCM VU
F203	F203	7.5 A	Fuse UCM VH1
F204	F204	7.5 A	Fuse UCM VH
F205	F205	5.0 A	Fuse UCM VA
F206	F206	10.0 A	Fuse UCM VM
F207	F207	7.5 A	Fuse UCM VF3
F208	F208	10.0 A	Fuse UCM VT1

7 - MAINTENANCE

Label Name	Component Name	Size of the fuse	Protector
F209	F209	<b>5.0 A</b>	Fuse UCM VD
F210	F210	<b>15.0 A</b>	Fuse UCM VF2
F211	F211	<b>5.0 A</b>	Fuse UCM VF1
F213	F213	<b>5.0 A</b>	Fuse UCM VB
F216	F216	<b>15.0 A</b>	+ Key socket
F217	F217	<b>20.0 A</b>	Fan speed 1 and 2 fuse
F218	F218	<b>7.5 A</b>	Air conditioning fuse
F219	F219	<b>7.5 A</b>	Reversing mechanism alarm fuse
F220	F220	<b>15.0 A</b>	Lighting switches fuse
F221	F221	<b>10.0 A</b>	ABS switch fuse
F222	F222	<b>10.0 A</b>	Antenna fuse
F223	F223	<b>10.0 A</b>	Fuse BDS RLY
F224	F224	<b>10.0 A</b>	Socket <b>8 A</b>
F225	F225	<b>5.0 A</b>	Start-up protection fuse
F226	F226	<b>15.0 A</b>	Accessories power supply fuse
F227	F227	<b>10.0 A</b>	Display fuse
F228	F228	<b>7.5 A</b>	Right side trailer turn indicator lights fuse
F229	F229	<b>7.5 A</b>	LH trailer turn indicator lights fuse
F230	F230	<b>10.0 A</b>	Stop trailer socket
F231	F231	<b>30.0 A</b>	Reversible fan fuse
F232	F232	<b>30.0 A</b>	NAR market trailer brake socket fuse
F301	F301	<b>15.0 A</b>	Trailer brake fuse
F302	F302	<b>15.0 A</b>	Front loader fuse
F303	F303	<b>10.0 A</b>	Lights stop fuse
F304	F304	<b>7.5 A</b>	3rd distributor fuse
F305	F305	<b>10.0 A</b>	High beam flashing lights and horn fuse
F307	F307	<b>15.0 A</b>	Hi-Range fuse
F308	F308	<b>15.0 A</b>	Lo-Range fuse
F310	F310	<b>30.0 A</b>	Start-up key protection fuse
F311	F311	<b>30.0 A</b>	Third and fourth speed fuse, LH fan
F312	F312	<b>30.0 A</b>	Third and fourth speed fuse, RH fan

**Pillar trim fuse compartment**



MOIL24TR00541BA 2

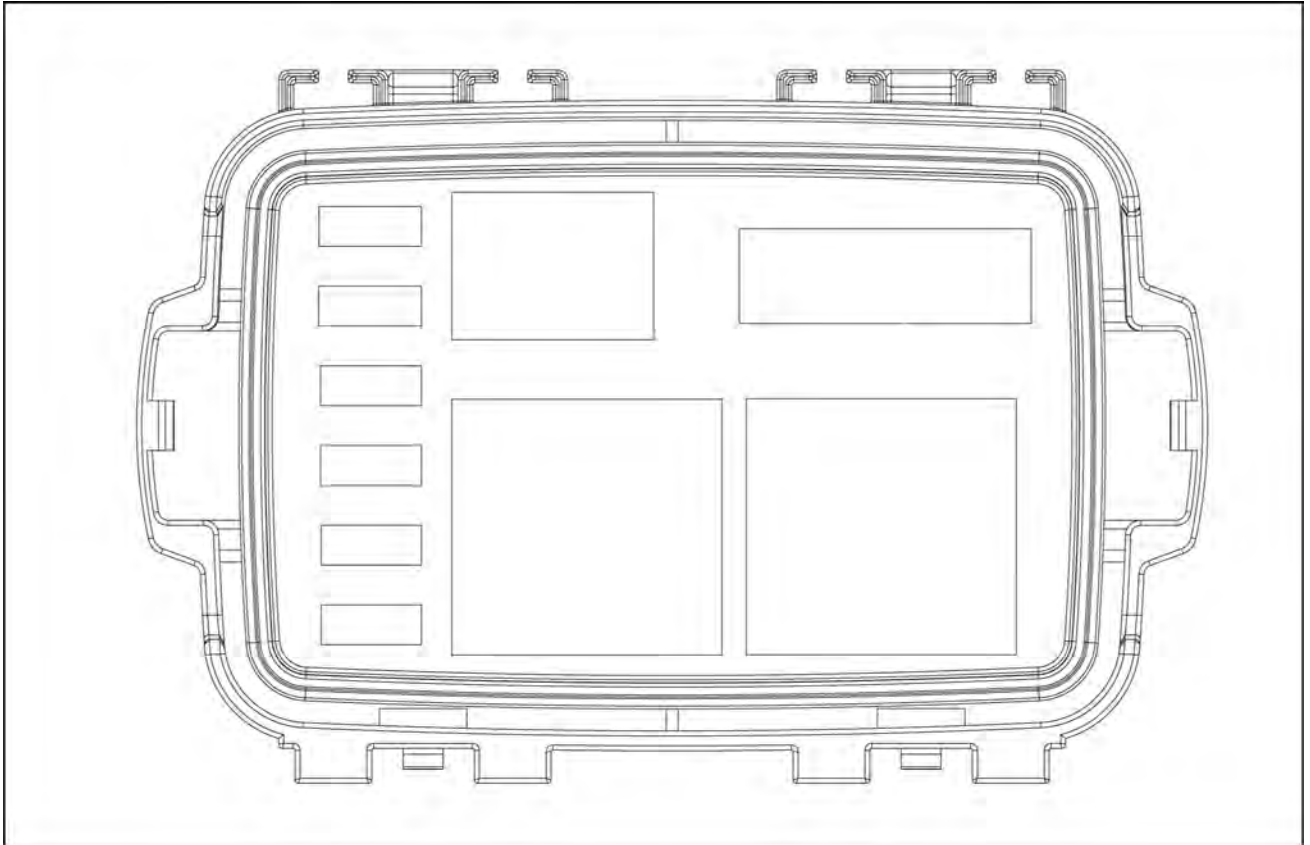
**Relay**

Label Name	Component Name	Protector
K481	K481	Rear work light
K482	K482	Roof power
K484	K484	Front work light

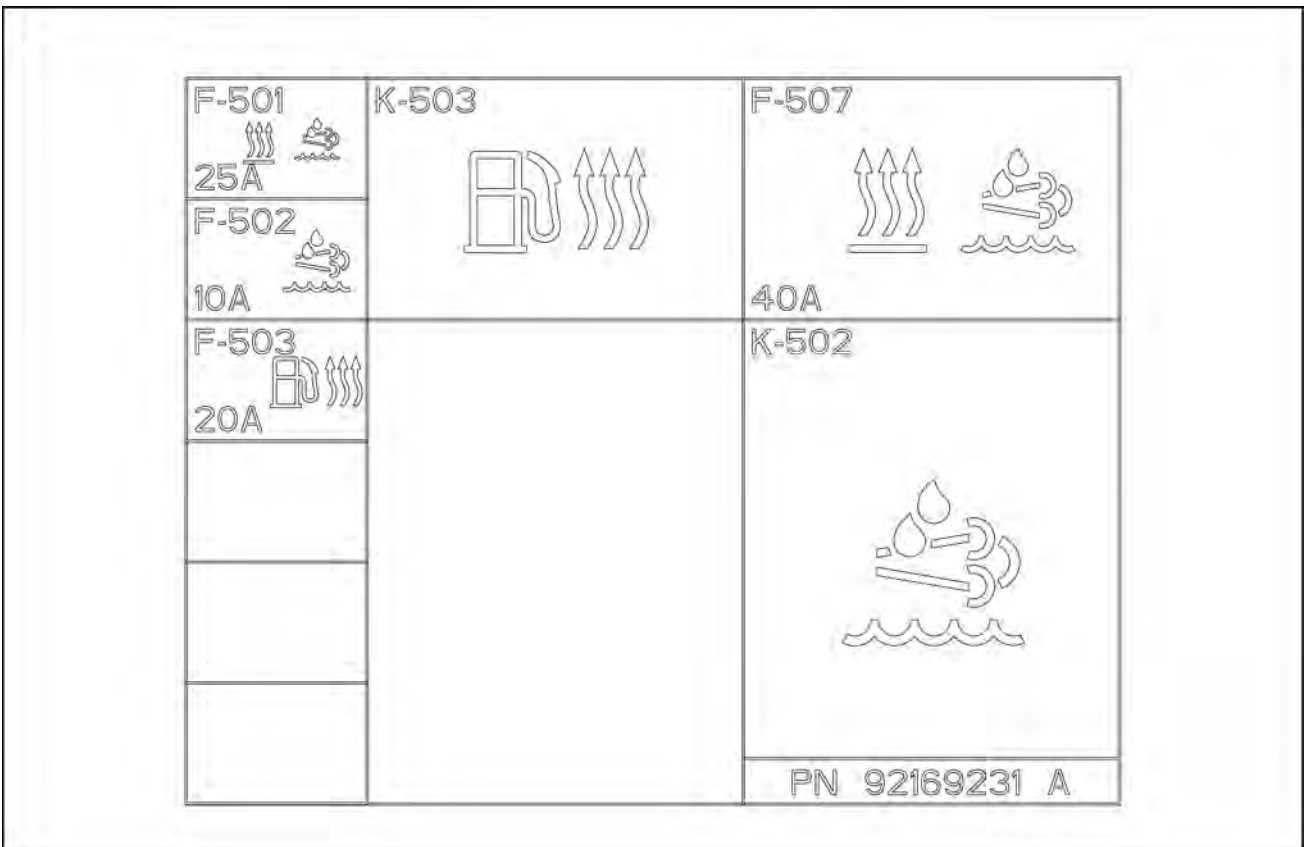
**Fuses**

Label Name	Component Name	Size of the fuse	Protector
F481	F481	20.0 A	Rear work light
F482	F482	15.0 A	Front work light
F483	F483	15.0 A	Rotating beacon
F484	F484	7.5 A	Roof lamp – Radio
F486	F486	5.0 A	A radio
F487	F487	10.0 A	Rear windshield wiper/washer
F488	F488	10.0 A	Front wipers and washers

Selective Catalytic Reduction (SCR) fuse compartment



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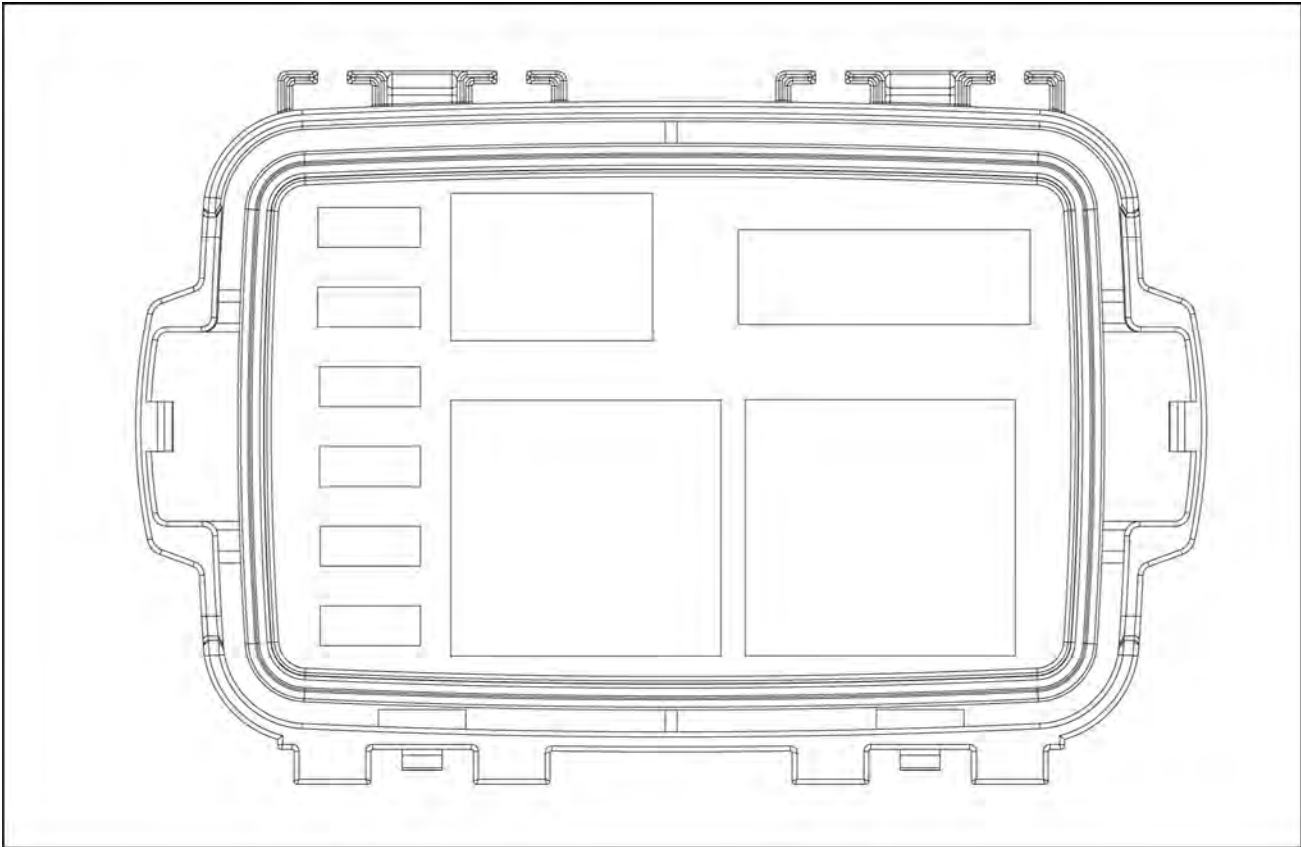
**Relay**

Label Name	Component Name	Protector
K502	K502	Selective Catalytic Reduction (SCR) main relay
K503	K503	Engine fuel heater relay

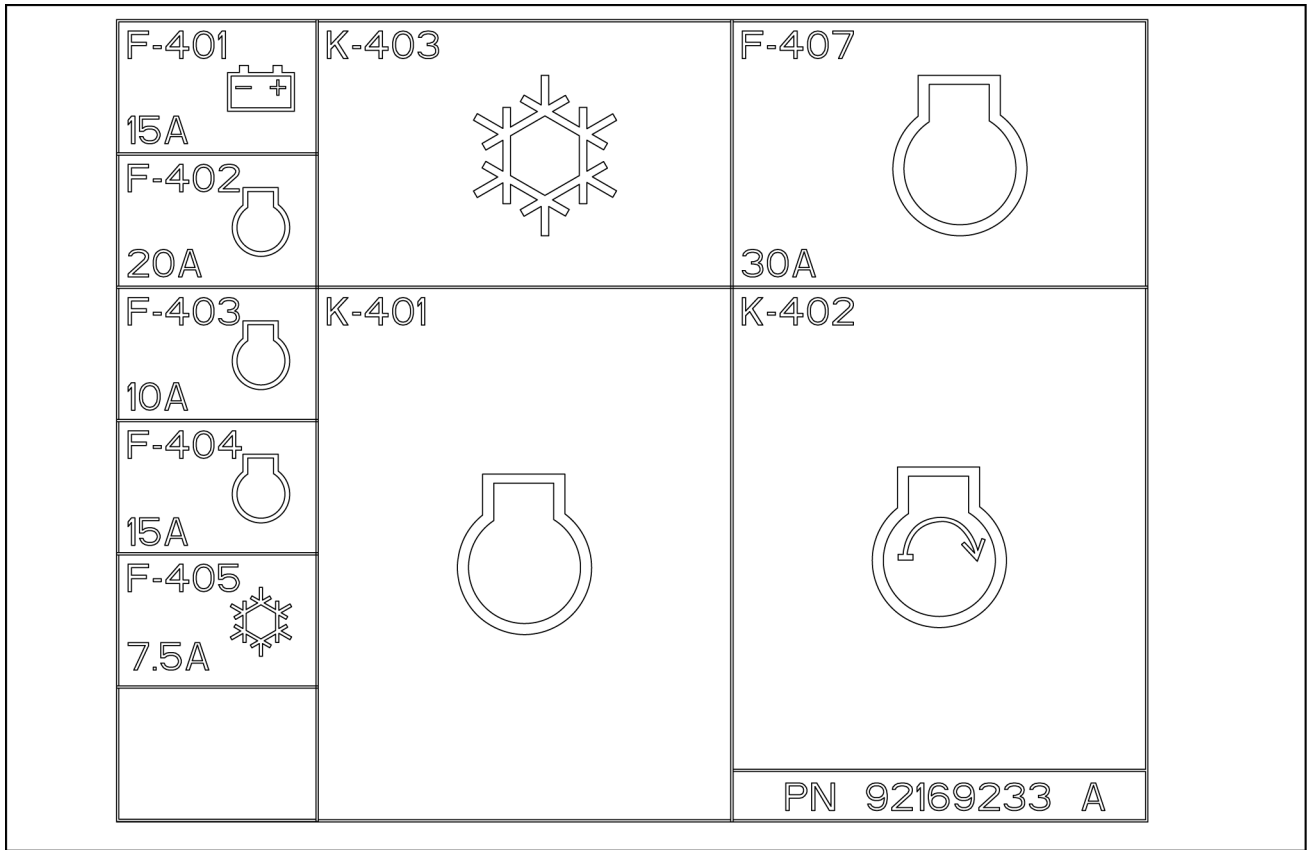
**Fuses**

Label Name	Component Name	Size of the fuse	Protector
F501	F501	<b>25.0 A</b>	Fuse DEF/AdBlue®
F502	F502	<b>10.0 A</b>	Selective Catalytic Reduction (SCR) fuse and engine pumps
F503	F503	<b>20.0 A</b>	Fuel heater
F507	F507	<b>40.0 A</b>	Hydraulic control unit fuse (HCU)

**Power Distribution Unit (PDU)**



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MOIL24TR00544FA 6

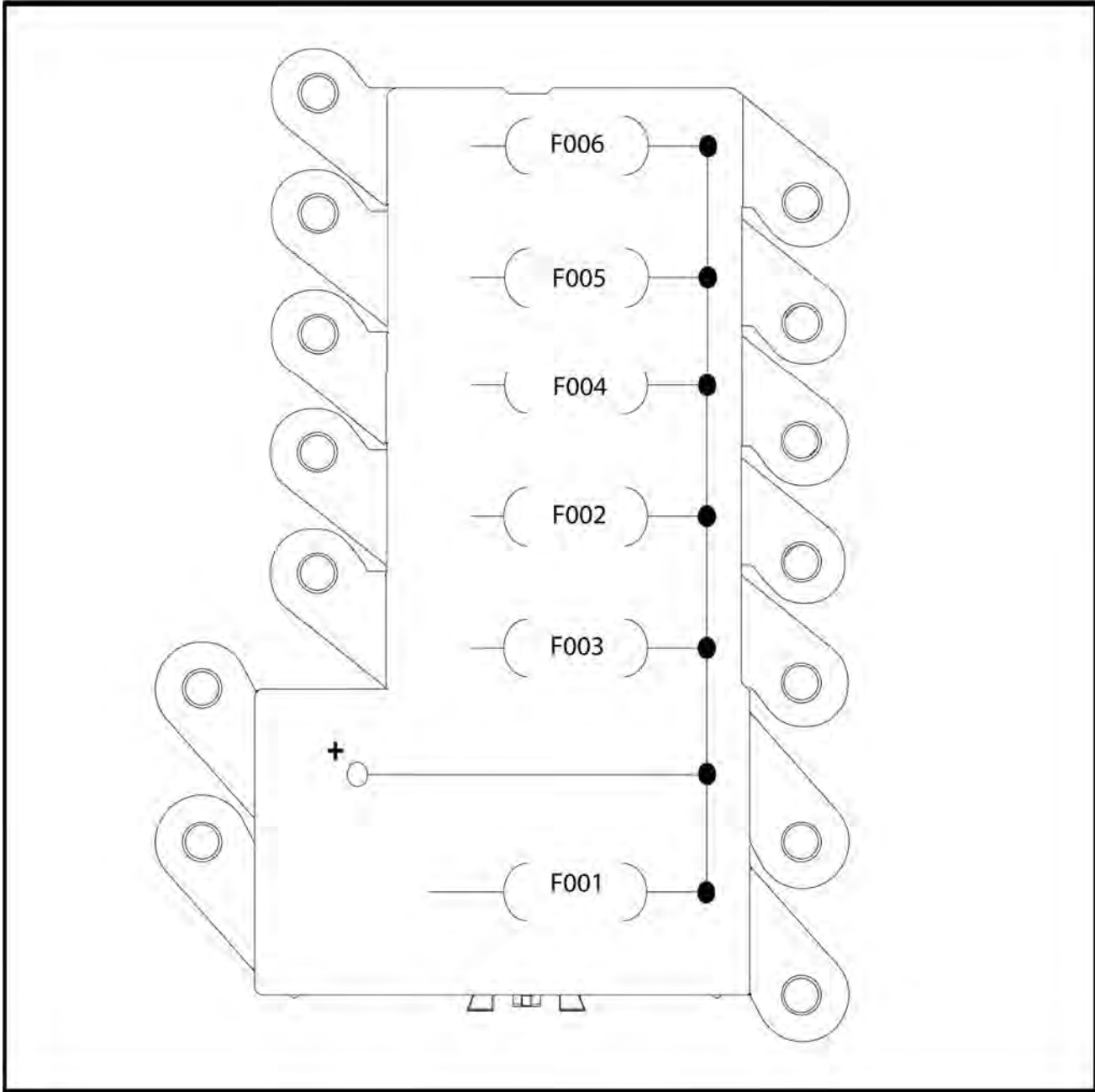
**Relay**

Label Name	Component Name	Protector
K401	K401	Engine power relay
K402	K402	Starter motor relay
K403	K403	Air conditioning relay

**Fuses**

Label Name	Component Name	Size of the fuse	Protector
F401	F401	15.0 A	KAM diagnostic
F402	F402	20.0 A	Engine fuse 2
F403	F403	10.0 A	Fuse Engine 3
F404	F404	15.0 A	Engine Fuse 4
F405	F405	7.5 A	Air conditioning fuse
F407	F407	30.0 A	Engine fuse 1

**PDM power distribution module**



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**Fuses**

Label Name	Component Name	Size of the fuse	Protector
F001	F001	<b>150.0 A</b>	Cab power fuse
F002	F002	<b>60.0 A</b>	Engine main fuse
F003	F003	<b>60.0 A</b>	Glow plugs fuse
F004	F004	<b>40.0 A</b>	Front socket fuse (optional)
F005	F005	<b>60.0 A</b>	ISOBUS power supply fuse (optional)
F006	F006	<b>23.0 A</b>	ISOBUS ECU fuse (optional)

**Battery Disconnect Switch (BDS) fuse compartment**

Label Name	Component Name	Size of the fuse	Protector
-	-	<b>40.0 A</b>	battery switch fuse (BDS)

## Storage

### Storing the tractor

**NOTE:** Take the following precautions if your tractor is going to remain unused for a prolonged period.

Protect the engine as follows:

- For storage periods of around one month: no precautions are necessary if the engine oil has not yet exceeded 100 hours of work. Otherwise, proceed as described in the paragraph below.
- For storage periods of over one month, drain the oil from the engine while hot, fill up the reservoir with oil (see "Topping-up" table on "Maintenance chapter") and run the engine for a few minutes at medium rpm.
- Remove the external air filter cartridge and clean according to the instructions provided on "Maintenance chapter".
- Do not drain off the engine cooling system. During winter periods, make sure that the proportions of the water/fluid, supplied with the tractor, are as specified (see "Topping-up" table on "Maintenance chapter"). To this end, follow the instructions on "Maintenance chapter".
- Clean the tractor and the bodywork.  
Protect the paintwork with silicone wax and use protective lubricants on non-painted metal parts; always keep the tractor in a covered, dry and well-ventilated place.
- Check that all controls are left in neutral (including electrical switches and the parking brake control).
- Do not leave the ignition key in the switch.
- Make sure that the operating cylinder rods (hydrostatic steering, lift, etc.) are closed up to protect them.
- Fill the fuel tank with diesel fuel.
- For **DEF/AdBlue®** fluid, follow the instructions in paragraph **1-20**.
- Remove the battery, clean the cover and smear the terminals and lead ends with petroleum jelly; next, place the battery in a ventilated spot not exposed to temperatures less than **10 °C (50.0 °F)** and away from direct sunlight.
- Check the battery charge condition using a voltmeter, as described on "Maintenance chapter".
- Fit stands or other suitable supports under the axles to raise the wheels off the ground. While the tractor is in a raised position, we recommend you let the air out of the tyres. Otherwise, raise the tractor and check the tire pressure from time to time.
- Cover the tractor with a non-plastic non-waterproof sheet.

**NOTICE:** at the end of the period of inactivity, closely follow the engine start-up instructions.

## Machine disposal

When the machine reaches the end of its useful life, observe the following recommendations for disposal:

1. Make an appointment with your dealer CASE IH to agree on the correct disposal of the machine, or
2. Sell the machine to a company that specializes in the proper disposal of industrial machinery.

If you want to keep the machine on your premises (for spare parts or other reusable components, etc.) you must observe the following instructions:

1. Park the machine on hard and level ground. Bring all moveable components to the lowest position and/or safest position.
2. Store the machine with the axles on wooden blocks in order to keep the machine upright, as the tires will deflate over time.
3. Contact your CASE IH dealer or other qualified Heating, Ventilation, and Air Conditioning (HVAC) technicians to reclaim the refrigerant in the air-conditioning system. Do not open the air-conditioning system yourself.
4. Remove the battery or batteries from the machine. Bring dead batteries or damaged batteries to your CASE IH dealer, who will dispose of the used batteries or recycle the used batteries properly.
5. Drain the remaining fuel into appropriate containers.
6. Drain the oil from engine, transmission, and hydraulic systems into appropriate containers. Take the oil to your local waste recycling facility. Pay attention to local rules that may require you to store the different types of oils separately. Remove the filters.
7. If the machine has a separate brake circuit with brake fluid, drain the brake fluid. Take the brake fluid to your local waste recycling facility.

## Long-term storage

The assigned storage life for the machine is minimum 10 years. During this time the machine must be packed in a dry and clean place without condensation.

**NOTE:** All the requirements for the storage of the machine must be met.

## Scrapping

When you scrap the vehicle, you must keep materials apart. Separate the following:

- Cab glass (laminated and/or tempered)
- Plastics
- Interior cladding and fabrics
- Rubber hoses
- Belts
- Electric and electronic components
- Tyres
- Wiring harnesses
- Sheet metal
- Castings
- Weld assemblies
- Aluminium
- Any other additional category

**NOTE:** See your local waste recycling facility for specific rules on how to deliver the scrapped materials.

When you dismount mechanical systems, make sure that there is no risk of residual energy (such as compressed springs in belt variators). If you do not have the proper tools or instructions to disassemble a system or component, contact your CASE IH dealer to perform this service.

**NOTE:** Make sure that the machine maintains stability during the dismantling process.

## Removal of tractor from storage

### WARNING

**Avoid injury!**

**Carefully read and observe all the precautionary advice contained in this manual.**

**Failure to comply could result in death or serious injury.**

W0044A

**After the period of inactivity, carry out the following operations to prepare the tractor for use:**

- Inflate the tires to the correct pressure and lower the tractor to the ground.
- Refill the fuel tank(s).
- For **DEF/AdBlue®** fluid, follow the instructions in paragraph **1-20**.
- Check the radiator coolant level.
- Check all oil levels.
- Install fully charged batteries.
- Uncover the exhaust pipe.
- Start the engine and check that all instruments and controls are functioning correctly. Using the tractor hydraulic system in Position Control, fully raise the three-point hitch and remove the supports.
- Check operation of heating and air conditioning systems (where fitted).
- Drive the tractor with no load to ensure that it is in good working order.

## Calibrations

### Clutch calibration

#### ⚠ WARNING

##### Unexpected machine movement!

The machine could move automatically during calibration. Park on a flat surface, engage the parking brake, and be sure that the area around the machine is clear before starting the calibration process. Failure to comply could result in death or serious injury.

W0300A

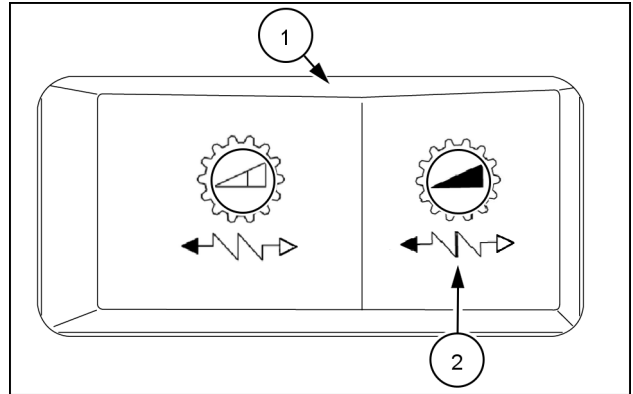
This procedure calibrates all the clutches, determining the required current to apply friction to the clamp pressure and synchronisation positions.

Before proceeding with calibration, check that the following conditions are met:

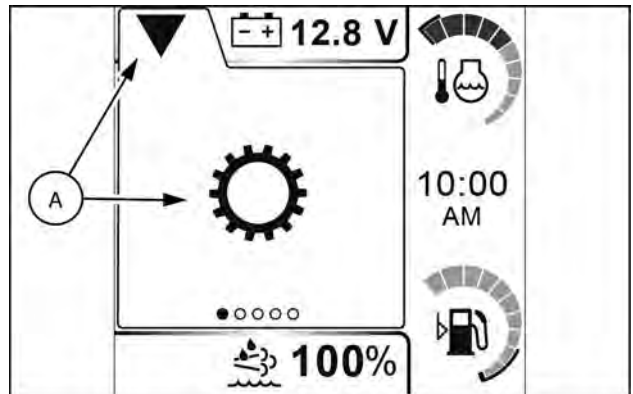
- Park the tractor on level ground and engage the parking brake.
- Make sure that the A/C, if fitted, is switched off and that all the electrical and hydraulic services are deselected.
- Check that the surrounding area is clear and free of obstacles.
- The drive line output speed is constantly monitored and the calibration will not proceed unless the tractor is stationary.

To access the initial drive line calibration screen (A) proceed as follows:

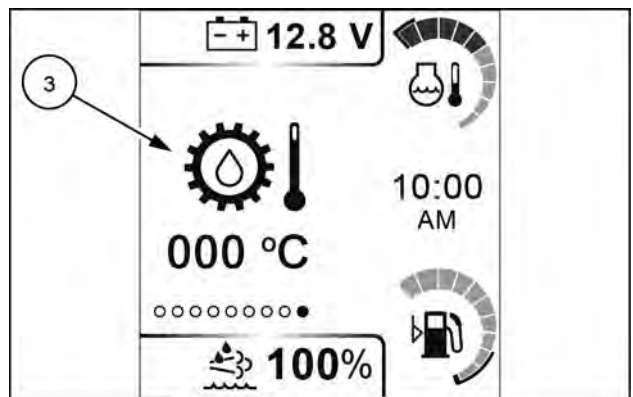
1. Switch off the engine.
2. Pull the hand brake as far as it will go.
3. Depress the clutch pedal).
4. Place the range lever to the "High" position.
5. Set the gear lever to position four
6. Move the hand throttle control to the beginning of the stroke and release the clutch pedal.
7. Press and hold the reverse reactivity switch (1) in position (2) and simultaneously start the engine.
8. When the window (A) is displayed, release the switch (1) between 3 s and 10 s.
9. Entering the calibration mode will also display the drive line oil temperature (3) for a few seconds, therefore make sure that the oil temperature is between 10 °C (50 °F) and 105 °C (221 °F)



MOIL16TR02416AC 1




MOIL24TR00141A 2



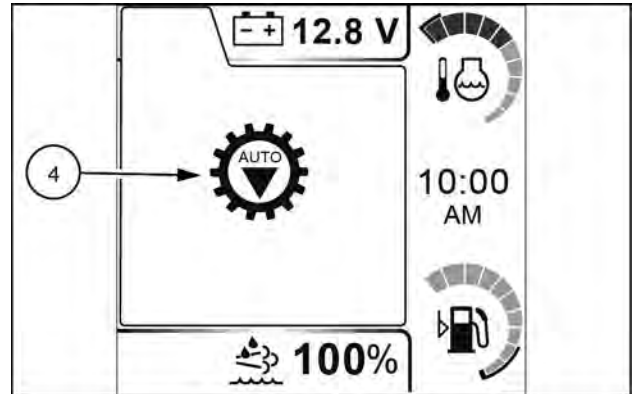
MOIL24TR00375 3

**ATTENTION:** If a two-digit number beginning with the letter "FE" is displayed at any time during the calibration procedure, or when the calibration procedure is activated, this is a standard error code. The fault condition must be corrected before calibration can be performed

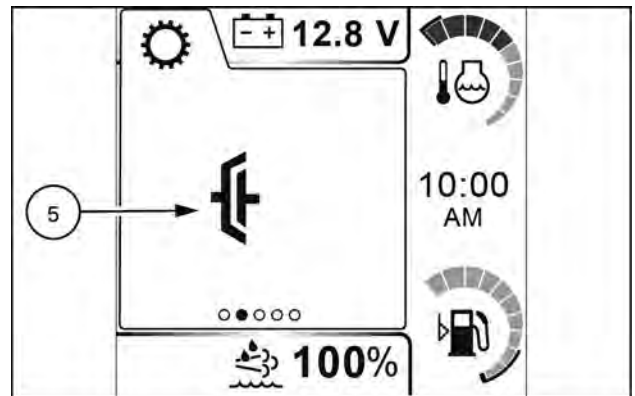
**NOTE:** The procedure for accessing the calibration screen fails (is not performed) if the auto take-off functionality activation switch is released before 3 s or 10 s after engine start-up.

In this screen, scrolling with the navigation keys  you can choose from the following calibrations:

- Auto calibration (4)
- Manual calibrations (5)




MOIL24TR00258 4

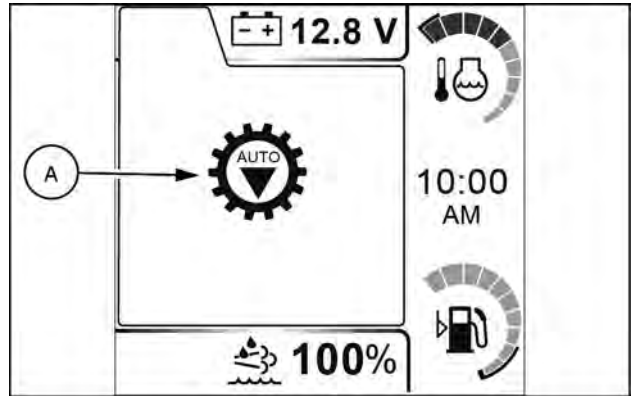


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### Auto calibration

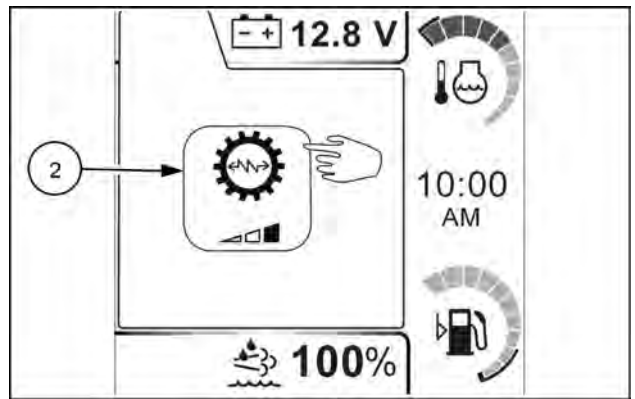
1. The automatic calibration procedure allows you to calibrate available clutches sequentially.

From the clutch calibration menu, use the control  to select the automatic calibration menu (1)

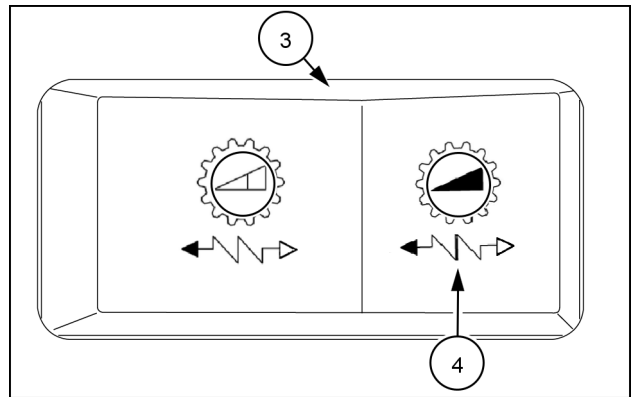


MOIL24TR00258 6

2. When the engine speed stabilises at **1300 RPM** and the icon (2) appears on the display, press the reverse switch (3) to position (4) for **3 s** to start the calibration procedure.

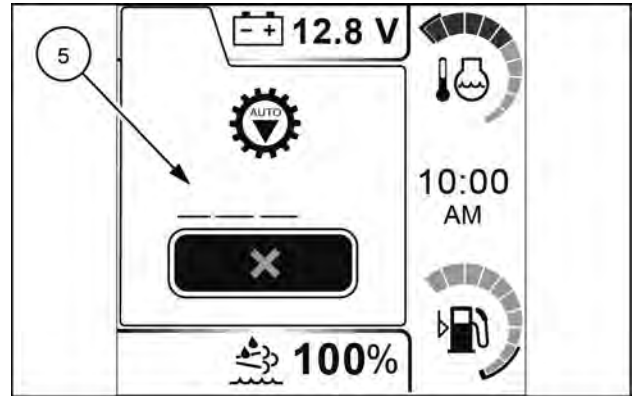


MOIL24TR00304AA 7




MOIL16TR02416AC 8


- Wait a few minutes for the procedure to complete, during which time the **(5)** window will be displayed with the progress of the procedure.

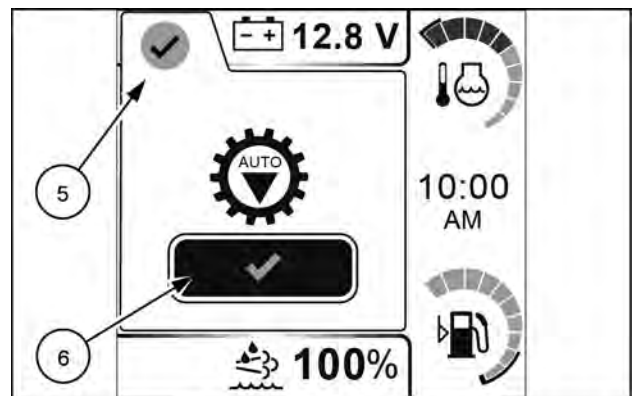


MOIL24TR00259 9

**ATTENTION:** Pressing the command  during the execution of the procedure will cancel the calibration.


- After the automatic calibration procedure is completed, a pop-up window **(6)** appears to confirm that the procedure has been successfully completed.

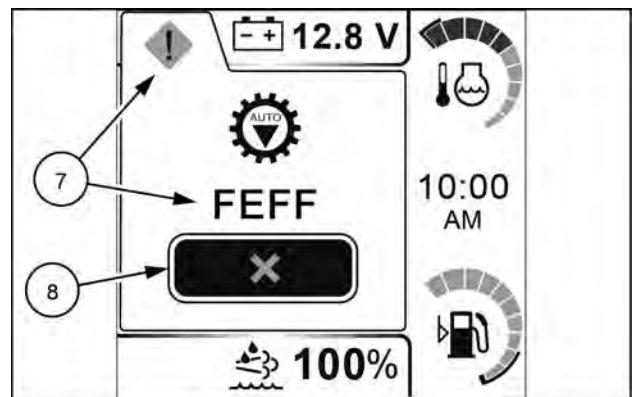
Press the command  in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.



MOIL24TR00258 10

- If the calibration procedure was not successful, the pop-up window **(7)** of procedure not performed is shown.


Press the command  to return to the home screen.




MOIL24TR00259 11

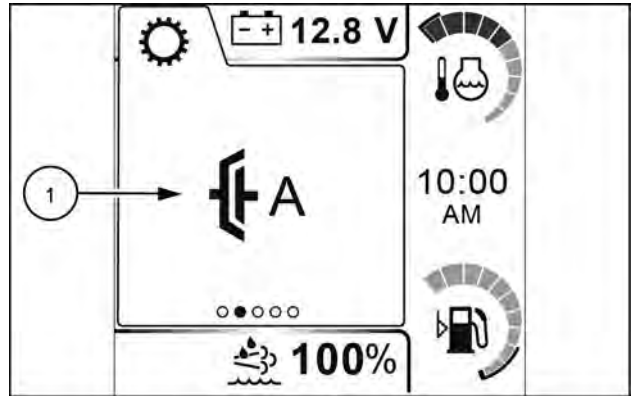
**Manual calibration**

6. From the clutch calibration menu, press the navigation

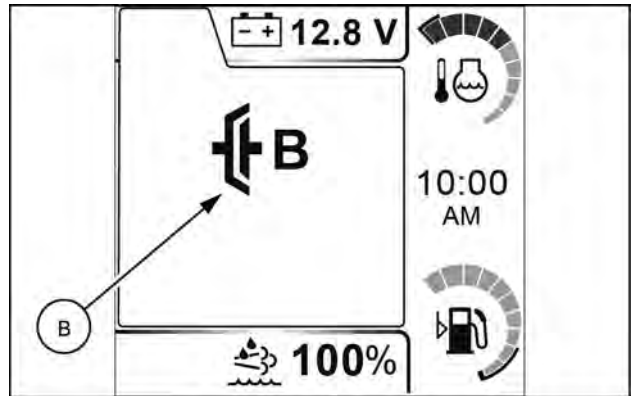
control  to select the manual calibration procedure (1) choosing from the following modes:

- Clutch (A).
- Clutch (B).
- Clutch (C).
- Clutch (D).

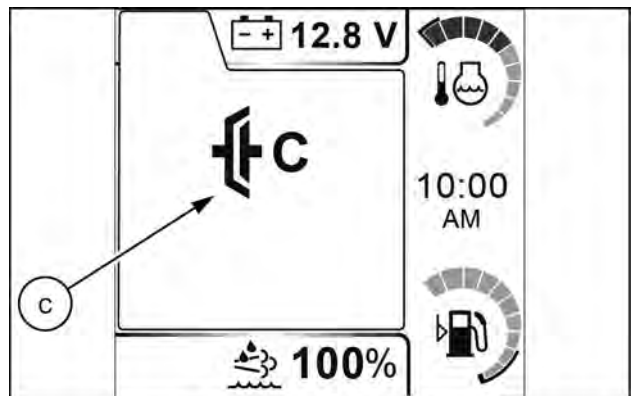
Press the control  to select the clutch to be calibrated.



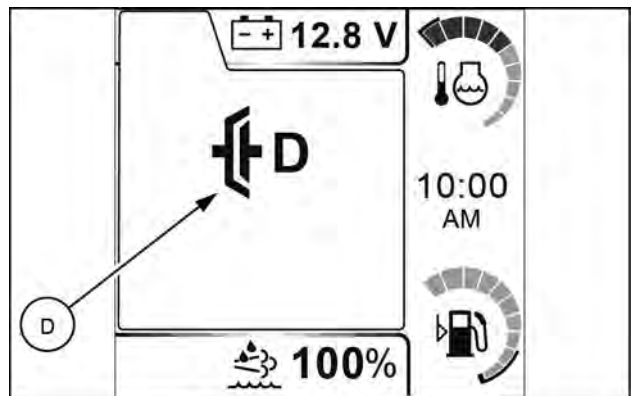
MOIL24TR00142 12



MOIL24TR00262 13

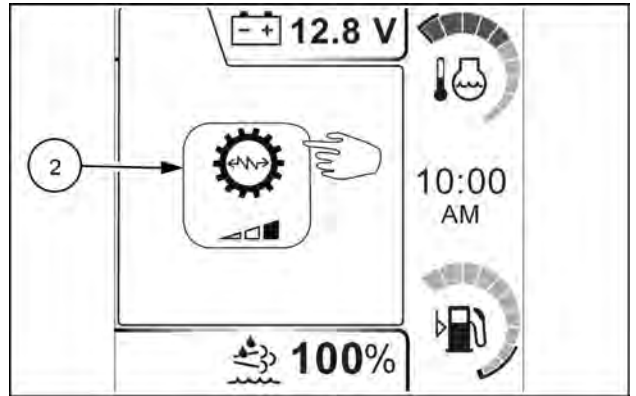


MOIL24TR00264 14

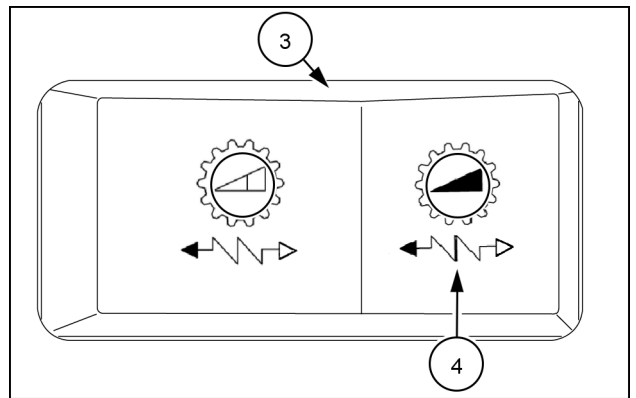


MOIL24TR00266 15

7. When the engine speed stabilises at **1300 RPM** and the icon **(2)** appears on the display, press the reverse switch **(3)** to position **(4)** for **3 s** to start the calibration procedure.

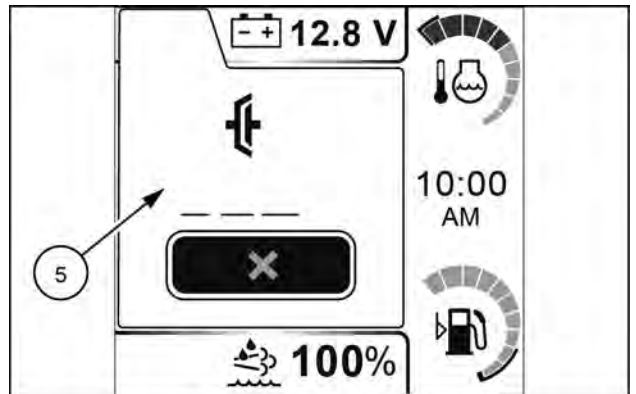


MOIL24TR00304AA 16



MOIL16TR02416AC 17

8. Wait a few minutes for the procedure to complete, during which time the **(5)** window will be displayed with the progress of the procedure.



MOIL24TR00261 18

**ATTENTION:** Pressing the command

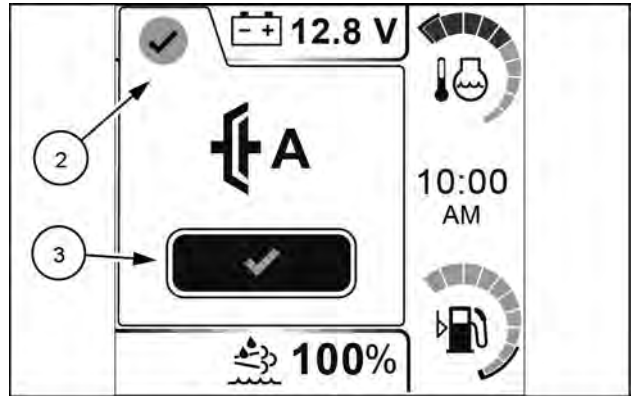


during the execution of the procedure will cancel the calibration.

9. After the automatic calibration procedure is completed, a pop-up window (6) appears to confirm that the procedure has been successfully completed.



Press the command in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.

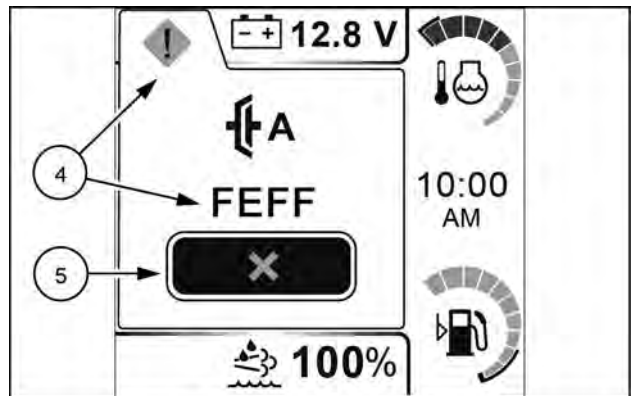


MOIL24TR00260 19

10. If the calibration procedure was not successful, the pop-up window (7) of procedure not performed is shown.



Press the command to return to the home screen.



MOIL24TR00261 20

## Drive line calibration fault codes

**NOTICE:** The transmission output rpm, clutch pedal position, shuttle lever position, and gear/range lever position are constantly monitored. Calibration cannot proceed unless the tractor is stopped, the shuttle lever is in gear, the gear and range levers are not in neutral, and the clutch pedal is up. If, during calibration, a faulty condition is detected, it is shown on the display with its error code via the alarm warning light; if the error is related to the calibration, then the corresponding "FE" code is displayed on the instrument panel. See the list of related codes on the next page.

CODE	MEANING
FAFB	Calibration aborted by operator
FE01	Seat switch not activated.
FE04	Wheel speed sensed
FE05	Hand brake is not engaged
FE09	Oil temperature too high
FE0A	Calibration timeout
FE12	Engine speed error or not working
FE13	Oil temperature is too low
FE17	Electric fault detected on the oil temperature sensor
FE18	Line pressure is not OK
FE1C	High Reactivity Switch not activated
FE48	Clutch pedal is not up, release the clutch pedal
FE4E	Clutch: One of the calibration values is too low
FE4F	Clutch: One of the calibration values is too high
FE50	Clutch B calibration value is too low
FE51	Clutch B calibration value is too high
FE63	Range lever in neutral
FE64	Shift lever in neutral
FE69	Clutch C calibration value is too low
FE6A	Clutch C calibration value is too high
FE6B	Clutch D calibration value is too low
FE6C	Clutch D calibration value is too high

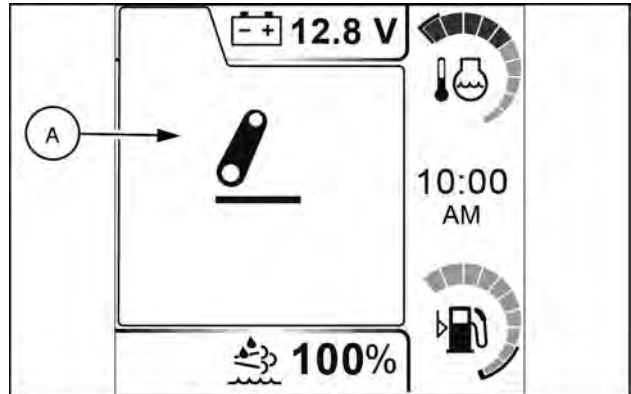
## Rear hydraulic lift with electronic control Calibration

To access the home screen for calibration and the electronically controlled rear lift (A), proceed as follows:

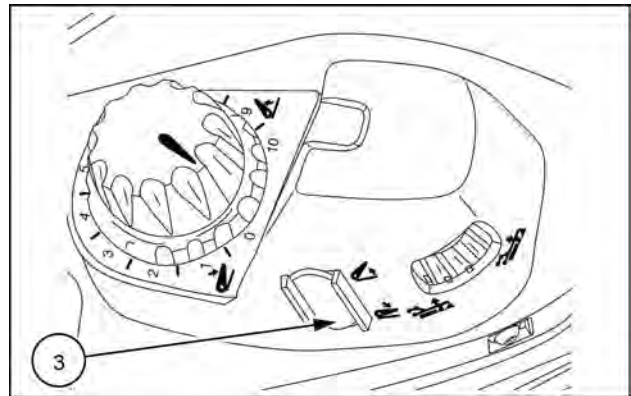
1. Switch off the engine.
2. Turn the potentiometers as far as they will go to the right.
3. Start the engine.
4. Press and hold the quick up/down switch downwards for **3 s (1)**
5. When the window (A) is displayed, release the switch (1) between **3 s** and **10 s**.

**NOTE:** The procedure for accessing the calibration screen is interrupted if the quick up/down switch is released **3 s** before or **10 s** after engine start-up.


**NOTE:** carry out the calibration process whenever the user notices a deterioration in the machine's operation and whenever operations are performed that impact the rear lift position sensor.



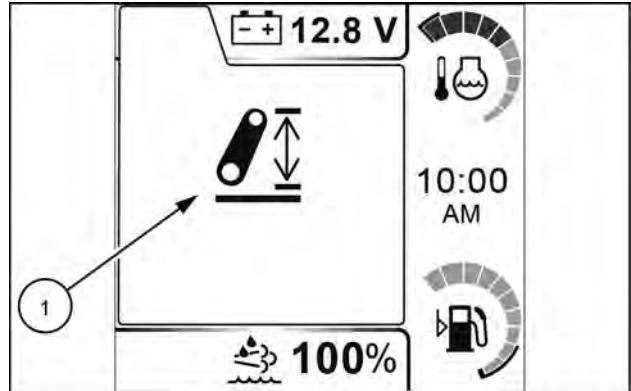
MOIL24TR00268 1



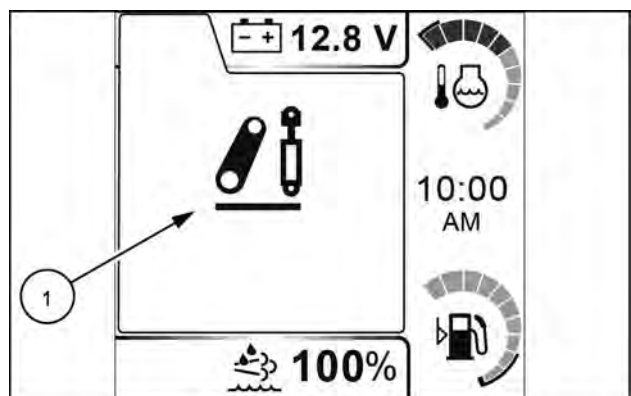
MOIL15TR02916AA 2

1. In this screen, scrolling with the navigation keys  you can choose from the following calibrations:
  - calibrating the position of the electronically controlled rear lift (1)
  - calibrating the valves of the electronically controlled rear lift (2)

**NOTE:** carry out the calibration process whenever the user notices a deterioration in the machine's operation and whenever operations are performed that impact the rear lift position sensor.




MOIL24TR00268 3

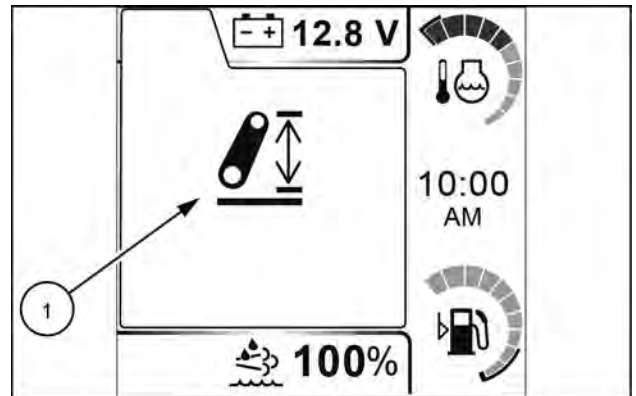


MOIL24TR00270 4

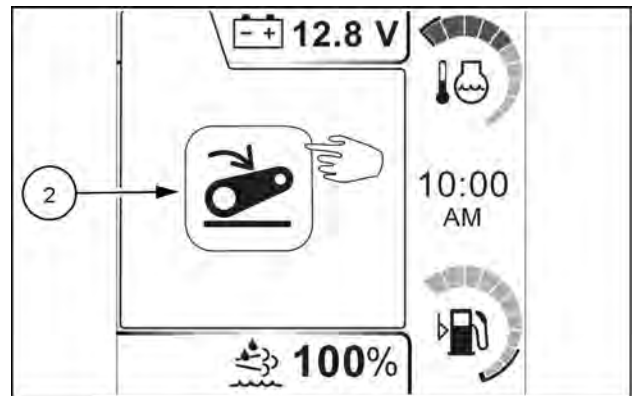
## calibrating the position of the electronically controlled rear lift

Use the command  to select position calibration (1)

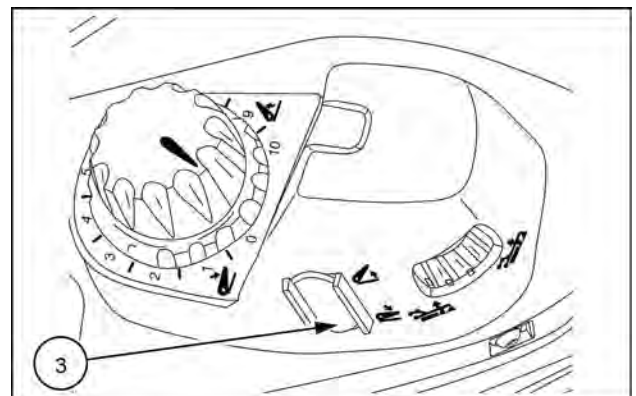
1. When the engine speed stabilises at **1300 RPM** and the icon (2) appears on the display, press the quick up/down switch (3) down to start the position calibration procedure.



MOIL24TR00268 5

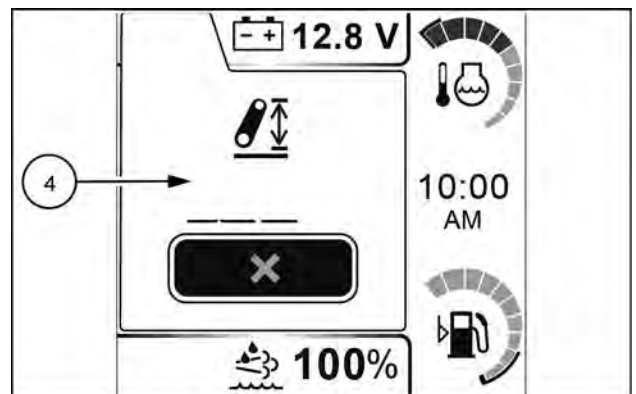


MOIL24TR00306AA 6




MOIL15TR02916AA 7


1. Wait a few minutes for the procedure to complete, during which time the (4) window will be displayed with the progress of the procedure.

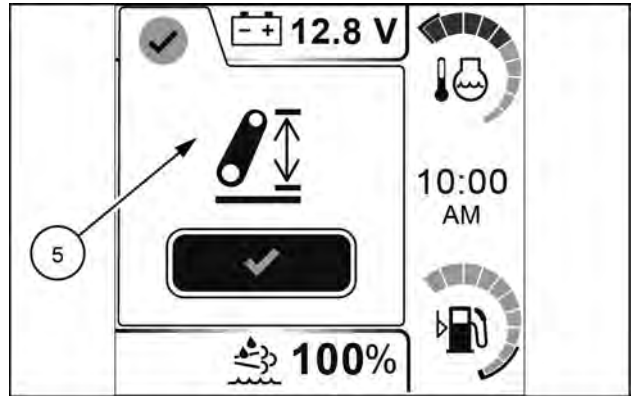


MOIL24TR00269 8

**ATTENTION:** Pressing the command  during the execution of the procedure will cancel the calibration.


2. After the automatic calibration procedure is completed, a pop-up window **(5)** appears to confirm that the procedure has been successfully completed.

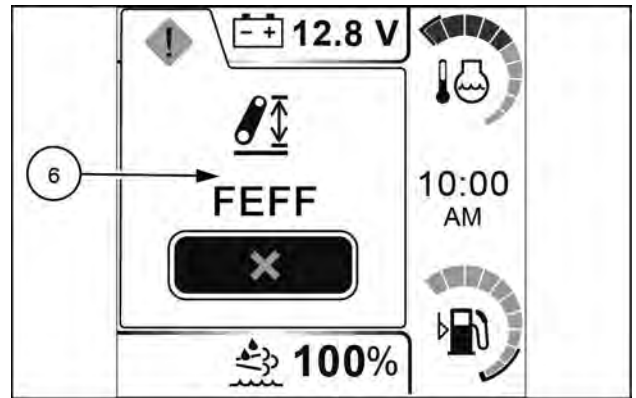
Press the command  in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.



MOIL24TR00268 9


3. If the calibration procedure was not successful, the pop-up window (6) of procedure not performed is shown.

Press the command  to return to the home screen.

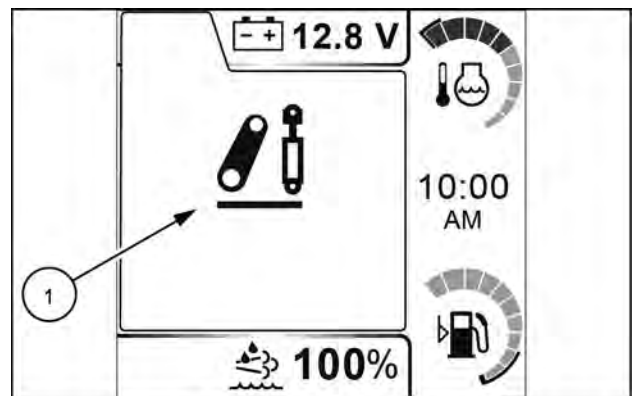


MOIL24TR00269 10

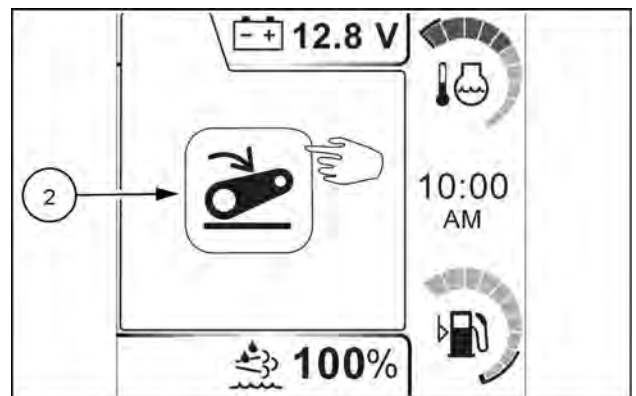
### Calibrating the valves of the electronically controlled rear lift

Use the command  to select valve calibration (1)

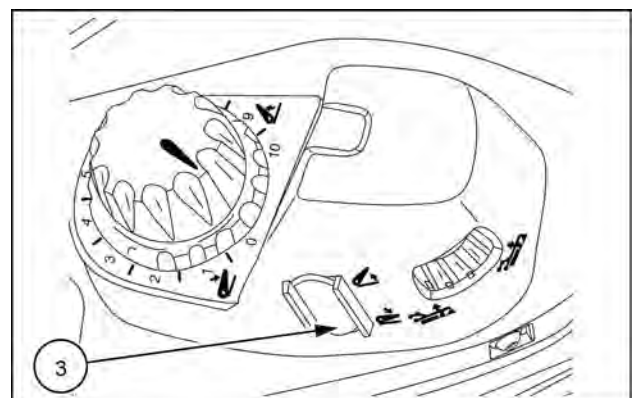
1. When the engine speed stabilises at **1300 RPM** and the icon (2) appears on the display, press the quick up/down switch (3) downwards to start the valve calibration procedure.



MOIL24TR00270 11

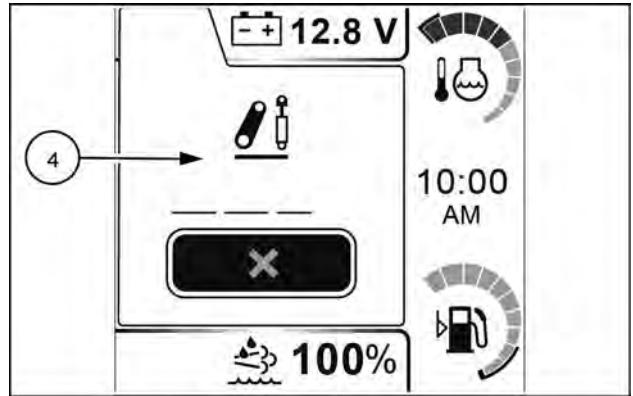


MOIL24TR00306AA 12




MOIL15TR02916AA 13


1. Wait a few minutes for the procedure to complete, during which time the **(4)** window will be displayed with the progress of the calibration procedure.

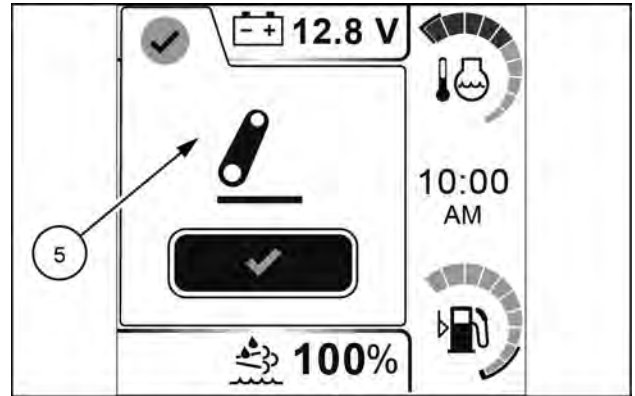


MOIL24TR00271 14

**ATTENTION:** Pressing the command  during the execution of the procedure will cancel the calibration.


4. Once the calibration procedure is complete, a pop-up window (5) appears to confirm that the procedure has been successfully completed.

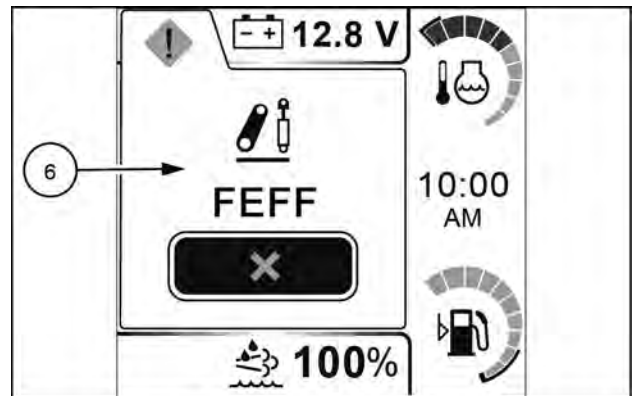
Press the command  in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.



MOIL24TR00268 15

5. If the calibration procedure was not successful, the pop-up window (6) of procedure not performed is shown.

Press the command  to return to the home screen.



MOIL24TR00271 16

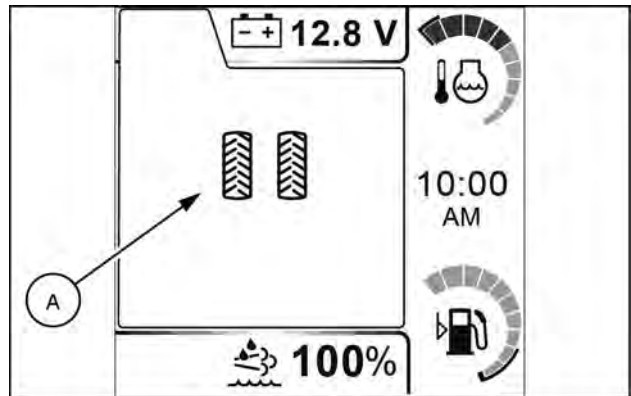
## Advanced steering system field/road switch

To access the steering calibration home screen (A), proceed as follows:

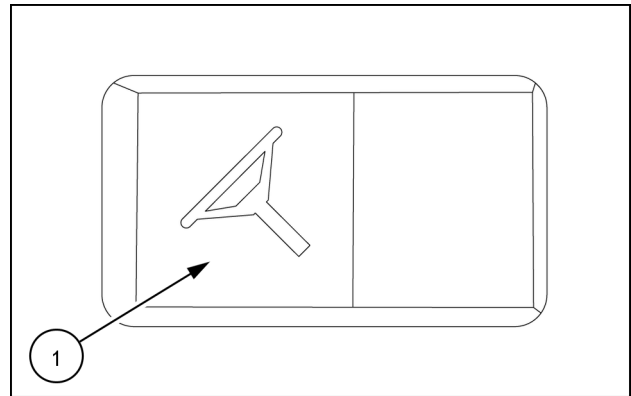
1. Switch off the engine.
2. Set the wheels parallel to the tractor.
3. Start the engine.
4. Press and hold the steering sensitivity switch (1) located on the right-hand pillar for 3 s
5. When the window (A) is displayed, release the switch (1) between 3 s and 10 s.

**NOTE:** The procedure for accessing the calibration screen is interrupted if the quick up/down switch is released 3 s before or 10 s after engine start-up.


**NOTE:** carry out the calibration process whenever the user notices a deterioration in the machine's operation and whenever operations are performed that impact the rear lift position sensor.



MOIL24TR00276 1

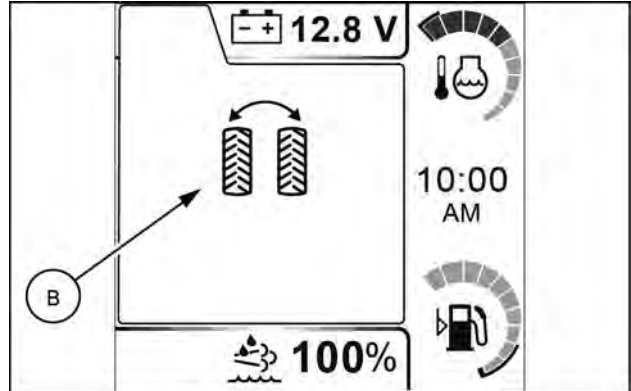


MOIL24TR00228AA 2

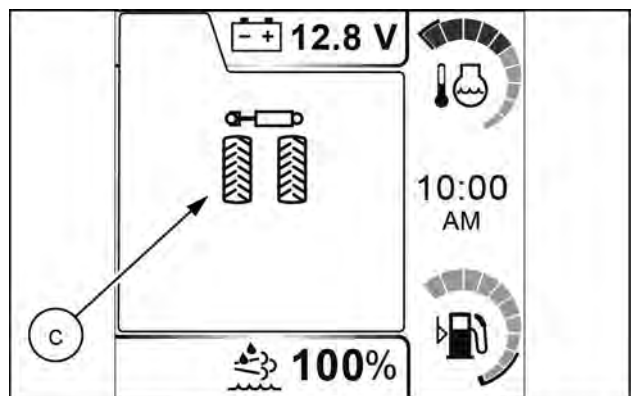
1. In this screen, scrolling with the navigation keys  you can choose from the following calibrations:

- steering reactivity calibration (B)
- steering valves calibration (C)

**NOTE:** carry out the calibration process whenever the user notices a deterioration in the machine's operation and whenever operations are performed that impact the rear lift position sensor.



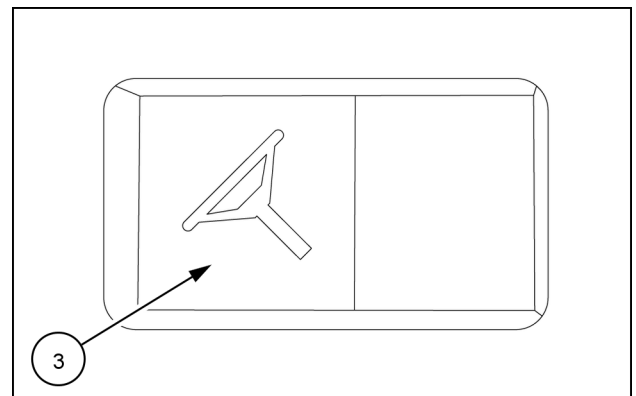
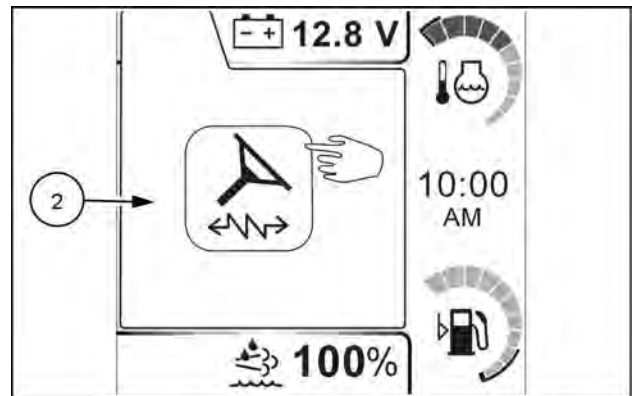
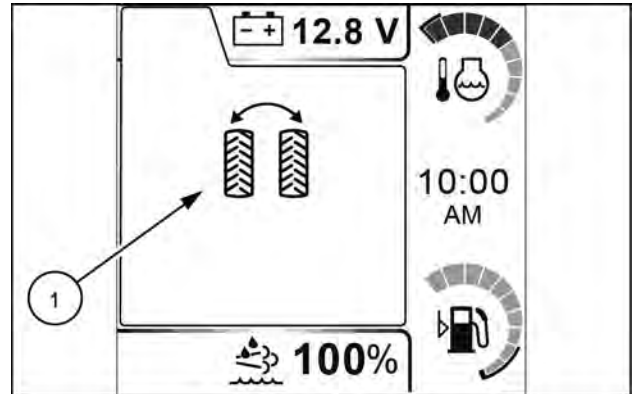
MOIL24TR00276 3



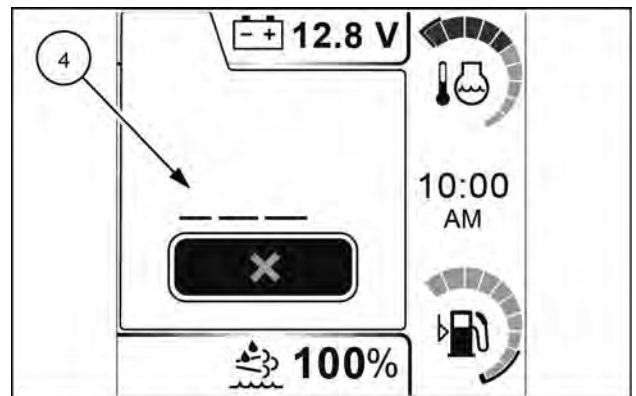
MOIL24TR00278 4


## Steering reactivity calibration

- When the engine speed stabilises at **1300 RPM** and the icon **(2)** appears on the display, press the switch **(3)** to start the position calibration procedure. **(1)**




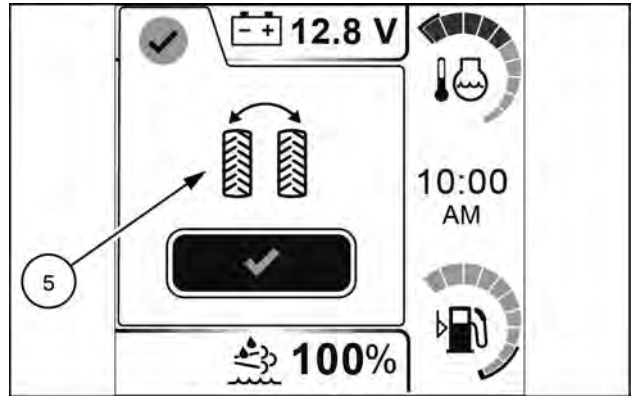
- Wait a few minutes for the procedure to complete, during which time the **(4)** window will be displayed with the progress of the procedure.



**ATTENTION:** Pressing the command  during the execution of the procedure will cancel the calibration.


2. After the automatic calibration procedure is completed, a pop-up window **(5)** appears to confirm that the procedure has been successfully completed.

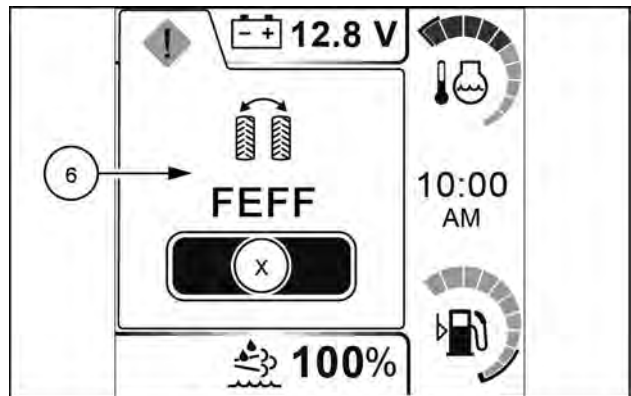
Press the command  in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.



MOIL24TR00276 9


3. If the calibration procedure was not successful, the pop-up window **(6)** of procedure not performed is shown.

Press the command  to return to the home screen.

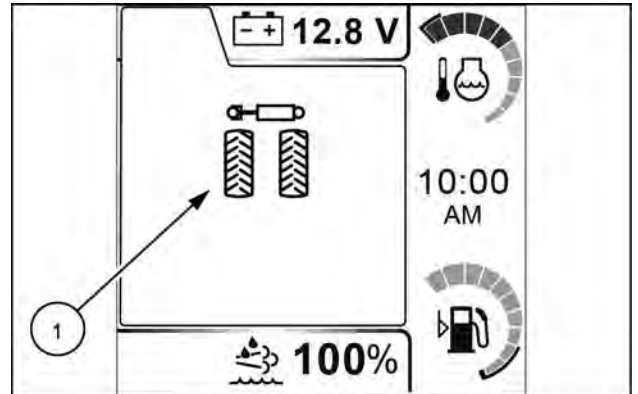


MOIL24TR00277 10

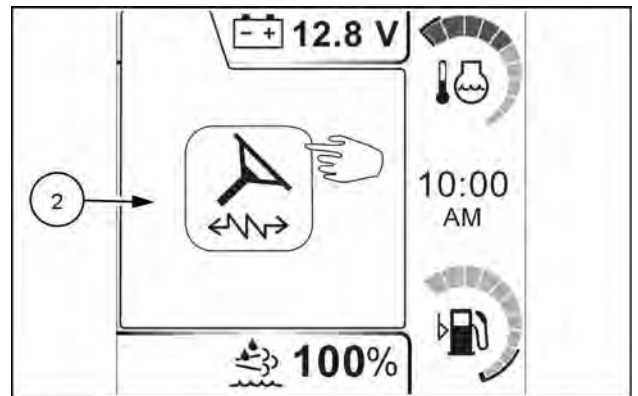
## steering valves calibration

Use the command  to select valve calibration (1)

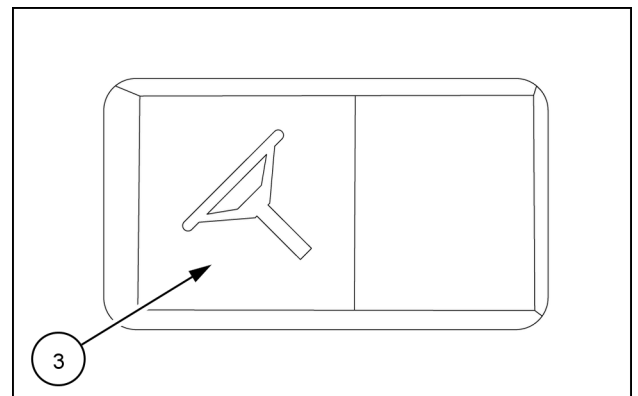
1. When the engine speed stabilises at **1300 RPM** and the icon (2) appears on the display, press the quick up/down switch (3) downwards to start the valve calibration procedure.



MOIL24TR00278 11

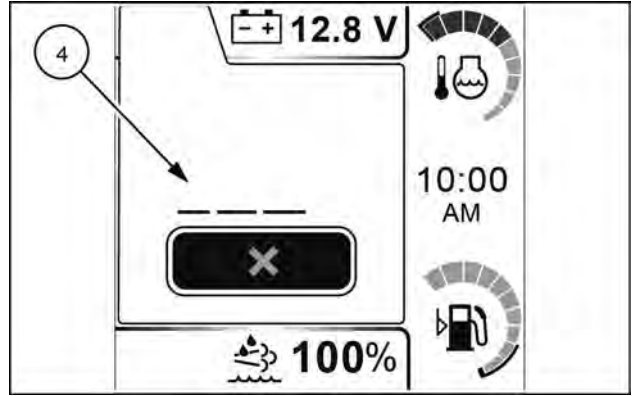


MOIL24TR00308AA 12




MOIL24TR00228AA 13


1. Wait a few minutes for the procedure to complete, during which time the (4) window will be displayed with the progress of the calibration procedure.

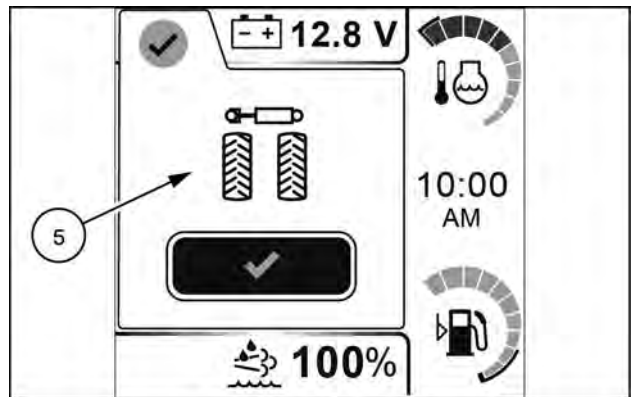


MOIL24TR00259 14

**ATTENTION:** Pressing the command  during the execution of the procedure will cancel the calibration.


4. Once the calibration procedure is complete, a pop-up window (5) appears to confirm that the procedure has been successfully completed.

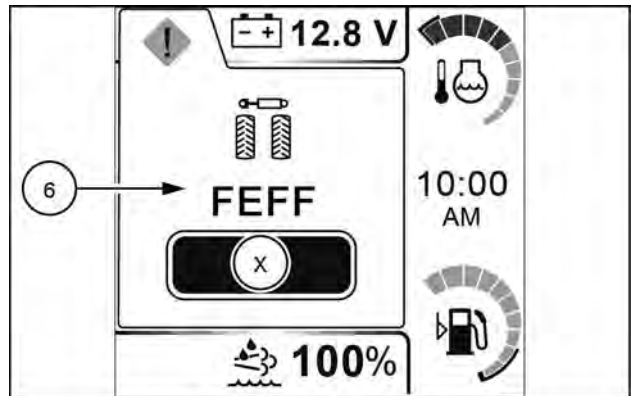
Press the command  in the confirmation window to return to the home screen.  
Switch off the engine to save the settings.



MOIL24TR00278 15

5. If the calibration procedure was not successful, the pop-up window (6) of procedure not performed is shown.

Press the command  to return to the home screen.



MOIL24TR00279 16

# 8 - TROUBLESHOOTING

## Fault code resolution

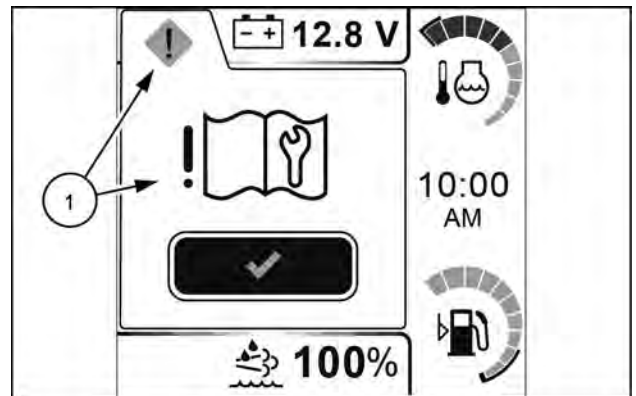
### Viewing error codes

The tractor's electronic control units are able to detect operating faults or errors occurring in key areas such as the engine, gearbox, electric and hydraulic systems. Should a malfunction or error occur, the relevant symbol and error code **(1)** will appear on the instrument cluster. This display may be followed by the amber or red warning lights coming on and by an acoustic warning, depending on the severity of the fault. Contact your authorised CASE IH dealer's specialized personnel where possible.



MOIL24TR00367 1

On the diagnostics menu screen, see page 3-53, use the navigation control to select the error codes and active warnings menu **(1)** to display all the active error codes.



MOIL24TR00280 2

# Selective Catalytic Reduction (SCR) exhaust treatment - Overview

## Diesel Exhaust Fluid (DEF)/AdBlue® instrumentation warning

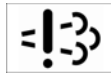
**ATTENTION:** The fuel system, exhaust after-treatment system, and engine on your machine are designed and built to government emissions standards. Tampering by dealers, customers, operators and users is strictly prohibited by law. Failure to comply could result in government fines, rework charges, invalid warranty, legal action, and possible confiscation of the machine until it is restored to original condition. Engine service and/or repairs must be done by a certified technician only!

Your CASE IH machine is equipped with a warning system to inform the operator of the DEF/AdBlue® level, system malfunctions, and engine power loss that may result from the SCR system for reducing exhaust emissions.

### Warning symbols and icons in the pop-up windows



Rpm and power reduction start



SCR failure



Limited power and engine rpm



Low DEF/AdBlue® level



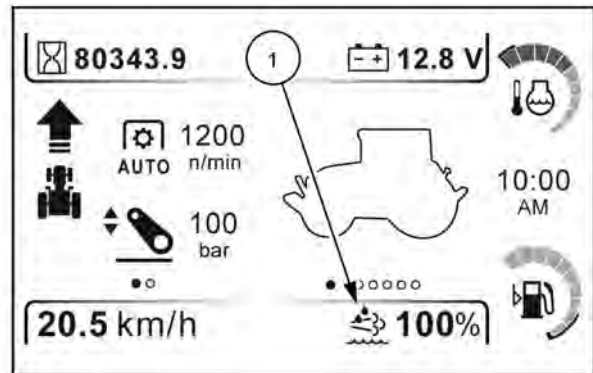
DEF/AdBlue®



Warning/Fault light

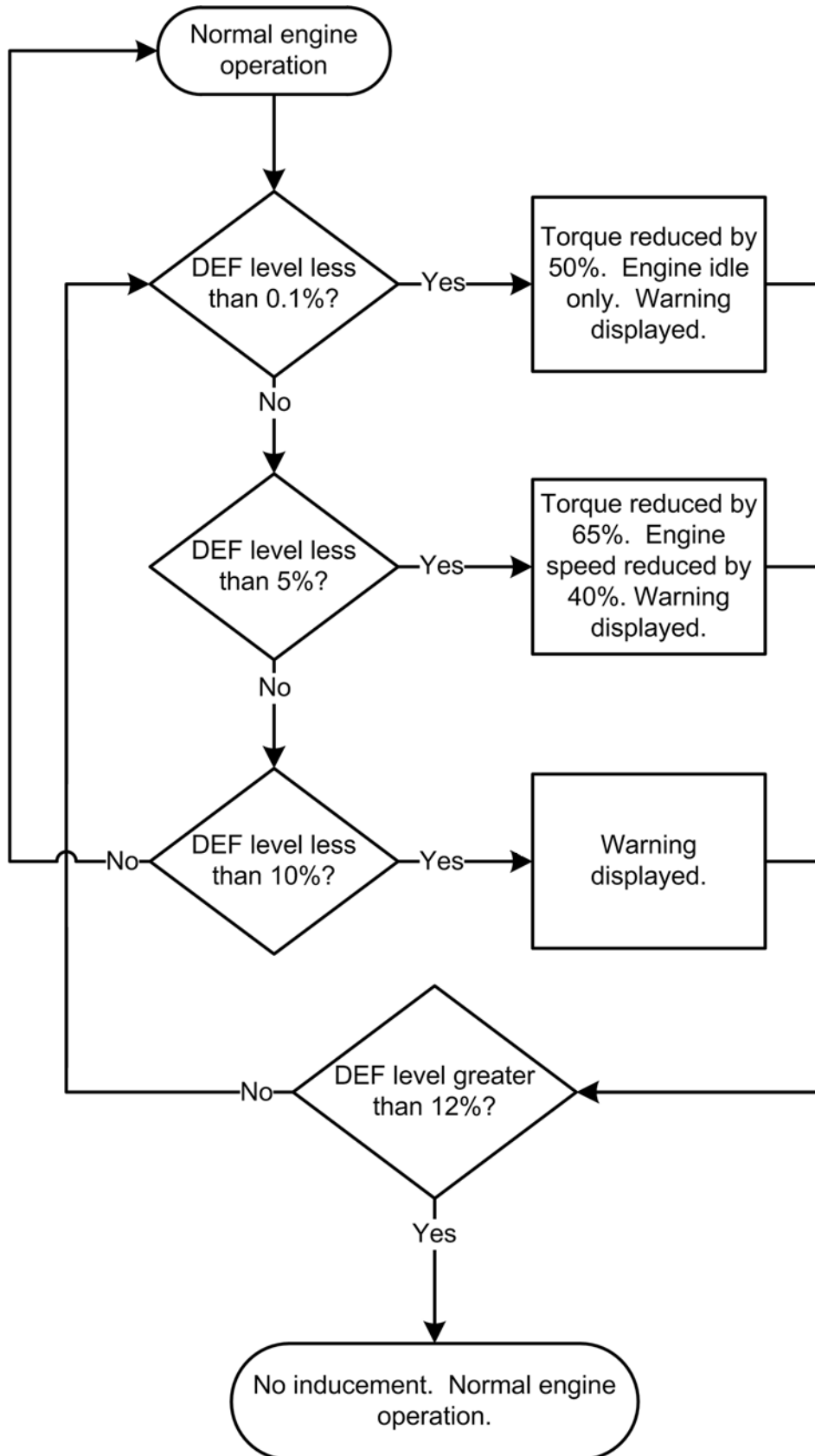
During normal operation of your CASE IH machine, the instrument cluster displays the DEF/AdBlue® fluid level (1) at all times.

Warning lights and indicators will be illuminated with a warning on the visual display. The display changes automatically to allow the operator to view the warning indicator and display message.



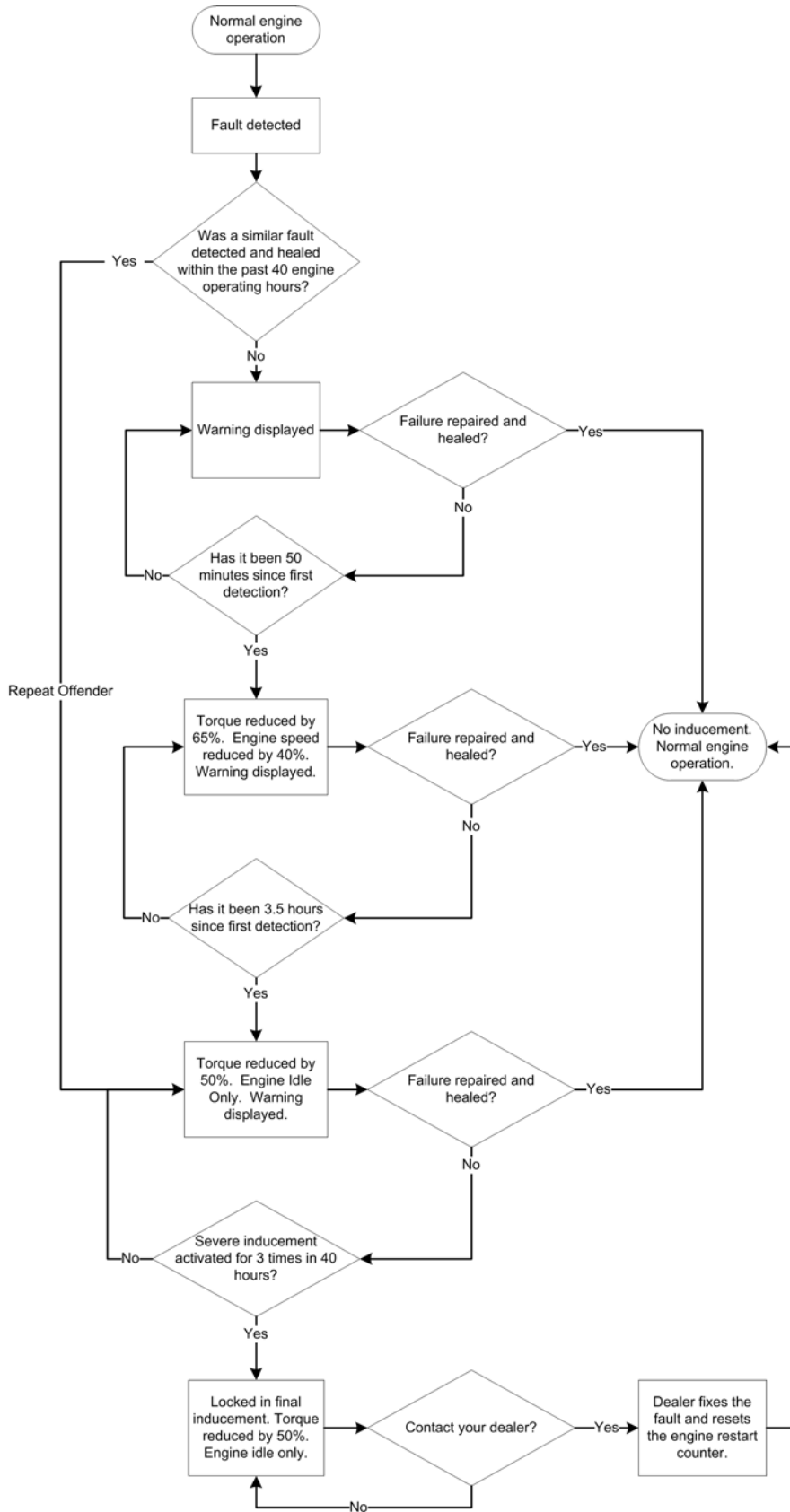
MOIL24TR00119AA 1

**DEF/AdBlue® level faults, failures, and engine power loss levels**



NHPH14ENG0567HA 2

**DEF/AdBlue® quality faults, failures, and engine power loss levels**



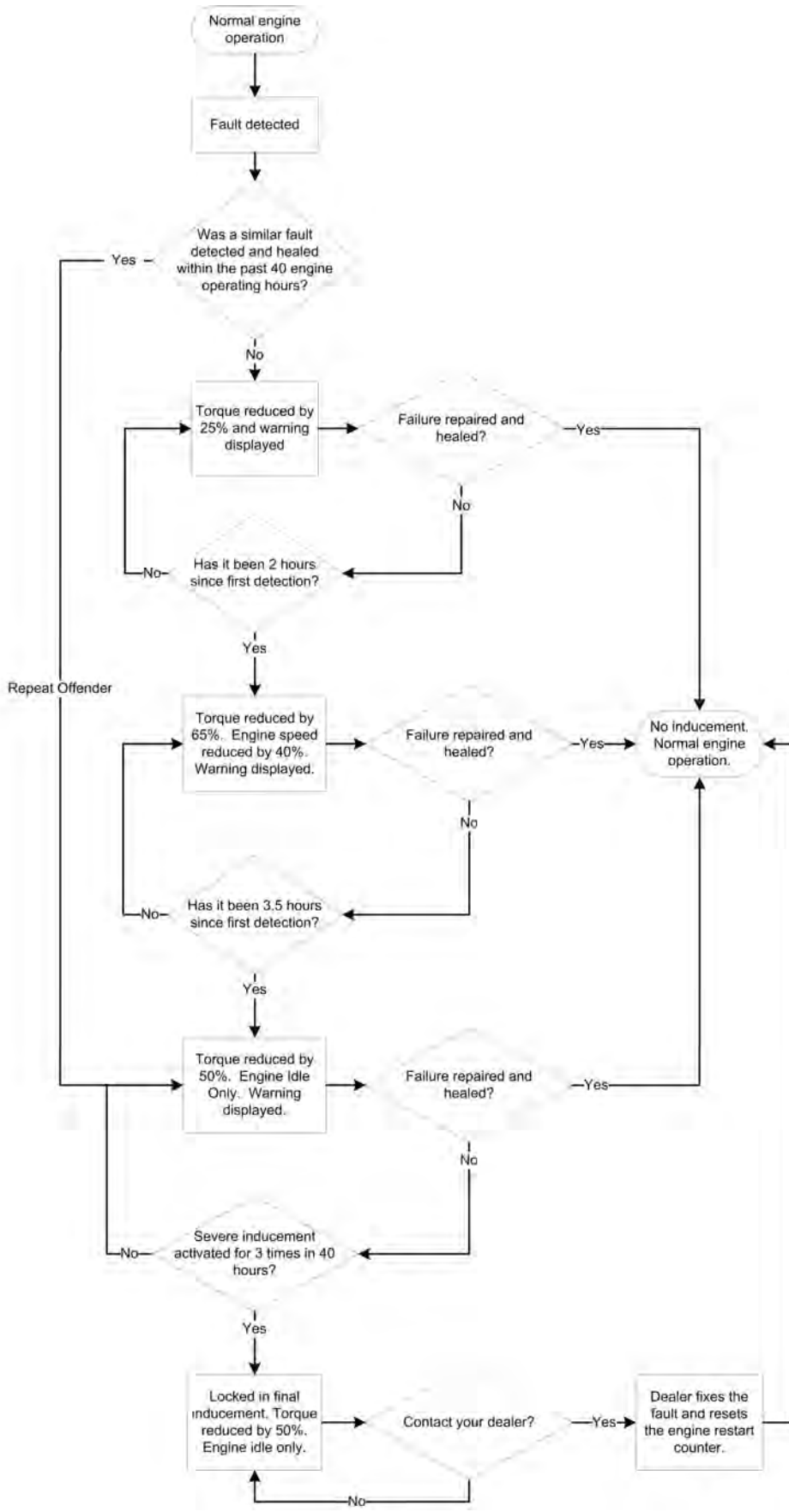
NPH14ENG0693HA 3

## SCR system technical faults, failures, and engine power loss levels

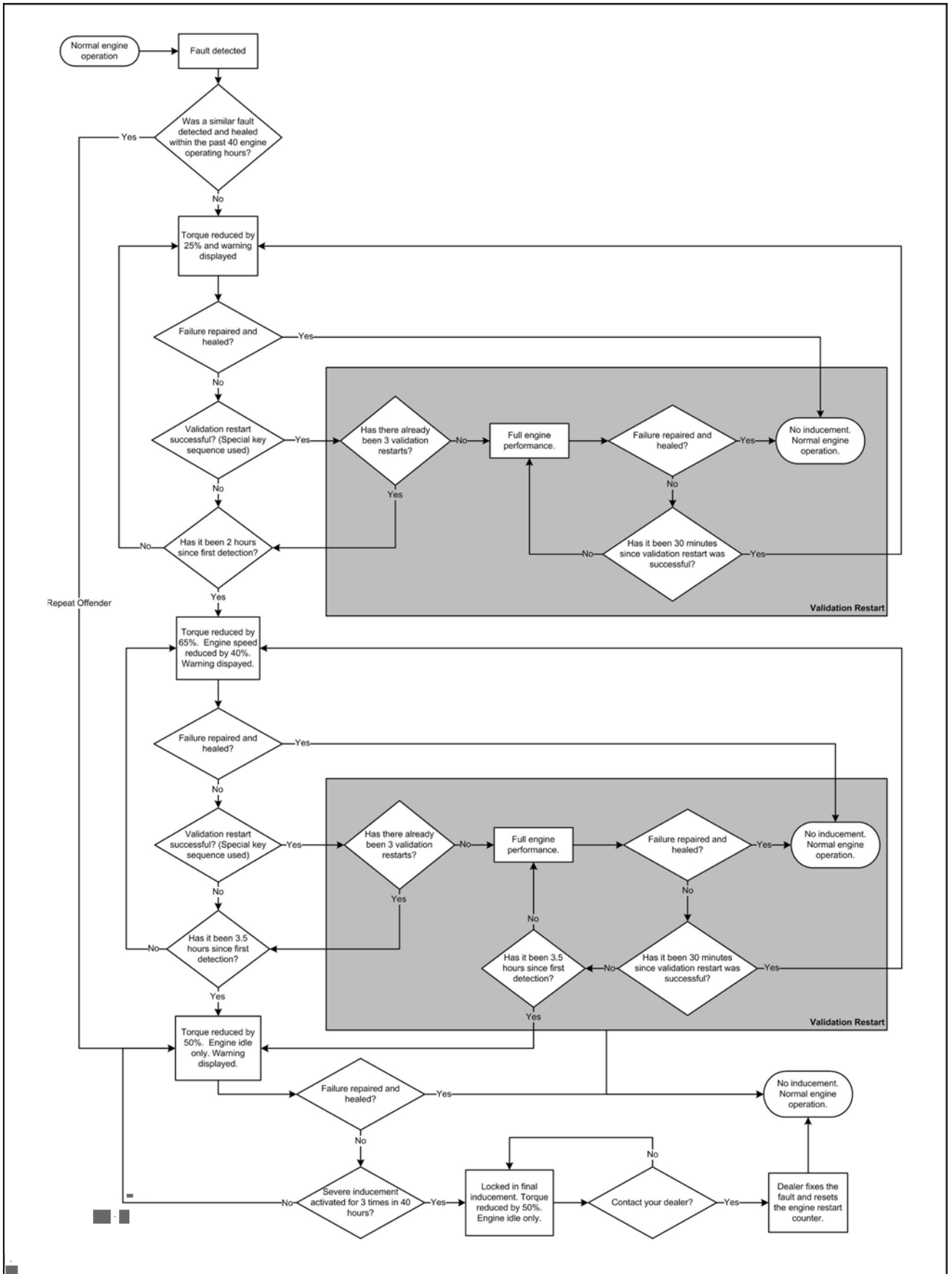
There are two types of strategies that are applied to your machine based on the type of failure that occurs.

- For electrical failures, refer to figure 4.
- For failures that require the SCR system to be operational, use figure 5 and see the section on validation re-starts.

**NOTE:** You can restart the engine and receive full engine power up to two times at any point after the machine detects a fault. However, if the machine detects the same fault within 40 operating hours, torque will be reduced to 50% and the engine will be reduced to idle immediately. If you attempt a third restart, the engine will be locked at 50% torque and engine idle. Contact your CASE IH dealer to reset the engine restart counter and resolve the fault causing the loss of productivity.



# 8 - TROUBLESHOOTING



## Validation re-starts

Validation re-starts allow operation of the machine for up to **30 min** without power loss after a poor DEF/AdBlue® quality or SCR system fault has been detected. Up to three re-starts are permitted. Re-starts are counted if either of the following conditions are met:

- Engine speed exceeds **1000 RPM**.
- Engine running time exceeds **5 min**.

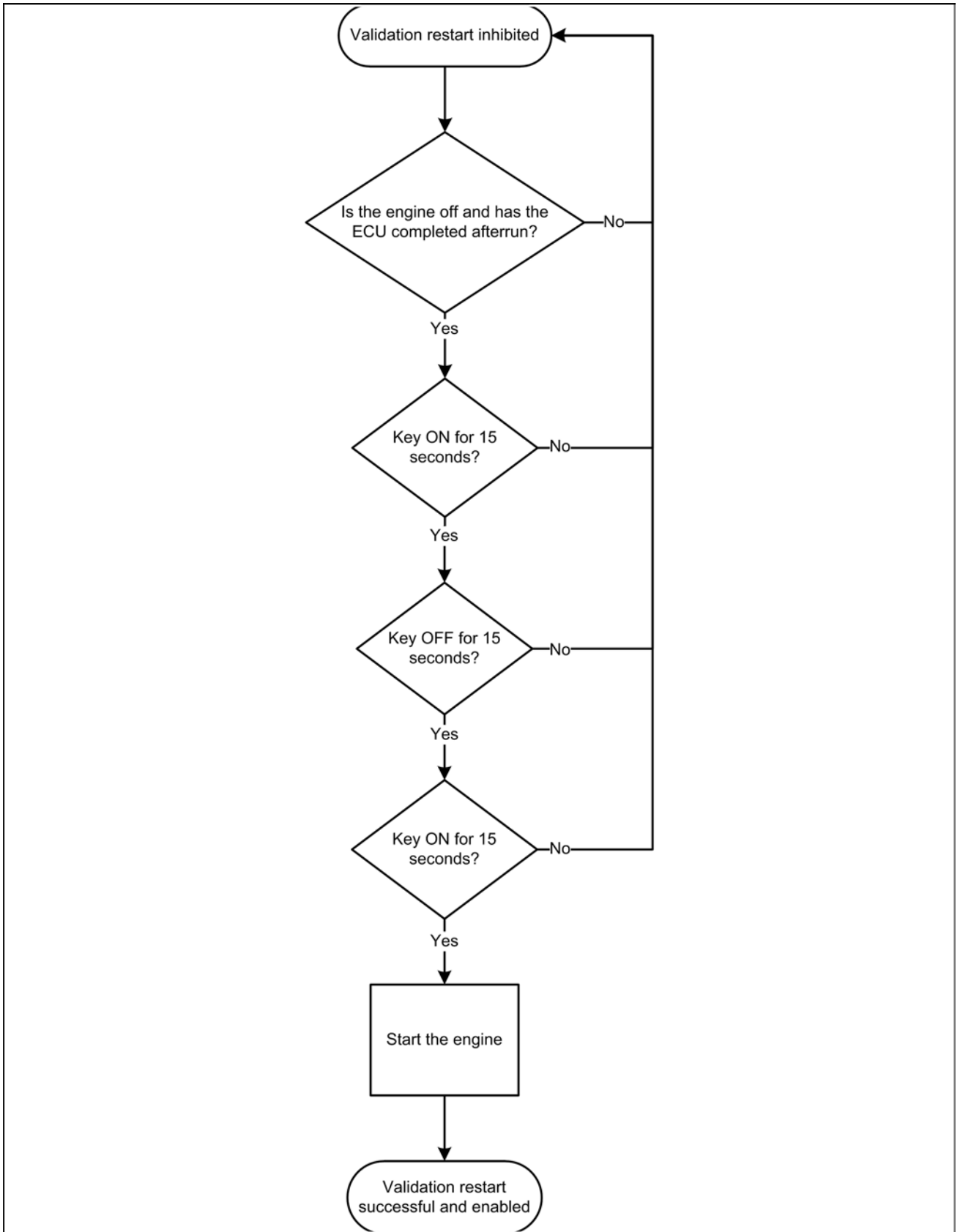
Normal operation will resume if a reset is detected within the **30 min** window.

torque and engine idle only. See your local authorized CASE IH dealer for repair.

If a reset is not detected within **30 min**, power loss will occur as described in the flowcharts.

Follow the sequence in figure **6** to activate validation re-starts.

If all three validation re-starts have been used and the system has not been reset, the machine is limited to **50%**



## Resetting the Selective Catalytic Reduction (SCR) system

For DEF/AdBlue® storage tank fluid level faults, failures that can cause engine power loss:








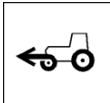




- The DEF/AdBlue® tank level must be raised above **12%** total volume.
- The key switch must be cycled to the Off position or throttle returned to low idle position.

For DEF/AdBlue® quality and SCR system technical faults, failures that can cause engine power loss:

- To fully reset the system, the component/failure causing the fault must be repaired or replaced.
- Switching off the engine will reset the system and the engine will restart at full power.
- If the same failure is re-detected within **40 h** of engine operation, the maximum engine power loss level will be introduced.
- If the same failure is detected three consecutive times within **40 h** of engine operation, maximum engine power loss will remain active after engine restart until the system is repaired.
- Please contact your authorized CASE IH dealer for service.

**Alarm(s)****Error code identification**

**NOTE:** Should any trouble occur, the instrument cluster will show a warning symbol and an error code. To resolve the problem, contact your authorised CASE IH dealer and report the error code displayed.

Symbol on the instrument cluster	Error code	Area of fault
	0x00	Engine
	0x03	Drive
	0X27	Vehicle
	0xB1	Rear Power Take-Off (PTO)
	0X24	Front Power Take Off (PTO)
	0x23	Hydraulic rear powerlift
	0X09	Differential locking
		
	0XB0	Braking
	0X13	Steering
	0X17	Instrument cluster
	0X22	Aux remote valves

## Error code identification - Error SPN 5571 IMF 11

**NOTICE:** If the engine is in an overload condition and shuts down, turn the key to "OFF" and wait for **3 s** for all systems to shut down, then run the ignition cycle again (key set to "ON").

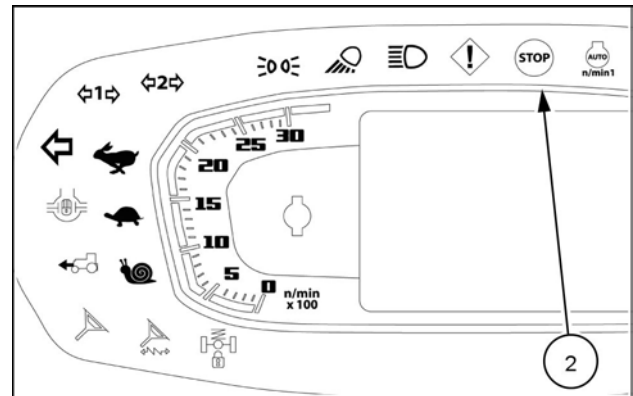
If the operation indicated above is not performed, run a new key "OFF/ON" cycle within **3 h**.

If the minimum time of **3 s** is not observed before restarting the engine, the respective error code **(1)** may appear. This display may be followed by activation of the red indicator light **(2)** and the generation of an acoustic alarm.

Contact your authorized dealer's specialized personnel.



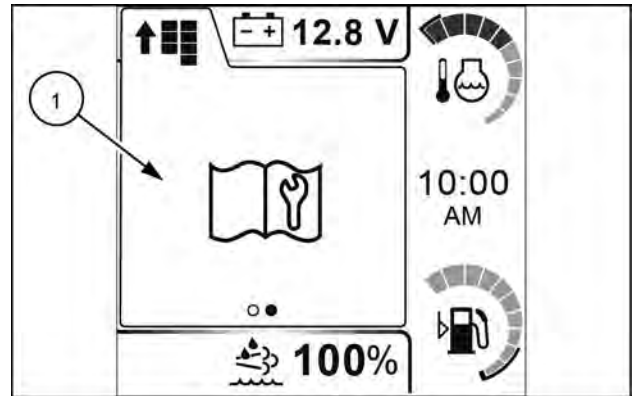
MOIL24TR00367AB 1



MOIL24TR00172AA 2

## Display warnings overview














On the diagnostics menu screen, see page 3-53, use the navigation control to select the error codes and active warnings menu (1) to display all the active warnings.

















MOIL24TR00377 1

INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
			Security	The operator has left the driving seat without applying hand brake or parking brake.	Apply the hand brake if the condition persists, have the seat switch or hand brake checked.
			Security	The operator has left the driver's seat with the reversing lever in the neutral position	Place the reversing mechanism control handle in forward
			Security	Handbrake or parking brake engaged while driving.	Disengage both braking systems.
	-		Security	Rear power take-off engaged without the operator.	The warning light will remain lit until the operator returns to his seat or the power take-off is disengaged.
	-		Security	Front power take-off engaged without the operator.	The warning light will remain lit until the operator returns to his seat or the power take-off is disengaged.
		-	Remedial action	Hand brake engaged during auto drive off.	Release the hand brake before auto drive off.
	-	-	Remedial action	Shuttle lever in drive.	Press the neutral button on the electro-hydraulic shuttle lever.
	-	-	Remedial action	Driving direction selected without depressing the clutch pedal, after leaving the drivers seat.	Fully depress the clutch pedal and release it slowly.
	-	-	Remedial action	Disengaged parking brake.	Engage the Parking Brake.
	-		Critical	Drive line oil pressure too low. The tractor will be stopped automatically in a short time.	Immediately stop the engine before it shuts down automatically, check the level of oil in the drive line and top it up if necessary.

8 - TROUBLESHOOTING






















INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
 STOP	-		Critical	Drive line oil temperature too high. The tractor will be stopped automatically in a short time.	Immediately stop the engine before it shuts down automatically, and leave it to cool. Restart work and if the warning continues, switch the engine off again, check the drive oil level, top it up if necessary and change the filter when needed.
 STOP	-		Critical	Engine coolant temperature too high. The tractor will be stopped automatically in a short time.	Immediately stop the engine before it shuts down automatically, and leave it to cool. Make sure the radiator is clean and the fluid is at the right level. (Contact Dealer).
 STOP			Critical	Engine oil pressure too low. The tractor will be stopped automatically in a short time.	Immediately stop the engine before it shuts down automatically, check the level of engine oil and top it up if necessary.
 23 23:45	-		Critical	DEF/AdBlue® level is empty. Engine torque reduction to <b>50%</b> and engine speed reduction down to idle within <b>30 min</b> of engine running time. The counter shows the number of validation restarts attempts.	Switch off the engine as described on page 4-7, top up with DEF/AdBlue® fluid as described on page 4-3, set the manual accelerator to the minimum position. Start up the engine as described on page 4-4. <b>NOTE:</b> If the final inducement strategy is activated, you must unlock the engine inducement with the service tool. Contact your local authorized dealer.
 23 23:45	-		Critical	DEF/AdBlue® quality/concentration is questionable <b>50 min</b> after the initial warning. Engine torque reduction down to <b>35%</b> and engine speed reduction down to <b>60%</b> within <b>40 min</b> of engine running time. The counter shows the number of validation restarts attempts.	Drain DEF/AdBlue® tank, clean and refill with approved DEF/AdBlue® solution. Contact your local authorized dealer if failure persists.
 23 23:45	-		Critical	SCR system failure detected <b>120 min</b> after the initial warning. Engine torque reduction down to <b>35%</b> and engine speed reduction down to <b>60%</b> within <b>40 min</b> of engine running time. The counter shows the number of validation restarts attempts.	Contact your local authorized dealer for repair.

INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
	-		Critical	Drive line/Steering oil pressure too low.	Stop the tractor as soon as possible, check the oil level and top up if necessary. Contact an authorised dealer if the fault persists.
	-		Non-critical	Transmission oil temperature too high.	Low warning only. Keep an eye on this warning
			Critical		Stop the engine immediately and let it cool down. If the warning continues, switch off the engine again, check the drive oil level, top it up if necessary and change the filter when needed.
	-		Critical	Engine coolant temperature too high.	Immediately stop the tractor leaving the engine running for a few minutes. If the warning persists, stop the engine and check that the radiator is clean and that the fluid level is correct.
			Critical	Engine oil pressure too low.	Stop the machine, check the oil level and top up if necessary.
	-		Critical	DEF/AdBlue® level is empty. Engine torque reduction to <b>50%</b> and engine speed reduction down to idle within <b>30 min</b> of engine running time. The counter shows the number of validation restarts attempts.	Switch off the engine as described on page 4-7, top up with DEF/AdBlue® fluid as described on page 4-3, set the manual accelerator to the minimum position. Start up the engine as described on page 4-4. <b>NOTE:</b> If the final inducement strategy is activated, you must unlock the engine inducement with the service tool. Contact your local authorized dealer.
	-		Critical	DEF/AdBlue® quality/concentration is questionable <b>210 min</b> after the initial warning. Engine torque reduction to <b>50%</b> and engine speed reduction down to idle within <b>30 min</b> of engine running time. The vehicle reaches the final inducement after <b>3.5 h</b> of operation after failure detection. The counter shows the number of validation restarts attempts.	Drain DEF/AdBlue® tank, clean and refill with approved DEF/AdBlue® solution. Contact your local authorized dealer if failure persists. <b>NOTE:</b> If the final inducement strategy is activated, you must unlock the engine inducement with the service tool. Contact your local authorized dealer for repair.







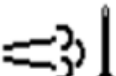





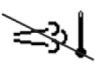


8 - TROUBLESHOOTING






















INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
	-		Critical	<p>SCR system failure detected <b>210 min</b> after the initial warning. Engine torque reduction to <b>50%</b> and engine speed reduction down to idle within <b>30 min</b> of engine running time. The vehicle reaches the final inducement after <b>3.5 h</b> of operation after failure detection. The counter shows the number of validation restarts attempts.</p>	<p>Contact your local authorized dealer for repair.</p> <p><b>NOTE:</b> <i>If the final inducement strategy is activated, you must unlock the engine inducement with the service tool. Contact your local authorized dealer for repair.</i></p>
	-		Critical	<p>DEF/AdBlue® level is less than <b>5%</b> of tank volume ( <b>0%</b> will be displayed) Engine torque reduction down to <b>35%</b> and engine speed reduction down to <b>60%</b> within <b>40 min</b> of engine running time. The counter shows the number of validation restarts attempts.</p>	<p>Switch off the engine as described on page <b>4-7</b>, top up with DEF/AdBlue® fluid as described on page <b>4-3</b>, set the manual accelerator to the minimum position. Start up the engine as described on page <b>4-4</b>.</p>
	-		Critical	<p>DEF/AdBlue® quality/concentration is questionable <b>50 min</b> after the initial warning. Engine torque reduction down to <b>35%</b> and engine speed reduction down to <b>60%</b> within <b>40 min</b> of engine running time. The counter shows the number of validation restarts attempts.</p>	<p>Drain DEF/AdBlue® tank, clean and refill with approved DEF/AdBlue® solution. Contact your local authorized dealer if failure persists.</p>
	-		Non-critical	<p>SCR system failure detected. Engine torque reduction down to <b>75%</b> within <b>25 min</b> of engine running time.</p>	<p>Contact your local authorized dealer for repair.</p>
			Critical	<p>SCR system failure detected <b>120 min</b> after the initial warning. Engine torque reduction down to <b>35%</b> and engine speed reduction down to <b>60%</b> within <b>40 min</b> of engine running time. The counter shows the number of validation restarts attempts.</p>	

8 - TROUBLESHOOTING



INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
	-		Critical	High accumulation of contaminants in the exhaust components. No regeneration of the diesel particulate filter (DPF).	Follow the directions for the error code.
	-		Critical	Transmission overspeed.	Reduce the engine speed.
	-		Non-critical	Exhaust system fault. Engine power loss occurring.	If the warning continues, contact your Dealer.
			Critical	Persistence of the exhaust system fault. Engine power loss occurring.	
	-		Non-critical	When battery voltage is below 9 Volts for more than 5 seconds.	Recharge / renew the battery.
	-		Non-critical	Water in fuel.	Clean the filter as described in the maintenance section. Start the engine and if the signal stays on, have your dealer check the system.
	-		Non-critical	Incorrect use of PTO controls, timed out.	Do not engage PTO until the symbol on the instrument cluster disappears.
	-		Non-critical	Engine speed too low to allow PTO engagement	Increase engine speed and reengage PTO drive.
	-		Non-critical	DEF/AdBlue® level is less than <b>10%</b> of tank volume. The counter shows the number of validation restarts attempts.	Switch off the engine as described on page 4-7, top up with DEF/AdBlue® fluid as described on page 4-3, set the manual accelerator to the minimum position. Start up the engine as described on page 4-4.
	-		Non-critical	The DEF/AdBlue® quality/concentration is questionable. No engine power loss. The counter shows the number of validation restarts attempts.	Drain DEF/AdBlue® tank, clean and refill with approved DEF/AdBlue® solution. Contact your local authorized dealer if failure persists.
	-		Non-critical	Exhaust temperature is low. The counter shows the number of validation restarts attempts. The timer shows the time remaining before speed and torque limitation occur.	Operate the machine at a minimum of <b>50%</b> load to check the SCR system performance. Follow the instruction on the display.

8 - TROUBLESHOOTING

INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
 2/3 23	-		Non-critical	Emission system performance test in progress. The counter shows the number of validation restarts attempts. The timer shows the time remaining before speed and torque limitation occur.	If all three validation restarts have been used and the system has not been reset, contact your local authorized dealer.
 2/3 23	-		Non-critical	Engine start required to perform system reset. The counter shows the number of validation restarts attempts. The timer shows the time remaining before speed and torque limitation occur.	Follow the instruction on the display.
	-		Non-critical	The engine SCR catalyst has become clogged with hydrocarbon accumulation. This can occur when operating at lower temperatures and lighter engine loads. Action is required to clean the SCR catalyst. <b>NOTE:</b> Do not drive the machine or increase load on the machine to avoid damage to the catalyst. Do not turn OFF the engine to avoid damage to the catalyst.	Place the machine in park and apply the hand brake. Manually increase the engine speed up to <b>1500 RPM</b> or higher and allow the machine to sit for <b>1 – 2 h</b> <b>NOTE:</b> This procedure may take <b>1 – 2 h</b> to complete depending on the ambient temperature.
	-		Non-critical	Automatic regeneration on. It lights up when automatic regeneration of the diesel particulate filter is started.	It is possible to continue working during the procedure of filter regeneration.
	-		Non-critical	Moderate accumulation of contaminants in the exhaust components. Request for regeneration of the diesel particulate filter (DPF).	Execute the Manual Catalyst Management.
	-		-	Low accumulation of contaminants in the exhaust components. Automatic regeneration required.	At the end of the procedure the icon goes out and the display returns to its normal functions.
	-	-	Single 'beep'	Automatic regeneration was prevented by the operator. Reminder every 5 minutes.	Enable automatic regeneration as soon as possible.
	-		Non-critical	Engine oil change warning.	To avoid damage, replace it when required; see the maintenance section.

INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
	-		Non-critical	Fuel temperature is too high	Low warning only. Keep an eye on this warning
	-		Non-critical	Hydraulic filter boost pressure too low.	This symbol advises of faults that may be critical to the operation of the machine. Stop the machine as soon as possible, investigate the cause and rectify the fault. If the fault cannot be easily rectified, consult your authorized dealer.
ATS	-		Non-critical	Exhaust system fault.	Monitor the warning.
	-		Non-critical	Calibration request for the electronically controlled rear lift.	Calibrate the electronically controlled rear lift.
	-		-	Engine intake air filter blocked.	Clean the filtering cartridges as described in the maintenance section.
			-	If the warning light fails to go out a few seconds after starting, it means that the alternator is not charging the battery.	Have your dealer check the system.
			-	Brake fluid level too low.	Top up the brake fluid level and check the level sensor works properly as described in the maintenance section. If the signal continues, have your dealer check the system.
	-		-	Battery voltage too high.	Call your local dealer.
	-		-	Maintenance Requested	Carry out the programmed type of maintenance at the scheduled time.
	-		-	The engine low idle speed has been increased to increase the exhaust temperatures towards SCR operating levels. This is desired when operating at lower temperatures or with lighter engine loads.	-

8 - TROUBLESHOOTING

INSTRUMENT CLUSTER	PANEL LAMP	WARNING LAMP	ALARM	CAUSE	REMEDIAL ACTION
 n/min	-		-	<p>The engine desires to increase the engine speed to increase the exhaust temperatures towards SCR operating levels. However, this automatic idle speed increase does not occur automatically if machine functions are active (e.g; gear engaged, PDF activated, hydraulic distributors activated). This increase is desired when operating at lower temperatures or with lighter engine loads.</p>	<p>Increase engine RPM if acceptable or simply ignore the message.</p>

Symptom(s)

Engine

**▲ WARNING**

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.

1. Disengage all drives.
  2. Engage parking brake.
  3. Lower all attachments to the ground, or raise and engage all safety locks.
  4. Shut off engine.
  5. Remove key from key switch.
  6. Switch off battery key, if installed.
  7. Wait for all machine movement to stop.
- Failure to comply could result in death or serious injury.

W0047A

**▲ WARNING**

Improper operation or service of this machine can result in an accident.

If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.

Failure to comply could result in death or serious injury.

W0157A

Problem	Possible Cause	Correction
<b>Engine will not start or is difficult to start</b>	Incorrect starting procedure.	Review starting procedure.
	Low or no fuel.	Check fuel level.
	Air in fuel lines.	Bleed fuel system.
	Low ambient temperature.	Use cold starting aid.
	Contaminated fuel system.	Clean and bleed fuel system.
	Clogged fuel filter(s).	Replace fuel filter element(s)
	Malfunctioning fuel pump or injectors.	See your authorised dealer.
	Malfunctioning fuel solenoid or solenoid relay.	See your authorised dealer.
	Incorrect engine oil viscosity.	Use correct viscosity oil.
	Incorrect fuel for operating temperature.	Use correct type fuel for temperature conditions.
<b>Engine runs roughly and/or stalls</b>	Slow starter speed.	See slow starter speed in Electrical.
	Clogged fuel filter(s)	Replace fuel filter element(s).
	Contaminated fuel system.	Clean and bleed fuel system.
	Fuel solenoid incorrectly adjusted.	See your authorised dealer.
<b>Engine lacks power</b>	Fuel cap vent blocked.	Wash cap in clean fuel oil.
	Engine overloaded.	Shift to lower gear, reduce draft load or ballast carried.
	Air cleaner restricted.	Service air cleaner.
	Low engine operating temperature.	Check thermostats.
	Engine overheats.	See Engine overheats.
	Clogged fuel filter(s).	Replace fuel filter element(s).
	Incorrect fuel.	Use correct type fuel.
	Malfunctioning fuel injectors.	See your authorized dealer.
	Malfunctioning fuel injection pump.	See your authorized dealer.
	Leaking air intake boost pipes or exhaust manifold.	Check and rectify or see your authorized dealer.
<b>Engine knocks</b>	Turbocharger malfunctioning.	See your authorized dealer.
	Implement incorrectly adjusted.	See implement Operator's Manual.
	Fuel injection pump timing.	See your authorised dealer.
	Low engine oil level.	Add oil, as required.
	Low engine oil pressure.	See your authorised dealer.
Low engine operating temperature.	Check thermostats.	

<b>Problem</b>	<b>Possible Cause</b>	<b>Correction</b>
	Engine overheats.	See Engine overheats.
<b>Engine overheats.</b>	Low engine oil level.	Add oil, as required.
	Low engine coolant level.	Fill coolant recovery tank. Check cooling system for leaks.
	Defective thermostat(s).	Check thermostat(s).
	Dirty/ blocked radiator core.	Clean.
	Excessive engine overload.	Shift to lower gear, reduce draft load or ballast carried.
	Faulty radiator pressure cap.	Replace cap.
	Cooling system blocked.	Flush cooling system.
	Loose or worn fan belt.	Check tension, adjust or replace belt if worn.
	Leaking hose or connection.	Tighten connection and/ or replace hose.
	Malfunctioning temperature gauge or sender.	See your authorised dealer.
	Malfunctioning vistronic fan.	See your authorised dealer.
<b>Low engine oil pressure</b>	Low oil level.	Add oil, as required.
	Wrong oil grade or viscosity.	Drain and refill with oil of the correct specification.
<b>Excessive engine oil consumption.</b>	Engine oil level too high.	Reduce oil level, as required.
	Wrong oil grade or viscosity.	Drain and refill with oil of the correct specification.
	Malfunctioning turbocharger.	See your authorised dealer.
	External oil leaks.	Repair leaks.
	Worn valve guides/ seals.	See your authorised dealer.
<b>Excessive fuel consumption</b>	Low engine operating temperature.	See Low engine operating temperature.
	Malfunctioning turbocharger.	See your authorised dealer.
	Engine overloaded.	Shift to lower gear, reduce draft load or ballast carried.
	Air cleaner restricted.	Service air cleaner.
	Incorrect fuel.	Use correct type fuel.
	Malfunctioning fuel injectors.	See your authorised dealer.
	Malfunctioning fuel injection pump.	See your authorised dealer.
	Leaking air intake or exhaust manifold.	Check and rectify or see your authorised dealer.
Implement incorrectly adjusted.	See implement Operator's Manual.	

## Transmission

<b>Problem</b>	<b>Possible Cause</b>	<b>Correction</b>
<b>Tractor does not drive in any gear</b>	Error code will indicate source of malfunction.	Recalibrate the transmission or see your authorised dealer.
<b>Gear shift sequence incorrect or gears missing</b>	Error code will indicate source of malfunction.	Recalibrate the transmission or see your authorised dealer.
<b>Jumping out of gear or holding in gear</b>	Worn synchronisers/ couplers.	Recalibrate the transmission or see your authorised dealer.
<b>Poor inching control when using inching pedal (clutch pedal) or jerky gear shifting</b>	Transmission clutches require calibration.	See your authorized dealer.
<b>High transmission operating temperature</b>	Low oil level.	Add oil, as required.
	Incorrect oil grade/ viscosity.	Drain and refill with oil of the correct specification.
	Dirty or blocked transmission oil cooler.	Clean.
<b>Low transmission oil pressure</b>	Low oil level.	Add oil, as required.

Problem	Possible Cause	Correction
<b>Noisy transmission</b>	Incorrect oil grade/ viscosity.	Drain and refill with oil of the correct specification.
	Blocked transmission oil filter.	Replace filter.
	Low oil level.	Add oil, as required.
	Incorrect oil grade/ viscosity.	Drain and refill with oil of the correct specification.
	Worn bearings or failed parts.	See your authorised dealer.

## Hydraulics

Problem	Possible Cause	Correction
<b>Hydraulic system does not operate</b>	Error code will indicate source of malfunction.	See your authorised dealer.
	Hydraulics oil level very low.	Add oil, as required.
	Blocked hydraulic oil filter(s).	Replace oil filter(s).
<b>Hydraulic oil overheats</b>	Hydraulics oil level too low or too high.	Adjust oil level, as required.
	Hydraulics oil cooler blocked.	Clean.
	Blocked hydraulic oil filter(s).	Replace oil filter(s).
	Flow control incorrectly adjusted.	Allow to cool, adjust flow control before operating again.
	Hydraulic load not matched to tractor.	See your authorised dealer.
<b>Remote control valve detent disengages prematurely</b>	Detent release pressure set too low.	Adjust detent pressure or see your authorised dealer.
<b>Remote equipment cylinder operates too fast or too slowly</b>	Flow control incorrectly set.	Adjust flow control.
<b>Remote equipment does not operate</b>	Hoses not correctly connected.	Attach hoses correctly.
	Load exceeds system capacity.	Reduce load or use correct size cylinder (see your authorised dealer).

## Three-point hitch

Problem	Possible Cause	Correction
<b>3- point hitch does not move when Hitch Position Control knob is moved</b>	Error code will indicate source of malfunction.	See your authorised dealer.
	Hitch not in phase with the Position Control knob.	Put Position Control knob back in phase with lower links.
	Fast raise switch in external control position.	Put switch in correct position.
	Height limit control incorrectly positioned.	Adjust height limit control.
<b>3- point hitch does not raise fully</b>	Height limit control incorrectly positioned.	Adjust height limit control.
<b>3- point hitch drops slowly</b>	Drop rate control incorrectly positioned.	Adjust drop rate control.
<b>3- point hitch slow to respond to draft loads</b>	Position/ draft control incorrectly adjusted.	Adjust position/ draft control.
	Drop rate too slow.	Adjust drop rate control.
	Implement not functioning properly.	See implement operator's manual.
<b>3- point hitch too responsive to draft loads</b>	Position/ draft control incorrectly adjusted.	Adjust position/ draft control.

## Brakes

Problem	Possible Cause	Correction
<b>Pedal(s) feel spongy</b>	Air in system.	System requires bleeding. See your authorised dealer.

<b>Problem</b>	<b>Possible Cause</b>	<b>Correction</b>
<b>Excessive brake pedal travel</b>	Brake piston seal leaking.	See your authorised dealer.
	Brake bleed valve leaking.	See your authorised dealer.
	Leakage in brake valve(s).	See your authorised dealer.
	Worn brake discs.	See your authorised dealer.

## Cab

<b>Problem</b>	<b>Possible Cause</b>	<b>Correction</b>
<b>Dust enters the cab</b>	Improper seal around filter element(s).	Check seal condition.
	Blocked filter(s).	Clean or replace filters.
	Defective filter.	Replace filter.
	Damaged seals around doors/ windows or roof hatch.	Replace seal(s).
<b>Low pressuriser air flow</b>	Blocked filter(s).	Clean or replace filters.
	Heater or evaporator core blocked.	See your authorised dealer.
<b>Air conditioner does not produce cool air</b>	Heater control turned on.	Turn temperature control knob fully anti-clockwise.
	Condenser blocked.	Clean radiator, condenser and oil cooler.
	Drive belt slipping, worn or damaged.	Check automatic belt tensioner and belt condition.
	Low refrigerant level.	See your authorised dealer.

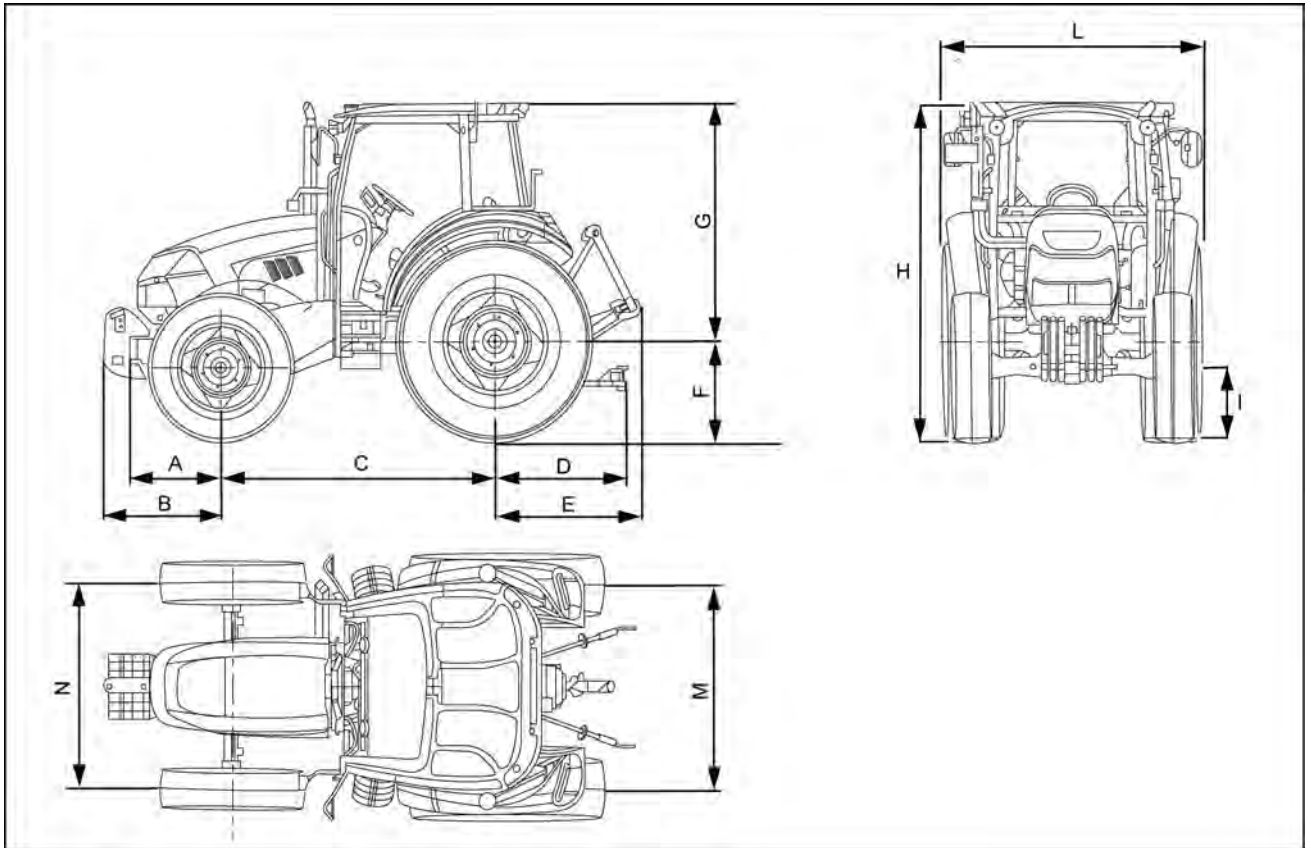
## Electrical systems

Problem	Possible Cause	Correction
<b>Electrical system completely inoperative</b>	Battery Isolator Switch open	Switch ON the Battery Isolator Switch. Check connections.
	Loose or corroded battery connections.	Clean and tighten connections.
	Sulphated batteries.	Check battery open circuit voltage for minimum <b>12.6 V</b> . Check electrolyte level and specific gravity.
<b>Starter speed slow - engine cranks slowly</b>	Loose or corroded battery connections.	Clean and tighten connections.
	Low battery output.	Check battery open circuit voltage for minimum <b>12.6 V</b> . Check electrolyte level and specific gravity.
	Incorrect viscosity engine oil.	Use correct viscosity oil for ambient temperature.
<b>Starter inoperative</b>	Loose or corroded battery or starter motor connections.	Clean and tighten connections.
	Dead battery.	Charge or replace batteries.
	Starter safety switch(es) operative.	
<b>Alternator light stays on with engine running</b>	Low engine idle speed.	Increase engine idle speed.
	Broken/ loose drive belt.	Check belt and automatic belt tensioner.
	Malfunctioning batteries.	Check battery open circuit voltage for minimum <b>12.6 V</b> . Check electrolyte level and specific gravity.
	Malfunctioning alternator.	Have alternator checked by your authorised dealer.
<b>Batteries will not charge</b>	Malfunctioning alternator	Have alternator checked by your authorised dealer.
	Loose or corroded terminals.	Clean and tighten connections.
	Loose or worn drive belt.	Check belt and automatic belt tensioner. Replace belt, if required.
	Malfunctioning batteries.	Check battery open circuit voltage for minimum <b>12.6 V</b> . Check electrolyte level and specific gravity.



# 9 - SPECIFICATIONS

## Dimensions and weights



MOIL13TR01917FB 1

Reference	Dimension
(A)	662 mm (26 in)
(B)	712 mm (28 in)
(C)	2350 mm (93 in)
(D)	940 mm (37 in)
(E)	1005 mm (37.0 in)
(F)	750 – 800 mm (30 – 31 in)
(G)	With fixed cab 1876 mm (74 in)
(G)	With suspended cab 1892 mm (75 in)
(H)	2676 mm (105 in)
(I)	575 – 625 mm (23 – 25 in)
(L)	1915 – 2160 mm (75 – 85 in)
(M)	1269 – 2138 mm (50 – 84 in)
(N)	1240 – 2154 mm (49 – 85 in)

**Weights**

<b>Front weights</b>			
<b>Supported weight</b>	<b>Weight of individual plate</b>	<b>Maximum total weight (4 plates and support)</b>	<b>Maximum total weight (8 plates and support)</b>
<b>80 kg (176 lb)</b>	<b>40 kg (88 lb)</b>	<b>240 kg (529 lb)</b>	<b>400 kg (882 lb)</b>

<b>Rear weights</b>		
<b>Weight of individual ring</b>	<b>Maximum total weight (4 plates)</b>	<b>Maximum total weight (6 plates)</b>
<b>50 kg (110.2 lb)</b>	<b>200 kg (441 lb)</b>	<b>300 kg (661 lb)</b>

<b>minimum tractor weight</b>	
Standard axle Class 1.5 HD, without counterweights	<b>4200 kg (9259 lb)</b>
<b>Maximum weight of tractor</b>	
With standard axle Class 1.5 HD without counterweights, with fuel in the tank, without a driver and with a lift and front power take-off (PTO)	<b>5175 kg (11409 lb)</b>
Trade Weight	<b>7000 kg (15432 lb)</b>

**NOTE:** The weight of the tractor is calculated: with fuel (full tank) and without operator.

## Maximum permitted loads on front and rear axle

**▲ WARNING**

**Overturning hazard!**

The operator must know the correct **OPERATING LOAD** capacity of the machine before attempting to operate the machine. Always follow the recommended load limits. Failure to comply could result in death or serious injury.

W0216A

**NOTICE:** The total weight of the tractor, including the ballast and the weight of the implements carried, must not exceed the limits given in the tables below. The values refer to the axle capacity.

**Maximum axle load for speeds above 8.0 km/h (5.0 mph)**

Axle type	Front axle	Rear axle	Total maximum load
Class 1.5 axle	3500 kg (7716 lb)	5500 kg (12125 lb)	7000 kg (15432 lb)

**Maximum axle load for speeds less than or equal to 8.0 km/h (5.0 mph)**

Axle type	Front axle	Rear axle	Total maximum load
Class 1.5 axle	5700 kg (12566 lb)	5500 kg (12125 lb)	8000 kg (17637 lb)

Maximum track width **2154 mm (85 in)**

**NOTICE:** Braking regulations in some countries may impose lower weight limits for road transport than the figures quoted in the above tables.

**NOTICE:** If the value of the maximum load of the pair of tires is less than the maximum axle load it is necessary to refer, for the maximum load, to the value of the pair of tires. Otherwise it is necessary to take the axle load as the maximum load.

## Speed table for 24 x 24 gearbox

### FORWARD DRIVE SPEED

RANGE	GEAR		REAR TYRES				
			INDEX RADIUS				
			625	675	700	725	750
I	1	LO	1.2 km/h (0.7 mph)	1.3 km/h (0.8 mph)	1.4 km/h (0.9 mph)	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)
	2	LO	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.7 km/h (1.1 mph)	1.8 km/h (1.1 mph)	1.8 km/h (1.1 mph)
	3	LO	1.9 km/h (1.2 mph)	2.0 km/h (1.2 mph)	2.1 km/h (1.3 mph)	2.2 km/h (1.4 mph)	2.3 km/h (1.4 mph)
	4	LO	2.3 km/h (1.4 mph)	2.5 km/h (1.6 mph)	2.6 km/h (1.6 mph)	2.7 km/h (1.7 mph)	2.8 km/h (1.7 mph)
I	1	HI	2.8 km/h (1.7 mph)	3.0 km/h (1.9 mph)	3.2 km/h (2.0 mph)	3.3 km/h (2.1 mph)	3.4 km/h (2.1 mph)
	2	HI	3.5 km/h (2.2 mph)	3.8 km/h (2.4 mph)	3.9 km/h (2.4 mph)	4.0 km/h (2.5 mph)	4.2 km/h (2.6 mph)
	3	HI	4.2 km/h (2.6 mph)	4.5 km/h (2.8 mph)	4.7 km/h (2.9 mph)	4.9 km/h (3.0 mph)	5.0 km/h (3.1 mph)
	4	HI	5.2 km/h (3.2 mph)	5.6 km/h (3.5 mph)	5.8 km/h (3.6 mph)	6.0 km/h (3.7 mph)	6.2 km/h (3.9 mph)
II	1	LO	3.2 km/h (2.0 mph)	3.5 km/h (2.2 mph)	3.6 km/h (2.2 mph)	3.7 km/h (2.3 mph)	3.8 km/h (2.4 mph)
	2	LO	4.0 km/h (2.5 mph)	4.3 km/h (2.7 mph)	4.4 km/h (2.7 mph)	4.6 km/h (2.9 mph)	4.8 km/h (3.0 mph)
	3	LO	4.9 km/h (3.0 mph)	5.3 km/h (3.3 mph)	5.5 km/h (3.4 mph)	5.7 km/h (3.5 mph)	5.9 km/h (3.7 mph)
	4	LO	6.1 km/h (3.8 mph)	6.6 km/h (4.1 mph)	6.8 km/h (4.2 mph)	7.0 km/h (4.3 mph)	7.3 km/h (4.5 mph)
II	1	HI	7.4 km/h (4.6 mph)	8.0 km/h (5.0 mph)	8.2 km/h (5.1 mph)	8.5 km/h (5.3 mph)	8.8 km/h (5.5 mph)
	2	HI	9.1 km/h (5.7 mph)	9.8 km/h (6.1 mph)	10.2 km/h (6.3 mph)	10.6 km/h (6.6 mph)	10.9 km/h (6.8 mph)
	3	HI	10.9 km/h (6.8 mph)	11.8 km/h (7.3 mph)	12.3 km/h (7.6 mph)	12.7 km/h (7.9 mph)	13.1 km/h (8.1 mph)
	4	HI	13.5 km/h (8.4 mph)	14.6 km/h (9.1 mph)	15.2 km/h (9.4 mph)	15.7 km/h (9.8 mph)	16.2 km/h (10.1 mph)
III	1	LO	9.3 km/h (5.8 mph)	10.1 km/h (6.3 mph)	10.4 km/h (6.5 mph)	10.8 km/h (6.7 mph)	11.2 km/h (7.0 mph)
	2	LO	11.5 km/h (7.1 mph)	12.4 km/h (7.7 mph)	12.9 km/h (8.0 mph)	13.3 km/h (8.3 mph)	13.8 km/h (8.6 mph)
	3	LO	14.2 km/h (8.8 mph)	15.4 km/h (9.6 mph)	15.9 km/h (9.9 mph)	16.5 km/h (10.3 mph)	17.1 km/h (10.6 mph)
	4	LO	17.6 km/h (10.9 mph)	19.0 km/h (11.8 mph)	19.7 km/h (12.2 mph)	20.4 km/h (12.7 mph)	21.1 km/h (13.1 mph)
III	1	HI	21.4 km/h (13.3 mph)	23.1 km/h (14.4 mph)	23.9 km/h (14.9 mph)	24.8 km/h (15.4 mph)	25.6 km/h (15.9 mph)
	2	HI	26.4 km/h (16.4 mph)	28.5 km/h (17.7 mph)	29.6 km/h (18.4 mph)	30.6 km/h (19.0 mph)	31.7 km/h (19.7 mph)
	3	HI	31.7 km/h (19.7 mph)	34.3 km/h (21.3 mph)	35.6 km/h (22.1 mph)	36.8 km/h (22.9 mph)	38.1 km/h (23.7 mph)
	4	HI	33.4 km/h (20.8 mph)	36.0 km/h (22.4 mph)	37.4 km/h (23.2 mph)	38.7 km/h (24.0 mph)	40.0* km/h (24.9 mph)

**NOTE:** (^^^) the following speeds were obtained at an engine speed of 2300 RPM.

**REVERSE SPEED**





RANGE	GEAR		REAR TYRES				
			INDEX RADIUS				
			625	675	700	725	750
I	1	LO	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.6 km/h (1.0 mph)
	2	LO	1.7 km/h (1.1 mph)	1.8 km/h (1.1 mph)	1.9 km/h (1.2 mph)	2.0 km/h (1.2 mph)	2.0 km/h (1.2 mph)
	3	LO	2.1 km/h (1.3 mph)	2.3 km/h (1.4 mph)	2.4 km/h (1.5 mph)	2.4 km/h (1.5 mph)	2.5 km/h (1.6 mph)
	4	LO	2.6 km/h (1.6 mph)	2.8 km/h (1.7 mph)	2.9 km/h (1.8 mph)	3.0 km/h (1.9 mph)	3.1 km/h (1.9 mph)
I	1	HI	3.2 km/h (2.0 mph)	3.4 km/h (2.1 mph)	3.5 km/h (2.2 mph)	3.7 km/h (2.3 mph)	3.8 km/h (2.4 mph)
	2	HI	3.9 km/h (2.4 mph)	4.2 km/h (2.6 mph)	4.4 km/h (2.7 mph)	4.5 km/h (2.8 mph)	4.7 km/h (2.9 mph)
	3	HI	4.7 km/h (2.9 mph)	5.1 km/h (3.2 mph)	5.3 km/h (3.3 mph)	5.4 km/h (3.4 mph)	5.6 km/h (3.5 mph)
	4	HI	5.8 km/h (3.6 mph)	6.3 km/h (3.9 mph)	6.5 km/h (4.0 mph)	6.7 km/h (4.2 mph)	7.0 km/h (4.3 mph)
II	1	LO	3.6 km/h (2.2 mph)	3.9 km/h (2.4 mph)	4.0 km/h (2.5 mph)	4.2 km/h (2.6 mph)	4.3 km/h (2.7 mph)
	2	LO	4.4 km/h (2.7 mph)	4.8 km/h (3.0 mph)	5.0 km/h (3.1 mph)	5.2 km/h (3.2 mph)	5.3 km/h (3.3 mph)
	3	LO	5.5 km/h (3.4 mph)	5.9 km/h (3.7 mph)	6.2 km/h (3.9 mph)	6.4 km/h (4.0 mph)	6.6 km/h (4.1 mph)
	4	LO	6.8 km/h (4.2 mph)	7.3 km/h (4.5 mph)	7.6 km/h (4.7 mph)	7.9 km/h (4.9 mph)	8.2 km/h (5.1 mph)
II	1	HI	8.2 km/h (5.1 mph)	8.9 km/h (5.5 mph)	9.2 km/h (5.7 mph)	9.6 km/h (6.0 mph)	9.9 km/h (6.2 mph)
	2	HI	10.2 km/h (6.3 mph)	11.0 km/h (6.8 mph)	11.4 km/h (7.1 mph)	11.8 km/h (7.3 mph)	12.2 km/h (7.6 mph)
	3	HI	12.3 km/h (7.6 mph)	13.2 km/h (8.2 mph)	13.7 km/h (8.5 mph)	14.2 km/h (8.8 mph)	14.7 km/h (9.1 mph)
	4	HI	15.1 km/h (9.4 mph)	16.4 km/h (10.2 mph)	17.0 km/h (10.6 mph)	17.6 km/h (10.9 mph)	18.2 km/h (11.3 mph)
III	1	LO	10.4 km/h (6.5 mph)	11.3 km/h (7.0 mph)	11.7 km/h (7.3 mph)	12.1 km/h (7.5 mph)	12.5 km/h (7.8 mph)
	2	LO	12.9 km/h (8.0 mph)	13.9 km/h (8.6 mph)	14.4 km/h (8.9 mph)	14.9 km/h (9.3 mph)	15.5 km/h (9.6 mph)
	3	LO	15.9 km/h (9.9 mph)	17.2 km/h (10.7 mph)	17.8 km/h (11.1 mph)	18.5 km/h (11.5 mph)	19.1 km/h (11.9 mph)
	4	LO	19.7 km/h (12.2 mph)	21.3 km/h (13.2 mph)	22.1 km/h (13.7 mph)	22.9 km/h (14.2 mph)	23.6 km/h (14.7 mph)
III	1	HI	23.9 km/h (14.9 mph)	25.8 km/h (16.0 mph)	26.8 km/h (16.7 mph)	27.7 km/h (17.2 mph)	28.7 km/h (17.8 mph)
	2	HI	29.6 km/h (18.4 mph)	31.9 km/h (19.8 mph)	33.1 km/h (20.6 mph)	34.3 km/h (21.3 mph)	35.5 km/h (22.1 mph)
	3	HI	33.3 km/h (20.7 mph)	36.0 km/h (22.4 mph)	37.3 km/h (23.2 mph)	38.6 km/h (24.0 mph)	40.0* km/h (24.9 mph)
	4	HI	33.3 km/h (20.7 mph)	36.0 km/h (22.4 mph)	37.3 km/h (23.2 mph)	38.7 km/h (24.0 mph)	40.0** km/h (24.9 mph)

**NOTE:** (^^) the following speeds were obtained at an engine speed of 2155 RPM.


**NOTE:** (\*\*) the following speeds were obtained at an engine speed of 1745 RPM.

# Speed table for 40 x 40 gearbox

## FORWARD SPEED





REDUCTION GEAR	RANGE	GEAR		REAR TYRES				
				INDEX RADIUS				
				625	675	700	725	750
	I	1	LO	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)
		2	LO	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)
		3	LO	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)
		4	LO	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)
	I	1	HI	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.5 km/h (0.3 mph)
		2	HI	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.6 km/h (0.4 mph)
		3	HI	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)
		4	HI	0.7 km/h (0.4 mph)	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)
	II	1	LO	0.4 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)
		2	LO	0.5 km/h (0.3 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)
		3	LO	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)
		4	LO	0.8 km/h (0.5 mph)	0.9 km/h (0.5 mph)	0.9 km/h (0.5 mph)	0.9 km/h (0.5 mph)	1.0 km/h (0.6 mph)
	II	1	HI	1.0 km/h (0.6 mph)	1.1 km/h (0.7 mph)	1.1 km/h (0.7 mph)	1.1 km/h (0.7 mph)	1.2 km/h (0.7 mph)
		2	HI	1.2 km/h (0.7 mph)	1.3 km/h (0.8 mph)	1.4 km/h (0.9 mph)	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)
		3	HI	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.6 km/h (1.0 mph)	1.7 km/h (1.1 mph)	1.8 km/h (1.1 mph)
		4	HI	1.8 km/h (1.1 mph)	2.0 km/h (1.2 mph)	2.0 km/h (1.2 mph)	2.1 km/h (1.3 mph)	2.2 km/h (1.4 mph)
	I	1	LO	1.2 km/h (0.7 mph)	1.3 km/h (0.8 mph)	1.4 km/h (0.9 mph)	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)
		2	LO	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.7 km/h (1.1 mph)	1.8 km/h (1.1 mph)	1.8 km/h (1.1 mph)
		3	LO	1.9 km/h (1.2 mph)	2.0 km/h (1.3 mph)	2.1 km/h (1.3 mph)	2.2 km/h (1.4 mph)	2.3 km/h (1.4 mph)
		4	LO	2.3 km/h (1.4 mph)	2.5 km/h (1.6 mph)	2.6 km/h (1.6 mph)	2.7 km/h (1.7 mph)	2.8 km/h (1.7 mph)
	I	1	HI	2.8 km/h (1.7 mph)	3.0 km/h (1.9 mph)	3.2 km/h (2.0 mph)	3.3 km/h (2.1 mph)	3.4 km/h (2.1 mph)
		2	HI	3.5 km/h (2.2 mph)	3.8 km/h (2.4 mph)	3.9 km/h (2.4 mph)	4.0 km/h (2.5 mph)	4.2 km/h (2.6 mph)
		3	HI	4.2 km/h (2.6 mph)	4.5 km/h (2.8 mph)	4.7 km/h (2.9 mph)	4.9 km/h (3.0 mph)	5.0 km/h (3.1 mph)
		4	HI	5.2 km/h (3.2 mph)	5.6 km/h (3.5 mph)	5.8 km/h (3.6 mph)	6.0 km/h (3.7 mph)	6.2 km/h (3.9 mph)
	II	1	LO	3.2 km/h (2.0 mph)	3.5 km/h (2.2 mph)	3.6 km/h (2.2 mph)	3.7 km/h (2.3 mph)	3.8 km/h (2.4 mph)
		2	LO	4.0 km/h (2.5 mph)	4.3 km/h (2.7 mph)	4.4 km/h (2.7 mph)	4.6 km/h (2.9 mph)	4.8 km/h (3.0 mph)
		3	LO	4.9 km/h (3.1 mph)	5.3 km/h (3.3 mph)	5.5 km/h (3.4 mph)	5.7 km/h (3.5 mph)	5.9 km/h (3.7 mph)
		4	LO	6.1 km/h (3.8 mph)	6.6 km/h (4.1 mph)	6.8 km/h (4.2 mph)	7.0 km/h (4.3 mph)	7.3 km/h (4.5 mph)
	II	1	HI	7.4 km/h (4.6 mph)	8.0 km/h (5.0 mph)	8.2 km/h (5.1 mph)	8.5 km/h (5.3 mph)	8.8 km/h (5.5 mph)
		2	HI	9.1 km/h (5.7 mph)	9.8 km/h (6.1 mph)	10.2 km/h (6.3 mph)	10.6 km/h (6.6 mph)	10.9 km/h (6.8 mph)
		3	HI	10.9 km/h (6.8 mph)	11.8 km/h (7.3 mph)	12.3 km/h (7.6 mph)	12.7 km/h (7.9 mph)	13.1 km/h (8.1 mph)
		4	HI	13.5 km/h (8.4 mph)	14.6 km/h (9.1 mph)	15.2 km/h (9.4 mph)	15.7 km/h (9.8 mph)	16.2 km/h (10.1 mph)

9 - SPECIFICATIONS

REDUCTION GEAR	RANGE	GEAR		REAR TYRES				
				INDEX RADIUS				
				625	675	700	725	750
	III	1	LO	9.3 km/h (5.8 mph)	10.1 km/h (6.3 mph)	10.4 km/h (6.5 mph)	10.8 km/h (6.7 mph)	11.2 km/h (7.0 mph)
		2	LO	11.5 km/h (7.1 mph)	12.4 km/h (7.7 mph)	12.9 km/h (8.0 mph)	13.3 km/h (8.3 mph)	13.8 km/h (8.6 mph)
		3	LO	14.2 km/h (8.8 mph)	15.4 km/h (9.6 mph)	15.9 km/h (9.9 mph)	16.5 km/h (10.3 mph)	17.1 km/h (10.6 mph)
		4	LO	17.6 km/h (10.9 mph)	19.0 km/h (11.8 mph)	19.7 km/h (12.2 mph)	20.4 km/h (12.7 mph)	21.1 km/h (13.1 mph)
	III	1	HI	21.4 km/h (13.3 mph)	23.1 km/h (14.4 mph)	23.9 km/h (14.9 mph)	24.8 km/h (15.4 mph)	25.6 km/h (15.9 mph)
		2	HI	26.4 km/h (16.4 mph)	28.5 km/h (17.7 mph)	29.6 km/h (18.4 mph)	30.6 km/h (19.0 mph)	31.7 km/h (19.7 mph)
		3	HI	31.7 km/h (19.7 mph)	34.3 km/h (21.3 mph)	35.6 km/h (22.1 mph)	36.8 km/h (22.9 mph)	38.1 km/h (23.7 mph)
		4	HI	33.4 km/h (20.8 mph)	36.0 km/h (22.4 mph)	37.4 km/h (23.2 mph)	38.7 km/h (24.0 mph)	40.0* km/h (24.9 mph)

**NOTE:** (^^^) the following speeds were obtained at an engine speed of 1955 RPM.

**REVERSE SPEED**

REDUCTION GEAR	RANGE	GEAR		REAR TYRES				
				INDEX RADIUS				
				625	675	700	725	750
	I	1	LO	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)
		2	LO	0.2 km/h (0.1 mph)	0.2 km/h (0.1 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)
		3	LO	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)	0.3 km/h (0.2 mph)
		4	LO	0.3 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)	0.4 km/h (0.2 mph)
	I	1	HI	0.4 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)
		2	HI	0.5 km/h (0.3 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)
		3	HI	0.6 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.8 km/h (0.5 mph)
		4	HI	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)	0.9 km/h (0.6 mph)	0.9 km/h (0.6 mph)	0.9 km/h (0.6 mph)
	II	1	LO	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.5 km/h (0.3 mph)	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)
		2	LO	0.6 km/h (0.4 mph)	0.6 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)	0.7 km/h (0.4 mph)
		3	LO	0.7 km/h (0.4 mph)	0.8 km/h (0.5 mph)	0.8 km/h (0.5 mph)	0.9 km/h (0.6 mph)	0.9 km/h (0.6 mph)
		4	LO	0.9 km/h (0.5 mph)	1.0 km/h (0.6 mph)	1.0 km/h (0.6 mph)	1.1 km/h (0.7 mph)	1.1 km/h (0.7 mph)
	II	1	HI	1.1 km/h (0.7 mph)	1.2 km/h (0.7 mph)	1.2 km/h (0.7 mph)	1.3 km/h (0.8 mph)	1.3 km/h (0.8 mph)
		2	HI	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.6 km/h (1.0 mph)
		3	HI	1.6 km/h (1.0 mph)	1.8 km/h (1.1 mph)	1.8 km/h (1.1 mph)	1.9 km/h (1.2 mph)	2.0 km/h (1.2 mph)
		4	HI	2.0 km/h (1.2 mph)	2.2 km/h (1.4 mph)	2.3 km/h (1.4 mph)	2.4 km/h (1.5 mph)	2.4 km/h (1.5 mph)
	I	1	LO	1.4 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.5 km/h (0.9 mph)	1.6 km/h (1.0 mph)	1.6 km/h (1.0 mph)
		2	LO	1.7 km/h (1.1 mph)	1.8 km/h (1.1 mph)	1.9 km/h (1.2 mph)	2.0 km/h (1.2 mph)	2.0 km/h (1.2 mph)
		3	LO	2.1 km/h (1.3 mph)	2.3 km/h (1.4 mph)	2.4 km/h (1.5 mph)	2.4 km/h (1.5 mph)	2.5 km/h (1.6 mph)
		4	LO	2.6 km/h (1.6 mph)	2.8 km/h (1.7 mph)	2.9 km/h (1.8 mph)	3.0 km/h (1.9 mph)	3.1 km/h (1.9 mph)
	I	1	HI	3.2 km/h (2.0 mph)	3.4 km/h (2.1 mph)	3.5 km/h (2.2 mph)	3.7 km/h (2.3 mph)	3.8 km/h (2.4 mph)
		2	HI	3.9 km/h (2.4 mph)	4.2 km/h (2.6 mph)	4.4 km/h (2.7 mph)	4.5 km/h (2.8 mph)	4.7 km/h (2.9 mph)
		3	HI	4.7 km/h (2.9 mph)	5.1 km/h (3.2 mph)	5.3 km/h (3.3 mph)	5.4 km/h (3.4 mph)	5.6 km/h (3.5 mph)
		4	HI	5.8 km/h (3.6 mph)	6.3 km/h (3.9 mph)	6.5 km/h (4.0 mph)	6.7 km/h (4.2 mph)	7.0 km/h (4.3 mph)
	II	1	LO	3.6 km/h (2.2 mph)	3.9 km/h (2.4 mph)	4.0 km/h (2.5 mph)	4.2 km/h (2.6 mph)	4.3 km/h (2.7 mph)
		2	LO	4.4 km/h (2.7 mph)	4.8 km/h (3.0 mph)	5.0 km/h (3.1 mph)	5.2 km/h (3.2 mph)	5.3 km/h (3.3 mph)
		3	LO	5.5 km/h (3.4 mph)	5.9 km/h (3.7 mph)	6.2 km/h (3.9 mph)	6.4 km/h (4.0 mph)	6.6 km/h (4.1 mph)
		4	LO	6.8 km/h (4.2 mph)	7.3 km/h (4.5 mph)	7.6 km/h (4.7 mph)	7.9 km/h (4.9 mph)	8.2 km/h (5.1 mph)
	II	1	HI	8.2 km/h (5.1 mph)	8.9 km/h (5.5 mph)	9.2 km/h (5.7 mph)	9.6 km/h (6.0 mph)	9.9 km/h (6.2 mph)
		2	HI	10.2 km/h (6.3 mph)	11.0 km/h (6.8 mph)	11.4 km/h (7.1 mph)	11.8 km/h (7.3 mph)	12.2 km/h (7.6 mph)
		3	HI	12.3 km/h (7.6 mph)	13.2 km/h (8.2 mph)	13.7 km/h (8.5 mph)	14.2 km/h (8.8 mph)	14.7 km/h (9.1 mph)
		4	HI	15.1 km/h (9.4 mph)	16.4 km/h (10.2 mph)	17.0 km/h (10.6 mph)	17.6 km/h (10.9 mph)	18.2 km/h (11.3 mph)

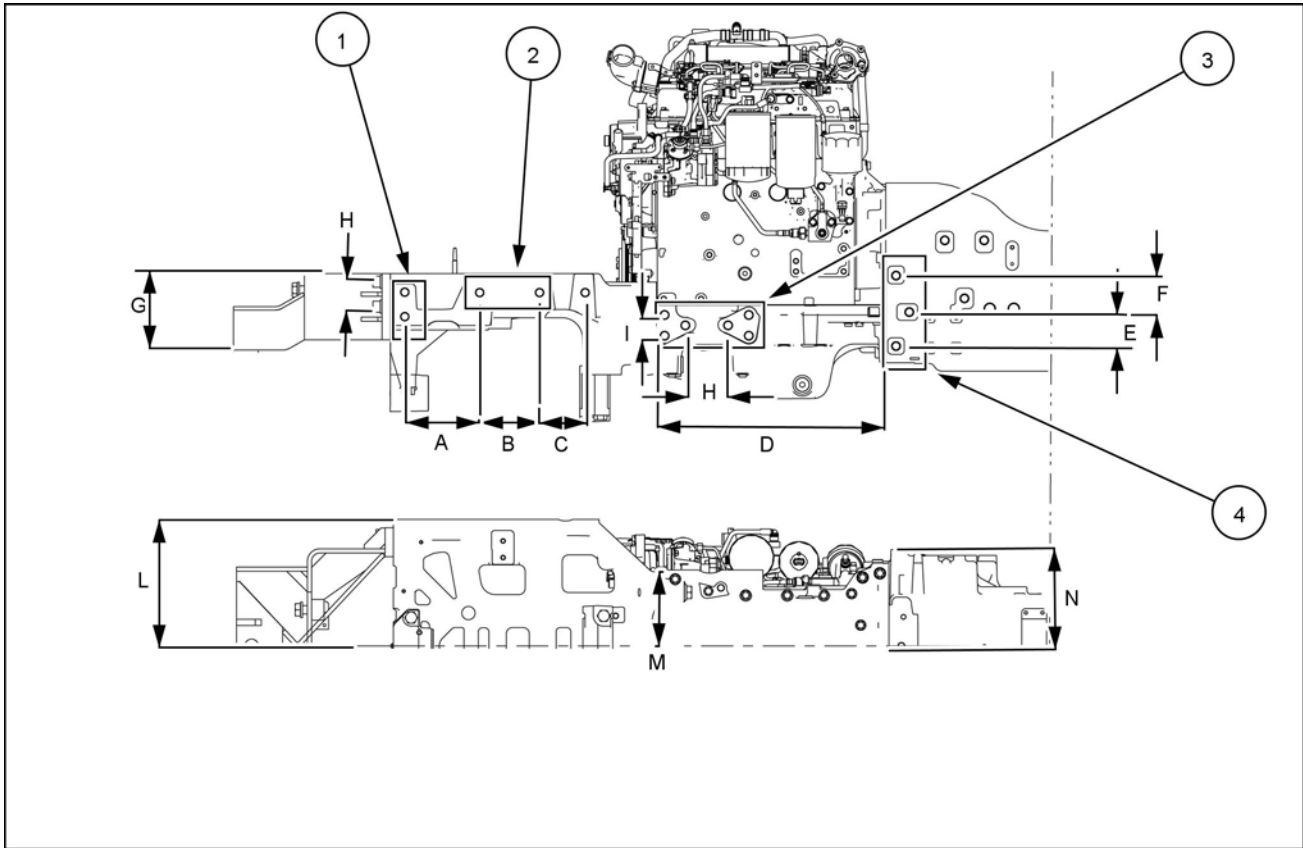
9 - SPECIFICATIONS

REDUCTION GEAR	RANGE	GEAR		REAR TYRES				
				INDEX RADIUS				
				625	675	700	725	750
	III	1	LO	10.4 km/h (6.5 mph)	11.3 km/h (7.0 mph)	11.7 km/h (7.3 mph)	12.1 km/h (7.5 mph)	12.5 km/h (7.8 mph)
		2	LO	12.9 km/h (8.0 mph)	13.9 km/h (8.6 mph)	14.4 km/h (8.9 mph)	14.9 km/h (9.3 mph)	15.5 km/h (9.6 mph)
		3	LO	15.9 km/h (9.9 mph)	17.2 km/h (10.7 mph)	17.8 km/h (11.1 mph)	18.5 km/h (11.5 mph)	19.1 km/h (11.9 mph)
		4	LO	19.7 km/h (12.2 mph)	21.3 km/h (13.2 mph)	22.1 km/h (13.7 mph)	22.9 km/h (14.2 mph)	23.6 km/h (14.7 mph)
	III	1	HI	23.9 km/h (14.9 mph)	25.8 km/h (16.0 mph)	26.8 km/h (16.7 mph)	27.7 km/h (17.2 mph)	28.7 km/h (17.8 mph)
		2	HI	29.6 km/h (18.4 mph)	31.9 km/h (19.8 mph)	33.1 km/h (20.6 mph)	34.3 km/h (21.3 mph)	35.5 km/h (22.1 mph)
		3	HI	33.3 km/h (20.7 mph)	36.0 km/h (22.4 mph)	37.3 km/h (23.2 mph)	38.6 km/h (24.0 mph)	40.0* km/h (24.9 mph)
		4	HI	33.3 km/h (20.7 mph)	36.0 km/h (22.4 mph)	37.3 km/h (23.2 mph)	38.7 km/h (24.0 mph)	40.0** km/h (24.9 mph)

**NOTE:** (^^^) the following speeds were obtained at an engine speed of 2155 RPM.

**NOTE:** (\*\*) the following speeds were obtained at an engine speed of 1745 RPM.

## Additional equipment attachment points





MOIL24TR00428FA 1

The figures illustrate the available fixing holes for your version.

**NOTE:** The tractor is provided with threaded holes on both sides for connecting implement and auxiliary equipment. The figure shows the free fixing holes on the left-hand side of the tractor, which are identical and symmetrical to the fixing holes on the right-hand side.

Use exclusively the holes specified in fig. when mounting auxiliary equipment. The use of different holes for auxiliary applications automatically exonerates the manufacturer from all liability in relation to damage to the tractor or injury to persons, resulting from failure to observe the relative regulations.

Hole		
4 x (1)	M 20 x 2.5	43.0 mm (1.7 in)
4 x (2)	M 20 x 2.5	43.0 mm (1.7 in)
6 x (3)	M 20 x 1.5	36.0 mm (1.4 in)
6 x (4)	M 20 x 2.5	45.0 mm (1.8 in)

A	B	C	D	E	F	G	H	I	L	M	N
180.60 mm (7.11 in)	144.40 mm (5.69 in)	110.00 mm (4.33 in)	552.50 mm (21.75 in)	82.00 mm (3.23 in)	88.00 mm (3.46 in)	211.00 mm (8.31 in)	58.00 mm (2.28 in)	50.00 mm (1.97 in)	305.00 mm (24.02 in)	183.00 mm (7.20 in)	232.00 mm (9.13 in)

**NOTICE:** prevent auxiliary implements and/or equipment of any type from obstructing the ventilation grille on both sides of the hood.

## General Specifications

Engine main data	
Manufacturer	FPT
Type	F5L, four cylinders, four valves per cylinder
Engine Model	
Farmall®90C	F5LGL413E
Farmall®100C	F5LGL413D
Farmall® 110C	F5LGL413C
Farmall® 120C	F5LGL413A
Emission level	Tier 4B/Stage V
Engine Flywheel	<b>305 mm (12 in)</b>
Aspiration	Turbocharged
Number of cylinders	4
Bore	<b>99 mm (3.9 in)</b>
Stroke	<b>110 mm (4.3 in)</b>
Displacement	<b>3600 cm<sup>3</sup></b>
Compression Ratio	18,5:1
Firing order	1. 3. 4. 2
Rated engine power (in accordance with <b>ECE R 120</b> )	
Farmall®90C	<b>66 kW (90 Hp)</b>
Farmall®100C	<b>74 kW (101 Hp)</b>
Farmall® 110C	<b>81 kW (110 Hp)</b>
Farmall® 120C	<b>86 kW (117 Hp)</b>
Torque increase:	
Farmall®90C	<b>38,7%</b>
Farmall®100C	<b>46,5%</b>
Farmall® 110C	<b>45,7%</b>
Farmall® 120C	<b>41,7%</b>
Rated Engine Speed	<b>2300 RPM</b>
Maximum power	<b>1900 kW</b>
Maximum torque	<b>1300 N/m</b>
Oil System	
Oil pressure with engine warm and running at maximum speed	<b>3.8 bar (55.1 psi)</b>
Cab	
FOPS structure type approval <b>OECD CODE 10</b> :	Category 1
Operator protection against dangerous substances <b>EN 15695-1</b> :	Category 2

9 - SPECIFICATIONS

Hydraulic System			
Pump <b>64 L/min (17 US gpm)</b>			
		Base	(With front power take-off (PTO), automatic steering system and oil bath clutch)
Pump Capacity	High pressure circuit	<b>25 cm<sup>3</sup> (2 in<sup>3</sup>)</b>	<b>25 cm<sup>3</sup> (2 in<sup>3</sup>)</b>
	Steering circuit with electro-hydraulic drive line	<b>14 cm<sup>3</sup> (1 in<sup>3</sup>)</b>	<b>16.0 cm<sup>3</sup> (1 in<sup>3</sup>)</b>
Pump flow at engine speed of <b>2300 RPM</b>	High pressure circuit	<b>64.70 L/min (17.09 US gpm)</b>	<b>64.70 L/min (17.09 US gpm)</b>
	Steering circuit with electro-hydraulic drive line	<b>36.2 L/min (9.6 US gpm)</b>	<b>41.4 L/min (10.9 US gpm)</b>
Maximum pump pressure at engine speed of <b>2300 RPM</b>	High pressure circuit	<b>190.0 bar (2755.0 psi)</b>	<b>190.0 bar (2755.0 psi)</b>
	Low pressure circuit	<b>18.5 bar (268.2 psi)</b>	<b>18.5 bar (268.2 psi)</b>
Pump <b>80 L/min (21 US gpm)</b>			
		Base	(With front power take-off (PTO), automatic steering system and oil bath clutch)
Pump Capacity	High pressure circuit	<b>32.0 cm<sup>3</sup> (2.0 in<sup>3</sup>)</b>	<b>32.0 cm<sup>3</sup> (2.0 in<sup>3</sup>)</b>
	Steering circuit with electro-hydraulic drive line	<b>14 cm<sup>3</sup> (1 in<sup>3</sup>)</b>	<b>16.0 cm<sup>3</sup> (1 in<sup>3</sup>)</b>
Pump flow at engine speed of <b>2300 RPM</b>	High pressure circuit	<b>82.0 L/min (21.7 US gpm)</b>	<b>82.0 L/min (21.7 US gpm)</b>
	Steering circuit with electro-hydraulic drive line	<b>36.2 L/min (9.6 US gpm)</b>	<b>41.4 L/min (10.9 US gpm)</b>
Maximum pump pressure at engine speed of <b>2300 RPM</b>	High pressure circuit	<b>190.0 bar (2755.0 psi)</b>	<b>190.0 bar (2755.0 psi)</b>
	Low pressure circuit	<b>18.5 bar (268.2 psi)</b>	<b>18.5 bar (268.2 psi)</b>

9 - SPECIFICATIONS

**Rear three-point hitch**

1st and 2nd category three-point implement linkage device.

Stabilizer system for all models: mechanically adjusted telescopic stabilizer system (standard).

- mechanically adjusted telescopic stabilizer system (standard).

Link arms with rapid attachment (optional).

Single- or double-acting rear auxiliary control valves: up to three, of which two with float setting and one with automatic release.

Configuration of mechanically actuated control valves:

-Basic configuration: has two valves, both single- and double-acting, one with a floating setting and the other with automatic release

- Optional configuration 1: Features three valves, all single- or double-acting with automatic release, two of which have a floating setting and one with quick release

- Optional configuration 2: Like optional configuration 1 with the addition of a diverter on the third manifold

**Rear hitch lifting capacity**

**Third point in the lower position**

<b>without additional cylinder</b>	<b>At ball joint</b>	<b>2477 kg (5461 lb)</b>
	<b>610.0 mm (24.0 in) from rear end</b>	<b>1850 kg (4079 lb)</b>

<b>with two additional cylinders</b>	<b>At ball joint</b>	<b>4199 kg (9257 lb)</b>
	<b>610.0 mm (24.0 in) from rear end</b>	<b>3114 kg (6865 lb)</b>

**Third point in the upper position**

<b>without additional cylinder</b>	<b>At ball joint</b>	<b>2477 kg (5461 lb)</b>
	<b>610.0 mm (24.0 in) from rear end</b>	<b>2075 kg (4575 lb)</b>

<b>with two additional cylinders</b>	<b>At ball joint</b>	<b>4199 kg (9257 lb)</b>
	<b>610.0 mm (24.0 in) from rear end</b>	<b>3493 kg (7701 lb)</b>

**NOTE:** capacities evaluated with static radius (SLR) of 693 mm (27 in)

**Rear Power Take-Off (PTO) with independent actuation**

<b>Power take-off speed</b>	<b>Engine rpm</b>
<b>540 RPM</b>	<b>1938 RPM</b>
<b>540E RPM</b>	<b>1535 RPM</b>
<b>1000 RPM</b>	<b>1926 RPM</b>

**Front hitch lift capacity**

With standard axle support	<b>At ball joint</b>	<b>1609 kg (3547 lb)</b>
	<b>At 610 mm (24 in) from the rear end</b>	<b>1290 kg (2844 lb)</b>

**Front power take-off (PTO)**

<b>Power take-off speed</b>	<b>Engine rpm</b>
<b>1000 RPM</b>	<b>1920 RPM</b>

## 9 - SPECIFICATIONS

### Towable loads

**NOTE:** In addition to the limit values referring to the drawbar, you must consult the relevant regulations in local legislation.

With implement linkage non-braked equipment	Value <b>3500.0 kg (7716.2 lb)</b>
--	---------------------------------------

**NOTE:** towable load values may vary depending on the specific configuration of the tractor.

### Axles

#### REAR AXLE COMBINED WITH CLASS 1.5 HD FRONT AXLE

Axle width Flange to Flange	<b>1570 mm (62 in)</b>
Bevel gear ratio for index radius <b>725 mm to 750 mm:</b>	4,44
Bevel gear ratio for index radius <b>700 mm:</b>	4,22
Size of disc/hub retaining nuts	M18
Disc/hub tightening torque	<b>310 N·m (229 lb ft)</b>

#### FRONT AXLE, CLASS 1.5

Axle width Flange to Flange	<b>1790 mm (70 in)</b>
Bevel gear ratio for index radius <b>750 mm to 800 mm:</b>	13/36
Size of disc/hub retaining nuts	M16
Disc/hub tightening torque	<b>215 N·m (159 lb ft)</b>

### Interaxle ratio\*

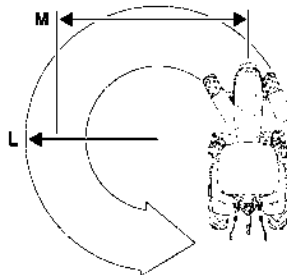
Maximum running speed	Configuration	Interaxle ratio
<b>40 km/h (25 mph)</b>	With front axle, Class 1.5 HD Rear tyres radius index from <b>750 mm (30 in)</b> to <b>800 mm (31 in)</b>	1,342

\* Ratio between the front axle rotation speed and the rear axle rotation speed, with 4-wheel drive engaged.

### Turn radius\*

**(L):** The SAE turning circle measures the distance from the centre point of the circle to the centre of the outside of the front tire.

**(M):** The turning circle is measured from the centre point of the rear axle, in line with the drawbar.



\* With 13.9R24 front tyres and track width of **1752 mm (69 in)**, 13.9R34 rear tyres and track width of **1630 mm (64 in)** a steering angle of **55°**

Turning radius without brakes	<b>5664 mm (223 in)</b>
Turnaround diameter without brakes	<b>8140 mm (320 in)</b>

9 - SPECIFICATIONS

<b>minimum tractor weight</b>	
Standard axle Class 1.5 HD, without counterweights	<b>4200 kg (9259 lb)</b>
<b>Maximum weight of tractor</b>	
With standard axle Class 1.5 HD without counterweights, with fuel in the tank, without a driver and with a lift and front power take-off (PTO)	<b>5175 kg (11409 lb)</b>
<b>Electrical system</b>	
Battery	Voltage <b>12 V</b> Capacity <b>140 A·h</b>
Starter motor	<b>4.2 kW</b>
Alternator	<b>120 A</b> (standard version) <b>170 A</b> (optional version)
<b>Bulb lights</b>	
Headlights on hood	Low beam H7 <b>55 W</b> High beam H7 <b>65 W</b>
Headlights on handrail	H4 <b>55 W 60 W</b>
Front side lights	R19 <b>5 W</b>
Tail lights	P21 <b>5 W</b>
Work lights on cab roof (front and rear)	H3 <b>55 W</b>
Turn indicators	PY <b>21 W</b>
Brake lights	P21 <b>5 W</b>
Reverse port	PY <b>21 W</b>
Number plate light	W <b>5 W</b>
<b>LED lights (if any)</b>	
Headlights on hood	Dipped beam LED <b>25 W</b> High beam lamps LED <b>12 W</b>
Headlights on handrail	Dipped beam LED <b>13 W</b> High beam lights: LED <b>13 W</b>
Front side lights	LED <b>0,8 W</b>
Work lights on cab roof (front and rear)	LED <b>25 W</b> Rear <b>25 W</b>
Front directional indicators	LED <b>6,5 W</b>
Interior courtesy light	LED <b>2.4 W</b>
" signature" lights	LED <b>4.5 W</b> H1 <b>55 W</b>



## 10 - ACCESSORIES

### Monitor bracket - (depending on the monitor on request)

#### **⚠ WARNING**

**Driving hazard!**

**Always make sure that the monitor is in the rear-most position while you drive on public roads.**

**Failure to comply could result in death or serious injury.**

W1661A

On request, the tractor may be equipped with a bracket to support a second monitor for the implements .

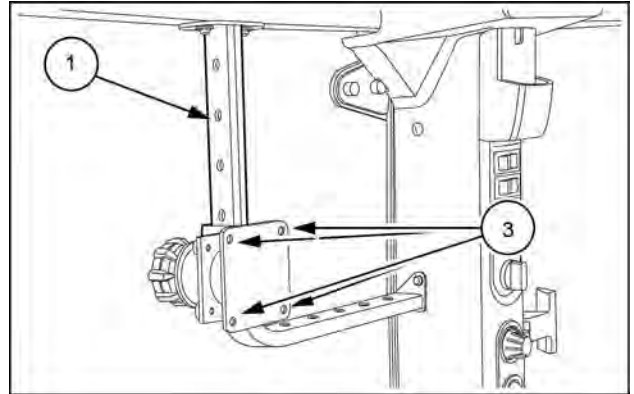
The bracket (1) is supplied with an installation kit which is used to position the monitor (2) using the fixing points (3) already provided on the right-hand side of the cab frame.

**NOTE:** See your authorized dealer regarding kit installation.

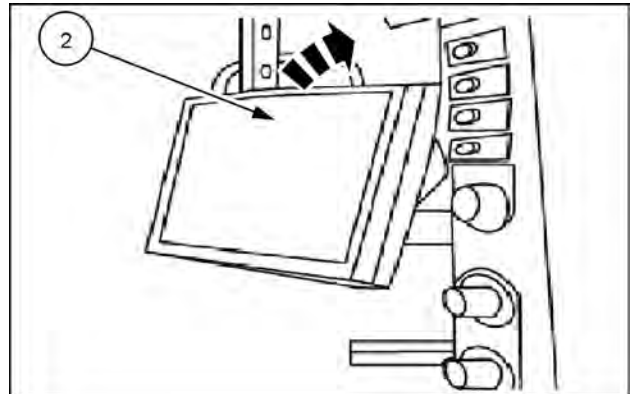
#### **Driving on roads open to public traffic**

Ensure to have a clear view of the exterior rear view mirrors at all times by adjusting the position of the additional monitors and brackets to the rearmost position.

**NOTE:** The image shown is an example depicting all optional equipment that must be moved to achieve a clear view.



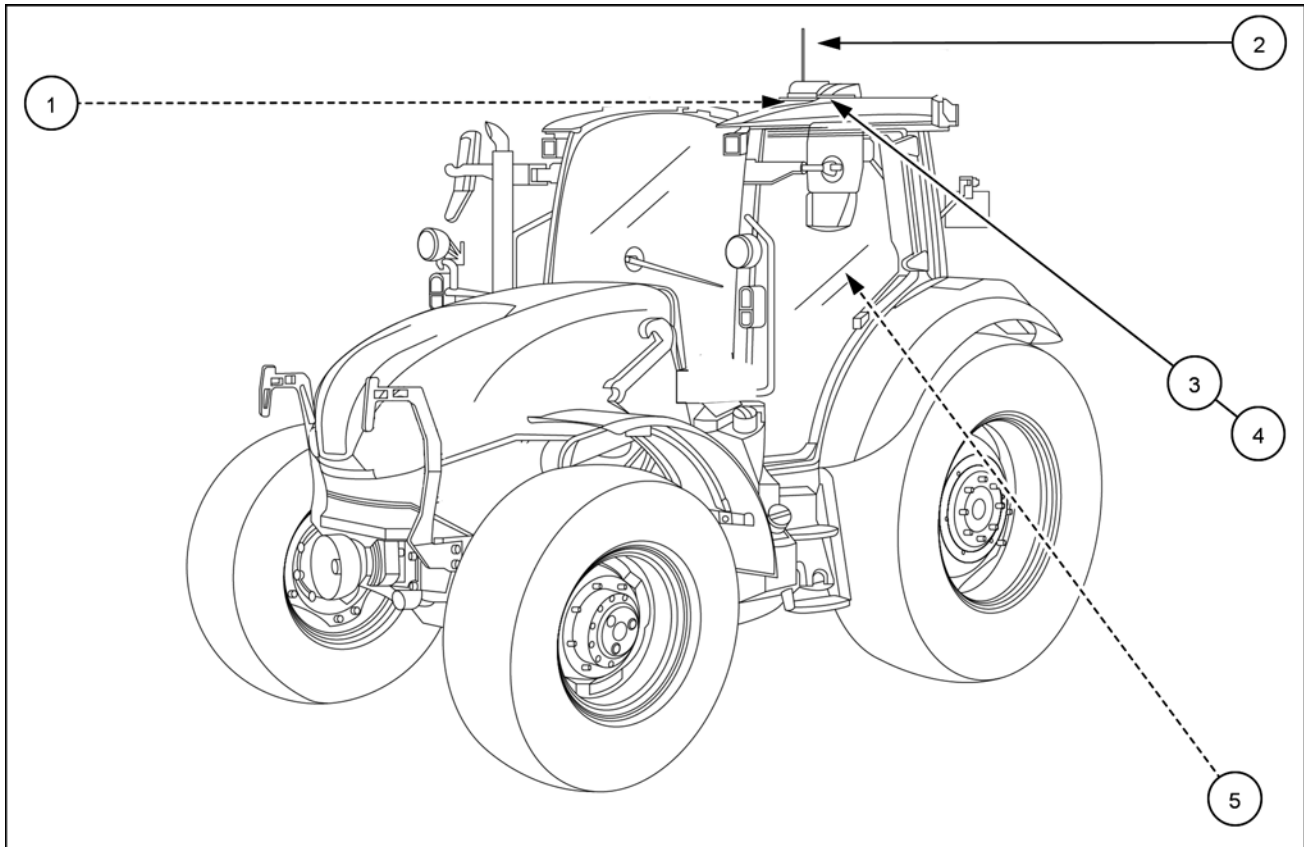
MOIL13TR02123AB 1



MOIL24TR00464AA 2

## Antenna - Location of components

The tractor is equipped with antennas, a GPS receiver and related control modules available depending on the set-up.



MOIL23TR01062FB 1

Description		Location	Basic telematics	Advanced telematics	Auto guidance
1	4G antenna	Rear left hand cab roof		X	
2	Antenna with pre-installation for AM/FM radio	Rear central cab roof	X	X	X
3	GPS receiver module	Rear central cab roof			X
4	Communication and accuracy module CM100	Rear central cab roof	X		
5	Auto-guidance control module	Inside the rear section of the left console			X

## Adjustment of hydraulic flow

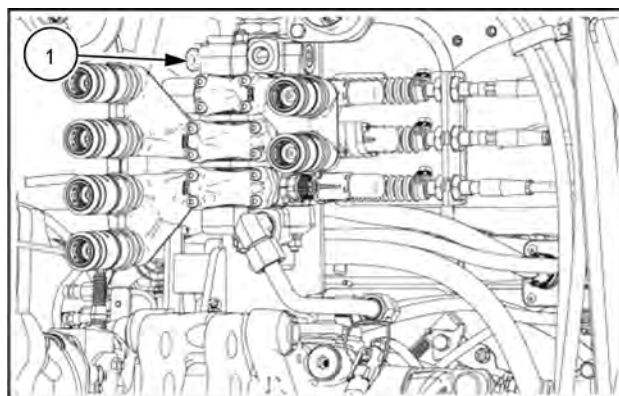
On request it is possible to equip the tractor with a distributor containing the flow regulator (1), whether starting from a configuration with two distributors or with three distributors.

**NOTE:** Only available with 80 L pump.

In the case of a starting configuration with two distributors, there will be a third distributor with flow regulator.

In the case of starting configuration with three distributors, the third distributor will be replaced with the one containing the flow regulator.

**NOTE:** for installation, contact your local dealer.



MOIL24TR00702AB 1

The flow regulator allows you to constantly and automatically limit the flow of oil available in the third distributor. Any excess flow is available to the distributors below or to the lift.

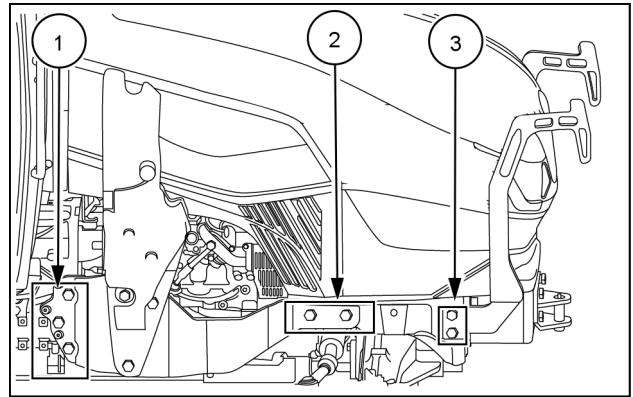
## Front-end loader fixation points

The tractor may be equipped on request with a connection for a front loader composed of:

1. Support for loader coupling.
2. Seven-pin power socket.
3. Quick coupler for hydraulic connections.

**NOTE:** Contact an authorised dealer to have the tightness of the screws at **(1)**, **(2)** and **(3)** checked.

**NOTE:** The tightening torque of the screws must be:  
**520 +/- 30 N·m** at points **(1)** and **(2)**,  
**440 +/- 40 N·m** at points **(3)**.



MOIL24TR00551AA 1

The front loader is controlled by a joystick.

**NOTE:** for installation of the front loader and its operation, refer to the manual supplied with the loader.

**NOTICE:** when using a front loader , it is necessary to remove the front ballast.



**NOTE:** *Telematics module Declaration of Conformity (Directive 2014/53/EU).*

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