MECALAC

Serie AS / AF / AT / AS tele

Serie AS / AF / AT / AS tele

Service manual
Status: 14.10.2015

Product	Serie AS / AF / AT / AS tele
FIN	Chassis number AS700 T3A: as from Chassis number W09S70001BBA08778 Chassis number AS700 T3B: as from Chassis number W09S70101FBA08810 Chassis number AS900 T3A: as from Chassis number W09S90001BBA08778 Chassis number AS900 T3B: as from Chassis number W09S90101FBA08810 Chassis number AF1050 T3A: as from Chassis number W09F10501ABA08779 Chassis number AF1050 T3B: as from Chassis number - no details at present Chassis number AF1200 T3A: as from Chassis number W09F12001ABA08779 Chassis number AF1200 T3B: as from Chassis number - no details at present Chassis number AT900 T3A: as from Chassis number W09FT0901DBA08799 Chassis number AT900 T3B: as from Chassis number - no details at present Chassis number AT1050 T3A: as from Chassis number W09FT1001DBA08799 Chassis number AT1050 T3B: as from Chassis number - no details at present Chassis number AS900tele T3A: as from Chassis number W09ST0801CBA08792 Chassis number AS900tele T3B: as from Chassis number W09ST0901CBA08808
Publisher	MECALAC Baumaschinen GmbH Am Friedrichsbrunnen 2 D-24782 Büdelsdorf Tel: +49 (0)4331 351 325 Fax: +49 (0)4331 351 491 E-Mail: info@mecalac.com www: www.mecalac.com
Foreword	This operating manual contains all the information and instructions required for the correct execution of service tasks required for the wheel loader. Read this service manual before commencing the tasks and always keep it to hand for reference.
Validity	This Service manual applies only in conjunction with the operating manual, to the Serie AS / AF / AT / AS tele.
Suggestions and comments	...regarding this documentation or the wheel loader can be sent to the above-mentioned address.

Most recent amendment 14.10.2015

Contents

1 Notes for the Reader

In this chapter you will find information regarding the use of the Service manual:

- Validity (Page 6)
- Illustrations (Page 6)
- Accentuated text (Page 6)

1.1 Validity

This service manual contains information and rules of conduct for service work on the Serie AS / AF / AT / AS tele. Read this service manual carefully before the first service. Always use the service manual when performing service tasks. Store the service manual at a central point and to hand for the responsible technical personnel. In accordance with current usage in the industry, the term wheel loader is used in this service manual.

This Service manual applies, in conjunction with the operating manual, to the respective wheel loader of the Serie AS / AF / AT / AS tele.

This service manual applies to technical personnel.

1.2 Illustrations

The illustrations in this service manual show the wheel loader in partially simplified form.

1.3 Accentuated text

In this service manual, important information is highlighted by symbols or special formatting. The following examples illustrate the most important types of highlighting.

1.3.1 Pictograms

Pictograms used

Pictogram	Meaning
	Further useful information.
	Conditions that must be fulfilled in order to perform an action
	Tools or material required in order to perform an action.

1.3.2 Safety Note

Safety instruction: Special note for an informatory section

Explanation of the note.

- The dot identifies measures that relate to the note.

1.3.3 Safety instructions

Safety Instruction

To ensure the safe implementation, ensure compliance with the following steps:

1. First step of a safety instruction
   ! Important note regarding a safety instruction
2. Second step of a safety instruction.
   ↪ The result of this step.

✓ The safety instruction is complete, the goal of the of a safety instruction has been achieved.

1.3.4 Warning notes

DANGER

Warning of injuries leading to fatality
Failure to observe the safety instruction will result in serious damage to health, including death.
➔ The arrow identifies a precautionary measure you have to take to avoid the hazard.

WARNING

Warning: Serious Injuries.
Failure to observe the warning can cause serious damage to health, or even death.
➔ The arrow identifies a precautionary measure you have to take to avoid the hazard.

CAUTION

Warning: Injuries.
Failure to observe the warning can result in serious damage to health.
➔ The arrow identifies a precautionary measure you have to take to avoid the hazard.

NOTICE

Warning: Damage to property.
Ignoring the warning instructions can result in serious damage to the wheel loader or in its surroundings
➔ The arrow identifies a precautionary measure you have to take to avoid the hazard.

1.3.5 Guideline

Carry out the following steps: = Start of a set of instructions.

1. First step in a sequence of operations.
   `Required settings . . . . . Setting values`
2. Second step in a sequence of operations.

➥ The result of this step.

✓ The operation is complete, the goal has been achieved.

2 Description

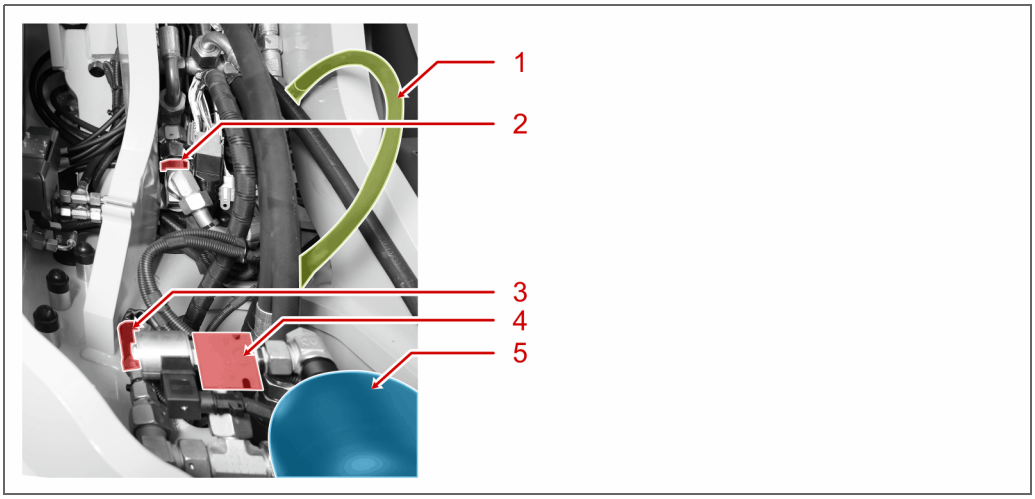
In this chapter you will find additional information regarding the parts of the wheel loader that are not described in the operating manual.

- Front section - overview (Page 9)
- Cab - interior (Page 10)
- Diagnostic unit (Page 15)

2.1 Front section - overview

The bucket arm and the valves required for the control of the hydraulic cylinders are located on the front section. The valves are controlled hydraulically or electrically. Due to the mechanical design of the wheel loader, the supply and control lines are subjected to high mechanical loading. Care must be taken that the lines are always fixed to the front and rear sections of the vehicle. The lines must be able to move freely without touching other components between the attachment points.

All valves and hydraulic hoses must be checked for leaks at regular intervals, see "Checking the hydraulic hoses" (Page 30).



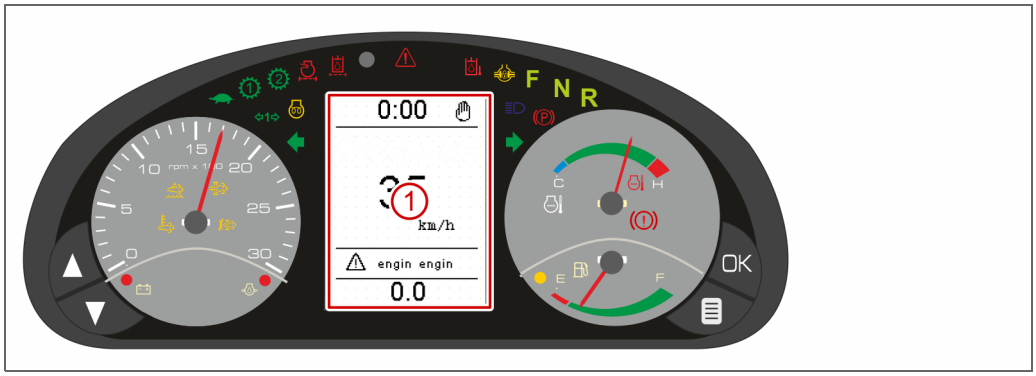
Overview - Front section | Hydraulic hoses and valves

Key

No.	Designation	Function
1	Hydraulic hose	See Chapter "Hydraulic hoses" (Page 29).
2	Solenoid valve	Serves to control the lifting unit suspension.
3	Switch	Tests the pressure of the nitrogen accumulator. The solenoid valve is shut in the event of over-pressure.
4	Bottom end of lifting cylinder	Responsible for the control of the lifting unit suspension.
5	Nitrogen accumulator	Provides suspension for the hydraulic system.

2.2 Cab - interior

2.2.1 Multi-function panel



Multi-function panel

Key

No.	Designation	Function
1	Display	See Chapter "Display" (Page 10).

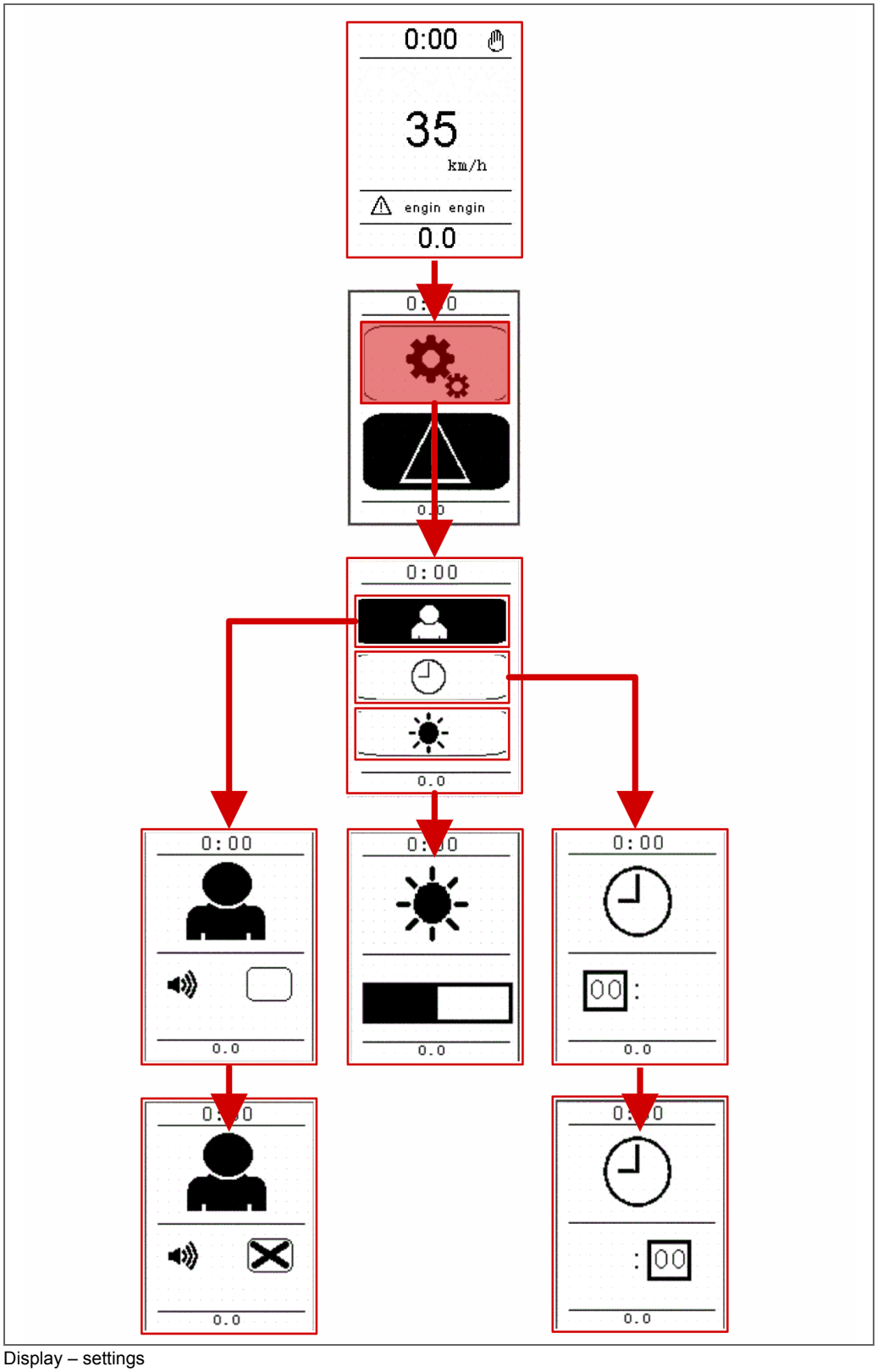
2.2.2 Display

2.2.2.1 Overview

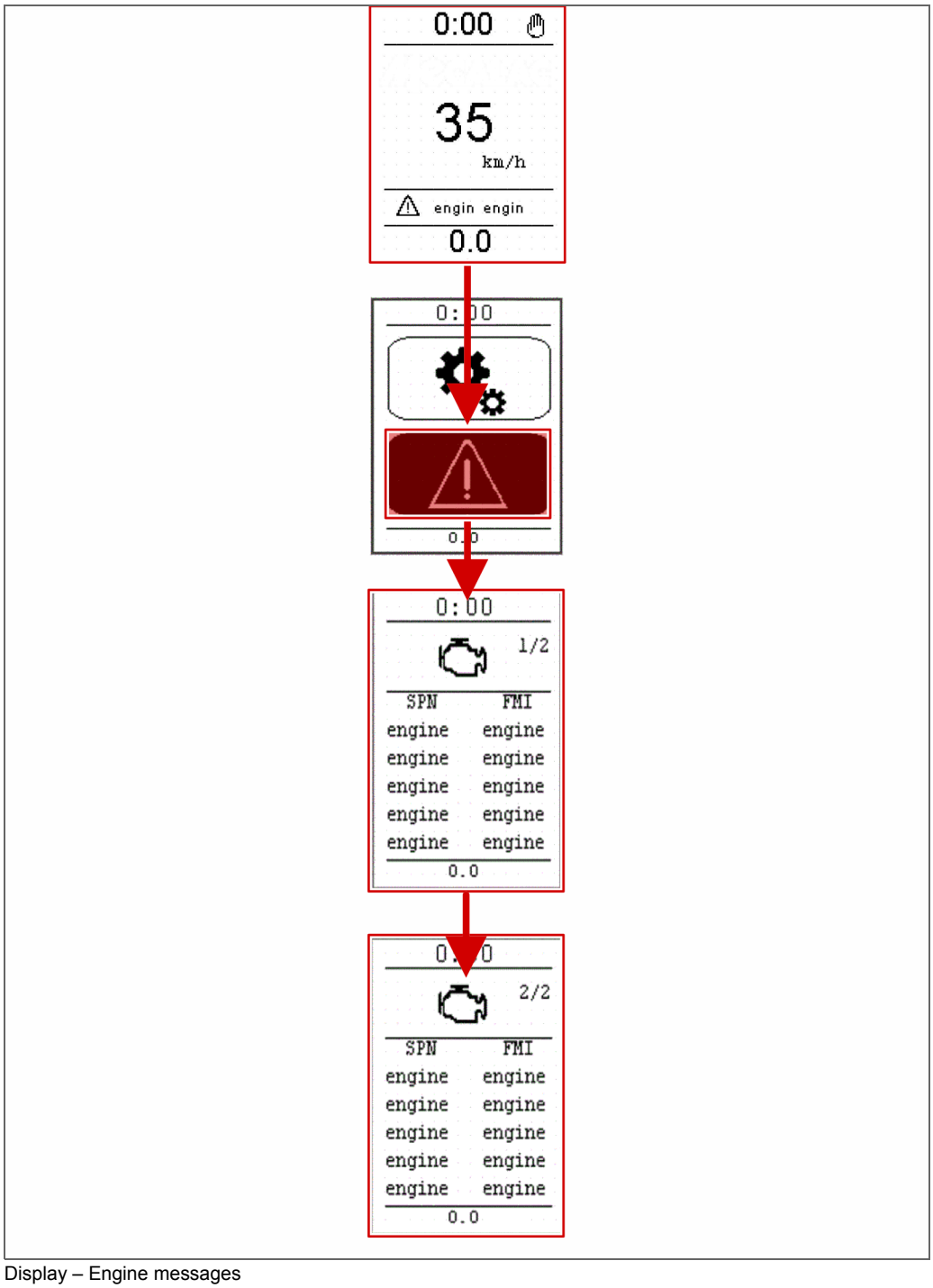
The functioning of the display has been enhanced. In the new component, CAN bus messages are displayed in addition to the familiar operating parameters. As a rule, these are error messages from the vehicle control system. The actual meaning of the error messages is described in Chapter "Error messages" (Page 16) . An error message appears in the display for only as long as the cause remains active.

2.2.2.2 Settings in the display

The following flowchart shows how the various display modes and settings are implemented directly in the component. The operation of the display is described in the operating manual.



Display – settings

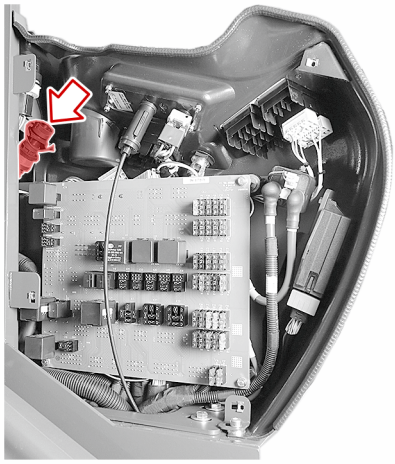


Display – Engine messages

2.2.3 Central electrical system

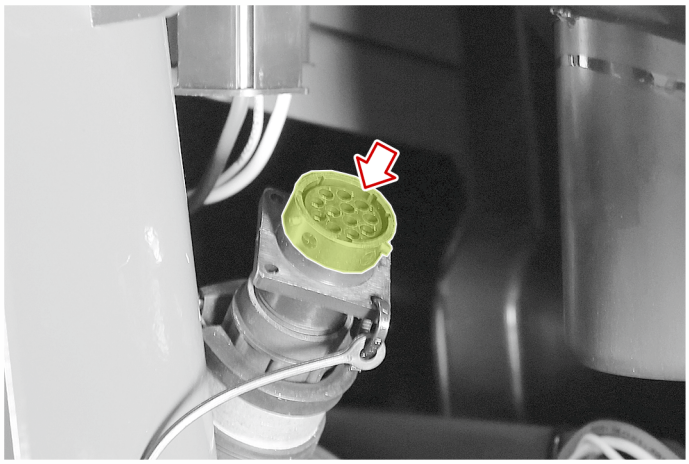
With the implementation of the required emission directives of the Tier standard, a new generation of vehicle control system has been introduced in this product segment. Electronic control of the power unit that is taken for granted in today's automotive industry in order to achieve the required emission values, has been enhanced in this stage of development to include electronic control of the hydraulic movement function. Furthermore, communication of the control signals has been optimised by the implementation of a CAN bus system between the control units in the vehicle.

2.2.3.1 Diagnosis interface - engine control system



Location - diagnosis interface - engine control system

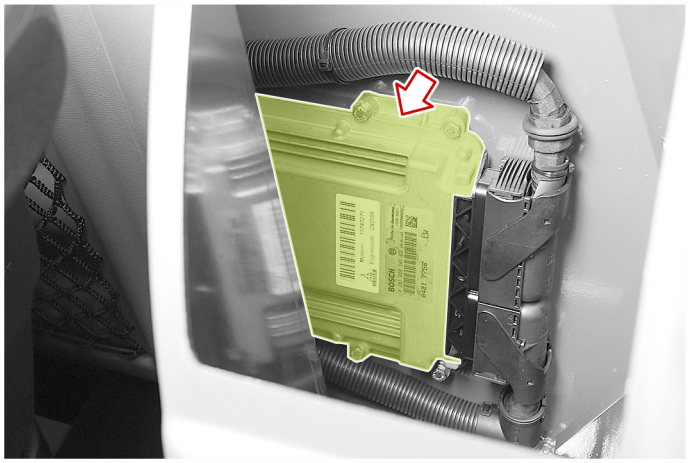
The diagnostic unit is connected to the engine control system diagnosis interface. Further information regarding the diagnostic unit can be found in Section: Diagnostic unit (Page 15).



Diagnosis interface - engine control system

2.2.3.2 Location of the control unit

The control unit is located below the glove box on the left-hand side of the wheel loader. The interior of the glove box must be removed in order to gain access to the control unit.



Location of the control systems

2.3 Diagnostic unit

2.3.1 Overview

The diagnostic unit serves as a reader to read and display engine and vehicle data from the CANbus system. In addition, stored error messages can be read and reset. The list of the error messages are to be found in Section Error messages (Page 16).

Active errors are displayed in the display. In addition, this error is stored in the main memory of the controller. The error memory is read and analysed within the framework of the recurring service.

Once the error has been processed, the error memory is deleted (reset).

The engine control system diagnosis interface allows various diagnostic units to be used.

Diagnostic unit

2.3.2 Error messages

The messages from the controller are shown on the display. By using this information and a standard multimeter, the causes of the error can be identified and the function of the electrical components can be checked with on-board resources.

Errors from the engine control system are based on the mandatory SAE j1939 protocol. This is used internationally by various manufacturers.

The list of all messages from the "U05" engine controller are to be found in the annex of this service manual (See page 117: Annex).

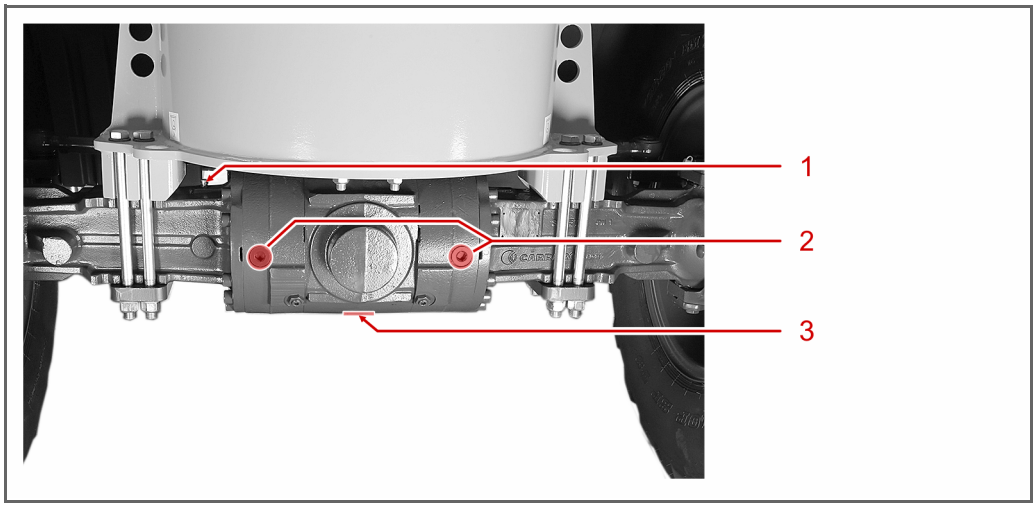
3 Service tasks

In this chapter you will find information regarding service tasks for technical personnel:

- Checks (Page 17)
- Repair work (Page 36)
- Changing the consumables (Page 81)
- Lubrication (Page 108)

3.1 Checks

3.1.1 Checking the front axle oil level



Location of the bolts on the front axle

Key

No.	Designation
1	Axle vent valve
2	Inspection and filler plug
3	Drain plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.
- The bucket arm is raised.
- The bucket arm support is installed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil, if necessary

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

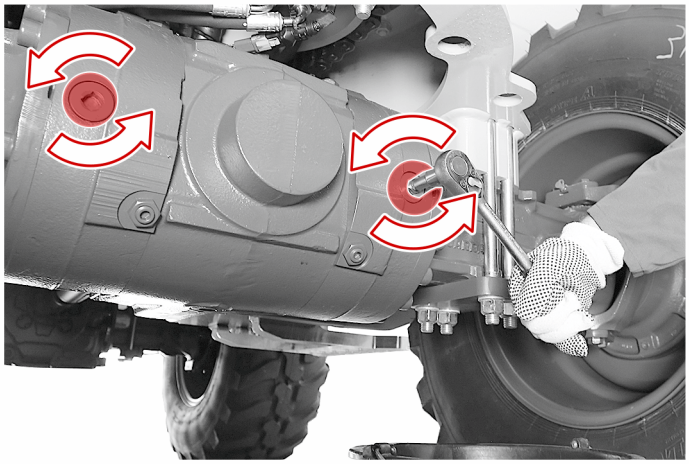
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

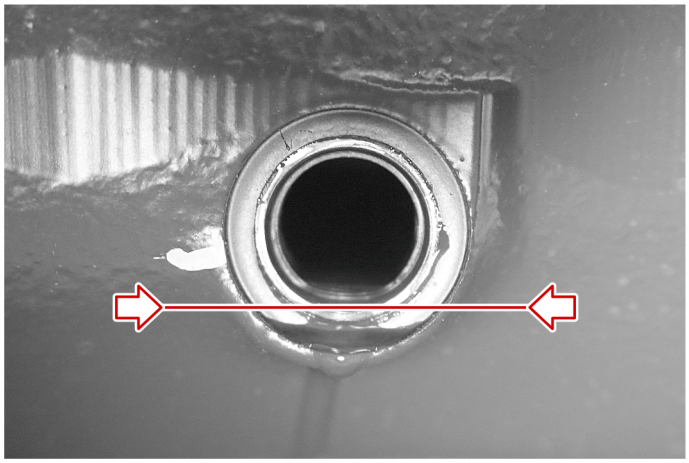
1. Place an oil drip tray beneath the front axle.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a ratchet and extension, unscrew both inspection and filler plugs.



3. Catch any escaping gearbox oil in the oil drip tray immediately.
4. Check the oil level of the front axle.

   ! The oil level must reach precisely below the lower edge of the inspection port .



5. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .
6. Using a ratchet and extension, tighten the inspection and filler plugs.
7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.2 Checking the rear axle oil level

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Wrench SW 17
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil, if necessary

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

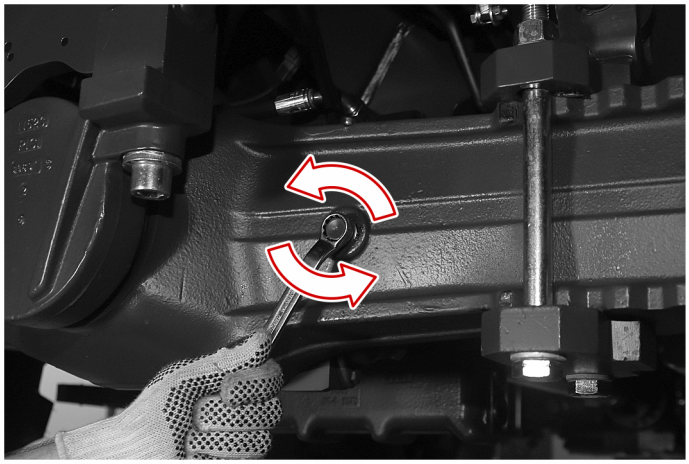
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

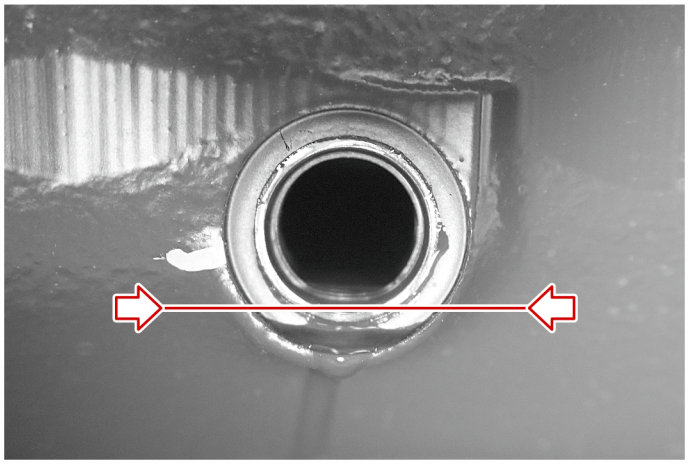
1. Place an oil drip tray beneath the rear axle.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a square socket wrench unscrew the inspection and oil filler plug.



3. Catch any escaping gearbox oil in the oil drip tray immediately.
4. Check the oil level of the rear axle.

   ! The oil level must reach precisely below the lower edge of the inspection port .



5. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .
6. Using a square socket wrench tighten inspection and oil filler plug.
7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.3 Checking the planetary gear oil level

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil, if necessary

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

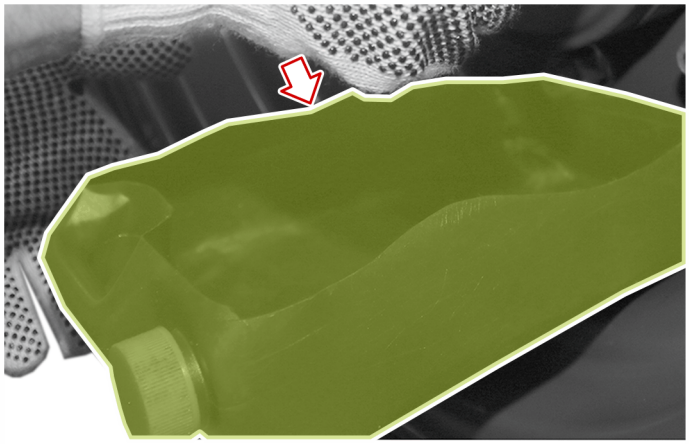
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Move the wheel loader so that the `Oil Level` fill level line of the planetary gear is horizontal.

2. Place an oil drip tray in the tyre rim.



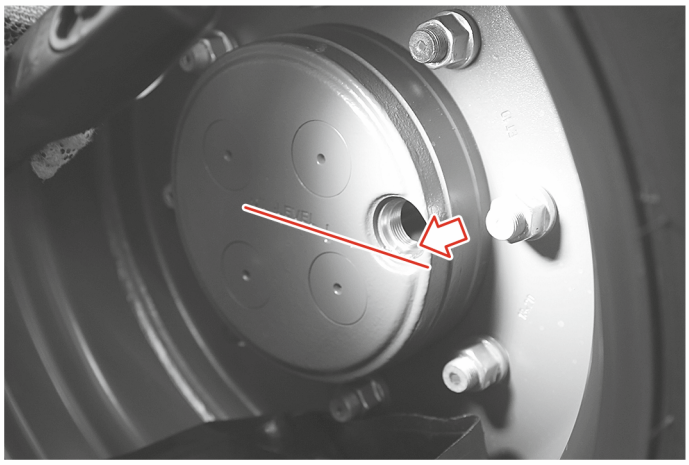
➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

3. Using a ratchet and extension, tighten the inspection and filler plugs.

4. Catch any escaping gearbox oil in the oil drip tray immediately.

5. Check the oil level of the planetary gear.

   ! The oil level must reach precisely below the lower edge of the inspection port .



6. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .

7. Using a ratchet and extension, tighten the inspection and filler plug.

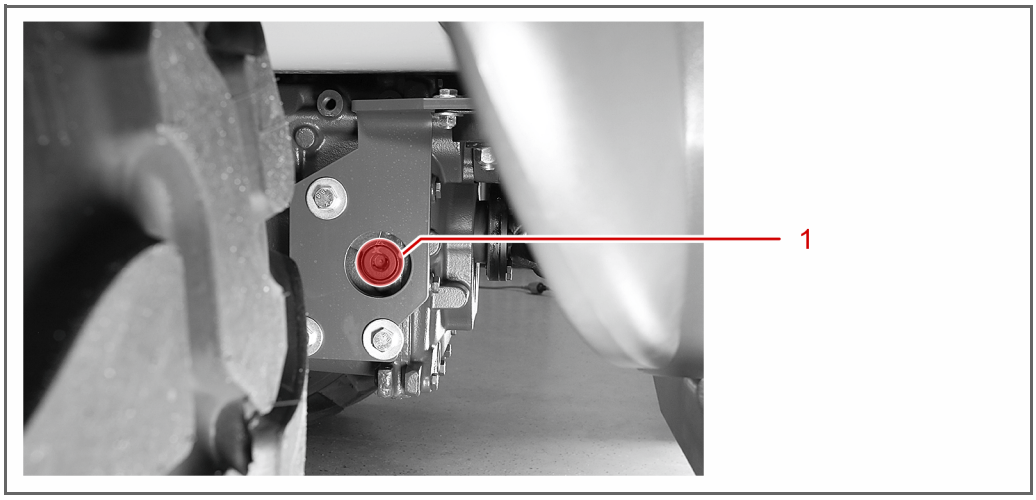
8. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.4 Checking the transfer case oil level

There are fast and slow runners - each with different transfer cases.

3.1.4.1 Checking the oil level of the fast runner transfer case



Location of the bolts on the transfer case

Key

No.	Designation
1	Inspection and filler plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil, if necessary

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

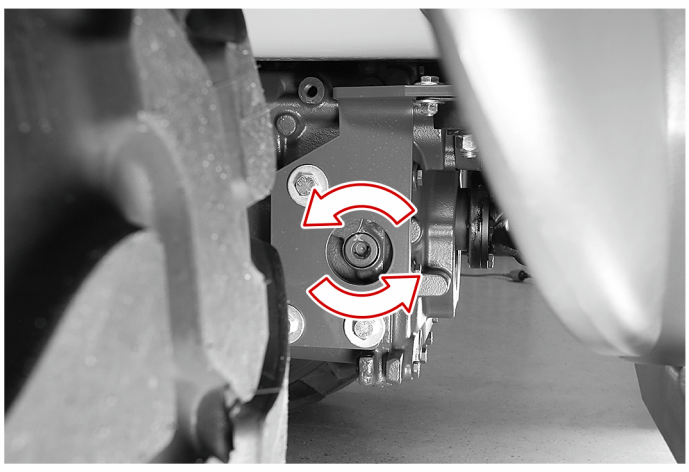
Environmental hazard posed by gearbox oil!

The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the transfer case.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.
2. Using a ratchet and extension, unscrew the inspection and filler plugs.

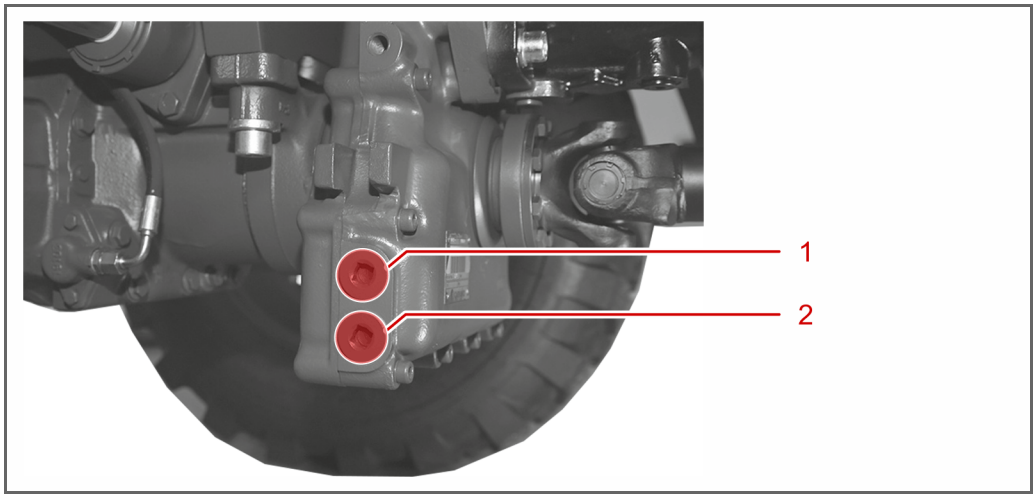


3. Catch any escaping gearbox oil in the oil drip tray immediately.
4. Check the oil level of the transfer case.

   ! The oil level must reach precisely below the lower edge of the inspection port .
5. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .
6. Using a ratchet and extension, tighten the inspection and filler plug.
7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.4.2 Checking the oil level of the slow runner transfer case



Location of the bolts on the transfer case

Key

No.	Designation
1	Inspection and filler plug
2	Drain plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil, if necessary

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

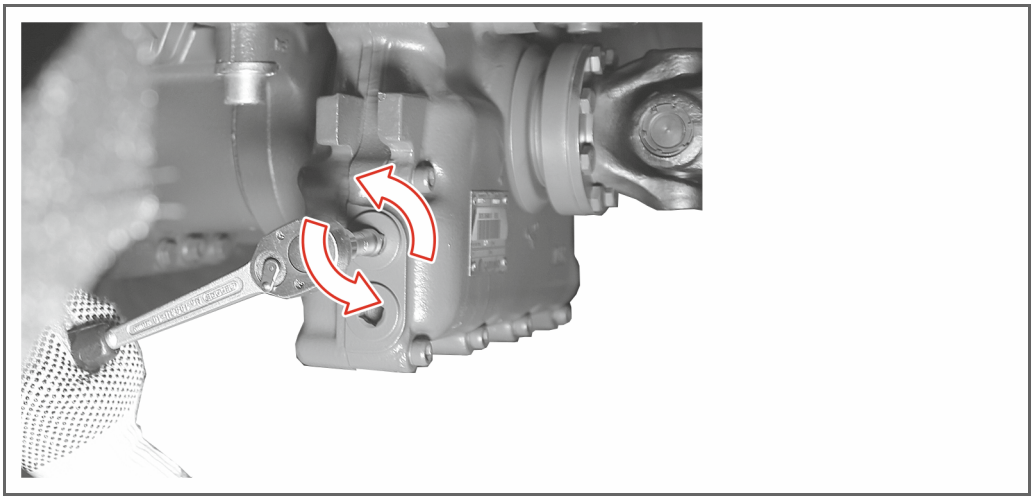
Environmental hazard posed by gearbox oil!

The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the transfer case.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.
2. Using a ratchet and extension, unscrew the inspection and filler plugs.



3. Catch any escaping gearbox oil in the oil drip tray immediately.
4. Check the oil level of the transfer case.
   ! The oil level must reach precisely below the lower edge of the inspection port .
5. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .
6. Using a ratchet and extension, tighten the inspection and filler plug.
7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.5 Checking the electrical functions and connections

Carry out the following steps:

1. Test all electrical functions
2. Check that the electrical plugs and sockets are securely seated.
   ➥ Fuses
   ➥ Relays
3. Perform a visual inspection of the cable harnesses.
   ! Check that they are seated securely.
4. Measure the battery voltage.
5. Measure and check the functioning of the alternator.
6. Check that the main battery switch functions correctly.
7. Check that the body is electrically isolated.

✓ Done.

3.1.6 Hydraulic hoses

3.1.6.1 Requirements for the hydraulic hoses

Hydraulic lines must be checked within the framework of the service intervals. Take note of the detailed instructions of the national regulations (Germany BGR 237).

A recommendation as to the replacement intervals has been compiled on the basis of DIN 20066.

Depending on the demands made on the hoses, the specified replacement intervals can be extended. The replacement interval remains the responsibility of the operator.

Description of the replacement intervals of the hydraulic hoses

Demands on the hydraulic hose	Recommended replacement interval
Normal use	6 years (operating life, including a maximum of 2 years' storage)
Enhanced demands: • Increased time in use; for example multi-shift operation or brief cycle times of the machine or pressure impulses • Severe external and internal influences (via the medium) that markedly reduce the period of use of the hydraulic hose. • manually-operated hydraulic tools, for example portable shears in scrap yards.	2 years (operating life)

3.1.6.2 Checking the hydraulic hoses

Carry out the following steps:

1. Check all hydraulic hoses for leaks and mechanical damage.

   ! Detailed instructions are to be found in the national regulations (Germany:BGR 237).

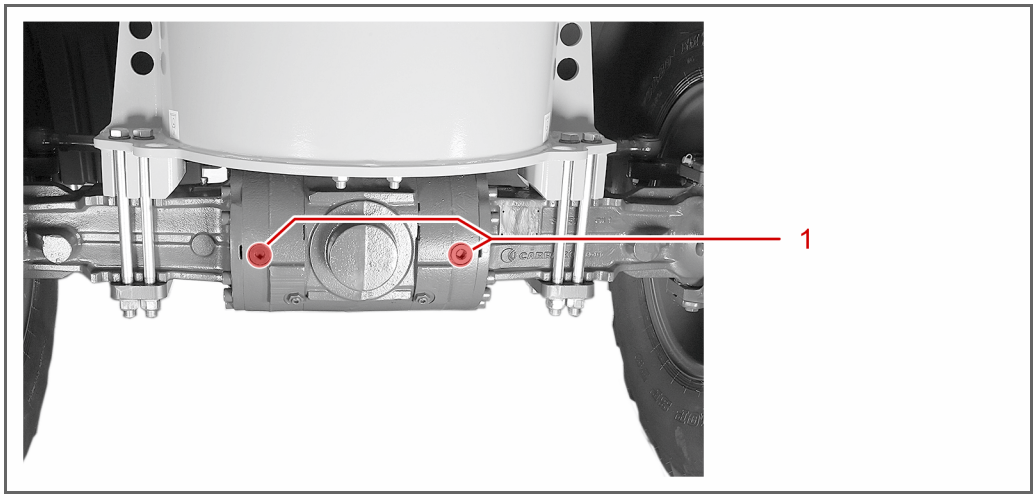
2. Exchange damaged hydraulic hoses immediately.

✓ Done.

Info

The recommended replacement intervals for the hydraulic hoses to be found in Chapter: “Service tasks“ > “Hydraulic hoses“ (Page 29).

3.1.7 Disc brakes - checking the pad thickness



Location of the bolts on the front axle

Key

No.	Designation
1	Front axle inspection and filler plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.
- The bucket arm is raised.
- The bucket arm support is installed.

Tools required:

- Feeler gauge or test-pin with a check gauge of 4,08mm
- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

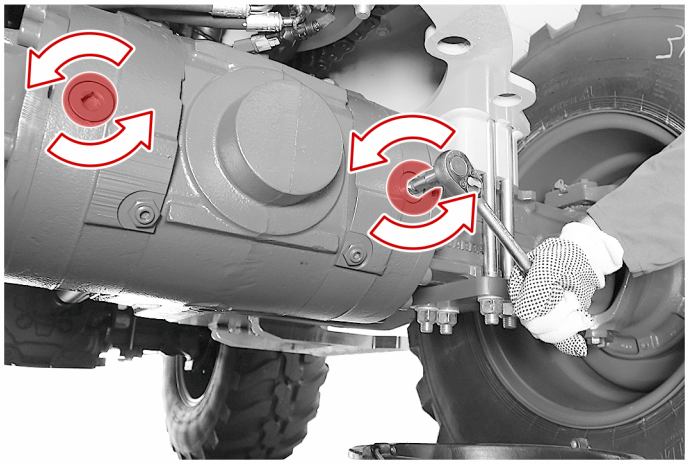
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

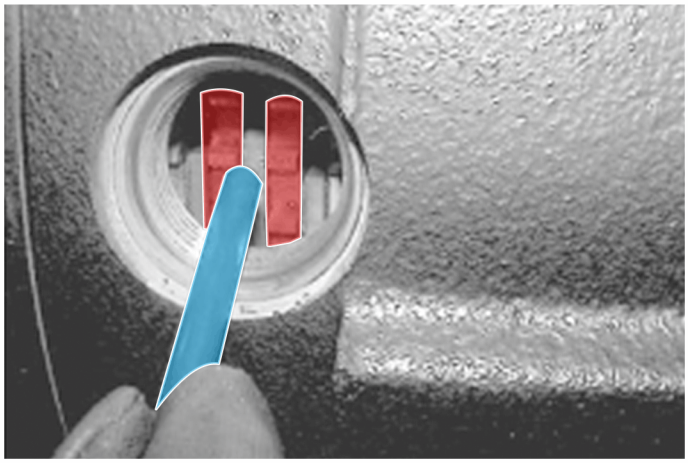
Carry out the following steps:

1. Place an oil drip tray beneath the front axle.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a ratchet and extension, unscrew the inspection and filler plugs.



3. Catch any escaping gearbox oil in the oil drip tray immediately.
4. Using a feeler gauge or test-pin (check gauge 4,08mm). check the distance between the two thrust plates at both inspection ports.



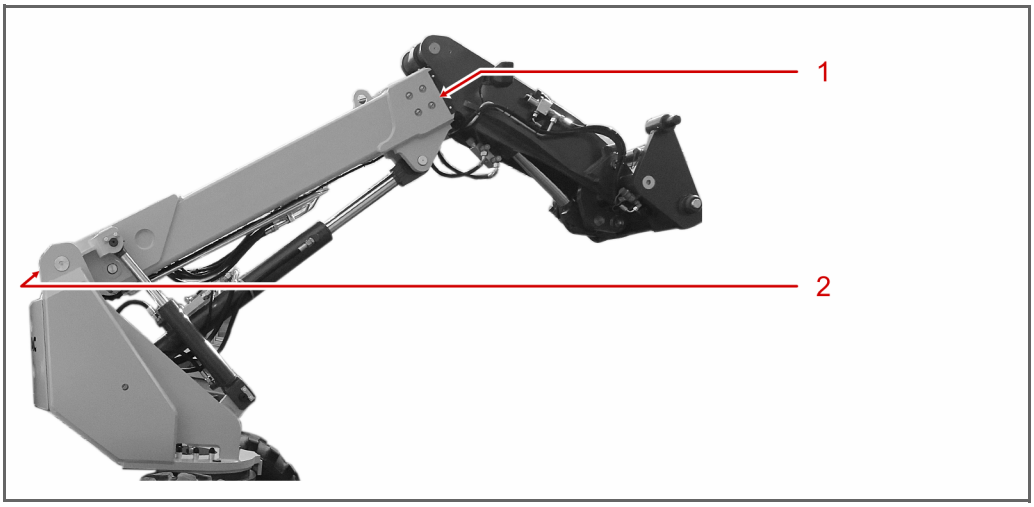
➥ If the feeler gauge or test-pin cannot be slid between the two thrust plates, the brake pad linings have been worn down too far and must be exchanged (see workshop manual).

5. If required, top up with fresh gearbox oil up to the lower edge of the inspection port .
6. Using a ratchet and extension, tighten the inspection and filler plugs.
7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

✓ Done.

3.1.8 Inspecting the wearing rails

The wearing rails are only installed on a telescopic loader. The wearing rails may not be worn down so far that the lug bolts rub on the boom. The state of wear must therefore be checked regularly. There are two wearing rails on each side of the boom.



Location of the wearing rails

Key

No.	Designation
1	Wearing rails - rear
2	Wearing rails - front

Requirement

- The wheel loader is standing on a horizontal surface.
- The parking brake is applied.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Protective gloves
- suitable feeler gauge

CAUTION

Hazard of injuries to limbs by crushing and cutting!

You can be cut and crushed when performing maintenance work on the telescopic arm!

➔ Always wear protective gloves!
➔ Always work carefully!

WARNING

Health risk posed by graphite grease!

Graphite grease is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with graphite grease.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by graphite grease!

The graphite grease used for the wheel loader is hazardous to the environment!

➔ Catch the draining graphite grease in a suitable container.
➔ Prevent the graphite grease from entering the soil.

Carry out the following steps:

➔ Inspect all 16 wearing rails on the telescopic arm for adequate strength.

✓ The wearing rails have been inspected.

3.2 Repair work

3.2.1 Changing a wheel

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The direction of travel toggle switch must be in the neutral position.
- The ignition key has been removed.

Tools required:

- Two persons
- One jack suitable for the mass of the wheel loader
- A suitable base for the jack
- Safety block
- Protective gloves
- Wheel-brace
- A torque wrench
- A new wheel

Dismount the wheel

CAUTION

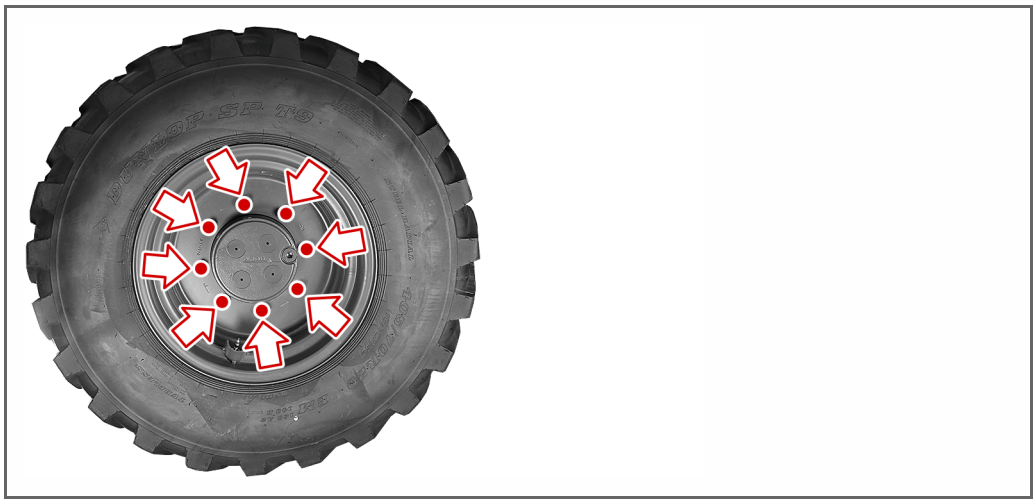
Hazard of crush injuries to limbs!

The tyre of the wheel loader is large and heavy. You can be crushed if it tips over!

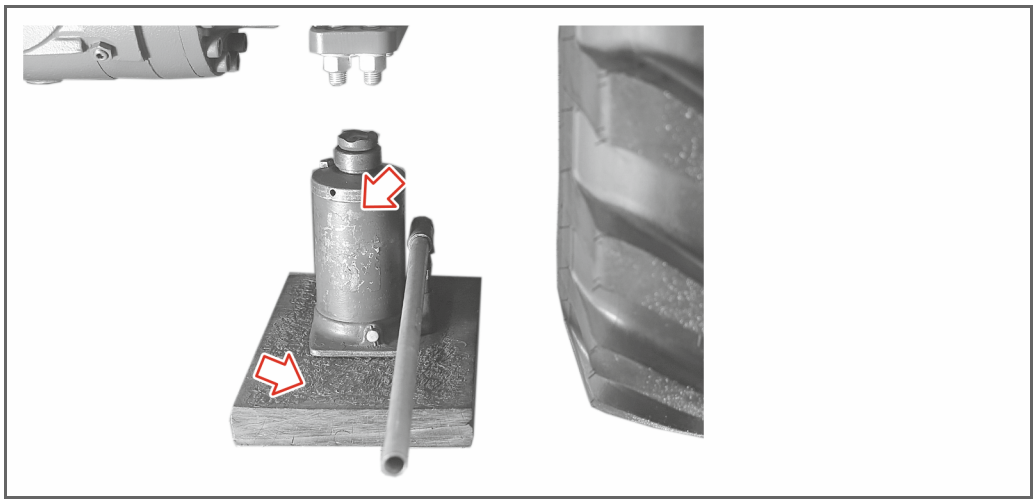
➔ Always wear protective gloves!
➔ Always wear safety shoes!
➔ Always work carefully!
➔ Always carry out a wheel change with two persons!

Carry out the following steps:

1. Using the wheel-brace loosen all eight wheel nuts by approximately half a turn.



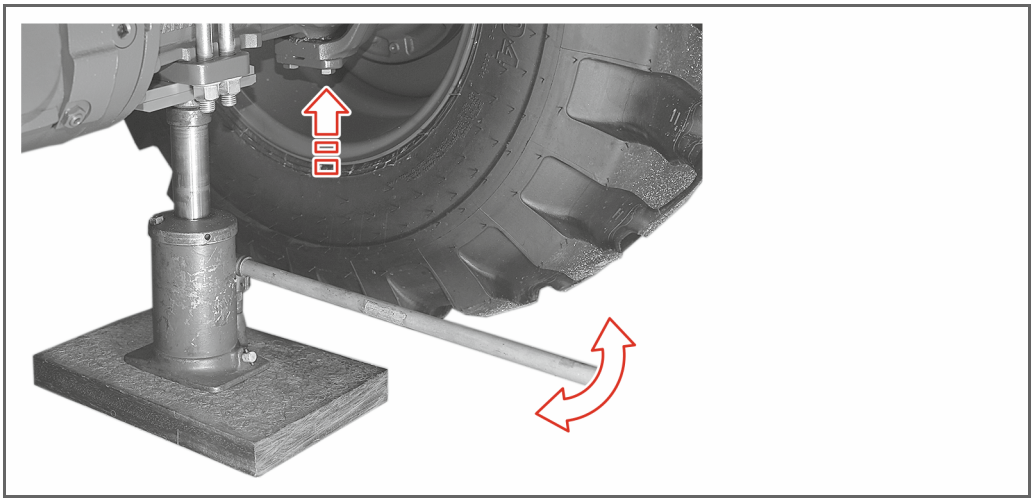
2. Position a suitable base beneath the jack below the jacking points of the axle of the wheel to be changed.



3. Place the safety blocks centrally on the upper end of the jack.

4. Using the jack lift up the wheel loader.

   ! The wheel must be lifted approximately one centimetre off the ground.



➥ The wheel has been lifted.

5. Using the wheel-brace remove all eight wheel nuts.

6. With two persons, carefully lift the wheel off the axle .

   The wheel has been dismounted.

Mounting the wheel.

Carry out the following steps:

1. With two persons, carefully lift the new wheel onto the axle .
2. Screw in the eight wheel nuts on the wheel loader.

   ! Only fasten the wheel nuts finger-tight.
3. Loosen the jack.
4. Remove the jack, the base and the safety blocks.

5. Tighten all eight wheel nuts to 500 Nm .

! For fastening, use a suitable torque wrench.

The wheel has been mounted.

✓ Done.

Info

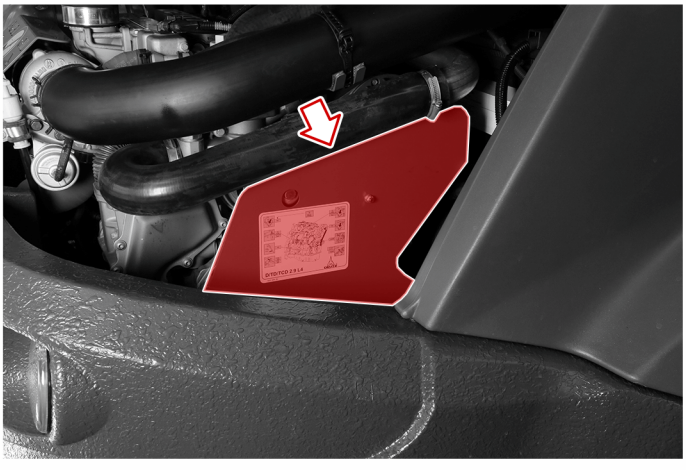
After approximately ten hours of operation, re-tighten the wheel nuts of the wheel that has been changed.

3.2.2 Changing the V-belt

There are various models that can be described as follows:

3.2.2.1 Changing V-belts - Deutz engine

The V-belts are located behind the V-belt guard plate



Location of the V-belt guard plate

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Protective gloves
- a new V-belt
- ratchet
- a short 1/2“ extension
- suitable mandrel

CAUTION

Hazard of injuries to limbs by crushing and cutting!

The interior of the engine compartment of the wheel loader is very cramped. You can be cut and crushed when performing maintenance tasks!

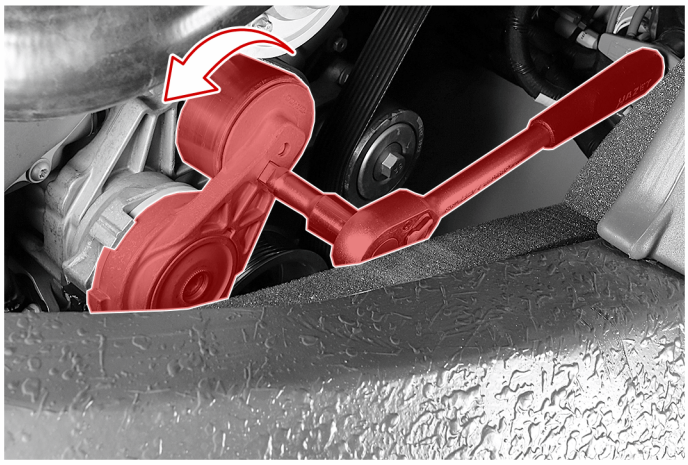
➔ Always wear protective gloves!
➔ Always work carefully!

Carry out the following steps:

1. Carefully pull the guard plate out of the four retaining points

➥ Place the guard plate in a suitable location.

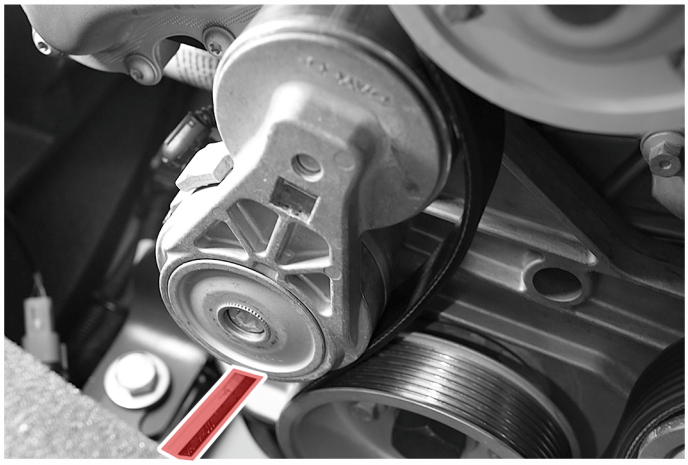
2. Turn the ‹TENSION PULLEY› of the ‹V-BELT› to one side with the aid of a ratchet and a short extension.



➥ The ‹V-BELT› is loosened.

3. Secure the ‹TENSION PULLEY› with a suitable mandrel.

   ! Slide the mandrel into the opening provided so that the ‹TENSION PULLEY› does not spring back

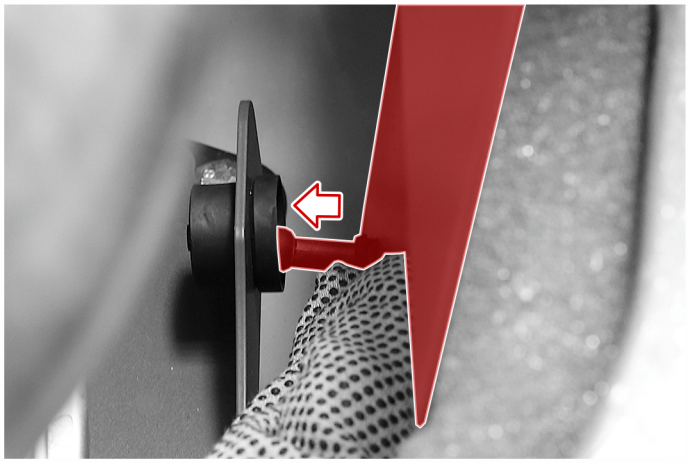


4. Remove the ‹V-BELT›.

5. Install the new ‹V-BELT›.

6. Carefully withdraw the mandrel.
   ➥ Carefully allow the ‹TENSION PULLEY› to swing back slowly.
   ➥ The ‹V-BELT› is tensioned.

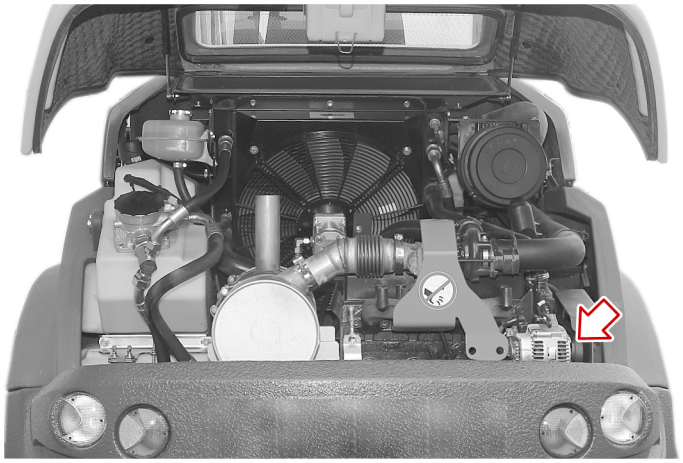
7. Press the guard plate into the four retaining points.



➥ The guard plate is secured.

✓ Done.

3.2.2.2 Changing V-belts - Cummins engine



Location of the v-belt

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Protective gloves
- A new V-belt
- Ratchet with extension with size 10 and 13 sockets.
- Size 13 and 17 Allen keys

Dismount the indicator

CAUTION

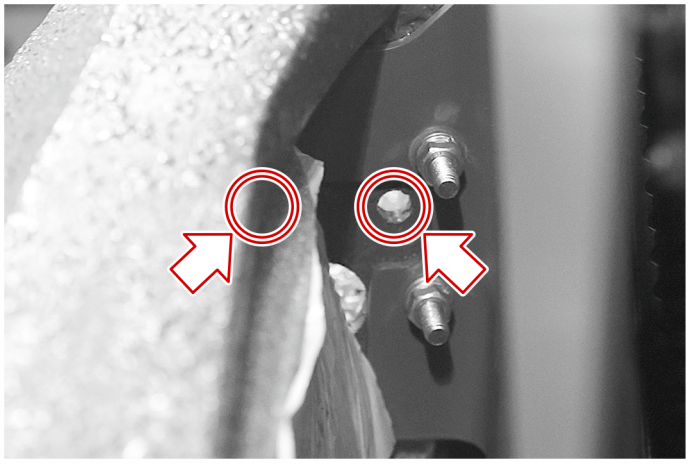
Hazard of injuries to limbs by crushing and cutting!

The interior of the engine compartment of the wheel loader is very cramped. You can be cut and crushed when performing maintenance tasks!

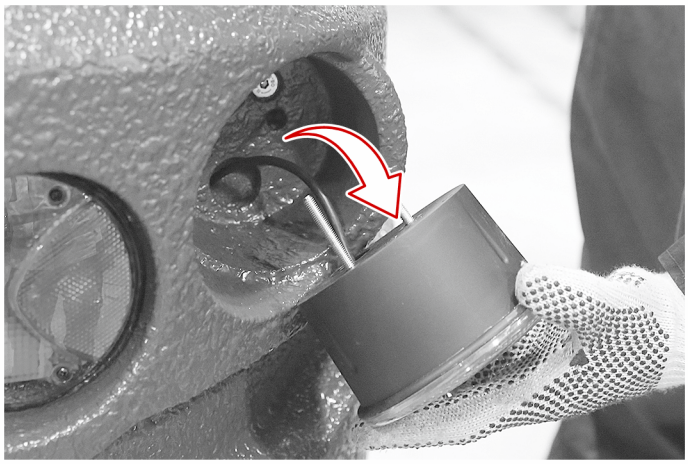
➔ Always wear protective gloves!
➔ Always work carefully!

Carry out the following steps:

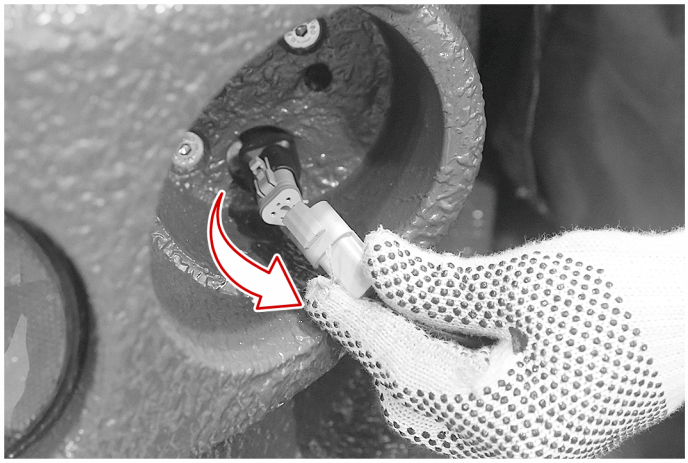
1. Using the ratchet loosen both mounting bolts for the ‹INDICATOR› in the interior of the engine compartment.



2. Carefully withdraw the **‹INDICATOR›** from the **‹CHASSIS›** .



3. Separate the electrical **‹PLUG CONNECTION›** of the **‹INDICATOR›**.

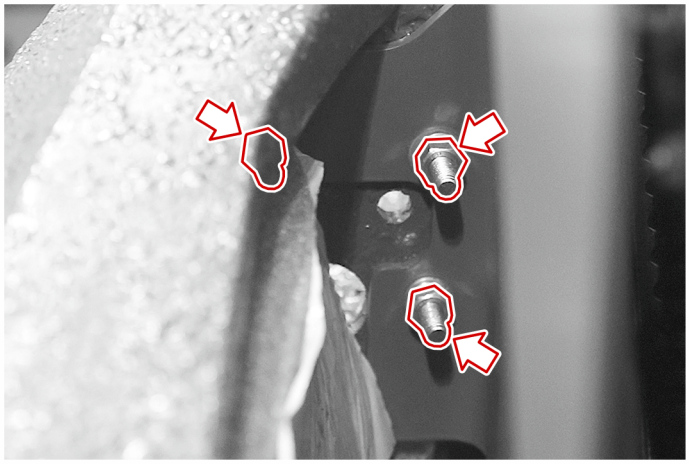


The indicator is dismounted.

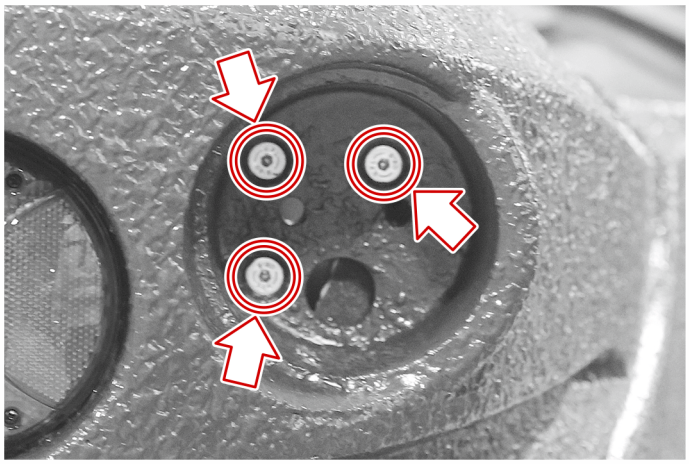
Removing the protective cover of the V-belt

Carry out the following steps:

1. Loosen the three mounting bolts of the protective cover of the V-belt.
➔ Using a ratchet, loosen the three mounting bolts of the protective cover.



➔ When loosening, counter the relevant bolts with the Allen key,



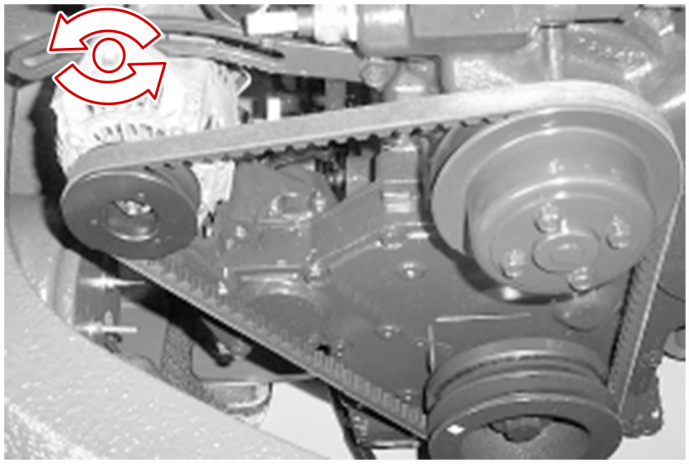
2. Remove the protective cover.

The protective cover is dismounted.

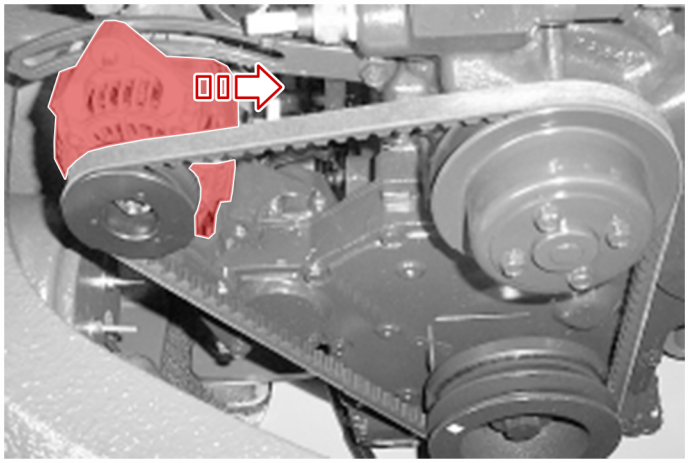
Change the V-belt

Carry out the following steps:

1. Loosen the set screws on the ‹TENSIONING DEVICE› of the ‹V-BELT›.



2. Push the ‹ALTERNATOR› in the direction of the ‹ENGINE›.

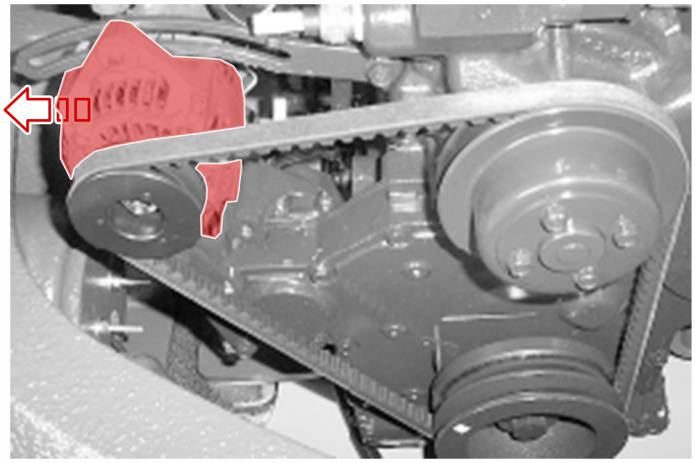


➥ The V-belt is loosened.

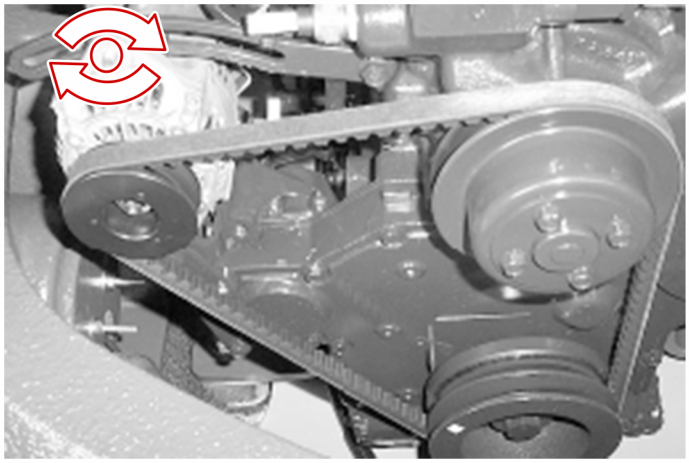
3. Remove the ‹V-BELT›.
4. Place the new ‹V-BELT› onto the ‹V-BELT PULLEYS› .

5. Tension the V-belt with the aid of the tensioning device.

! The sag of the longest straight length of the V-belt may, under light thumb-pressure, reach a maximum of **five** to **eight** millimetres.



6. Re-tighten the screw on the ‹**TENSIONING DEVICE**› of the ‹**V-BELTS**› .

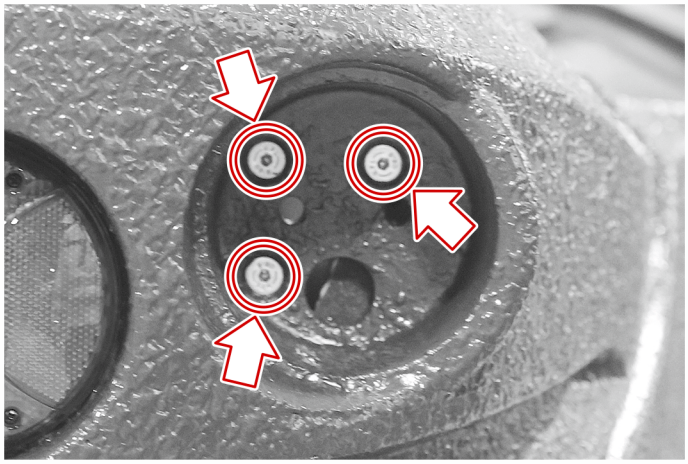


The V-belt has been exchanged.

Install the protective cover

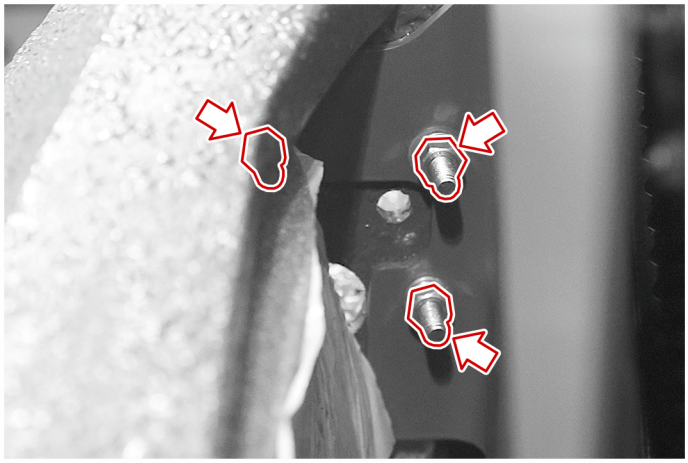
Carry out the following steps:

1. Insert the three mounting bolts of the protective cover from outside into the mounting holes.



2. Place the protective cover onto the three bolts.
3. Tighten the three bolts of the protective cover by using a ratchet.

   ! When tightening, counter the respective bolts with the Allen key,

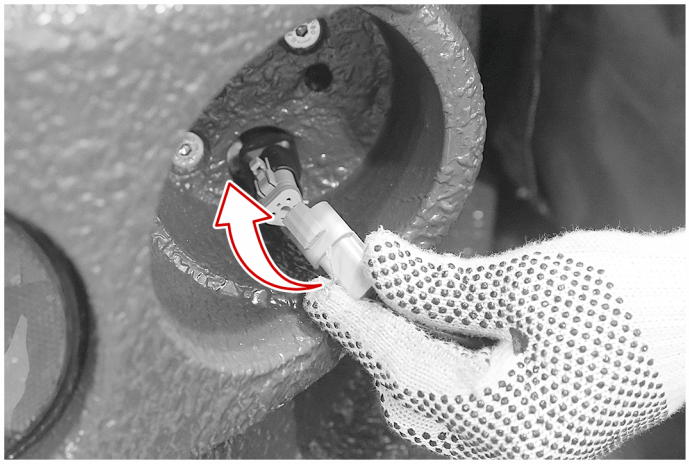


The protective cover has been installed.

Re-installing the indicator

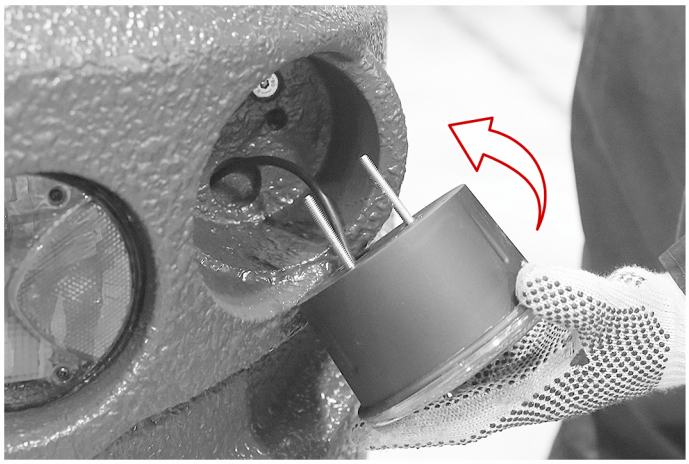
Carry out the following steps:

1. Reconnect the electrical plug connection of the ‹INDICATOR› to the wheel loader.

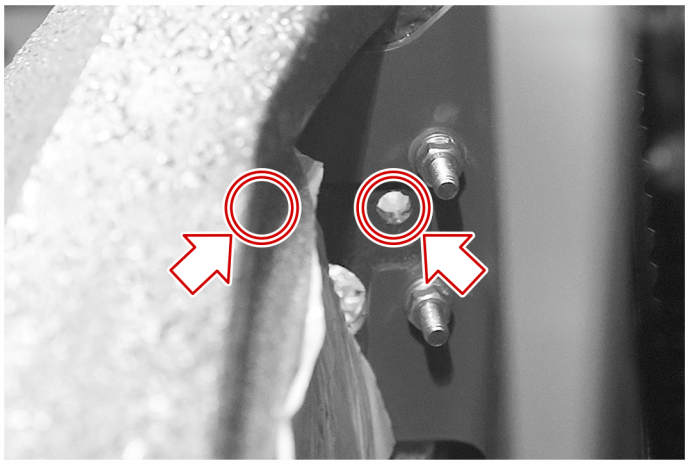


➥ The electrical supply to the indicator is reconnected.

2. Carefully insert the ‹INDICATOR› into the ‹CHASSIS›.



3. Using the ratchet tighten both mounting bolts for the indicator in the interior of the engine compartment.



The indicator has been re-installed.

✓ Done.

3.2.3 Changing the fuel pre-filter

There are various models that can be described as follows:

3.2.3.1 Changing the fuel pre-filter – Deutz engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Strap wrench
- Protective gloves
- A new fuel pre-filter

Changing the fuel pre-filter

WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

➔ Smoking is prohibited when working on the fuel filter of the wheel loader!
➔ Immediately clean up any diesel fuel that has spilled.

WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the diesel fuel.
➔ Always wear gloves when carrying out this job.

NOTICE

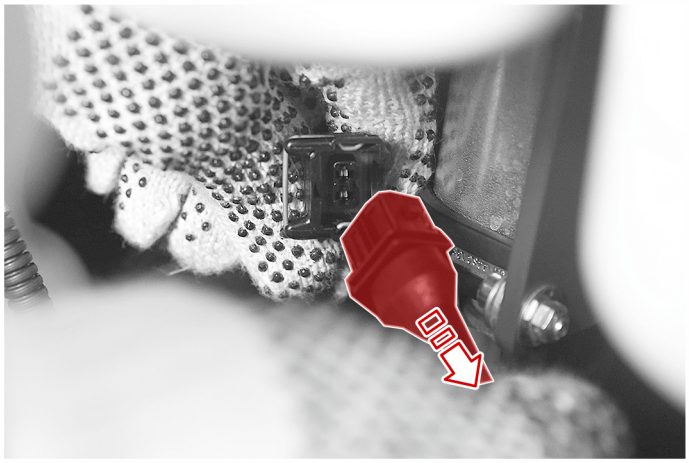
Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

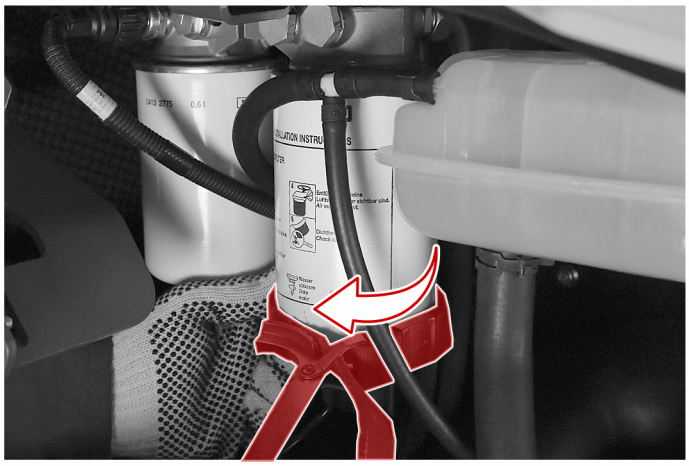
➔ Dispose of the diesel fuel according to the local statutory provisions,
➔ Catch the draining diesel fuel in a suitable container.
➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Carefully detach the connection cable for the ‹WATER LEVEL SENSOR› .



2. Place the strap of the strap wrench around the ‹FUEL PRE-FILTER›.
3. Loosen the ‹FUEL PRE-FILTER› with the aid of the strap wrench.



4. Carefully pull the ‹FUEL PRE-FILTER› from the mounting.

5. Unscrew the water separator valve from the ‹FUEL PRE-FILTER› .

6. Secure the ‹WATER SEPARATOR VALVE› onto the new ‹FUEL PRE-FILTER›.
7. Slide the ‹FUEL PRE-FILTER› back into the mounting.
8. Install the connection cable for the ‹WATER LEVEL SENSOR›.

The fuel pre-filter has been changed.

Bleeding the fuel system

Carry out the following steps:

1. Insert the ignition key of the wheel loader into the ignition lock.
2. Turn the ignition key clockwise to the **I**position.
   - ➥ The ignition system of the wheel loader is switched on.
   - ➥ The ‹FUEL SUPPLY PUMP› is switched on.
3. Wait 20 seconds.
4. Turn the ignition key clockwise to the **0**position.
   - ➥ The ignition system of the wheel loader is switched off.
5. Repeat steps ‹1 TO 4› twice.
   - ➥ The fuel system is bled piece by piece.
   - ➥ The fuel pressure required for operation is built up.

The fuel system has been bled.

✓ Done.

3.2.3.2 Changing the fuel pre-filter – Cummins engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Vice-grip pliers
- Screwdriver
- Compressed air pistol
- Protective gloves
- A new fuel pre-filter
- Cloths

Clean the fuel pre-filter in the banjo bolt

WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

➔ Smoking is prohibited when working on the fuel filter of the wheel loader!

➔ Immediately clean up any diesel fuel that has spilled.

WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the diesel fuel.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

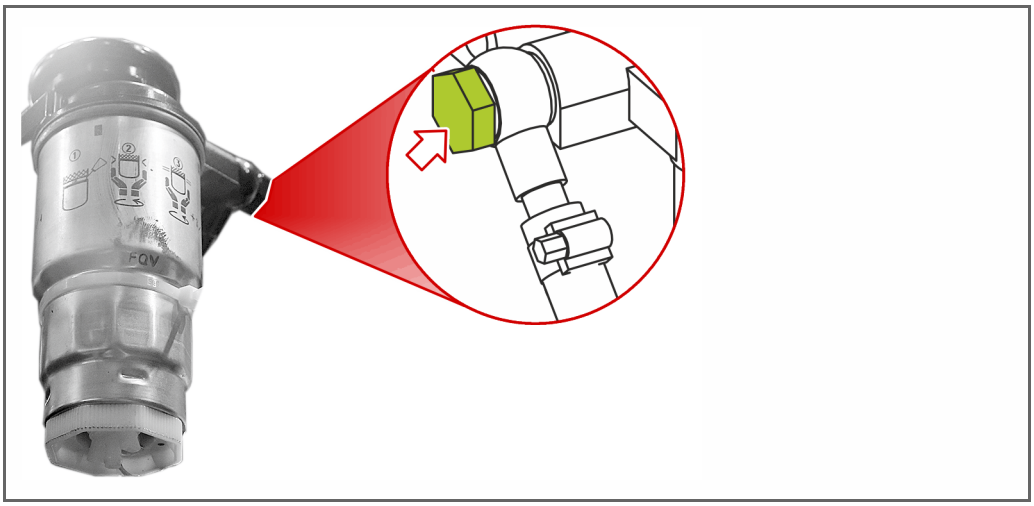
➔ Dispose of the diesel fuel according to the local statutory provisions,

➔ Catch the draining diesel fuel in a suitable container.

➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Carefully unscrew the banjo bolt from the ‹FUEL FILTER› .



2. Using a suitable screwdriver, unscrew the ‹FUEL PRE-FILTER› located in the ‹BANJO BOLT› .

3. Clean it using a ‹FUEL PRE-FILTER› compressed air pistol.
4. Using a suitable screwdriver, screw the cleaned ‹FUEL PRE-FILTER› into the ‹BANJO BOLT› .
5. Carefully screw the banjo bolt into the fuel filter .

   The fuel pre-filter in the banjo bolt has been replaced.

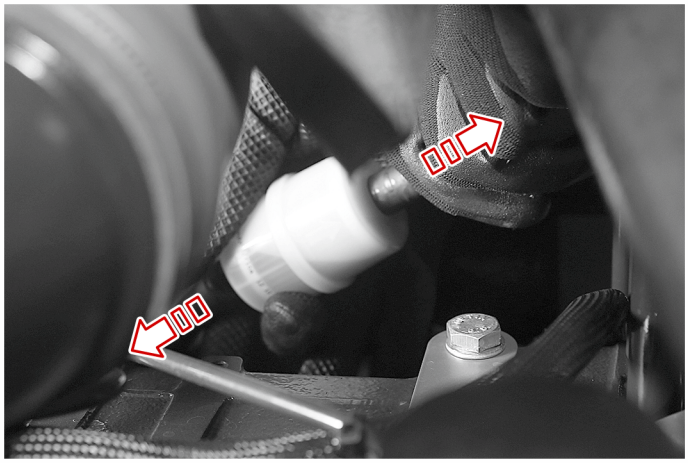
Removing the fuel pre-filter

Carry out the following steps:

1. Place a cloth beneath the ‹FUEL PRE-FILTER›
   ↪ The cloth prevents diesel fuel from entering the sub-soil and the interior of the engine compartment.
2. Using the vice-grip pliers squeeze the hose clamp of the ‹FUEL PRE-FILTER› open.
3. Using the vice-grip pliers push the opened hose clamp away from the FUEL PRE-FILTER

.

4. Repeat the last two steps for the other end of the ‹FUEL PRE-FILTER›.
5. Carefully pull the ‹FUEL PRE-FILTER› from both the hose ends.



The fuel pre-filter has been removed.

Installing the fuel pre-filter

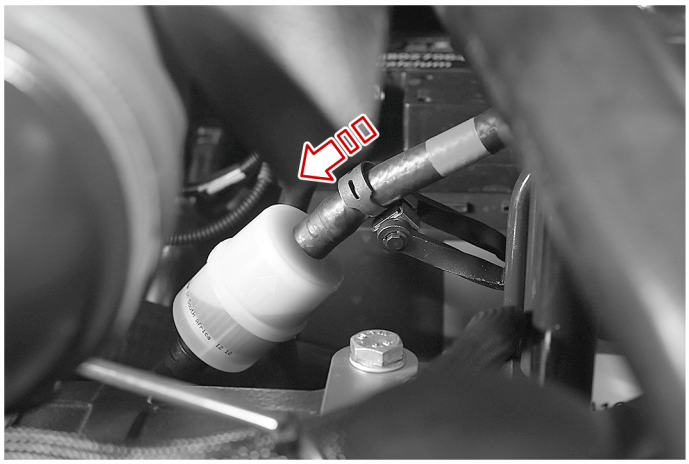
Carry out the following steps:

1. Connect the new ‹FUEL PRE FILTER› to the the two hose ends.

   ! When inserting the fuel pre-filter, take note of the correct position. The arrow on the fuel pre-filter must point towards the fuel filter.

2. Using the vice-grip pliers squeeze the hose clamp of the ‹FUEL PRE-FILTER› open.

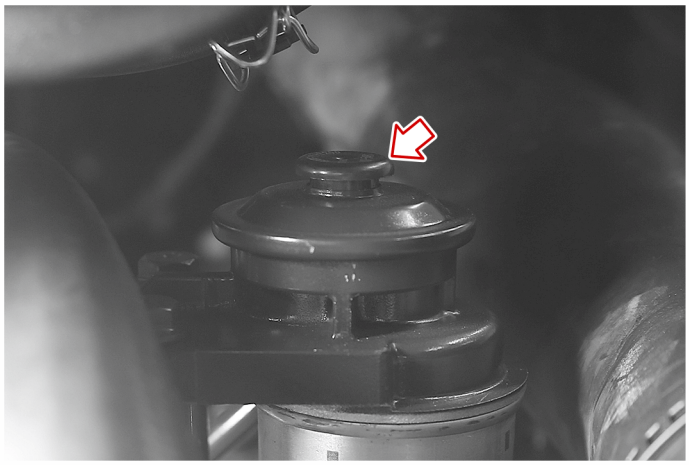
3. Using the vice-grip pliers push the opened hose clamp back onto the ‹FUEL PRE-FILTER› .



4. Repeat the last two steps for the other end of the ‹FUEL PRE-FILTER›.
5. Remove the cloth from the interior of the engine compartment.

   ! Dispose of the captured diesel fuel and the dirty cloth according to the locally applicable provisions.

6. Operate the ‹MANUAL FUEL PUMP› repeatedly until a resistance can be detected.



➥ The new filter element is filled with diesel fuel.

The fuel pre-filter has been changed.

✓ Done.

3.2.4 Changing the fuel filter

There are various models that can be described as follows:

3.2.4.1 Changing the fuel filter - Deutz engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Strap wrench
- Protective gloves
- A new fuel filter

WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

➔ Smoking is prohibited when working on the fuel filter of the wheel loader!

➔ Immediately clean up any diesel fuel that has spilled.

WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the diesel fuel.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

➔ Dispose of the diesel fuel according to the local statutory provisions,

➔ Catch the draining diesel fuel in a suitable container.

➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Place the strap of the strap wrench around the ‹FUEL FILTER›.
2. Loosen the ‹FUEL FILTER› with the aid of the strap wrench.

3. Carefully pull the ‹FUEL PRE-FILTER› from both the hose ends .
4. Screw the new ‹FUEL FILTER› onto the mounting.

✓ Done.

3.2.4.2 Changing the fuel filter - Cummins engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Strap wrench
- Protective gloves
- A new fuel filter

Fuel filter

WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

➔ Smoking is prohibited when working on the fuel filter of the wheel loader!

➔ Immediately clean up any diesel fuel that has spilled.

WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the diesel fuel.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

➔ Dispose of the diesel fuel according to the local statutory provisions,

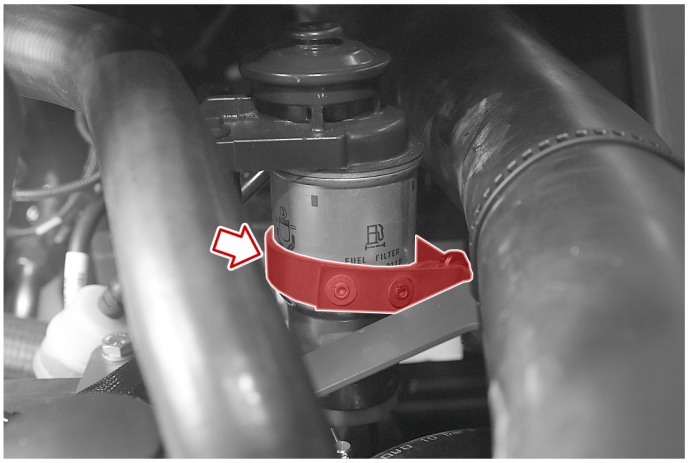
➔ Catch the draining diesel fuel in a suitable container.

➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

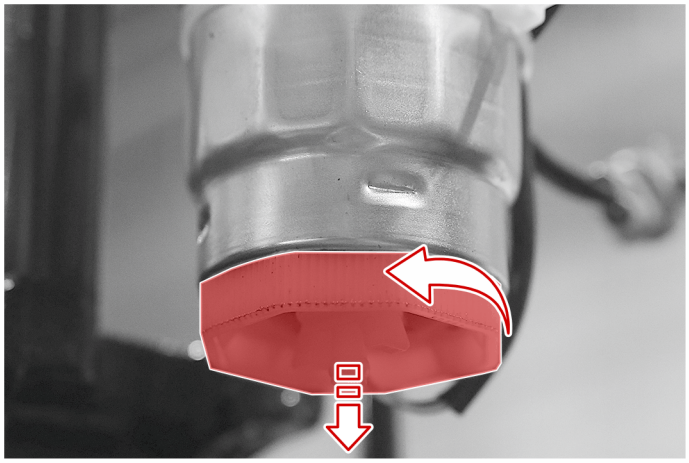
1. Rinse the water separator valve of the fuel filter (see Operating manual).
2. Place the strap of the strap wrench around the ‹FUEL FILTER›.

3. Loosen the ‹FUEL FILTER› with the aid of the strap wrench.



4. Carefully pull the ‹FUEL PRE-FILTER› from both the hose ends .

5. Unscrew the ‹WATER SEPARATOR VALVE› from the ‹FUEL FILTER› .

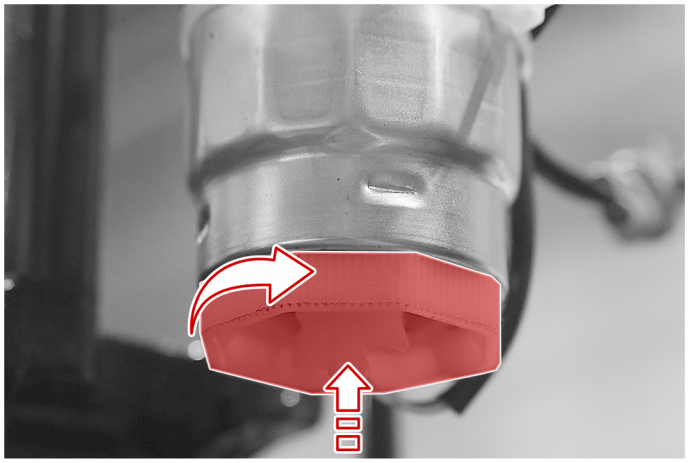


The fuel filter has been removed.

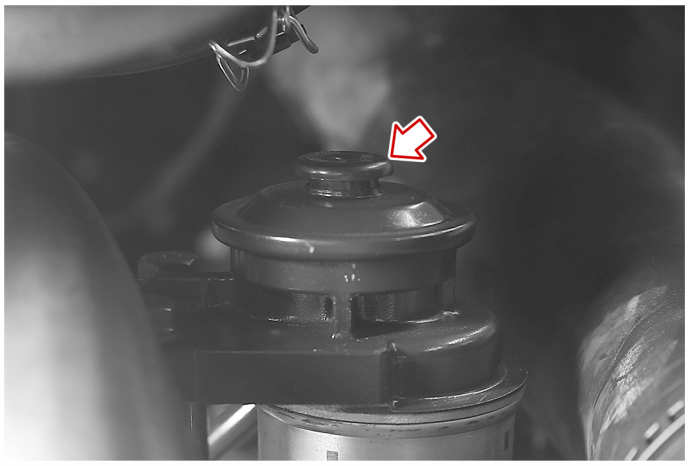
Install the new fuel filter

Carry out the following steps:

1. Screw the new ‹FUEL FILTER› onto the ‹WATER SEPARATOR VALVE›.



2. Screw the new ‹FUEL FILTER› onto the mounting.
3. Operate the ‹MANUAL FUEL PUMP› repeatedly until a resistance can be detected.



➥ The new filter element is filled with diesel fuel.

4. Start the ‹DIESEL ENGINE›

   ! Check the fuel filter for leaks while the diesel engine is running.

   The new fuel filter has been installed.

✓ Done.

3.2.5 Changing the fresh air filter

The installation and removal of the fresh air filter is the same throughout the Serie AS / AF / AT / AS tele . In the case of the AS700, the process of changing is different. Both versions are described in this chapter.

3.2.5.1 Changing the fresh air filter

Requirement

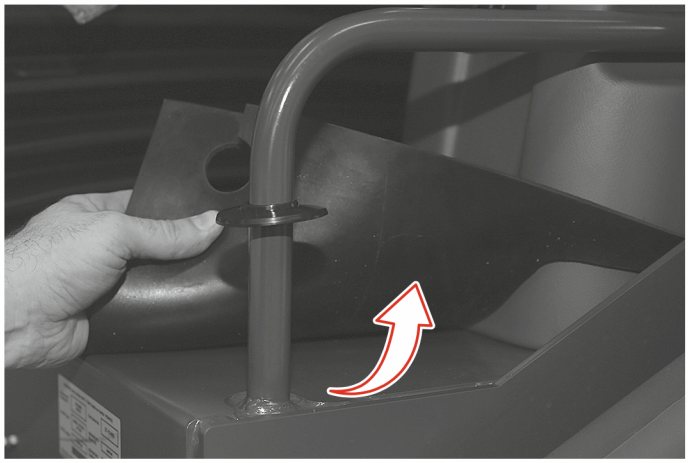
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Protective gloves
- A new fresh air filter
- Allen key, size 4.

Carry out the following steps:

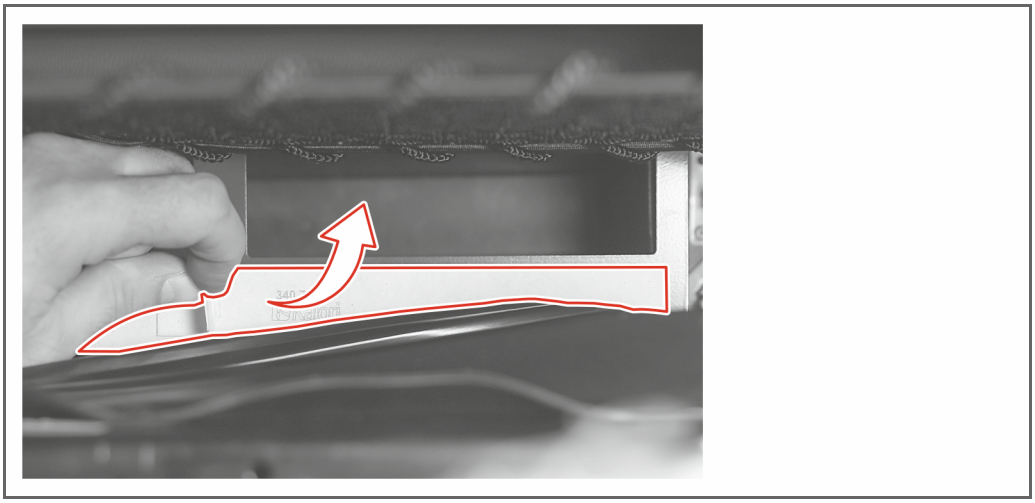
1. Remove the protective pad from the floor of the ‹CAB›.



2. Using the Allen key unscrew the two mounting screws on the left- and right-hand sides of the **‹FRESH AIR FILTER›** cover.

3. Lift off the cover of the **‹FRESH AIR FILTER›** .

4. Carefully withdraw the old **‹FRESH AIR FILTER›** from the holder .



5. Push the new **‹FRESH AIR FILTER›** into the holder.

   ! When pushing it in, take care that the arrow on the fresh air filter points in the direction of the driver's seat.

6. Place the cover of the **‹FRESH AIR FILTER›** onto the opening.

7. Using the Allen key unscrew the two mounting screws on the left- and right-hand sides of the **‹FRESH AIR FILTER›** cover.

8. Replace the protective pad on the floor of the ‹CAB›

✓ Done.

3.2.5.2 Changing the fresh air filter - AS700

Requirement

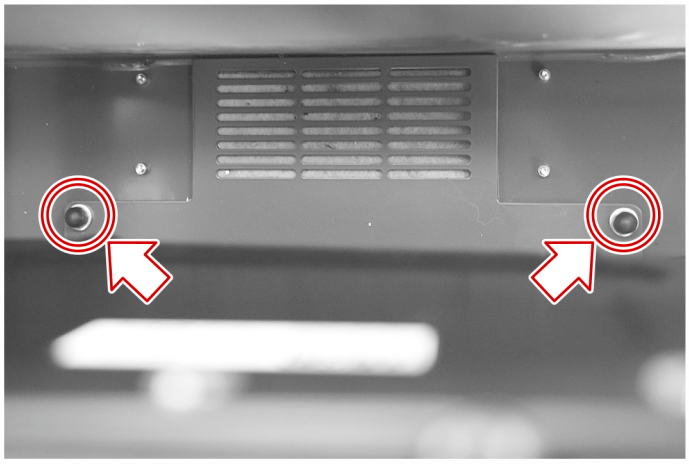
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

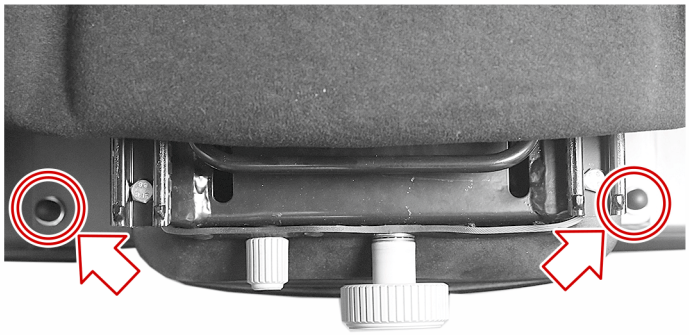
Tools required:

- Protective gloves
- A new fresh air filter
- Allen key, SW 4

Carry out the following steps:

1. Using the wrench, remove the four mounting bolts of the driver's seat baseplate.





2. Carefully lift the driver's seat together with the base plate out of the cab.

3. Carefully withdraw the old fresh air filter.

4. Install the new fresh air filter.V-belt.
5. Carefully lift the driver's seat together with the base plate into the cab.
6. Using the wrench, fasten the four mounting bolts of the driver's seat baseplate.

✓ Done.

3.2.6 Changing the hydraulic fluid filter

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Two persons
- Protective gloves
- Open-end wrench SW 32
- Allen key, size 6 mm.
- a sufficiently large oil drip tray
- A new hydraulic fluid filter

Remove the hydraulic fluid filter

WARNING

Health hazard posed by hydraulic fluid!

The hydraulic fluid is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the hydraulic fluid.
➔ Always wear gloves when carrying out this job.

NOTICE

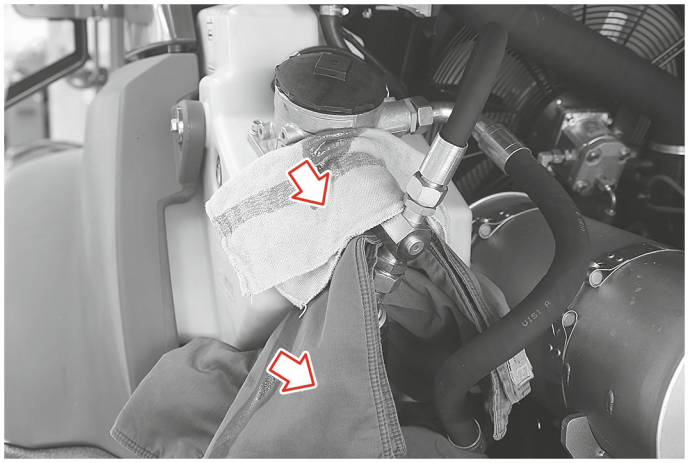
Environmental hazard posed by hydraulic fluid!

The used hydraulic fluid of the wheel loader is hazardous to the environment!

➔ Dispose of the used hydraulic fluid according to the local statutory provisions,
➔ Catch the draining hydraulic fluid in a suitable container.
➔ Prevent the hydraulic fluid from entering the soil.

Carry out the following steps:

1. Place the oil-absorbent mats around the ‹HYDRAULIC FLUID RESERVOIR›.

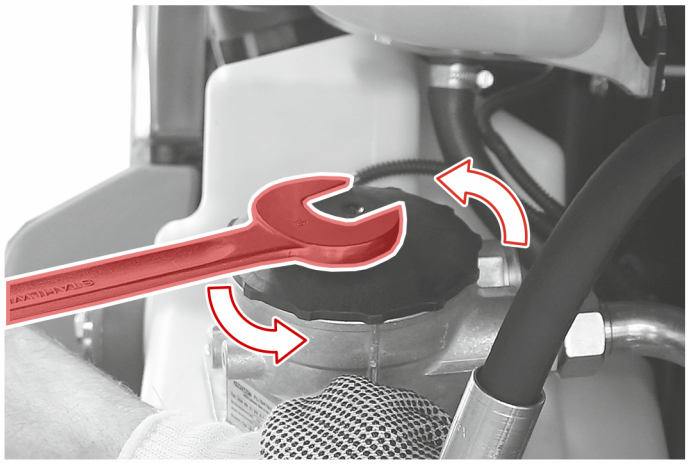


➥ The oil-absorbent mat protect the interior of the engine bay from contamination.

2. Hold a suitable oil drip tray beneath the **‹OIL DRAIN PLUG›**.
3. Using an Allen key, unscrew the **‹OIL DRAIN PLUG›** from the **‹HYDRAULIC FLUID RETURN COLLECTOR›** .

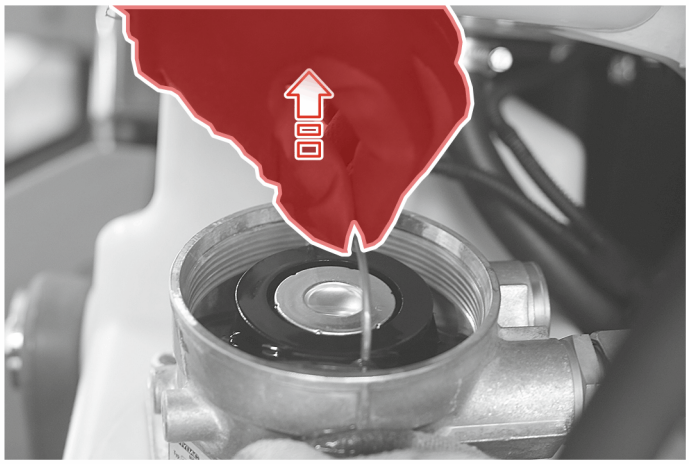
➥ The excess hydraulic fluid flows into the oil drip tray.

4. Using the open-end spanner loosen the lid of the ‹HYDRAULIC FLUID RESERVOIR›.

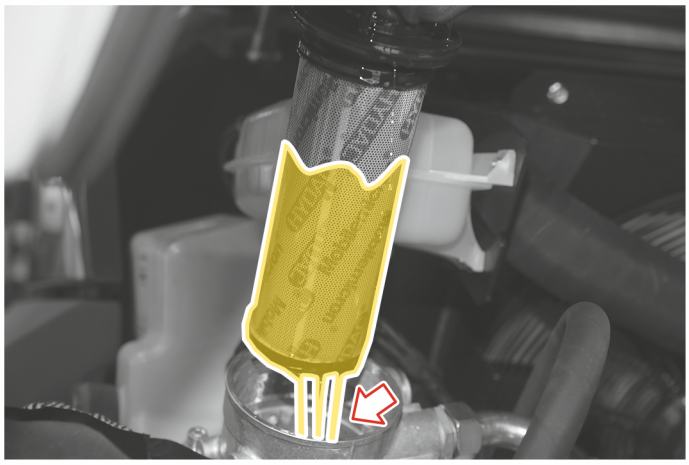


5. Unscrew the lid by hand.

6. Withdraw the ‹HYDRAULIC FLUID FILTER› by the handle .

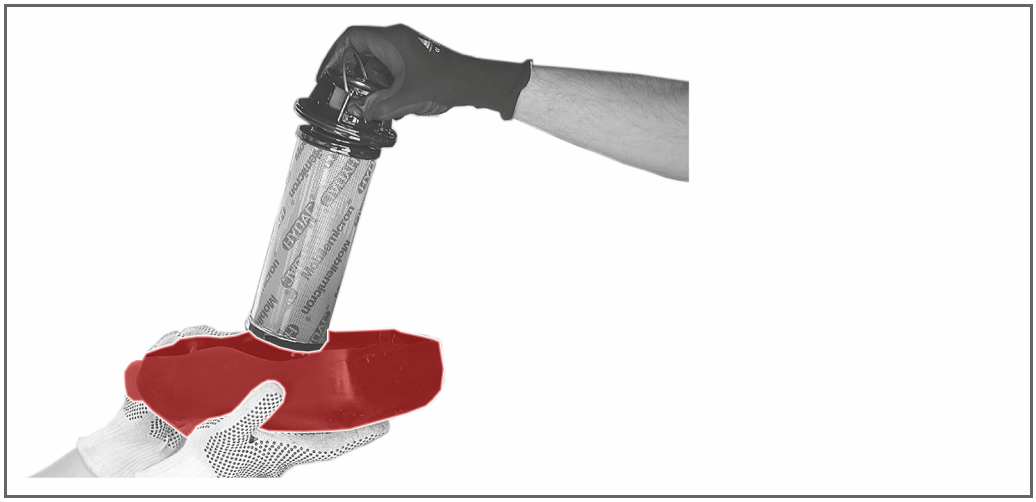


7. Allow the surplus hydraulic fluid to run into the ‹HYDRAULIC FLUID RESERVOIR› .



8. Place the ‹HYDRAULIC FLUID FILTER› in the oil drip tray.

   ! The oil drip tray must be held by a second person.



The hydraulic fluid filter is dismounted.

Install the hydraulic fluid filter

Carry out the following steps:

1. Insert the new ‹HYDRAULIC FLUID FILTER› into the ‹HYDRAULIC FLUID RESERVOIR› .
2. Screw the lid back onto the ‹HYDRAULIC FLUID RESERVOIR› by hand.
3. Using the open-end spanner tighten the lid of the hydraulic fluid reservoir.
4. Using an Allen key, screw the ‹OIL DRAIN PLUG› into the ‹HYDRAULIC FLUID RETURN COLLECTOR› .

➥ The excess hydraulic fluid flows into the oil drip tray.

5. Remove the oil collection container.
6. Remove the oil-absorbent mats.

7. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

   The hydraulic fluid filter is installed.

✓ Done.

3.2.7 Changing the engine oil filter

There are various models that can be described as follows:

3.2.7.1 Changing the engine oil filter - Deutz engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Strap wrench
- Protective gloves
- A new engine oil filter
- a sufficiently large oil drip tray

Dismounting the engine oil filter

WARNING

Health hazard posed by engine oil!

The engine oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the engine oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by engine oil!

The used engine oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used engine oil according to the local statutory provisions,
➔ Catch the draining engine oil oil in a suitable container.
➔ Prevent the engine oil from entering the soil.

Carry out the following steps:

1. Place the oil drip tray beneath the engine oil filter.

   ➥ The oil drip tray prevents the engine oil from penetrating the subsoil or entering the interior of the engine bay.

2. Place the strap of the strap wrench around the engine oil filter.
3. Loosen the engine oil filter with the aid of the strap wrench.

4. Carefully pull the engine oil filter from the mounting .

   The engine oil filter has been removed.

Install the new engine oil filter

Carry out the following steps:

1. Coat the surfaces of the new ‹ENGINE OIL FILTER› with fresh lubricating oil.
2. Screw the new ‹ENGINE OIL FILTER› into the mounting.
3. Fasten the ‹ENGINE OIL FILTER› by hand.
4. Check the oil level of the engine.
5. Dispose of the engine oil that has been collected according to the local statutory provisions.

   The new engine oil filter has been installed.

✓ Done.

3.2.7.2 Changing the engine oil filter - Cummins engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Strap wrench
- Protective gloves
- A new engine oil filter
- a sufficiently large oil drip tray

Dismounting the engine oil filter

WARNING

Health hazard posed by engine oil!

The engine oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the engine oil.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by engine oil!

The used engine oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used engine oil according to the local statutory provisions,

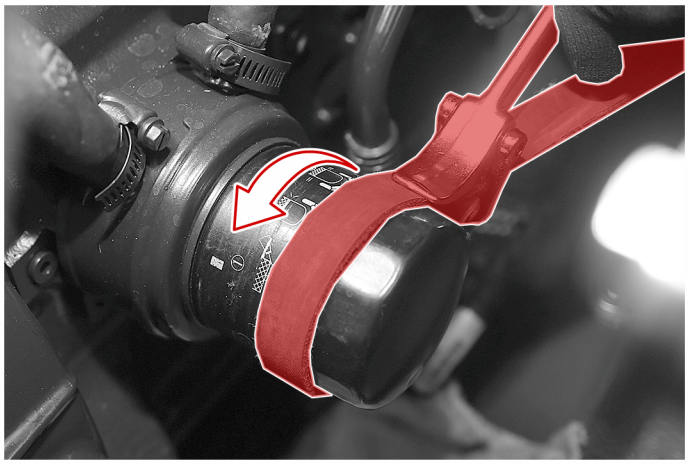
➔ Catch the draining engine oil oil in a suitable container.

➔ Prevent the engine oil from entering the soil.

Carry out the following steps:

1. Place the oil drip tray beneath the engine oil filter.
   ↪ The oil drip tray prevents the engine oil from penetrating the subsoil or entering the interior of the engine bay.
2. Place the strap of the strap wrench around the ‹ENGINE OIL FILTER›.

3. Loosen the ‹ENGINE OIL FILTER› with the aid of the strap wrench.



4. Carefully pull the ‹ENGINE OIL FILTER› from both the hose ends .

   The engine oil filter has been removed.

Install the new engine oil filter

Carry out the following steps:

1. Coat the surfaces of the new ‹ENGINE OIL FILTER› with fresh lubricating oil.
2. Screw the new ‹ENGINE OIL FILTER› into the mounting.
3. Fasten the ‹ENGINE OIL FILTER› by hand.
4. Check the oil level of the engine, (see operating manual).
5. Dispose of the engine oil that has been collected according to the local statutory provisions.

   The new engine oil filter has been installed.

✓ Done.

3.2.8 Changing the air filter

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

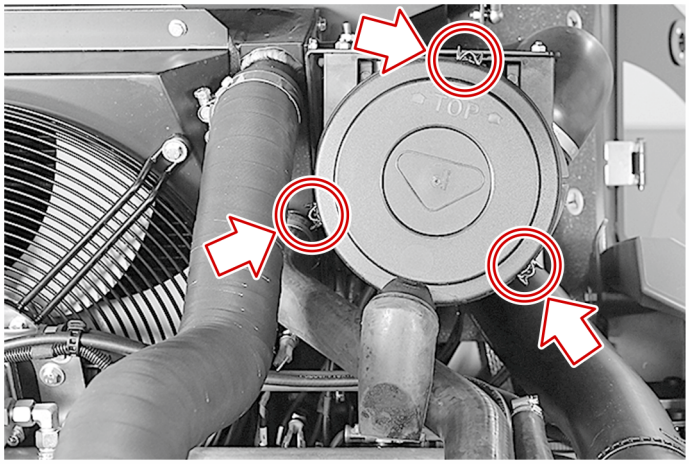
Tools required:

- A new air filter cartridge
- A new safety cartridge

Dismounting the air filter cartridge

Carry out the following steps:

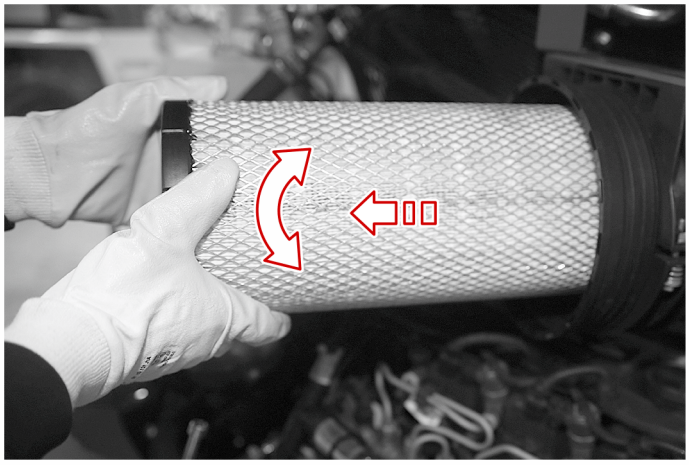
1. Open the three locking mechanisms of the lid.



2. Remove the lid.

3. Remove the filter cartridge.

! Loosen the filter cartridge with gentle rotating movements left and right.



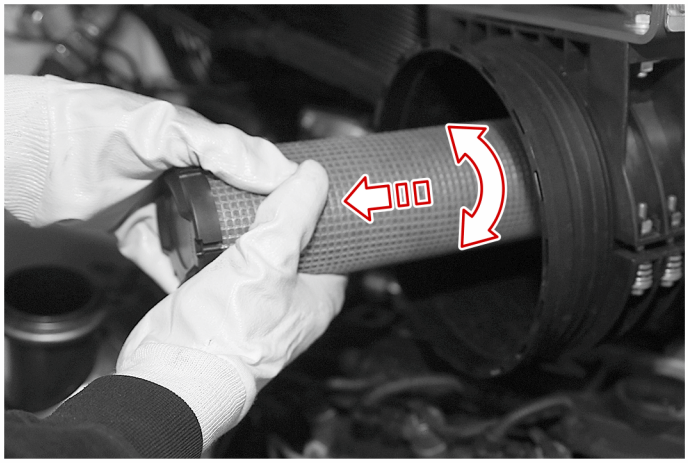
The air filter cartridge has been dismounted.

Exchanging the safety cartridge.

Carry out the following steps:

1. Remove the safety cartridge.

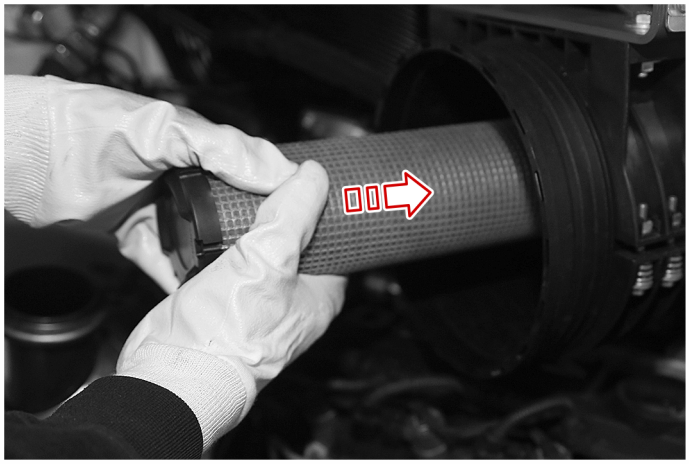
! Loosen the safety cartridge with gentle rotating movements left and right.



2. Check the interior of the filter housing for dust and dirt.

   ! If necessary, carefully clean the interior of the filter housing with a cloth.

3. Slide the new safety cartridge carefully into the filter housing.

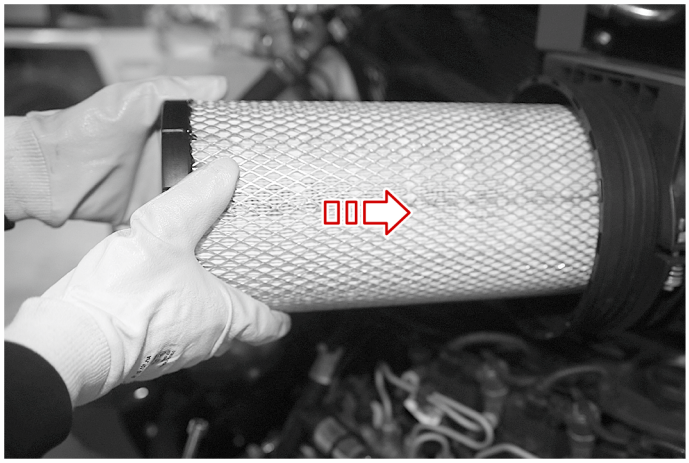


The safety cartridge has been exchanged.

Re-install the air filter cartridge

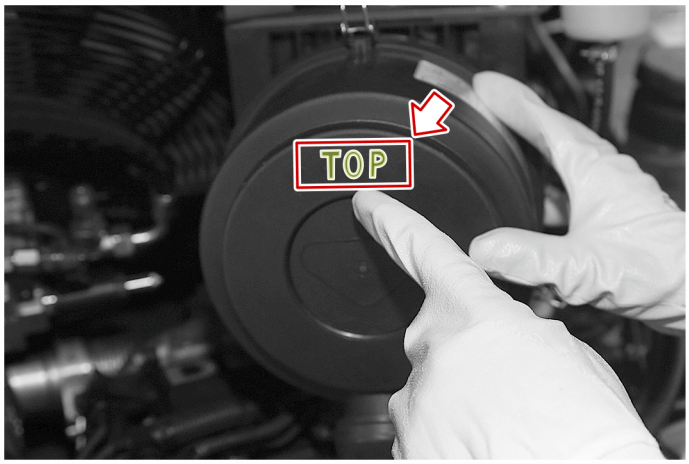
Carry out the following steps:

1. Slide the inspected filter cartridge back into the holder.

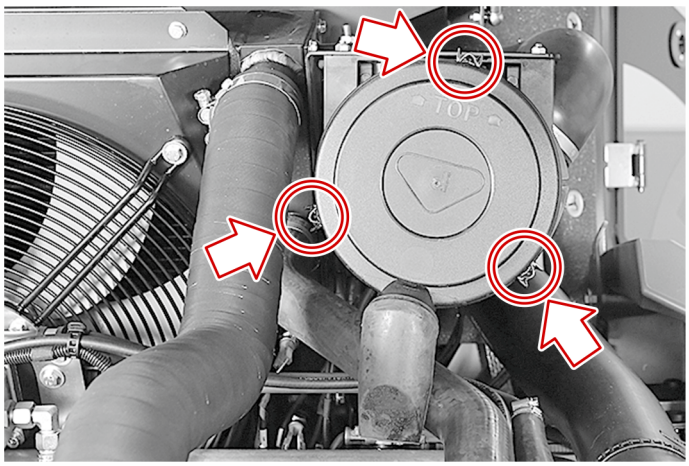


2. Re-install the lid.

! When remounting the lid, take care that the TOP marking faces **upwards** .



3. Secure the three locking mechanisms of the lid.



The air filter cartridge has been installed.

✓ Done.

3.3 Changing the consumables

3.3.1 Changing the engine oil

There are various models that can be described as follows:

3.3.1.1 Changing the engine oil - Deutz engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The ignition key has been removed.
- The engine must be warm.

Tools required:

- a sufficiently large oil drip tray
- Bochumer plug
- Ratchet with socket
- Protective gloves

Draining the engine oil

WARNING

Health hazard posed by engine oil!

The engine oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the engine oil.
➔ Always wear gloves when carrying out this job.

NOTICE

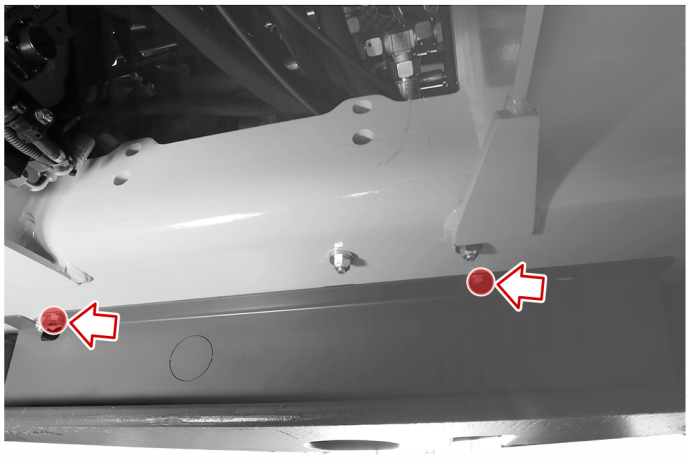
Environmental hazard posed by engine oil!

The used engine oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used engine oil according to the local statutory provisions,
➔ Catch the draining engine oil oil in a suitable container.
➔ Prevent the engine oil from entering the soil.

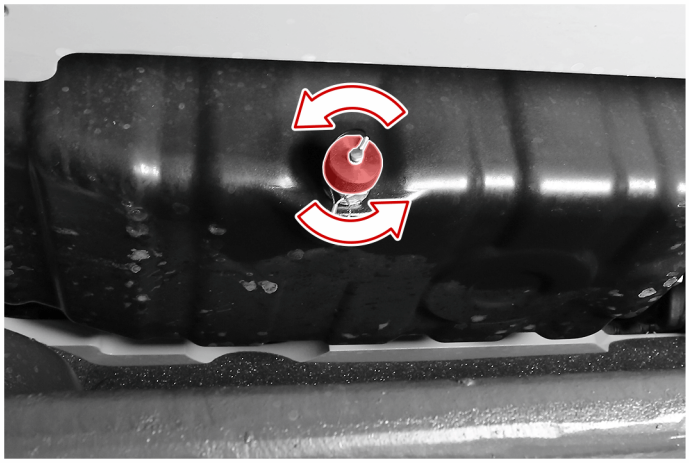
Carry out the following steps:

1. Loosen the two mounting screws of the sump guard.



➥ Alternatively, the laser pre-cut plate can be pushed inwards and a Bochum plug can be installed on the oil drain plug in the resulting hole.

2. Carefully remove the sump guard.
3. Place an oil collection container beneath the sump.
4. Unscrew the protective cap of the oil drain plug.



5. Screw the Bochumer plug onto the oil drain plug.
➥ The engine oil begins draining.
6. Wait until the engine oil has drained completely.
7. Unscrew the Bochumer plug from the oil drain plug.
8. Screw the protective cap back onto the oil drain plug.

The engine oil has been drained.

Topping up the engine oil

Carry out the following steps:

➔ Refill the engine oil.

The engine oil has been changed.

Performing the check

Carry out the following steps:

1. Switch on the diesel engine.
2. Allow the diesel engine to idle for a short while.
3. Switch off the diesel engine.
4. Inspect the sump and the oil drain plug for leaks.
5. Remove the oil collection container.
6. Re-install the sump guard on the wheel-loader with the aid of the two mounting screws.
7. Dispose of the engine oil that has been collected according to the local statutory provisions.
8. Check the oil level using the dipstick.

   The check is complete.

✓ Done.

3.3.1.2 Changing the engine oil - Cummins engine

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The ignition key has been removed.
- The engine must be warm.

Tools required:

- a sufficiently large oil drip tray
- Open-end wrench SW 17
- Protective gloves
- Cloths

Draining the engine oil

WARNING

Health hazard posed by engine oil!

The engine oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the engine oil.
➔ Always wear gloves when carrying out this job.

NOTICE

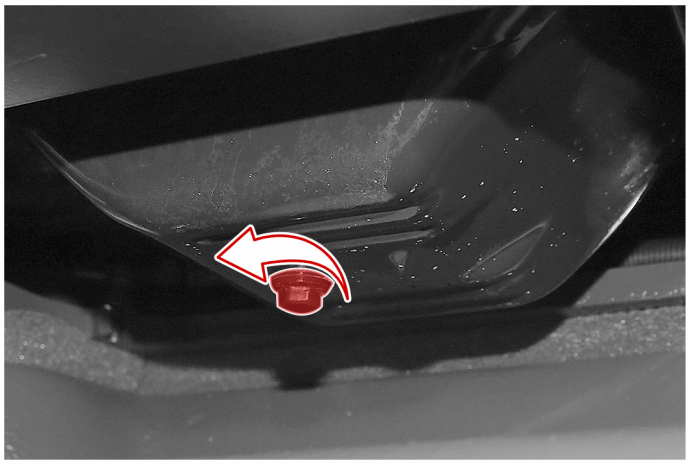
Environmental hazard posed by engine oil!

The used engine oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used engine oil according to the local statutory provisions,
➔ Catch the draining engine oil oil in a suitable container.
➔ Prevent the engine oil from entering the soil.

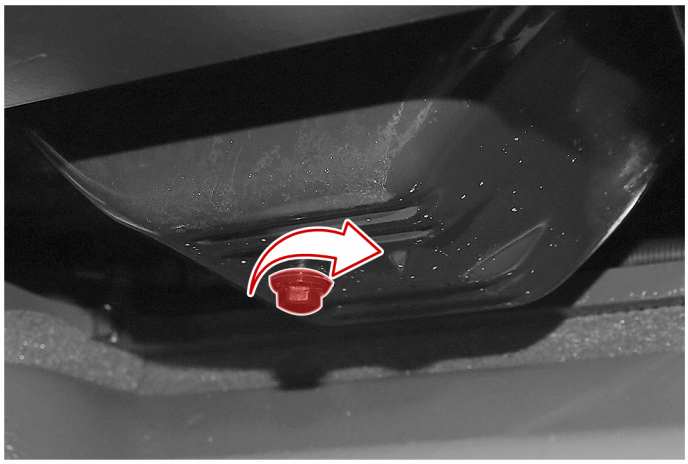
Carry out the following steps:

1. Place an oil collection container beneath the sump.
2. Unscrew the ‹OIL DRAIN BOLT› completely.



➥ The engine oil begins draining.

3. Wait until the engine oil has drained completely.
4. Screw the ‹OIL DRAIN BOLT› into the ‹SUMP› completely.



5. Using a cloth clean any places that may have been contaminated with oil on the ‹SUMP›.

   The engine oil has been drained.

Topping up the engine oil

Carry out the following steps:

➔ Refill the engine oil.

The engine oil has been changed.

Performing the check

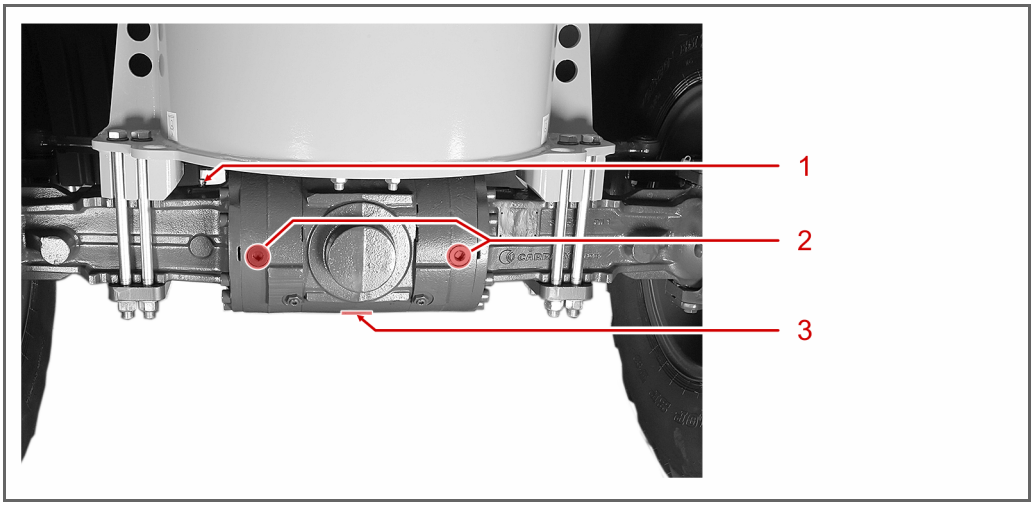
Carry out the following steps:

1. Switch on the diesel engine.
2. Allow the diesel engine to idle for a short while.
3. Switch off the diesel engine.
4. Inspect the sump and the oil drain plug for leaks.
5. Remove the oil collection container.
6. Re-install the sump guard on the wheel-loader with the aid of the two mounting screws.
7. Dispose of the engine oil that has been collected according to the local statutory provisions.
8. Check the oil level using the dipstick.

   The check is complete.

✓ Done.

3.3.2 Changing the gearbox oil of the front axle



Location of the bolts on the front axle

Key

No.	Designation
1	Axle vent valve
2	Inspection and filler plug
3	Drain plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.
- The bucket arm is raised.
- The bucket arm support is installed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil

Draining the gearbox oil

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

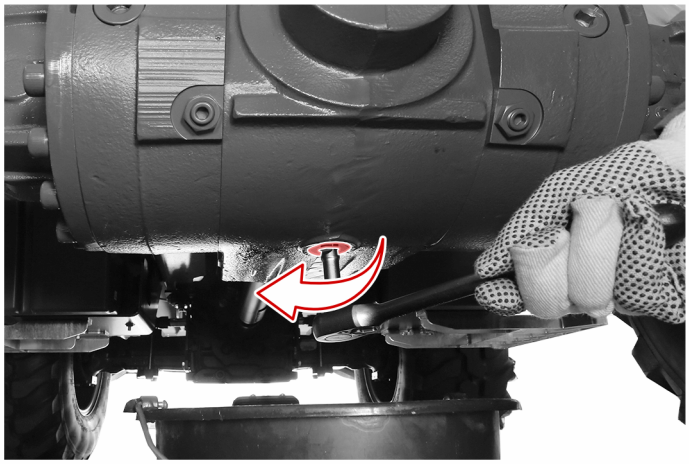
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the front axle.
   ↪ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a ratchet and extension, unscrew the oil drain plug.



➥ The gearbox oil drains immediately.

3. Wait until the gearbox oil has drained completely.

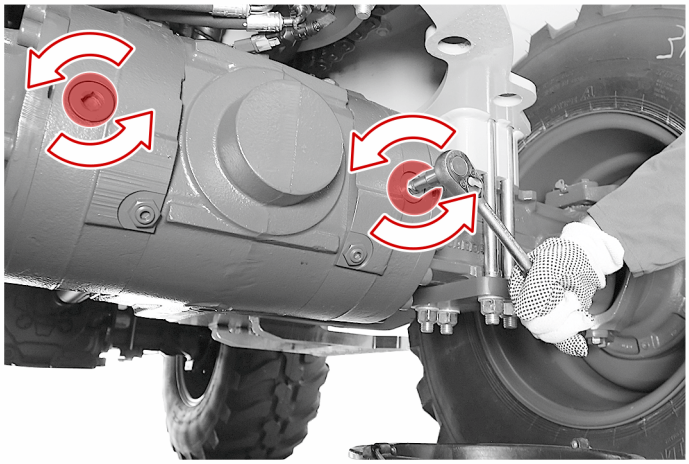
4. Using a ratchet and extension, unscrew the oil drain plug.

   The gearbox oil has been drained.

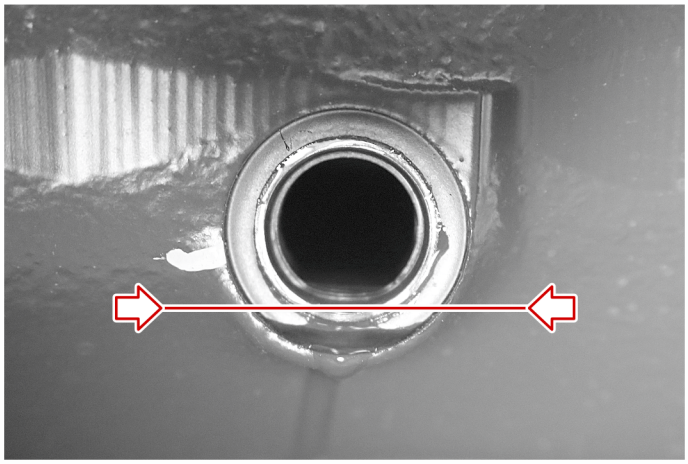
Refilling the gearbox oil

Carry out the following steps:

1. Using a ratchet and extension, unscrew both inspection and filler plugs.



2. Refill with fresh gearbox oil up to the lower edge of both inspection ports.



➥ Check the level at both inspection ports.

3. Using a ratchet and extension, tighten both the inspection and filler plugs.
4. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

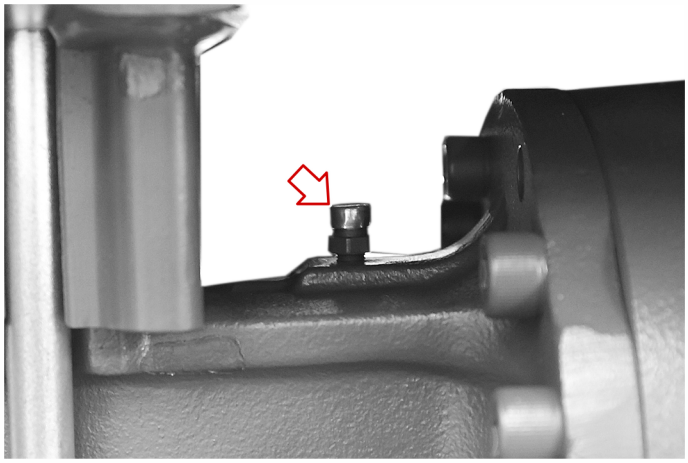
   The gearbox oil has been refilled.

Performing the check

Carry out the following steps:

1. Check that the ‹AXLE VENT VALVE› is free of contamination.

   ! If necessary, clean the axle vent valve .



2. Inspect the rear axle and the oil drain bolt for leaks.

   The check is complete.

✓ Done.

3.3.3 Changing the gearbox oil of the rear axle

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Wrench SW 17
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil

Draining the gearbox oil

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

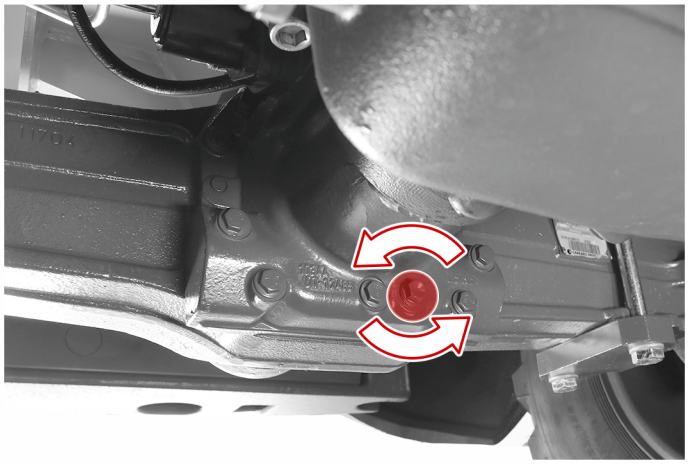
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the rear axle.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a square socket wrench remove the drain plug.



➥ The gearbox oil drains immediately.

3. Wait until the gearbox oil has drained completely.

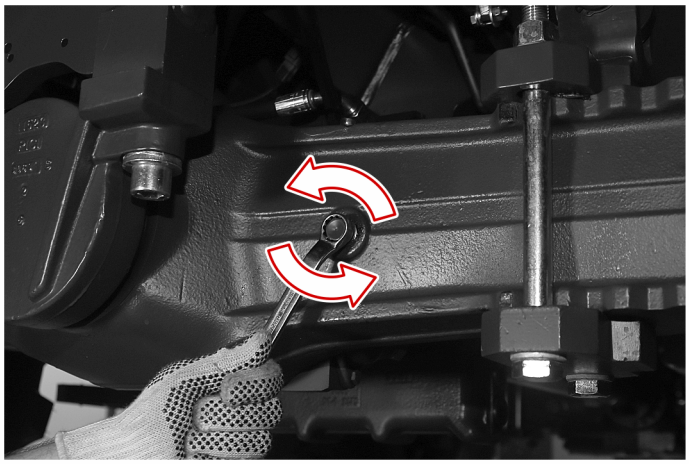
4. Using a square socket wrench re-install the drain plug in the rear axle.

The gearbox oil has been drained.

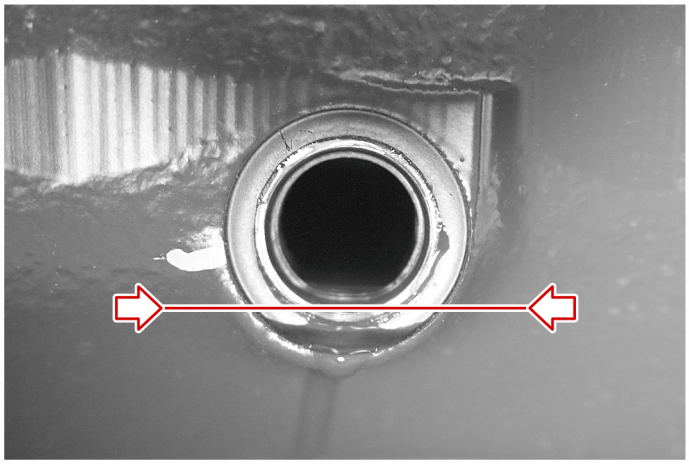
Refilling the gearbox oil

Carry out the following steps:

1. Using a square socket wrench unscrew the inspection and oil filler plug.



2. Refill with fresh gearbox oil up to the lower edge of the inspection port .



3. Using a square socket wrench tighten the inspection and oil filler plug.
4. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

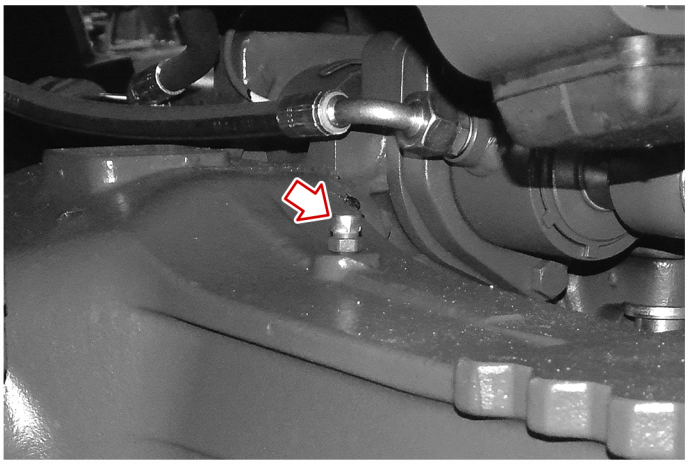
   The gearbox oil has been refilled.

Performing the check

Carry out the following steps:

1. Check that the ‹AXLE VENT VALVE› is free of contamination.

   ! If necessary, clean the axle vent valve .



2. Inspect the rear axle and the oil drain bolt for leaks.

   The check is complete.

✓ Done.

3.3.4 Changing the gearbox oil of the planetary gear

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil

Draining the gearbox oil

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

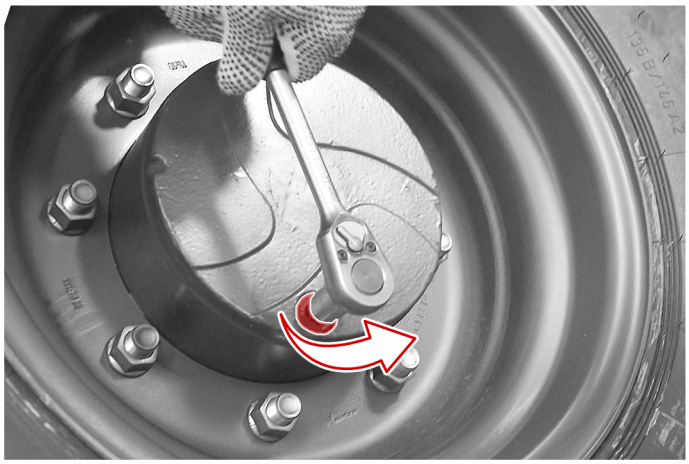
The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,
➔ Catch the draining gearbox oil in a suitable container.
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Move the wheel loader so that the inspection and oil filler plug of the planetary gearbox is at the lowest position.

2. Place an oil drip tray in the tyre rim.
   ➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.
3. Using a ratchet and extension, unscrew the inspection and filler plug.



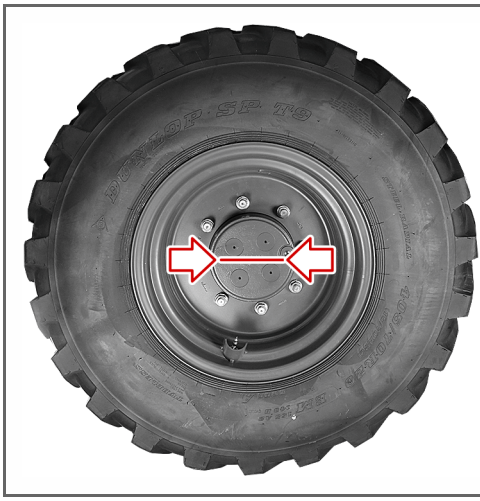
   ➥ The gearbox oil drains immediately.
4. Wait until the gearbox oil has drained completely.
5. Using an Allen key, re-install the inspection and oil filler plug in the planetary gearbox.
   ➥ Contamination by small quantities of spillage is thus avoided.

The gearbox oil has been drained.

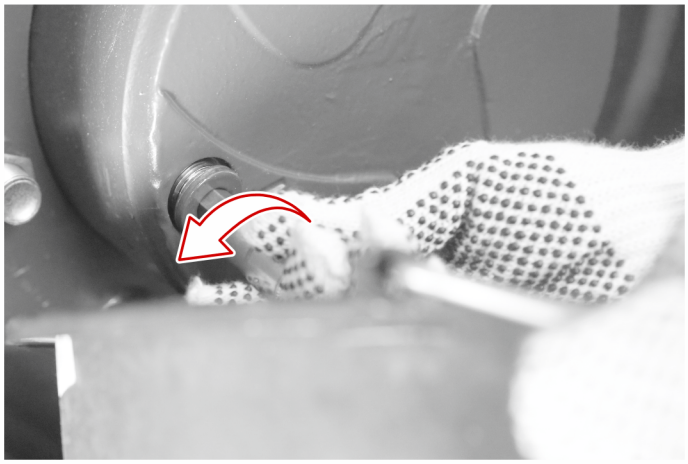
Refilling the gearbox oil

Carry out the following steps:

1. Move the wheel loader so that the **OIL LEVEL** fill level line of the planetary gearbox is horizontal.

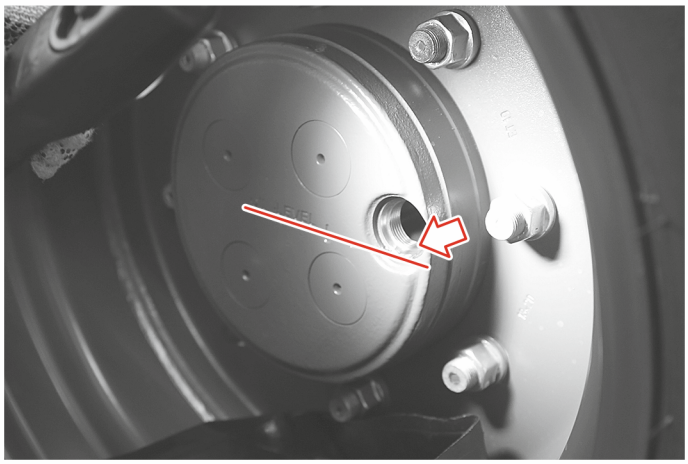


2. Using a ratchet and extension, unscrew the inspection and filler plugs.



3. Fill with fresh gearbox oil in the inspection port.

   ! The oil level must reach precisely below the lower edge of the inspection port .



4. Using a ratchet and extension, tighten the inspection and filler plug.
5. Wipe off any escaping gearbox oil with a cloth .
6. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

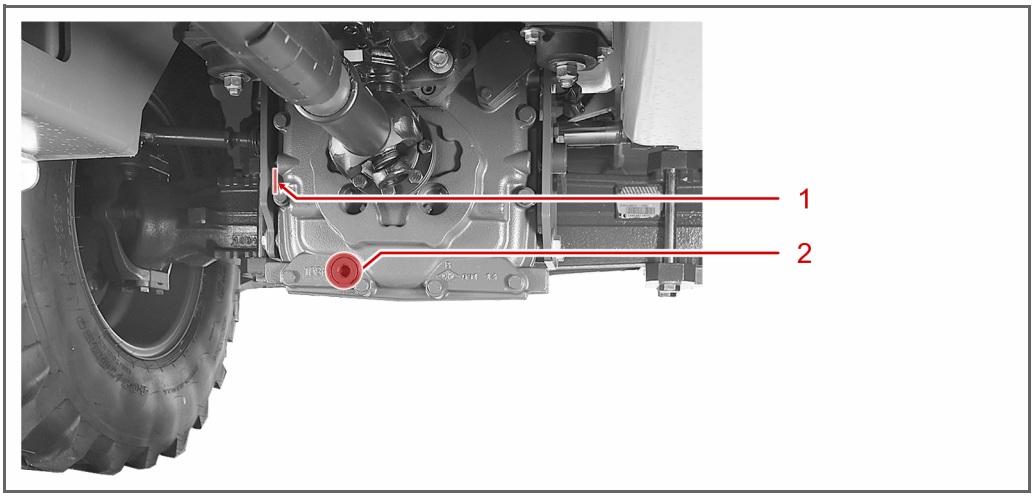
   The gearbox oil has been refilled.

✓ Done.

3.3.5 Changing the gearbox oil of the transfer box

There are fast and slow runners - each with different transfer cases.

3.3.5.1 Changing the oil of the fast runner transfer case



Location of the bolts on the transfer case

Key

No.	Designation
1	Inspection and filler plug
2	Drain plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil

Draining the gearbox oil

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,

➔ Catch the draining gearbox oil in a suitable container.

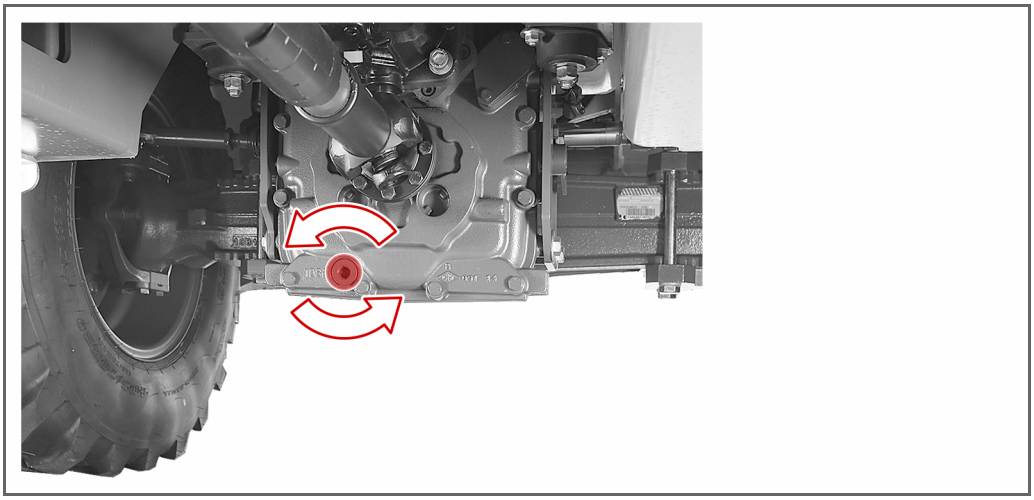
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the transfer case.

➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a ratchet and extension, unscrew the oil drain plug.



➥ The gearbox oil drains immediately.

3. Wait until the gearbox oil has drained completely.

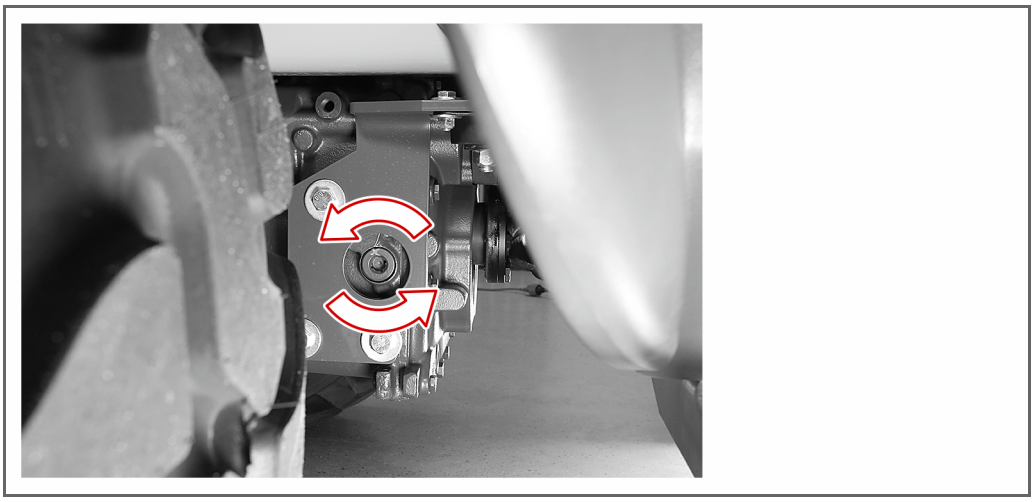
4. Using a ratchet and extension, tighten the drain plug.

The gearbox oil has been drained.

Refilling the gearbox oil

Carry out the following steps:

1. Using a ratchet and extension, unscrew the inspection and filler plugs.



2. Pour fresh gearbox oil into the transfer box.

! The oil level must reach precisely below the lower edge of the inspection port .

3. Using a ratchet and extension, tighten the inspection and filler plug.

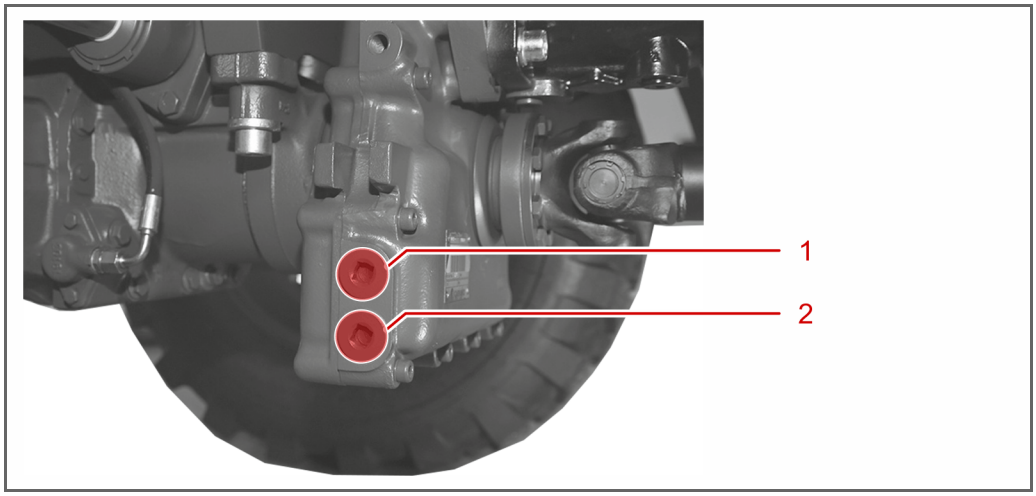
4. Remove the oil collection container.

5. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

   The gearbox oil has been refilled.

✓ Done.

3.3.5.2 Changing the oil of the slow runner transfer case



Location of the bolts on the transfer case

Key

No.	Designation
1	Inspection and filler plug
2	Drain plug

Requirement

- The wheel loader is warmed up.
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The parking brake is applied.
- The ignition key has been removed.

Tools required:

- Ratchet with 1/2“ extension
- a sufficiently large oil drip tray
- Protective gloves
- Suitable, fresh gearbox oil

Draining the gearbox oil

WARNING

Health hazard posed by gearbox oil!

The gearbox oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the gearbox oil.

➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by gearbox oil!

The used gearbox oil of the wheel loader is hazardous to the environment!

➔ Dispose of the used gearbox oil according to the local statutory provisions,

➔ Catch the draining gearbox oil in a suitable container.

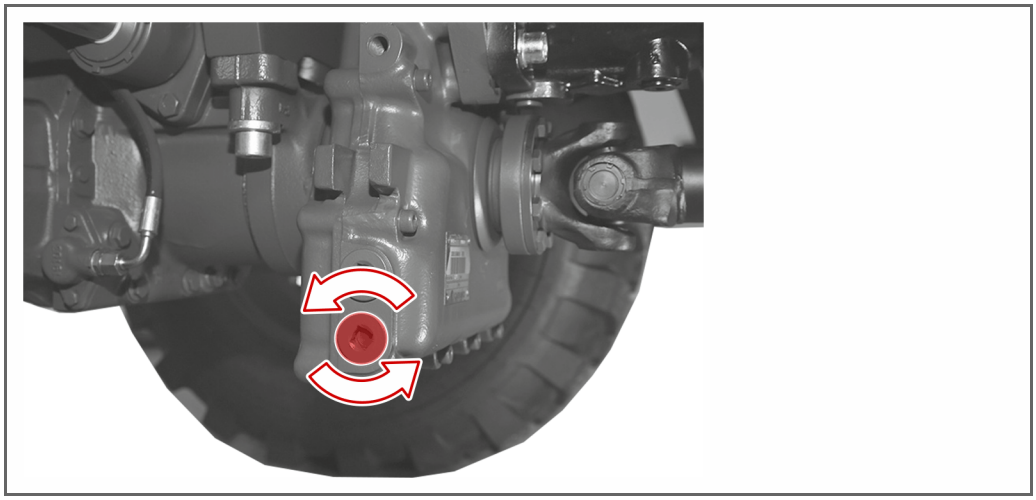
➔ Prevent the gearbox oil from entering the soil.

Carry out the following steps:

1. Place an oil drip tray beneath the transfer case.

➥ The oil drip tray prevents the gearbox oil from penetrating the subsoil.

2. Using a ratchet and extension, unscrew the oil drain plug.



➥ The gearbox oil drains immediately.

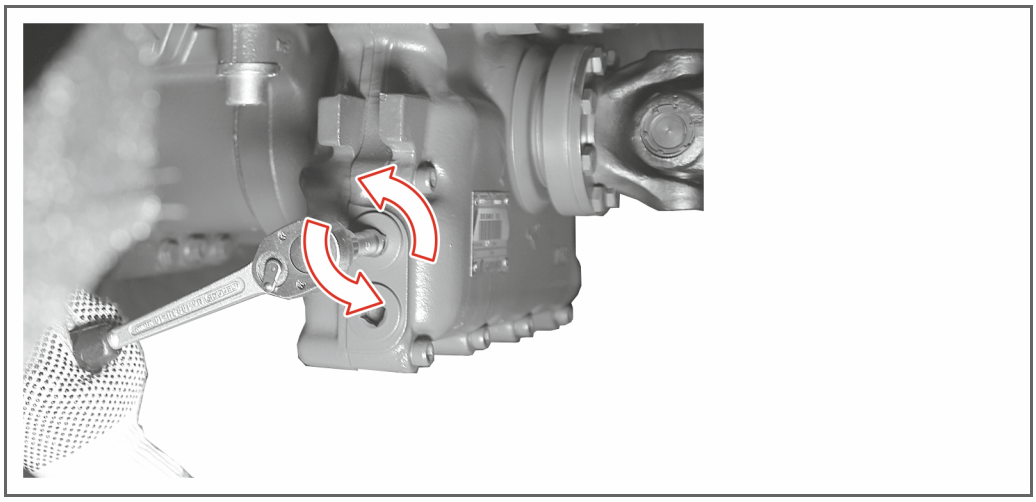
3. Wait until the gearbox oil has drained completely.
4. Using a ratchet and extension, tighten the drain plug.

The gearbox oil has been drained.

Refilling the gearbox oil

Carry out the following steps:

1. Using a ratchet and extension, unscrew the inspection and filler plugs.



2. Pour fresh gearbox oil into the transfer box.

! The oil level must reach precisely below the lower edge of the inspection port .

3. Using a ratchet and extension, tighten the inspection and filler plug.
4. Remove the oil collection container.

5. Dispose of the gearbox oil that has been collected, according to the local statutory provisions,

   The gearbox oil has been refilled.

✓ Done.

3.3.6 Refilling with diesel fuel

There is no diesel tank drain plug in this series.

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The ignition key has been removed.
- The parking brake is applied.

Tools required:

- Cloths
- Ignition key
- Protective gloves
- Scavenge pump
- a sufficiently large diesel fuel collection receptacle
- suitable fresh diesel fuel

Drain the diesel fuel

WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

➔ Refuel the wheel loader only once it has cooled down.
➔ Smoking `es strictly prohibited` when refuelling the wheel-loader!
➔ Immediately clean up any diesel fuel that has spilled.

WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the diesel fuel.
➔ Always wear gloves when carrying out this job.

NOTICE

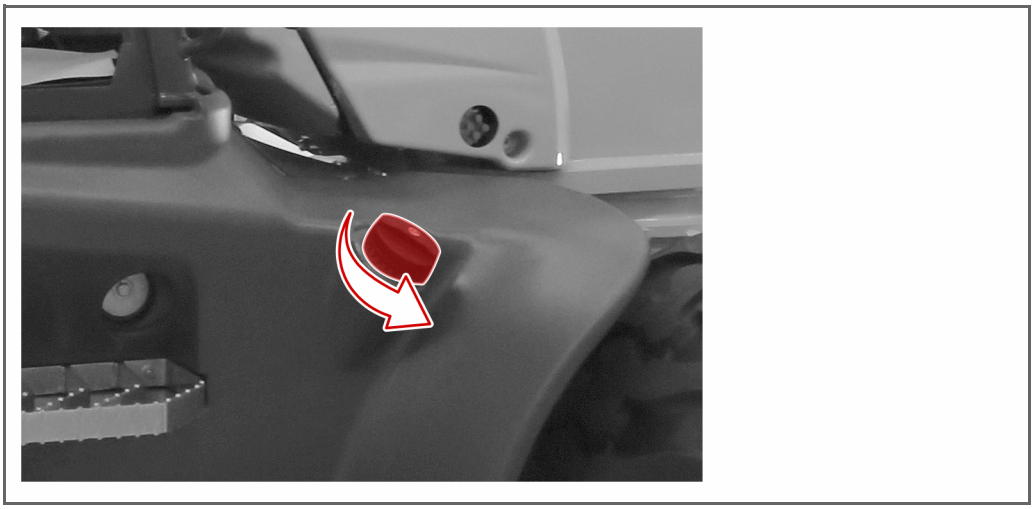
Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

➔ Dispose of the diesel fuel according to the local statutory provisions,
➔ Catch the draining diesel fuel in a suitable container.
➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Using the ignition key, open the tank cap.



2. Use a diesel fuel catchment receptacle of adequate capacity.
   ↪ The diesel fuel collection container prevents the diesel fuel from penetrating the subsoil.
3. Guide the scavenge pump into the diesel fuel filler nozzle.
4. Operate the scavenge pump
5. Wait until the diesel fuel oil has been pumped out completely.
6. Remove the scavenge pump
   ↪ If necessary, clean the scavenge pump

   The diesel fuel has been drained.

Refilling diesel fuel

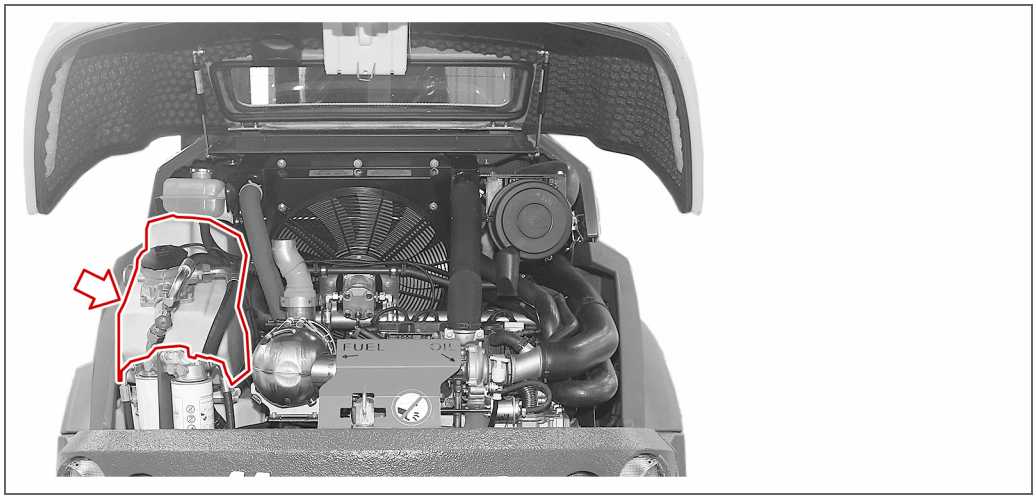
Carry out the following steps:

1. Carefully pour the diesel fuel into the tank.
2. Close the tank cap of the diesel fuel filling nozzle.
3. Wipe off any spilled diesel fuel with a cloth .
4. Dispose of the collected diesel fuel according to the local statutory provisions,

   The diesel fuel has been topped up.

✓ Done.

3.3.7 Changing the hydraulic fluid



Location of the hydraulic fluid reservoir.

Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The bucket arm is lowered.
- If a bucket is mounted, this must be tilted.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Tools required:

- Cloths
- Protective gloves
- A suitable funnel
- Suitable, fresh gearbox oil
- a sufficiently large hydraulic fluid drip tray
- A suitable oil drainage hose

Drain the hydraulic fluid

WARNING

Health hazard posed by hydraulic fluid!

The hydraulic fluid is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with the hydraulic fluid.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by hydraulic fluid!

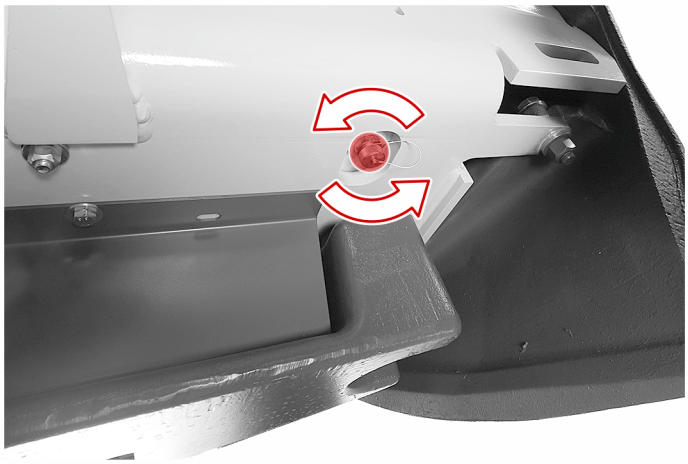
The used hydraulic fluid of the wheel loader is hazardous to the environment!

➔ Dispose of the used hydraulic fluid according to the local statutory provisions,
➔ Catch the draining hydraulic fluid in a suitable container.
➔ Prevent the hydraulic fluid from entering the soil.

Carry out the following steps:

1. Place an hydraulic fluid drip tray beneath the hydraulic fluid drain plug.
   ➥ The hydraulic fluid drip prevents the hydraulic fluid from penetrating the subsoil.

2. Unscrew the protective cap of the oil drain plug.



3. Screw the oil drainage hose onto the oil drain plug.
   ➥ The hydraulic fluid begins draining.
4. Wait until the hydraulic fluid has drained completely.
5. Unscrew the oil drainage hose from the oil drain plug.
6. Screw the protective cap back onto the oil drain plug.

   The hydraulic fluid has been drained.

Topping up the hydraulic fluid

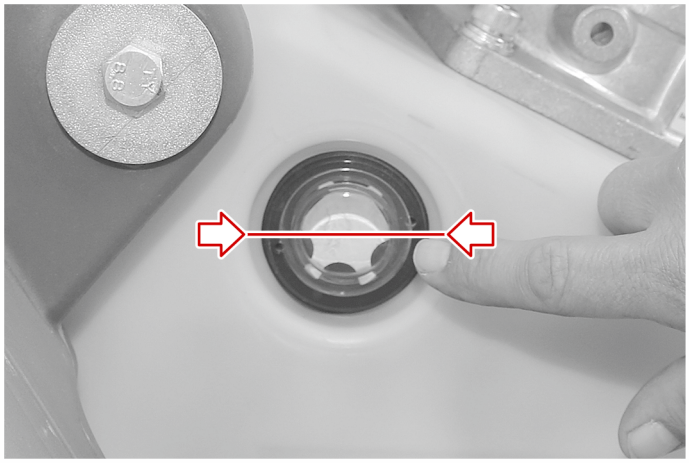
Carry out the following steps:

1. Manually open the cap of the hydraulic fluid filler nozzle.

   ! If the cap cannot he opened by hand, then a special open-end spanner can be used.

2. Using a suitable funnel pour the hydraulic fluid into the open hydraulic fluid filler nozzle.

   ! The sight glass must be at least half full with hydraulic fluid.



3. Close the cap of the hydraulic fluid reservoir manually.
4. Wipe off any spilled hydraulic fluid with a cloth .
5. Dispose of the hydraulic fluid that has been collected, according to the local statutory provisions,

   The hydraulic fluid has been refilled.

✓ Done.

3.4 Lubrication

3.4.1 Lubrication plan

Wheel loader lubrication schedule Serie AS / AF / AT / AS tele

Lubrication intervals	Part on wheel loader	Number of lubrication points
after 500 hours of operation	Turntable chain	See "Lubricating the turntable chain" (Page 109)
after 500 hours of operation	Support valve	See "Oiling the check valve" (Page 111)

3.4.2 Lubricating the turntable chain

A turntable chain is only installed on a swing loader.

Requirement

- The wheel loader is standing on a horizontal surface.
- The parking brake is applied.

Tools required:

- A second person who operates the wheel loader.
- Protective gloves
- Grease brush
- Multi-purpose grease

CAUTION

Hazard of injuries to limbs by crushing and cutting!

The front part of the wheel loader is very cramped. You can be cut and crushed when performing maintenance tasks!

➔ Always wear protective gloves!
➔ Always work carefully!

WARNING

Health hazard posed by multi-purpose grease!

Multi-purpose grease is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with multi-purpose grease.
➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by multi-purpose grease!

The multi-purpose grease used for the wheel loader is hazardous to the environment!

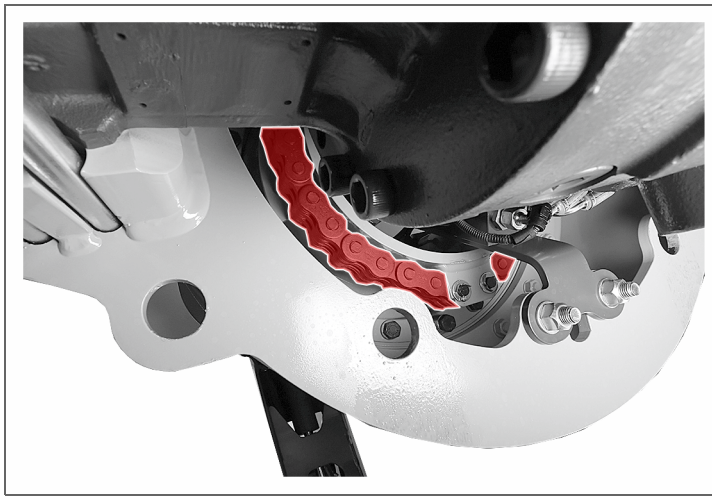
➔ Dispose of the multi-purpose grease according to the local statutory provisions,
➔ Catch the draining multi-purpose grease in a suitable container.
➔ Prevent the multi-purpose grease from entering the soil.

Carry out the following steps:

1. Lift the bucket arm
2. Secure the bucket arm support.

3. Slowly move the bucket arm completely to the right and to the left once.

! While moving, a second person smears the chain with a paintbrush.



✓ The turntable chain has been lubricated.

3.4.3 Oiling the check valve

Requirement

- The wheel loader is standing on a horizontal surface.
- The parking brake is applied.
- The wheel loader is switched off.
- The bucket arm is raised.
- The bucket arm support is installed.
- The bucket arm is moved completely to one side.
- The ignition key has been removed.

Tools required:

- Wrench SW 10
- Screwdriver
- Protective gloves
- Standard maintenance oil

CAUTION

Hazard of injuries to limbs by crushing and cutting!

The front part of the wheel loader is very cramped. You can be cut and crushed when performing maintenance tasks!

➔ Always wear protective gloves!
➔ Always work carefully!

WARNING

Health hazard posed by maintenance oil!

The maintenance oil is hazardous to health. Frequent skin contact can be carcinogenic.

➔ Avoid continuous skin contact with maintenance oil.
➔ Always wear gloves when carrying out this job.

NOTICE

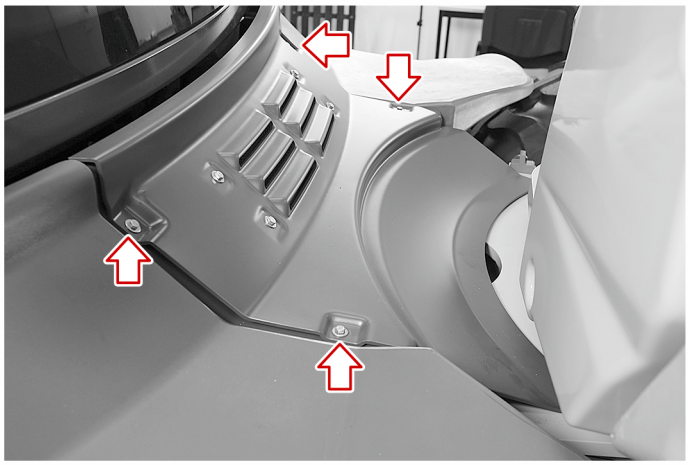
Environmental hazard posed by maintenance oil!

The maintenance oil used for the wheel loader is hazardous to the environment!

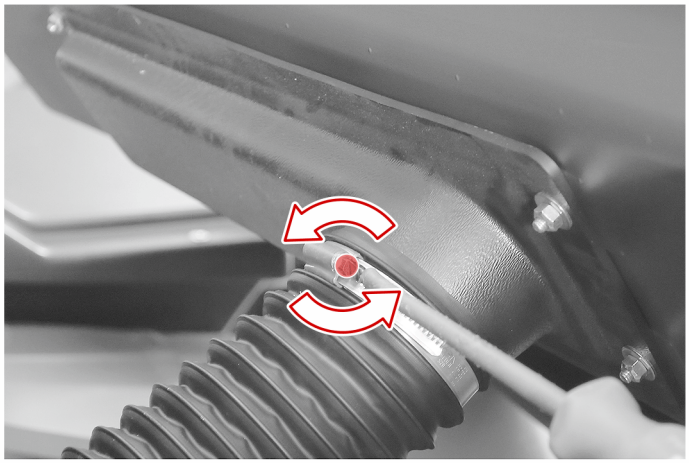
➔ Dispose of the maintenance oil according to the local statutory provisions,
➔ Catch the draining maintenance oil in a suitable container.
➔ Prevent the maintenance oil from entering the soil.

Carry out the following steps:

1. Unscrew the four mounting screws of the protective cover.

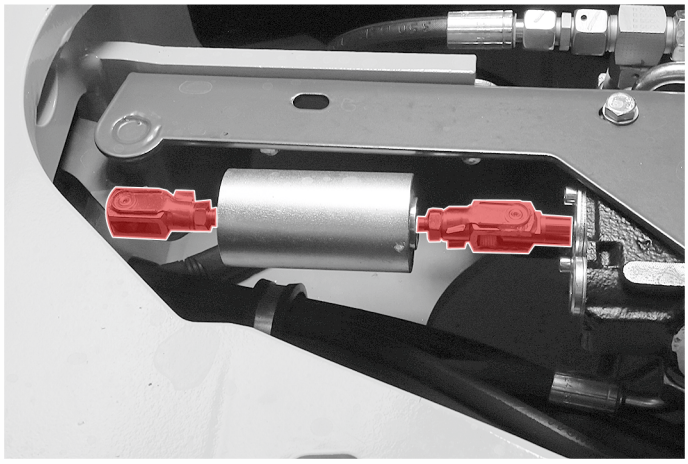


2. Loosen the hose from the protective cover with the aid of a screwdriver.



3. Remove the protective cover.
4. Check the interior for leaks.

5. Oil the check valve.



6. Secure the hose to the protective cover.

7. Refasten the four mounting screws of the protective cover.

✓ The check valve has been oiled.

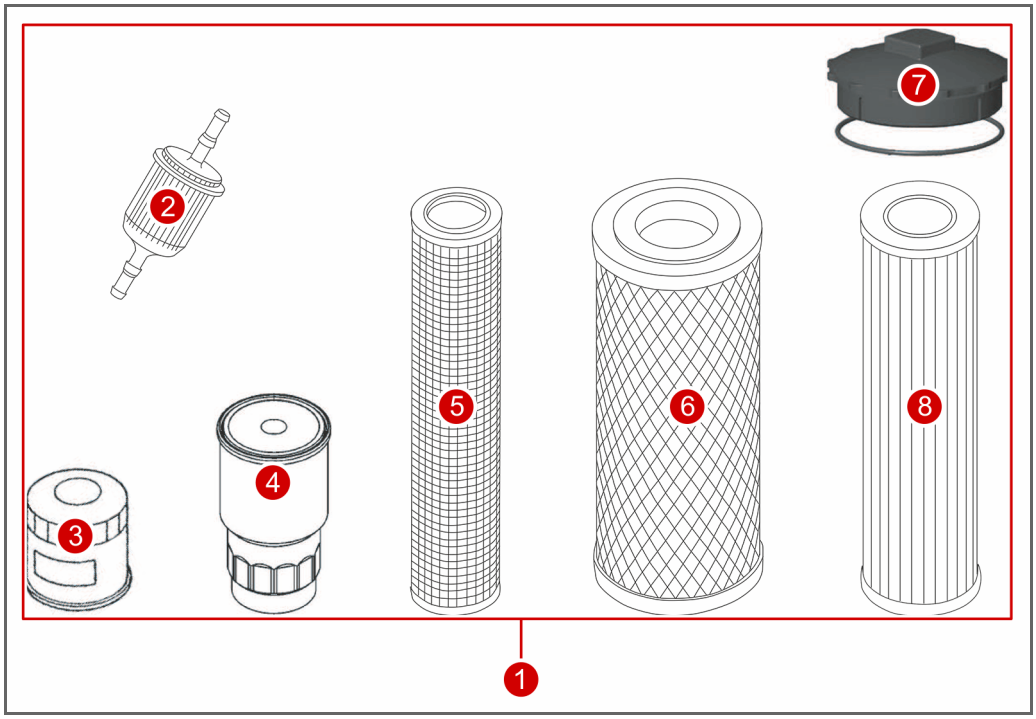
4 Circuit diagrams

Circuit diagrams can be obtained from Mecalac on request.

5 Annex

5.1 Spare Parts

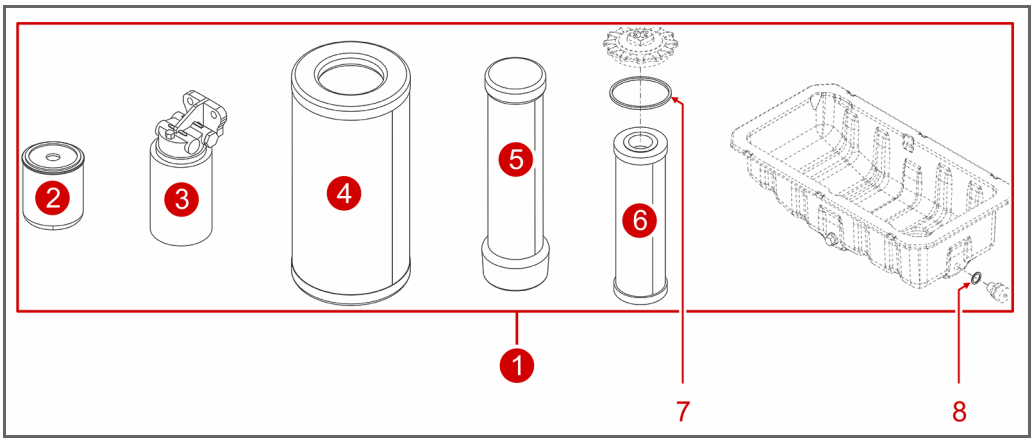
5.1.1 Filter



Cummins engine filter – overview

Key

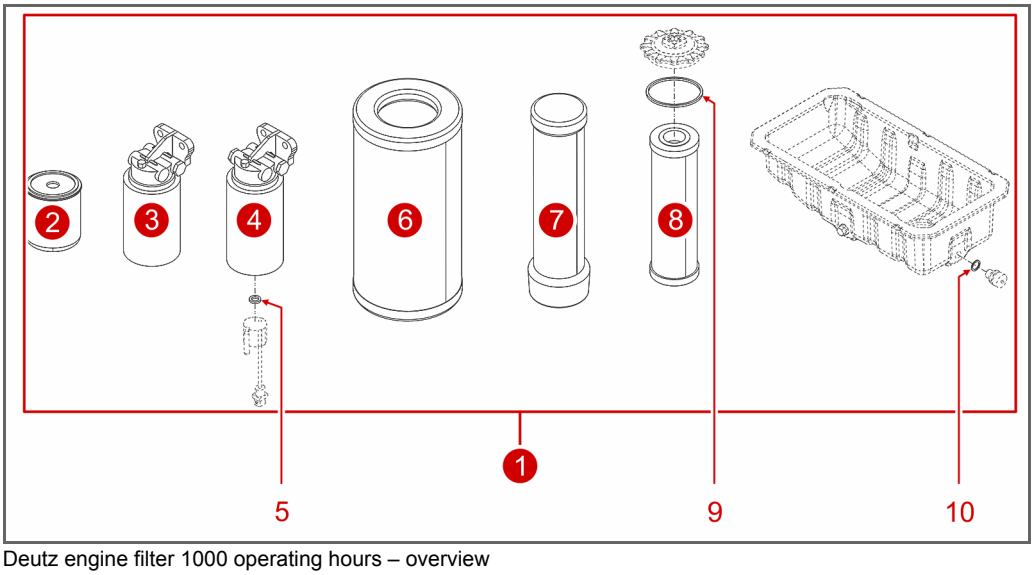
No.	Designation	Mecalac TKZ
1	Filter set	23122185
2	Fuel pre-filter	23128661
3	Engine oil filter	23121921
4	Fuel filter	23121920
5	Safety cartridge	4198304A
6	Air filter insert	4198305A
7	O-ring 110,72x3,53	4185042A
8	Hydraulic fluid filter	23122182



Deutz engine filter 500 operating hours – overview

Key

No.	Designation	Mecalac TKZ
1	Filter set	23133440
2	Engine oil filter	23110650
3	Fuel filter	23133339
4	Air filter insert	4198305A
5	Safety cartridge	4198304A
6	Hydraulic fluid filter	23122182
7	O-ring 110,72x3,53	4185042A
8	Seal ring A 18X 24 CU	7426631A



Deutz engine filter 1000 operating hours – overview

Key

No.	Designation	Mecalac TKZ
1	Filter set	23133507

Key (Cont.)

No.	Designation	Mecalac TKZ
2	Engine oil filter	23110650
3	Fuel filter	23133339
4	Fuel pre-filter	23133338
5	Circular gasket	23124774
6	Air filter insert	4198305A
7	Safety cartridge	4198304A
8	Hydraulic fluid filter	23122182
9	O-ring 110,72x3,53	4185042A
10	Seal ring A 18X 24 CU	7426631A

5.1.2 Consumables

Slow-runner, Cummins engine, consumables

Designation	Quantity	Mecalac TKZ
Engine oil	8	23106886
Gearbox oil	22	23104578
Hydraulic fluid	134	23107305
Lubricating grease cartridge	1	4117807A
Coolant	14	23129554

Fast runner, Cummins engine, consumables

Designation	Quantity	Mecalac TKZ
Engine oil	8	23106886
Gearbox oil	24.7	23104578
Hydraulic fluid	134	23107305
Lubricating grease cartridge	1	4117807A
Coolant	14	23129554

Slow runner, Deutz engine, consumables

Designation	Quantity	Mecalac TKZ
Engine oil	8	2320062
Gearbox oil	22	23104578
Hydraulic fluid	134	23107305
Lubricating grease cartridge	1	4117807A
Coolant	14	23129554

Fast runner, Deutz engine, consumables

Designation	Quantity	Mecalac TKZ
Engine oil	8	2320062
Gearbox oil	24.7	23104578
Hydraulic fluid	134	23107305
Lubricating grease cartridge	1	4117807A
Coolant	14	23129554

5.2 Deutz error messages

DTC-List
Diagnosis- and Errorcodes

referrenced ECU-Software
P490_: 220, 310, 501
P491_: 220, 310, 400, 501
P492_: 213
P513_: 214, 300

11 / 107 / AirFltSysReac

Error description AIR FILTER COND.
Air filter differential pressure: the pressure difference of the intake air between the filter inlet and outlet calculated by ECU is above the target range and the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 11
BlinkCode (short-long-short): 1 - 3 - 6
SPN: 107
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Pressure loss above target range with system reaction, air filter clogged or defective, sensor not working, connection cable demaged

Take actions for error repair
Check airfilter and if necessary clean or renew it, check cabling, check air filter and if necessary replace the filter component, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

12 / 91 / APP1

Error description THROTTLE 1
Analog accelerator pedal sensor 1 or double accelerator pedal sensor: the voltage measured by ECU is out of the target range or the calculated pedal position is implausible compared with the position of the second pedal

Error codes
DEUTZ-Errorcode: 12
BlinkCode (short-long-short): 2 - 2 - 6
SPN: 91
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Voltage outside target range, signal implausible compared to signal of redundant pedal (analog pedal 1), sensor defective, connection cable demaged

Take actions for error repair
Check cabling, check accelator pedal sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, switching to substitute value correspond to Priority-Chain or Limp Home
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

14 / 91 / APPPwm

Error description THROTTLE 1
Digital accelerator pedal sensor (PWM): the signal received by ECU is defective or implausible or the pulse-duty factor is out of the target range

Error codes
DEUTZ-Errorcode: 14
BlinkCode (short-long-short): 2 - 2 - 2
SPN: 91
possible FMI:
8: unusual frequency, pulse or period.
8: unusual frequency, pulse or period.
2: data stream is defective
8: unusual frequency, pulse or period.

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Duty cycle outside target range, signal erroneous or implausible (pedal 1), sensor defective, onnection cable demaged

Take actions for error repair
Check cabling, check accelator pedal sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, switching to substitute value correspond to Priority-Chain or Limp Home
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

15 / 91 / APPPwmPer

Error description THROTTLE 1
digital accelerator pedal sensor (PWM): the frequence of the signal received by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 15
BlinkCode (short-long-short): 2 - 2 - 2
SPN: 91
possible FMI:
8: unusual frequency, pulse or period.
8: unusual frequency, pulse or period.
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Pulse frequency outside target range (pedal 1), sensor defective, connection cable demaged

Take actions for error repair
Check cabling, check accelator pedal sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, switching to substitute value correspond to Priority-Chain or Limp Home
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

16 / 108 / APSCD

Error description BAROMETRIC PRESS.
Ambient air pressure sensor (in ECU): the voltage measured by ECU is out of the target range or the calculated ambient air pressure is implausible compared with the charge air pressure

Error codes
DEUTZ-Errorcode: 16
BlinkCode (short-long-short): 2 - 9 - 2
SPN: 108
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Ambient air pressure sensor defective, ECU defective

Take actions for error repair
Change ECU

other error properties
System reaction: Warning, substitute value (0,85bar)
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

17 / 729 / ArHt1

Error description AIR HEATER RELAY
Air heater relay: the current drain measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 17
BlinkCode (short-long-short): 2 - 6 - 3
SPN: 729
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit at EDC output, relay defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check relay and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: shut off value

18 / 730 / ArHt2

Error description AIR HEATER VALVE
Air heater magnet valve: the current drain measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 18
BlinkCode (short-long-short): 2 - 6 - 3
SPN: 730
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair
Check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: shut off value

19 / 676 / ArHtCD_NoLd

Error description AIR HEATER
Air heater relay: the ECU detects no switching operation at the input of a readback process

Error codes
DEUTZ-Errorcode: 19
BlinkCode (short-long-short): 2 - 6 - 3
SPN: 676
possible FMI:
12. Errormode not identifiable
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Relay energized, but no feedback on sense line, relay defective or wrong wired, preheat component defective, connection cable demaged

Take actions for error repair
Check cabling of preheat component, if relay not working,check relay and if necessary replace it, check preheat component and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: setpoint for output status

20 / 676 / ArHtCD_RlyErr

Error description AIR HEATER
Air heater relay: the ECU detects an implausible signal at the input of a readback process

Error codes
DEUTZ-Errorcode: 20
BlinkCode (short-long-short): 2 - 6 - 3
SPN: 676
possible FMI:
5: current to low or broken wire
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Relay not energized, but working voltage on sense line, relay defective (can not disconnect or switch off), preheat component defective, connection cable demaged

Take actions for error repair
Check cabling of preheat component, if relay not working,check relay and if necessary replace it, check preheat component and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: setpoint for output status

22 / 168 / BattCD

Error description BATTERY VOLTAGE

Battery voltage: the voltage measured by ECU is out of the target range

Error codes

DEUTZ-Errorcode: 22
BlinkCode (short-long-short): 3 - 1 - 8
SPN: 168
possible FMI:
0: data valid, but above normal working area
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Voltage below target range, battery defective, too high power supply voltage, too high contact resistance, wiring demaged, energie system overloaded, parametering inaccurate, ECU defective

Take actions for error repair

Check LIMA?, ECU, cabling, contact resistance, safety fuses, too high load in energy system, check battery and if necessary replace it, check battery pole and if necessary clean it, check connection cable and if necessary repair or replace it, check volta

other error properties

System reaction: Warning, substitute value, dependent upon supply voltage (12V, 24V)
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

23 / 168 / BattCDSysReac

Error description BATTERY VOLTAGE

Battery voltage: the voltage measured by ECU is out of the target range; the ECU activates a system reaction

Error codes

DEUTZ-Errorcode: 23
BlinkCode (short-long-short): 3 - 1 - 8
SPN: 168
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Above target range with system reaction, too high power supply voltage, parametering inaccurate, ECU defective

Take actions for error repair

Check dataset of calibration of working voltage for application, check LIMA? Check voltage of generator, check the parameters and if necessary correct them, replace ECU

other error properties

System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

24 / 523561 / BIPCyl1

Error description INJECT. PERIOD ZYL.1

Begin of injection of cylinder 1: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes

DEUTZ-Errorcode: 24
BlinkCode (short-long-short): 5 - 3 - 1
SPN: 523561
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Value outside target range or missing (cylinder 1), magnet valve or injection pump defective

Take actions for error repair

Check magnetic valve or injection pump and if necessary change them

other error properties

System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

25 / 523562 / BIPCyl2

Error description INJECT. PERIOD ZYL.2
Begin of injection of cylinder 2: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 25
BlinkCode (short-long-short): 5 - 3 - 2
SPN: 523562
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 2), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

26 / 523563 / BIPCyl3

Error description INJECT. PERIOD ZYL.3
Begin of injection of cylinder 3: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 26
BlinkCode (short-long-short): 5 - 3 - 3
SPN: 523563
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 3), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

27 / 523564 / BIPCyl4

Error description INJECT. PERIOD ZYL.4
Begin of injection of cylinder 4: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 27
BlinkCode (short-long-short): 5 - 3 - 4
SPN: 523564
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 4), magnet valve or injection pump defective

Take actions for error repair
d

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

28 / 523565 / BIPCyl5

Error description INJECT. PERIOD ZYL.5
Begin of injection of cylinder 5: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 28
BlinkCode (short-long-short): 5 - 3 - 5
SPN: 523565
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 5), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

29 / 523566 / BIPCyl6

Error description INJECT. PERIOD ZYL.6
Begin of injection of cylinder 6: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 29
BlinkCode (short-long-short): 5 - 3 - 6
SPN: 523566
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 6), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

30 / 523567 / BIPCyl7

Error description INJECT. PERIOD ZYL.7
Begin of injection of cylinder 7: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 30
BlinkCode (short-long-short): 5 - 3 - 7
SPN: 523567
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 7), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

31 / 523568 / BIPCyl8

Error description INJECT. PERIOD ZYL.8
Begin of injection of cylinder 8: the ECU can not identify the magnet valve or the injection pump with the measured value of current drain at the begin of the injection

Error codes
DEUTZ-Errorcode: 31
BlinkCode (short-long-short): 5 - 3 - 8
SPN: 523568
possible FMI:
2: data stream is defective
2: data stream is defective
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Value outside target range or missing (cylinder 8), magnet valve or injection pump defective

Take actions for error repair
Check magnetic valve or injection pump and if necessary change them

other error properties
System reaction: No function at the moment/ Allocation check cylinder!
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

32 / 102 / BPSCD

Error description CHARGE AIR PRESS.
Charge air pressure sensor: the measured voltage of sensor by ECU is out of the target range; the calculated charge air pressure is implausible or the received value via CAN is defective

Error codes
DEUTZ-Errorcode: 32
BlinkCode (short-long-short): 2 - 2 - 3
SPN: 102
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, onnection cable demaged

Take actions for error repair
Check cabling, if LDF6T sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

33 / 102 / BPSCDSysReac

Error description CHARGE AIR PRESS.
Charge air pressure: the charge air pressure calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 33
BlinkCode (short-long-short): 2 - 2 - 3
SPN: 102
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Outside target range with system reaction, air system demaged, sensor defective, onnection cable demaged

Take actions for error repair
Check air system, inspect air system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: BPSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

37 / 111 / CLSCDSysReac

Error description ENG COOLANT LEVEL
Coolant level: the coolant level calculated by ECU is underneath the allowed minimum

Error codes
DEUTZ-Errorcode: 37
BlinkCode (short-long-short): 2 - 3 - 5
SPN: 111
possible FMI:
1: data valid, but below normal working area
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Outside target range with system reaction, cooling system untight, sensor defective, onnection cable demaged

Take actions for error repair
Check coolant level, check cabling, inspect cooling system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: CLSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

38 / 1323 / CmbChbMisfire1

Error description MISFIRE CYL. 1
Misfire at cylinder 1: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 38
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1323
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected (cylinder 1), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

39 / 1324 / CmbChbMisfire2

Error description MISFIRE CYL. 2
Misfire at cylinder 2: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 39
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1324
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected (cylinder 2), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

40 / 1325 / CmbChbMisfire3

Error description MISFIRE CYL. 3

Misfire at cylinder 3: the number of the misfire detected by ECU is out of the allowed limit value

Error codes

DEUTZ-Errorcode: 40
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1325
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Misfire detected (cylinder 3), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair

Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties

System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

41 / 1326 / CmbChbMisfire4

Error description MISFIRE CYL. 4

Misfire at cylinder 4: the number of the misfire detected by ECU is out of the allowed limit value

Error codes

DEUTZ-Errorcode: 41
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1326
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Misfire detected (cylinder 4), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair

Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties

System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

42 / 1327 / CmbChbMisfire5

Error description MISFIRE CYL. 5

Misfire at cylinder 5: the number of the misfire detected by ECU is out of the allowed limit value

Error codes

DEUTZ-Errorcode: 42
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1327
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Misfire detected (cylinder 5), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair

Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties

System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

43 / 1328 / CmbChbMisfire6

Error description MISFIRE CYL. 6
Misfire at cylinder 6: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 43
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1328
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected (cylinder 6), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

44 / 1450 / CmbChbMisfire7

Error description MISFIRE CYL. 7
Misfire at cylinder 7: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 44
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1450
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected (cylinder 7), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

45 / 1451 / CmbChbMisfire8

Error description MISFIRE CYL. 8
Misfire at cylinder 8: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 45
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1451
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected (cylinder 8), magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

46 / 1322 / CmbChbMisfireMul

Error description MULTIPL. CYL. MISFIRE
Misfire at more cylinders: the number of the misfire detected by ECU is out of the allowed limit value

Error codes
DEUTZ-Errorcode: 46
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1322
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected, magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

47 / 1346 / CmbChbSysReac

Error description MISFIRE SYST. REACT
Misfire at more cylinders: the number of the misfire detected by ECU is out of the allowed limit value; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 47
BlinkCode (short-long-short): 2 - 4 - 1
SPN: 1346
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Misfire detected with system reaction, magnet valve or injection pump defective, fuel system defective, motor engineering demaged

Take actions for error repair
Check magnetic valve or injection pump and if necessary replace them, check fuel system and if necessary repair it, check motor engineering and if necessary repair it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 0
Measurement @ errortime: actual value

48 / 1109 / CoEngShOffDemIgr

Error description SHUT OFF REQUEST
Request of engine off: the operator ignors the engine off request within an allowed period.

Error codes
DEUTZ-Errorcode: 48
BlinkCode (short-long-short): 3 - 4 - 1
SPN: 1109
possible FMI:
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Shut-off request ignored by operator

Take actions for error repair
Warranty relevant

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

52 / 1072 / CRERCD

Error description ENGINE BRAKE INT.
Engine brake actuator (internal): the current drain measured by ECU is out of the target range or the maximum permissble temperature of the ECU component for power supply of the actuator is exceeded.

Error codes
DEUTZ-Errorcode: 52
BlinkCode (short-long-short): 5 - 2 - 8
SPN: 1072
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check actuator and if necessary replace it, check connection cable and if necessary repaire or replace it

other error properties
System reaction: Warning, shutoff output, capacity reduction via second topcurve?
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 2
Measurement @ errortime: setpoint for output status

53 / 1081 / CSLpCD

Error description PREHEAT LAMP
Indicator lamp of air heater relay: the current drain measured by ECU is out of the target range or the maximum permissble temperature of the ECU component for power supply of the lamp is exceeded

Error codes
DEUTZ-Errorcode: 53
BlinkCode (short-long-short): 3 - 2 - 8
SPN: 1081
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling and load, check lamp and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: setpoint for output status

54 / 704 / CTLpCD

Error description TEMP. LAMP
Warning lamp for coolant temperature: the current drain measured by ECU is out of the target range or the maximum temperature of the ECU component for power supply of the lamp is exceeded

Error codes
DEUTZ-Errorcode: 54
BlinkCode (short-long-short): 1 - 2 - 3
SPN: 704
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling and load, check lamp and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: setpoint for output status

55 / 110 / CTSCD

Error description ENG COOLANT TEMP.
Coolant temperature sensor: the voltage of the sensor measured by ECU is out of the target range; the coolant temperature calculated by ECU is implausible compared with the oil temperature or the received value via CAN is defective

Error codes
DEUTZ-Errorcode: 55
BlinkCode (short-long-short): 2 - 2 - 5
SPN: 110
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

56 / 110 / CTSCDSysReac

Error description ENG COOLANT TEMP.
Coolant temperature: the coolant temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 56
BlinkCode (short-long-short): 2 - 3 - 2
SPN: 110
possible FMI:
0: data valid, but above normal working area
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Outside target range with system reaction, cooling system not enough to be filled, clogged or demaged, cooling compressor dropped out, sensor defective, onnection cable demaged

Take actions for error repair
Check cycle cooling system and compressor, inspect cooling system and if necessary repair it, check cooling compressor and if necessary replace it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: CTSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

57 / 701 / Dummy1CD_Max

Error description RESERVE 2
Reserve output 1: the ECU detects a short circuit to battery

Error codes
DEUTZ-Errorcode: 57
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 701
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to Ubatt (output 1), connection cable demaged

Take actions for error repair
Check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

58 / 701 / Dummy1CD_Min

Error description RESERVE 2
Reserve output 1: the ECU detects a short circuit to ground
Error codes
DEUTZ-Errorcode: 58
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 701
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
Errordetection
Errorlamp shows permanent light. Entry in errormemory.
Possible reason for error
Short circuit to ground (output 1), connection cable demaged
Take actions for error repair
Check connection cable and if necessary repair or replace it
other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

59 / 701 / Dummy1CD_SigNpl

Error description RESERVE 2
Reserve output 1: the ECU detects no load or excess temperature of the ECU component for power supply of the connected components
Error codes
DEUTZ-Errorcode: 59
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 701
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
Errordetection
Errorlamp shows permanent light. Entry in errormemory.
Possible reason for error
Cable break or ECU internal error (output 1), connection cable demaged, connected components defective, parametering of the output inaccurate, ECU defective
Take actions for error repair
Check connection cable and if necessary repair or replace it, check parameters and if necessary correct it, replace ECU
other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

60 / 702 / Dummy2CD_Max

Error description THRUST MODE
Reserve output 2: the ECU detects a short circuit to battery
Error codes
DEUTZ-Errorcode: 60
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 702
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
Errordetection
Errorlamp shows permanent light. Entry in errormemory.
Possible reason for error
Short circuit to Ubatt (output 2), onnection cable demaged
Take actions for error repair
Check connection cable and if necessary repair or replace it
other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

61 / 702 / Dummy2CD_Min

Error description THRUST MODE
Reserve output 2: the ECU detects a short circuit to ground

Error codes
DEUTZ-Errorcode: 61
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 702
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to ground (output 2), connection cable demaged

Take actions for error repair
Check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

62 / 702 / Dummy2CD_SigNpl

Error description THRUST MODE
Reserve output 2: the ECU detects no load or excess temperature of the ECU component for power supply of the connected components

Error codes
DEUTZ-Errorcode: 62
BlinkCode (short-long-short): 1 - 0 - 0
SPN: 702
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or ECU internal error (output 2), connection cable demaged, connected components defective, parametering of the output inaccurate, ECU defective

Take actions for error repair
Check connection cable and if necessary repair or replace it, check parameters and if necessary correct it, replace ECU

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

69 / 2791 / EGRCD_Max

Error description EGR ACTUATOR
Actuator of the external EGR valve: the ECU detects a short circuit to battery

Error codes
DEUTZ-Errorcode: 69
BlinkCode (short-long-short): 4 - 1 - 4
SPN: 2791
possible FMI:
3: Voltage to high or short circuit to +Ubatt
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to Ubatt, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output, power reduction via second topcurve?
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: shut off value

70 / 2791 / EGRCD_Min

Error description EGR ACTUATOR
Actuator of the external EGR valve: the ECU detects a short circuit to ground

Error codes
DEUTZ-Errorcode: 70
BlinkCode (short-long-short): 4 - 1 - 4
SPN: 2791
possible FMI:
12. Errormode not identifiable
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to ground, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output, power reduction via second topcurve?
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: shut off value

71 / 2791 / EGRCD_SigNpl

Error description EGR ACTUATOR
Actuator of the external EGR valve: the ECU detects no load or excess temperature of the ECU component for power supply of the connected components

Error codes
DEUTZ-Errorcode: 71
BlinkCode (short-long-short): 4 - 1 - 5
SPN: 2791
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or excess temperature, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output, power reduction via second topcurve?
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: shut off value

72 / 2791 / EGRCDIntEGR

Error description EGR ACTUATOR
Actuator of the internal EGR valve: the ECU detects no load or excess temperature of the ECU component for power supply of the actuator

Error codes
DEUTZ-Errorcode: 72
BlinkCode (short-long-short): 4 - 1 - 6
SPN: 2791
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break, short circuit or excess temperature, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output, power reduction via second topcurve?
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: shut off value

74 / 923 / EngCDTrqCalcOut

Error description ENGINE POWER OUT
Output with PWM signal of the engine power: the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component to control the output is exceeded

Error codes
DEUTZ-Errorcode: 74
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 923
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Engine Power output: cable break or short circuit, output defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

75 / 190 / EngMBackUp

Error description ENGINE SPEED
Crankschaft speed sensor: the ECU receives no signal and uses the signal from camschaft speed sensor as alternative to calculate the engine speed

Error codes
DEUTZ-Errorcode: 75
BlinkCode (short-long-short): 2 - 1 - 2
SPN: 190
possible FMI:
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Engine running only with cam-shaft speed signal, transmitter defective, connection cable demaged

Take actions for error repair
Check cabling of crankschaft sensor, check crankschaft sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, calculation of injektion initation point will be incorrect
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: -

76 / 190 / EngMCaS1

Error description ENGINE SPEED
Camschaft speed sensor: the ECU receives no signal or the signal is defective

Error codes
DEUTZ-Errorcode: 76
BlinkCode (short-long-short): 2 - 1 - 2
SPN: 190
possible FMI:
12: Defective component
8: unusual frequency, pulse or period.
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Speed signal from cam-shaft defectiveiv or missing, transmitter defective, connection cable demaged, parametering of the sensor wheel inaccurate

Take actions for error repair
Check cabling, check camschaft sensor and if necessary replace it, check configuration of sensor wheel, check connection cable and if necessary repair or replace it, check parameters and if necessary correct them

other error properties
System reaction: Warning, difficult start
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: 0

77 / 190 / EngMCrS1

Error description ENGINE SPEED
Crankschaft speed sensor: the ECU receives no signal or the signal is defective

Error codes
DEUTZ-Errorcode: 77
BlinkCode (short-long-short): 2 - 1 - 2
SPN: 190
possible FMI:
12: Defective component
8: unusual frequency, pulse or period.
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Speed signal from crankshaft defectiveiv or missing, transmitter defective, connection cable demaged, sensor wheel installed inaccurately

Take actions for error repair
Check cabling, check camschaft sensor and if necessary replace it, check configuration of sensor wheel, check connection cable and if necessary repair or replace it, check the position of sensor wheel and if necessary correct it

other error properties
System reaction: Warning, power reduction via second topcurve
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: 0

78 / 190 / EngMOfsCaSCrS

Error description ENGINE SPEED
Speed sensor of crankschaft and camschaft: the received signals are out of phase

Error codes
DEUTZ-Errorcode: 78
BlinkCode (short-long-short): 2 - 1 - 3
SPN: 190
possible FMI:
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Speed signals of crank-shaft and cam-shaft are phase-shifted, sensor wheel installed in wrong position, sensor wrong wired

Take actions for error repair
Check position from crankschaft sensor wheel to camschaft sensor wheel, polarisation crankschaft or camschaft sensor, check position of sensor wheel and if necessary correct it, check cabling and if necessary correct it

other error properties
System reaction: Warning, not possible to start engine
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

79 / 190 / EngPrtSysReacFOC

Error description ENGINE SPEED
Engine speed: the engine speed calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 79
BlinkCode (short-long-short): 2 - 1 - 4
SPN: 190
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
Engine overspeed detected with system reaction, maximum engine speed exceeded

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: actual value

80 / 190 / EngPrtSysReacORC

Error description ENGINE SPEED
Engine speed: under overrun conditions, the engine speed calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 80
BlinkCode (short-long-short): 2 - 1 - 4
SPN: 190
possible FMI:
14: Special Instructions
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Overrun conditions detected with system reaction, maximum engine speed exceeded

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

81 / 703 / ESLpCD

Error description ENG. RUNNING LAMP
Indicator lamp for engine running: the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component for power supply of the lamp is exceeded

Error codes
DEUTZ-Errorcode: 81
BlinkCode (short-long-short): 1 - 4 - 2
SPN: 703
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or internal ECU error, lamp defective, connection cable demaged

Take actions for error repair
Check cabling and load, check lamp and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: shut off value

82 / 1074 / ExFlCD

Error description BRAKE FLAP ACTUATOR
Engine brake flap actuator: the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component for power supply of the actuator is exceeded

Error codes
DEUTZ-Errorcode: 82
BlinkCode (short-long-short): 2 - 1 - 9
SPN: 1074
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Engine brake flap actuator: cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 2
Measurement @ errortime: shut off value

83 / 975 / FanCD

Error description FAN ACTUATOR
Fan power stage: the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component for power supply of the actuator is exceeded

Error codes
DEUTZ-Errorcode: 83
BlinkCode (short-long-short): 2 - 3 - 8
SPN: 975
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, sensor defect, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 2
Measurement @ errortime: Sollwert

85 / 1639 / FanCDEval

Error description
Fan speed sensor: the current drain measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 85
BlinkCode (short-long-short): 2 - 3 - 8
SPN: 1639
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Sensor defective, connection cable demaged, fan speed outside the target range

Take actions for error repair
Check sensor and if necessary replace it, check connectionn cable and if necessary repair or replace it, check fan

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

86 / 523602 / FanCDSysReac

Error description FAN SPEED
Fan speed: the fan speed calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 86
BlinkCode (short-long-short): 2 - 3 - 8
SPN: 523602
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Above target range with system reaction

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

87 / 97 / FIFCD

Error description WATER IN FUEL
Fuel filter water level sensor: the voltage of sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 87
BlinkCode (short-long-short): 2 - 2 - 8
SPN: 97
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

89 / 97 / FIFCD_WtLvl

Error description WATER IN FUEL
Water in fuel: the water level calculated by ECU is above the allowed limit value

Error codes
DEUTZ-Errorcode: 89
BlinkCode (short-long-short): 2 - 2 - 8
SPN: 97
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Above target range, excess of maximum permissible water level in fuel filter

Take actions for error repair
flush water seperator

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

90 / 94 / FIPSCD

Error description FUEL PRE PRESS.
Low fuel pressure sensor: the voltage of sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 90
BlinkCode (short-long-short): 2 - 1 - 6
SPN: 94
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

91 / 94 / FlPSCDSysReac

Error description FUEL PRE PRESS.
Low fuel pressure: the low fuel pressure calculated by ECU is underneath the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 91
BlinkCode (short-long-short): 2 - 1 - 6
SPN: 94
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Below target range with system reaction, interruption in cycling process of low fuel pressure (for example, fuel pump defective), sensor defective, connection cable demaged

Take actions for error repair
Check low fuel pressure loop system, Check fuel pump, inspect fuel system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: FLPSCD_stSysReacReq
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

94 / 523239 / FrmMngDecV1

Error description CAN ERROR DEC-V1
CAN message DecV1 (Pseudo Pedal): the message can not be received by ECU or the received value is above the target range

Error codes
DEUTZ-Errorcode: 94
BlinkCode (short-long-short): 5 - 2 - 6
SPN: 523239
possible FMI:
12: Defective component
12: Defective component
12: Defective component
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing or value above target range (message "DecV1" = pseudo pedal), CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, changing to substitute values according to customers configuration.
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

95 / 523240 / FrmMngFunModCtl

Error description CAN ERROR FUNMODCTL
CAN message FunModCtl (Function Mode Control): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 95
BlinkCode (short-long-short): 5 - 2 - 7
SPN: 523240
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "FunModCtl" = function mode control, CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, changing to substitute values according to customers configuration.
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default valuee

106 / 523212 / FrmMngTOEngPrt

Error description CAN ERROR ENGPRT

CAN message EngPrt (Engine Protection): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 106
BlinkCode (short-long-short): 3 - 3 - 3
SPN: 523212
possible FMI:
12: Defective component
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "EngPrt" = engine protection, CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning. Hold last value.
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

110 / 523216 / FrmMngTOPrHtEnCmd

Error description CAN ERROR PRHTENCMD

CAN message PrHtEnCmd (Preheat and Engine Command): the message received can not be received by ECU

Error codes

DEUTZ-Errorcode: 110
BlinkCode (short-long-short): 3 - 3 - 7
SPN: 523216
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "PrHtEnCmd" = preheat and engine command; CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to customers configuration.
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default valuee

112 / 523218 / FrmMngTORxCCVS

Error description CAN ERROR RXCCVS

CAN message RxCCVS (Cruise Control): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 112
BlinkCode (short-long-short): 1 - 1 - 1
SPN: 523218
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "RxCCVS" = cruise control; CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default valuee

113 / 523604 / FrmMngTORxEngTemp

Error description CAN ERROR RxEngTemp
CAN message RxEngTemp (Engine Temperature): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 113
BlinkCode (short-long-short): 1 - 1 - 2
SPN: 523604
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "RxEngTemp" = engine temperature, CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

117 / 523238 / FrmMngTOSwtOut

Error description CAN ERROR SWTOUT
CAN message SwtOut (Switching Output): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 117
BlinkCode (short-long-short): 1 - 1 - 5
SPN: 523238
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "SwtOut" = switch outputs, CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default valuee

118 / 523222 / FrmMngTOTCO1

Error description CAN ERROR TCO1
CAN message "TCO1" (Speedo Signal): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 118
BlinkCode (short-long-short): 1 - 1 - 6
SPN: 523222
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "TCO1" = speedo signal, CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

120 / 523605 / FrmMngTOTSC1AE

Error description CAN ERROR TSC1-AE
CAN message TSC1-AE (Torque/Speed Control #1 from Automatic Traction Control to Engine): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 120
BlinkCode (short-long-short): 1 - 1 - 8
SPN: 523605
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "TSC1-AE", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

121 / 523606 / FrmMngTOTSC1AR

Error description CAN ERROR TSC1-AR
CAN message TSC1-AR (Torque/Speed Control #1 from Automatic Traction Control to Retarder): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 121
BlinkCode (short-long-short): 1 - 1 - 9
SPN: 523606
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "TSC1-AR", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

122 / 523607 / FrmMngTOTSC1DE

Error description CAN ERROR TSC1-DE
CAN message TSC1-DE (Torque/Speed Control #1 from Driveline to Engine): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 122
BlinkCode (short-long-short): 1 - 1 - 8
SPN: 523607
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Missing message "TSC1-DE", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

123 / 523608 / FrmMngTOTSC1DR

Error description CAN ERROR TSC1-DR

CAN message TSC1-DR (Torque/Speed Control #1 from Driveline to Retarder): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 123
BlinkCode (short-long-short): 1 - 1 - 9
SPN: 523608
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-DR", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

124 / 523609 / FrmMngTOTSC1PE

Error description CAN ERROR TSC1-PE

CAN message TSC1-PE (Torque/Speed Control #1 from Power Take Off to Engine): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 124
BlinkCode (short-long-short): 1 - 1 - 8
SPN: 523609
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-PE", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

125 / 898 / FrmMngTOTSC1TE

Error description CAN ERROR TSC1-TE

CAN message TSC1-TE (Torque/Speed Control #1 from Traction Control to Engine): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 125
BlinkCode (short-long-short): 1 - 1 - 8
SPN: 898
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-TE", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

126 / 520 / FrmMngTOTSC1TR

Error description CAN ERROR TSC1-TR

CAN message TSC1-TR (Torque/Speed Control #1 from Traction Control to Retarder): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 126
BlinkCode (short-long-short): 1 - 1 - 9
SPN: 520
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-TR", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

127 / 523610 / FrmMngTOTSC1VE

Error description CAN ERROR TSC1-VE

CAN message TSC1-VE (Torque/Speed Control #1 from Vehicle Control to Engine): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 127
BlinkCode (short-long-short): 1 - 1 - 8
SPN: 523610
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-VE", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

128 / 523611 / FrmMngTOTSC1VR

Error description CAN ERROR TSC1-VR

CAN message TSC1-VR (Torque/Speed Control #1 from Vehicle Control to Retarder): the message can not be received by ECU

Error codes

DEUTZ-Errorcode: 128
BlinkCode (short-long-short): 1 - 1 - 9
SPN: 523611
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Missing message "TSC1-VR", CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties

System reaction: Warning, changing to substitute values according to priority chain.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

131 / 523500 / FrmMngTxTO

Error description CAN MESS. TIMEOUT
CAN message: the ECU detects a timeout for one or more posted message

Error codes
DEUTZ-Errorcode: 131
BlinkCode (short-long-short): 2 - 7 - 1
SPN: 523500
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Timeout for sent messages

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: -

133 / 174 / FTSCD

Error description FUEL TEMP. SENSOR
Fuel temperature sensor: the voltage measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 133
BlinkCode (short-long-short): 2 - 2 - 7
SPN: 174
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Fuel temp. sensor: cable break or short circuit, sendor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

134 / 174 / FTSCDSysReac

Error description FUEL TEMP. SENSOR
Fuel temperature: the fuel temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 134
BlinkCode (short-long-short): 2 - 3 - 7
SPN: 174
possible FMI:
0: data valid, but above normal working area
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Above target range with system reaction, interruption of fuel loop (for example, rail pressure relief valve defective), sensor defective, connection cable demaged

Take actions for error repair
Check fuel system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: FTSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

136 / 523618 / GOTSCD

Error description CUSTOMER TEMPSENS 1
Customer specific temperature sensor 1: the voltage of sensor measured by ECU is out of the target range or the received value of temperature via CAN is defective

Error codes
DEUTZ-Errorcode: 136
BlinkCode (short-long-short): 1 - 3 - 3
SPN: 523618
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit (sensor 1), sensor defective, connection cable demaged, CAN bus wrong cabled, wiring demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Customer specific bugfixing, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it, Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN fun

other error properties
System reaction: Warning, substitute value (customer specific)
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: default value

137 / 523619 / GOTSCDSysReac

Error description
Customer specific temperature 1: the temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 137
BlinkCode (short-long-short): 1 - 3 - 3
SPN: 523619
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Outside target range with system reaction (temperature 1), dependant on the application

Take actions for error repair
Customer specific bugfixing, denpendant on application

other error properties
System reaction: Advice: GOTSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

138 / 29 / HdThrt

Error description THROTTLE 2
Hand throttle pedal sensor: the voltage measured by ECU is out of the target range or the calculated pedal position is implausible compared with the position of accelerator pedal 1

Error codes
DEUTZ-Errorcode: 138
BlinkCode (short-long-short): 1 - 2 - 6
SPN: 29
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, signal implausible compared to signal of idle sensor, transmitter defective, connection cable demaged

Take actions for error repair
Check cabling, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, changing to substitute values according to priority chain or limp home
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

139 / 1638 / HOTSCD

Error description CUSTOMER TEMPSENS 2
Customer specific temperature sensor 2: the voltage of sensor measured by ECU is out of the target range or the received value of temperature via CAN is defective

Error codes
DEUTZ-Errorcode: 139
BlinkCode (short-long-short): 3 - 1 - 4
SPN: 1638
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit (sensor 2), sensor defective, connection cable demaged, CAN bus wrong cabled, wiring demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Customer specific bugfixing, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it, Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN fun

other error properties
System reaction: Warning, substitute value (customer specific)
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: default value

140 / 1638 / HOTSCDSysReac

Error description CUSTOMER TEMPSENS 2
Customer specific temperature 2: the temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 140
BlinkCode (short-long-short): 3 - 1 - 4
SPN: 1638
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Outside target range with system reaction (temperature 2), dependant on the application

Take actions for error repair
Customer specific bugfixing, denpendant on application

other error properties
System reaction: Advice: HOTSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

141 / 523617 / HWEMonCom

Error description INTERNAL COMM. ERROR
Internal hardware monitoring: the ECU detects a communication distrubance

Error codes
DEUTZ-Errorcode: 141
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523617
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Communication with chip CJ 940 disturbed, ECU defective

Take actions for error repair
If cannot delete the error, change ECU

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

142 / 630 / HWEMonEEPROM

Error description EEPROM MEM. ACCESS
Internal hardware monitoring: the ECU finds an error during the access to ist EEPROM memory or works with an alternative value

Error codes
DEUTZ-Errorcode: 142
BlinkCode (short-long-short): 2 - 8 - 1
SPN: 630
possible FMI:
12. Errormode not identifiable
12: Defective component
12: Defective component
12: Defective component

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Error during EEPROM memory access or EEPROM works with substitute value, programming error, ECU defective

Take actions for error repair
If not programmed, EEPROM is defect –> ECU is defect, reprogram ECU and if necessary replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

143 / 523612 / HWEMonRcyLocked

Error description INT. RECOVERY
Internal hardware monitoring: the CPU of the ECU is reset and the cause is logged internally; no item will be created in error memory

Error codes
DEUTZ-Errorcode: 143
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523612
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
14: Special Instructions

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
A recovery occurred which is stored as protected

Take actions for error repair
Recoverey occured which is stored as protected
With parameter HWEMon_numRexxxxxxx the recovery nummer and the subsequent position can be identified. See especially SW-Doku _rcy_auto.pdf

other error properties
System reaction: Recovery of ECU
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

144 / 523612 / HWEMonRcySuppressed

Error description INT. RECOVERY
Internal hardware monitoring: the CPU of the ECU is reset and the cause is logged internally; no item will be created in error memory

Error codes
DEUTZ-Errorcode: 144
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523612
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
14: Special Instructions

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
A recovery occurred which is not stored

Take actions for error repair
Recoverey occured which is stored as protected
With parameter HWEMon_numRexxxxxxx the recovery nummer and the subsequent position can be identified. See especially SW-Doku _rcy_auto.pdf

other error properties
System reaction: Warning, shown at error path
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

145 / 523612 / HWEMonRcyVisible

Error description INT. RECOVERY
Internal hardware monitoring: the CPU of the ECU is reset and an item will be created in error memory

Error codes
DEUTZ-Errorcode: 145
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523612
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
14: Special Instructions

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
A recovery occurred which is visible in the error memory

Take actions for error repair
Recoverey occured which is stored as protected
With parameter HWEMon_numRexxxxxxx the recovery nummer and the subsequent position can be identified. See especially SW-Doku _rcy_auto.pdf

other error properties
System reaction: Recovery of ECU
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

146 / 523612 / HWEMonUMaxSupply

Error description INT. RECOVERY
Internal hardware monitoring: the ECU detects an excess of the target range for the power supply of ist communication module

Error codes
DEUTZ-Errorcode: 146
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523612
possible FMI:
3: Voltage to high or short circuit to +Ubatt
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Overvoltage at CJ940, power supply voltage too high, ECU defective

Take actions for error repair
Check working voltage and if necessary correct it, Check ECU and if necessary replace it

other error properties
System reaction: Power stage shut off
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

147 / 523612 / HWEMonUMinSupply

Error description INT. RECOVERY
Internal hardware monitoring: the ECU detects an undershooting of the target range for the power supply of ist communication module

Error codes
DEUTZ-Errorcode: 147
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523612
possible FMI:
12. Errormode not identifiable
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Undervoltage at CJ940, power supply voltage too low, ECU defective

Take actions for error repair
Check working voltage and if necessary correct it, Check ECU and if necessary replace it

other error properties
System reaction: Power stage shut off
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

149 / 105 / IATSCD

Error description CHARGE AIR TEMP.
Charge air temperature sensor: the voltage of sensor measured by ECU is out of the target range or the received value of temperature via CAN is defective

Error codes
DEUTZ-Errorcode: 149
BlinkCode (short-long-short): 1 - 2 - 8
SPN: 105
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, connection cable demaged, CAN bus wrong cabled, wiring demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check cabling, LDF6T-sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it, Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, c

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

150 / 105 / IATSCDSysReac

Error description CHARGE AIR TEMP.
Charge air temperature: die charge air temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 150
BlinkCode (short-long-short): 2 - 3 - 3
SPN: 105
possible FMI:
0: data valid, but above normal working area
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Above target range with system reaction, air system demaged, sensor defective, connection cable demaged

Take actions for error repair
Check construction of LDF6T , check suction parts, check air system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: IATSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

153 / 523350 / InjVlvBnk1A

Error description INJECTOR BANK A
Injector cylinder bank 1: the current drain measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 153
BlinkCode (short-long-short): 1 - 5 - 1
SPN: 523350
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
13: out of calibrated range
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit (cylinder bank 1), injector defective, connection cable demaged

Take actions for error repair
Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, cylinder shut off
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

154 / 523351 / InjVlvBnk1B

Error description INJECTOR BANK A

Injector cylinder bank 1: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 154
BlinkCode (short-long-short): 1 - 5 - 1
SPN: 523351
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder bank 1), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, cylinder shut off
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

155 / 523352 / InjVlvBnk2A

Error description INJECTOR BANK B

Injector cylinder bank 2: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 155
BlinkCode (short-long-short): 1 - 5 - 2
SPN: 523352
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
13: out of calibrated range
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder bank 2), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, cylinder shut off
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

156 / 523353 / InjVlvBnk2B

Error description INJECTOR BANK B

Injector cylinder bank 2: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 156
BlinkCode (short-long-short): 1 - 5 - 2
SPN: 523353
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder bank 2), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, cylinder shut off
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

157 / 523354 / InjVlvChipA

Error description PWR. INJ. BANK B
Internal hardware monitoring: the ECU detects an error of ist injector high current output

Error codes
DEUTZ-Errorcode: 157
BlinkCode (short-long-short): 1 - 5 - 3
SPN: 523354
possible FMI:
3: Voltage to high or short circuit to +Ubatt
2: data stream is defective
14: Special Instructions
12: Defective component

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
High power stage Injector A, ECU defective

Take actions for error repair
If error is not removable, change ECU

other error properties
System reaction: Warninig, outputs shut off
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: actual value

158 / 523355 / InjVlvChipB

Error description PWR. INJ. BANK B
Internal hardware monitoring: the ECU detects a disturbance in its injector high current output

Error codes
DEUTZ-Errorcode: 158
BlinkCode (short-long-short): 1 - 5 - 3
SPN: 523355
possible FMI:
12: Defective component
12: Defective component
12: Defective component
12: Defective component

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
High power stage Injector B, ECU defective

Take actions for error repair
If error is not removable, change ECU

other error properties
System reaction: Warninig, outputs shut off
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: actual value

159 / 651 / InjVlvCyl1A

Error description INJECTOR 1
Injector 1: the current drain measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 159
BlinkCode (short-long-short): 1 - 5 - 4
SPN: 651
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit (cylinder 1), injector defective, connection cable demaged

Take actions for error repair
Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

160 / 651 / InjVlvCyl1B

Error description INJECTOR 1

Injector 1: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 160
BlinkCode (short-long-short): 1 - 5 - 4
SPN: 651
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 1), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

161 / 652 / InjVlvCyl2A

Error description INJECTOR 2

Injector 2: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 161
BlinkCode (short-long-short): 1 - 5 - 5
SPN: 652
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 2), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

162 / 652 / InjVlvCyl2B

Error description INJECTOR 2

Injector 2: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 162
BlinkCode (short-long-short): 1 - 5 - 5
SPN: 652
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 2), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

163 / 653 / InjVlvCyl3A

Error description INJECTOR 3

Injector 3: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 163
BlinkCode (short-long-short): 1 - 5 - 6
SPN: 653
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 3), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

164 / 653 / InjVlvCyl3B

Error description INJECTOR 3

Injector 3: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 164
BlinkCode (short-long-short): 1 - 5 - 6
SPN: 653
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 3), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

165 / 654 / InjVlvCyl4A

Error description INJECTOR 4

Injector 4: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 165
BlinkCode (short-long-short): 1 - 6 - 1
SPN: 654
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 4), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

166 / 654 / InjVlvCyl4B

Error description INJECTOR 4

Injector 4: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 166
BlinkCode (short-long-short): 1 - 6 - 1
SPN: 654
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 4), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

167 / 655 / InjVlvCyl5A

Error description INJECTOR 5

Injector 5: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 167
BlinkCode (short-long-short): 1 - 6 - 2
SPN: 655
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 5), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

168 / 655 / InjVlvCyl5B

Error description INJECTOR 5

Injector 5: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 168
BlinkCode (short-long-short): 1 - 6 - 2
SPN: 655
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 5), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

169 / 656 / InjVlvCyl6A

Error description INJECTOR 6

Injector 6: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 169
BlinkCode (short-long-short): 1 - 6 - 3
SPN: 656
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 6), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

170 / 656 / InjVlvCyl6B

Error description INJECTOR 6

Injector 6: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 170
BlinkCode (short-long-short): 1 - 6 - 3
SPN: 656
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 6), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

171 / 657 / InjVlvCyl7A

Error description INJECTOR 7

Injector 7: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 171
BlinkCode (short-long-short): 1 - 6 - 4
SPN: 657
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 7), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

172 / 657 / InjVlvCyl7B

Error description INJECTOR 7

Injector 7: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 172
BlinkCode (short-long-short): 1 - 6 - 4
SPN: 657
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 7), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

173 / 658 / InjVlvCyl8A

Error description INJECTOR 8

Injector 8: the current drain measured by ECU is above the target range

Error codes

DEUTZ-Errorcode: 173
BlinkCode (short-long-short): 1 - 6 - 5
SPN: 658
possible FMI:
3: Voltage to high or short circuit to +Ubatt
13: out of calibrated range
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Short circuit (cylinder 8), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

174 / 658 / InjVlvCyl8B

Error description INJECTOR 8

Injector 8: the current drain measured by ECU is underneath the target range

Error codes

DEUTZ-Errorcode: 174
BlinkCode (short-long-short): 1 - 6 - 5
SPN: 658
possible FMI:
13: out of calibrated range
13: out of calibrated range
5: current to low or broken wire
13: out of calibrated range

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break (cylinder 8), injector defective, connection cable demaged

Take actions for error repair

Check cabling, check injectors and if necessary replace them, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning, fuel injection failed, shut off wenn the number of active cylinders below minimum
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

175 / 523370 / InjVlvErrDet

Error description RAIL PRESS. MON. DISABLED
Rail pressure monitoring: the monitoring of the rail pressure will be deactivated by ECU because of the activation of the function "compression test" by user

Error codes
DEUTZ-Errorcode: 175
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523370
possible FMI:
14: Special Instructions
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows . Entry in errormemory.

Possible reason for error
Compression test active: rail-pressure monitoring is going to be disabled

Take actions for error repair
not correct

other error properties
System reaction: Rail pressure monitoring disabled
Behaviour error lamp:
Selfhealing: -
Signal Priority: 1
Measurement @ errortime:

176 / 523615 / MeUnCD_ADC

Error description METERING UNIT
Fuel volume flow rate: the fuel volume rate calculated by ECU at outlet of the fuel metering unit is out of the target range

Error codes
DEUTZ-Errorcode: 176
BlinkCode (short-long-short): 1 - 3 - 5
SPN: 523615
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Flow rate outside target range

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

177 / 523615 / MeUnCDNoLoad

Error description METERING UNIT
Valve at outlet of the fuel metering unit: the ECU detects no load or temperature excess of the ECU component for power supply of the valve

Error codes
DEUTZ-Errorcode: 177
BlinkCode (short-long-short): 1 - 3 - 5
SPN: 523615
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
5: current to low or broken wire
12: Defective component

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
wiring error or ECU output is switched off because of overtemperature, fuel metering unit defective, connection cable demaged

Take actions for error repair
Check cabling , if necessary check FCU, check fuel metering unit and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, max.extraction of FCU --> open rail pressure relief valve --> shut the engine off in about 5 minutes
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

178 / 523615 / MeUnCDSCBat

Error description METERING UNIT
Valve at outlet of the fuel metering unit: the current drain measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 178
BlinkCode (short-long-short): 1 - 3 - 5
SPN: 523615
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
Short circuit to Ubatt, fuel metering unit defective, connection cable demaged

Take actions for error repair
Check cabling , if necessary check FCU, check fuel metering unit and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, rail pressure relief valve will open
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

179 / 523615 / MeUnCDSCGnd

Error description METERING UNIT
Valve at outlet of the fuel metering unit: the current drain measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 179
BlinkCode (short-long-short): 1 - 3 - 5
SPN: 523615
possible FMI:
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
Short circuit to ground, fuel metering unit defective, connection cable demaged

Take actions for error repair
Check cabling , if necessary check FCU, check fuel metering unit and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, rail pressure relief valve will open
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

182 / 2634 / MnRly1_SCB

Error description MAIN RELAY
Main relay 1: the current drains measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 182
BlinkCode (short-long-short): 1 - 3 - 7
SPN: 2634
possible FMI:
3: Voltage to high or short circuit to +Ubatt
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to Ubatt (relay 1), relay defective, connection cable demaged

Take actions for error repair
Check cabling, check ECU, check relay and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff the outputs MPROP
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

183 / 2634 / MnRly1_SCG

Error description MAIN RELAY
Main relay 1: the current drains measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 183
BlinkCode (short-long-short): 1 - 3 - 8
SPN: 2634
possible FMI:
12. Errormode not identifiable
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to ground (relay 1), relay defective, connection cable demaged

Take actions for error repair
Check cabling, check ECU, check relay and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff the outputs MPROP
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

184 / 523420 / Montr

Error description WATCHDOG COUNTER
Internal hardware monitoring: the ECU detects an disturbance in ist monitoring module (Wachtdog)

Error codes
DEUTZ-Errorcode: 184
BlinkCode (short-long-short): 1 - 3 - 9
SPN: 523420
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
14: Special Instructions

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
Watchdog counter exceeds maximum, ECU defective

Take actions for error repair
If error is not removable, change ECU

other error properties
System reaction: Recovery of ECU
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

186 / 2634 / MRlyCD

Error description MAIN RELAY
Main relay: during the switching off, main relay does not switch on within an allowed time

Error codes
DEUTZ-Errorcode: 186
BlinkCode (short-long-short): 2 - 6 - 1
SPN: 2634
possible FMI:
7: Mechanical system not OK
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
EDC16: main relay not open in allowed time or main relay open too early; EDC7: main relay not open in allowed time or short circuit of main relay to ground; EDC16: main relay defective, connection cable demaged; generally: rapid shut-off of the ECU (witho

Take actions for error repair
EDC16: check external main relay, check cabling
EDC7: if error is not removable, change ECU, EDC16: Check main relay and if necessary replace it, check connection cable and if necessary repair or replace it; both: if error is not removable, change ECU

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

187 / 563 / MRlyCDMnRly2

Error description MAIN RELAY 2
Main relay 2 (in ECU): during the switching off, main relay does not switch on within an allowed time

Error codes
DEUTZ-Errorcode: 187
BlinkCode (short-long-short): 2 - 6 - 1
SPN: 563
possible FMI:
7: Mechanical system not OK
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
rapid shut-off of the ECU (without waiting till the end of the afterrun), ECU defective

Take actions for error repair
If error not removable, change ECU

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

188 / 2634 / MRlyCDMnRly3

Error description MAIN RELAY
Main relay 3 (in ECU): during the switching off, main relay does not switch on within an allowed time

Error codes
DEUTZ-Errorcode: 188
BlinkCode (short-long-short): 2 - 6 - 1
SPN: 2634
possible FMI:
7: Mechanical system not OK
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Short circuit to ground or emergency shut-off (relay 3 internal), rapid shut-off of the ECU (without waiting till the end of the afterrun), ECU defective

Take actions for error repair
Check cabling, check ECU, if error not removable, change ECU

other error properties
System reaction: Warning, shutoff the outputs MPROP (see BOSCH-Electricity operating plan)
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

189 / 523450 / MSSCD1

Error description MULTISTATE SWITCH 1
Multi state switch 1: the voltage measured by ECU is out of the target range or the swith setting is not plausible

Error codes
DEUTZ-Errorcode: 189
BlinkCode (short-long-short): 1 - 4 - 3
SPN: 523450
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, input voltage outside target range (switch 1), switch defective, connection cable demaged

Take actions for error repair
Check cabling and sensor, check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: default value

190 / 523451 / MSSCD2

Error description MULTISTATE SWITCH 2
Multi state switch 2: the voltage measured by ECU is out of the target range or the swith setting is not plausible

Error codes
DEUTZ-Errorcode: 190
BlinkCode (short-long-short): 1 - 4 - 3
SPN: 523451
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, input voltage outside target range (switch 2), switch defective, connection cable demaged

Take actions for error repair
Check cabling and sensor, check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: default value

191 / 523452 / MSSCD3

Error description MULTISTATE SWITCH 3
Multi state switch 3: the voltage measured by ECU is out of the target range or the swith setting is not plausible

Error codes
DEUTZ-Errorcode: 191
BlinkCode (short-long-short): 1 - 4 - 3
SPN: 523452
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, input voltage outside target range (switch 3), switch defective, connection cable demaged

Take actions for error repair
Check cabling and sensor, check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: default value

192 / 639 / NetMngCANAOff

Error description CAN A BUS OFF
CAN bus A: the ECU is not allowed to send messages, because the status "BusOff" is detected

Error codes
DEUTZ-Errorcode: 192
BlinkCode (short-long-short): 2 - 7 - 1
SPN: 639
possible FMI:
14: Special Instructions
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, off-state (CAN bus A), CAN bus deactivated, connection cable demaged

Take actions for error repair
Check cabling of CAN bus and if necessary repair it, check connection cable and if necessary repair or replace it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime:

193 / 1231 / NetMngCANBOff

Error description CAN B BUS OFF
CAN bus B: the ECU is not allowed to send messages, because the status "BusOff" is detected

Error codes
DEUTZ-Errorcode: 193
BlinkCode (short-long-short): 2 - 7 - 1
SPN: 1231
possible FMI:
14: Special Instructions
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, off-state (CAN bus B), CAN bus deactivated, connection cable demaged

Take actions for error repair
Check cabling of CAN bus and if necessary repair it, check connection cable and if necessary repair or replace it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime:

194 / 1235 / NetMngCANCOff

Error description CAN C BUS OFF
CAN bus C: the ECU is not allowed to send messages, because the status "BusOff" is detected

Error codes
DEUTZ-Errorcode: 194
BlinkCode (short-long-short): 2 - 7 - 1
SPN: 1235
possible FMI:
14: Special Instructions
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, off-state (CAN bus C), CAN bus deactivated, connection cable demaged

Take actions for error repair
Check cabling of CAN bus and if necessary repair it, check connection cable and if necessary repair or replace it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime:

195 / 705 / OPLpCD

Error description OIL PRESS LAMP
Warning lamp for oil level: the current drain measured by ECU is out of the target range or the maximum temperature of the ECU component for power supply of the lamp is exceeded

Error codes
DEUTZ-Errorcode: 195
BlinkCode (short-long-short): 1 - 3 - 5
SPN: 705
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling and load, check lamp and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

196 / 100 / OPSCD

Error description ENG OIL PRESS.
Oil pressure sensor: the voltage of sensor measured by ECU is out of the target range or the received value of oil pressure via CAN is implausible (Oil pressure is above the target range with higher oil temperature at the same time)

Error codes
DEUTZ-Errorcode: 196
BlinkCode (short-long-short): 2 - 2 - 4
SPN: 100
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
0: data valid, but above normal working area

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, connection cable demaged, CAN bus wrong cabled, wiring demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it, Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, chec

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

197 / 100 / OPSCD1

Error description ENG OIL PRESS.
Oil pressure: the oil pressure calculated by ECU is implausibly low

Error codes
DEUTZ-Errorcode: 197
BlinkCode (short-long-short): 2 - 3 - 1
SPN: 100
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
1: data valid, but below normal working area

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Oil pressure implausible low, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

198 / 100 / OPSCDSysReacHi

Error description ENG OIL PRESS.
Oil pressure: the oil pressure calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 198
BlinkCode (short-long-short): 2 - 3 - 1
SPN: 100
possible FMI:
0: data valid, but above normal working area
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Above target range, oil volume too large, sensor defective, oil pump defective, connection cable demaged

Take actions for error repair
Check oil level and if necessary correct it, check oil pump and if necessary replace it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: OPSCD_stSysReacReqHi
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

199 / 100 / OPSCDSysReacLo

Error description ENG OIL PRESS.
Oil pressure: the oil pressure calculated by ECU is underneath the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 199
BlinkCode (short-long-short): 2 - 3 - 1
SPN: 100
possible FMI:
1: data valid, but below normal working area
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Below target range, oil volume too small, sensor defective, oil pump defective, connection cable demaged

Take actions for error repair
Check oil level and if necessary correct it, check oil pump and if necessary replace it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: OPSCD_stSysReacReqLo
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

200 / 1237 / OSwCD

Error description OVERRIDE SWITCH
Bridgeover switch: the ECU receives a permanent signal

Error codes
DEUTZ-Errorcode: 200
BlinkCode (short-long-short): 1 - 4 - 5
SPN: 1237
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Switch is blocked, taster locked, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

201 / 175 / OTSCD

Error description OIL TEMP. SENSOR
Oil temperature sensor: the voltage of sensor measured by ECU is out of the target range; the oil temperature calculated by ECU is implausible compared with coolant temperature or the received value via CAN is defective

Error codes
DEUTZ-Errorcode: 201
BlinkCode (short-long-short): 1 - 4 - 4
SPN: 175
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
2: data stream is defective

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

203 / 175 / OTSCDSysReac

Error description OIL TEMP. SENSOR
Oil temperature: the oil temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 203
BlinkCode (short-long-short): 1 - 4 - 4
SPN: 175
possible FMI:
0: data valid, but above normal working area
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
Above target range with system reaction, oil volume too small, oil loop disturbed, sensor defective, connection cable demaged

Take actions for error repair
Check cycle cooling system and compressor, check oil level and if necessary correct it, check sensor and if necessary replace it, check oil loop and if necessary repair it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: OTSCD_stSysReacReq
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

208 / 523470 / PRVMon

Error description RAIL PRESS. LIM. VALVE
Rail pressure relief valve: is open, will be forced to open, the forced-open failed

Error codes
DEUTZ-Errorcode: 208
BlinkCode (short-long-short): 1 - 4 - 6
SPN: 523470
possible FMI:
14: Special Instructions
2: data stream is defective
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
Rail pressure relief valve open or forced open abortive (interpretation of the rail pressure gradient), operating voltage too low, rail pressure sensor defective, fuel metering unit defective, rail pressure relief valve defective, air in fuel system

Take actions for error repair
Check working voltage and if necessary correct it, check rail-pressure sensor and if necessary replace it, check FCU and if necessary replace it, check rail pressure relief valve and if necessary replace it, bleed the fuel-system

other error properties
System reaction: Warning, shut the engine off in about 5 minutes
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

209 / 157 / RailCD

Error description RAIL PRESS. SENSOR
Rail pressure sensor: the voltage of sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 209
BlinkCode (short-long-short): 1 - 4 - 7
SPN: 157
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, check rail pressure sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, max.extraction of FCU --> open rail pressure relief valve --> shut the engine off in about 5 minutes
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: default value

210 / 157 / RailCDOfsTst

Error description RAIL PRESS. SENSOR

Rail pressure sensor: the change of the voltage measured by ECU during the engine start or the after-run is out of the target range

Error codes

DEUTZ-Errorcode: 210
BlinkCode (short-long-short): 1 - 4 - 7
SPN: 157
possible FMI:
0: data valid, but above normal working area
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Deviation of signal during start or after-run above target range, sensor defective

Take actions for error repair

Replace sensor

other error properties

System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

211 / 523613 / RailMeUn0

Error description RAIL PRESSURE

Rail pressure: the fuel pressure in rail calculated by ECU is above the target range which is dependant on the engine speed

Error codes

DEUTZ-Errorcode: 211
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error

1) Leakage in high pressure system (external) ,
2) Leakage at rail pressure relief valve (internal),
3) Needle clampt in open position,
4) Abrasion at injector,
5) Abrasion at high pressure pump,
6) Too low primary pressure on low pressure side, sensor d

Take actions for error repair

(A) Check for leakage
(B) Chek fuel-primary pressure
(C) Change components, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties

System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

212 / 523613 / RailMeUn1

Error description RAIL PRESSURE

Rail pressure: the fuel pressure in rail calculated by ECU is above the target range which is dependant on the volume flow rate

Error codes

DEUTZ-Errorcode: 212
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error

1) Leakage in high pressure system (external) ,
2) Leakage at rail pressure relief valve (internal),
3) Needle clampt in open position,
4) Abrasion at injector,
5) Abrasion at high pressure pump,
6) Too low primary pressure on low pressure side, sensor d

Take actions for error repair

(A) Check for leakage
(B) Chek fuel-primary pressure
(C) Change components, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties

System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

213 / 523613 / RailMeUn2

Error description RAIL PRESSURE
Rail pressure: the fuel pressure in rail calculated by ECU is underneath the target range which is dependant on the engine speed

Error codes
DEUTZ-Errorcode: 213
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
1) No power supply in FCU,
2) ZME clamped in open position,
3) Too high pressure nach Nullförderdrossel (FCU),
4) Nullförderdrossel clogged,
5) Too high primary pressure on low pressure side, sensor defective, fuel system disturbed

Take actions for error repair
(A) Check return-pressure FCU
(B) Check flow-pressure
(C) Change FCU, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties
System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

214 / 523613 / RailMeUn3

Error description RAIL PRESSURE
Rail pressure: the fuel pressure in rail calculated by ECU is underneath the target range which is dependant on the volume flow rate

Error codes
DEUTZ-Errorcode: 214
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
1) Leakage in high pressure system (external) ,
2) Leakage at rail pressure relief valve (internal),
3) Needle clampt in open position,
4) Abrasion at injector,
5) Abrasion at high pressure pump,
6) Too low primary pressure on low pressure side, sensor d

Take actions for error repair
(A) Check for leakage
(B) Chek fuel-primary pressure
(C) Change components, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties
System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

215 / 523613 / RailMeUn4

Error description RAIL PRESSURE
Rail pressure: the fuel pressure in rail calculated by ECU is above the absolute target range

Error codes
DEUTZ-Errorcode: 215
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
1) No power supply in FCU,
2) ZME clamped in open position,
3) Too high pressure nach Nullförderdrossel (FCU),
4) Nullförderdrossel clogged,
5) Too high primary pressure on low pressure side, sensor defective, fuel system disturbed

Take actions for error repair
(A) Check return-pressure FCU
(B) Check flow-pressure
(C) Change FCU, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties
System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

216 / 523613 / RailMeUn7

Error description RAIL PRESSURE
Rail pressure: the fuel pressure in rail calculated by ECU is implausible compared with the setpoint setting of the fuel metering unit

Error codes
DEUTZ-Errorcode: 216
BlinkCode (short-long-short): 1 - 3 - 4
SPN: 523613
possible FMI:
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light
oder
blinking. Entry in errormemory.

Possible reason for error
1) Leakage in high pressure system (external) ,
2) Leakage at rail pressure relief valve (internal),
3) Needle clampt in open position,
4) Abrasion at injector,
5) Abrasion at high pressure pump,
6) Too low primary pressure on low pressure side, sensor d

Take actions for error repair
(A) Check for leakage
(B) Chek fuel-primary pressure
(C) Change components, check sensor and if necessary replace it, check fuel system and if necessary repair it

other error properties
System reaction: Warning or Warning and power reduction
Behaviour error lamp: permanent light
oder
blinking
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

218 / 523490 / SOPTst

Error description REDUNDANT SHUT OFF DET.
Internal hardware monitoring: the ECU finds an disturbance in the redundant switch off path through a test during the ramp up phase

Error codes
DEUTZ-Errorcode: 218
BlinkCode (short-long-short): 1 - 4 - 9
SPN: 523490
possible FMI:
12. Errormode not identifiable
12: Defective component
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Test of redundant shut-off paths

Take actions for error repair
Could be triggered by over/undervoltage or external Watchdog

other error properties
System reaction: Test will only be executed with ECU Initialisation. Warning, dependent upon application.
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: -

219 / 1079 / SSpMon1

Error description 5V SUPPLY 1 FAIL.
Internal hardware monitoring: the ECU detects a deviation of the target range of the power supply voltage of sensor 1

Error codes
DEUTZ-Errorcode: 219
BlinkCode (short-long-short): 2 - 8 - 2
SPN: 1079
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
5V sensor supply voltage 1 outside target range, operating voltage too high or to low, connection cable demaged, ECU defective

Take actions for error repair
If error not removable, change ECU, check cabling of external components, check working voltage and if necessary correct it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

221 / 1080 / SSpMon2

Error description 5V SUPPLY 2 FAIL.
Internal hardware monitoring: the ECU detects a deviation of the target range of the power supply voltage of sensor 2

Error codes
DEUTZ-Errorcode: 221
BlinkCode (short-long-short): 2 - 8 - 2
SPN: 1080
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
5V sensor supply voltage 2 outside target range, operating voltage too high or to low, connection cable demaged, ECU defective

Take actions for error repair
If error not removable, change ECU, check cabling of external components, check working voltage and if necessary correct it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

222 / 523601 / SSpMon3

Error description 5V SUPPLY 3 FAIL.
Internal hardware monitoring: the ECU detects a deviation of the target range of the power supply voltage of sensor 3

Error codes
DEUTZ-Errorcode: 222
BlinkCode (short-long-short): 2 - 8 - 2
SPN: 523601
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Wrong voltage of internal 5V reference source 3, operating voltage too high or too low, connection cable demaged, ECU defective

Take actions for error repair
If error not removable, change ECU, check cabling of external components, check working voltage and if necessary correct it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: actual value

223 / 677 / StrtCDHS

Error description START RELAY
Start relay (high side power stage): the current drain measured by ECU is above the target range

Error codes
DEUTZ-Errorcode: 223
BlinkCode (short-long-short): 5 - 1 - 2
SPN: 677
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Start relay (high side): short circuit, relay defective, conncection cable defective

Take actions for error repair
Check cabling and start relay and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

224 / 677 / StrtCDLS

Error description START RELAY
start relay (low side power stage): the current drain measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 224
BlinkCode (short-long-short): 5 - 1 - 2
SPN: 677
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Start relay (low side): cable break or short circuit, disabled by ECU, relay defective, connection cable demaged

Take actions for error repair
Check cabling and start relay and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, shutoff output
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: default value

225 / 624 / SysLamp

Error description DIAGNOSTIC LAMP
Error lamp (diagnositic lamp): the current drain measured by ECU is out of the target range or the maximum permissble temperature of the ECU component for power supply of the lamp is exceeded

Error codes
DEUTZ-Errorcode: 225
BlinkCode (short-long-short): 5 - 1 - 3
SPN: 624
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
5: current to low or broken wire
2: data stream is defective

Errordetection
Errorlamp shows -. Entry in errormemory.

Possible reason for error
Cable break or short circuit, disabled by ECU, lamp defective, connection cable demaged

Take actions for error repair
Check cabling and load, check lamp and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: only error memory item
Behaviour error lamp: -
Selfhealing: no
Signal Priority: 2
Measurement @ errortime: setpoint Diagnosticlamp

226 / 158 / T15CD

Error description TERMINAL 15
Terminal 15: ECU receives no signal

Error codes
DEUTZ-Errorcode: 226
BlinkCode (short-long-short): 5 - 1 - 4
SPN: 158
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Ignition ON not detected, ignition switch defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check ignition switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, engine can not start
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 2
Measurement @ errortime: actual value

227 / 523550 / T50CD

Error description TERMINAL 50
Terminal 50: ECU receives a permanent signal

Error codes
DEUTZ-Errorcode: 227
BlinkCode (short-long-short): 5 - 1 - 5
SPN: 523550
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Engine start switch stuck, start switch clamped, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check start switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 1
Measurement @ errortime: actual value

228 / 523550 / TPUMon

Error description TERMINAL 50
Internal hardware monitoring: ECU detects a deviation between the signal of time module and the system time

Error codes
DEUTZ-Errorcode: 228
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523550
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
2: data stream is defective

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
Time processing unit (TPU) defective, ECU defective

Take actions for error repair
If error not removable, change ECU

other error properties
System reaction: Recovery of ECU
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

232 / 84 / VSSCD1

Error description VEHICLE SPEED
Vehicle speed: over the maximum, signal invalid or implausible compared with the injection quantity and the engine speed, offset factors unlearned

Error codes
DEUTZ-Errorcode: 232
BlinkCode (short-long-short): 5 - 2 - 1
SPN: 84
possible FMI:
0: data valid, but above normal working area
12: Defective component
8: unusual frequency, pulse or period.
14: Special Instructions

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Speed above target range, signal invalid or implausible compared to injection volume and engine speed, distance factor not learned, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

235 / 523600 / WdCom

Error description SERIAL INTERFACE DEF.
Internal hardware monitoring: the ECU detects a disturbance in internal communication

Error codes

DEUTZ-Errorcode: 235
BlinkCode (short-long-short): 5 - 5 - 5
SPN: 523600
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component

Errordetection
Errorlamp shows blinking. Entry in errormemory.

Possible reason for error
Communication disturbed, ECU defective

Take actions for error repair
If error not to removable, change ECU

other error properties
System reaction: Recovery of ECU
Behaviour error lamp: blinking
Selfhealing: no
Signal Priority: 5
Measurement @ errortime: -

236 / 523470 / PRVMonSysReac

Error description RAIL PRESS. LIM. VALVE
Rail pressure relief valve: is open, will be forced to open, the forced-open failed; the ECU activates a system reaction

Error codes

DEUTZ-Errorcode: 236
BlinkCode (short-long-short): 1 - 4 - 6
SPN: 523470
possible FMI:
12: Defective component
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light, 15s before shut off. Entry in errormemory.

Possible reason for error
Rail pressure relief valve open or forced open abortive (interpretation of the rail pressure gradient), power supply voltage too low, rail pressure sensor defective, fuel metering unit defective, rail pressure relief valve defective, air in fuel system

Take actions for error repair
Check working voltage and if necessary correct it, check rail-pressure sensor and if necessary replace it, check FCU and if necessary replace it, check rail pressure relief valve and if necessary replace it, bleed the fuel-system

other error properties
System reaction: Warning, shut the engine off in about 5 minutes
Behaviour error lamp: permanent light, 15s before shut off
Selfhealing: no
Signal Priority: 4
Measurement @ errortime: actual value

237 / 523006 / APPCDSwtnSel

Error description CONTR. MODE SWITCH
Controller mode switch: the signal received by ECU is defective or implausible.

Error codes

DEUTZ-Errorcode: 237
BlinkCode (short-long-short): 2 - 4 - 2
SPN: 523006
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break, signal implausible, switch defective, connection cable demaged

Take actions for error repair
Check switch and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 2
Measurement @ errortime: actual value

238 / 523007 / FrmMng_TORxEngPress

Error description CAN ERROR RxEngPress.

Error codes

DEUTZ-Errorcode: 238
BlinkCode (short-long-short): 2 - 1 - 5
SPN: 523007
possible FMI:
12: Defective component
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Take actions for error repair

other error properties

System reaction:
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 1
Measurement @ errortime: default value

239 / 523008 / MpICtl

Error description MANIPULATION CONTROL

Data monitoring: the torque curve does not match the specification

Error codes

DEUTZ-Errorcode: 239
BlinkCode (short-long-short): 4 - 2 - 4
SPN: 523008
possible FMI:
1: data valid, but below normal working area
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection

Errorlamp shows . Entry in errormemory.

Possible reason for error

Manipulation of Topcurve detected, data manipulation, too slow changed curve

Take actions for error repair

other error properties

System reaction:
Behaviour error lamp:
Selfhealing: -
Signal Priority: 3
Measurement @ errortime:

240 / 98 / OLSCD

Error description OIL LEVEL SWITCH

Oil level sensor: the voltage of sensor measured by ECU is out of the target range or the received value of oil level via CAN is defective or the signal value is implausible

Error codes

DEUTZ-Errorcode: 240
BlinkCode (short-long-short): 2 - 1 - 1
SPN: 98
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
2: data stream is defective
2: data stream is defective

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Voltage outside target range, CAN signal error, signal implausible, sensor defective, connection cable demaged, CAN bus wrong cabled, wiring demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair

Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it, Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, chec

other error properties

System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

241 / 98 / OLSCDSysReacHi

Error description OIL LEVEL SWITCH
Oil level: the oil level calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 241
BlinkCode (short-long-short): 2 - 5 - 1
SPN: 98
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Oil level too high with system reaction, oil volume too large, sensor defective, connection cable demaged, CAN data error

Take actions for error repair
Check oil level and if necessary correct it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: OLSCD_stSysReacReq
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

242 / 107 / ADPSCDAna

Error description AIR FILTER COND.
Air filter differential pressure sensor: the voltage of sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 242
BlinkCode (short-long-short): 1 - 3 - 6
SPN: 107
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Voltage outside target range, sensor defective, connection cable demaged

Take actions for error repair
Check cable harness, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

243 / 98 / OLSCDSysReacLo

Error description OIL LEVEL SWITCH
Oil level: the oil level calculated by ECU is underneath the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 243
BlinkCode (short-long-short): 2 - 5 - 2
SPN: 98
possible FMI:
1: data valid, but below normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Oil level too low with system reaction, oil volume too small, sensor defective, connection cable demaged, CAN data error

Take actions for error repair
Check oil level and if necessary correct it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Advice: OLSCD_stSysReacReq
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: actual value

244 / 523009 / PrvMonWear

Error description REPL. RAIL PRESS. VALVE
Rail pressure relief valve: is open more frequently or for a longer time than what the technical specification allows

Error codes
DEUTZ-Errorcode: 244
BlinkCode (short-long-short): 2 - 5 - 3
SPN: 523009
possible FMI:
9: Abnormal update rated
10: Abnormal rate of change
14: Special Instructions
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Rail pressure relief valve open more frequently than the technical specification allowed, rail pressure relief valve open longer than the technical specification allowed, rail pressure relief valve defective

Take actions for error repair
Change rail pressure relief valve and remove the error through Serdia command

other error properties
System reaction: permanent error message, unerasable by "Clear EM"
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

245 / 523010 / RailMeUn8

Error description LEAKAGE DETECTION
Wenn the engine is in idle running, the metering unit compares its output and rail pressure with the default value (Parameter) and calculates a correction factor-it calibrates itself then

Error codes
DEUTZ-Errorcode: 245
BlinkCode (short-long-short): 2 - 5 - 4
SPN: 523010
possible FMI:
0: data valid, but above normal working area
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Take actions for error repair

other error properties
System reaction:
Behaviour error lamp: permanent light
Selfhealing: no
Signal Priority: 3
Measurement @ errortime: actual value

246 / 523650 / FlSys_FLPFMSysReac

Error description
Low fuel pressure Diesel: the low fuel pressure calculated by ECU is underneath the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 246
BlinkCode (short-long-short): 5 - 4 - 1
SPN: 523650
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Diesel fuel pressure below target range with system reaction, interruption in cycling process of low fuel pressure (for example, fuel pump defective), sensor defective, connection cable demaged

Take actions for error repair
Check Diesel low fuel pressure loop system, Check electrical fuel pump, inspect fuel system and if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 4
Measurement @ errortime: default value

247 / 523651 / FlSys_FTSFMSysReac

Error description
Rape Oil Fuel temperature: the fuel temperature calculated by ECU is above the target range; the ECU activates a system reaction

Error codes
DEUTZ-Errorcode: 247
BlinkCode (short-long-short): 5 - 4 - 2
SPN: 523651
possible FMI:
2: data stream is defective
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Rape oil fuel temperature above target range with system reaction, interruption of rape oil fuel loop (for example, heat exchanger not working properly), sensor defective, connection cable demaged

Take actions for error repair
Check rape oil fuel system as well as heat exchanger and heat exchanger valve, if necessary repair it, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning and switchover to Diesel operation mode
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

248 / 523652 / FlSys_FlushStateEngineOff

Error description
Engine shut off without flushing or flushing was not already completed. ECU stores every shutoff with uncompleted or missing flushing process

Error codes
DEUTZ-Errorcode: 248
BlinkCode (short-long-short): 5 - 4 - 3
SPN: 523652
possible FMI:
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Engine shut off without flushing of the fuel system in Diesel operation mode, Shutoff before flushing in Diesel operation mode was finished

Take actions for error repair
Awaiting complete flushing of the fuel system everytime before engine shut off

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: -

249 / 523653 / FlSys_RapeOilHeatEx

Error description RAPEOILSYSTEM
Awaited temperatur rise with opened heat exchanger valve did not occur. Error in fuel heating system.

Error codes
DEUTZ-Errorcode: 249
BlinkCode (short-long-short): 5 - 4 - 4
SPN: 523653
possible FMI:
2: data stream is defective
12. Errormode not identifiable
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Fuel heating system (heat exchanger) not working correctly

Take actions for error repair
Check Heat exchanger and heat exchanger valve, check cooling system going to the heat exchanger, check rape oil system going to the heat exchanger

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: -

250 / 523654 / FrmMngDieselLvl

Error description RAPEOILSYSTEM
Status DieselLvl (Diesel tank level): the voltage of the sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 250
BlinkCode (short-long-short): 5 - 4 - 5
SPN: 523654
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, sensor defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

251 / 523655 / FrmMngFuelTemp

Error description RAPEOILSYSTEM
Status FuelTemp (Fuel Temperature): the voltage of the sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 251
BlinkCode (short-long-short): 5 - 4 - 6
SPN: 523655
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

252 / 523656 / FrmMngLowPressureDiesel

Error description RAPEOILSYSTEM
Status LowPressureDiesel (Low fuel pressure diesel): the voltage of the sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 252
BlinkCode (short-long-short): 5 - 4 - 7
SPN: 523656
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

253 / 523657 / FrmMngRapeOilIn

Error description RAPEOILSYSTEM
CAN messageRapeOilIn (Rape oil input): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 253
BlinkCode (short-long-short): 5 - 6 - 1
SPN: 523657
possible FMI:
12: Defective component
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, substitute values
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

254 / 523658 / FrmMngRapeOilLvl

Error description RAPEOILSYSTEM
Status RapeOilLvl (Rape oil tank level): the voltage of the sensor measured by ECU is out of the target range

Error codes
DEUTZ-Errorcode: 254
BlinkCode (short-long-short): 5 - 6 - 2
SPN: 523658
possible FMI:
3: Voltage to high or short circuit to +Ubatt
4: Voltage to low or short circuit to -Ubatt
12. Errormode not identifiable
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, lamp defective, connection cable demaged

Take actions for error repair
Check cabling, if sensor not working, check sensor and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning, substitute value
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

255 / 523659 / FrmMngRapeOilVlv1

Error description RAPEOILSYSTEM
Status RapeOilVlv1 (Valve 1): the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component is exceeded

Error codes
DEUTZ-Errorcode: 255
BlinkCode (short-long-short): 5 - 6 - 3
SPN: 523659
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair
Check cabling, if valve not working, check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning and switchover to Diesel operation mode
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

256 / 523660 / FrmMngRapeOilVlv2

Error description RAPEOILSYSTEM

Status RapeOilVlv2 (Valve 2): the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component is exceeded

Error codes

DEUTZ-Errorcode: 256
BlinkCode (short-long-short): 5 - 6 - 4
SPN: 523660
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair

Check cabling, if valve not working, check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning and switchover to Diesel operation mode
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

257 / 523661 / FrmMngRapeOilVlv3

Error description RAPEOILSYSTEM

Status RapeOilVlv3 (Valve 3): the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component is exceeded

Error codes

DEUTZ-Errorcode: 257
BlinkCode (short-long-short): 5 - 6 - 5
SPN: 523661
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair

Check cabling, if valve not working, check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning and switchover to Diesel operation mode
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

258 / 523662 / FrmMngRapeOilVlv4

Error description RAPEOILSYSTEM

Status RapeOilVlv4 (Valve 4): the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component is exceeded

Error codes

DEUTZ-Errorcode: 258
BlinkCode (short-long-short): 5 - 6 - 6
SPN: 523662
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection

Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error

Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair

Check cabling, if valve not working, check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties

System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

259 / 523663 / FrmMngRapeOilVlv5

Error description RAPEOILSYSTEM
Status RapeOilVlv5 (Valve 5): the current drain measured by ECU is out of the target range or the maximum permissible temperature of the ECU component is exceeded

Error codes
DEUTZ-Errorcode: 259
BlinkCode (short-long-short): 5 - 6 - 7
SPN: 523663
possible FMI:
12. Errormode not identifiable
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
Cable break or short circuit, valve defective, connection cable demaged

Take actions for error repair
Check cabling, if valve not working, check valve and if necessary replace it, check connection cable and if necessary repair or replace it

other error properties
System reaction: Warning
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

260 / 523664 / FrmMngSTIN1RX

Error description RAPEOILSYSTEM
CAN message STIN1 (State Inputs 1): the message can not be received by ECU

Error codes
DEUTZ-Errorcode: 260
BlinkCode (short-long-short): 5 - 6 - 8
SPN: 523664
possible FMI:
12: Defective component
12. Errormode not identifiable
12: Defective component
12. Errormode not identifiable

Errordetection
Errorlamp shows permanent light. Entry in errormemory.

Possible reason for error
CAN bus wrong cabled, wiring is demaged, receiver (sender of the message) work inaccurately, parametering inaccurate

Take actions for error repair
Check CAN Bus cabling (Bus sheduling, polarity, short circuit, power interrupt), test protocol of receiver, check CAN functional range

other error properties
System reaction: Warning, substitute values
Behaviour error lamp: permanent light
Selfhealing: yes
Signal Priority: 3
Measurement @ errortime: default value

MECALAC Baumaschinen GmbH

Am Friedrichsbrunnen 2
D-24782 Büdelsdorf

Tel: +49 (0)4331 351 325
Fax: +49 (0)4331 351 491

E-Mail: info@mecalac.com
Web: www.mecalac.com