CLAAS

SCORPION
6030 COMPACT
408-01 from serial no. 408 01 0179

Operator's Manual

SERVICE & PARTS

Attachment[1]	Attachment type no.	Dimensions	Heaped	Use	Telehandler model
Manure forks[4, 5] with hydraulic grab	1000249314 1000249480	2300 mm 2500 mm	–	Picking up and transporting manure and silage	408-01
Silage cutter[4, 5]	1000249317	800 mm	–		408-01
Pallet forks[3, 4, 5]	1000238331	1200 mm	Load diagram	Picking up and transporting pallets	408-01
Bale grapple[4, 5]	1000166756	Clamping width 800 – 1800 mm	–	Picking up and transporting hay and straw bales (load-bearing capacity 1500 kg)	408-01
Bale grapple V40[4, 5]	1000249268	–	–		408-01
Bale grapple W500[4, 5, 6]	1000249269	–	–		408-01
Bale grapple V6000[4, 5]	1000249270	1000 mm	–		408-01

1. Bear in mind the safe load indicator when working with this attachment
2. With screwed-on blade
3. Only with load diagram for telehandler
4. Authorised for public roads if the distance between the front edge of the bucket and the centre of the steering wheel is **not over 3500 mm** in transport position and if the pallet forks are equipped with a fork arm protection (see “Merkblatt für Anbaugeräte“ (leaflet with specific instructions for attachments) § 30, 11 of the StVZO German road traffic regulations
5. See the Operator's Manual of the attachment for putting the attachment into operation and using it
6. Attachment can be operated only with a switchable 3rd control circuit.

Labels in the engine compartment

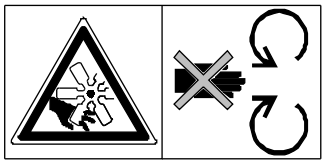

Fig. 31: Prohibitory label

Label: Danger of shearing

Caution! Do not touch any moving or turning parts!

Carry out inspections and maintenance work only at diesel engine standstill!

Location

In the area of the engine cooling (V-belt guard)

Fig. 32: Label: hot fluid (coolant)

Label: Container under pressure, danger of scalding!

Caution! Do not open, radiator is hot and under pressure.

- Open the radiator only after the coolant has cooled down
- Open the cover carefully to the first stop notch to allow the pressure to escape
- Wear protective gloves and clothing

Location

In the engine compartment next to the radiator (coolant)

Fig. 33: Label: hot surface

Label: Danger of burns!

Caution! Do not touch.

- Wear protective gloves and clothing during maintenance work

Location

Next to the exhaust silencer.

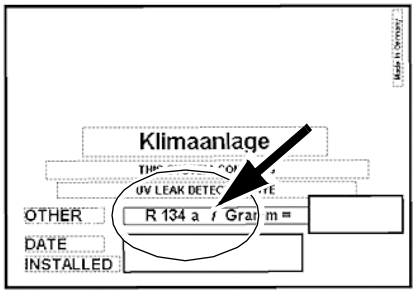

Fig. 34: Label for air conditioning refill

Label for air conditioning system refill (option)

Use only the refrigerants (see arrow) indicated on the label for refilling the air conditioning system.

Location

In the engine compartment on the air guide plate of the radiator (coolant)

Attachment operation

Attachments

- Prior to driving on public roads remove all attachments which cannot be secured in compliance with the legal regulations of your country! See also the footnote – *see chapter 1 "Authorised attachments*" on page 1-6!
- Attachments and counterweights affect handling, as well as the steering and brake capability of the machine!
- Fit the attachments with the specially required devices only!
- Before uncoupling or coupling hydraulic lines (hydraulic quick couplers), stop the diesel engine and release the pressure in the work hydraulics!

  ➥ – *see chapter 3 "Locking and unlocking the quickhitch or an attachment*" on page 3-59
- Coupling attachments requires special care!
- Secure attachments on the ground against unintentional movement!
- If the machine is equipped with a quickhitch, ensure that the attachment is safely locked in the quickhitch. The lock pin must be visible on either side of the bores on the attachment.
- Before starting work, secure attachments on the quickhitch against unintentional actuation of the lock!
- Be careful when mounting attachments onto the quickhitch: danger of personal injury due to crushing and shearing. Ensure that nobody is between the machine and the attachment before securing the machine and the attachment against movement!

Transport

- The machine must be towed, loaded and transported only in accordance with the Operator's Manual!
- For towing the machine observe the prescribed transport position, admissible speed and itinerary!
- Use only suitable means of transport and lifting gear of adequate capacity/payload!
- Bear in mind the overall weight of the machine!
- Safely secure the machine on means of transport! Use suitable slinging points and load-securing devices!
- The recommissioning procedure must be strictly in accordance with the Operator's Manual!

Instrument panel switch console (left)	For more information see page
74 Not assigned (option)	
75 Not assigned (option)	
76 Not assigned (option)	
77 Not assigned (option)	
78 Switch with lock (green) – additional front and/or rear control circuit (option)	3-86
79 Switch with lock (green) – continuous operation of 3rd control circuit (option)	3-85
80 Switch (green) – Autohitch trailer coupling (option)	3-91
81 Switch (green) – quickhitch unlocking/emergency lowering (option)	3-59
82 Switch (green) – load stabiliser (option)	3-48
83 Switch with lock (green) – locking/unlocking the 3rd control circuit	3-84
84 Switch – hazard warning system	3-51
85 Switch (grey) – machine lights (headlights)	3-49
86 Rotary switch – heating temperature	3-52
87 Rotary switch – heater fan settings	3-52
88 Tachometer (engine) switch – air conditioning (option)	3-53
Instrument panel – speed range switch panel	**For more information see page**
89 Potentiometer – low-speed control (option)	3-46
90 Indicator light – centre position of front axle wheels (option)	
91 Tip switch (grey) – reversing fan (option)	3-52
92 Tip switch – accelerator pedal lock (option)	3-43
93 Potentiometer – additional control circuit (option)	3-88
94 Indicator light – centre position of wheels (rear axle)	3-42
95 Switch (blue) – speed range	
Control lever (joystick)	**For more information see page**
96 Switch – locking/unlocking attachments – quickhitch and 3rd control circuit	3-59
97 Not assigned (option)	
98 Tip switch – front socket (option)	3-55
99 Switch – extend/retract telescopic boom	3-60
100 Switch – forwards/reverse driving direction	3-39
101 Tip switch – driving direction in neutral	3-39
Switch panel for rear attachments	**For more information see page**
102 Switch (green) – tipping trailer switchover/Autohitch (option)	3-91
103 Tip switch (green) – hydraulically adjustable trailer coupling (Autohitch) or hydraulic connection for tipping trailer (option)	3-89
104 Switch (green) – additional control circuit (option)	3-86
Switch panel on cab ceiling	**For more information see page**
105 Switch (grey) – boom working light (option)	3-50
106 Switch (grey) – front working light	3-50
107 Switch (grey) – rear working light	3-50
108 Switch (grey) – rotating beacon (option)	3-51
109 Tip switch (grey) – heated rear window (option)	3-52
110 Switch (grey) – rear window wiper	3-54

Opening/closing the rear window

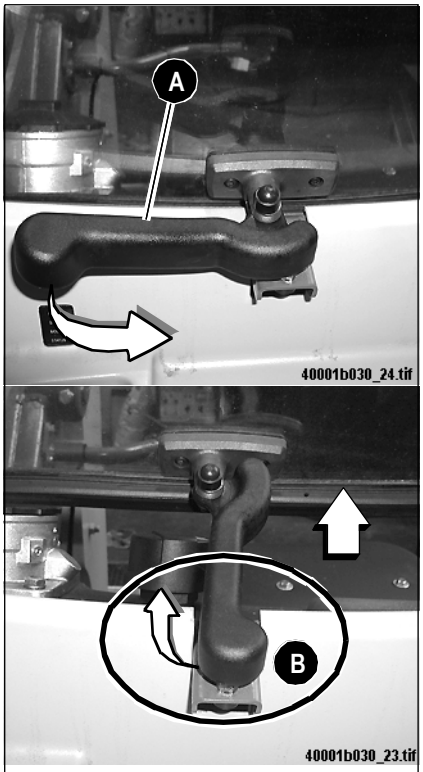

Fig. 47: Rear window lock

Danger!

In order to avoid crushing and injury, close the rear window when driving the machine!

☞ *Lock the rear window with the lock lever*

☞ *Remove the lock lever from the guide only in case of an emergency*

☞ ***Opening the rear window***

- Unlock lock lever ***A*** in the direction of the arrow
- Open the rear window
- *Engage lock* ***A*** in the end of lever **B** with an audible click (arrow)

☞ ***Closing the open rear window***

- Lock the rear window in the reverse order

Interior light operation (cab)

Fig. 48: Switch for interior light

The interior light is switched on via a contact switch when opening the door.

☞ *Switch the light on/off permanently*

- See the switch on the interior light

Enabling (locking) the drive interlock

☞ *Apply the parking brake*

➥ *– see Parking brake* on page 3-45

☞ *Stop the engine*

☞ *Remove the ignition key (blue)*

➥ The drive interlock is enabled in 30 seconds

Caution!

The drive interlock remains disabled if the ignition key (blue) is **not** removed from the ignition lock!

Disabling (releasing) the drive interlock

Start and stop the engine exactly as described on page 3-32 *"Starting the engine"*.

☞ *The system is enabled 5 seconds after the ignition key is inserted in the ignition lock*

☞ *Start the engine – see Starting the engine on page 3-32*

➥ The drive interlock is disabled as long as the engine runs

Deleting coded keys

Deleting coded keys is necessary whenever a coded key is lost

- All coded keys are deleted during deletion
- After deletion has been carried out, all existing keys can be recoded
- Deletion is carried out by inserting the master key in the ignition lock and by turning it to position '1' for a minimum 20 seconds.
- All coded keys are then deleted, and all existing keys can be recoded
- The master key code is not deleted during deletion

Safety functions

The drive interlock remains enabled for 15 minutes and does not accept any valid keys if more than 5 keys with different invalid codes are inserted and turned in the ignition lock within 60 seconds.

This function avoids 'finding' the correct key by chance by trying different keys. The drive interlock remains enabled for 15 minutes and does not accept any valid keys if several invalid keys have been detected without having set the ignition lock to position '0'.

Valid keys are accepted only after 15 minutes and after the position '0' of the ignition lock has been detected. This avoids testing keys without actuating the mechanical ignition lock, e.g. by moving the ignition lock to position '1' by force.

Interruptions of the supply line or other control lines do not disable the drive interlock or delete data (e.g. data codes). All important data is saved in a non-volatile memory.

3.19 Preparing to put the machine into operation

Important notice regarding driving on public roads

- Carrying or transporting **accompanying persons** in the cab or on the telehandler is **not** allowed.
- The machine is subject to the applicable national legal regulations (e.g. **StVZO** German road traffic regulations) and to the provisions laid down in the **General Certification for Vehicles (Germany)** or the **data confirmation (Germany)**.
- On the machine, only the attachments are certified for use on public roads that are described in the **General Certification for Vehicles (Germany)**, in the **data confirmation (Germany)** or in this Operator's Manual on page 1-6 *"Fields of application and using a telehandler with an attachment"* (the footnotes must be taken into account).
- Driving on public roads with an attachment is allowed if the distance between the front edge of the pallets forks or bucket and the centre of the steering wheel is **not over 3500 mm** in transport position.
- In trailer operation the provisions laid down in the **General Certification for Vehicles (Germany)**, or the **data confirmation (Germany)** must be observed – also see *Trailer operation* on page 2-8
- Securely tie down loads on the trailer
- **Bear in mind the trailer and drawbar loads** *– see chapter 6 "Trailer couplings: trailer weight/drawbar load"* on page 6-10

Caution!

When driving downhill, the brake pedal must be used to support the braking effect of the drive. This avoids damage to the drive due to excessive speed. In addition, shift to 1st speed first on extremely steep slopes!

☞ *– see Selecting the speed range 0 – 30 kph (40 kph option) on page 3-38*

3.26 Parking brake

Information on the parking brake

An electric driving interlock prevents starting the diesel engine when the parking brake is not applied.

Selecting the driving direction with the switch on the control lever is not possible unless the parking brake is released completely.

Notice!

Applying the parking brake automatically cancels the selection of the forwards/ reverse driving direction (drive) and switches the drive to neutral.

Applying the parking brake

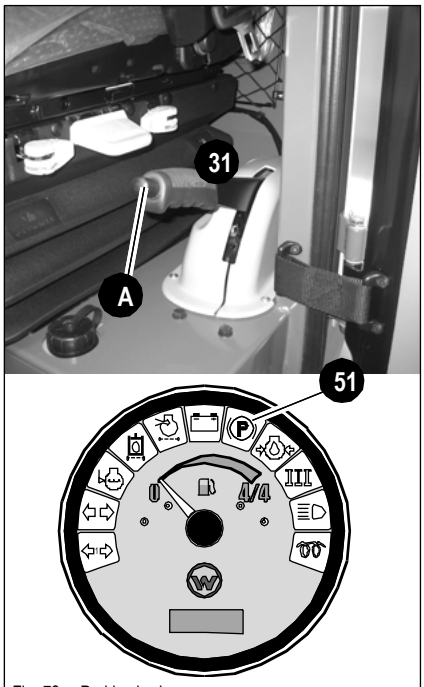

Fig. 76: Parking brake

Danger!

When driving the machine, apply parking brake **31** only in an emergency if the service brakes break down.

☞ *In normal operation use only the brake/inching pedal as a service brake*

☞ *Apply the parking brake*

- Pull parking brake lever **31** up
  - ➥ Indicator light **51** on the indicating instrument comes on
  - ➥ The engine can be started

☞ *Release the parking brake*

- *Pull parking brake lever* **31** *up a little*
- *Press button* ***A*** and lower the parking brake lever as far as it will go
  - ➥ Indicator light **51** on the indicating instrument goes out

Notice!

The brake lights at the rear of the machine do **not** come on when the parking brake is applied!

- Press the brake/inching pedal *(Fig. 35 on page 3-2)* down with force in order to brake the machine

3.38 Telescopic boom control lever: overview

Operating the control lever for the lift, tilt and push-out rams

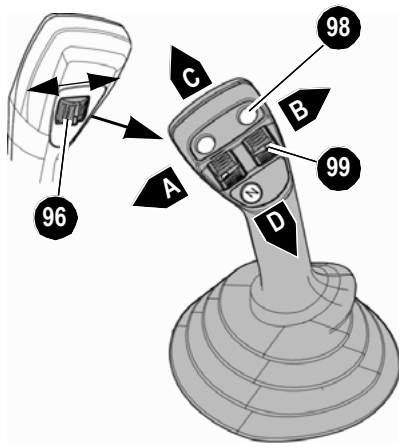

Fig. 94: Control lever for telescopic boom

Danger!

In order to avoid injury or danger of accidents, the control levers for the telescopic boom and the 3rd control circuit must be locked against unintentional actuation before leaving the seat, and when driving on public roads!

☞ *Lock the control lever (joystick) and the 3rd control circuit*

➥ *– see Locking the control lever (joystick) and the 3rd control circuit (attachments)* on page 3-37

➥ *– see Operating and securing the 3rd control circuit* on page 3-59

Notice!

Safety feature! The telescopic boom cannot be lowered with the diesel engine and the ignition switched off!

• *– see Emergency lowering of telescopic boom in case of diesel engine breakdown* on page 3-61

Position	Operation	Function
A	To the left	Tilts in the attachment
B	To the right	Dumps out the attachment
C	Forwards	Lowers the telescopic boom
D	Backwards	Raises the telescopic boom
96	Switch (scroll wheel for proportional controls)	3rd control circuit for locking/unlocking the quickhitch or for hydraulic attachment
98	Tip switch	Front socket – attachment (option)
99	Switch (scroll wheel for proportional controls option)	Retracts/extends the telescopic boom

3.44 Working with the standard bucket

Important notice on bucket use

- Bear in mind the safety instructions given in chapter 2 before working with the machine.
  ➥ *– see Designated use and exemption from liability* on page 2-2,
  ➥ *– see General conduct and safety instructions* on page 2-3,
  ➥ *– see Safety instructions regarding operation* on page 2-6
- Never drive up to the edge of a pit from outside – d**anger of cave-in!**
- Never undermine the foundations of walls – **danger of collapse!**
- When working with a bucket, pallet forks or other attachments, bear in mind the load diagram and the safe load indicator
  ➥ Both are located in the cab.
- Operation of the machine by unauthorised staff is prohibited!
- When working with the machine, look out for high-voltage cables, underground cables, gas and water pipes!
- Release the pressure in the sections of the system and hydraulic lines which are to be opened before starting setup or repair work, e.g. fitting/removing an attachment with hydraulic functions
  ➥ *– see Pressure relief on the quickhitch couplers* on page 3-82
- Switch off the load stabiliser before working with the telescopic boom – otherwise it will yield very easily, making it difficult to carry out any precise lifting movements
  ➥ *– see Load stabiliser* on page 3-47

Caution!

In order to avoid damage to the telescopic boom, push and pull material only with the telescopic boom completely retracted!
If the bucket is very full, the material may fall over the rear of the bucket and the slide surfaces of the extended telescopic boom may become dirty.

- *Do not completely tilt in a full bucket if the telescopic boom is extended*

Brief instructions for fork arms

The following brief instructions are based on the “Guidelines for testing and repairing fork arms” (© by VETTER Umformtechnik GmbH):

- Use fork arms only according to their designated use
- Do not exceed the load centre and the load-bearing capacity
- Always keep fork arms clean
- Load both fork arms evenly
- Do not use standard fork arms as reverse forks
- Do not push, pull or shove the fork arms, or move them in at a slanting angle (danger of damaging them due to lateral forces)
- Do not pull off loads, or allow them to fall onto the fork arms
- Tie down loads, if necessary, to avoid loosing them
- Do not raise with the tilt ram (tilt device)
- Bear in mind the limits of application for the fork lift, and its Operator's Manuals
- Carry out frequent visual checks
- Have regular checks carried out according to the Operator's Manual and the legal regulations of your country
- Do not modify the fork arms, or attach any additional device
- Only the manufacturer is authorised to carry out repair work on the fork arms
- No transport of persons on the fork arms
- No transport of molten material
- No cable-laying work allowed
- Observe the legal regulations of your country when driving on public roads
- The operator/driver must check at regular intervals:
  - Lock: functional check
  - Hooks: visual check for cracks and deformations
  - Bend: visual check for indents, nicks and cracks
  - Bend and blade: do not use any longer if worn over 10 %
  - Blade and tip: check for deformations
- In case of damage or if you are unsure: immediately stop using the fork arms!

3.50 Continuous operation of 3rd front control circuit (option)

Switching continuous operation of 3rd control circuit ON/OFF

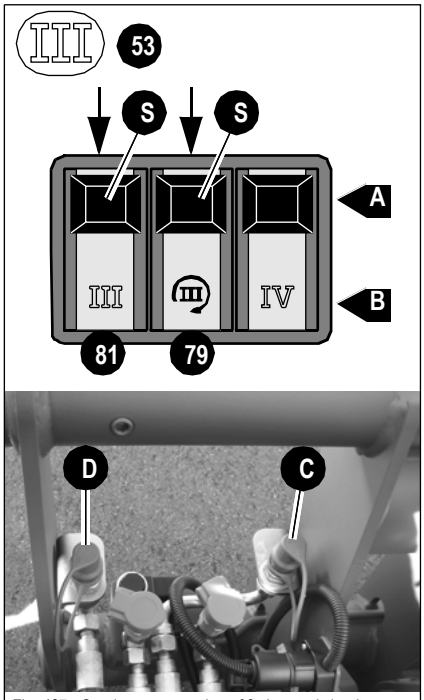

Fig. 137: Continuous operation of 3rd control circuit

By means of quick couplers **C/D** of the 3rd control circuit, this option is used for continuous operation of attachments with hydraulic motors (e.g. rotary brooms) or of attachments with their own hydraulic circuits and control valves.

After an attachment has been fitted and safely locked onto the quickhitch, continuous operation is carried out by means of switches **81** and **79** (switch console on the left) as follows:

☞ *Switching on continuous operation*

- *Slide switch* **81** *(lock* ***S****) in the direction of the arrow and press it to position* ***B***
  - ➥ 3rd control circuit switched ON
  - ➥ Indicator light **53** on the indicating instrument comes on
- *Slide switch* ***79*** *(lock* ***S****) in the direction of the arrow and press it to position* ***B***
  - ➥ 3rd control circuit is in continuous operation

☞ *Switching off continuous operation*

- *Slide switch* ***79*** *(lock* ***S****) in the direction of the arrow and press it to position* ***A***
  - ➥ Continuous operation of the 3rd control circuit is switched OFF

Caution!

Clean the quick couplers carefully before connecting an attachment in order to ensure proper function and sealing features!

Compressed-air gauge

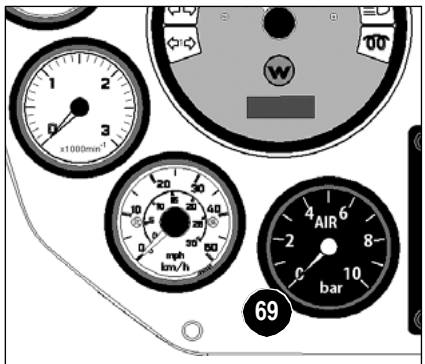

Fig. 146: Compressed-air brake gauge (option)

Danger!

Before moving off with a trailer, pressure gauge **69** must show a system pressure of at least 5 bar. Danger of accidents if the system pressure is below 5 bar!

☞ *Let the diesel engine run at machine standstill until the compressed-air brake system is filled*

➥ **Specified value: 6 – 8 bar**

➥ Carry out a brake test

➥ If the air pressure drops below 5 bar when driving

➥ Stop the machine immediately and have the pressure loss repaired

➥ *– see chapter 5 "Maintenance: compressed-air brake system (option)*" on page 5-31

3.57 Hydraulic trailer brake (option)

Information on the hydraulic trailer brake

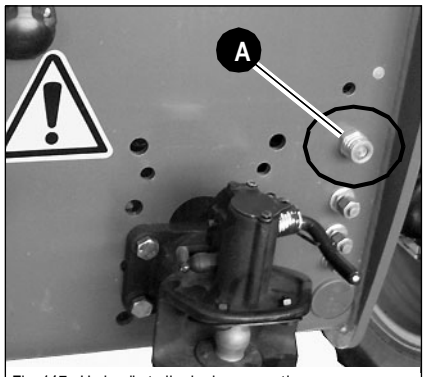

Fig. 147: Hydraulic trailer brake connection

Quick coupler **A** for the hydraulic trailer brake is mounted at the rear of the machine (on the right in driving direction).

The hydraulic trailer brake is operated with the machine's service brake!

Caution! Only trailers with hydraulic brakes may be used that are certified for a braking pressure of a maximum 150 bar at full braking!

Notice!

The hydraulic trailer brake is certified for public roads in Germany (StVZO German road traffic regulations) provided it is adapted to the tractor!

- Refer to the **General Certification for Vehicles (Germany), the data confirmation (Germany) or the licence certificate (Germany)** for the applicable provisions!

Get informed on and follow the legal regulations of your country, or have country-specific final acceptance carried out.

Caution!

Clean the quick coupler carefully before connecting the flexible line of the trailer in order to maintain proper function and sealing features!

- *Inspection and maintenance work on the hydraulic brake may be carried out only by trained staff or an authorised workshop*

Crane handling

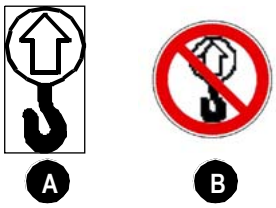

Fig. 153: Label for crane handling

☞ *Handle the machine with a crane as follows:*

- Mount and safely lock the standard bucket – *see Equipping the machine with a standard bucket* on page 3-62
- Empty and dump in the standard bucket, and lower it to transport position – *see Driving on public roads with a standard bucket* on page 3-66
- Set the drive to neutral – *see Driving direction selection (reversing operation forwards/reverse)* on page 3-39
- Stop the diesel engine and remove the ignition key
- Apply the parking brake – *see Parking brake* on page 3-45
- Lock the cab and the engine cover
- Fasten the machine to the slinging points with tested and sufficiently dimensioned lifting gear (ropes, belts, hooks, shackles)
  - ➥ Slinging points on the machine, see labels **A** on the left and right, and at the front and rear of the frame – *see chapter 1 "Machine overview"* on page 1-3
- Carefully raise the machine with the crane

Caution!

Do **not** use the slinging points **B** (eyelets) on the cab for loading the machine!

- *They are used for removing the cab only*
- *– see chapter 1 "Machine overview" on page 1-3*

5.3 Fuel system

Important safety instructions for refuelling

- Extreme caution is essential when handling fuel – high risk of fire!
- Never carry out work on the fuel system in the vicinity of naked flames or sparks!
- Do not smoke when working on the fuel system or when refuelling!
- Before refuelling, stop the engine and remove the ignition key!
- Do not refuel in closed rooms!

Environment!

Use a suitable container to collect the fuel as it drains and dispose of it in an environmentally friendly manner! Keep the machine clean to reduce the risk of fire and wipe away fuel spills immediately!

Diesel fuel specification

Caution!

Use only the diesel fuels listed in the table below!

☞ *If other fuels are used, warranty rights shall not apply in case of diesel engine damage (guarantee)!*

☞ *Do not use diesel fuel with additives*

Fuel specification	Cetane number	Use (°C)
DIN 51628/DIN EN 590 (EU) ASTM D975-94 (USA)	Min. 49	Up to -44 °C outside temperature
EN 14214 (biodiesel)	Min. 51	Up to -20 °C outside temperature

Stationary fuel pumps

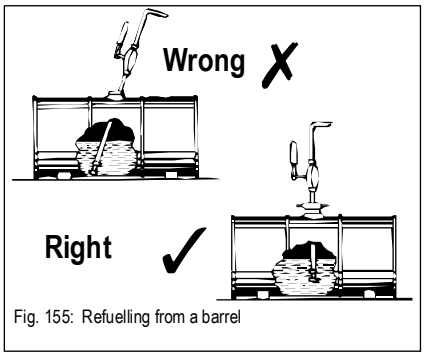

Fig. 155: Refuelling from a barrel

General

Only refuel from stationary fuel pumps. Fuel from barrels or cans is usually contaminated. Even the smallest particles of dirt can cause

- Increased engine wear
- Malfunctions in the fuel system and
- Reduced effectiveness of the fuel filters

Refuelling from barrels

If refuelling from barrels cannot be avoided, note the following points:

- Barrels must neither be rolled nor tilted before refuelling
- Protect the suction pipe opening of the barrel pump with a fine-mesh strainer
- Immerse it down to a max. 15 cm above the floor of the barrel
- Only fill the tank using refuelling aids (funnels or filler pipes) with integral microfilter
- Keep all refuelling containers clean at all times

Temperature gauge: engine coolant

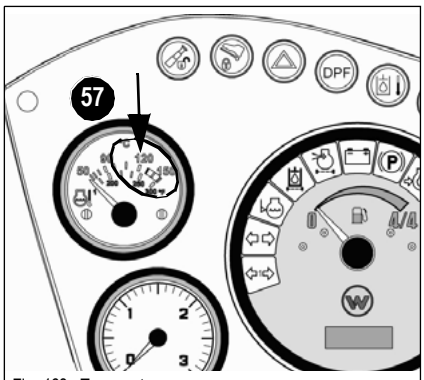

Fig. 168: Temperature gauge

Temperature gauge **57** (with acoustic warning) on the instrument panel monitors the cooling system.

Caution!

Engine temperature should be between 80 and 105 °C (the maximum admissible cooling temperature is 110 °C, see arrow).

☞ *If the acoustic warning sounds (115 °C),*

- let the engine run briefly at idling speed until the temperature drops back to 110 °C (acoustic warning no longer sounds)
- *Stop the engine and check the coolant level*
- *Clean the radiator fins*

Checking the coolant level

Notice!

Check the coolant level every **10 s/h (service hours)** or once a day.

- Check before starting the engine
- Check the antifreeze at temperatures below 4 °C

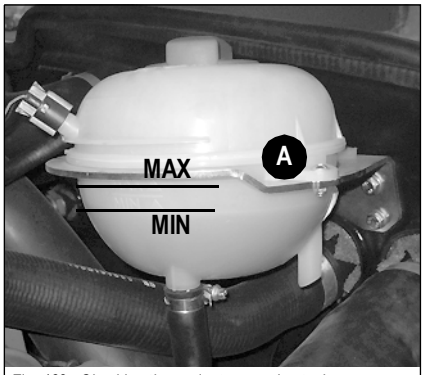

Fig. 169: Checking the coolant expansion tank

☞ *Checking the coolant level*

- Park the machine on level ground
- Lower the telescopic boom fully
- Apply the parking brake
- Stop the engine
- Switch off ignition and remove the ignition key
- Open the engine cover
- Check the coolant level in the expansion tank **A**

If the coolant level is below the **MIN** mark of the expansion tank:

- Fill up coolant to the **MAX** mark

☞ *Check the coolant quality (antifreeze) with suitable testing equipment (antifreeze tester)*

➥ *– see Fluids and lubricants* on page 5-55 and *– see chapter 6 "Coolant compound table"* on page 6-11

Checking the hydraulic oil level once a day

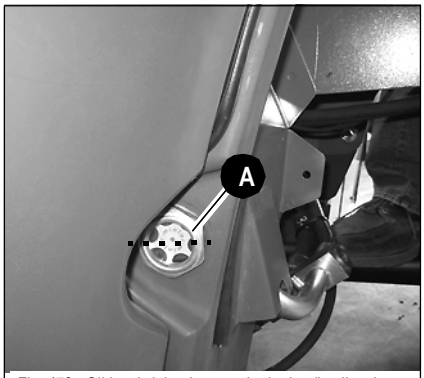

Fig. 179: Oil level sight glass on the hydraulic oil tank

The oil level sight glass is located on the hydraulic oil tank behind the cab (on the left in driving direction).

☞ *Proceed as follows:*

- Park the telehandler on level ground
- Retract all hydraulic rams
- Stop the engine and apply the parking brake
- Switch off ignition and remove the ignition key
- Clean oil level sight glass **A** and check the oil level

If the oil level is visible in the lower half of the oil level sight glass

- Oil level is OK

If the oil level is no longer visible in the lower half of the oil level sight glass

- Not enough oil, fill up hydraulic oil – *see Filling up hydraulic oil* on page 5-23

If the oil level is no longer visible in the upper half of the oil level sight glass

- *Drain the hydraulic oil into a suitable container until the oil level is visible in the lower half*

Notice!

Any excess quantity of hydraulic oil in the tank escapes via the breather **B** as soon as the temperature rises!

Filling up hydraulic oil

Caution!

Do not fill up the hydraulic oil unless the diesel engine is stopped.

☞ Hydraulic oil runs out of the filler opening on the hydraulic tank

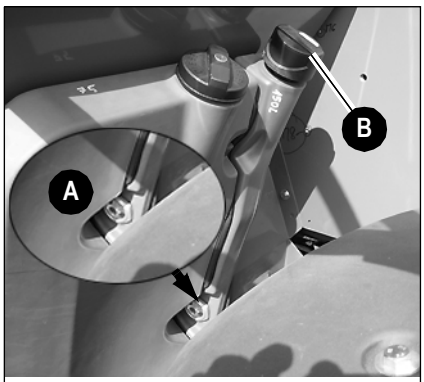

Fig. 180: Hydraulic oil tank

☞ *Fill up as follows:*

- Park the telehandler on level ground
- Retract all hydraulic rams
- Stop the engine
- Apply the parking brake
- Switch off ignition and remove the ignition key
- Clean the area around the filler and breather filter **B** with a cloth
- Place a suitable container under the hydraulic oil tank
- Open breather filter **B** by hand

With the filter insert in place:

- Fill up the hydraulic oil and check the oil level at the oil level sight glass **A**
- Fill up if necessary and check again
- Firmly close breather filter **B** by hand

Changing wheels

Danger!

Use only the wheels and tyres that have been released for the machine.

☞ *– see chapter 6 "Tyres" on page 6-10*

☞ *Check the wheel nuts for tightness after every wheel or tyre change*

Caution!

The threads on the wheel bolts can be damaged when mounting the heavy wheels!

☞ *Use suitable assembly tools, such as covering sleeves for the studs, a jack etc.*

☞ *Remove the wheels as follows:*

- Park the telehandler on level and firm ground and prevent it from rolling away *– see chapter 3 "Stopping/parking the machine"* on page 3-101
- Loosen the wheel nuts a little of the wheel you want to remove
- Place a jack under the axle beam, making sure it is standing firmly
- Raise the side of the axle from which you want to remove the wheel
- Secure the machine with a suitable trestle
- Check the machine is standing firmly
- Completely remove the wheel nuts
- Remove the wheel

☞ *Mount the wheels as follows:*

- Place the wheel onto the wheel bolts
- Tighten all wheel nuts part-way
- Lower the raised axle
- Tighten the wheel nuts to the prescribed tightening torque *– see chapter 6 "Specific tightening torques"* on page 6-12

5.19 General maintenance work

Specific safety instructions regarding cleaning

The wrong choice of cleaning equipment and agents can impair the operating safety of the machine on the one hand, and on the other undermine the health of the persons in charge of cleaning the machine. Therefore always observe the following instructions.

Caution!

Machines with anticorrosion protection (“aggressive media”) must be cleaned separately!

☞ – *see Maintenance work “Aggressive Media” (option) on page 5-47*

Cleaning the machine is divided into 3 separate areas:

- Inside the cab
- Exterior of the machine
- Engine compartment

Cleaning with washing solvents

- Ensure adequate room ventilation
- Wear suitable protective clothing
- Do not use flammable liquids, such as petrol or diesel

Cleaning with compressed air

- Work carefully
- Wear goggles and protective clothing
- Do not aim the compressed air at the skin or at other people
- Do not use compressed air for cleaning your clothing

Cleaning with a high-pressure cleaner or steam jet

- Electric components and damping material must be covered and not directly exposed to the jet
- Cover the vent filter on the hydraulic oil tank and the filler caps for fuel, hydraulic oil etc.
- Protect the following components from moisture:
  - Engine
  - Electric components such as the alternator, oil pressure switches, wiring, electric/ electronic parts etc.
  - Control devices and seals
  - Air intake filters etc.

Cleaning with volatile and easily flammable anticorrosion agents and sprays

- Ensure adequate room ventilation
- Do not use unprotected lights or naked flames
- Do not smoke!

5.23 [1]Maintenance plan (overview)

For service and maintenance work on the attachment, please refer to the Operator's and maintenance manual of the attachment manufacturer as well.

	Workshop	Operator/driver		Workshop		
	Delivery inspection	Every 10 s/h (once a day)	Every 20 s/h (once a week)	"A" 1st Inspection[2] at 100 s/h	"B" every 500 s/h[2] 2nd Inspection	"C" every 1500 s/h once a year
Lubrication service[16] ( )						
• Rear axle oscillating bearing	●		●	●	●	●
• Front and rear axle planetary drive bearings (left and right)	●		●	●	●	●
• Hinges, joints and fittings (e.g. door arrester)	●	●		●	●	●
• Trailer coupling (option)	●	●		●	●	●
Telescopic boom – *see Lubrication points on the telescopic boom: overview* on page 5-27						
• Telescopic boom slide plates	●		●	●	●	●
• Compensating ram bearing	●		●	●	●	●
• Telescopic ram bearing (push-out ram)	●		●	●	●	●
• Boom bearing	●		●	●	●	●
• Tilt lever bearing and tilt rod bearing	●		●	●	●	●
• Lift ram bearing	●		●	●	●	●
• Tilt ram bearing	●		●	●	●	●
• Quickhitch: bearing on boom	●		●	●	●	●
Functional check ( ):						
• Service and parking brake	●	●		●	●	●
• Compressed-air braking system (pressure gauge, compressor, couplings)	●	●		●	●	●
• Steering system: steering column adjustment, synchronous position of wheels	●	●		●	●	●
• Lights and electrical system	●	●		●	●	●
• Drive interlock (option)	●	●		●	●	●
• Safe load indicator with overload cutoff of telescopic boom	●	●		●	●	●
• Seat adjustment, seat belt	●	●		●	●	●
• Lock – control lever (joystick) and 3rd control circuit for road travel	●	●		●	●	●
• Load stabiliser	●	●		●	●	●
• Front and rear additional control circuits (option)	●	●		●	●	●
• Cab – heating, ventilation, air conditioning (option)	●	●		●	●	●

6.9 Work hydraulics

Hydraulic pump

Diesel engine	58/74.9 kW	74.9 kW (option)
Hydraulic pump	38 cm³/rev	60 cm³/rev
Design	Fixed displacement pump (gear pump)	Variable displacement pump (LS)
Displacement	84 l/min at 2300 rpm	135 l/min at 2300 rpm
Control valve	4-fold (standard)[1] 5-fold (optional)[2]	
Hydraulic oil filter	Return filter	

1. 4-fold control valve (2x mechanical controls, 2x proportional controls)
2. 5-fold control valve (2x mechanical controls, 3x proportional controls)

Hydraulic ram protection

Hydraulic ram protection	
Hydraulic pump	38 cm³/rev (60 cm³/rev option)
Max. operating pressure[1]	240 bar
Tilt ram Secondary pressure limiting	Rod side 260^{+10} bar Base side 260^{+10} bar
Lift ram Secondary pressure limiting	Base side 260^{+10} bar
Push-out ram Secondary pressure limiting	Rod side 260^{+10} bar Base side 200 bar
Quickhitch ram (3rd control circuit) Secondary pressure limiting	210 bar

1. Measured at control valve