en **Operating manual**

Crawler dozer

PR 734-1481

From serial number 12368

Document ID

ORIGINAL OPERATING MANUAL

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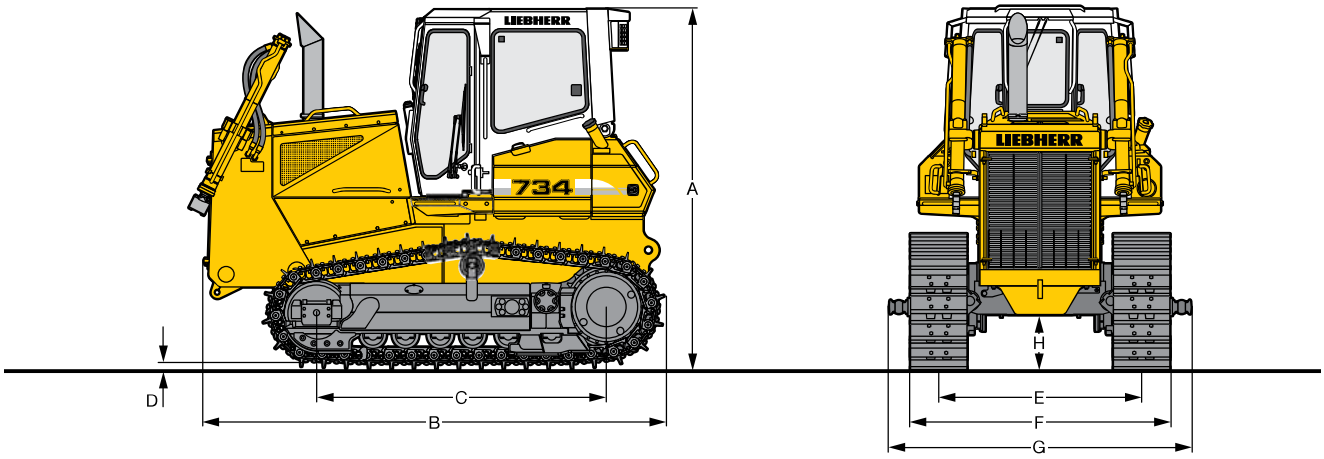
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Basic machine



Dimensions		PR 734-4 L
A Height over cab	mm	3,284
B Overall length without attachments	mm	4,170
C Length of track on ground	mm	2,630
D Grouser height	mm	65
E Track gauge	mm	1,830
F Total width without trunnions [1]	mm	2,366
G Total width over blade-mounting trunnions	mm	2,724
H Ground clearance	mm	497
Tractor shipping weight [2]	kg	15,291

[1] With track shoes 508 mm/20”

[2] Includes coolant, lubricants, 20% fuel, ROPS/FOPS cab and track shoes 508 mm/20”

2 Safety guidelines, signs

Working with the machine is dangerous, serious or fatal injuries can happen to you, the operator, the driver or maintenance personnel. If you regularly read and observe the various safety information, you can prevent dangers and accidents.

This applies especially for personnel who is working only intermittently on the machine, such as for set up, maintenance.

The following information comprises safety guidelines which, if followed conscientiously, will guarantee your safety and that of other persons, as well as avoid damage to the machine.

For description of work, which can pose a danger for man or machine, the required safety precautions are described in this manual.

2.1 Designation of warning notes

	This is the warning sign. Warns of possible danger of injury. Follow all measures, which are marked with this warning sign to avoid injuries or death.

Tab. 7

The warning sign always appears in connection with the signal words

DANGER
WARNING
CAUTION

	**DANGER**	designates a dangerous situation which will lead to death or serious injury if it is not prevented.
	**WARNING**	designates a dangerous situation, which can lead to death or serious injury if it is not prevented.
	**CAUTION**	designates a dangerous situation, which can lead to light or medium injuries if it is not prevented.
	ATTENTION	designates a dangerous situation, which can lead to property damage if it is not prevented.

Tab. 8

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Sign *Travel hydraulic*

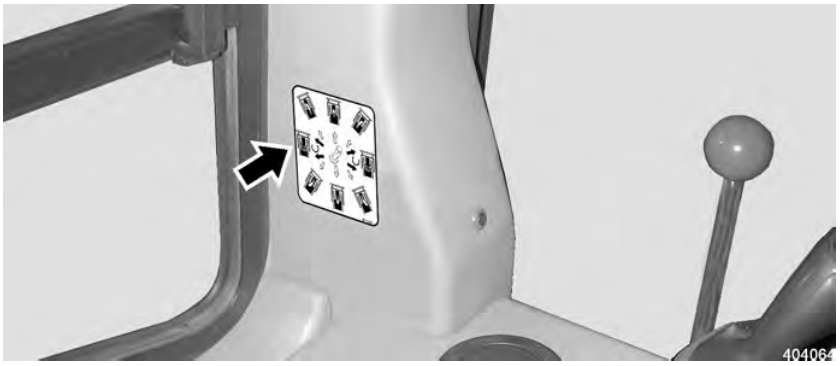


Fig. 24: Sign Travel hydraulic

The sign is installed on the left hand side on the operator's platform.

Shows the operation of the travel joystick for the travel functions of the machine.

Sign *Noise protection*

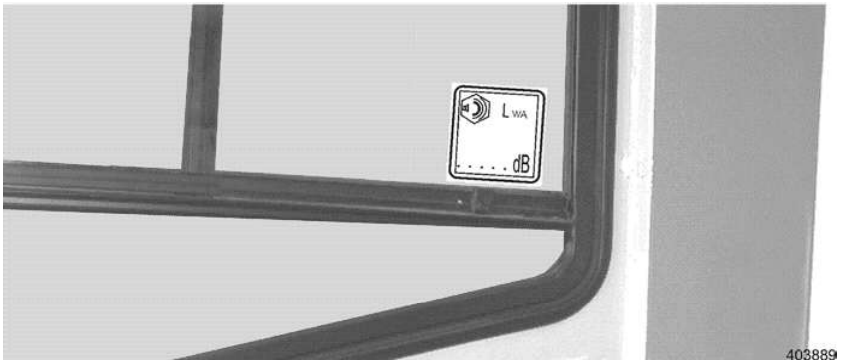


Fig. 25: Sign Noise protection

The sign is installed on the inside on the operator's cab window.

LWA = Sound output level (sound output level emitted to the surrounding area).

Sign *Fastening - lifting point*

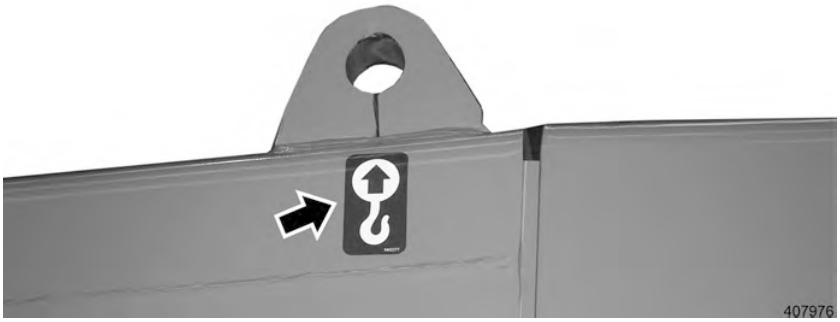


Fig. 26: Sign Fastening - lifting point

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17. Before cleaning with water, steam (high pressure cleaner) or other cleaning fluids, cover / tape off all openings whose safety and function could be affected by infiltration of water, steam or cleaning fluid.
    Electrical motors, switch boxes and battery compartments are especially endangered.

    Further procedure:
    - Make sure that the temperature sensor of the fire warning system and the fire extinguisher do not come in contact with hot cleaning fluids when cleaning the operator's cab. Otherwise they could trigger the fire extinguishing system.
    - After cleaning, completely remove the covers and tapes.
    - After cleaning the machine, check all fuel, engine oil, hydraulic oil lines for leaks, loose connections, chafing and damage.
    - Fix any defects immediately.
18. Adhere to the product safety instructions issued for handling of oils, greases and other chemical substances.
19. Ensure safe and environmentally friendly disposal of operating and service fluids as well as exchange parts.
20. Be very careful when handling any hot components or service fluids on the machine as there is a danger of burns and scalding.
21. Operate combustion engines and fuel operated heaters only in sufficiently ventilated areas. Before starting the machine in a closed area, make sure the ventilation is sufficient. Always follow all regulations valid for the current job site.
22. Perform any welding, cutting or grinding work on the machine only if this work has been explicitly authorized, as there can be a danger of fire or explosion.
23. The operator’s cab windows are made of safety glass. Damaged operator’s cab windows must always be replaced immediately.
    - Only safety glass may be used for the operator’s cab windows.
    - Use only Original Liebherr spare parts.
24. Do not attempt to lift heavy parts. Use suitable lifting devices with sufficient load carrying capacity.

    Procedure:
    - When replacing individual parts and larger components, attach and secure them carefully to the lifting devices to avoid any danger.
    - Use only suitable and technically sound lifting devices as well as load tackle with sufficient load carrying capacity.
    - **Do not allow anyone to work or remain underneath suspended loads.**
25. Do not use damaged or insufficiently sized ropes or cables. Always wear work gloves when handling wire cables.
26. Only permit experienced personnel to secure loads and signal the crane operator. The guide must position himself within view of the operator or be in voice contact with him.
27. When working overhead during installation work, use appropriate safe access ladders and working platforms. Never use machine parts as access aids. Wear a harness / anti-fall guards when working in great heights. Keep all handles, steps, railings, platforms, ladders free of dirt, ice and snow.
28. When working on the attachment, make sure it is safely supported. Never use metal on metal support.
29. Never lay underneath the machine unless the machine is properly and safely supported with wooden beams.
30. Always support the machine in such a way that any shifting weight will not endanger the stability of the machine and avoid metal to metal contact.
31. Only authorized, especially trained personnel may work on the travel gears, brake and steering system.

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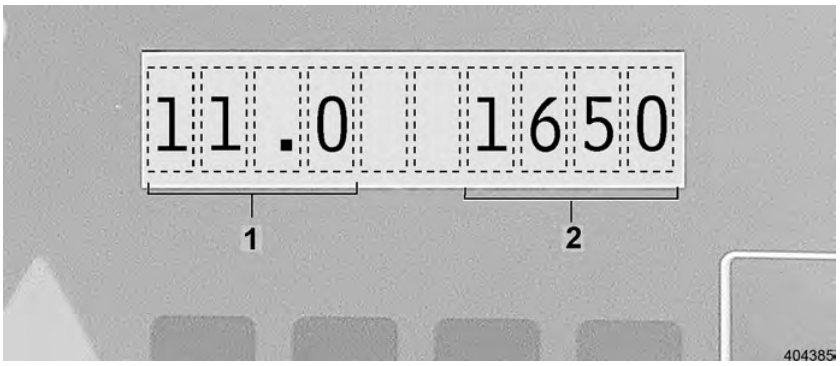


Fig. 37: LC display Travel speed - rpm

1 Display of travel speed in km/hr. **2** Rpm display

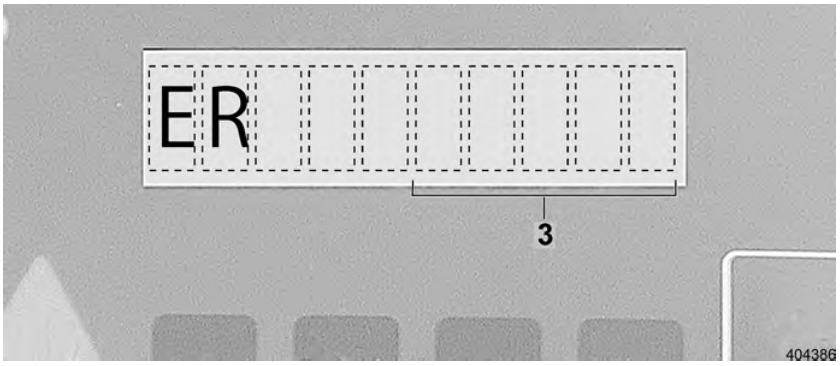


Fig. 38: LC display Service codes

3 Display Service code

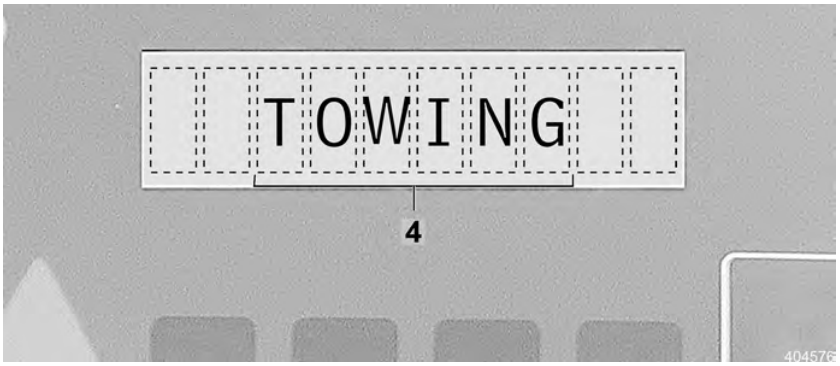


Fig. 39: LC display Towing mode

4 LC display Towing mode
"TOWING"

In towing mode, the word "TOWING" appears in the LC display.

31 Warning light *Operator's cab*



The warning light lights up or blinks:

- in case of increased Diesel engine coolant temperature
- in case of a drop in Diesel engine oil pressure
- in case of a drop in pump replenishing pressure

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3.1.5 *Hydraulic oil level indicator*

(Special equipment)

The *hydraulic oil level indicator* monitors the hydraulic oil level electronically.

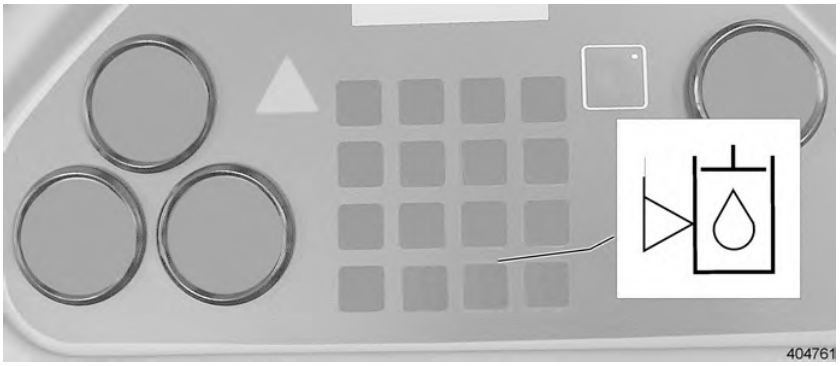


Fig. 85: Hydraulic oil level indicator

Bulb color: red

- Lights up if the hydraulic oil level is too low. In addition, the warning light operator's cab lights up and a buzzer sounds.

If the indicator light lights up: Turn the Diesel engine off and remedy the problem.

Check the hydraulic system for leaks.

The electrical system of the hydraulic oil level indicator is protected with fuse F29.

Fuse	Value	Unit	Description / Function
F 29	3	A	Hydraulic oil level indicator (SI)

Tab. 10

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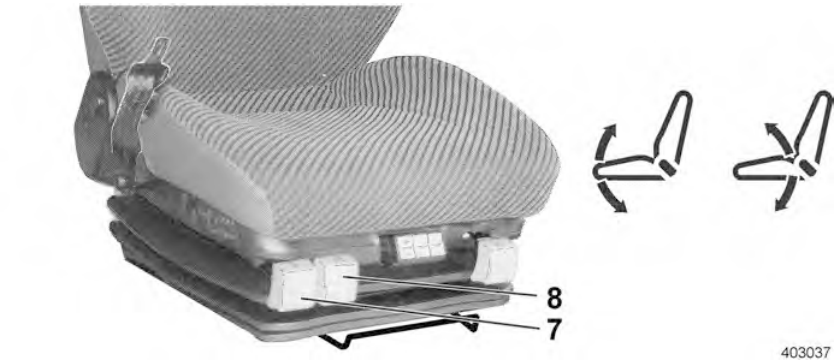


Fig. 104: Adjust the incline of the seat surface

7 Lever *Incline adjustment, rear* **8** Lever *Incline adjustment, front*

- ▶ Incline adjustment, rear: Lift the lever **7** in direction of the arrow, adjust the incline and release the lever.
- ▶ Incline adjustment, front: Lift the lever **8** in direction of the arrow, adjust the incline and release the lever.

Adjust the seat height

The adjustment is made with lever **7** and lever **8** on the right side of the operator's seat.

- ▶ Lift lever **7** and lever **8** at the same time.
- ▶ Bring the seat to the desired height and release both levers.

Adjust the backrest

The incline of the backrest is adjusted with the lever **6** on the left side of the operator's seat.

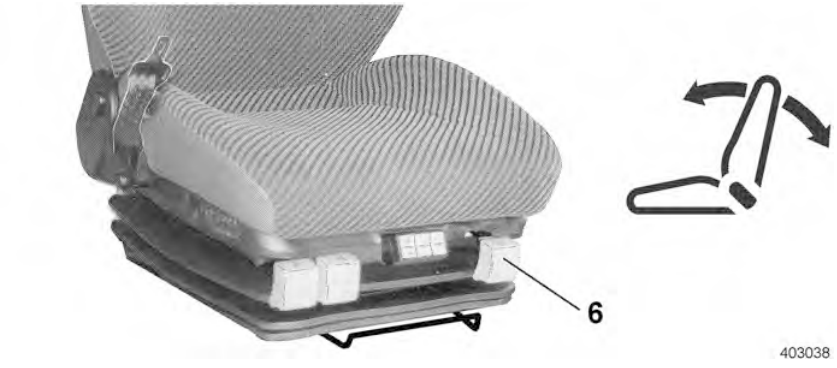


Fig. 105: Adjust the backrest

6 Lever *Backrest adjustment*

- ▶ Lift lever **6**.
- ▶ Move the backrest to the desired incline and release the lever.

Adjust the seat suspension

The seat suspension can be adjusted individually to the body weight of the operator.

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Operate the windshield wiper and washer system

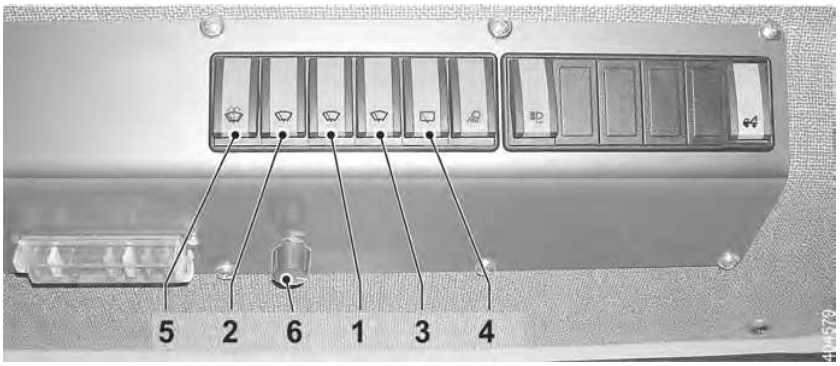


Fig. 125: Switch Windshield wiper and washer system

1 Switch *Windshield wiper system front window*
2 Switch *Windshield wiper system door left*
3 Switch *Windshield wiper system door right*
4 Switch *Windshield wiper system Rear window*
5 Switch *Intermittent control and windshield washer system*
6 Knob *Intermittent control*

Wipe the window

▶ Press the switch **1**, **2**, **3** or **4** .
▷ The selected windshield wiper is activated.

Intermittent wipe, continuous wipe or wash windows

Switch functions **5**:

– Switch pressed on top: Intermittent wipe
– Switch center position: Continuous wipe
– Switch pressed on the bottom (touch function): Wipe and wash function

▶ Windshield wiper - intermittent wipe: Move the switch **5** upward.
▷ The windshield wiper turned on with switches **1**, **2**, **3** and **4** is switched to intermittent wipe.

▶ Windshield wiper continuous wipe: Set the switch **5** to center position.
▷ The windshield wiper turned on with switches **1**, **2**, **3** and **4** is switched to continuous wipe.

▶ Wash the windows: Press the switch **5** downward and hold.
▷ The windshield washer fluid is sprayed on the windows via the nozzles.

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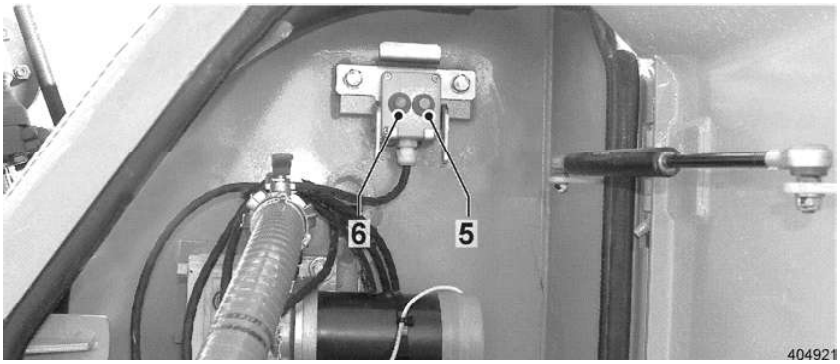


Fig. 145: Switch for refueling pump

▶ Remove the control section with cable from the retainer.

▶ Turn the refueling pump on with the switch **5** (green).
▷ When the maximum fill level is reached, then the fill level sensor turns the refueling pump off automatically.

The refueling procedure can be interrupted at any time by turning off the switch **6** (red).

NOTICE
Danger of refueling pump damage if it runs dry!

▶ Make sure that the fuel level does not drop below the intake level of the intake hose.



Fig. 146: Close the shut off valve

▶ Close the shut off valve **4**.

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WARNING
Danger of accidents due to loss of control over the machine!
When driving carelessly downhill, the drive train can overspeed.

- ▶ Drive downhill at low travel speed and maximum 4 km/h .
- ▶ Move the switch on the travel joystick **before** driving on slopes to position **“I”** .
- ▶ Set the rpm to full load.
- ▶ Reduce the travel speed to keep the engine rpm under 2100 rpm .

Note
To optimally utilize the machine power:

- ▶ Carry out heavy pull work with the machine only in low speed range - rocker switch position I, as well as maximum 2 km/h .



Fig. 162: Rocker switch - speed ranges

- ▶ Set the switch on the travel joystick to position **“I,II”** or **“III”** .

Speed ranges - basic setting

Full speed range

- ▶ Push the rocker switch on top - position **“III”**
  - ▷ Forward speed 0 km/h to 10 km/h
  - ▷ Reverse speed 0 km/h to 10 km/h

Medium speed range

- ▶ Rocker switch center position - position **“II”**
  - ▷ Forward speed 0 km/h to 6.5 km/h
  - ▷ Reverse speed 0 km/h to 8 km/h

Lower speed range

- ▶ Push the rocker switch on the bottom - position **“I”**
  - ▷ Forward speed 0 km/h to 4 km/h
  - ▷ Reverse speed 0 km/h to 4.5 km/h

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Troubleshooting
The Diesel engine cannot be turned off with the starter switch?
Due to a problem in the Diesel engine control unit it can happen that the Diesel engine cannot be turned off via the starter switch.

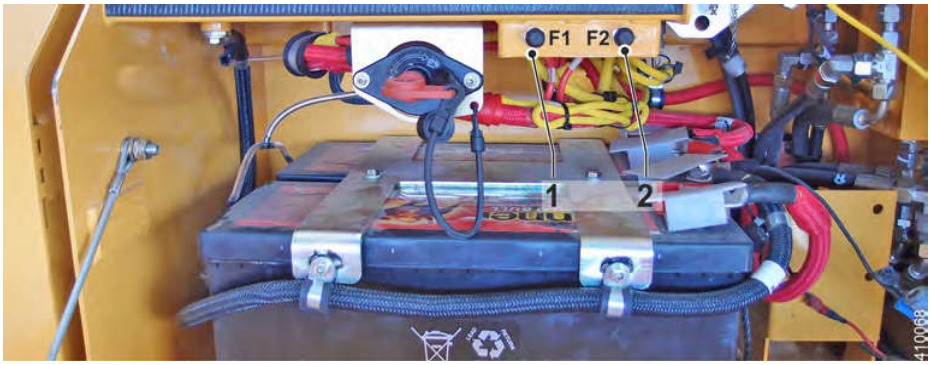


Fig. 180: Main fuse F1

▶ Pull the main fuse **1** (Safety automat F1) to turn the Diesel engine off.

▶ Then return the main fuse **1** to operating position.

Troubleshooting
The Diesel engine cannot be turned off with the starter switch?
If the Diesel engine still cannot be turned off with the starter switch?

▶ Contact Liebherr Service immediately.

Turn the battery master switch off

The battery master switch is on the right hand side in the battery compartment.

Before leaving the machine, turn the battery master switch off.

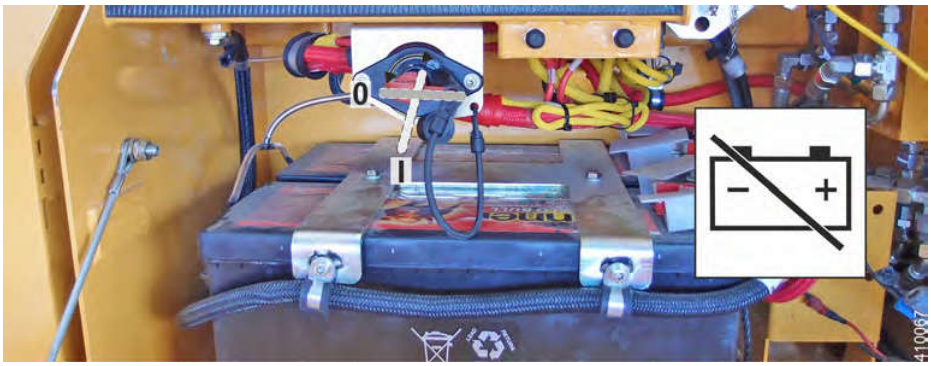


Fig. 181: Battery master switch

▶ Set the battery master switch to position **“0”**.
▷ The battery master switch is turned off.

▶ Secure the machine to prevent unauthorized access: Pull the key on the main switch.

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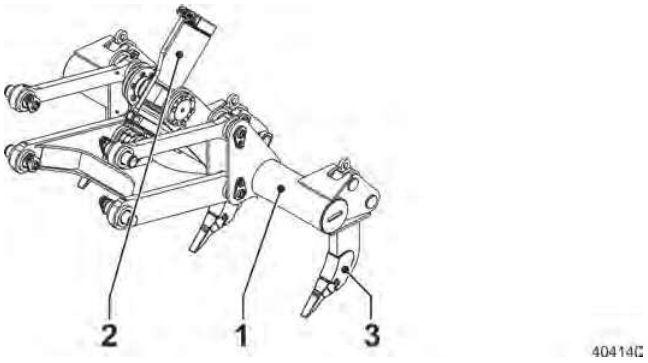


Fig. 201: Ripper

1 Pull bar
2 Ripper tooth
3 Hydraulic cylinder

WARNING
Danger of accidents due to raised components and loads!
Falling components or loads can result in severe bodily injuries or even death.

▶ Never work under raised components and loads, if they are not properly supported or laying on the ground.

Standing under suspended loads is strictly prohibited!

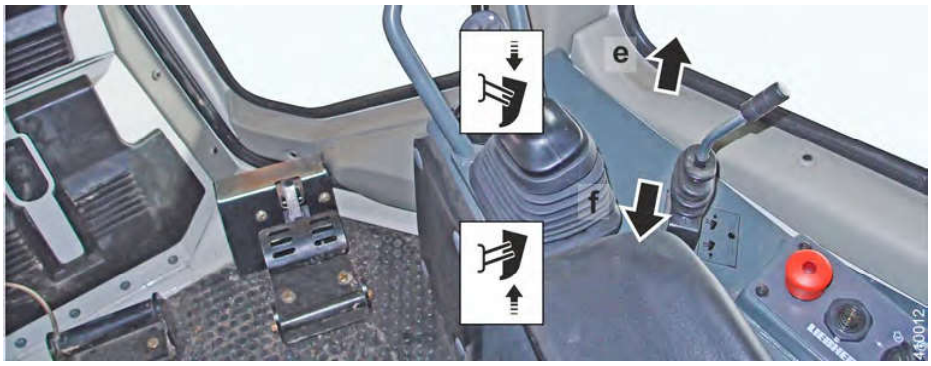


Fig. 202: Ripper lever

▶ Move the ripper lever forward in direction **-e-**.
▷ The ripper lever is lowered.

▶ Move the ripper lever backward in direction **-f-**.
▷ The ripper lever is raised.

Rear winch operation

For the installation of a protective grill contact Liebherr for further information.

CAUTION
Danger of injury when working with rear winches without protective grill!
When working with rear winches, the cable can break and be thrown into the operator's cab.

▶ For rear winch operation, secure the operator's platform with a protective grill.

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3.5.3 Install and remove the push frame with the straight blade

Design overview

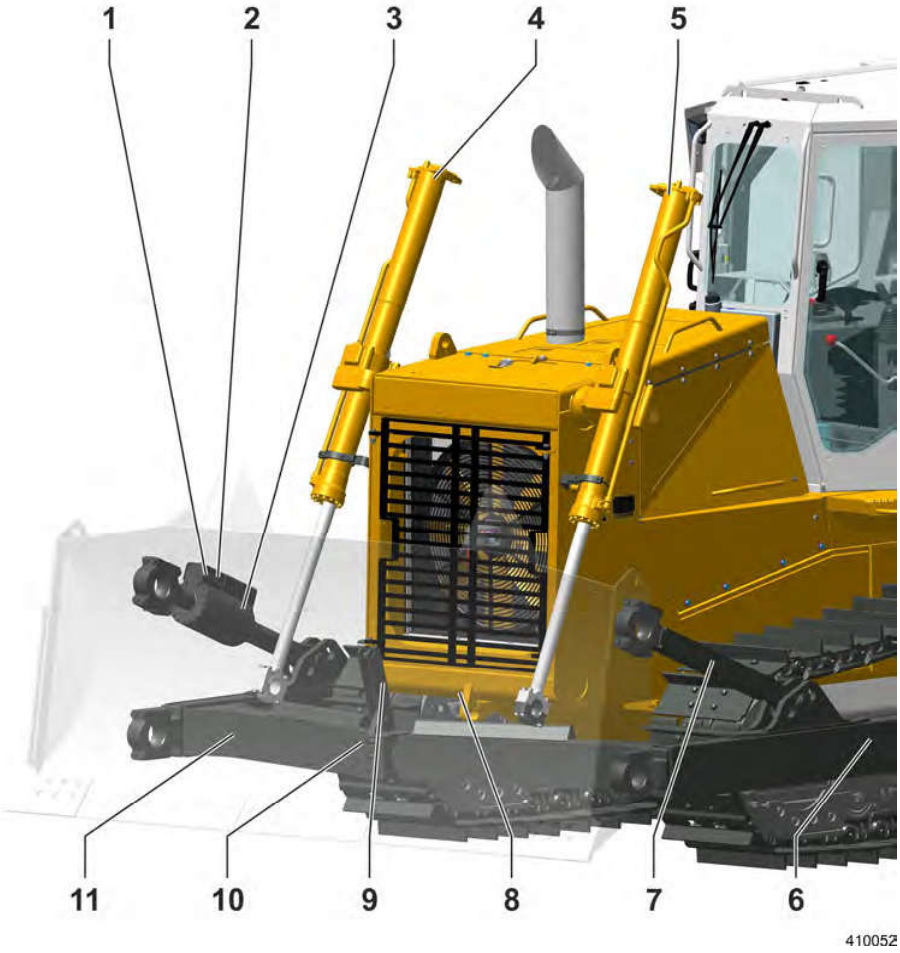


Fig. 219: Push frame - straight blade

1 Connection tilt cylinder
2 Connection tilt cylinder
3 Tilt cylinder
4 Hoist cylinder
5 Hoist cylinder
6 Left push frame half
7 Strut
8 Straight blade
9 Center retainer
10 Center bearing
11 Right push frame half

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Drive onto the ramp only in low speed range position **"I"**.



Fig. 244: Lower speed range

- ▶ Select low speed range: Set the rocker switch to position **"I"**.
- ▶ Start the machine out carefully. (For more information see: 3.3 Operation, page 89)

After driving on the loading surface

- ▶ Stop the machine.

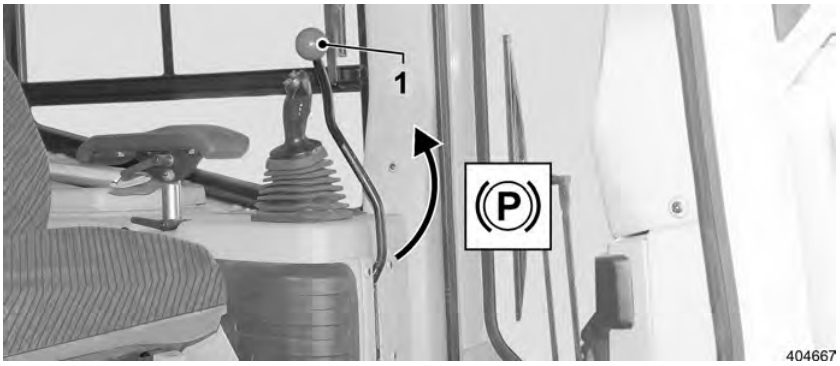


Fig. 245: Safety lever up

- ▶ Move the safety lever **1** up.
- ▶ Turn the Diesel engine off.
- ▶ Close and lock all doors and hoods on the machine.

DANGER
The machine is incorrectly rigged!
The load can move and cause severe injuries or property damage.

- ▶ Fasten the machine properly with chains or ropes on the transport vehicle.

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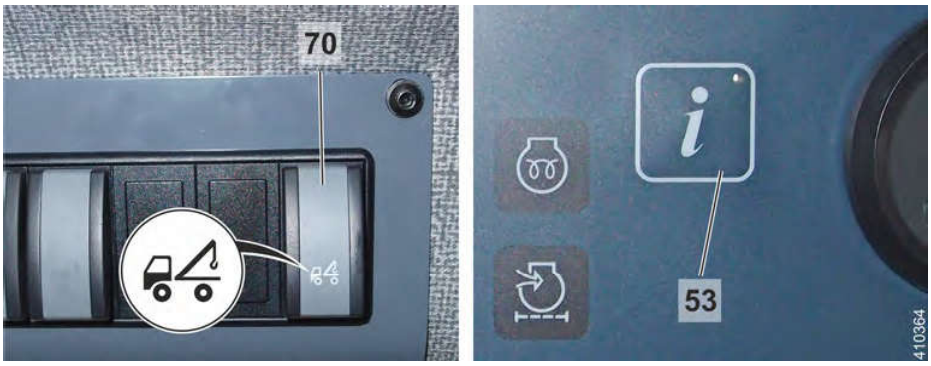


Fig. 262: Press the towing button and the scroll key

▶ Press button *Towing mode* **70** and the scroll key **53** simultaneously within 10 seconds.
▷ The word “TOWING” is shown blinking in the LC display.
▷ The towing mode is activated.

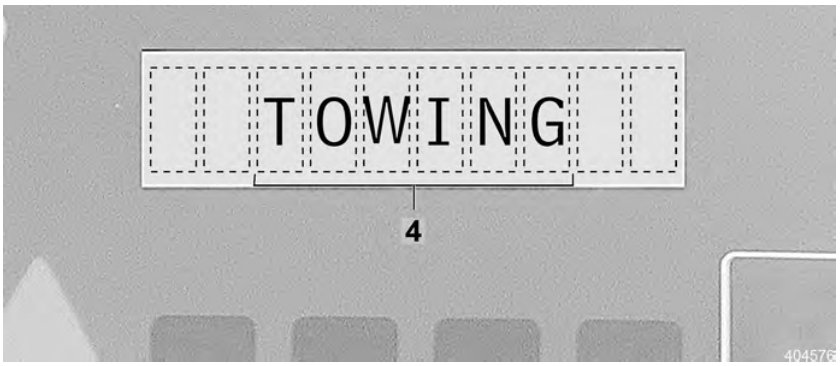


Fig. 263: LC-display “TOWING”

4 Display Towing mode “TOWING”



Fig. 264: Safety lever down

▶ Move the safety lever **1** down.
▷ The indicator light *Travel gear brake* lights up.

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4.1.2 Hydraulic system

Malfunction / error	Cause	Remedy
Indicator light replenishing pressure does not turn off after starting the Diesel engine. **Turn the Diesel engine off immediately.**	Excessive leakage	Visit Liebherr Service
Abnormal noises of hydraulic pumps. **Turn the Diesel engine off immediately.**	Shut off valve on hydraulic tank is closed	Open shut off valve
	Hydraulic pumps draw air	Check oil level in hydraulic oil tank, check suction lines for leaks
No reaction to travel joystick deflection	Safety lever in up position or emergency off button is pressed	Move safety lever down and press emergency off button
No reaction when actuating the blade up function	Blade release turned on	Turn blade release off

4.1.3 Travel gear, tracks

Malfunction / error	Cause	Remedy
Oil discharge on track rollers, carrier rollers or idler	Seal damaged	Replace seal
Insufficient chain guide on idler	Idler guide on track roller frame has too much play	Adjust play on idler guide
Chain jumps off or over	Chain tension too low or sprocket worn	Adjust or replace chain tension
Correctly tensioned chain looses tension quickly during application	Chain tension cylinder defective	Check chain tension cylinder, change if necessary or seal (only authorized expert personnel)
Track or carrier roller is stuck	Track extremely dirty	clean

4.1.4 Electrical system

Malfunction / error	Cause	Remedy
Charge indicator light does not turn off	V-belt for alternator loose or broken	Tension or change V-belt
	Alternator damaged	Change alternator
Batteries are not or only insufficiently charged	Batteries damaged	Change batteries
	Battery connections dirty or oxidized	Clean battery connections
	Cable is loose or damaged	Connect or replace cable
No or erroneous function of an indicator light or a display instrument	Bulb burnt out, display instrument defective	Change damaged part
Failure of some or all instrument panel functions	Plug connector disconnected or damaged, ground line interrupted, short circuit fuse defective	Properly connect or change plug connector, remedy short circuit, replace fuse

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Customer:..... Machine type:.....Serial no.:.....Service hours:.....Date:.....

Maintenance / inspection after service hours								Tasks to be performed	See page
On handover	All 8-10 h	All 50 h	All 500 h	All 1000 h	All 2000 h	All 3000 h	Other intervals	**By maintenance staff** ■ Once-only activity ● Repeat interval ✦ As necessary ❄ Annually before the winter **with authorised specialist staff** ☐ Once-only activity ❍ Repeat interval ✧ As necessary	
								Change the coolant (at least every 6 years), only in connection with coolant analysis	227
Fuel system									
	●	●	❍	❍	❍	❍		Drain the fuel filter condensation (immediately if the indicator light lights up)	229
		●	❍	❍	❍	❍		Drain water and sediments in the fuel tank (but at least 1 x a week)	230
				❍	❍	❍		Change the fuel filter cartridges (observe the bleeding instruction)	231
	●	●	❍	❍	❍	❍		Drain the fuel separator condensation	241
			❍	❍	❍	❍		Check the fuel system for leaks and condition	
Air filter system									
							✦	Change the air filter inserts (but at least 1 x a year)	243
Hydraulic system									
☐	●	●	❍	❍	❍	❍		Check the oil level in the hydraulic tank	247
		■		❍	❍	❍		Clean the magnetic rod on the hydraulic tank (and after repairs) up to 50 hrs. daily.	249
			☐	❍	❍	❍		Change the return filter insert (or when the indicator light lights up with the hydraulic oil at operating temperature)	251
			❍	❍	❍	❍		Change the replenishing circuit filter	253
☐			☐	❍	❍	❍		Check the hydraulic system for function and leaks, check the hose routing for chafing	254
			❍	❍	❍	❍		Check the oil cooler for contamination and clean	254
						❍		Hydraulic tank - Change the hydraulic oil (Liebherr). Pay attention to the notes for oil analysis and dust intensive application! (For more information see: 5.3.5 Hydraulic oil, page 188)	255
					❍			Hydraulic tank - Change the hydraulic oil (Liebherr). Pay attention to the notes for oil analysis and dust intensive application! (For more information see: 5.3.5 Hydraulic oil, page 188)	255
			❍	❍	❍	❍		Drain water and sediments in the hydraulic tank (but at least every 6 months), when using an “environmentally friendly hydraulic medium ” - weekly	257
			☐	❍	❍	❍		Check and adjust all hydraulic pressures according to adjustment check list	
			☐	❍	❍	❍		Check mountings and fittings for tight seating	
				❍	❍	❍		Take an oil sample before changing the oil and send it in for analysis (if an extended warranty or service contract exists)	
Splitterbox									
☐	●	●	❍	❍	❍	❍		Check the oil level	258
			❍	❍	❍	❍		Change the gear oil (but at least once every 2 years)	258

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Aggravating factor		Oil specification	
Operating conditions	**Sulfur content in fuel**	**Interval**	
Climate normal to -10 °C	up to 0.5%	250 h[B)]	500 h[B)]
	above 0.5% to 1%	125 h[B)]	250 h[B)]
below -10 °C	up to 0.5%	125 h[B)]	250 h[B)]
	above 0.5% to 1%	not permissible	125 h[B)]

Tab. 20: See Oil change intervals depending on aggravating factors

A) TBN at least 13 mgKOH/g
B) Operating hours

Aggravating factor		Oil specification
		E6
Operating conditions	**Sulfur content in fuel**	**Interval**
Climate normal to -10 °C	up to 0.005%	500 h[B)]
	above 0.005% to 0.05%	250 h[B)]
	above 0.0501% to 0.1%	125 h[B)]
below -10 °C	up to 0.005%	250 h[B)]
	above 0.005% to 0.05%	125 h[B)]
	above 0.0501% to 0.1%	not permissible

Tab. 21: See Oil change intervals depending on aggravating factors

5.3.4 Coolant for Diesel engines

General recommendations



The cooling system only functions reliably if it is under pretension pressure. For that reason, it is essential that it is kept clean and tight, that the cooler lock and working valves function correctly and that the required coolant level is retained.

Antifreeze fluids with corrosion inhibitors approved by Liebherr ensure sufficient cold, corrosion and cavitation protection, they do not affect the seals and hoses and do not foam.

Coolant, which contains unsuitable antifreeze fluids with corrosion inhibitors or is prepared incorrectly can cause failure of aggregates and components in the cooling circuit due to cavitation and corrosion damage.

In addition, heat insulating deposits can be created on heat transferring components, which lead to overheating and finally to engine failure.

Water (Fresh water)

Suitable is colorless, clear drinkable tap water free of mechanical contaminants with the following limiting analysis values.

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If Liebherr oils are not available locally, then oils according to the specification must be used instead (after consulting with the respective Service Dept.).

Viscosity

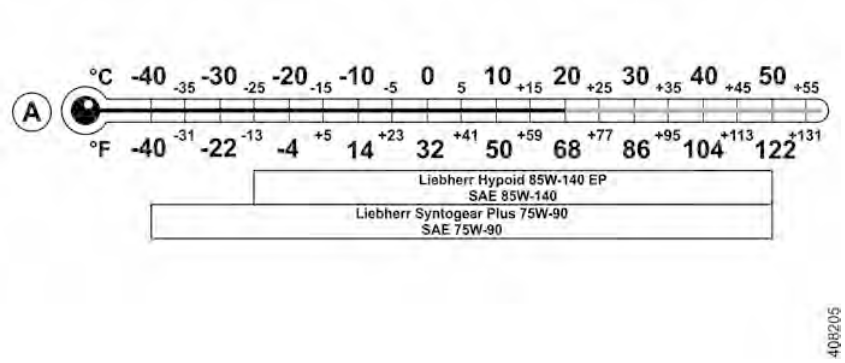


Fig. 306: Temperature dependent selection of SAE classification

A Ambient temperature

The selection of lube oil viscosity is made according to the SAE classification (Society of Automotive Engineers). The SAE classification provides no information about the quality of a lube oil. The ambient temperature is decisive in the correct selection of the SAE classification. The function of axles and gears can be adversely affected due to the incorrect viscosity.

The temperature ranges given in the chart are reference values, which can be exceeded or fallen below for short periods.

5.3.8 Oil for duo cone (slipring) seal - travel gear

Hydraulic oil, see Hydraulic system

Use the same oil quality and viscosity as in the hydraulic system.

5.3.9 Oil for axle bearing

Hydraulic oil, see Hydraulic system

Use the same oil quality and viscosity as in the hydraulic system.

5.3.10 Grease and other lubricants

The grease is used for automatic or manual lubrication of the machine. The grease gets to the lube points via the central lubrication system or via grease fittings.

Example:
- Pins, axles and screws
- Attached tools

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WARNING
Falling engine compartment door due to defective gas cylinder!

▶ Before starting to work underneath the door, check if the completely opened door position is ensured by the gas cylinder.

▶ Open the door: Fold the handle outward, turn by 90° and fold the door up.
▷ The engine compartment door is held in this position by a gas cylinder.

If the function is not ensured:
▶ Find the cause and remedy it immediately.

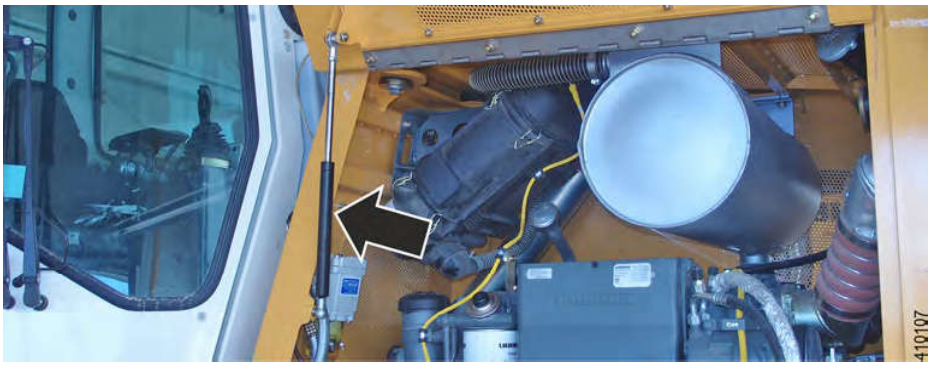


Fig. 325: Pneumatic strut

▶ Check the pneumatic strut.

Remove the covers

Access to additional maintenance points is provided after removing the cover plate on the bottom as well as the cover on the left.

Remove the cover plate on the lower right



Fig. 326: Remove the cover plate

CAUTION
During the entire working procedure, pay attention to good stability.

▶ If the placement location is unsuitable, there is a danger of injury due to falling covers.

▶ Remove the mounting screws on the cover plate.

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5.7.6 Diesel engine: Check for leaks and condition

Make sure that the following prerequisites are met:
- ❑ The machine is in maintenance position.
- ❑ The engine compartment doors are open.

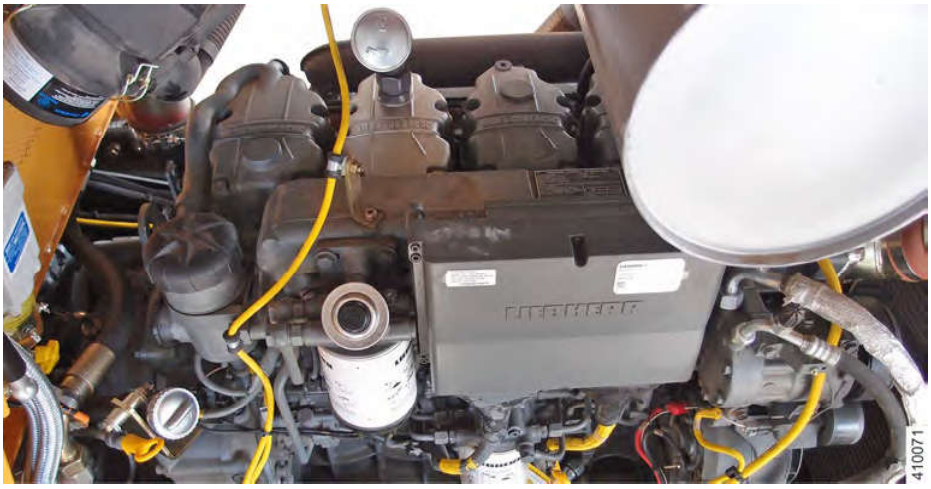


Fig. 339: Diesel engine arrangement

▶ Check the entire engine arrangement for condition and leaks.

Note

▶ Pay attention to leaky fuel lines!

▶ Replace damaged seals immediately.

5.7.7 Diesel engine: Check the intake and exhaust lines for mounting and leaks

Make sure that the following prerequisites are met:
- ❑ The machine is in maintenance position.
- ❑ The engine compartment doors are open.

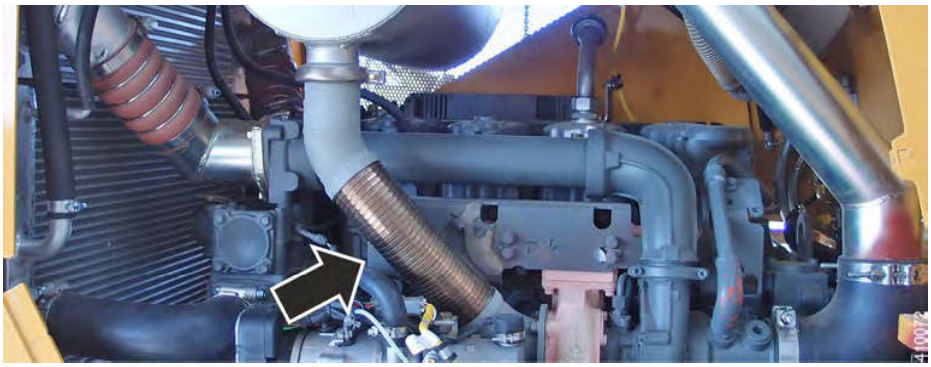


Fig. 340: Intake and exhaust lines

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▶ Add the determined amount of pure corrosion inhibitor / antifreeze fluid.

▶ To obtain the required coolant level, add the remainder again with the previously drained coolant.

Use of corrosion inhibitor without antifreeze fluid

Use of DCA 4

▶ Take a coolant sample and analyze with the test kit CC 2602 M by Fleetguard.

▶ If the analysis does not provide a DCA 4 concentration between 0.6-1.06 units per liter, then the mixing ratio must be corrected, check the manufacturer's instructions.

Use of other water-soluble corrosion inhibitors

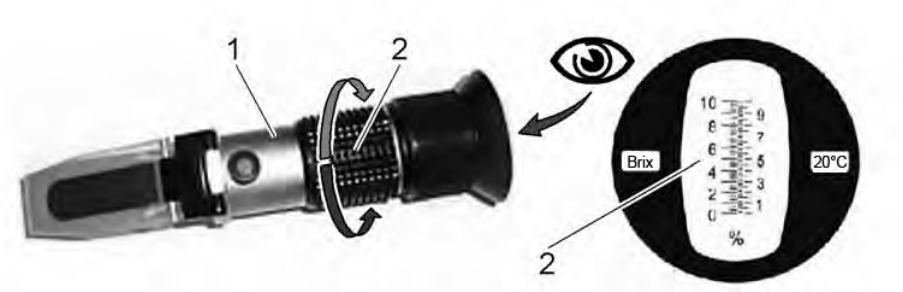
– Caltex XL Corrosion Inhibitor Concentrate
– Chevron Heavy Duty Extended Life Corrosion Inhibitor Nitrite Free
– Havoline Extended Life Corrosion Inhibitor (XLI)
– Total WT Supra

The mixing ratio must always show a value of 2.8 +/-0.9 % Brix. This corresponds to 5-10% of corrosion inhibitor and 95-90% water.

▶ Take a coolant sample and analyze with refractometer 2710 by Gefo.

Check the mixing ratio with the refractometer

Brix value: Dosage for soluble dry substance in liquid



407994

Fig. 356: Gefo Refractometer No. 2710

1 Refractometer **2** Lens

▶ Check the mixing ratio.

Test procedure

▶ Clean the cover and the prism carefully.

▶ Place 1-2 drops of test fluid on the prism.
▷ The liquid distributes when the lid is closed.

▶ Look through the lens **2** against a light background and adjust the scale clearly.

▶ Adjust the sharpness by turning the lens **2**.

▶ Read the Brix values on the blue dividing line in the lens **2**.

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▶ Remove the hex head screws **1** and remove the cover plate.

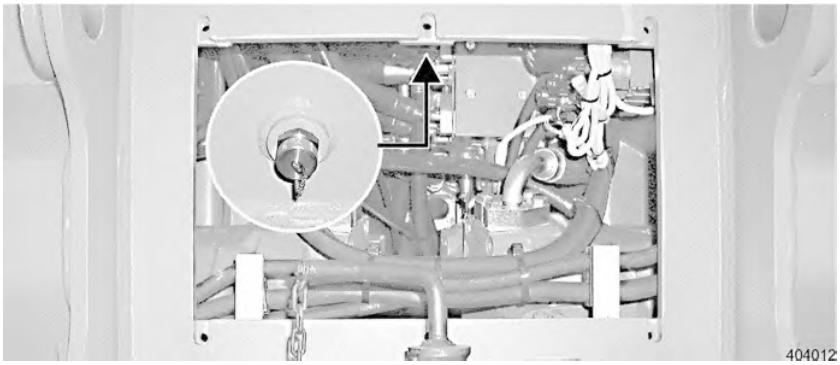


Fig. 372: Drain valve - fuel tank

▶ Unscrew the cap on the drain valve on the underside of the Diesel fuel tank.

▶ Place a container with sufficient capacity under the drain valve.

▶ Install the drain hose on the drain valve.

▶ Drain fuel into a suitable container.

▶ Remove the drain hose and install the cap on the drain valve and tighten.

▶ Install the cover plate with hex head screws.

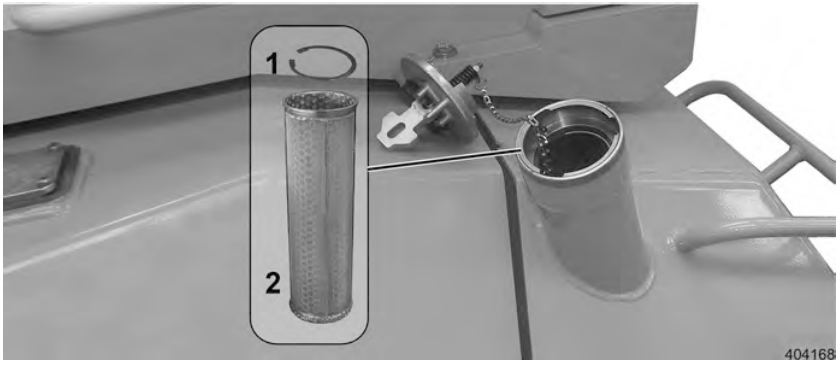


Fig. 373: Fuel tank - filler neck

▶ On the fuel tank - filler neck remove the retaining ring **1** .

▶ Remove the strainer **2**, check it and replace it, if necessary.

▶ Check the fuel tank.

If the fuel tank is dirty:

▶ Clean the fuel tank.

▶ Reinstall the strainer and the retaining ring.

Clean the fuel tank

▶ Empty the fuel tank completely.

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Change the safety element



Fig. 390: Safety element

The safety element **3** must be changed at every third cleaning or whenever the main filter element is being replaced. The safety element may not be cleaned!

Clean the filter housing before removing the safety element as described.

▶ Change the safety element **3**.

NOTICE
Dust is drawn in via the intake line!
The Diesel engine can be thereby damaged.

▶ Never operate the machine without an air filter.

▶ Install the safety element and the main filter element. Ensure correct seating.

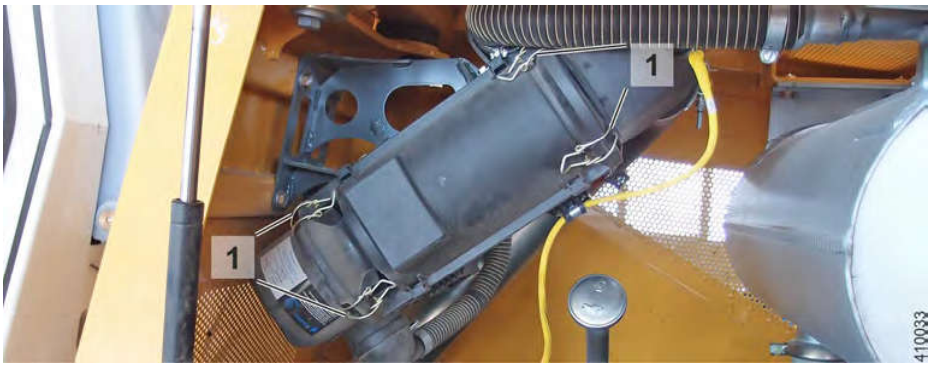


Fig. 391: Close the mounting clamps

▶ Clean the service cover and set it onto the filter housing true to side.

The mounting clamps can be closed without force only if the service cover is touching the filter housing all around the circumference.

▶ Close the mounting clamps.

Troubleshooting
The filter cover cannot be locked.

▶ The filter cover is not installed true to side.

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Use of pressurized air is recommended.

NOTICE
Careless treatment damages the cooler fins!
Danger of damage to the cooling system.

▶ Do not use hard objects or excessive water pressure for cleaning

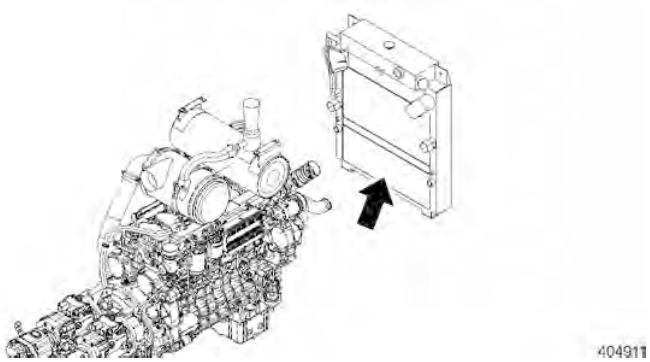


Fig. 409: Oil cooler

▶ Clean the cooler unit with pressurized air, steam or water.

▶ Close the engine compartment doors.

5.11.7 Change the hydraulic oil

Make sure that the following prerequisites are met:
❑ The machine is at operating temperature.
❑ The machine is in maintenance position.
❑ An appropriate container is available.
❑ The correct oil quality and amount is on hand. (For more information see: 5.2.1 Recommended lubricants, page 178)

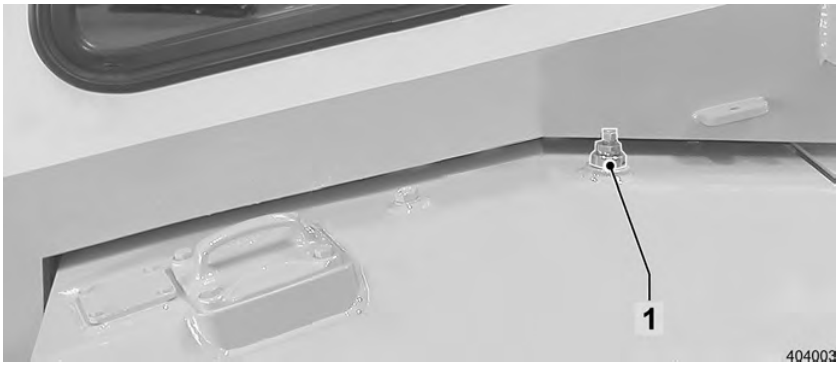


Fig. 410: Breather screw on the hydraulic tank

▶ Relieve the tank pretension: Back the breather screw **1** out by two turns.

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Change the bulb in the cab interior light



Fig. 426: Cab interior light and reading light

- ▶ Remove the glass.
- ▶ Remove the bulb from the base and replace it with a new one.

Note

- ▶ Do not touch the new bulb with bare hands.

- ▶ Insert a new bulb.
- ▶ Insert the glass and push it up.

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5.15.3 Change the oil

Make sure that the following prerequisites are met:
- ❑ The machine is in maintenance position.
- ❑ The machine is parked in such a way that the oil drain plug **1** is positioned on the lowest gear point.
- ❑ A torque wrench is available.
- ❑ An appropriate container is available.
- ❑ The correct oil quality and amount is on hand.

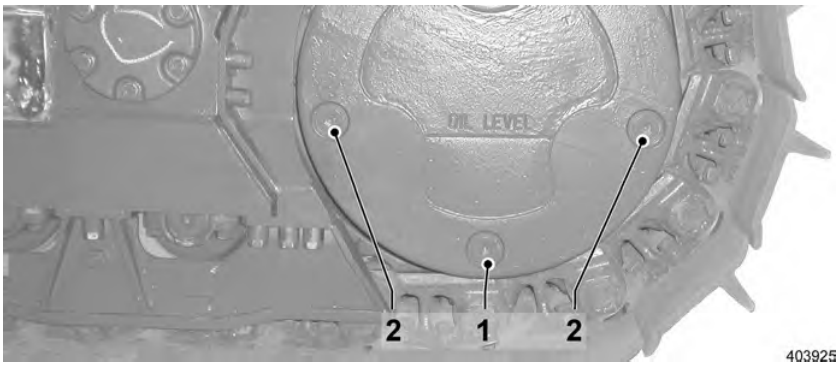


Fig. 444: Travel gear

- ▶ Clean the area of the oil filler and oil drain plug.
- ▶ Place a container under the oil drain plug **1**.
- ▶ Remove both oil filler plugs **2**.
- ▶ Remove the oil drain plug **1**.
- ▶ Let the oil flow into the container.
- ▶ Check the oil for mechanical contamination.
- ▶ Clean the oil drain plug **1** and reinstall.

Note

- ▶ Observe the tightening torque of 120 Nm.

To be able to drain the gear oil completely from the gear, the oil on the inside of the gear must also be drained form the gear housing.

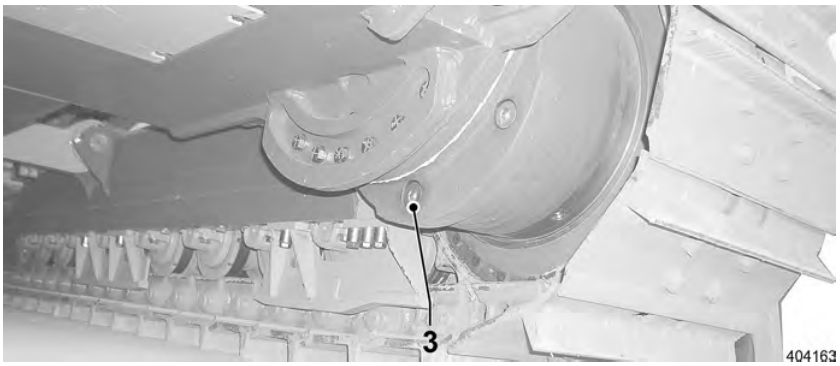


Fig. 445: Travel gear inside

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5.16 Track components

5.16.1 Check screws and nuts of travel gear components for tight seating

Make sure that the following prerequisites are met:
- ❑ The machine is in maintenance position.
- ❑ A torque wrench is available.

Check the tightening torque

▶ Check the mounting screws of track pads and sprocket segments visually for loose screws.



Fig. 463: Tightening torque

▶ Check the tightening torques.

Tightening torques for track pad screws (re-check)

Made by BERCO	
Size	**Tightening torque**
3/4” -16 UNF	630 +/- 20 Nm
7/8” - 14 UNF	850 +/- 10 Nm
M24 x 1.5	1020 +/- 30 Nm
M27 x 2	1913 +/- 49 Nm
1” - 14 UNF	1400 +/- 30 Nm

Tab. 42: Tightening torque Made by BERCO

Made by INTERTRAC	
Size	**Tightening torque**
3/4” -16 UNF	640 +/- 30 Nm

Tab. 43: Tightening torque Made by Intertrac

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- Spray the lock on the master link with penetrating oil and support the infiltration of the penetrating oil by hitting the master link lightly with a hammer.

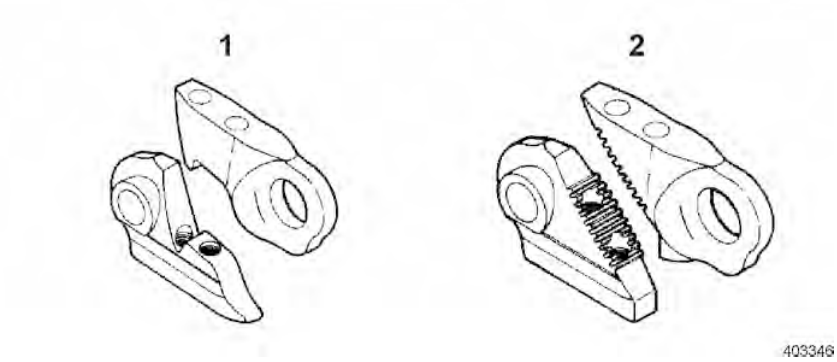


Fig. 481: Master link manufacturers

- Remove the track pad bolts on the end pad.
- Remove the end pad.
- Release and divide the master link by hitting it lightly with a hammer.
- Remove the wooden block on the front.
- Place the chain on the ground by carefully driving forward.

Chains with split master links can be easily installed on the sprocket or on the idler.

- Drive the machine backward on the placed down chain.
- Clean the lock and the bore holes of the new chain to remove any paint, conservation substances or other foreign material and grease lightly.
- Check the bore holes: Screws must be able to be installed by hand.

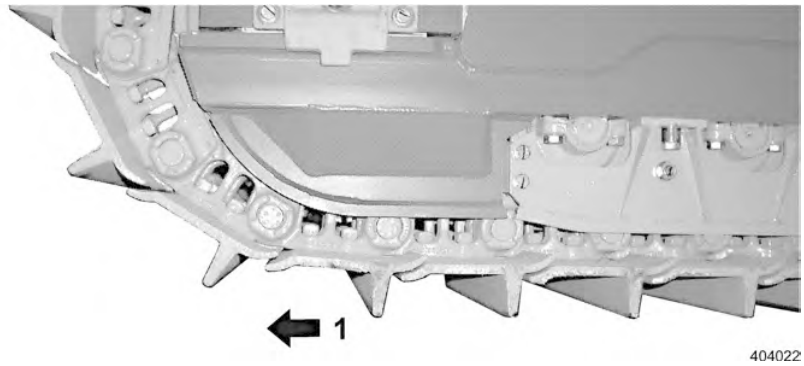


Fig. 482: Travel direction forwards

- Place the chain **true to side** on the ground behind the old chain (Travel direction forward **1**).
- Connect the new chain with the old chain with a wire.
- Align the chain to the track and drive the machine carefully to the end of the new chain.
- Release the new chain from the old chain and attach it on the sprocket with the wire.
- Carefully drive the machine forward until the chain is positioned on top on the sprocket.

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5.18 Operator's platform - tilt device

5.18.1 Raise the operator's platform mechanically

Make sure that the following prerequisites are met:
- ❑ The machine is in maintenance position.
- ❑ Suitable load lifting equipment and lifting device is available.

To replace, clean, check and repair the aggregates between the engine compartment and the reservoir, the operator's platform can be tilted.

DANGER
Danger of crushing between operator's platform and machine!
Personnel remaining under the unsecured operator's platform can be crushed between the operator's platform and machine.

- ▶ Raise the operator's platform only when the machine is at a standstill.
- ▶ When raising and lowering the operator's platform, make sure that there are no persons within the tilt range.
- ▶ Install the retaining pin.
- ▶ Do **not** start or drive the machine with tilted operator's platform.
- ▶ Leave the safety lever in the up position.



Fig. 496: Stop - Lifting points on the operator's platform

- ▶ Fasten suitable load lifting equipment (belt, chain, etc.) on the intended fastening points of the operator's platform.

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