D 11 Operation

1 Safety regulations



Injury or death can result through starting the engine, travel drive, conveyor belt or lifting units.
Before starting, ensure that nobody is working on or underneath the vehicle or standing in the vehicle's danger area!

- Do not start the engine or do not actuate any controls when this is expressly forbidden!
  Unless otherwise specified, the controls may only be actuated when the engine is running!



Never enter the hopper or conveyor belt whilst the engine is running. Danger to life!

- Always make sure during work that no-one is endangered by the vehicle!
- Ensure that all protective covers and hoods are fitted and secured accordingly!
- Immediately rectify damage which as been ascertained! Operation must not be continued when the vehicle is defective!
- Do not allow anyone to ride along on the vehicle!
- Remove obstacles from the road and the work area!
- Always try to choose a driver’s position that is opposite to the flowing traffic! Lock the operating panel and the driver’s seat.
- Maintain sufficient safety clearance from overhanging objects, other vehicles and points of danger!
- Be careful when travelling on rough terrain to keep the feeder from slipping, tipping or turning over.



Always maintain control of the vehicle; never try to use it beyond its capacities!

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F 11 Maintenance

1 Maintenance safety instructions

DANGER	**Danger due to incorrect vehicle maintenance**
	Incorrectly performed maintenance and repair work can cause severe or fatal injuries! - Ensure that maintenance and repair work is always only carried out by trained, specialist staff. - All maintenance, repair and cleaning work should only be carried out with the engine turned off. Remove ignition key and main switch. - Affix a sign "Do not start" to the vehicle. - Perform a visual inspection and check all functions every day. - Proceed with all maintenance tasks according to the maintenance schedule. - Proceed with expert inspection every twelve months. - Eliminate all ascertained faults straight away. - Do not restart the vehicle until all ascertained faults have been eliminated. - Failure to comply with the prescribed inspection and maintenance work renders the operating licence null and void! - Comply with all further information in these instructions and in the safety manual.

DANGER	**Danger due to changes at the vehicle**
	Structural chances to the vehicle make the operating licence null and void and can cause severe to fatal injuries! - Only use original spare parts and approved accessories. - After maintenance and repair work, ensure that any dismantled protective and safety devices are all completely fitted again. - Comply with all further information in these instructions and in the safety manual.

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2.2 Fault codes

Diesel Engine fault codes chart					
Fault Code	**SPN**	**FMI**	**Lamp**	**SPN description**	**Cumins Description**
111	629	12	Red	Controller #1	Engine Control Module Critical Internal Failure - Bad intelligent device or component
115	612	2	Red	System Diagnostic Code #2	Engine Magnetic Speed/Position Lost Both of Two Signals - Data erratic, intermittent or incorrect
122	102	3	Amber	Engine Intake Manifold #1 Pressure	Intake Manifold 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
123	102	4	Amber	Engine Intake Manifold #1 Pressure	Intake Manifold 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
124	102	16	Amber	Engine Intake Manifold #1 Pressure	Intake Manifold 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
125	102	18	Amber	Engine Intake Manifold #1 Pressure	Intake Manifold 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
131	91	3	Red	Accelerator Pedal Position 1	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
132	91	4	Red	Accelerator Pedal Position 1	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
133	974	3	Red	Remote Accelerator Pedal Position	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
134	974	4	Red	Remote Accelerator Pedal Position	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
135	100	3	Amber	Engine Oil Pressure	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage above normal, or shorted to high source
141	100	4	Amber	Engine Oil Pressure	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage below normal, or shorted to low source
143	100	18	Amber	Engine Oil Pressure	Engine Oil Rifle Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
144	110	3	Amber	Engine Coolant Temperature	Engine Coolant Temperature 1 Sensor Circuit - Voltage above normal, or shorted to high source
145	110	4	Amber	Engine Coolant Temperature	Engine Coolant Temperature 1 Sensor Circuit - Voltage below normal, or shorted to low source
146	110	16	Amber	Engine Coolant Temperature	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
147	91	1	Red	Accelerator Pedal Position 1	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data valid but below normal operating Range

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9 Bolts - torques

9.1 Standard metric threads - strength class 8.8 / 10.9 / 12.9



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1.2 Safety signs, signal words

In the safety instructions, the signal words "Danger", "Warning", "Caution", "Note" are positioned in the coloured title block. They follow a certain hierarchy; in combination with the warning symbol, they indicate the severity of the danger or the type of note.

"Danger"!



Danger of personal injury.
Indication of an immediately threatening danger that result in fatal or severe injuries unless the corresponding actions are taken.

"Warning"!



Indication of a possible danger that can result in fatal or severe injuries unless the corresponding actions are taken.

"Caution"!



Indication of a possible danger that result in moderate or minor injuries unless the corresponding actions are taken.

"Note"!



Indication of a possible drawback unless the corresponding actions are taken, e.g. unwanted conditions or consequences can occur.

1.3 Other supplementary information

Other information and important explanations are identified by the following pictograms:



Precedes safety instructions that must be observed in order to prevent danger to personnel.



Precedes notes that must be observed to prevent damage to equipment.



Precedes general notes and explanations.

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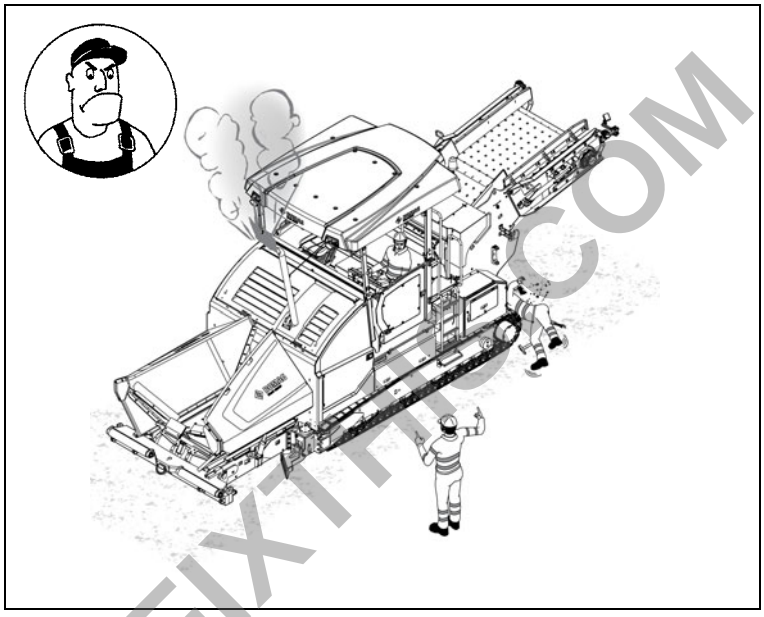
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7 Funs of the operator controls and display instructions

☞ All relevant specifications in the operating instructions must be observed.

7.1 Starting



STOP Injury or death can result through starting the engine, travel drive, conveyor belt or lifting units.
Before starting, make sure that no-one is working on, in or beneath the feeder or is located within its danger zone!
Do not start the engine or do not actuate any controls when this is expressly forbidden!
Unless otherwise described in the operating instructions, the controls may only be actuated when the engine is running!
Never enter the hopper or conveyor belt whilst the engine is running - danger to life!

⚠ WARNING	**Danger of being pulled in by rotating or conveying vehicle parts**
	Rotating or conveying vehicle parts can cause severe or fatal injuries! - Do not enter the danger zone. - Do not reach into rotating or conveying parts. - Only wear close-fitting clothing. - Comply with the warning and information signs on the vehicle. - Stop the engine and remove the ignition key before any maintenance work. - Comply with all further information in these instructions and in the safety manual.

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7 Operation at night / night work

⚠ CAUTION	**Danger due to restricted vision**
	Restricted vision poses a risk of injury! - Before starting work, arrange the intended driver's seat to ensure adequate vision. - Signalmen must be used when vision is restricted, also to the sides and when reversing. - Only reliable persons who must have received instructions about their task before taking up their activity may be used as signalmen. This refers in particular to the hand signals to be used. Standardised hand signals must be used. - Adequate lighting must be provided when working at night. - Comply with all further information in these instructions and in the safety manual.

- Night time operations differ fundamentally from operations during daylight! Maximum attention is always required during night time operations! Persons passing the construction site area may possibly be unaware of the dangers which exist!
- Plan and discuss the operation carefully. Inspect the working area regularly during daylight and mark obstacles and danger points with reflectors or other suitable aids!
- All operating personnel must wear suitable, reflective protective clothing during night time operations!
- Make sure that the construction site area is adequately illuminated. Observe the local illumination regulations!

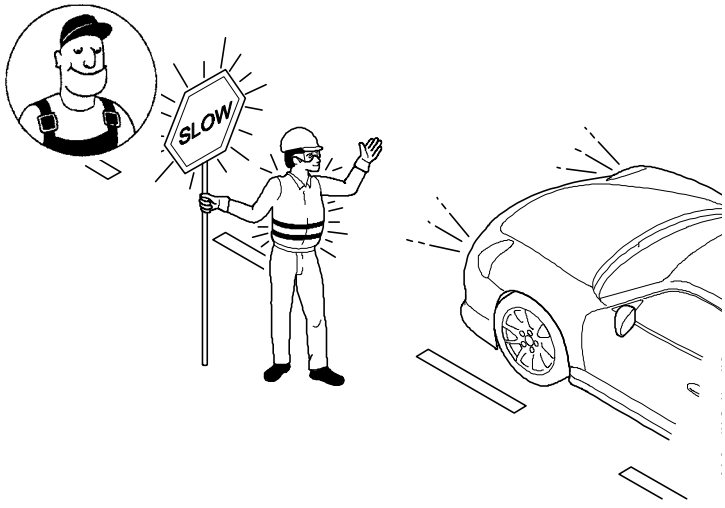


Fig.26

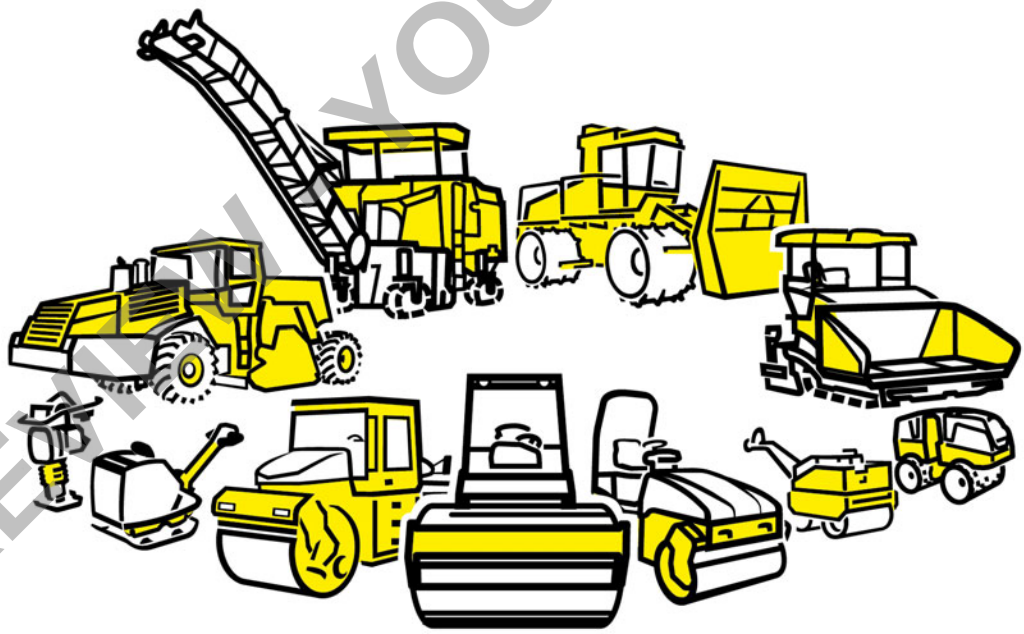
- Make sure that displays and controls are clearly visible and easily legible!

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BOMAG
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Operation- and maintenance manual

BMF 2500 S / BMF 2500 M



S/N 101 940 00 1001> / S/N 101 940 01 1001> / S/N 101 940 02 1001> / S/N 101 940 03 1001>
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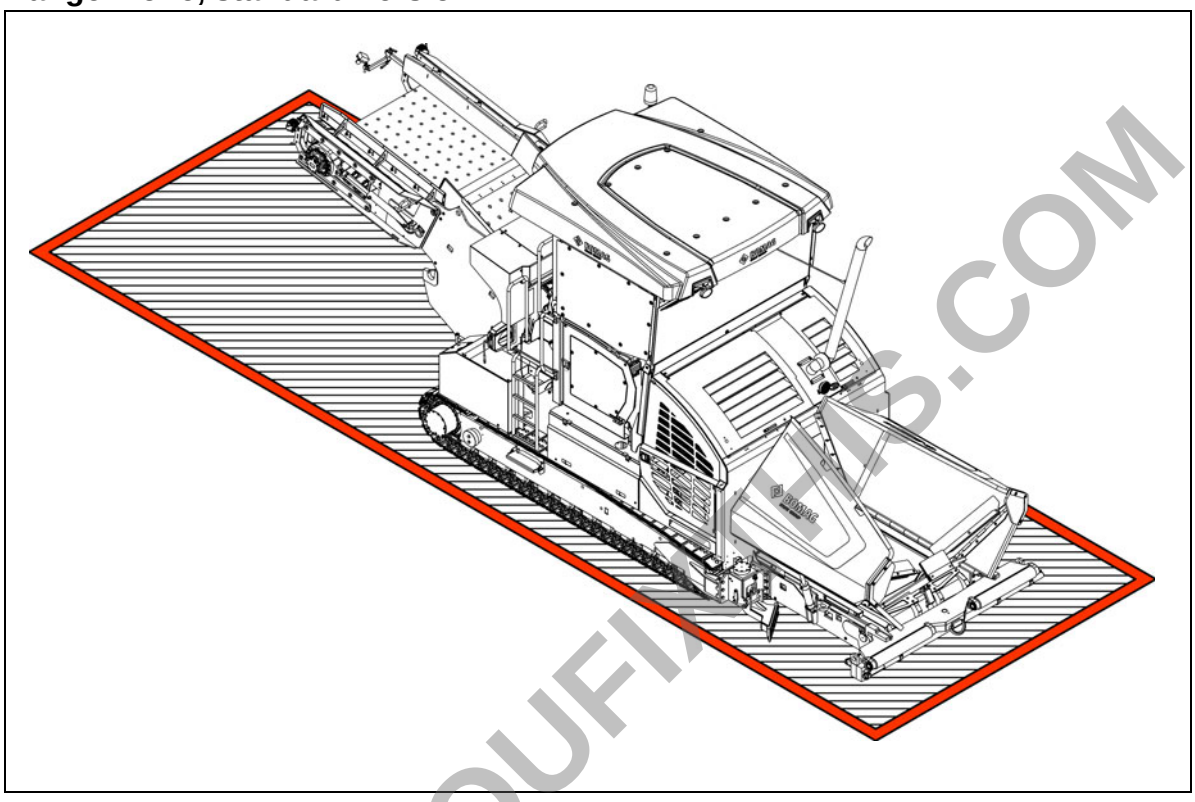
Feeder

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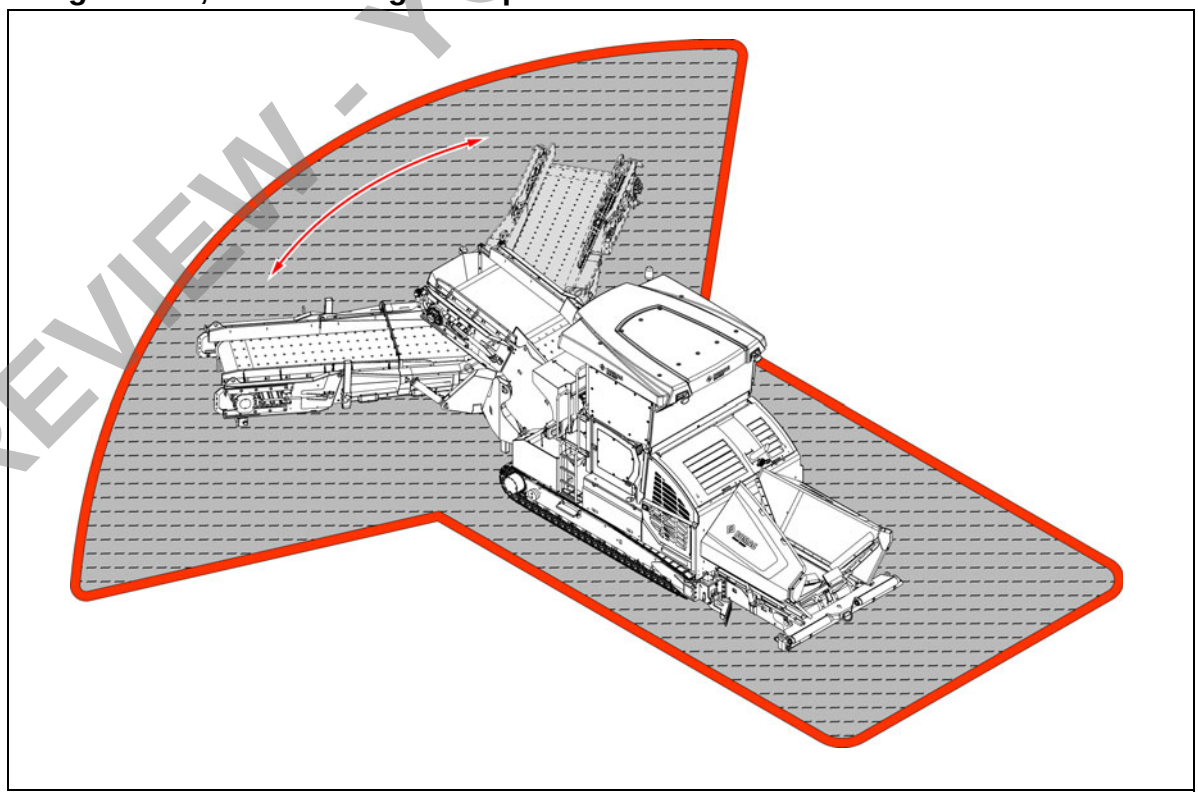
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3 Danger zones

3.1 Danger zone, standard version



3.2 Danger zone, with slewing belt option



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7.4 Vibration acting on the entire body

When the vehicle is used properly, the weighted effective acceleration values at the driver's seat of $a_w = 0.5\ m/s^2$ according to DIN EN 1032 are not exceeded.

7.5 Vibrations acting on hands and arms

When the vehicle is used properly, the weighted effective acceleration values at the driver's seat of $a_{hw} = 2.5\ m/s^2$ according to DIN EN ISO 20643 are not exceeded.

7.6 Electromagnetic compatibility (EMC)

The following limit values are observed according to the protection requirements of the EMC Directive 2004/108/EC:

- Interference emission according to DIN EN 13309:
  < 35 dB µV/m for frequencies of 30 MHz - 1GHz measured at a distance of 10 m
  < 45 db µV/m for frequencies of 30 MHz - 1 GHz measured at a distance of 10 m

- Interference immunity against electrostatic discharge (ESD) according to DIN EN 13309:
  The ± 4-KV contact and the ± 4-KV airborne discharge did not result in any influence on the vehicle which could be detected.
  Compliance is maintained with the modifications in accordance with assessment criterion "A", i.e. the vehicle continues to operate correctly during the test.

Electrical or electronic components and their arrangement may only be modified after written approval has been obtained from the manufacturer.

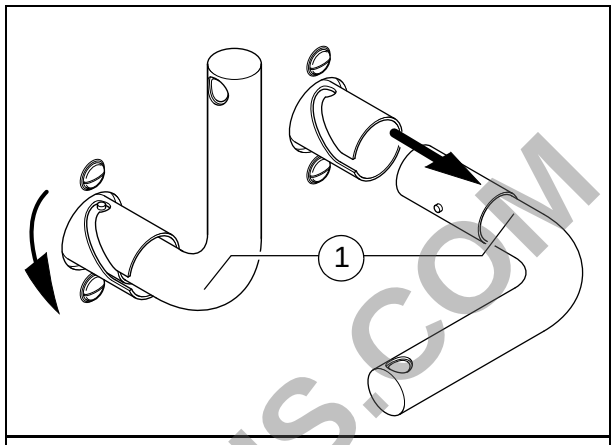
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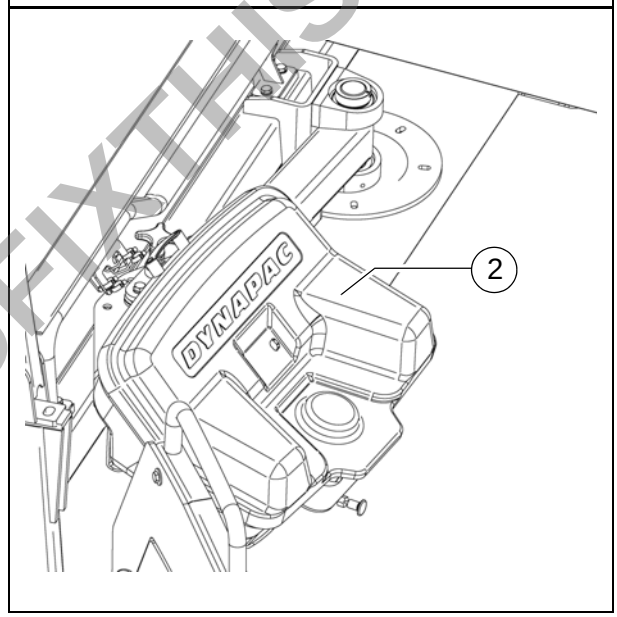
10 Safely parking the vehicle

⚠ When the feeder is parked in a location accessible to the public, it must be secured in such a way that unauthorised persons or playing children cannot damage the vehicle.

- Remove ignition key and main switch (1) and take them with you – do not leave them "hidden" on the machine.

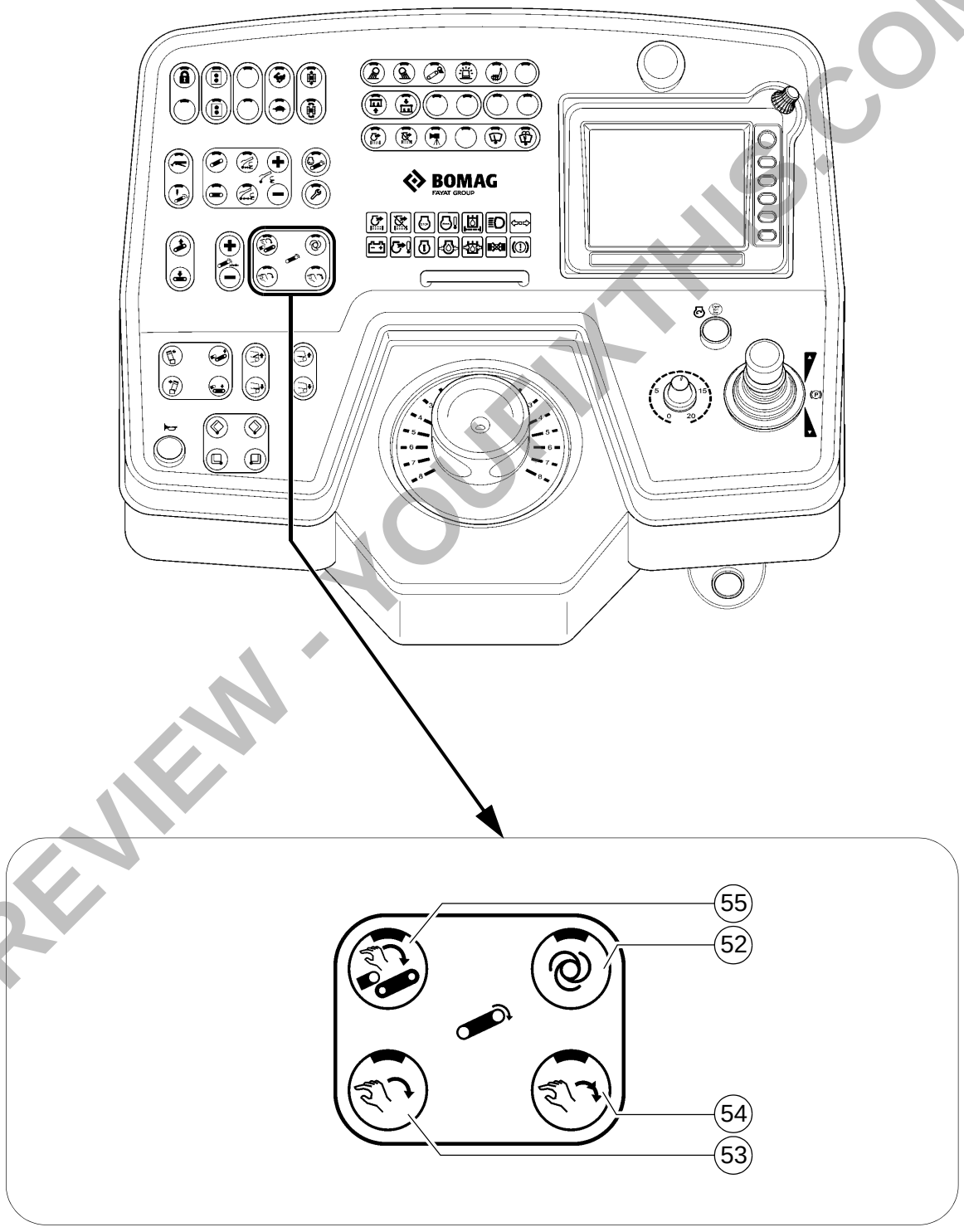


- Protect the operating panel with the dust cover (2) and lock it.
- Store loose parts and accessories in a safe place.
- Then lower and set the latches properly on both sides.



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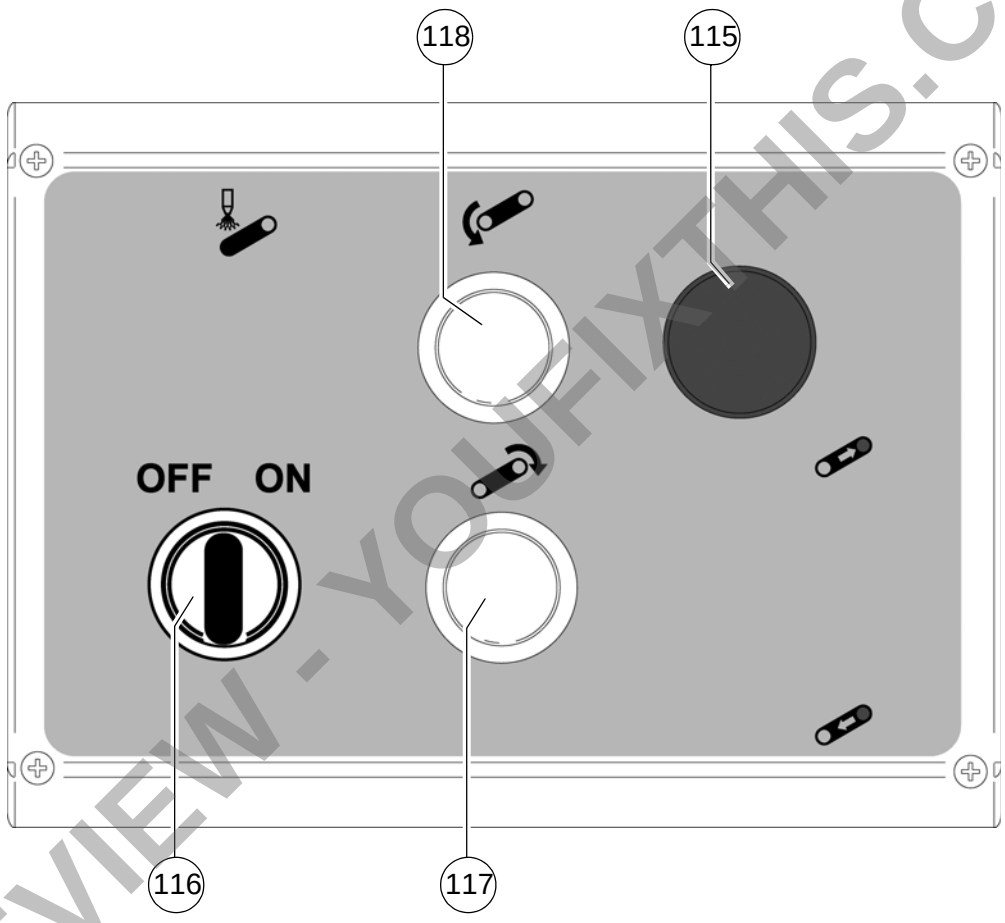
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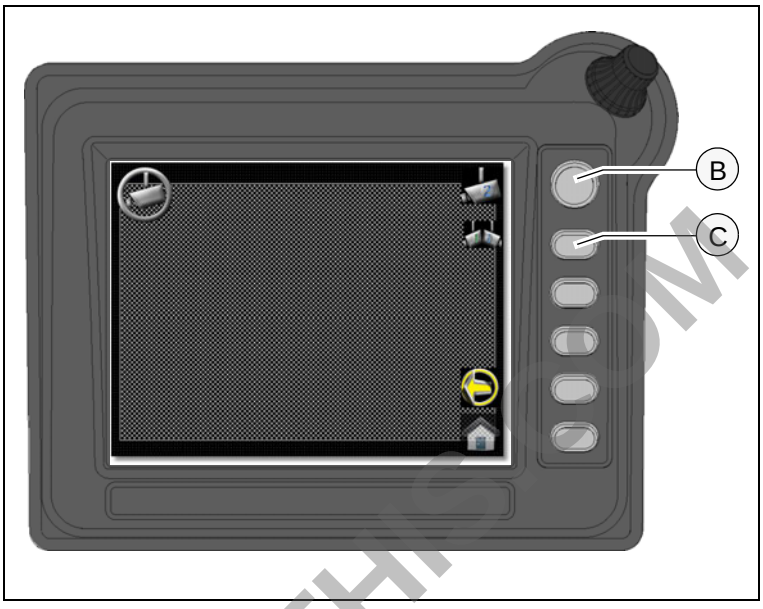
Side operating unit - slewing conveyor belt (○)



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Menu
"Camera display"



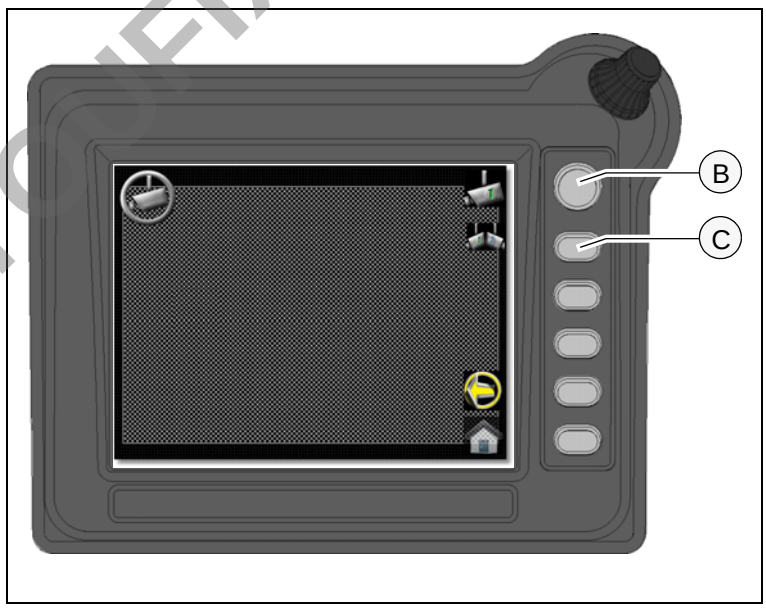
Machine parts partly concealed from view can be displayed by the camera system.

When this function is called up, display camera 1 appears.

- Show camera 2 display: button (B).
- Show camera 1+2 display: button (C).

☞ When the camera function is active, the rear camera is automatically displayed on reverse travel.

"Camera 2" display



- "Show camera 1" display: button (B).
- Show camera 1+2 display: button (C).

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Diesel Engine fault codes chart

Fault Code	SPN	FMI	Lamp	SPN description	Cumins Description
3253	3242	16	Red	Aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
3254	3242	15	Amber	Aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
3255	3246	16	Red	Aftertreatment 1 Diesel Particulate Filter Outlet Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
3256	3246	15	Amber	Aftertreatment 1 Diesel Particulate Filter Outlet Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
3258	4340	5	Amber	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 State	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Current below normal or open circuit
3261	4342	5	Amber	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 State	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Current below normal or open circuit
3298	1194	13	Red	Anti-theft Encryption Seed Present Indicator	Anti-theft Encryption Seed - Out of Calibration
3311	3242	0	Red	Aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data valid but above normal operation
3312	3246	0	Red	Aftertreatment 1 Diesel Particulate Filter Outlet Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data valid but above normal operation
3313	4765	4	Amber	Aftertreatment Diesel Oxidation Catalyst Intake Temperature	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
3314	4765	3	Amber	Aftertreatment Diesel Oxidation Catalyst Intake Temperature	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
3315	4765	2	Amber	Aftertreatment Diesel Oxidation Catalyst Intake Temperature	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
3316	3242	4	Amber	Aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
3317	3242	3	Amber	Aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source

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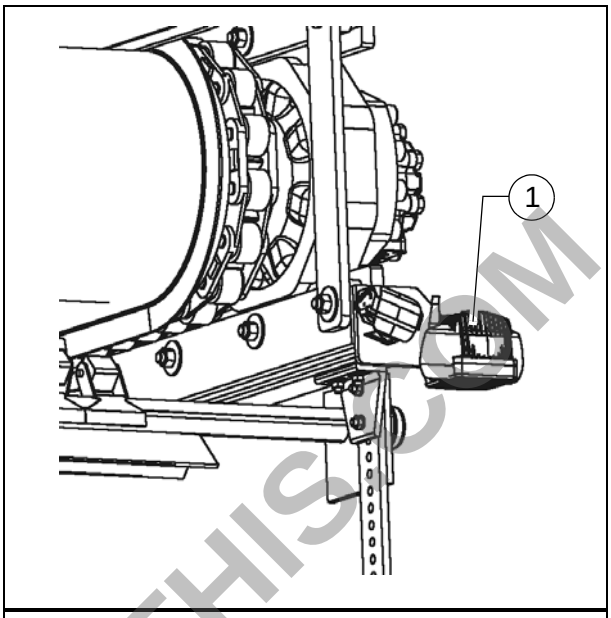
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Conveyor belt lighting (○)

☞ Two swivelling headlights (1) are located on the left and right of the conveyor belt for illuminating the transfer point.

- They are engaged together with the working lights.

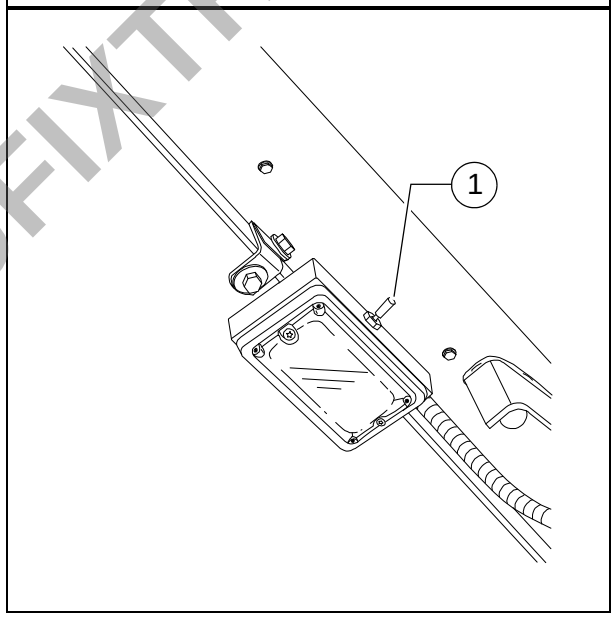
☞ These are activated together with the other working lights on the operating panel!



Engine compartment lighting (○)

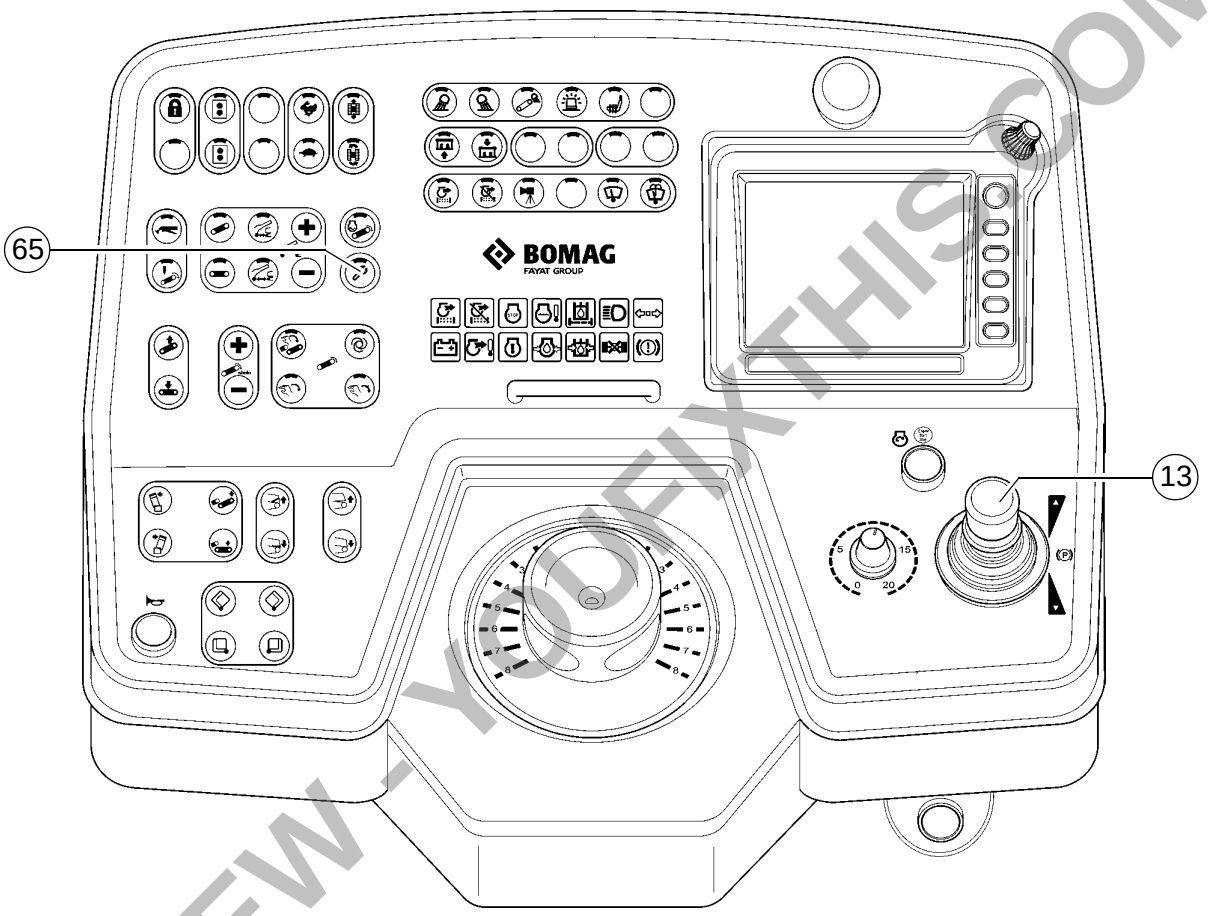
☞ The engine compartment lighting can be activated when the ignition is switched on.

- On/off switch (1) for the engine compartment lighting.



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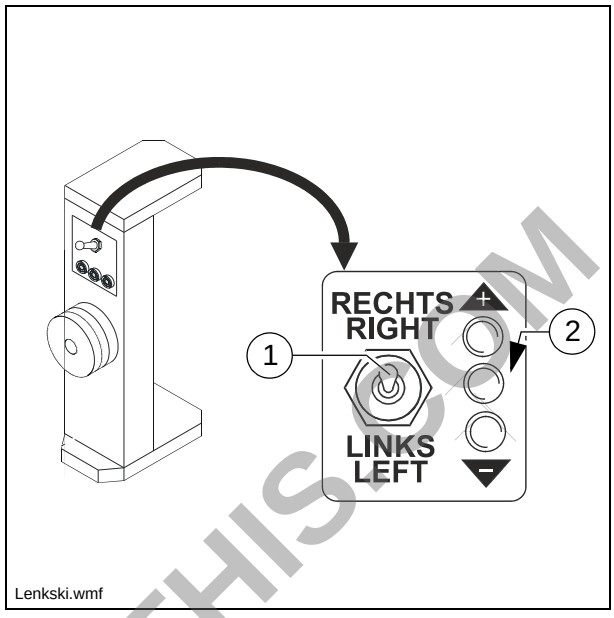


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Automatic steering unit operating instructions



- When the automatic steering unit is activated, the steering potentiometer is deactivated. Steering is carried out automatically via ski cable sensing.
- Activate the function on the operating panel as necessary.
- The automatic steering unit can be overridden by actuating the steering potentiometer.

- The switch (1) is used to set the sensing side:
  - Right: Automatic steering unit on the right side of the vehicle.
  - Left: Automatic steering unit on the left side of the vehicle.

- The LEDs (2) indicate the distance from the reference.
  - LED + / - : Distance from the reference too high / too low.
  - Centre LED: Distance correct.

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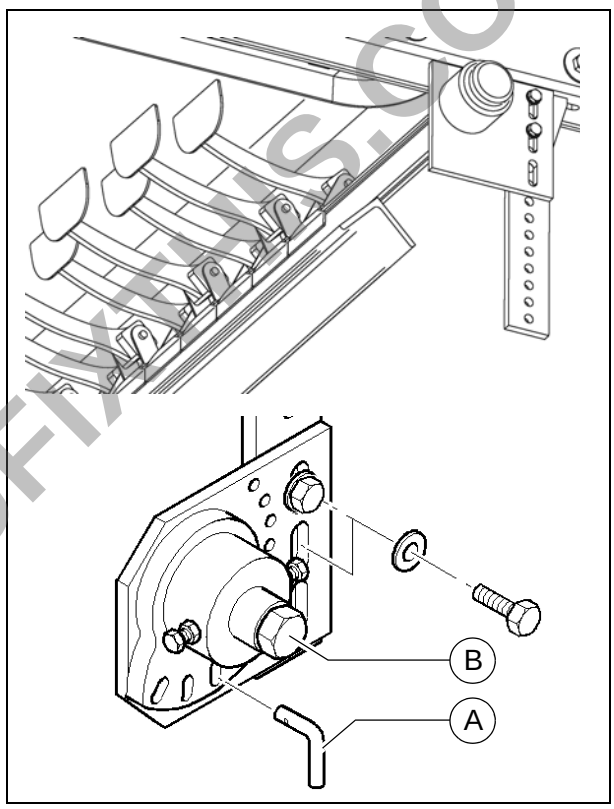
Spring arm scraper (4)



☞ A scraper is available to minimise dirt and wear on the conveyor belt.

☞ The scraper is equipped with several scraper plates which scrape off bonded material residues during conveyor belt operation.

Check tension:



⚠ The tension must be readjusted as soon as the scraper no longer operates correctly and material residues stick to the conveyor belt.

Adjust tension:

- Remove tensioning fixture bolts (A) on both sides of the vehicle.
- Place an appropriate wrench on the hexagon head (B) and tension scraper.
  - After scraper blade contact with the belt, continue turning one hole division.
- Insert and secure bolt (A).
- Insert and secure bolt (A) in the identical hole on the other side.
- Observe scraping effect, re-tension if necessary.

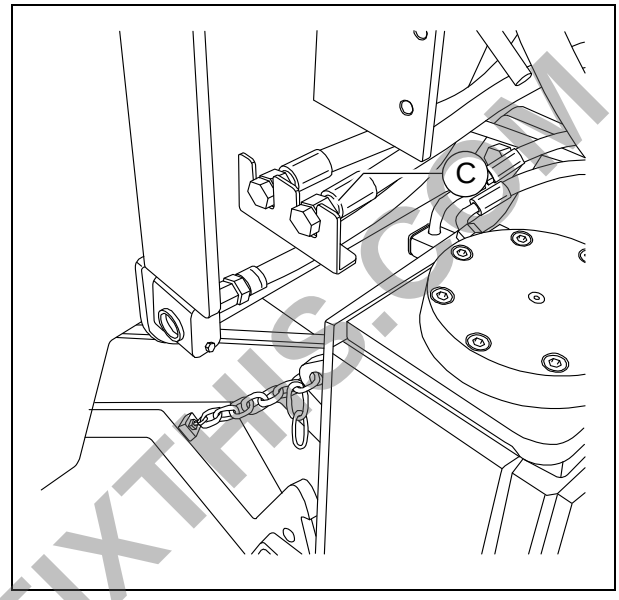
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Oil change:

☞ Change the oil when the engine is at operating temperature.

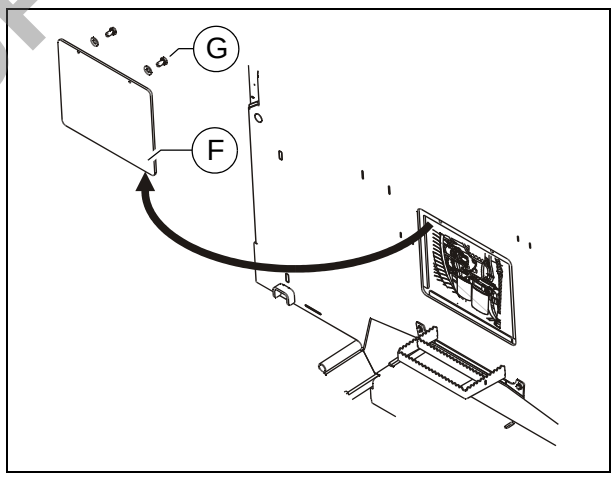
- Place the end of the oil drain port hose (C) in the collection container.
- Remove the screw cap with a wrench and allow the oil to drain completely.
- Replace the screw cap and tighten properly.
- Fill in the specified quality of oil through the filler opening (B) on the engine until the oil level rises to the correct mark on the sensor rod (A).



Changing the oil filter:

☞ All filters are accessed via the service flap (F) on the vehicle's centre wall:

- Remove the screws (G) from the inner side of the frame and remove the service flap (F).
- After completing the maintenance work, reinstall the service flap (F) properly.



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Pos.	Interval									Maintenance point	Note
	10	50	250	500 / annually	1000 / annually	2000 / every 2 years	4000 / every 3 years	5000	If necessary		
6	■									- AdBlue® / DEF tank Check level	
									■	- AdBlue® / DEF tank Top up with AdBlue® / DEF	
									■	- AdBlue® / DEF tank Replace suction filter	
			■							- AdBlue® / DEF tank Check tank cover	
									■	- AdBlue® / DEF tank Clean tank cover	
							■			- AdBlue® / DEF dosing unit Inspection and cleaning	
							■		■	- AdBlue® / DEF dosing unit Change filter	
							■			- Check hoses and lines for damage	

Maintenance	■
Maintenance during the running-in period	▼

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1.1 Maintenance intervals

Pos.	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
1	■								- Hydraulic oil tank - Check filling level	
								■	- Hydraulic oil tank - Top up with oil	
							■		- Hydraulic oil tank - Change oil and clean	
2	■								- Hydraulic oil tank - Check maintenance indicator	
						■		■	- Hydraulic oil tank - Change and vent the suction/return flow hydraulic filter	
3	■								- High-pressure filter - Check maintenance indicator	
						■		■	- High-pressure filter - Replace filter element	
4		■							- Pump distribution gear - Check oil level	
								■	- Pump distribution gear - Top up oil	
						■			- Pump distribution gear - Change oil	
		■							- Pump distribution gear - Check bleeder	
								■	- Pump distribution gear - Clean bleeder	

Maintenance	■
Maintenance during the running-in period	▼

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1.2 Maintenance points

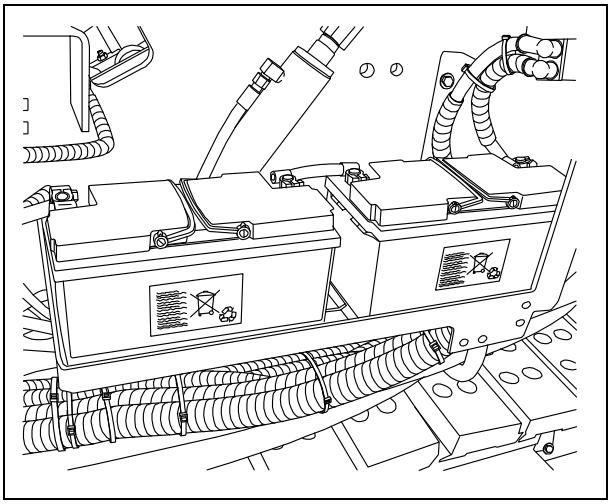
Batteries (1)

Maintenance of batteries



☞ The batteries are factory-filled with the correct quantity of acid.
Ensure than an electrolyte level of 10 to 15 mm above the plates or the marking is guaranteed accordingly; top up with distilled water only. Never overfill, as this affects performance and causes excessive corrosion.

☞ The amount of water that has evaporated from the batteries usually depends on the operating conditions, such as e.g. temperatures, number of starts, operating time between starting and stopping, etc.
If a battery has to be topped up with increasing frequency, this indicates overloading.
If a battery does not have to be topped up at all over a long period of operation, the battery may be underloaded e.g. due to poor cable connections.



⚠ The battery terminal clamps must be free of oxide and protected with a special terminal grease.

⚠ When removing the batteries, always first remove the negative terminal, ensuring that the battery terminals cannot be short circuited.

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