

# Operating Instructions

Paver Finisher  
SD2500W / SC2500WS  
Type 897 / 898



EN 11-0419  
4812074033



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# V Preface

Translation of the original operating instructions.

If the vehicle is to be operated safely, the information provided in these operating instructions will be required. The information is provided in a concise, clearly structured form. The individual chapters are arranged in alphabetical order, and every chapter starts with page 1. The individual pages are identified by the chapter letter and the page number.

Example: Page B 2 is the second page of chapter B.

These operating instructions cover various vehicle options. Make sure that during operation and maintenance work the description appropriate to the vehicle option is used.





In the interest of continued development, the manufacturer reserves the right to make changes to the vehicle (which will not, however, change the essential features of the type of vehicle described) without updating the present operating instructions at the same time.

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## 1 General safety instructions

### 1.1 Laws, guidelines, accident prevention regulations

-  The locally applicable laws, guidelines and accident prevention regulations must always be observed, even if these are not expressly named here.  
The user himself/herself is responsible for compliance with the resulting regulations and measures!
  
-  The following warnings, prohibitive symbols and instructive symbols indicate dangers for persons, the vehicle and the environment due to residual risks when operating the vehicle.
  
-  Failure to observe this information, prohibitions and instructions can result in life-threatening injuries!
  
-  The "Guidelines for the Correct Use and Application of Paver Finishers" compiled by Dynapac must also be observed!

## 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.

## 1.4 Warnings

Warning on a dangerous area or hazard!

Failure to observe the warnings can result in life-threatening injuries!



Warning on danger of being pulled in!



In this working area/on this element there is a danger of being pulled in by rotating or conveying elements!  
Only carry out activities with elements switched off!



Warning on dangerous electrical voltage!



All maintenance and repair work on the screed's electrical system must always be carried out by an electrician!



Warning on suspended loads!



Never stand under suspended loads!



Warning on danger of crushing!



There is a danger of crushing when certain components are operated, or certain functions or vehicle movements are carried out.  
Always make sure that there are no persons within the endangered areas!



Warning on hand injuries!



Warning on hot surfaces or hot liquids!



Warning on danger of falling!



Warning on dangers posed by batteries!



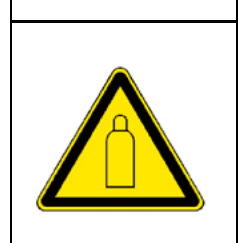
Warning on hazardous or irritating substances!



Warning on substances which constitute a fire hazard!

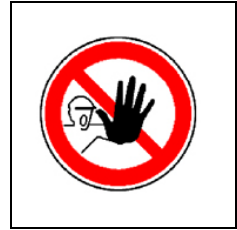


Warning on gas bottles!



## 1.5 Prohibitive symbols

Opening/walking on/reaching in/carrying out/setting up are prohibited during operation or while the drive engine is running!



Do not start engine/drive!  
Maintenance and repair work may only be carried out with the diesel engine shut down!



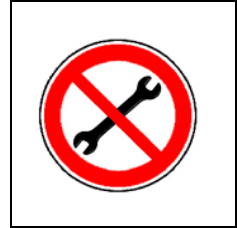
Spraying with water is prohibited!



Extinguishing with water is prohibited!



Unauthorised maintenance is prohibited!  
Only qualified experts may conduct maintenance!



 Consult the Dynapac Service Department


Fire!, naked flames and smoking are prohibited!



Do not switch!



## 1.6 Protective equipment

 Locally applicable regulations may require the wearing of various safety equipment!  
Always observe these regulations!

Wear safety goggles to protect your eyes!



Wear suitable head protection!



Wear suitable hearing protection to protect your hearing!



Wear suitable safety gloves to protect your hands!



Wear safety shoes to protect your feet!




Always wear close-fitting work clothing!  
Wear a warning vest to be seen in time to avoid accidents!



Wear respiratory equipment if breathing air is contaminated!



## 1.7 Environmental protection

 The locally applicable laws, guidelines and accident prevention regulations for the proper recycling and disposal of waste must always be observed, even if these are not expressly named here.

Water-endangering substances like:

- Lubricants (oil, grease)
- Hydraulic oil
- Diesel fuel
- Coolant
- Cleaning liquids

must not get into the soil or sewer system during cleaning, maintenance and repair work!


Substances must be caught, stored, transported and brought to professional disposal sites in suitable containers!



Environmentally hazardous substance!



## 1.8 Fire prevention

 Locally applicable regulations may require suitable extinguishing agents to be carried on the vehicle!

Always observe these regulations!

Fire extinguisher!  
(optional equipment)



## 1.9 Additional information



Also observe the manufacturer's documentation and additional documentation!



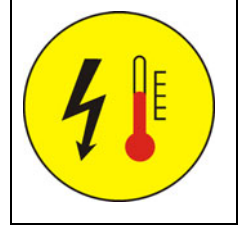
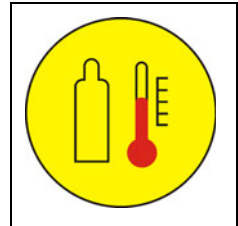
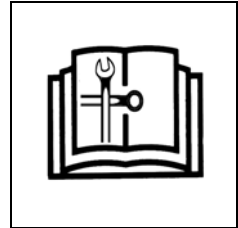
For example, the maintenance instructions of the engine manufacturer



Description / depiction applicable when equipped with gas heater!



Description / depiction applicable when equipped with electric heater!



- Used to indicate standard equipment.
- Used to indicate optional equipment.

## 2 CE identification and Declaration of Conformity

(only applies to machines sold in the EU/EEC)

This machine has CE identification. This identification says that the machine fulfils the basic health and safety requirements pursuant to the Machinery Directive 2006/42/EC together with all other valid regulations. The scope of supply of the machine includes a Declaration of Conformity as specified in the valid regulations and amendments together with harmonised standards and other valid provisions.

## 3 Guarantee conditions



The guarantee conditions are included in the scope of supply of the machine. This contains a complete specification of the valid conditions.

### **The guarantee becomes null and void if**

- damage occurs through malfunctions caused by improper use and incorrect operation.
- repairs or manipulations are carried out by persons who are neither trained nor authorised accordingly.
- accessories or spare parts are used that cause damage and which are not approved by Dynapac.

## **4 Residual risks**

These are risks that remain even if all possible measures and safety precautions have been taken to help minimise dangers (risks) or to reduce their probability and scope to zero.

### **Residual risks in the form of**

- **Danger to life and limb of persons at the machine**
- **Danger to the environment posed by the machine**
- **Damage to property and restricted output and functionality of the machine**
- **Damage to property in the operating range of the machine**

### **caused by:**

- wrong or improper use of the machine
- defective or missing safety devices
- use of the machine by untrained, uninstructed staff
- defective or damaged parts
- incorrect transport of the machine
- incorrect maintenance or repairs
- leaking operating substances
- emission of noise and vibrations
- impermissible operating substances

### **Existing residual risks can be avoided by complying and implementing the following:**

- warnings at the machine
- warnings and instructions in the safety manual for paver finishers and in the operating instructions of the paver finisher
- Operating instructions of the machine operator

## **5 Sensibly predictable incorrect usage**

Every kind of sensibly predictable incorrect usage of the machine constitutes misuse. Incorrect usage makes the manufacturer's warranty null and void: the operator bears sole responsibility.

Sensibly predictable incorrect usage of the machine includes:

- presence in the danger zone of the machine
- transporting persons
- leaving the operator's platform while the machine is operating
- removing protection or safety devices
- starting and using the machine outside the operator's platform
- operating the machine with the screed walkway plate hinged up
- failing to comply with the maintenance instructions
- omission or incorrect execution of maintenance or repair work
- spraying the machine with high pressure cleaners

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# A Correct use and application



The "Guidelines for the Correct Use and Application of Paver Finishers" compiled by Dynapac are included in the scope of delivery for the present machine. The guidelines are part of the present operating instructions and must always be heeded. National regulations are fully applicable.

The road construction machine described in these operating instructions is a paver finisher that is suited for laying mixed materials, roll-down concrete or lean-mixed concrete, track-laying ballast and unbound mineral aggregates for foundations for paving.

The paver finisher must be used, operated and maintained according to the instructions given in the present operating instructions. Any other use is regarded as improper use and can cause injury to persons or damage to the paver finisher or other equipment or property.

Any use going beyond the range of applications described above is regarded as improper use and is expressly forbidden! Especially in those cases where the paver finisher is to be operated on inclines or where it is to be used for special purposes (construction of dumps, dams), it is absolutely necessary to contact the manufacturer.

**Duties of the user:** A "user" within the meaning of these operating instructions is defined as any natural or legal person who either uses the paver finisher himself, or on whose behalf it is used. In special cases (e.g. leasing or renting), the user is considered to be the person who, in accordance with existing contractual agreements between the owner and the user of the paver finisher, is charged with the observance of the operating duties.

The user must ensure that the paver finisher is only used in the stipulated manner and that all danger to life and limb of the operator, or third parties, is avoided. In addition to this, it must be ensured that the relevant accident prevention regulations and other safety-related provisions as well as the operating, servicing and maintenance guidelines are observed. The user must also ensure that all persons operating the paver finisher have read and understood the present operating instructions.

**Mounting of attachments:** The paver finisher must only be operated in conjunction with screeds that have been approved by the manufacturer. Mounting or installation of any attachments that will interfere with or supplement the functions of the paver finisher is permitted only after written approval by the manufacturer has been obtained. If necessary, the approval of local authorities must be obtained.

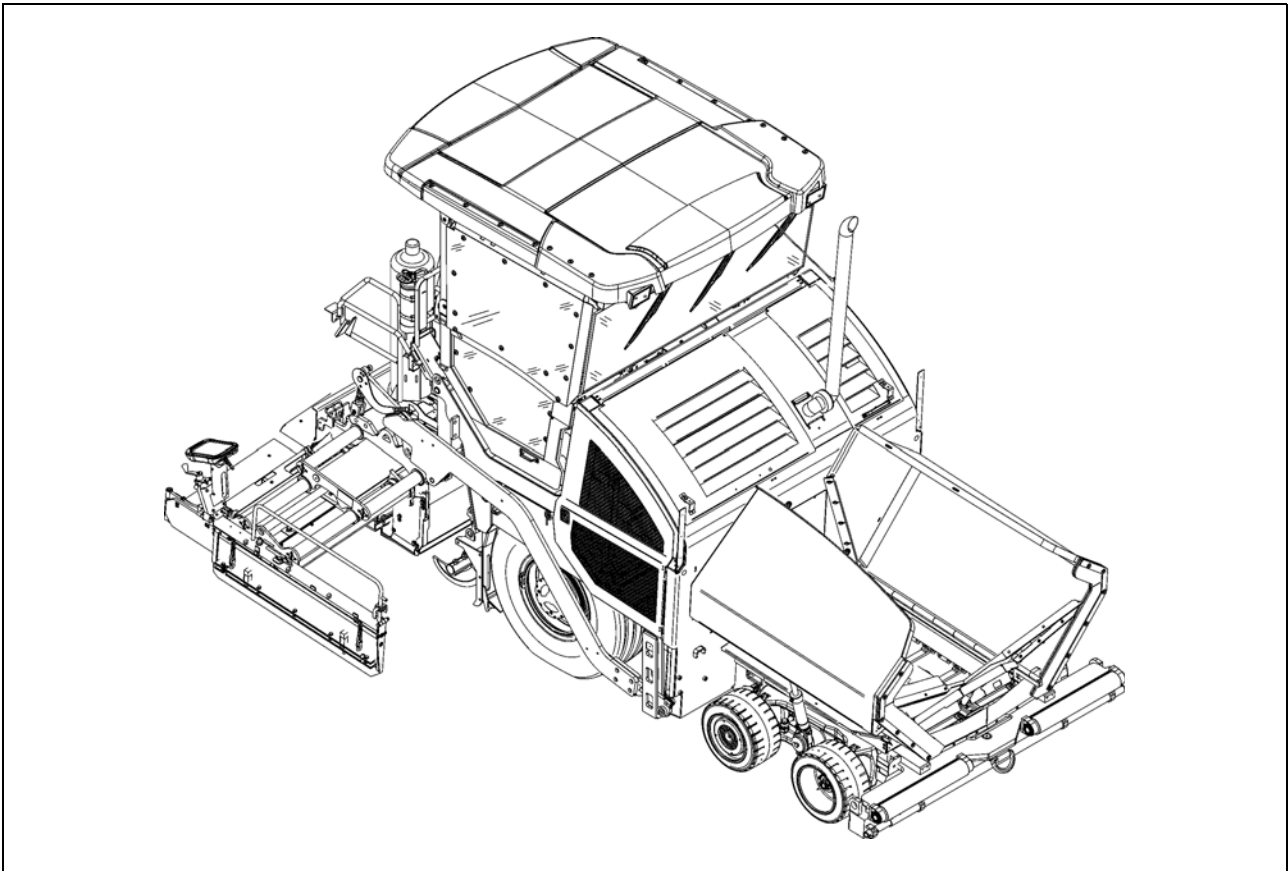
Any approval obtained from local authorities does not, however, make approval by the manufacturer unnecessary.



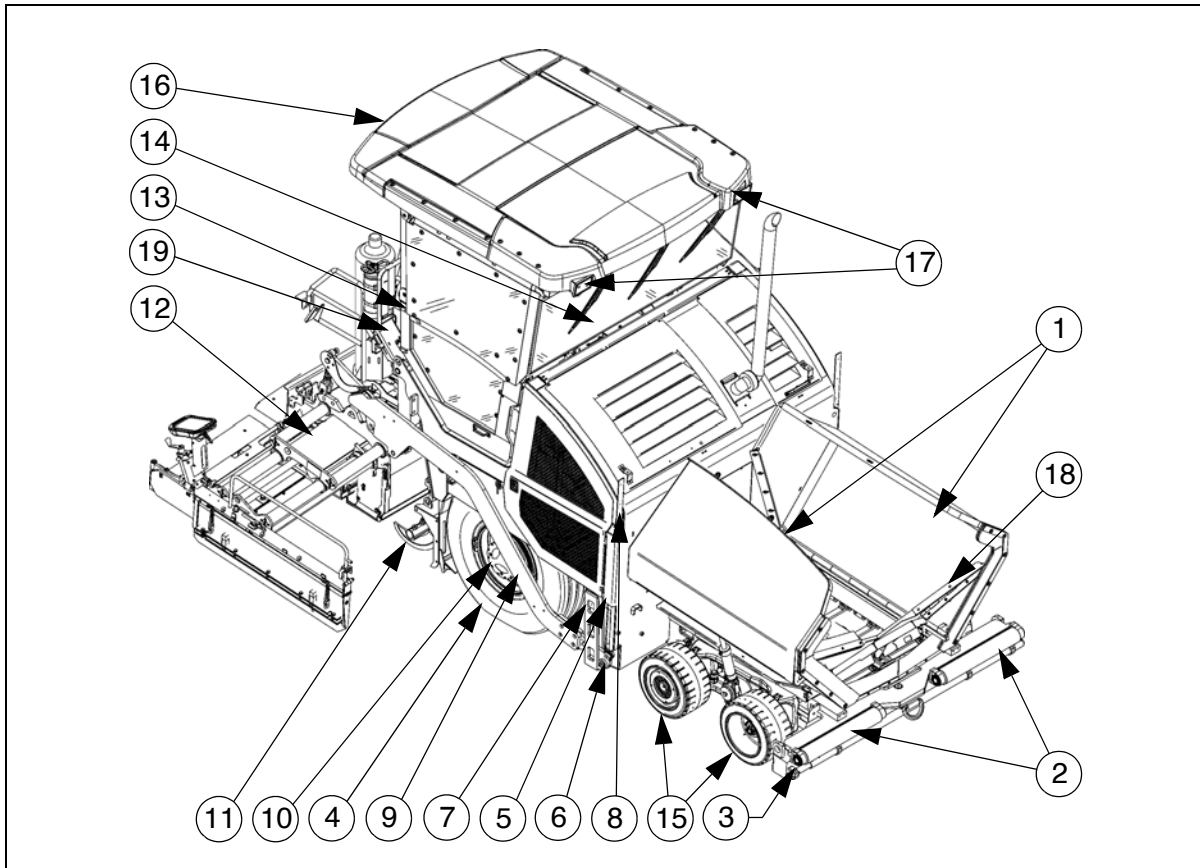
## B Vehicle description

### 1 Application

The Dynapac SD2500W / SD2500WS paver finisher is a wheeled paver finisher which is used for paving bituminous mixed material, roll-down or lean-mixed concrete, track-laying ballast and unbound mineral aggregates for foundations for paving.



## 2 Description of assemblies and functions



Item		Designation
1	●	Material compartment (hopper)
2	●	Truck push rollers
3	●	Tube for sensor rod (direction indicator) and holder for levelling shoe
4	●	Rear wheels
5	●	Levelling cylinder for paving thickness
6	●	Traction roller
7	●	Crossbeam pull bar
8	●	Paving thickness indicator
9	●	Crossbeam
10	●	Travel drive
11	●	Auger
12	●	Screed
13	●	Operator's platform
14	●	Operating panel (can be moved to either side)
15	●	Tandem front axle
16	●	Protective roof
17	○	Working lights
18	○	Hydraulic front hopper flap
19	○	Asphalt fume control system

● = Standard equipment

○ = Optional equipment

---

## 2.1 Vehicle

### Construction

The paver finisher has a welded steel frame on which the individual components are mounted.

The large drive wheels together with the front tandem shaft jointly compensate the irregularities of the soil and as a result of the suspension of the screed they guarantee a particularly high paving precision.

The continuously adjustable hydrostatic travel drive allows the speed of the paver finisher to be matched to all work conditions.

The operation of the paver finisher is considerably facilitated by the automatic material handling system, the independent travel drives and the clearly structured operating components and controls.

The following extra equipment (option) is available:

- Automatic levelling/slope control system
- Additional cut-off shoe
- Larger working widths
- Automatic central lubrication system for the finisher and/or the screed
- Protective roof
- Additional headlights, warning lamps
- Emulsion spraying system
- Fuelling system
- Camera system
- Asphalt fume control system
- 12 volt system
- Reverse buzzer
- Central lubrication system
- Further equipment and upgrade options on request.

**Engine:** The paver finisher is driven by a water cooled diesel engine. For further details see the technical data and the engine's instruction manual.

Various engine variants in different emission classes are available as options.

**Stage IIIa / Tier 3 (○):** There is no separate exhaust aftertreatment for this engine type when used in countries without specific regulations.

**Stage IV / Tier 4final (○):** The engine complies with the latest emissions standards and helps to reduce diesel consumption and improve the working environment.

The exhaust gas aftertreatment system consists e.g. of a diesel oxidation catalytic converter (DOC), an SCR catalytic converter (Selective Catalytic Reducer) and an AdBlue® / DEF injection system.

The emission of exhaust gases which are harmful to the environment and health is significantly reduced.

**Stage V (○):** The engine complies with the latest emissions standards and helps to reduce diesel consumption and improve the working environment.

The exhaust gas aftertreatment system consists e.g. of a diesel oxidation catalytic converter (DOC) + a diesel particulate filter (DPF), an SCR catalytic converter (Selective Catalytic Reducer) and an AdBlue® / DEF injection system.

The emission of exhaust gases which are harmful to the environment and health is significantly reduced.

**Traction unit:** The front axle is a tandem swing axle. As the wheels are not mounted on non-uniform lifting arms, the second front wheel is subject to a heavier load on the shorter lifting arm.

This solution provides increased steering and load-bearing capabilities, especially on soft grounds. The tyres are solid rubber tyres at the front axle and large, tubeless, pneumatic tyres at the rear axle (water filling - ○).

With additional front-wheel drive, the second front axle or both front axles can be engaged as additional drive axles.

**Hydraulic system:** The diesel engine drives the hydraulic pumps for all main paver finisher drives via the attached distribution gear and its auxiliary drive shafts.

**Travel drive:** The continuously adjustable travel drive pumps are connected to the travel drive engines by means of high pressure hydraulic hoses.

These oil engines drive the drive wheels via planetary gears.

The multi-stage planetary gear covers the various driving ranges and the braking function.

**Steering system/operator's platform:** The fully hydraulic steering system ensures easy manoeuvrability.

The small turning radius permits quick and easy manoeuvring.

The operating panel can be hydraulically shifted beyond the left/right outer edge of the vehicle, providing the driver with a better view of the paving area in this position.

The entire operating panel can be swivelled for operation beyond the outer edge of the vehicle, and can be additionally be locked in several positions along the control platform.

**Push roller crossbar:** The push rollers for material trucks are fastened to a cross bar that is pivoted at its centre. The paver finisher thus deviates less from its course and paving in curves is made easier.

For adaptation to various truck design types, the push roller crossbar can be shifted to two positions.

**Material compartment (hopper):** The hopper inlet is equipped with a conveyor system that empties the hopper and transfers the material to the auger.

The hopper can hold approx. 13.0 t.

To facilitate emptying and achieve even material transfer, each of the lateral covers of the hopper can be hydraulically folded in.

The hydraulic front hopper flaps (○) ensure that no material remains at the front of the feeding hoppers.

**Material transfer:** The paver finisher is equipped with two conveyors driven separately that transfer the material from the hopper to the augers.

By scanning the filling height during the paving procedure, the transfer amount or speed is regulated fully automatically.

The drive is reversible (○).

**Augers:** The augers are driven and actuated independently from the conveyors. The left-hand and the right-hand half of the auger can be controlled separately. The drive system is fully hydraulic.

The conveying direction can be changed towards the centre or towards the outside. This ensures that there is always a sufficient supply of material even if an excessive amount of material is required at one side. The auger speed is continuously controlled by sensors that monitor the material flow.

**Height adjustment and extension of augers:** Height adjustment and extension of augers ensure optimum adaptation to a wide range of paving thicknesses and widths. When using ratchets for height adjustment, barrel nuts at the guide supports in the rear wall are used to adjust the height.

Another variant allows the height to be regulated at the operating panel by means of hydraulic cylinders (○).

Auger segments of different lengths can be attached to easily adapt to the different paving widths.

**Levelling/slope control system:** The slope control system (○) allows the traction point to be regulated at the left-hand or the right-hand side with a defined difference to the opposite side.

To determine the actual value, the two traction crossbeams are linked with a slope control rod.

The slope control system always operates in conjunction with the screed height adjustment of the opposite side.

By adjusting the height of the traction point of the crossbeam (traction roller), the paving thickness of the material or the laying height of the screed can be controlled.

Actuation occurs electro-hydraulically on both sides and can be controlled manually by means of toggle switches or automatically by means of an electronic grade control system.

**Crossbeams / screed lifting device:** The screed lifting device is used to lift the screed during transportation. The screed's approach angle can be changed using the eccentric adjustment facility on the crossbeam.

Depending on the paving condition requirements, the crossbeam can be moved backwards or forwards. This adjustment enlarges the material space between the auger and screed.

**Automatic paving stop and screed charging/relieving:** The automatic paving stop prevents the formation of any screed marks caused by a stopped screed. When the paver finisher stops (during a truck change), the screed remains in floating position and relief pressure is applied, thus preventing the screed from sinking while stationary.

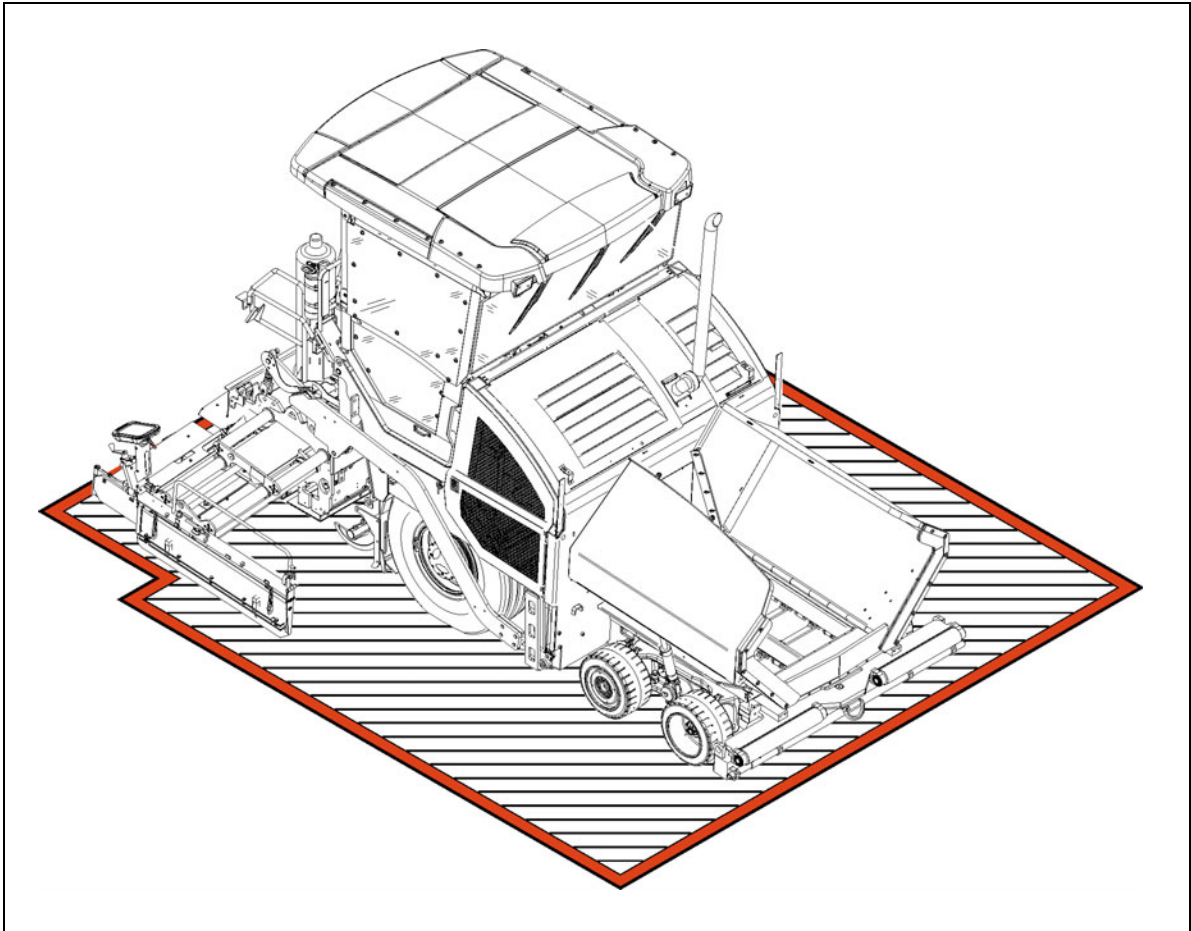
The screed relieving device puts a higher load on the traction unit, thus increasing the traction.

Activating the screed charging device can improve the compacting result under different paving conditions.

**Asphalt fume control system (○):** An extraction system installed in the material tunnel extracts and discharges asphalt fumes.

**Central lubricating system (○):** The central lubrication pump fitted with a large lubricant tank supplies grease to the various lubrication circuits through various flow dividers. They supply lubricant to the service-sensitive points of lubrication (e.g. bearings) at adjustable intervals.

### 3 Danger zones



 **WARNING**

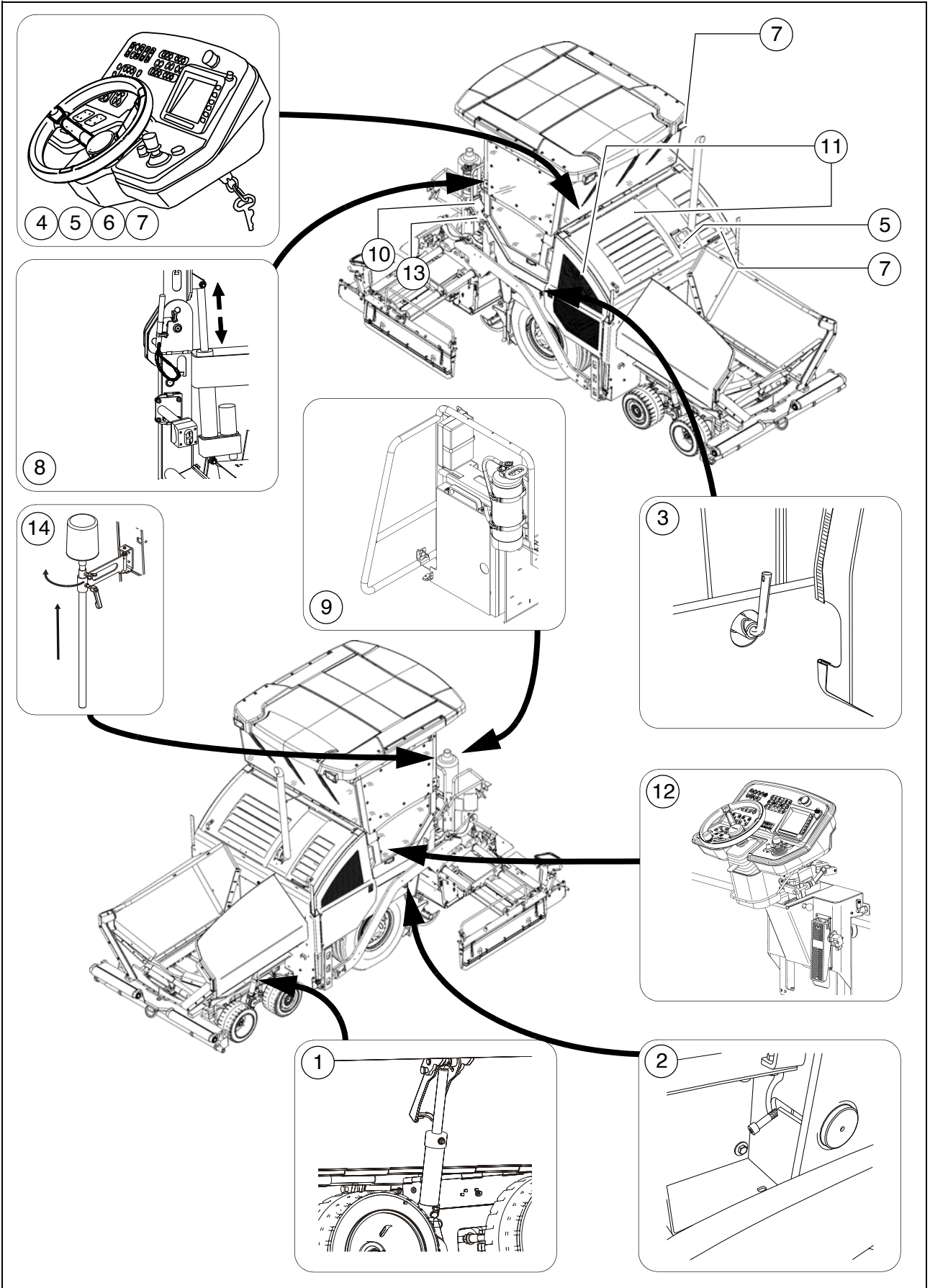
**Danger for persons in the danger zone**



Persons in the danger zone can suffer severe or fatal injuries from movements and functions of the vehicle!

- Remaining in the vehicle's danger zone during operation is prohibited!
- During operation, only the vehicle operator and the screed personnel are allowed on the vehicle or in the danger zone. The vehicle operator and screed personnel must keep to the respective driver's seats.
- Make sure that there is no-one in the danger zone before switching the vehicle on or starting it moving.
- The vehicle operator must ensure that no-one is in the danger zone.
- Sound the horn before driving away.
- Comply with all further information in these instructions and in the safety manual.

**4 Safety devices**



Item	Designation	
1	Hopper transport safeguard	**
2	Crossbeam lock, mechanical / hydraulic (○)	**
3	Main switch	
4	Emergency stop button	
5	Horn	
6	Ignition key	
7	Lights	**
8	Protective roof latch (○)	**
9	Fire extinguisher (○)	
10	Screed warning light (○)	**
11	Covers, lateral flaps, coverings	**
12	Foot brake	
13	Hazard warning flasher	**
14	Rotary beacon (○)	

\*\* Located on both sides of the vehicle



Safe operation is only possible when all operating and control elements are functioning correctly and when all safety devices are in position.



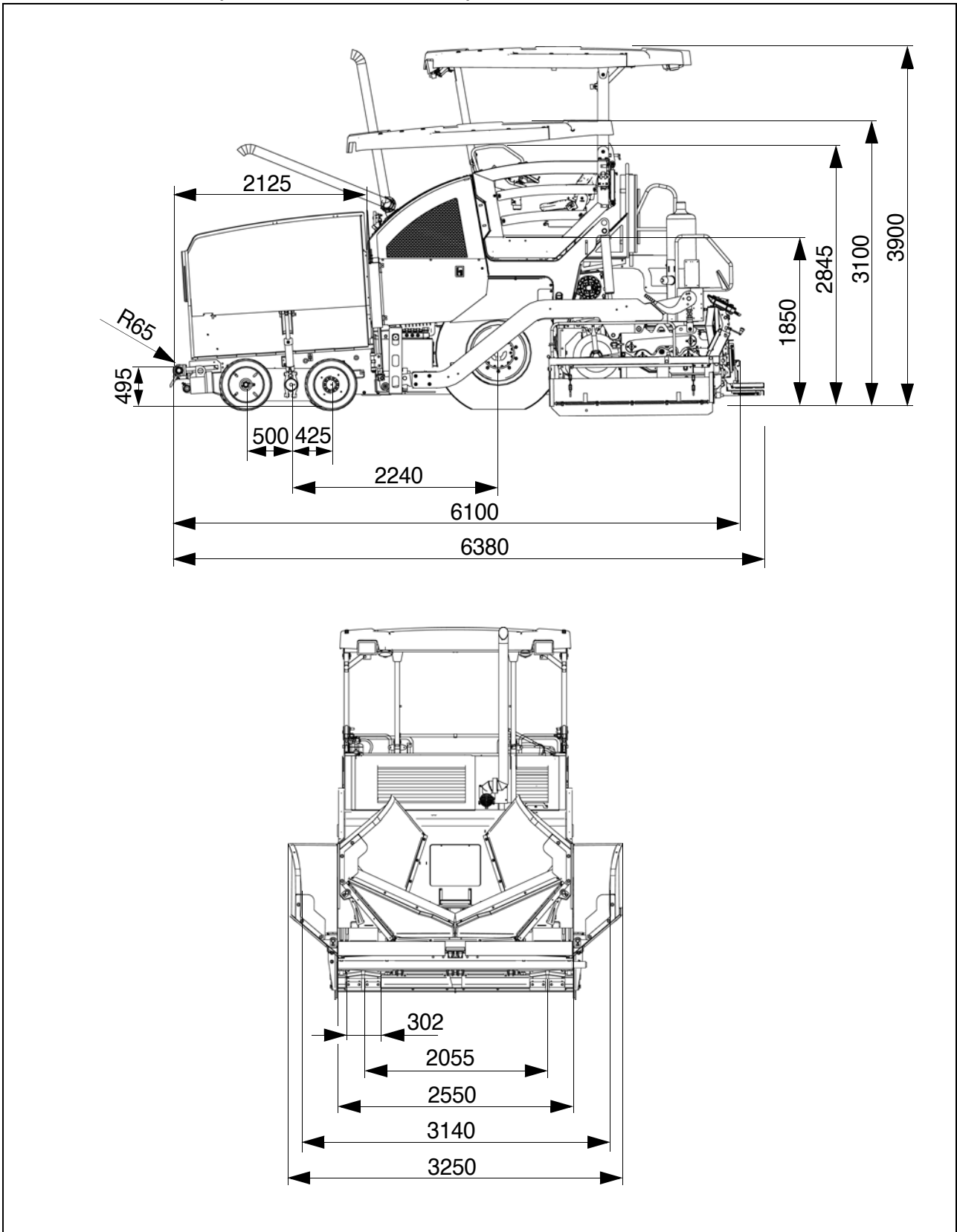
Check the function of these devices at regular intervals.



Functional descriptions for the individual safety facilities can be found in the following chapters.

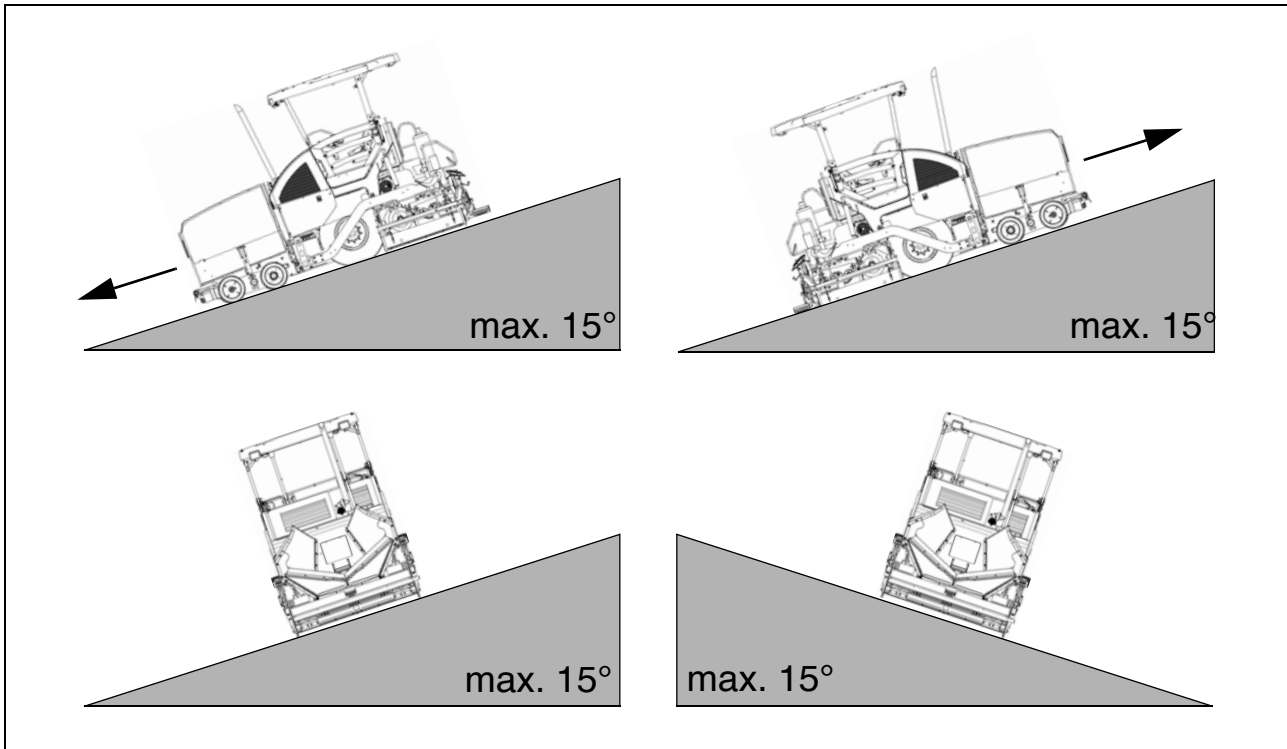
## 5 Technical data, standard configuration


### 5.1 Dimensions (all dimensions in mm)



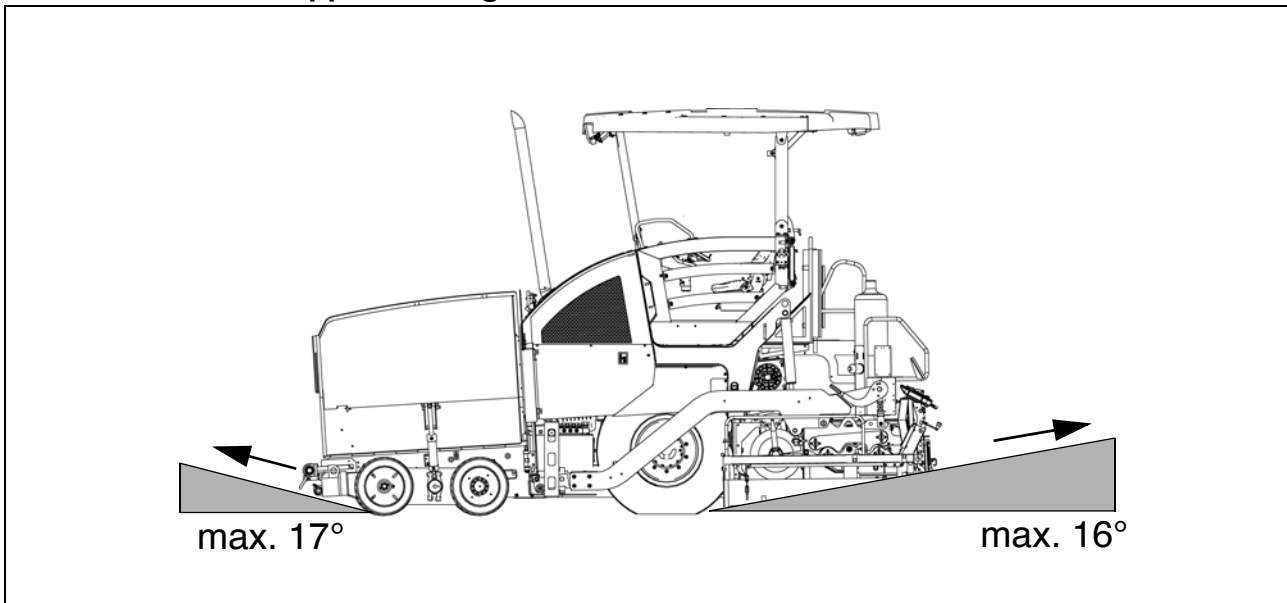
 For screed technical data, refer to the screed operating instructions.

## 5.2 Allowed angle of rise and slope



 Before operating your vehicle in an inclined position (gradient, slope, lateral inclination) which is above the specified limit value, please consult the customer service department for your vehicle!

## 5.3 Permissible approach angle




## 5.4 Turning circle

Internal turning circle	2.47 m
External turning circle	6.06 m


### 5.5 Weights SD2500W (all weights in t)

Paver finisher without screed	approx. 13.2 - 14.7
Paver finisher with screed: - V5100	approx. 16.5 - 18.0
With extension parts for max. working width, additionally max.	
With filled hopper additionally max.	approx. 13.0

 For the weights of the screed and the screed attachments, see the operating instructions for the screed.

### 5.6 Weights SD2500WS (all weights in t)

Paver finisher without screed	approx. 13.2 - 14.7
Paver finisher with screed: - V5100	approx. 16.5 - 18.0
With extension parts for max. working width, additionally max.	
With filled hopper additionally max.	approx. 13.0

 For the weights of the screed and the screed attachments, see the operating instructions for the screed.

## 5.7 Performance data SD2500W

Screed used	Basic width (without cut-off shoes)	Minimum paving width (with cut-off shoe)	Fully variable hydr. adjustment up to	Maximum paving width (with extension parts)	
V5100TV(E)	2.55	2.00	5.10	7.30	m
V5100TV	2.55	2.00	5.10	7.30	m
V6000TV(E)	3.00	2.45	6.00	7.50	m
V6000TV	3.00	2.45	6.00	7.50	m

Transport speed	0 - 20	km/h
Operating speed	0 - 30	m/min
Paving height	-100 - 300	mm
Max. grain size	40	mm
Theoretical paving performance	700	t/h

## 5.8 Performance data SD2500WS

Screed used	Basic width (without cut-off shoes)	Minimum paving width (with cut-off shoe)	Fully variable hydr. adjustment up to	Maximum paving width (with extension parts)	
V5100TV(E)	2.55	2.00	5.10	8.80	m
V5100TV	2.55	2.00	5.10	8.80	m
V5100TH	2.55	2.00	5.10	6.60	m
V6000TV(E)	3.00	2.45	6.00	9.00	m
V6000TV	3.00	2.45	6.00	9.00	m
V6000TVH	3.00	2.45	6.00	7.50	m

Transport speed	0 - 20	km/h
Operating speed	0 - 30	m/min
Paving height	-100 - 300	mm
Max. grain size	40	mm
Theoretical paving performance	750	t/h

## 5.9 Travel drive/traction unit

Drive	Hydrostatic drive with pump and motor, continuously adjustable
Transmission	Planetary gear
Speeds	(see above)
Drive wheels	2 x 445/80R25 (pneumatic tyres) (water filling ○)
Steering wheels	4 x 560 / 390 - 300 (elastic solid rubber tyres)
Front-wheel drive	2 / 4 wheel hub hydraulic motor, variable drive performance, anti-spin control
Brakes	Travel drive brake, hydraulic parking brake

## 5.10 SD2500W - Engine EU IIIa / Tier 3 (○)

Make/type	Cummins QSB 6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 KW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage IIIa / Tier 3
Fuel consumption, full load	36.0 l/h
Fuel consumption, 2/3 load	24.0 l/h
Fuel tank capacity	(See chapter F)

## 5.11 SD2500WS - Engine EU IIIa / Tier 3 (○)

Make/type	Cummins QSB 6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 kW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage IIIa / Tier 3
Fuel consumption, full load	36.0 l/h
Fuel consumption, 2/3 load	24.0 l/h
Fuel tank capacity	(See chapter F)

### 5.12 SD2500W - Engine Engine EU IV / Tier 4final (O)

Make/type	Cummins QSB 6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 KW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage IV / Tier 4final
Fuel consumption, full load	33.5 l/h
Fuel consumption, 2/3 load	22.4 l/h
Fuel tank capacity	(See chapter F)
AdBlue® / DEF consumption	approx. 5% of fuel consumption

### 5.13 SD2500WS - Engine Engine EU IV / Tier 4final (O)

Make/type	Cummins QSB 6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 kW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage IV / Tier 4final
Fuel consumption, full load	33.5 l/h
Fuel consumption, 2/3 load	22.4 l/h
Fuel tank capacity	(See chapter F)
AdBlue® / DEF consumption	approx. 5% of fuel consumption

#### 5.14 SD2500W - Engine Stage V (O)

Make/type	Cummins B6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 KW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage V
Fuel consumption, full load	32.9 l/h
Fuel consumption, 2/3 load	22.0 l/h
Fuel tank capacity	(See chapter F)
AdBlue® / DEF consumption	approx. 5% of fuel consumption

#### 5.15 SD2500WS - Engine Stage V (O)

Make/type	Cummins B6.7-C173
Version	6-cylinder diesel engine (water-cooled)
Performance	129 KW / 175 hp (at 2200 rpm)
Pollutant emissions in accordance with:	Stage V
Fuel consumption, full load	32.9 l/h
Fuel consumption, 2/3 load	22.0 l/h
Fuel tank capacity	(See chapter F)
AdBlue® / DEF consumption	approx. 5% of fuel consumption

## 5.16 Hydraulic system

Pressure generation	Hydraulic pumps via distribution gear (directly flanged to the engine)
Pressure distribution	Hydraulic circuits for: <ul style="list-style-type: none"> <li>- Travel drive</li> <li>- Auger</li> <li>- Conveyor</li> <li>- Tamper / vibration</li> <li>- Operating functions</li> <li>- Fan</li> <li>- Separate hydraulic circuits for options</li> </ul>
Hydraulic oil reservoir - volume	(See chapter F)

## 5.17 Material compartment (hopper)

Volume	Approx. 6.0 m <sup>3</sup> = approx. 13.0 t
Minimum inlet height, centre	575 mm
Minimum inlet height, outside	585 mm
Hopper width, outside, open	3,460 mm

## 5.18 Material transfer

Type	Dual conveyor belt
Width	2 x 580 mm
Conveyors	Left and right auger separately controllable
Drive	Hydrostatic, continuously controllable
Conveying volume controller	Fully automatic via configurable switching points

## 5.19 Material distribution

Auger diameter	380 mm
Drive	<ul style="list-style-type: none"> <li>- Hydrostatic central drive (○) / hydrostatic external drive (○)</li> <li>- Continuously variable, regardless of conveyor, auger halves can be switched to opposite direction, reversible direction of rotation</li> </ul>
Conveying volume controller	Fully automatic via configurable switching points
Auger height adjustment	<ul style="list-style-type: none"> <li>- Mechanically</li> <li>- Hydraulic (○)</li> </ul>
Auger extension	With extension parts (see auger extension chart)

## 5.20 Screed lifting device

Special functions	<p>At standstill:</p> <ul style="list-style-type: none"> <li>- Screed stop</li> <li>- Screed stop with pretensioning (max. pressure 40 bar)</li> </ul> <p>During paving:</p> <ul style="list-style-type: none"> <li>- Screed charging</li> <li>- Screed relieving (max. pressure 40 bar)</li> </ul>
Levelling system	<p>Mechanical grade control</p> <p>Optional systems with and without slope control</p>



## 5.21 Electrical system

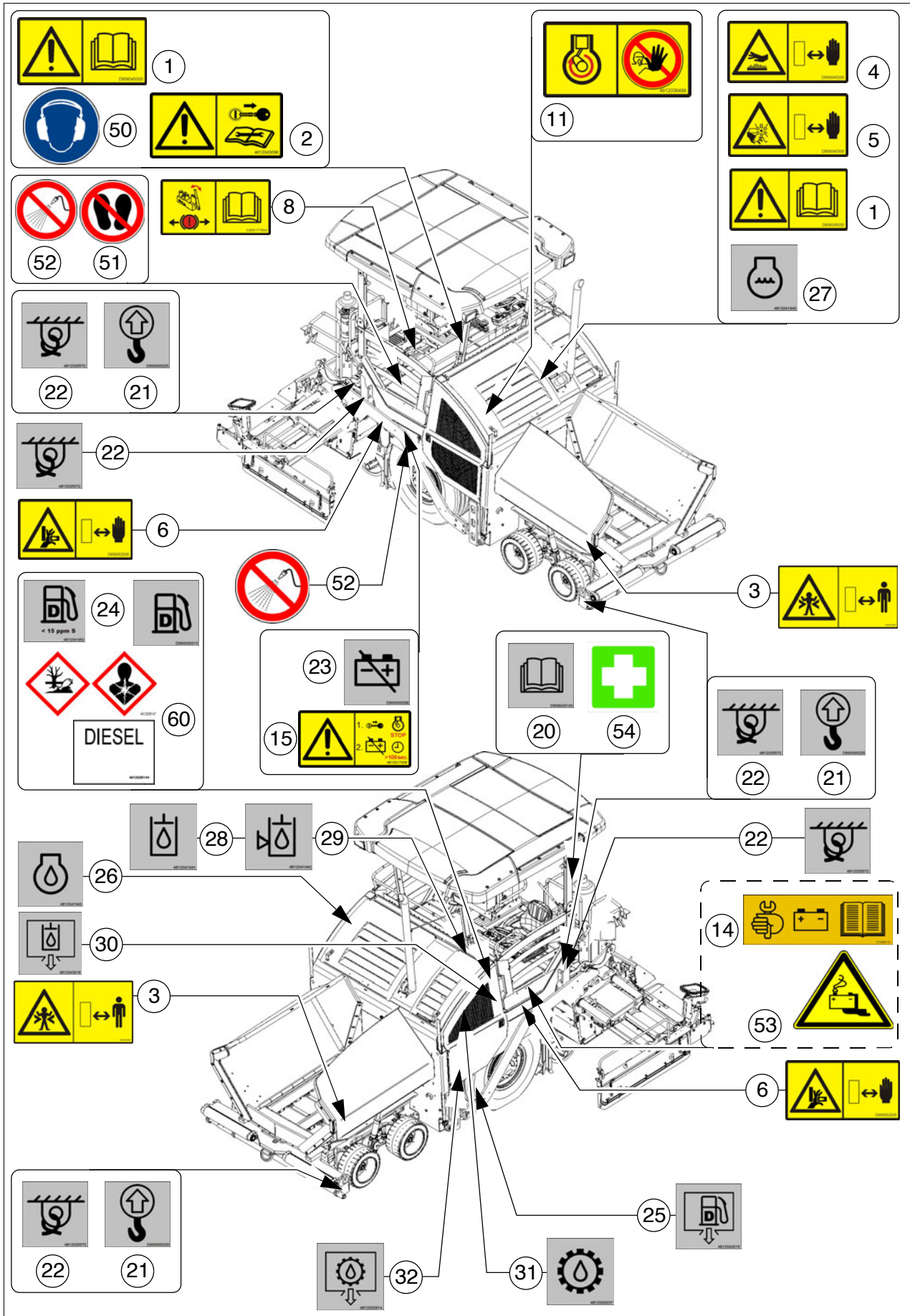
On-board voltage	24 V
Batteries	2 x 12 V, 88 Ah
Alternator (○)	19 kVA / 400 V 25 kVA / 400 V

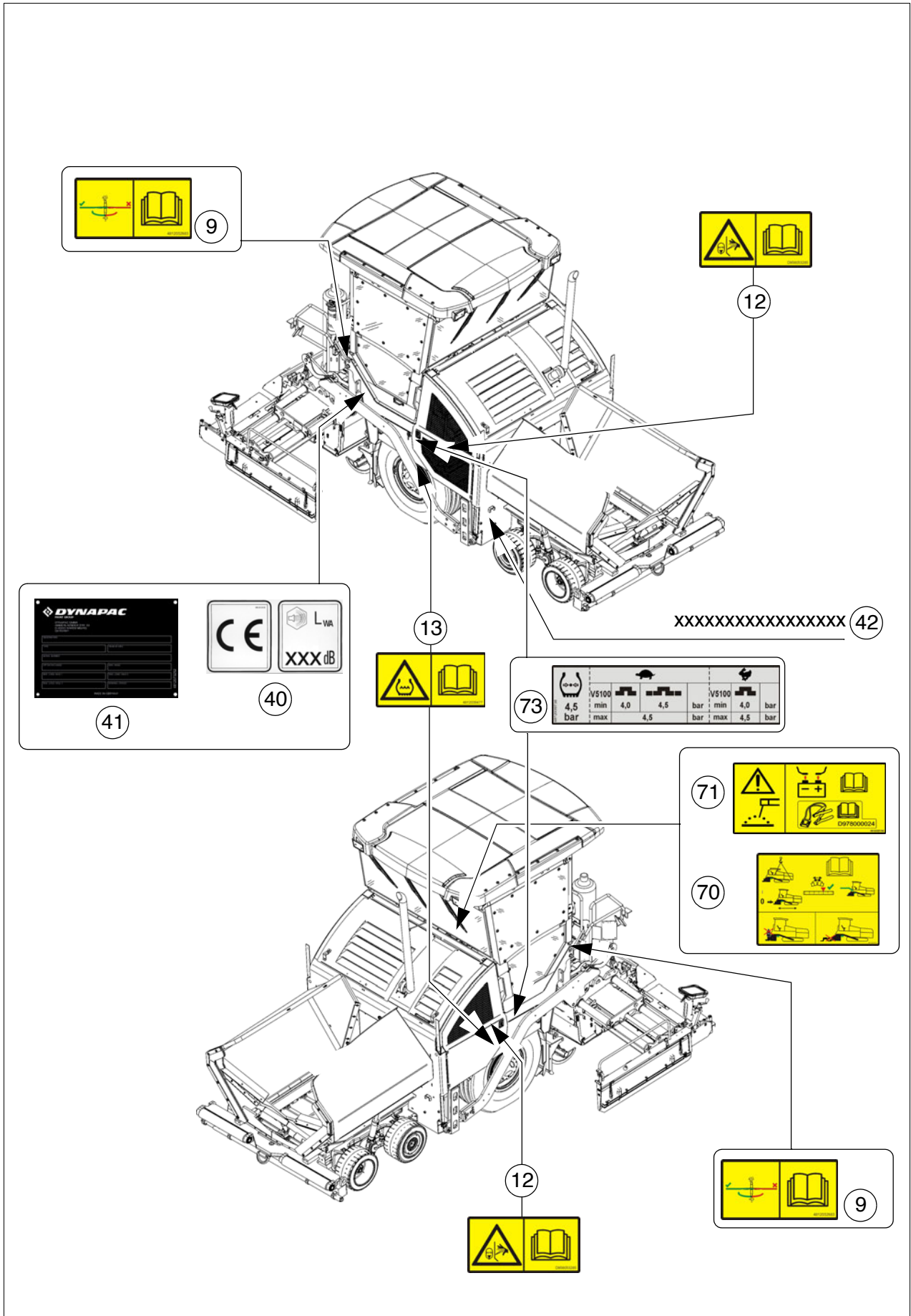
## 5.22 Permissible temperature ranges

Operation	-5°C / +45°C
Storage	-5°C / +45°C

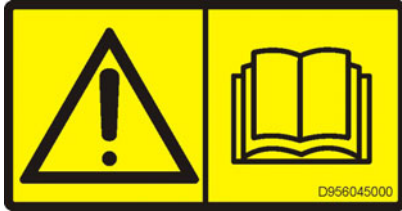


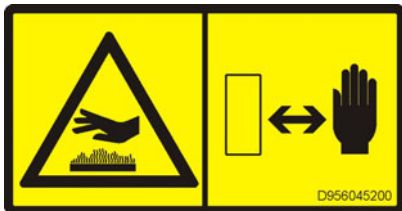
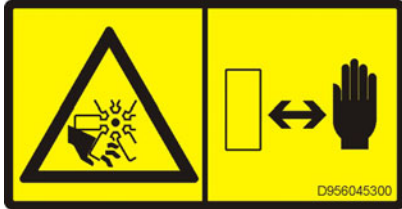
## 6 Identification points

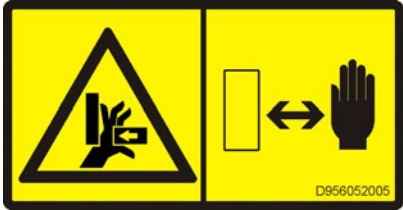
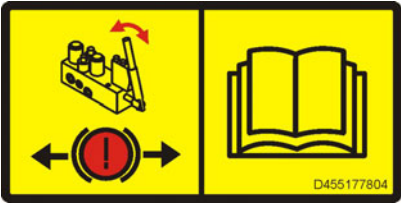
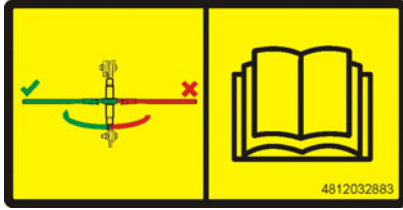

 <b>CAUTION</b>	<b>Danger due to missing or misunderstood vehicle signs</b>
	<p>Missing or misunderstood vehicle signs pose a danger of injuries!</p> <ul style="list-style-type: none"><li>- Never remove any warnings or information signs from the vehicle.</li><li>- Damaged or lost warning or information signs must be replaced immediately.</li><li>- Make yourself familiar with the meaning and position of the warning and information signs.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>



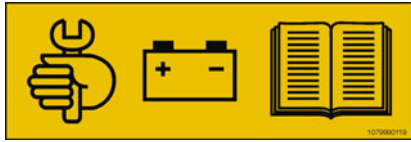
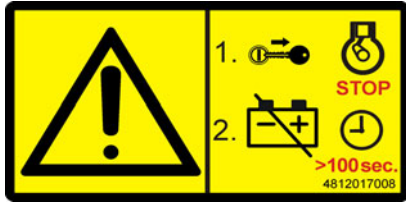




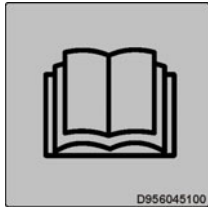
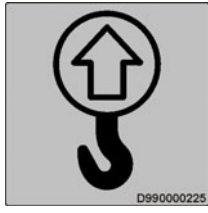
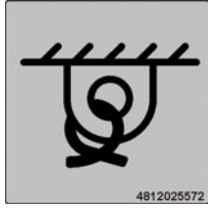


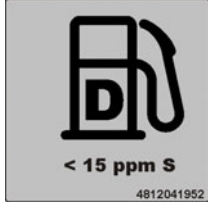
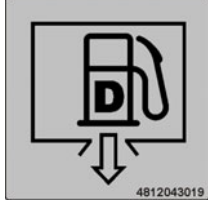
## 6.1 Warning signs








No.	Pictogram	Meaning
1		<ul style="list-style-type: none"> <li>- <b>Warning - Operating instructions!</b> Danger due to improper operation. The vehicle personnel must have read and understood the safety, operating and maintenance instructions for the vehicle before the vehicle is put into operation! Failure to comply with the operating and warning instructions can cause severe to fatal injuries. Always replace lost operating instructions immediately! It is your personal responsibility to take due care and attention!</li> </ul>
2		<ul style="list-style-type: none"> <li>- <b>Warning - Switch off the engine and remove the ignition key before performing any maintenance and repair work!</b> If the drive engine is left running or functions are switched on, this can cause severe to fatal injuries! Switch the engine off and remove the ignition key.</li> </ul>
3		<ul style="list-style-type: none"> <li>- <b>Warning - Danger of crushing!</b> Crushing points can cause severe to fatal injuries! Maintain a safe distance from the danger area!</li> </ul>
4		<ul style="list-style-type: none"> <li>- <b>Warning - Hot surface - Risk of burning!</b> Hot surfaces can cause severe injuries! Keep your hands a safe distance away from the danger area! Use protective clothing or protective equipment!</li> </ul>
5		<ul style="list-style-type: none"> <li>- <b>Warning - Danger from fan!</b> Rotating fans can cause severe injuries from cutting or severing fingers and hands. Keep your hands a safe distance away from the danger area!</li> </ul>

No.	Pictogram	Meaning
6		<ul style="list-style-type: none"> <li>- <b>Warning - Danger of crushing fingers and hands due to moving, accessible vehicle parts!</b> Crushing points can cause severe injuries with the loss of parts of the fingers or hand. Keep your hands a safe distance away from the danger area!</li> </ul>
8		<ul style="list-style-type: none"> <li>- <b>Caution - Danger from incorrect towing!</b> Vehicle movements can cause severe to fatal injuries. The traction system brake must be released before towing. Always observe the operating instructions!</li> </ul>
9		<ul style="list-style-type: none"> <li>- <b>Caution - Possible collision of parts!</b> The ratchet lever must always be swivelled in. Always observe the operating instructions!</li> </ul>
11		<ul style="list-style-type: none"> <li>- <b>Warning - Danger from running engine!</b> If the drive engine is left running, this can cause severe to fatal injuries. Never open the engine hood while the engine is running!</li> </ul>

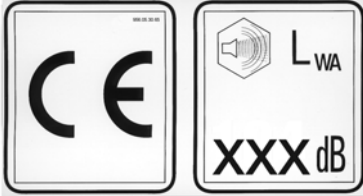
No.	Pictogram	Meaning
12		<p>- <b>Warning - Hazard from hydraulic reservoir and from hydraulic oil under pressure!</b> Escaping hydraulic oil under pressure can pierce the skin and enter into the body, causing severe or fatal injuries. Always observe the operating instructions!</p>
13		<p>- <b>Warning - Danger from tyres filled with water!</b> Handling tyres filled with water incorrectly can cause severe to fatal injuries. Always observe the operating instructions!</p>
14		<p>- <b>Maintenance for the starter batteries!</b> Maintenance work has to be carried out to the starter batteries! Comply with the maintenance instructions!</p>
15		<p>- <b>Warning - Possible damage to the engine electronics</b> After the drive engine is switched off, the on-board voltage may not be switched off until after a period of &gt; 100 seconds (main switch). Always observe the operating instructions!</p>

## 6.2 Information signs

No.	Pictogram	Meaning
20		- <b>Operating Instructions</b> Position of the storage compartment.
21		- <b>Lifting point</b> Lifting the machine is only permitted at these lifting points!
22		- <b>Lashing point</b> Lashing the machine is only permitted at these points!
23		- <b>Main battery switch</b> Position of the main battery switch.
24		- <b>Diesel fuel</b> Position of the filling point.
24		- <b>Diesel fuel, sulphur level &lt; 15 ppm</b> Position of the filling point, specification.
25		- <b>Fuel drainage point</b> Position of the drainage point.

No.	Pictogram	Meaning
26		- <b>Engine oil</b> Position of the filling and control point.
27		- <b>Engine coolant</b> Position of the filling and control point.
28		- <b>Hydraulic oil</b> Position of the filling point.
29		- <b>Hydraulic oil level</b> Position of the control point.
30		- <b>Engine oil drainage point</b> Position of the drainage point.
31		- <b>Gearbox oil</b> Position of the filling and control point.
32		- <b>Gear oil drainage point</b> Position of the drainage point.

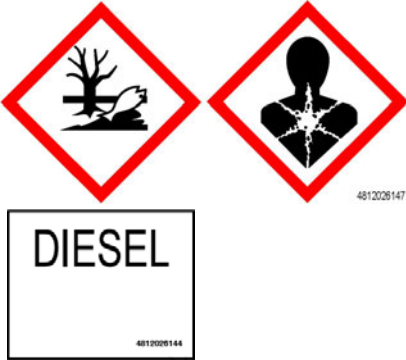
### 6.3 CE marking

No.	Pictogram	Meaning
40		- CE, sound output level

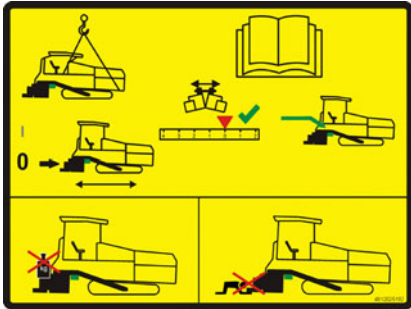
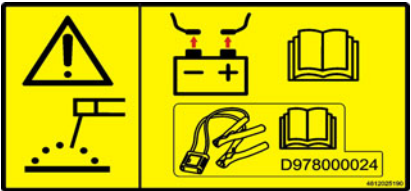
### 6.4 Instructive symbols, prohibitive symbols, warning symbols


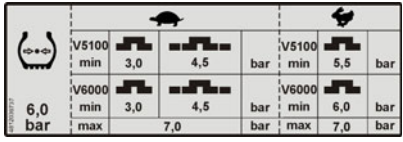
No.	Pictogram	Meaning
50		- Wear ear protectors
51		- Do not enter the area!
52		- Do not spray the area or component with water!
53		- Warning on dangers posed by batteries!
54		- First aid kit

## 6.5 Danger symbols

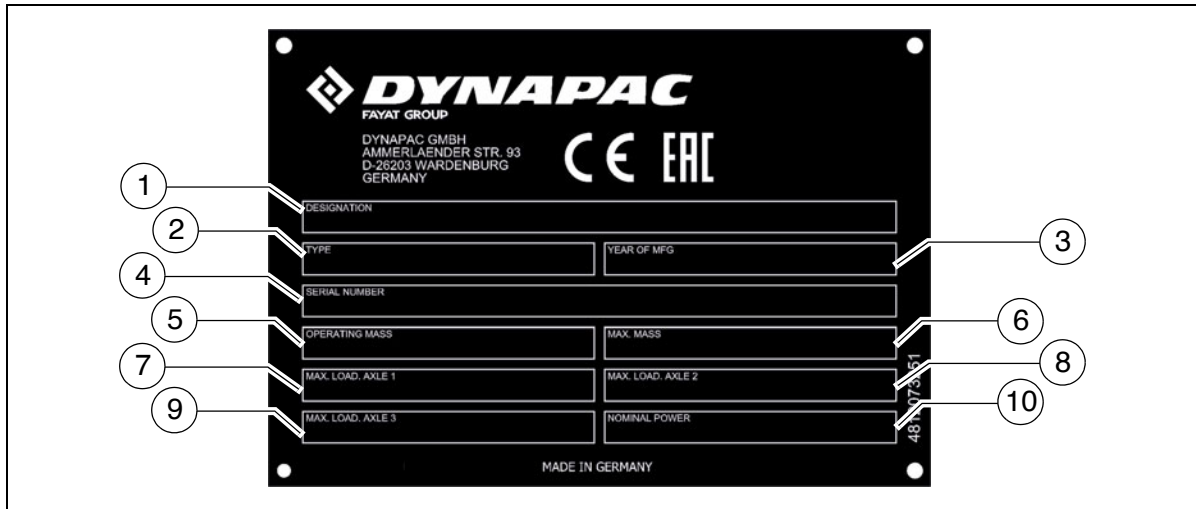
No.	Pictogram	Meaning	No.
60			<ul style="list-style-type: none"> <li>- <b>XN: Danger to health!</b> This substance can damage your health when absorbed in the body! Substance irritating to skin, eyes and respiratory system; can cause inflammation. Avoid contact with the human body; also avoid inhaling the vapours and seek medical advice if feeling unwell.</li> <li>- <b>N: Environmentally hazardous substance!</b> May cause immediate or delayed danger to the eco-system when released into the environment. Do not release into the sewage system, ground or environment, depending on hazard potential. Comply with special disposal regulations!</li> <li>- Diesel fuel complies with EN590</li> </ul>

## 6.6 Further warnings and operating instructions

No.	Pictogram	Meaning
70		<p>- <b>Warning - Hazard from unsupported screed!</b>            If the screed sags, this can cause severe to fatal injuries! Insert crossbeam lock only at crown adjustment "zero". Crossbeam lock only for transportation! Do not enter or work under screed only secured with crossbeam lock for transportation!</p>
71		<p>- <b>Attention - Danger of high voltage in vehicle electrical system!</b>            Disconnect batteries and electronics during welding work or when charging the batteries, or use a service watchdog D978000024 in accordance with the corresponding instruction manual.</p>

No.	Pictogram	Meaning
73	 <p>The pictogram shows a table with columns for 'V5100' and 'bar'. The first column has '4,5 bar' and 'min'. The second column has '4,0' and 'max'. The third column has '4,5' and 'max'. The fourth column has 'bar' and 'min'. The fifth column has '4,0' and 'max'. The sixth column has 'bar' and 'max'. There are also icons for a tyre and a bulldozer.</p>	<ul style="list-style-type: none"> <li>- Overview "Tyre pressure / working width / speed preselection"</li> </ul>
73	 <p>The pictogram shows a table with columns for 'V5100' and 'V6000' and 'bar'. The first column has '6,0 bar' and 'min'. The second column has '3,0' and 'max'. The third column has '4,5' and 'max'. The fourth column has 'bar' and 'min'. The fifth column has '5,5' and 'max'. The sixth column has 'bar' and 'max'. The seventh column has '6,0' and 'max'. The eighth column has 'bar' and 'max'. There are also icons for a tyre and a bulldozer.</p>	<ul style="list-style-type: none"> <li>- Overview "Tyre pressure / working width / speed preselection"</li> </ul>

## 6.7 Identification label for the paver finisher (41)

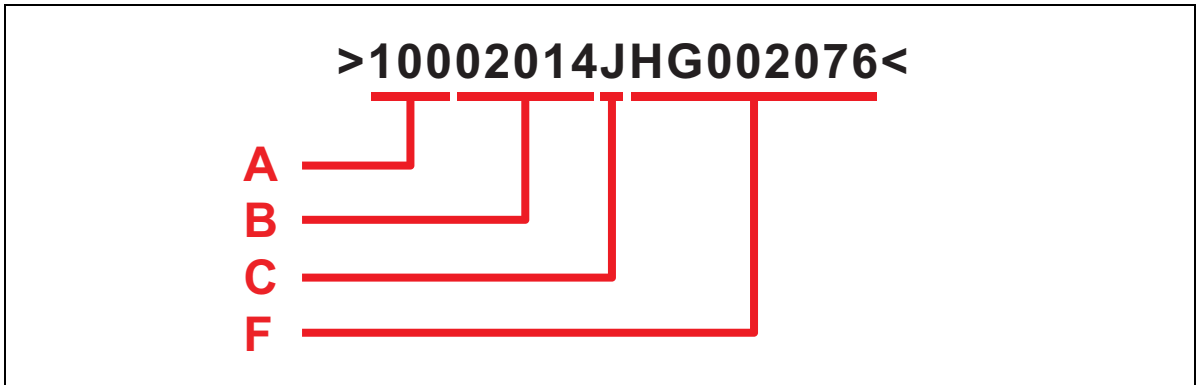


Item	Designation
1	Vehicle designation
2	Designation type
3	Year of construction
4	Serial number (product identification number (PIN))
5	Operating weight, incl. all extension parts, in kg
6	Maximum permitted total weight in kg
7	Maximum permitted axle load kg - axle 1
8	Maximum permitted axle load kg - axle 2
9	Maximum permitted axle load kg - axle 3
10	Rated power in kW



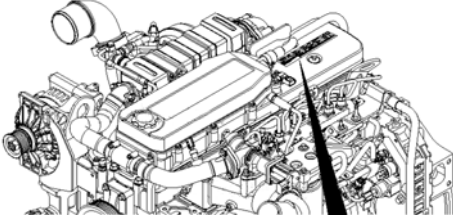
The punched vehicle identification number (PIN) on the paver finisher must match the product identification number (4).



6.8 Explanation of 17-digit PIN serial number





A	- Manufacturer
B	- Family/Model
C	- Code letter
F	- Serial number

## 6.9 Engine type plate



	CUMMINS INC. Assembled in the USA	Engine No. XXXXXXXX	Ref. No. XXXXXXXXXX	Model XXXXXXXXXXXXX	Fuel Rate at Adv. HP/ka (mm3/sf) XXX	FR XXXXX	CPL XXXXX
	Date of Mfg XX-XX-XX	Idle Speed (rpm) XXXX	Advertised HP XXXXX at XXXX rpm	Family XXXXXXXXXXXXX	STD/FEL	EPA	CARB
	XXXX XXXXX XXXX XXXXX XXXX XXXXX	Firing Order XXXXXX	Timing - T.D.C. ELECTRONIC	Category XXX - XXX	XXXX	X.X	X.X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		Valve lash cold X.XXX int.	Exh.	C. I. D. /L XXX/XX.X	E. C. S. XXXXXXXXXXXX	PM	X.X

**WARNING:** Injury may result and warranty is voided if fuel rate, rpm or altitudes exceed published maximum values for this model and application.

	CUMMINS INC. Assembled in the USA	Engine No. XXXXXXXX	Ref. No. XXXXXXXXXX	Model XXXXXXXXXXXXX	Fuel Rate at Adv. HP/ka (mm3/sf) XXX	FR XXXXX	CPL XXXXX
	Date of Mfg XX-XX-XX	Idle Speed (rpm) XXXX	Advertised HP XXXXX at XXXX rpm	Family XXXXXXXXXXXXX	STD/FEL	EPA	CARB
	XXXX XXXXX XXXX XXXXX XXXX XXXXX	Firing Order XXXXXX	Timing - T.D.C. ELECTRONIC	Category XXX - XXX	XXXX	X.X	X.X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		Valve lash cold X.XXX int.	Exh.	C. I. D. /L XXX/XX.X	E. C. S. XXXXXXXXXXXX	PM	X.X

**WARNING:** Injury may result and warranty is voided if fuel rate, rpm or altitudes exceed published maximum values for this model and application.

The engine type plate (1) is affixed on top of the engine.  
 The type plate states the engine type, serial number and engine data.  
 Please state the engine number of the engine when ordering spare parts.  
 See also operating instructions for the engine.

## 7 EN standards

### 7.1 Continuous sound pressure SD2500W



The operator always must use ear protection. The emission value at the ear of the driver varies depending on the materials used for paving and may even rise above 85 dB(A). If no ear protectors are used, hearing can be impaired.

The sound emission level of the paver finisher was measured under free-field conditions according to EN 500-6:2006 and ISO 4872.

**Sound pressure level at the operator's position  
(at the height of the head):**

$L_{AF} = 87.0$  dB(A)

**Sound capacity level:**

$L_{WA} = 104.0$  dB(A)

### 7.2 Operating conditions during measurement

The diesel engine was running at maximum speed. The screed was lowered into working position. The tamper and the vibrator were running at min. 50% of their maximum speed, the augers at min. 40% and the conveyors at min. 10% of their maximum speed.

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### 7.3 Continuous sound pressure SD2500WS



The operator always must use ear protection. The emission value at the ear of the driver varies depending on the materials used for paving and may even rise above 85 dB(A). If no ear protectors are used, hearing can be impaired.

The sound emission level of the paver finisher was measured under free-field conditions according to EN 500-6:2006 and ISO 4872.

**Sound pressure level at the operator's position  
(at the height of the head):**

$L_{AF} = 87.0$  dB(A)

**Sound capacity level:**

$L_{WA} = 104.0$  dB(A)

### 7.4 Operating conditions during measurement

The diesel engine was running at maximum speed. The screed was lowered into working position. The tamper and the vibrator were running at min. 50% of their maximum speed, the augers at min. 40% and the conveyors at min. 10% of their maximum speed.

## 7.5 Vibration acting on the entire body

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

## 7.6 Vibrations acting on hands and arms

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

## 7.7 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  $\mu\text{V/m}$  for frequencies of 30 MHz - 1 GHz measured at a distance of 10 m
  - < 45 dB  $\mu\text{V/m}$  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 paver finisher did not show any discernible reactions to contact discharges of  $\pm 4 \text{ KV}$  and to air discharges of  $\pm 4 \text{ KV}$ .
  - The modifications according to test criterion "A" are being met, i.e. the paver finisher continues to work without malfunction during the test.

Changes to the electrical or electronic components and their arrangement may only be conducted with the written approval of the manufacturer.

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# C 13 Transportation

## 1 Safety regulations for transportation



Accidents can happen when the paver finisher and the screed are not properly prepared for transportation or when transportation is carried out improperly!

Reduce both the paver finisher and the screed to their basic widths. Remove all protruding parts (such as the automatic levelling system, auger limit switches, aprons, etc.). When transporting under a special permit, secure these parts!

Close the hopper lids and engage the hopper transport safeguards. Lift the screed and engage the screed transport safeguards. Convert the protective roof and engage the latch.

Pack all parts that are not permanently fixed to the paver finisher and the screed into the appropriate boxes and into the hopper.

Close all coverings and check that they are securely seated.

In Germany, gas bottles must not be transported on the paver finisher or on the screed.

Disconnect the gas bottles from the gas system and protect them with their caps. Use a separate vehicle to transport them.

When loading via ramps, there is a risk that the machine will slip, tilt or overturn. Drive carefully! Keep people away from the danger area!

### **Additional stipulations for transportation on public roads:**



Comply with the local road traffic regulations!





On the screed, remove the floorboards and place them in the hopper. Hinged side shields must be swivelled behind the screed and secured correctly.



The operator must be in the possession of a valid permit for vehicles of this type.

The driving lights must be properly adjusted.





Only accessories and extension parts may be transported in the hopper, no material or gas bottles!

If necessary, the operator must be assisted by a second person when driving on public roads – especially at road crossings and junctions.

 <b>WARNING</b>	<b>Danger due to vehicle loading</b>
	<p>Loading or unloading the vehicle onto or from another vehicle poses a potential risk of accident. Vehicles can tip over on driving onto the low-bed trailer and cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- The transportation vehicle must always meet the requirements for transportation and be designed for this.</li><li>- Ensure that the transportation vehicle is secured correctly during loading and unloading.</li><li>- Do not enter the danger zone.</li><li>- Always work with a banksman during loading and unloading.</li><li>- Do not leave any load or loose parts on the vehicle.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>WARNING</b>	<b>Danger due to incorrect directing of the vehicle</b>
	<p>A banksman must be used when visibility is impaired on roads or transport roads and when loading the vehicle. Incorrectly implemented or misunderstood directions given by the banksman can cause severe to fatal injuries!</p> <p>The banksmen assigned for directing vehicles may only consist of personnel</p> <ul style="list-style-type: none"><li>- who have been trained for directing machines and can verify to the company that they have successfully attended the training course and hold the necessary qualifications.</li><li>- who have been assigned to act as banksmen by the company and</li><li>- who can be expected to reliably perform the tasks assigned to them.</li><li>- High-visibility clothing must be worn.</li><li>- The banksman and vehicle driver must have made themselves familiar with the dimensions of the vehicle and the transportation vehicle.</li><li>- Directions are given by radio or with hand signals. The banksman and vehicle driver must have agreed together beyond any doubt on the meaning of the used signs and signals. Only standardised hand signals may be used.</li><li>- The vehicle driver must be provided with suitable aids to get down safely from the transportation vehicle, such as approved steps or ladders. The banksman must help the driver to get down from the vehicle.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>


## 2 Transportation on low-bed trailers

-  Reduce the paver finisher and the screed to their basic widths; also remove any attached side plates.  
The maximum approach angle is indicated in the section entitled "Technical data"!
-  Check the fill level of the operating substances so that these do not escape when driving on an incline.
-  Attachment and loading equipment must meet the conditions of the applicable accident prevention regulations!
-  The weight of the paver finisher must be taken into consideration when selecting the attachment and loading equipment!

### 2.1 Preparations

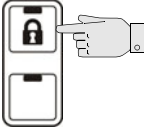
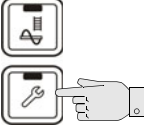
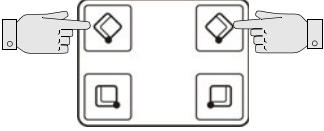
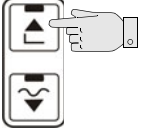
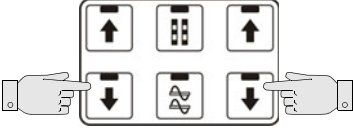
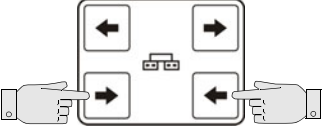
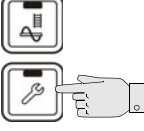
- Prepare the paver finisher for transportation (see chapter D).
- Remove all overlaying or loose parts from finisher and screed (see also operating instructions for the screed). Store these parts in a safe place.

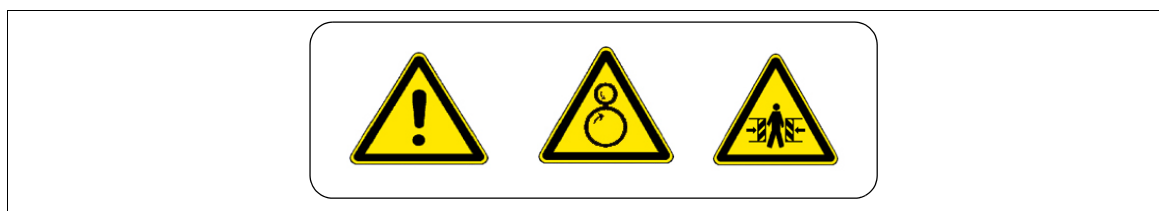
 Move the auger to the uppermost position to avoid collisions!

 When screed is operated with the optional gas heating system:








- Remove the gas bottles of the screed heating system:
  - Close the main shut-off valves and the bottle valves.
  - Turn off the valves on the bottles and remove the gas bottles from the screed.
  - Transport the gas bottles on a second vehicle; heed all applicable safety regulations.



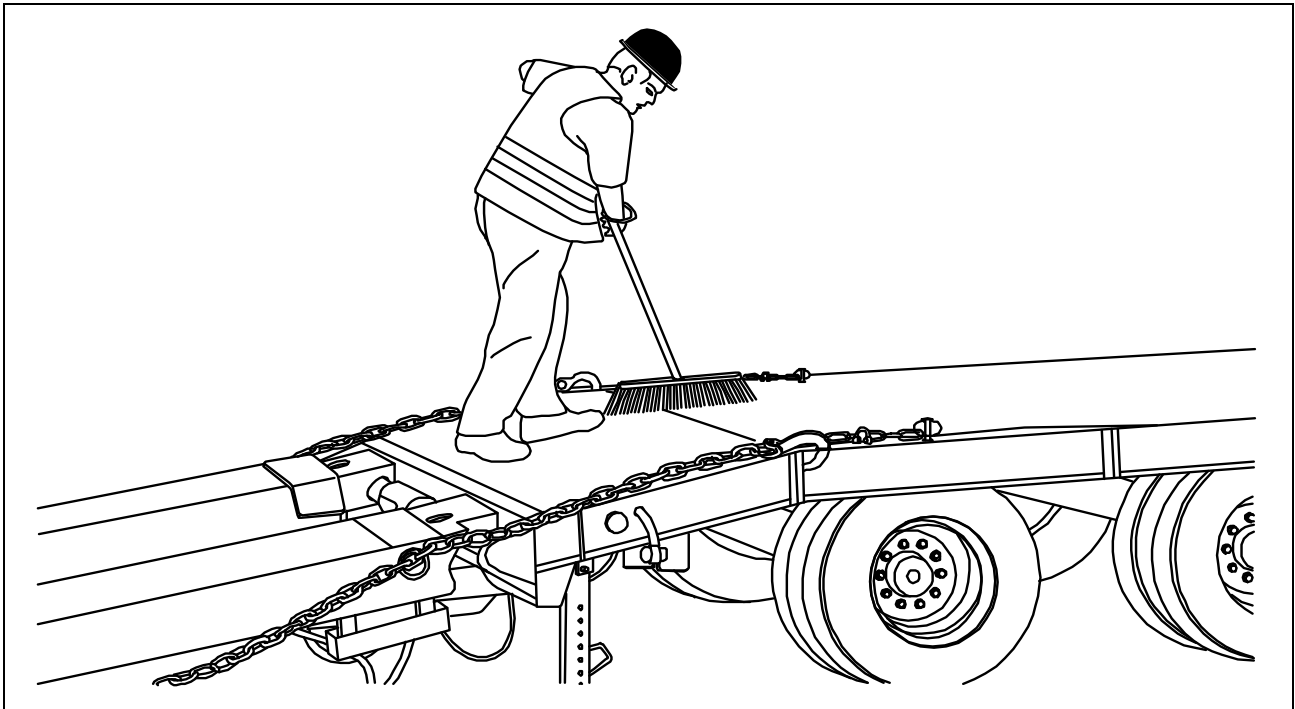
Operation	Buttons
- Deactivating the function lock	
- Activate set-up mode.	
- Close the hopper lids.	
- Engage both hopper transport safeguards.	
- Lift the screed.	
- Fully extend the levelling cylinder.	
- Retract the screed parts until the screed matches the basic width of the paver finisher.	
- Deactivate set-up mode.	




### 3 Securing the load

-  The following instructions for securing the load on the low-bed trailer consist merely in examples of how to secure the load correctly.
-  Always comply with the local regulations for securing the load and for correct use of load securing equipment.
-  Normal driving mode also includes emergency braking, evasive manoeuvres and poor road surfaces.
-  Use should be made of the different methods available for securing loads (positive fit, force connection, diagonal lashing, etc.) in accordance with the specific transport vehicle.
-  The low-loader must have the necessary number of lashing points with a lashing strength of LC 4,000 daN.
-  The total height and total width must not exceed the maximum permissible dimensions.
-  The ends of lashing chains and straps must be secured to prevent them working loose and falling down unintentionally!

#### 3.1 Prepare the low-bed trailer

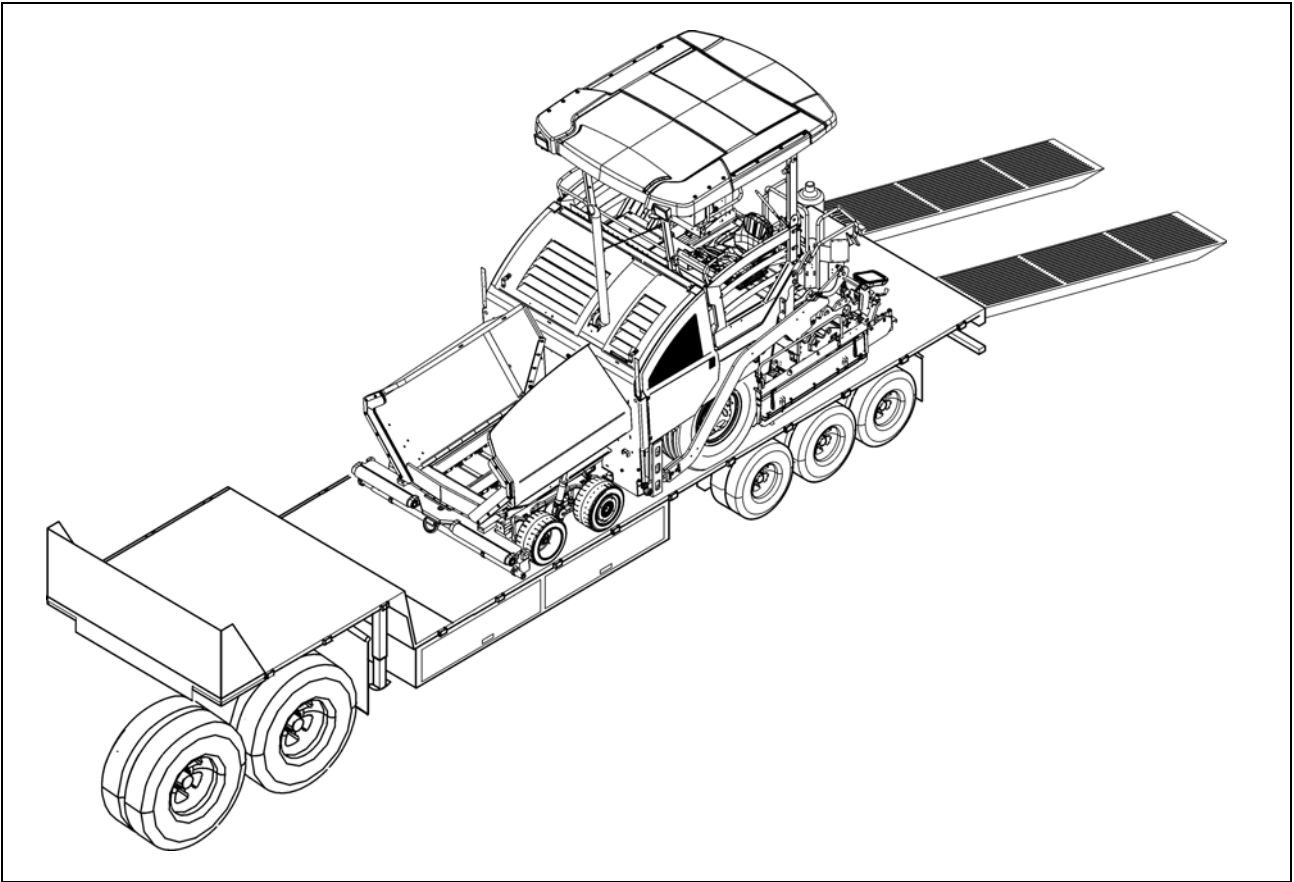


-  The floor of the loading space must always be undamaged, free of oil and mud, dry (residual moisture is permitted without accumulations of water) and swept clean!

### 3.2 Driving onto the low-bed trailer





Make sure that there are no persons in the danger area during loading.

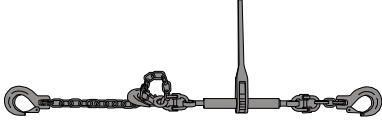

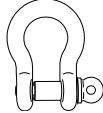

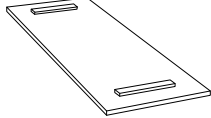
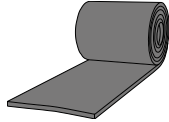



- Use the work gear and low engine speeds to drive onto the low-bed trailer.

### 3.3 Lashing equipment

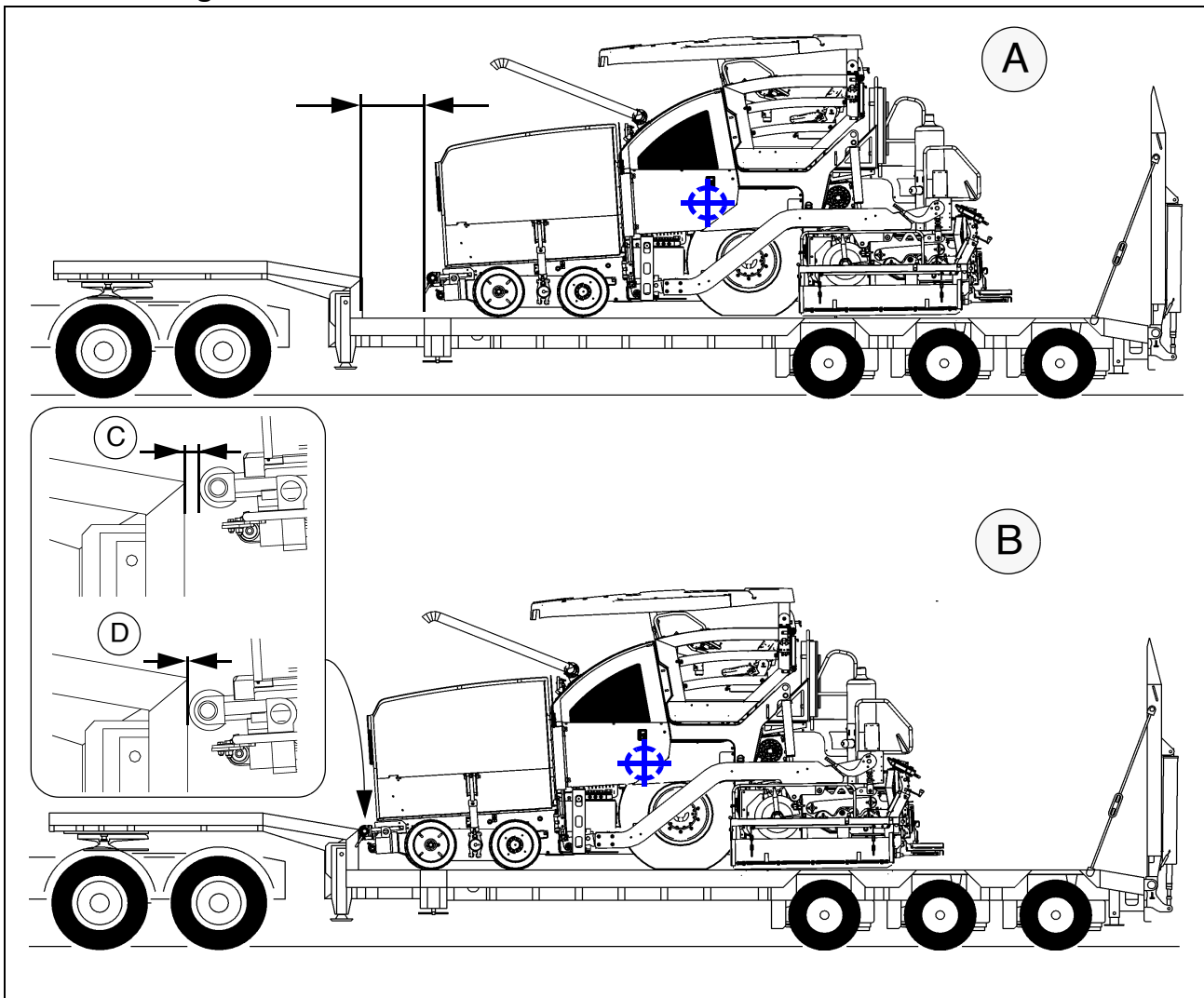
Use the load securing equipment, lashing straps and chains belonging to the vehicle. Additional shackles, eyebolts, edge guards and non-slip mats may be needed depending on the type of load securing equipment.

-  Always comply with the stated values for permitted lashing force and load rating!
-  Always tighten the lashing chains and straps hand-tight (100-150 daN).

<ul style="list-style-type: none"> <li>- Lashing chain permissible lashing force LC 4,000 daN</li> </ul>	
<ul style="list-style-type: none"> <li>- Lashing straps permissible lashing force LC 2,500 daN</li> </ul>	
<ul style="list-style-type: none"> <li>- Shackles Load rating 4,000 daN</li> </ul>	
<ul style="list-style-type: none"> <li>- Eyebolts Load rating 2,500 daN</li> </ul>	
<ul style="list-style-type: none"> <li>- Edge guards for lashing straps</li> </ul>	
<ul style="list-style-type: none"> <li>- Non-slip mats</li> </ul>	

-  Lashing equipment must be checked by the user for any signs of damage before use. On detecting any signs of damage that affect safety, the lashing equipment must be withdrawn from further use.

### 3.4 Loading



**Pay attention to load distribution during loading!**

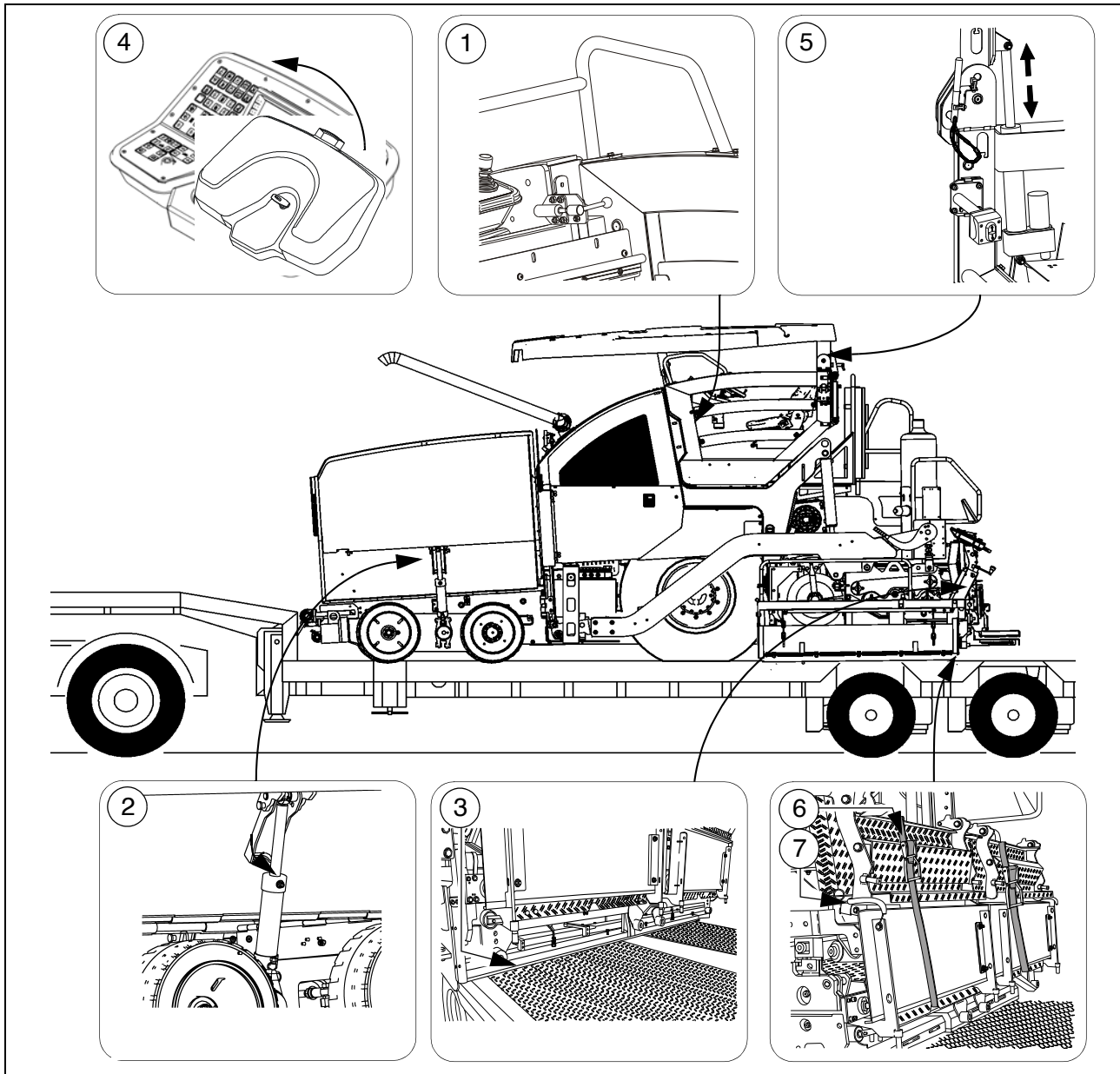
In some vehicles, the kingpin load is too low so that the load has to be positioned further to the back of the vehicle (A).

Always heed the details regarding load distribution stipulated for the vehicle together with the centre of gravity of the paver finisher.

Comply with the following if the paver finisher has to be placed in the front section of the low-bed trailer (B) for load distribution reasons or on account of the length of the paver finisher:

- The paver finisher must stand freely if the push rollers would only touch the gooseneck half way up (C).
- There must be a positive fit between the paver finisher push rollers and the low-bed trailer if the push rollers are in full contact with the low-bed trailer (D).

### 3.5 Preparing the vehicle



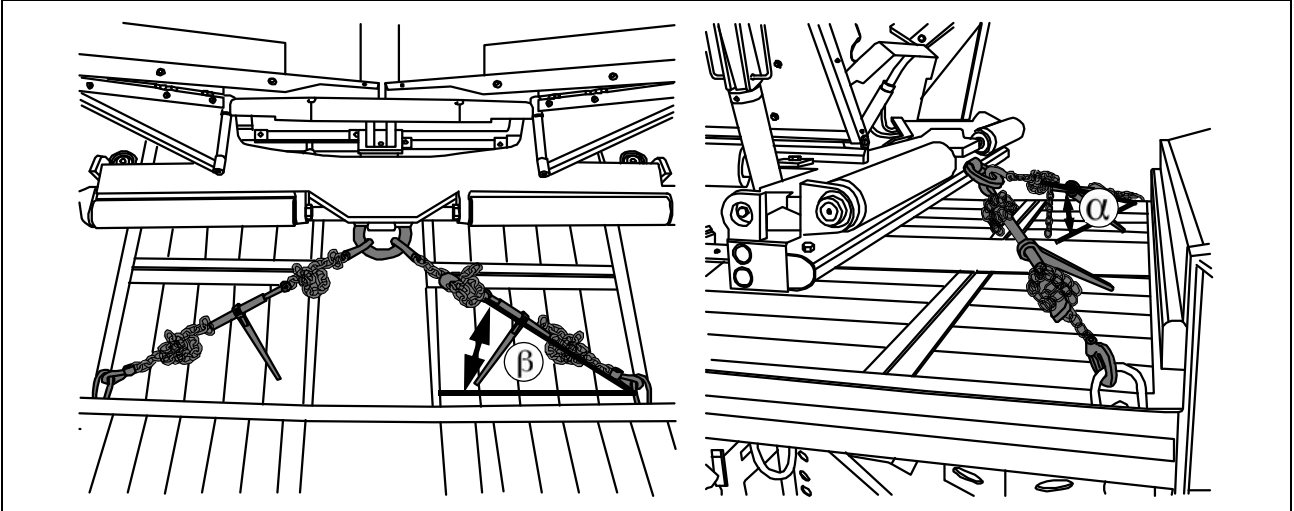
After the vehicle has been positioned on the low-loader, the following preparations must be carried out:

- For movable platform: Set the retaining bolt properly (1).
- Close the hopper and set the hopper transport safeguards (2) on both sides.
- Position the non-slip mats under the screed across the whole width of the vehicle (3) and lower the screed.
- Switch off the paver finisher.
- Attach and secure the protective hood (4) to the operating panel.
- Lower the roof and set the retainers (5) properly on both sides.
- Fold up the walkway plates of the screed and fasten on both sides using lashing straps (6) and any possibly existing hook springs (7).

## 4 Securing the load

### 4.1 Securing at the front and at the sides

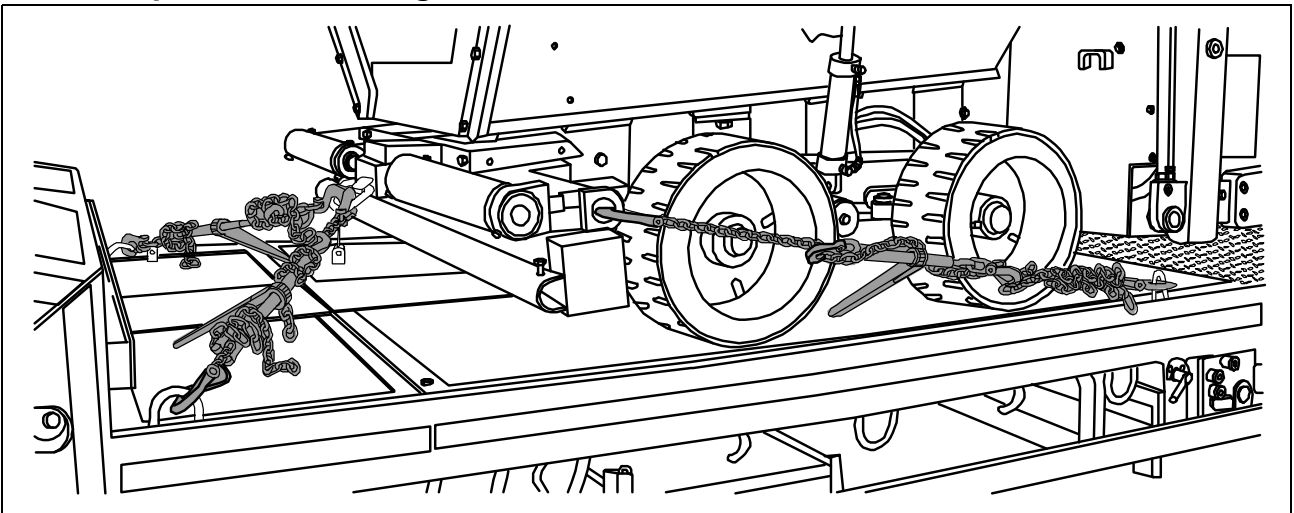
#### Step 1: fasten lashing chains at the front



⚠ Diagonal lashing secures the paver finisher at the front using the lashing points on the paver finisher and on the low-load trailer. Fasten the lashing chains as shown.

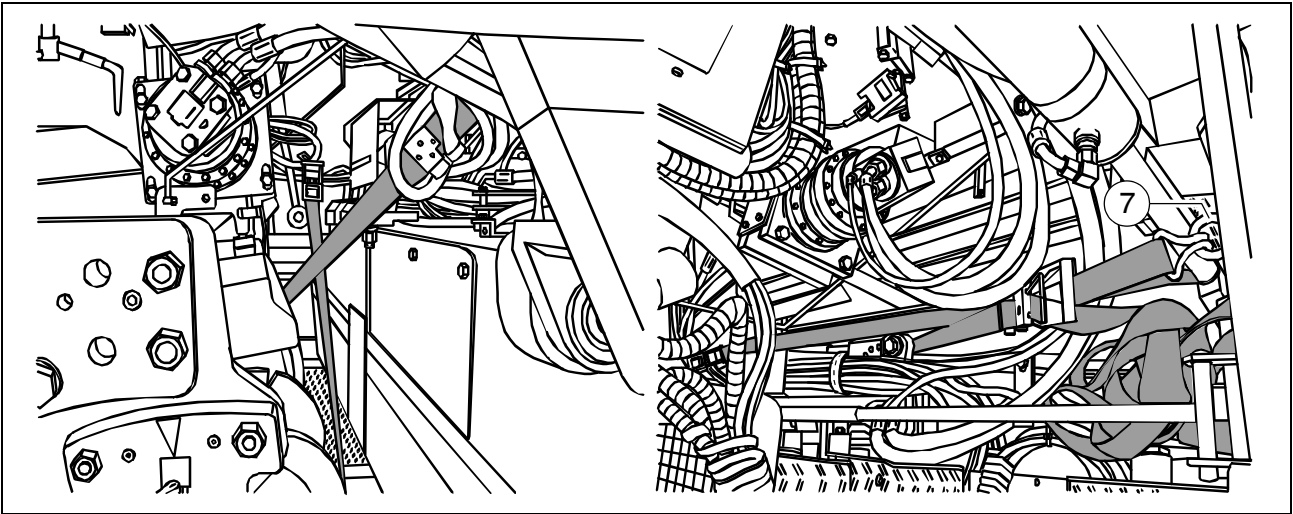
⚠ The lashing angles should be: "β" between 6°-55° and "α" between 20°-65°!


#### Step 2: fasten lashing chains at the side

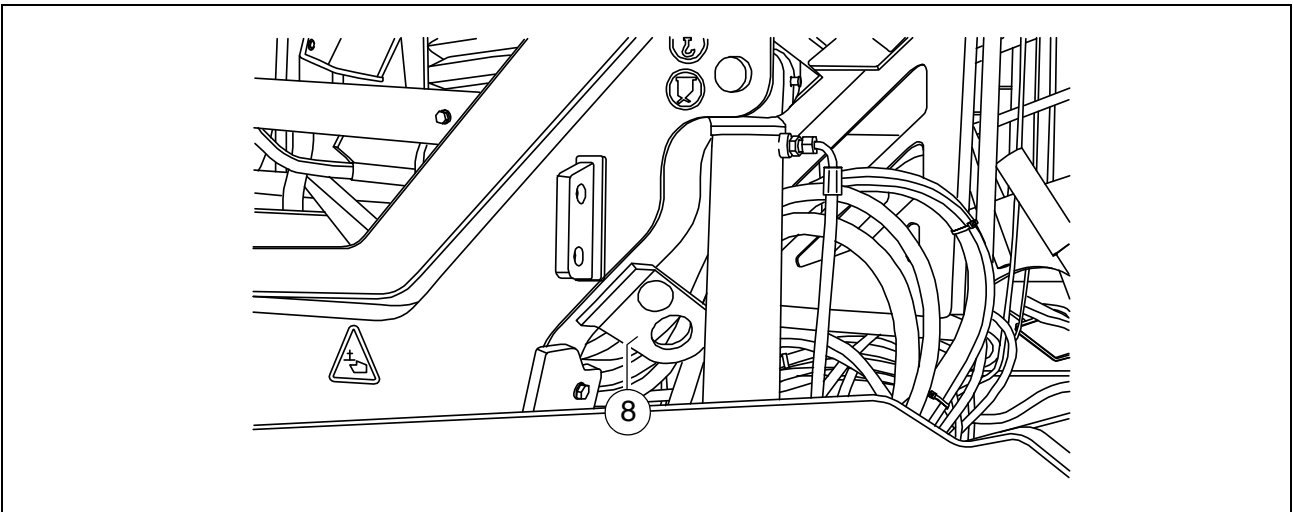



⚠ Diagonal lashing secures the wheeled paver at the front and sides using the lashing points on the paver finisher and on the low-load trailer. Fasten the lashing chains as shown.

## 4.2 Securing at the rear - screed with side board



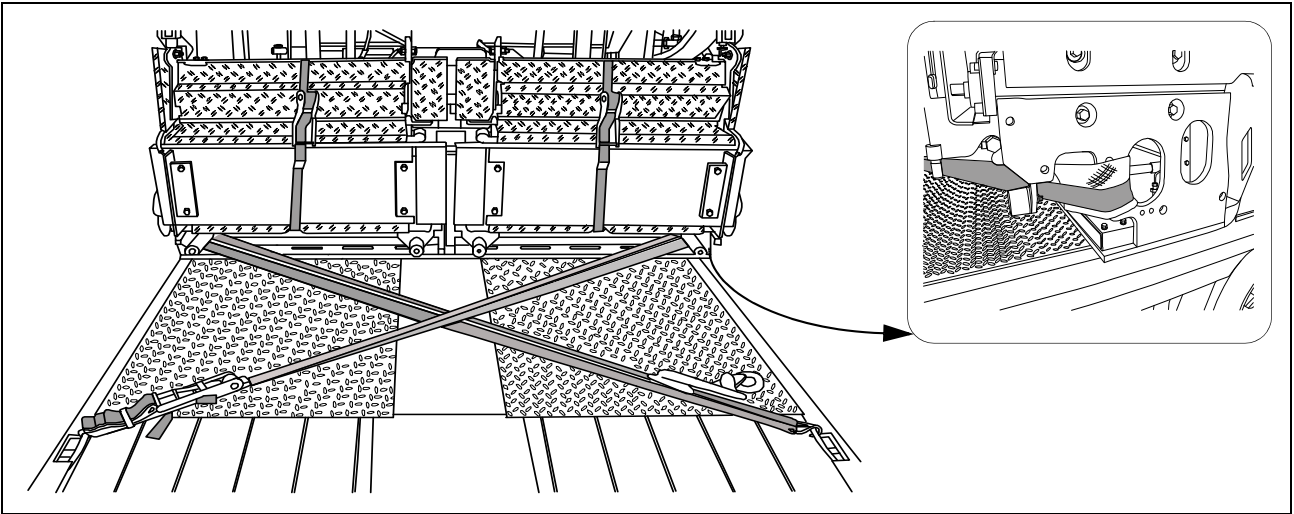
-  Diagonal lashing secures the paver finisher at the rear, at right angles to the direction of travel using the lashing points on the paver finisher (eyebolts) and on the low-load trailer. Fasten the lashing straps as shown. Screw the supplied eyebolts (7) first of all in the holes provided in the arms.




-  Alternatively, additional lashing points (8) are provided on the chassis at the rear. These should be used preferably for transports without screed / without arms.

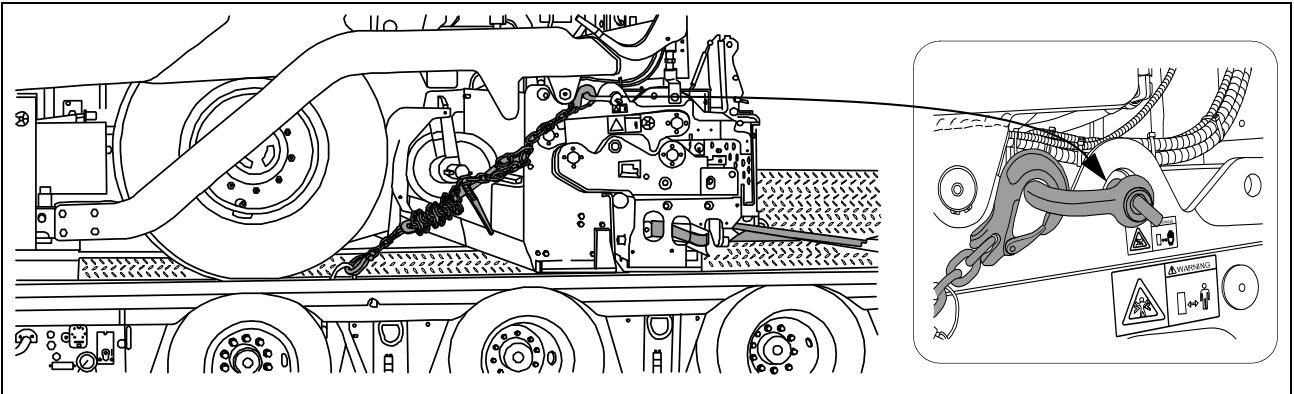
### 4.3 Securing at the rear - screed without side board


#### Step 1: fasten lashing straps



-  Diagonal lashing secures the paver finisher at the rear using the lashing points on the paver finisher and on the low-load trailer. Fasten the lashing straps as shown.

#### Step 2: fasten lashing chains



-  Diagonal lashing secures the paver finisher at the rear using the lashing points on the paver finisher and on the low-load trailer. Fasten the lashing chains as shown.

#### 4.4 After transportation

- Remove the attachment devices.
- Raise protective roof:



See section entitled "Protective roof"


- Lift the screed to the transportation position.
- Start the engine and drive the vehicle in working gear from the trailer with low engine revs/speed.




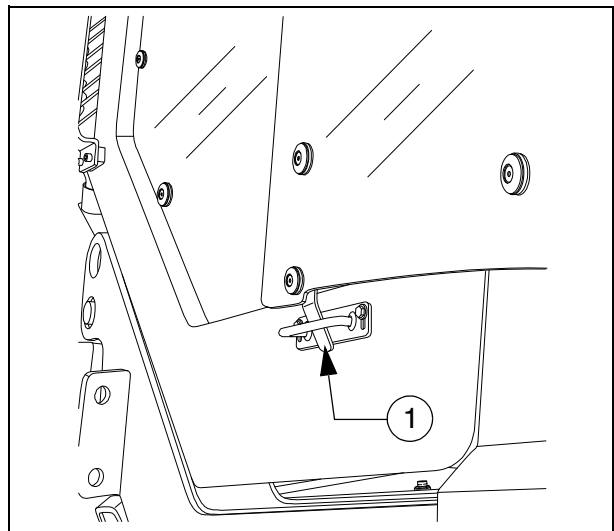
Always only use the working gear to drive up and down slopes!

- Park the paver finisher in a secure spot, lower the screed and switch off the engine.
- Remove the key and/or cover the operating panel with the protective hood and secure it.

## Protective roof (○)

NOTE	<b>Caution! Possible collision of parts</b>
	<p>The following adjustments must be made before lowering the roof:</p> <ul style="list-style-type: none"> <li>- Control platform locked in central position</li> <li>- Operating panel locked in central position</li> <li>- Operating panel fixed in lowest position and engaged in rearmost setting</li> <li>- Steering wheel knob is at the bottom (wheeled paver)</li> <li>- Driver's seats swivelled to middle setting and in lowest position</li> <li>- Backrests and armrests of driver's seats tilted forwards</li> <li>- Front and side windows closed</li> <li>- Engine hood and lateral flaps closed</li> <li>- Rotary beacon swivelled inwards and in lowest setting</li> </ul>

NOTE	<b>Caution! Possible damage to parts!</b>
	<p>The following measures must be ensured before transport:</p> <ul style="list-style-type: none"> <li>- After lowering the roof, the lock tabs (1) of the side windows must be in the corresponding mountings on both sides of the machine.</li> </ul>

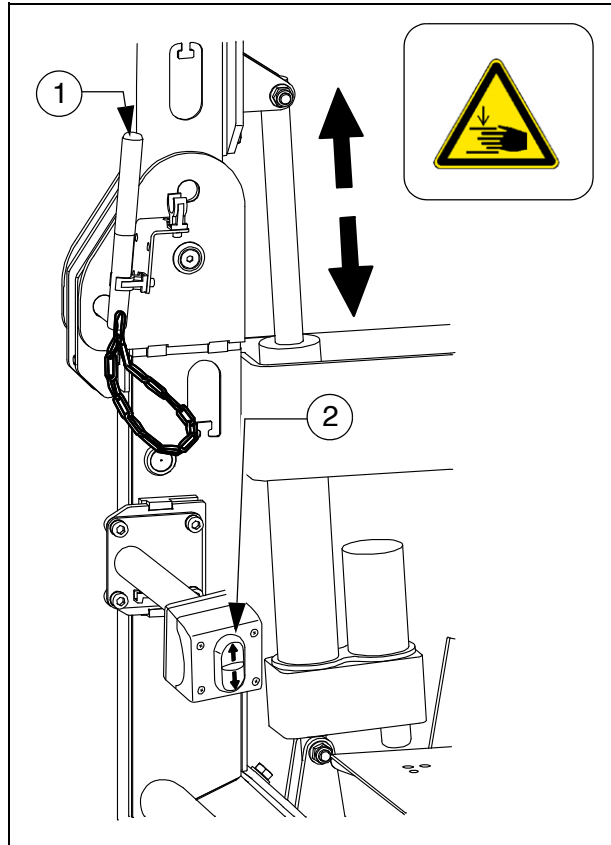


The protective roof can be raised and lowered electrically.



The exhaust pipe is lowered or raised together with the roof.

- Tighten bolts (1) on both sides of the roof.
- Operate the switch (2) until the roof has reached the upper or lower limit position.
- Set bolts (1) in the respective position on both sides of the roof.



## 5 Transportation



Reduce the paver finisher and the screed to their basic widths; also remove any attached side plates.

### 5.1 Preparations

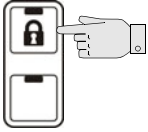
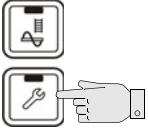
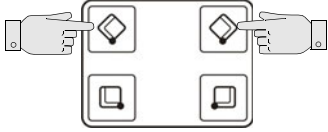
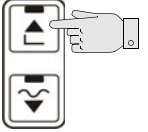
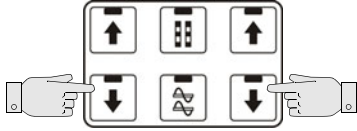
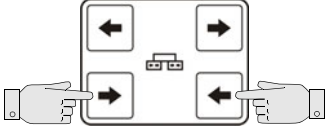
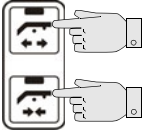
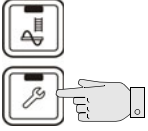
- Prepare the paver finisher for transportation (see chapter D).
- Remove all overlaying or loose parts from finisher and screed (see also operating instructions for the screed). Store these parts in a safe place.

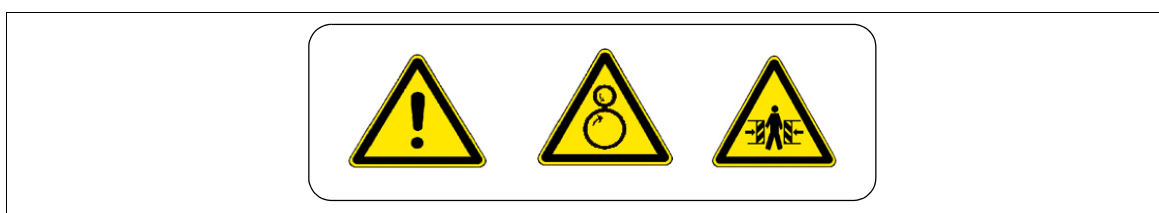


When screed is operated with the optional gas heating system:

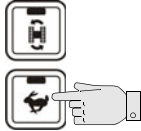
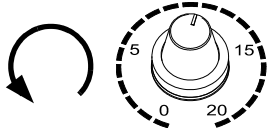

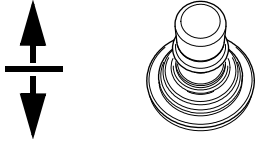
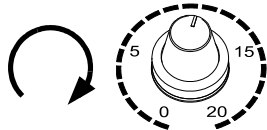
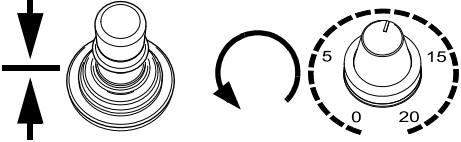
- Remove the gas bottles of the screed heater:
  - Close main shut-off valves and bottle valves.
  - Turn off the valves on the bottles and remove the gas bottles from the screed.
  - Transport the gas bottles on a second vehicle; heed all applicable safety regulations.



Operation	Buttons
- Deactivating the function lock	
- Activate set-up mode.	
- Close the hopper lids.	
- Engage both hopper transport safeguards.	
- Lift the screed.	
- Fully extend the levelling cylinder.	
- Retract the screed parts until the screed matches the basic width of the paver finisher.	
- Extend crossbeam lock.	
- Deactivate set-up mode.	



## 5.2 Driving mode

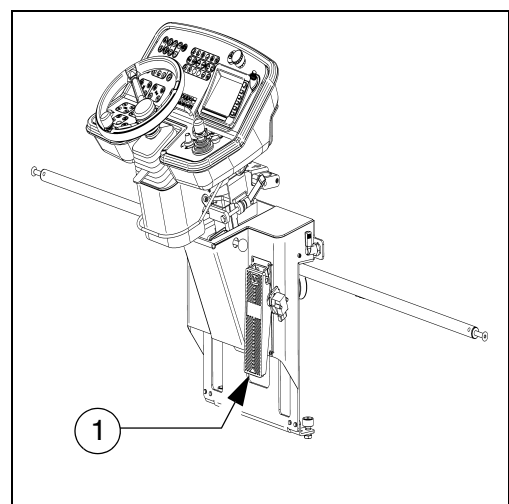
Operation	Buttons
<ul style="list-style-type: none"> <li>- Set the fast/slow switch to "Hare" if necessary.</li> </ul>	
<ul style="list-style-type: none"> <li>- Turn the preselector to "zero".</li> </ul>	
<ul style="list-style-type: none"> <li>- Swivel the drive lever to maximum.  The vehicle already advances slightly on deflecting the drive lever!</li> </ul>	
<ul style="list-style-type: none"> <li>- Adjust required vehicle speed with the preselector.</li> </ul>	
<ul style="list-style-type: none"> <li>- To stop the vehicle, swivel the drive lever to the middle setting and set the preselector to "zero".</li> </ul>	





Press the emergency stop button when a dangerous situation arises!





Use the service brake (1) to brake the vehicle!



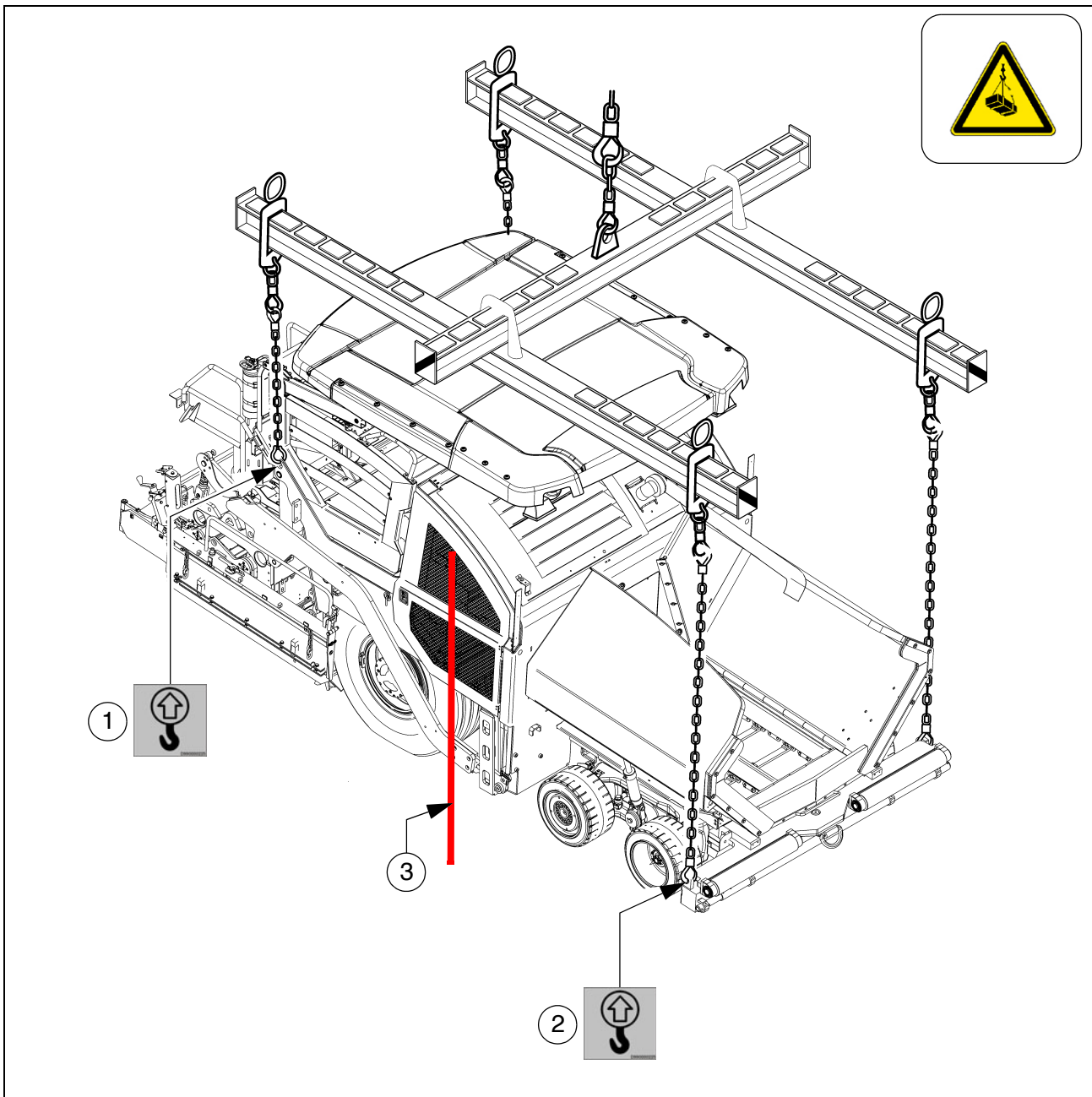
## 6 Loading by crane

 <b>WARNING</b>	<b>Danger from suspended loads</b>
	<p>Crane and/or lifted vehicle can tip when lifted and cause injuries!</p> <ul style="list-style-type: none"><li>- The vehicle may only be raised at the marked lifting points.</li><li>- Heed the operating weight of the vehicle.</li><li>- Do not enter the danger zone.</li><li>- Use only lifting gear that can bear the load.</li><li>- Do not leave any load or loose parts on the vehicle.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 Use only lifting gear that can bear the load.  
(See chapter B for weights and dimensions).

 Attachment and loading equipment must meet the conditions of the applicable accident prevention regulations!

 The vehicle's centre of gravity is dependent on the screed which is mounted.



- ☞ Four lifting eyes (1, 2) are provided for loading the vehicle with a crane.
- ☞ Depending on the type of screeed which is used, the paver finisher's centre of gravity, with the screeed mounted, is located in the area of the front edge (3) of the rear wheel.
  - Secure vehicle wherever it is parked up.
  - Engage the transport safeguards.
  - Remove any attachments and extension parts from the paver finisher and the screeed until the basic width has been attained.
  - Take off all protruding or loose parts and the gas bottles of the screeed heater (see chapters E and D).
  - Lower the protective roof (○):



See section entitled "Protective roof"

- Attach lifting gear to the four attachment points (1, 2).



The max. permissible attachment point load at the attachment points is 73.5 kN.



The permissible load applies in the vertical direction!



Make sure that the paver finisher remains in a horizontal position during transportation!

## 7 Towing



Heed all regulations and apply all safety measures applicable for towing heavy construction machines.



The towing vehicle must be capable of securing the paver finisher, even on slopes.

Use only approved tow bars!

If necessary, remove any attachments and accessories from the paver finisher and the screed until the basic width has been attained.



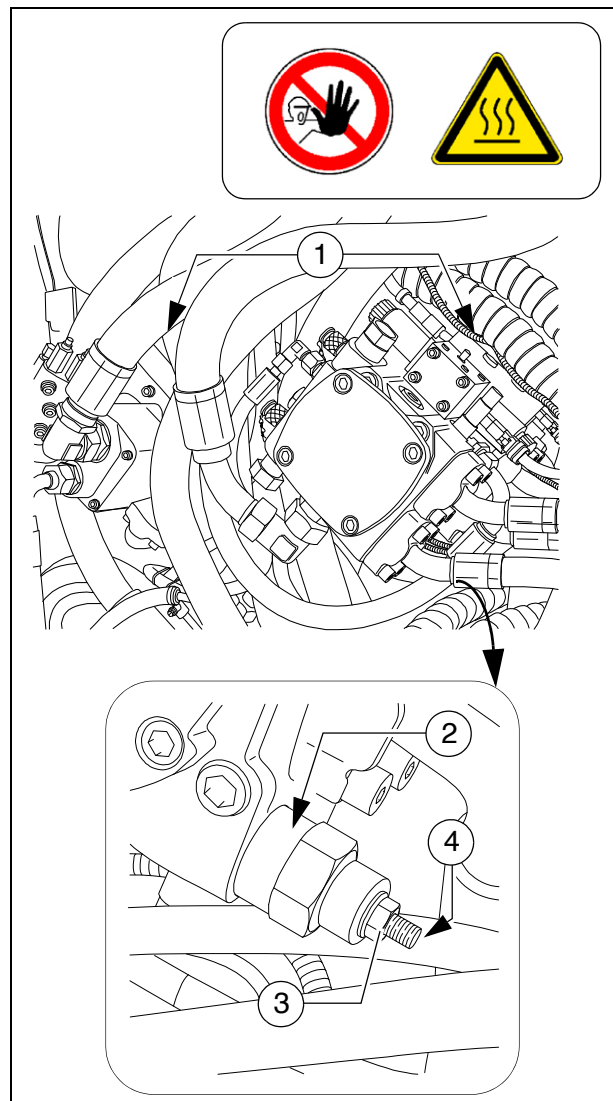
Two high-pressure cartridges (2) are located on both of the travel drive pumps (1).

The following activities must be carried out to activate the towing function:

- Loosen lock nut (3) half a turn.
- Screw in the bolt (4) until increased resistance occurs. Then screw the bolt a further half turn into the high-pressure cartridge.
- Tighten the lock nut (3) to a torque of 22 Nm.



On completion of the towing process, restore the initial status.





A hand pump (5) is located under the central control platform floor panel; it must be actuated to be able to tow the machine.

Pressure for releasing the traction system brakes is built up with the hand pump.

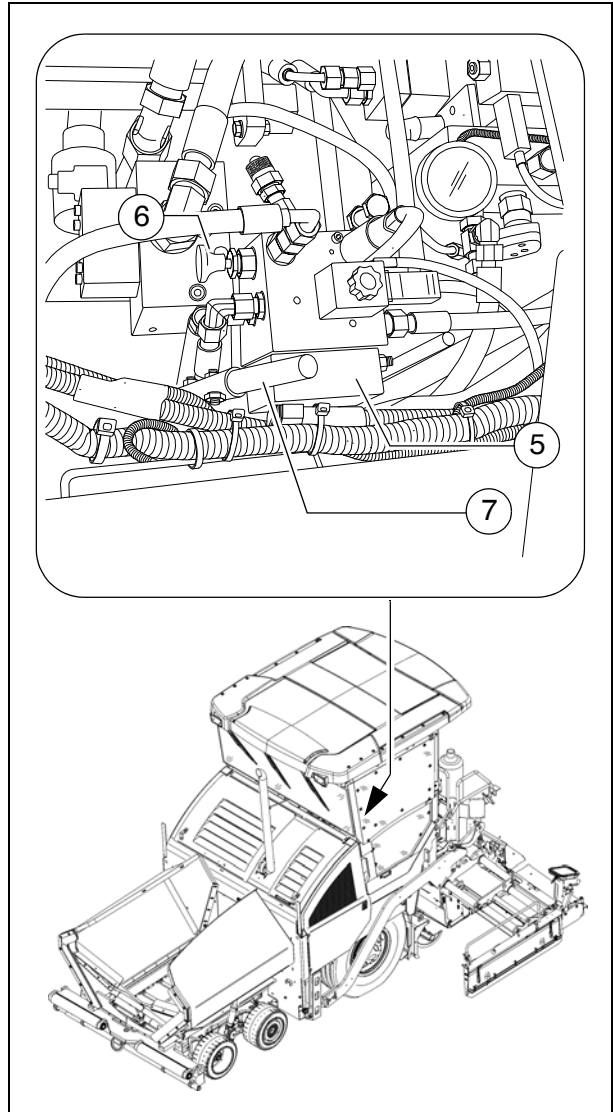
- Push knob (6) into the valve body. While pumping (next step), check that the knob remains in the pressed position.
- Actuate lever (7) of hand pump until sufficient pressure has been built up and traction system brakes have been released.



On completion of the towing process, restore the initial status.



Only release the traction system brakes when the machine is sufficiently secured against accidental rolling or is already properly connected to the towing vehicle.



- Attach the tow bar to the coupling (9) located in the bumper.



Now carefully and slowly tow the paver finisher out of the construction area.



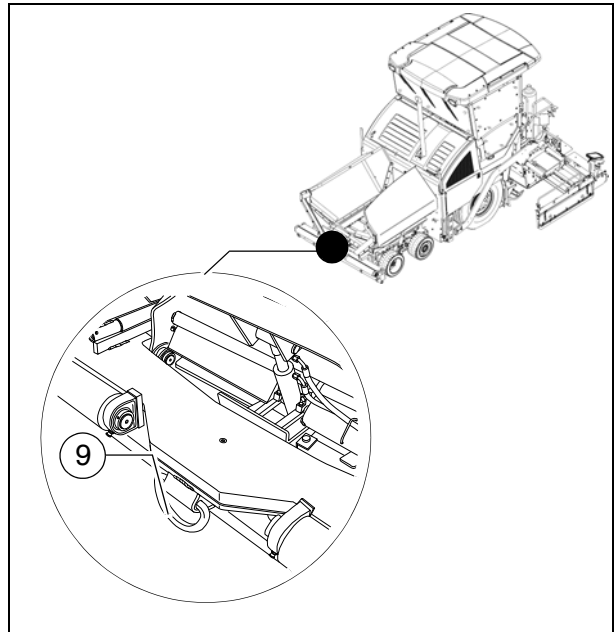
Only ever tow the shortest distance to the means of transport or the next parking possibility.



The max. permissible towing speed is 10 m/min!  
In hazardous situations, a towing speed of 15 m/min is only permitted temporarily.



The max. permissible towing eye (9) load is: 200 kN

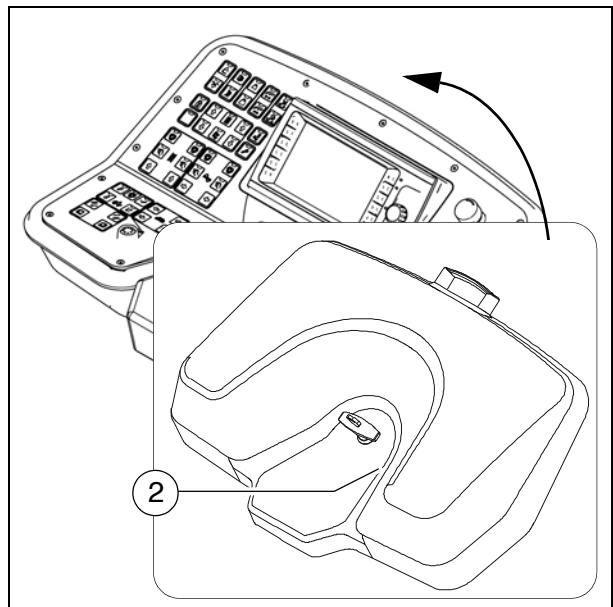
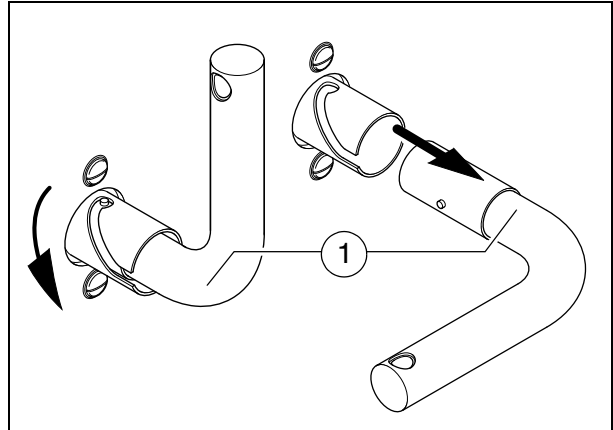



## 8 Safely parking the vehicle



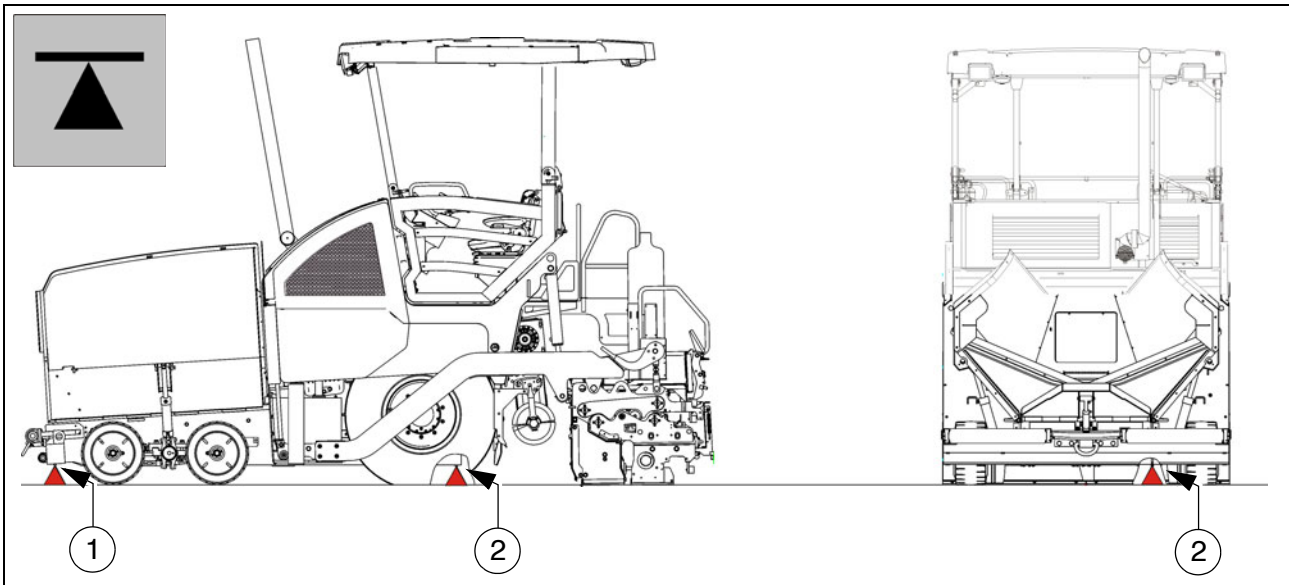
When the paver finisher is parked at a location accessible to the public, it must be secured in such a way that unauthorised persons or playing children cannot damage the vehicle.

- Pull off the ignition key and the main switch (1) and take it with you – do not hide them somewhere on the machine.
- Protect the operating panel with the dust cover (2) and lock it.
- Store loose parts and accessories in a safe place.



<b>NOTE</b>	<b>Caution! Possible damage to the engine electronics</b>
	<ul style="list-style-type: none"> <li>- After the drive engine is switched off, the on-board voltage may not be switched off until after a period &gt; 100 seconds (main switch). Always observe the operating instructions!</li> </ul>

## 8.1 Lifting the vehicle with hydraulic lifts, lifting points



The hydraulic lift must be rated for at least 10t.



Always choose a horizontal surface with adequate load rating as installation surface for the hydraulic lift!



Make sure that the hydraulic lift is securely and correctly positioned!



The hydraulic lift is only intended to lift a load and not as a support. Work should only be performed to and under raised vehicles when they have been secured and correctly supported to prevent them from tilting over and rolling or sliding away.



Roller-type jacks must not be moved when under load.



Chocks or supporting beams positioned so that they cannot be shifted or tilted must be adequately dimensioned and be able to take the corresponding weight.



There must not be anyone on the vehicle while it is being lifted.



All raising and lowering work must be carried out uniformly with all hydraulic lifts in use! Always check and observe horizontal alignment of the load!



Always carry out raising and lowering work with several people together, with an additional person monitoring progress!



Only positions (1) and (2) in the left and right side of the vehicle are permissible lifting points!



---

# D 13 Operation

## 1 Safety regulations



Starting the engine, the travel drive, the conveyor, the auger, the screed or the lifting devices can cause injuries or even the death of persons.

Make sure before starting any of these devices that no-one is working at, in or beneath the paver finisher or within its 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 crawl into the auger tunnel or step into the hopper or onto the conveyor. 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 has been ascertained! Operation must not be continued when the vehicle is defective!
- Do not let any persons ride on the paver finisher or the screed!
- 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 paver finisher from slipping, tipping or turning over.



Always be the master over the vehicle; never try to use it beyond its capacities!

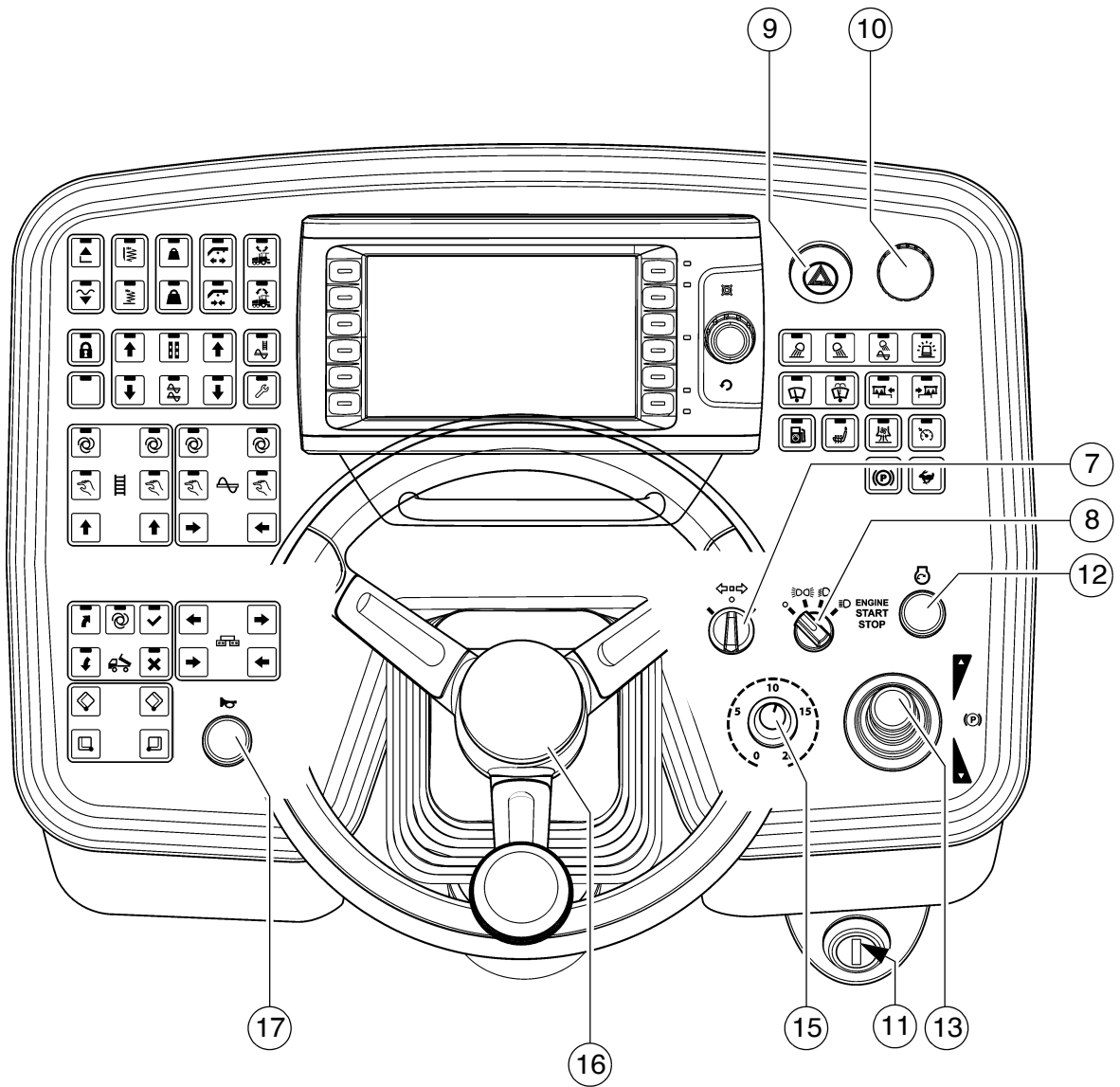
 <b>DANGER</b>	<b>Danger due to improper operation</b>
	<p>Improper operation of the vehicles can cause severe to fatal injuries!</p> <ul style="list-style-type: none"> <li>- The vehicle may only be used in the proper manner for its intended purpose.</li> <li>- The vehicle may only be operated by trained staff.</li> <li>- The vehicle operators must have made themselves familiar with the contents of the operating instructions.</li> <li>- Avoid jerky movements of the vehicle.</li> <li>- Do not exceed the permissible angle of rise and slope.</li> <li>- Keep hoods and covering parts closed during operation.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>
 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Do not enter the danger zone.</li> <li>- Do not reach into rotating or conveying parts.</li> <li>- Only wear close-fitting clothing.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Stop the engine and remove the ignition key for any maintenance work.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>
 <b>WARNING</b>	<b>Danger of crushing due to moving vehicle parts</b>
	<p>Vehicle parts performing movements can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Remaining in the vehicle's danger zone during operation is prohibited!</li> <li>- Do not reach into the danger zone.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>






## 2 Controls

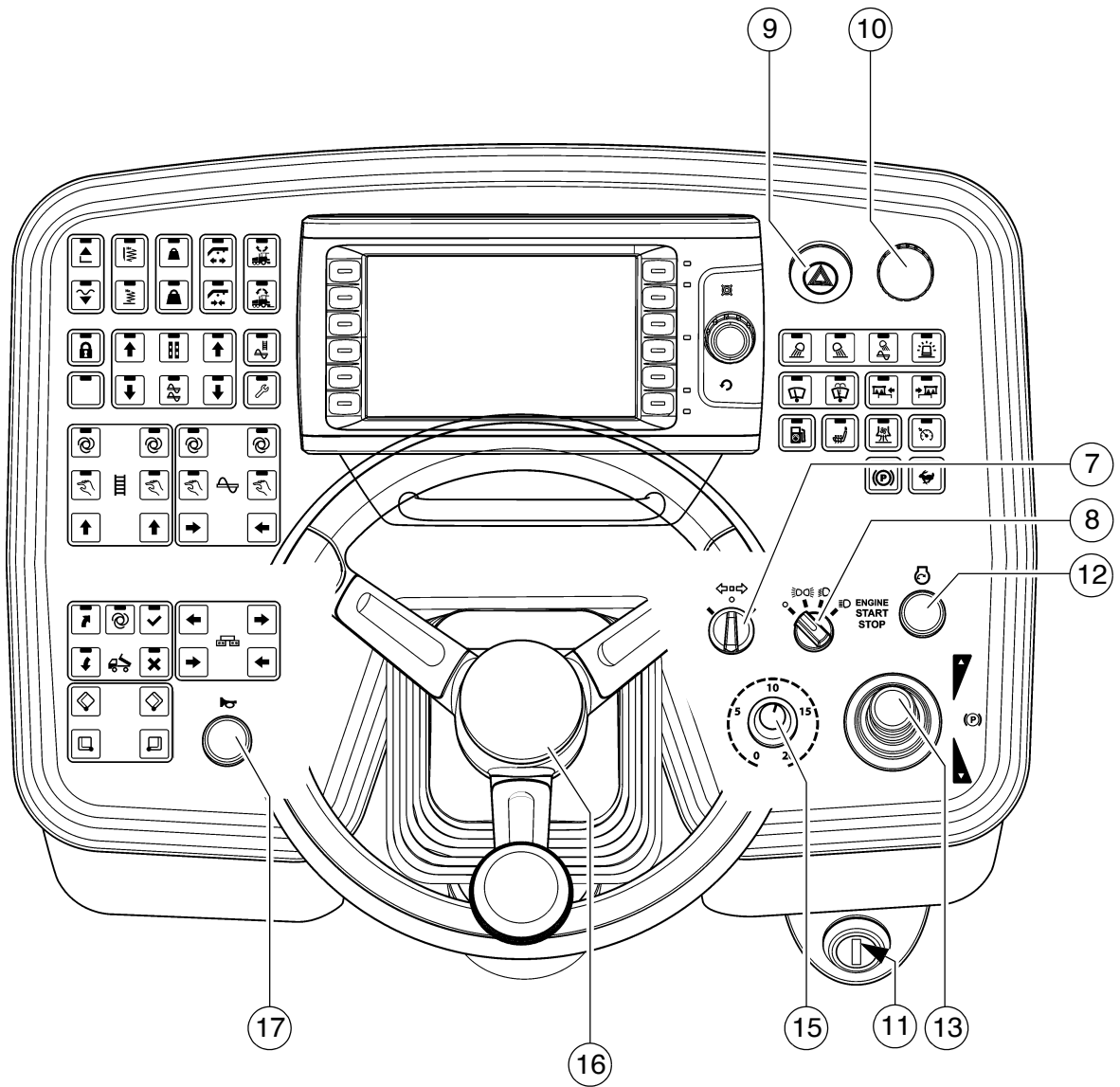
### 2.1 Operating panel









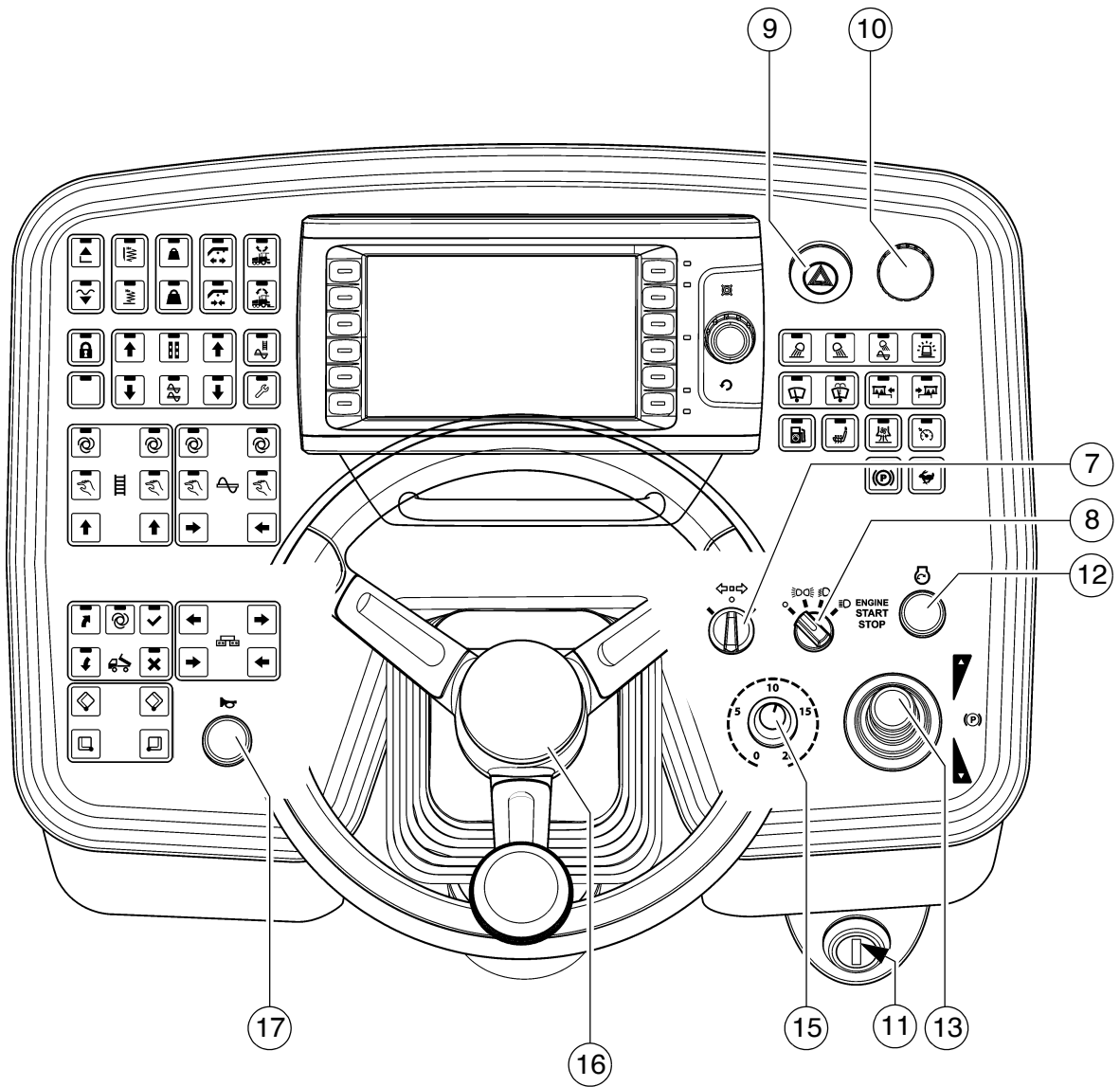
All detent switch functions which may pose a risk on starting the diesel engine (auger and conveyor conveying function) are set to the STOP function in the case of EMERGENCY STOP or restarting the control system. If settings are changed when the diesel engine is stopped ("AUTO" or "MANUAL"), these are reset to "STOP" on starting the diesel engine.








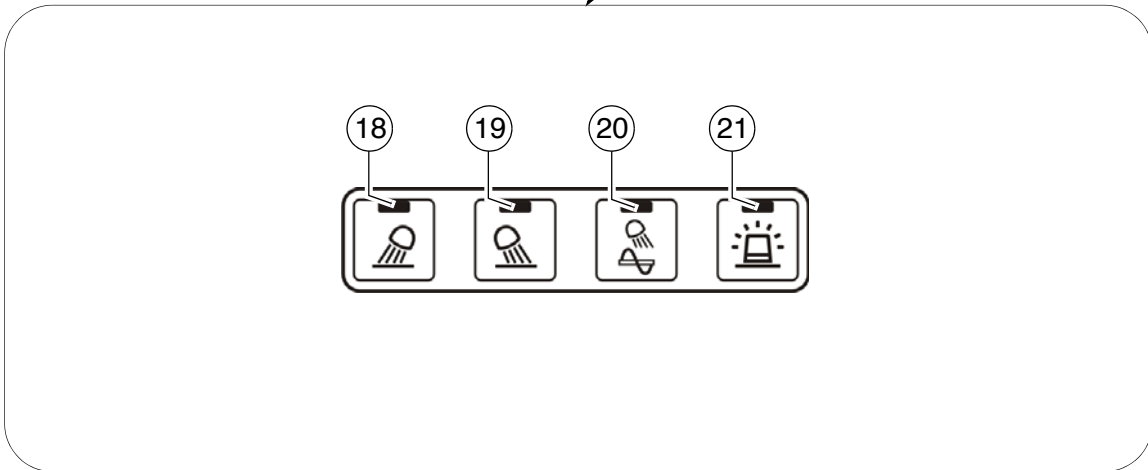
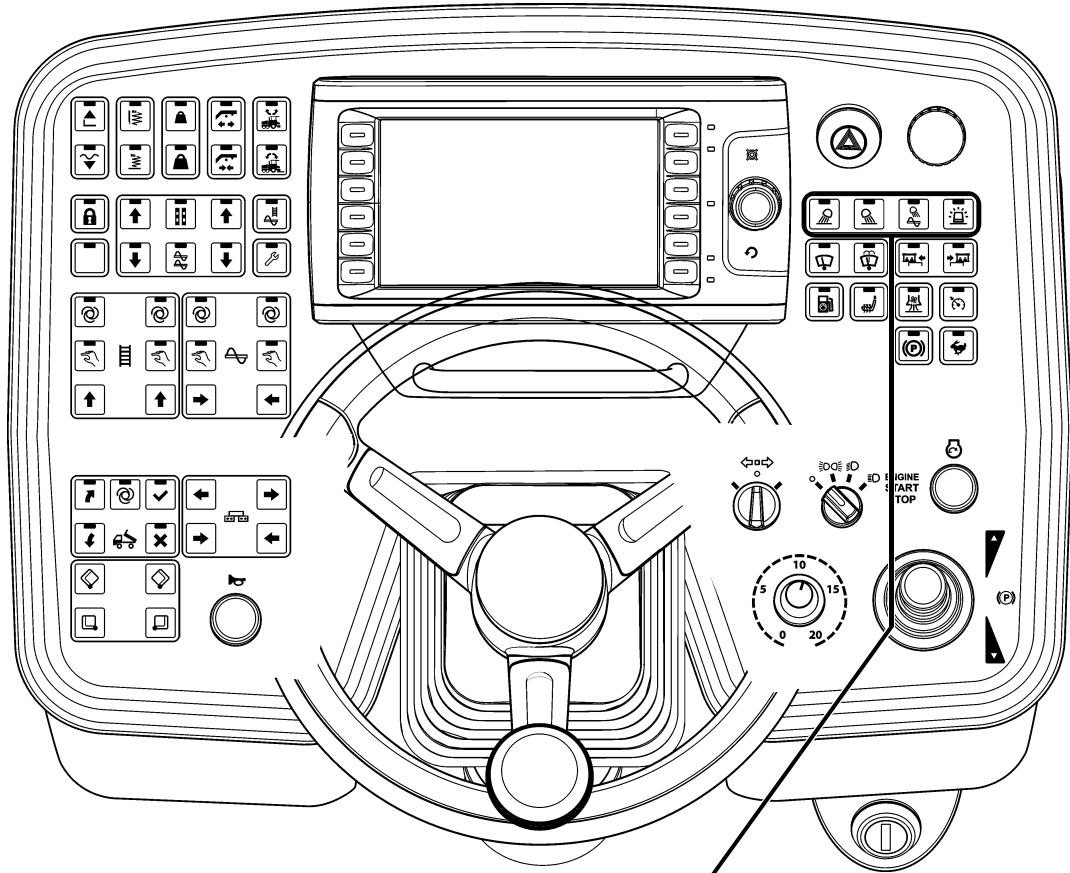
Item	Designation	Brief description
7	Direction of travel indicator ("flasher")	Use when changing direction of travel on roads.
8	Illumination switch	<p>Four switch positions can be selected:</p> <ul style="list-style-type: none"> <li>- 0: Light OFF</li> <li>- 1: Parking lights ON (+operating panel lighting)</li> <li>- 2: Low-beam headlights ON (+operating panel lighting)</li> <li>- 3: High-beam headlights ON (+operating panel lighting)</li> </ul> <p> Avoid dazzling the oncoming traffic!</p>
9	Hazard warning flasher	<p> Always have the warning lights on when moving the machine!</p>
10	Emergency stop button	<p>Press in an emergency (danger to persons, impending collision, etc.)!</p> <ul style="list-style-type: none"> <li>- Pressing the emergency stop button switches off the engine, the drives and the steering system. Making way, lifting the screed or other actions are then no longer possible! Danger of accident!</li> <li>- The emergency stop button does not shut off the gas heater system (○). Close the main shut-off valve and the valves on the bottles by hand!</li> <li>- To restart the engine, the button must be pulled out again.</li> </ul>
11	Ignition lock	<p>To activate the ignition voltage by turning the key.</p> <ul style="list-style-type: none"> <li>- Switch off by turning the key back to its starting position.</li> </ul> <p> After activating the ignition voltage, the input and display terminal requires a few seconds for the booting process.</p> <p> On shutting off the vehicle, first switch off the ignition, then deactivate the main switch.</p> <p> Before the main battery switch is deactivated, a period of at least 100 seconds must elapse after switching off the vehicle.</p>






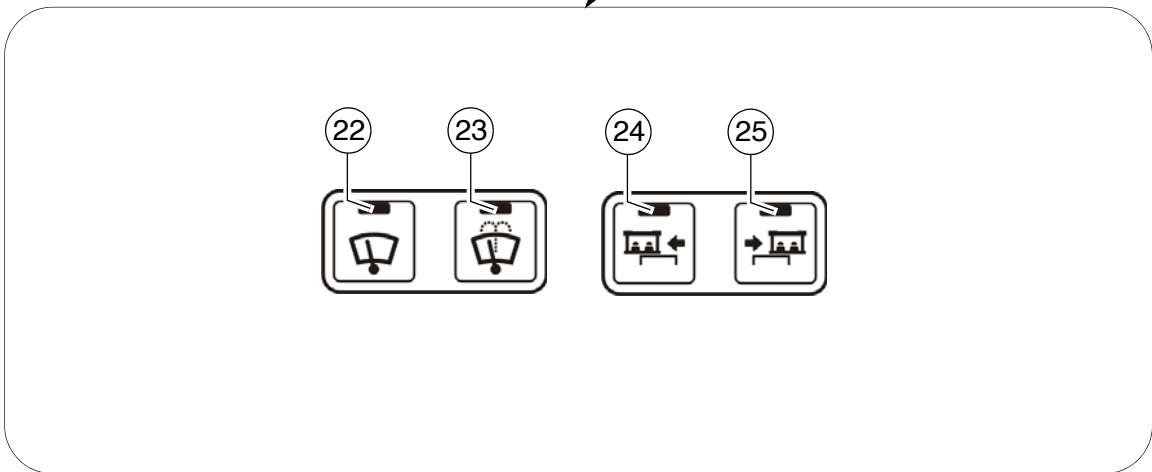
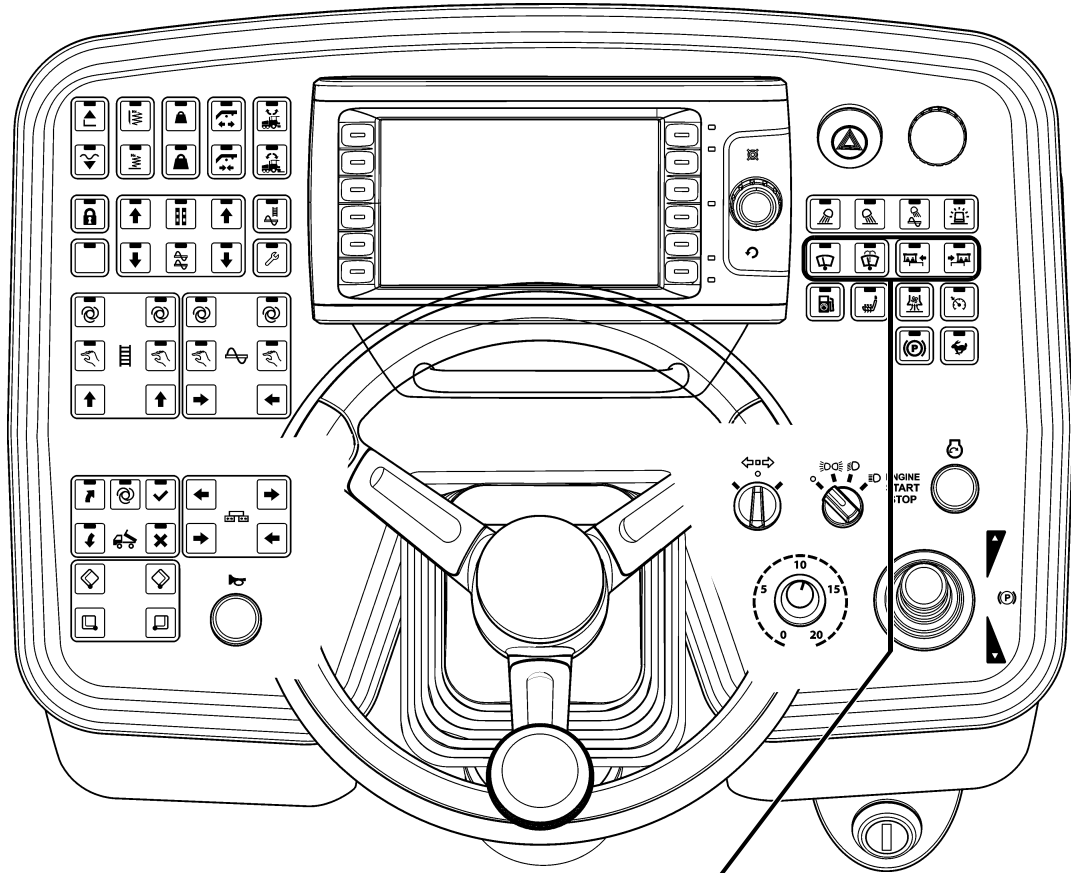
Item	Designation	Brief description
12	Starter / drive engine OFF	<p>For starting and shutting off the drive engine.</p> <ul style="list-style-type: none"> <li>- On actuation, the starter is in operation</li> <li>- Switch the running engine OFF by pressing the button again</li> </ul> <p> Run the starter continuously for a maximum of 20 seconds, then take a break for 1 minute!</p> <p> All emergency stop buttons (on the operating panel and the remote controls) must be pulled out when starting.</p>
13	Drive lever (traction)	<p>For switching on the paver finisher functions and for continuously regulating the road speed – forward or reverse. Centre position: Engine in neutral; no travel drive;</p> <ul style="list-style-type: none"> <li>- To swivel the drive lever out, release by pulling the handle up.</li> </ul> <p>Depending on the position of the drive lever, the following functions can be activated:</p> <p>1. position:</p> <ul style="list-style-type: none"> <li>- Conveyor and auger on.</li> </ul> <p>2. position:</p> <ul style="list-style-type: none"> <li>- Screed motion (tamper/vibration) on; travel drive on; increase speed until the stop is reached.</li> </ul> <p> Use the preselector to set the maximum speed.</p> <p> The vehicle speed cannot be reduced to "0" with the preselector. The vehicle advances slightly with deflected drive lever, even if the travel drive preselector is set to zero!</p> <p> If the engine is started with the drive lever pivoted out, the travel drive is inhibited. To start the travel drive, first the drive lever must be returned to the centre position.</p> <p> When changing over between forwards and reverse travel, the drive lever must remain briefly in neutral.</p>







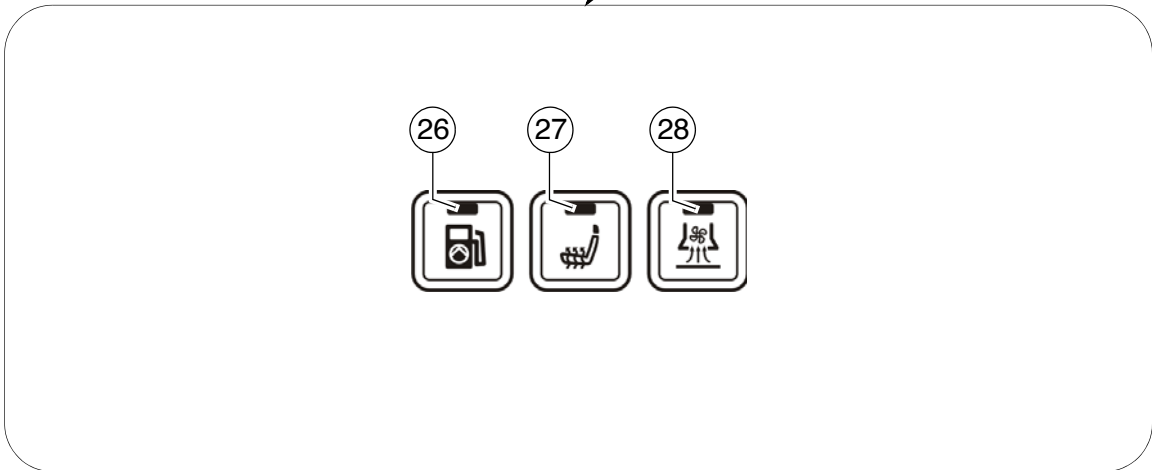
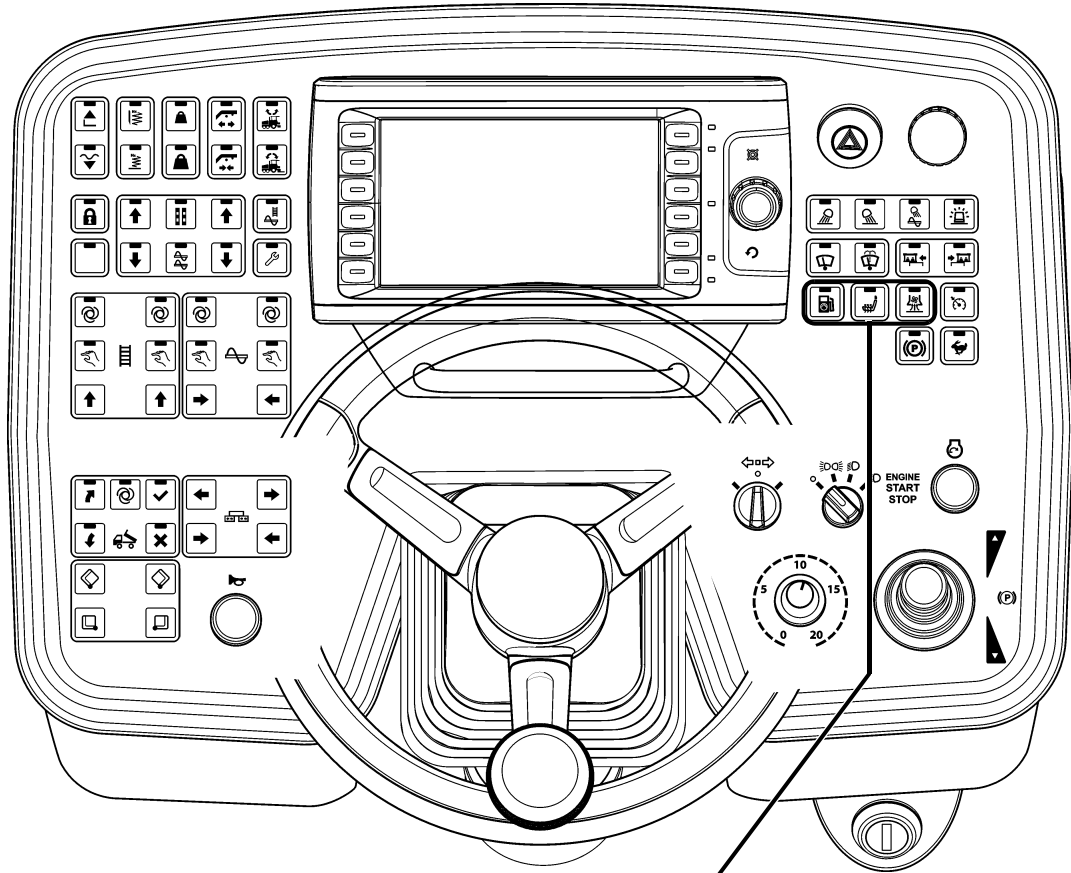
Item	Designation	Brief description
15	Travel drive preselector	<p>For setting the maximum speed that can be reached when the drive lever is at its stop.</p> <p> The scale roughly matches the speed in m/min (during paving).</p> <p> The vehicle must not travel at max. transport speed when the hopper is full!</p> <p> The vehicle speed cannot be reduced to "0" with the preselector. The vehicle advances slightly with deflected drive lever, even if the travel drive preselector is set to zero!</p>
16	Steering wheel	<p>The steering wheel movement is transferred hydraulically to the front wheels.</p> <p> Take the special steering ratio into consideration when transporting the machine through tight curves (approx. 3 turns for a full steering lock). Danger of accident!</p>
17	Horn	<p>Press in the case of emergencies and to indicate when the vehicle starts to move!</p> <p> The horn can also be used to communicate acoustically with the truck driver for material loading!</p>



Item	Designation	Brief description
18	Front working lights ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- For switching on the front working lights</li> <li>- Switch OFF by pressing the button again</li> </ul>  Avoid dazzling other road users!
19	Rear working lights ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- For switching on the rear working lights</li> <li>- Switch OFF by pressing the button again</li> </ul>  Avoid dazzling other road users!
20	Auger compartment working lights ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- for switching on the auger compartment working lights</li> <li>- Switch OFF by pressing the button again</li> </ul>
21	Rotary beacon ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- For switching on the rotary beacon</li> <li>- Switch OFF by pressing the button again</li> </ul>  Switch on for safety on roads and in the construction site area

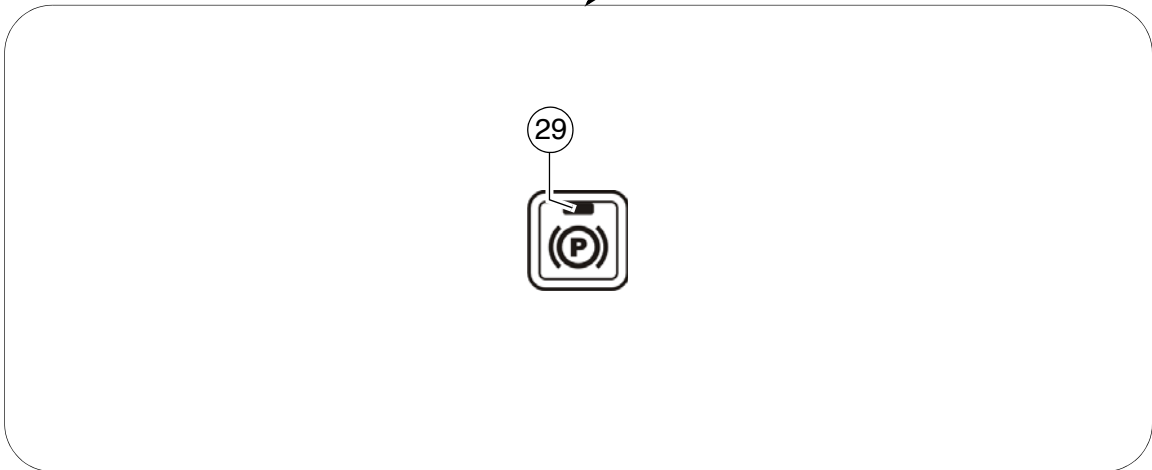
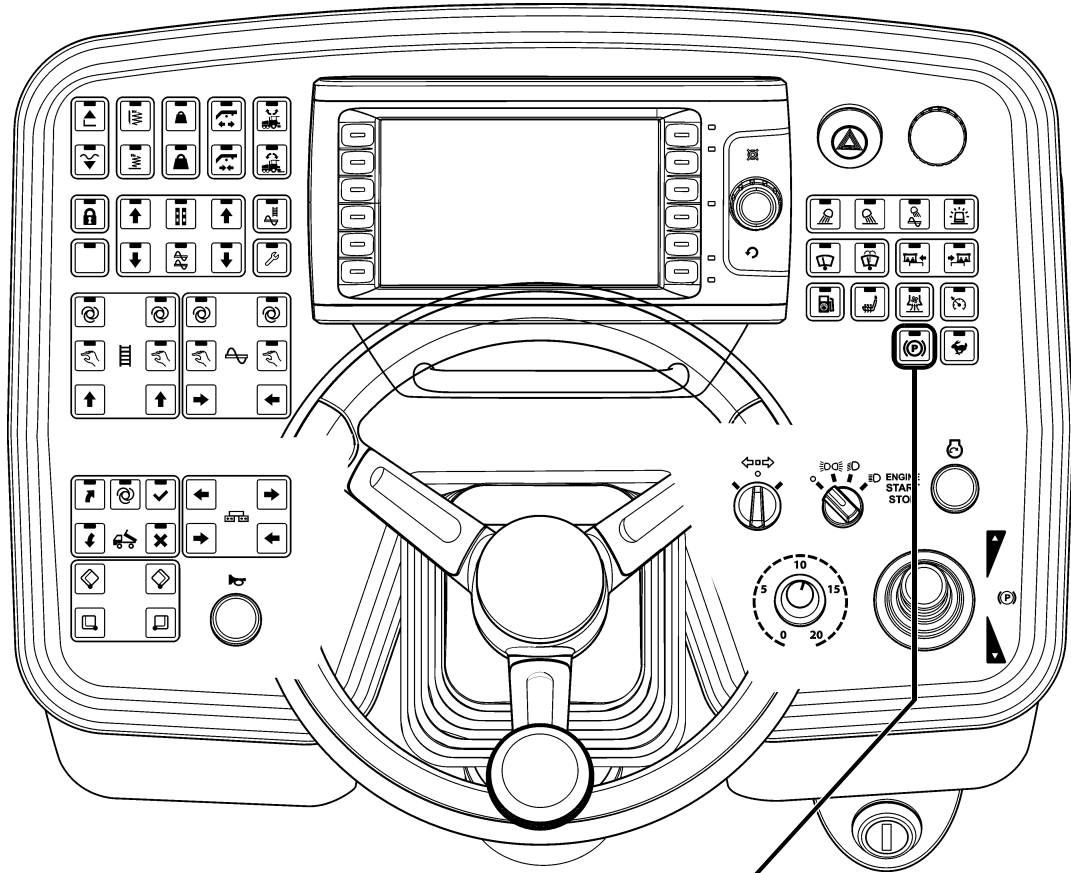


Item	Designation	Brief description
22	Windscreen wipers ON / OFF (○)	<p>Detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- For switching on the windscreen wipers</li> <li>- Switch OFF by pressing the button again</li> </ul>
23	Windscreen washer system + windscreen wiper ON / OFF (○)	<p>Detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- For engaging the windscreen washer system + windscreen wipers</li> <li>- Switched OFF with time control</li> </ul>
24	Move control platform to the left	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To move the control platform to the left</li> </ul> <p> The platform lock must be released before moving the control platform!</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
25	Move control platform to the right	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To move the control platform to the right</li> </ul> <p> The platform lock must be released before moving the control platform!</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>




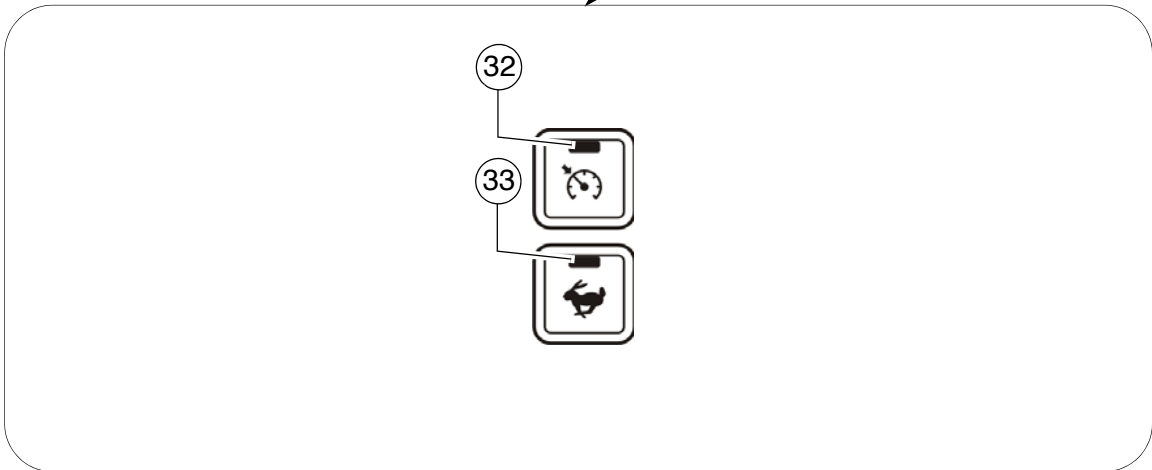
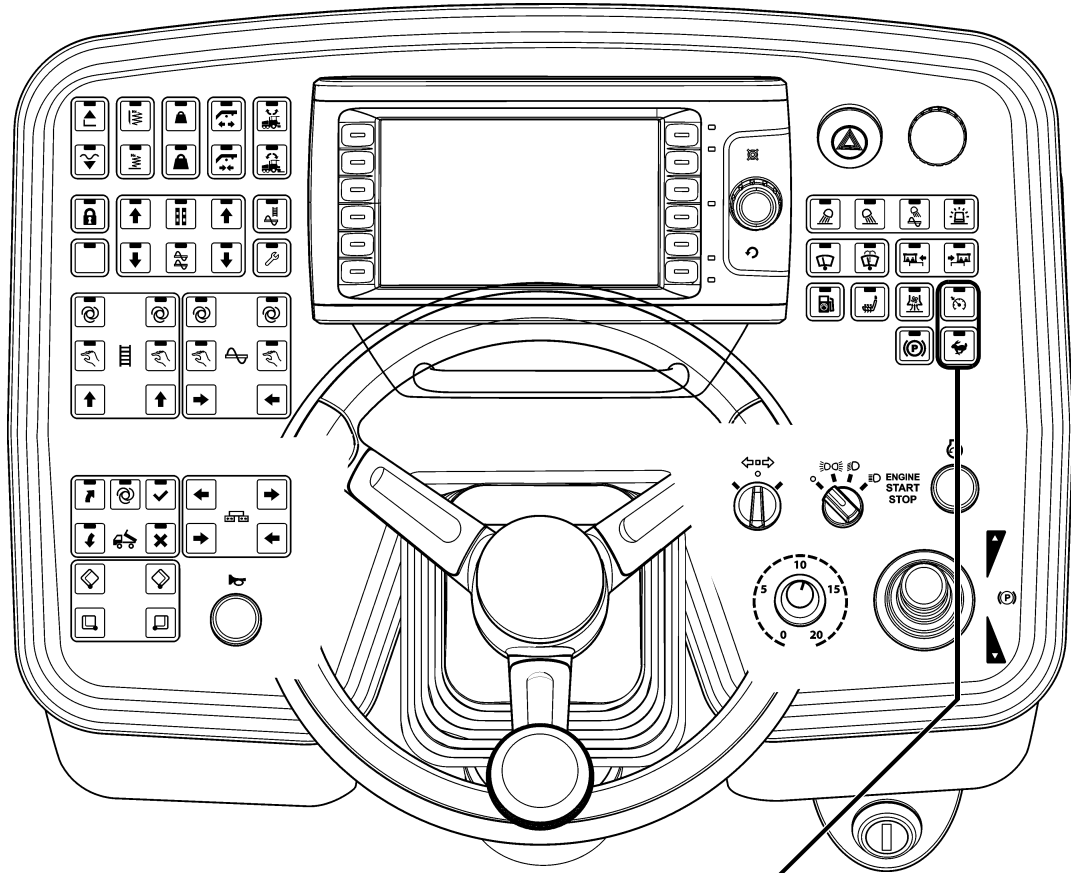
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Item	Designation	Brief description
26	Filling pump Fuel tank ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"><li>- For switching on the filling pump</li><li>- Switch OFF by pressing the button again</li></ul>
27	Seat heating ON / OFF (○)	Button with detent switch function and LED feedback: <ul style="list-style-type: none"><li>- For switching on the seat heating</li><li>- Switch OFF by pressing the button again</li></ul>
28	Extraction ON / OFF (○)	Detent switch function and LED feedback: <ul style="list-style-type: none"><li>- To actuate the asphalt fume control system</li><li>- Switch OFF by pressing the button again</li></ul>

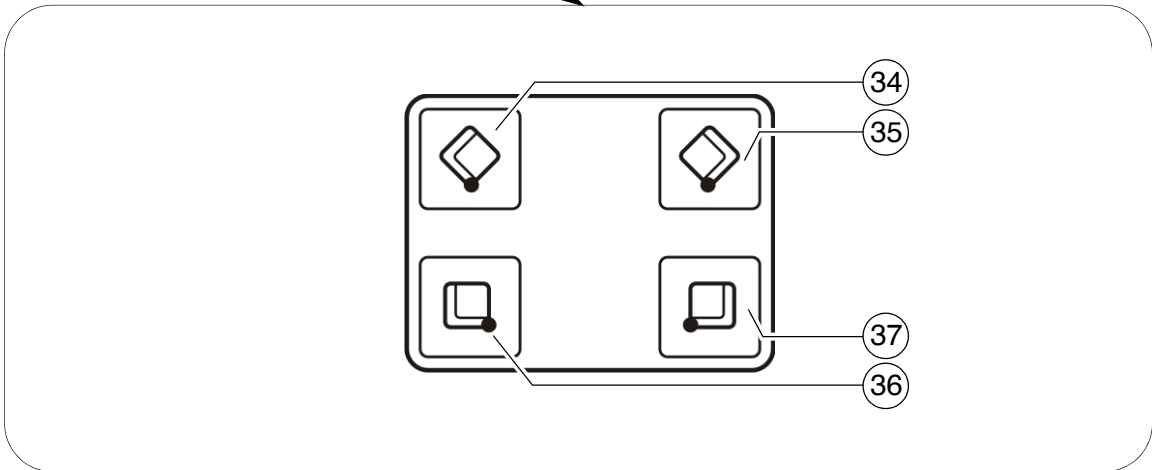
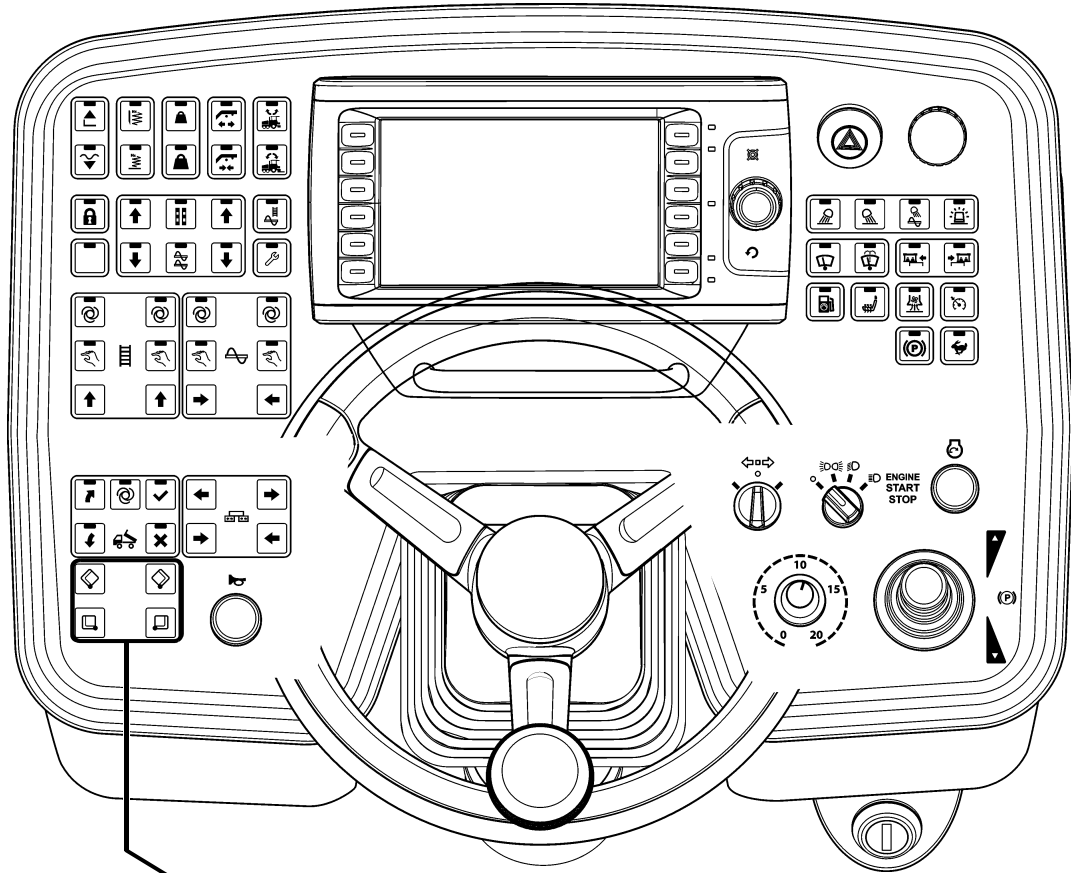










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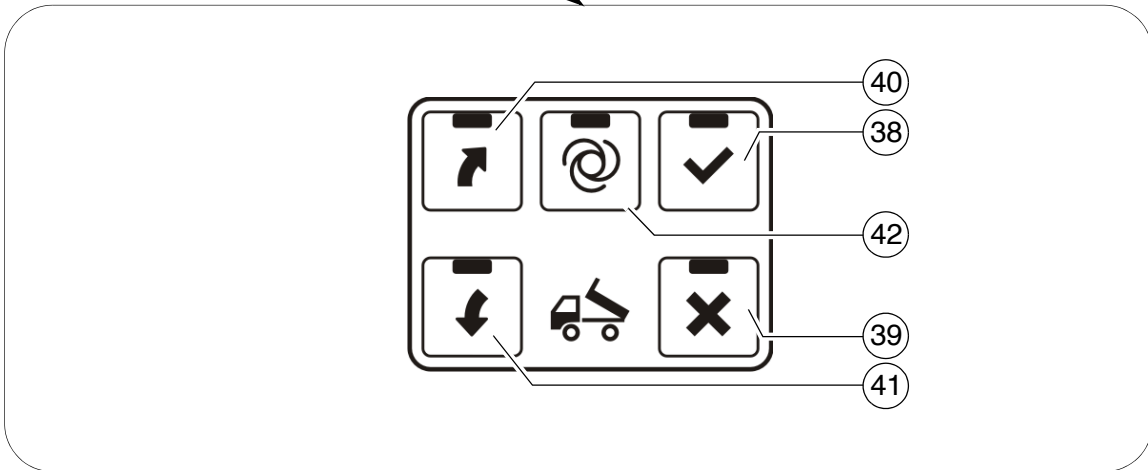
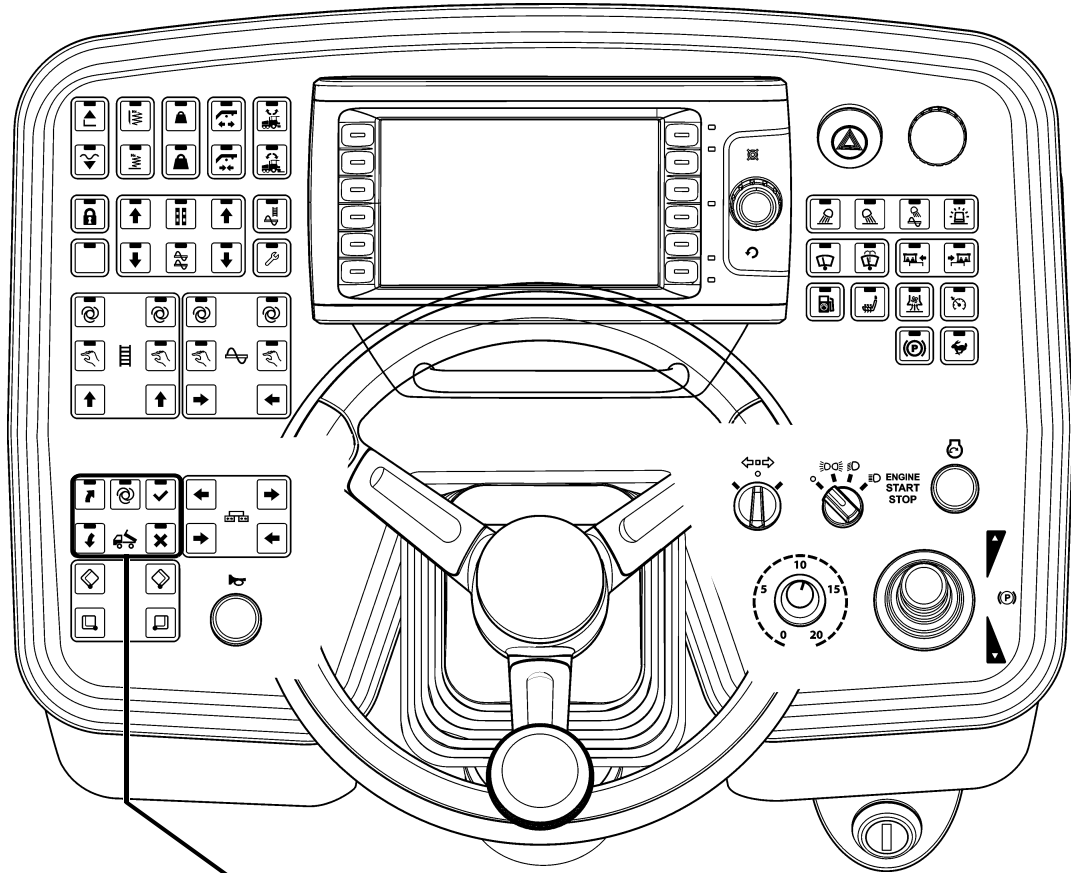
Item	Designation	Brief description
29	Parking brake	<p>Buttons with detent switch function and LED feedback:</p> <ul style="list-style-type: none"><li>- for activating the parking brake when the vehicle is stationary.</li></ul> <p> The parking brake must be deactivated to start the drive the vehicle away again.</p>





Item	Designation	Brief description
32	Tempomat (cruise control)	<p>Buttons with detent switch function and LED feedback. (LED ON = ready)</p> <ul style="list-style-type: none"> <li>- The speed control is activated by pressing the foot brake. The speed obtained after slowing down is held automatically.</li> <li>- Pressing the button again switches the function off (LED ON) and the machine is accelerated to the speed set by the drive lever and the preselection potentiometer.</li> </ul> <p> If the speed has been reduced to "zero", the drive lever first has to be put back into its zero position.</p>
33	Traction drive speed fast (hare)	<p>Buttons with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- To preselect the speed level - transport speed</li> </ul> <p> On restarting, the speed is set to operating speed.</p>


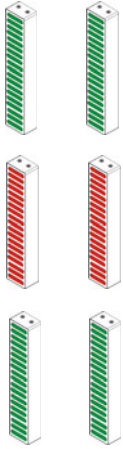

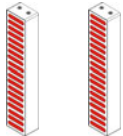


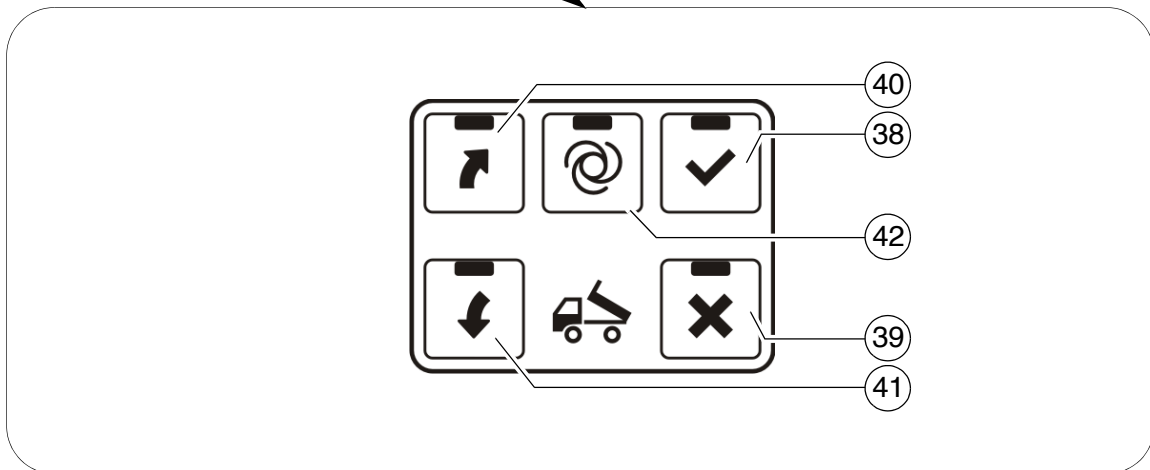
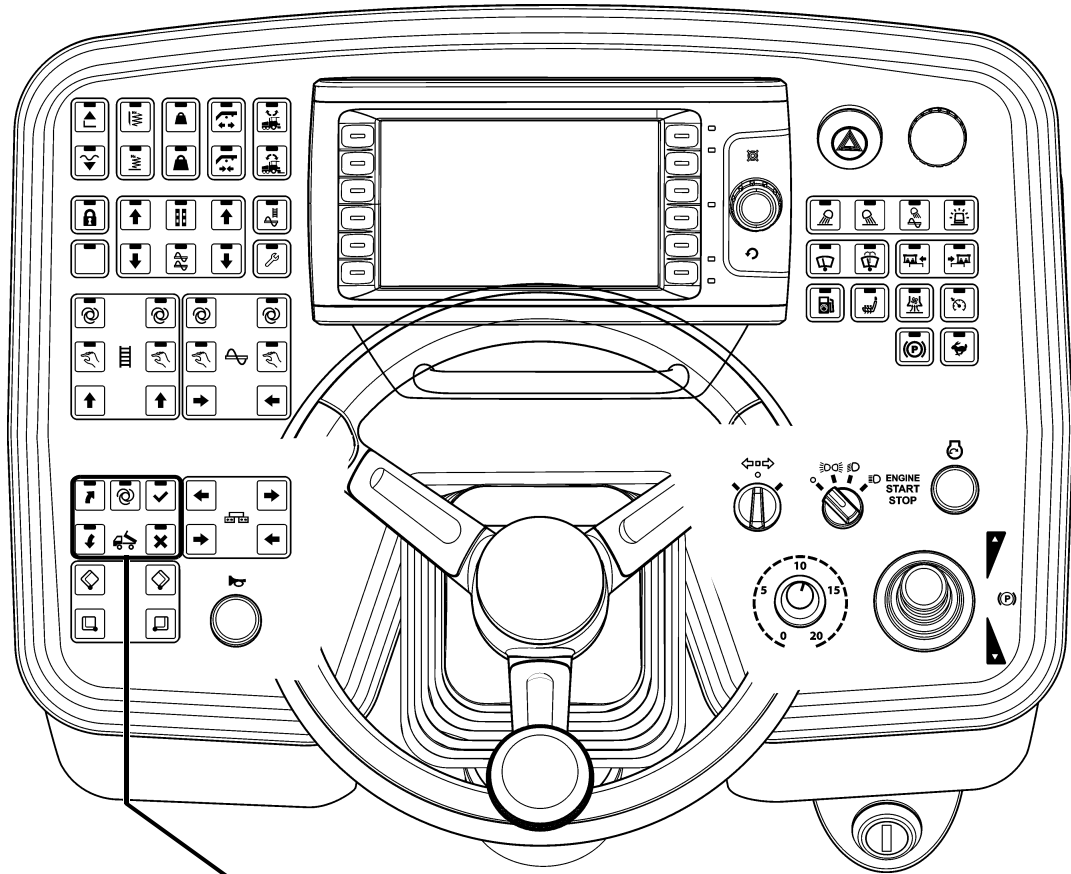
Item	Designation	Brief description
34	Close hopper left	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To close the left half of the hopper</li> </ul> <p> Separate actuation (○): Is required when paving in spaces where there is only limited space at one side or when obstacles obstruct truck unloading.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
35	Close hopper right	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To close the right half of the hopper</li> </ul> <p> Separate actuation (○): Is required when paving in spaces where there is only limited space at one side or when obstacles obstruct truck unloading.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
36	Open hopper left	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To open the left half of the hopper</li> </ul> <p> If the hoppers are hydraulically actuated at the same time, both the left and the right switch can be used for actuation.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
37	Open hopper right	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To open the right half of the hopper</li> </ul> <p> If the hoppers are hydraulically actuated at the same time, both the left and the right switch can be used for actuation.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>


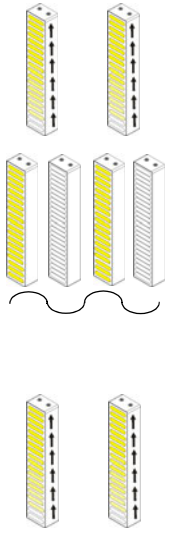

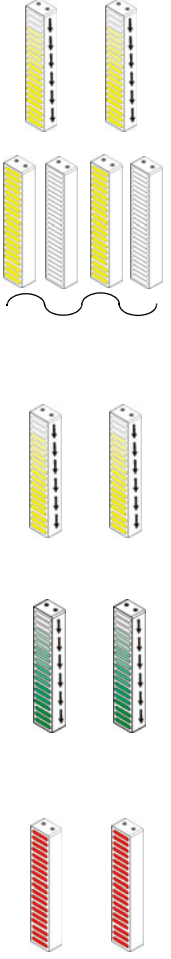


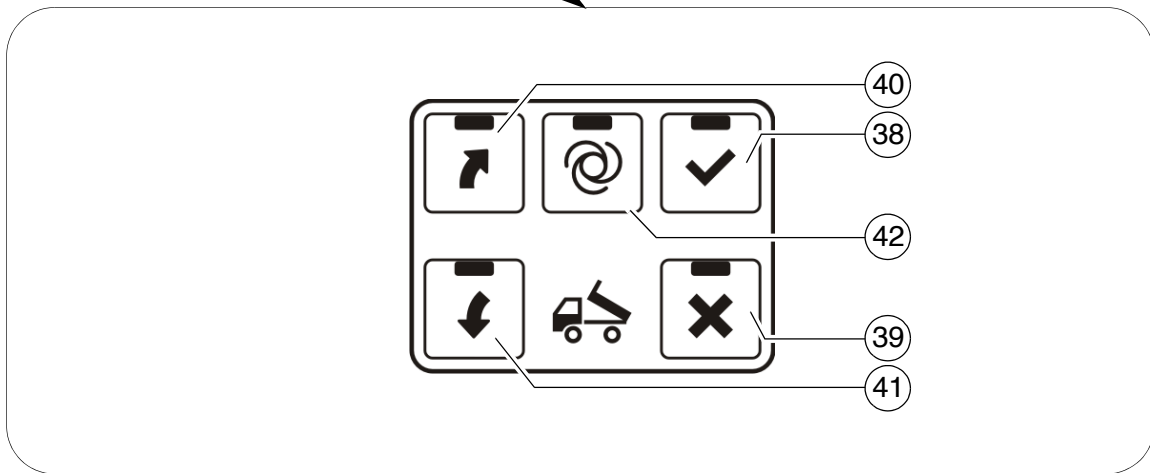
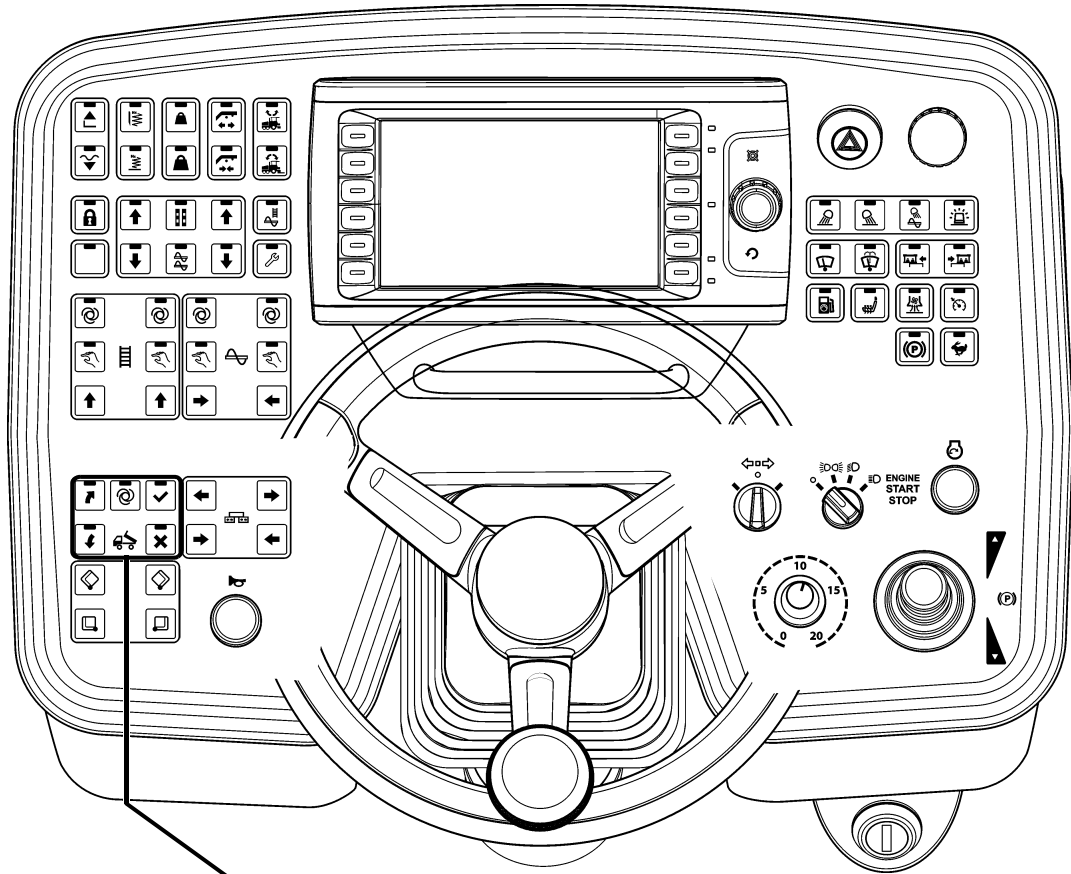
 The Truck Assist system is used for communication between the driver of the paver and the driver of the material truck. The corresponding signal system shows the truck driver which action to perform (reversing / stop / tip material / depart).





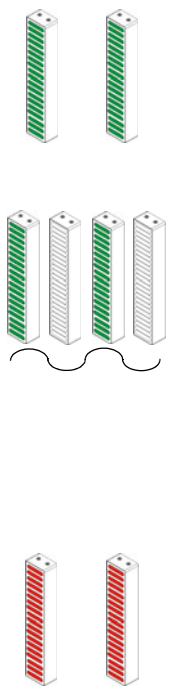
NOTE	<b>Caution! Possible material damage through insufficient instruction</b>
	<p>Ignored or incorrectly understood signals can cause damage to the paver and/or material truck!</p> <ul style="list-style-type: none"> <li>- The paver driver and all drivers of the material trucks must be instructed in how the Truck Assist system works and understand the system.</li> <li>- Comply with all further information in the operating instructions and in the safety manual.</li> </ul>

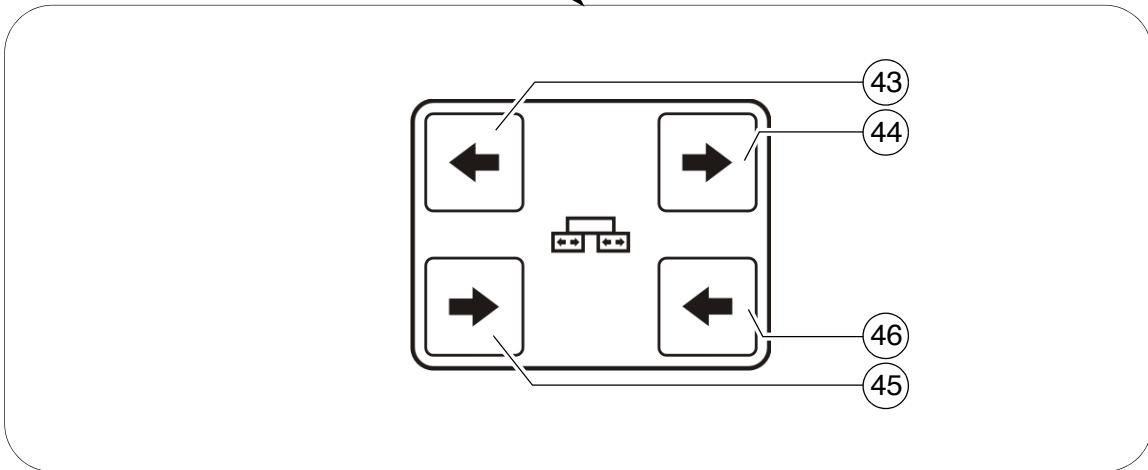
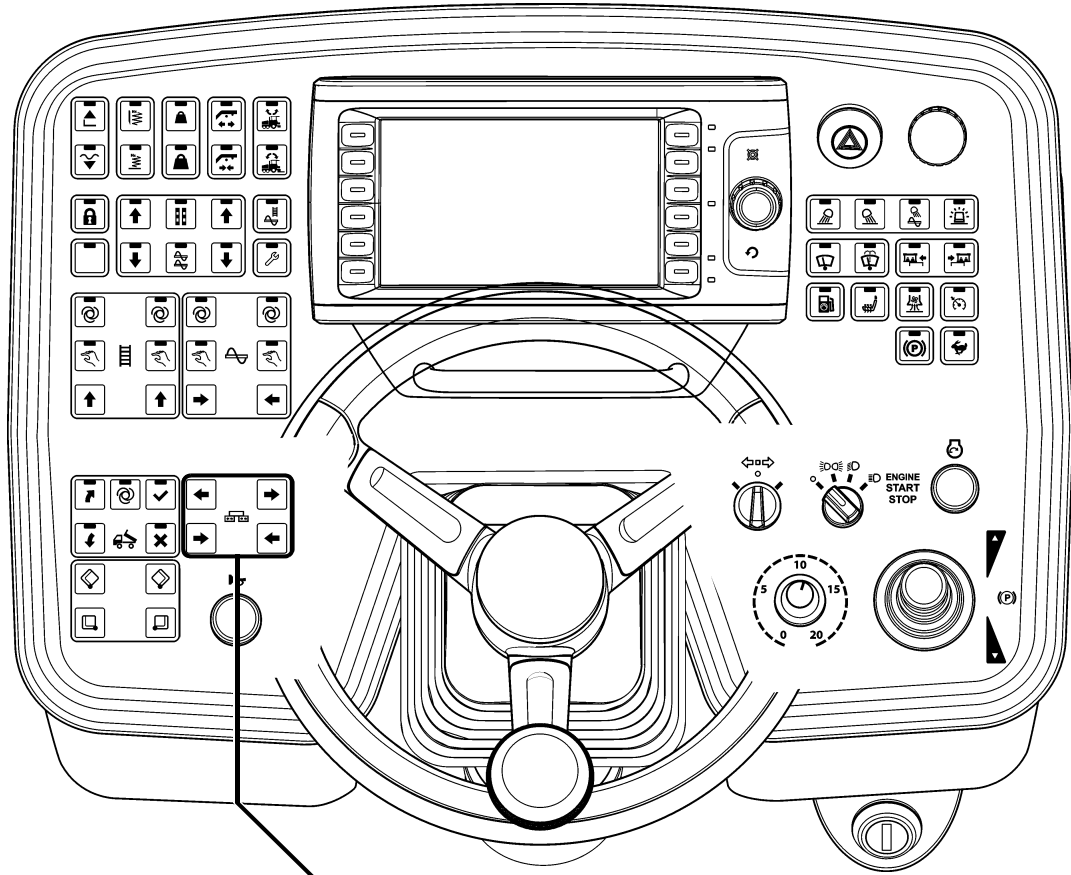
Item	Designation	Brief description	LED display
38	Tell truck to reverse	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To change over to the "Start Reversing" signal. (GREEN SIGNAL)</li> <li>- Press button again to change signal over to "Stop". Button LED (39) on + (RED SIGNAL).</li> <li>- Press button once more to switch again to "Start Reversing" signal. (GREEN SIGNAL)</li> </ul> <p> Button (39) can also be used to change over to "Stop".</p>	
39	Tell truck to interrupt reversing - "STOP"	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To change over to the "STOP" signal. (RED SIGNAL)</li> </ul> <p> Set "STOP" signal to interrupt procedure or on reaching correct distance between truck and paver.</p>	











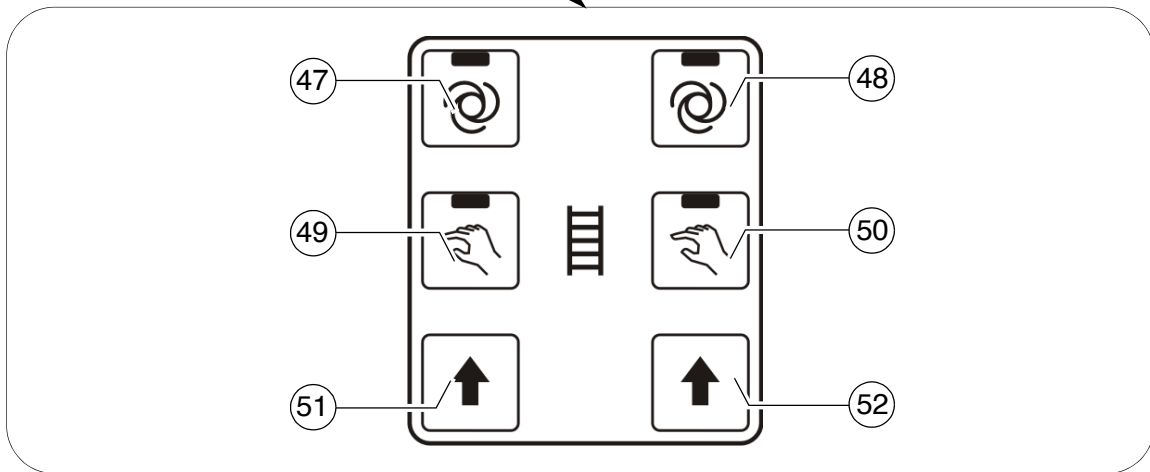
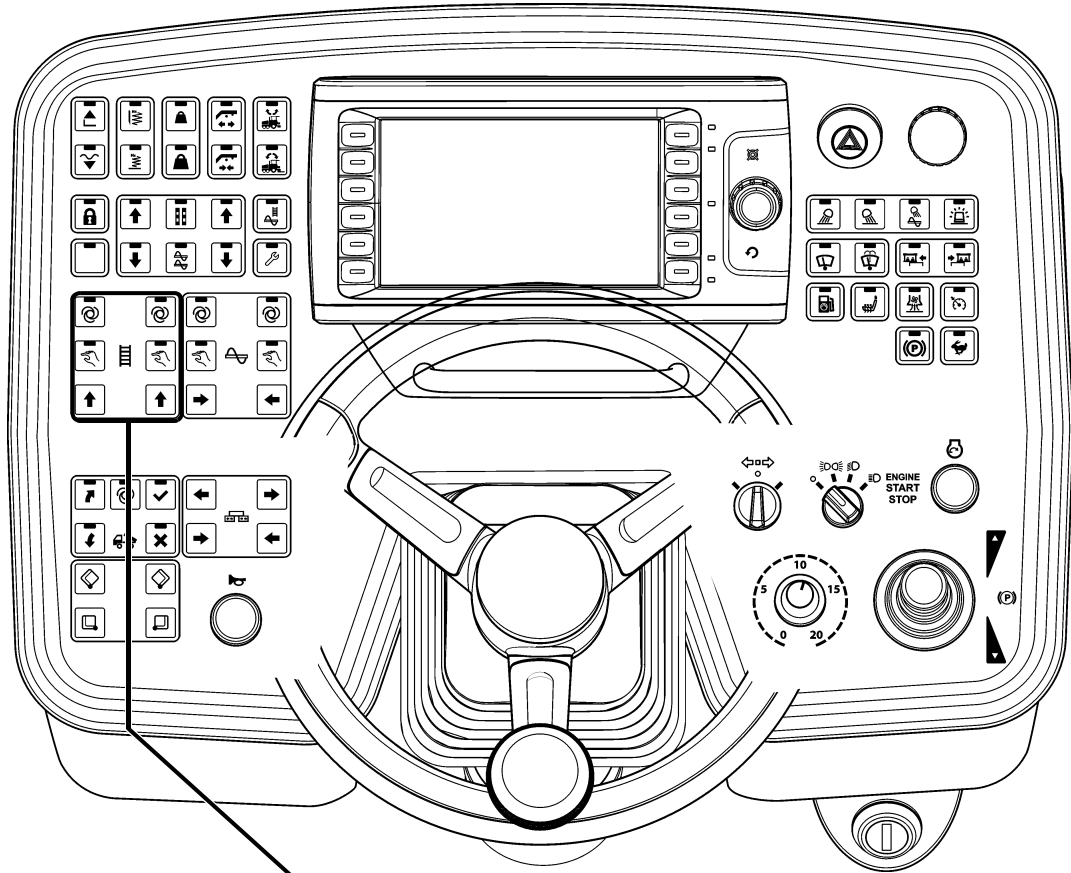
Item	Designation	Brief description	LED display
40	Tell truck "Start Tipping"(raise truck hopper)	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To change over to the "Start Tipping" signal. (YELLOW SIGNAL, running light ascending)</li> <li>- Press button again to change signal over to "Pause". (YELLOW SIGNAL, flashing).</li> </ul> <p> The button LED + button LED (41) flashes in the "PAUSE" MODE</p> <ul style="list-style-type: none"> <li>- Press button once more to switch again to "Start Tipping" signal. (YELLOW SIGNAL, running light ascending)</li> </ul>	
41	Tell truck to "End Tipping" (lower truck hopper) + tell truck to "Detach, Depart"	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To change over to the "End Tipping" signal. (YELLOW SIGNAL, running light descending)</li> <li>- Press button again to change signal over to "Pause". (YELLOW SIGNAL, flashing).</li> </ul> <p> The button LED + button LED (40) flashes in the "PAUSE" MODE</p> <ul style="list-style-type: none"> <li>- Press button once more to switch again to "Start Tipping" signal. (YELLOW SIGNAL, running light descending)</li> <li>- After material transfer completed: Press button &gt;3 seconds to change signal to "Detach, Depart". (GREEN SIGNAL, running light descending) + button LED (38), flashing.</li> <li>- After 10 seconds the system automatically changes over to the "STOP" signal. (RED SIGNAL)</li> </ul>	









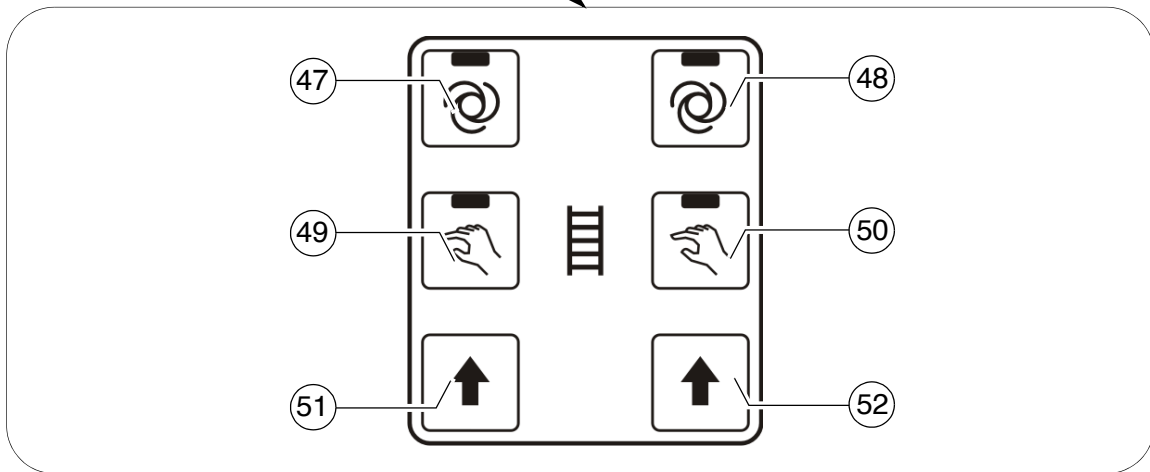
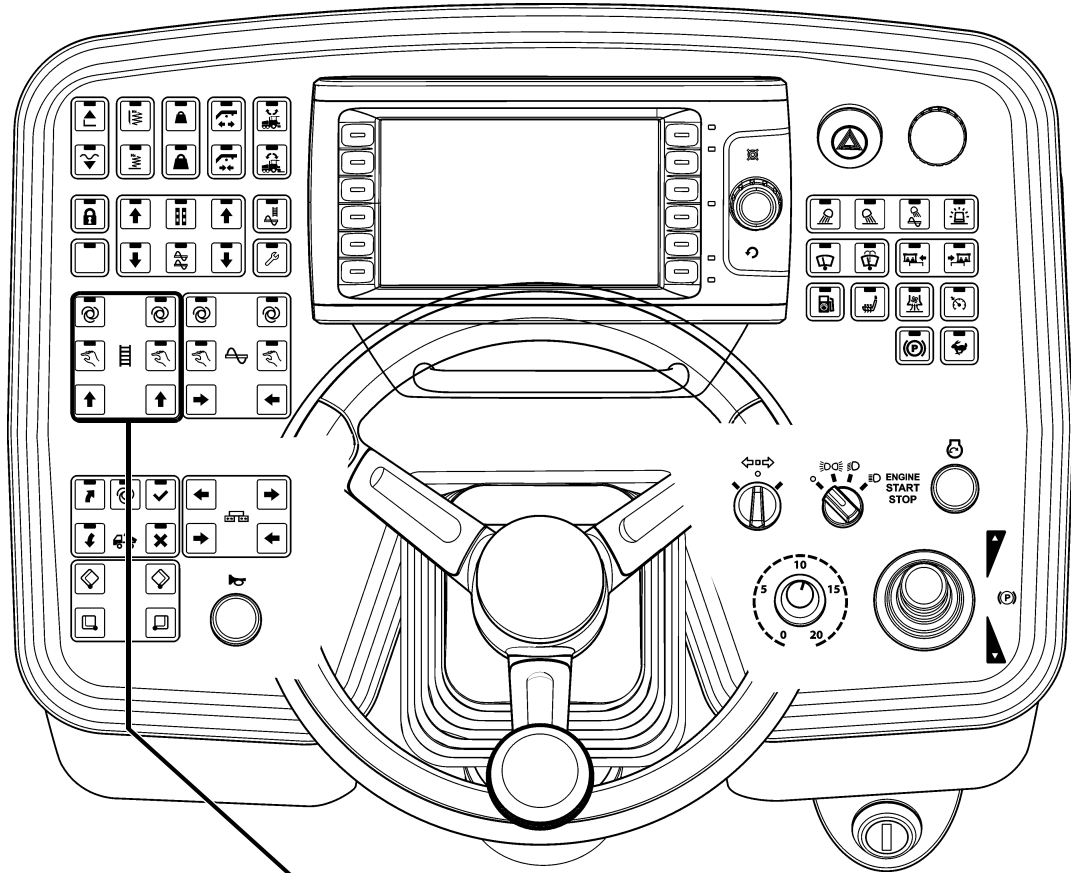
Item	Designation	Brief description	LED display
42	"Truck Assist" AUTO mode ON / OFF	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- The "Truck Assist" function runs automatically.</li> <li>- Switch OFF by pressing the button again</li> <li>- Press button (38) to request a truck with material / Release for truck to approach (GREEN SIGNAL)</li> </ul> <p> The truck is detected by a laser sensor at a distance of 6 m between the paver and the material truck. (GREEN SIGNAL, flashing)</p> <p> The flashing frequency of the display increases with decreasing distance between paver and material truck.</p> <ul style="list-style-type: none"> <li>- On reaching the preset minimum distance, the signal changes over to "STOP". (RED SIGNAL)</li> </ul> <p> The minimum distance is adjusted in the display settings.</p> <p> The other signals have to be triggered by hand.</p>	 <p>The LED display section contains several diagrams. At the top, two vertical bars are shown, each with a green signal. Below these, four vertical bars are shown, with the first and third bars having a green signal and the second and fourth bars having a white signal. A bracket is drawn under the second and fourth bars. At the bottom, two vertical bars are shown, each with a red signal.</p>











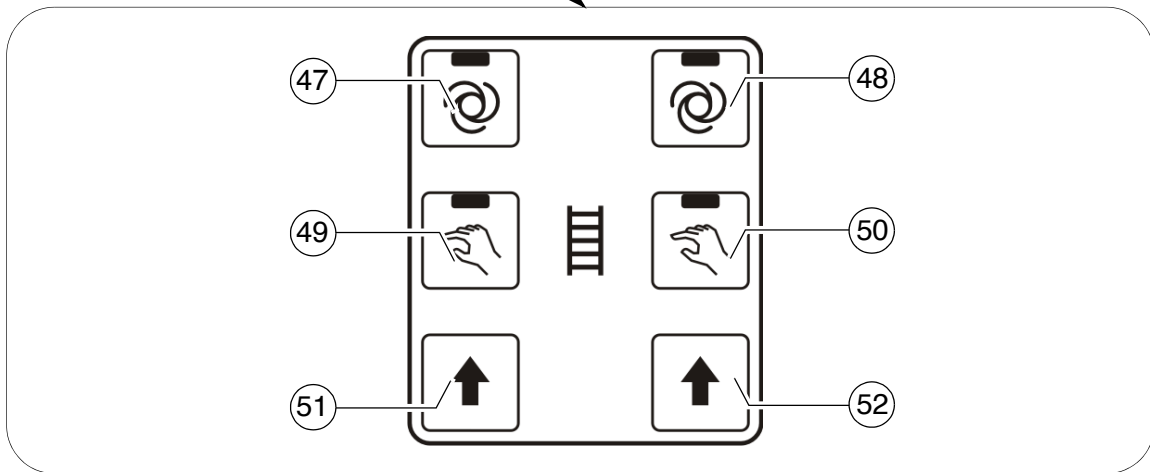
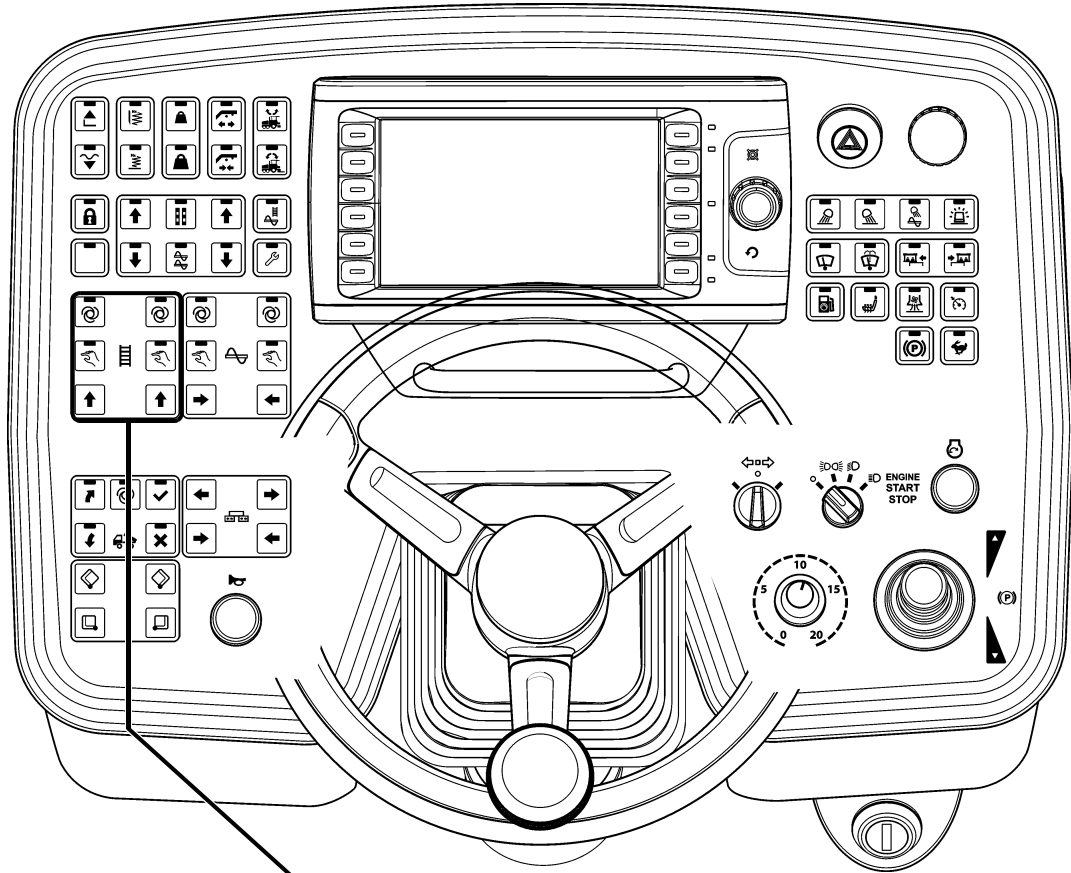
Item	Designation	Brief description
43	Extend left screed	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To extend the left half of the screed</li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
44	Extend right screed	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To extend the right half of the screed</li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
45	Retract left screed	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To retract the left half of the screed</li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
46	Retract right screed	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To retract the right half of the screed</li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>











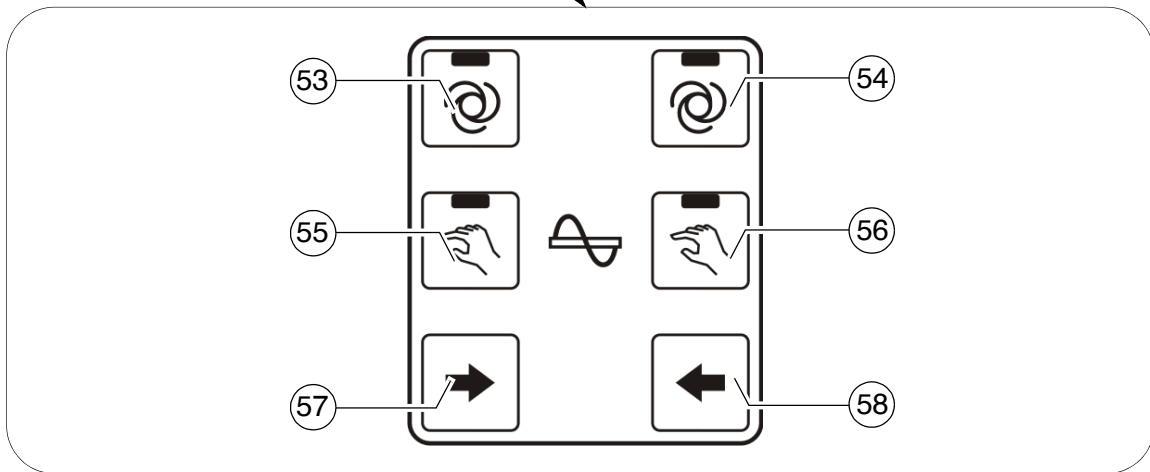
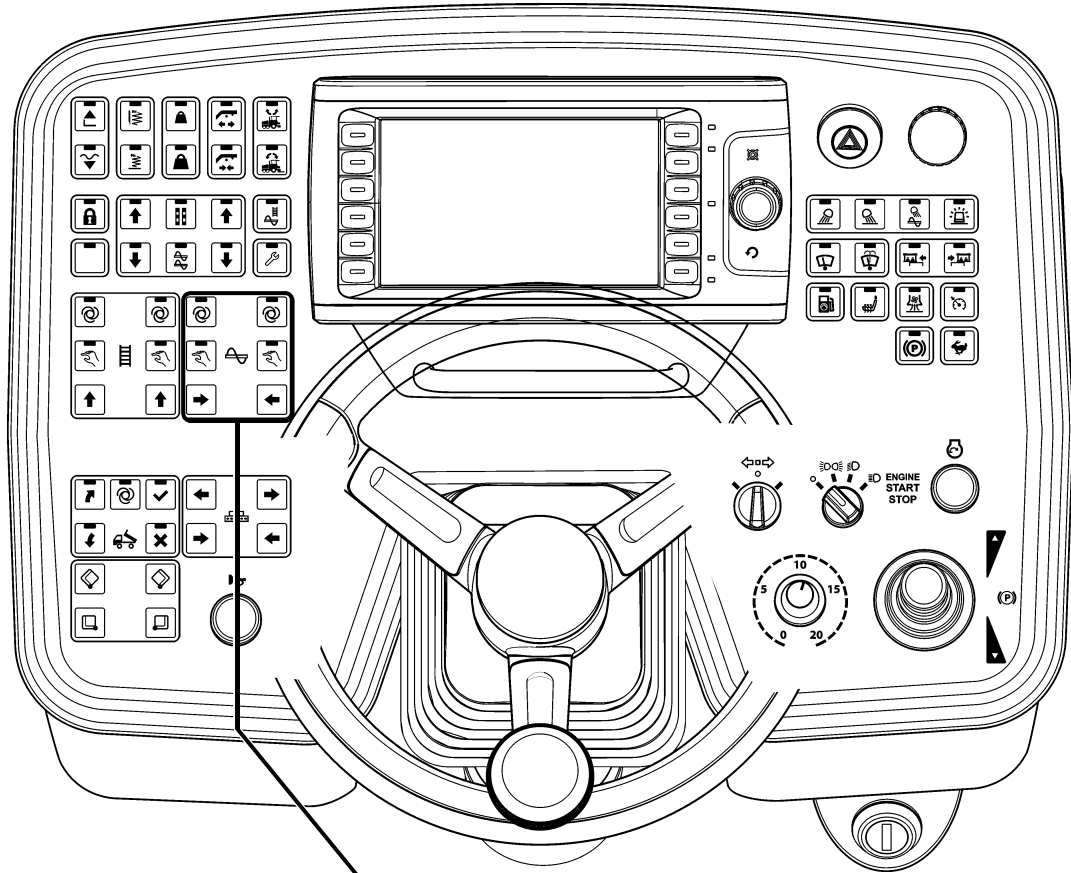
Item	Designation	Brief description
47	Left conveyor "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the left conveyor is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches in the material tunnel.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
48	Right conveyor "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the right conveyor is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches in the material tunnel.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>









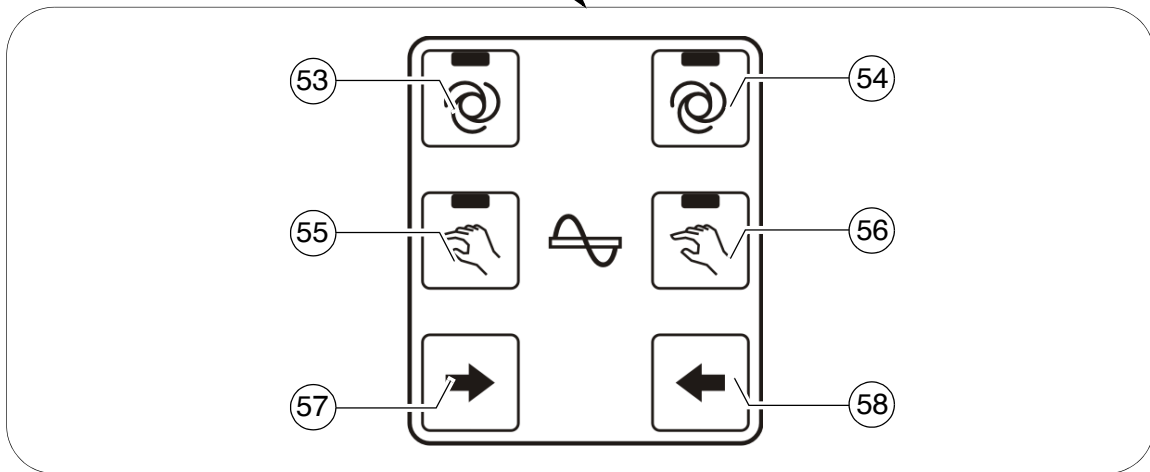
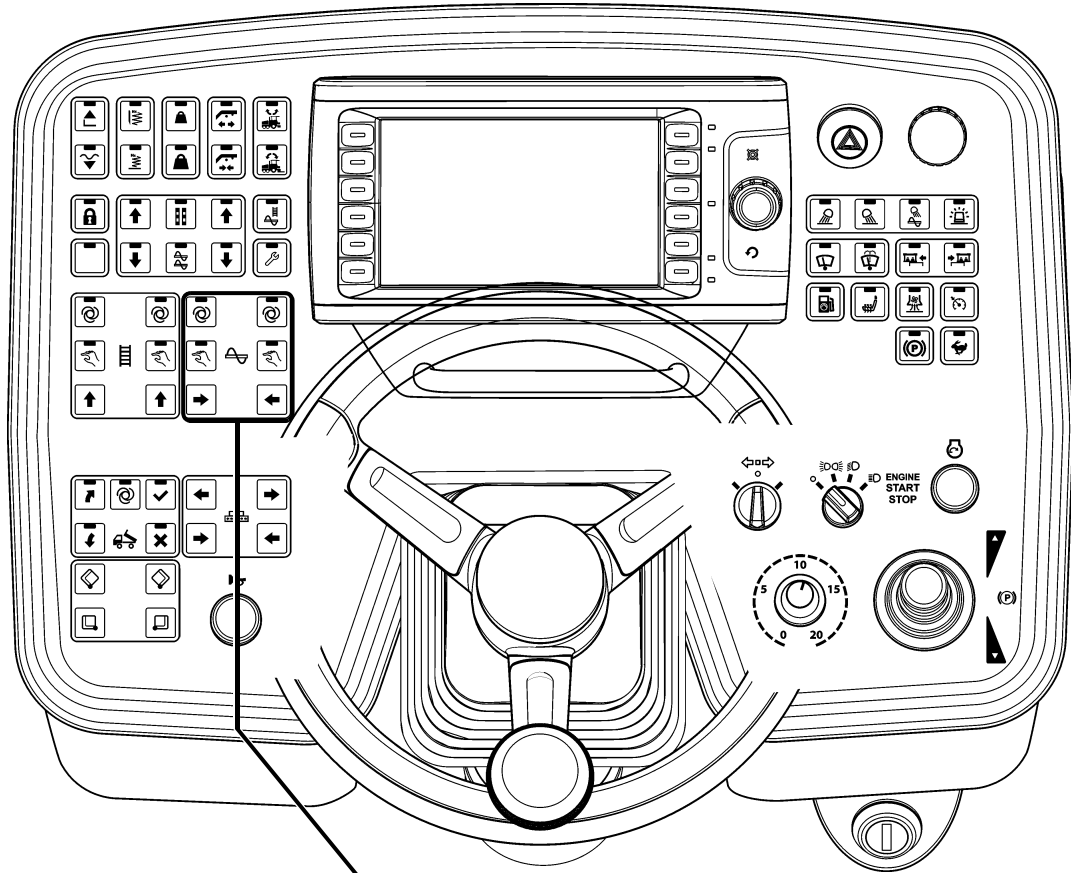
Item	Designation	Brief description
49	Left conveyor "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the left conveyor is switched on continuously with full delivery capacity, without material control via the limit switches in the material tunnel.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> To avoid excessive conveying, the system is shut off at a defined material height!</p> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
50	Right conveyor "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the right conveyor is switched on continuously with full delivery capacity, without material control via the limit switches in the material tunnel.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> To avoid excessive conveying, the system is shut off at a defined material height!</p> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>









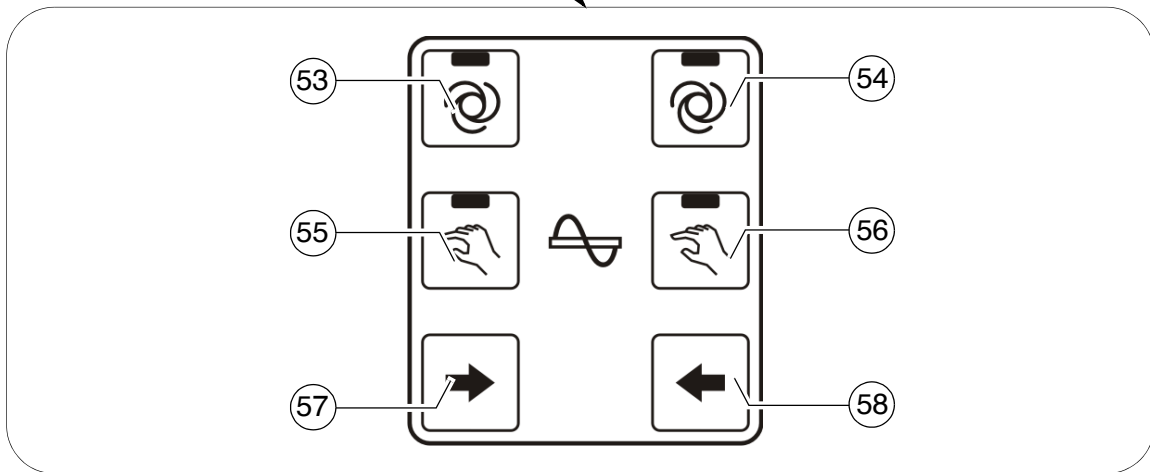
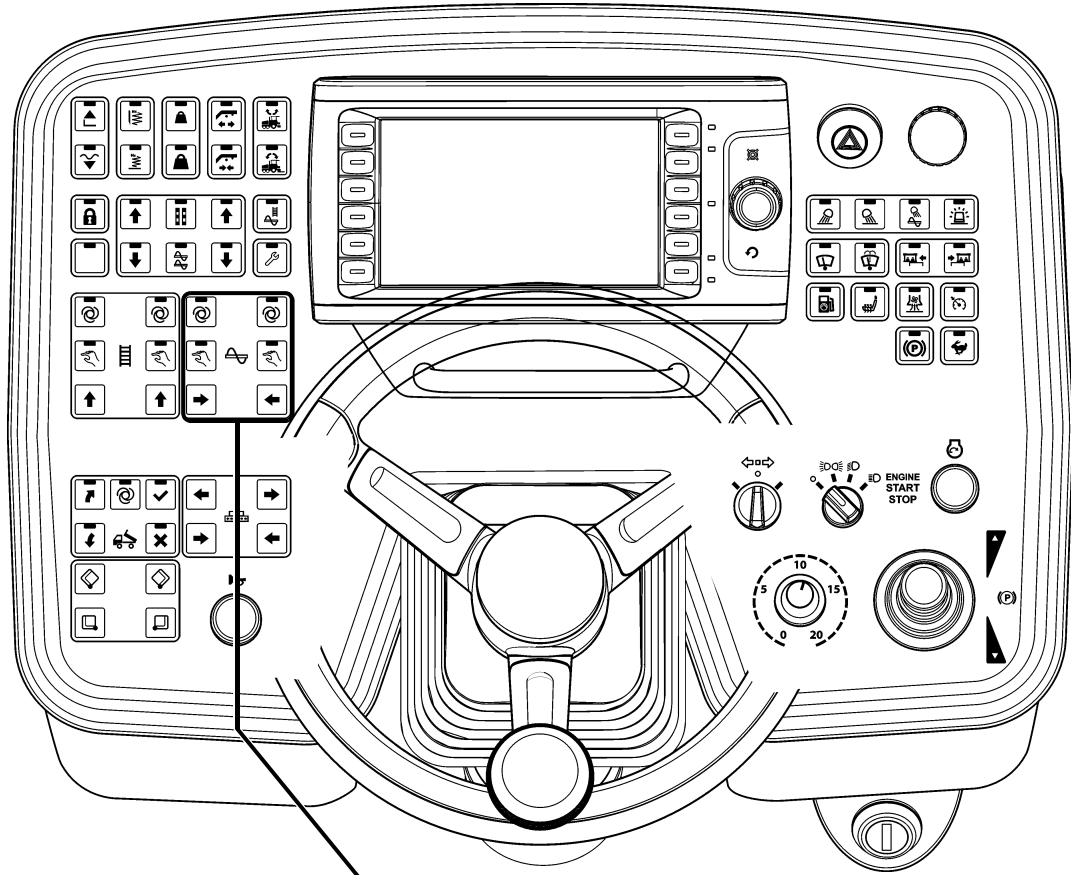
Item	Designation	Brief description
51	"Reverse" left conveyor	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- The conveying direction of the conveyor can be reversed in order to slightly reverse paving material for example which may be present in the material tunnel.</li> </ul> <p> The function can be triggered in all modes of the conveyor.</p> <p> The main function switch locks the conveying function.</p> <p> The conveyor moves towards the hopper for approx. 3-5 seconds.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
52	"Reverse" right conveyor	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- The conveying direction of the conveyor can be reversed in order to slightly reverse paving material for example which may be present in the material tunnel.</li> </ul> <p> The function can only be triggered in the "Auto" mode when the vehicle is moving.</p> <p> The main function switch locks the conveying function.</p> <p> The conveyor moves towards the hopper for approx. 3-5 seconds.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>







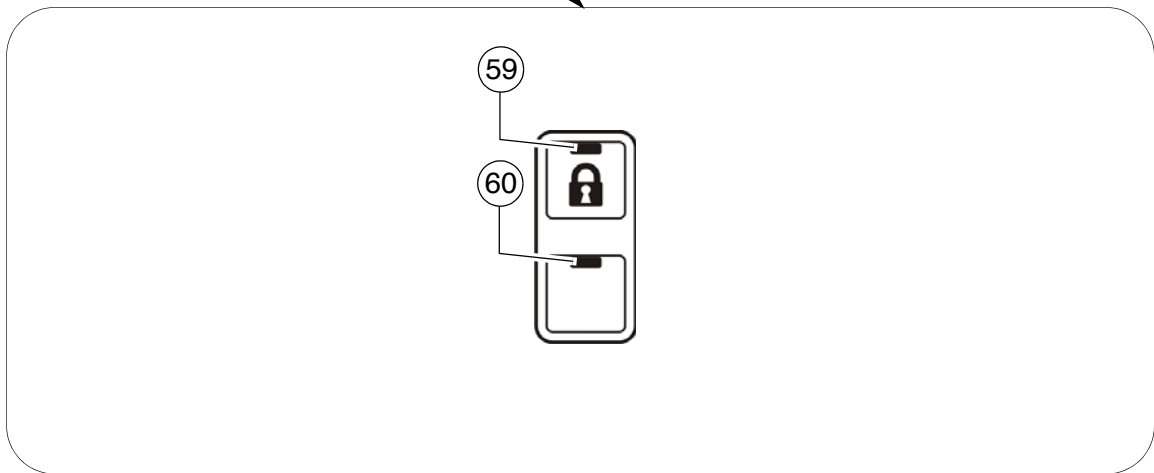
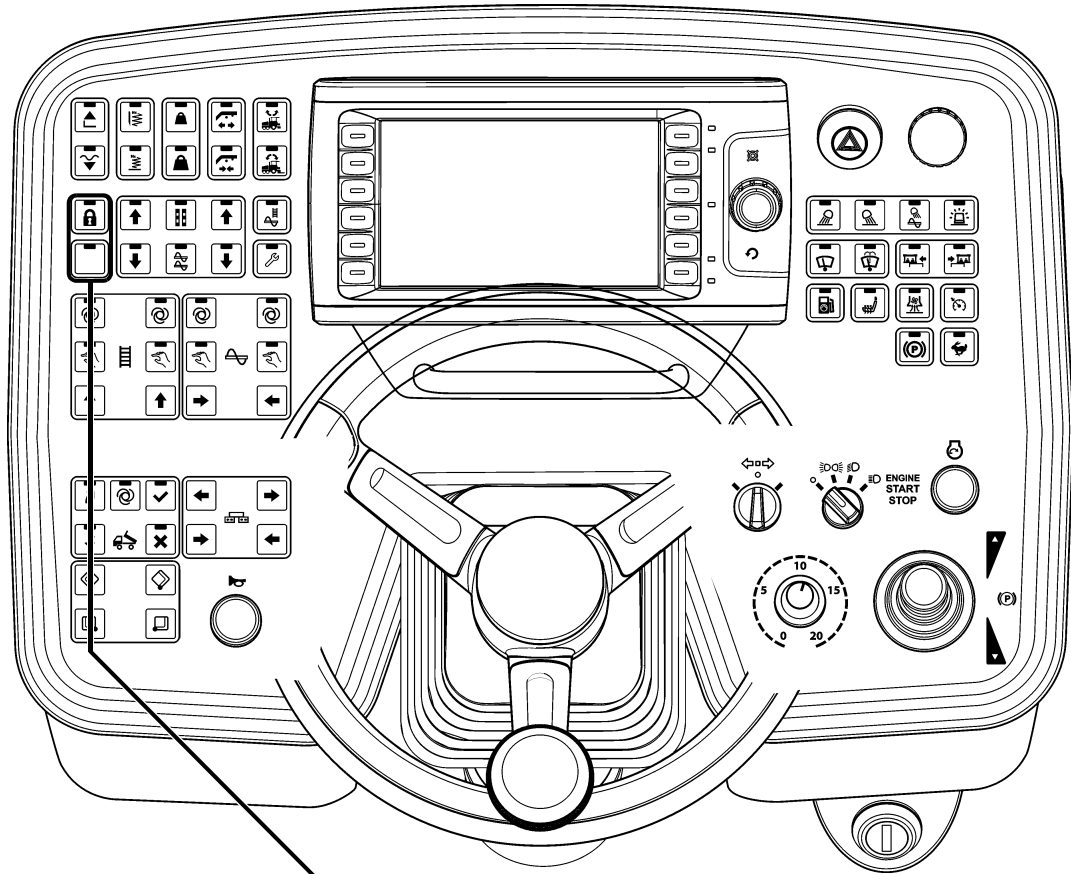
Item	Designation	Brief description
53	Left auger "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the left half of the auger is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
54	Right auger "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the right half of the auger is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches in the material tunnel.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>





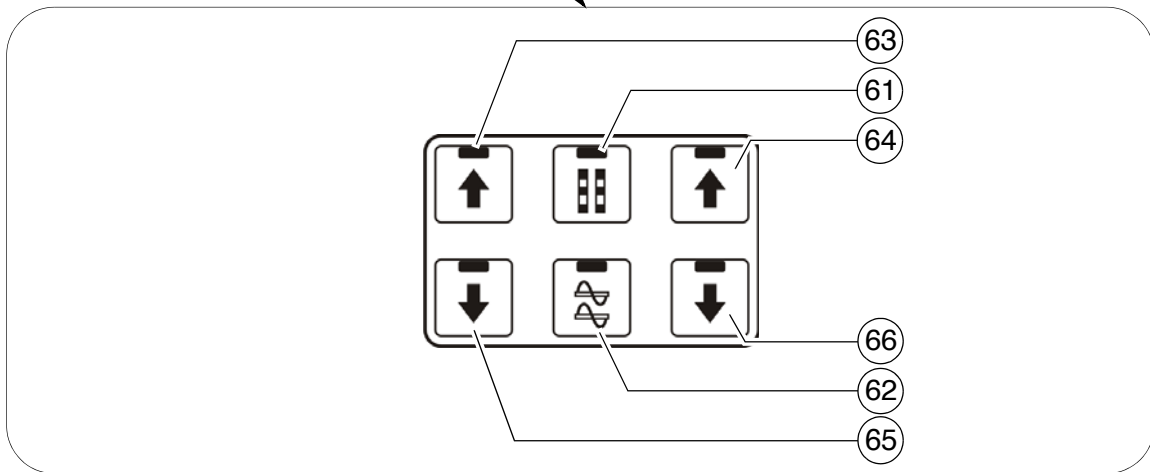
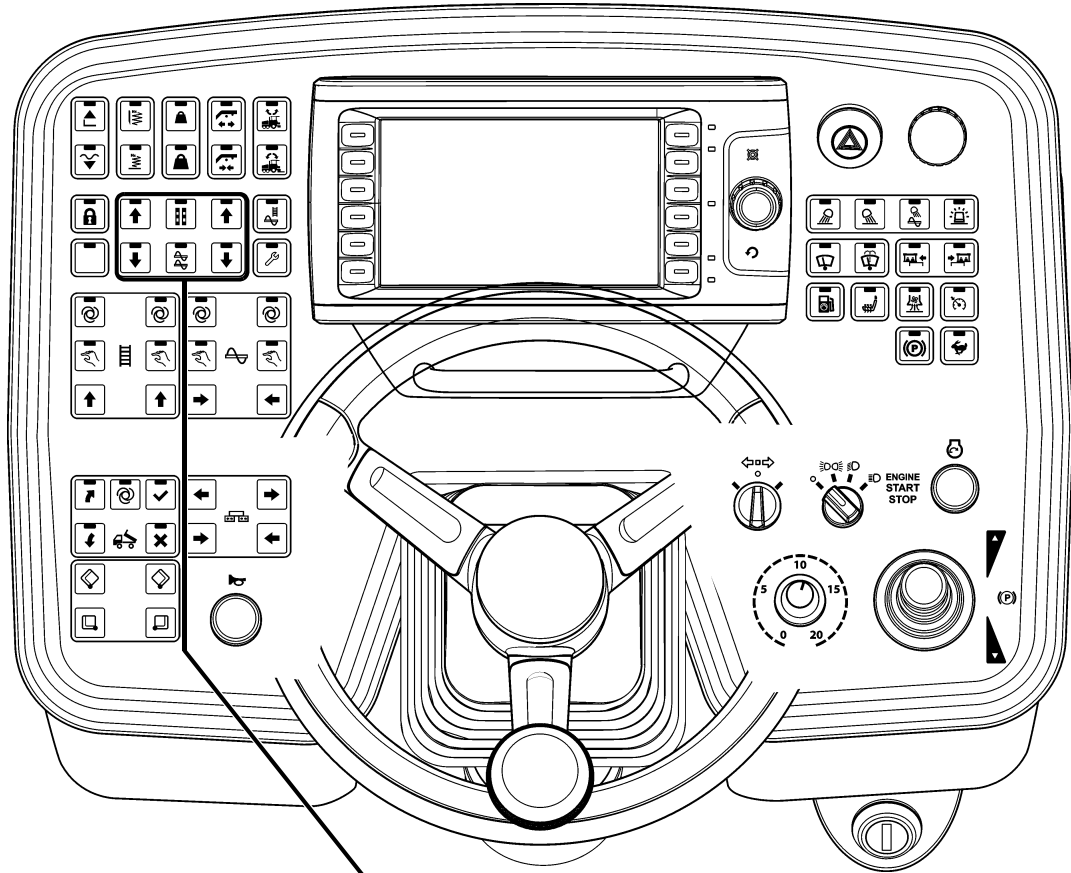
Item	Designation	Brief description
55	Left auger "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the left half of the auger is switched on continuously with full delivery capacity, without material control via the limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
56	Right auger "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the right half of the auger is switched on continuously with full delivery capacity, without material control via the limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>









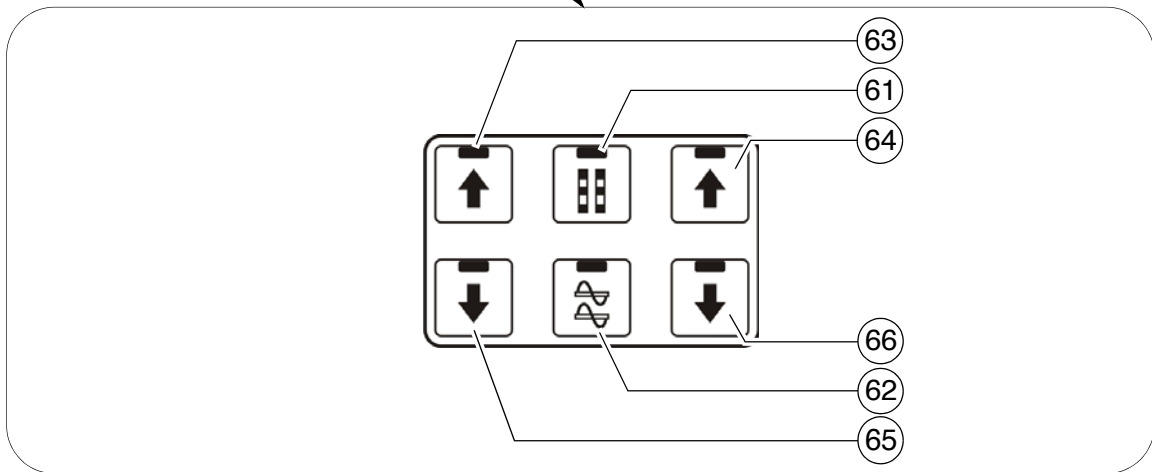
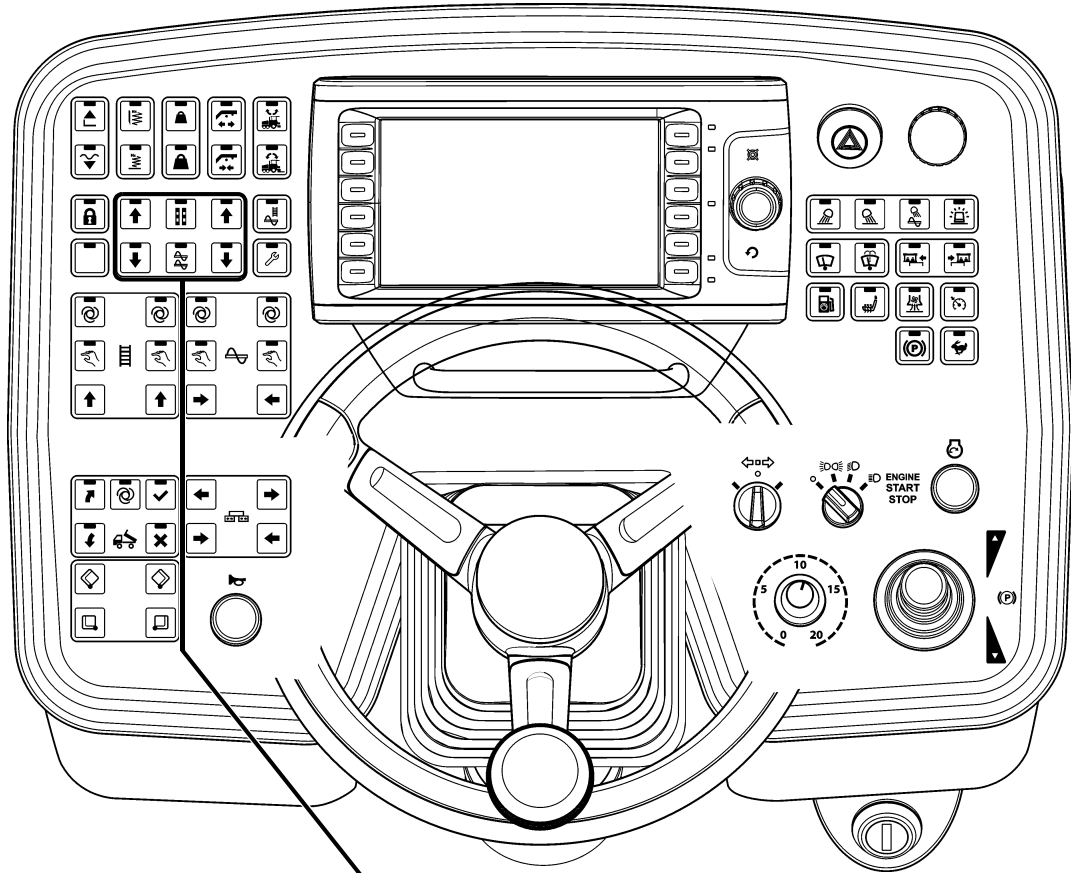
Item	Designation	Brief description
57	Left auger "MANUAL" Conveying direction inwards	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To manually trigger the conveying function for the left half of the auger, conveying direction inwards.</li> </ul> <p> After triggering the function, a previously engaged "AUTO" or "MANUAL" function is switched off.</p> <p> On manual triggering, the automatic function is overridden with reduced delivery capacity.</p>
58	Right auger "MANUAL" Conveying direction inwards	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To manually trigger the conveying function for the right half of the auger, conveying direction inwards.</li> </ul> <p> After triggering the function, a previously engaged "AUTO" or "MANUAL" function is switched off.</p> <p> On manual triggering, the automatic function is overridden with reduced delivery capacity.</p>







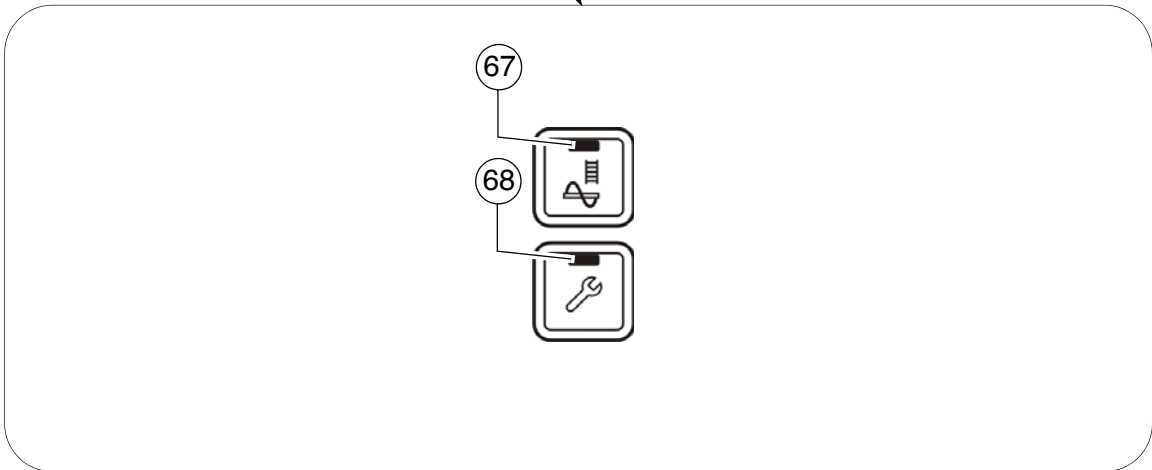
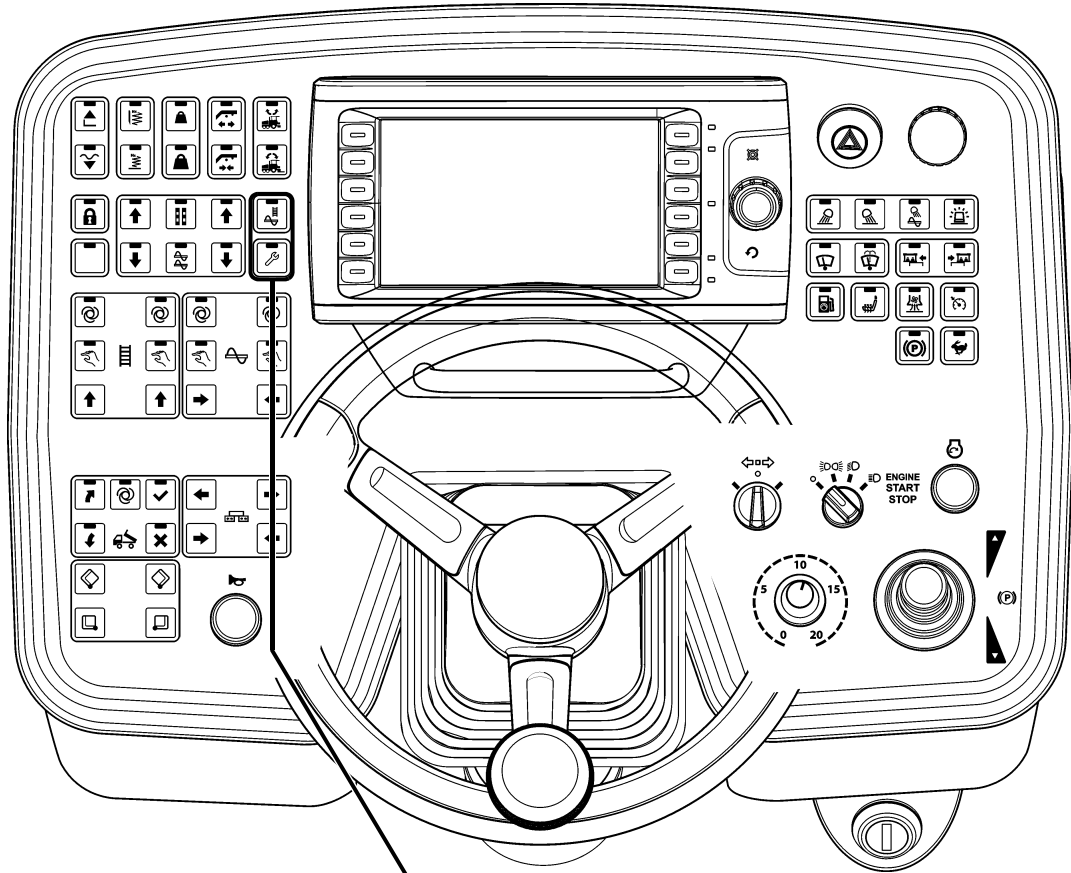
Item	Designation	Brief description
59	Main function switch	<p>Detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- To lock all functions relevant to paving. Despite "Auto" settings in the individual functions, these are not activated when the drive lever is swivelled out.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> The preset vehicle can be relocated and released at the new paving location. The paving process is continued on swivelling the drive lever out.</p> <p> On restarting, the function is set to "ON".</p>
60	Not used	







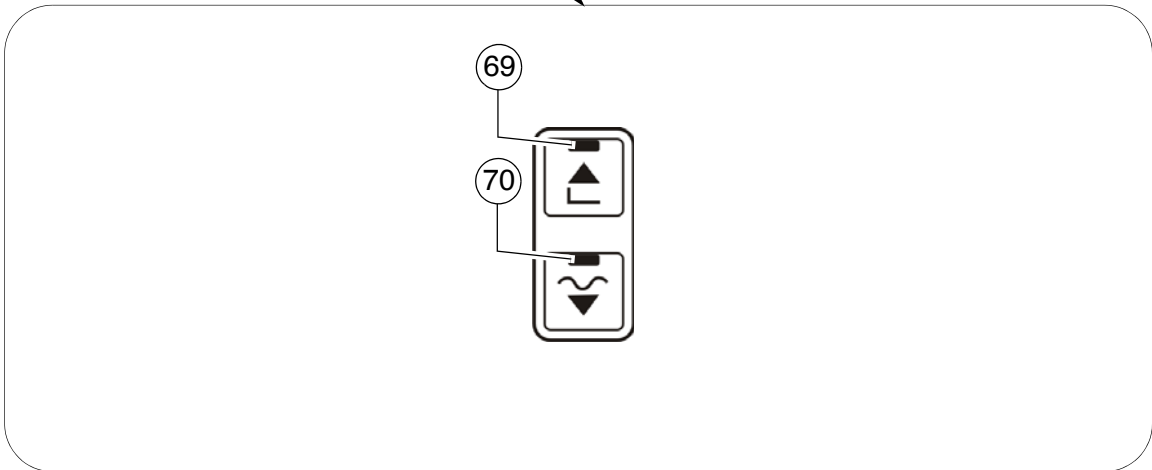
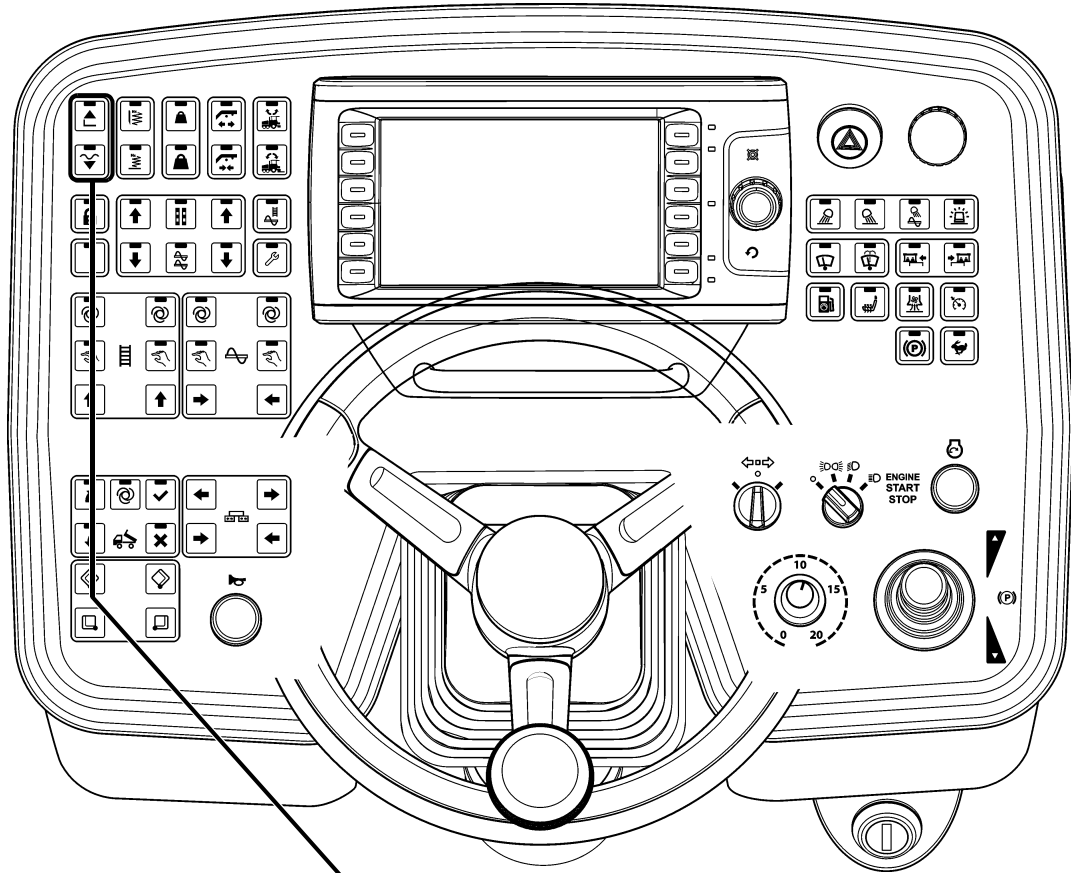
Item	Designation	Brief description
61	Levelling cylinder adjustment	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- For manual actuation of the levelling cylinders when the automatic levelling system is switched off.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The corresponding switch on the remote control must be switched to "Manual" for this function.</p> <p> Levelling cylinder adjustment is carried out with the adjustment buttons in the displayed arrow direction.</p> <p> This function is also activated when the remote control is not connected!</p>
62	Raising/lowering auger (○)	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- For hydraulic adjustment of the auger height.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> The height can be read on the scales to the left and the right of the auger crossbeam support. Rule of thumb: Paving thickness plus 5 cm (2 inches) equals the auger crossbeam height.</p> <p> Actuate both relevant adjustment switches at the same time as the auger crossbeam otherwise jams!</p> <p> Auger adjustment is carried out with the adjustment buttons in the displayed arrow direction!</p>











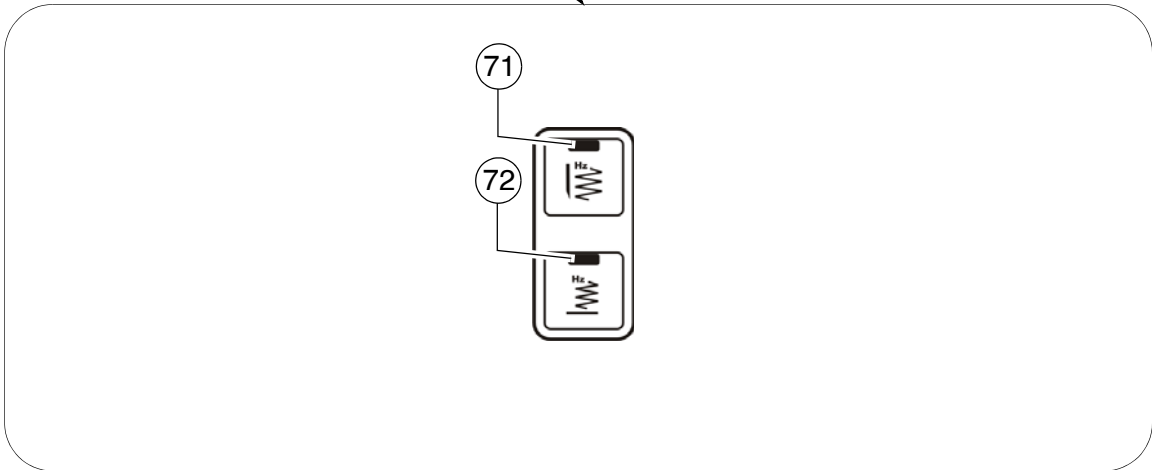
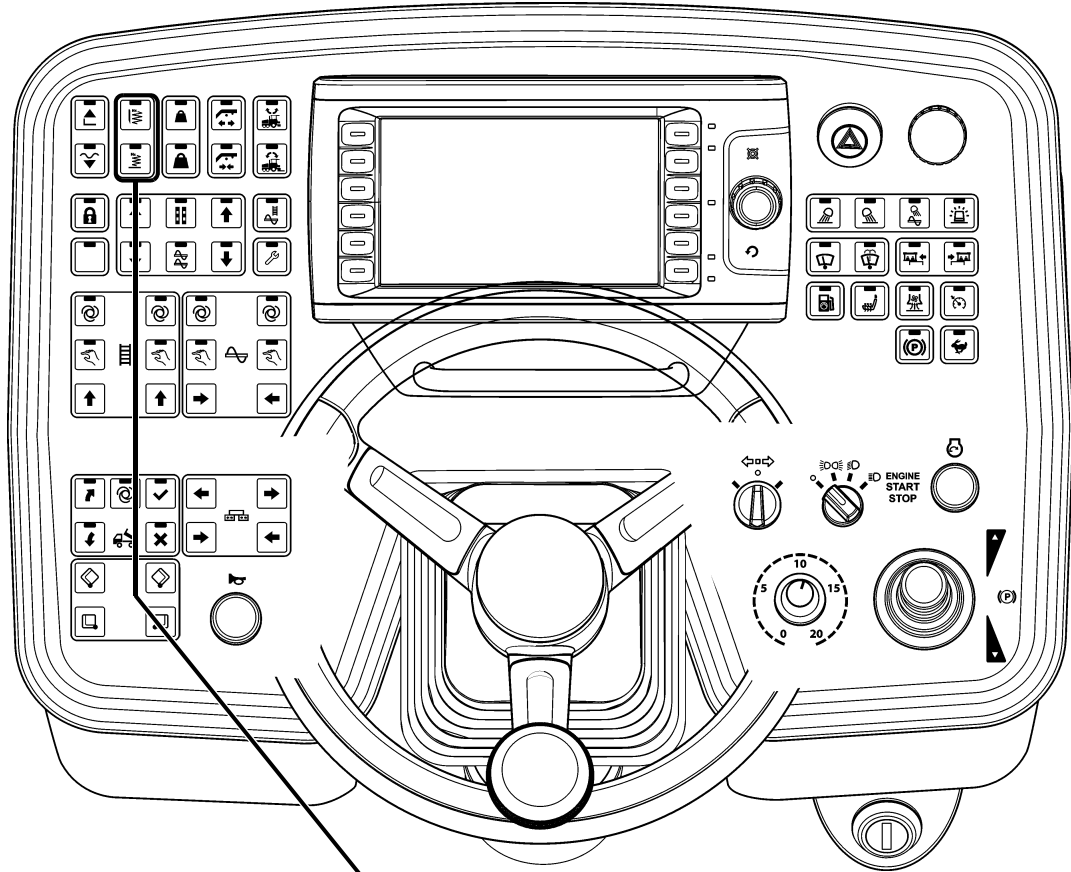
Item	Designation	Brief description
63	Adjustment button: Retract / lift on left	Pushbutton function: - To adjust the selected function in the corresponding direction.  On actuation, heed danger zones of moving parts of the vehicle!
64	Adjustment button: Retract / lift on right	Pushbutton function: - To adjust the selected function in the corresponding direction.  On actuation, heed danger zones of moving parts of the vehicle!
65	Adjustment button: Extend / lower on left	Pushbutton function: - To adjust the selected function in the corresponding direction.  On actuation, heed danger zones of moving parts of the vehicle!
66	Adjustment button: Extend / lower on right	Pushbutton function: - To adjust the selected function in the corresponding direction.  On actuation, heed danger zones of moving parts of the vehicle!







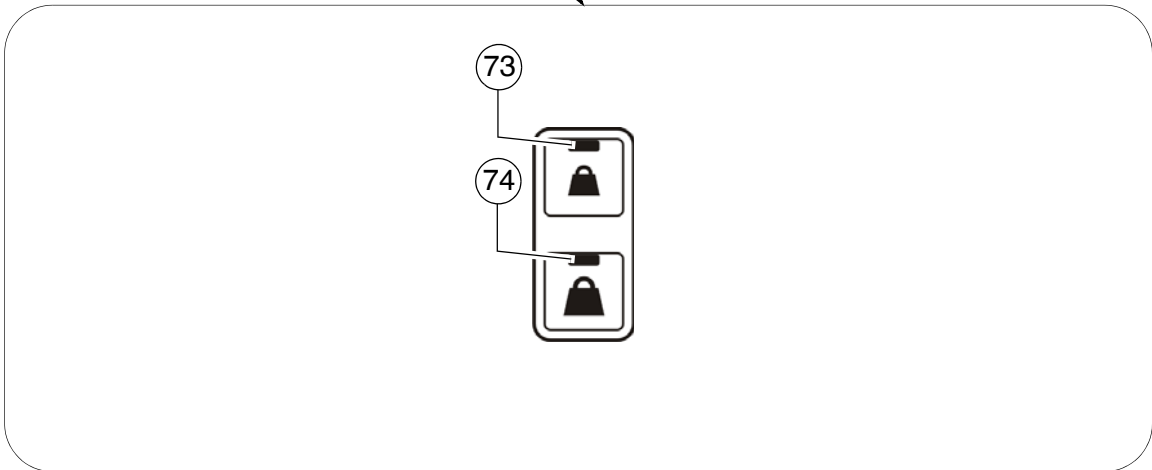
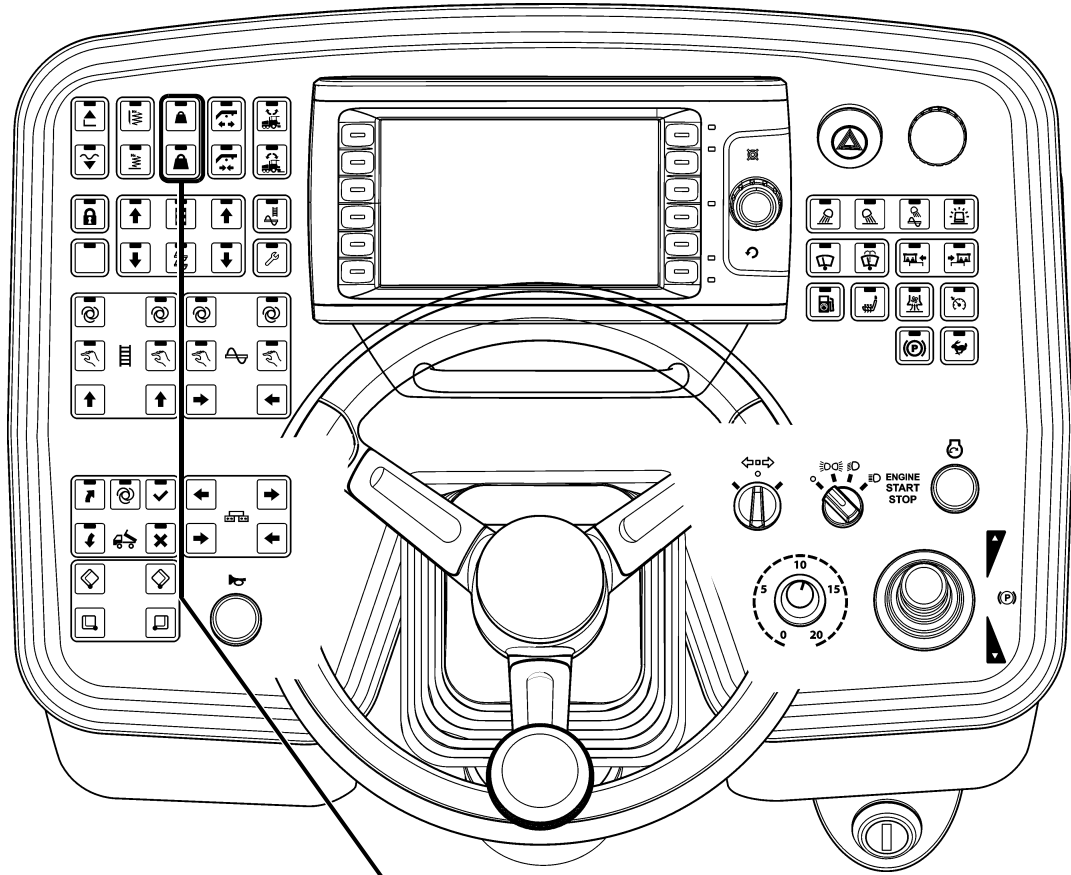
Item	Designation	Brief description
67	Fill vehicle for paving process	<p>Detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- Filling function for the paving process. The diesel engine's speed is increased to the preselected nominal speed and all conveying functions set to "Automatic" (conveyor and auger) are engaged.</li> </ul> <p> The main function switch must be set to the OFF position.</p> <ul style="list-style-type: none"> <li>- Switch OFF by pressing the button again or by swivelling the drive lever out to the paving position.</li> <li>- On reaching the adjusted material height (material sensor), the filling function is automatically switched off.</li> </ul> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
68	Set-up mode	<p>Detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- When the vehicle is stationary, this function enables all operating functions, which are only activated when the drive lever is swivelled out (vehicle driving), to be started up.</li> </ul> <p> The main function switch must be set to the OFF position.</p> <p> The engine speed is increased to the preselected nominal value.</p>



Item	Designation	Brief description
69	Lift screed	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- For lifting the screed (LED ON) and for switching off the "Screed floating position" function</li> </ul> <p> Check whether the screed transport safeguard is inserted!</p> <p> On actuation, the levelling function in AUTO mode is switched off.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
70	Paving stop + relief pressure / Lower screed + floating position	<p>Button with detent switch function and LED feedback</p> <p> The main function switch must be set to the OFF position.</p> <ul style="list-style-type: none"> <li>- Button function: Press the button briefly until LED ON. The screed is held in paving stop + relief pressure.</li> </ul> <p> Screed may lower slowly!</p> <ul style="list-style-type: none"> <li>- Press and hold the button to lower the screed at higher speed.</li> <li>- Resting function: Press the button briefly (LED ON) - the screed is lowered. Press the button briefly again (LED OFF) - the screed is stopped.</li> <li>- Screed floating position: Pressing the button switches the LED ON and the screed is in readiness in the "floating position", which is activated via the swivelled out drive lever.</li> <li>- Switch off by pressing the button again or via the lift screed button.</li> </ul> <p> During paving, the screed always remains in its floating position. During intermediate stops (drive lever in centre position), the screed is switched to stop paving + relief pressure.</p> <p> Check whether the screed transport safeguard is inserted!</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>

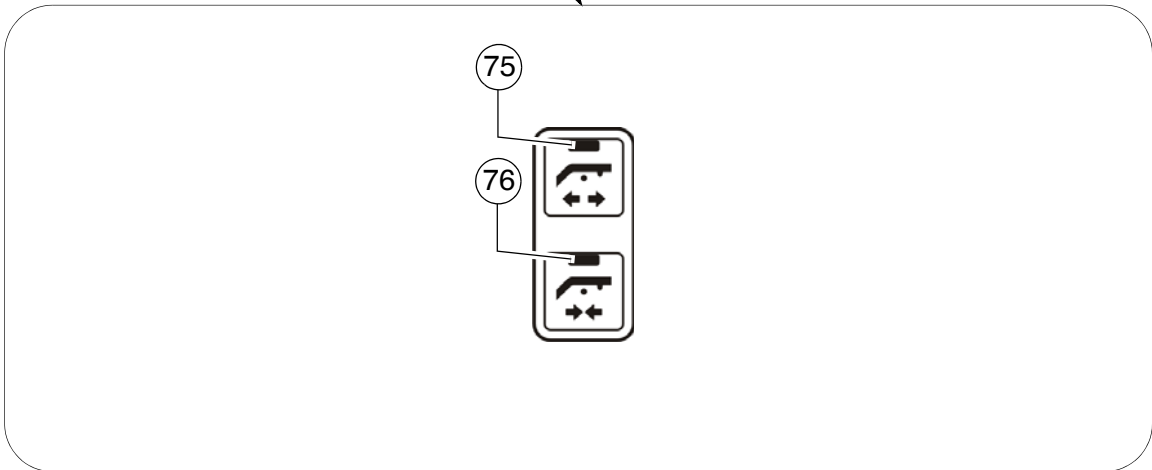
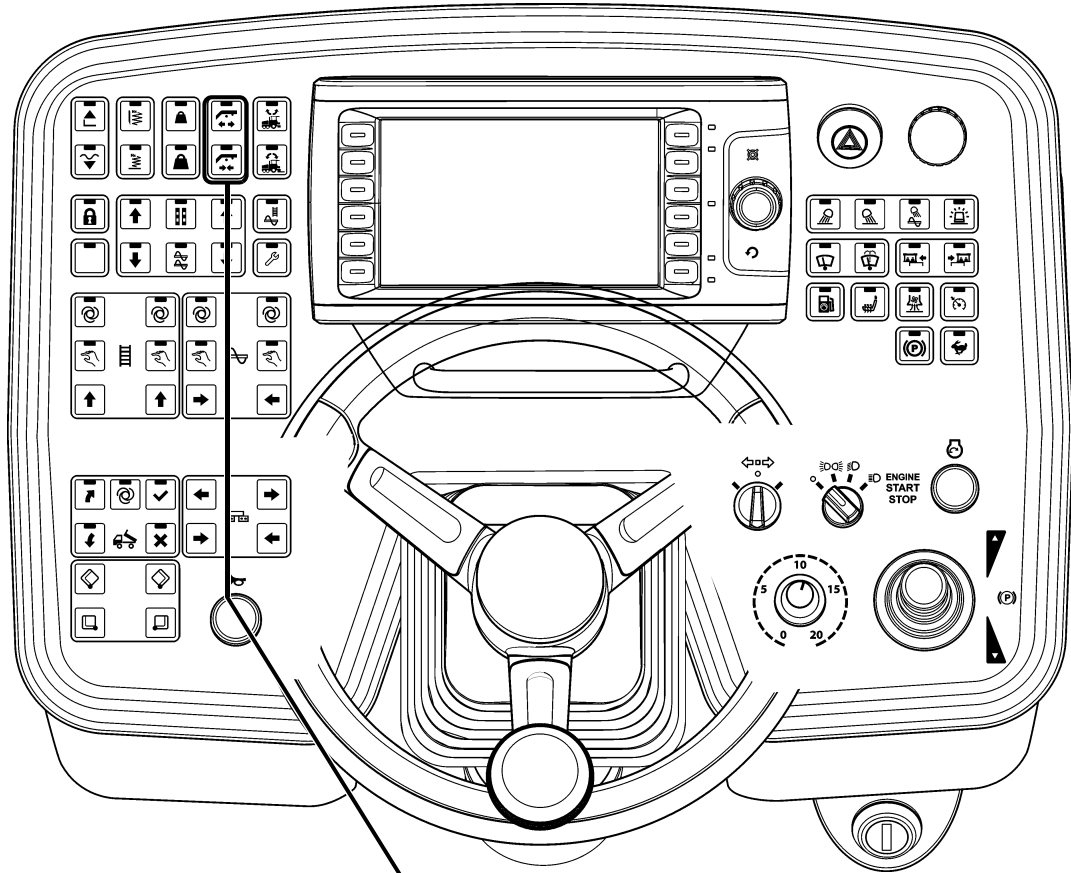


Item	Designation	Brief description
71	Tamper (screed-specific)	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- Tamper ON and OFF function.</li> <li>- Activation is carried out by swivelling the drive lever out.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> The main function switch must be set to the OFF position.</p> <p> The function is preset in conjunction with the "Set-up mode" button.</p>
72	Vibration (screed-specific)	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- Vibration ON and OFF function.</li> <li>- Activation is carried out by swivelling the drive lever out.</li> <li>- Switch OFF by pressing the button again.</li> </ul> <p> The main function switch must be set to the OFF position.</p> <p> The function is preset in conjunction with the "Set-up mode" button.</p>





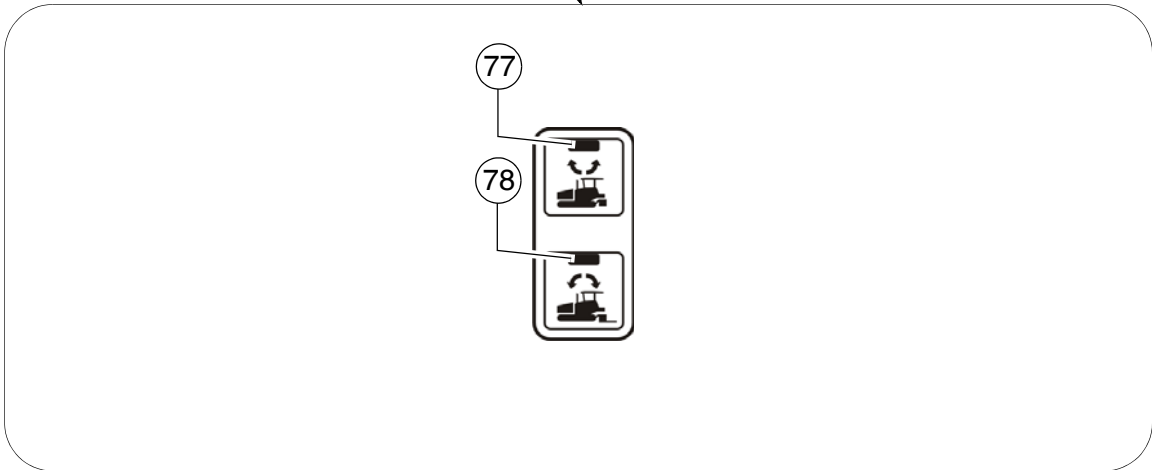
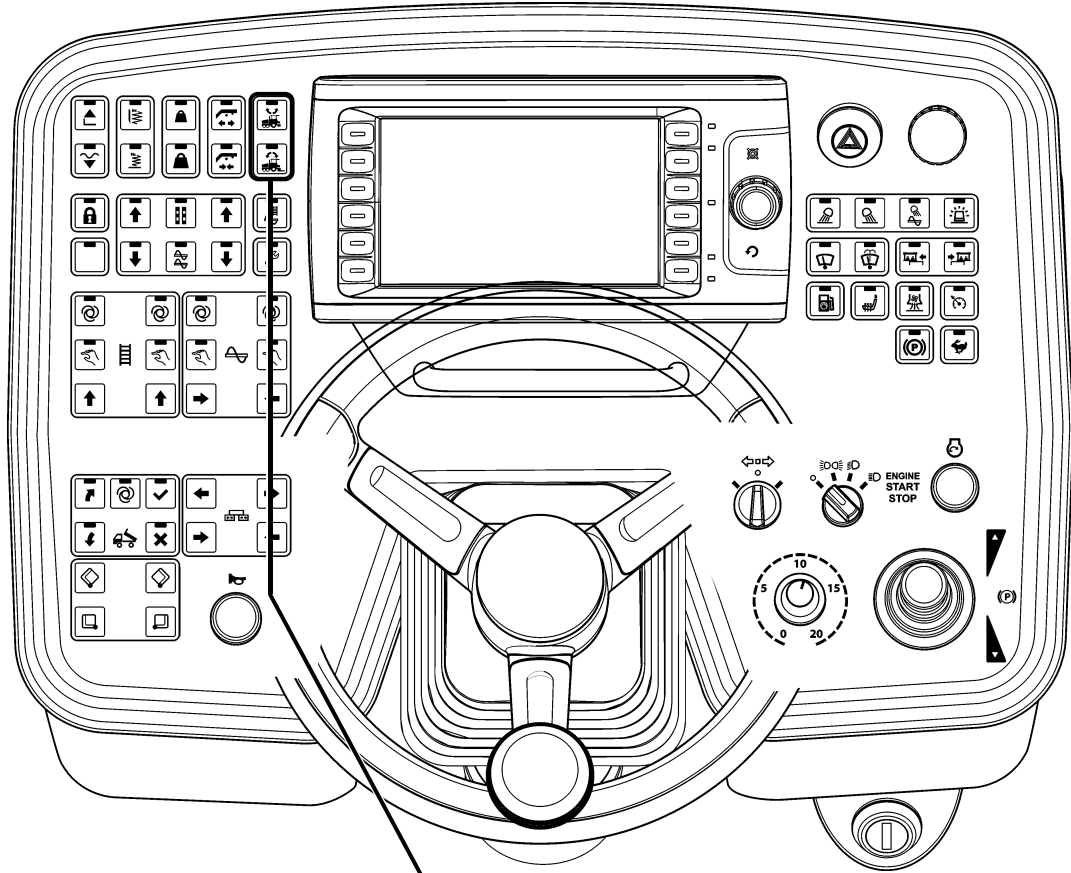
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Item	Designation	Brief description
73	Screed relieving	Button with detent switch function and LED feedback: <ul style="list-style-type: none"><li>- For relieving the screed to influence the traction force and compaction ratio.</li><li>- Switch OFF by pressing the button again or switching between screed relieving and screed charging.</li><li>- To preset the hydraulic oil pressure, switch this button and the "Set-up mode" button to "ON".</li></ul>
74	Screed charging	Button with detent switch function and LED feedback: <ul style="list-style-type: none"><li>- For relieving the screed to influence the traction force and compaction ratio.</li><li>- Switch OFF by pressing the button again or switching between screed relieving and screed charging.</li><li>- To preset the hydraulic oil pressure, switch this button and the "Set-up mode" button to "ON".</li></ul>





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Item	Designation	Brief description
75	Extend cross-beam lock (○)	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"><li>- To hydraulically extend the crossbeam lock.</li></ul> <p> Before retracting and extending the lock, raise the crossbeams slightly over the locking bolts (raise the screed)!</p>
76	Retract cross-beam lock (○)	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"><li>- To hydraulically retract the screed lock.</li></ul> <p> Before retracting and extending the lock, raise the crossbeams slightly over the locking bolts (raise the screed)!</p>





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The "Set Assist" function prepares the paver to relocate to another section of road-works or for transportation.  
 When the function is activated, previously selected vehicle functions are carried out to make the vehicle ready for transport.  
 The function can be reset after relocating the paver.  
 This restores the corresponding elements to the previously saved working condition /position.
  
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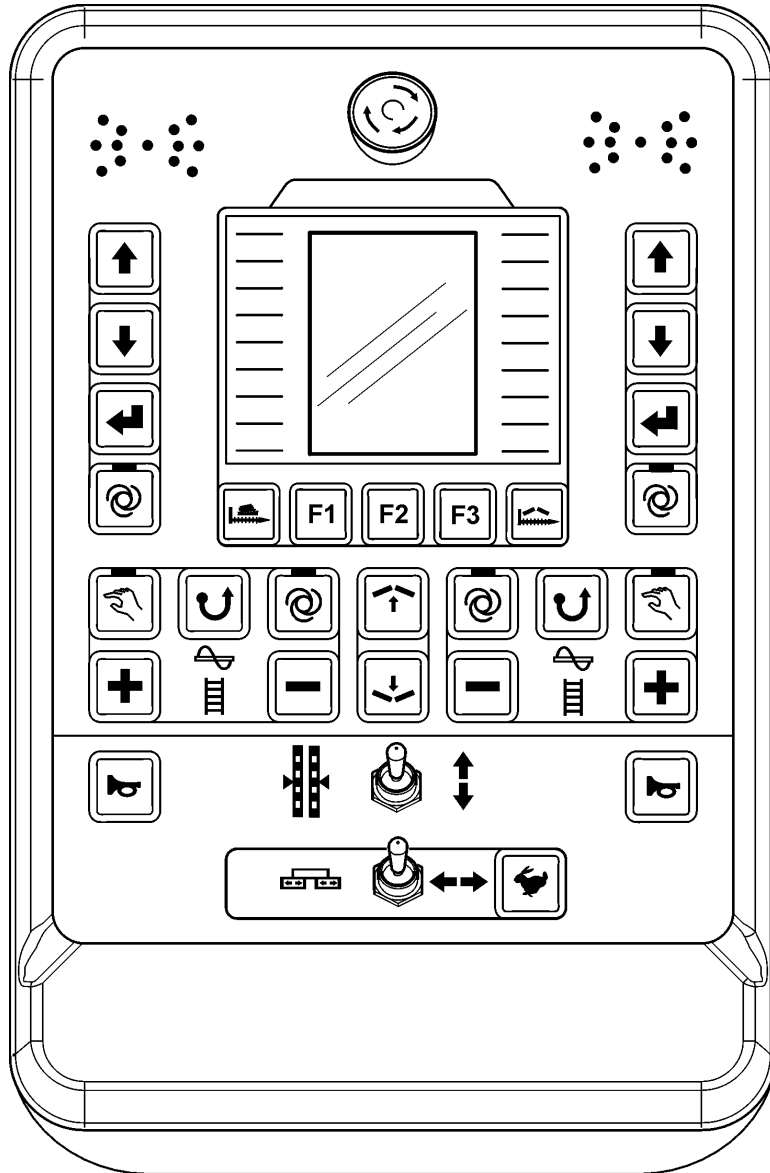
The elements that can be actuated by the function are selected in the corresponding menu in the vehicle display.
  
- 


The following conditions must be fulfilled to use the function:


  - Drive lever (13) in neutral position, road speed "0"
  - Transport speed (33) - OFF
  - Main function switch (59) - OFF
  - Set-up mode (68) OFF

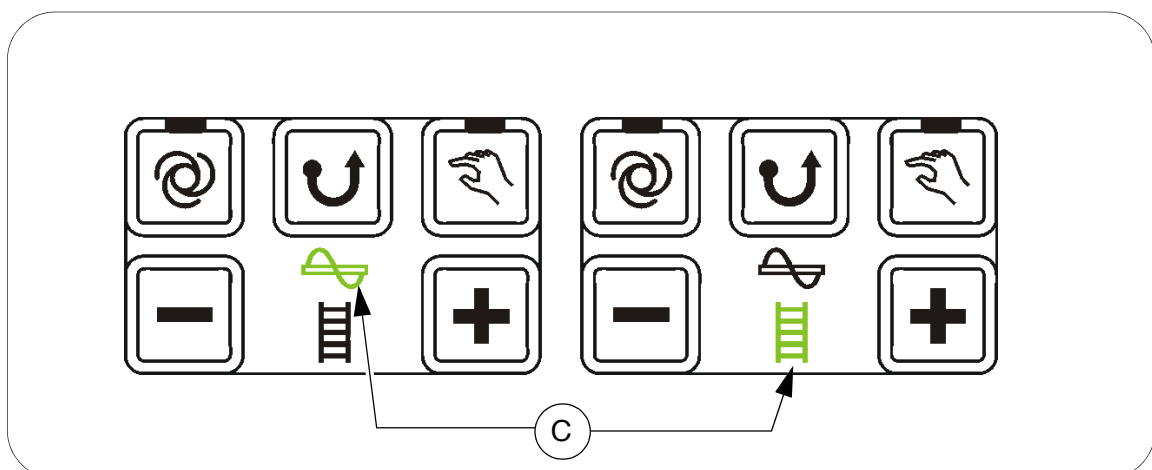
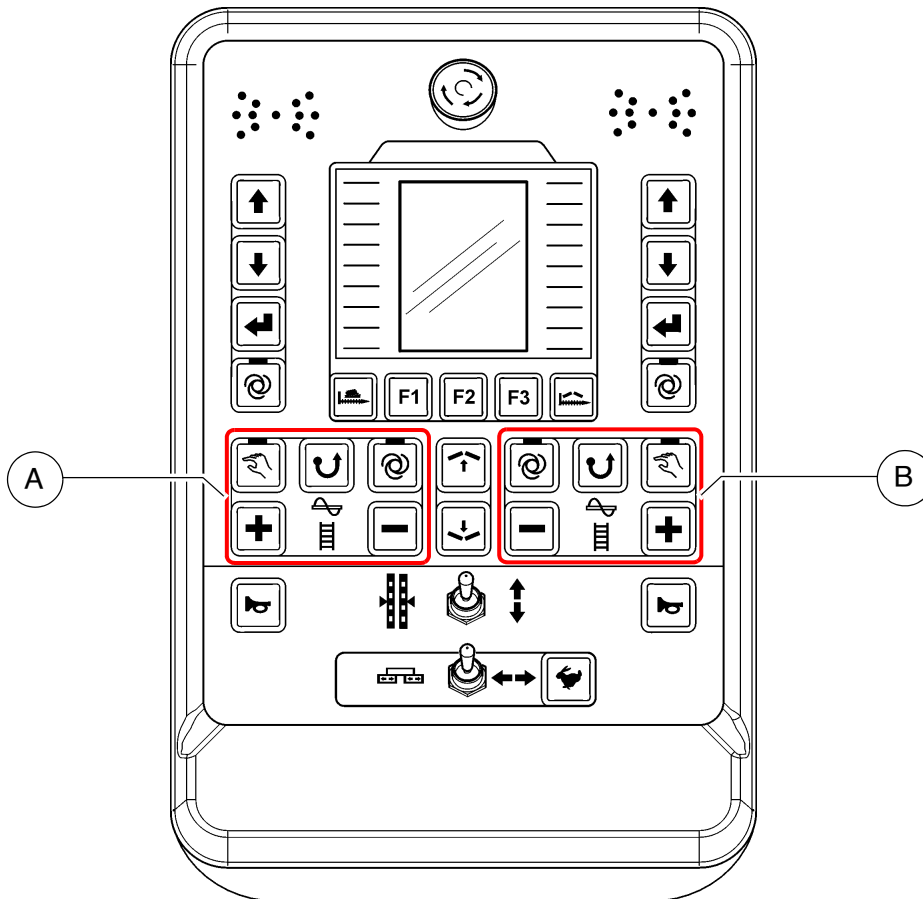
Item	Designation	Brief description
77	Set "Set assist" (○)	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To set up the transport condition.</li> <li>- Press and hold button (LED flashes) until completion of all functions to achieve transport condition (LED ON).</li> </ul> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
78	Reset "Set assist" (○)	<p>Pushbutton function with LED feedback:</p> <ul style="list-style-type: none"> <li>- To set up the previous working condition.</li> <li>- Press and hold button (LED flashes) until completion of all functions to achieve last saved working condition (LED ON).</li> </ul> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>

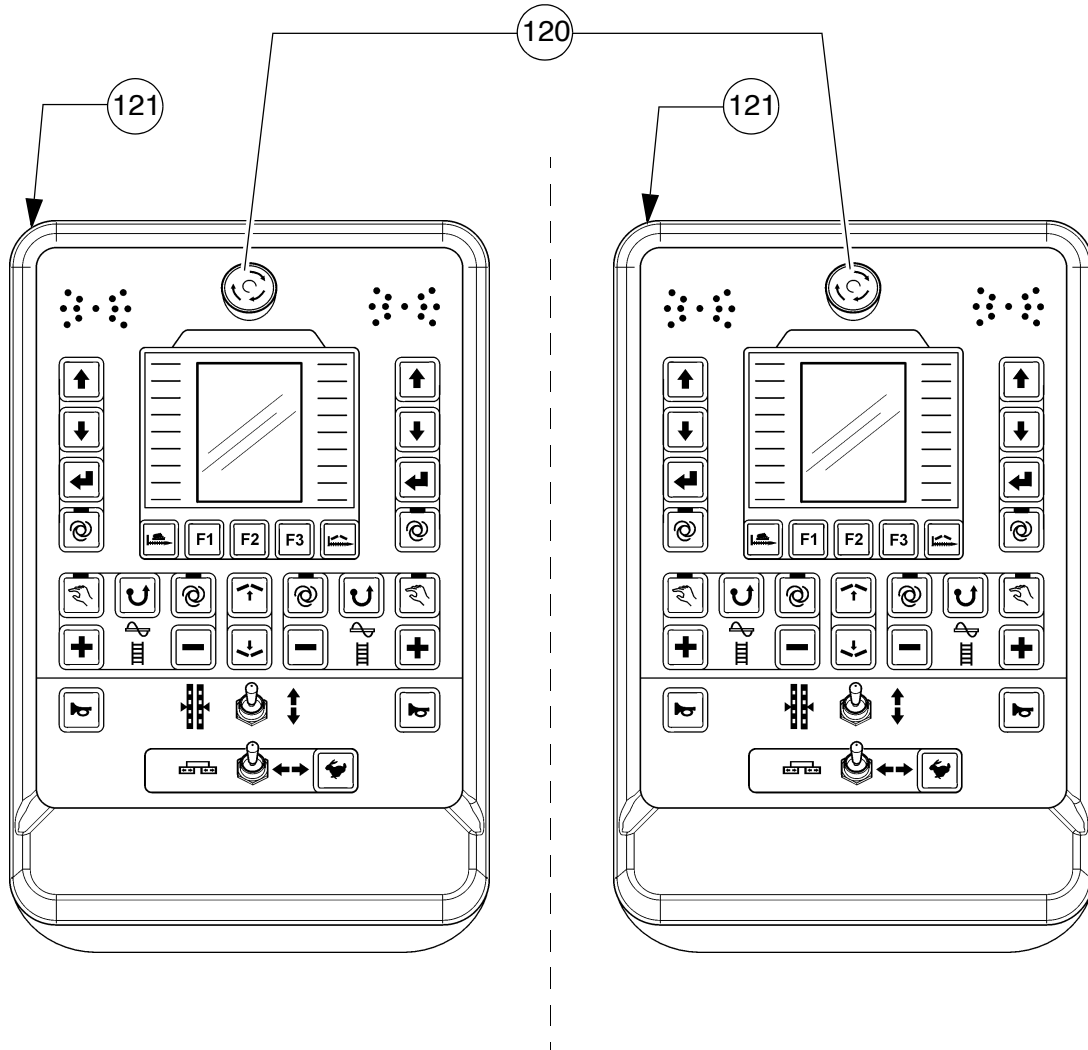
### 3 Remote control




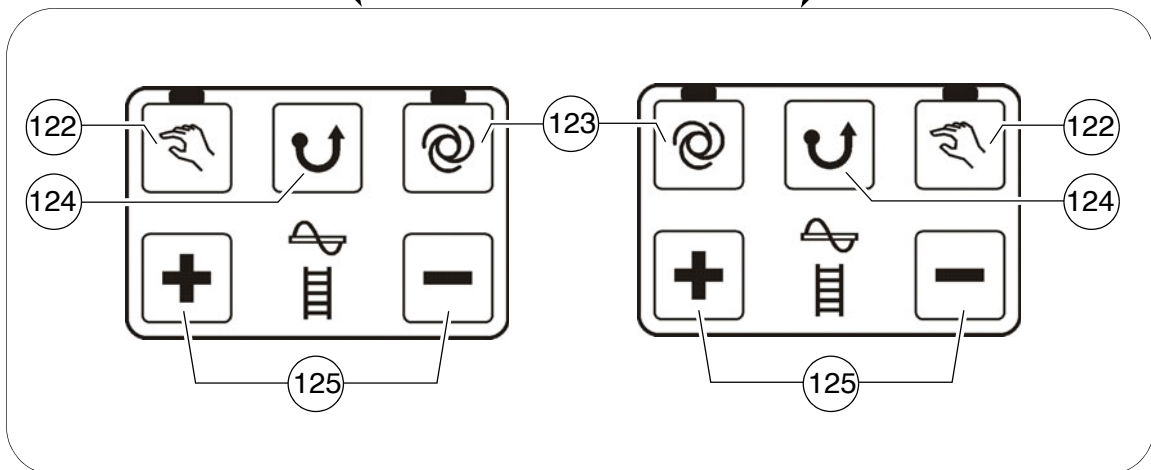
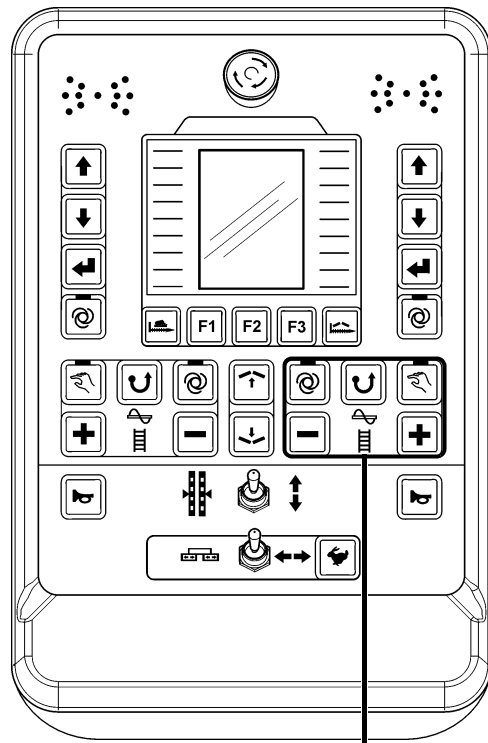
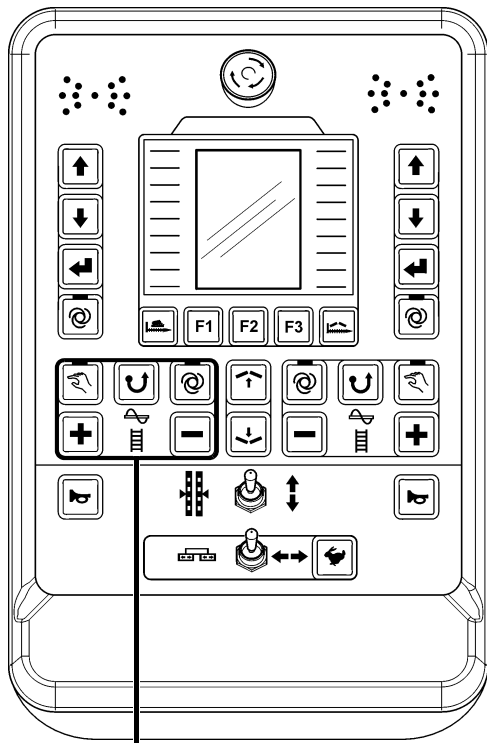
 Depending on the side of the vehicle, the button blocks (A) and (B) are assigned to either the auger or the conveyor control system. The relevant element which is controlled is indicated by an illuminated symbol (C).







 Important! Do not disconnect remote controls during operation!  
This causes the paver finisher to be shut down!

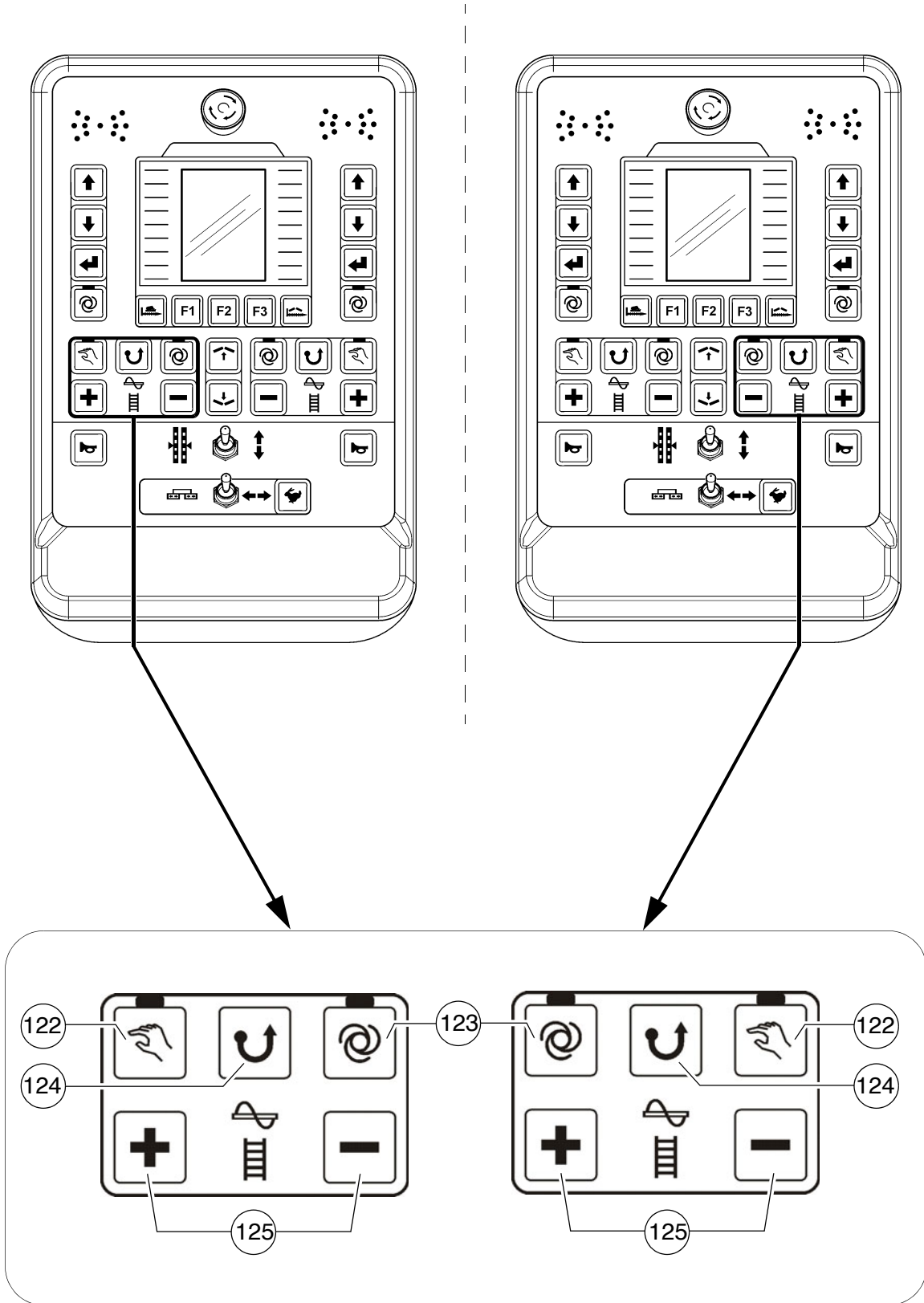





Item	Designation	Brief description
120	Emergency stop button	<p>Press in an emergency (danger to persons, impending collision, etc.)!</p> <ul style="list-style-type: none"> <li>- Pressing the emergency stop button switches off the engine, the drives and the steering system. Making way, lifting the screed or other actions are then no longer possible! Danger of accident!</li> <li>- The emergency stop button does not shut off the gas heater system. Close the main shut-off valve and the valves on the bottles by hand!</li> <li>- To restart the engine, the button must be pulled out again.</li> </ul>
121	Remote control connection socket	<p>Connect the plug to the screed.</p> <p> Whether this involves the left-hand or the right-hand remote control is automatically detected.</p>

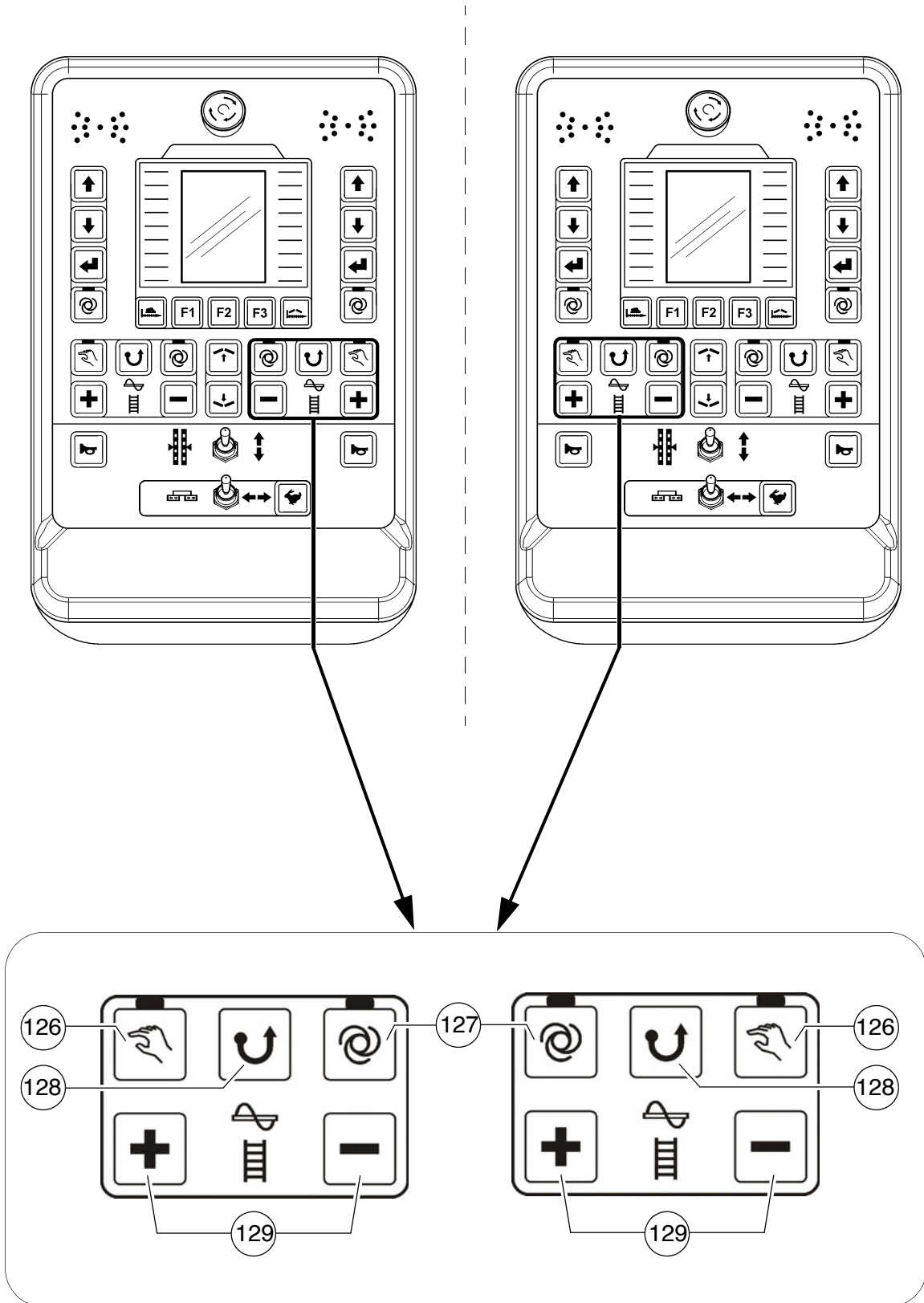








Item	Designation	Brief description
122	Auger "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the corresponding half of the auger is switched on continuously with full delivery capacity, without material control via the limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p>
123	Auger "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the corresponding half of the auger is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch (operating panel) locks the conveying function.</p>
124	Auger "Reversing mode"	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- The auger's conveying direction can be reversed in order to slightly reverse any paving material which may be positioned just in front of the auger. This enables e.g. material losses to be avoided during transportation.</li> <li>- Temporally limited reversal is carried out when the button is pressed continuously.</li> </ul> <p> The auger function must be switched to "AUTO" or "MANUAL" for reversing mode.</p> <p> In reversing mode, the automatic function is overridden with reduced capacity.</p>

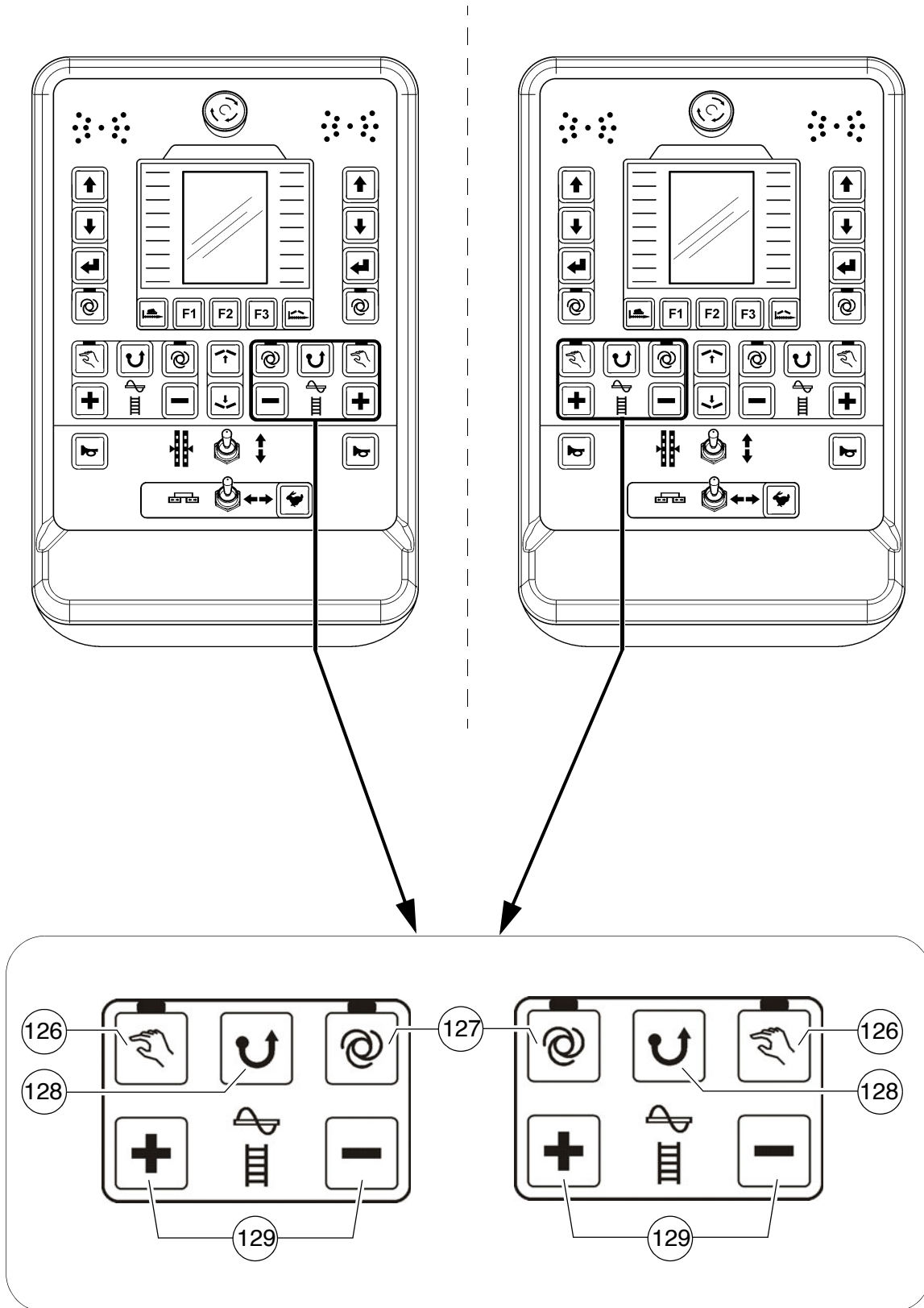


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Item	Designation	Brief description
125	Auger delivery capacity	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Plus/minus buttons for adjusting the delivery capacity.</li><li>- The delivery capacity is slowed down or speeded up depending on the length of time for which the button is pressed.</li></ul> <p> The auger function must be switched to "AUTO" or "MANUAL" for making the adjustment.</p>

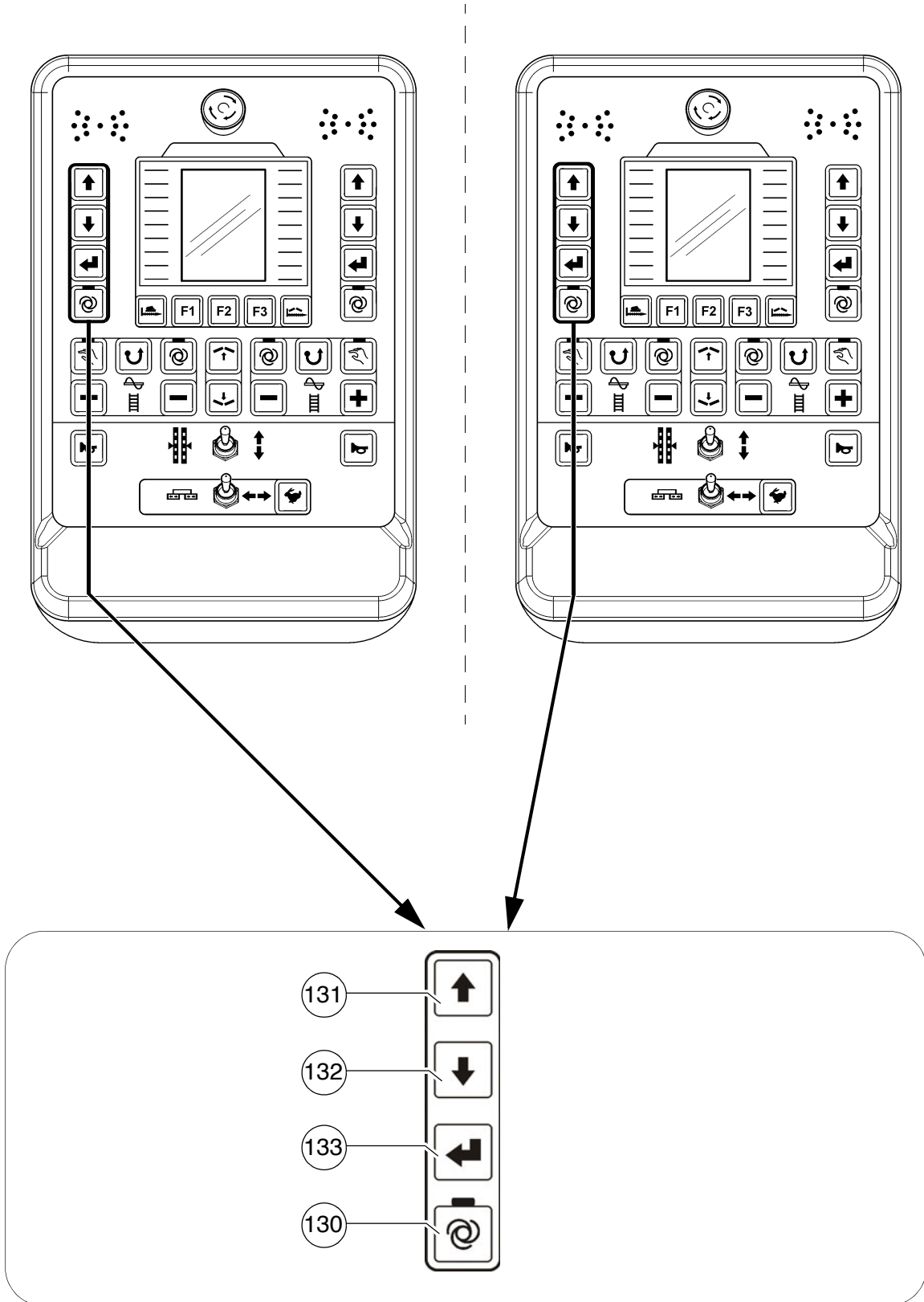




Item	Designation	Brief description
126	Conveyor "MANUAL"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the corresponding half of the conveyor is switched on continuously with full delivery capacity, without material control via the limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch locks the conveying function.</p>
127	Conveyor "AUTO"	<p>Button with detent switch function and LED feedback:</p> <ul style="list-style-type: none"> <li>- The conveying function of the corresponding half of the conveyor is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches.</li> <li>- Switch OFF by pressing the button again</li> </ul> <p> The function is shut off by pressing the EMERGENCY STOP button or restarting the vehicle.</p> <p> The main function switch (operating panel) locks the conveying function.</p>
128	Conveyor "Reversing mode"	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- The conveying direction of the corresponding half of the conveyor can be reversed in order to slightly reverse e.g. paving material which may be present in the material tunnel.</li> <li>- Temporally limited reversal is carried out when the button is pressed continuously.</li> </ul> <p> After triggering the function, a previously engaged "AUTO" or "MANUAL" function is switched off.</p> <p> In reversing mode, the automatic function is overridden with reduced capacity.</p>

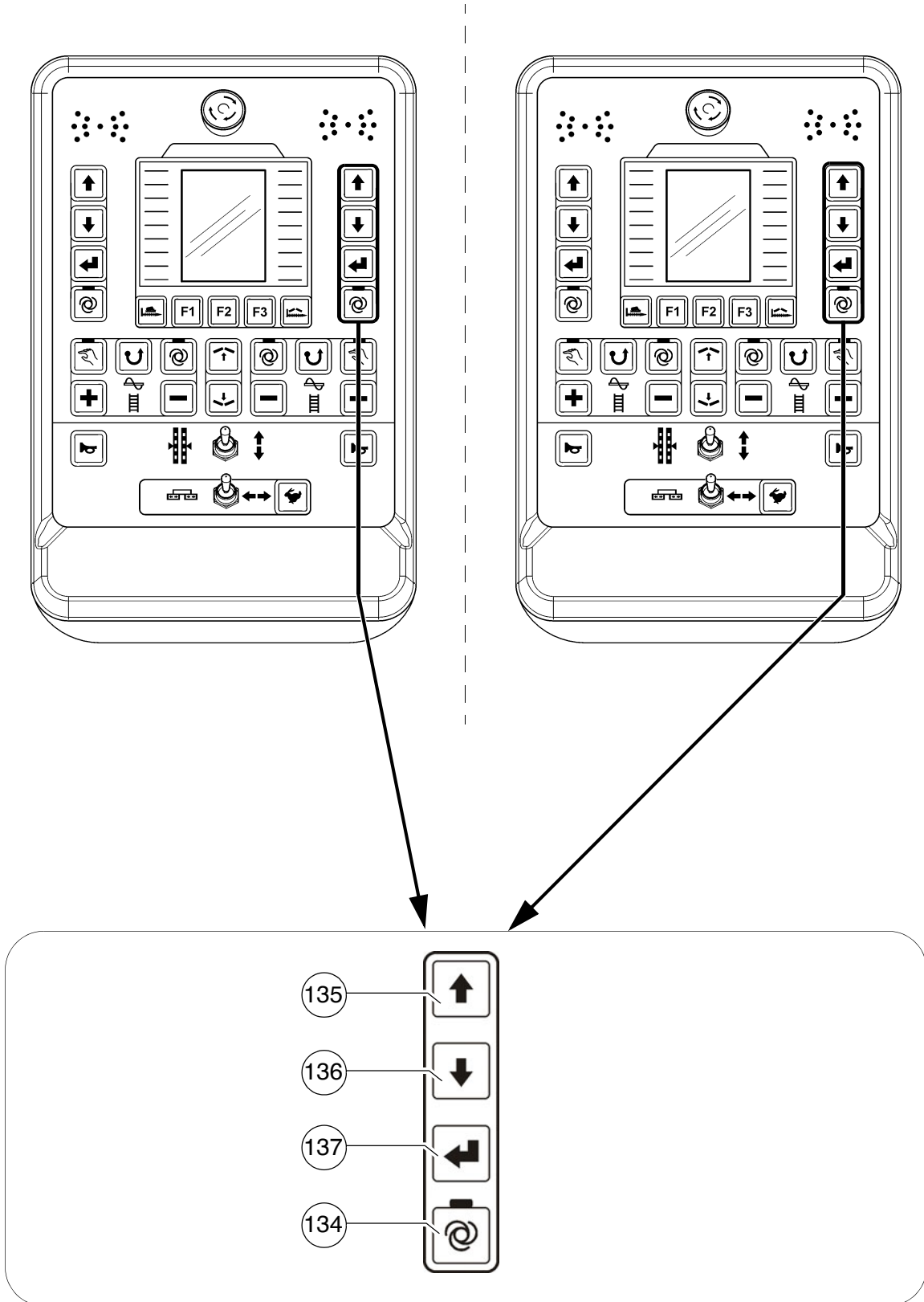




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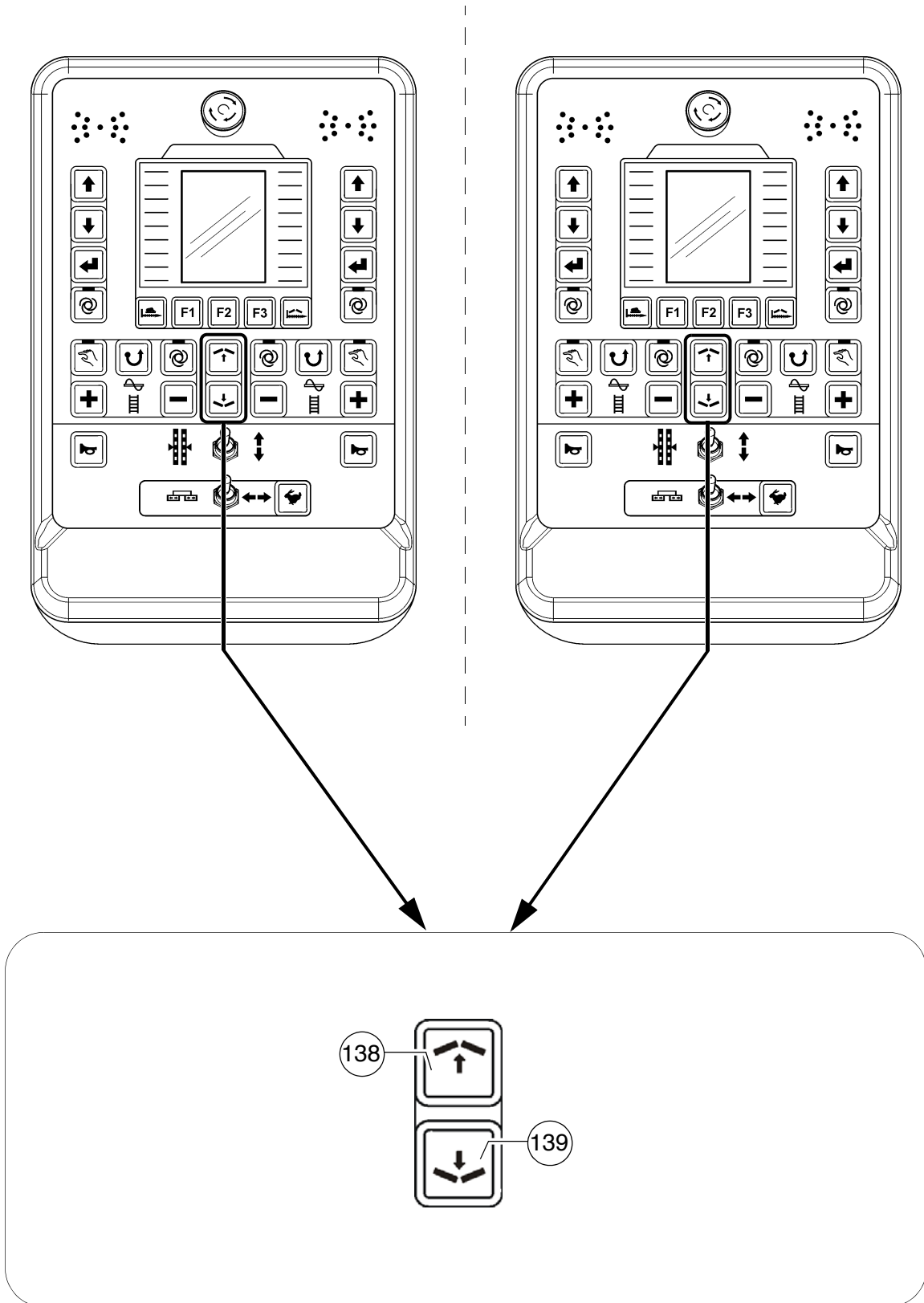
Item	Designation	Brief description
129	Conveyor delivery capacity	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Plus/minus buttons for adjusting the delivery capacity.</li><li>- The delivery capacity is slowed down or speeded up depending on the length of time for which the button is pressed.</li></ul> <p> The conveyor function must be switched to "AUTO" or "MANUAL" for making the adjustment.</p>





Item	Designation	Brief description
130	Operating mode Levelling "AUTO" / "MANUAL" left	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- Operating mode "AUTO" (LED ON): levelling engages automatically when the drive lever is swivelled out for paving operation.</li> <li>- Operating mode "MANUAL" (LED OFF): levelling switched off.</li> </ul>
131 / 132	Levelling cylinder adjustment, left	Pushbutton function: <ul style="list-style-type: none"> <li>- To retract and extend the levelling cylinder on the corresponding side of the vehicle.</li> </ul>  On adjustment, note the levelling display in the remote control display!  For direct adjustment, the levelling function must be set to "MANUAL". In "AUTO" operating mode, adjustment is carried out after confirming the enter button (133).
133	Enter	Pushbutton function: <ul style="list-style-type: none"> <li>- For confirming levelling cylinder adjustment in "Auto" operating mode. Levelling cylinder adjustment is carried out by pressing the button.</li> </ul>

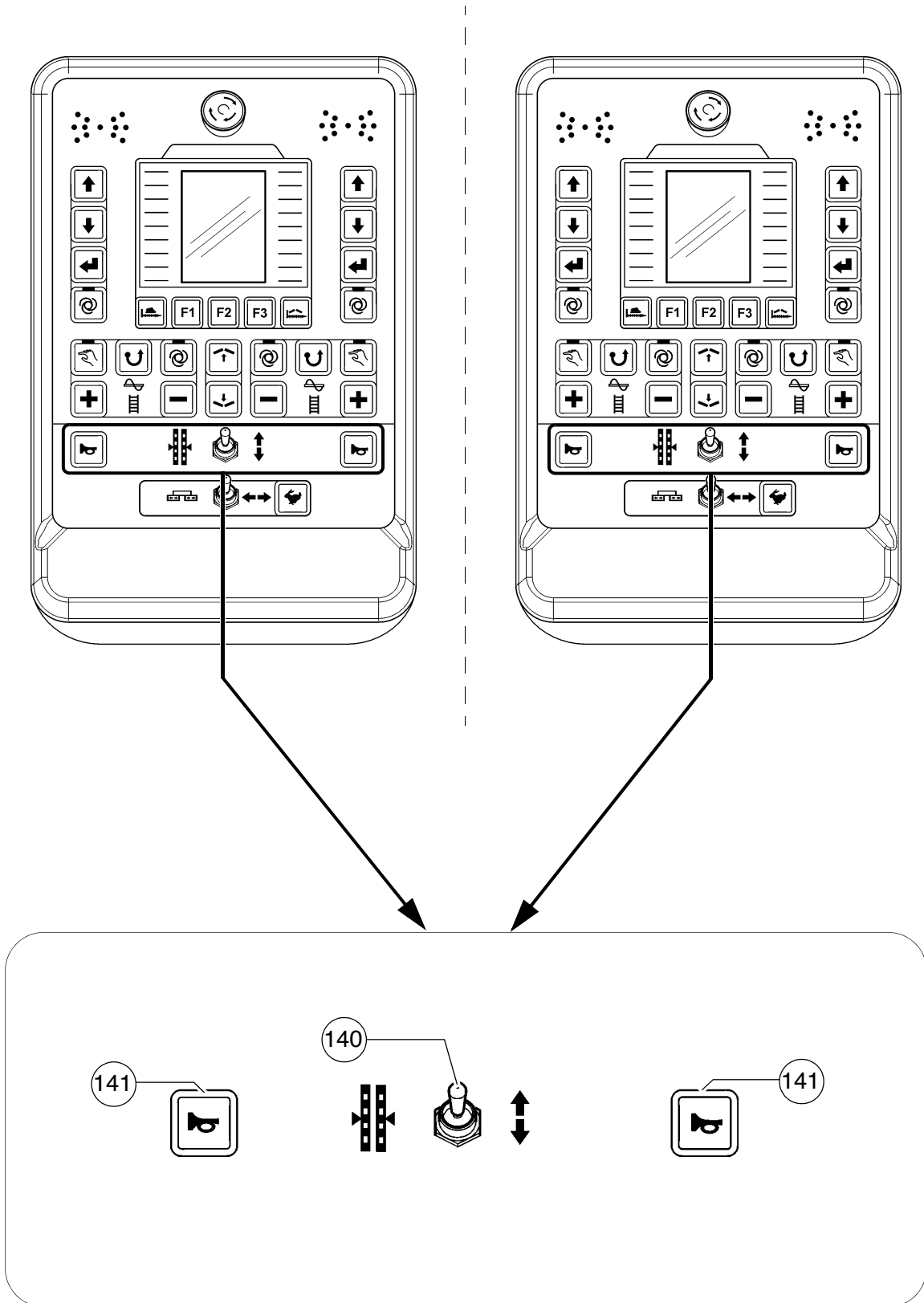


Item	Designation	Brief description
134	Operating mode Levelling "AUTO" / "MANUAL" right	Button with detent switch function and LED feedback: <ul style="list-style-type: none"> <li>- Operating mode "AUTO" (LED ON): levelling engages automatically when the drive lever is swivelled out for paving operation.</li> <li>- Operating mode "MANUAL" (LED OFF): levelling switched off.</li> </ul>
135 / 136	Levelling cylinder adjustment, right	Pushbutton function: <ul style="list-style-type: none"> <li>- To retract and extend the levelling cylinder on the corresponding side of the vehicle.</li> </ul>  On adjustment, note the levelling display in the remote control display!   For direct adjustment, the levelling function must be set to "MANUAL". In "AUTO" operating mode, adjustment is carried out after confirming the enter button (137).
137	Enter	Pushbutton function: <ul style="list-style-type: none"> <li>- For confirming levelling cylinder adjustment in "Auto" operating mode. Levelling cylinder adjustment is carried out by pressing the button.</li> </ul>





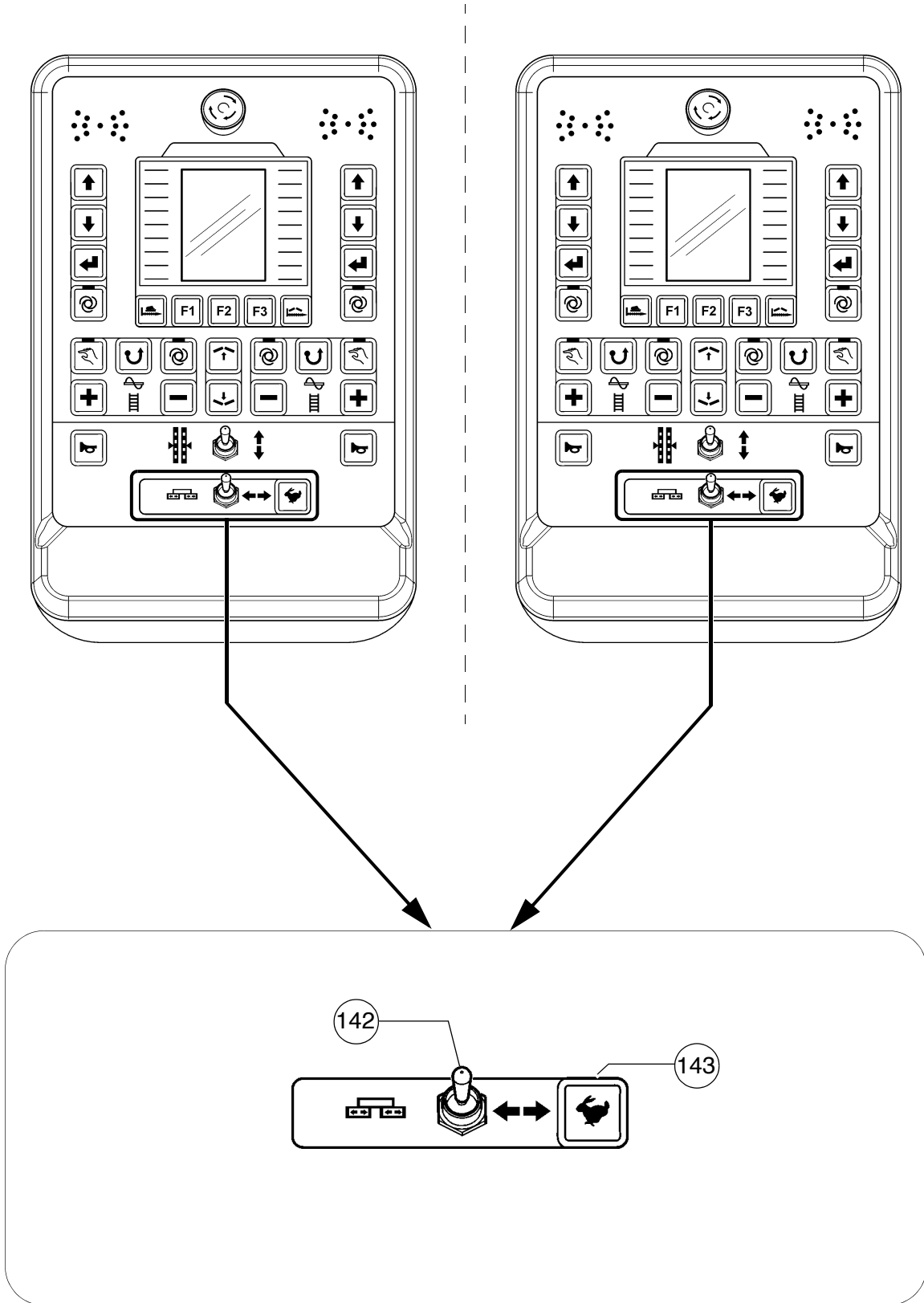
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Item	Designation	Brief description
138	Manual control crowning adjustment (+)	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Direct adjustment of the crowning with call-up of the corresponding menu showing the actual value.</li></ul> <p> Comply with the corresponding "Screed Control" instructions!</p>
139	Manual control crowning adjustment (-)	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Direct adjustment of the crowning with call-up of the corresponding menu showing the actual value.</li></ul> <p> Comply with the corresponding "Screed Control" instructions!</p>

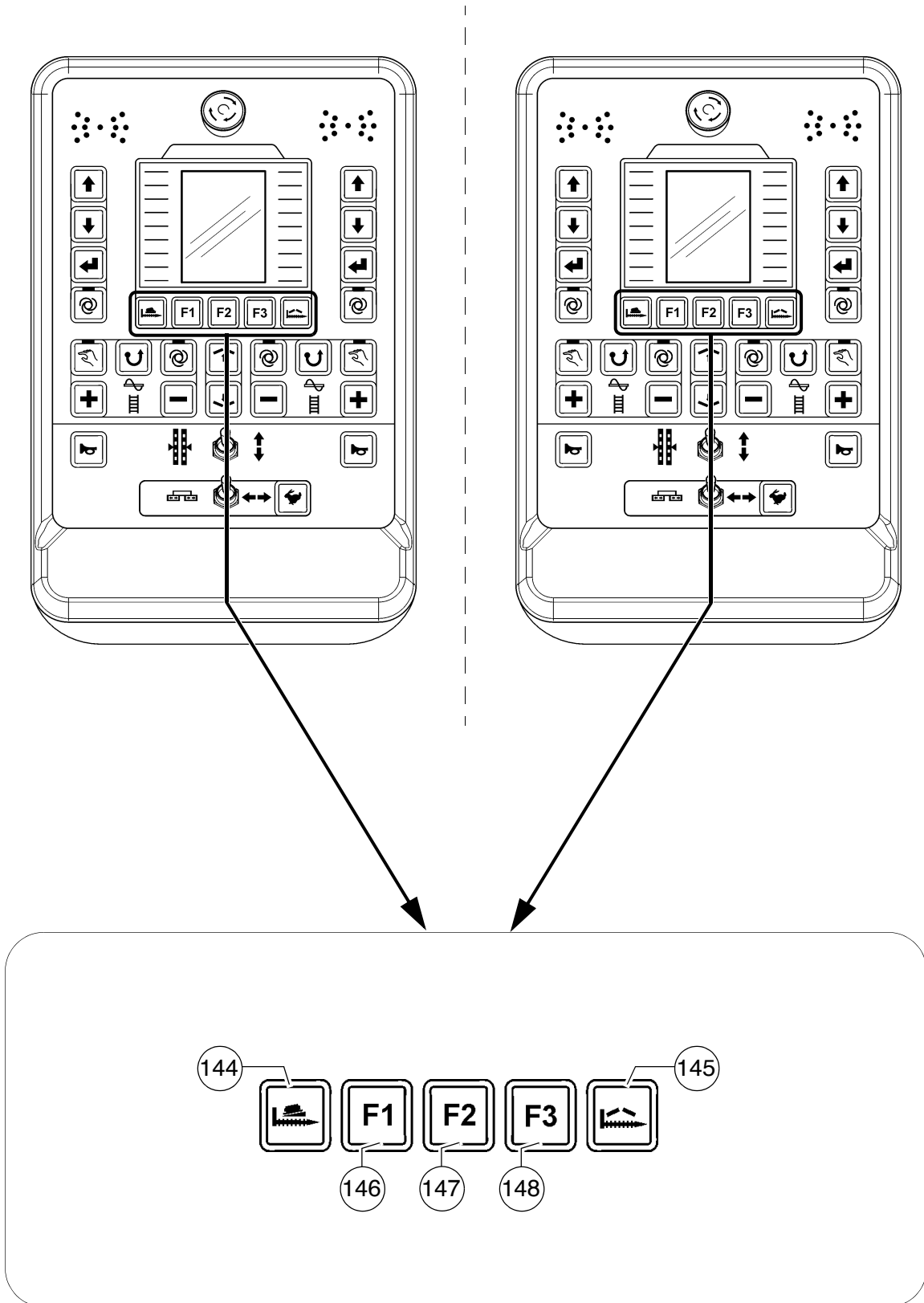






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Item	Designation	Brief description
140	Levelling cylinder manual	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- For manual actuation of the levelling cylinders on the corresponding side of the vehicle when the automatic levelling system is switched off (LED OFF).</li></ul> <p> On adjustment, note the levelling display in the remote control display!</p>
141	Horn	<p>Press in the case of emergencies and to indicate when the vehicle starts to move!</p> <p> The horn can also be used to communicate acoustically with the truck driver for material loading!</p>

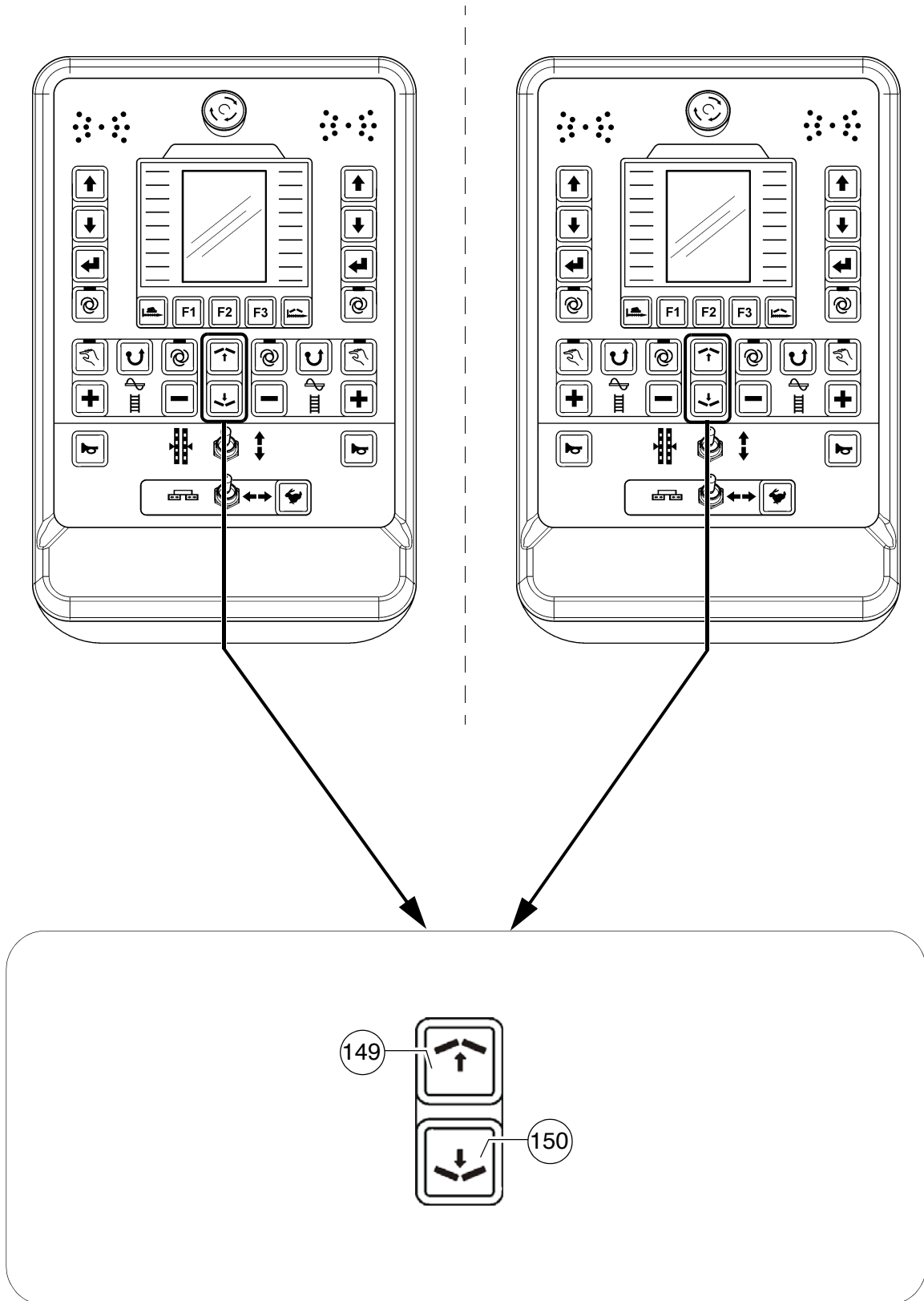


Item	Designation	Brief description
142	Extend/retract screed	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- To retract and extend the screed half on the corresponding side of the vehicle.</li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>
143	Extend/retract screed - speed preselection	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- 2 speeds can be selected for the adjustment using the button: <ul style="list-style-type: none"> <li>- LED OFF = slow adjustment</li> <li>- LED ON = fast adjustment</li> </ul> </li> </ul> <p> This function is not used in vehicle configurations with a screed which cannot be extended.</p> <p> On actuation, heed danger zones of moving parts of the vehicle!</p>





Item	Designation	Brief description
144	Travel-dependent lateral slope control	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- Calling up the "travel-dependent lateral slope" menu.</li> </ul> <p> The nominal value for required lateral slope and the distance for adjusting the lateral slope can be entered in the corresponding menu. The function is started in the same menu.</p> <p> Comply with the corresponding "Screed Control" instructions!</p>
145	Travel-dependent crowning adjustment	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- Calling up the "travel-dependent crowning adjustment" menu.</li> </ul> <p> The nominal value for required crowning adjustment and the distance for adjusting the crowning can be entered in the corresponding menu. The function is started in the same menu.</p> <p> Comply with the corresponding "Screed Control" instructions!</p>
146	Function button F1	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- Depending on the window or menu in which you are currently located, the function button has different assignments.</li> <li>- In the operating window, the button has the following functions: <ul style="list-style-type: none"> <li>- Calling up sensor selection</li> </ul> </li> </ul>
147	Function button F2	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- Depending on the window or menu in which you are currently located, the function button has different assignments.</li> <li>- In the operating window, the button has the following functions: <ul style="list-style-type: none"> <li>- Calling up the view menu</li> </ul> </li> </ul>
148	Function button F3	<p>Pushbutton function:</p> <ul style="list-style-type: none"> <li>- Depending on the window or menu in which you are currently located, the function button has different assignments.</li> <li>- In the operating window, the button has the following functions: <ul style="list-style-type: none"> <li>- Calling up the user menu</li> </ul> </li> </ul>



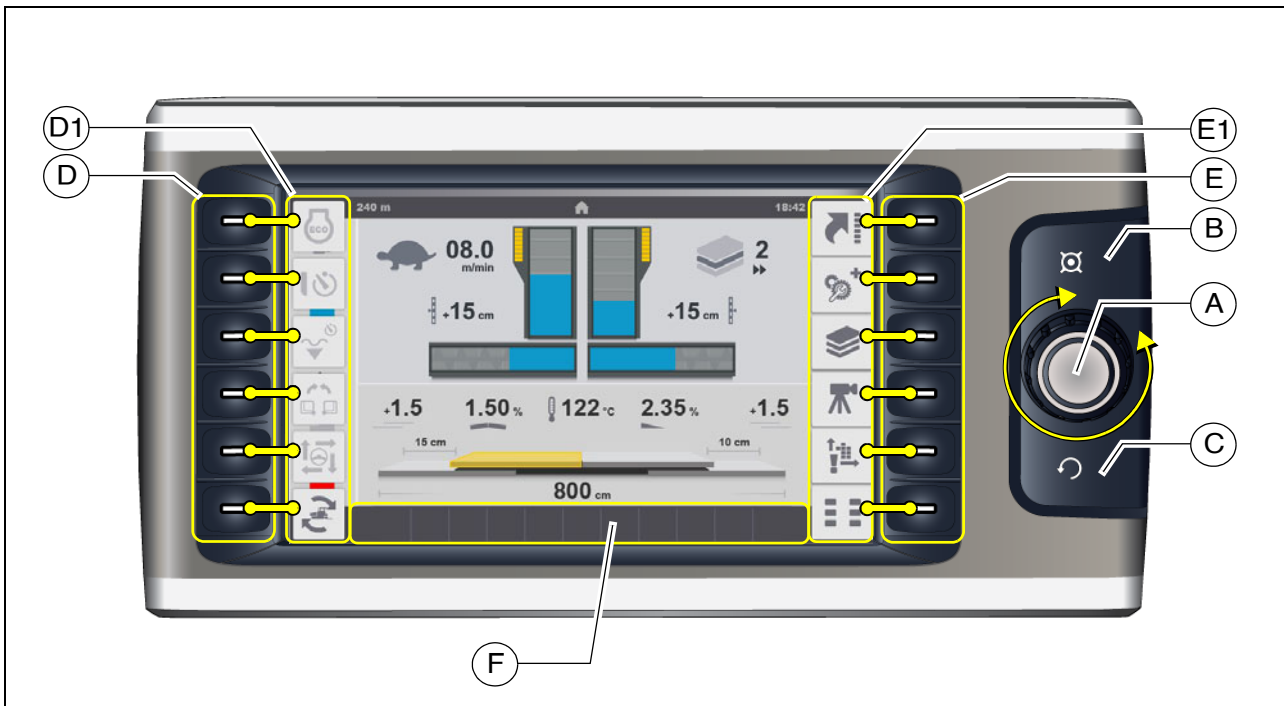


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Item	Designation	Brief description
149	Manual control crowning adjustment (+)	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Direct adjustment of the crowning with call-up of the corresponding menu showing the actual value.</li></ul> <p> Comply with the corresponding "Screed Control" instructions!</p>
150	Manual control crowning adjustment (-)	<p>Pushbutton function:</p> <ul style="list-style-type: none"><li>- Direct adjustment of the crowning with call-up of the corresponding menu showing the actual value.</li></ul> <p> Comply with the corresponding "Screed Control" instructions!</p>


## **D 22    Operating the display**


## 1 Operation of the input and display terminal

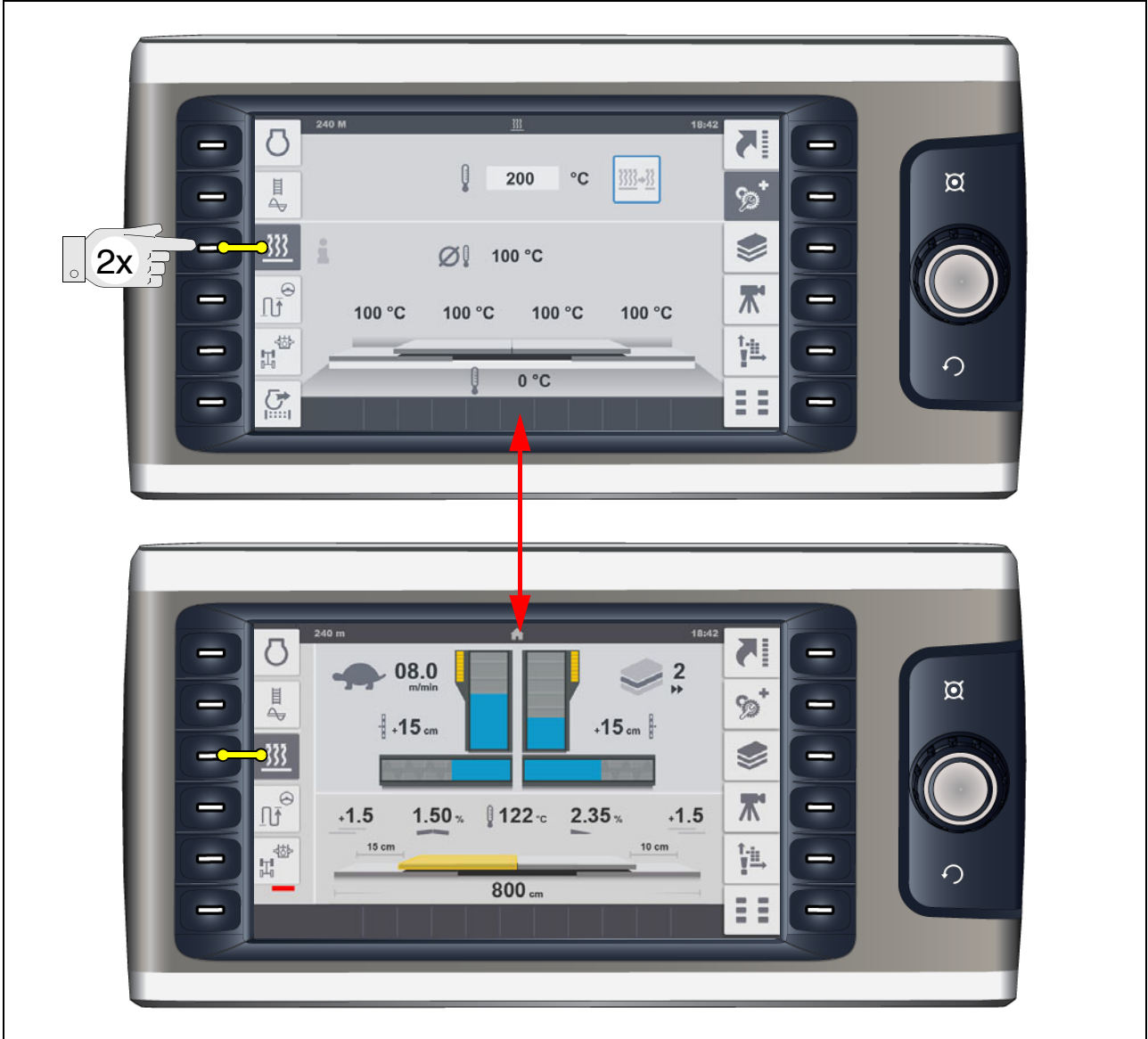
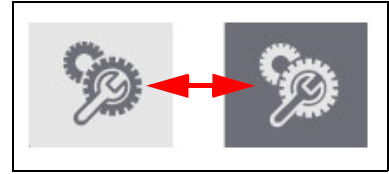


### Button layout on the display

- (A) Jog dial (knob to be turned+push button):
  - Turn:
    - to select various adjustment parameters within a menu
    - to adjust the parameter
    - to select various selection possibilities within a menu
  - Press:
    - to release the adjustment of a parameter
    - to confirm a parameter adjustment
    - to confirm a selection possibility
- (B) Home button
  - To show the home menu directly
- (C) Upwards button
  - To show the higher-level menu / higher-level display
- (D) Function buttons:
  - To select the menus assigned in the display area (D1)
  - To activate the functions assigned in the display area (D1)
- (E) Function buttons:
  - To select the menus assigned in the display area (E1)




 To confirm an active/opened menu, the colour of the corresponding symbol changes from pale to dark grey!

 Press the corresponding function button again to go back to the previous page.



- (F) Display area for status, warning and error messages:
  - To show current earnings or error messages.

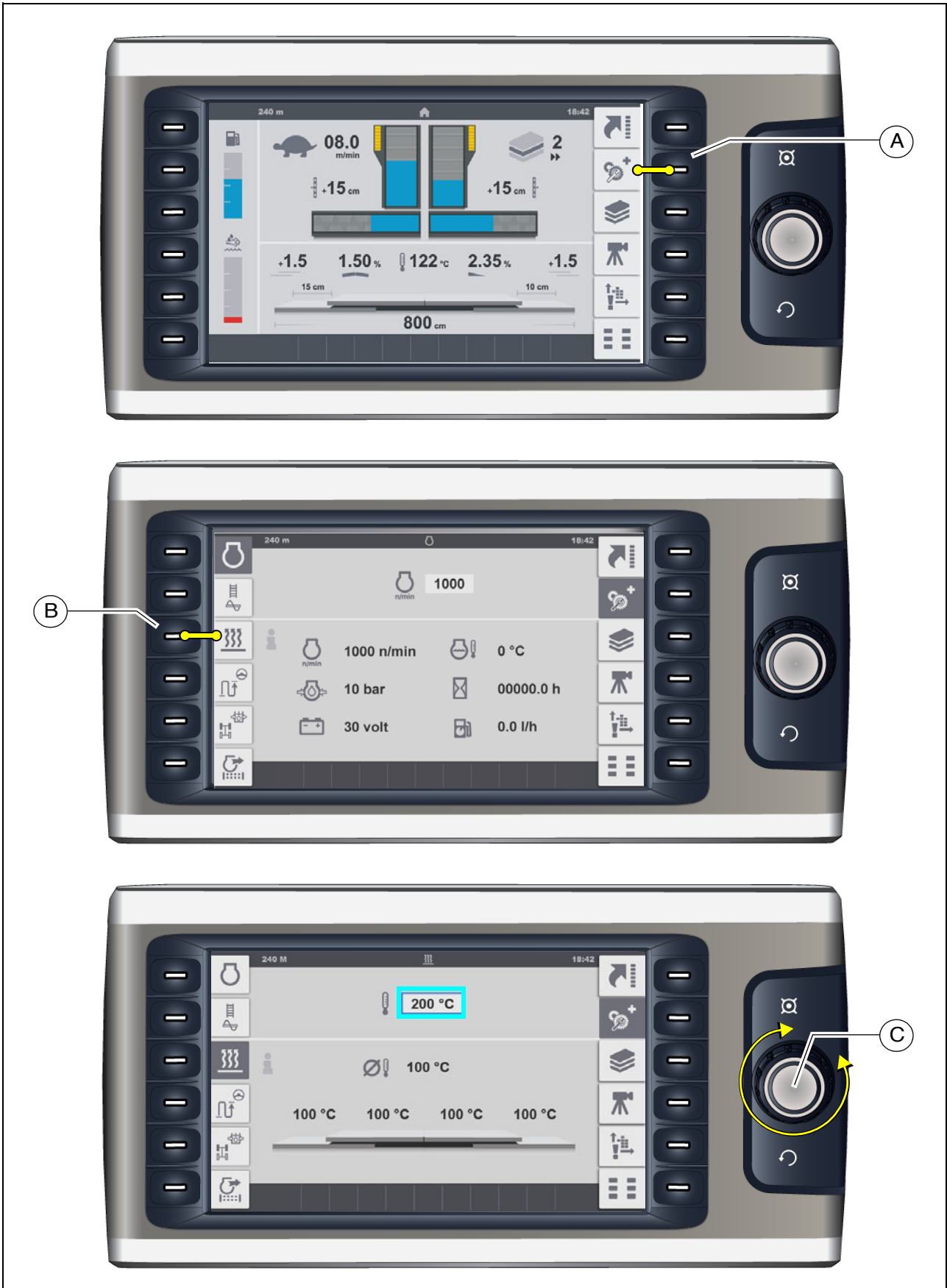
 The colour of the symbol indicates whether it is a status, warning or error message:

Colour code	Explanation
	<ul style="list-style-type: none"> <li>- RED - error message</li> <li>- Reports a serious fault that must be checked and rectified immediately.</li> </ul>
	<ul style="list-style-type: none"> <li>- YELLOW - warning message</li> <li>- Reports a current condition that needs to be observed or rectified at short notice to ensure correct working.</li> </ul>
	<ul style="list-style-type: none"> <li>- BLUE / GREEN - status message</li> <li>- Confirms an activated function.</li> </ul>



Detailed explanations for the individual displays can be found in the section "Symbols for status, warning and error messages"

### 1.1 Menu operation - procedure for adjusting parameters



Example: Adjusting the screed temperature

- The "Home" menu is open in the display.
  - Press button (A) to open the "Engine speed" menu.
- The "Engine speed" menu is open in the display.
  - Press button (B) to open the "Screed heater" menu.
- Turn jog dial (C) to make the cursor appear.



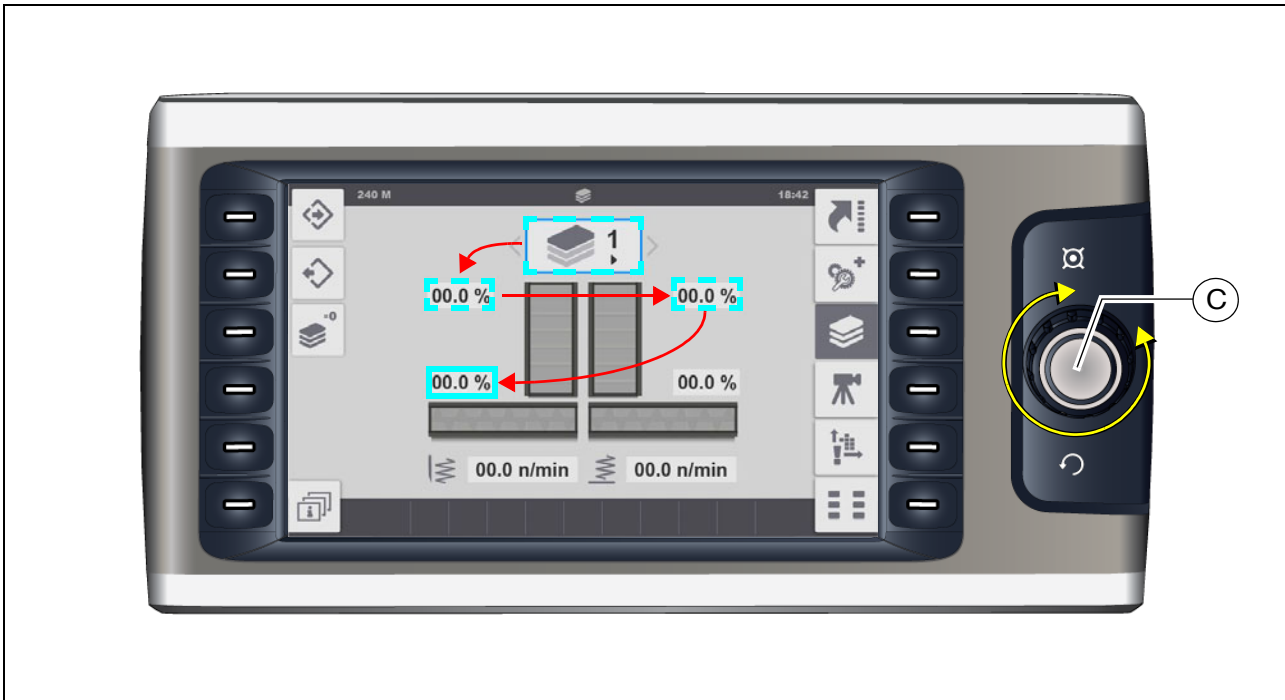
A blue frame appears around the temperature parameter.

- Press jog dial (C) to activate the adjustment.
  - Turn jog dial (C) in the corresponding direction to reach the required temperature.
  - Press jog dial (C) to adopt the adjusted value.



The blue frame around the temperature parameter disappears.

## Selecting and changing an adjustment parameter in a menu



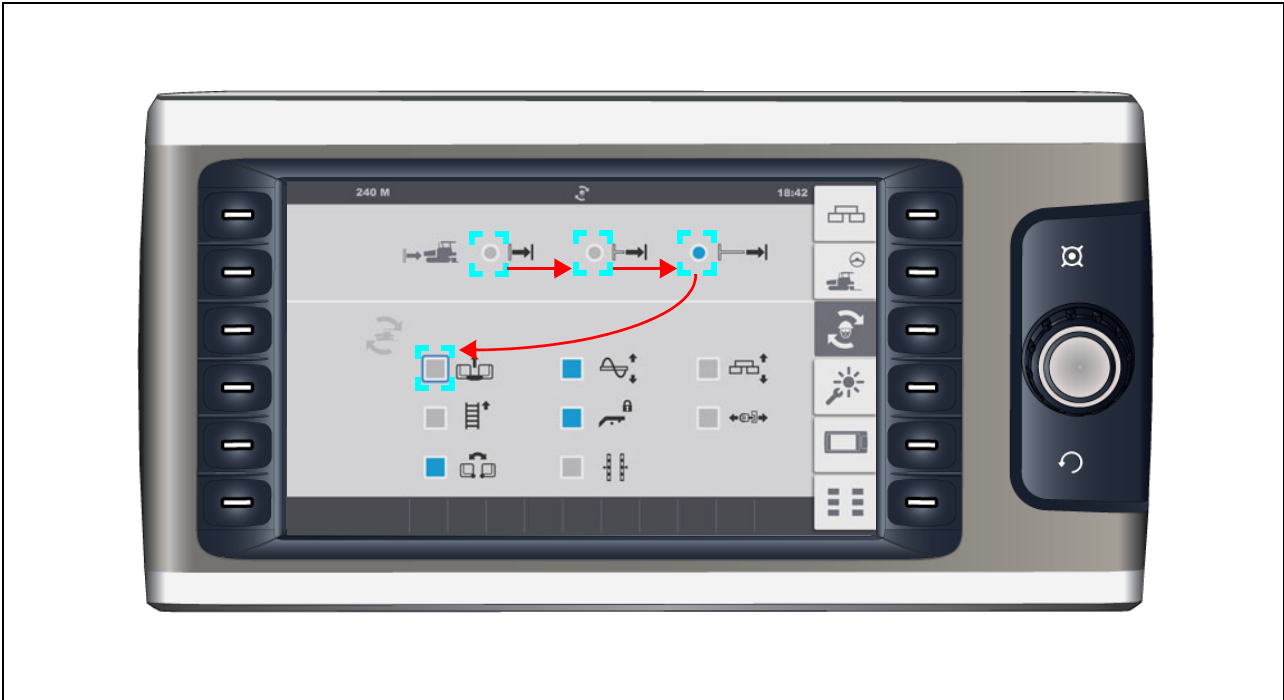
- Press jog dial (C) to activate the parameter adjustment.



A blue frame appears around the top adjustment parameter in the menu.

- Turn jog dial (C) in the corresponding direction until the blue frame is around the required adjustment parameter.
- Press jog dial (C) to activate the parameter adjustment.
- Turn jog dial (C) in the corresponding direction to reach the required value.
- Press jog dial (C) to adopt the adjusted value.

## Selecting and changing a selection possibility in a menu



- Press jog dial to activate the parameter adjustment.



A blue frame appears around the top selection possibility in the menu.

- Turn jog dial in the corresponding direction until the blue frame is around the required selection possibility.
- Press jog dial to activate the selection possibility.


## 2 Menu structure

### Menu of the "Home" displays




Displays:

- (1) Speed:
  - Paving (tortoise)-(m/min) / (ft/min)
  - Driving (hare) - (km/h) / (mph)

 Speed preselection is possible when at a standstill (only for paving). The preselected speed then appears in "blue".

- (2) Fuel gauge
- (3) Level AdBlue® / DEF tank (○)

 If the level is too low, a warning also appears.

- (4) Paving material - conveyor level left / right
- (5) Paving material - auger level left / right
- (6) Actual temperature of the screen heater (°C) / (°F)

 The display shows the average temperature of all screed sections.

 Currently heated screed sections appear coloured in the corresponding graphic.

- (7) Extension distance - extendable part screed left (cm) / (inch) (○)
- (8) Extension distance - extendable part screed right (cm) / (inch) (○)
- (9) Course thickness - screed left (cm) / (inch) (○)
- (10) Course thickness - screed right (cm) / (inch) (○)
- (11) Crowning - (%) (○)
- (12) Target slope - left / right (%) (○)
- (13) Overall width screed (cm) / (inch) (○)



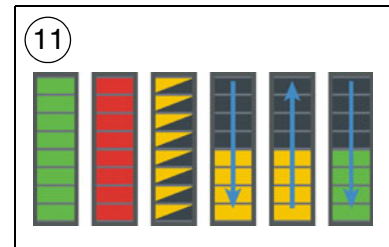
The remote control must be reset to measure the overall width.

- (14) Extension distance - levelling cylinder left (cm) / (inch) (○)
- (15) Extension distance - levelling cylinder right (cm) / (inch) (○)
- (16) Type of material control being used
- (17) Truck Assist control (○)

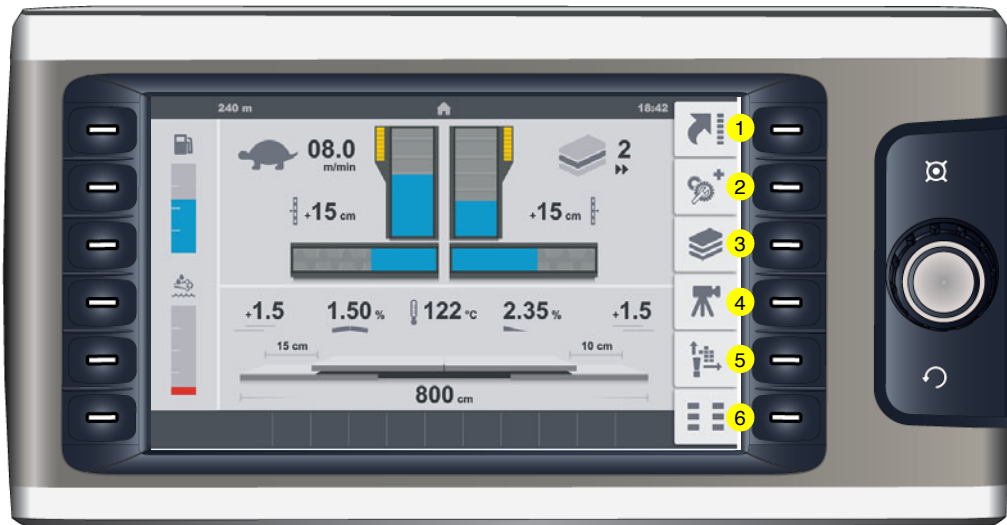


The display is the same as the Truck Assist LED display at the hopper.

- (18) Distance travelled counter (m) / (ft)
- (19) Time of day (hh:mm) (AM/PM)
- (20) Menu/display symbol



## "Home" menu - sub-menus



Open the following sub-menus:

- (1) Show "Home" functions / "Quick settings"
- (2) Call "Engine speed" menu / Engine measured value display + sub-menus.
- (3) "Paving parameters" menu + sub-menus.
- (4) "Camera display" menu + sub-menus.(○)
- (5) "Error memory" menu + sub-menus.
- (6) "Basic" menu + sub-menus.

## "Home" functions / "Quick settings" menu

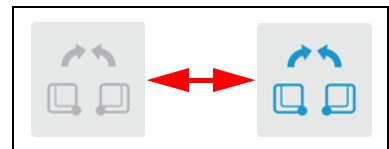


Menu for directly activating various functions.

- Press corresponding function button to show the functions / quick settings (1) to (6). Press once more to hide the functions again.



Pressing the adjacent function button activates or deactivates the functions. The function is activated when the corresponding symbol appears blue.



Depending on the vehicle equipment, the position (1) can have two different functions:

- (1.1) "Eco mode" function
  - The engine speed is constantly regulated to 1600 rpm.
- (1.2) "Vario-Speed" function
  - The engine speed is regulated automatically depending on the load.
- (2): "Delayed tamper start" function
  - On swivelling the drive lever, the tamper function is only activated once a defined time has elapsed.
- (3): "Delayed screed start" function
  - When the drive lever is deflected, the floating function is only activated once the time set in the relevant menu has elapsed.



- (4): "Joint hopper actuation" function
  - Both hopper halves are actuated together with one of the hopper function switches (open hopper / close hopper).
- (5) "Automatic steering unit" function (only for caterpillar pavers)
  - The vehicle is steered automatically via corresponding sensing along a reference (e.g. cable).



When the automatic steering unit is activated, the steering potentiometer is deactivated.



If the driver carries out a steering movement, this overrides the automatic steering unit due to safety reasons.

- (5) Function "Front-wheel drive" ON / OFF (only for wheeled pavers)
  - Activation is only possible when the vehicle is at a standstill.



A corresponding warning shows when the front-wheel drive is activated.



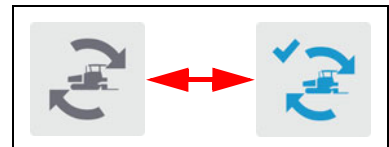
Front-wheel drive Plus (○): To activate front-wheel drive again, the drive lever must remain in neutral for 10 seconds.  
The "Drive speed fast - hare" must be deactivated in this case.



- (6) Save function "Set Assist"
  - The working condition / current position of the corresponding functions and components is saved for later use.



As confirmation, the display changes for 5 to 10 seconds during saving.



The functions and elements for the "Set Assist" function are selected in the corresponding menu.



The "Set Assist" function prepares the paver to relocate to another section of road-works or for transportation.

When the function is activated, previously selected vehicle functions are carried out to make the vehicle ready for transport.

The function can be reset after relocating the paver.

This restores the corresponding elements to the previous working condition /position.




If the "Auto Save" function is activated in the corresponding sub-menu, the saving function is no longer shown on this menu level.


## "Engine speed" menu / Engine measured value display



Menu for adjusting the engine speed and for checking various measured values of the engine.

- (1) Nominal speed display and adjustment parameters

 Adjusted directly by pressing the job dial.

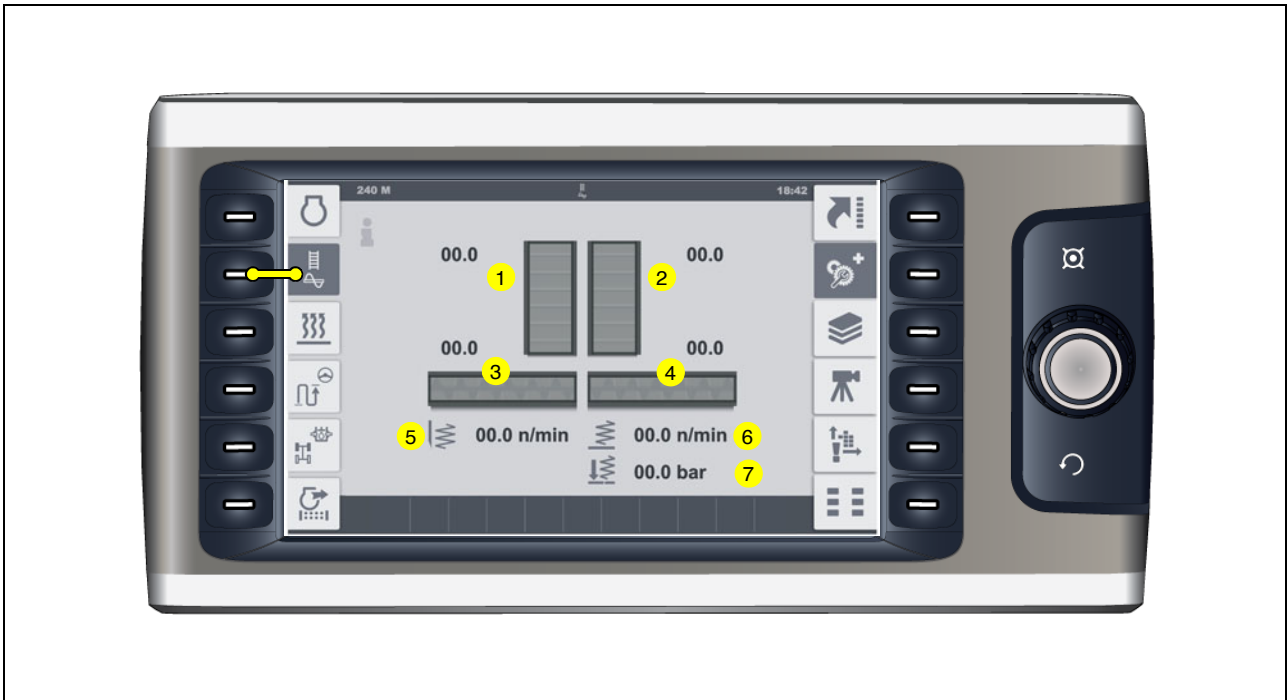
 Adjustment is carried out in steps of 50; the engine speed is adapted directly.

- (2) Actual engine speed
- (3) Engine oil pressure (bar)
- (4) On-board voltage (V)
- (5) Engine coolant temperature (°C) / (°F)
- (6) Engine operating hours (h)
- (7) Fuel consumption (l/h) (○)

Open the following sub-menus:

- (8) "Material management" measured value display.
- (9) "Screed heater" adjustment and display menu. (○)
- (10) "Paving area / Automatic steering unit" menu (○)
- (11) "Front wheel drive" measured value display. (○)
- (12) "Particulate filter regeneration" menu. (○)

## "Material management" measured value display



Menu for checking the following parameters:


- (1) Paving material level (%) conveyor left
- (2) Paving material level (%) conveyor right
- (3) Paving material level (%) auger left
- (4) Paving material level (%) auger right
- (5) Tamper speed (n/min)
- (6) Vibrations speed (n/min)
- (7) Auxiliary compactor pressure setting (bar)


## "Screed heater" adjustment and display menu (○)



Menu for adjusting the nominal screed heater temperature and for checking the actual temperatures and for activating the "Sectional heating" function (○)

- (1) Nominal screed heater temperature display and adjustment parameters.

 Press encoder (A) to start the editing menu.

 Setting range 50-180°C

- (2) Average actual temperature of all screed sections (°C) / (°F)
- (3) Actual temperature basic screed left (°C) / (°F)
- (4) Actual temperature basic screed right (°C) / (°F)
- (5) Actual temperature extendable part + extension parts left (°C) / (°F)
- (6) Actual temperature extendable part + extension parts right (°C) / (°F)
- (7) Actual temperature of paving material in auger compartment (°C) / (°F) (○)
- (8) Activation / deactivation of "Sectional heating" (○)
- With large screed working widths with electric heating, uniform heating is realised.

 The function is only available for certain screed types.

## "Paving area / Automatic steering unit" menu



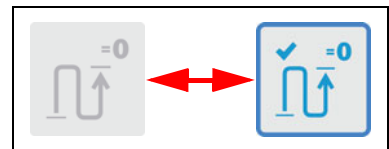
Menu for retrieving and resetting the current paving area, for showing the steering monitoring and resetting the steering monitoring reference.

- (1) Current paving distance (m)

- Reset / set value to zero: Select function (1.1) with the job dial and press to reset.



As confirmation, the display changes for 5 to 10 seconds during reset.

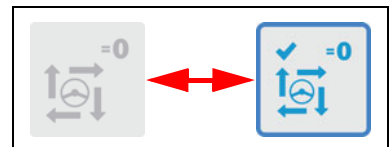


- (2) Steering monitoring is used for distance control scanning --> reference.

- Reset / reference to zero: Select function (2.1) with the job dial and press to reset.



As confirmation, the display changes for 5 to 10 seconds during reset.



Ideal distance scanning --> reference is the value "0" in display (2). Excursions indicate increased or reduced distances.



If necessary, carry out correction via slight steering movement!



If the driver carries out a steering movement, this overrides the automatic steering unit due to safety reasons.

## "Front wheel drive" measured value display (○)



Display of the power provided for the front wheel drive.

- (1) Power display left front wheel drive.
- (2) Power display right front wheel drive.
- (3) Display and adjustment parameters for traction (○)
  - ((>):low traction
  - ((>>):high traction
  - ((>>>):maximum traction



The traction must be matched to the existing paving situation.



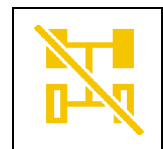
Adjustment is also possible during the driving mode.



When the front-wheel drive is switched off automatically, the related message is shown in the display.

An automatic switch-off occurs in the following situations:

- Reversing initiated
- Pressure and rotating speed-dependent switch-off



To activate front-wheel drive again, the drive lever must remain in neutral for 10 seconds.

The "Drive speed fast - hare" must be deactivated in this case.

## "Particulate filter regeneration" menu (○)



Menu for triggering requested active filter regeneration and for disabling automatic filter regeneration.

- (1) Particulate filter regeneration, manual:

- for triggering necessary particulate filter regeneration.



Necessary regeneration is indicated by the regeneration warning sign (1a)!



Please heed the notes in the "Terminal error messages" section.





When the function is activated, the "HEST" warning sign (1a) comes on permanently and the regeneration warning sign (1b) flashes.





Particulate filter regeneration takes about 20-60 minutes.



Regeneration may only be carried out if the vehicle is parked correctly and is not currently paving!


 <b>DANGER</b>	<b>Danger from particulate filter regeneration</b>
	<p>Improper particulate filter regeneration can cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- Keep the outlet of the exhaust pipe out of the reach of people and of objects that can burn, melt or explode!</li><li>- There may not be any people or objects within a radius of 0.6 m of the exhaust outlet!</li><li>- There may not be any objects or substances that can burn, melt or explode within a radius of 1.5 m. (petrol, wood, paper, plastic, textiles, pressurised cylinders, hydraulic lines).</li><li>- In an emergency, turn the engine off so that no more exhaust gas is emitted!</li><li>- Comply with all further information in these instructions and in the engine operating instructions.</li></ul>

 Automatic regeneration takes place during normal operation without the operator noticing. However, it does cause a higher exhaust gas temperature.

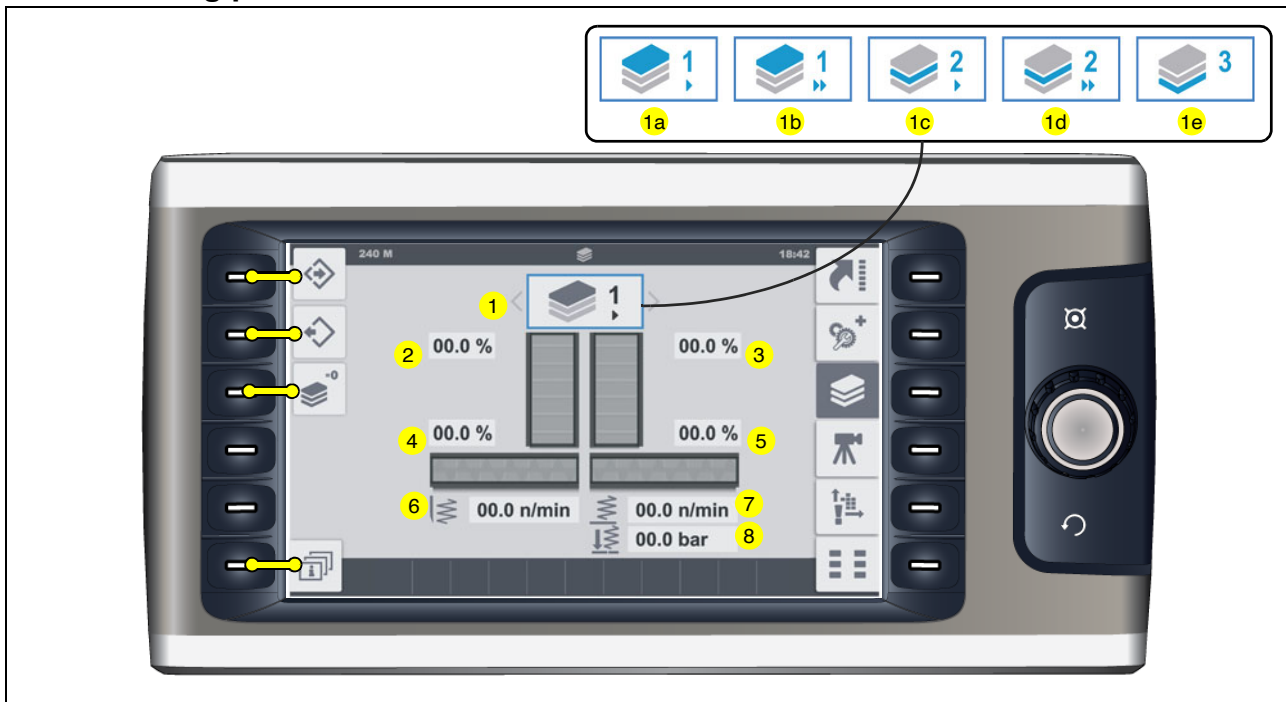
 If the current paving situation or surroundings do not permit automatic regeneration, then the function can be disabled:

- (2) Disabling/enabling automatic particulate filter regeneration.
  - For disabling/enabling automatic triggering of particulate filter regeneration.

 When the disabling function is activated, the corresponding warning sign appears (2a).

 Automatic particulate filter regeneration can occur immediately after being enabled again.

## "Paving parameters" menu



Menu for showing and adjusting the paving parameters.

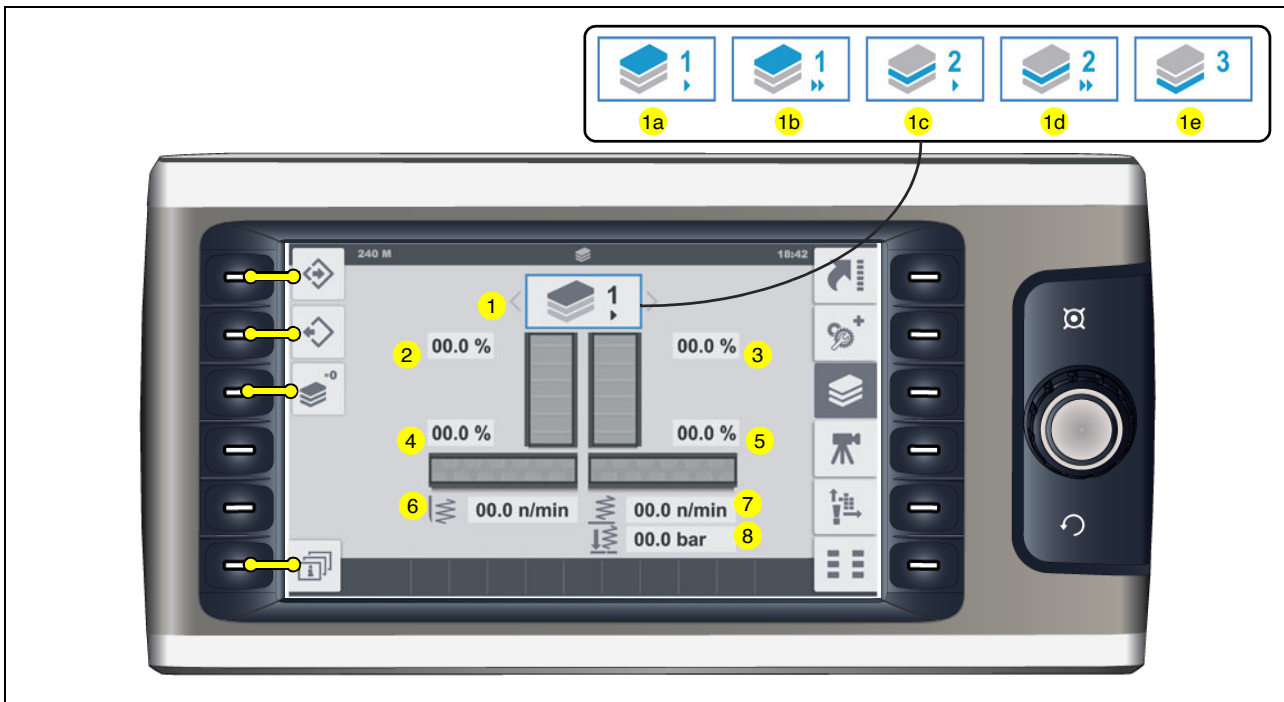
- (1) Current course thickness parameter
  - The following course thickness parameters can be selected:
    - (1a) Surface course >, low paving speed
    - (1b) Surface course >>, high paving speed
    - (1c) Binder course >, low paving speed
    - (1d) Binder course >>, high paving speed
    - (1e) Foundation



The speeds for every course thickness parameter have been stored in the factory for all conveying and compacting elements. Depending on the course thickness, the conveying rate increases slowly or faster at the start of paving. Preferred parameters or parameters configured to the paving material can be saved in the memory for later use.




Factory resets for the values are possible.

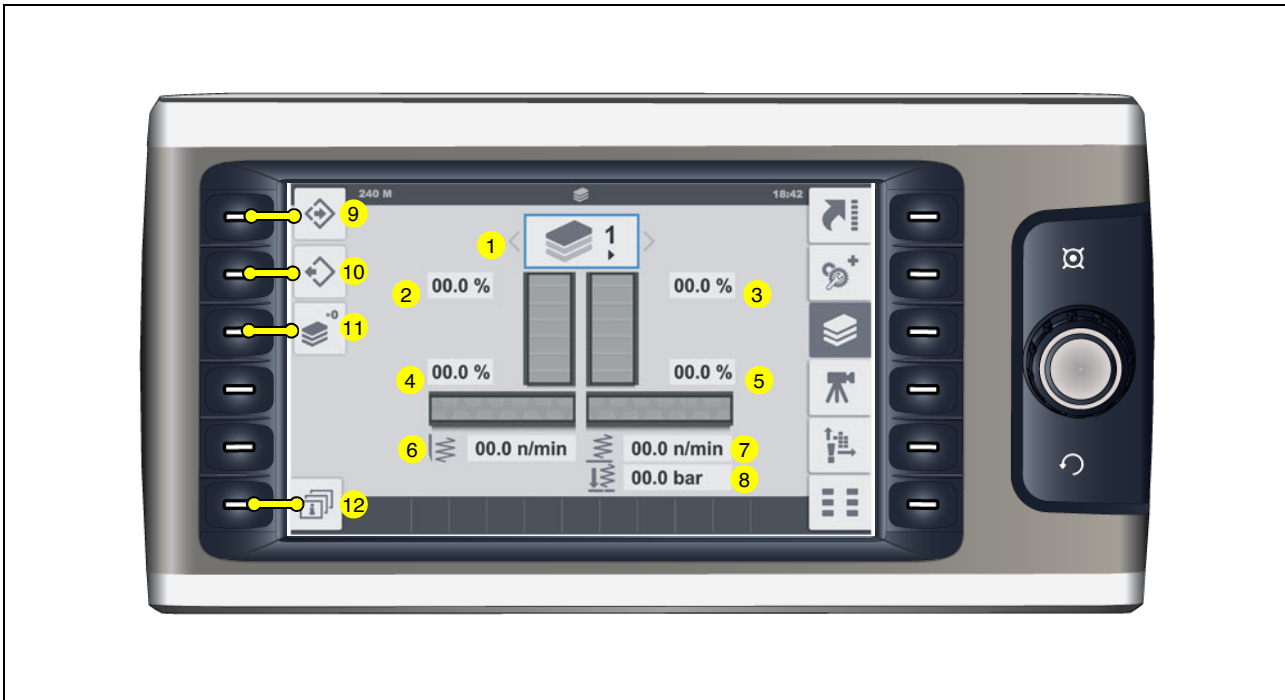


- (2) Left conveyor speed (%) display and adjustment parameters
- (3) Right conveyor speed (%) display and adjustment parameters
- (4) Left auger speed (%) display and adjustment parameters
- (5) Right auger speed (%) display and adjustment parameters
- (6) Nominal tamper speed (n/min) display and adjustment parameters
- (7) Nominal vibration speed (n/min) display and adjustment parameters
- (8) Auxiliary compactor pressure setting (bar) display and adjustment parameters

 Tamper and vibration range depending on screed type.

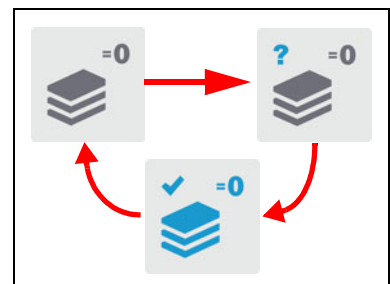
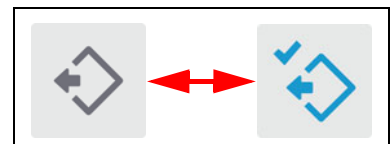
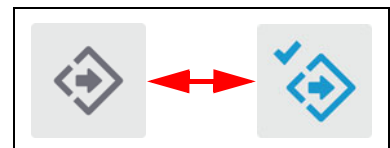
 If the settings are not saved, an adjusted parameter remains valid until another course thickness is chosen. This also applies when restarting the vehicle.

## Adjusting the paving parameters



### Functions:

- (9) "Save parameter" function  
 As confirmation, the display changes for 5 to 10 seconds during saving.
- (10): "Load parameter" function  
 As confirmation, the display changes for 5 to 10 seconds during loading.
- (11): "Parameter reset - Load factory settings" function  
 Firstly the system requests reset confirmation.  
 Press the button again for a reset within 5 seconds.  
 As confirmation, the display changes for 5 to 10 seconds during reset.



Open the following sub-menus:

- (12) Overview "Course thickness parameters".

## Overview "Course thickness parameters"



Menu for viewing the speeds saved for all conveying and compacting elements according to the course thickness parameters.

Back to the main menu:

- (1) "Paving parameters" menu.

## "Camera display" menu (○)



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



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

- (1) Show camera 1 display.
- (2) Show camera 2 display.

## "Error memory" menu



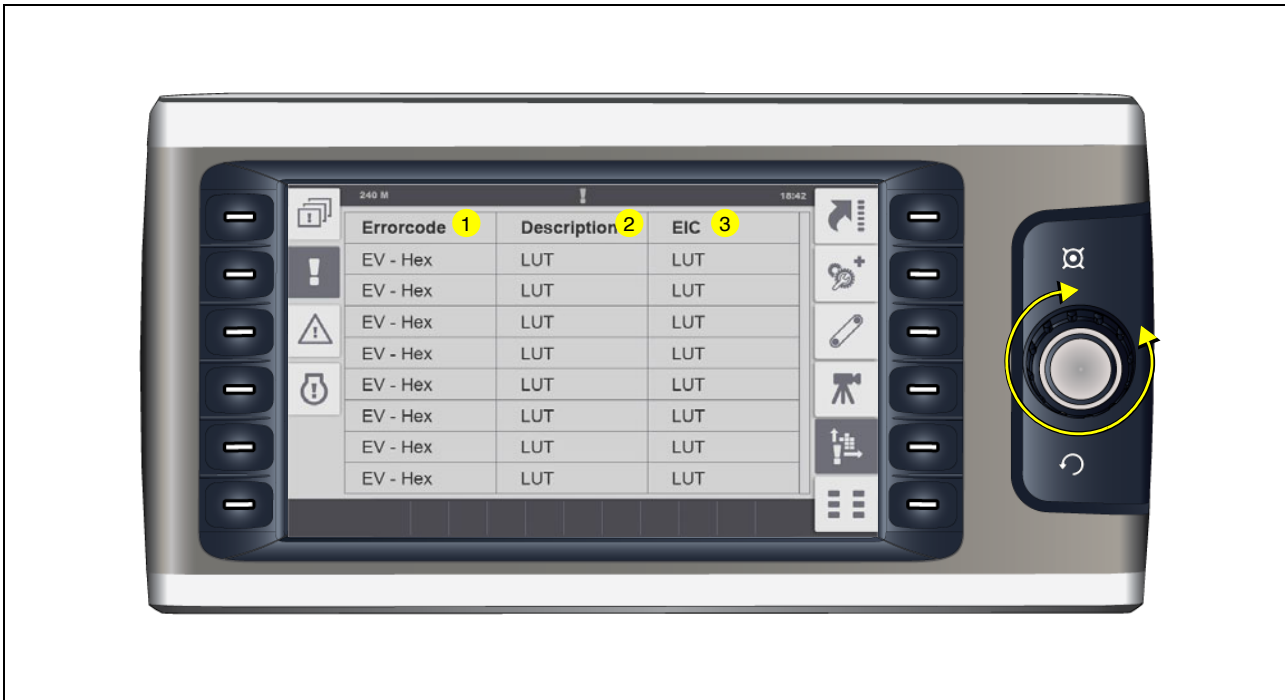
Menu for retrieving existing error messages.

- (1) Number of error messages with travel drive stop.
  - Open detailed display "Error messages with travel drive stop": (1.1).
- (2) Number of vehicle warning messages.
  - Open detailed display "Vehicle warning messages": (2.1).
- (3) Number of engine error messages.
  - Open detailed display "Engine error messages": (3.1).
- (4) System error display.



Possibly notify customer service of the system error number displayed on your paver finisher; the customer service department will then discuss with you how to proceed.

## Detailed display "Error messages with travel drive stop"



Display of existing error messages in a table.

- (1) Error code.
- (2) Error description.
- (3) Designation of the faulty part as per BMK/EIC list.




Press the job dial to scroll through the list.

## Detailed display "Vehicle warning messages"




Display of existing error messages in a table.

- (1) Error code.
- (2) Error description.
- (3) Designation of the faulty part as per BMK/EIC list.

 Press the job dial to scroll through the list.

- Delete list of error messages: (4).

 As confirmation, the display changes for 5 to 10 seconds during deleting.





## Detailed display "Engine error messages"



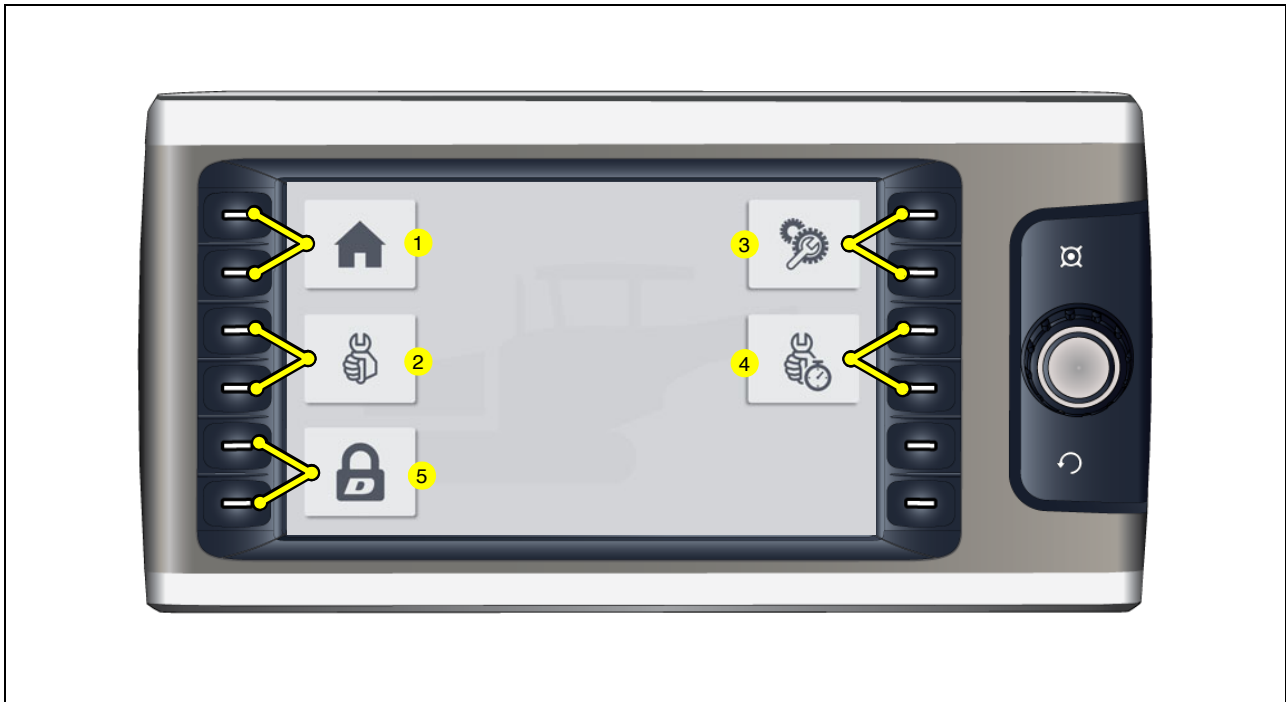
Display of existing error messages in a table.

- (1) SPN code.
- (2) FMI code.
- (3) OC error frequency.

 All error messages can be identified in the section "Drive engine error codes".

 Press the job dial to scroll through the list.

## "Basic" menu



 The "Basic" menu can be opened from every menu, sub-menu or display.

Menu for opening the following sub-menus:

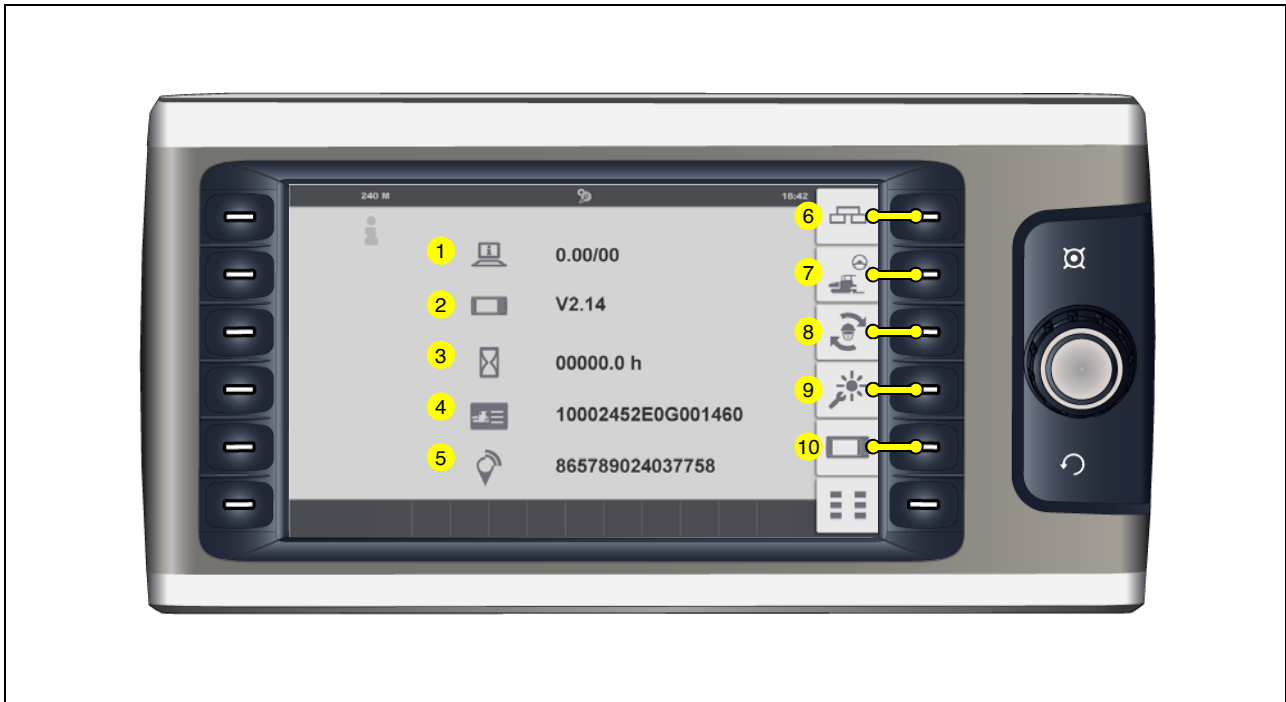
- (1) "Home" menu
  - Display and "Quick settings" menu.
- (2) "Service" menu
  - Menu for service technician (password required)
- (3) "Info & Settings" menu.
  - Menu for adjusting various functions.
- (4) "Service report" menu
  - Menu for recording service work performed on the vehicle.
- (5) "Remote lock" menu
  - For locking and unlocking machine functions.

## "Service" menu



Password-protected menu for various service settings.

## "Info & Settings" menu



Menu for calling up various vehicle information and sub-menus for various settings.

Display of the following information:

- (1) Software version of the vehicle
- (2) Software version of the display
- (3) Engine operating hours (h)
- (4) Vehicle serial numbers (17-digit PIN) / (VIN)
- (5) Dynalink module number (○) (15-digit number) / (IMEI)



If consultation with Technical Support is required for your vehicle, always specify the software version!

Open the following sub-menus:


- (6) "Screed" set-up menu.
- (7) "Paving / Travel" set-up menu.
- (8) "Truck Assist / Set Assist" set-up menu.
- (9) "Day/night lighting" set-up menu.
- (10) "Display" set-up menu.

## "Screed" set-up menu




Menu for setting up the basic screed settings and screed functions.

- (1) Display and adjustment parameters for "Delayed screed start" - delay time (sec)


 On swivelling the drive lever, the floating function is only activated once an adjusted time has elapsed.

 Setting range 0-10 sec.


- (2) Display and adjustment parameters for the central lubrication system
  - (2.1): Extended lubrication interval
  - (2.2): Standard lubrication interval
  - (2.3): Shortened lubrication interval

 If necessary, the lubrication interval has to be adjusted to the prevailing paving situation and to the material.


- (2.4): Function "Lubrication interval - manual start".

 The lubrication function is started manually and runs for the selected interval. Press again to cancel.

- (3) Info on screed type

 The screed type is automatically recognised.

- (4) Info on screed heater

 The gas / electric heater type is automatically recognised.

## "Paving / Travel" set-up menu



Menu for setting up the vehicle and levelling functions.

- (1) Display and adjustment parameters for "Delayed front hopper" - delay time (sec). (○)



After closing the hopper lids, the front hopper is only raised after the adjusted time has expired.



Setting range 0-25 sec.

- (2) Selection "External levelling"
  - (L): External levelling - left side of the vehicle
  - (R): External levelling - right side of the vehicle



When "External levelling" is selected, the toggle switches of the system's own remote control remain active!



- (3) Selection "Cross levelling"
  - (0): Cross levelling OFF
  - (1): Only data display of the opposite side of the vehicle.
  - (2): Data display and control of the opposite side of the vehicle.
  - (3): Split screen on the remote controls: simultaneous data display and operation of both sides of the vehicle possible. (○)
  
- (4) Selection "Steering sensitivity" (○)
  - (>): Low steering sensitivity
  - (>>): Medium steering sensitivity
  - (>>>): High steering sensitivity

## "Truck Assist / Set Assist" set-up menu



Menu for setting up the "Truck Assist" and "Set Assist" functions.

- (1) Selection "Truck distance"



In order to adjust to the prevailing situation, the truck's automatic detection function can be preset to 3 different distances (paver/truck).

- (1.1): Shortened distance
- (1.2): Medium distance
- (1.3): Extended distance
- (2) Selection "Set Assist"



The selected elements are taken into account in executing the "Set Assist" function.

- (2.1): Raise / lower front hopper
- (2.2): Raise / lower auger
- (2.3): Raise / lower screed
- (2.4): Reverse conveyor
- (2.5): Retract/extend crossbeam lock
- (2.6): Retract/extend push rollers
- (2.7): Open / close hopper
- (2.8): Position levelling cylinder
- (2.9): Position track cleaner (○)

- (3) Selection "Auto Save"



The working condition / current position of the corresponding functions and components is saved automatically on pressing the Set Assist function button (operating panel).

## "Day/night lighting" set-up menu



Menu for adjusting the illuminance of various control elements.

- (2) Monitor brightness display and adjustment parameters
  - (2.1): daytime light (%)
  - (2.2): nighttime light (%)
- (3) Truck Assist display and adjustment parameters
  - (3.1): daytime light (%)
  - (3.2): nighttime light (%)

## "Display" set-up menu



Menu for setting up basic display settings.

- (1) Selection "System language"
  - English / German
- (2) Selection "Units of measurement"
  - Metric / Imperial (US)
- (3) "Time" display and adjustment parameters
  - h/h : min/min
  - 24h / PM/AM
- (4) "Date" display and adjustment parameters
  - dd - mm - yyyy

Open the following sub-menus:

- (5) "Camera / display" set-up menu
- (6) "Licence text" display of Open Source Software (OSS)
  - The software for machine control used with the product contains Open Source Software. The OSS licence conditions are included and can be viewed here.

## "Camera / display" set-up menu



Menu for setting up the camera display.

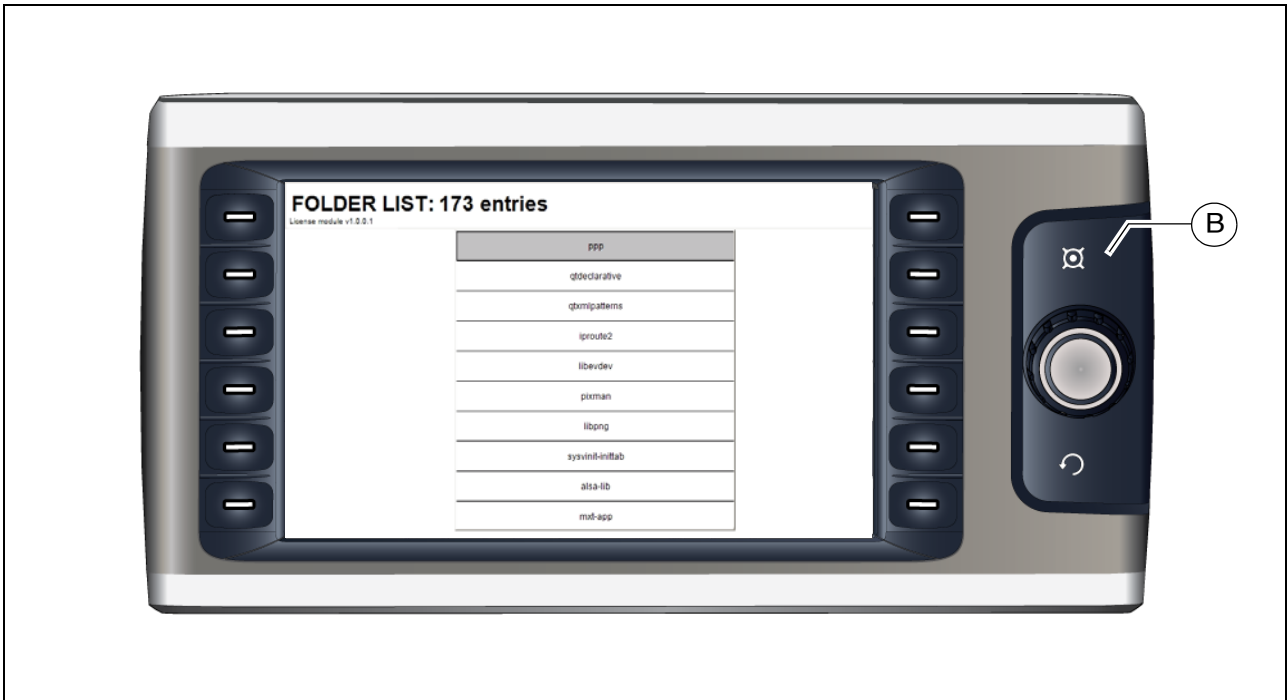
- (1) Brightness display and adjustment parameters
- (2) Contrast display and adjustment parameters
- (3) Colour display and adjustment parameters

Setting range 0-100%

Open the following sub-menus:

- (4) "Display" set-up menu.
- (5) "Licence text" display

## "Licence text" display

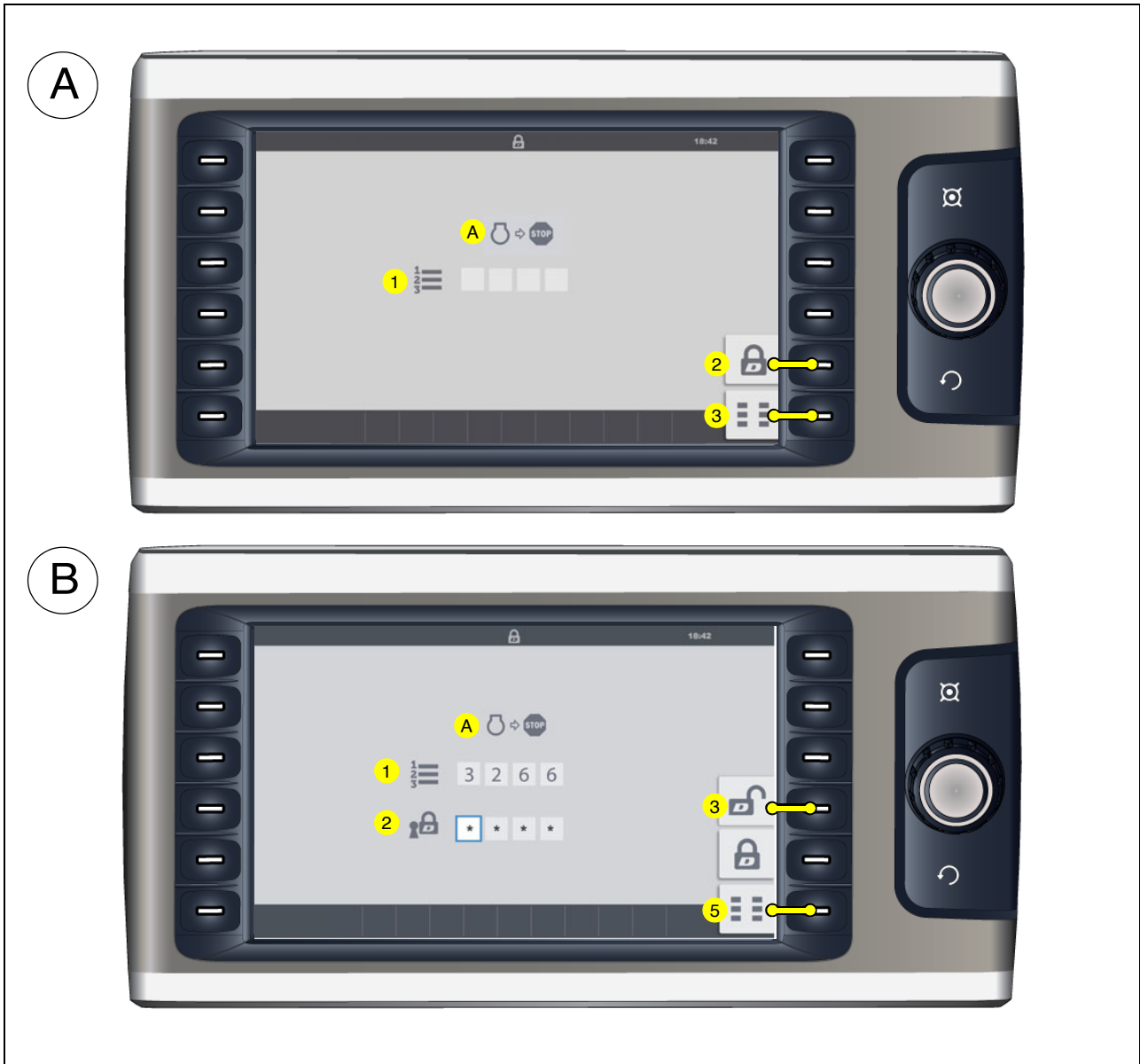


Display of the software licence text.

Exit display:

- (B) Back to the previous page.

## "Remote lock" menu



Menu for opening the locking/unlocking function

(A): Remote lock not active

Display of the following information:

- (1) Request number (empty), cannot be edited

Open the following sub-menus:

- (2) "Lock menu"
- (3) "Basic menu" display



Locking only possible with engine "OFF". (Note (A))

(B): Remote lock active

Display of the following information:

- (1) Request number
- (2) Transaction number "TAN"  
Function button (3) must be pressed after entering the TAN.  
The lock is cancelled.



The TAN which is only valid once can be queried from the owner of the machine. The request number has to be stated to this end. The requested TAN has to be entered in the corresponding field (2) to unlock.

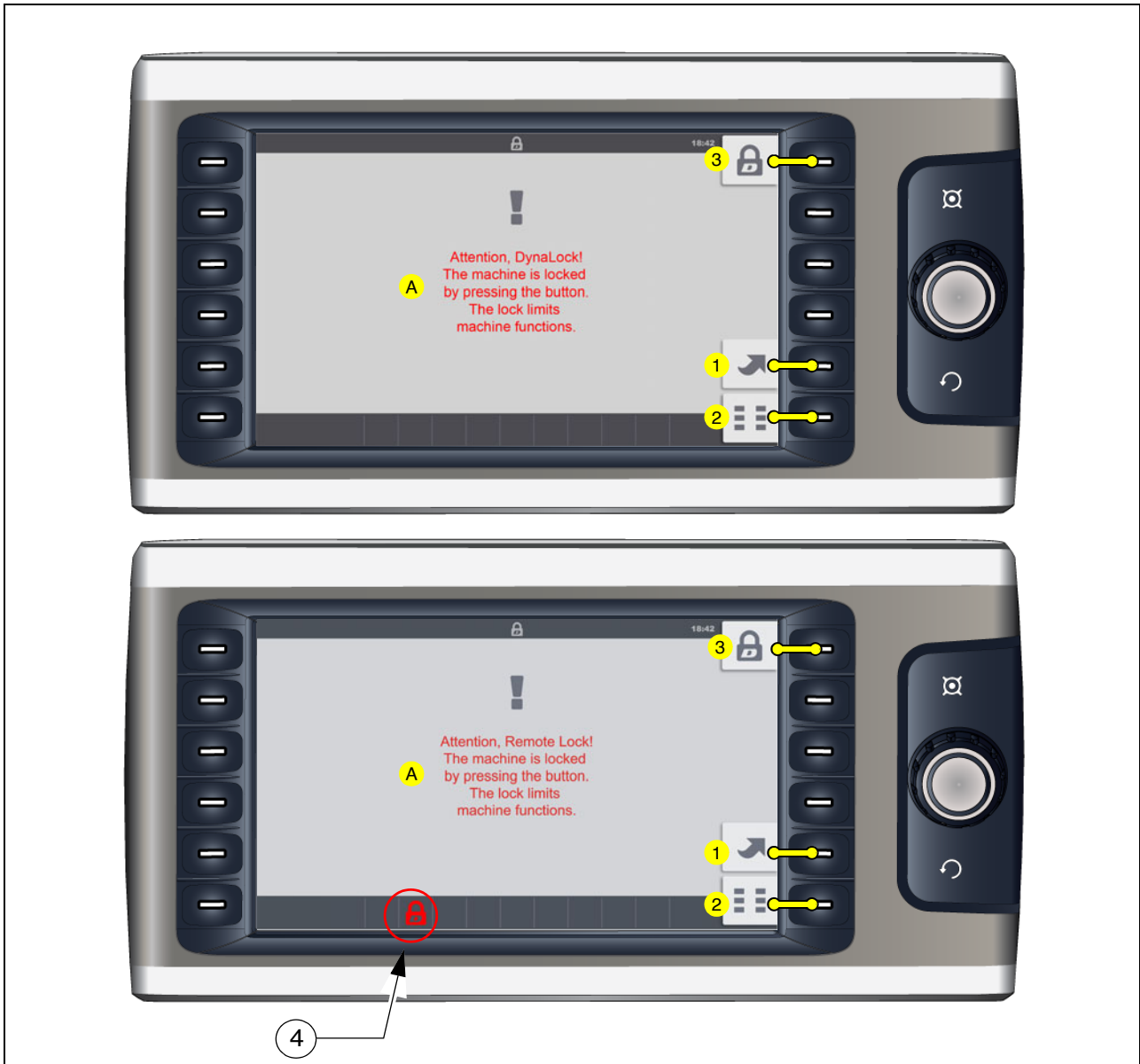
Open the following sub-menus:

- (5) "Basic menu" display



Locking only possible with engine "OFF". (Note (A))

## "Lock menu"



### Menu for locking machine functions

Open the following displays / sub-menus:

- (A) "Remote lock!" warning appears
- (1) When machine already locked: Open "Unlock" menu
- (2) "Basic menu" display



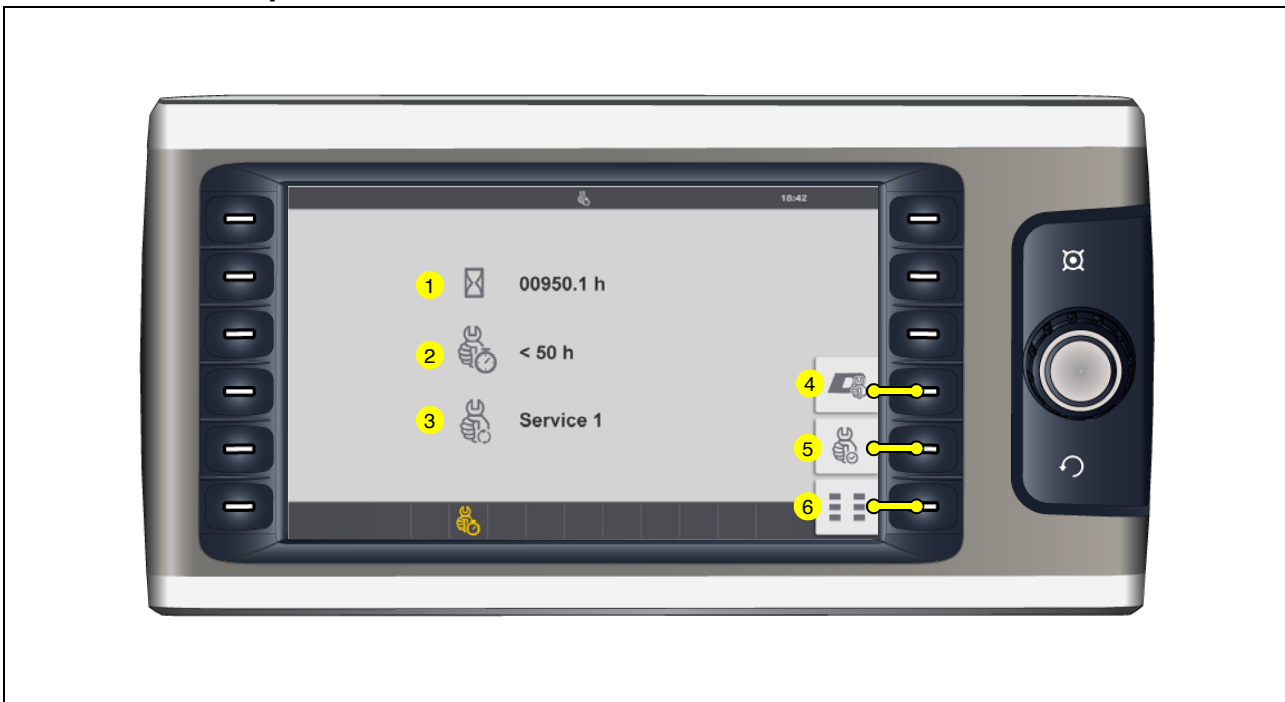
The lock function is activated by pressing function button (3).



After locking, button (3) has no function and the corresponding error message (4) appears.



## "Service report" menu



Menu for opening the lock function.

Display of the following information:

- (1) Operating hours
- (2) Remaining operating hours until the next service
- (3) Pending service scope. Service 1 / Service 2 / Service 3 (○)

Open the following sub-menus:

- (4) Report for Dynapac service technician
- (5) Report for servicing carried out by the customer
- (6) Back to the "Basic" menu

## Report for Dynapac service technician - step I



Menu for entering the following parameters:

- (1) Selection "Performed service"
  - Service 1 / Service 2 / Service 3 (○)
- (2) Technician number of the Dynapac service technician
- (3) PIN of the Dynapac service technician

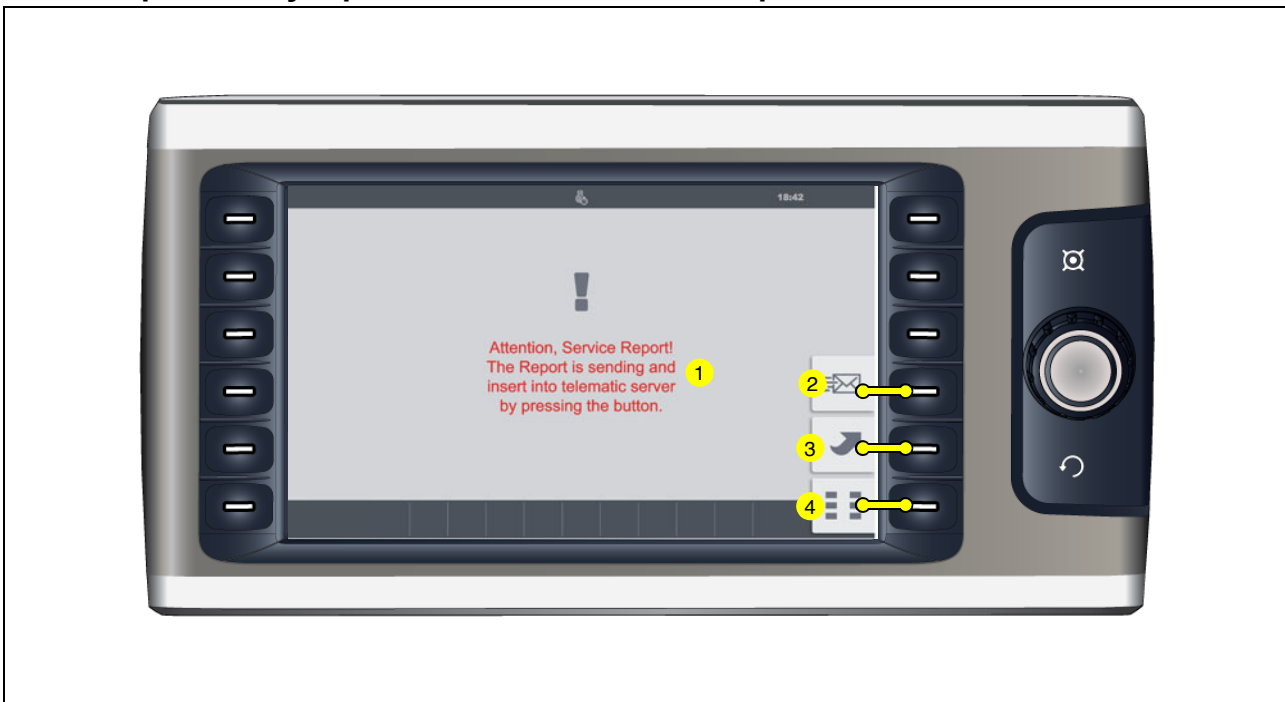


When the input field appears with a red surround, this indicates the technician number or PIN were entered incorrectly.

Perform the following functions:

- (4) Report for Dynapac service technician - step II
- (5) Back to the previous mask
- (6) Back to the "Basic" menu

## Report for Dynapac service technician - step II



Menu to confirm / forward the service report.

- (1) "Service report" warning appears (1)

Perform the following functions:

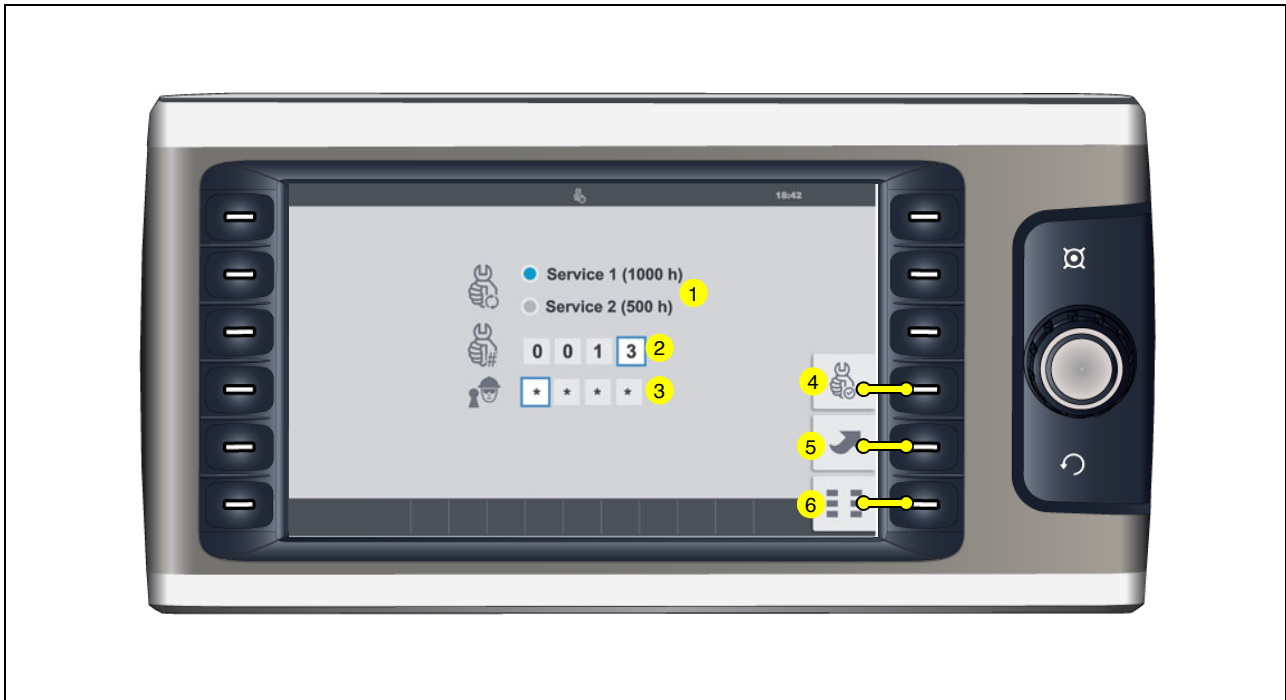
- (2) Send service report



After pressing the button, the system goes back to the "service report" mask.

- (3) Back to the previous mask
- (4) Back to the "Basic" menu

## Report for servicing carried out by the customer - step I



Menu for entering the following parameters:

- (1) Selection "Performed service"
  - Service 1 / Service 2 / Service 3 (○)
- (2) Technician number.
- (3) PIN 1-1-1-1

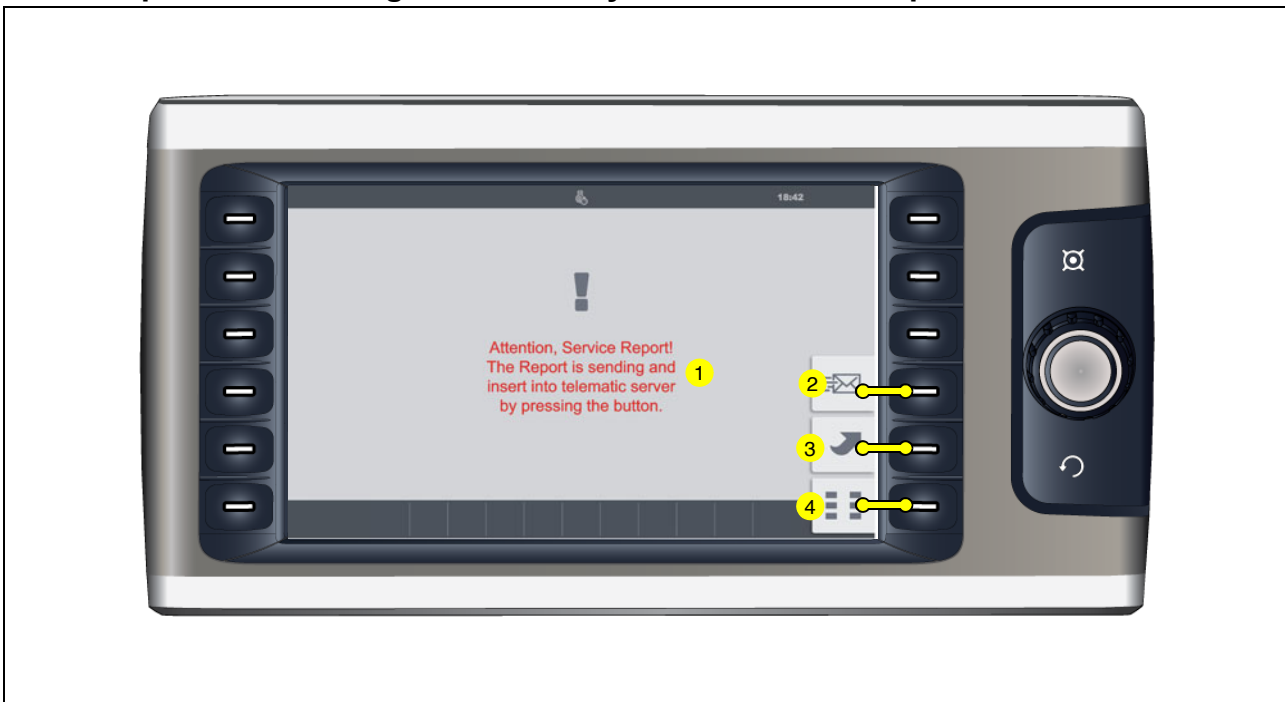


When the input field appears with a red surround, this indicates the PIN was entered incorrectly.

Perform the following functions:

- (4) Report for service technician - step II
- (5) Back to the previous mask
- (6) Back to the "Basic" menu

## Report for servicing carried out by the customer - step II



Menu to confirm / forward the service report.

- (1) "Service report" warning appears (1)

Perform the following functions:

- (2) Send service report



















After pressing the button, the system goes back to the "service report" mask.
















- (3) Back to the previous mask
- (4) Back to the "Basic" menu












## 2 Terminal error messages












### Status, warning and error messages symbols













Command	Symbol in the display
<ul style="list-style-type: none"> <li>- High beam headlights control The high beam headlights are switched on.  Avoid dazzling the oncoming traffic!</li> </ul>	
<ul style="list-style-type: none"> <li>- Check direction of travel indicator Flashes whenever direction of travel indicator is activated.</li> </ul>	
<ul style="list-style-type: none"> <li>- Particulate filter indicator lamp. Particulate filter regeneration is necessary.</li> <li>- Indicator lamp on permanently: Urgent maintenance, level I. Particulate filter regeneration must be carried out as soon as the operating status of the vehicle permits.</li> <li>- Indicator lamp flashes: Urgent maintenance, level II. Particulate filter regeneration must be carried out as soon as possible. The engine output may be automatically reduced under certain circumstances.</li> <li>- Indicator lamp flashes + indicator lamp "Engine malfunction" is on permanently: Urgent maintenance, level III. Particulate filter regeneration is vitally necessary to avoid subsequent damage and repairs. The engine output is automatically reduced.</li> <li>- Indicator lamp goes off + indicator lamp "Engine malfunction" is on permanently: Particulate filter regeneration is no longer possible.  Operation must be stopped immediately.</li> <li>- Consult the Dynapac Service Department  see "Particulate filter regeneration" menu</li> </ul>	



Command	Symbol in the display
<ul style="list-style-type: none"> <li>- Indicator lamp automatic particulate filter regeneration - deactivated</li> </ul> <p>Particulate filter regeneration is deactivated.</p> <ul style="list-style-type: none"> <li>- Automatic regeneration should only be deactivated if the operating status of the paver finisher does not permit any automatic function.</li> </ul> <p> see "Particulate filter regeneration" menu</p>	
<ul style="list-style-type: none"> <li>- Warning - high exhaust gas temperature! (HEST)</li> </ul> <p>The indicator lamp indicates a high exhaust gas temperature!</p> <p> It is normal for the indicator lamp to go on and off during operation while the exhaust gas system is being cleaned by the engine.</p> <p> Keep the outlet of the exhaust pipe out of the reach of people and of objects that can burn, melt or explode!</p> <p> There may not be any people or objects within a radius of 0.6 m of the exhaust outlet!</p> <p> There may not be any objects or substances that can burn, melt or explode within a radius of 1.5 m. (petrol, wood, paper, plastic, textiles, pressurised cylinders, hydraulic lines).</p> <p> In an emergency, turn the engine off so that no more exhaust gas is emitted!</p>	
<ul style="list-style-type: none"> <li>- Indicator lamp AdBlue® / DEF + warning tone</li> </ul> <p>The level of AdBlue® / DEF is insufficient.</p> <p>Level 10% - display flashes</p> <p>Level 5% - display stays on permanently</p> <p>Level 0% - drive engine is throttled to emergency mode</p>	
<ul style="list-style-type: none"> <li>- Indicator lamp platform lock.</li> </ul> <p>The control platform lock is set.</p>	

Command	Symbol in the display
<p>- Indicator lamp fuel reserve + warning sound The fuel is down to the reserve level in the tank</p> <p> Approx. 10% remains</p> <p> Urgent need to refuel!</p>	
<p>- Pre-heating indicator (yellow)</p> <p> Pre-heating is started with the ignition starter by switching the ignition on. (ignition key in position 1). Once pre-heating has finished, the indicator lamp goes off.</p> <p> Do not switch the start button until the pre-heating phase has finished!</p>	
<p>- Error message Indicates that there is a drive engine fault. Depending on the type of fault, the vehicle can temporarily continue to be operated or, in the case of serious faults, should be shut down immediately to prevent further damage from occurring. Each fault should be rectified as soon as possible!</p> <p> An error code query can be shown in the corresponding menu of the display.</p> <p> Lights up for a few seconds once the ignition has been switched on for checking purposes.</p>	
<p>- Hydraulic oil temperature indicator lamp Hydraulic oil temperature too low!</p> <p> Bring vehicle up to temperature with stationary acceleration!</p> <p> The engine speed cannot be increased when the hydraulic oil temperature is too low!</p>	
<p>- Overspeed Important! Machine speed too high! Reduce travel</p>	
<p>- Warning: The vehicle has one or more errors.  Error details can be viewed in the "Error memory" display menu.</p>	

Command	Symbol in the display
<p>- Pending service:</p> <p> A maintenance interval is about to expire.</p> <p> Proceed immediately with maintenance to avoid subsequent damage!</p>	
<p>- Service overdue:</p> <p> A maintenance interval is overdue.</p> <p> Proceed immediately with maintenance to avoid subsequent damage!</p>	
<p>- Heating status "ON":</p> <p> If the heating is activated, the heating system is switched off first when switching the vehicle off. This can cause a delay in switching the vehicle off.</p>	
<p>- Switching off front-wheel drive:</p> <p> When the front-wheel drive is blocked, e.g. after reversing</p> <p> Wait 10 seconds before the drive lever is swung out.</p>	


Command	Symbol in the display
<p>- Error message "Serious error" There is a serious error in the engine.</p> <p> Switch off the drive engine immediately!</p> <p> Error details can be viewed in the "Error memory" display menu.</p> <p> Lights up for a few seconds once the ignition has been switched on for checking purposes.</p>	
<p>- Parking brake indicator The parking brake is switched on.</p>	
<p>- Emergency Stop One or more emergency stop buttons have been pressed.</p>	
<p>- Engine coolant temperature The engine temperature is too high.</p> <p> The engine performance will be throttled down automatically. (Driving mode remains possible). Stop the paver finisher (drive lever to the centre position), let the engine cool down while idling. Determine the cause and rectify if necessary (refer to "Malfunctions" section). After cooling down to normal temperature, the engine will run with full performance again.</p> <p> This error is displayed together with "Error message".</p>	
<p>- Battery charge indicator: Must go out after starting when the engine revs up.</p> <p> If the light does not go out, switch off the engine</p>	

Command	Symbol in the display
<ul style="list-style-type: none"> <li>- Engine stop: Display for all error messages with machine stop.</li> </ul>	
<ul style="list-style-type: none"> <li>- Hydraulic filter. The hydraulic filter must be replaced.</li> <li> Replace filter element acc. to Maintenance Instructions!</li> </ul>	
<ul style="list-style-type: none"> <li>- Engine oil pressure</li> <li> The oil pressure is insufficient. Switch off the engine immediately! For other possible errors, see engine's operating instructions.</li> <li> This error is displayed together with "Error message".</li> </ul>	
<ul style="list-style-type: none"> <li>- Hydrostatic travel drive oil pressure indicator</li> <li> The oil pressure is insufficient. Switch off the engine immediately! For other possible errors, see engine's operating instructions.</li> </ul>	
<ul style="list-style-type: none"> <li>- Emergency mode active</li> </ul>	
<ul style="list-style-type: none"> <li>- Vehicle error. The control unit reports one or several malfunctions that cause the vehicle to shut down. It may be possible to continue operating the vehicle in the emergency mode.</li> <li> Error details can be viewed in the "Error memory" display menu.</li> </ul>	
<ul style="list-style-type: none"> <li>- Master display communication error Communication between master and display is interrupted / emergency stop button has been pressed</li> </ul>	

Command	Symbol in the display
<p>- Remote Lock activated The machine lock function has been activated. The conveyor belt speed is reduced.</p> <p> A TAN which is only valid once can be queried from the owner of the machine. The request number has to be stated to this end.</p>	

## 2.1 Error message drive lever



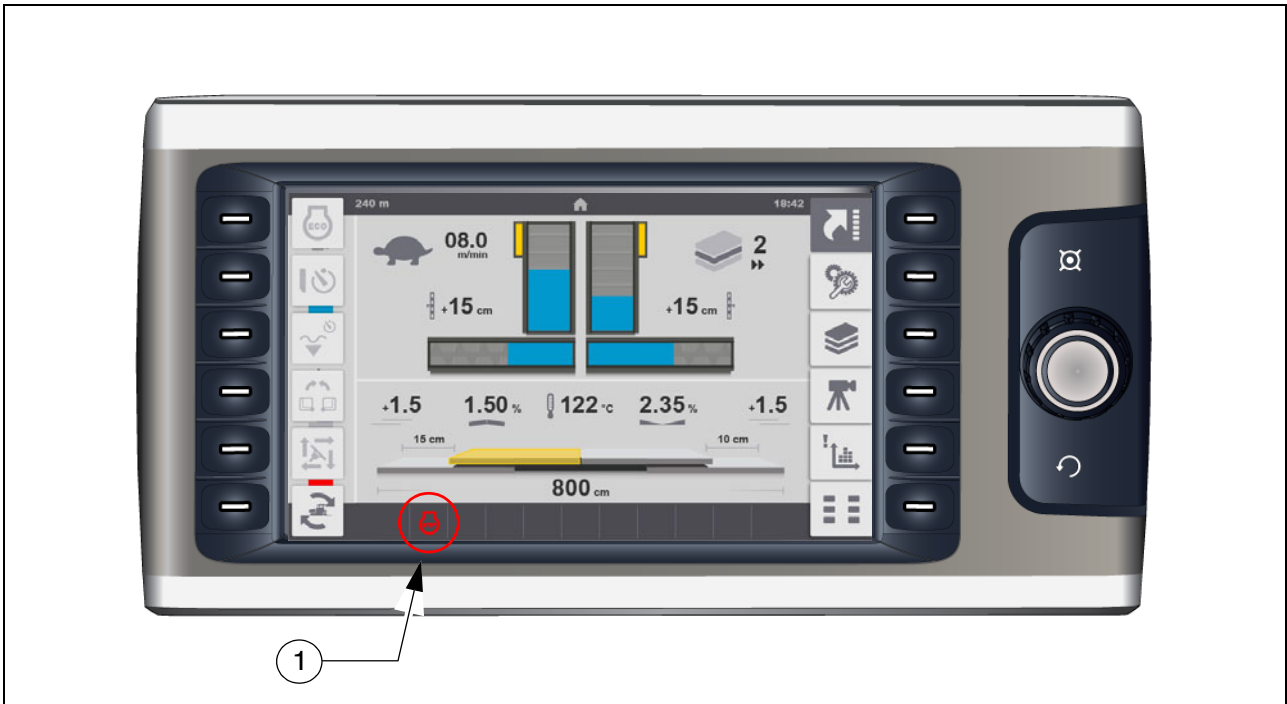
 If a fault is detected in the drive lever, this is shown by the corresponding indication in the display. The display appears directly but can be quit.


 The vehicle can be moved away from the construction site in emergency mode:

- Caterpillar paver:
  - Turn the travel drive preselector (1) to zero. The LEDs in buttons (2) and (3) flash.
  - Forwards travel: Press and hold function button (2) "turning on the spot", speed control with "travel drive preselector " (1).
  - Reverse travel: Press and hold function button (3) "transport gear", speed control with "travel drive preselector " (1).





- Wheeled paver:
  - Turn the travel drive preselector (4) to zero. The LEDs in buttons (5) and (6) flash.
  - Forwards travel: Press and hold function button (5) "cruise control", speed control with "travel drive preselector " (4).
  - Reverse travel: Press and hold function button (6) "transport gear", speed control with "travel drive preselector " (4).

## 2.2 Drive engine error codes

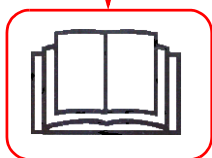
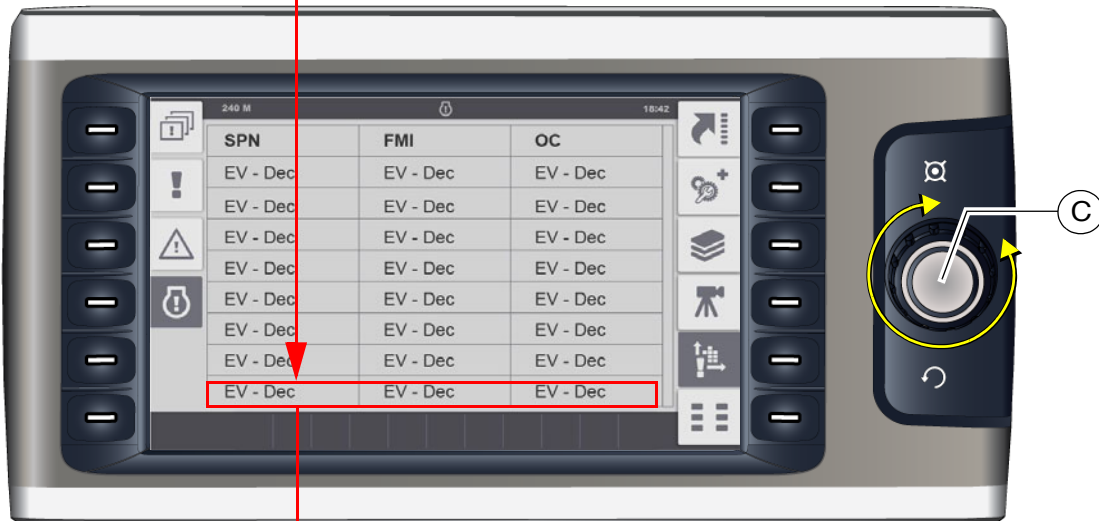
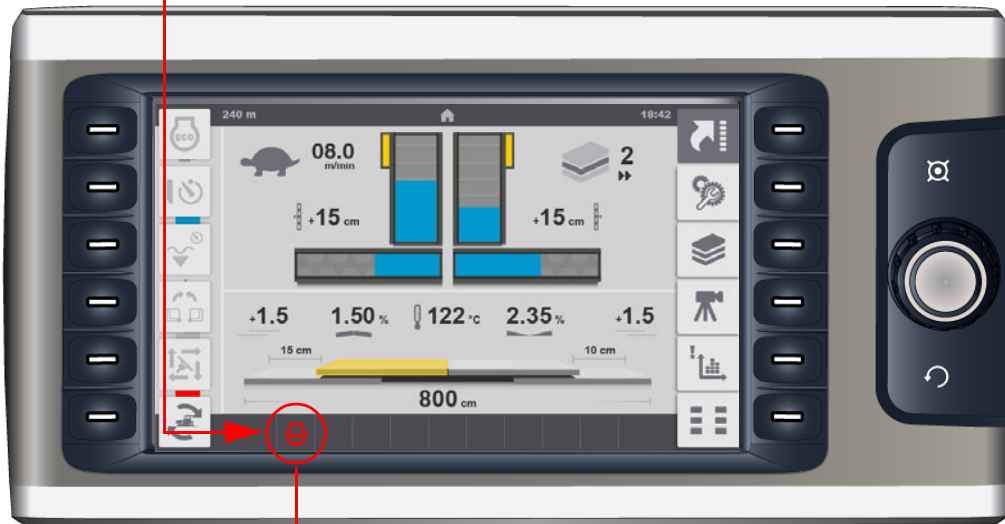
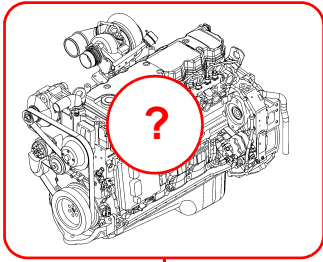


 If a fault is detected on the engine, this is shown by the corresponding indication (1) in the display.



-  The error message that can be viewed in the corresponding menu contains several numerical codes, which clearly define the fault after decoding.
-  Press the job dial to scroll through the list.
-  It may be possible to continue operating the vehicle, depending on the severity of the error. The error should however be remedied quickly to prevent further damage.
-  Engine malfunctions result in the engine stopping automatically to prevent further damage.

Example:



Explanation:

Warning light and display signal a serious fault on the drive engine with automatic or necessary engine shut-down.

Display:

SPN: 157

FMI: 3

OC: 1

**Cause:** Cable break on sensor for rail pressure.


**Effect:** Engine shut-down.

**Frequency:** Fault occurs for the 1st time.



Notify customer service of the error number displayed on your paver finisher; the customer service department will then discuss the further procedure with you.

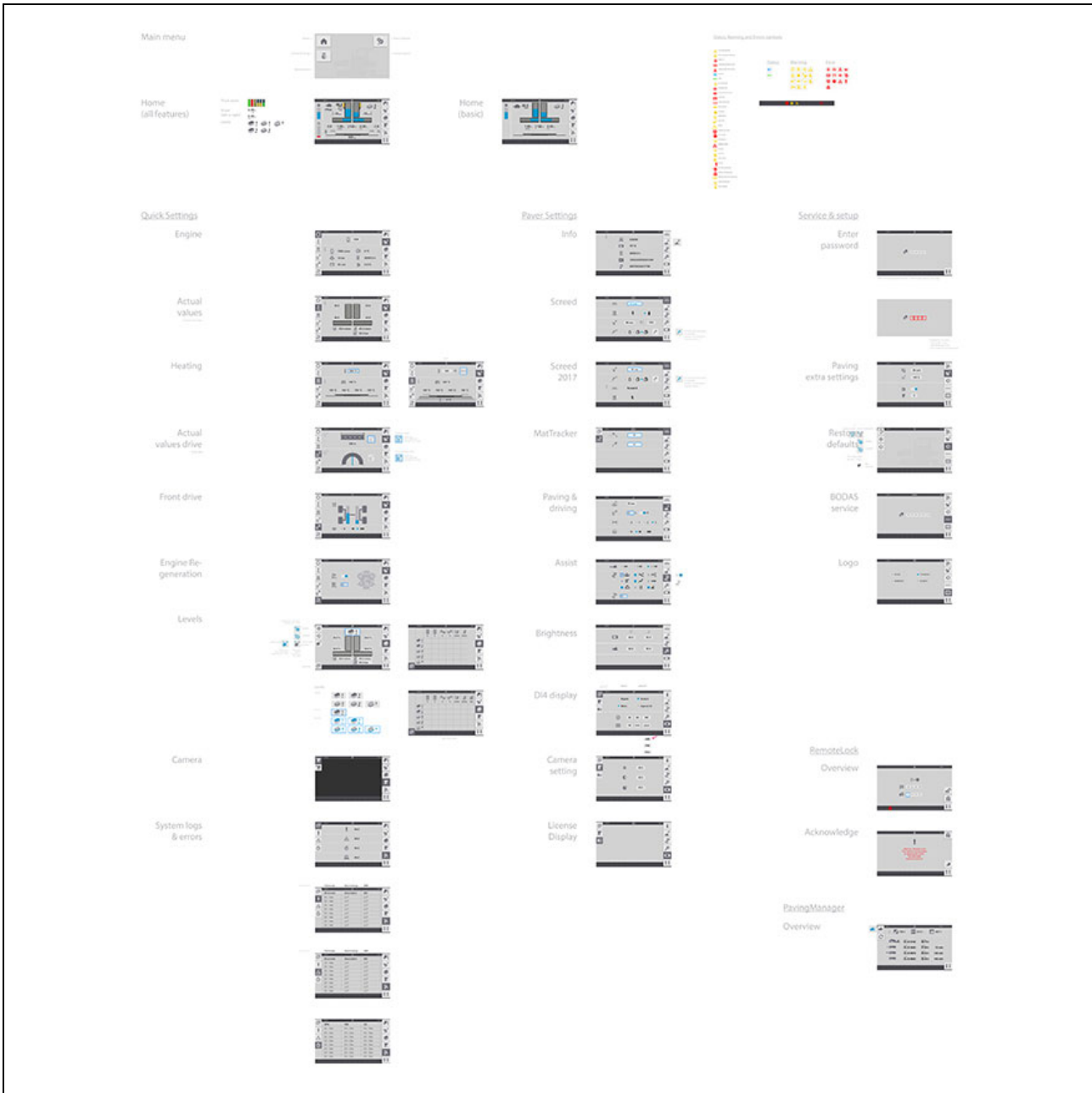
## 2.3 Error codes

 Scan QR-Code to access failure code chart...



### 3 Menu structure of the setting and display menus



The following illustration shows the menu structure and serves to simplify operation and the procedure in the case of various settings and displays.




# D 31 Mode of operation


## 1 Operating elements on the paver finisher

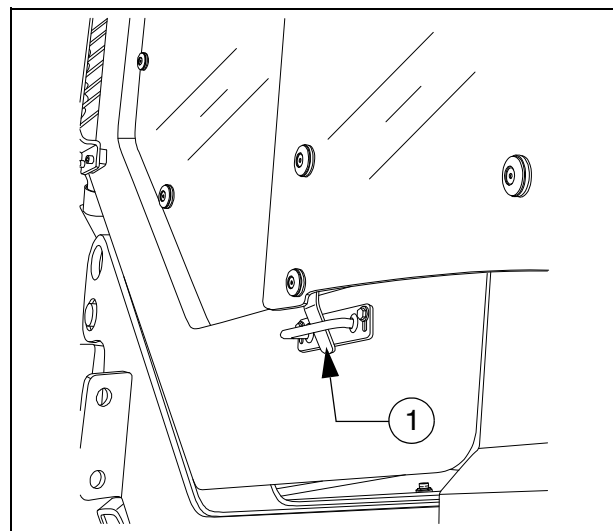
### 1.1 Control elements on the operator's control station

 <b>WARNING</b>	<b>Danger of falling from the vehicle</b>
	<p>Entering and leaving the vehicle and the driver's seat during operation poses a risk of falling from the vehicle, which can cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- During operation, the operator must be at the intended driver's seat and be seated properly.</li><li>- Never jump onto or off a moving vehicle.</li><li>- Keep accessible surfaces free of any soiling, e.g. operating substances, to avoid the risk of slipping.</li><li>- Use the steps provided and hold onto the handrail with both hands.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

Protective roof (○)

<b>NOTE</b>	<b>Caution! Possible collision of parts</b>
	<p>The following adjustments must be made before lowering the roof:</p> <ul style="list-style-type: none"><li>- Control platform locked in central position</li><li>- Operating panel locked in central position</li><li>- Operating panel fixed in lowest position and engaged in rearmost setting</li><li>- Steering wheel knob is at the bottom (wheeled paver)</li><li>- Driver's seats swivelled to middle setting and in lowest position</li><li>- Backrests and armrests of driver's seats tilted forwards</li><li>- Front and side windows closed</li><li>- Engine hood and lateral flaps closed</li><li>- Rotary beacon swivelled inwards and in lowest setting.</li></ul>

<b>NOTE</b>	<b>Caution! Possible damage to parts!</b>
	<p>The following measures must be ensured before transport:</p> <ul style="list-style-type: none"><li>- After lowering the roof, the lock tabs (1) of the side windows must be in the corresponding mountings on both sides of the machine.</li></ul>



The protective roof can be raised and lowered electrically.

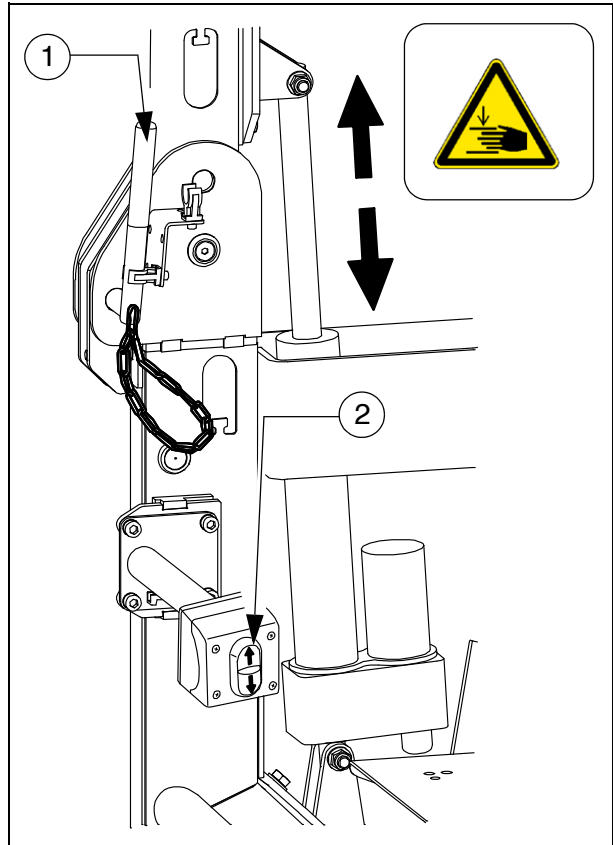


The exhaust pipe is lowered or raised together with the roof.

- Tighten bolts (1) on both sides of the roof.
- Operate the switch (2) until the roof has reached the upper or lower limit position.
- Set bolts (1) in the respective position on both sides of the roof.



There must not be anyone on the control platform on actuation!



<b>WARNING</b>	<b>Danger of crushing due to moving vehicle parts</b>
	<p>Vehicle parts performing movements can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Remaining in the vehicle's danger zone during operation is prohibited!</li> <li>- Do not reach into the danger zone.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

## Ladder

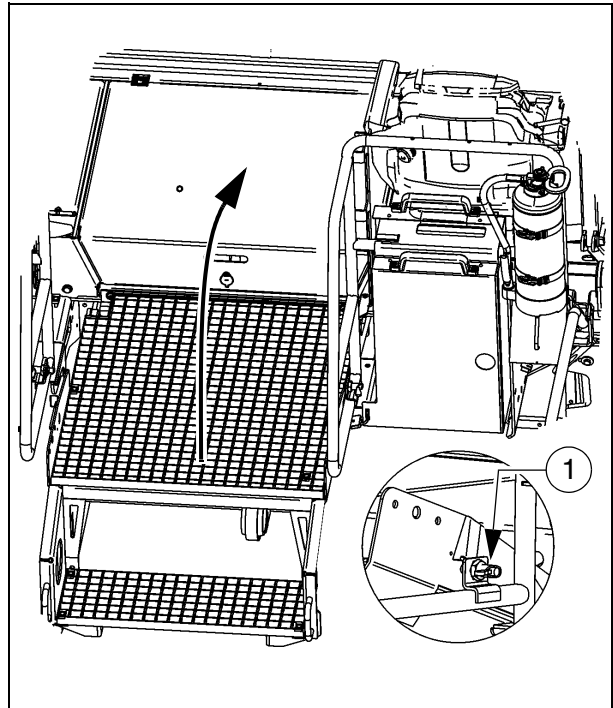
The ladder is used to access the control platform.

The ladder can be secured in the top position:

- have the ladder raised by a second person. Set the latch (1) on both sides of the ladder to the intended position.



The ladder must not be locked when driving or paving!



## Storage space

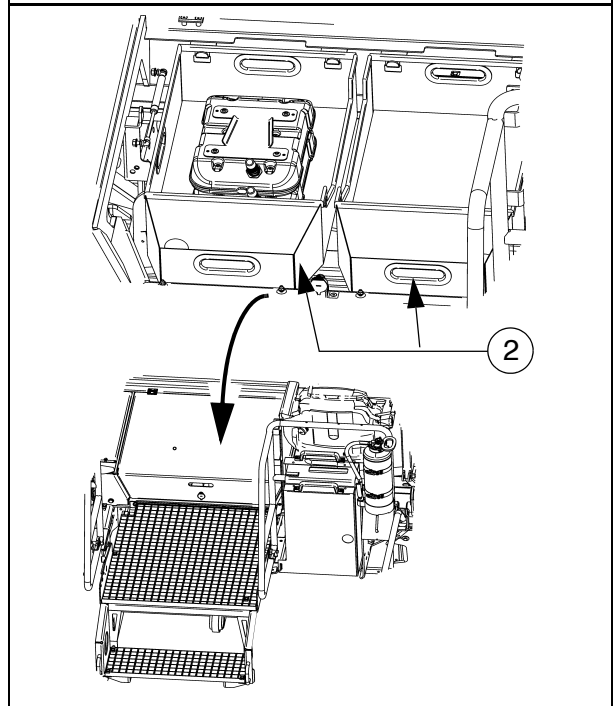
There are two removable containers (2) under the lockable bottom flap.



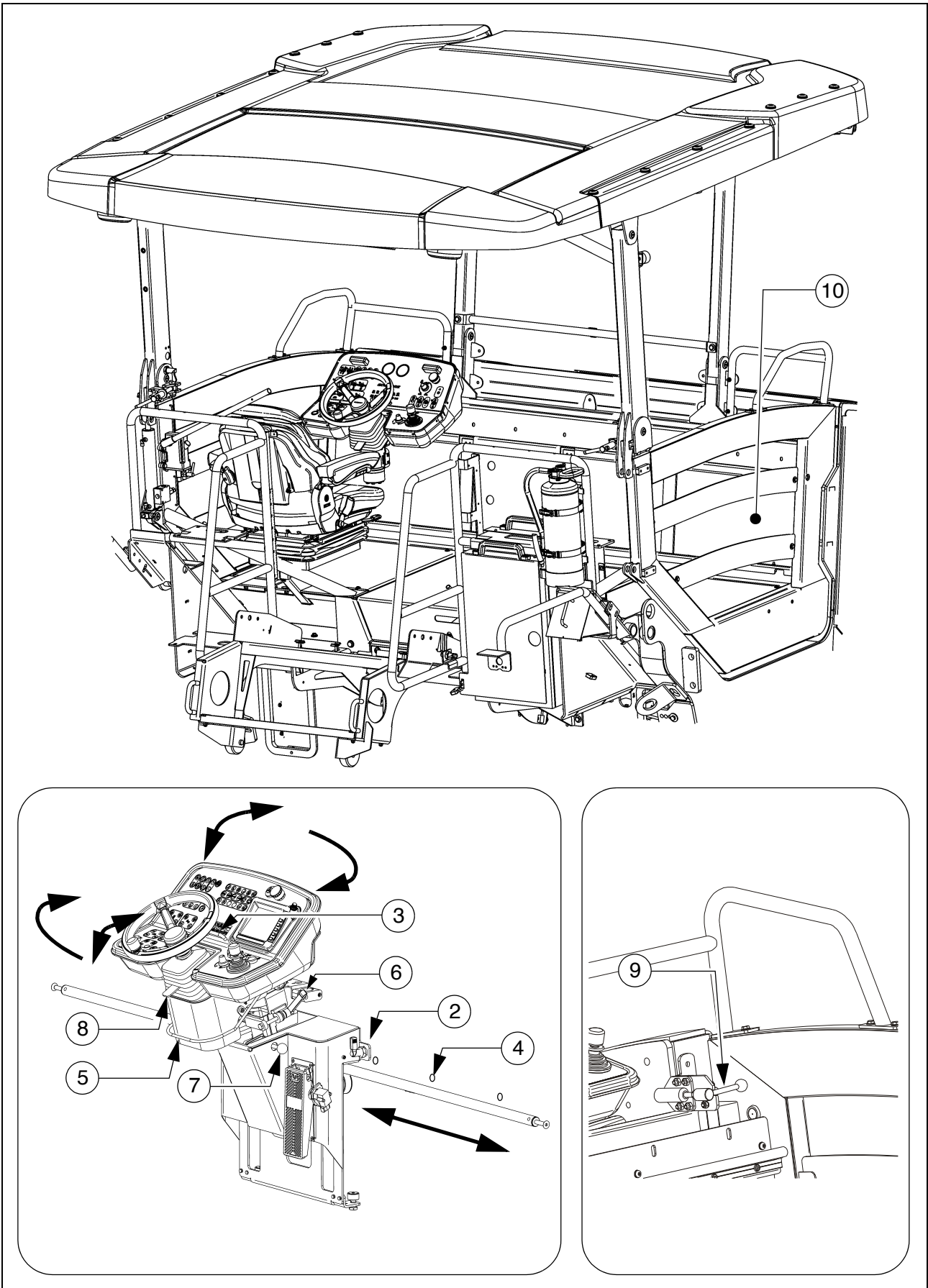
For storing the on-board tool kit, remote controls and other accessories.



The fuse and terminal box is beneath the metal containers.



Control platform, moveable (O)



The control platform can be hydraulically shifted beyond the left/right outer edge of the vehicle, providing the driver with a better view of the paving area in this position.



During transportation in road traffic and when transporting the vehicle on transporters, the control panel must be secured in the central position!



Actuating the platform shift function: see operating panel.



To shift the control platform, the latch (9) must be released.



Shifting the platform increases the basic width of the paver finisher.



If the platform is moved, ensure that there is no one in the vehicle's danger area!



Only adjust the operating position whilst the vehicle is stationary!

### **Control platform lock (○)**

- Release the latch (9) to move the control platform.



The latch must be fixed when the control platform is set in the middle and during transport.



To be able to set the lock, the panel must be positioned centrally above the machine frame.

### **Storage compartment**

Behind the locking door (10) there is a compartment for stowing necessary items.

---

## Operating panel

The operating panel can be adjusted to the various operating positions: left/right, sitting/standing. The entire operating panel can be swivelled for operation beyond the outer edge of the vehicle.



Make sure it is latched properly!



Only adjust the operating position whilst the vehicle is stationary!

Pushing the operating panel:

- Release panel latch (2) and slide panel console to the desired position using the handle (3).
- Insert panel latch (2) into one of the detent positions (4).

Swivelling the operating panel:

- Lift latch (5), swivel operating panel to the required position using the handle (3) and allow latch to engage again in one of the intended detent positions.

Raise/lower the operating panel:

- Release clamping lever (6), lift or lower operating panel.  
Tighten clamping lever (6) in required position.

Operating panel, linear adjustment:


- Press latch (7), move operating panel to foremost or rearmost position and allow latch to engage again.


Steering wheel, inclination adjustment:

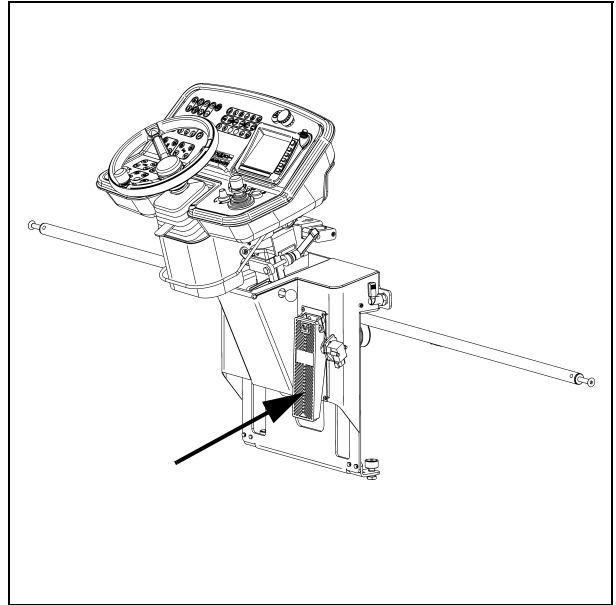
- Press latch (8), swivel steering wheel to the required position and allow latch to engage again.

## Service brake ("foot brake") (○)

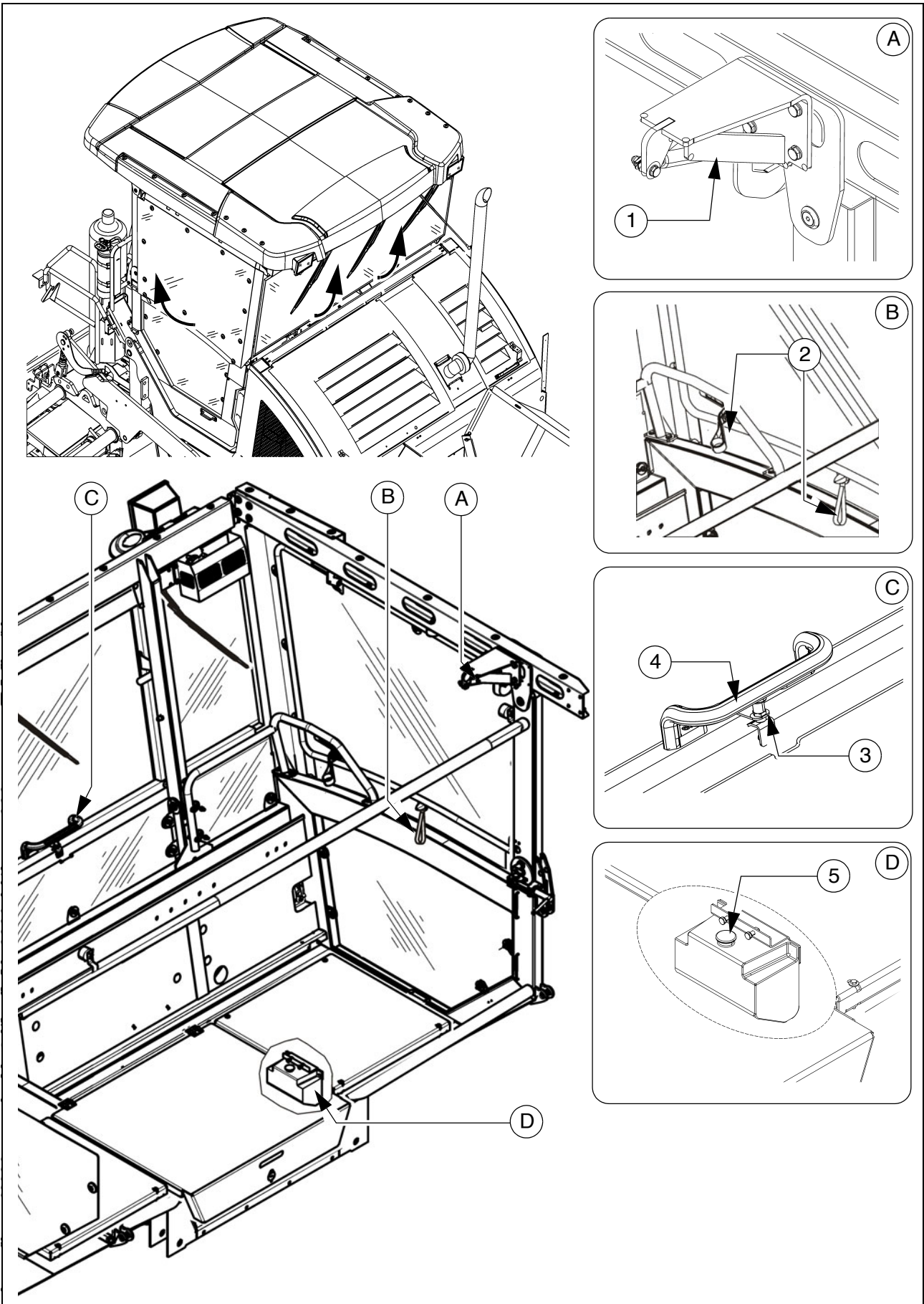
The brake pedal is in front of the driver's seat.



 When the brake is actuated, the speed of the travel drive is automatically reduced (regardless of the drive lever position).

 If the vehicle was brought to a standstill with the service brake, it cannot be driven away again until after the drive lever has been put into neutral!



Protective roof (O)



 <b>CAUTION</b>	<b>Risk of crushing hands</b>
	<p>When closing the spring-loaded front and side windows, there is a risk of crushing which can cause injuries!</p> <ul style="list-style-type: none"><li>- Do not reach into the danger zone.</li><li>- Set the latches correctly.</li><li>- Comply with further instructions in the safety manual.</li></ul>

The protective roof is equipped with an additional front window and two side windows.

- The side windows can be swivelled out to the side at the sliding frame.  
To close the side windows, press the latch (1) and pull the sliding frame with both straps (2).
- The front window can be swivelled using the handle (4) with the latch pulled (3).  
To close the front window, pull the latch (4) and pull the sliding frame at the handle (4).

### **Windscreen wiper**

- Engage the windscreen wiper / screen wash on the operating panel if necessary.



Ensure that the washer fluid tank (5) is always adequately filled.



Replace worn wiper blades immediately.

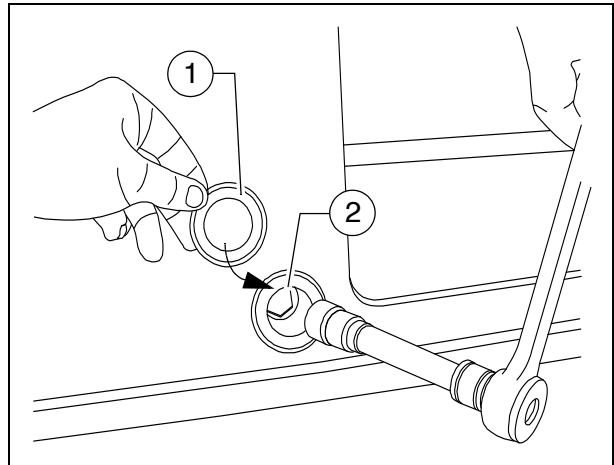
### Emergency actuation control platform, movable

If the control platform cannot be moved hydraulically, it can be pushed back to its central position by hand.

- Remove the screw cap (1) (next to the right footwell window).
- Remove screw (2).



This undoes the connection between the platform and the frame so that the platform can be moved.



- Restore the original status after eliminating the fault.

## Seat console

The seat consoles can be swivelled for operation beyond the outer edge of the vehicle.

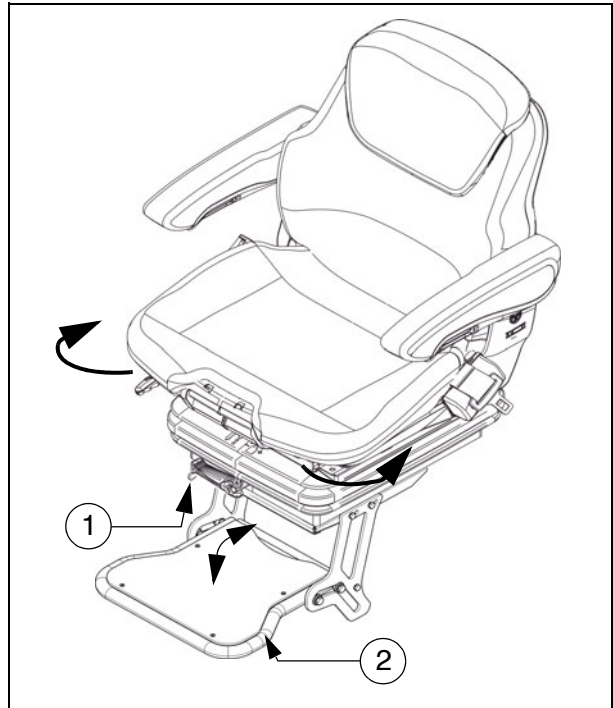
- Press latch (1), swivel seat console to the desired position and allow latch to engage again.
- Fold hinged step (2) down if necessary.



Make sure it is latched properly!



Only adjust the operating position whilst the vehicle is stationary!



## Driver's seat, type I



To avoid damage to health, the individual seat settings should be checked and adjusted before starting the vehicle.

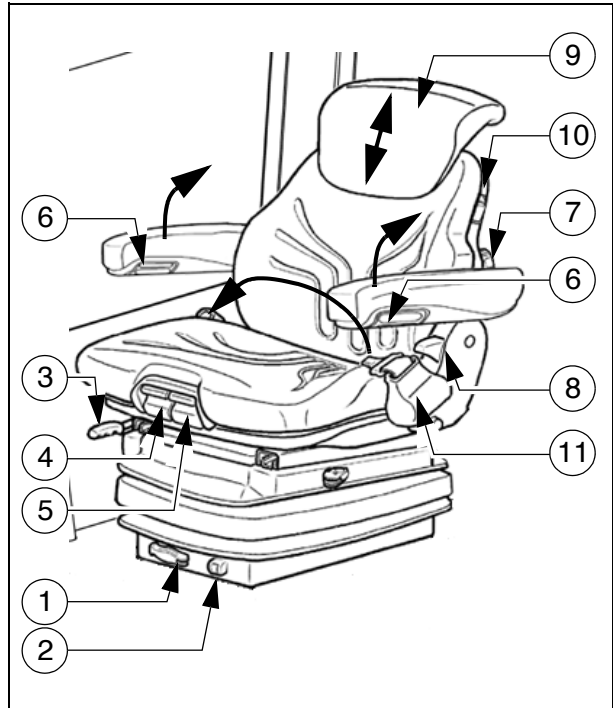


After locking the individual elements, it must no longer be possible to shift them to another position.

- **Weight setting (1):** The relevant driver's weight should be set by turning the weight adjustment lever when the driver's seat is unoccupied.
- **Weight indicator (2):** The set driver's weight can be read off at the viewing window.
- **Longitudinal adjustment (3):** Longitudinal adjustment is released by actuating the locking lever.

The locking lever must engage in the desired position.

- **Seat depth adjustment (4):** The seat depth can be individually adjusted. Raise the button to adjust the seat depth. The desired position is set by simultaneously sliding the seat surface forwards or backwards.
- **Seat inclination adjustment (5):** The seat surface's longitudinal inclination can be individually adjusted. Raise the button to adjust the inclination. The seat surface inclines to the desired position by simultaneously loading or relieving it.
- **Armrest inclination (6):** The armrest's longitudinal inclination can be adjusted by turning the hand wheel. Turning outwards raises the front of the armrest; turning inwards lowers it at the front.  
In addition, the armrests can be folded up fully.
- **Lumbar support (7):** Both the height and the extent of the convexity in the backrest padding can be individually adjusted by turning the hand wheel to the left or right.
- **Backrest adjustment (8):** The backrest is adjusted via the locking lever. The locking lever must engage in the desired position.
- **Back extension (9):** By pulling out via perceptible detents, the height can be individually adjusted up to a limit stop. To remove the back extension, the limit stop is overcome with a jolt.
- **Seat heating ON/OFF (10):** The seat heating is switched on and off by actuating the switch.
- **Seat belt (11):** The seat belt must be applied before starting up the vehicle.



The seat belts must be replaced following an accident.

## Driver's seat, type II

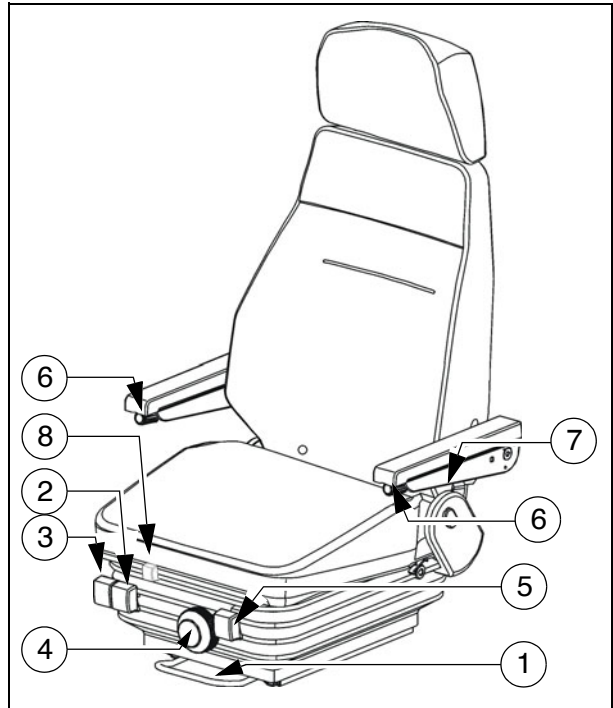


To avoid damage to health, the individual seat settings should be checked and adjusted before starting the vehicle.



After locking the individual elements, it must no longer be possible to shift them to another position.

- Horizontal setting (1).
- Height and slope setting, front (2).
- Height and slope setting, rear (3).
- Weight setting (4).
- Backrest setting (5).
- Armrests with tilt adjustment (6).
- Lumbar support setting (7).
- Seat heating ON/OFF (8).

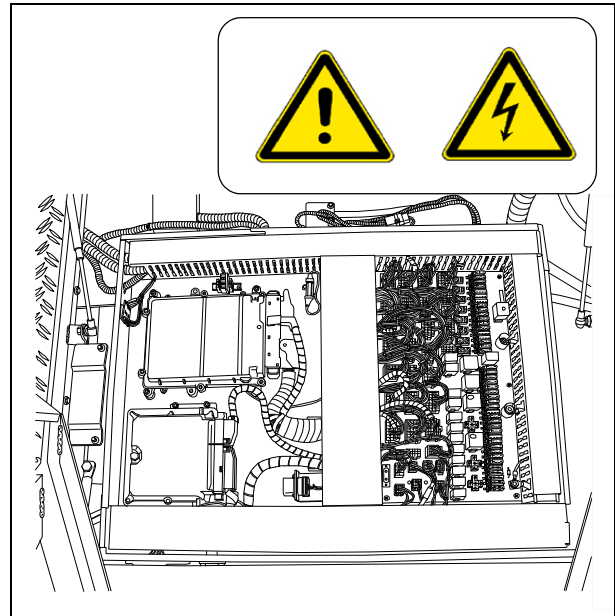


## Fuse box

The terminal box, which contains all fuses and relays, etc. is located beneath the central control platform floor panel.



An assignment plan for fuses and relays can be found in chapter F8.



## Batteries

The batteries (1) of the 24 V system are located in the vehicle footwell.



For the specifications, refer to chapter B, "Technical Data". For maintenance, see chapter "F".



External starting only according to the instructions (see section "Starting the paver finisher, external starting (starting aid)")

## Main battery switch

The main battery switch separates the current circuit from the battery to the main fuse.

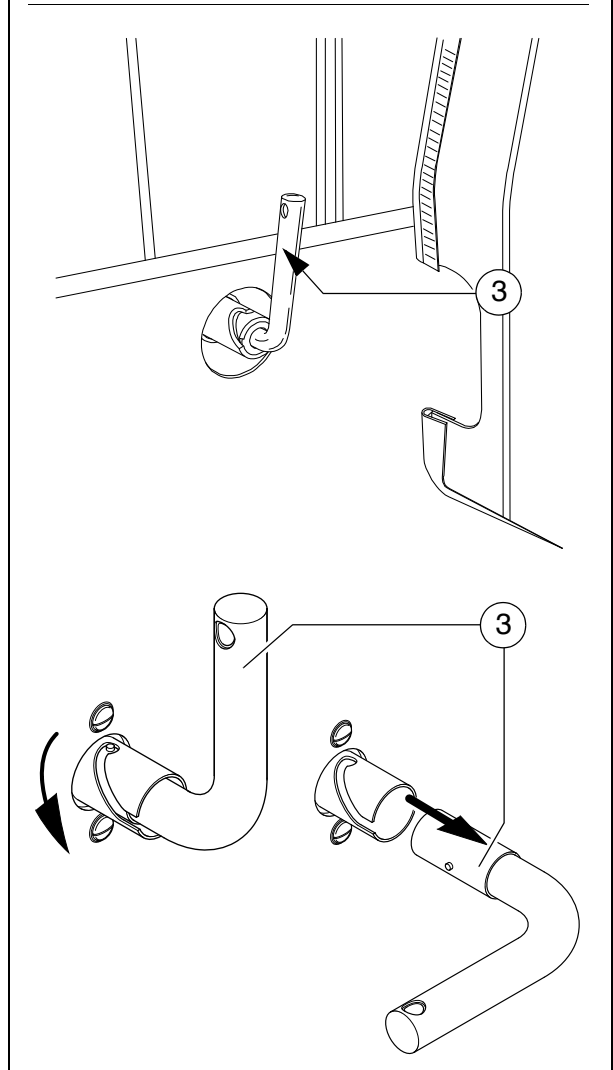
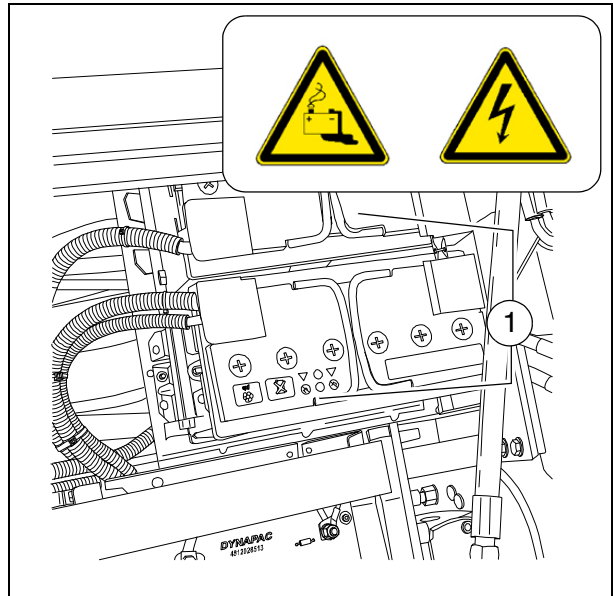


For the assignment of all fuses, see chapter F

- To interrupt the battery's current circuit, turn the key pin (3) to the left and pull it out.



Do not lose the key pin as in this case the paver finisher can no longer be moved!



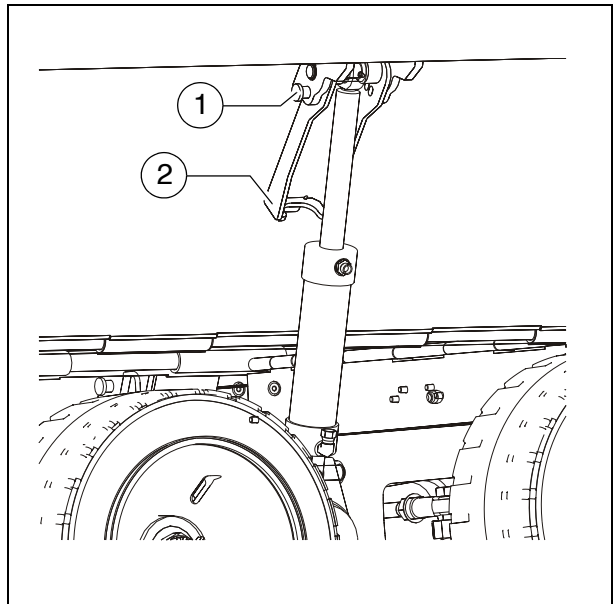
## Hopper transport safeguard

Before transporting or in order to park the paver finisher, the hopper halves must be swung upwards and the transport safeguards for the hopper must be inserted on both sides of the vehicle.

- Pull the locking pin (1) and place the transport safeguard (2) above the hopper cylinder's piston rod.



Without transport safeguards inserted, the hopper halves will slowly open; danger during transportation!



## Screed lock, mechanical (○)

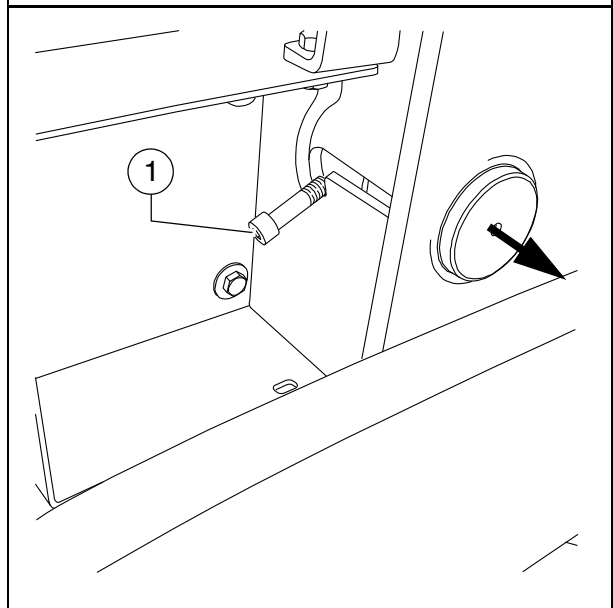


The screed locks must additionally be engaged on both sides of the vehicle prior to transportation with the screed lifted.



Transportation with an unsecured screed leads to a risk of accidents!

- Lift the screed.
- On both sides of the paver finisher, slide the screed lock beneath the crossbeams using the lever (1); place the lever in the detent position.



### ATTENTION!

Insert screed lock only at crown adjustment "zero"!

Screed lock only for transportation!

Do not enter or work under screed only secured with screed lock for transportation!

**Danger of accident!**

## Screed lock, hydraulic (○)



The screed locks must additionally be extended on both sides of the vehicle prior to transportation with the screed lifted.

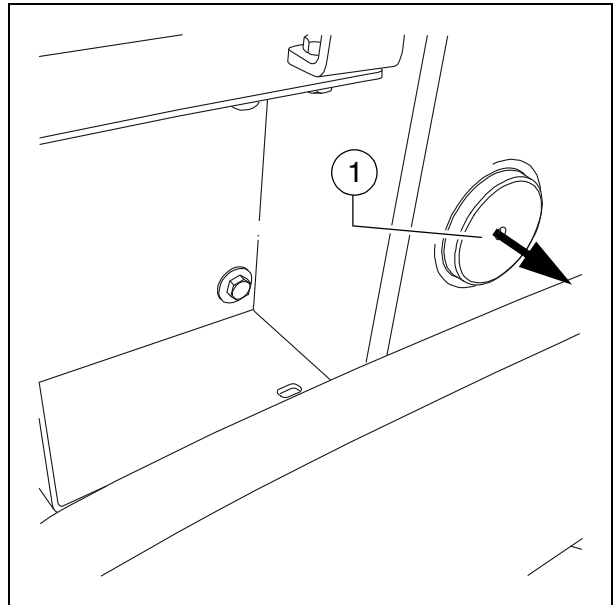


Transportation with an unsecured screed leads to a risk of accidents!

- Lift the screed.
- Activate the function on the operating panel.



The two screed locks (1) extend hydraulically.



### **ATTENTION!**

Insert screed lock only at crown adjustment "zero"!

Screed lock only for transportation!

Do not enter or work under screed only secured with screed lock for transportation!

**Danger of accident!**

## Paving thickness indicator

Two scales, on which the currently set paving thickness can be read off, are located on the left and right sides of the vehicle.

- Loosen the clamping bolt (1) to change the position of the indicator.



In normal paving situations, the same paving thickness should be set on both sides of the vehicle!

Other displays (○) are on the cross-beam guide.

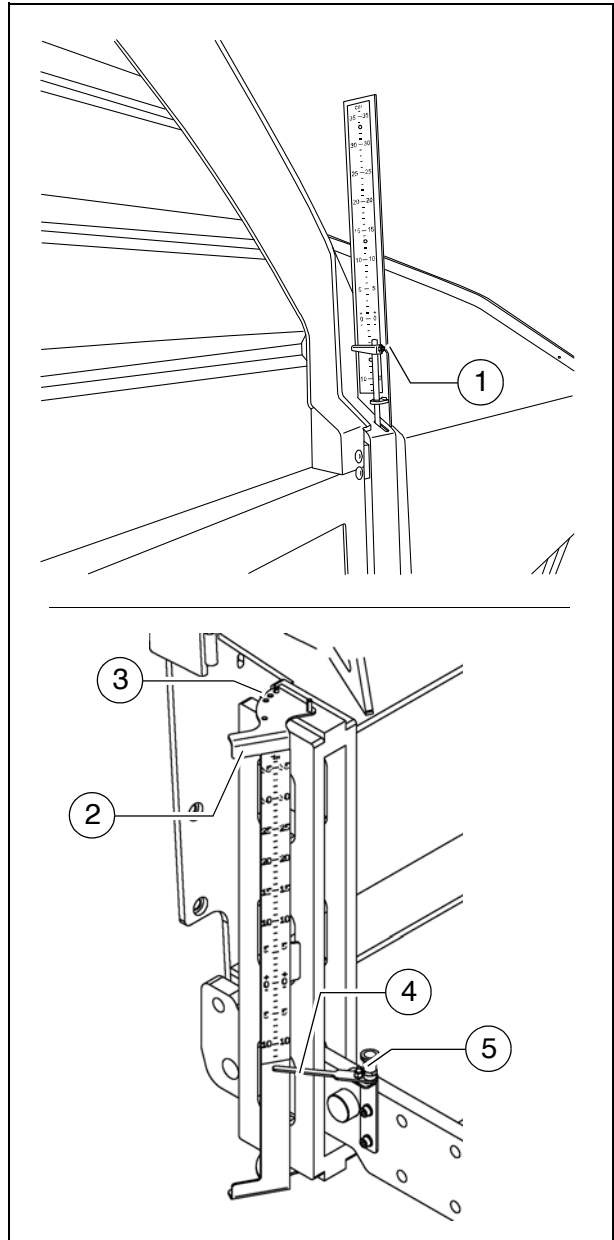
- To change the reading position, the scale (2) can be raised and lowered again in one of the adjacent locating bores (3).
- The pointer (4) can be swivelled to different positions using the locking knob (5).




The scale (2) and pointer (4) must be swivelled in completely to transport the machine.




Avoid parallax errors!

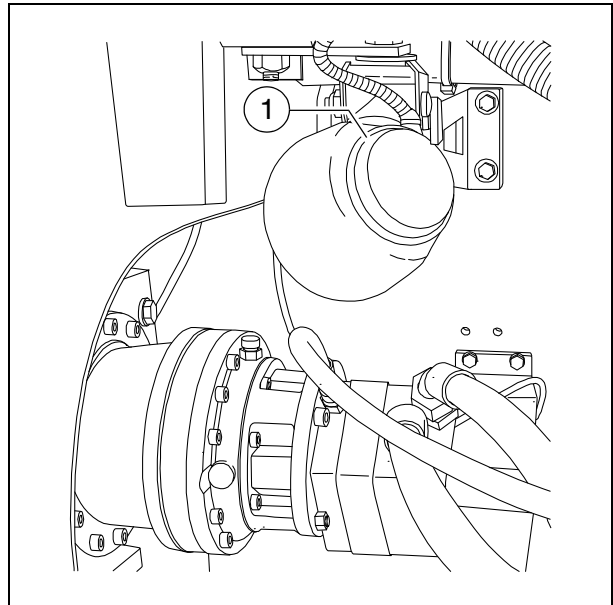


### Auger lighting (○)


 Two swivelling headlights (1) are located on the auger box for illuminating the auger compartment.

- They are engaged together with the working lights.

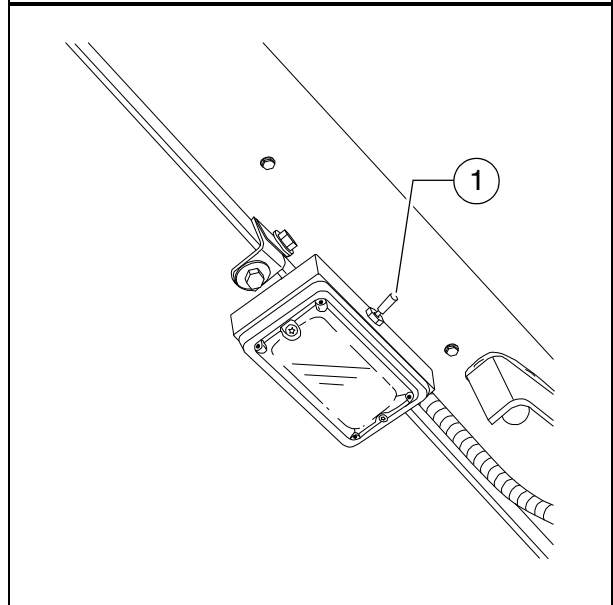
 These are activated together with the other working lights on the operating panel!



### 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.

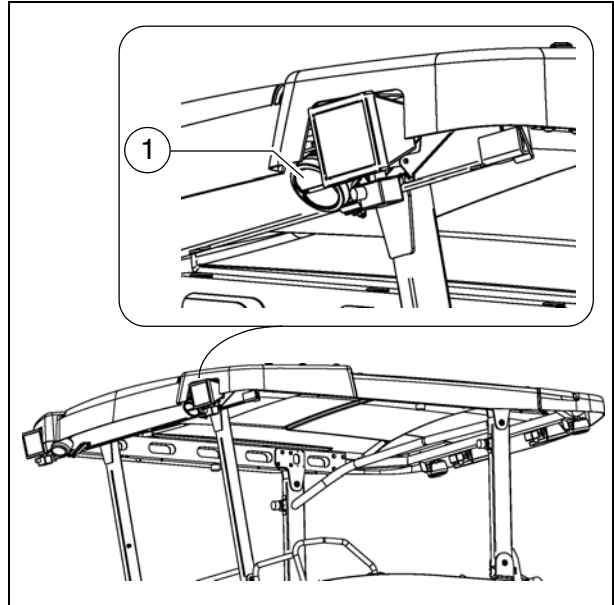


## LED working light (○)

There are two LED spotlights (1) at the front and rear of the vehicle.



Always align the working lights to avoid dazzling the operating personnel or other road users!



### 500 watt spotlight (○)

There are two halogen spotlights (2) at the front of the machine and also at the back.



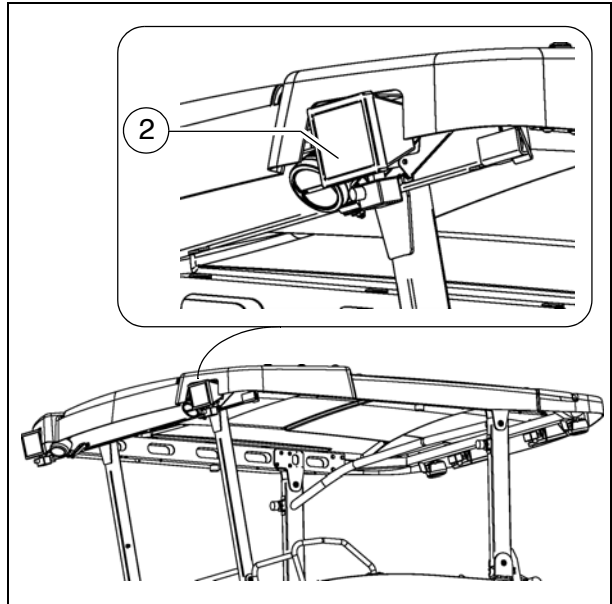
Always align the working lights to avoid dazzling the operating personnel or other road users!



Danger of burning! The working lights get very hot!  
Do not touch working lights that are switched on or hot!



When equipped with an electric screed, it is possible for the lamps to flicker irregularly during the heating-up phase with simultaneous operation of 500 watt spotlights (○) and illuminated balloon (○). Preferably only one type of lighting should be used during the heating-up phase.



### Camera (○)

There is a camera (1) at the front of the machine and also at the back.

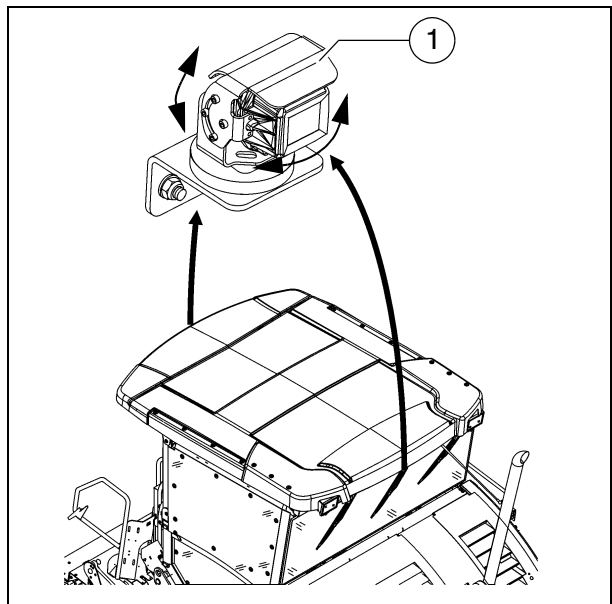
- The camera can be swivelled in various directions.



The pictures are shown in the control panel display.



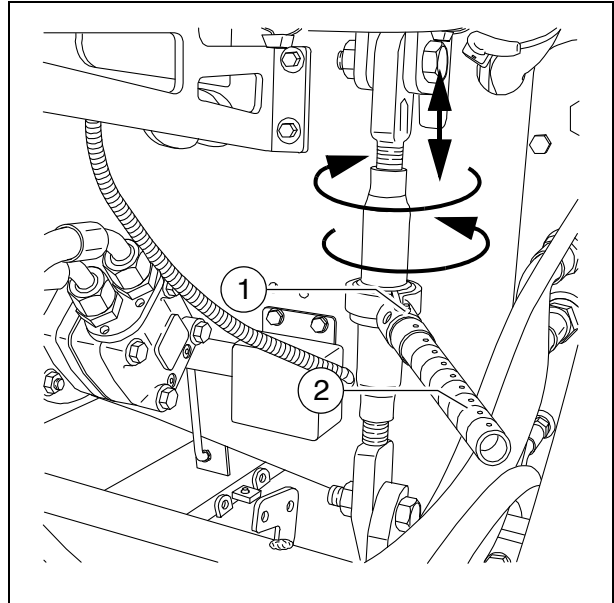
The position of the camera can be changed with the magnetic foot.





### Auger height adjustment ratchet (○)

For mechanical adjustment of the auger height

- Set the ratchet direction lever (1) to the clockwise or anti-clockwise direction. Turning anti-clockwise lowers the auger, turning clockwise lifts the auger.
- Actuate the ratchet lever (2)
- Set the desired height by alternately actuating the left and right ratchets.



 The current height can be read on both auger height indicators.


 Observe the notes on adjusting the auger height in the chapter "Set-up and modification"!

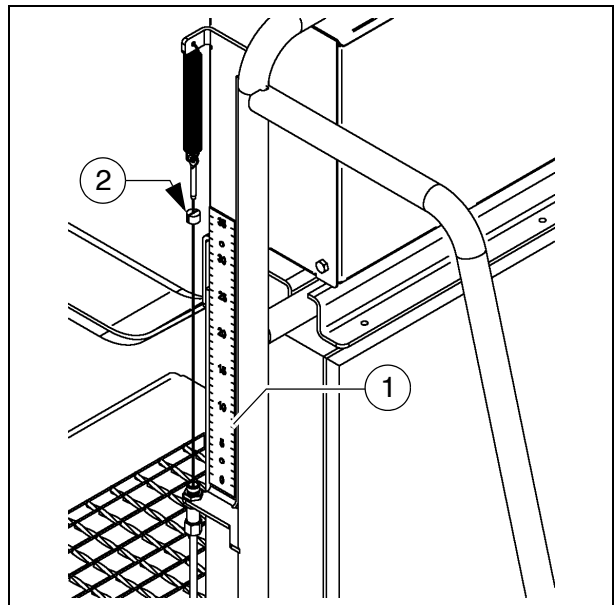
### Auger height displays

A scale (1), on which the currently set auger height can be read off, is located on the left and right sides of the ladder.

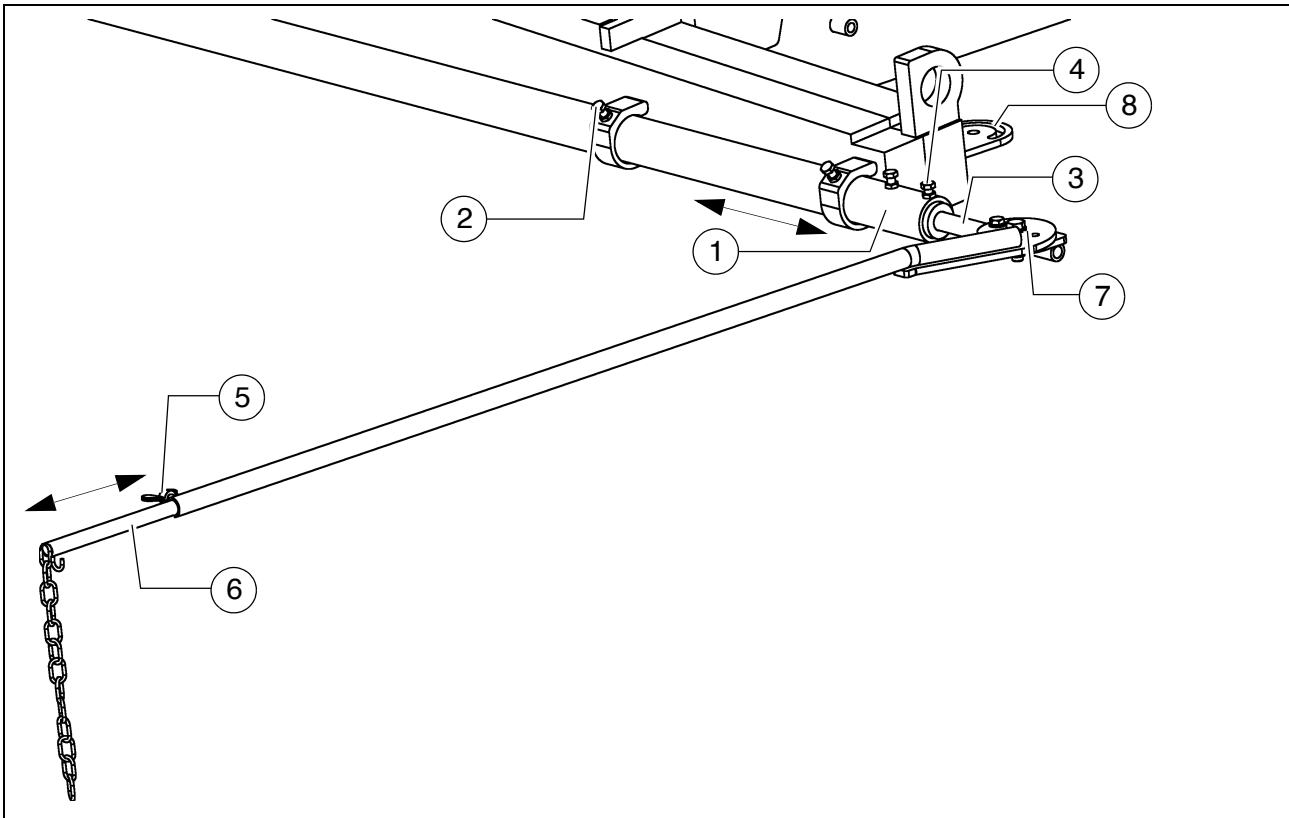
 Display in cm

- Loosen the clamping bolt (2) to change the position of the indicator.

 When setting the auger height, adjustment must be carried out evenly on both sides to prevent the auger from jamming!



## Sensor rod / sensor rod extension



The sensor rod acts as an orientation aid for the vehicle driver during paving. Along the defined paving route, the vehicle driver can use the sensor rod to follow a tensioned reference wire or another marking.

The sensor rod runs along the reference wire or over the marking. Steering deviations can therefore be ascertained and corrected by the driver.



Use of the sensor rod increases the basic width of the paver finisher.



If the sensor rod or sensor rod extension are used, ensure that there is no one in the vehicle's danger area!



The sensor rod is adjusted when the vehicle is positioned, with its set working width, on the paving route and the reference marking running parallel to the paving route has been set up.

Adjusting the sensor rod:

- The sensor rod (1) is located on the face end of the vehicle and can be pulled out to the left or right after releasing the four clamping bolts (2).



In the case of larger working widths, the sensor rod extension (3) is inserted into the sensor rod.

- Once the sensor rod has been set to the desired width, the clamping bolts (2) must be tightened again.
- The inserted sensor rod extension is secured with the bolts (4).



Depending on the side of the vehicle on which the sensor rod extension is used, the entire sensor rod may have to be removed and re-inserted on the other side of the vehicle!

- After releasing the wing nuts (5), the end section of the sensor rod extension (6) can be set to the desired length; the angle can additionally be changed by swivelling on the joint (7).



Either the adjustable indicator or the chain can be used as an aid to orientation.



Tighten all assembly parts properly after setting up!



The sensor rod extension's joint (7) can be mounted on both sides of the vehicle in position (8).

At this point, the sensor rod extension can be swivelled in for transporting the vehicle without increasing the vehicle's basic width.

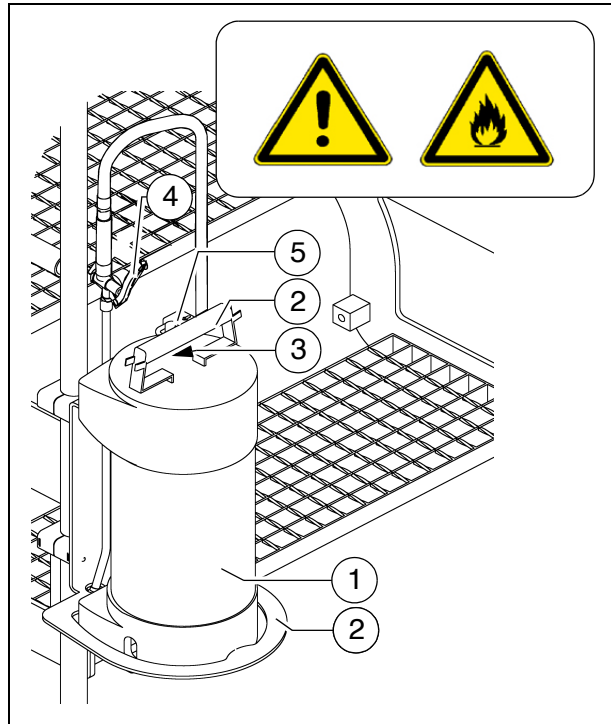
## Manual separator fluid spray (○)

Used to spray the parts coming into contact with asphalt with a separator emulsion.

- Remove the spray (1) from its bracket.
- Build up pressure by actuating the pump lever (2).
  - The pressure is indicated on the manometer (3).
- Actuate the manual valve (4) to spray.
- On completion of work, secure the manual spray in its bracket with a lock (5).



Do not spray into open flame or on hot surface. Danger of explosion!



## Separator fluid spraying system (○)

Used to spray the parts coming into contact with asphalt with a separator emulsion.

Variant (A): hose package

Variant (B): Hose reeling device

- Possibly connect the spray hose (1) with the connecting piece (2).



Only switch on the spraying system when the diesel engine is running; otherwise, the battery will be discharged. Switch off after use.

- Pull the hose out of the device until a click is audible. When released, the hose automatically engages here. The hose is automatically retracted into the guide after pulling and discharging again.

- Actuate button (3) to activate and deactivate the pump.
  - The indicator lamp (4) lights up when the emulsion pump is running.
- Actuate the manual valve (5) to spray.



Do not spray into open flame or on hot surface! Danger of explosion!

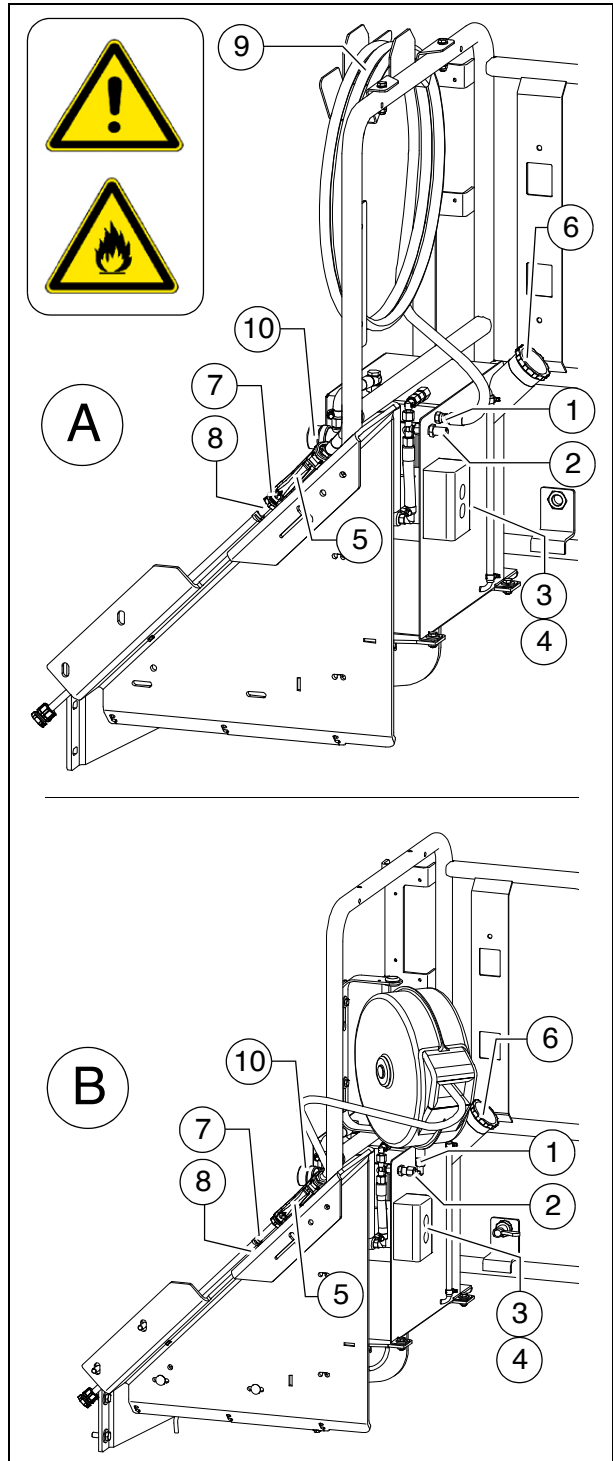


The spraying system is fed by a tank (6) at the vehicle step.



Refill the canister only while the vehicle is stationary!

- If the system is not in use, place the spray lance (7) in the provided holder (8).
- If the spray hose is not in use, it can be placed in its bracket (9).
- Change filter (10) as necessary.



## Conveyor limit switches - PLC version

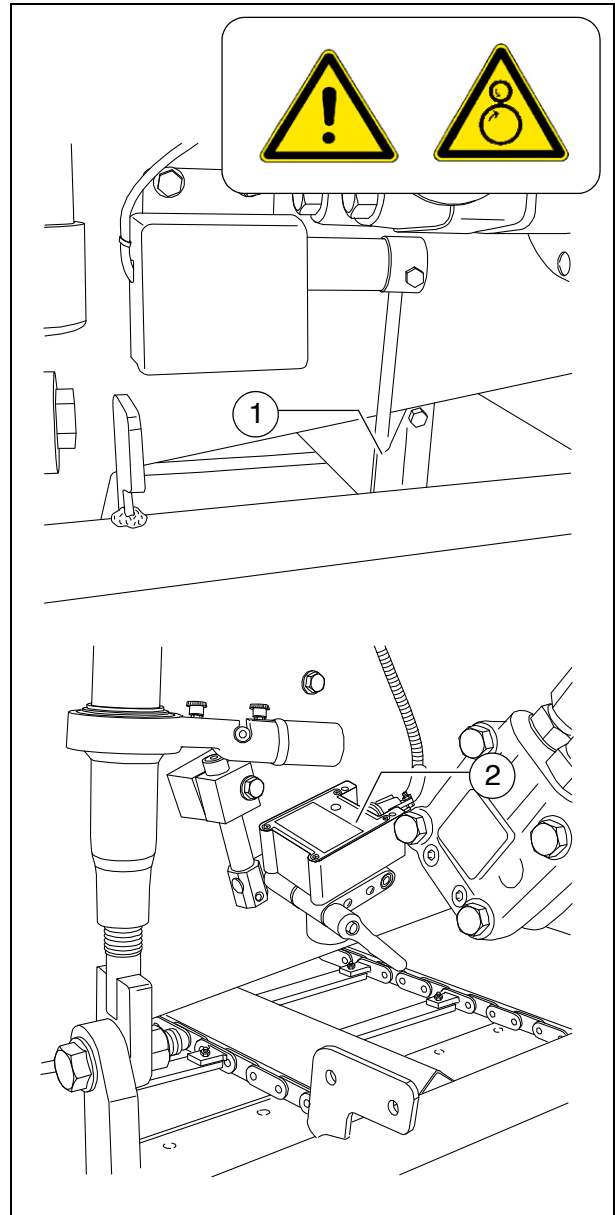
The mechanical conveyor limit switches (1) or the ultrasonic conveyor limit switches (2) control the material flow on the relevant half of the conveyor. The conveyors should stop when the material has roughly reached the area below the auger tube.



This requires that the auger height has been adjusted correctly (see chapter E).



In vehicles with a PLC control system, the deactivation point is set on the remote control.



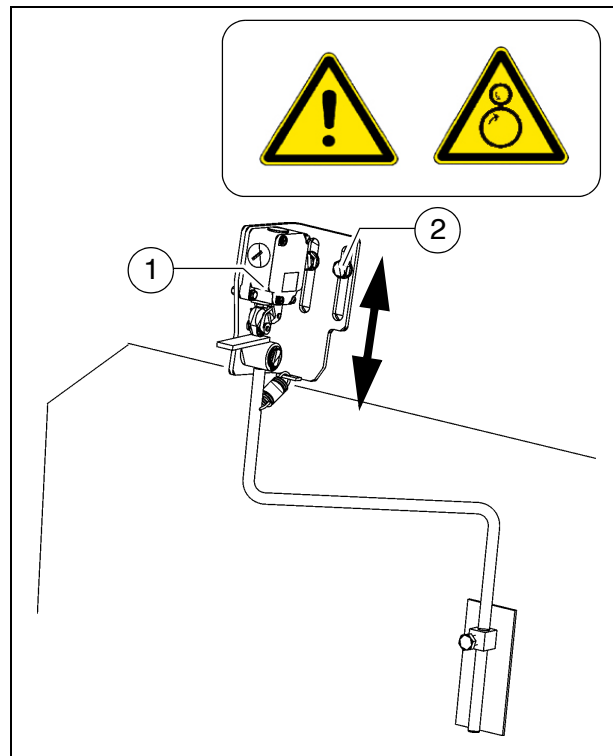
## Conveyor limit switches - conventional version

The mechanical conveyor limit switches (1) control the material flow on the relevant half of the conveyor. The conveyors should stop when the material has roughly reached the area below the auger tube.




This requires that the auger height has been adjusted correctly (see chapter E).

- To set the deactivation point, release the two mounting screws (2) and set the switch to the required height.
- After adjusting, retighten all mounting parts properly.

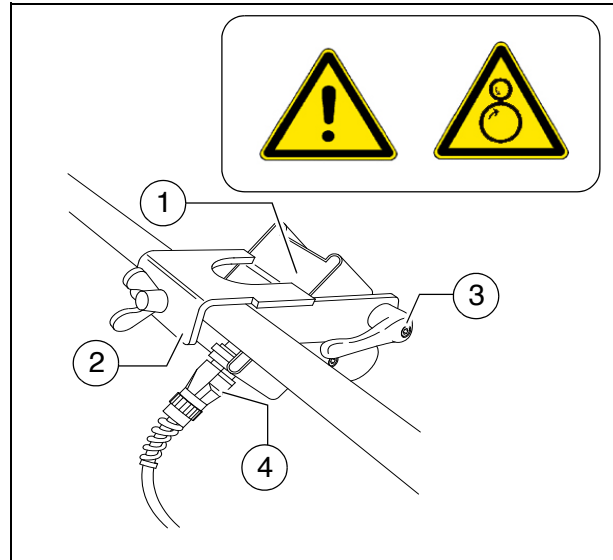



## Ultrasonic auger limit switches (left and right) - PLC version


 The limit switches control the material flow at the relevant half of the auger without contact.


The ultrasonic sensor (1) is secured to the side shield via a bracket (2).


- To adjust, release the clamping lever / stop screw (3) and adjust the sensor's angle.
- After adjusting, retighten all mounting parts properly.



 The connection cables (4) are connected to the relevant sockets on the remote control bracket.


 The sensors should be adjusted so that 2/3 of the augers are covered with the paving material.

 The paving material must be conveyed over the full working width.

 We recommend adjusting the limit switch positions during material distribution.


 In vehicles with a PLC control system, the deactivation point is set on the remote control.


### Ultrasonic auger limit switches (left and right) - conventional version


 The limit switches control the material flow at the relevant half of the auger without contact.


The ultrasonic sensor (1) is secured to the side shield via a bracket (2).

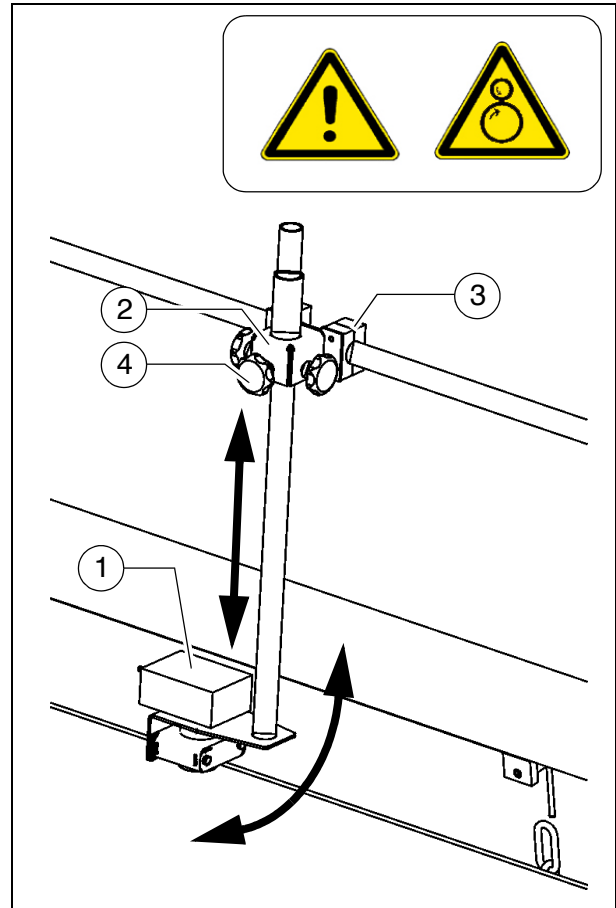
- To adjust the sensor angle, loosen the clamps (3) and swivel the bracket.
- To set the sensor height / the deactivation point, loosen the star handles (4) and adjust the linkage to the required length.
- After adjusting, retighten all mounting parts properly.

 The connection cables are connected to the relevant sockets on the remote control bracket.

 The sensors should be adjusted so that 2/3 of the augers are covered with the paving material.

 The paving material must be conveyed over the full working width.

 We recommend adjusting the limit switch positions during material distribution.



### 24 volt / 12 volt sockets (○)

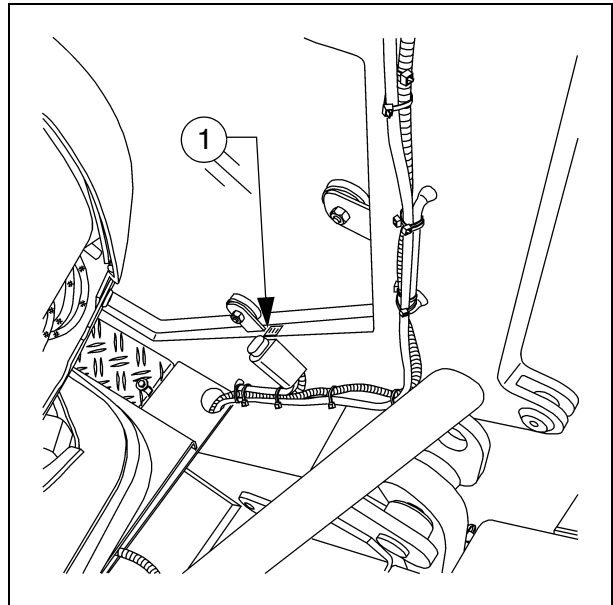
A socket (1) is located behind the left/ right seat consoles.

Additional working lights can be connected here, for example.

- Right seat console: 12V socket
- Left seat console: 24V socket



Voltage is present when the main switch is switched on.



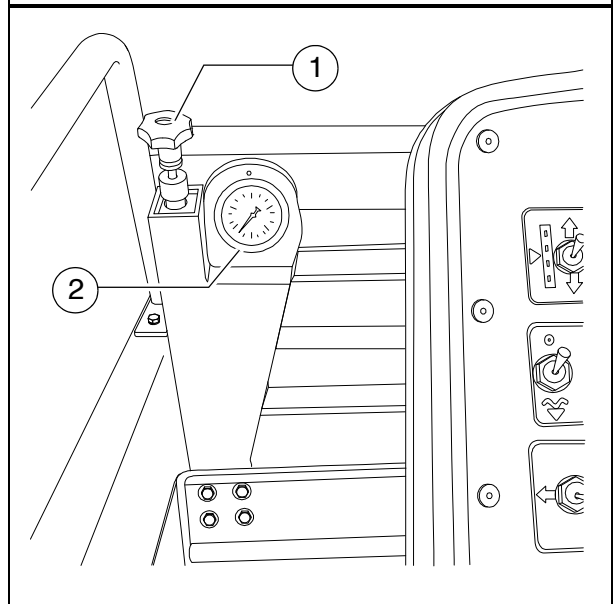
### Pressure setting front-wheel drive (○)

The traction force of the front wheels can be adjusted with a pressure setting of 0-200bar.



The front-wheel drive is active when at a standstill/in working gear.

- The pressure setting is adjusted at the regulator (1). Pressure is displayed at the manometer (2).



### Pressure control valve for screed charging/relieving

A valve (1) is used to set the pressure for additional screed charging/relieving.



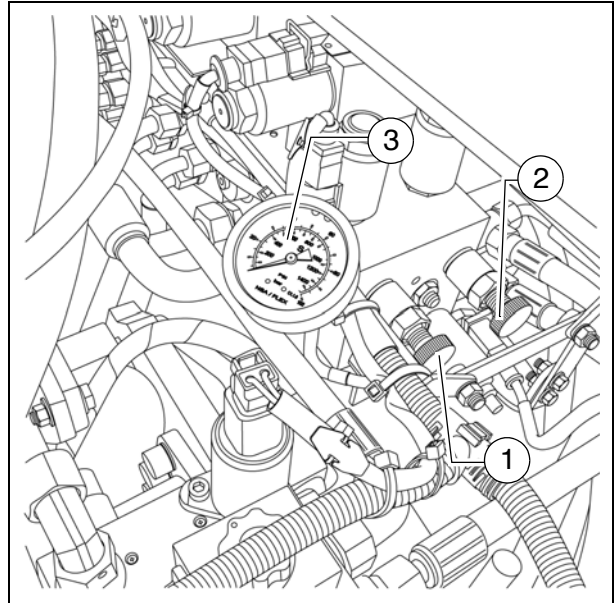
Switching on, see screed charging/relieving (chapter "Operating panel", "Operation").

- For pressure indication, see manometer (3).

### Pressure control valve for paving stop with relieving

Valve (2) is used to set the pressure for "Screed control with paver finisher stop - floating stop with relieving".

- Switching on, see screed stop / paving stop (Chapters "Operating panel", "Operation").
- For pressure indication, see manometer (3).



### Manometer for screed charging/relieving

The manometer (3) indicates the pressure for:

- Screed charging/relieving when the drive lever is in the third position (pressure setting with valve (1)).

### Central lubricating system (○):

The automatic mode of the central lubrication system is activated as soon as the compacting elements of the screed are engaged.



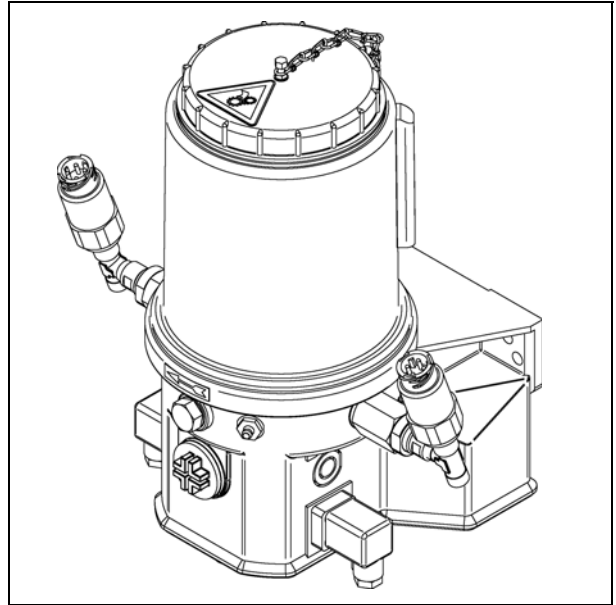
The pumping interval adjusted in the factory must be modified to the paving situation.



It is prohibited to change the factory-set durations of pumping and break without consulting the technical customer service!



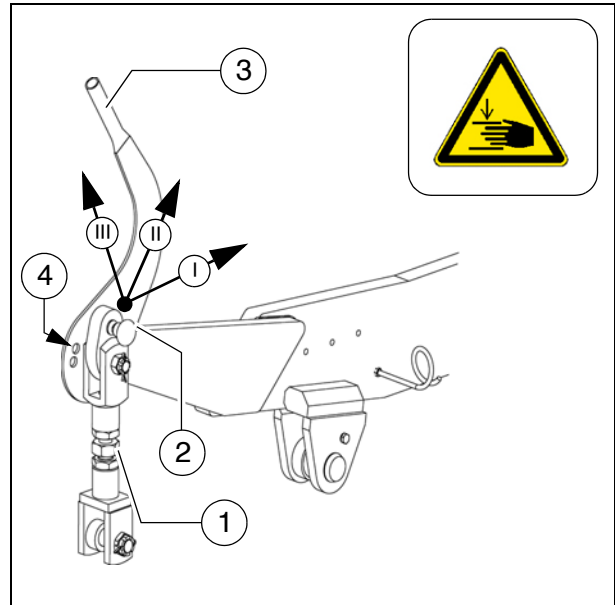
The adjustment is carried out in the vehicle control (display) for PLC vehicles.



## Screed eccentric adjustment

To pave thicker layers of material, if the piston rods in the levelling cylinder are operating close to their limit position and if the desired paving thickness cannot be reached, it is possible to alter the approach angle of the screed by adjusting the eccentric.

- Pos. I: Paving thickness up to approx. 7 cm
- Pos. II Paving thickness of approx. 7 cm to approx. 14 cm
- Pos. III Paving thickness above approx. 14 cm



- The spindle (1) is not adjusted.
- Unfasten locks (2) for eccentric adjustment.
- Swivel screed to the desired position using the lever (3), and engage the locking knob again.



If the levelling unit is connected to a height controller, this has the function of balancing out any rapid rise in the screed position: The levelling cylinders are extended until the correct height is reached.

- The change in approach angle can only take place slowly and uniformly on both sides at once during paving operation, and involves the use of eccentric adjustments. Failing this, any rapid response in the screed could easily cause waves to appear on the road surface.  
The setting process should therefore take place before work starts!



When equipped with rigid screed, the second hole (4) is intended for (item I).

## Push roller crossbar, adjustable

For adaptation to various truck design types, the push roller crossbar (1) can be shifted to two positions.



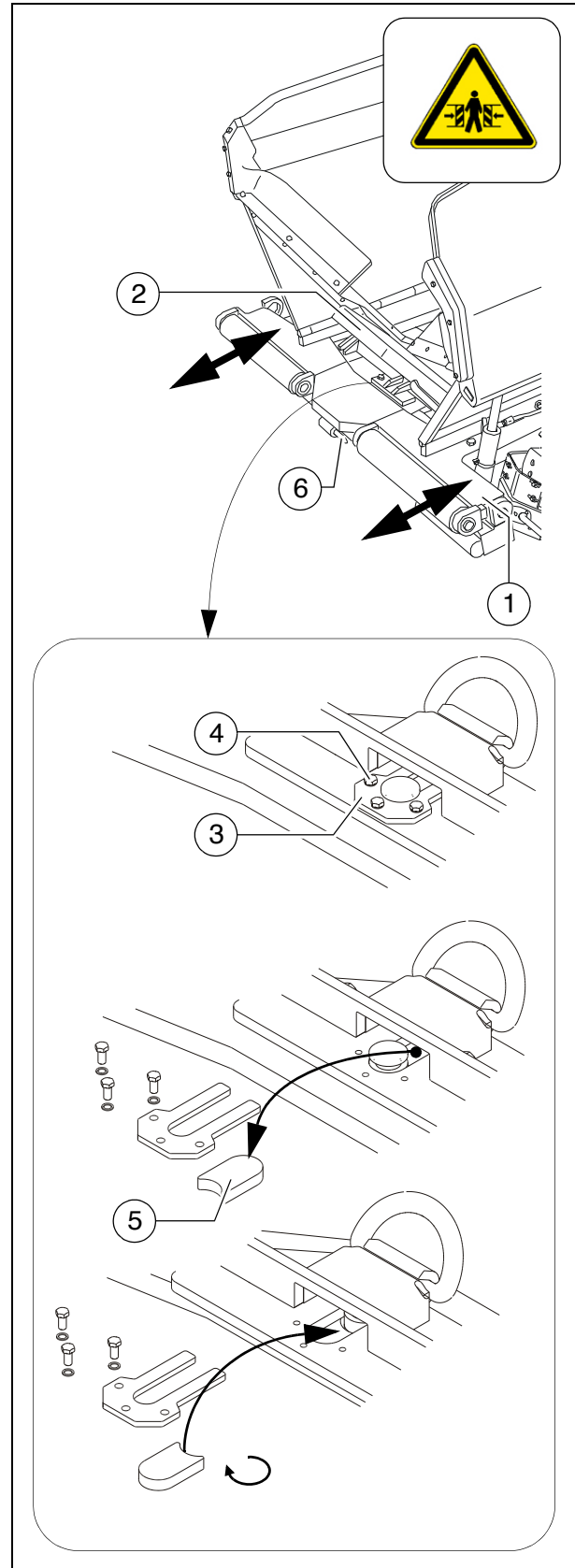
The adjustment travel is 90 mm.

- Close the hopper halves to lift the hopper flap (2).
- After removing the bolts (4), remove the locking plate (3) on the lower side of the crossbar.
- Remove insert plate (5).
- Move the push roller crossbar as far as it will go to the front / rear position.



Shift the push roller crossbar at the towing eye (6) or use a suitable assembly lever in its guide (left and right) to push it into the corresponding position.

- Turn the insert plate (5) 180° and reinsert into the groove in the front or rear position.
- Properly reinstall the locking plate (3) with bolts (4).



### Fire extinguisher (○)



The paver finisher personnel must be familiarised with operation of the fire extinguisher (2).



Observe the inspection interval for the fire extinguisher!

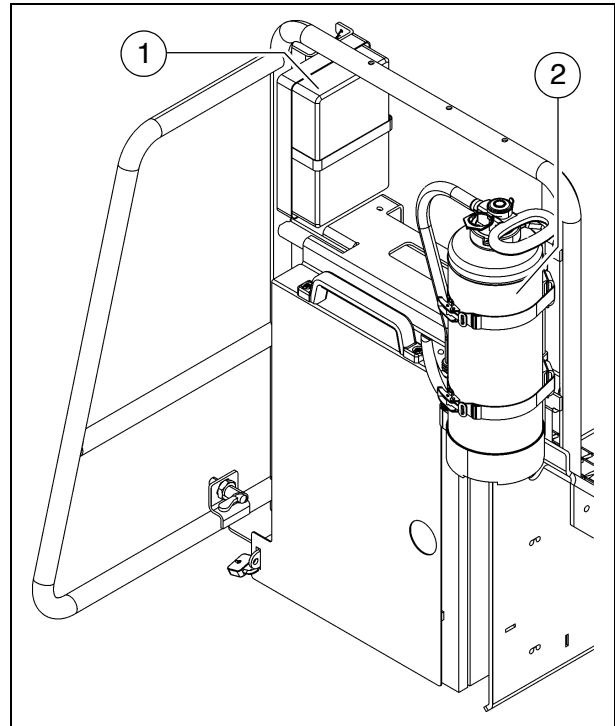
### First-aid kit (○)



Any dressings that have been used must be replaced immediately!



Heed the expiry date of the first-aid kit!



## Rotary beacon (○)

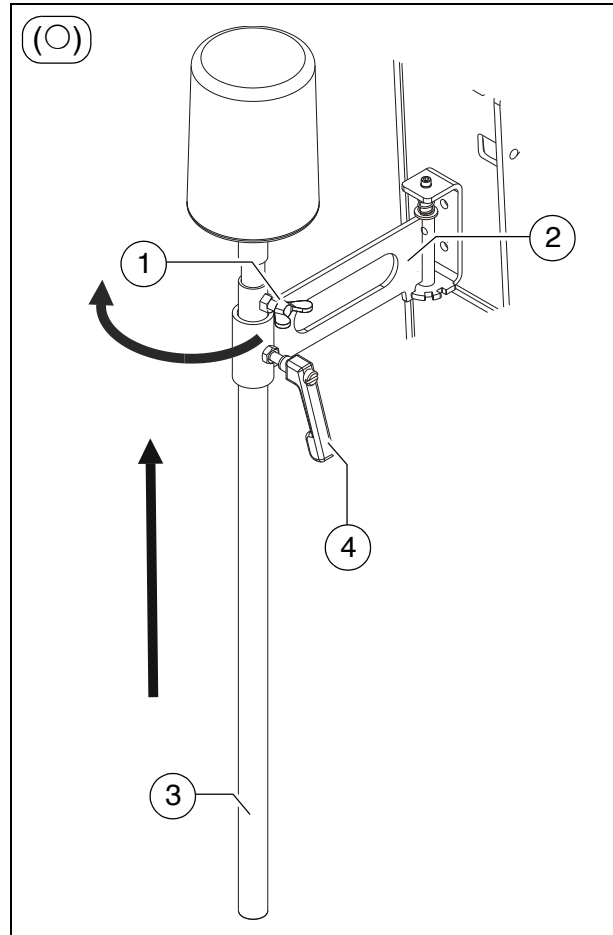


The function of the rotary beacon must be checked daily before starting work.

- Place the rotary beacon onto the plug-in contact and secure with a wing bolt (1).
- Raise the bracket (2), swivel to the outer position and allow to engage there
- Slide the rotary beacon with the tube (3) out to the desired height and secure with the clamping bolt (4).
- Activate the function on the operating panel as necessary.



The rotary beacon is easy to remove and should be stored securely at the end of work.



## Fuelling pump (O)



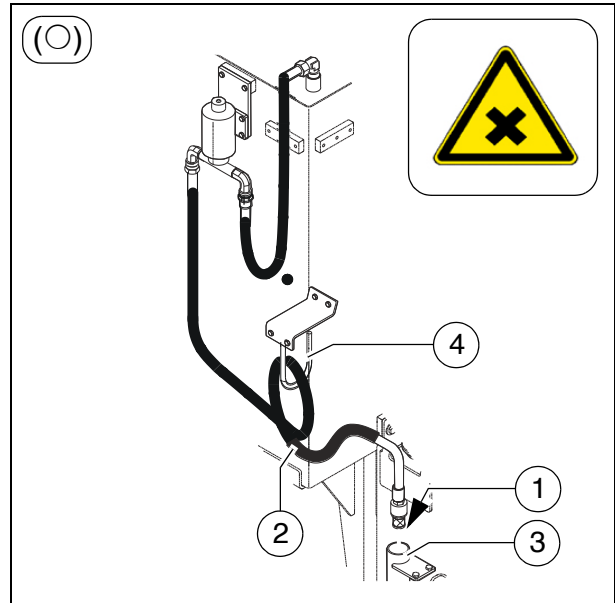
The fuelling pump must only be used to pump diesel fuel.



Foreign bodies which are larger than the mesh size of the intake cage (1) lead to damage. An intake cage must therefore always be used.



Each time fuelling is carried out, the intake cage (1) must be checked for damage, and must be replaced if damaged. Do not work without it under any circumstances, as the fuelling pump is not otherwise protected against foreign bodies.



- Insert the suction hose (2) into the container which is to be emptied.



To enable the container to be emptied completely, the suction hose must reach down to the floor of the container.

- Activate the function on the operating panel as necessary.



The fuelling pump does not shut off automatically. Therefore, never leave the pump unattended when fuelling!



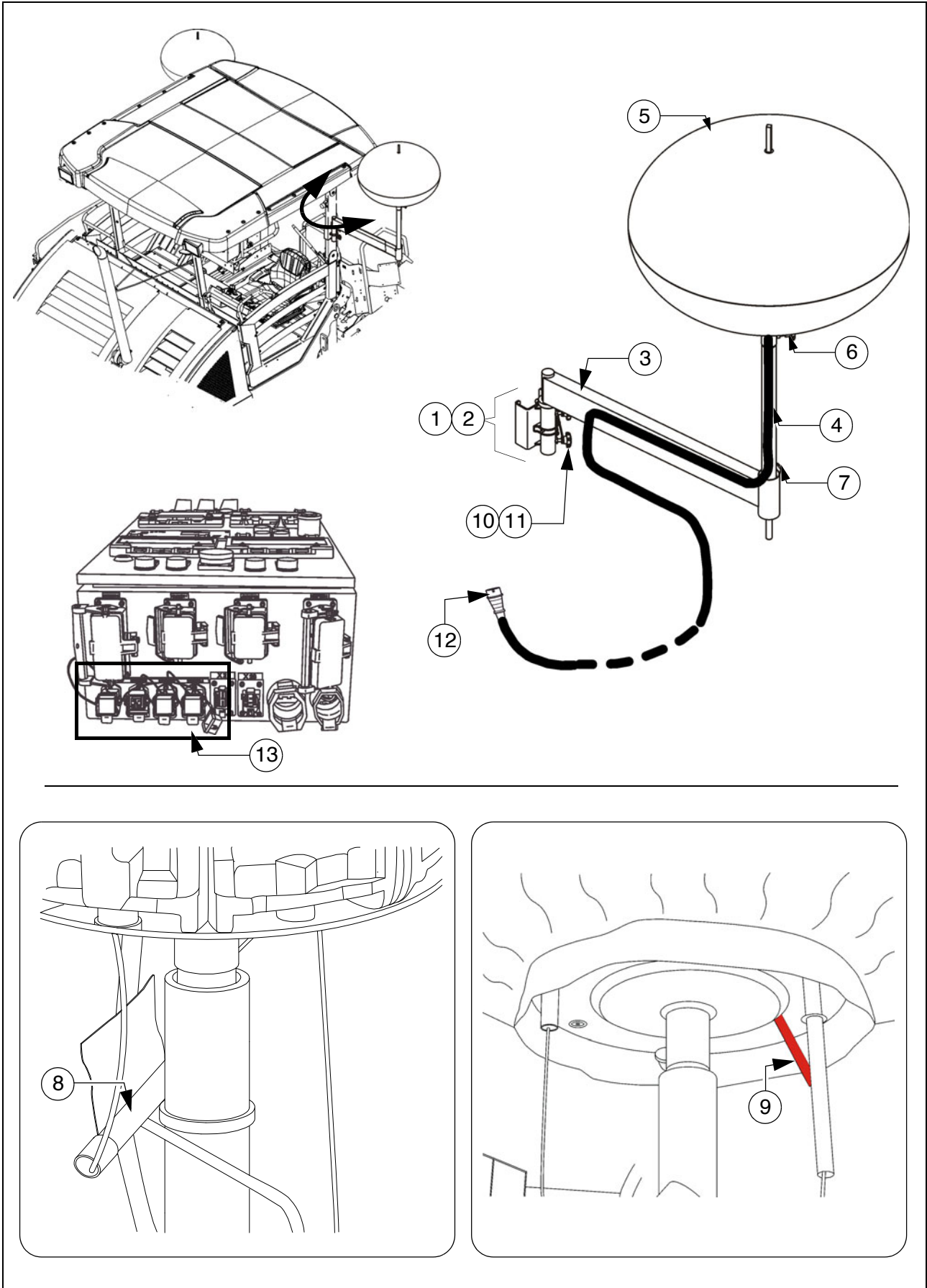
Never operate the pump without pumping a fluid. The risk of damaging your diesel pump is run if it runs dry.

- To end fuelling, switch the function "off" on the operating panel.

- Place the end of the hose, with the intake cage, into its cup (3) so that no diesel is able to escape into the environment.

- Gather up the hose and place it over the bracket (4).

### Illuminated balloon (O)



The illuminated balloon generates shadow-reducing and anti-dazzle light.



The illuminated balloon makes the paver finisher higher and wider.



Note the passage height of bridges and tunnels and the enlarged vehicle width.



Always disconnect the power supply before working on the illuminated balloon!



Never look directly in the balloon when it is switched on!



The illuminated balloon must not be used in the vicinity of highly flammable materials (e.g. petrol and gas); a safety distance of at least 1 metre must be maintained from combustible materials.



Ensure that the area above the balloon is free and open without any power lines and hindrances. There should be a linear distance of at least 50 m between overhead high voltage power lines and the illuminated balloon. There should be a distance of at least 2.5 m between overhead power lines and railway tracks with overhead lines on the one hand, and the balloon on the other.







The illuminated balloon must not be operated if there is any damage to the electric supply cables or connectors, the lamp or the balloon skin.



Never operate the balloon unsupervised or with a strong wind!

## Installation and operation

 <b>CAUTION</b>	<b>Danger due to electric shock</b>
	<p>Electric shock can cause severe or fatal injuries</p> <ul style="list-style-type: none"> <li>- The Powermoon must always be completely unpacked, assembled and aligned before it is connected to the power grid and switched on!</li> </ul>

 <b>CAUTION</b>	<b>Danger of squeezing!</b>
	<p>Fingers or hands can get clamped between the bracket and the holding tube!</p> <ul style="list-style-type: none"> <li>- Caution when inserting the holding tube!</li> </ul>

- Extend the platform to the side for easy access to the corresponding B-pillar.
- Mount the bracket (1) on the B-pillar on the left / right of the control platform. Screw the corresponding clamping bolts (2) tight.
- Insert holder (3) in holder (1),
- Insert pipe (4) in holder (3).
- Place the illuminated balloon (5) on the pipe (4) and fix with a clamping bolt (6).
- Adjust the pipe (4) to the required height and fix with a clamping bolt (7).
- With one hand on the handle flagged in green (8), pull down hard to open the balloon before putting it into operation.  
When the balloon has been pulled down completely up to the stop, a safety catch (9) folds out of the guide rod.
- Swivel the holder (3), fix with split pin (10) and the corresponding clamping bolts (11).
- Once the illuminated balloon is completely mounted, aligned and secured, connect the plug (12) of the illuminated balloon in the corresponding switch cabinet sockets (13).



Never adjust the holding tube while the illuminated balloon is in operation.



Operation of the switch cabinet - see screed operating instructions.





Route the supply lines so as to rule out any risk of stumbling or damage to the lines.



Activation is carried out on the switch cabinet. When equipped with an electric screed, it is possible for the lamps to flicker irregularly during the heating-up phase with simultaneous operation of 500 watt spotlights (○) and the illuminated balloon (○). Preferably only one type of lighting should be used during the heating-up phase.

### Decommissioning

 <b>CAUTION</b>	<b>Danger due to electric shock</b>
	<p>Electric shock can cause severe or fatal injuries</p> <ul style="list-style-type: none"> <li>- Do not start to dismantle the Powermoon until it has been disconnected from the power grid!</li> </ul>



- Switch off the illuminated balloon on the switch cabinet.
- Disconnect the power plug from the socket (13).
- To dismantle the Powermoon, pull the cable down and hinge in the safety brace (9) until it disappears in the guide rod.  
Now carefully relax the cable and fold together the Powermoon.
- Fold the Powermoon up and store in dry condition in the corresponding transport cover.

### Cleaning

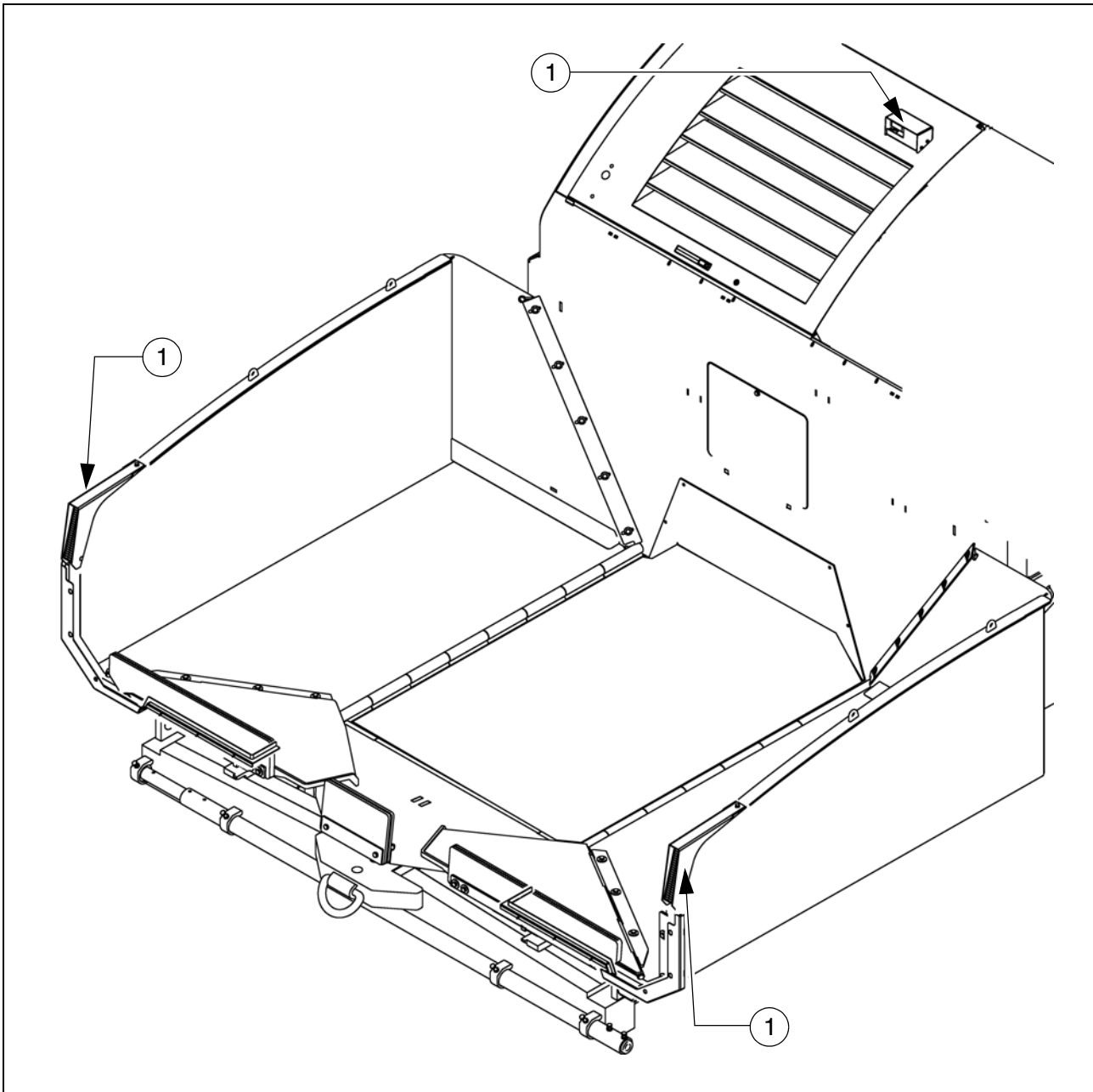


A damp cloth may be used to wipe down the Powermoon skins. Dishwashing detergent is recommended as the cleaning agent for the upper and lower skin. Never use aggressive cleaners such as cleaning solvent, turpentine or other products that could corrode the material.

### Service safety

 <b>CAUTION</b>	<b>High voltage! Danger due to electric shock</b>
	<p>This unit uses high-voltage circuits that can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Only qualified electricians may be entrusted with troubleshooting or repairing any electrical problems with this device. Only skilled staff are allowed to open the LED body. The capacitor circuit must be discharged.</li> </ul>

## Truck Assist (○)



The Truck Assist system is used for communication between the driver of the paver and the driver of the material truck. The corresponding signal system shows the truck driver which action to perform (reversing / stop / tip material / depart).

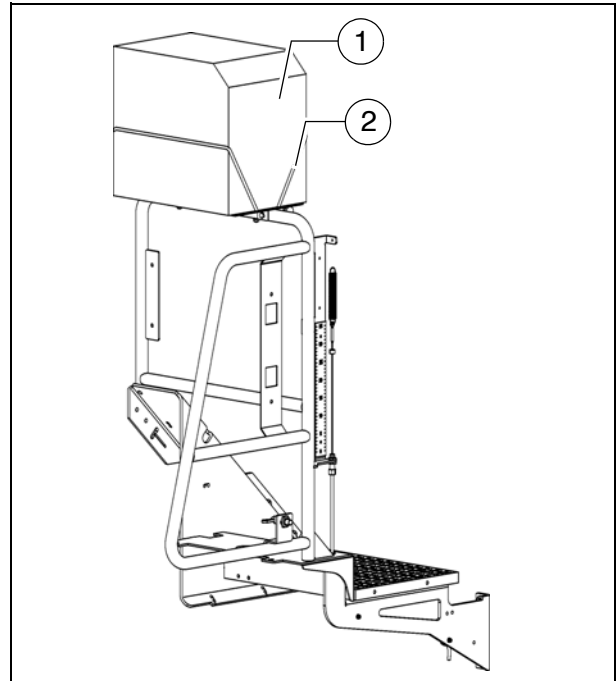
The system consists of:

- Two LED light bars (1) as a signal for the truck driver and a laser sensor (2) for detecting the truck.

## Cool box (O)

The cool box can be used to keep food cold and warm.

- Insert the cool box (1) in the corresponding holder (2).
- Connect up to the corresponding socket on the control platform for the necessary power supply.
- Start operating and adjust the settings for the cool box at its own control panel.





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## D 43      Mode of operation



### 1      Preparing for operation

#### Required devices and aids

To avoid delays on site, check before starting work whether or not the following devices and aids are present:

- Wheel loader for transporting heavy extension parts
- Diesel fuel
- Engine oil and hydraulic oil, lubricants
- Separator fluids (emulsion) and manual injector
- Two filled propane gas bottles
- Shovel and broom
- Scraper (spatula) for cleaning the auger and the hopper infeed area
- Parts that may become necessary for extending the auger
- Parts that may become necessary for extending the screed
- Percentage spirit level + levelling rail, 4 m long
- Levelling wire
- Protective clothing, signal vest, gloves, ear protection

 <b>CAUTION</b>	<b>Danger due to restricted vision</b>
	<p>Restricted vision poses a risk of injury!</p> <ul style="list-style-type: none"><li>- Before starting work, arrange the intended driver's seat to ensure adequate vision.</li><li>- Signalmen must be used when vision is restricted, also to the sides and when reversing.</li><li>- Only reliable persons may be used as signalmen who must have been received instructions about their task before taking up their activity. This refers in particular to the hand signals to be used. Standardised hand signals must be used.</li><li>- Adequate lighting must be provided when working at night.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>WARNING</b>	<b>Danger of falling from the vehicle</b>
	<p>Entering and leaving the vehicle and the driver's seat during operation poses a risk of falling from the vehicle, which can cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- The operator must be at the intended driver's seat during operation.</li><li>- Never jump onto or off a moving vehicle.</li><li>- Keep accessible surfaces free of any soiling, e.g. operating substances, to avoid the risk of slipping.</li><li>- Use the steps provided and hold onto the handrail with both hands.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>


### Before starting work

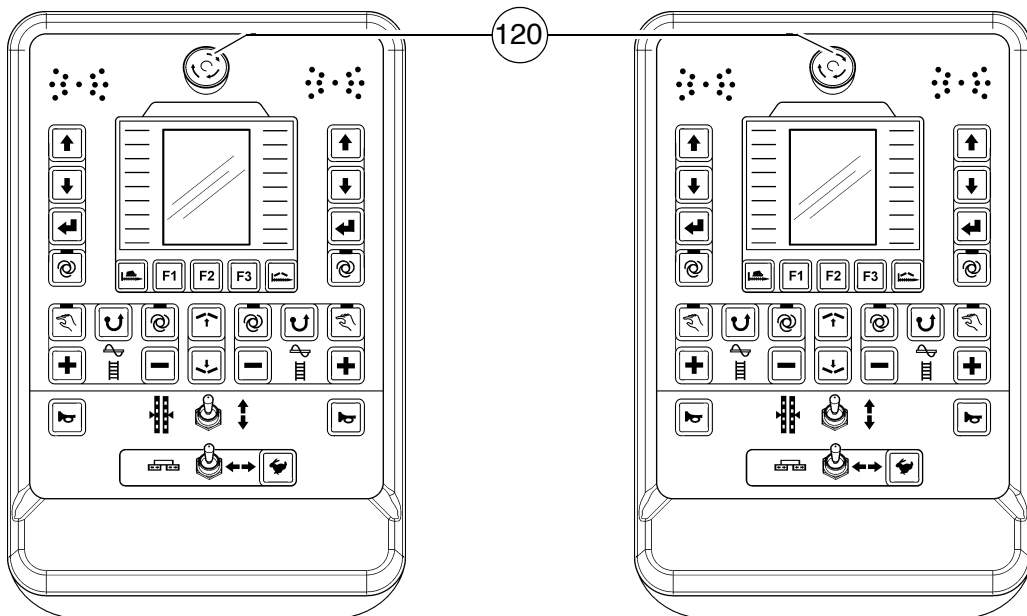
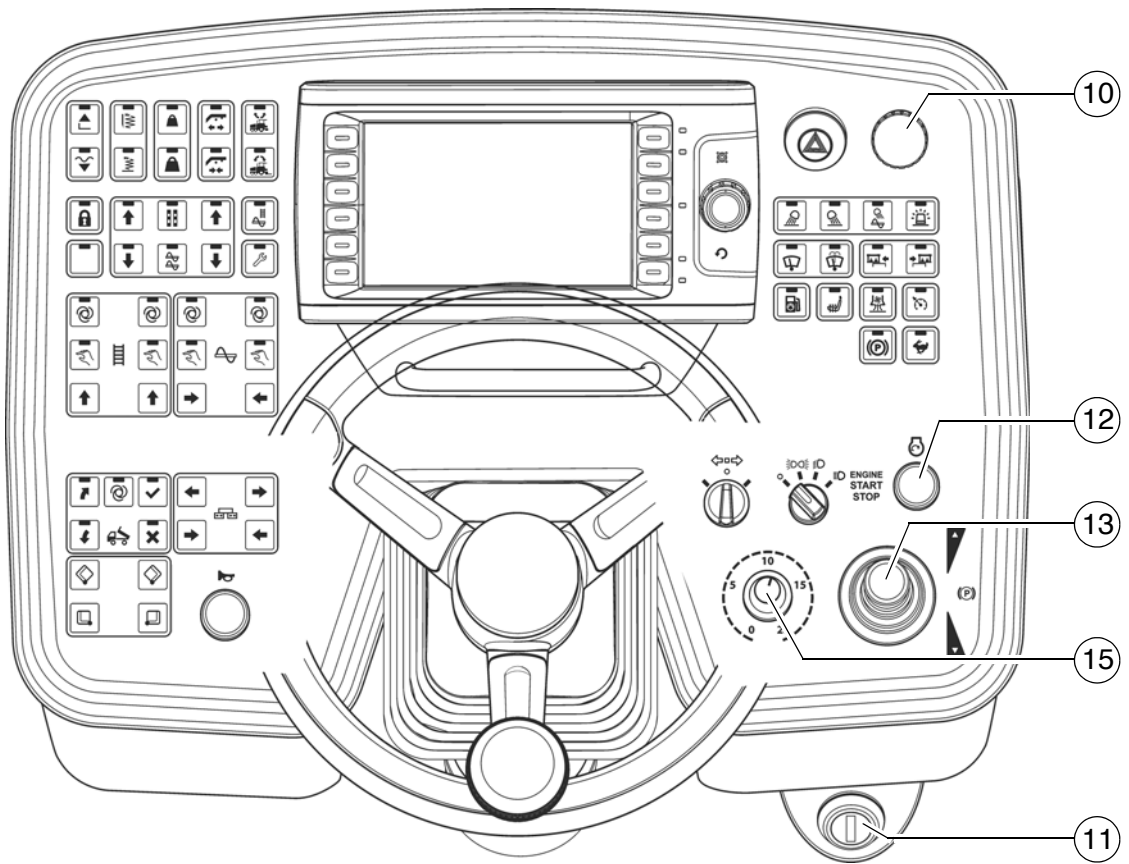
(in the morning or when starting paving)

- Heed the safety instructions.
- Check the personal protective equipment.
- Take an inspection walk around the paver finisher and check for leaks and damages.
- Install parts removed for transportation or for the night.
- When screed is operated with the optional gas heating system, open the closing valves and the main shut-off valve.
- Perform the check according to the following "Checklist for the machine operator".

### Check list for the machine operator

Check!	How?
Emergency stop button - on the operating panel - on both remote controls	Push in the button. The diesel engine and all running drives must stop immediately.
Steering	The paver finisher must immediately follow every steering wheel movement in a precise manner. Check straight ahead travel.
Horn - on the operating panel - on both remote controls	Briefly press the horn button. Horn signal must sound.
Lights	Switch on with the ignition key, walk around the paver finisher to check and switch off again.
Screed hazard flasher (with vario screeds)	With the ignition switched on, press the switches for extending/retracting the screed parts. Hazard warning flashers must flash.
Gas heater system (○): - Bottle holders - Bottle valves - Pressure reducer - Hose break safety devices - Shut-off valves - Main shut-off valve - Connections - Indicator lamps of the switch box	Check: - Secure seat - Cleanliness and tightness - Working pressure 1.5 bar - Function - Function - Function - Tightness - All indicator lamps must light up when the system is switched on

Check!	How?
Auger coverings	For larger working widths, the walkway plates must be extended and the auger tunnels must be covered.
Screed covers and walkways	Folding walkways must be present at the basic screed and all extension parts and folded down accordingly. Check that the side shields, the side plates and the covers are securely seated.
Screed transport safeguard	When the screed is raised / before transport, make sure that the cross-beam lock is fixed correctly.
Hopper transport safeguard	When the hopper is closed / before transport, the locks must be fixed correctly.
Protective roof	The locking bolts must be set properly.
Other facilities: - Engine panels - Lateral flaps	Check that the hoods and flaps are securely seated.
Accessories: - First aid box	Equipment must be present on the vehicle!  Always observe the local regulations!



## 1.1 Starting the paver finisher

### Before starting the paver finisher

Before starting the diesel engine and beginning operation, the following steps must be performed:

- Daily maintenance of the paver finisher (see chapter F).



Check the operating hours counter to determine whether further maintenance work should be conducted.


- Check the safety devices and protective devices.

### "Normal" starting

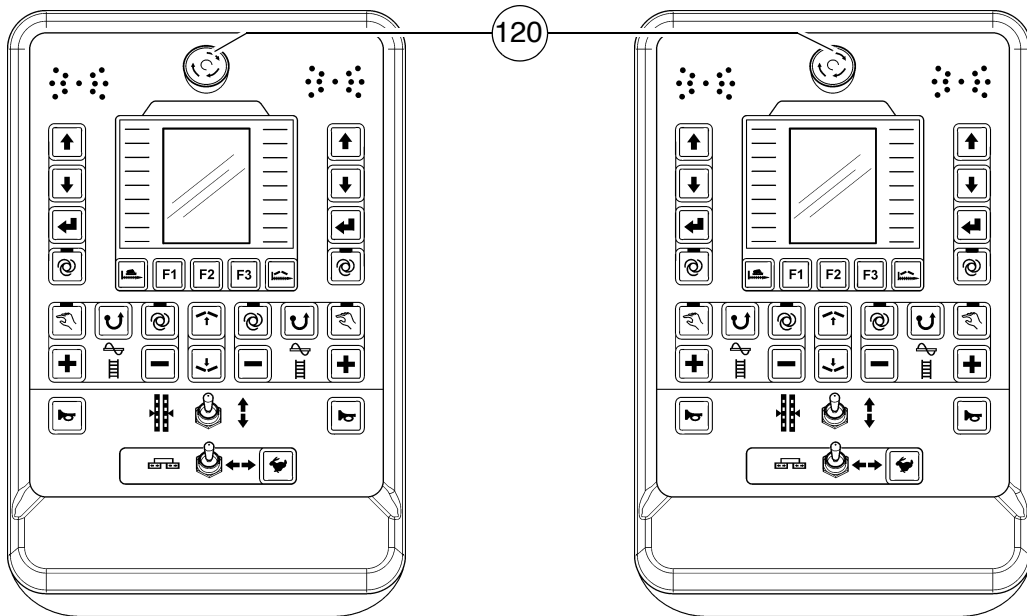
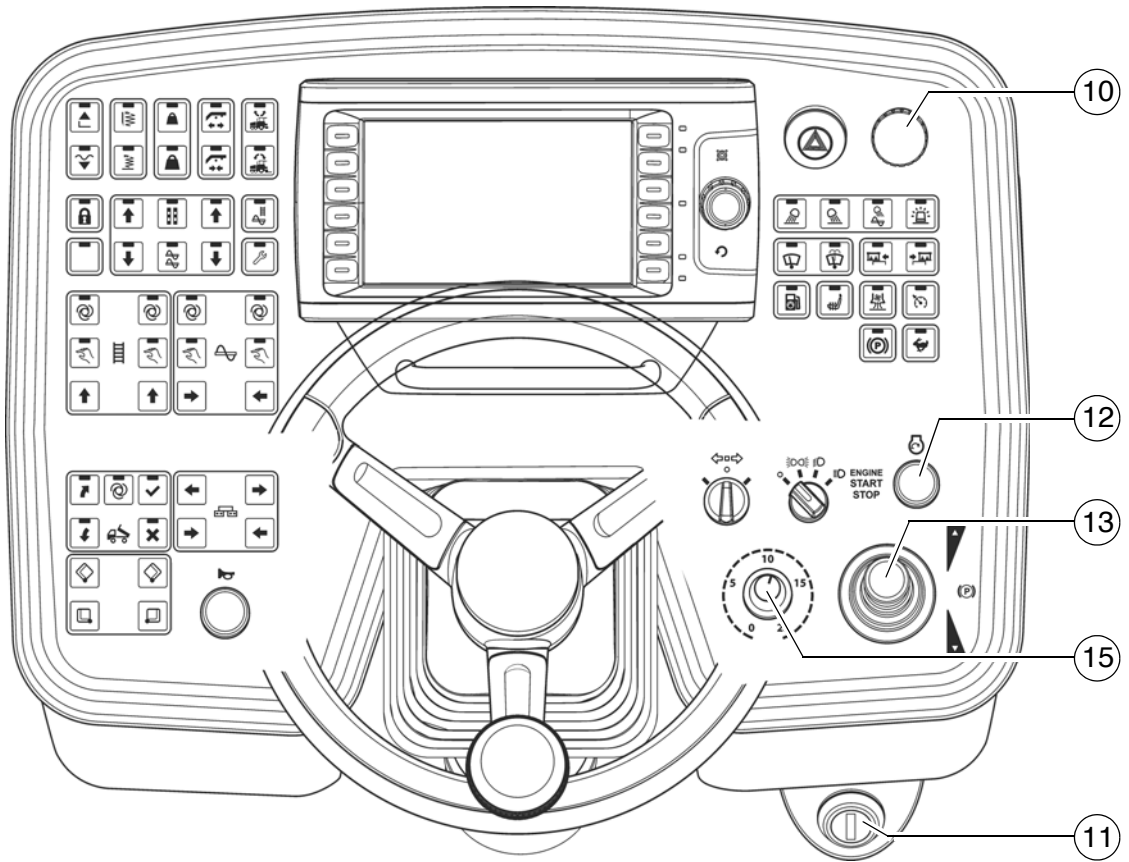
- Set the drive lever (13) to the centre position and the travel drive preselector (15) to minimum.
- Insert the ignition key (11) in position "0".



It is impossible to start the vehicle if an emergency stop button (10) / (120) is pressed. (Error shown on the display)

<b>NOTE</b>	<b>Caution! Possible subsequent damage!</b>
	<ul style="list-style-type: none"> <li>- No additional consumers (light, heater, etc.) may be switched on when starting.</li> <li>- Do not switch the consumers on until the engine has reached a speed of &gt;1000 revs.</li> </ul>

- Press the starter button (12) to start the engine. Run the starter continuously for a maximum of 30 seconds, then take a break for 2 minutes!



## External starting (starting aid)



The engine can be started with the help of an external power source if the batteries are empty and the starter no longer turns.

Suitable power sources are:

- Other vehicles with a 24V system
- Additional 24V battery
- Start device that is suitable for external starting (24 V/90 A).



Standard chargers or quick chargers cannot be used for external starting.

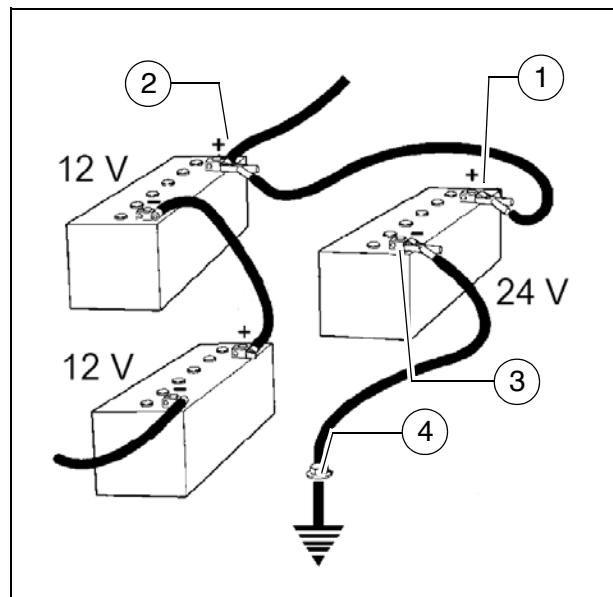
To externally start the engine:

- Switch on the ignition (11), set the drive lever (13) to the centre position and the travel drive preselector (15) to minimum.



The starting aid cable must be connected to 24 V.

- First connect the positive terminal (1) of the starting aid battery to the positive terminal (2) of the vehicle battery.
- Then connect the negative terminal (3) of the starting aid battery to the ground of the discharged vehicle, e.g. to the engine block or to a bolt (4) on the vehicle frame.




Do not connect the starting aid cable to the negative terminal of the discharged battery! Danger of explosion!



Lay the starting aid cable so that it can be disconnected once the engine is running.



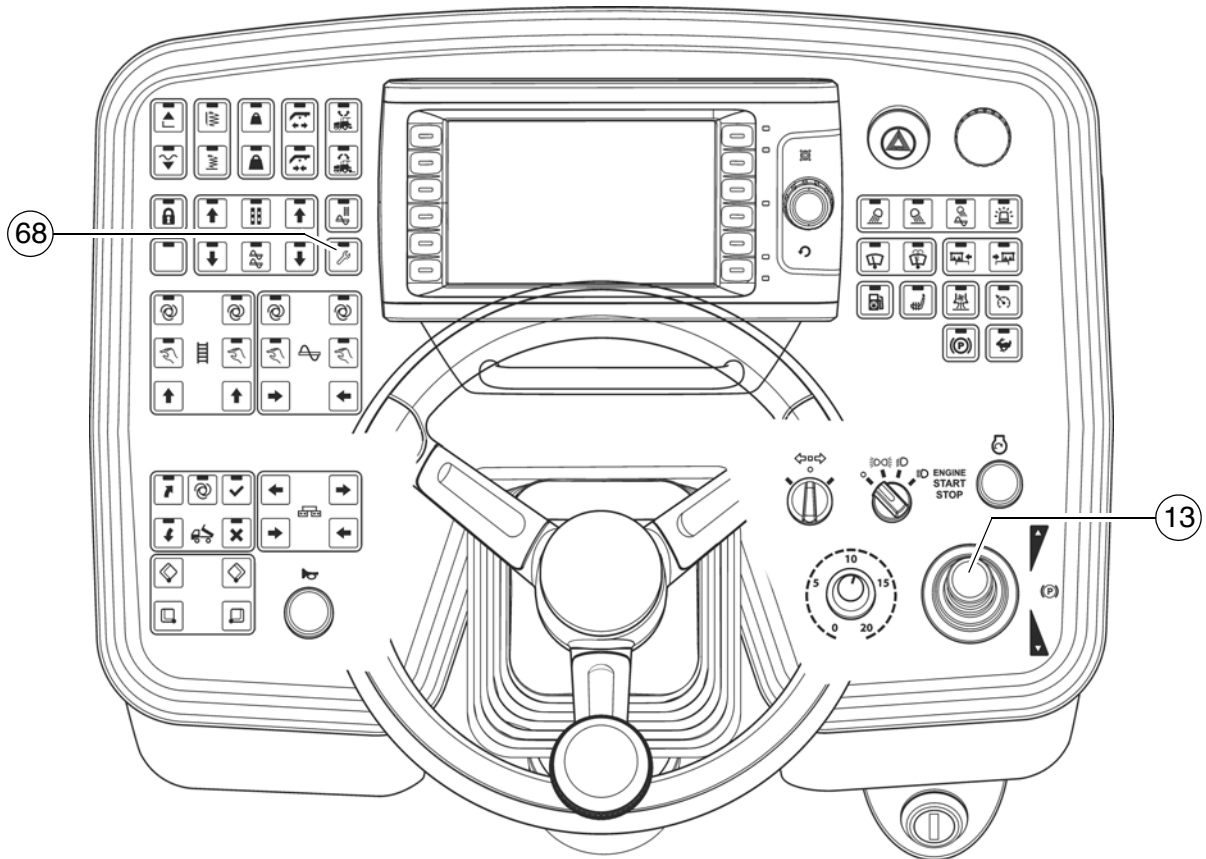
It is impossible to start the vehicle if an emergency stop button (10) / (120) is pressed. (Error shown on the display)

NOTE	<b>Caution! Possible subsequent damage!</b>
	<ul style="list-style-type: none"> <li>- No additional consumers (light, heater, etc.) may be switched on when starting.</li> <li>- Do not switch the consumers on until the engine has reached a speed of &gt;1000 revs.</li> </ul>

- If necessary, start the engine of the vehicle supplying power and leave to run for a while.

Now try to start the other vehicle:

- Press the starter button (12) to start the engine. Run the starter continuously for a maximum of 30 seconds, then take a break for 2 minutes!
- If the engine still has not started after two attempts, ascertain the cause!
- If the engine starts up: disconnect the starting aid cable again in reverse order.



### **After starting**

To increase the engine speed:

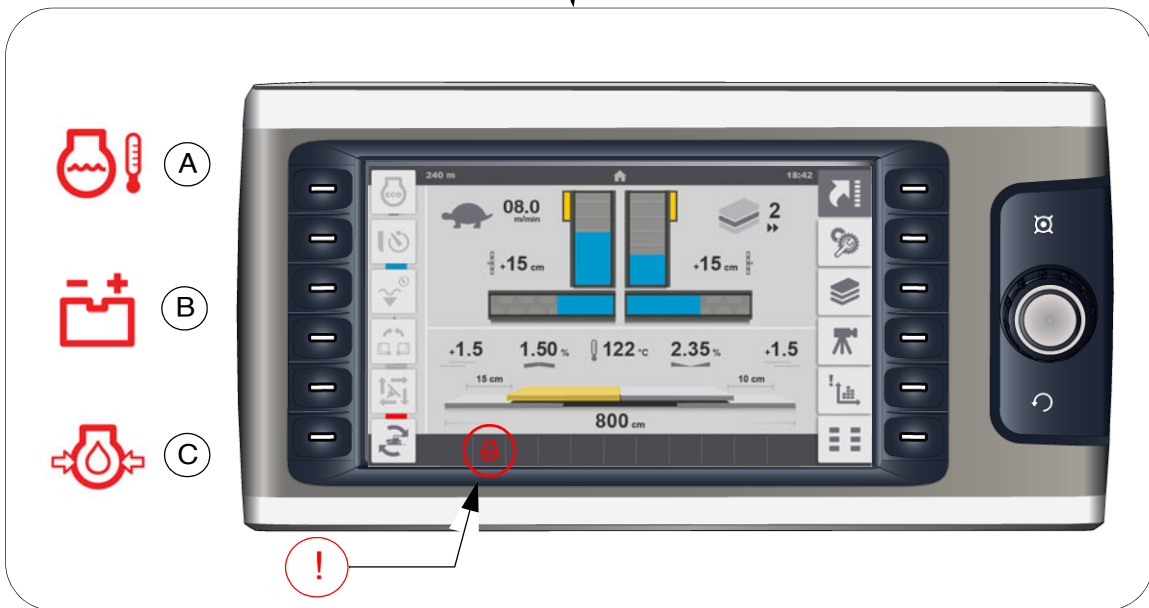
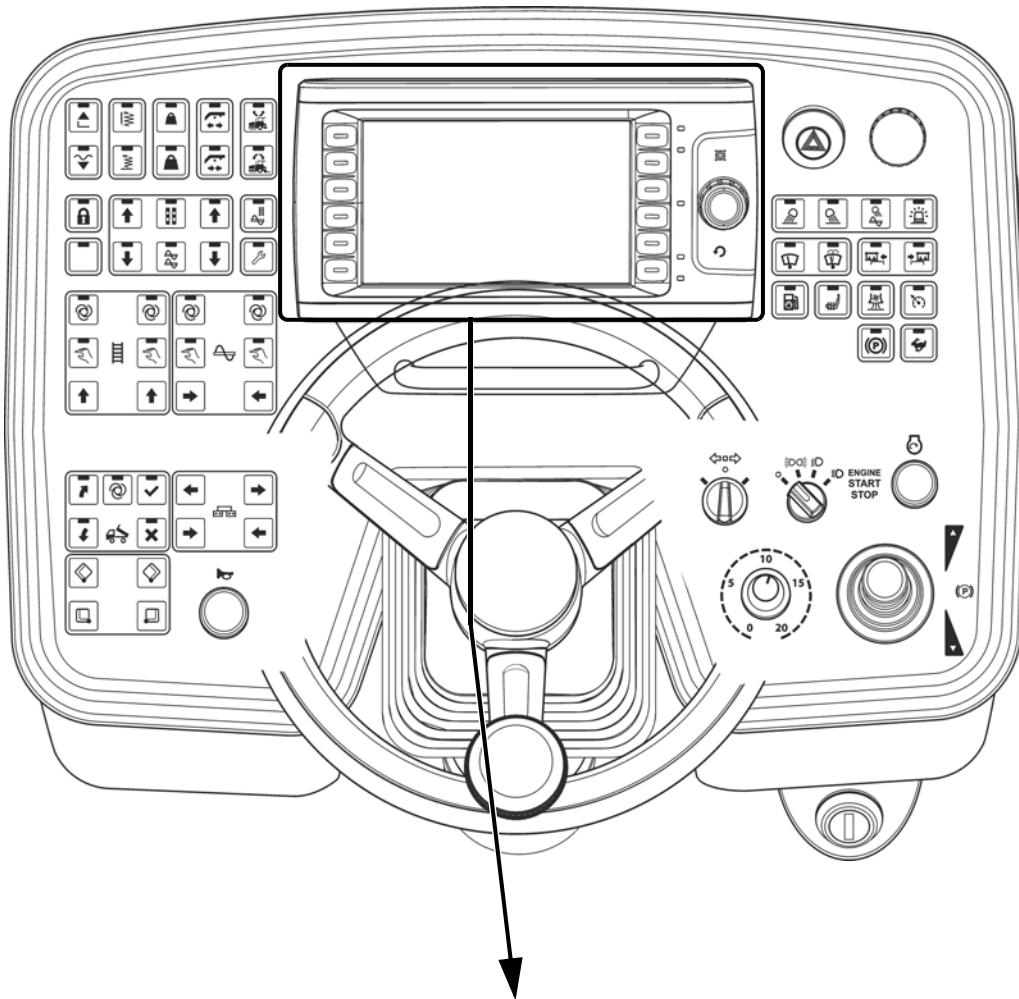
- Press button (68) to increase engine speed.



The engine speed is increased to the preset value.



Let the paver finisher warm up for approx. 5 minutes if the engine is cold.



---

## Observe indicator lamps

The following indicator lamps must be observed under all circumstances:

For other possible errors, see engine's operating instructions.

### Engine coolant temperature check (A)

Lights up when the engine temperature is outside of the permissible range.



Stop the paver finisher (drive lever to the centre position), let the engine cool down while idling.

Determine the cause and correct it if necessary.



The engine performance will be throttled down automatically. (Driving mode remains possible).

After cooling down to normal temperature, the engine will run with full performance again.

### Battery charge indicator lamp (B)

Must go out after starting when the engine revs up.



If the lamp does not go out or lights up during operation: Briefly rev up the engine. Switch off the engine and determine the fault if the lamp does not go out.

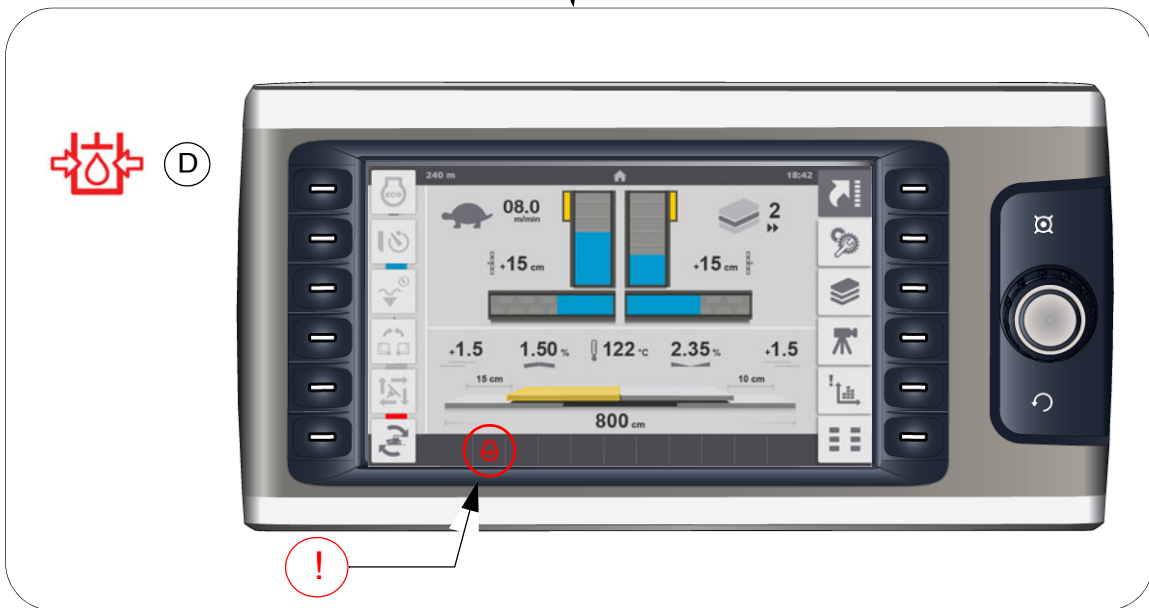
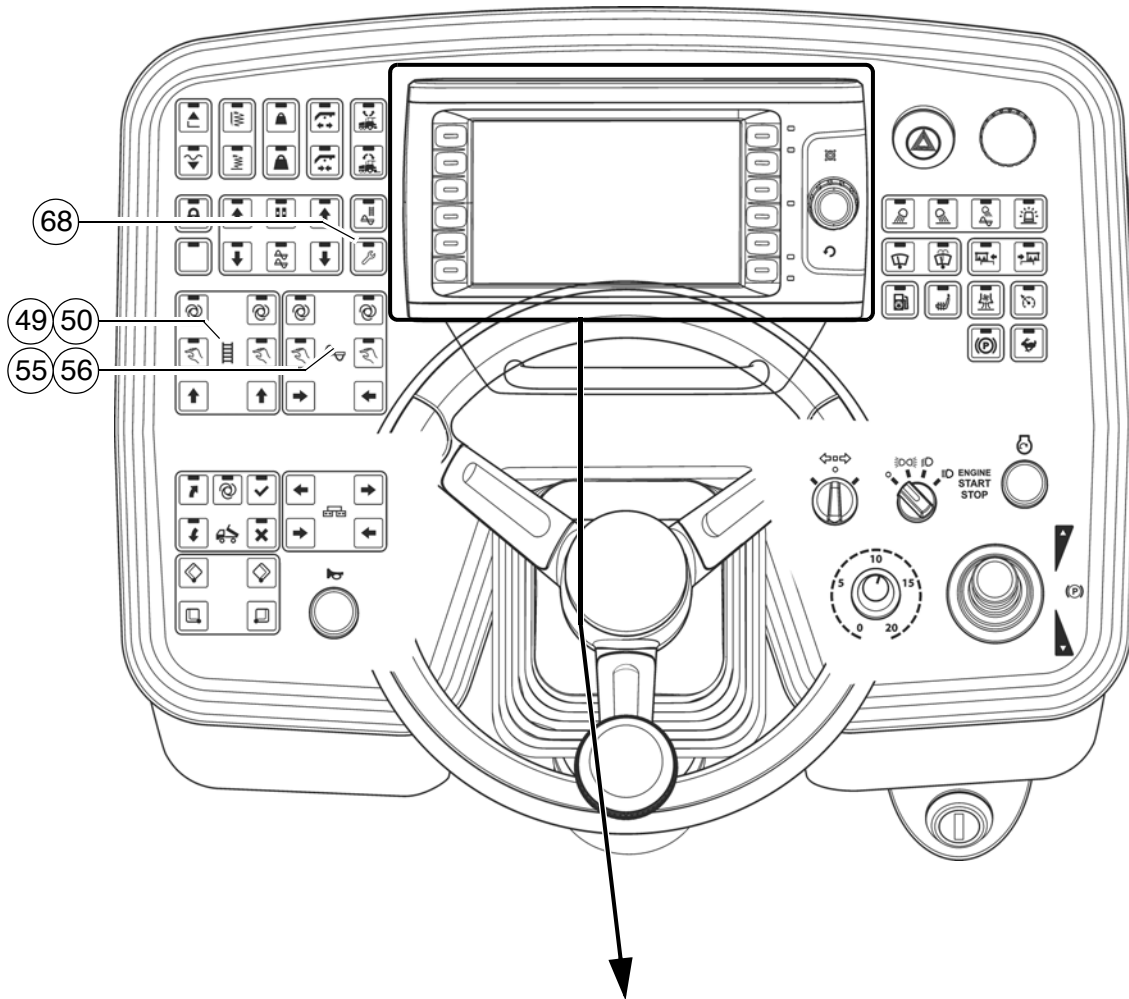
For further possible malfunctions, refer to the section "Malfunctions".

### Diesel engine oil pressure indicator lamp (C)

Must go out at the latest 15 seconds after starting.



If the lamp does not go out or lights up during operation: switch off engine immediately and determine fault.



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## Travel drive oil pressure indicator lamp (D)

- Must go out after starting.



If the lamp does not go out:

Do not switch on the traction drive! Otherwise, the entire hydraulic system could be damaged.

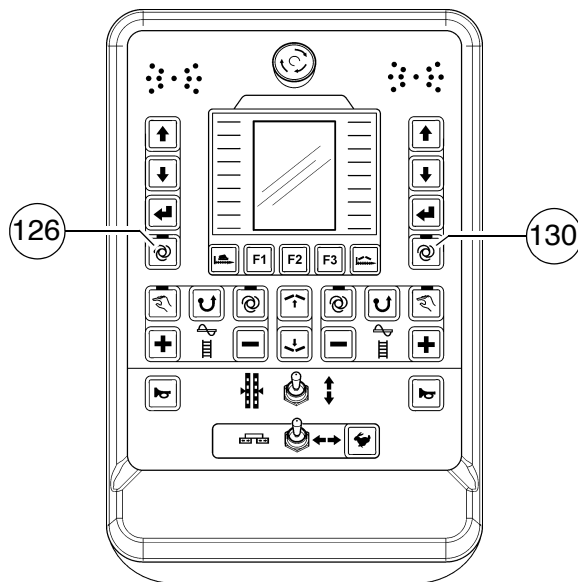
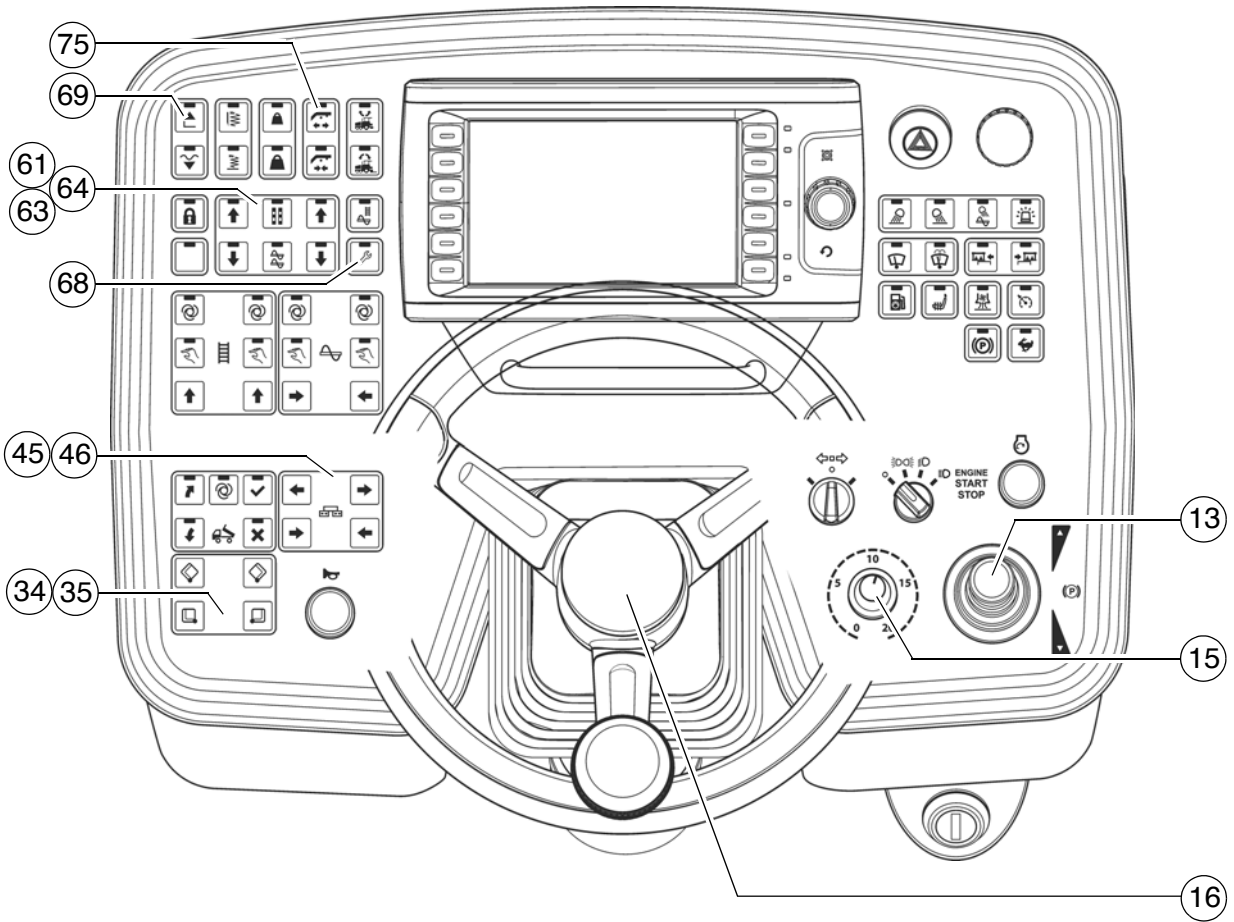
When the hydraulic oil is cold:

- Activate set-up mode function (68).
- Set the conveyor function (49)/(50) to "manual" and the auger function (55)/(56) to "manual". Conveyor and auger start to operate
- Let the hydraulics warm up until the indicator lamp goes out.



The Lamp goes out when the pressure drops below  
2.8 bar = 40 psi.

For further possible malfunctions, refer to the section "Malfunctions".



---

## 1.2 Preparation for transportation

- Close the hopper with switch (34)/(35).
- Engage both hopper transport safeguards.
- Lift the screed completely using switch (69), set the crossbeam lock (75).
- Turn the travel drive preselector (15) to zero.
- Activate set-up mode function (68).
- Fully extend the levelling cylinders with switch (61),(63)/(64).



To extend the levelling cylinders, levelling operating mode (126)/(130) must be switched to "MANUAL" on the remote controls.

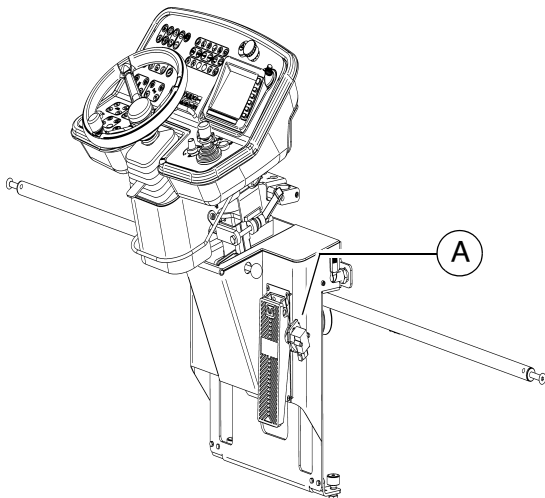
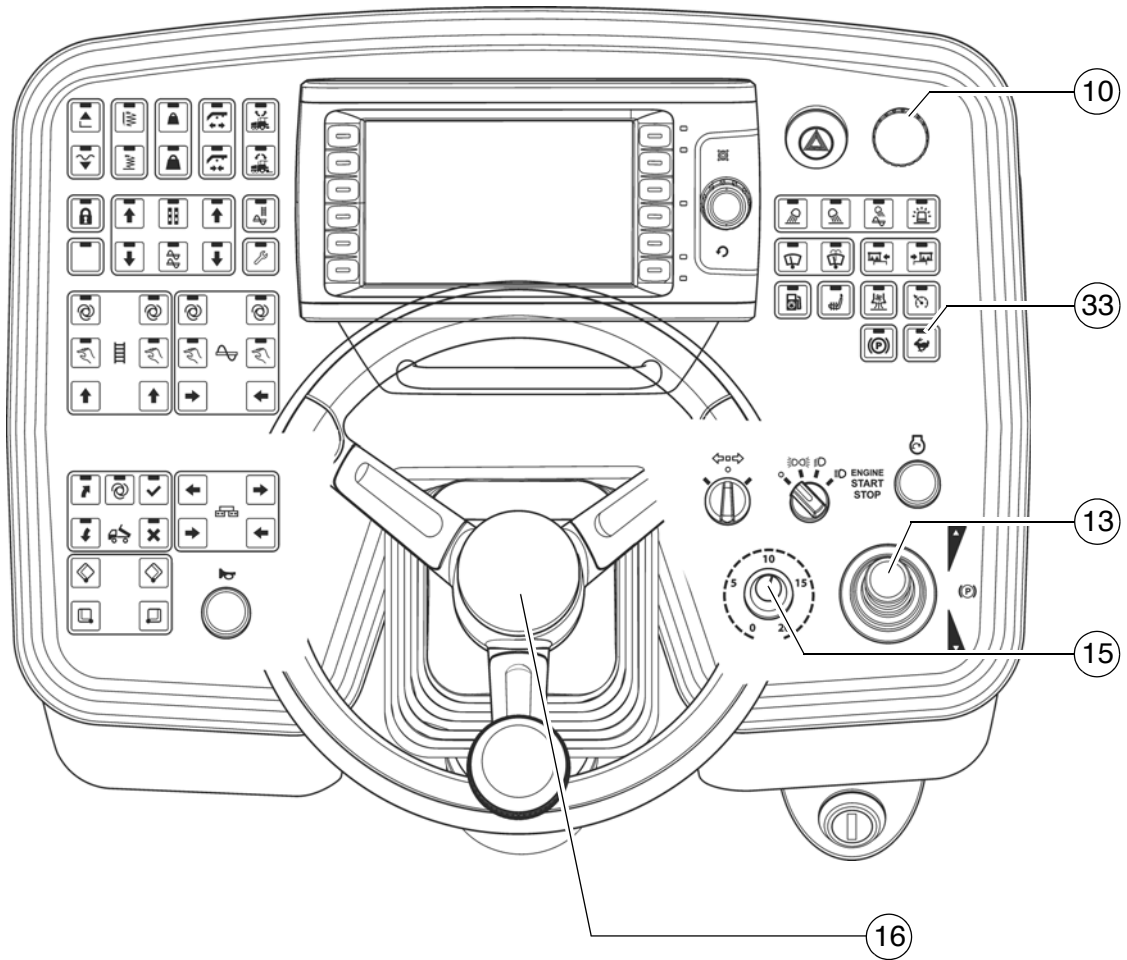
- Use switch (45)/(46) to adjust the screed to the basic width of the paver finisher.



Lift the auger if necessary!



If the engine is started with the drive lever pivoted out, the travel drive is inhibited. To start the travel drive, first the drive lever must be returned to the centre position.



---

## Driving and stopping the paver finisher

- Set the Fast/Slow switch (33) to "Hare".
- Set the preselector (15) to mark 10.
- For driving, carefully tilt the drive lever (13) forward or backward according to the drive direction desired.
  - Adjust the speed with the preselector (15).
- Carry out steering movements with the steering wheel (16).



In case of an emergency, press the emergency stop button (10)!

- To stop, press the service brake (A), set the preselector (15) to "0" and move the drive lever (13) into its centre position.



If the vehicle was brought to a standstill with the service brake, it cannot be driven away again until after the drive lever has been put into neutral!

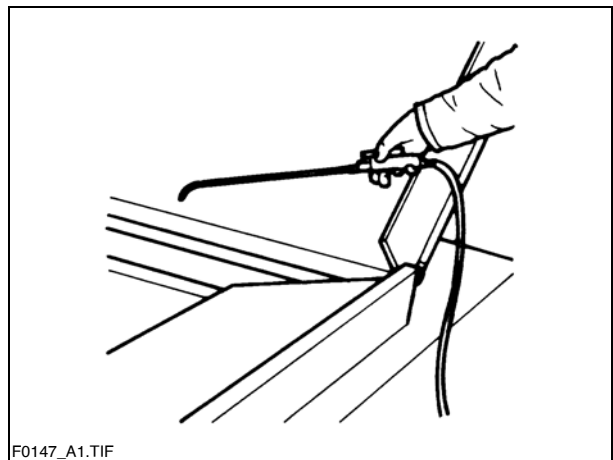
## 1.3 Preparations for paving

### Separator fluid

Spray the parts coming into contact with asphalt (hopper, screed, auger, push roller) with a separator fluid.



Do not use diesel fuel as it dissolves the bitumen (prohibited in Germany!).



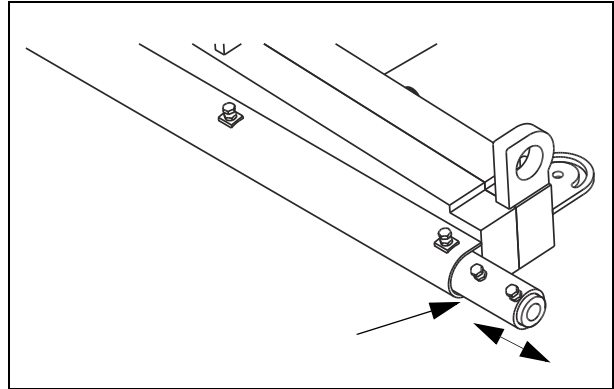
### Screed heater system

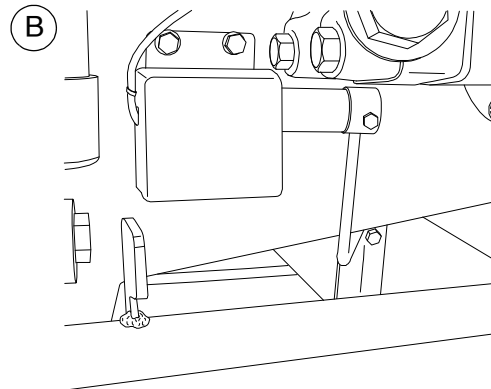
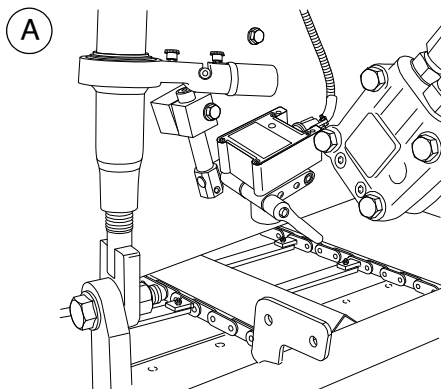
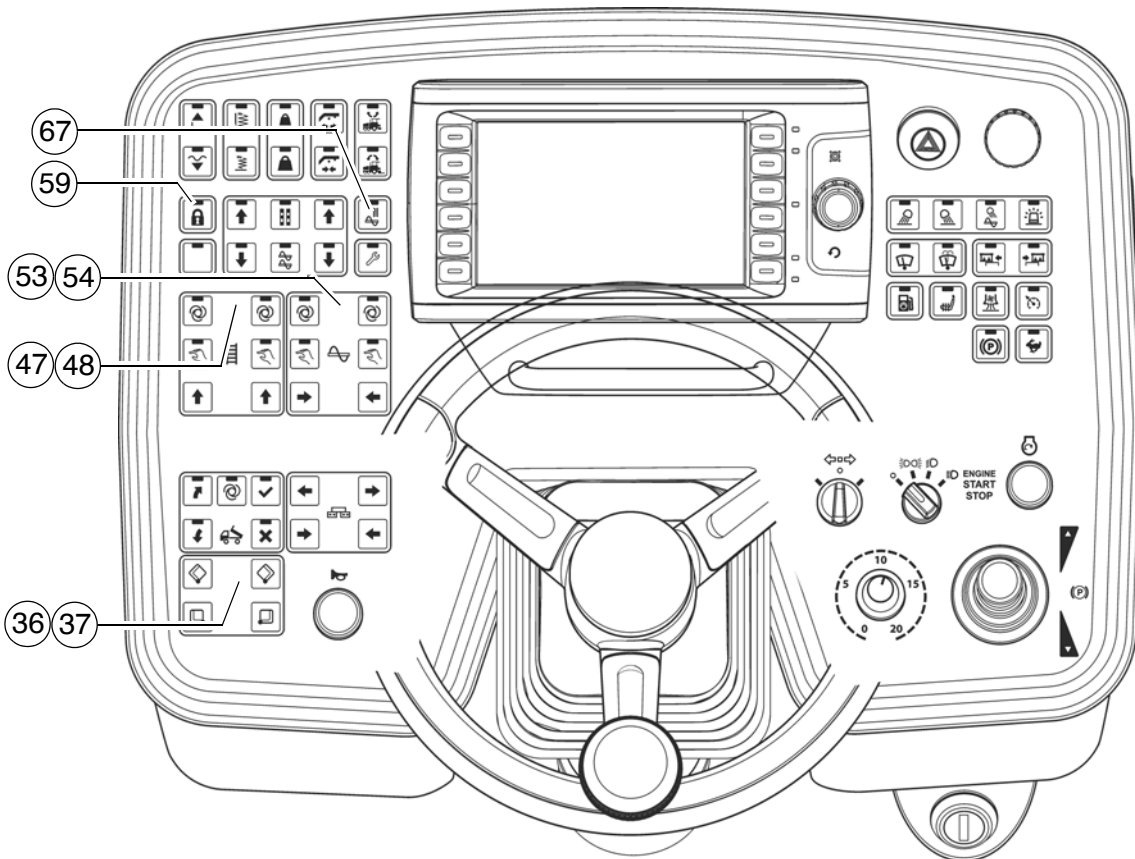
Switch on the screed heater approx. 15–30 minutes (depending on the ambient temperature) before paving begins. Warming up prevents the material from sticking to the screed plates.

## Direction marks

To ensure straight paving, a direction mark must be present or established (road edge, chalk lines or similar).

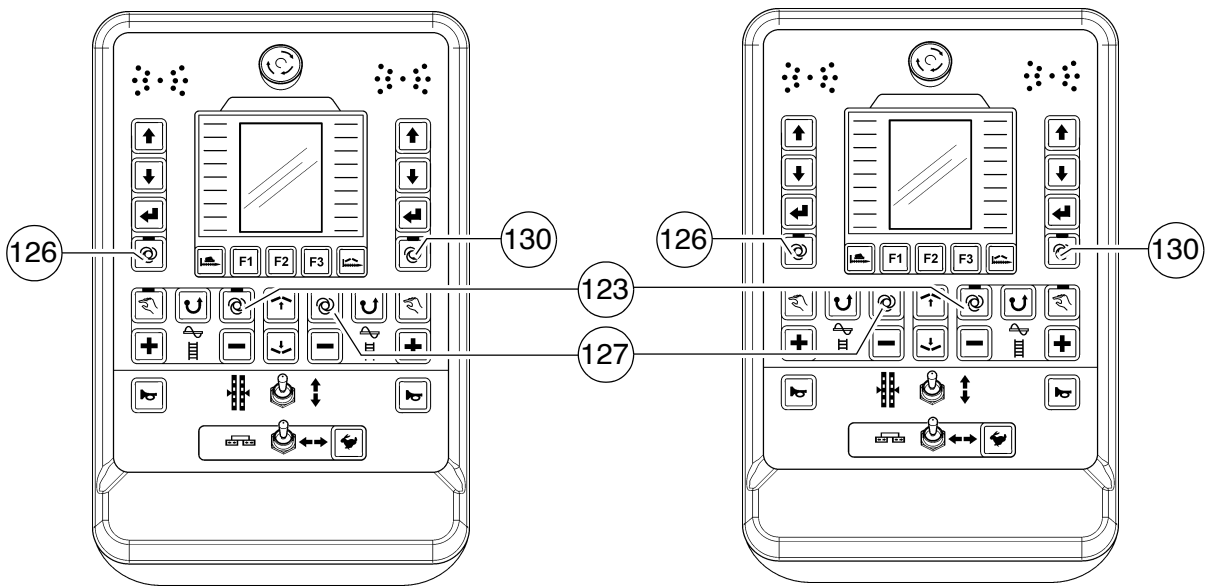
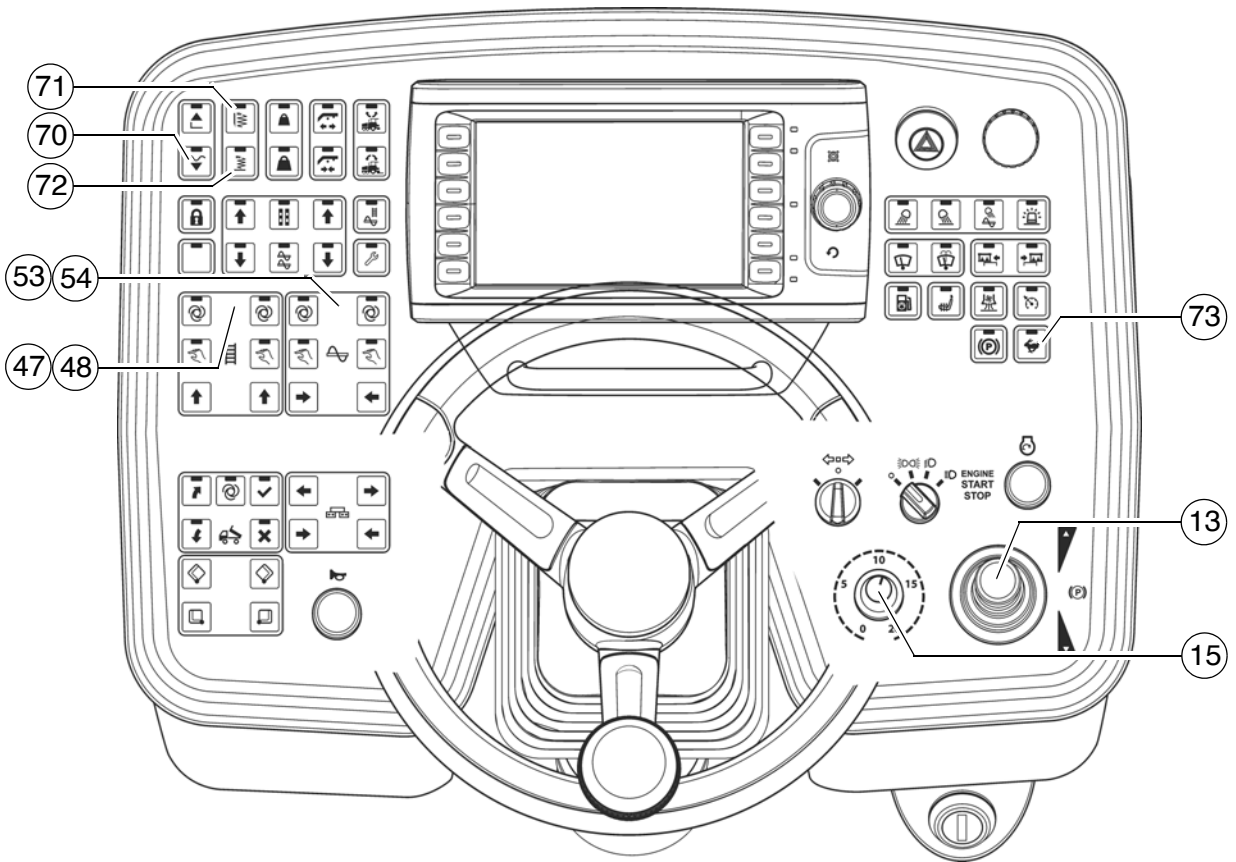
- Slide the operating panel to the desired side and secure it.
- Pull the direction indicator out of the bumper (arrow) and adjust it accordingly.





### **Loading/conveying material**

- Button (59) has to be switched off.
- Use switch (36)/(37) to open the hopper.  
Instruct the truck driver to dump the material.
- Set the switches for the auger (53)/(54) and the conveyor (47)/(48) to "Auto".
- Activate function (67) to fill the vehicle for the paving process.
  
- Switch the conveyors on.  
The conveyor limit switches (A) / (B) must switch off when the material has approximately reached the area beneath the auger crossbeam.
- Check that the material is transferred properly.  
Manually switch on or off the conveyor if the material is not conveyed properly until a sufficient amount of material lies in front of the screed.



## 1.4 Starting for paving

Set the switches, levers and controls listed below to the specified positions when the screed has reached its operating temperature and a sufficient amount of material lies in front of the screed

Item	Travelling direction	Position
13	Drive lever	Centre position
33	Traction drive fast/slow	LED OFF
15	Travel drive preselector	Mark 6-7
70	Preparation for screed floating position	LED ON
72	Vibration	LED ON
71	Tamper	LED ON
53/54 123	Auger left/right	auto
47/48 127	Conveyor left/right	auto
126 / 130	Levelling	auto
	Speed regulator, vibration	adapted to the paving situation
	Speed control for the tamper	adapted to the paving situation

- Push the drive lever (13) all the way to the front and start driving.
- Observe the distribution of the material and adjust the limit switches if necessary.
- Set the compacting elements (tamper / vibration) according to the required compaction ratio.
- Let the paving master check the paving thickness after 5–6 meters and correct if necessary.

Carry out the check in the area of the caterpillar chains or drive wheels as the screed tends to level an uneven ground. The reference points for the layer thickness are the caterpillar chains or drive wheels.

The basic setting of the screed must be corrected when the actual layer thickness deviates significantly from the values indicated by the scales (see the operating instructions for the screed).



The basic setting is for asphalt material.

## 1.5 Checks during paving

The following points must be constantly observed during paving:

### Paver function

- Screed heater system
- Tamper and vibration
- Engine oil and hydraulic oil temperature
- The screed parts must be retracted and extended in time when obstacles are in the way
- Uniform material transport and distribution or supply to the screed; may require corrections to settings of the material switches for conveyor and auger.



See the section "Malfunctions" when paver functions fail.

### Quality of the layer

- Paving height
- Slope
- Evenness in the driving direction and at right angles to it (check with 4 m levelling rod)
- Surface structure/texture behind the screed.



See section "Malfunctions, problems during paving" if the paving quality is poor.

## 1.6 Paving with "screed control at paving stop" and "screed charging/relieving"

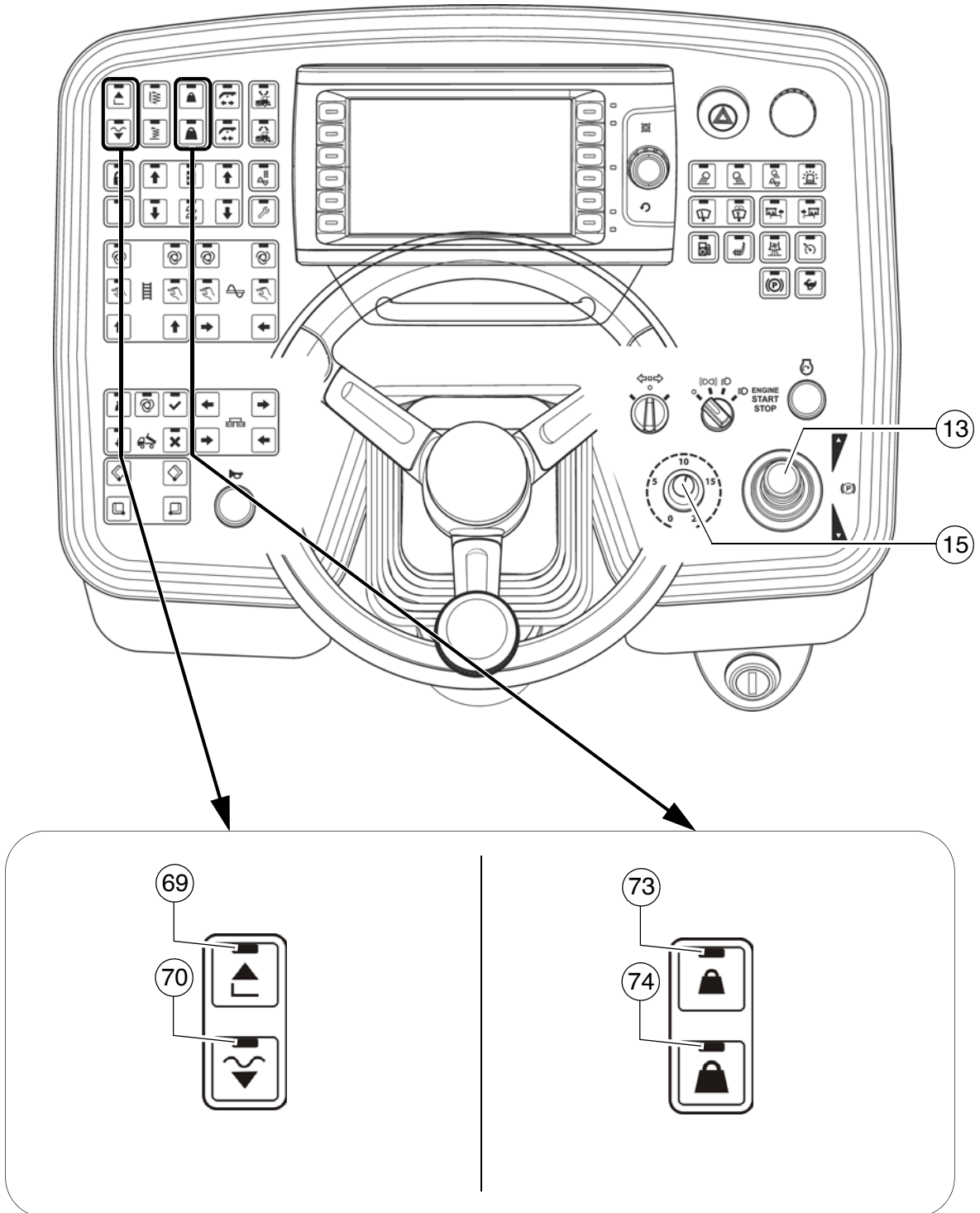
### General

The screed hydraulics can be influenced in three different ways to attain optimum paving results:

- Paving stop + relief when the paver finisher is halting,
- floating paving when the paver finisher is driving,
- floating paving with screed charging or relieving when the paver finisher is driving.



Relieving reduces the screed weight and increases the traction force.  
Charging increases the screed weight, reduces the traction force, but increases the compaction ratio. (To be used with light-weight screeds in exceptional cases.)



---

## Screed charging/relieving

This function charges or relieves the screed regardless of its own dead weight.

**Function (73)** Relieving (screed "lighter")

**Function (74)** Charging (screed "heavier")



The "Screed charging and relieving" functions are only effective when the paver finisher moves. According to the activated function, the paver finisher is automatically switched to "paving stop + relief" when stationary.

## Screed control with paver finisher stop / in paving operation (screed stop / paving stop / floating paving)

Button (70) can be used to activate the following functions:

- Screed stop / floating position (OFF)-->(LED OFF)
  - Screed is hydraulically held in position.



Function for setting up the paver finisher and for lifting/lowering the screed

- Paving stop / floating paving (ON)-->(LED ON)

The following functions are active depending on operating status:

- "Paving stop": when the paver finisher is stationary.  
The screed is held by the relief pressure and the counter pressure of the material.
- "Floating paving": during paving operation.  
Lower screed to the floating position with preselected screed charging/relieving function.



Function for paving operation.

- To lift the screed press switch (69).
- To lower the screed:
  - Resting function: Keep button (70) pressed for longer than 1.5 seconds. The screed is lowered as long as the button is pressed. When the button is released, the screed is stopped again.
  - Button function: Press button (70) briefly - the screed is lowered. Press the button briefly again - the screed is stopped.

As in the case of screed charging and relieving, a pressure of 2-50 bar is separately applied to the screed lifting cylinders. This pressure acts to combat the weight of the screed to prevent the screed from sinking into the freshly laid material, thus supporting the paving stop function, especially when the screed relieving function is used.

The pressure to be applied depends on the load-bearing capacity of the material. If necessary, the pressure must be readjusted or changed as required during the first stops until the lower edge of the screed no longer leaves any marks when the finisher moves on again.

A pressure greater than 10-15 bar neutralises the screed weight, thus preventing the screed from sinking into the material.

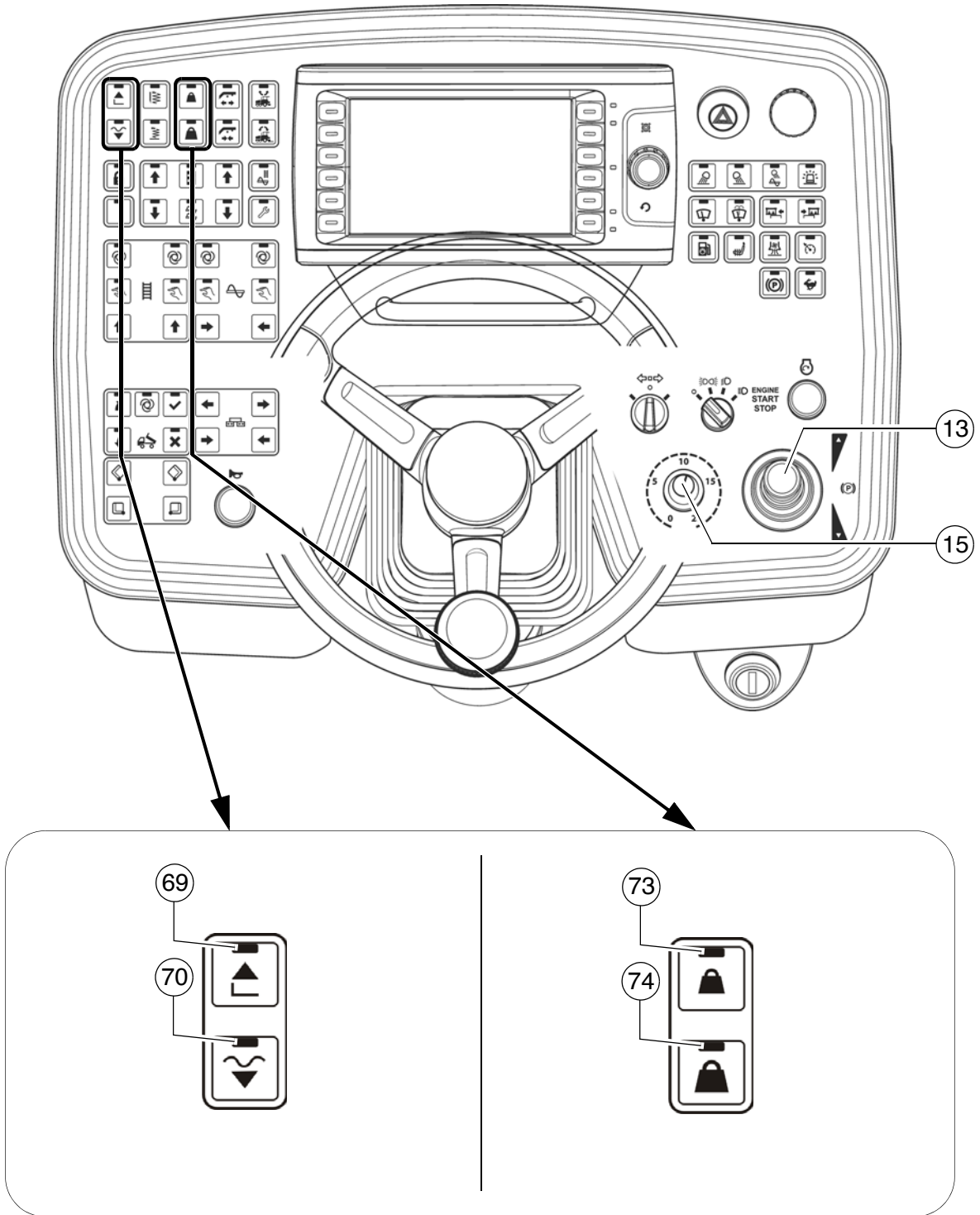


When combining the "paving stop" and "screed relieving" functions, make sure that the pressure difference between the two functions does not exceed 10–15 bar.



Especially in those cases where the "screed relieving" function is only briefly used as a start-up aid, there is a danger of uncontrolled floating when starting up again.





## Adjusting the pressure

Pressure adjustments can only be made while the diesel engine is running.  
Therefore:

- Start the diesel engine and turn the traction controller (15) back to zero (precaution against inadvertent advancing).
- Activate the "floating position" using switch (70).

### For screed charging/relieving:

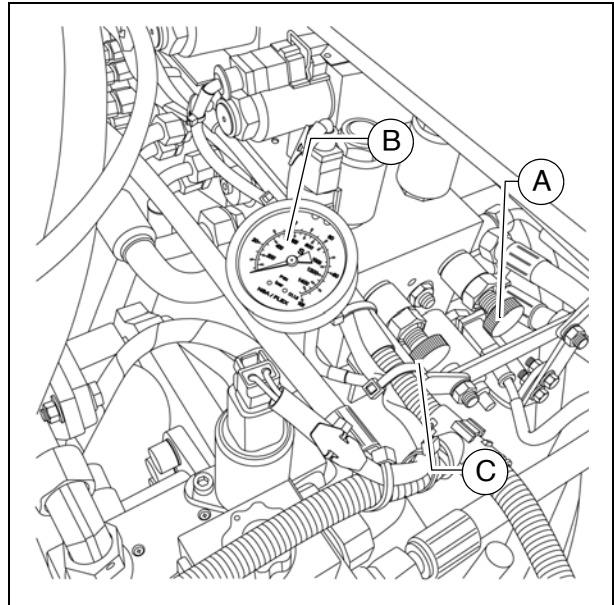
- Set the drive lever (13) to the centre position.
- Activate the screed relieving function (73) or the screen charging function (74) (LED ON).
- Set the pressure using pressure regulating valve (A) ; read it off at the manometer (B).



When screed charging/relieving is necessary and automatic levelling is used (grade control and/or slope control), the compacting performance changes (layer thickness).

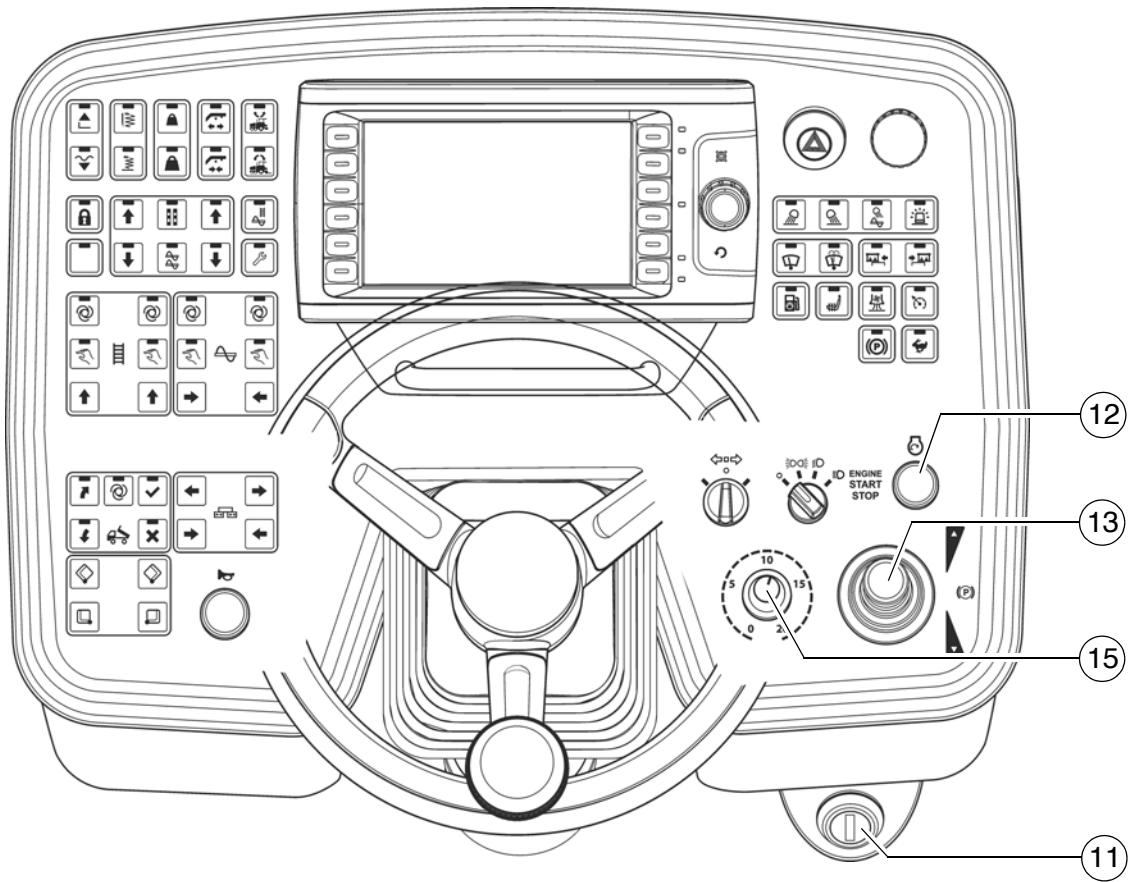


The pressure can also be set or corrected during paving.  
(max. 40 bar)



### Setting pressure for screed control with paving stop + relieving:

- Set the drive lever (13) to the centre position.
- Activate the "floating position" (70) function (LED ON).
- Set the pressure using pressure regulating valve (C); read it off at the manometer (A).  
(Basic setting: 20 bar)



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## 1.7 Interrupting/terminating operation

### **During breaks in paving** (e.g. delay due to material trucks)

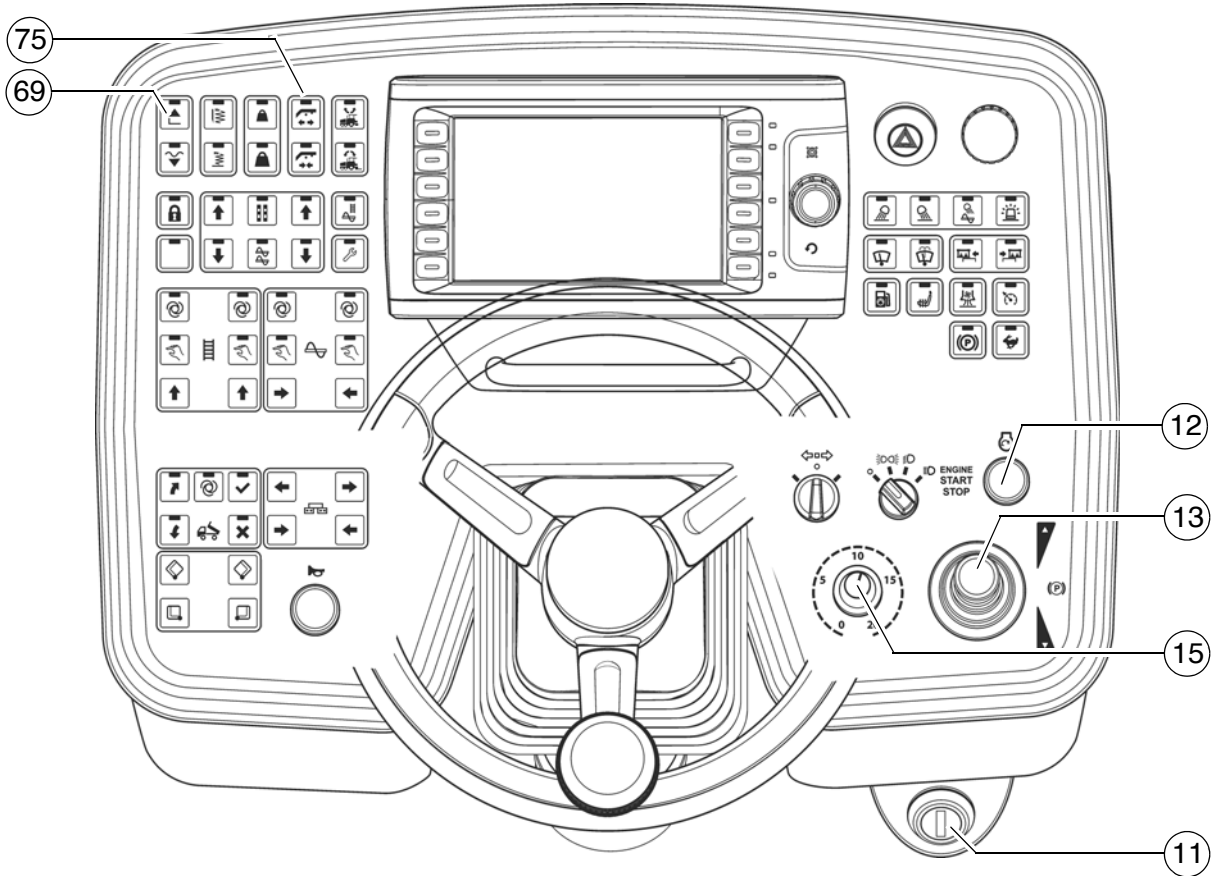
- Determine the approximate duration.
- When cooling down of the material below the minimum paving temperature must be expected, run the paver finisher empty and create an edge like the end of a layer.
- Set the drive lever (13) to the centre position.

### **During longer breaks** (e.g. lunch break)

- Set the drive lever (13) to the centre position and the speed adjuster (15) to minimum.
- Press the stop button (12) to switch off the engine.
- Switch off the ignition (11).
- Switch the screed heater system off.
- With a screed with gas heating system (○), close the bottle valves.



The screed must be heated up to the correct paving temperature before paving may be restarted.




### When work is finished

- Run the paver finisher empty and stop it.
- Lift the screed using switch (69), set the crossbeam lock (75).
- Retract the screed parts to the basic screed width and lift the auger. Where applicable, completely extend the levelling cylinders.
- Close hopper halves, set hopper transport safeguards.



The screed is hydraulically secured in the lifted position.

- While operating the tampers at a low speed, let any material residues drop out.
- Set the drive lever (13) to the centre position and the speed adjuster (15) to minimum.
- Switch the screed heater system off.
- Press the stop button (12) to switch off the engine.
- Switch off the ignition (11).
- With a screed with gas heating system (○), close the main shut-off valves and the bottle valves.
- Remove the levelling units and stow them away in the boxes, close all flaps.
- Remove all parts that extend beyond the paver finisher contour or secure them if the paver finisher is to be transported over public roads on a low-bed trailer.
- Read and check the operating hour meter to determine whether maintenance work must be performed (see chapter F).
- Cover and lock the operating panel.
- Remove material residues from the screed and the paver finisher and spray all parts with separator fluid.

<b>NOTE</b>	<b>Caution! Possible damage to the engine electronics</b>
	<ul style="list-style-type: none"> <li>- After the drive engine is switched off, the on-board voltage may not be switched off until after a period &gt; 100 seconds (main switch). Always observe the operating instructions!</li> </ul>

## 2 Malfunctions

### 2.1 Problems during paving

Problem	Cause
Wavy surface ("short waves")	<ul style="list-style-type: none"> <li>- change in the material temperature, demixing</li> <li>- wrong material composition</li> <li>- incorrect operation of the roller</li> <li>- incorrectly prepared foundation</li> <li>- long standstill times between loads</li> <li>- grade control reference line is not suitable</li> <li>- grade control jumps to the reference line</li> <li>- grade control toggles between up and down (inertia setting is too high)</li> <li>- bottom plates of the screed are loose</li> <li>- bottom plates of the screed are warped or not uniformly worn</li> <li>- screed is not operated in the floating position</li> <li>- too much play in the mechanical screed link/suspension</li> <li>- paver finisher speed is too high</li> <li>- augers are overloaded</li> <li>- changing material pressure against the screed</li> </ul>
Wavy surface ("long waves")	<ul style="list-style-type: none"> <li>- change in the material temperature</li> <li>- demixing</li> <li>- roller has stopped on the hot material</li> <li>- roller has turned or roller speed has been changed too fast</li> <li>- incorrect operation of the roller</li> <li>- incorrectly prepared foundation</li> <li>- truck brake is applied too tight</li> <li>- long standstill times between loads</li> <li>- grade control reference line is not suitable</li> <li>- incorrect installation of the grade control</li> <li>- limit switch is not correctly set</li> <li>- screed is empty</li> <li>- screed has not been switched to the floating position</li> <li>- too much play in the mechanical screed link</li> <li>- auger is set too deep</li> <li>- auger is overloaded</li> <li>- changing material pressure against the screed</li> </ul>
Cracks in the layer (over the entire width)	<ul style="list-style-type: none"> <li>- material temperature is too low</li> <li>- change in the material temperature</li> <li>- moisture on the foundation</li> <li>- demixing</li> <li>- wrong material composition</li> <li>- wrong layer height for maximum grain size</li> <li>- cold screed</li> <li>- bottom plates of the screed are worn or warped</li> <li>- paver finisher speed is too high</li> </ul>

Problem	Cause
Cracks in the layer (centre strip)	<ul style="list-style-type: none"> <li>- material temperature</li> <li>- cold screed</li> <li>- bottom plates are worn or warped</li> <li>- wrong crowning</li> </ul>
Cracks in the layer (outer strip)	<ul style="list-style-type: none"> <li>- material temperature</li> <li>- screed extendable parts are incorrectly installed</li> <li>- limit switch is not correctly set</li> <li>- cold screed</li> <li>- bottom plates are worn or warped</li> <li>- paver finisher speed is too high</li> </ul>
Layer composition is not uniform	<ul style="list-style-type: none"> <li>- material temperature</li> <li>- change in the material temperature</li> <li>- moisture on the foundation</li> <li>- demixing</li> <li>- wrong material composition</li> <li>- incorrectly prepared foundation</li> <li>- wrong layer height for maximum grain size</li> <li>- long standstill times between loads</li> <li>- vibration is too slow</li> <li>- screed extendable parts are incorrectly installed</li> <li>- cold screed</li> <li>- bottom plates are worn or warped</li> <li>- screed is not operated in the floating position</li> <li>- paver finisher speed is too high</li> <li>- auger is overloaded</li> <li>- changing material pressure against the screed</li> </ul>
Marks in the surface	<ul style="list-style-type: none"> <li>- truck hits too much against the finisher while aligning to the finisher</li> <li>- too much play in the mechanical screed link/suspension</li> <li>- truck brake is applied</li> <li>- vibration is too high while standing on a spot</li> </ul>
Screed does not react to corrective measures as expected	<ul style="list-style-type: none"> <li>- material temperature</li> <li>- change in the material temperature</li> <li>- wrong layer height for maximum grain size</li> <li>- incorrect installation of the grade control</li> <li>- vibration is too slow</li> <li>- screed is not operated in the floating position</li> <li>- too much play in the mechanical screed link</li> <li>- paver finisher speed is too high</li> </ul>

## 2.2 Malfunctions on the paver finisher or screed

Malfunction	Cause	Remedy
At the diesel engine	Various	See operating instructions for the engine
Diesel engine does not start	Batteries empty	See "External starting" (start assistance)
	Various	see "Towing"
Tammer or vibration is not functioning	Tammer is obstructed by cold bitumen	Properly heat the screed
	Hydraulic oil level in the tank is too low	Top up oil
	Pressure limiting valve is defective	Replace the valve; if necessary, repair and adjust the valve
	Leak in the suction line of the pump	Seal or replace the connections
		Tighten or replace the hose clamps
Oil filter is soiled	Clean the filter; if necessary, replace the filter	
Conveyor or augers run too slowly	Hydraulic oil level in the tank is too low	Top up oil
	Power supply interrupted	Check fuses and cables; replace if necessary
	Switch is defective	Replace the switch
	One of the pressure limiting valves is defective	Repair or exchange the valves
	Pump shaft broken	Replace the pump
	Limit switch does not switch or regulate correctly	Check the switch; replace and adjust the switch if necessary
	Pump is defective	Check the high pressure filter for dirt particles; replace if necessary
	Oil filter is soiled	Replace the filter
Hopper cannot be swung open	Engine speed is too low	Increase the speed
	Hydraulic oil level is too low	Top up oil
	Leak in the suction line	Tighten the connections
	Flow rate regulator defective	Replace
	Leaking seals of the hydraulic cylinder	Replace
	Control valve is defective	Replace
	Power supply interrupted	Check fuse and cables; replace if necessary

Malfunction	Cause	Remedy
Hoppers lowers inadvertently	Control valve is defective	Replace
	Leaking hydraulic cylinder sleeves	Replace
Screed cannot be lifted	Oil pressure too low	Increase the oil pressure
	Leaking seal	Replace
	Screed relieving or charging is switched on	Switch must be in the centre position
	Power supply interrupted	Check fuse and cables; replace if necessary
Crossbeams cannot be lifted or lowered	Switch on the remote control is set to "Auto"	Set the switch to "Manual"
	Power supply interrupted	Check fuse and cables; replace if necessary
	Switch on the operating panel defective	Replace
	Excess pressure valve defective	Replace
	Flow rate regulator defective	Replace
	Seals defective	Replace
Crossbeams lower inadvertently	Control valves defective	Replace
	Pilot-controlled non-return valves defective	Replace
	Seals defective	Replace

Malfunction	Cause	Remedy	
Traction does not work	Travel drive fuse defective	Replace (fuse strip on the operating panel)	
	Power supply interrupted	Check potentiometer, cables, connectors; replace if necessary	
	Travel drive monitoring (type-specific) defective	Replace	
	Electro-hydraulic servo unit of the pump defective	Replace the servo unit	
	Insufficient supply pressure		Check and adjust if necessary
			Check the suction filter; replace the supply pump and the filter if necessary
Drive shaft of hydraulic pumps or engines broken	Replace pump or engine		
Irregular engine speed, engine stop function does not work	Fuel level too low	Check the fuel level; refill fuel if necessary	
	Fuse "engine speed control" defective	Replace (fuse strip on the operating panel)	
	Electrical power defect (line break or short circuit)	Check potentiometer, cables, connectors; replace if necessary	

# E 13 Set-up and modification

## 1 Special notes on safety



Danger to personnel by inadvertent starting of the engine, travel drive, conveyor, auger, screed or screed lifting devices.

Unless otherwise specified, work may only be performed when the engine is at a standstill!



- To protect the paver finisher against inadvertent starting:  
Move drive lever into centre position and turn preselector controller to zero, remove ignition key and battery main switch.
- Protect lifted vehicle parts (e.g. screed or hopper) against lowering by means of mechanical safeguards.
- Replace parts or have them replaced as stipulated.



When connecting or disconnecting hydraulic hoses and when working on the hydraulic system, hot hydraulic fluid may spurt out at high pressure.

Switch off the engine and depressurise the hydraulic system! Protect your eyes!

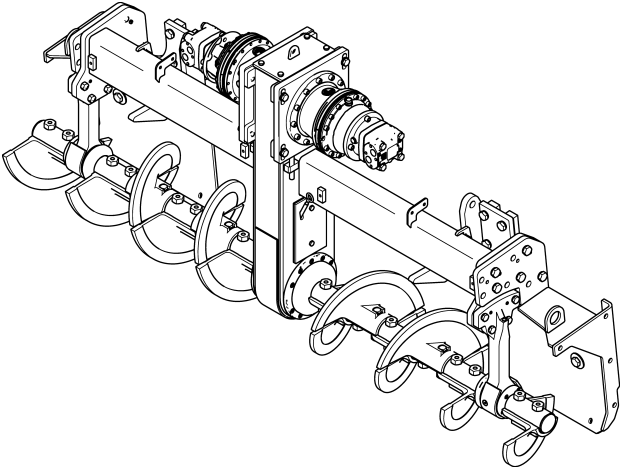
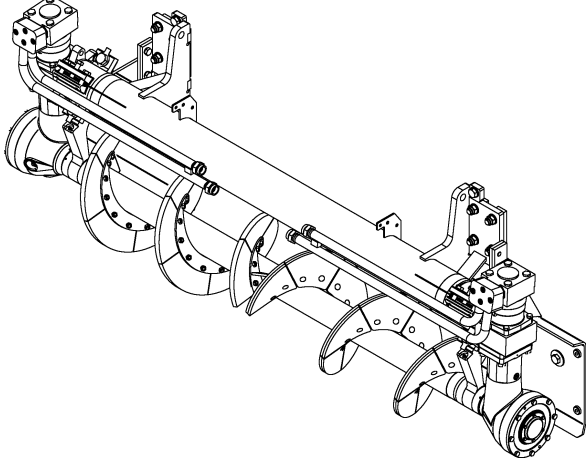
- Mount all protective devices before re-commissioning the paver finisher.
- The walkway must always reach over the entire working width of the screed.  
The hinged walkway plate may only be folded up under the following conditions:
  - When paving next to a wall or a similar obstacle.
  - During transportation on a low-bed trailer.

 <b>DANGER</b>	<b>Danger due to changes at the vehicle</b>
	<p>Structural changes to the vehicle make the operating licence null and void and can cause severe to fatal injuries!</p> <ul style="list-style-type: none"> <li>- Only use original spare parts and approved accessories.</li> <li>- After maintenance and repair work, ensure that any dismantled protective and safety devices are all completely fitted again.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

## 2 Optional assemblies



Two different auger systems are available as options.  
Check which auger type is used in your machine and comply with the corresponding installation, operation and maintenance instructions!

<p>- Auger <b>-Type A-</b> Central drive</p>	
<p>- Auger <b>-Type B-</b> External drive</p>	

### 3 Distribution auger

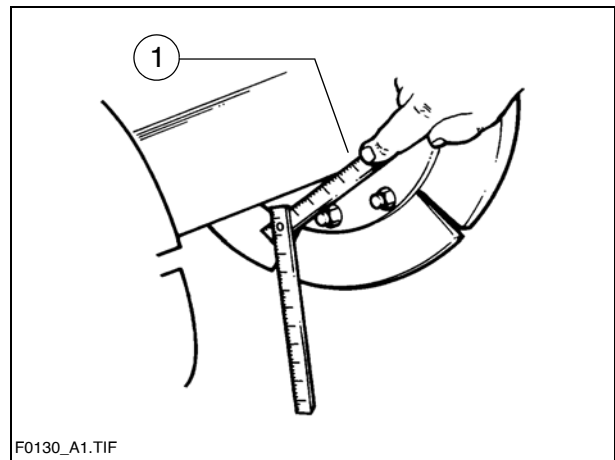
#### 3.1 Height adjustment

Depending on the mix of materials, the set height of the distribution auger (1) – measured from its bottom edge – should lie above the material layer height.

##### Grain sizes up to 16 mm

Example:

Paving thickness 10 cm  
Min. height setting 15 cm  
from the ground



##### Grain sizes > 16 mm

Example:

Paving thickness 10 cm  
Min. height setting 18 cm  
from the ground

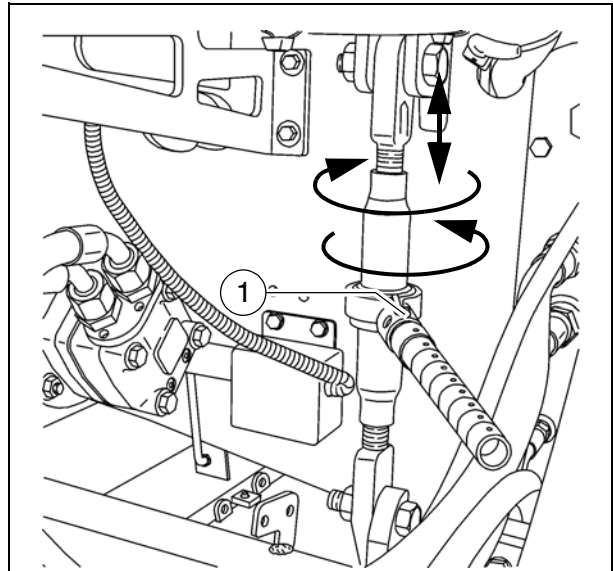


An incorrect height setting can result in the following problems during paving:

- Auger too high:  
Too much material in front of the screed; material overflow. When operating with larger working widths, demixing and traction problems may occur.
- Auger too low:  
Not enough material that can be precompacted by the auger. Irregularities resulting from this cannot be completely compensated by the screed (wavy surface).  
In addition, increased auger segment wear occurs.

### 3.2 Mechanical adjustment with ratchet (○)

- Set the ratchet direction lever (1) to the clockwise or anti-clockwise direction. Turning anti-clockwise lowers the auger, turning clockwise lifts the auger.
- Set the desired height by alternately adjusting the right-hand and the left-hand side.
- The current height can be read at the scale (2).



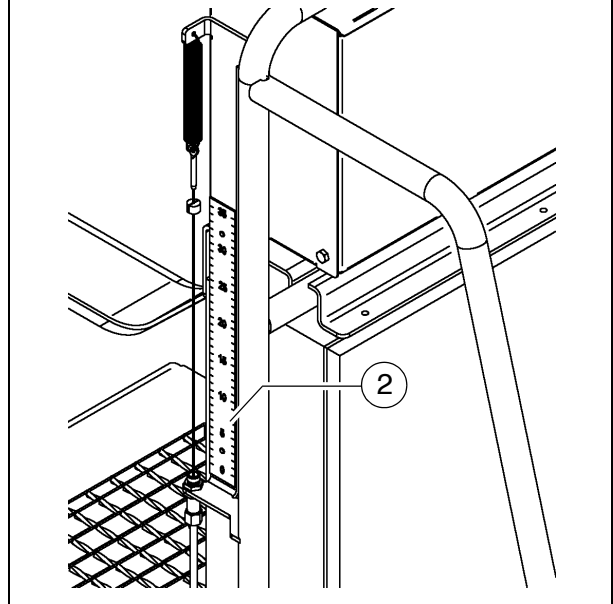
### 3.3 Hydraulic adjustment (○)

- Determine the currently set height of the auger crossbeam - left and right on the scale (2).

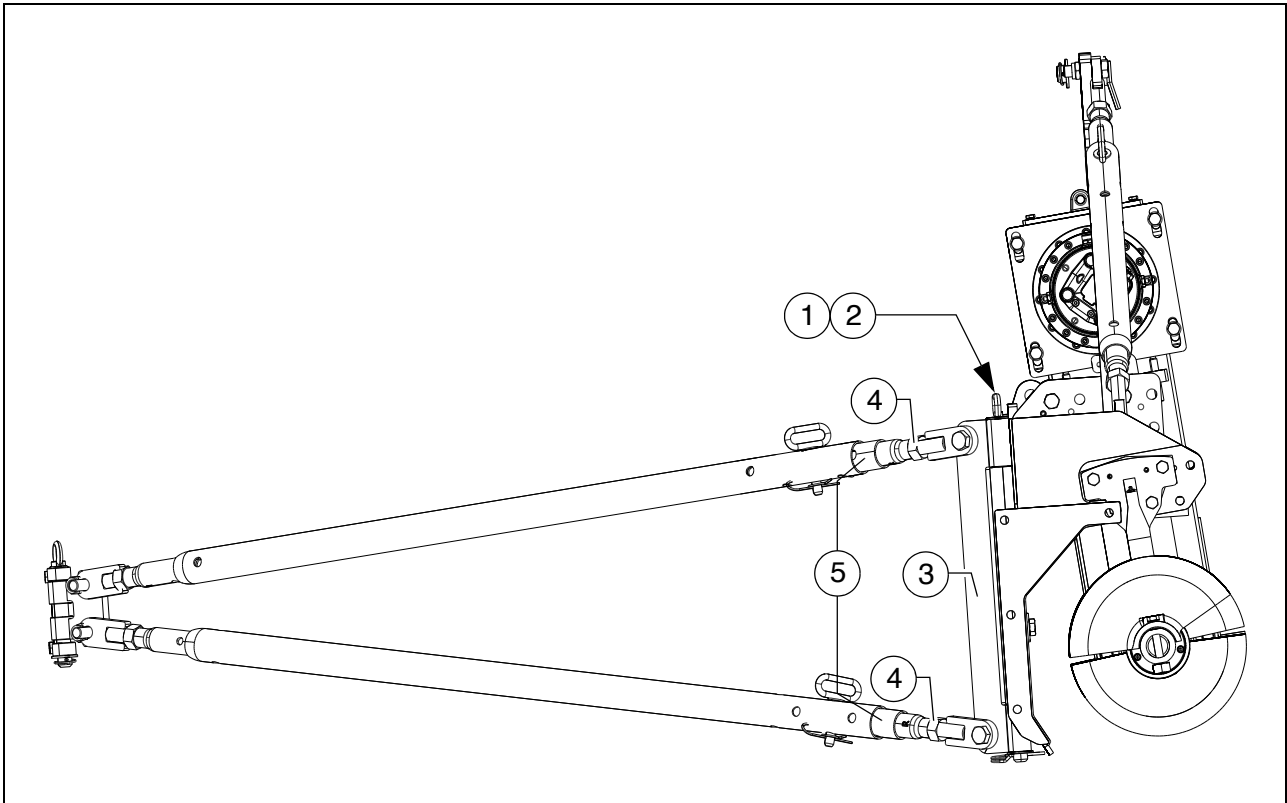


Actuate both of the corresponding function buttons on the operating panel evenly to prevent the auger crossbeam from jamming.

- Check whether the heights on the left and on the right are identical.



### 3.4 Height adjustment for large working widths / with brace - Auger Type A -



Auger height adjustment for large working widths can be carried out with a hinged brace:



Only adjust the height of the auger with the slewing bracket retaining pins removed!

- Remove the slewing bracket (3) split pin (1) and retaining pin (2) on both sides of the vehicle.
- Push the slewing brackets with braces from the attaching point on the material shaft.
- Carry out height adjustment.
- Push the slewing brackets with braces onto the attaching point on the material shaft.
- Install the split pin (1) and retaining pin (2) again.



If the retaining pins (2) cannot be set in the new position, extend or shorten the braces by turning the adjustment rods until a through hole is available to set the retaining pin (2).

- Loosen lock nuts (4).



The adjustment rods (5) are each equipped with a bore. A suitable drift can be used to adjust the length of the adjustment rod here.

- Extend or shorten the braces by rotating the adjustment rods (5) until the retaining pins can be inserted.
- Retighten the lock nuts (4).
- Install the split pin (1) and retaining pin (2).

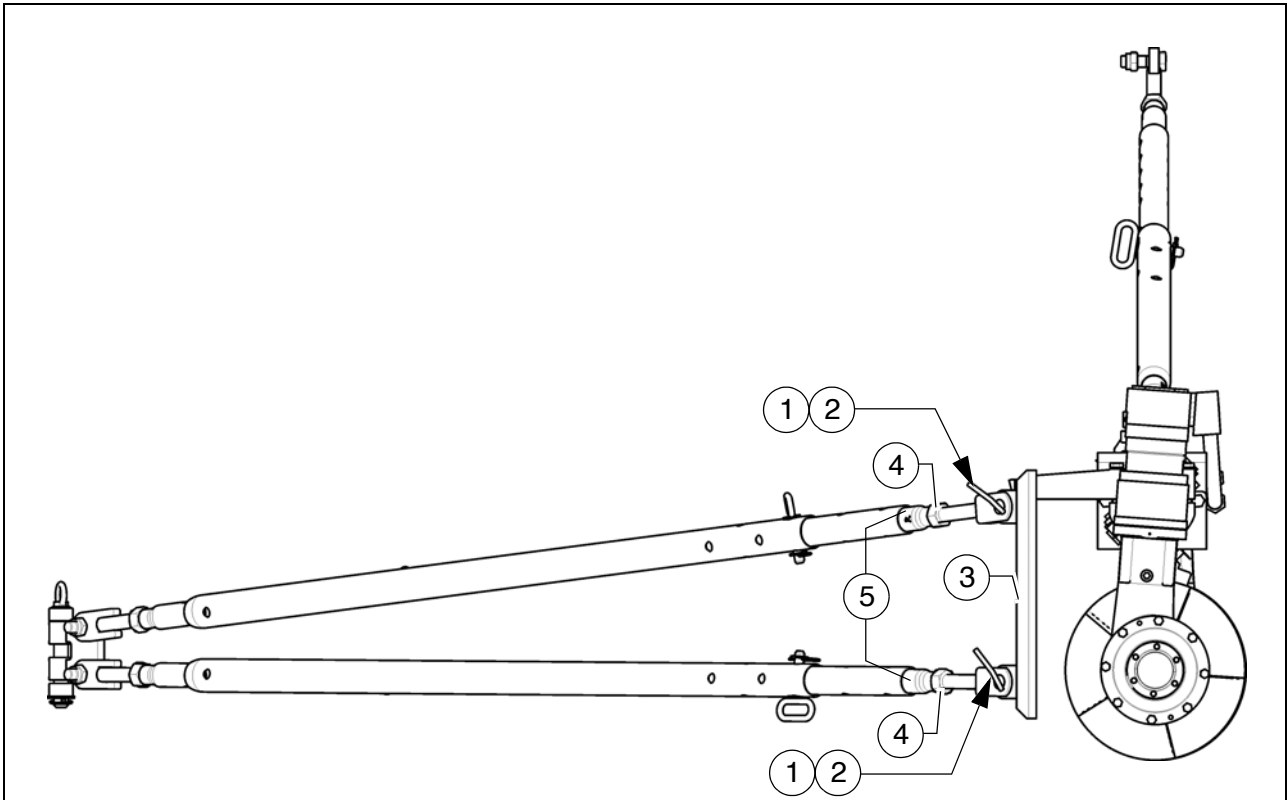


Each time the height is adjusted, the auger must be realigned via the braces!



See section "Aligning the auger"!

### 3.5 Height adjustment for large working widths / with brace - Auger Type B -



Auger height adjustment for large working widths can be carried out with a hinged brace:



Only adjust the height of the auger with the support retaining pins removed!

- Remove the support (3) split pins (1) and retaining pin (2) on both sides of the vehicle.
- Push the fork heads of the braces from the support shackles.
- Carry out height adjustment.
- Push the fork heads of the braces onto the support shackles.
- Install the split pin (1) and retaining pin (2) again.



If the retaining pins (2) cannot be set in the new position, extend or shorten the braces by turning the adjustment rods until a through hole is available to set the retaining pin (2).

- Loosen lock nuts (4).



The adjustment rods (5) are each equipped with a bore. A suitable drift can be used to adjust the length of the adjustment rod here.

- Extend or shorten the braces by rotating the adjustment rods (5) until the retaining pins can be inserted.
- Retighten the lock nuts (4).
- Install the split pin (1) and retaining pin (2).

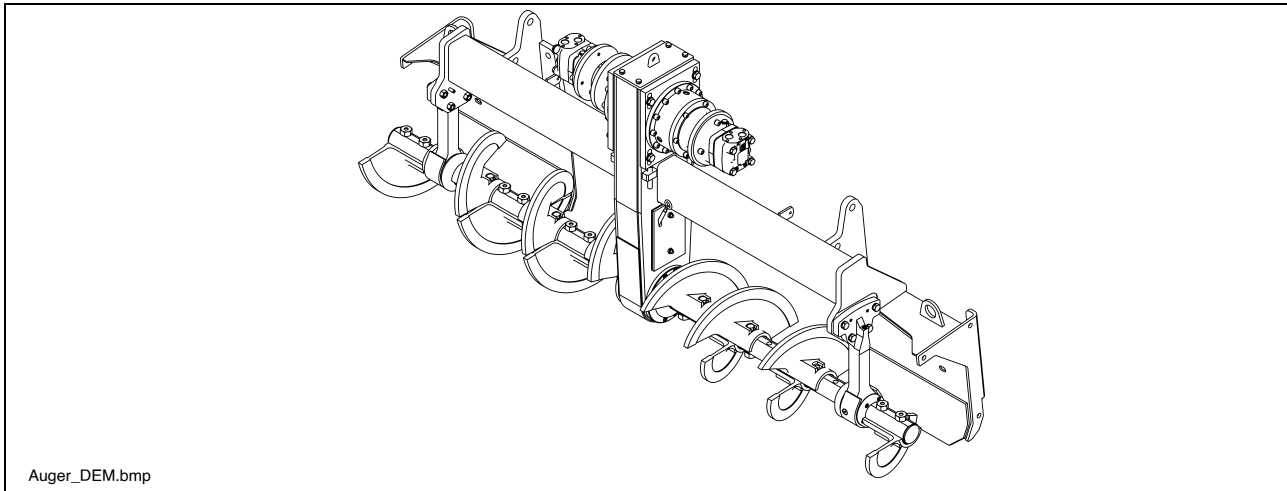


Each time the height is adjusted, the auger must be realigned via the braces!



See section "Aligning the auger"!

## 4 Auger extension - Auger Type A -



Depending on the type of screed, the most diversified working widths can be reached.



Auger and screed extension must match.

Refer to the appropriate chapter "Set-up and modification" in the screed operating instructions:

– screed extension chart

To attain the desired working width, the respective screed extensions, side plates, augers, tunnel plates or cut-off shoes must be mounted.

For working widths of more than 3.00 m, the auger should be fitted with extension parts on both sides to improve material distribution and to reduce the wear.



The diesel engine must be switched off whenever work is performed on the auger.  
Danger of injuries!

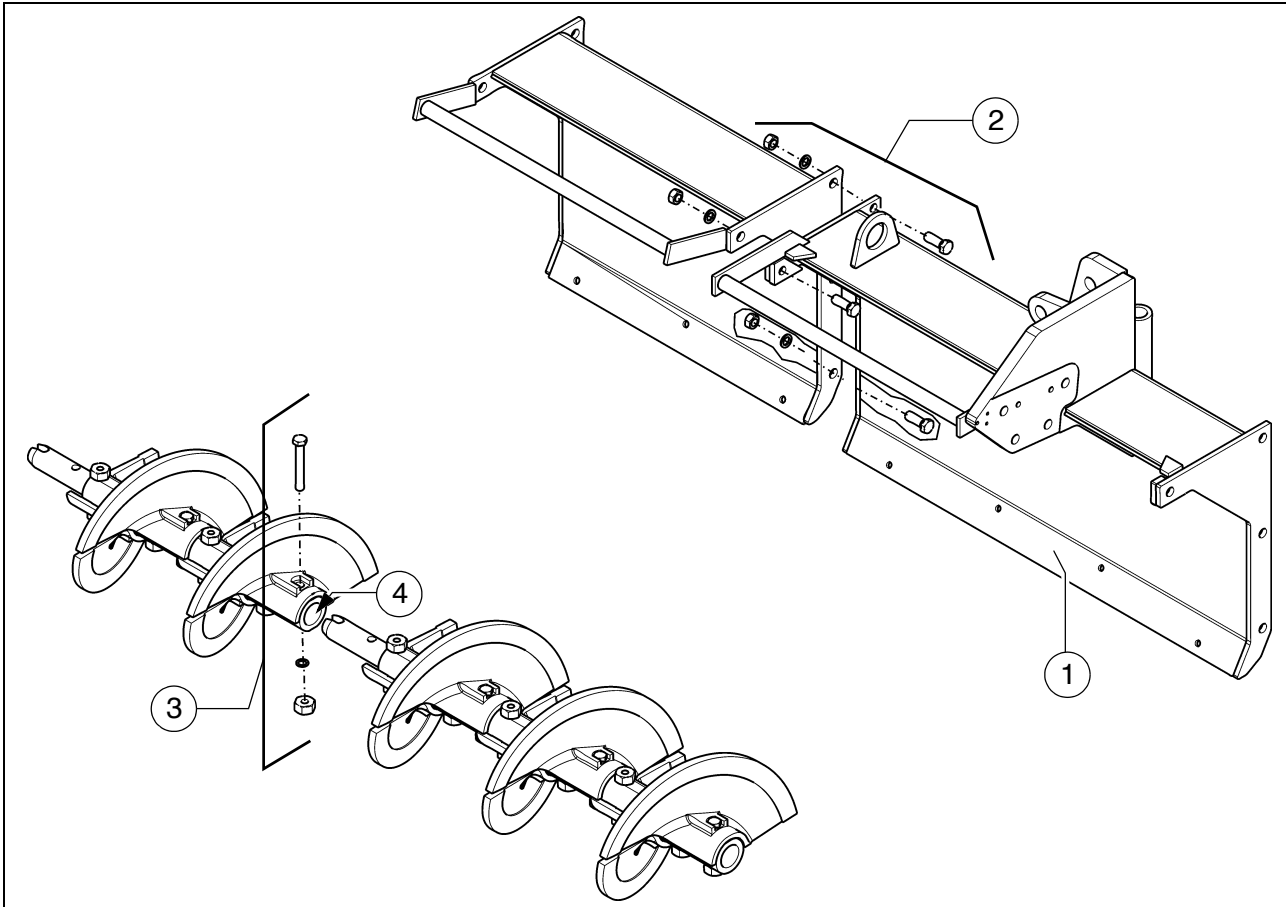


If the operating conditions on the construction site permit an auger extension to be fitted, or render this necessary, always additionally fit the outer auger bearings.

For auger width extensions with an outer auger bearing on the basic unit, fit the shorter auger blade to the bearing. Otherwise, destruction between the auger blade and bearing may occur.

## 4.1 Mounting extension parts

### Mounting the material shaft and auger extension

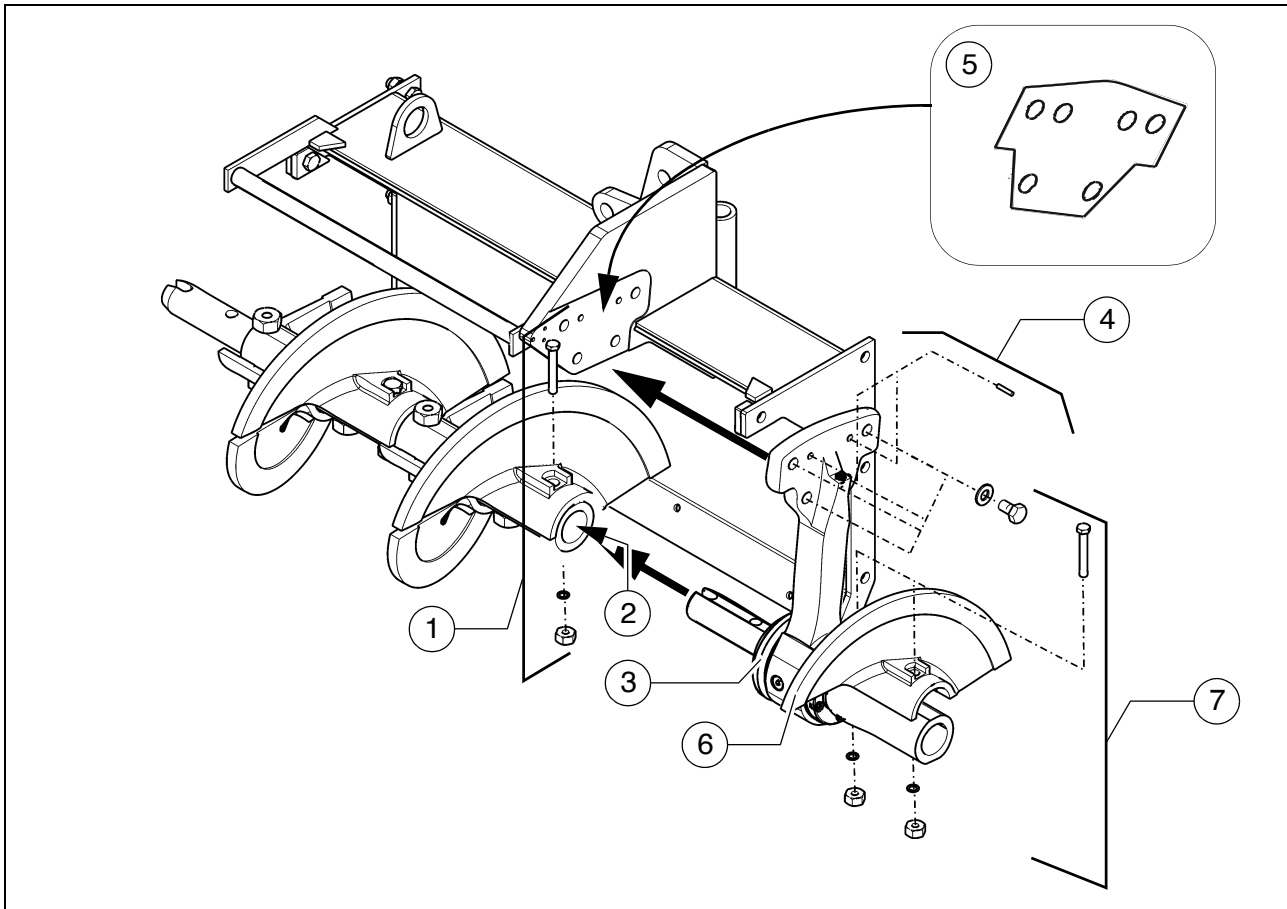


- Secure the additional material shaft (1) to the basic unit or the adjacent material shaft with the relevant assembly parts (2) (bolts, washers, nuts).
- Dismantle the assembly parts (3) of the adjacent auger blade, remove plug (4).
- Guide the auger shaft extension into the auger shaft.
- Reinstall the previously removed assembly parts (3) and simultaneously tighten the auger shaft bolts.
- Insert the plug (3) at the end of the auger.



Depending on the operating width, the outer auger bearing and/or auger end bearing must be installed:

## Mounting the outer auger bearing



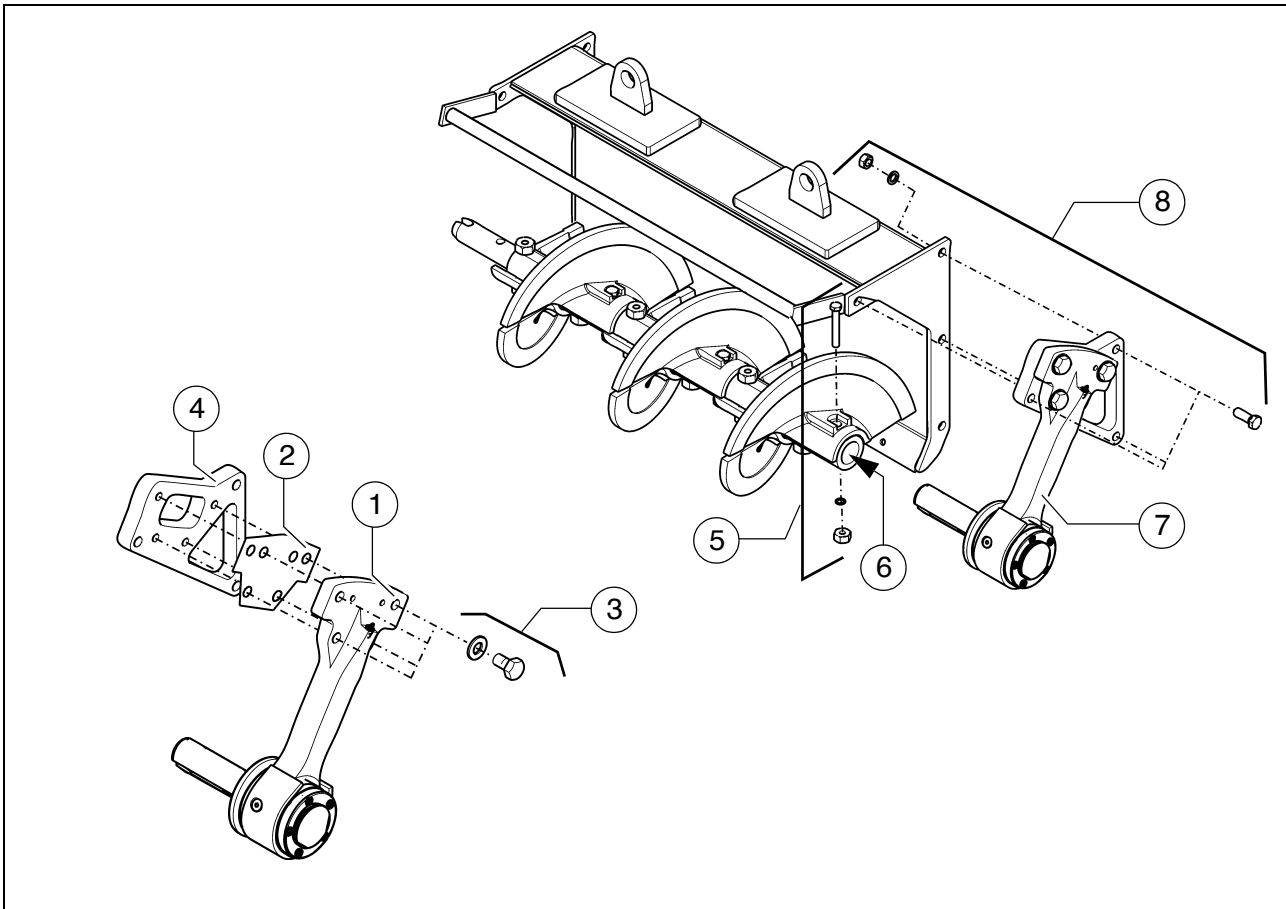
- Dismantle the assembly parts (1) of the adjacent auger blade, remove plug (2).
- Guide the outer auger bearing (3) into the auger extension.
- Secure the outer auger bearing to the brace shaft with the relevant assembly parts (4) (bolts, washers, pins).



If necessary, insert fitted plates (5)!





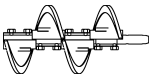
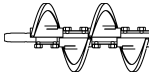
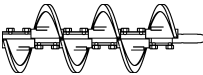
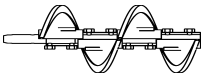
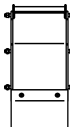
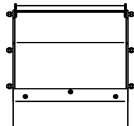
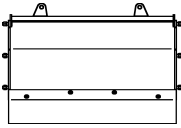
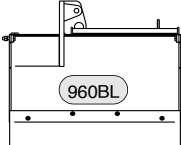
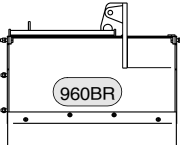
- Reinstall the previously removed assembly parts (1) and simultaneously tighten the auger shaft and bearing shaft bolts.
- Mount the auger half (5) on the outer side of the bearing with the relevant assembly parts (6) (bolts, washers, nuts).
- Insert the plug (2) at the end of the auger.

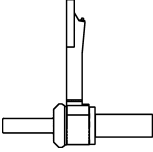
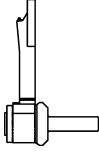
## Mounting the auger end bearing



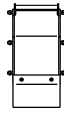
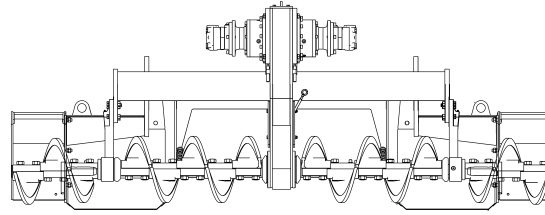
- The auger end bearing must first be pre-assembled:
  - Mount the auger end bearing (1) together with the fitted plate (2) on the intermediate plate (4) with the relevant assembly parts (3) (bolt, washer).
- Dismantle the assembly parts (5) of the adjacent auger blade, remove plug (6).
- Guide the auger end bearing (7) into the auger extension.
- Secure the auger end bearing to the material shaft with the relevant assembly parts (8) (bolts, washers, nuts).
- Reinstall the previously removed assembly parts (5) of the auger blade and simultaneously tighten the auger shaft and bearing shaft bolts.
- Insert the plug (6) at the end of the auger.

## 4.2 Auger extension chart

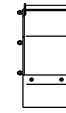
Symbol		Meaning	
 160L	 160R	- (160L)	- Auger blade 160mm left
		- (160R)	- Auger blade 160mm right
 320L	 320R	- (320L)	- Auger extension part 320 mm left
		- (320R)	- Auger extension part 320 mm right
 640L	 640R	- (640L)	- Auger extension part 640 mm left
		- (640R)	- Auger extension part 640 mm right
 960L	 960R	- (960L)	- Auger extension part 960 mm left
		- (960R)	- Auger extension part 960 mm right
 320		- (320)	- Material shaft 320 mm
 640		- (640)	- Material shaft 640 mm
 960		- (960)	- Material shaft 960 mm
 960BL	 960BR	- (960BL)	- Material shaft 960 mm with brace left
		- (960BR)	- Material shaft 960 mm with brace right

Symbol		Meaning
		Outer auger bearing
		Auger end bearing

### Auger upgrading, working width 3.14 m



320



320

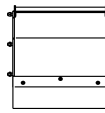
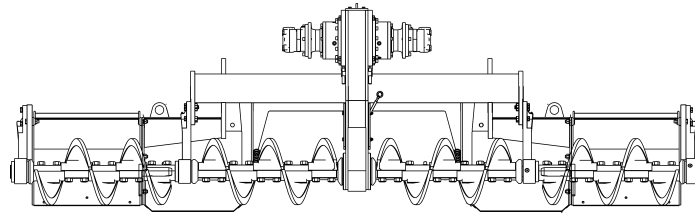


320 L

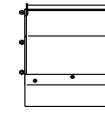


320 R

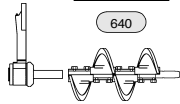
### Auger upgrading, working width 3.78 m



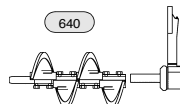
640



640

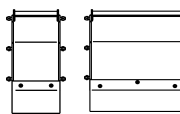
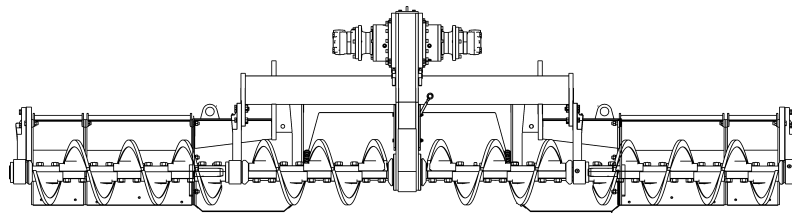


640 L

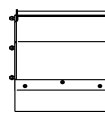


640 R

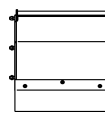
### Auger upgrading, working width 4.42 m



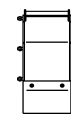
320



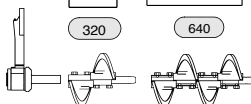
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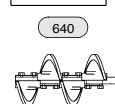
640



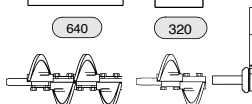
320



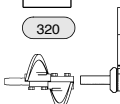
320 L



640 L

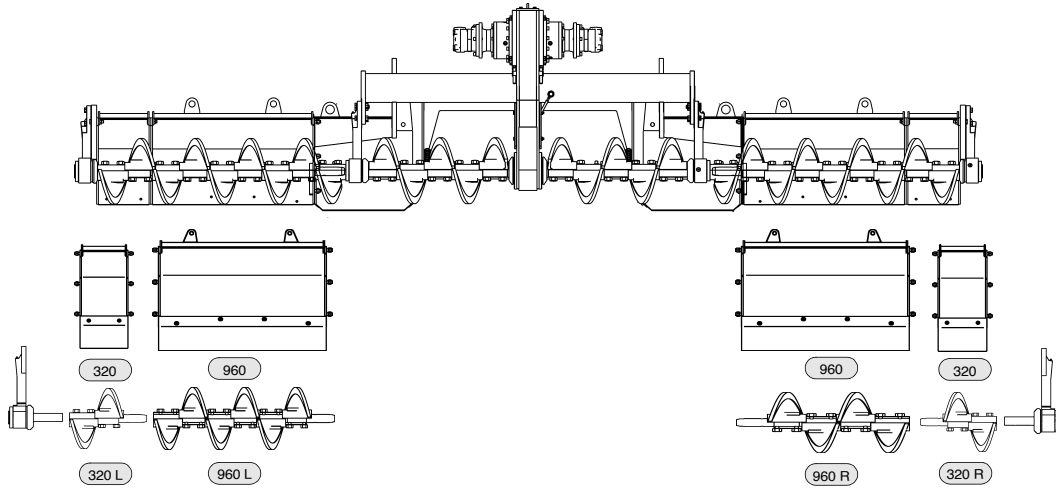


640 R

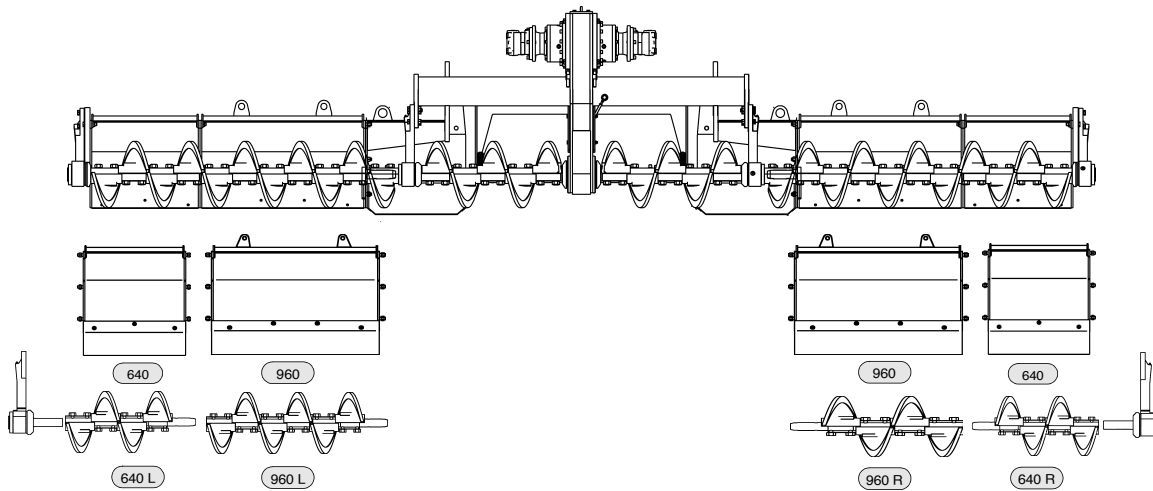


320 R

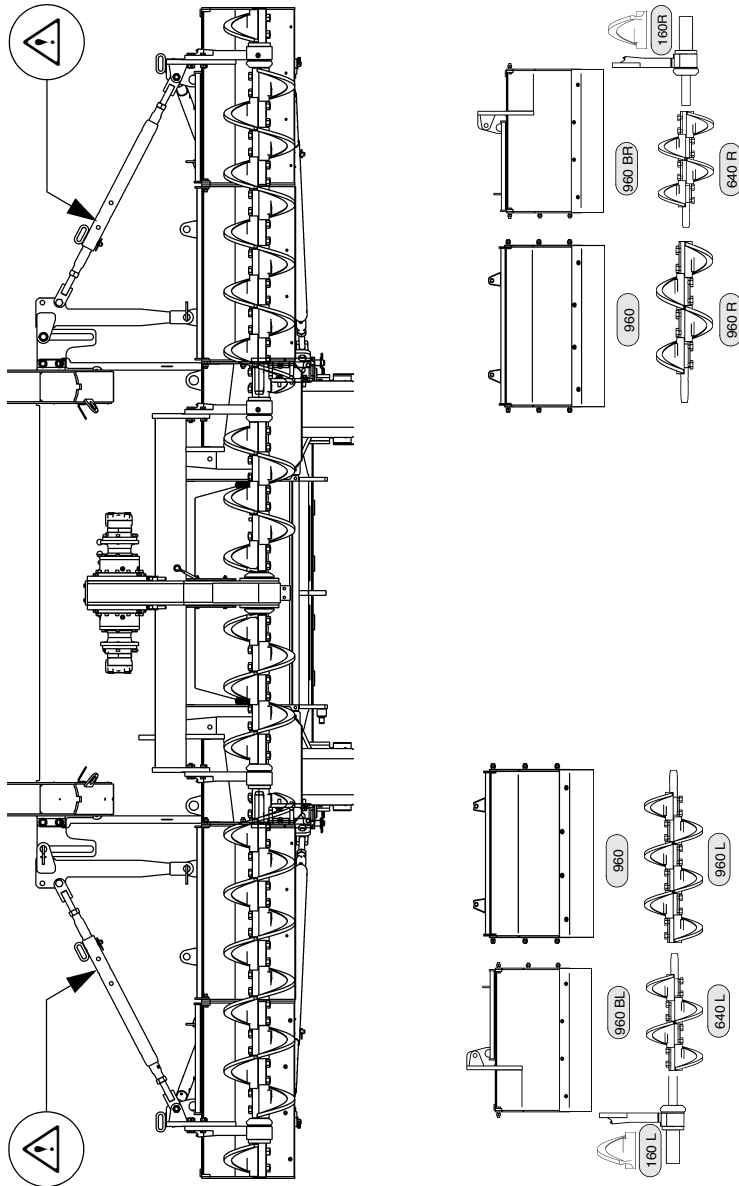
**Auger upgrading, working width 5.06 m**



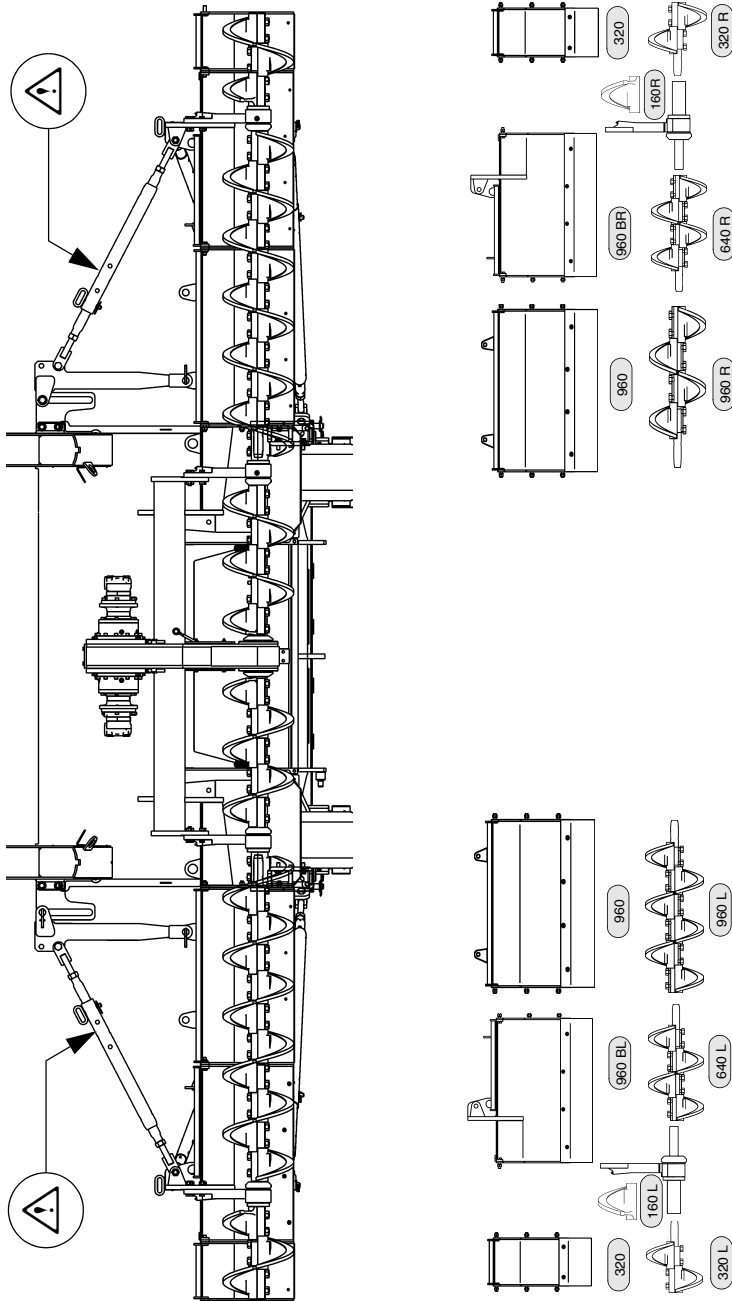
**Auger upgrading, working width 5.70 m**



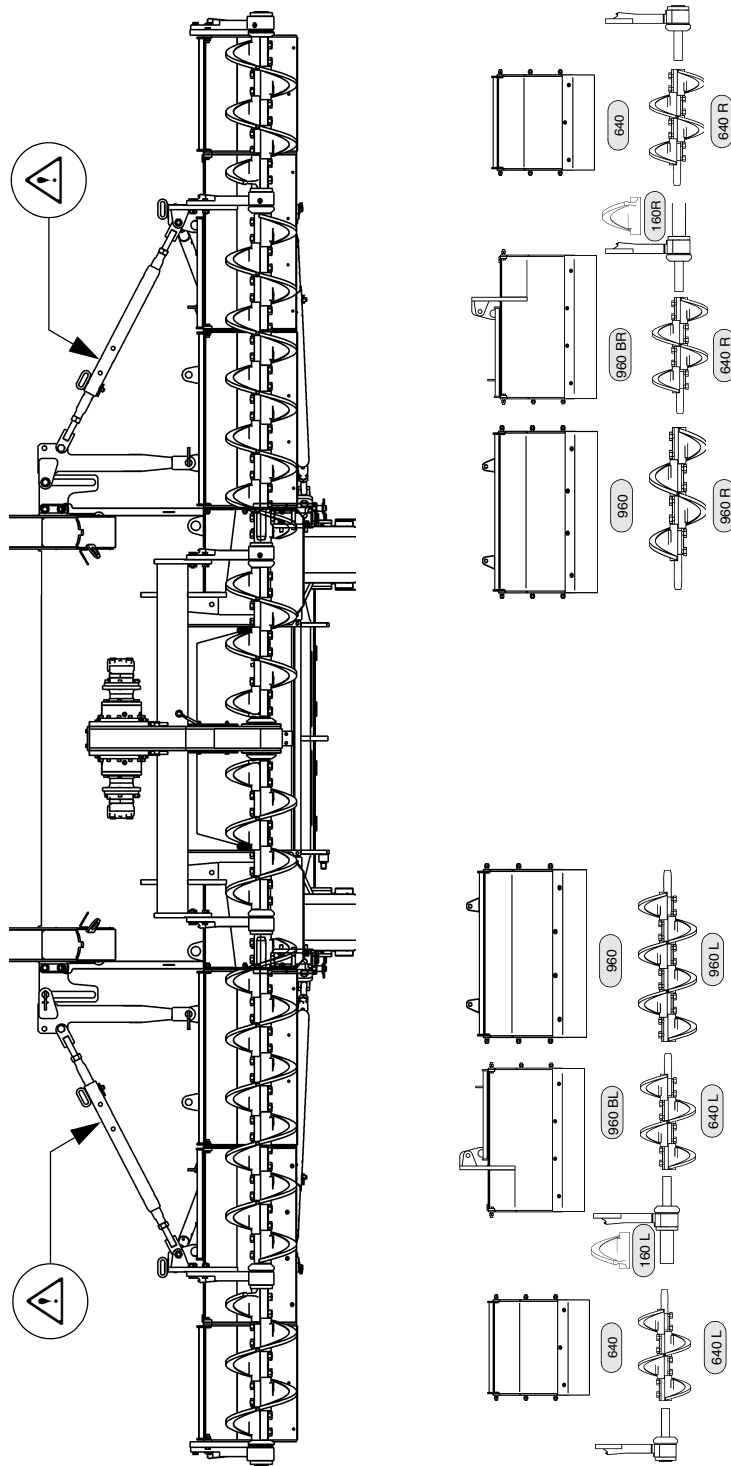
## Auger upgrading, working width 6.34 m



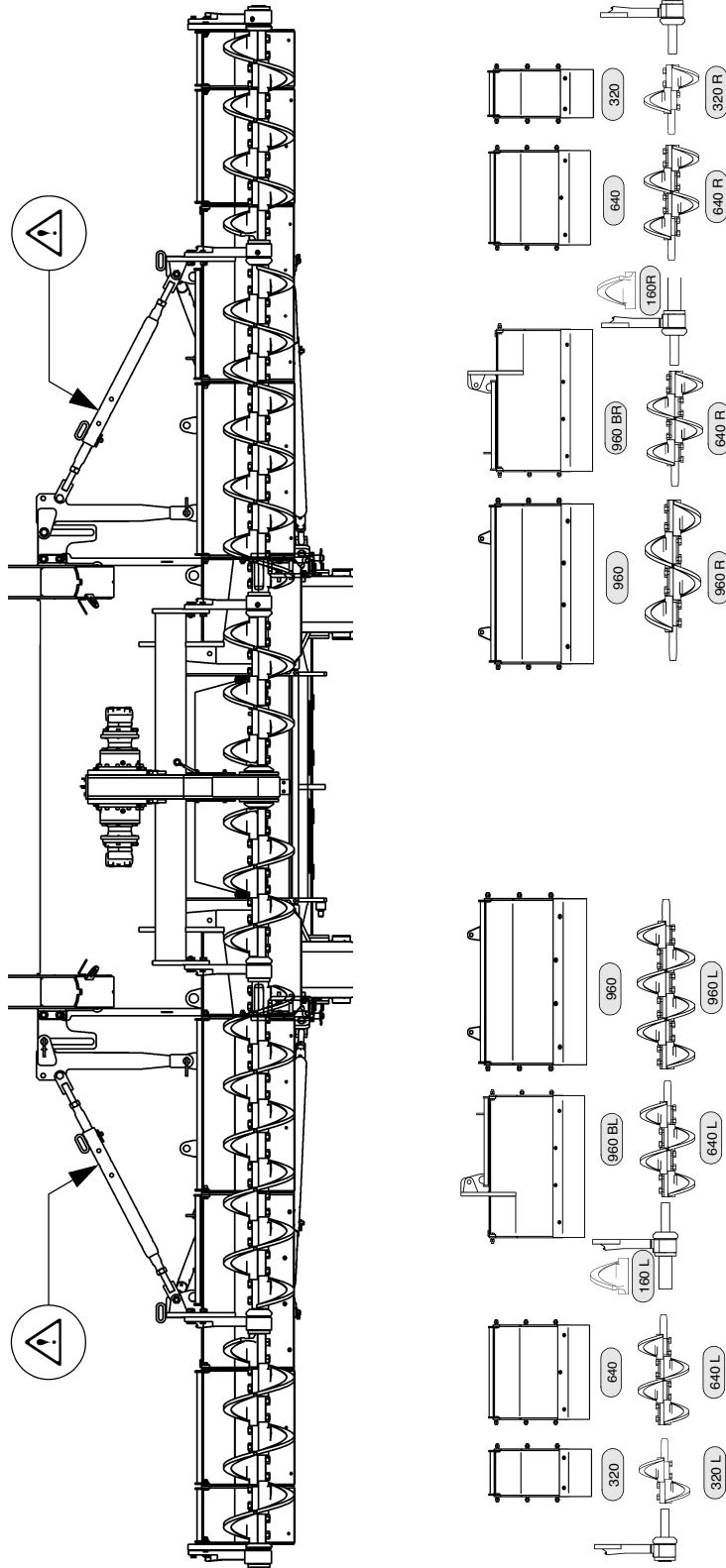
**Auger upgrading, working width 6.98 m**



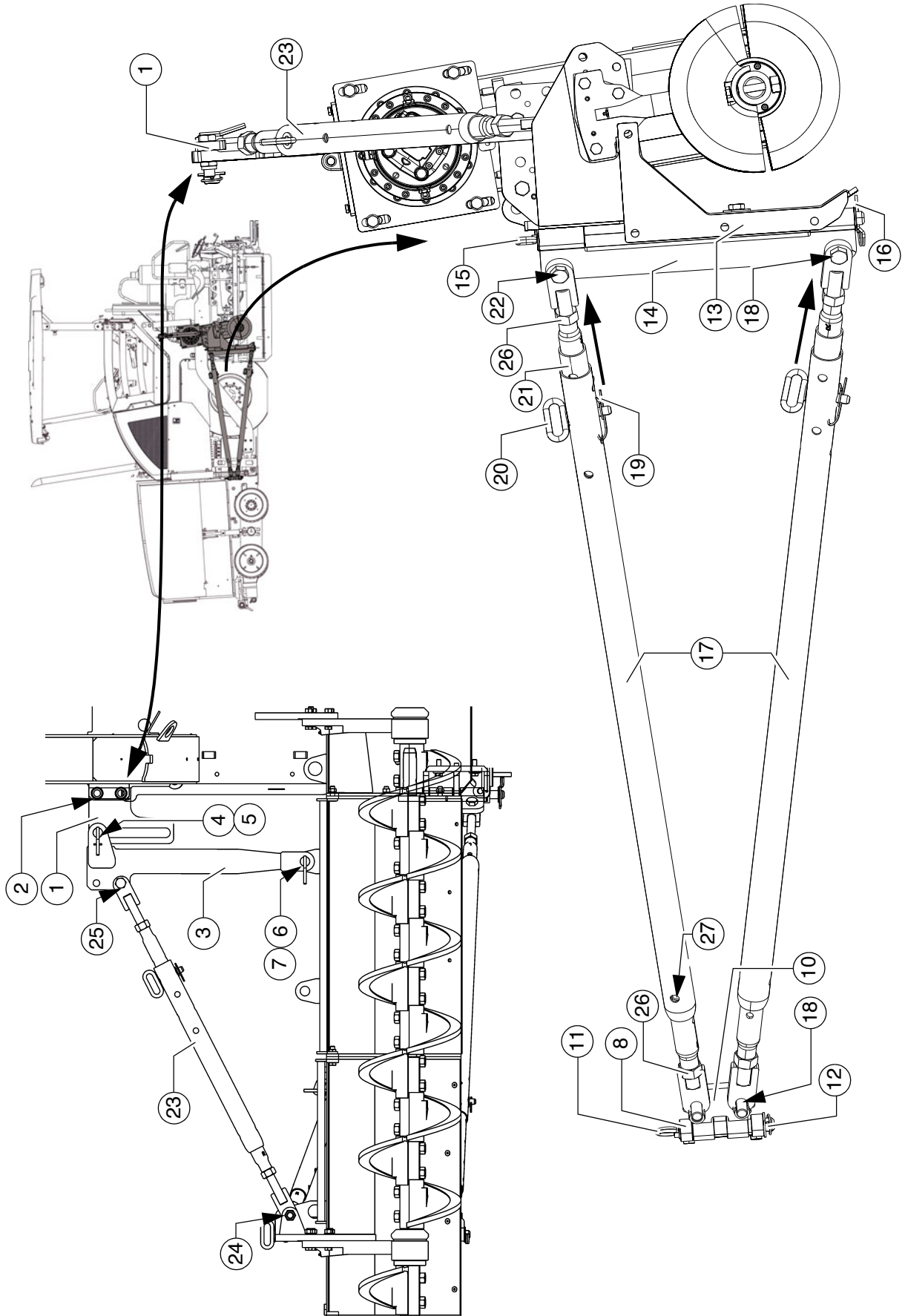
Auger upgrading, working width 7.62 m








**Auger upgrading, working width 8.26 m**



### 4.3 Mounting the auger brace



- 
-  Before mounting the auger brace, the required auger height should already have been set on the basic auger!  
Note the section "Height adjustment for large operating widths / with brace"!
- Mount the left/right guide plates (1) on the vehicle frame shackles with the relevant assembly parts (2).
-  The guide plates must be mounted on the front side of the shackles.
- Slide the support shackle (3) over the guide plate and secure in the groove with a pin (4) and split pin (5).
  - Slide the lower support shackle (3) over the attaching point of the material shaft and secure with a pin (6) and split pin (7).
-  The brace bracket (8) is secured to the central panel of the machine using the corresponding assembly parts.
- Insert the fulcrum bracket (10) into the brace bracket (8) and secure with the retaining pin (11).
  - Secure the retaining pins (11) with a split pin (12).
  - Mount the slewing bracket (14) at the brace shaft (13) with retaining pins (15).
  - Secure the retaining pins (15) with a split pin (16).
  - Mount the braces (17) on the fulcrum bracket (10) with the assembly parts (18).
-  The braces must be mounted on the outer side of the fulcrum bracket (10)!
- Remove the spring cotter pin (19) and retaining pin (20), pull out the adjustment rod (21) until the brace can be mounted on the slewing bracket (14) together with the corresponding assembly parts (22).
  - Secure the adjustment rod (21) in an appropriate bore with a retaining pin (20) and spring cotter pin (19).
  - Mount the vertical brace (23) in the same way.
    - In this case, secure the vertical brace at the outer auger bearing (24) and the lower support bore (25).
-  At the support (3) mounting point, the brace must be secured at the rear side in each case!

---

#### 4.4 Aligning the auger

- Loosen lock nuts (26).



Note the left-hand thread (L) and right-hand thread (R) mark on the brace!

- Extend or shorten the braces (17) by rotating both adjustment rods (21) until all mounted material shafts align with the auger.



The adjustment rod (21) is equipped with a bore (27) on the left and right. A suitable drift can be used to adjust the length of the adjustment rod here. The rotational direction for extending or shortening the adjustment rod is determined by the left-hand thread (L) or right-hand thread (R).



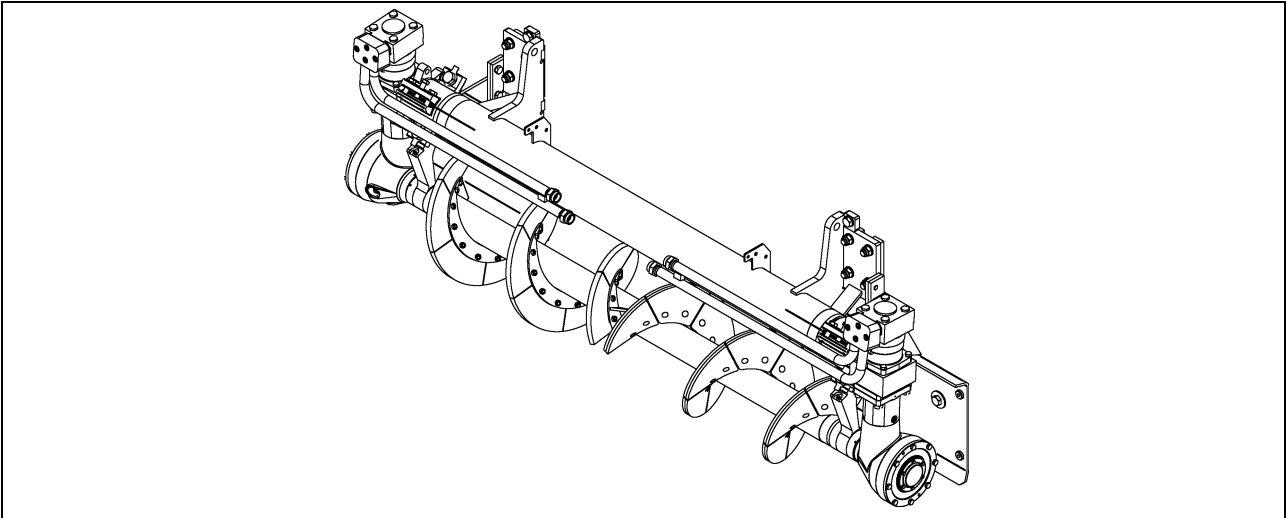
A cord, which aligns with the screed or the rear wall of the vehicle, can be tensioned e.g. to provide assistance during alignment!

- Extend the upper and lower adjustment rods until the material shafts are aligned vertically.
- Retighten the lock nuts (26).
- Align the auger height in the same way by adjusting the vertical brace (23).



Check the horizontal alignment with a spirit level!

## 5 Auger extension - Auger Type B -



Depending on the type of screed, the most diversified working widths can be reached.



Auger and screed extension must match.

Refer to the appropriate chapter "Set-up and modification" in the screed operating instructions:

– screed extension chart

To obtain the desired working width, the corresponding screed extensions, auger width extensions, guides or cut-off shoes must be mounted.



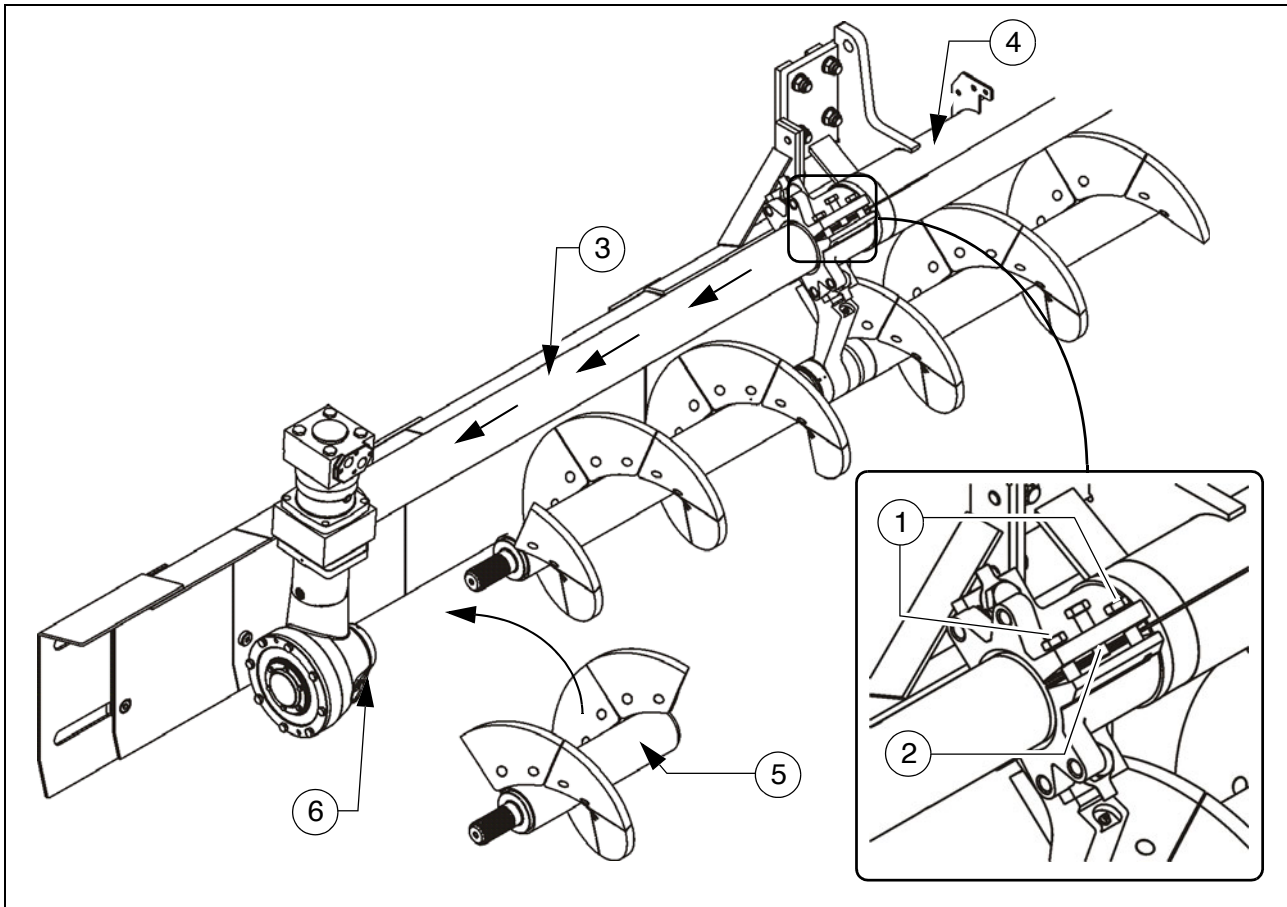
Refer to the auger extension chart to determine which parts of the conveyor system are required for the desired paving width in which position.




The diesel engine must be switched off whenever work is performed on the auger.  
Danger of injuries!


## 5.1 Mounting extension parts

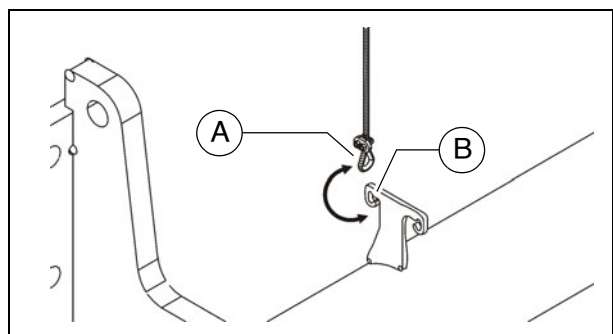
### Mount auger extension




 Before pulling the gear off, the auger extremities must be supported with a block of wood or similar to prevent any damage.

- Loosen the clamping bolts (1) on the support tube. Then turn in the centre expansion bolt (2) to expand the clamping joint.
- Pull the telescopic tube (3) out of the support tube (4).

 Collision between the hydraulic hoses and the steel cable of the height display! Remove the steel cable (A) from the bracket (B). After the support tube has been pulled out, hang the steel cable back in position again.



- Mount the required extension parts (5).

 Make sure that the shaft end is clean!

- Push in the telescopic tube (3). When doing so, make sure that the drive of the auger gear (6) is pushed all the way over the shaft end of the auger extension part and that the auger threads match.



Heed the alignment of the gear! All mounted guides and auger segments must be in line.



A cord, which aligns with the screed or the rear wall of the vehicle, can be tensioned e.g. to provide assistance during alignment!

- Remove the expansion bolt (2). Then tighten the clamping bolts (1). Finally tighten the expansion bolt (2) by hand.



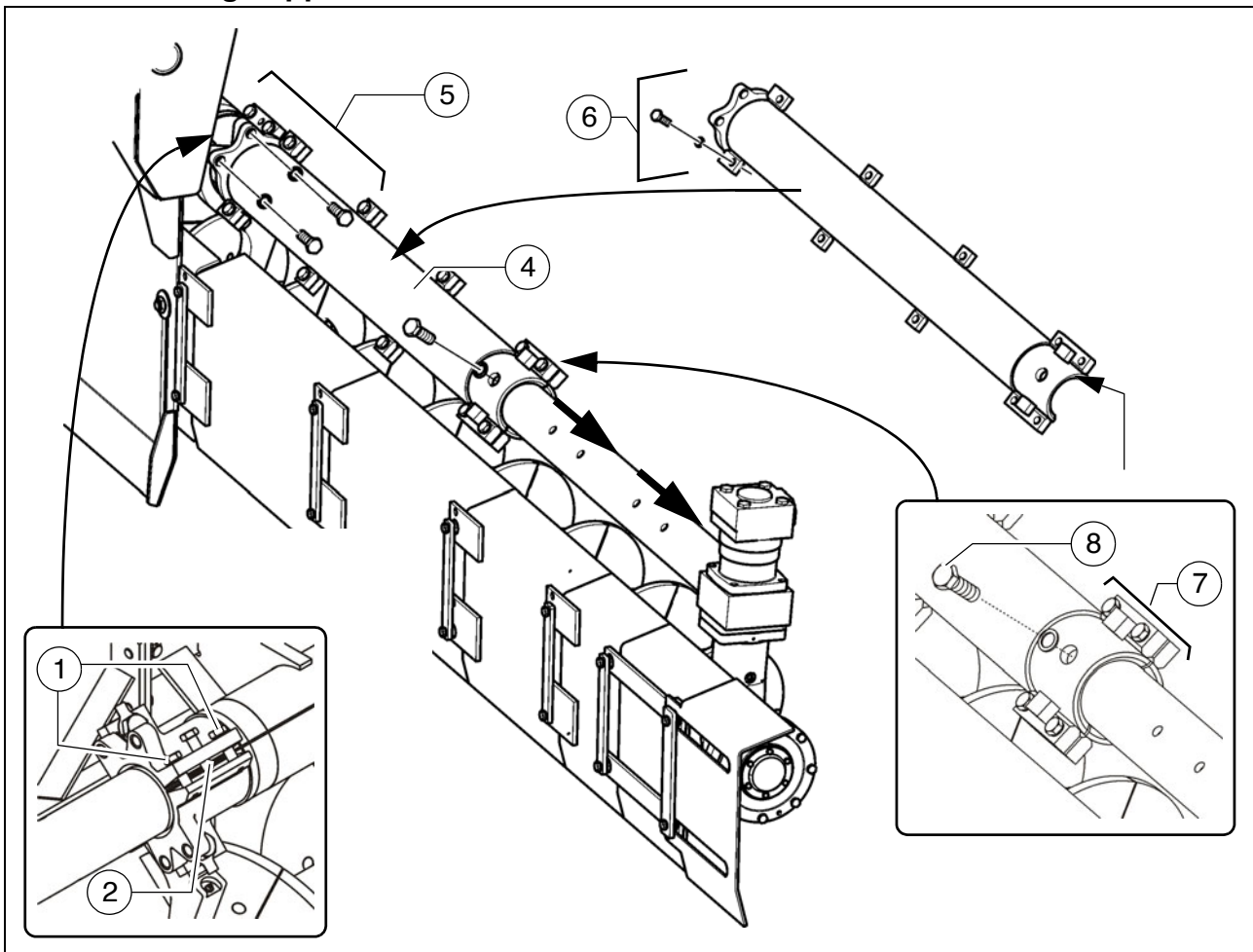
Before the clamping bolts (1) can be tightened again, the expansion bolt (2) must be sufficiently turned back!


Otherwise, the telescopic tube cannot be safely clamped and the splined shaft ends break.



When clamped insufficiently, the telescopic tube can slide out of the support tube. Danger during transportation!

## Mounting support tube extensions



 If the auger widths exceed 6.50 m, an auger crossbeam extension must be mounted.

- Loosen the clamping bolts (1) on the support tube. Then turn in the centre expansion bolt (2) to expand the clamping joint.
- Pull the telescopic tube (3) approx. 150 cm out of the support tube.

 **Danger of injuries!** Do not pull the telescopic tube too far out of the support tube, as otherwise it can fall down!

- The support tube extension (4) of the auger crossbeam consists of two halves. Put the upper and lower part over the telescopic tube and bolt together with the support tube using the relevant assembly parts (5).
- Bolt the two extension parts together using the relevant assembly parts (6). Only tighten the bolts lightly on the clamping piece (7).
- Mount the required extension parts.
- Set the bolt (8) to prevent the telescopic tube from twisting.
- Clamp the telescopic tube by tightening the bolts on the clamping piece (7).

## Hydraulic lines

For larger working widths, longer hydraulic hoses have to be used for the auger motors.

These long hoses are included in the scope of delivery for this working width.



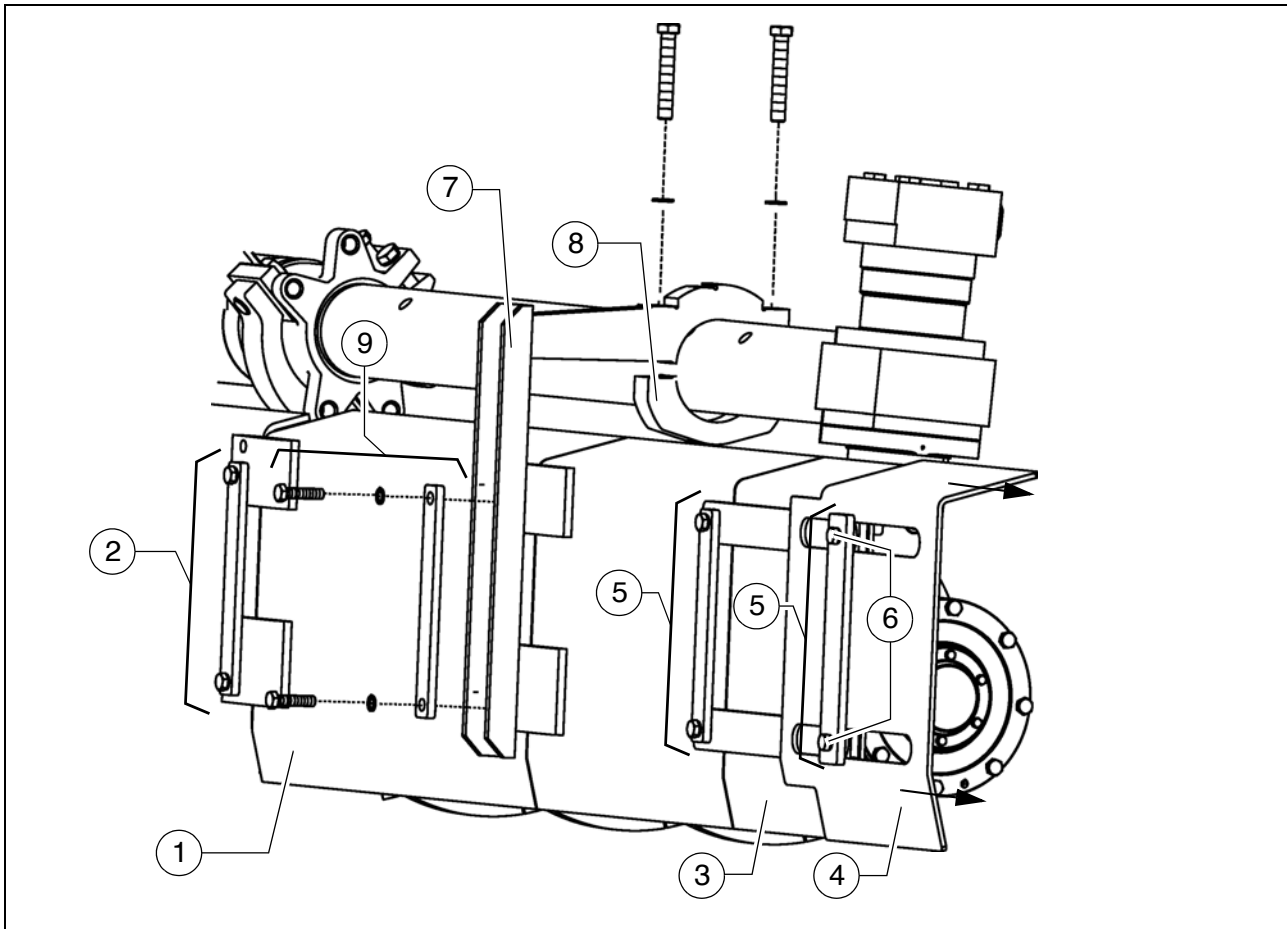
When connecting or disconnecting hydraulic hoses, hydraulic fluid can spurt out at a high pressure.

Switch off the finisher and de-pressurize the hydraulic circuit! Protect your eyes!



When installing the hoses, make sure that the area around the connections is clean. Any dirt that enters the hydraulic system can cause malfunctions.

## Mount guides, guide extensions and supports



To ensure an optimum material flow – especially in the case of large paving widths – guides (1) must be installed.

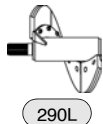
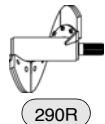
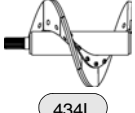
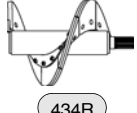

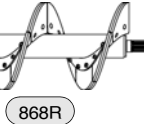
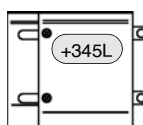
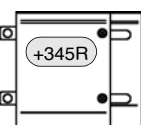
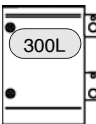
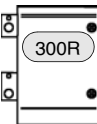
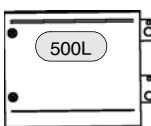
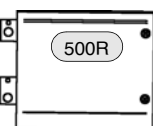
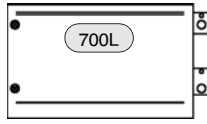
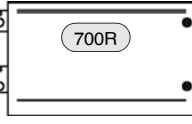
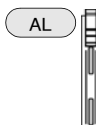
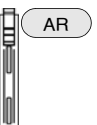
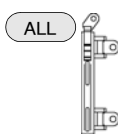
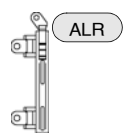
- Secure the additional guide (1) to the basic unit or the adjacent guide with the relevant assembly parts (2) (bolts, washers, bearing plates).
- Fasten a guide extension (3) and an end piece (4) to the outermost guide, using the relevant assembly parts (5).
- After loosening the bolts (6), adjust the end piece to the required width. Then retighten the bolts (6).

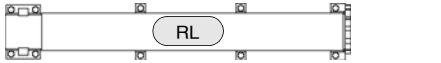



For larger working widths, additional supports (7) must be attached to the telescopic tube to stabilise the guides. Depending on the working width, supports with shackles may have to be fitted for fastening the braces.

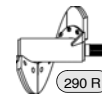
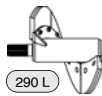
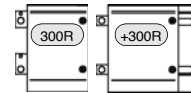
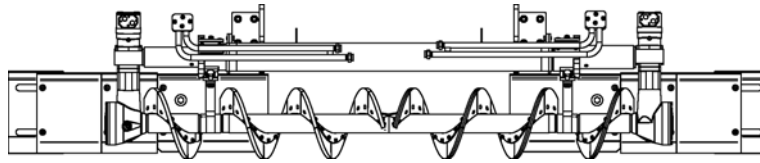
- Dismantle support lower part (8).
- Set the support (7) on the telescopic tube and mount together with the corresponding guide, using the relevant assembly parts (9) (bolts, washers, bearing plate).
- Fit the lower part of the side shield (8) back in position again correctly.

## 5.2 Auger extension chart

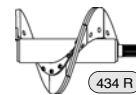
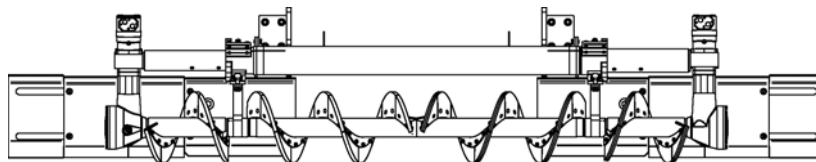
Symbol	Meaning
 	- (290L) - Auger blade 290mm left
	- (290R) - Auger blade 290mm right
 	- (434L) - Auger extension part 434 mm left
	- (434R) - Auger extension part 434 mm right
 	- (868L) - Auger extension part 868 mm left
	- (868R) - Auger extension part 868 mm right
 	- (+345L) - Guide end piece 345mm + extension left
	- (+345R) - Guide end piece 345mm + extension right
 	- (300L) - Guide 300mm left
	- (300R) - Guide 300mm left
 	- (500L) - Guide 500mm left
	- (500R) - Guide 500mm left
 	- (700L) - Guide 700mm left
	- (700R) - Guide 700mm left
 	- (AL) - Support left
	- (AR) - Support right
 	- (AL) - Support with shackles left
	- (AR) - Support with shackles right

Symbol	Meaning	
	- (RL)	- Extension pipe left
	- (RR)	- Extension pipe right

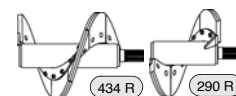
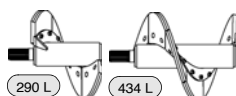
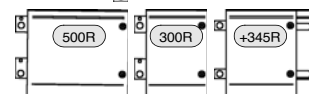
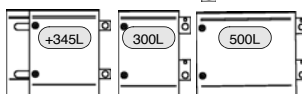
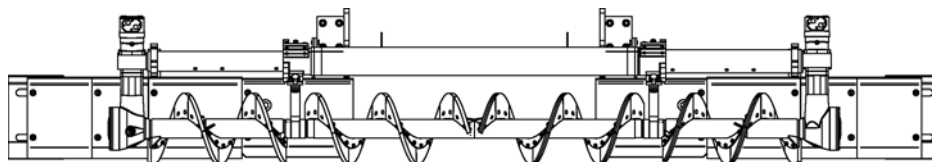
**Auger upgrading, working width 3.06m**



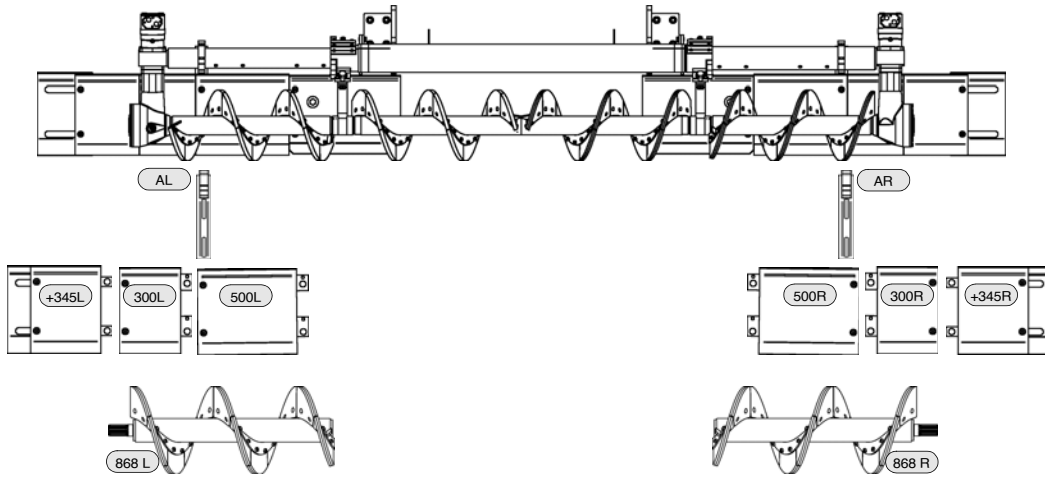
**Auger upgrading, working width 3.35m**



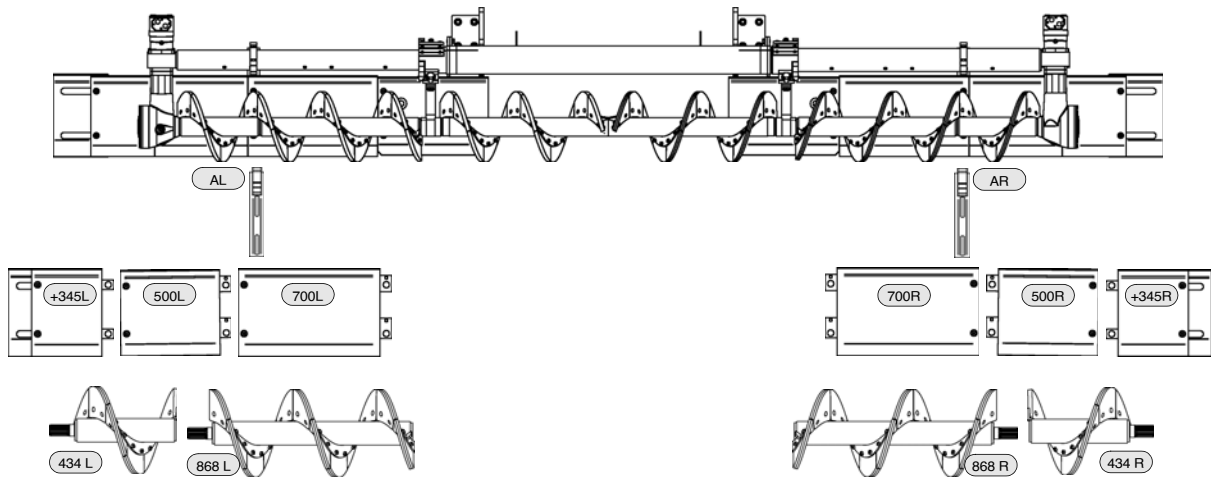
**Auger upgrading, working width 3.93m**



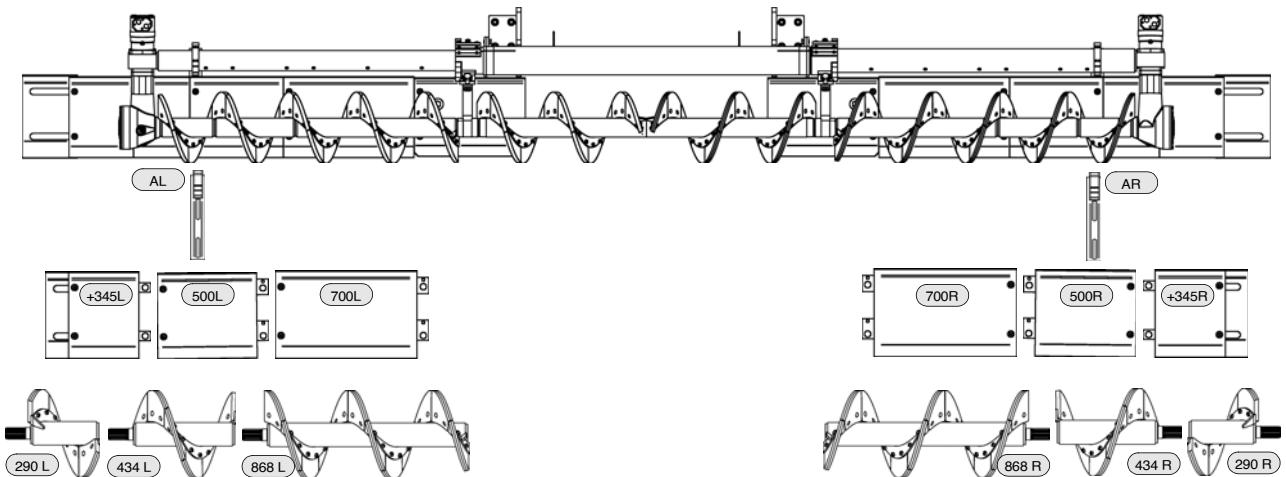
### Auger upgrading, working width 4.22m



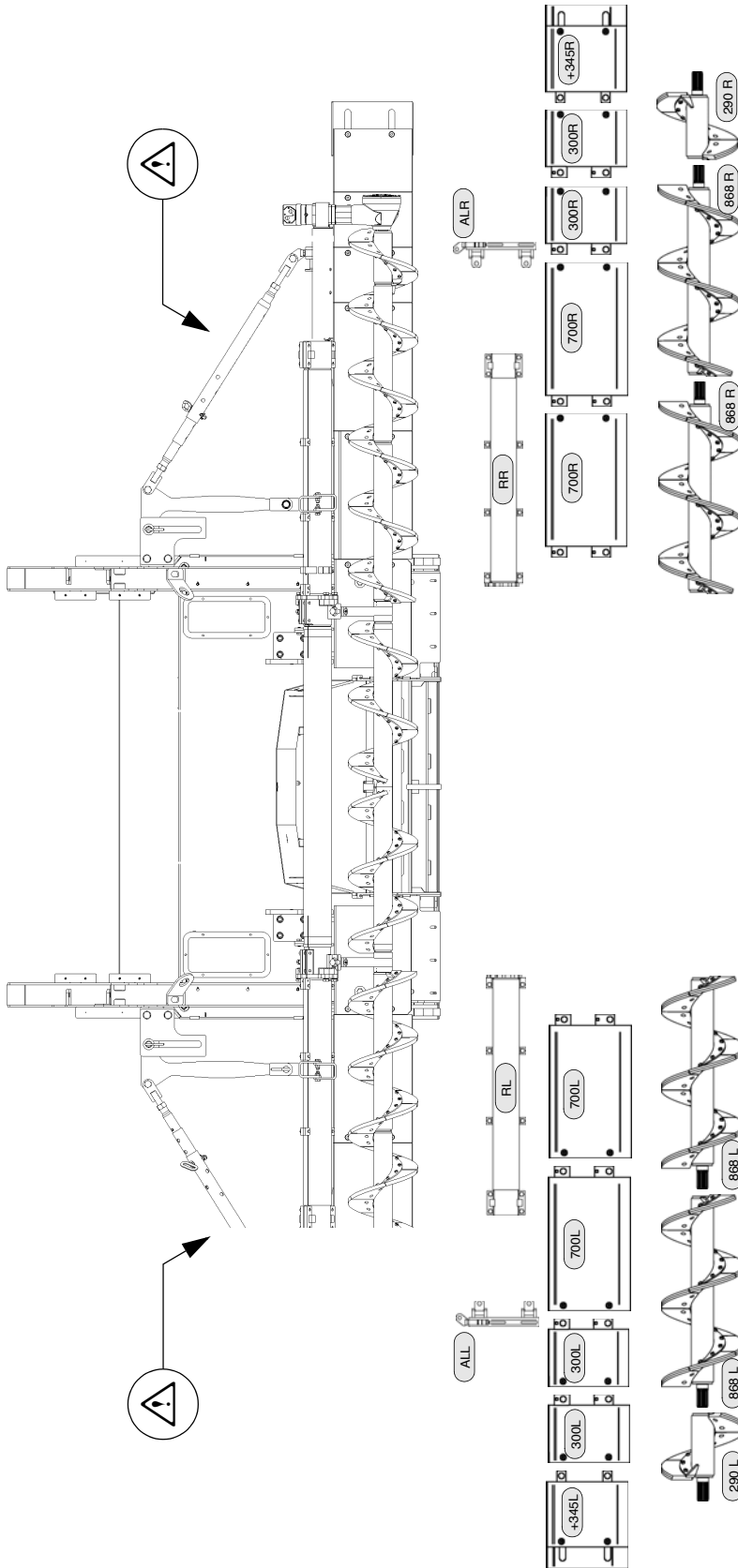
### Auger upgrading, working width 5.08m



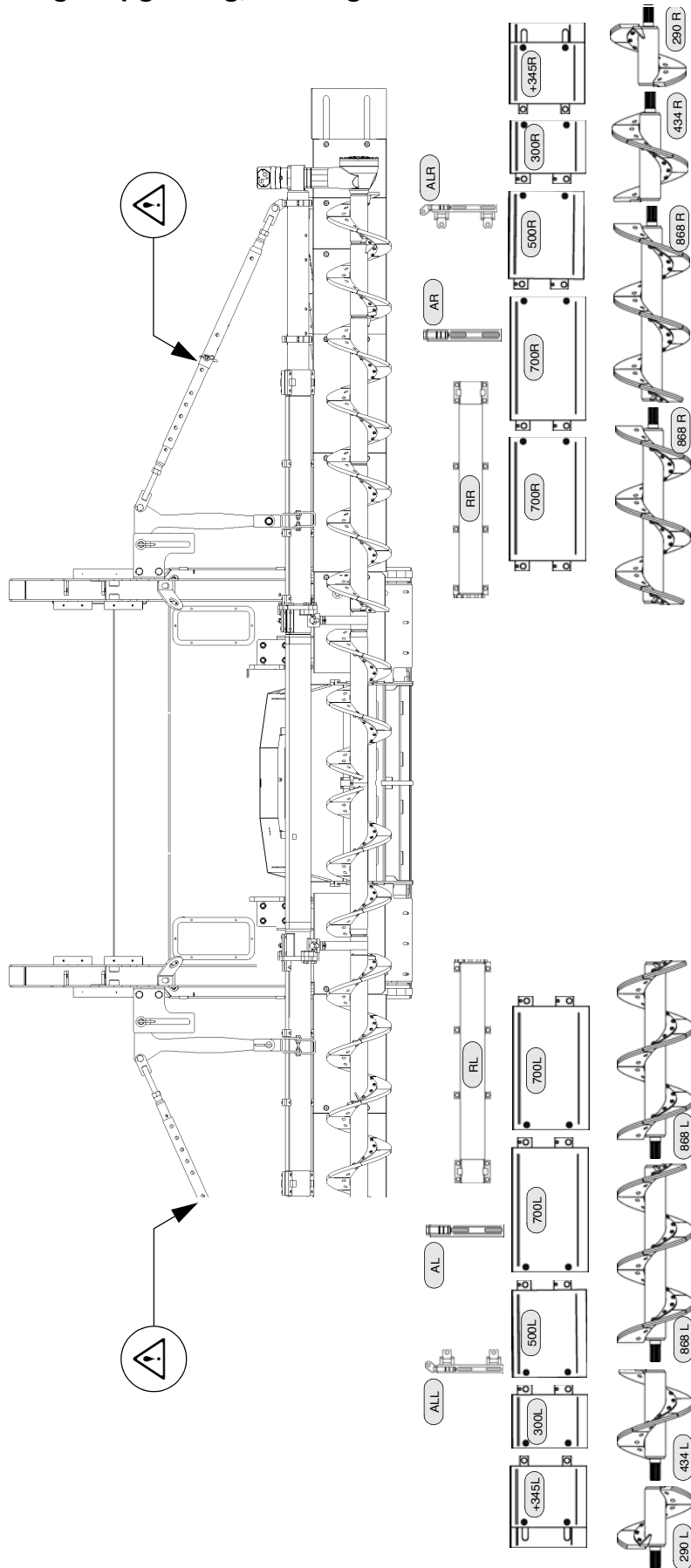
### Auger upgrading, working width 5.66m



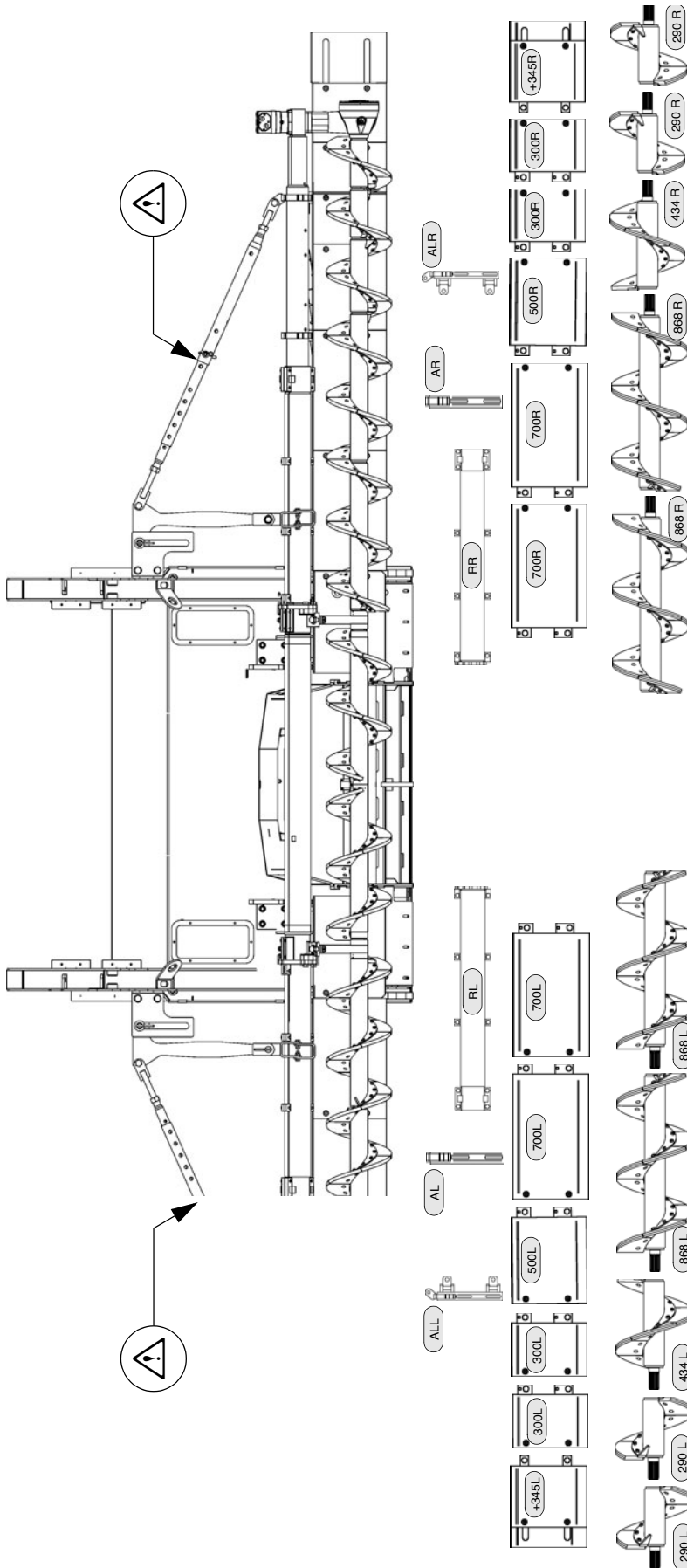
## Auger upgrading, working width 6.53m



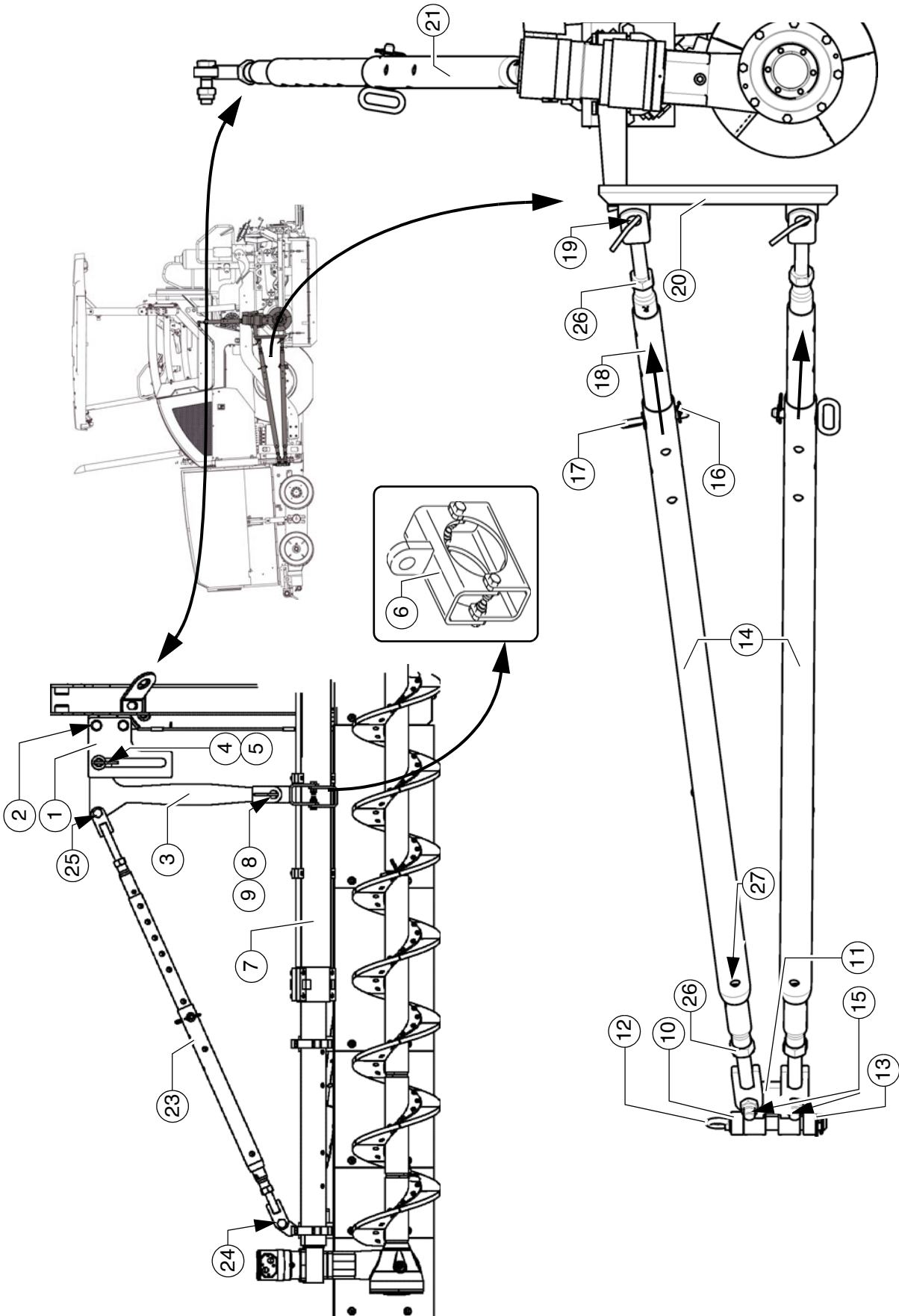
## Auger upgrading, working width 7.40m









Auger upgrading, working width 8.00m



### 5.3 Mounting the auger brace



- 
-  Before mounting the auger brace, the required auger height should already have been set on the basic auger!  
Note the section "Height adjustment for large operating widths / with brace"!
- Mount the left/right guide plates (1) on the vehicle frame shackles with the relevant assembly parts (2).
-  The guide plates must be mounted on the front and rear side of the machine frame shackles.
- Slide the support shackle (3) over the guide plate and secure in the groove with a pin (4) and split pin (5).
  - Mount bracket (6) to the extension pipe (7) using the relevant assembly parts.
-  Mount the bracket (6) so that the support (3) is at right angles after mounting!
- Slide the lower support shackle (3) over the attaching point of the bracket (6) and secure with a pin (8) and split pin (9).
-  The brace bracket (10) is secured to the central panel of the machine using the corresponding assembly parts.
- Insert the fulcrum bracket (11) into the brace bracket (10) and secure with the retaining pin (12).
  - Secure the retaining pins (12) with a split pin (13).
  - Mount braces (14) to the bracket (11) using the relevant assembly parts (15).
-  The braces must be mounted on the outer side of the fulcrum bracket (11)!
- Remove the spring cotter pin (16) and retaining pin (17), pull out the adjustment rod (18) until the brace can be mounted on the bracket (with shackle) (20) using the retaining pin+split pin (19).
  - Secure the adjustment rod (18) in an appropriate bore with a retaining pin (17) and spring cotter pin (16).
  - Mount the vertical brace (21) to the bracket (20) in the same way.
-  At the support (3) mounting point, the brace must be secured at the rear side in each case!

---

## 5.4 Aligning the auger

- Loosen lock nuts (26).



Note the left-hand thread (L) and right-hand thread (R) mark on the brace!

- Extend or shorten the braces (14) by rotating both adjustment rods (18) until all mounted guides and auger segments are in line.



The adjustment rod (18) is equipped with a bore (27) on the left and right. A suitable drift can be used to adjust the length of the adjustment rod here. The rotational direction for extending or shortening the adjustment rod is determined by the left-hand thread (L) or right-hand thread (R).



A cord, which aligns with the screed or the rear wall of the vehicle, can be tensioned e.g. to provide assistance during alignment!

- Extend the upper and lower adjustment rods until the guides and auger segments are aligned vertically.
- Retighten the lock nuts (26).
- Align the auger height in the same way by adjusting the vertical brace (21).



Check the horizontal alignment with a spirit level!

## 5.5 Material shaft, hinged - auger Type A-

To close the gap between auger box and side board of the screen, hinged material shafts can be fitted to both sides of the auger.



The hinged material shafts swivel up due to the material pressure which is exerted and swivel in due to screed retraction.

- Mount the left/right material shafts on the auger box with the relevant assembly parts (1).



If a terminal bearing is mounted for the existing auger width, the adapter plate (2) also has to be fitted.

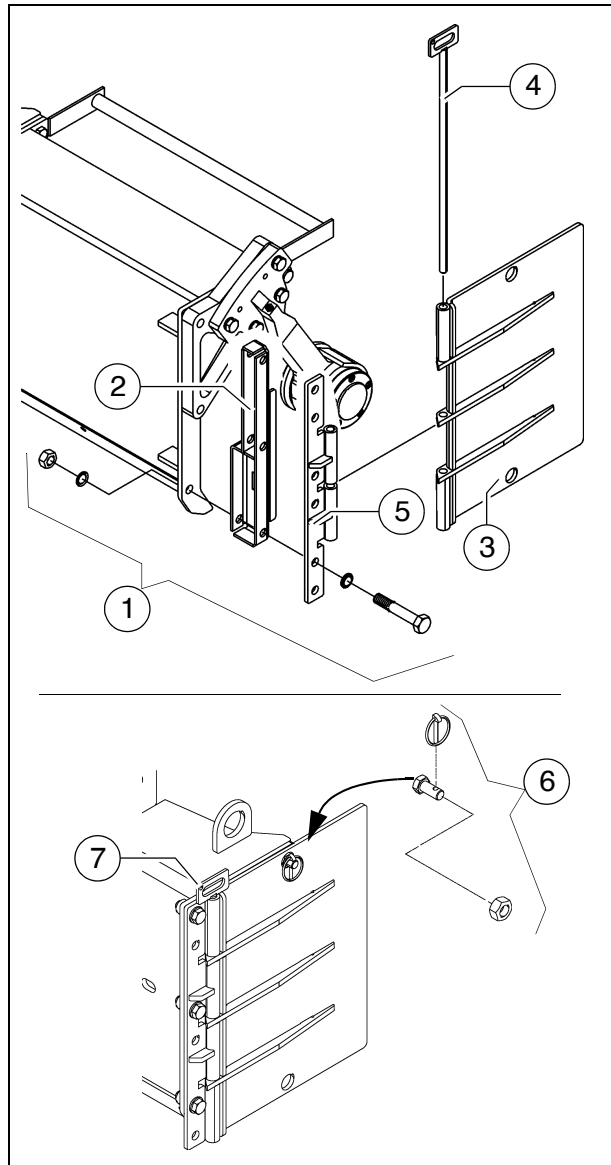
- Fit the plate (3) to the hinge (5) using the hinge rod (4).



The hinged material shaft can be secured with the assembly parts (6) in swivelled in position when transporting the machine in its basic width.



The assembly parts (6) can be kept at the hole (7).



## 5.6 Hopper scraper

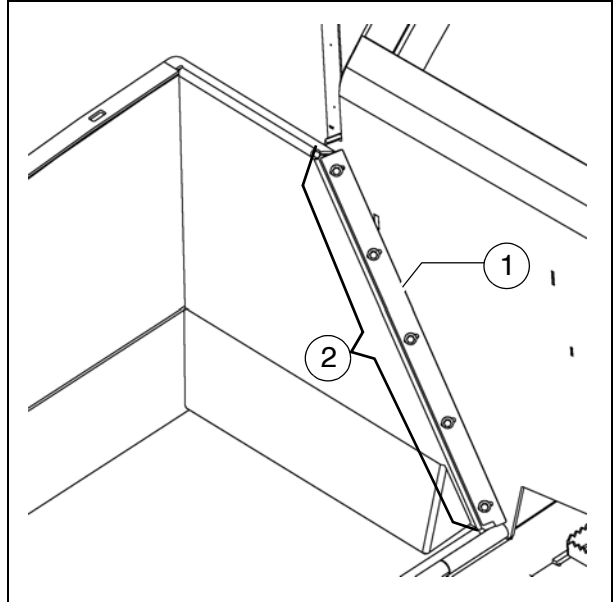
To reduce the gap between hopper and vehicle frame, the hopper scrapers (1) must be adjusted on both hopper lids.



- Loosen the mounting screws (2).
- Set a gap of 6 mm across the whole length of the scraper.
- Retighten the mounting screws (2) properly.



Risk of injury due to sharp-edged parts!  
Wear suitable safety gloves to protect your hands!



## 5.7 Crossbeam guide

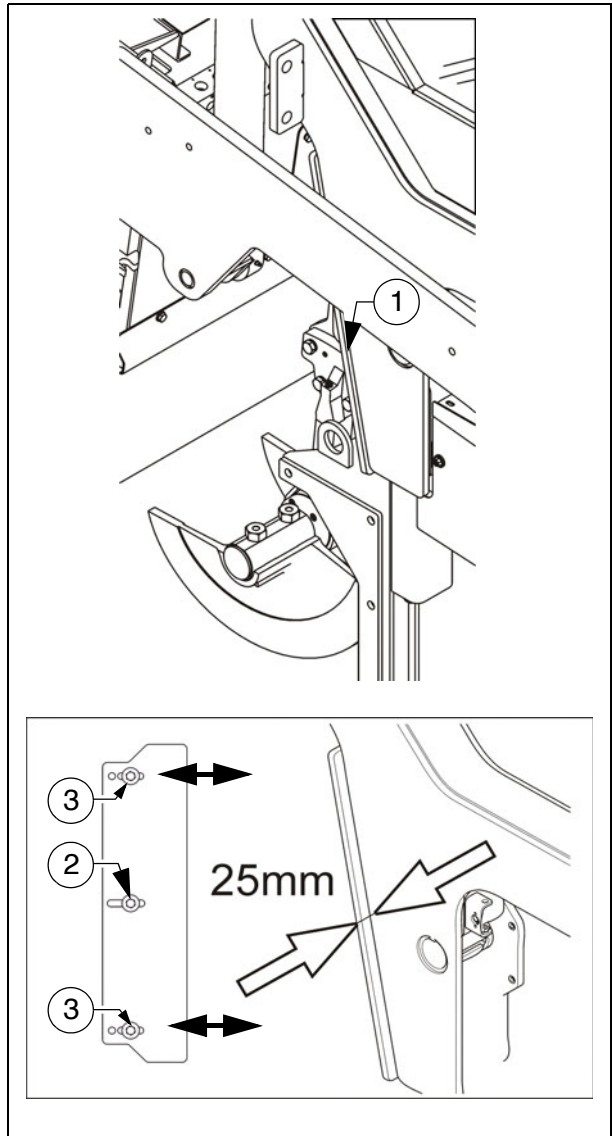
To warrant correct guidance of the crossbeams, the guide plates (1) at both sides of the vehicle must be adjusted to the prevailing paving conditions (e.g. positive or negative crowning, etc.).



- Loosen screw (2) and remove screws (3).
- Adjust guide plate to the required size (basic setting 25mm).
- Retighten the mounting screws (2), (3) properly.



Risk of injury due to sharp-edged parts!  
Wear suitable safety gloves to protect your hands!



## 6 Offsetting the screed

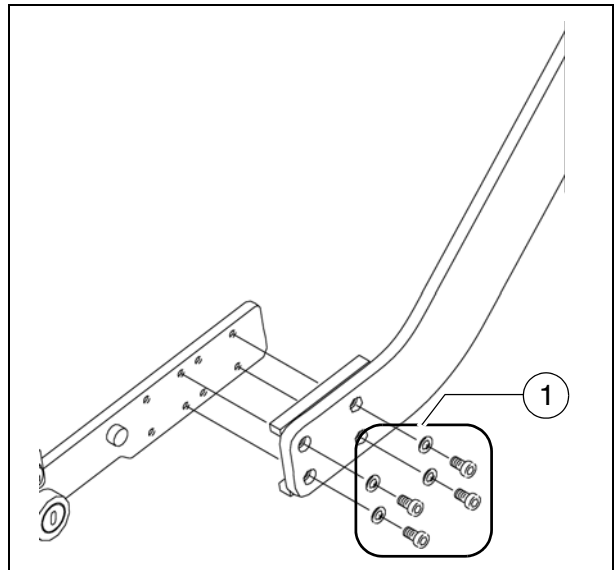
Depending on the paving condition requirements, the crossbeam can be moved backwards or forwards.

This adjustment enlarges the material space between the auger and screed.

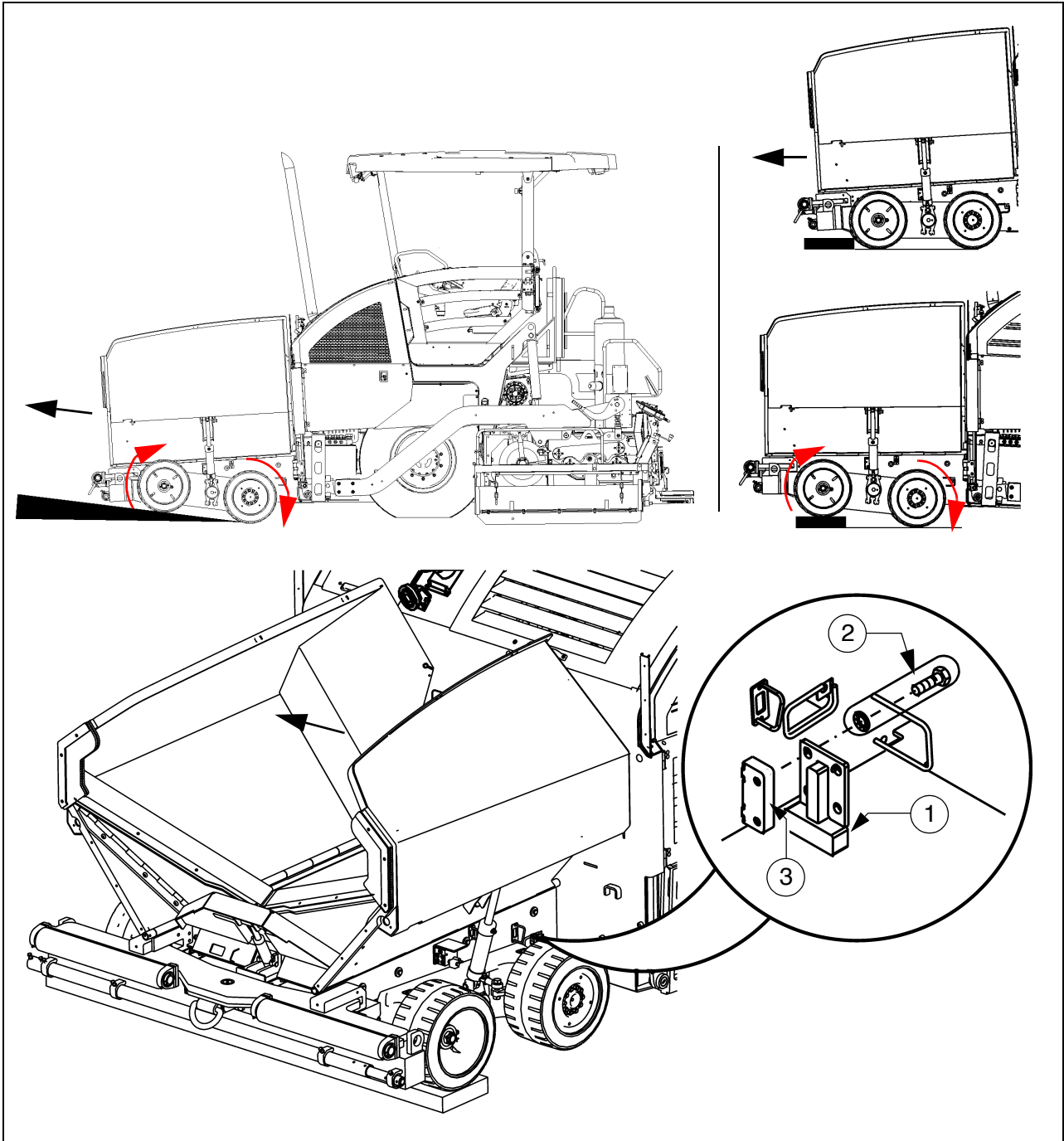
- Loosen the four mounting screws (1).
- Remove the screws and move the vehicle forwards.
- The crossbeam remains in its position on slide rails: now tighten the screws (1) back down.



When paving thin layers, the material can "settle" in front of the screed if the screed is set to the rear position. When paving thick layers, the screed then climbs better.



## 7 Lift axle



The axis load of the front axle can be reduced for travelling on public roads. The pendulum-mounted front axle is locked mechanically in a position that ensures that only the rear pair of wheels of the front axle are on the ground.




Check the local regulations with regard to the permissible axle loads!

**Block front axle:**


- Drive the front wheels of the front axle onto a sufficiently large edge or ramp so that the two rear wheels of the front axle swivel down.
- Switch off the machine and prevent it from rolling away!
- On both sides of the machine, mount the axle locking mechanism (1) to the shackle (3) provided for this purpose on the main frame, using the corresponding assembly parts (2).
- The front axle is now locked in the swivelled position and the front wheels are no longer engaged.
- For paving, the two locking mechanisms have to be dismantled again in the same way.


## 8 Levelling


### 8.1 Slope controller

 During operation, no work may be carried out on the slope control linkage or the slope controller!


- Mount the slope control linkage (1) in the intended position between the two crossbeams.
- Mount the slope controller (2) on the slope control linkage's retaining plate (3).

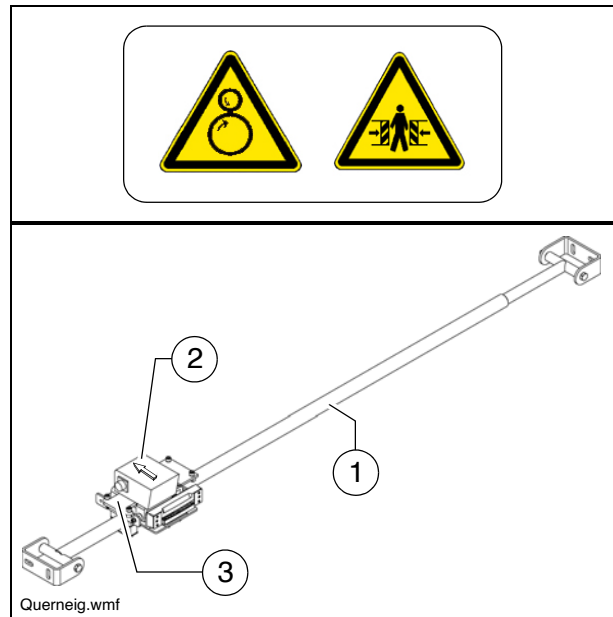
 Four securing holes are provided for mounting on the sensor's retaining plate.

 The digital slope controller must be mounted in such a way that the marking arrow on the housing points in the direction of travel.

 The analogue slope controller must be mounted in such a way that the displays for the operator visibly point backwards.

- Connect the left or right connection cable to the intended handset or vehicle socket.

 Exhaustive operating instructions can be found in the documentation for the corresponding levelling system.



## 8.2 Fitting the height sensing device

Fit the sensor arm to the required side of the machine.

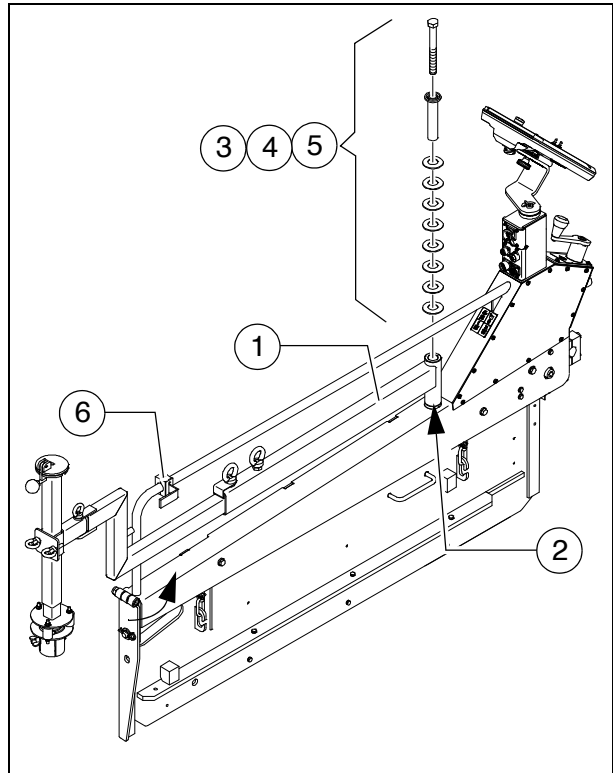
- Place the holder (1) on the corresponding journal (2) of the side shield and fasten with the pin (3), bush (4) and spring washers (5).
- Tighten the pin (3) so that the sensor arm is just still able to swivel.



Mount the spring washers (5) in the opposite direction

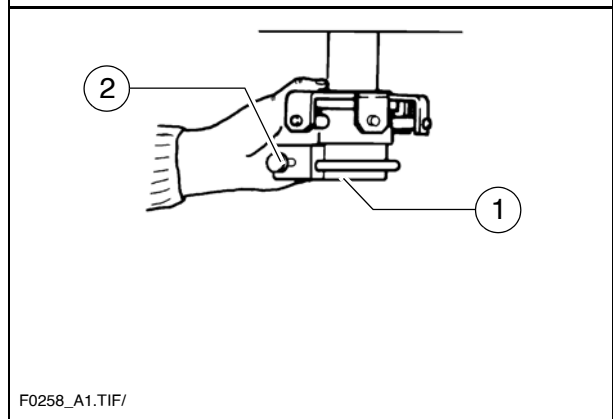


The sensor arm can be secured on the side shield with the lock (6).



## 8.3 Mounting the grade control system


Insert the grade control system into the clamp bracket (1) and secure with the clamping bolt (2) to prevent rotation.



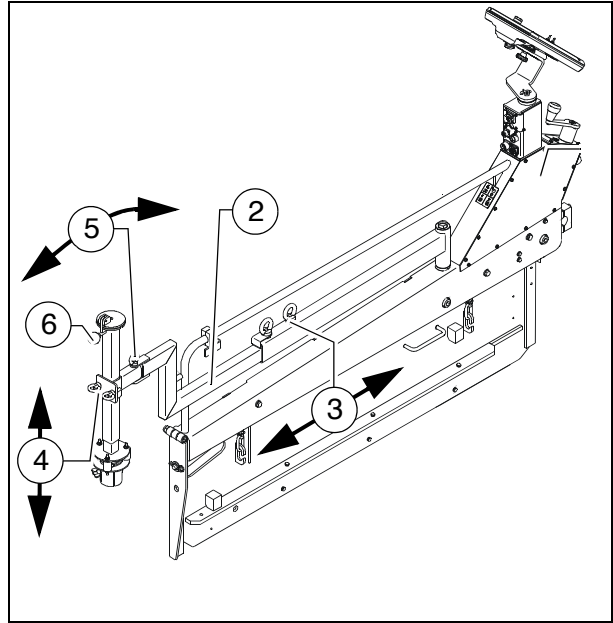
F0258\_A1.TIF/


## 8.4 Setting up the sensor arm

Before starting paving, the sensor arm must be set, with the grade control system, to its reference (cable, kerb, etc.).


 Sensing should be carried out in the area of the auger.


- Swivel the sensor arm (2) over the reference.
- Use the following options to adjust the sensor arm precisely:
  - After loosening the clamping bolts (3), the sensor arm length can be set up.
  - The sensing height can be set by loosening the clamping bolts (4).
  - Adjustment of the lateral sensing angle is possible at the lock (5).
  - Height adjustment for analogue grade sensors is carried out by means of a crank (6). To lock it, the crank is inserted into one of the available notches following the adjustment work.



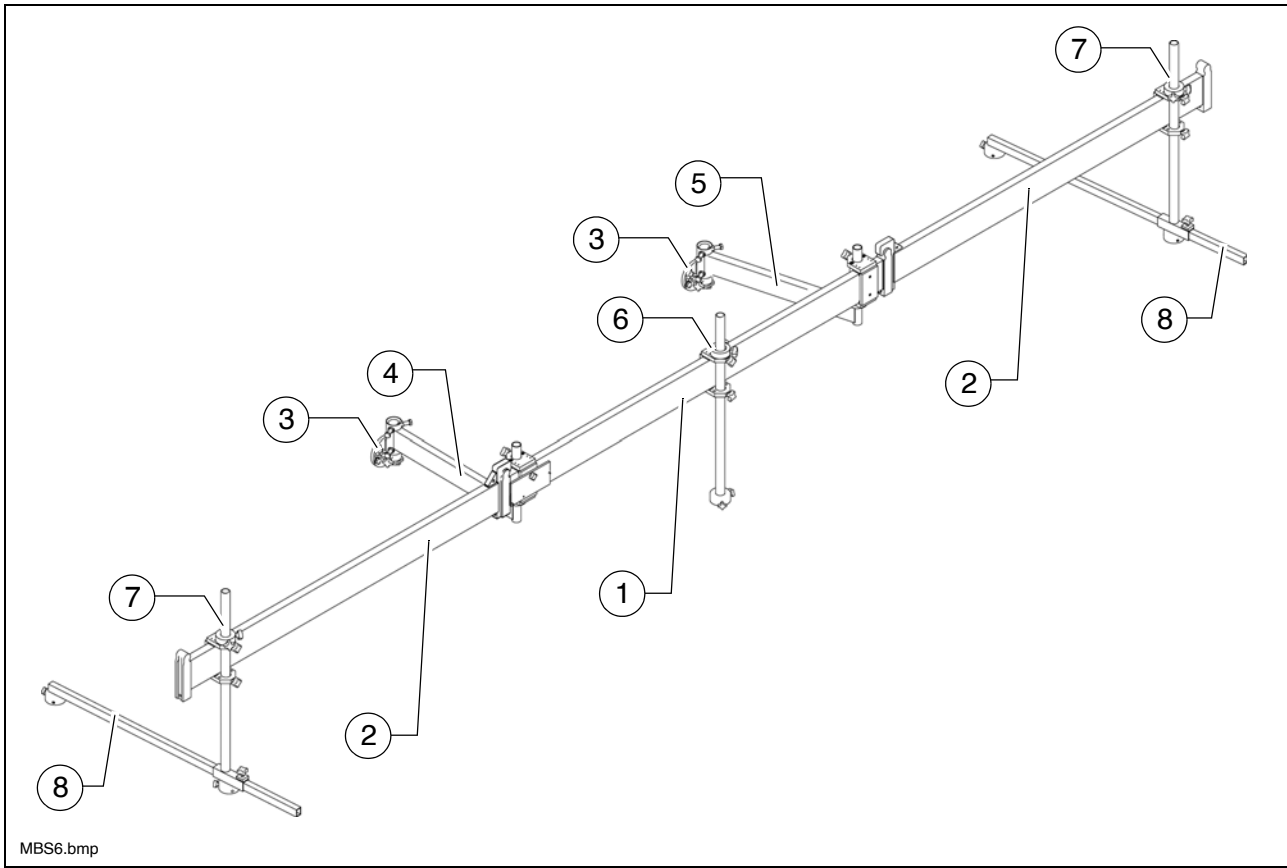
 All assembly parts and clamping points must be tightened properly to ensure safe and precise sensor arm operation!

- Connect the left or right grade control system connection cable to the intended handset or vehicle socket.




 If the vehicle is to be operated with automatic grade sensing on both sides, the above described adjustment process must be repeated on the second side.

 Exhaustive operating instructions can be found in the documentation for the corresponding levelling system.

## 8.5 Big ski 9 m, big ski 13 m



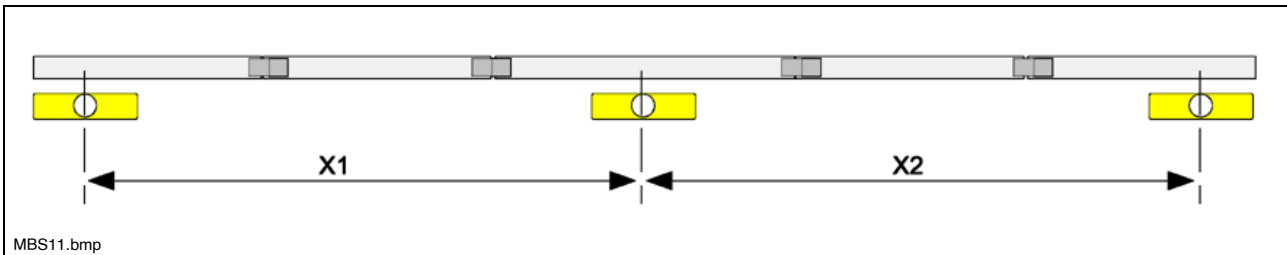
The big ski is used for contactless sensing over a particularly large reference length.

- 
 A total max. ski length of approx. 9.30 m can be achieved with the combination of 1 centre element and 2 module elements together with the sensor arm extensions. A total max. ski length of approx. 13.50 m can be achieved with the combination of 1 centre element and 4 module elements together with the sensor arm extensions.
- 
 The big ski enables the alignment of the individual sensors at the front and rear to be shifted over the reference. The sonic ski can actually be positioned in front of and behind the vehicle in order to guarantee safe reference sensing even on cornering.
- 
 Before starting paving, the big ski must be set, with the grade control system mounted, to its reference (cable, kerb, etc.).

The big ski essentially consists of the following components:

- Centre element (1)
- Extension modules (2)
- Crossbeam bracket (3)
- Front swivel arm (4)
- Rear swivel arm (5)
- Sensor bracket (6)
- Sensor bracket, extendable (7)
- Arm extension (8)

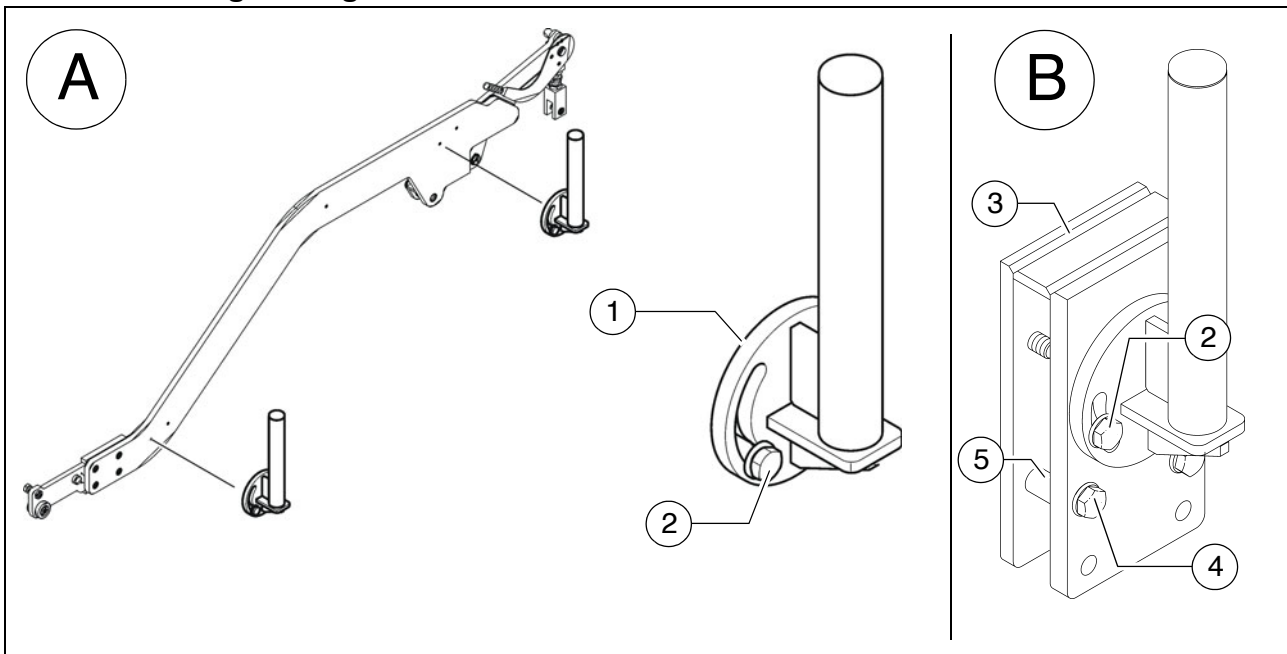
- ➡ Assembly of the short version is described in the following, as the longer variant is achieved simply by adding further module elements.






The distances between the sensors are ideally identical ( $X1 = X2$ ).


- ➡ The centre sensor is mounted in the usual individual sensor position so that, if necessary, work can be carried out with just one sensor by switching over on the MOBA-matic (e.g. at the start of paving, road junctions, etc...)
- ➡ Depending on application, the mechanism can be mounted at the side next to the screed or also above the screed. This is dependent on the paving width required in each case.
- ➡ The procedure for mounting the big ski is the same in both cases.
- ➡ So that the big ski can be operated as parallel to the ground as possible during paving, it must be attached according to the subsequent paving conditions. To do this, the screed should be lowered to the desired course thickness and the traction point should be set appropriately.
- ⚠ When mounting the two crossbeam brackets, it is vital to ensure that these do not hamper the free movement of either the crossbeam or the screed construction! Clearance must be guaranteed throughout the entire working range!

## Mounting the big ski bracket on the crossbeam



-  The entire big ski construction is mounted laterally on the crossbeams. To do so, the two crossbeam brackets must first be mounted. The crossbeam bracket design differs slightly depending on the paver finisher which is used. During assembly, it is possible either to bolt the brackets directly at the existing bores (A) or to secure them to the crossbeam using clamping plates (B).
-  The front bracket is mounted directly behind the traction point; the rear bracket is mounted at approximately the height of the auger.

  - Mount both holders (1) to the crossbeam with corresponding bolts (2).
  - or
  - Place both clamping plates (3) over the crossbeam at the corresponding point and mount with bolts (4) and sleeves (5).
-  For different crossbeam thicknesses, use the mounting's corresponding bores.

  - The mounting tube is aligned via the two bolts (2).
-  Align the bracket vertically.

## Mounting the swivel arms

- Slide a fixing ring (1) over the tube of the big ski bracket (2).



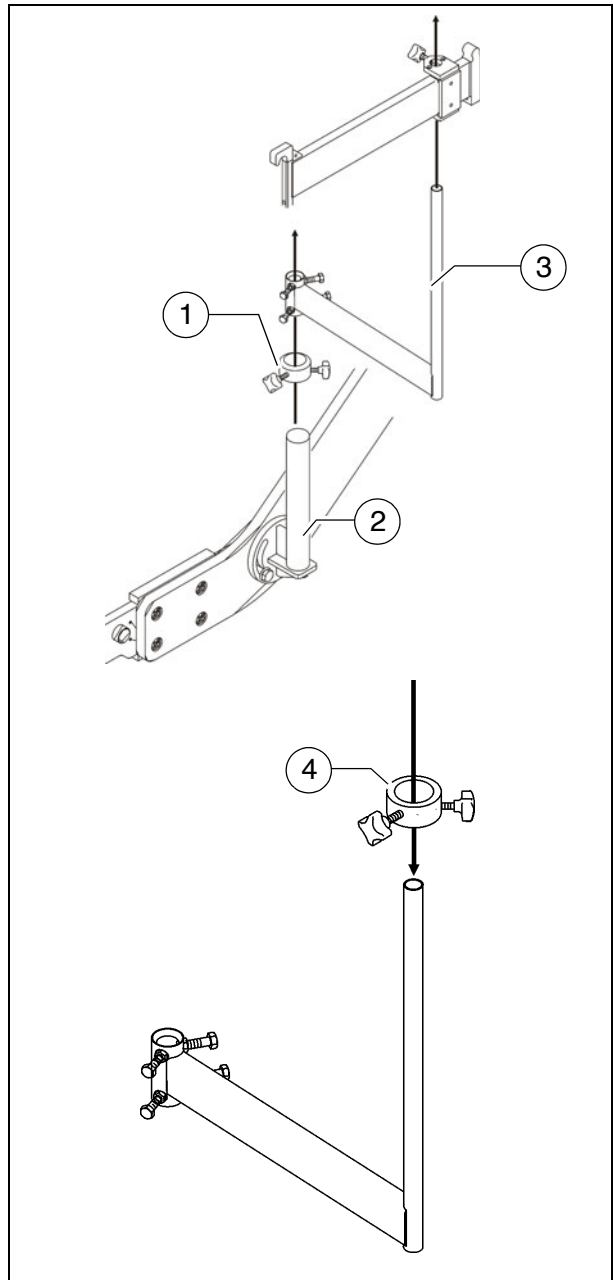
The fixing ring's 45° chamfer must point upwards.

- Then slide the two swivel arms (3) onto the tube of the big ski bracket.

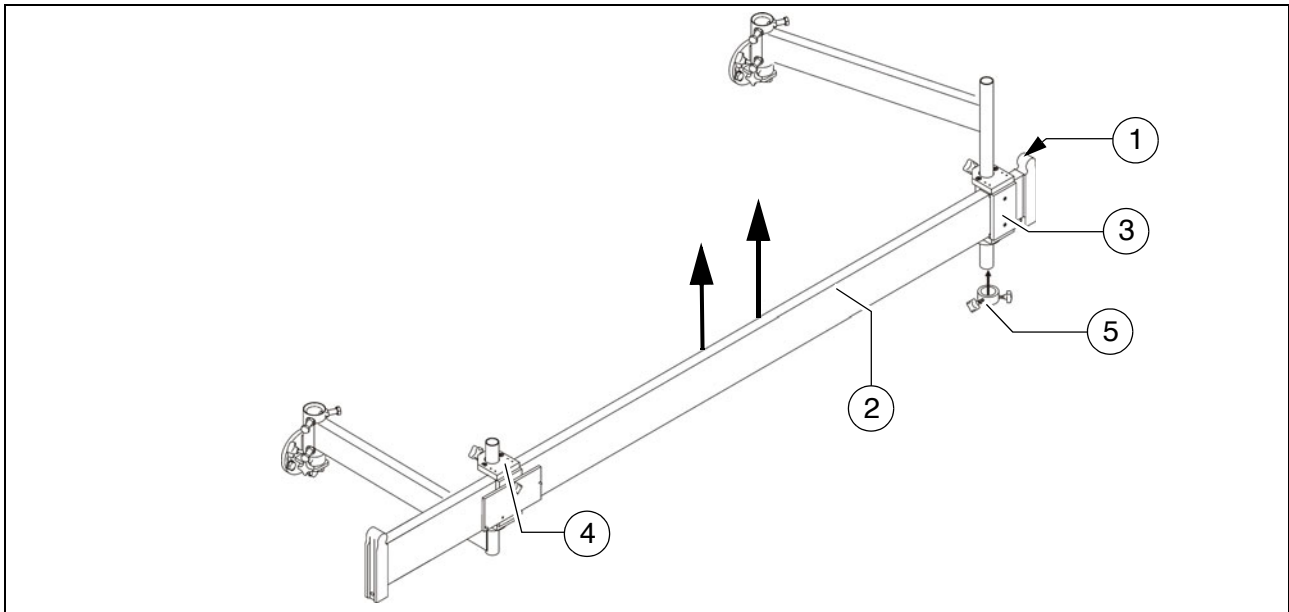





The rear swivel arm is positioned, rotated by 180°, on the big ski bracket.

- Slide a fixing ring (4) (flat version) onto the front swivel arm and secure with the relevant star handle bolt.





## Mounting the centre element



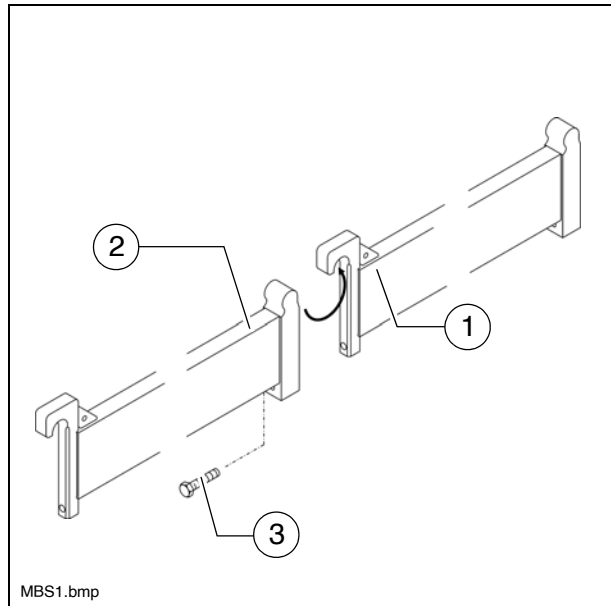
-  During assembly, it must be ensured that the round lug (1) for attaching the subsequent modules points upwards.
-  The centre element (2) is already fitted in the factory with 2 pre-assembled sliding parts (3) / (4), which are pushed over the two round mounting journals of the swivel arms.
  - First slide the rear sliding part (3) onto the rear swivel arm from below. Then raise the centre element, together with the rear swivel arm, until the front sliding part (4) can be pushed onto the front swivel arm from above.
  - Then secure the rear sliding part with a fixing ring (5) and the relevant star handle bolt.
-  Once the first part of the beam has been assembled, it is initially aligned:
  - The centre element is now aligned horizontally using the fixing rings on the swivel arms, and also with the fixing rings on the big ski brackets if necessary.
  - Next, the centre element is aligned by rotating the swivel arms parallel to the paver finisher.
  - Finally tighten all securing bolts.

## Extending the big ski


 The big ski can be extended to both the 9 m and 13 m versions.


 Structure of the 9 m version:  
Extension part at the front/rear each.  
Structure of the 13 m version:  
Two extension parts at  
the front/rear each.


- Place the extension module (1) onto the centre element (2) and secure with a bolt (3).



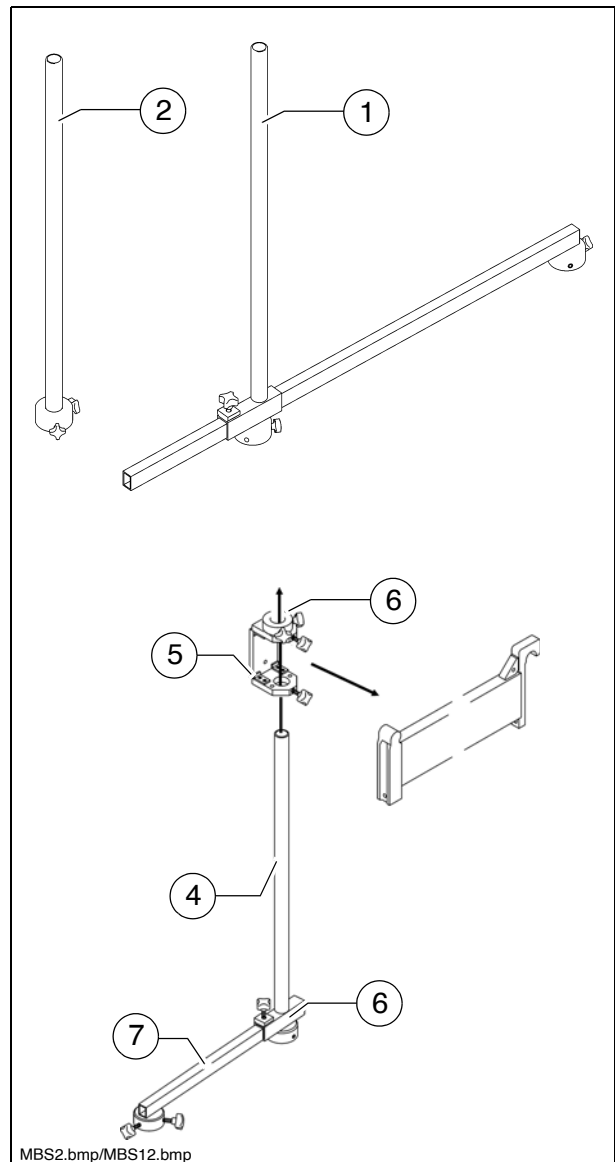
## Mounting the sensor bracket

 A sensing system with 3 sensors is provided over the entire length of the big ski. One sensor each on the centre element, and the front and rear end elements.

 The centre sensor should be mounted on the ski in precisely the location in which it would be found during normal operation (approx. the height of the auger). The two other sensors should be mounted the same distance away from it.

 Extendable sensor brackets (1) are mounted in the two outer positions; the normal sensor bracket (2) is mounted in the centre.

- Place the sliding bracket (3) over the corresponding big ski element from the inner side.
- Insert the sensor bracket (4) into the sliding bracket (5) from below and secure with the relevant star handle bolts.
- Place the clamping ring (6) onto the sensor bracket tube and secure with the relevant star handle bolt.
- In the case of the extendable sensor brackets, slide in the arm extension (7) and secure in position with the relevant star handle bolt.



## Mounting and aligning the sensors

- Insert the sensor mounting (1) into the bracket (2).
- Align the sensor and secure with the relevant star handle bolts.
- The sensing height can be adjusted by loosening the star handle bolts (3).



At the two outer sensor brackets, the sensor can also be mounted on the swivelling sensor extension arm (4). This therefore enables the two outer sensors to be swivelled during paving for diverse requirements, e.g. cornering.

- By loosening the star handle bolts (5), the length of the extension arm can be adjusted.

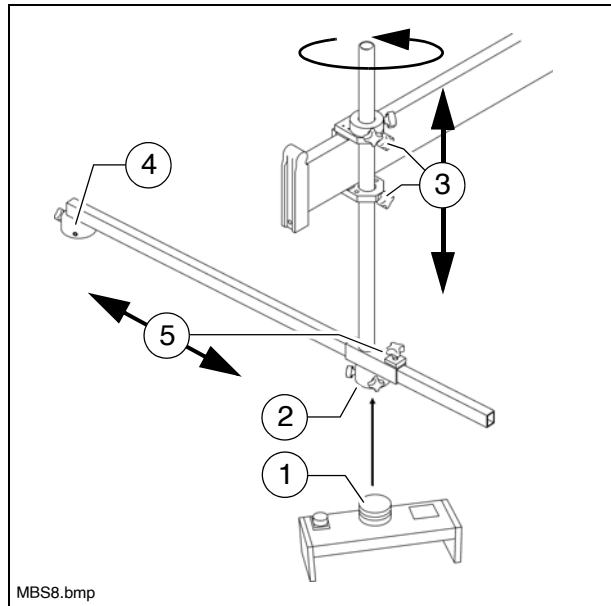
- The sensor bracket with extension arm can be swivelled by loosening the star handle bolts (3).



If a sensor extension arm is swivelled to the side, it must be ensured that the attached sensor is subsequently aligned in the direction of travel.



All assembly parts must be mounted and tightened properly to ensure safe and precise operation of the big ski!



## Mounting the distributor box



The distributor box should be mounted in such a way that simple wiring to the controller and the sensors is possible.

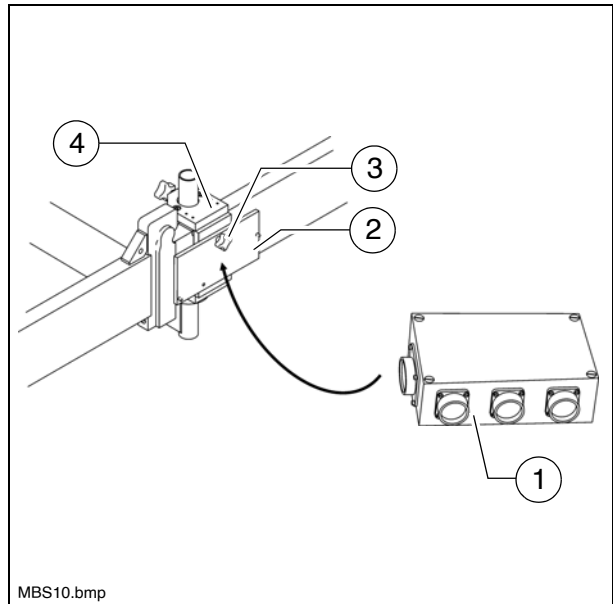


The connections for the sensors should always point down to prevent water from entering the distributor box. Inlets which are not required must be sealed with dust caps.

- Allen head bolts are used to initially mount the distributor box (1) on the mounting plate (2).



The input connector always points in the direction of travel.



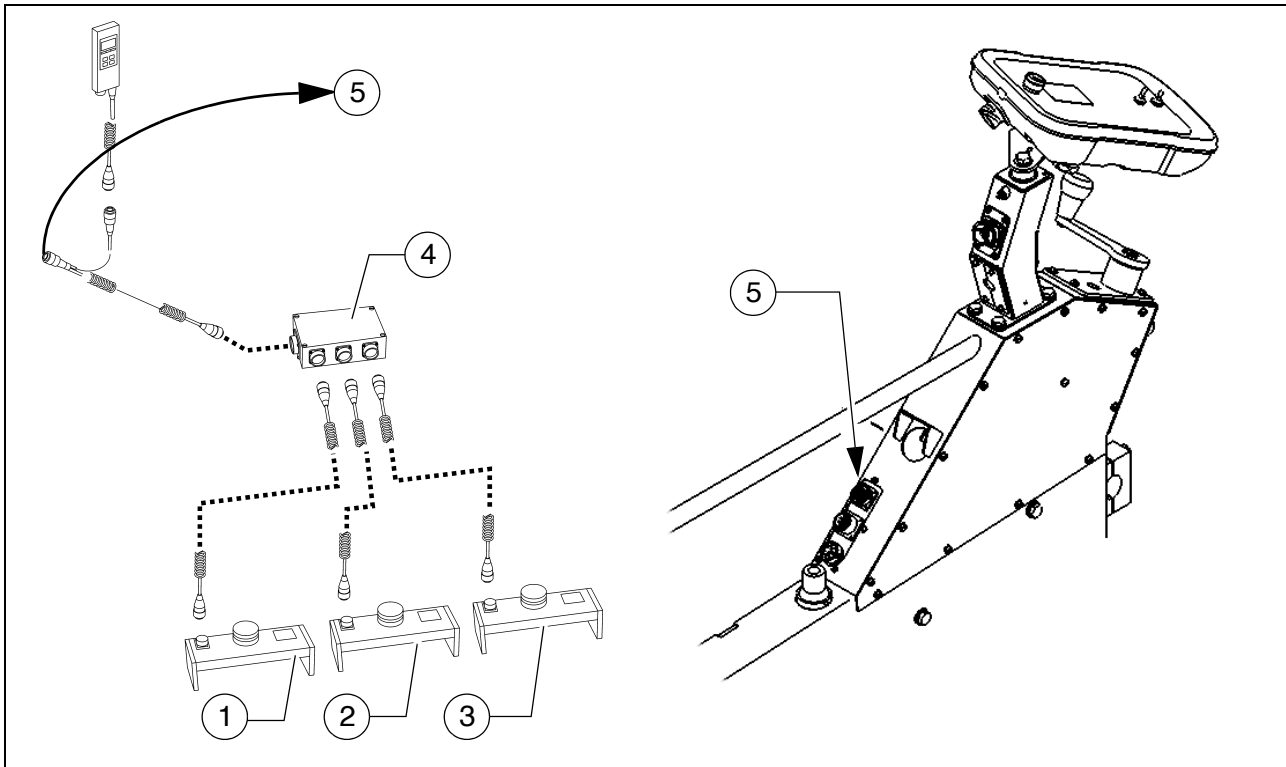
- Then mount the mounting plate on one of the two sliding brackets (4) on the centre element using a star handle bolt (3).



Mounting the big ski on the right-hand side of the vehicle:

To meet the requirement that the input connector always points in the direction of travel, the sliding bracket, on which the distributor box is to be mounted, must be pushed onto the big ski from the inside to the outside here.

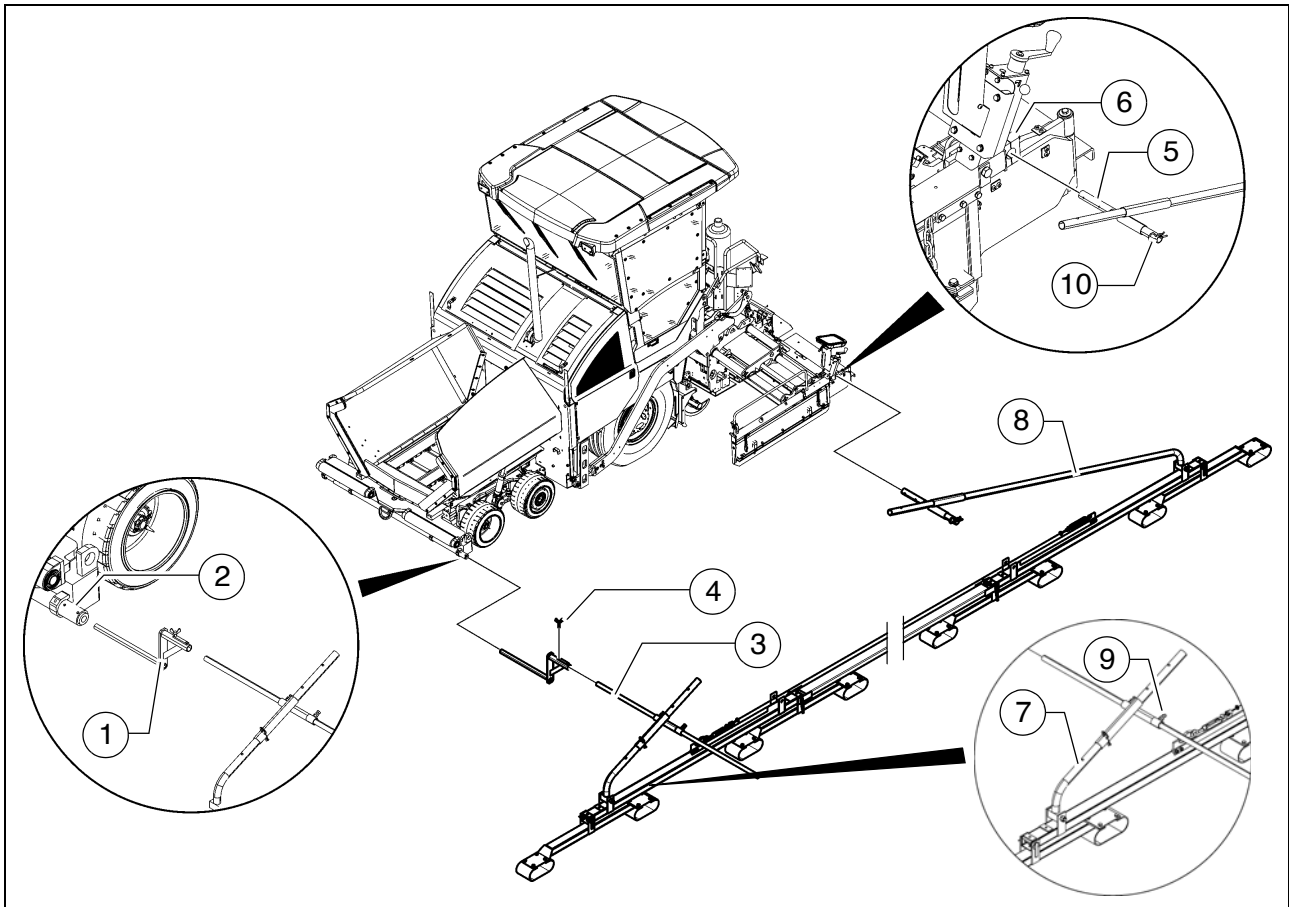
### Connection diagram



The three sensors are connected to the distributor box and the distributor to the machine according to the following scheme.

- Sensors
  - Front (1)
  - Centre (2)
  - Rear (3)
- Distributor box (4)
- Machine interface (5)

## 8.6 Levelling shoe 6m, 9m



The levelling shoe includes a shoe that moves at several joints and runs on the reference surface, together with a rotary sensor that scans a reference wire on the shoe. The levelling shoe is ideal for compensating for long bumps in the ground.

It is used on roadworks sections without tight bends.

- Adjust the working width by extending the screed.
- Push the levelling piece (1) in the extension pipe (2). Tighten the clamping bolts at the extension pipe.
- Push the extension (3) into the levelling piece (1). Secure properly with wing nuts (4).
- Insert the holding tube (5) in the clamp bracket (6) on the side board. Tighten the bolts of the clamp bracket correctly.
- Fix the front pull rod (7) in the holding tube (5) with a spring cotter pin so that the shoe lies freely on the ground at the front.



At the back, the shoe automatically lies on the ground on account of the freely moving pull rod (8).

- Align the shoe to be parallel to the paver across the whole length and not tilted to the side.
- Fix with bolts (9) at the front.
- Set the spring cotter pin (10) at the back.
- Insert the sensor (11) in the height sensing unit (12).
- Set up the height sensing unit so that the sensing arm (13) lies on the reference wire (14) in the middle.



Tighten the reference wire with the rope tensioner if too loose.

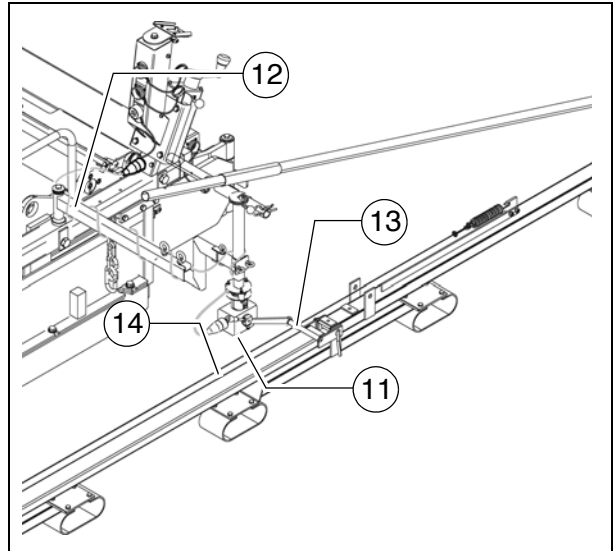
- Connect the corresponding cable lead with the provided socket in the remote control bracket and with the sensor.



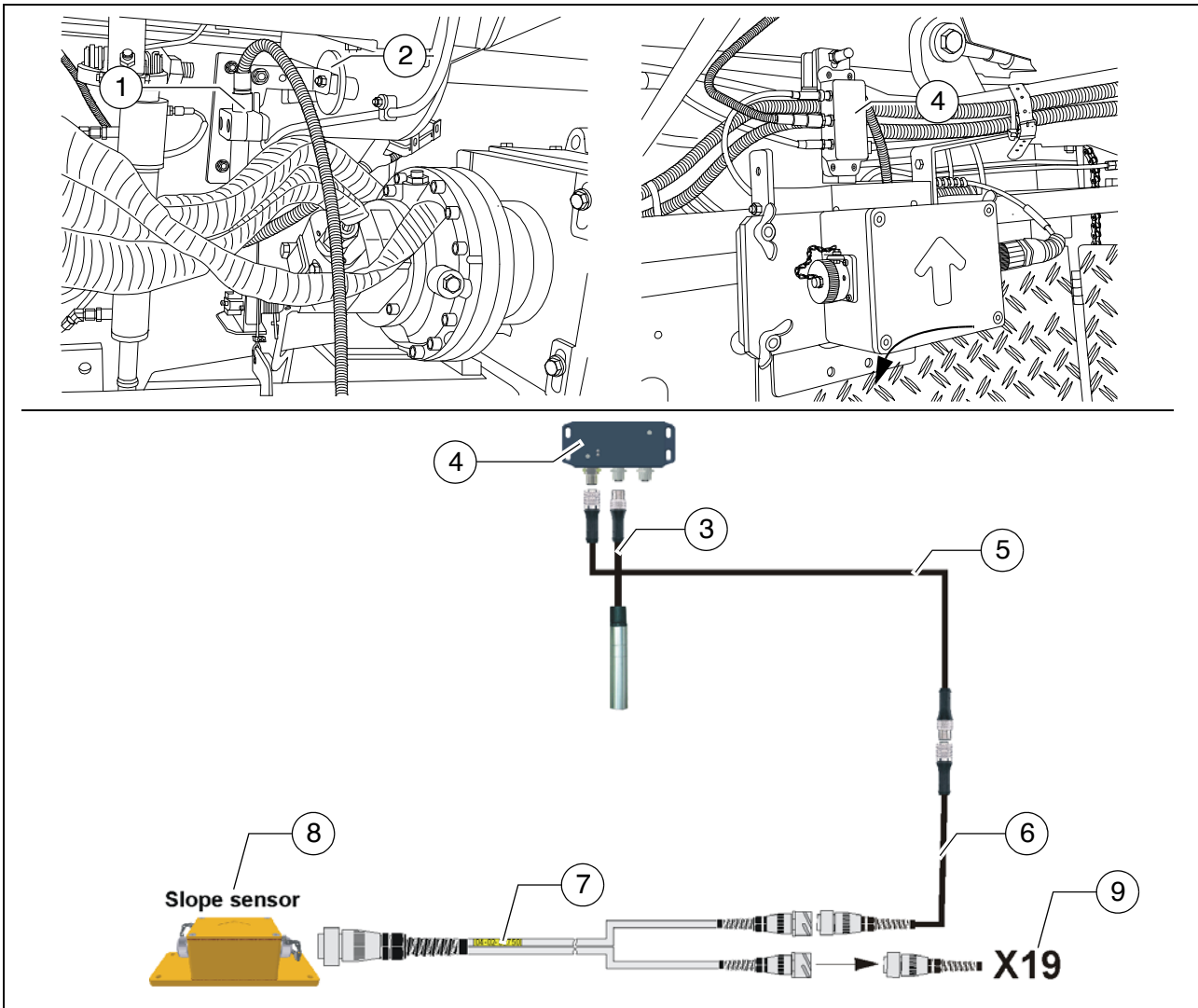
Route the connection cable so that it cannot be damaged during operation.



Use of the levelling shoe increases the basic width of the paver finisher!



## 9 Auger temperature measurement (O)



A sensor can be installed to detect the material temperature in the auger area.

- Fasten the sensor (1) above the basic auger width on the machine frame with the related magnetic holder (2) as shown.
- Connect the connection cable (3) of the sensor to the centre socket (TEMP) of the signal converter (4).



The signal converter (4) should be positioned above the centre hose guide of the screed with the related magnetic holders.

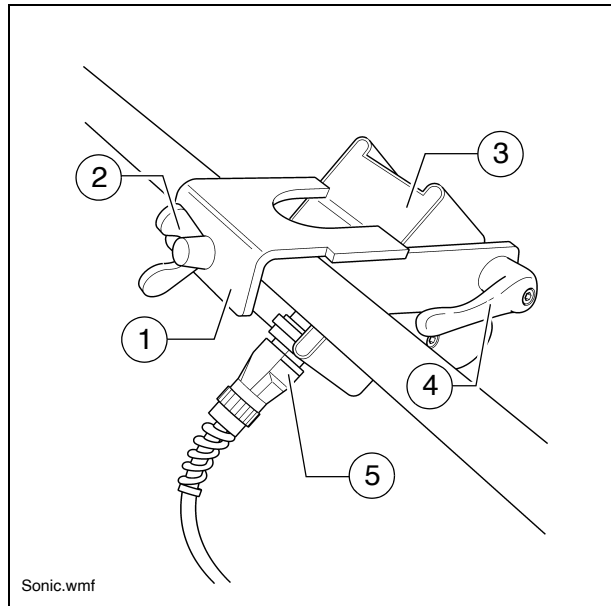
- Install the connection cable (5) between the signal converter connection (CAN->) and adapter cable (6).
- Connect the adapter cable (6) to the Y cable (7) and produce the connection to the slope control sensor (8).
- Also connect the machine interface for the slope control sensor (9) to the Y cable.





## 10 Limit switch

### 10.1 Auger limit switches (left and right) - mounting the PLC version

The auger's ultrasonic limit switch is mounted on both sides on the side board's handrail.

- Place the sensor bracket (1) onto the handrail, align it and tighten with a wing bolt (2).
- Align the sensor (3) and secure with a clamping lever (4).
- Connect the left or right sensor's connection cable (5) to the intended remote control bracket sockets.

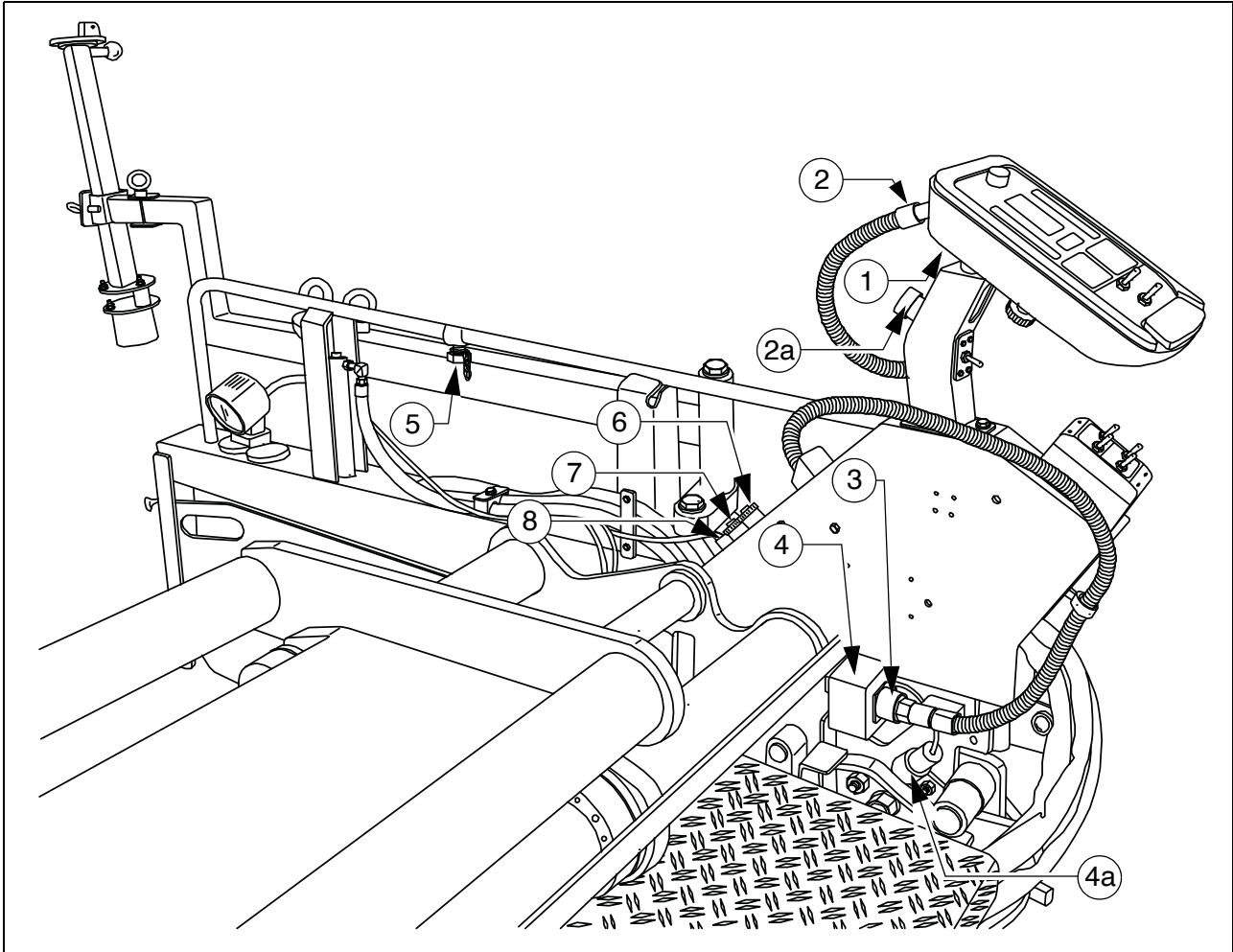


-  The connection cables are connected to the relevant sockets on the remote control bracket.
-  The sensors should be adjusted so that 2/3 of the augers are covered with the paving material.
-  The paving material must be conveyed over the full working width.
-  We recommend adjusting the limit switch positions during material distribution.

## 11 Screed

All work required for mounting, setting up and extending the screed are described in the screed operating instructions.

### 11.1 Electrical connections side board - screed - Conventional version



Prepare or make the following electrical connections when the mechanical components have been mounted and set up:

- Set remote control to holder (1).
- Connect plug (2) with the remote control.



If the remote control is not implemented, the plug (2) has to be set to the bridge socket (2a).

- Connect the connection lead (3) of the side board with the socket (4) of the screed.



The cover of the extendable part must be removed to install the cables. Install the cables to rule out the risk of any damage to the cables.



If the side board is not connected, the socket (4) has to be connected with the bridge plug (4a).

Other connection possibilities:

- Auger limit switches (5)
- Grade control system (6)
- External levelling system (7)
- 24 volt consumers, e.g. additional lighting (8).

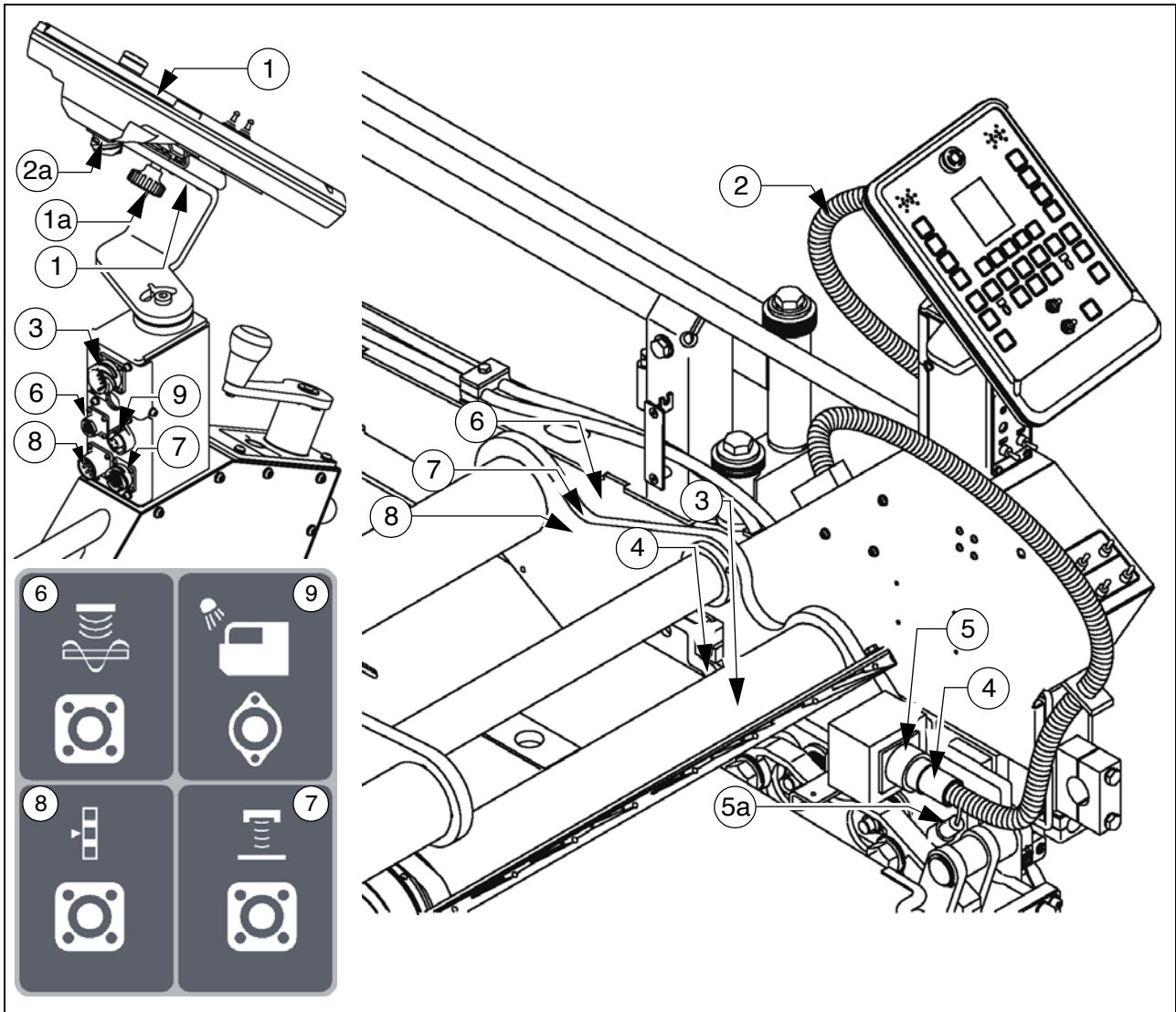


When using an external levelling system, this must be logged in using the remote control menu.



Always seal unused sockets or plugs with the corresponding protective caps!

## 11.2 Electrical connections side board - screed PLC version



Prepare or make the following electrical connections when the mechanical components have been mounted and set up:

- Set remote control on holder (1), tighten knurled screw (1a).
- Connect the plug of the lead (2) with the socket (2a) on the remote control.



If the remote control is not mounted, the plug has to be set on the bridge socket (3).

- Connect the connection lead (4) of the side board with the socket (5) of the screed.



The cover of the extendable part must be removed to install the cables. Install the cables to rule out the risk of any damage to the cables.



If the side board is not connected, the socket (5) has to be connected with the bridge plug (5a).

Other connection possibilities:

- Auger limit switches (6)
- Grade control system (7)
- External levelling system (8)
- 24 volt consumers, e.g. additional lighting (9).





When using an external levelling system, this must be logged in using the remote control menu.







Always seal unused sockets or plugs with the corresponding protective caps!



# F 10 Maintenance

## 1 Notes regarding safety

 <b>DANGER</b>	<p><b>Danger due to changes at the vehicle</b></p>
	<p>Structural changes to the vehicle make the operating licence null and void and can cause severe to fatal injuries!</p> <ul style="list-style-type: none"> <li>- Only use original spare parts and approved accessories.</li> <li>- After maintenance and repair work, ensure that any dismantled protective and safety devices are all completely fitted again.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>DANGER</b>	<p><b>Danger due to incorrect vehicle maintenance</b></p>
	<p>Incorrectly performed maintenance and repair work can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Ensure that maintenance and repair work is always only carried out by trained, specialist staff.</li> <li>- All maintenance, repair and cleaning work should only be carried out with the engine turned off. Remove ignition key and main switch.</li> <li>- Affix a sign "Do not start" to the vehicle.</li> <li>- Perform a visual inspection and check all functions every day.</li> <li>- Proceed with all maintenance tasks according to the maintenance schedule.</li> <li>- Proceed with expert inspection every twelve months.</li> <li>- Eliminate all ascertained faults straight away.</li> <li>- Do not restart the vehicle until all ascertained faults have been eliminated.</li> <li>- Failure to comply with the prescribed inspection and maintenance work renders the operating licence null and void!</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Only perform maintenance and repair work after the vehicle has cooled down.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Danger due to electric shock</b>
	<p>Injuries can be caused by touching live parts directly or indirectly!</p> <ul style="list-style-type: none"> <li>- Do not remove any protective safeguards.</li> <li>- Never spray water on electric or electronic components.</li> <li>- Maintenance work to the electric system should only be carried out by trained specialist staff.</li> <li>- When equipped with electric screed heater, check the insulation monitoring every day according to the instructions.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>



**Cleaning:** Do not use any inflammable substances (such as petrol).

Avoid directly cleaning electrical parts and insulation material with a steam jet; cover them up beforehand.



**Working in enclosed environments:** Exhaust fumes must be conducted into the open air. Propane gas bottles must not be stored in closed rooms.



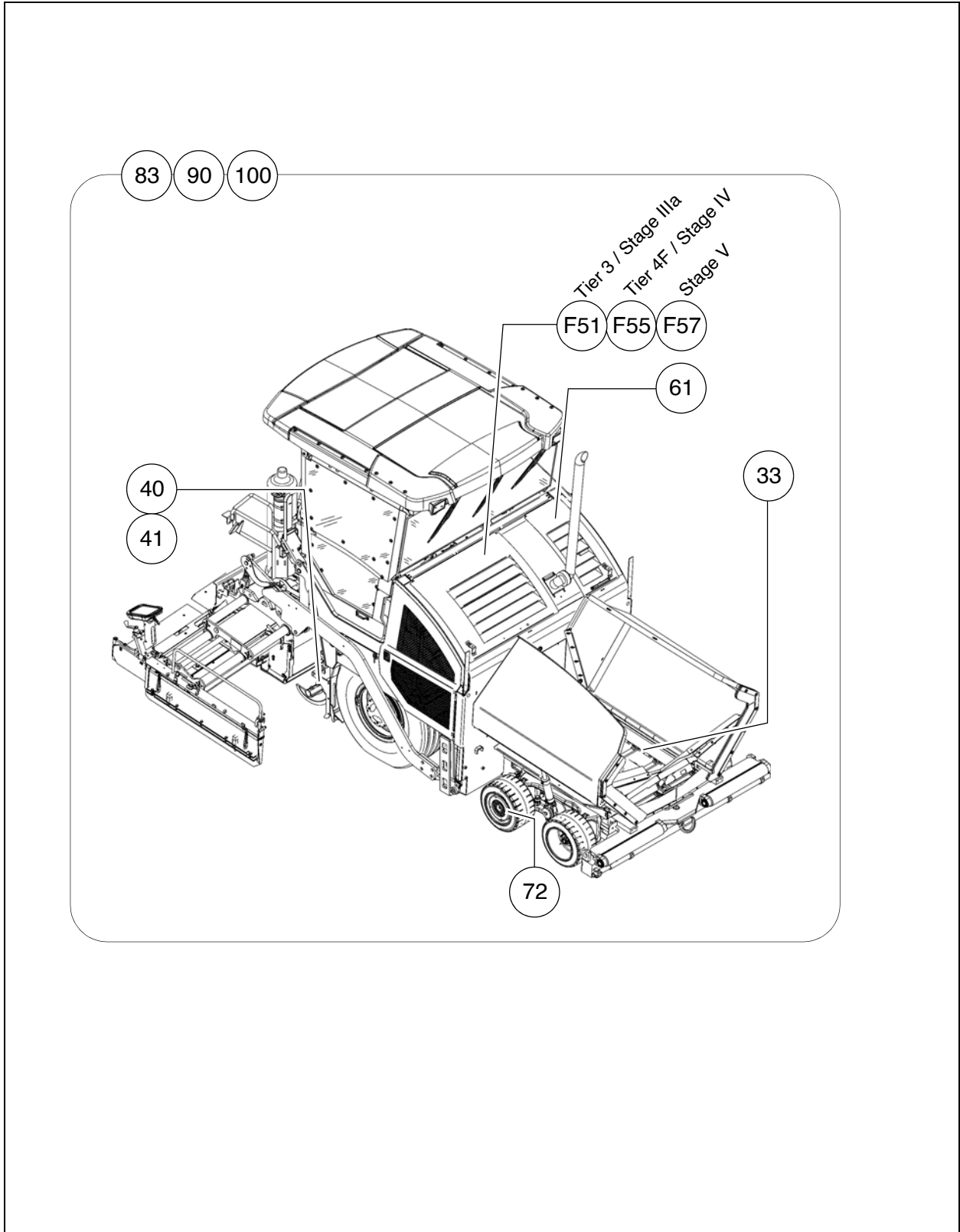
In addition to these maintenance instructions, the maintenance instructions issued by the engine manufacturer must be adhered to under all circumstances. All maintenance work and service intervals itemised here are binding in nature.



Information on how to maintain the optional equipment can be found in the individual sub-sections of this chapter!

# F 29 Maintenance overview

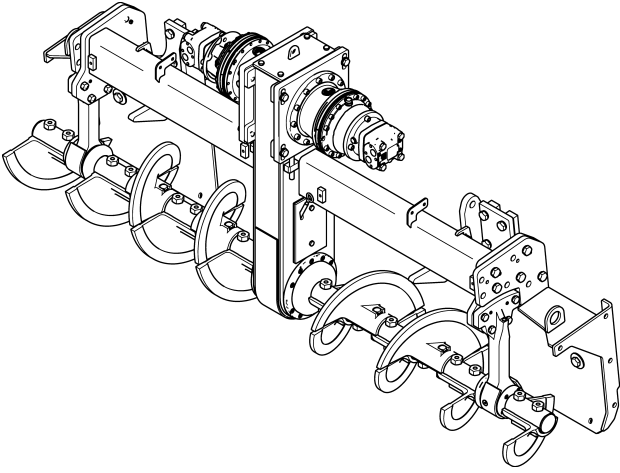
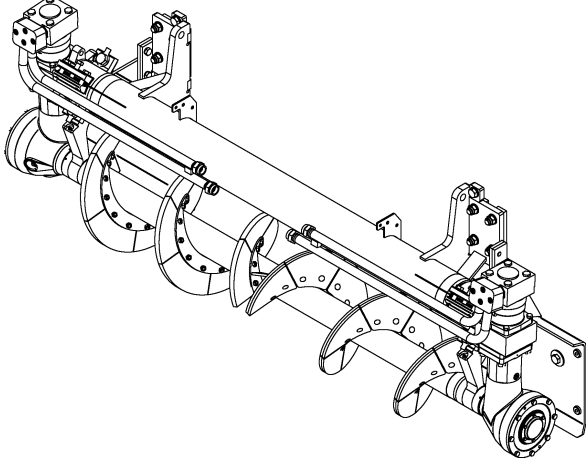
## 1 Maintenance overview



## 2 Optional assemblies



Two different auger systems are available as options.  
Check which auger type is used in your machine and comply with the corresponding installation, operation and maintenance instructions!

<p>- Auger <b>-Type A-</b> Central drive</p>	
<p>- Auger <b>-Type B-</b> External drive</p>	

Assembly	Chapter	Maintenance necessary after operating hours												
		10	50	100	250	500	1000 / annually	2000 / every 2 years	4000 / every 3 years	5000	20000	If necessary		
Conveyor	F33	■		■										■
Auger - type A	F40	■	■	■	■		■	■						■
Auger - type B	F41	■	■	■	■		■							■
Drive engine - Tier 3 / Stage IIIa	F51	■			■	■	■	■						■
Drive engine - Tier4F / Stage IV	F55	■			■	■	■	■	■					■
Drive engine - StageV	F57	■			■	■	■	■	■					■
Hydraulic system	F61	■	■			■	■	■						■
Wheel chassis	F72	■	■	■		■	■							■
Electrical system	F83	■	■	■	■									■
Lubrication points	F90	■	■					■						■
Checking/shutdown	F100	■					■							■

Maintenance required	■
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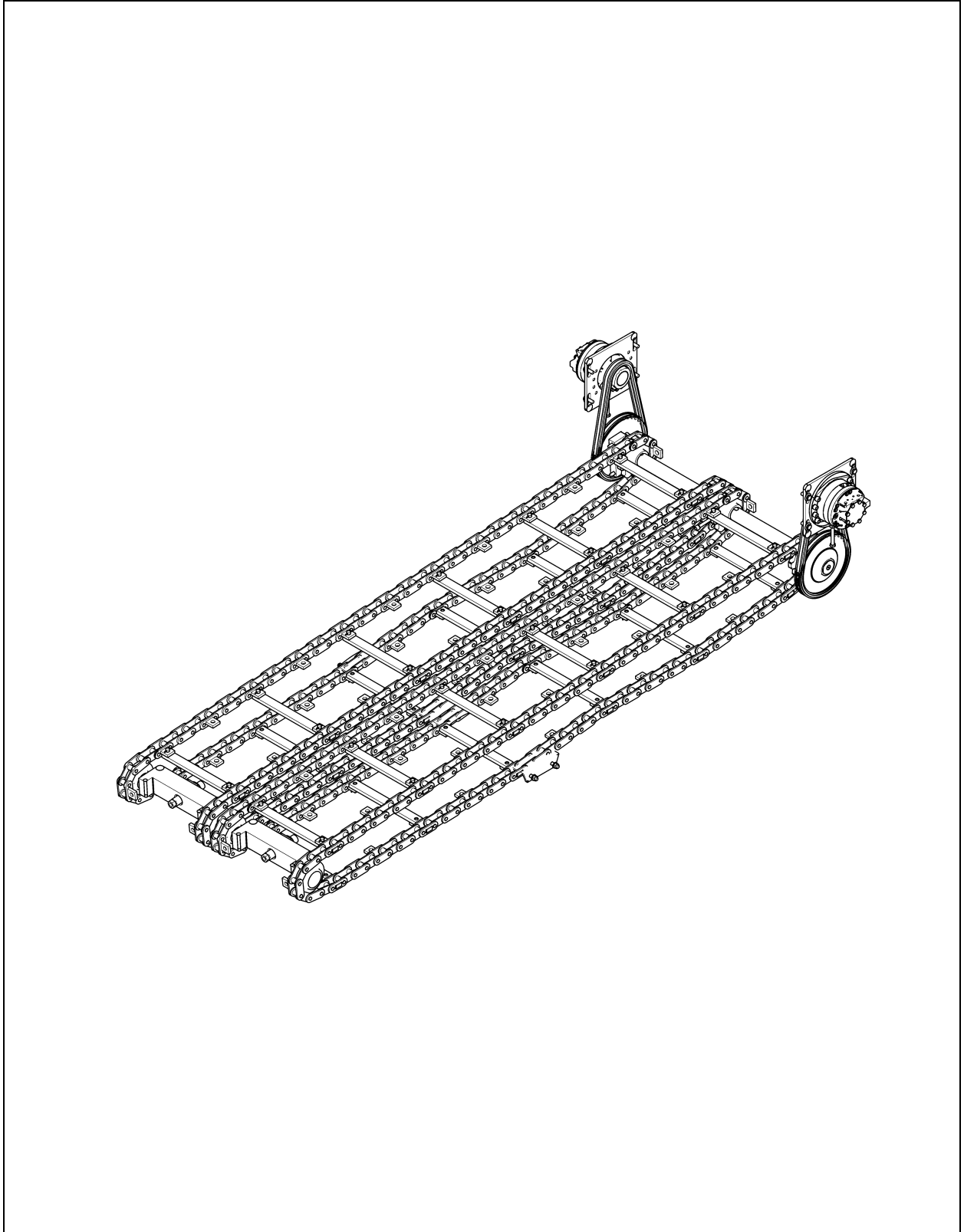




In this overview, you will find the maintenance intervals for optional machine equipment!







# F 33 Maintenance - conveyor

## 1 Maintenance - conveyor



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Do not enter the danger zone.</li> <li>- Do not reach into rotating or conveying parts.</li> <li>- Only wear close-fitting clothing.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Danger from heavy loads</b>
	<p>Lowering vehicle parts may cause injuries!</p> <ul style="list-style-type: none"> <li>- When the vehicle is parked and during maintenance and transport, close both halves of the hopper and fit the corresponding hopper transport safeguards.</li> <li>- When the vehicle is parked and during maintenance and transport, raise the screen and fit the corresponding screed transport safeguards.</li> <li>- Ensure that opened hoods and covering parts are locked properly.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Only perform maintenance and repair work after the vehicle has cooled down.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

## 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years If necessary		
1	■							- Conveyor chain - Check tightness	
							■	- Conveyor chain - Adjust tension	
							■	- Conveyor chain - Replace chain	
2			■					- Conveyor drive - drive chains - Check chain tightness	
							■	- Conveyor drive - drive chains - Adjust chain tightness	
3							■	- Replace conveyor deflectors / conveyor plates	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Points of maintenance

### Chain tension, conveyor (1)

#### Check chain tension:

When correctly tensioned, the conveyor chain hangs approx. 40 mm below the crossbeam of the front axle.



The conveyor chains should not be too tight or too slack. An excessively taut chain can cause the chain to be stopped or to break when material falls into the space between the chain and the sprocket.

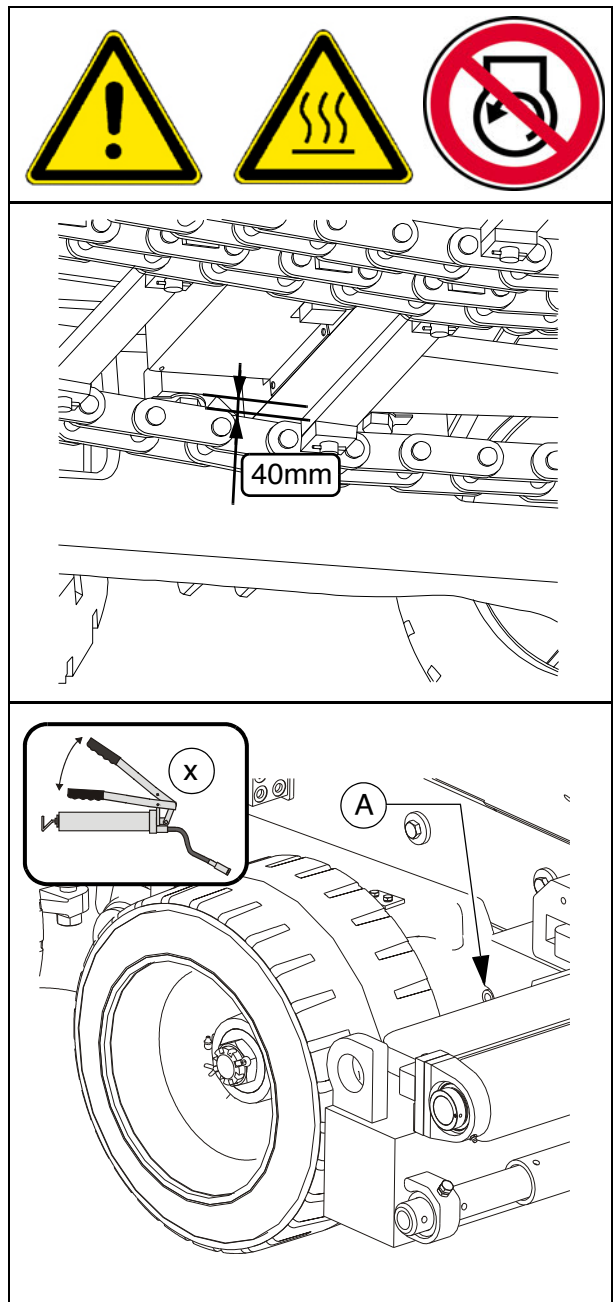
An excessively slack chain may catch on protruding objects and be destroyed.

#### Adjustment of chain tension:



The chain tension is adjusted with grease tensioners. The filling connections (A) are located behind the bumper on the left and right sides.

- Add grease with a grease gun until the correct chain tension is set.



### Check / replace chain:



At the latest, the conveyor chains (A) must be replaced when their elongation has progressed so far that they can no longer be re-tensioned.

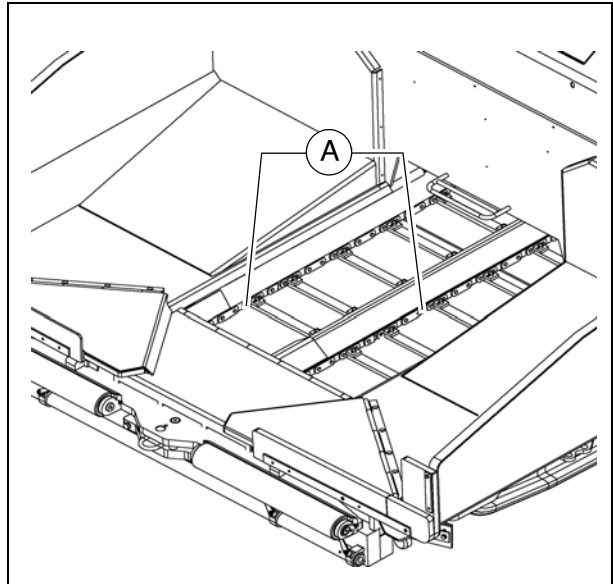


Chain links must not be removed to shorten the chain!  
Incorrectly dividing the chains would lead to the destruction of the drive wheels!



If components have to be replaced as a result of wear, the following components should always be replaced in sets:

- Conveyor chain
- Conveyor deflectors
- Conveyor plates
- Deflector plates
- Conveyor chain reversing rollers
- Conveyor drive chain sprockets



Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

## Conveyor drive - drive chains (2)

To check the chain tension:



At the chain protection is a scale (A) which indicates the dip of the chain.

- Move the chain in the long hole of the chain protection:

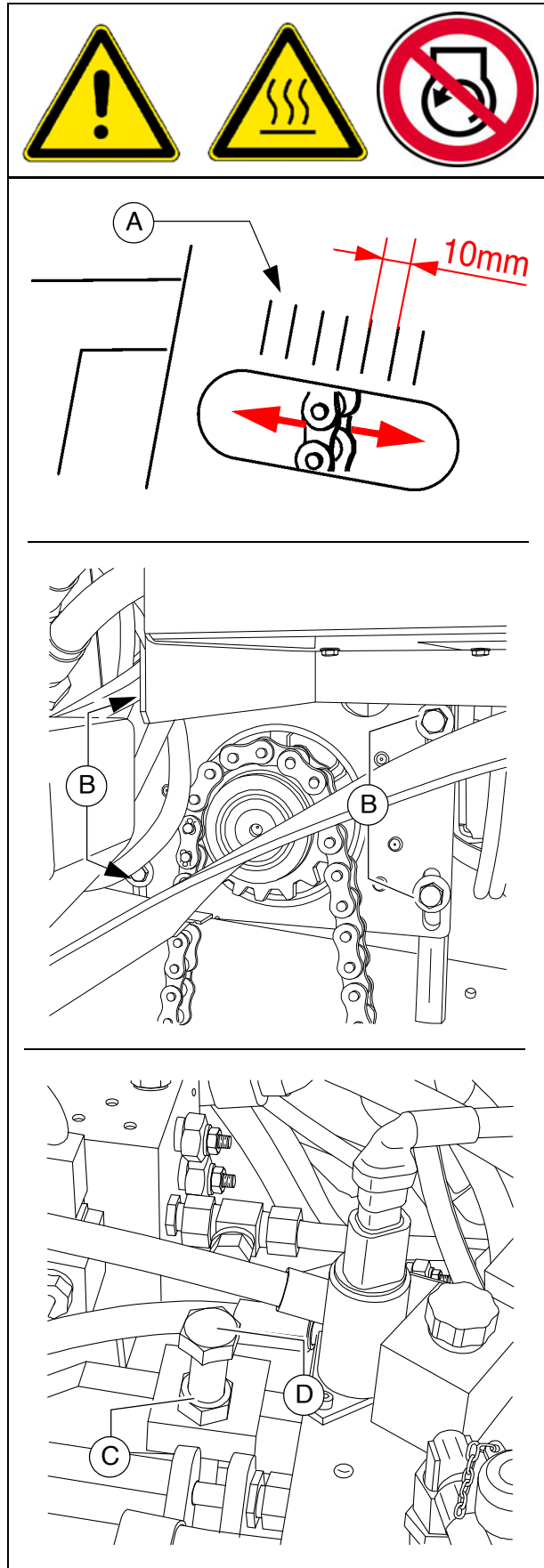
If the tension has been set properly, the chain must be able to move freely approx. 10 - 15 mm.

To **re-tension** the chains

- Unfasten mounting screws (B) and lock nut (C) slightly.
- Use the tensioning screw (D) to set the required chain tightness.
- Retighten mounting screws (B) and lock nuts (C) correctly.



The tensioning screws are accessed through the bottom plates of the operating platform.



### Conveyor deflectors / conveyor plates (3)



At the latest, the conveyor deflectors (A) must be replaced when their lower edges are worn or reveal holes.

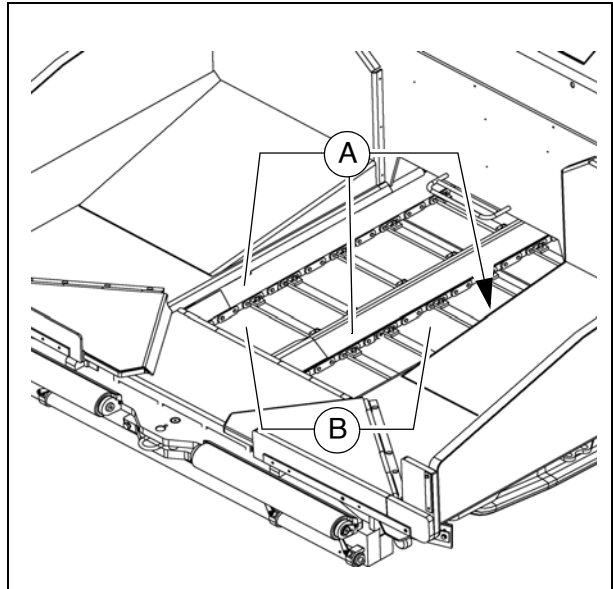


The conveyor chain is not offered protection by worn conveyor deflectors!

- Remove conveyor deflector bolts.
- Remove the conveyor deflectors from the material tunnel.
- Install new conveyor deflectors with new bolts.



At the latest, the conveyor plates (B) must be replaced when the wear limit of 5 mm in the rear area beneath the chain has been reached.



If components have to be replaced as a result of wear, the following components should always be replaced in sets:

- Conveyor chain
- Conveyor deflectors
- Conveyor plates
- Deflector plates
- Conveyor chain reversing rollers
- Conveyor drive chain sprockets

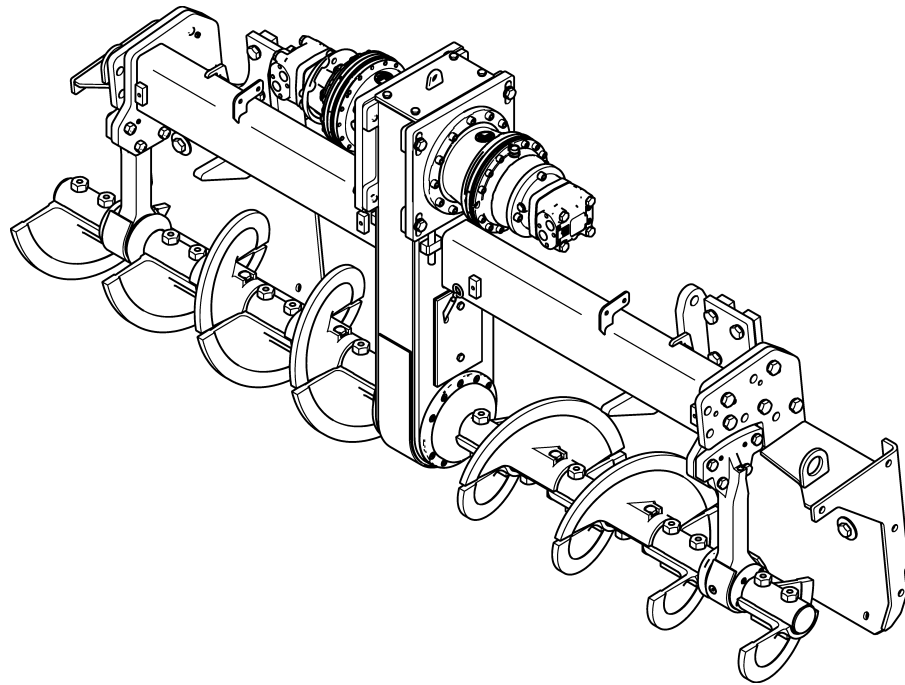




Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!





# F 40 Maintenance - auger assembly

## 1 Maintenance - auger assembly



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"><li>- Do not enter the danger zone.</li><li>- Do not reach into rotating or conveying parts.</li><li>- Only wear close-fitting clothing.</li><li>- Comply with the warning and information signs on the vehicle.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

## 1.1 Maintenance intervals

Item	Interval								Maintenance point	Note	
	10	50	100	250	500	1000 / annually	2000 / every 2 years	5000			If necessary
1	■									- Outer auger bearing - Lubricate	
2						■				- Auger planetary gear - Check oil level	
									■	- Auger planetary gear - Top up oil	
				▼			■			- Auger planetary gear - Change oil	
3			■							- Auger drive chains - Check tension	
									■	- Auger drive chains - Adjust tension	
4				■						- Auger box - Check oil level	
									■	- Auger box - Top up oil	
						■				- Auger box - Change oil	
5								■		- Seals and sealing rings - Check wear	
									■	- Seals and sealing rings - Replace seals	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually 2000 / every 2 years	5000 If necessary		
6				▼				- Gearbox bolts - Check tightening	
							■	- Gearbox bolts - Tighten to correct torque	
7		▼						- Outer bearing bolts - Check tightening	
							■	- Outer bearing bolts - Tighten to correct torque	
8			■					- Auger blade - Check wear	
							■	- Auger blade - Replace auger blade	

Maintenance	■
Maintenance during the running-in period	▼


## 1.2 Points of maintenance


### Outer auger bearing (1)

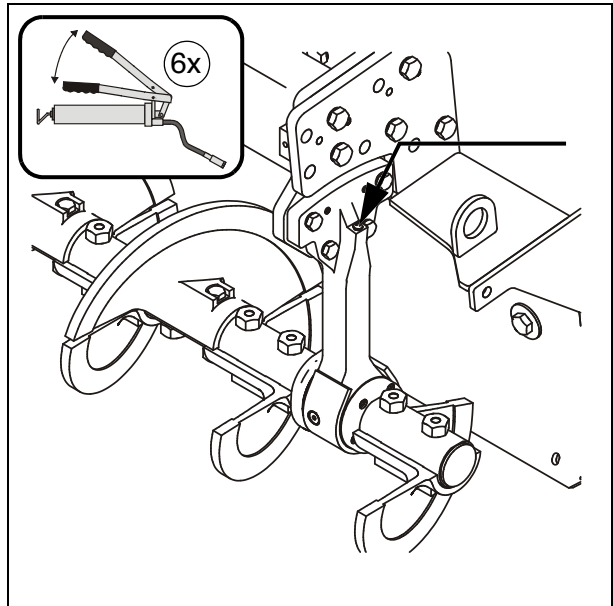
The grease nipples are located on each side at the top of the outer auger bearings.



These nipples must be lubricated at the end of work to force out any bitumen residues which may have entered and to supply the bearings with fresh grease when warm.

 If the auger is extended, the outer rings should be loosened slightly when initially greasing the outer bearing points in order to improve ventilation on greasing. The outer rings must be properly secured again after greasing.

 New bearings must be filled with 6 strokes of grease using a grease gun.



## Auger planetary gear (2)

- For **oil level check** unscrew and remove the inspection bolt (A).



When oil level is correct, the oil comes up to the lower edge of the inspection bore or a small amount of oil escapes through the aperture.

For **filling in** the oil:

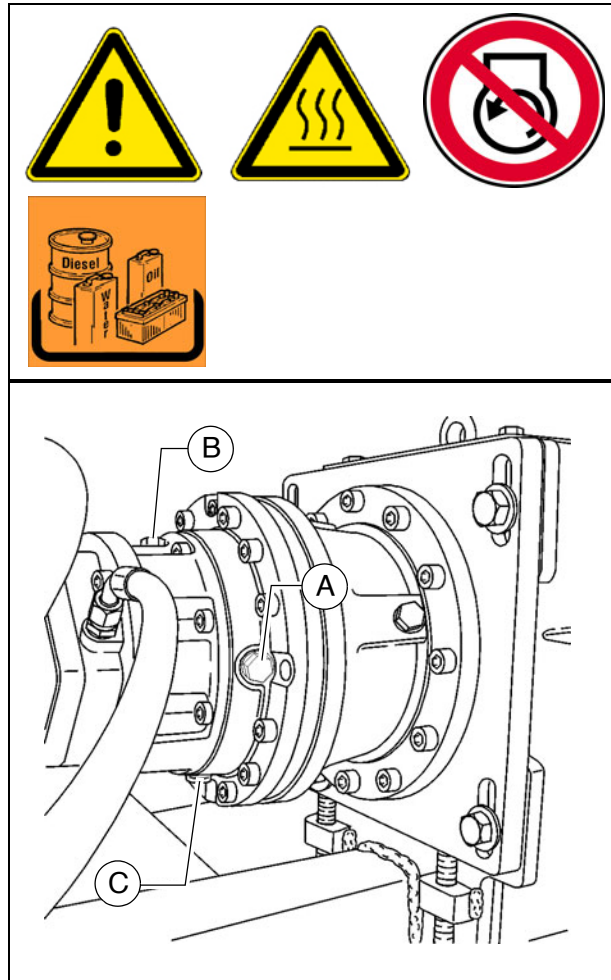
- Unscrew inspection screw (A) and filler screw (B).
- Fill in the specified oil into the filler bore at (B) until the oil level has reached the lower edge of the inspection bore (A).
- Screw the filler (B) and inspection screws (A) back in.

To **change** oil:



The oil should be changed when at operating temperature.

- Unscrew the filler screw (B) and drain plug (C).
- Drain the oil.
- Screw the drain plug (C) back in.
- Unscrew the inspection screw (A).
- Fill the specified oil into the filler bore at (B) until the oil level has reached the lower edge of the inspection bore (A).
- Screw the filler (B) and inspection screws (A) back in.



## Drive chains of the augers (3)

To check the chain tension:

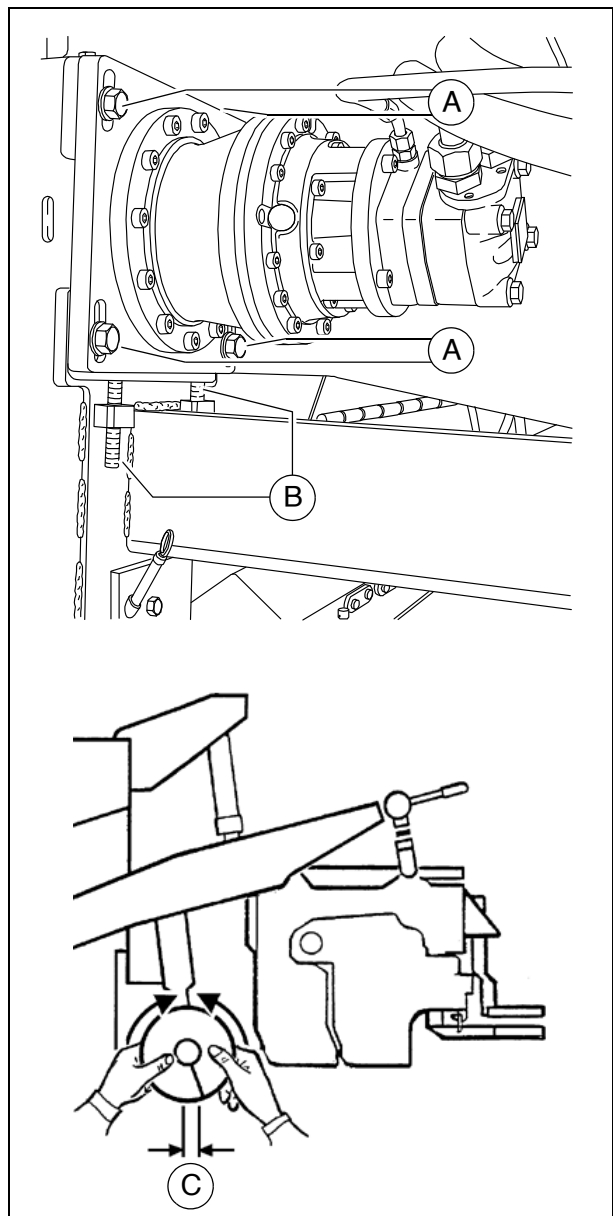
- Manually turn both augers to the right and left. In this case, movement clearance (C) at the augers' outer circumference should be 10 mm.



Risk of injury due to sharp-edged parts!

To **re-tension** the chains

- Release the mounting screws (A).
- Set the chain tension correctly using the threaded pins (B):
  - Tighten the threaded pins to 20 Nm using a torque wrench.
  - Subsequently loosen the threaded pins again by one full revolution.
- Retighten the bolts (A).



## Auger box (4)

### Check oil level



In case of correct oil level, the oil is between the two notches of the dipstick (A).

For **filling in** the oil:

- Unscrew screws (B) from the top cover of the auger box.
- Take off the cover (C).
- Fill up oil to correct level.
- Reinstall the cover.
- Use dipstick to check level again.

### Change oil



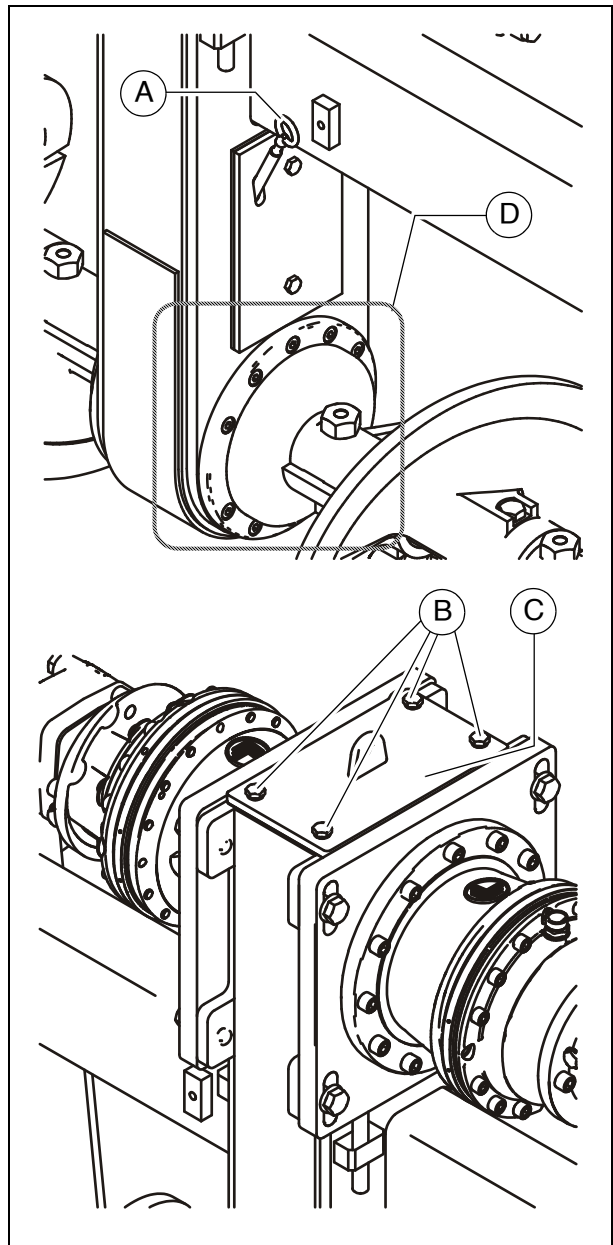
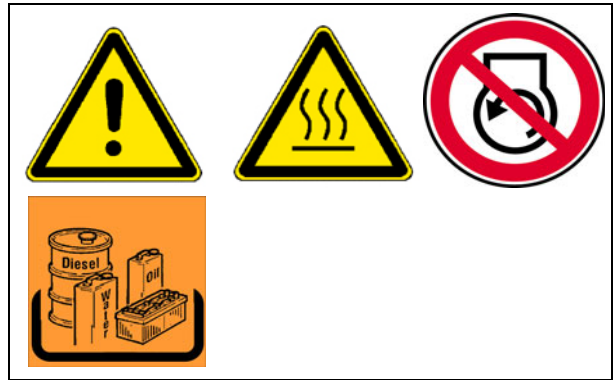
The oil should be changed when at operating temperature.

- Place a suitable collecting container under the auger box.
- Loosen bolts (D) from the circumference of the worm shaft flange.



The oil runs out between the flange and auger box.

- Drain out all oil.
- Correctly retighten flange bolts (D) diagonally.
- Pour the specified oil in through the open top cover (C) of the auger box until the oil level has reached the correct level on the dipstick (A).
- Correctly reinstall the cover (C) and screws (B).



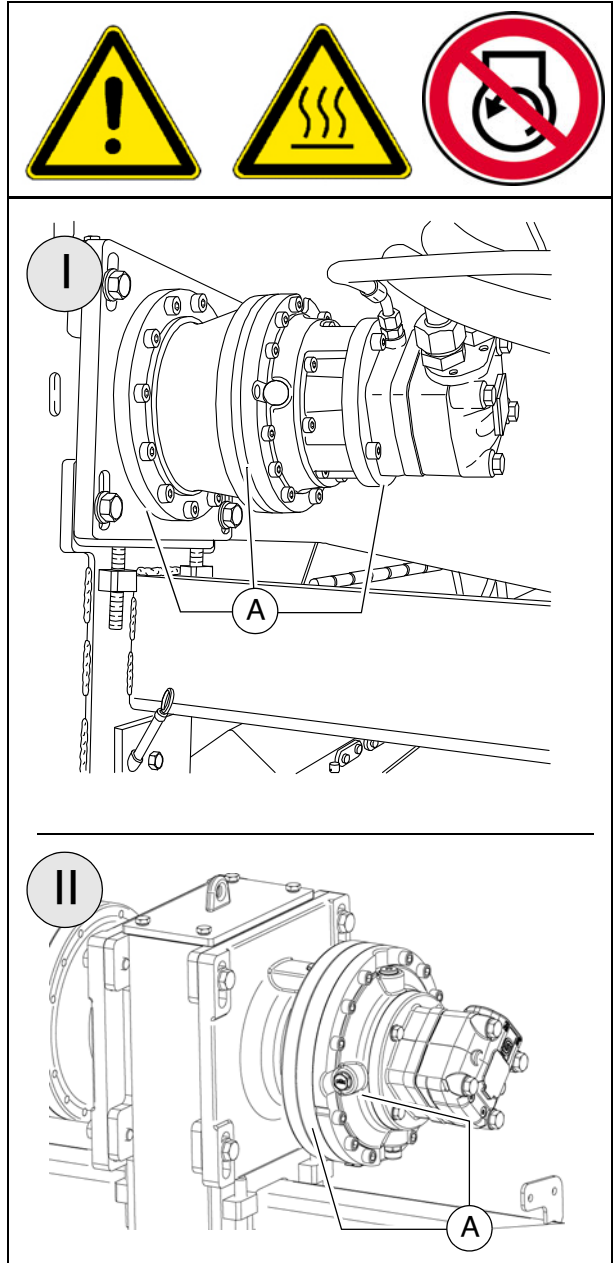
## Seals and sealing rings (5)



After reaching operating temperature, check the gearbox for leaks.



In case of visible leaks, e.g. between the flange surfaces (A) of the gearbox, replacement of the seals and sealing rings is necessary.



## Gearbox bolts Check tightening (6)



Following the running-in period, the tightening torques of the outer gearbox bolts must be checked.

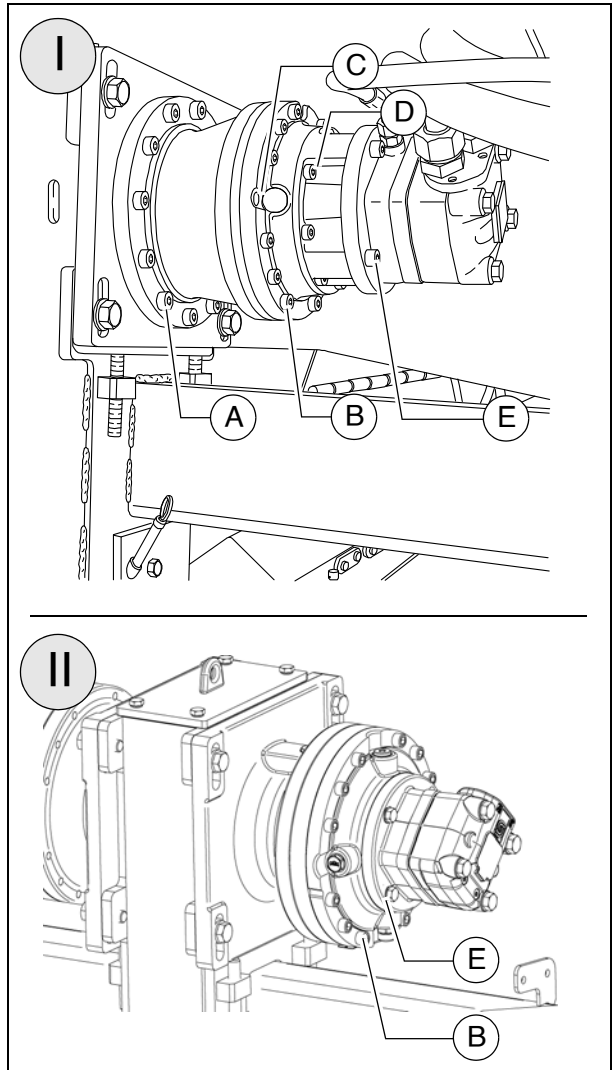


Please check which gear version is used in your vehicle.

- Tighten to the following torques if necessary:
  - (A): 86 Nm
  - (B): 83 Nm
  - (C): 49 Nm
  - (D): 49 Nm
  - (E): 86 Nm



Check that each bolt has attained the full tightening torque and note the corresponding tightening pattern whilst doing so!



**Mounting screws -  
Outer auger bearing  
Check tightening (7)**

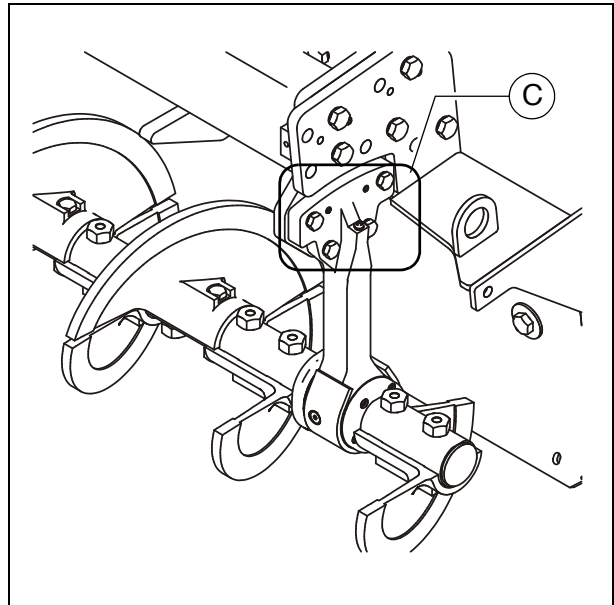


Following the running-in period, the tightening torques of the outer auger bearing mounting screws must be checked.

- Tighten to the following torques if necessary:
  - (F): 210 Nm



If the auger's working width is changed, the tightening check must be repeated after the running-in period!



## Auger blade (8)



If the surface of the auger blade (A) becomes sharp-edged, the diameter of the auger is reduced and the blades (B) have to be replaced.



- Remove the bolts (C), washers (D), nuts (E) and auger blade (B).

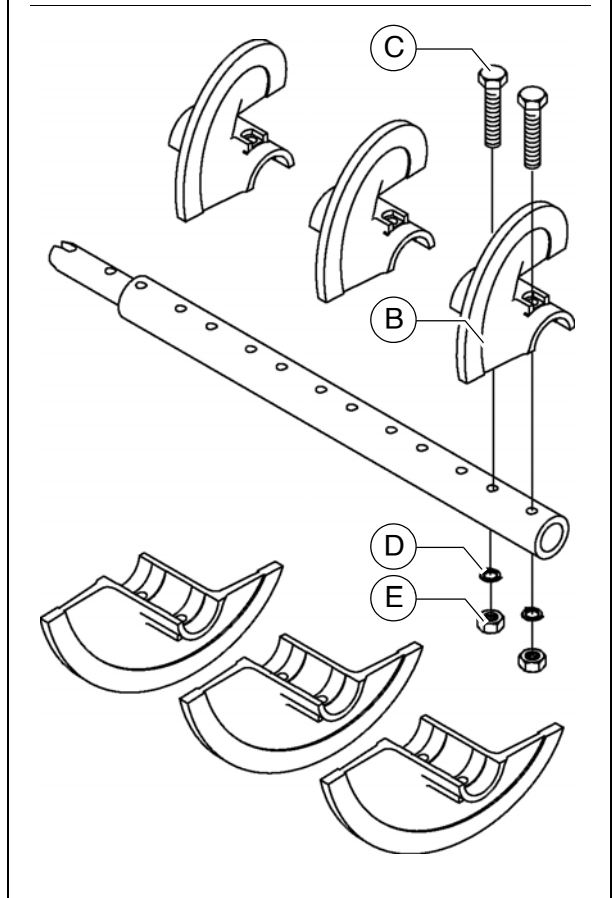
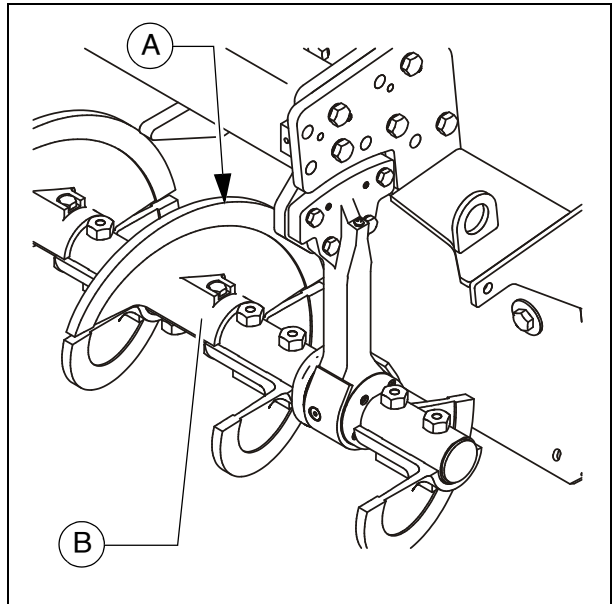


Risk of injury due to sharp-edged parts!



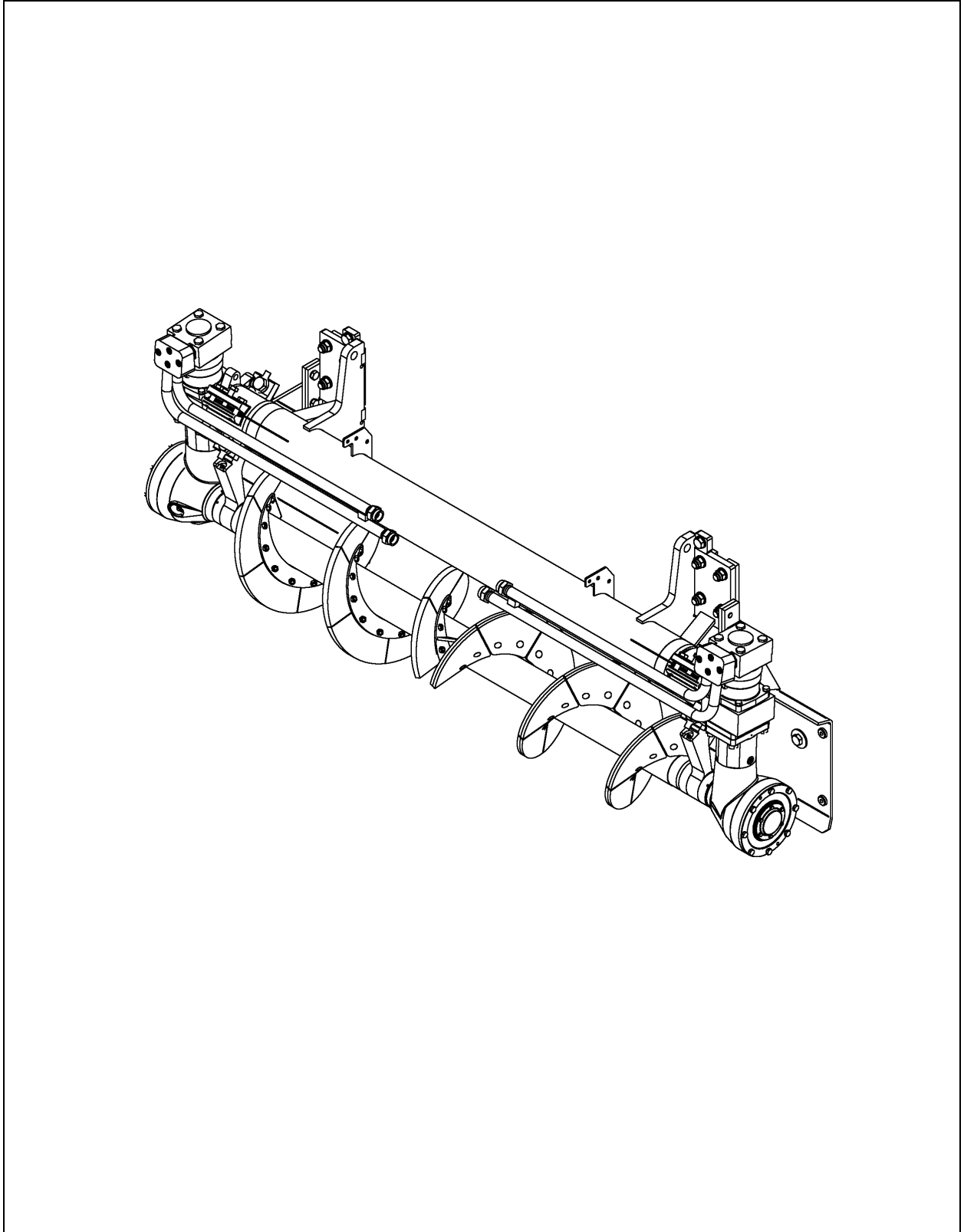
Auger blades must be installed play-free; the contact surfaces must be dirt-free!



- Install the new auger blade (B); replace the bolts (C), washers (D) and nuts (E) if necessary.





# F 41 Maintenance - auger assembly

## 1 Maintenance - auger assembly - external drive version



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"><li>- Do not enter the danger zone.</li><li>- Do not reach into rotating or conveying parts.</li><li>- Only wear close-fitting clothing.</li><li>- Comply with the warning and information signs on the vehicle.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

## 1.1 Maintenance intervals

Item	Interval								Maintenance point	Note	
	10	50	100	250	500	1000 / annually	2000 / every 2 years	5000			If necessary
1	■									- Outer auger bearing - Lubricate	
2				■						- Auger centre bearing - Lubricate	
3						■				- Auger gear neck bearing - Lubricate	
4		■								- Auger bevel gear - Check oil level	
									■	- Auger bevel gear - Top up oil	
						■				- Auger bevel gear - Change oil	
5			■							- Auger blade - Check wear	
									■	- Auger blade - Replace auger blade	


Maintenance	■
Maintenance during the running-in period	▼


## 1.2 Points of maintenance

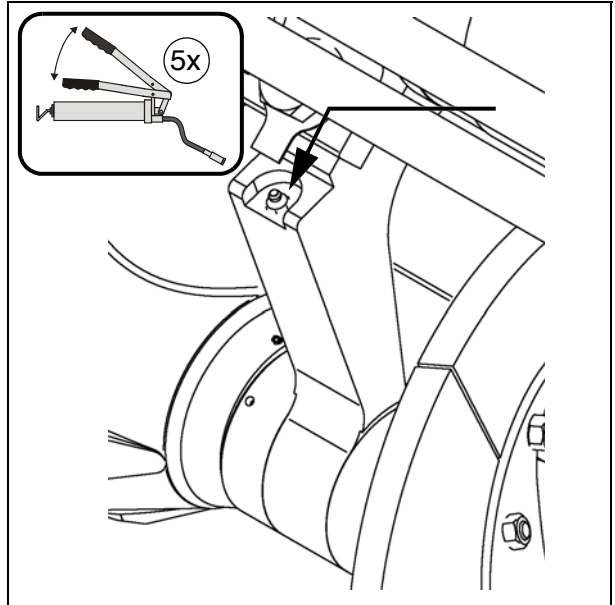
### Outer auger bearing (1)

The grease nipples are located on each side at the top of the outer auger bearings. These nipples must be lubricated each time work is finished.



 Lubricate the outer auger bearing while they are warm to force out any bitumen residues.

 Manual lubrication no longer applies when equipped with the optional central lubrication system.

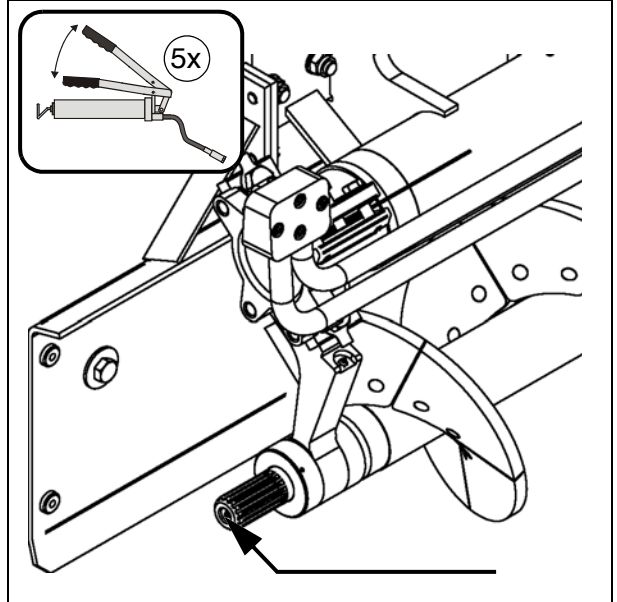


## Centre auger bearing (2)

The centre bearing (A) must be lubricated on the left-hand side of the auger. To do so, the bevel gear unit must be pulled off.



The centre bearing must be lubricated when in a warm state to force out any bitumen residues.

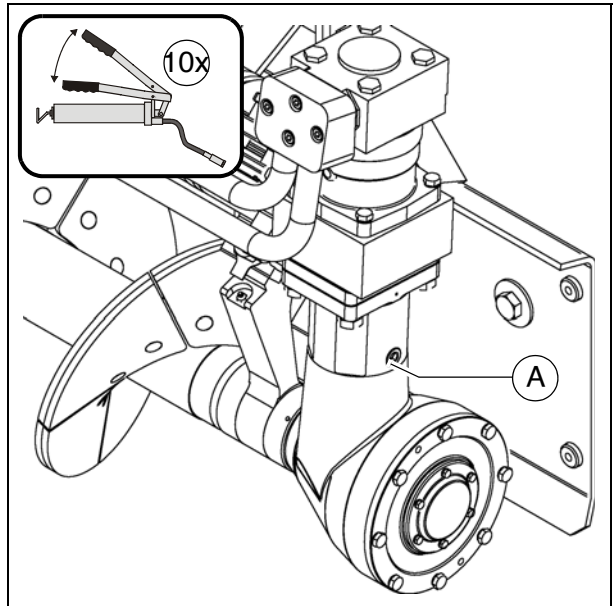


### Auger, gear neck bearing (3)

Remove the socket head cap screw plug (A) on the gear neck and replace the screw located underneath with an M10x1 grease nipple. Using a grease gun, inject 10 strokes into it.



Remove the grease nipple and screw both screws back in.  
The gear bearing is sealed underneath and lubricated only with grease.

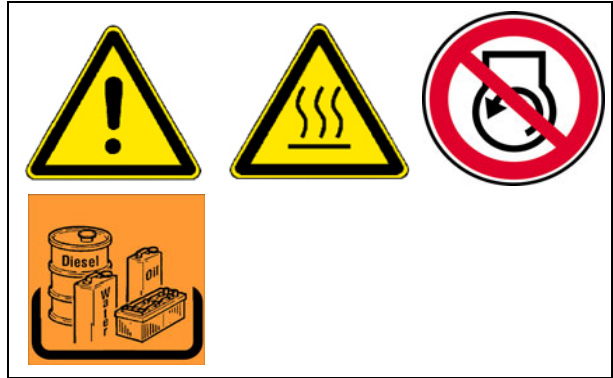


### Auger bevel gear (left/ right) (4)

- For **oil level check** unscrew and remove the inspection bolt/filler screw (A).



When oil level is correct, the oil comes up to the lower edge of the inspection bore or a small amount of oil escapes through the aperture.



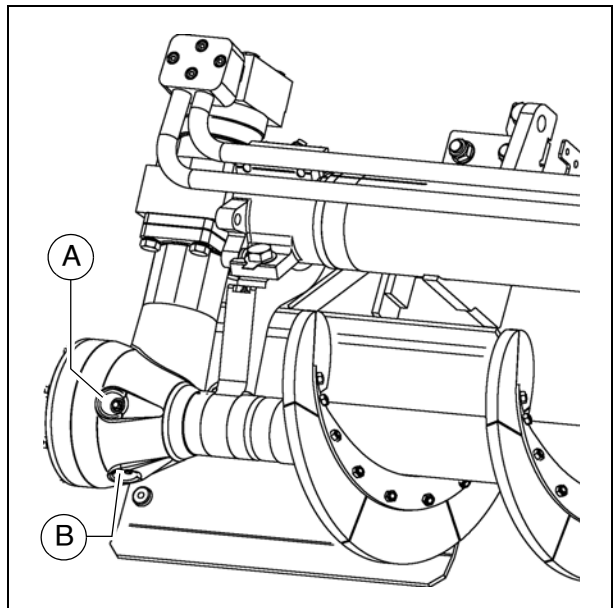
### For **filling in** the oil:

- Unscrew the inspection bolt/filler screw (A).
- Fill the specified oil into the filler and inspection bore (A) until the oil level has reached the lower edge of the bore (A).
- Screw the inspection bolt/filler screw (A) back in.

### To **change** oil:



The oil should be changed when at operating temperature.



- Unscrew and remove the inspection bolt/filler screw (A) and drain plug (B).
- Drain the oil.
- Tighten the drain plug (B) back in.
- Pour the specified oil into the filler and inspection bore (A) until the oil level has reached the lower edge of the bore (A).
- Screw the inspection bolt/filler screw (A) back in.



Make sure to clean the screw and the vicinity of the drain bore!

### Auger blade (5)



If the surface of the auger blade (A) becomes sharp-edged, the diameter of the auger is reduced and the blades have to be replaced.



- Dismantle nuts (B) and bolt (C) and remove the worn auger blade.

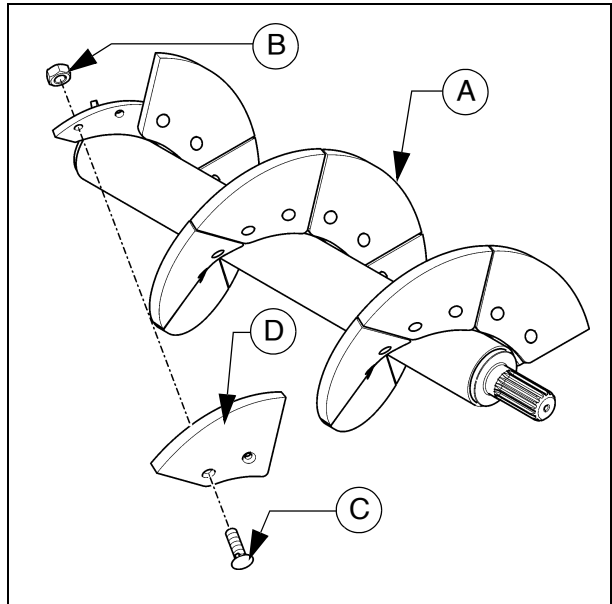


Risk of injury due to sharp-edged parts!



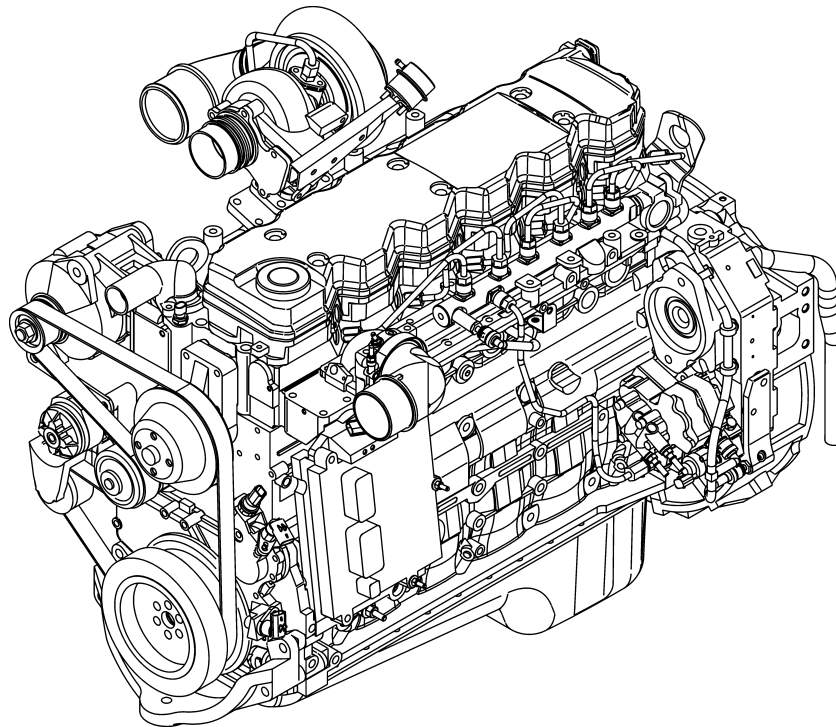
Auger blades must be installed play-free; the contact surfaces must be dirt-free!

- Install the new auger blade (D); replace the bolts (C) and nuts (B).







# F 51 Maintenance - engine assembly Tier 3 (○)

## 1 Maintenance - engine assembly



In addition to these maintenance instructions, the maintenance instructions issued by the engine manufacturer must be adhered to under all circumstances. All maintenance work and service intervals itemised here are binding in nature.

 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"><li>- Do not enter the danger zone.</li><li>- Do not reach into rotating or conveying parts.</li><li>- Only wear close-fitting clothing.</li><li>- Comply with the warning and information signs on the vehicle.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

## 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years If necessary		
1	■							- Fuel tank Check filling level	
							■	- Fuel tank Refill with fuel	
							■	- Fuel tank Clean the tank and system	
2	■							- Engine lube oil system Check oil level	
							■	- Engine lube oil system Top up oil	
					■			- Engine lube oil system Change oil	
					■			- Engine lube oil system Change oil filter	
3	■							- Engine fuel system Fuel filter (drain the water separator)	
					■			- Engine fuel system Replace fuel pre-filter	
					■			- Engine fuel system Replace fuel filter	
							■	- Engine fuel system Bleed fuel system	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Maintenance point	Note	
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years			If necessary
4	■								- Engine air filter Check air filter	
	■								- Engine air filter Dust collector Emptying	
						■		■	- Engine air filter Air filter cartridge Replace	
5	■								- Engine cooling system Check radiator fins	
				■				■	- Engine cooling system Clean radiator fins	
				■					- Engine cooling system Check level of the coolant	
								■	- Engine cooling system Top up coolant	
					■				- Engine cooling system Check coolant concentration	
								■	- Engine cooling system Coolant concentration Adjust	
							■		- Engine cooling system Change coolant	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Maintenance point	Note
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years If necessary		
6				■				- Engine drive belt Check drive belt	
							■	- Engine drive belt Tighten drive belt	
					■			- Engine drive belt Replace drive belt	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Points of maintenance

### Engine fuel tank (1)

- Check the **filling level** on the gauge on the operating panel.



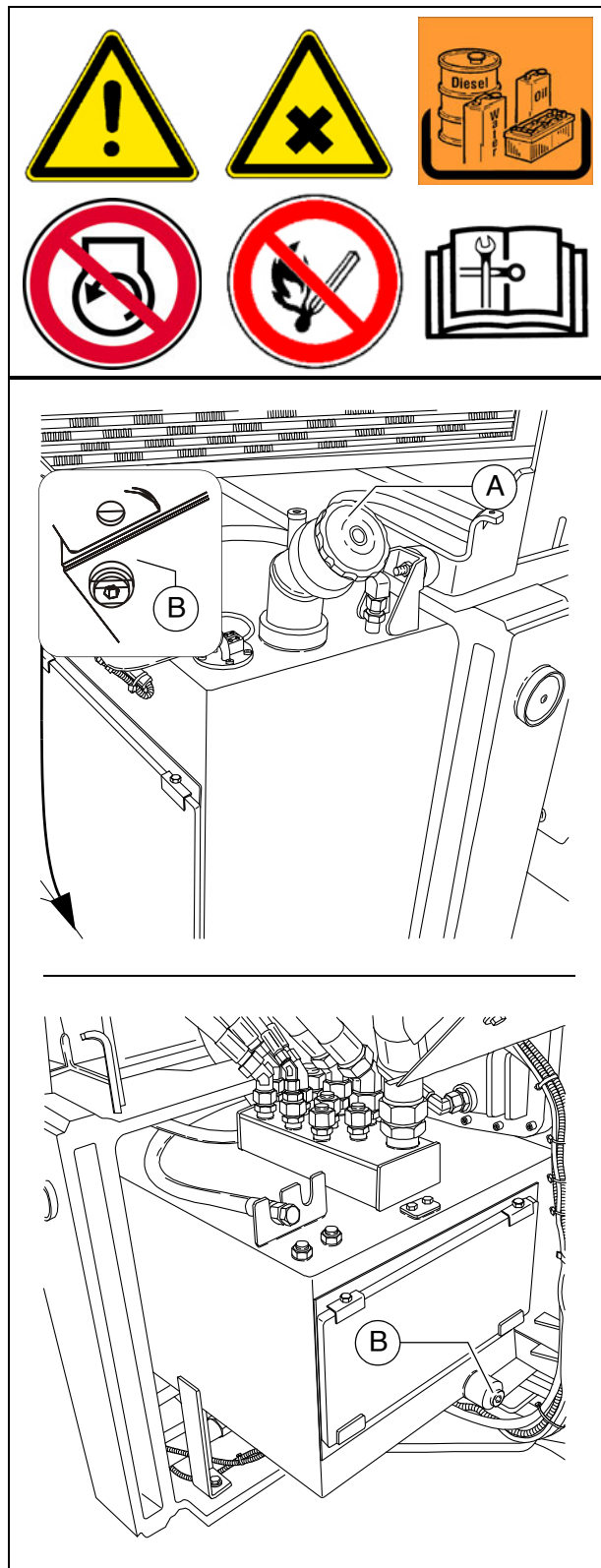
Fill the fuel tank each time before starting work so that the fuel system cannot "run dry" and time-consuming venting (bleeding) can therefore be avoided.

For **filling in** the fuel:

- Remove cap (A).
- Fill in fuel through the filling port until the required fill level is achieved.
- Replace the cap (A).

### Clean the tank and system:

- Unscrew the drain plugs (B) in both tanks and drain about 1 l fuel into a collection pan.
- When fastening the screw again after draining, make sure to use a new seal.



## Engine lube oil system (2)

### Check oil level



In case of correct oil level, the oil is between the two notches of the dipstick (A).



Only check the oil level when the finisher is in a horizontal position!



Too much oil in engine damages gas-kets; too little oil results in overheating and engine destruction.

For **filling in** the oil:

- Remove cap (B).
- Fill up oil to correct level.
- Return cap (B).
- Use dipstick to check level again.

### Oil change:

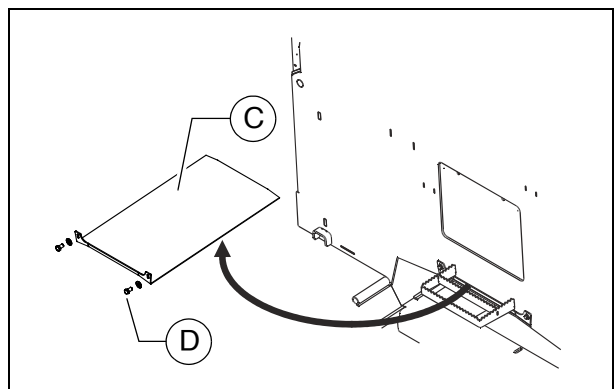
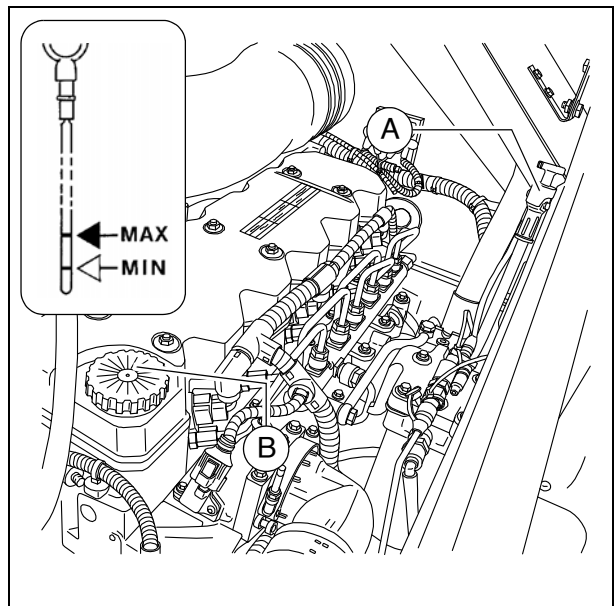
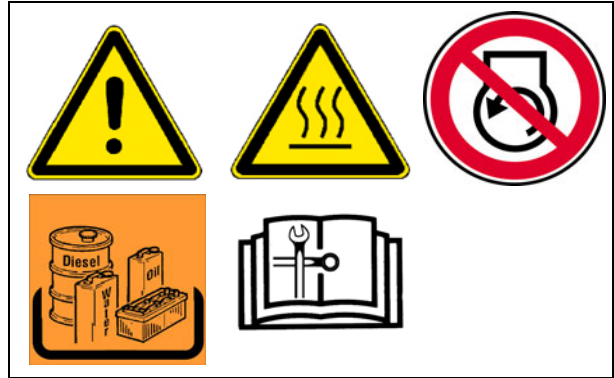


The oil drain screw is accessed via the cover (C) in the vehicle's material tunnel:

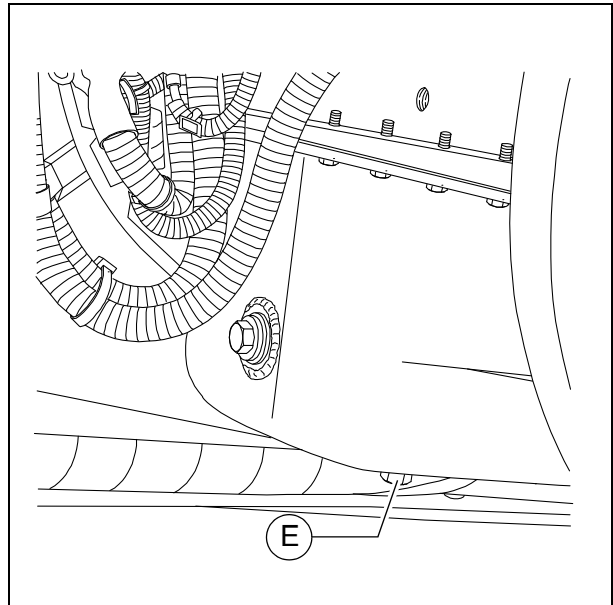
- Remove the bolts (D) from the frame and pull the cover (C) out in the direction of travel.
- After completing the maintenance work, reinstall the cover (C) properly.




Change the oil when the engine is at operating temperature

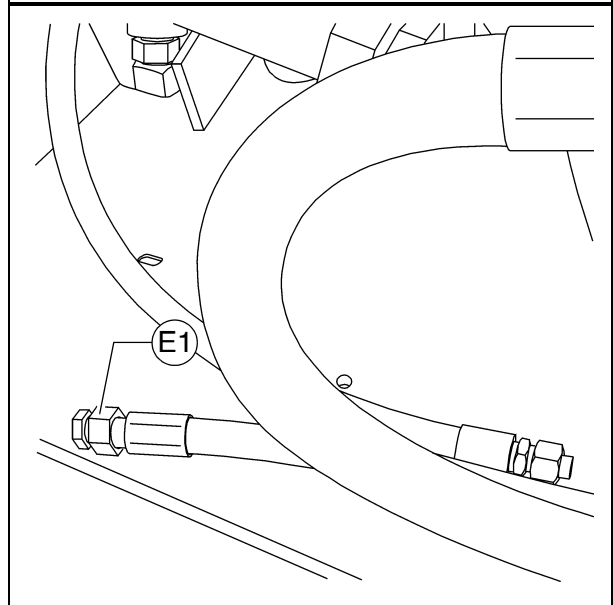


- Position a collecting container beneath the oil pan oil drain screw (E).
- Remove the oil drain screw (E) and allow the oil to drain completely.
- Reinstall the oil drain screw (E) with a new seal and tighten properly.
- Fill in the specified quality of oil through the filler opening (B) on the engine until the oil level rises to the correct mark on the dipstick (A).




 When fitted with the optional asphalt fume control system, there is a drainage hose behind the left side flap.

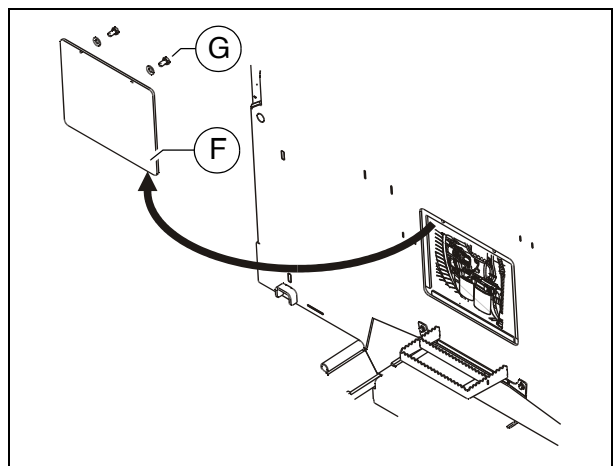
- Place the end of the oil drain port hose (E1) in the collection container.
- Remove the screw cap with a wrench and allow the oil to drain completely.
- Replace the screw cap and tighten properly.
- Refill with oil as described above.



### 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.



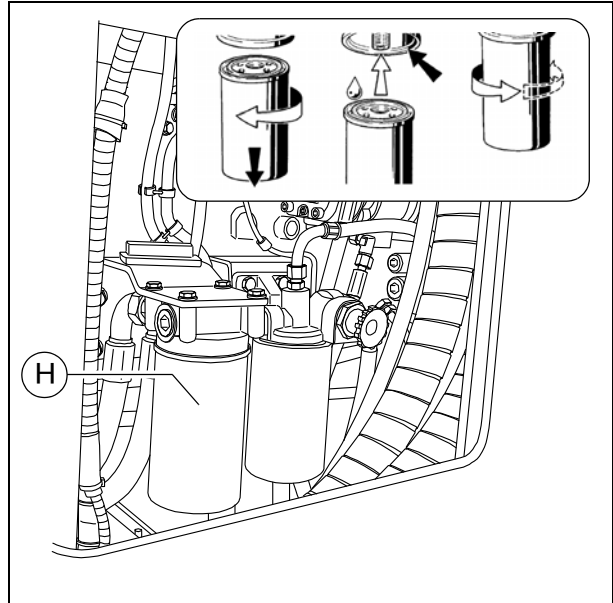


The new filter is inserted during an oil change once the used oil has been drained out.

- Loosen the filter (H) with a filter wrench or filter strap and unscrew it. Clean the contact surface.
- Apply light coating of oil to the gasket on the new filter and fill filter with oil before installing it.
- Tighten filter by hand.



After installing the oil filter, attention must be paid to the oil pressure display and good sealing during the test run. Check oil level again.



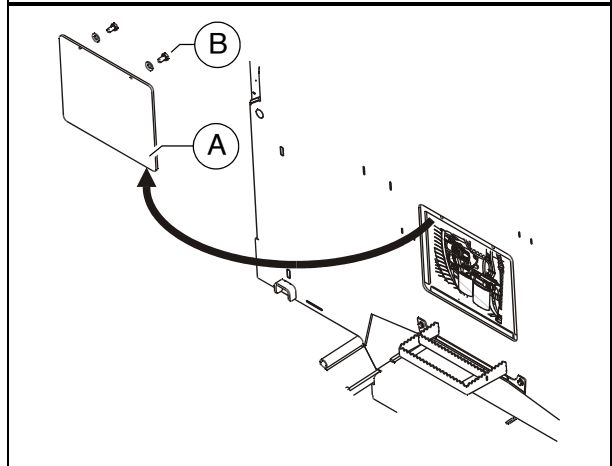
### Engine fuel system (3)



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



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



The fuel filter system consists of two filters:

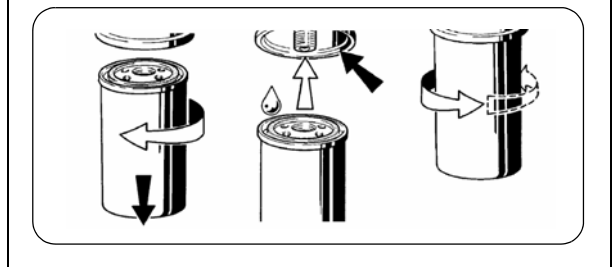
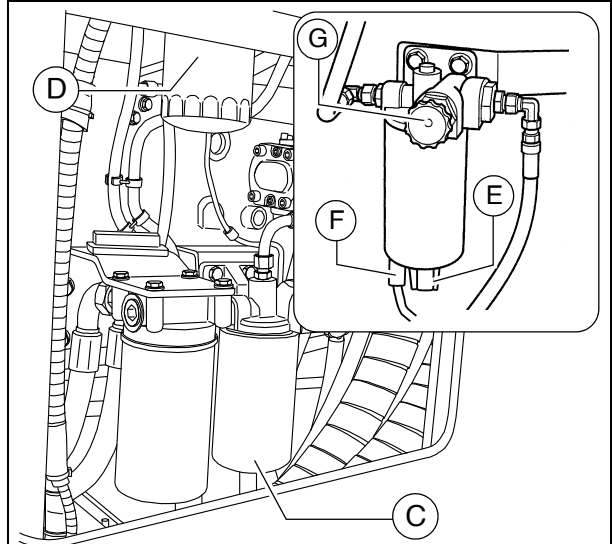
- Prefilter with water separator (C)
- Main filter (D)

#### Prefilter - draining of water



Drain the collecting vessel at regular intervals, or in response to an error message from the engine control unit.

- Drain off separated water at the cock (E) and collect, then close the cock again.



---

### Changing the prefilter:

- Drain off separated water at the cock (E) and collect, then close the cock again.
- Pull off the water sensor (F) connector.
- Loosen the filter cartridge (C) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Oil in filter cartridge gasket (only use a little oil) and screw (hand tight) under the bracket.
- Reconnect the water sensor (F) connector.

### Bleeding the pre-filter:

- Release the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning counter-clockwise.
- The pump plunger is now pressed out via the spring.
- Pump until a very high resistance is perceptible and pumping can only be carried out very slowly.
- Now continue pumping a few more times. (The return line must be filled).
- Start the engine and operate for approx. 5 minutes at idle speed or low load.
- Check the prefilter for leaks whilst doing this.
- Lock the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning clockwise.

### Replacing the main filter:

- Loosen the filter cartridge (D) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Oil in filter cartridge gasket (only use a little oil) and screw (hand tight) under the bracket.



After fitting the filter, ensure good sealing action during the test run.

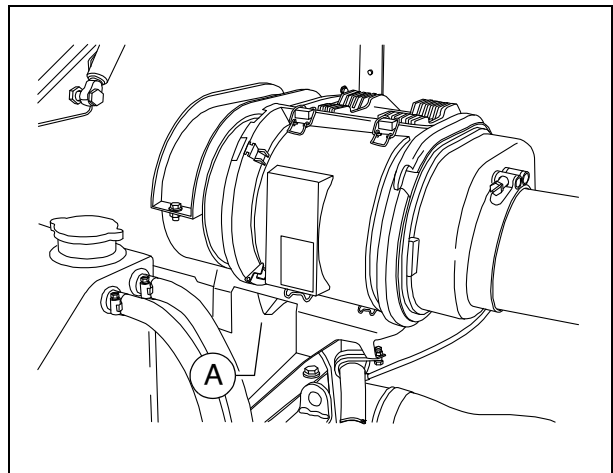
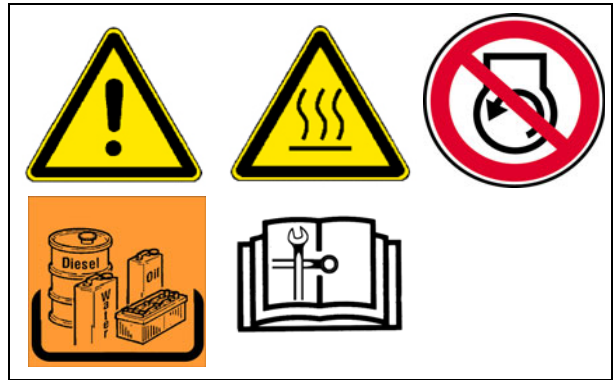
## Engine air filter (4)

### Empty dust collector

- Empty the dust removal valve (A) on the air filter housing by compressing the discharge slot.
- Remove any dust deflectors by pressing together the upper valve section.



Clean the dust removal valve from time to time.



## Replace air filter insert

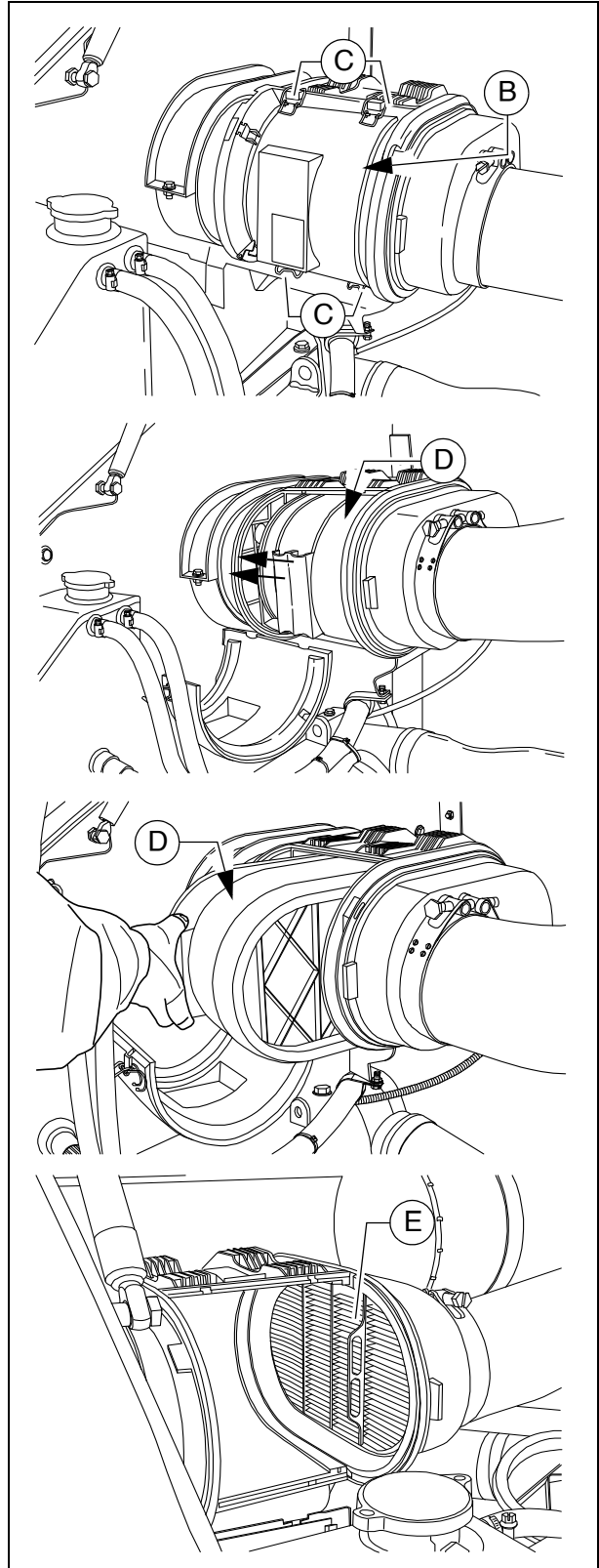


Maintenance of the filter becomes necessary if:

- Engine electronics service indicator
- Open the air filter housing (B) at the clips (C).
- Move filter element (D) to the side a little and then pull it out of the housing.
- Pull out the safety element (E) and check for signs of damage.



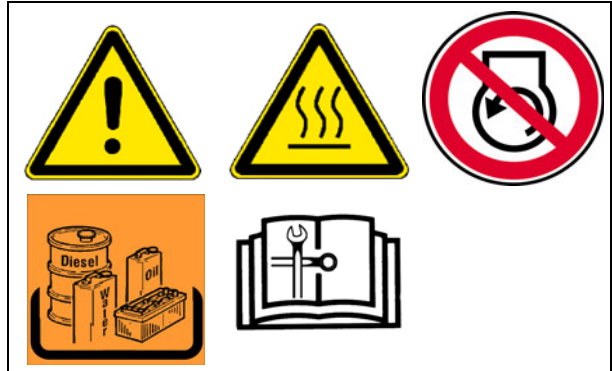
Replace the safety element (E) after the filter has been serviced 3 times, but after 2 years at the latest (never clean it!).



## Engine cooling system (5)

### Checking / topping up coolant

The cooling water level must be checked when the system is cold. Make sure that the anti-freeze and anti-corrosive liquid is sufficient (-25°C).



When hot, the system is under pressure. When it is opened, there is danger of scalding!

- If necessary fill in a sufficient amount of coolant through the open port (A) of the compensating tank.

### Change coolant



When hot, the system is under pressure. When it is opened, there is danger of scalding!



Use only approved coolants!



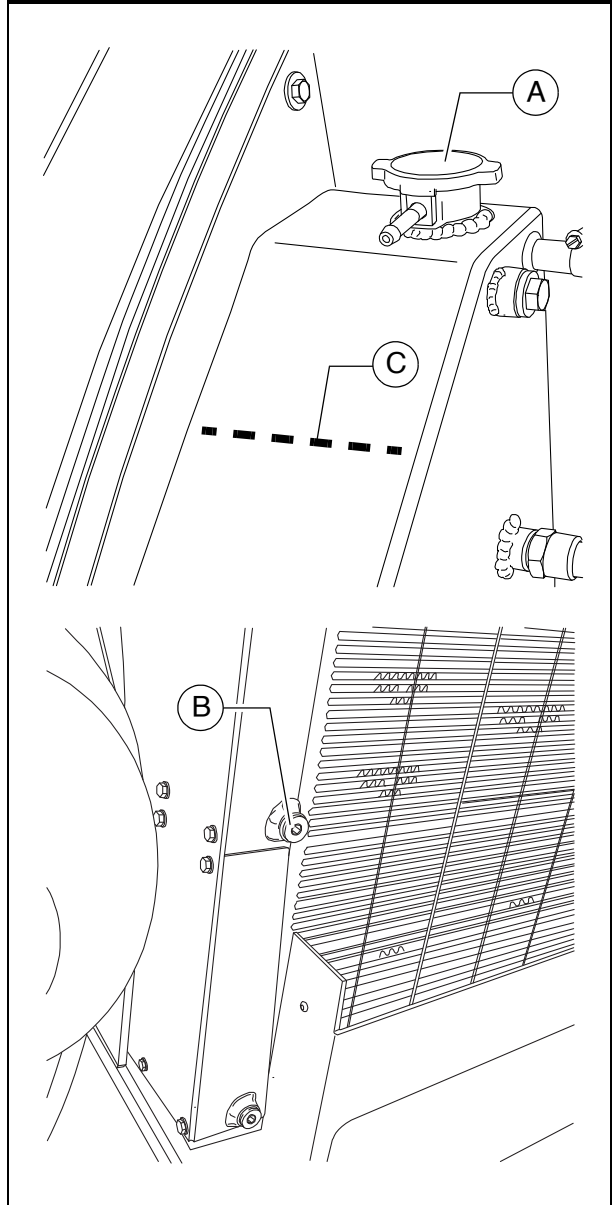
Observe the instructions in the chapter entitled "Operating substances"!

- Remove the drain screw (B) on the radiator and let the coolant drain completely.
- Reinstall the drain screw (B) and tighten properly.
- Fill in coolant through the filling opening (A) on the compensation tank up to approx. 7 cm (C) from the top edge of the compensation tank.



The air is only able to escape completely from the cooling system once the engine has reached its operating temperature (at least 90°C).

Check the fluid level again, top up if necessary.



### **Checking and cleaning the radiator fins**

- If necessary, remove leaves, dust or sand from the radiator.



Observe engine's operating instructions!

### **Checking coolant concentration**

- Check the concentration using a suitable tester (hydrometer).
- Adjust the concentration if necessary.



Observe engine's operating instructions!

## Engine drive belt (6)

### Check drive belts

- Check the drive belt for damage.



Small transverse cracks in the belt are acceptable.



In the event of longitudinal cracks which intersect with transverse cracks and damaged material surfaces, belt replacement is necessary.

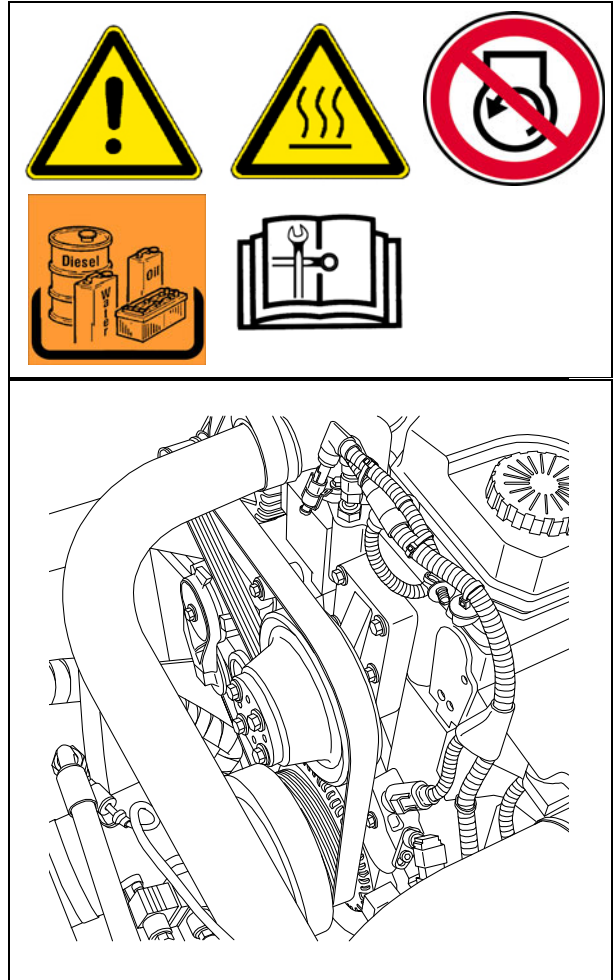


Observe engine's operating instructions!

### Replace drive belt

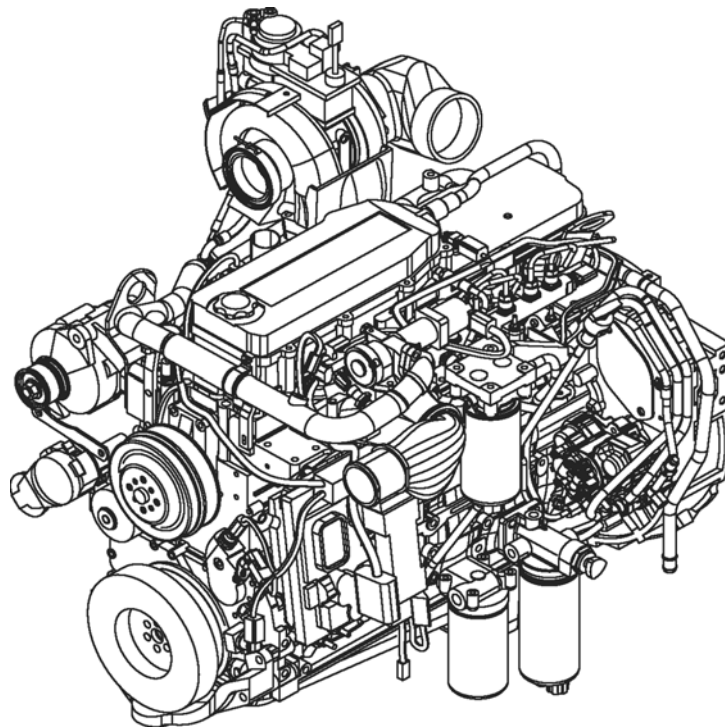


Observe engine's operating instructions!







# F 55 Maintenance - engine assembly Tier 4F (○)

## 1 Maintenance - engine assembly



As well as this maintenance manual, always also pay close attention to the maintenance manual provided by the engine manufacturer. All maintenance work and service intervals itemised here are binding in nature.

 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"><li>- Do not enter the danger zone.</li><li>- Do not reach into rotating or conveying parts.</li><li>- Only wear close-fitting clothing.</li><li>- Comply with the warning and information signs on the vehicle.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

## 1.1 Maintenance intervals

Item	Interval							Points of maintenance	Note
	10	50	100	250	500 / annually	1000 / annually	2000 / 2 years If necessary		
1	■							- Fuel tank Check filling level	
							■	- Fuel tank Refill with fuel	
							■	- Fuel tank Clean the tank and system	
2	■							- Engine lube oil system Check oil level	
							■	- Engine lube oil system Top up oil	
					■			- Engine lube oil system Change oil	
					■			- Engine lube oil system Change oil filter	
3	■							- Engine fuel system Fuel filter (drain the water separator)	
					■			- Engine fuel system Replace fuel pre-filter	
					■			- Engine fuel system Replace fuel filter	
							■	- Engine fuel system Bleed fuel system	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval								Points of maintenance	Note
	10	50	100	250	500 / annually	1000 / annually	2000 / 2 years	If necessary		
4	■								- Engine air filter Check air filter	
	■								- Engine air filter Empty dust collector	
						■		■	- Engine air filter Exchange air filter insert	
5	■								- Engine cooling system Check radiator fins	
				■				■	- Engine cooling system Clean radiator fins	
				■					- Engine cooling system Check level of the coolant	
								■	- Engine cooling system Top up coolant	
					■				- Engine cooling system Check coolant concentration	
								■	- Engine cooling system Adjust coolant concentration	
							■		- Engine cooling system Change coolant	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Points of maintenance	Note	
	10	50	250	500 / annually	1000 / annually	2000 / 2 years	4000 / every 3 years If necessary			
6	■							- AdBlue® / DEF tank Check filling level		
							■	- AdBlue® / DEF tank Top up 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 Replace filter	
							■		- Check hoses and lines for damage	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Points of maintenance	Note
	10	50	100	250	500 / annually	1000 / annually	2000 / 2 years		
7				■				- Engine drive belt Check drive belt	
							■	- Engine drive belt Tighten drive belt	
						■		- Engine drive belt Replace drive belt	
8							■	- Crankshaft ventilation filter Replace filter element	
9							■	- Exhaust system / Inspect diesel oxidation catalytic converter	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Points of maintenance

### Engine fuel tank (1)

- Check the **filling level** using the display on the operating panel.



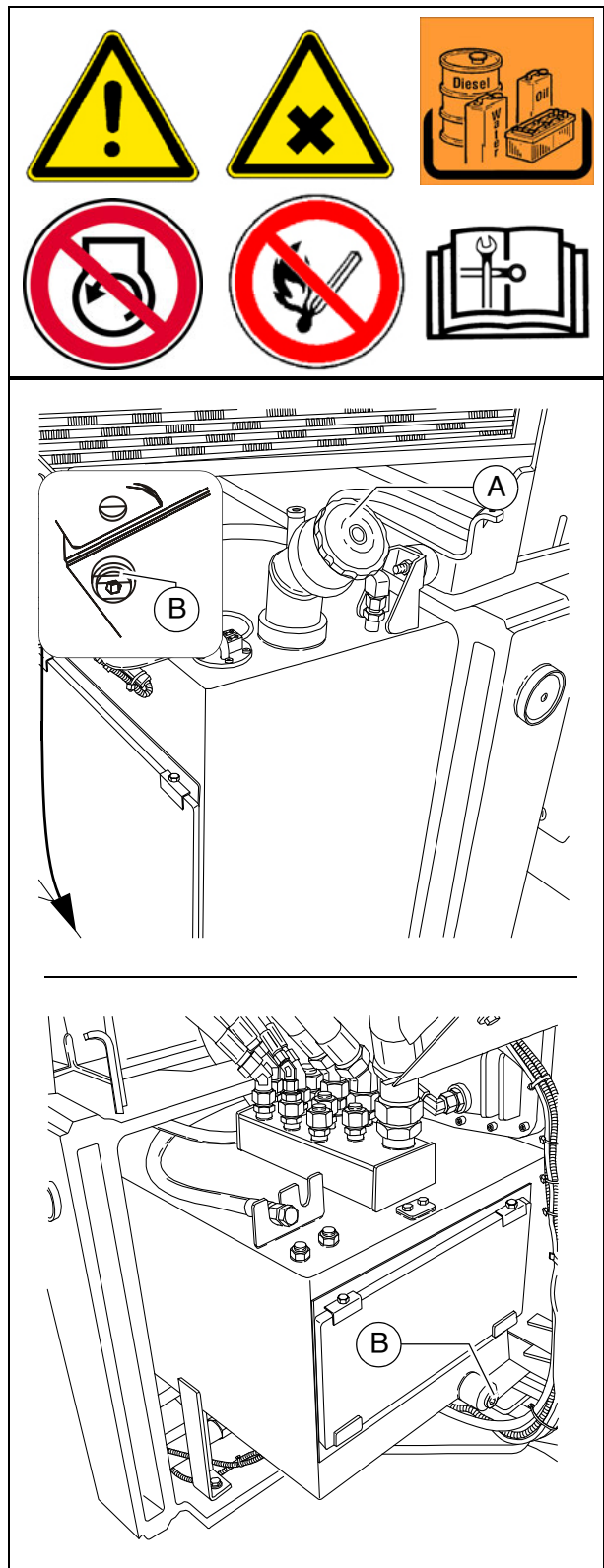
Fill the fuel tank each time before starting work so that the fuel system cannot "run dry" and time-consuming venting (bleeding) can therefore be avoided.

#### For filling with fuel:

- Remove cover (A).
- Fill in fuel through the filling port until the required fill level is achieved.
- Replace the cover (A).


#### Clean the tank and system:


- Unscrew the drain plugs (B) in both tanks and drain about 1 l fuel into a collection pan.
- When fastening the screw again after draining, make sure to use a new seal.




## Engine lube oil system (2)

### Check oil level

 In case of correct oil level, the oil is between the two notches of the dipstick (A).


 Only check the oil level when the finisher is in a horizontal position!

 Too much oil in engine damages gas-kets; too little oil results in overheating and engine destruction.


For **filling in** the oil:

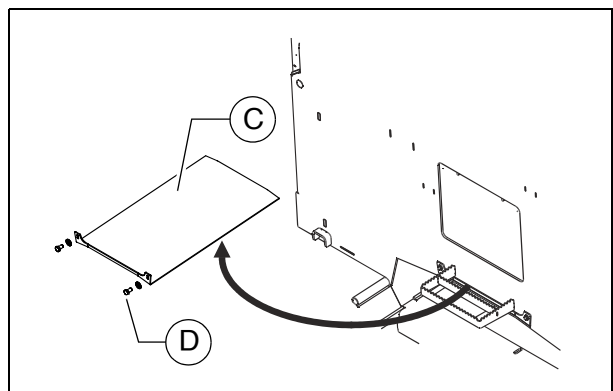
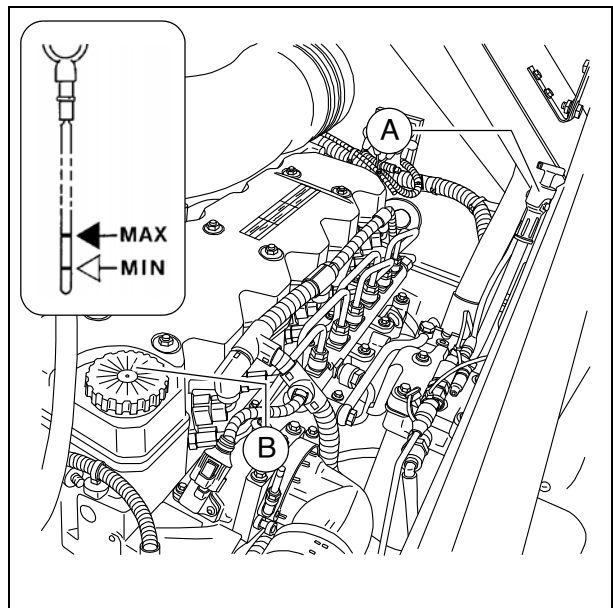
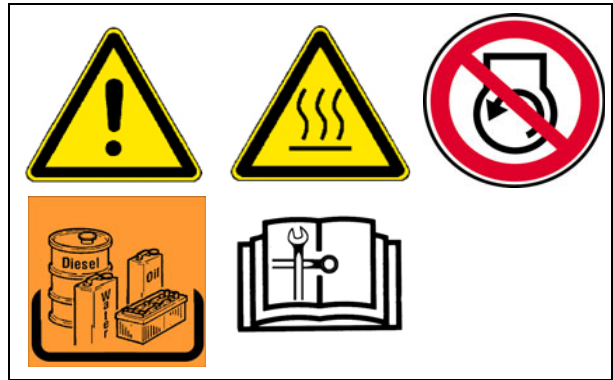
- Remove cover (B).
- Fill up oil to correct level.
- Return cover (B).
- Use dipstick to check level again.

### Oil change:

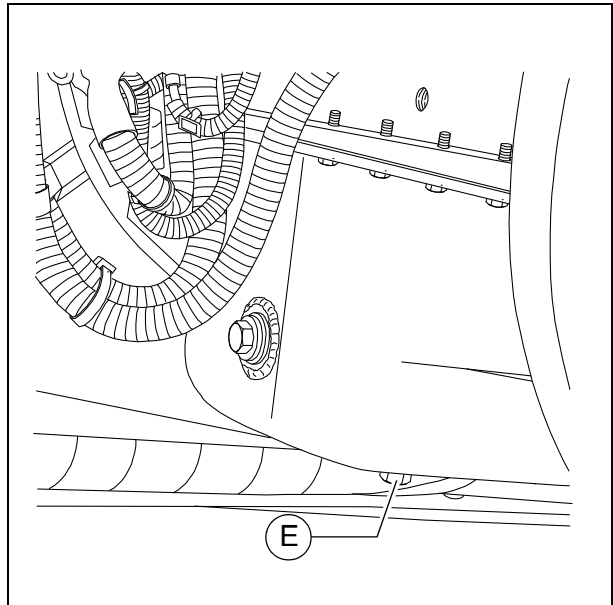
 The oil drain screw is accessed via the cover (C) in the vehicle's material tunnel:

- Remove the bolts (D) from the frame and pull the cover (C) out in the direction of travel.
- After completing the maintenance work, reinstall the cover (C) properly.

 Change the oil when the engine is at operating temperature

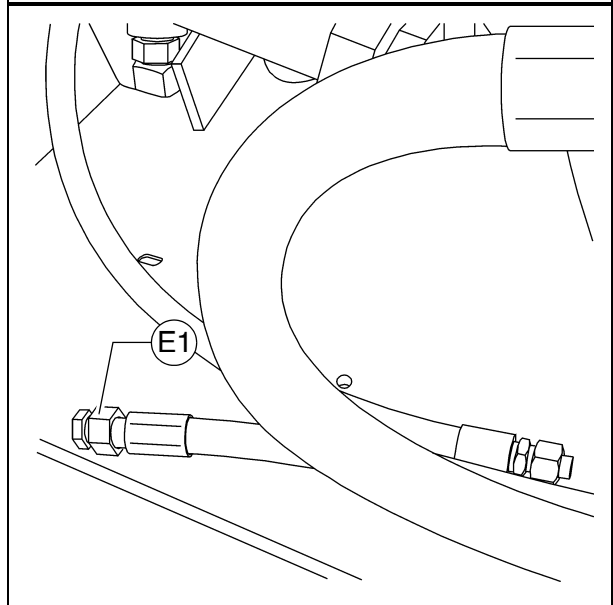


- Position a collecting container beneath the oil pan oil drain screw (E).
- Remove the oil drain screw (E) and allow the oil to drain completely.
- Reinstall the oil drain screw (E) with a new seal and tighten properly.
- Fill in the specified quality of oil through the filler opening (B) on the engine until the oil level rises to the correct mark on the dipstick (A).



When fitted with the optional asphalt fume control system, there is a drainage hose behind the left side flap.

- Place the end of the oil drain port hose (E1) 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.
- Refill with oil as described above.

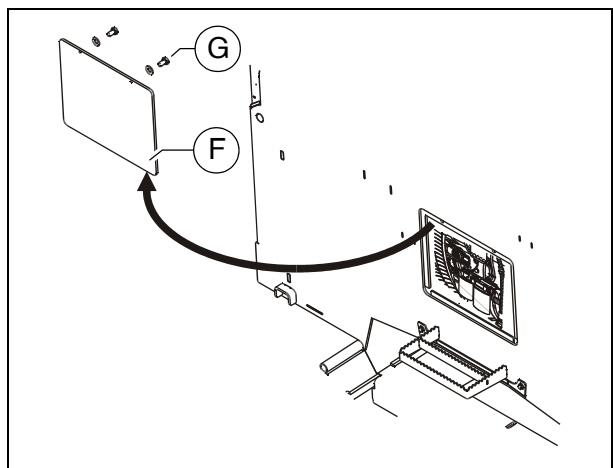



### Changing the oil filter:




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

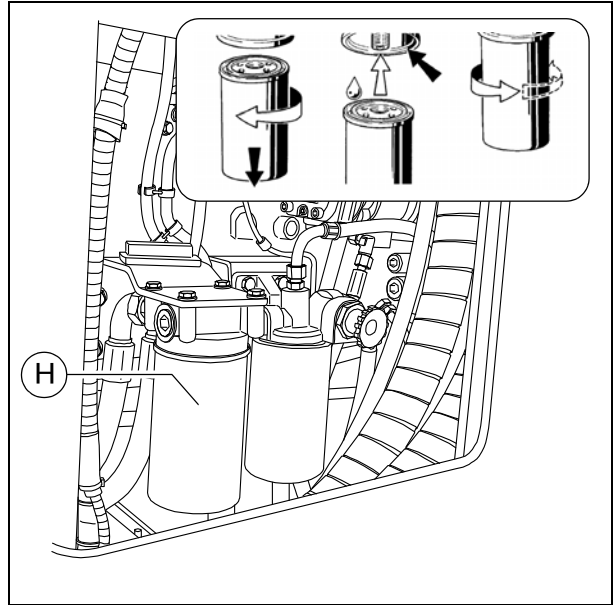
- Remove the screws (G) from the inner side of the frame and remove the service flap (F).
- After completing the maintenance work, reinstall the service flap (F) properly.



 The new filter is inserted during an oil change once the used oil has been drained out.

- Loosen the filter (H) with a filter wrench or filter strap and unscrew it. Clean the contact surface.
- Apply light coating of oil to the gasket on the new filter and fill filter with oil before installing it.
- Tighten filter by hand.

 After installing the oil filter, attention must be paid to the oil pressure display and good sealing during the test run. Check oil level again.



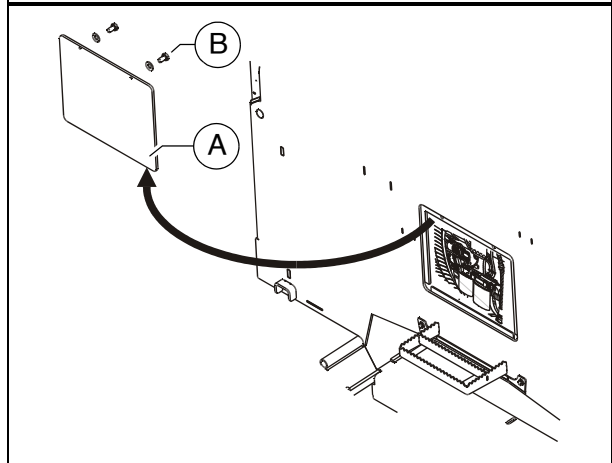
### Engine fuel system (3)



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



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



The fuel filter system consists of two filters:

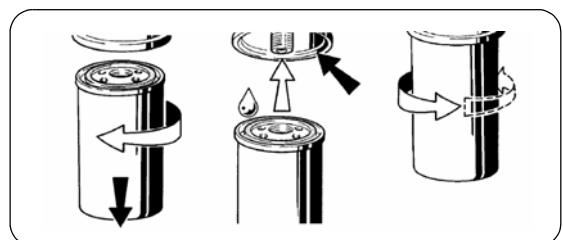
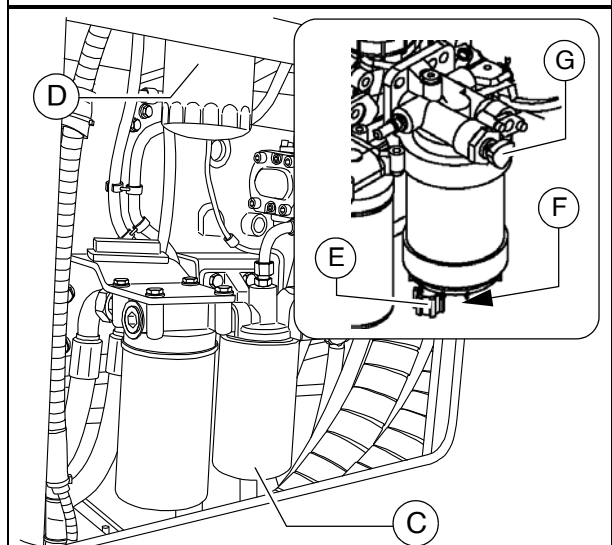
- Prefilter with water separator (C)
- Main filter (D)

#### Prefilter - draining of water



Drain the collecting vessel at regular intervals, or in response to an error message from the engine control unit.

- Drain off separated water at the cock (E) and collect, then close the cock again.



### **Changing the prefilter:**

- Drain off separated water at the cock (E) and collect, then close the cock again.
- Pull off the water sensor (F) connector.
- Loosen the filter cartridge (C) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Lightly oil filter cartridge seal and screw hand-tight under the bracket.
- Reconnect the water sensor (F) connector.

### **Bleeding the pre-filter:**

- Release the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning counter-clockwise.
- The pump plunger is now pressed out via the spring.
- Pump until a very high resistance is perceptible and pumping can only be carried out very slowly.
- Now continue pumping a few more times. (The return line must be filled).
- Start the engine and operate for approx. 5 minutes at idle speed or low load.
- Check the prefilter for leaks whilst doing this.
- Lock the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning clockwise.

### **Replacing the main filter:**

- Loosen the filter cartridge (D) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Lightly oil filter cartridge seal and screw hand-tight under the bracket.



After fitting the filter, ensure good sealing action during the test run.

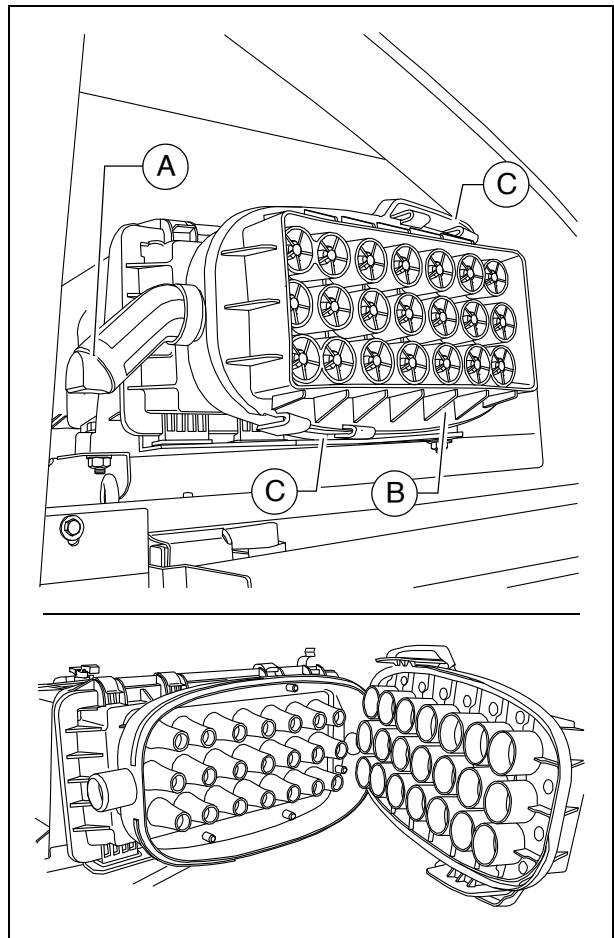
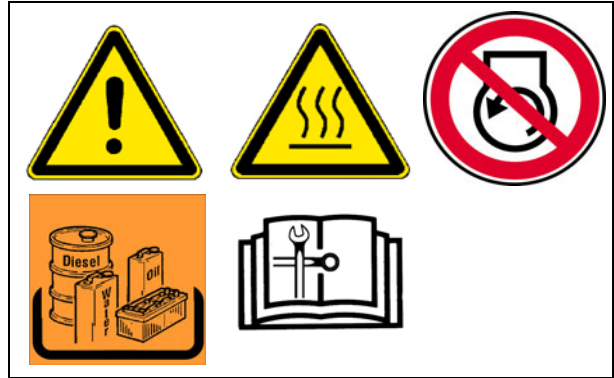
## Engine air filter (4)

### Empty dust collector

- Empty the dust removal valve (A) on the air filter housing by compressing the discharge slot.
- Remove any dust deflectors by pressing together the upper valve section.
- Open the collector housing (B) at the clips (C) and remove dust accumulations.
- Properly reposition the collector housing and lock at the clips (C).



Clean the dust removal valve from time to time.



## Cleaning / replacing the air filter cartridge

☞ Maintenance of the filter becomes necessary if:

- Engine electronics service indicator
- Open the collector housing (B) at the clips (C)
- Open the collector housing (D) at the clips (E).
- Pull out the filter element (F) and safety element (G).

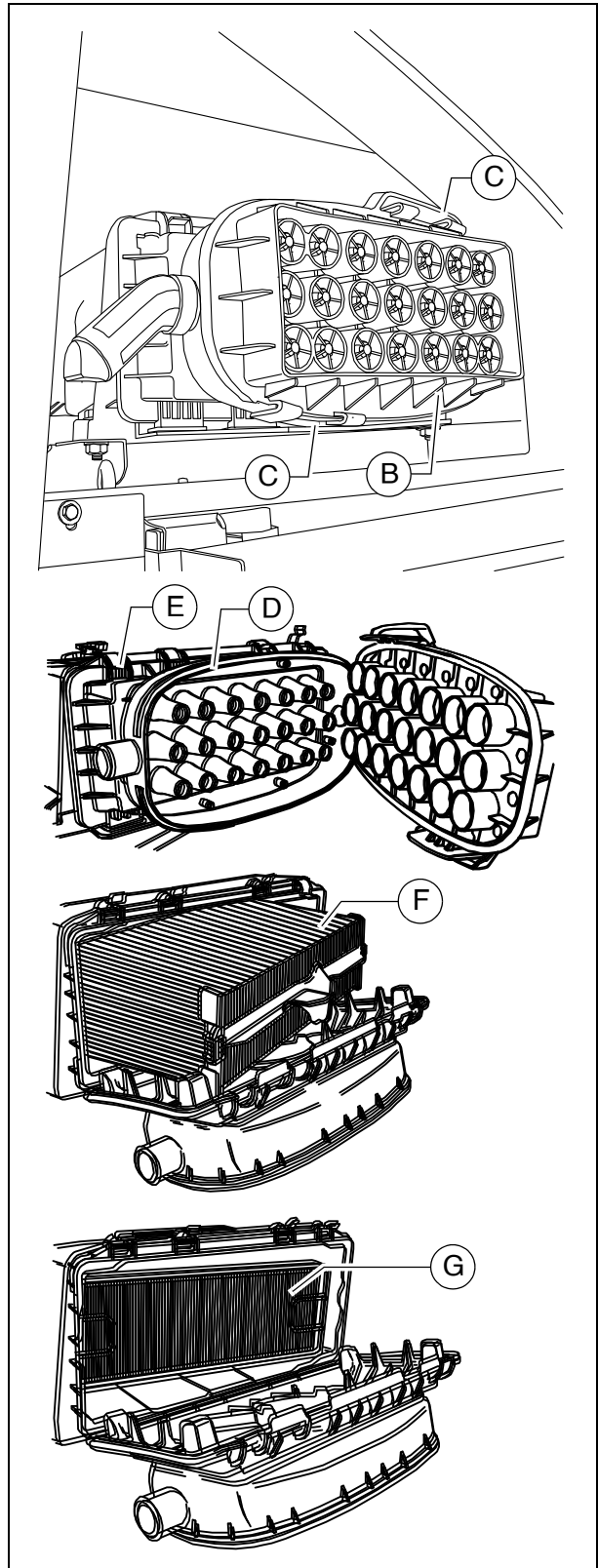
☞ Clean the filter element (F) and replace after one year at the latest.

- Blow out with dry pressure air (max. 5 bar) from inside out or tap it (in case of emergency only).

☞ Do not damage cartridge when doing so.

- Check the soundness of the filter papers of the filter cartridge (by exposing to light) and the soundness of the seals. Replace them as required.

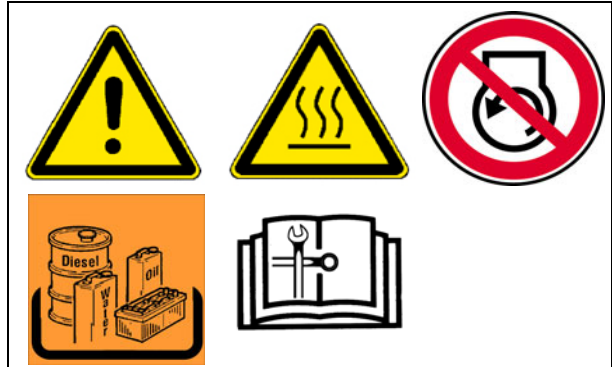
☞ Replace the safety element (G) after the filter has been serviced 5 times, but after 2 years at the latest (never clean it!).



## Engine cooling system (5)

### Checking / topping up coolant

The cooling water level must be checked when the system is cold. Make sure that sufficient anti-freeze and anti-corrosion agent is available (-25°C).



When hot, the system is under pressure. When opening, there is a danger of scalding!

- If necessary fill in a sufficient amount of coolant through the open port (A) of the compensating tank.

### Change coolant



When hot, the system is under pressure. When opening, there is a danger of scalding!



Use only approved coolants!



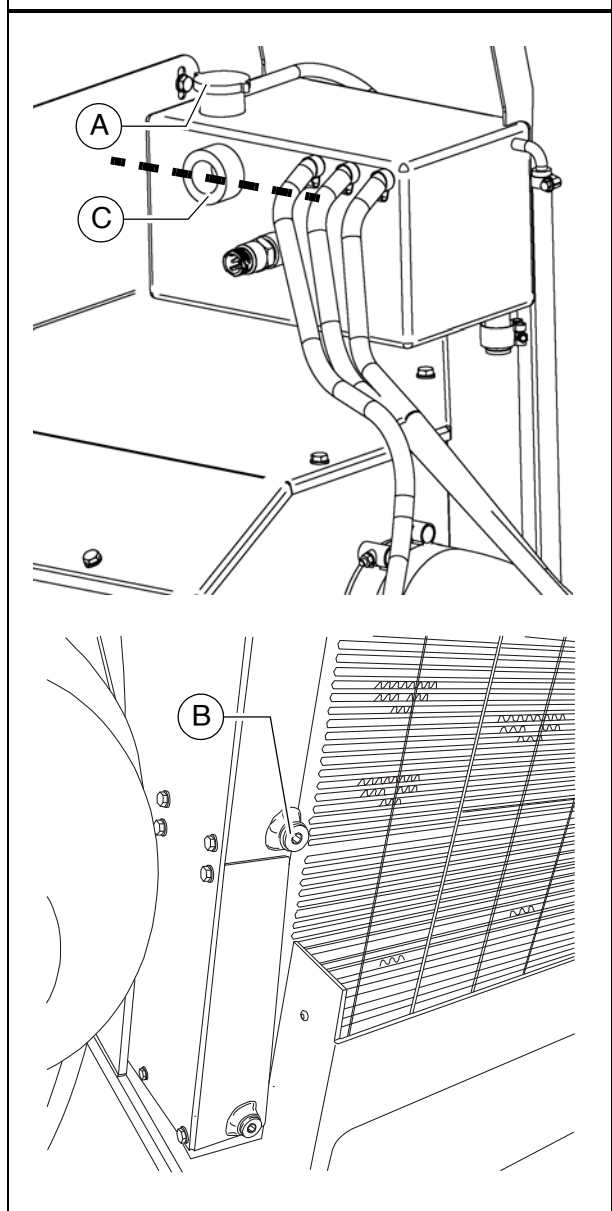
Observe the instructions in the chapter entitled "Operating substances"!

- Remove the drain screw (B) on the radiator and let the coolant drain completely.
- Reinstall the drain screw (B) and tighten properly.
- Fill in coolant through the filling opening (A) on the compensation tank until the coolant level rises to the centre of the sight glass (C).



The air is only able to escape completely from the cooling system once the engine has reached its operating temperature (at least 90°C).

Check the fluid level again, top up if necessary.



### **Checking and cleaning the radiator fins**

- If necessary, remove leaves, dust or sand from the radiator.



Observe engine's operating instructions!

### **Checking coolant concentration**

- Check the concentration using a suitable tester (hydrometer).
- Adjust the concentration if necessary.



Observe engine's operating instructions!


### AdBlue® / DEF tank (6)



- Check the **filling level** using the display on the operating panel.





Top up with AdBlue® / DEF if necessary.



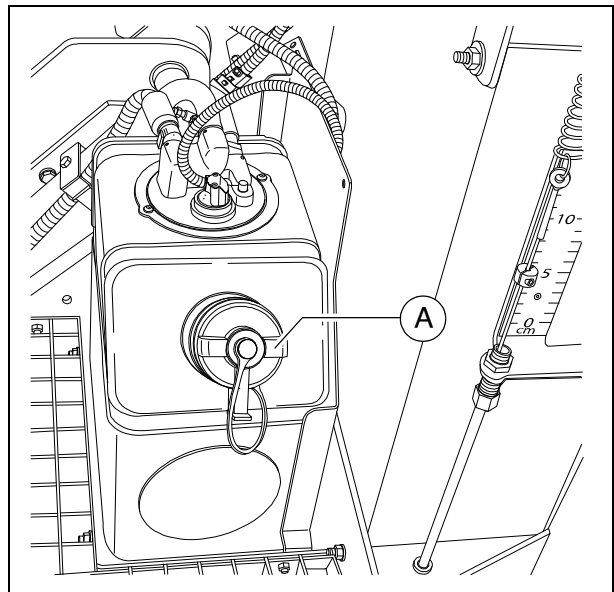
NOTE	<b>Storage and handling AdBlue® / Diesel Exhaust Fluid (DEF)</b>
	<p>Incorrect handling of AdBlue® / DEF can cause major damage to the vehicle:</p> <ul style="list-style-type: none"> <li>- Never fill oil, diesel or other fluids into the AdBlue® / DEF system: <ul style="list-style-type: none"> <li>- Do not start the engine after filling incorrectly</li> <li>- Consult the Atlas Copco Service Department</li> </ul> </li> <li>- Only use AdBlue® / DEF as per ISO 22241-1 / DIN 70070.</li> <li>- The storage temperature for AdBlue® / DEF is between -5°C and 25°C (23°F and 77°F)</li> <li>- Store in sealed containers to avoid impurities.</li> <li>- No direct sunlight.</li> <li>- It is not advisable to store in a vehicle for longer than 6 months. Seal the tank breathers when stored in the urea tank.</li> <li>- If AdBlue® / DEF is spilt on painted surfaces or aluminium surfaces when topping up, rinse the affected areas immediately with water.</li> <li>- Do not fill the AdBlue® / DEF tank until it overflows, otherwise it can be damaged at very low temperatures.</li> <li>- Always heed the local rules and regulations when disposing of AdBlue® / DEF!</li> <li>- Comply with all further information in the engine operating instructions.</li> </ul>

 <b>WARNING</b>	<b>Danger from AdBlue® / Diesel Exhaust Fluid (DEF)</b>
	<p>Inadequate preparations for using AdBlue® / DEF can result in severe injuries!</p> <p>AdBlue® / DEF should never be in contact with the skin, eyes or clothing or be swallowed. Keep AdBlue® / DEF out of reach of children.</p> <ul style="list-style-type: none"><li>- Before handling AdBlue® / DEF, make yourself familiar with the safety data sheet.</li><li>- If you get AdBlue® / DEF in your eyes, rinse your eyes immediately and thoroughly for at least 15 minutes with clear water. Seek medical advice immediately!</li><li>- Wash AdBlue® / DEF off your skin immediately with soap and water.</li><li>- If you have swallowed AdBlue® / DEF, rinse your mouth out with water and drink plenty of water. Seek medical advice immediately!</li><li>- Change any clothing soiled with AdBlue® / DEF immediately.</li><li>- Comply with all further instructions in the AdBlue® / DEF safety data sheet.</li><li>- Comply with all further information in the engine operating instructions.</li></ul>

 <b>WARNING</b>	<b>Danger from ammonia vapours, overpressure in the tank</b>
	<p>If you open the AdBlue<sup>®</sup> / DEF tank cap at high temperatures, ammonia vapours can escape and cause injuries!</p> <ul style="list-style-type: none"><li>- Only fill the AdBlue<sup>®</sup> / DEF tank in well ventilated areas.</li><li>- Always be careful when opening the AdBlue<sup>®</sup> / DEF, as this can cause pressure to be released. AdBlue<sup>®</sup> / DEF may leak as a result.</li><li>- Do not inhale the ammonia vapours!</li><li>- Ammonia vapours have a biting smell and cause irritation above all to the skin, mucous membranes and eyes.</li><li>- Consult a doctor immediately if injured.</li><li>- Comply with all further instructions in the AdBlue<sup>®</sup> / DEF safety data sheet.</li><li>- Comply with all further information in the engine operating instructions.</li></ul>

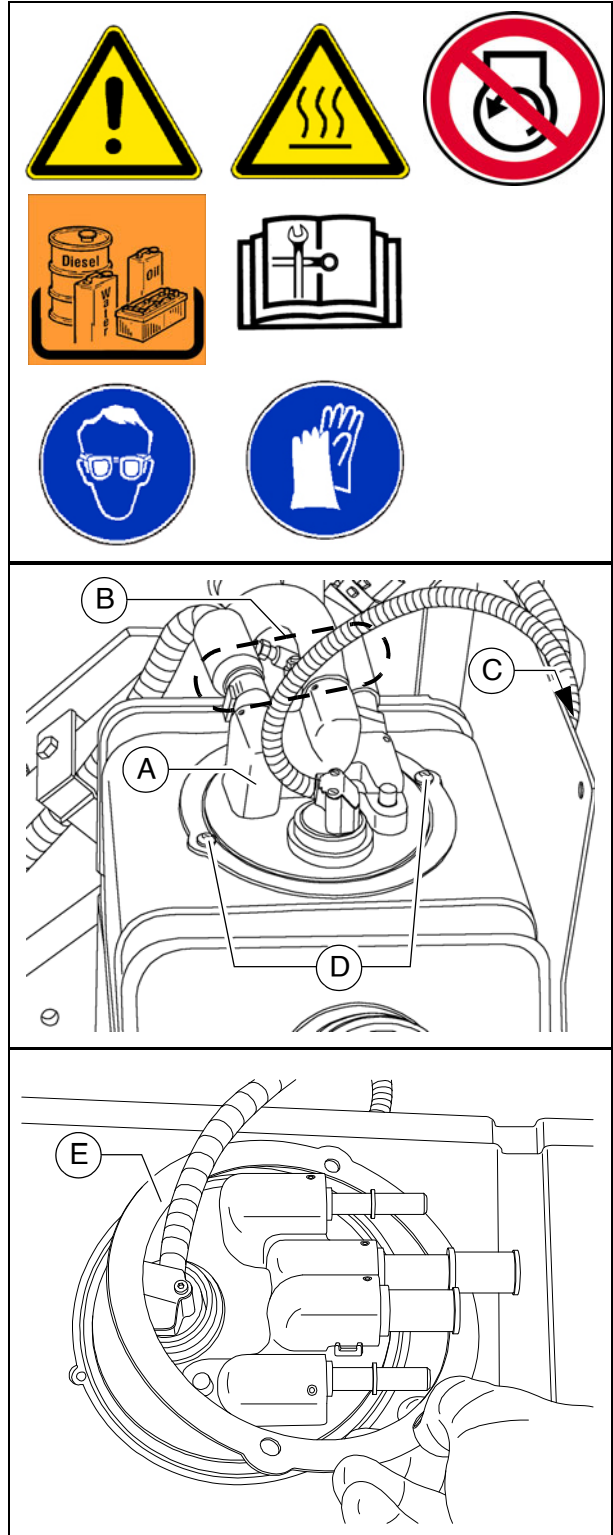
#### To top up with AdBlue<sup>®</sup> / DEF

- Remove cover (A).
- Top up with AdBlue<sup>®</sup> / DEF through the filling port until the required level is reached.
- Replace the cover (A).



## AdBlue® / DEF tank - suction filter

### Replace filter element



- To change the filter, the supply lines (B) at the AdBlue® / DEF multi-head (A) must be dismantled and the electrical connection (plug) (C) disconnected.



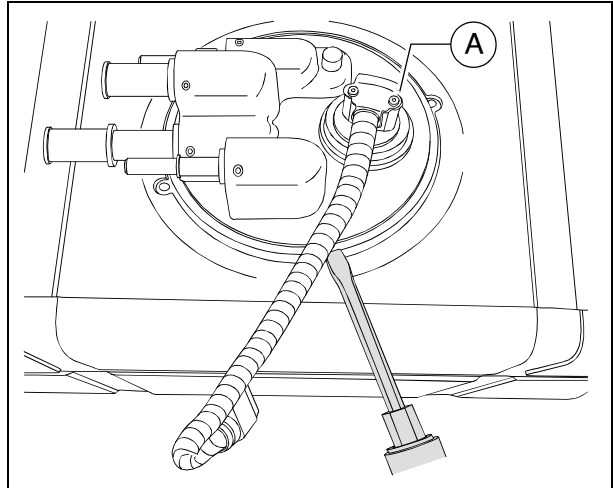
Use a suitable container or cloth to take up any leaked residues.

- Loosen screws (D) and remove retaining ring (E).

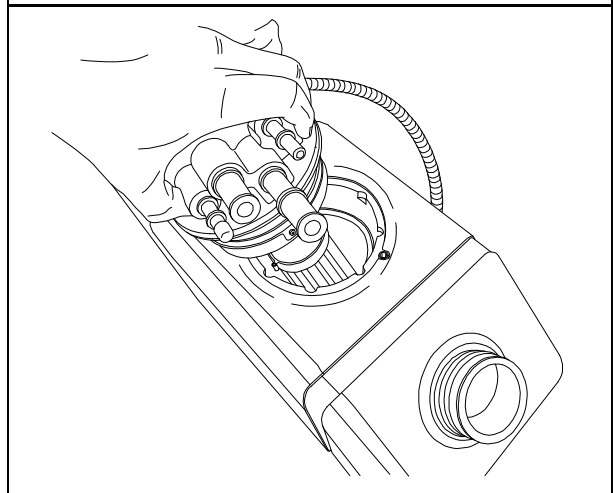
- Carefully lever the multi-head (A) from the tank surface by applying a suitable slotted screwdriver around the edge. Pull the head at the same time.



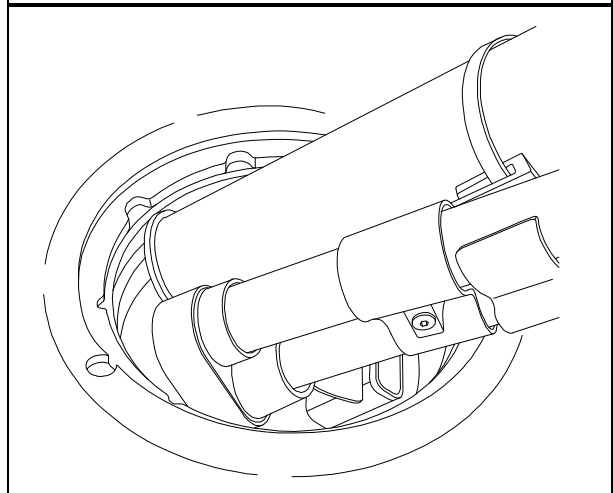
Do not pull the connection cable or connection port!



- Carefully pull the multi-head up until the lower part is beneath the tank opening.

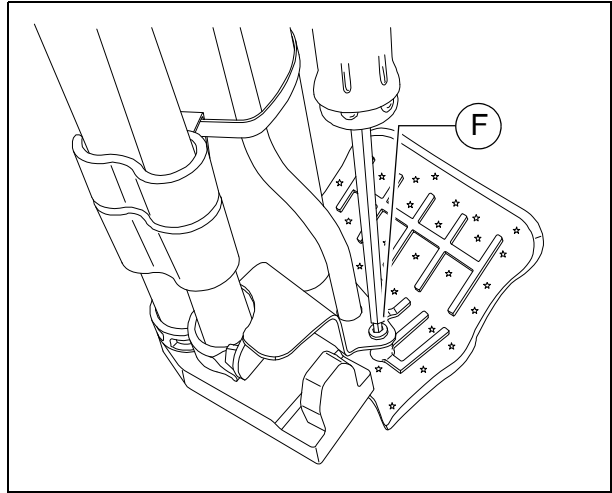


- Carefully tilt the lower part up and turn the head until the lower part is at the tank opening.
- Carefully pull the lower part out of the tank opening.

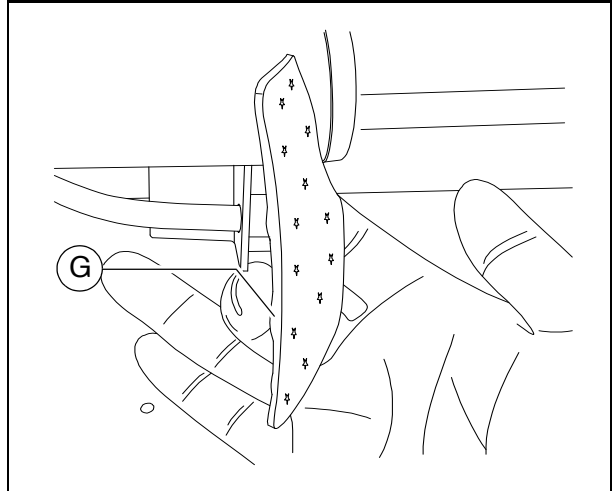


### Filter change < / = s/n 003055

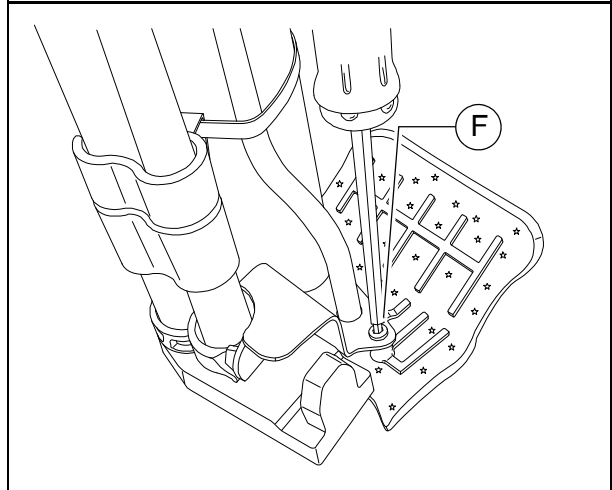
- Loosen the fastening screw (F) of the filter.



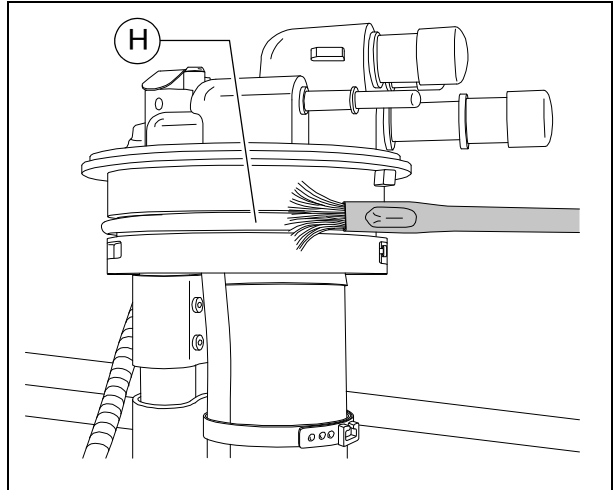
- Pull the used filter (G) from the suction pipe.



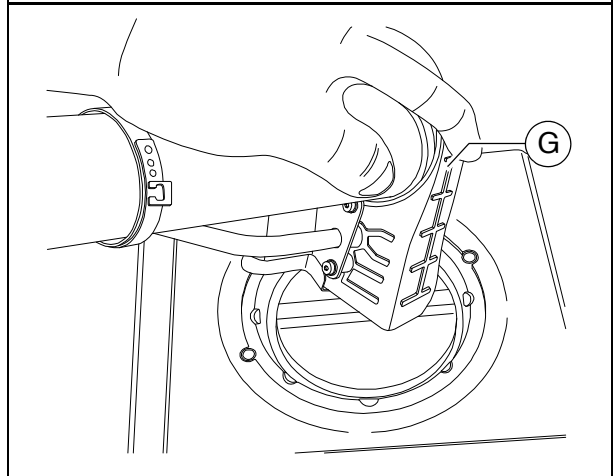
- Fit the new filter onto the suction pipe and fasten with a new fastening screw (F).



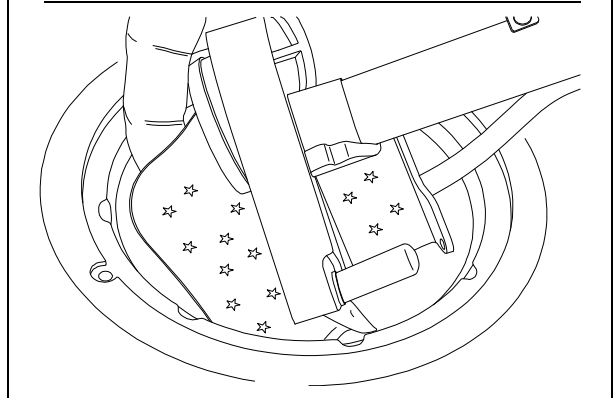
- Lightly grease the O-ring (H) of the multi-head.



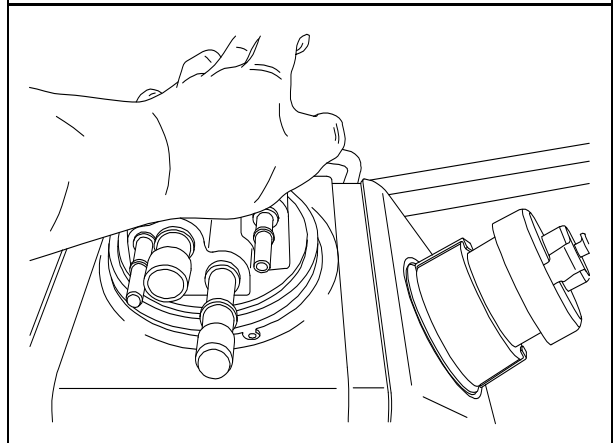
- Fold the filter element (G) in the middle towards the underside of the lower part.
- Tilt the lower part at an angle of about 45°.
- Place the filter side and the tip of the lower part in the tank opening as shown.
- Gradually insert the lower part in the tank opening, proceeding carefully.



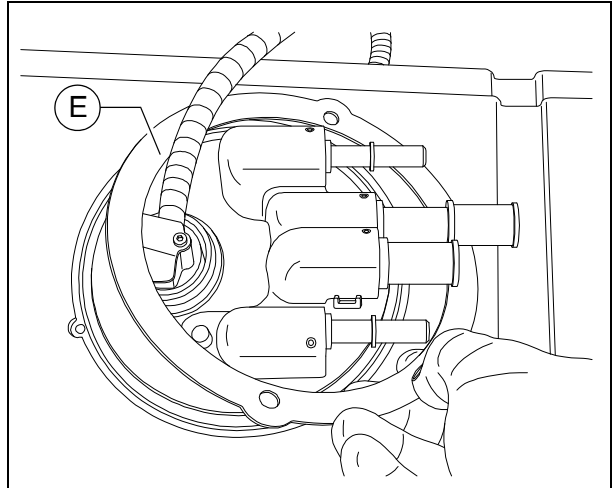
Do not push the parts with force directly into the tank opening. This will cause damage!



- Position the head in the required alignment and press on the top until the head fits completely in the tank opening.



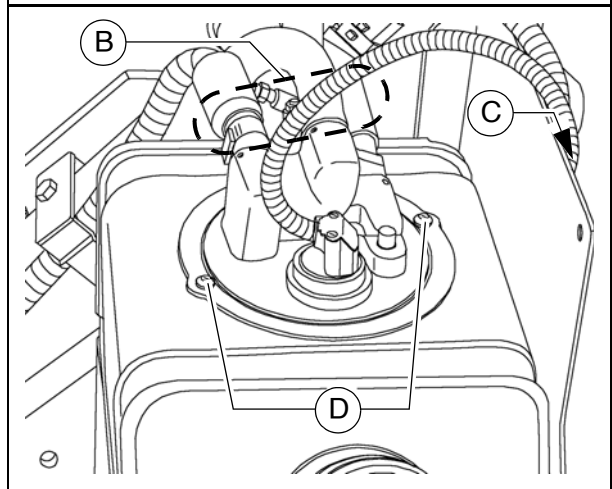
- Place the retaining ring (E) over the filter head.



- Tighten the screws (D) properly.
- Then mount the supply lines (B) and connect up to the power supply (plug) (C).

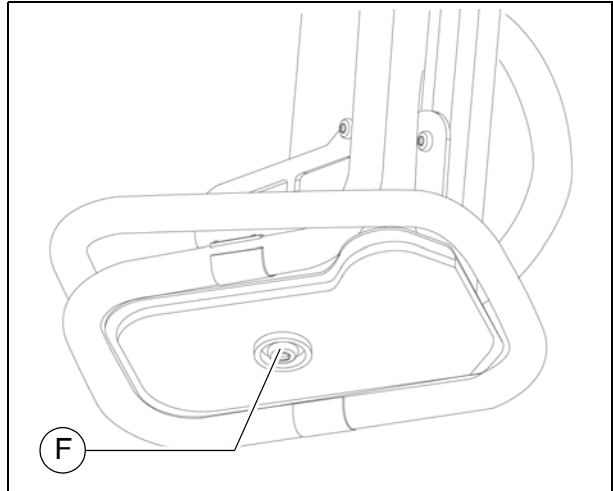


After installation, check correct sealing during a trial run.



### Filter change > / = s/n 003056

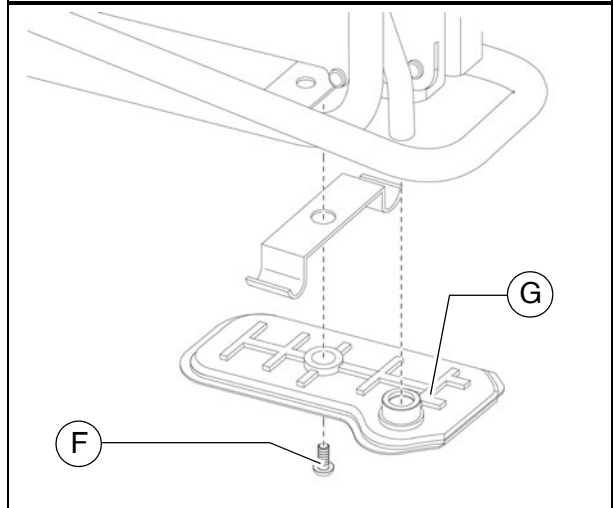
- Loosen the fastening screw (F) of the filter.



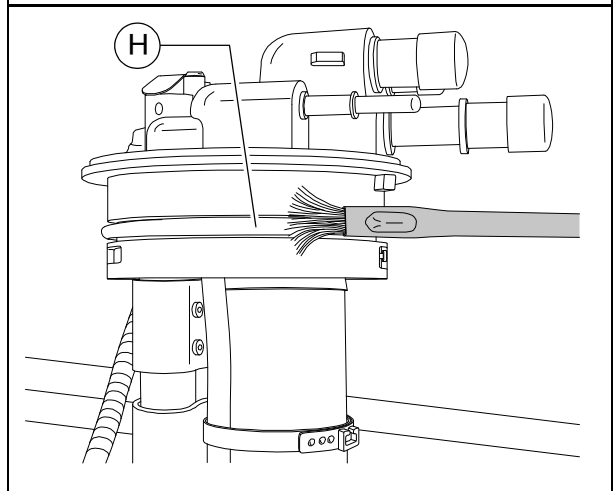
- Pull the used filter (G) from the suction pipe.
- Fit the new filter onto the suction pipe and fasten with a new fastening screw (F).



Ensure correct alignment of filter and holders!



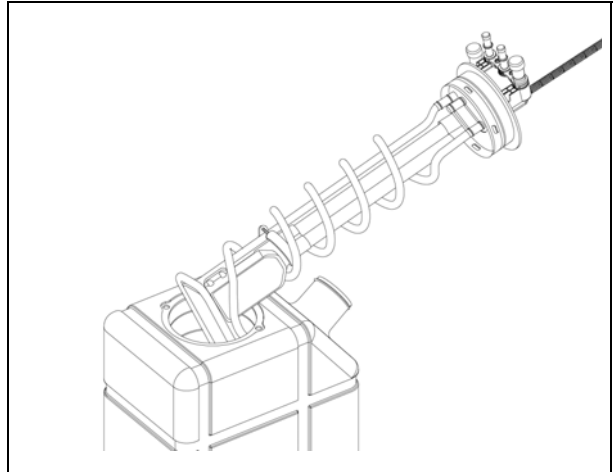
- Lightly grease the O-ring (H) of the multi-head.



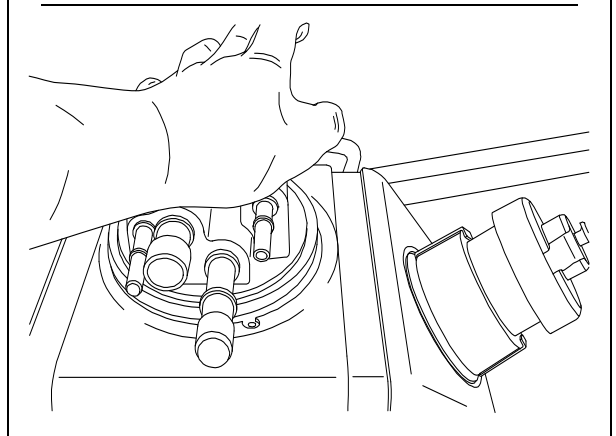
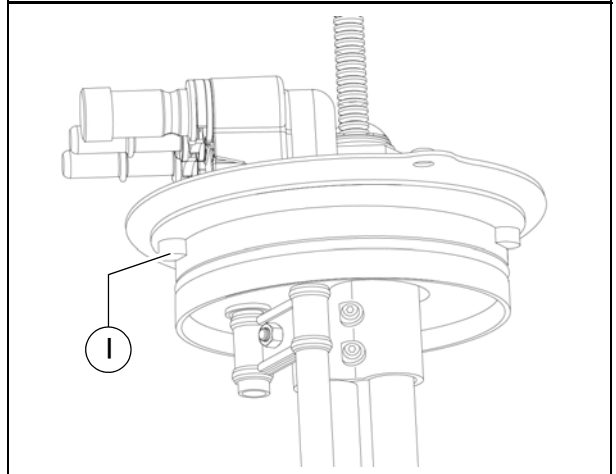
- Introduce the filter side into the tank opening as shown.
- Gradually introduce the whole unit I into the tank opening, using due caution.



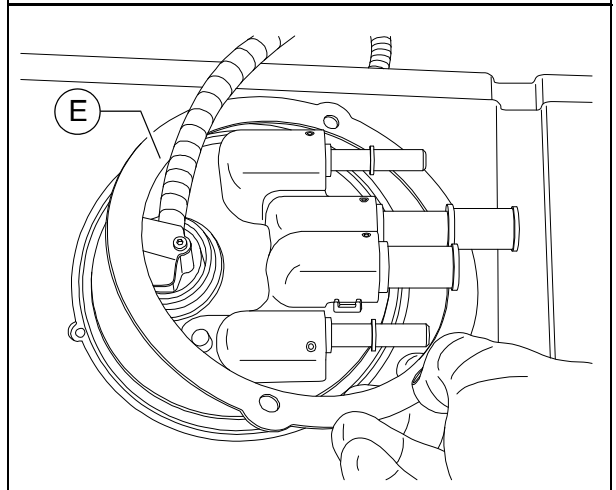
Do not push the parts with force directly into the tank opening. This will cause damage!



- Position the head in the required alignment.  
Ensure that the two noses (I) at the flange of the filter head fit in the corresponding recesses at the tank!  
Press on the top until the head fits completely in the tank opening.



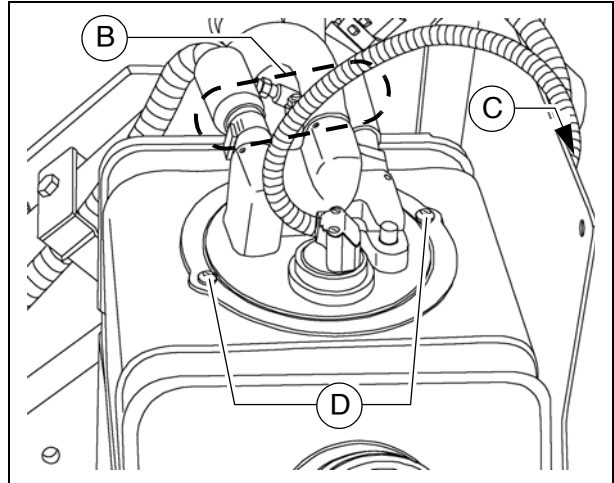
- Place the retaining ring (E) over the filter head.



- Tighten the screws (D) properly.
- Then mount the supply lines (B) and connect up to the power supply (plug) (C).





After installation, check correct sealing during a trial run.



## AdBlue® / DEF tank - tank cover


### Clean tank cover

 Impurities or crystals of AdBlue® / DEF on the outside and inside of the tank cover can considerably interfere with the system!

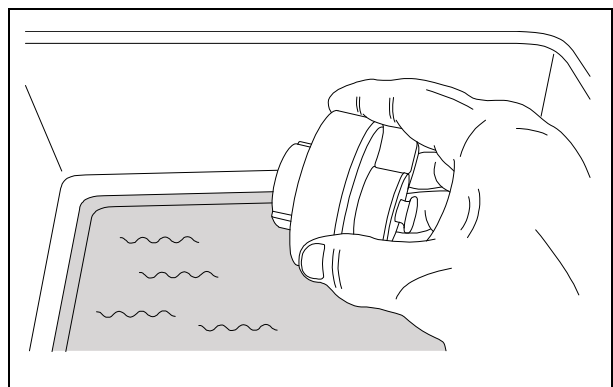
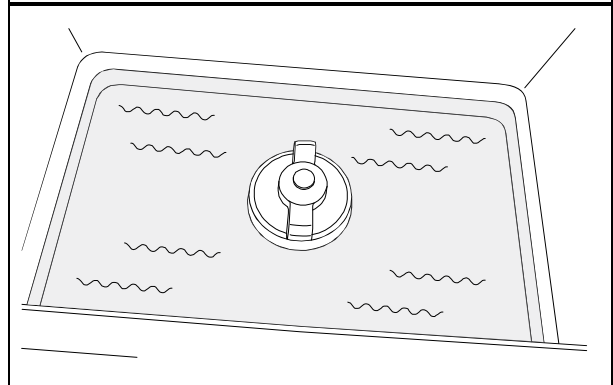
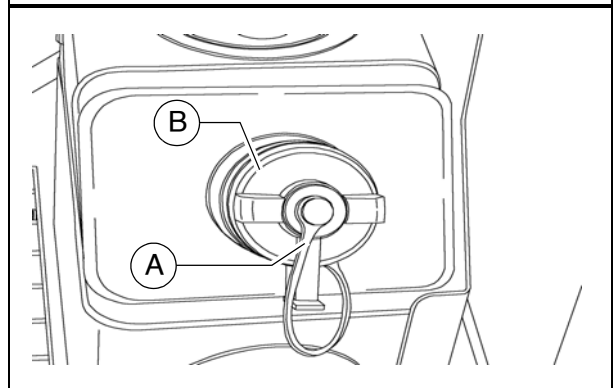
 If the tank cover is visibly soiled, it must be cleaned as follows.

- Loosen the retaining tab (A) and unscrew the tank cover (B) from the tank.

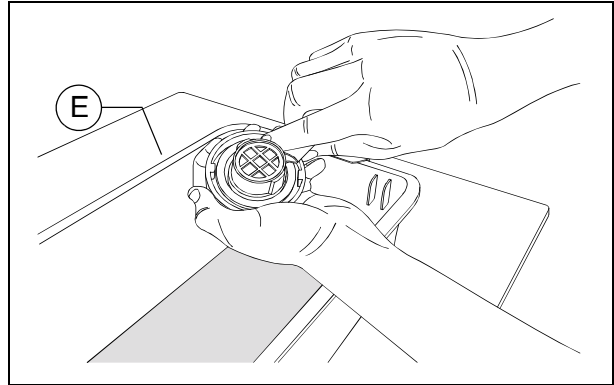
- Put the cover in a vessel filled with water so that the water comes up to half the height of the blue edge (large diameter). Leave the cap to soak for about five minutes.

 Make sure that the cover is not completely covered with water as this interferes with the ventilation function.

- Shake the cap to let any residual water drain out.



- Wipe the gasket with a damp cloth to remove any remaining DEF crystals or dirt.
- Then connect the tank cover with the previously loosened retaining tab and screw onto the tank.



## AdBlue® / DEF dosing unit



Do not disconnect the vehicle batteries until the dosing system has finished the rinsing cycle. Wait for at least 5 minutes after the ignition has been switched off before starting to work on the dosing unit.

### Replace filter element

- Place a suitable container under the filter housing to catch any AdBlue® / DEF residues.
- Unscrew the cover (A) (27mm wrench) and compensating element (B).
- Remove the filter (C) using the corresponding service tool (supplied with the filter). The tool engages on the filter with a "click".



Use the side of the service tool with the same colour markings as the filter.



Depending on their condition, the compensation element and filter **must** be replaced after they have been removed.



Check the cover (A), cover thread and thread (D) of the dosing unit for any damage and replace if necessary!

- Clean the cover (A), the cap thread and the dosing unit with warm water and a clean cloth.

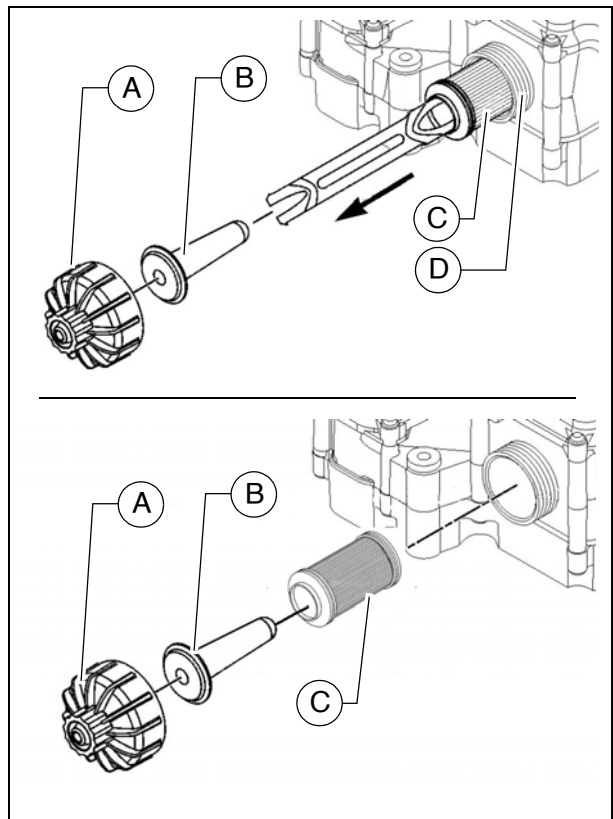


Do not oil the O-rings and gaskets of the filter!

- Insert the compensating element (B) in the filter cartridge (C) and push this into the dosing unit.
- Fit the cover (A).  
Torque: 20 Nm.



Let the engine run for at least 15 minutes so that the system reaches operating temperature. Look out for any leaks.



## Engine drive belt (7)

### Check drive belt

- Check the drive belt for damage.



Small transverse cracks in the belt are acceptable.



In the event of longitudinal cracks which intersect with transverse cracks and damaged material surfaces, belt replacement is necessary.

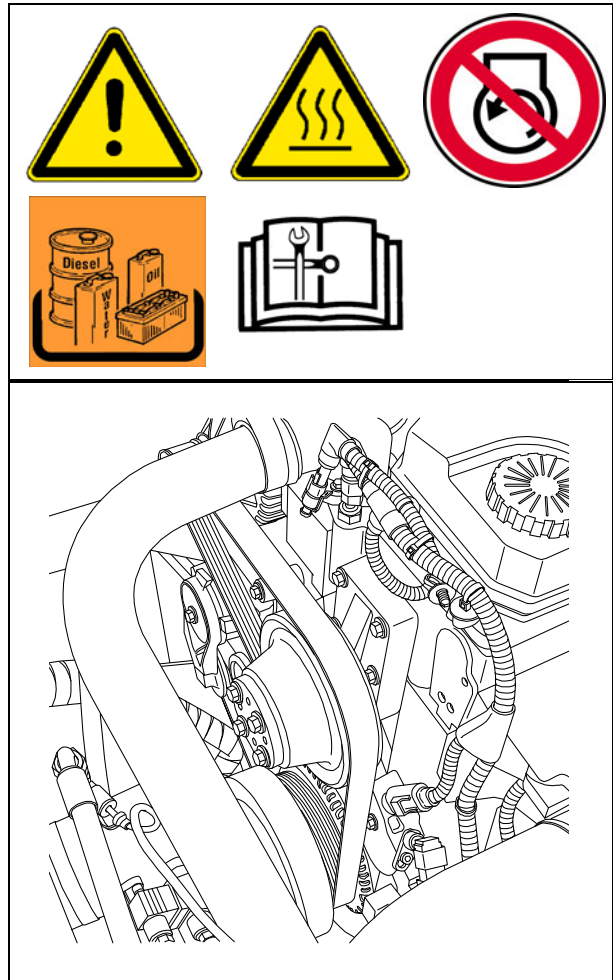


Observe engine's operating instructions!

### Replace drive belt



Observe engine's operating instructions!



## Crankshaft ventilation filter (8)

### Replace filter element

- Take the cover off (A) and remove the filter cover (B)
- Remove the depleted filter.



Check the cover and cover seal for any signs of damage and replace if necessary!

- Clean the contact surface (D) of the filter and the sealing surfaces of the O-rings with a cloth and light solvent and then dry them with a clean cloth.
- Clean the filter cover with warm soapy water (E) and dry it with compressed air.



Wear protective goggles when using working with compressed air! Never blow compressed air towards other people!



Use personal safety equipment when cleaning with solvents! Avoid contact with skin!

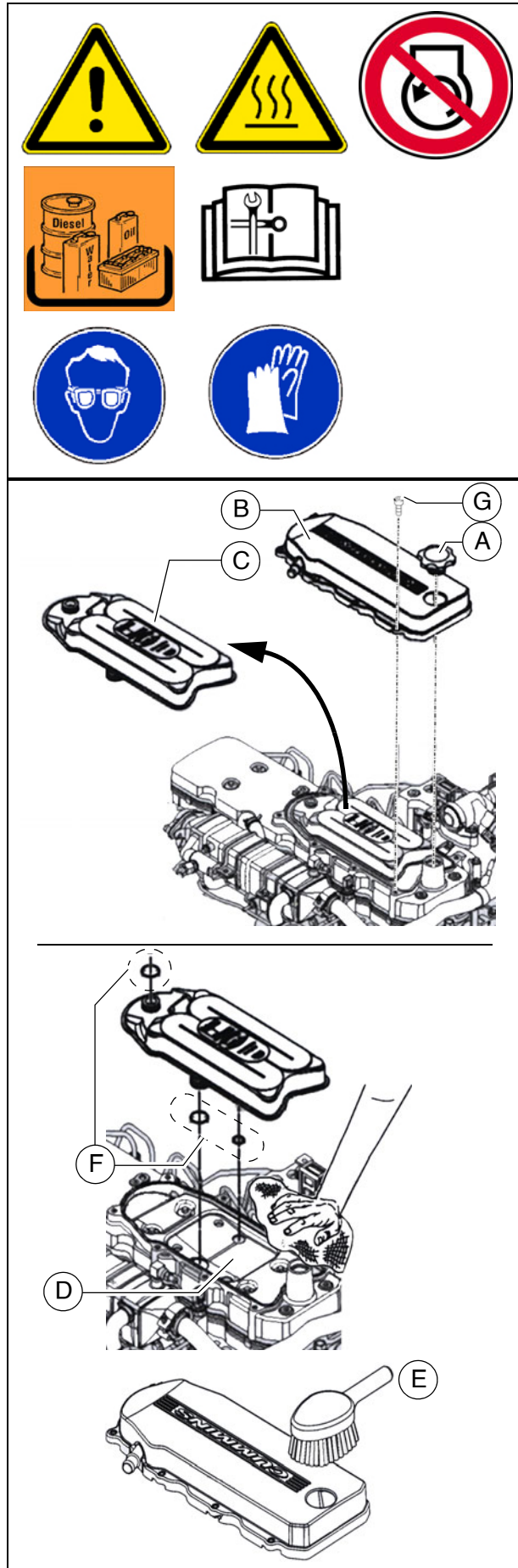
- Apply a little fresh engine oil to the O-rings (F) of the new filter and set the filter correctly on its contact surface.
- Fit the cover (B):
  - Start with the inside screw (G) and work forwards clockwise.



The torque for the cover screws is 7 Nm.



After installation, check correct sealing during a trial run.



## Exhaust system - diesel oxidation catalytic converter (9)



### Inspect the exhaust system



Basically the exhaust system does not need any maintenance. Inspection consists of a visual check:

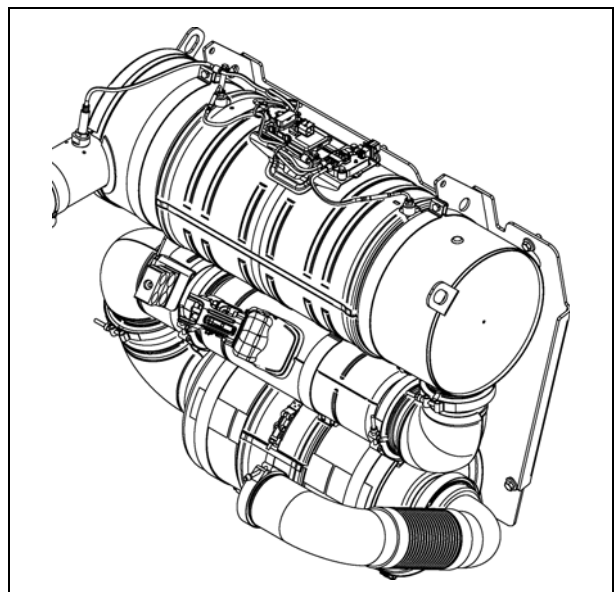
- damaged parts?
- loose screwed connections, plugs or lines?



 <b>WARNING</b>	<b>Risk from hot surfaces!</b>
	<p>During system cleaning, the exhaust temperature and the surface temperature of the exhaust system is very hot and can cause severe injuries! The exhaust and exhaust components remain hot after the engine has stopped.</p> <ul style="list-style-type: none"> <li>- Let the exhaust system cool down before starting inspection work.</li> <li>- Make sure that no flammable materials can come into contact with the exhaust system.</li> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Comply with all further information in the engine operating instructions and in the safety manual.</li> </ul>



The Dynapac Customer Service must be consulted whenever the exhaust system is to be repaired!

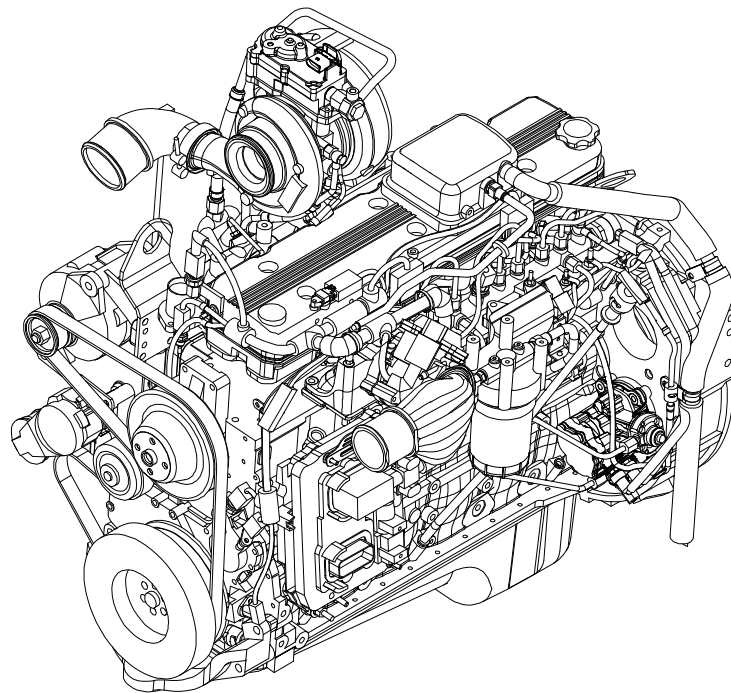






# F 57 Maintenance - engine assembly



## Stage V (○)

### 1 Maintenance - engine assembly



As well as this maintenance manual, always also pay close attention to the maintenance manual provided by the engine manufacturer. All maintenance work and service intervals itemised here are binding in nature.

 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- Do not enter the danger zone.</li><li>- Do not reach into rotating or conveying parts.</li><li>- Only wear close-fitting clothing.</li><li>- Comply with the warning and information signs on the vehicle.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

## 1.1 Maintenance intervals

Item	Interval								Points of maintenance	Note		
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years	4000 / every 3 years			6500	If necessary
1	■										- Fuel tank Check filling level	
										■	- Fuel tank Refill with fuel	
							■				- Fuel tank Clean the tank and system	
2	■										- Engine lube oil system Check oil level	
										■	- Engine lube oil system Top up oil	
					■						- Engine lube oil system Change oil	
					■						- Engine lube oil system Change oil filter	
3	■										- Engine fuel system Fuel filter (drain the water separator)	
					■						- Engine fuel system Replace fuel pre-filter	
					■						- Engine fuel system Replace fuel filter	
										■	- Engine fuel system Bleed fuel system	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval								Points of maintenance	Note		
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years	4000 / every 3 years			6500	If necessary
4	■										- Engine air filter Check air filter	
	■										- Engine air filter Empty dust collector	
						■				■	- Engine air filter Exchange air filter insert	
5	■										- Engine cooling system Check radiator fins	
				■						■	- Engine cooling system Clean radiator fins	
				■							- Engine cooling system Check level of the coolant	
										■	- Engine cooling system Top up coolant	
							■				- Engine cooling system Change coolant / flush radiator	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Points of maintenance	Note		
	10	50	250	500 / annually	1000 / annually	2000 / every 2 years	4000 / every 3 years			6500	If necessary
6	■								- AdBlue® / DEF tank Check filling level		
								■	- AdBlue® / DEF tank Top up 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 Replace filter	
								■	- Check hoses and lines for damage		

Maintenance	■
Maintenance - deviating interval in dusty environment	⊙
Maintenance during the running-in period	▼

Item	Interval								Points of maintenance	Note		
	10	50	100	250	500 / annually	1000 / annually	2000 / every 2 years	4000 / every 3 years			6500	If necessary
7				■							- Engine drive belt Check drive belt	
									■		- Engine drive belt Tighten drive belt	
						■					- Engine drive belt Replace drive belt	
8								■			- Exhaust system / Inspect diesel oxidisation catalytic converter	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Maintenance points



### Engine fuel tank (1)

- Check the **filling level** on the gauge on the operating panel.



Fill the fuel tank each time before starting work so that the fuel system cannot "run dry" and time-consuming venting (bleeding) can therefore be avoided.



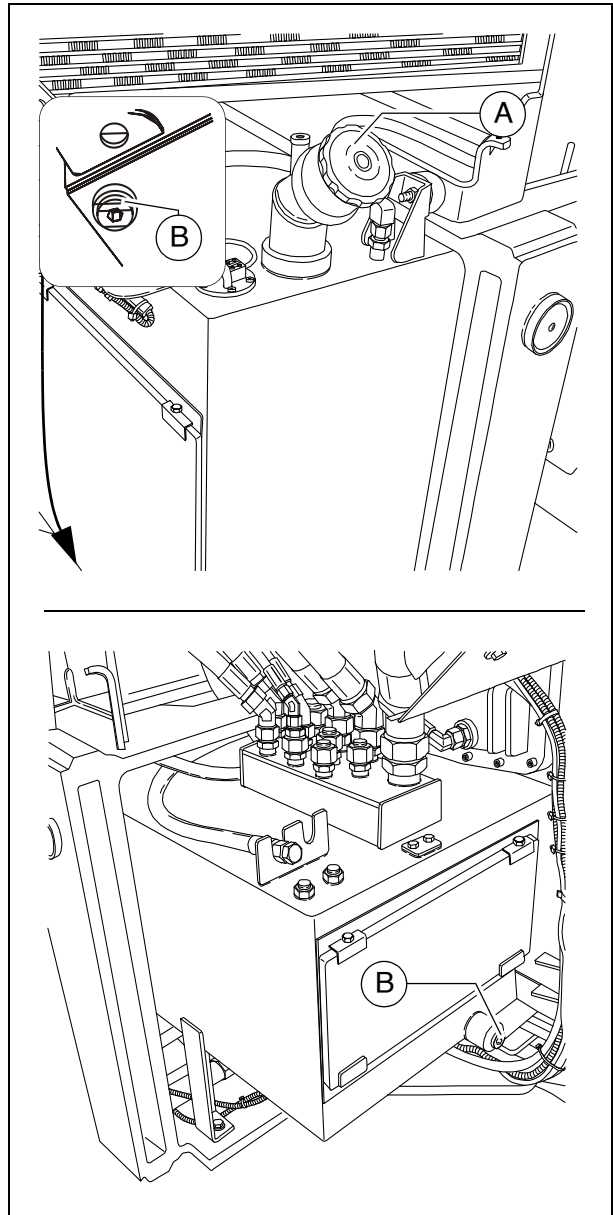
 <b>DANGER</b>	<b>Danger from ultra low-sulphur diesel</b>
	<p>Ultra low-sulphur diesel (ULSD) poses a greater risk of combustion from static electricity than earlier grades of diesel that contained more sulphur. An explosion or combustion can cause severe to fatal injuries!</p> <ul style="list-style-type: none"> <li>- When refuelling vehicles, always ensure that the fuel pump is earthed with equipotential bonding to the vehicle.</li> <li>- When a fuel pump has correct equipotential bonding, there is a continuous electrically conductive connection between all components of the fuel pump and the vehicle being refuelled.</li> <li>- Contact your fuel supplier or the supplier of your refuelling system to ensure that the fuel pump complies with the currently valid refuelling standards and that correct earthing and equipotential bonding is warranted.</li> </ul>

For **filling** with fuel:

- Remove cover (A).
- Fill in fuel through the filling port until the required fill lever is achieved.
- Replace the cover (A).

**Clean the tank and system:**

- Unscrew the drain plugs (B) in both tanks and drain about 1 l fuel into a collection pan.
- When fastening the screw again after draining, make sure to use a new seal.



## Engine lube oil system (2)

### Check oil level

In case of correct oil level, the oil is between the two notches of the dipstick (A).

Only check the oil level when the finisher is in a horizontal position!

Too much oil in engine damages gas-kets; too little oil results in overheating and engine destruction.

For **filling in** the oil:

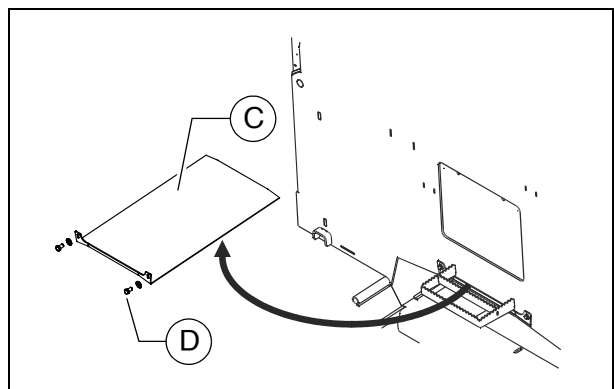
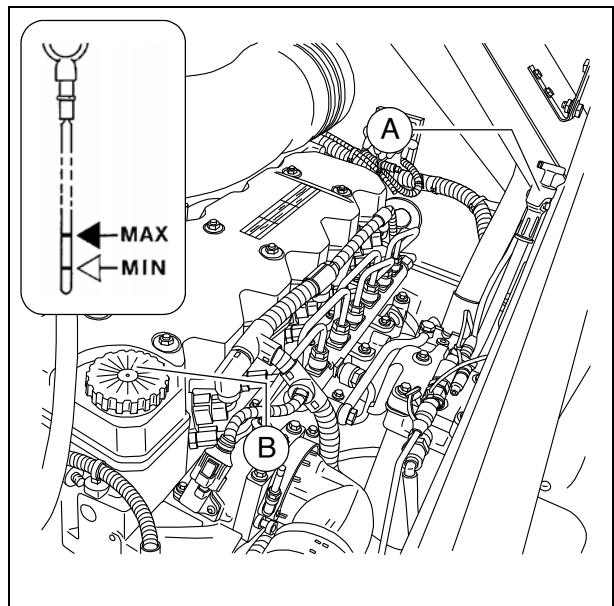
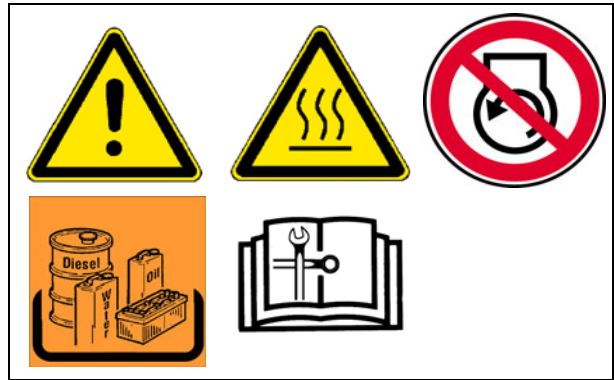
- Remove cover (B).
- Fill up oil to correct level.
- Return cover (B).
- Use dipstick to check level again.

### Oil change:

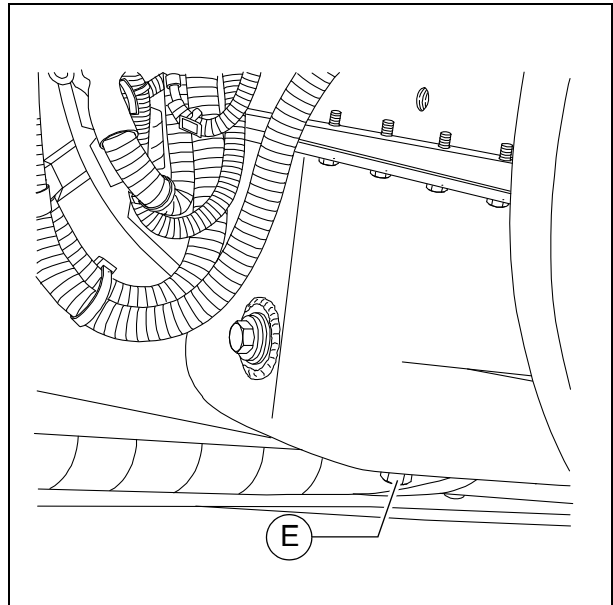
The oil drain screw is accessed via the cover (C) in the vehicle's material tunnel:

- Remove the bolts (D) from the frame and pull the cover (C) out in the direction of travel.
- After completing the maintenance work, reinstall the cover (C) properly.

Change the oil when the engine is at operating temperature

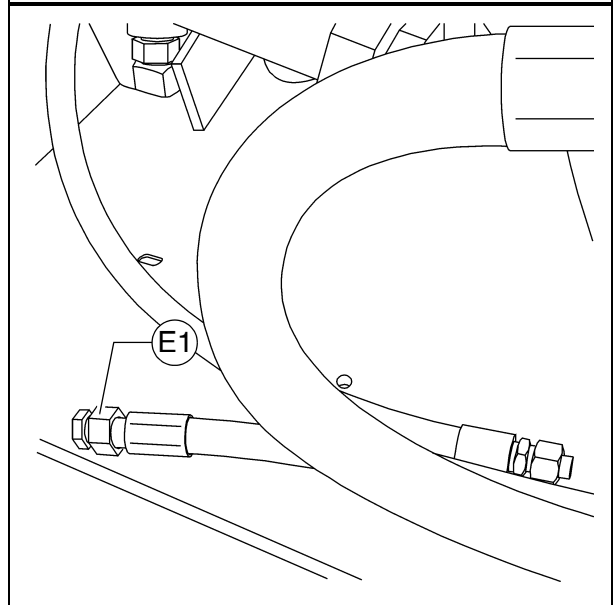


- Position a collecting container beneath the oil pan oil drain screw (E).
- Remove the oil drain screw (E) and allow the oil to drain completely.
- Reinstall the oil drain screw (E) with a new seal and tighten properly.
- Fill in the specified quality of oil through the filler opening (B) on the engine until the oil level rises to the correct mark on the dipstick (A).



When fitted with the optional asphalt fume control system, there is a drainage hose behind the left side flap.

- Place the end of the oil drain port hose (E1) 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.
- Refill with oil as described above.

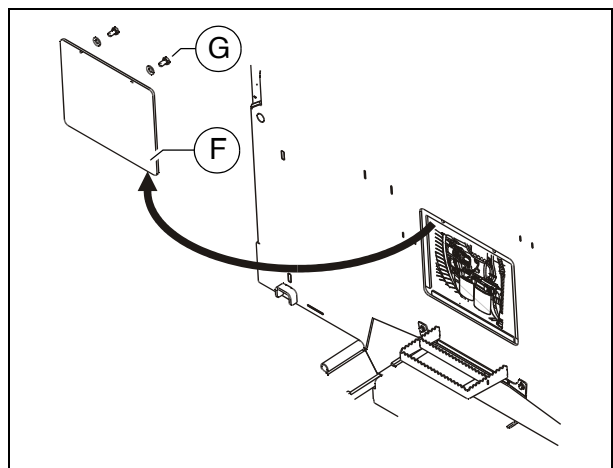


### Changing the oil filter:



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.



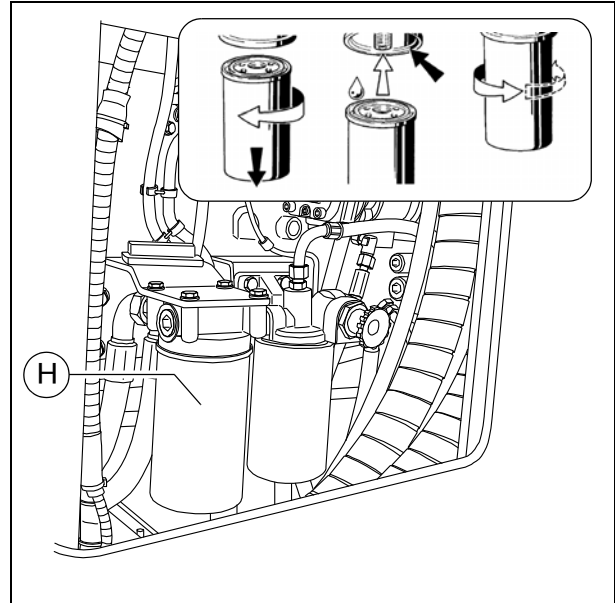


The new filter is inserted during an oil change once the used oil has been drained out.

- Loosen the filter (H) with a filter wrench or filter strap and unscrew it. Clean the contact surface.
- Apply light coating of oil to the gasket on the new filter and fill filter with oil before installing it.
- Tighten filter by hand.



After installing the oil filter, attention must be paid to the oil pressure display and good sealing during the test run. Check oil level again.



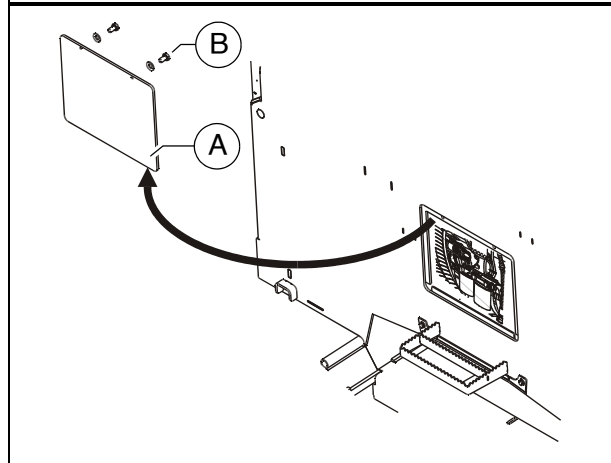
### Engine fuel system (3)



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



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



The fuel filter system consists of two filters:

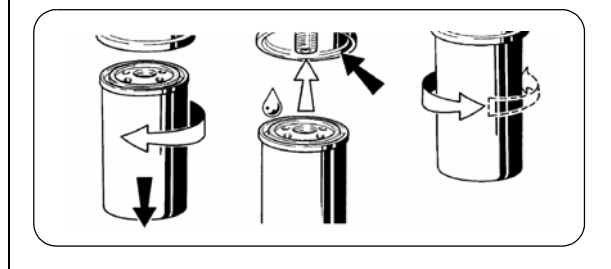
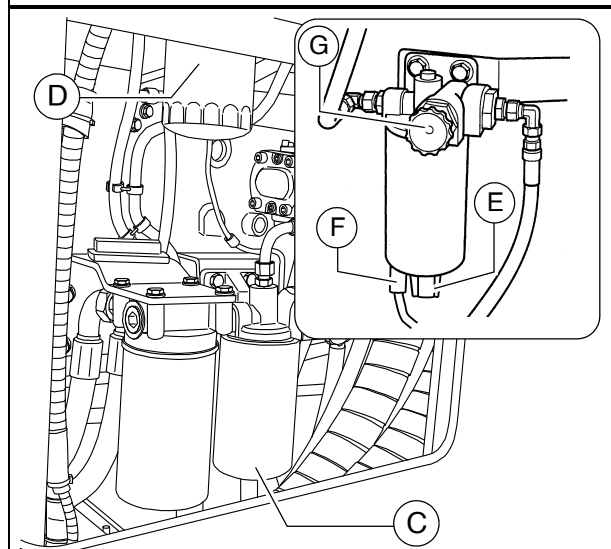
- Prefilter with water separator (C)
- Main filter (D)

#### Prefilter - draining of water



Drain the collecting vessel at regular intervals, or in response to an error message from the engine control unit.

- Drain off separated water at the cock (E) and collect, then close the cock again.



---

### Changing the prefilter:

- Drain off separated water at the cock (E) and collect, then close the cock again.
- Pull off the water sensor (F) connector.
- Loosen the filter cartridge (C) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Lightly oil filter cartridge seal and screw hand-tight under the bracket.
- Reconnect the water sensor (F) connector.

### Bleeding the pre-filter:

- Release the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning counter-clockwise.
- The pump plunger is now pressed out via the spring.
- Pump until a very high resistance is perceptible and pumping can only be carried out very slowly.
- Now continue pumping a few more times. (The return line must be filled).
- Start the engine and operate for approx. 5 minutes at idle speed or low load.
- Check the prefilter for leaks whilst doing this.
- Lock the manual fuel pump's (G) bayonet lock by pressing and simultaneously turning clockwise.

### Replacing the main filter:

- Loosen the filter cartridge (D) using a filter wrench or filter strap and unscrew.
- Clean sealing surface of filter bracket.
- Lightly oil the filter cartridge gasket and screw under the bracket.
- Once the gasket has contact with the filter head, turn the filter another 3/4 to full revolution.



Torque: 38Nm



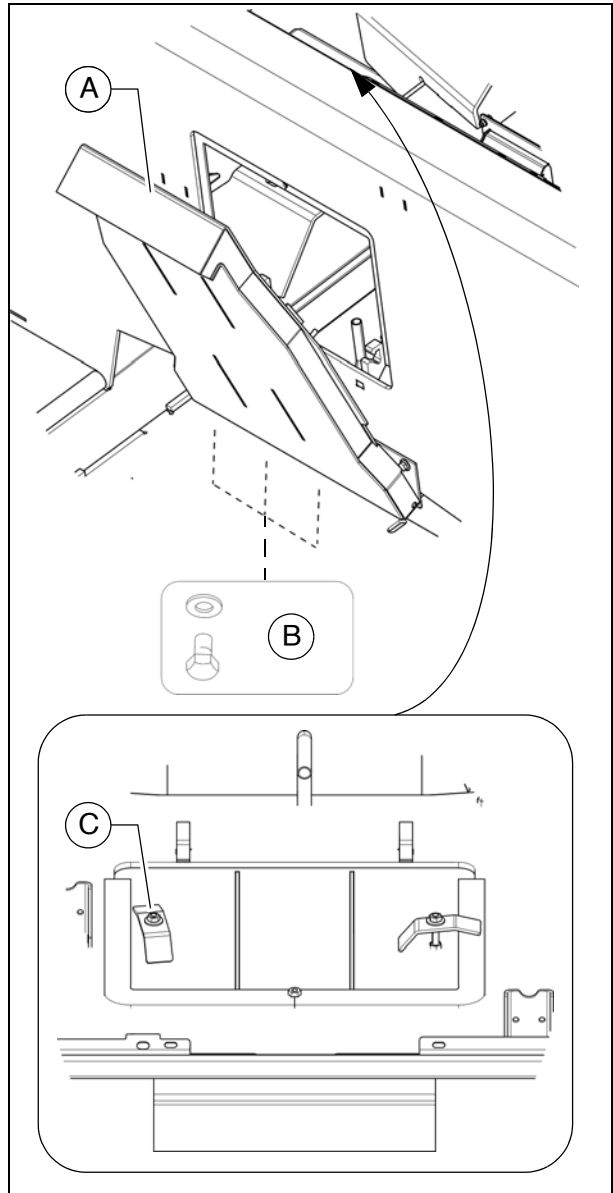
After fitting the filter, ensure good sealing action during the test run.

## Change extraction filter (○)



The air outlet shaft (A) has to be dismantled first in order to reach the filters.

- Open engine hood, remove screws (B) underneath the shaft.
- Loosen clips (C) on inside of frame and remove air outlet shaft (A).
- After completing the maintenance work, fit the air outlet shaft again in reverse order.



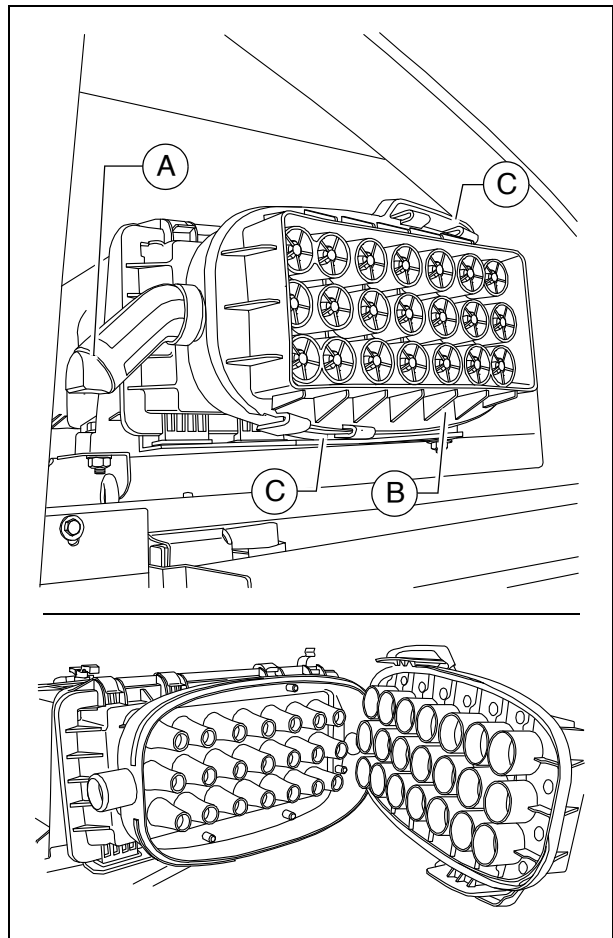
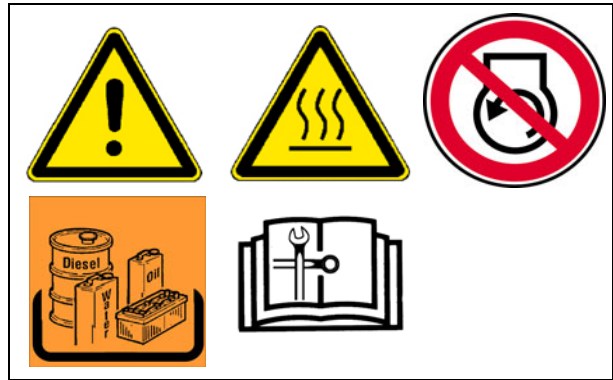
## Engine air filter (4)

### Empty dust collector

- Empty the dust removal valve (A) on the air filter housing by compressing the discharge slot.
- Remove any dust deflectors by pressing together the upper valve section.
- Open the collector housing (B) at the clips (C) and remove dust accumulations.
- Properly reposition the collector housing and lock at the clips (C).



Clean the dust removal valve from time to time.



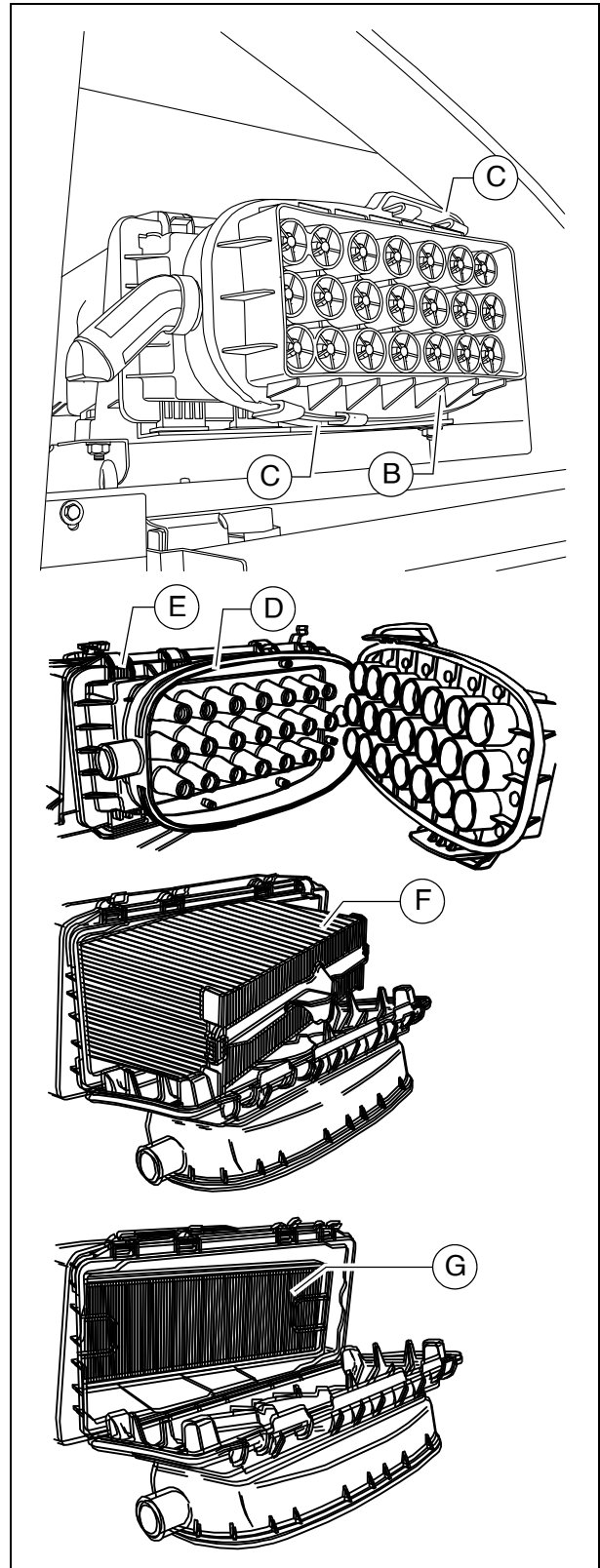
## Cleaning / replacing the air filter cartridge

- ☞ Maintenance of the filter becomes necessary if:

  - Engine electronics service indicator
  - Open the collector housing (B) at the clips (C)
  - Open the collector housing (D) at the clips (E).
  - Pull out the filter element (F) and safety element (G).
  
- ☞ Clean the filter element (F) and replace after one year at the latest.

  - Blow out with dry pressure air (max. 5 bar) from inside out or tap it (in case of emergency only).
  
- ☞ Do not damage cartridge when doing so.

  - Check the soundness of the filter papers of the filter cartridge (by exposing to light) and the soundness of the seals. Replace them if necessary.
  
- ☞ Replace the safety element (G) after the filter has been serviced 5 times, but after 2 years at the latest (never clean it!).



## Engine cooling system (5)

### Checking / topping up coolant

The cooling water level must be checked when the system is cold. Make sure that sufficient anti-freeze and anti-corrosion agent is available (-25°C).



When hot, the system is under pressure. When opening, there is a danger of scalding!

- If necessary fill in a sufficient amount of coolant through the open port (A) of the compensating tank.

### Change coolant



When hot, the system is under pressure. When opening, there is a danger of scalding!



Use only approved coolants!



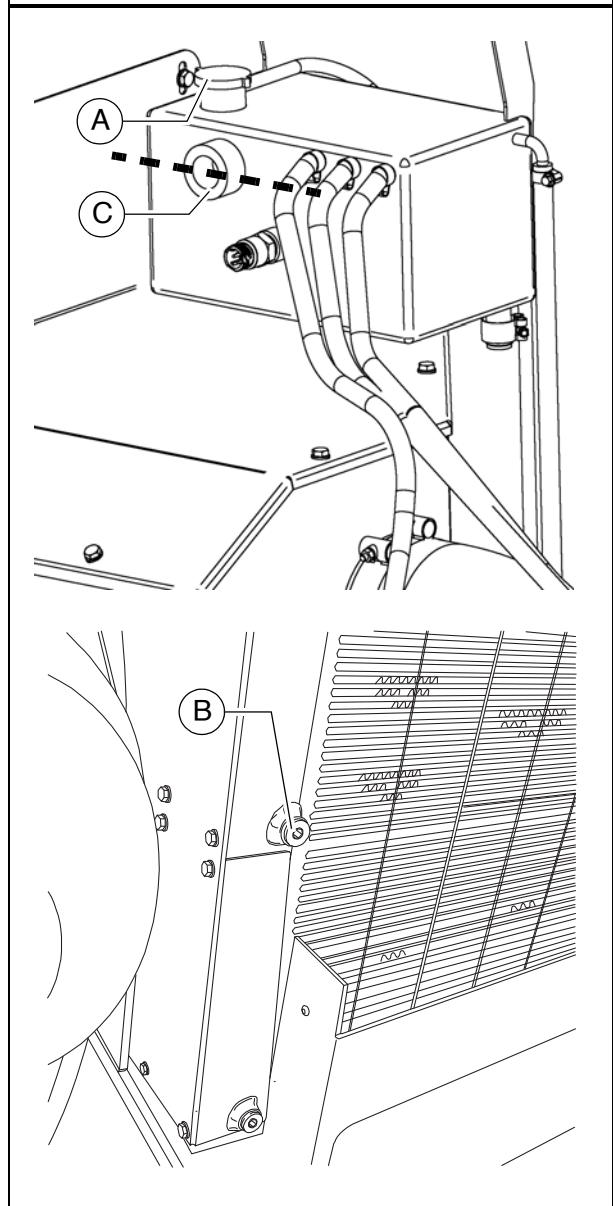
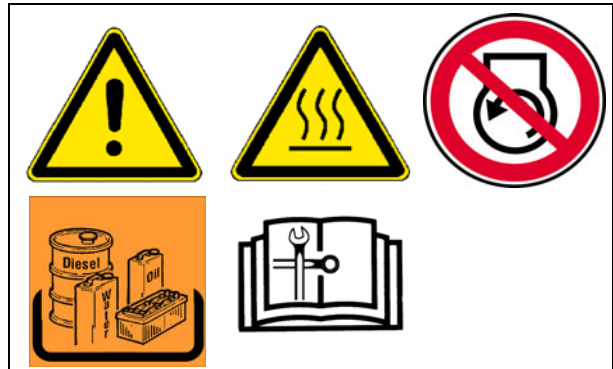
Observe the instructions in the chapter entitled "Operating substances"!

- Remove the drain screw (B) on the radiator and let the coolant drain completely.
- Reinstall the drain screw (B) and tighten properly.
- Fill in coolant through the filling opening (A) on the compensation tank until the coolant level rises to the centre of the sight glass (C).



The air is only able to escape completely from the cooling system once the engine has reached its operating temperature (at least 90°C).

Check the fluid level again, top up if necessary.



### **Checking and cleaning the radiator fins**

- If necessary, remove leaves, dust or sand from the radiator.



Observe engine's operating instructions!

### **Check coolant concentration**

- Check the concentration using a suitable tester (hydrometer).
- Adjust the concentration if necessary.



Observe engine's operating instructions!


### AdBlue® / DEF tank (6)



- Check the **filling level** on the gauge on the operating panel.





Top up with AdBlue® / DEF if necessary.



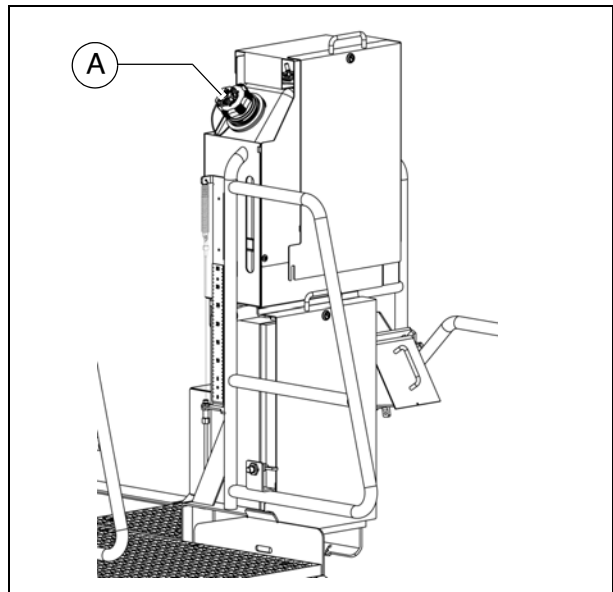
NOTE	<b>Storage and handling AdBlue® / Diesel Exhaust Fluid (DEF)</b>
	<p>Incorrect handling of AdBlue® / DEF can cause major damage to the vehicle:</p> <ul style="list-style-type: none"> <li>- Never fill oil, diesel or other fluids into the AdBlue® / DEF system: <ul style="list-style-type: none"> <li>- Do not start the engine after filling incorrectly</li> <li>- Consult the Atlas Copco Service Department</li> </ul> </li> <li>- Only use AdBlue® / DEF as per ISO 22241-1 / DIN 70070.</li> <li>- The storage temperature for AdBlue® / DEF is between -5°C and 25°C (23°F and 77°F)</li> <li>- Store in sealed containers to avoid impurities.</li> <li>- No direct sunlight.</li> <li>- It is not advisable to store in a vehicle for longer than 6 months. Seal the tank breathers when stored in the urea tank.</li> <li>- If AdBlue® / DEF is spilt on painted surfaces or aluminium surfaces when topping up, rinse the affected areas immediately with water.</li> <li>- Do not fill the AdBlue® / DEF tank until it overflows, otherwise it can be damaged at very low temperatures.</li> <li>- Always heed the local rules and regulations when disposing of AdBlue® / DEF!</li> <li>- Comply with all further information in the engine operating instructions.</li> </ul>

 <b>WARNING</b>	<b>Danger from AdBlue<sup>®</sup> / Diesel Exhaust Fluid (DEF)</b>
	<p>Inadequate preparations for using AdBlue<sup>®</sup> / DEF can result in severe injuries! AdBlue<sup>®</sup> / DEF should never be in contact with the skin, eyes or clothing or be swallowed. Keep AdBlue<sup>®</sup> / DEF out of reach of children.</p> <ul style="list-style-type: none"><li>- Before handling AdBlue<sup>®</sup> / DEF, make yourself familiar with the safety data sheet.</li><li>- If you get AdBlue<sup>®</sup> / DEF in your eyes, rinse your eyes immediately and thoroughly for at least 15 minutes with clear water. Seek medical advice immediately!</li><li>- Wash AdBlue<sup>®</sup> / DEF off your skin immediately with soap and water.</li><li>- If you have swallowed AdBlue<sup>®</sup> / DEF, rinse your mouth out with water and drink plenty of water. Seek medical advice immediately!</li><li>- Change any clothing soiled with AdBlue<sup>®</sup> / DEF immediately.</li><li>- Comply with all further instructions in the AdBlue<sup>®</sup> / DEF safety data sheet.</li><li>- Comply with all further information in the engine operating instructions.</li></ul>

 <b>WARNING</b>	<b>Danger from ammonia vapours, overpressure in the tank</b>
	<p>If you open the AdBlue<sup>®</sup> / DEF tank cap at high temperatures, ammonia vapours can escape and cause injuries!</p> <ul style="list-style-type: none"><li>- Only fill the AdBlue<sup>®</sup> / DEF tank in well ventilated areas.</li><li>- Always be careful when opening the AdBlue<sup>®</sup> / DEF, as this can cause pressure to be released. AdBlue<sup>®</sup> / DEF may leak as a result.</li><li>- Do not inhale the ammonia vapours!</li><li>- Ammonia vapours have a biting smell and cause irritation above all to the skin, mucous membranes and eyes.</li><li>- Consult a doctor immediately if injured.</li><li>- Comply with all further instructions in the AdBlue<sup>®</sup> / DEF safety data sheet.</li><li>- Comply with all further information in the engine operating instructions.</li></ul>

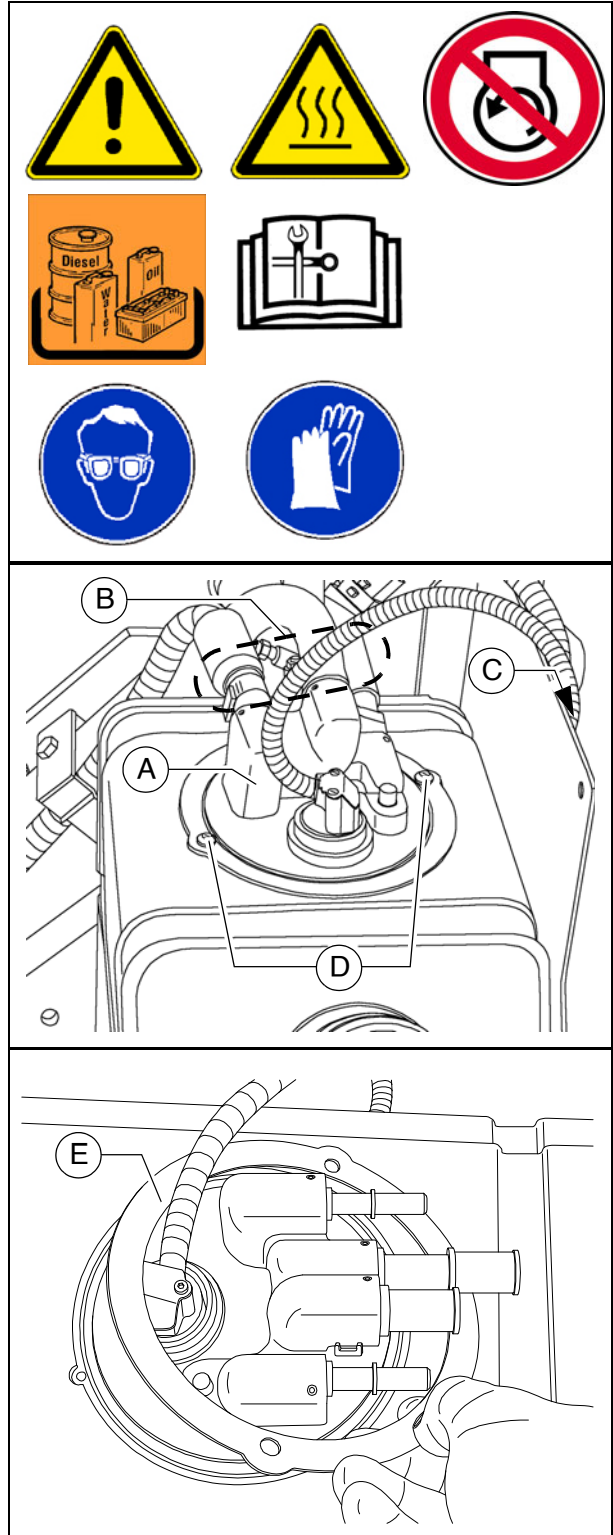
#### To top up with AdBlue<sup>®</sup> / DEF

- Remove cover (A).
- Top up with AdBlue<sup>®</sup> / DEF through the filling port until the required level is reached.
- Replace the cover (A).



## AdBlue® / DEF tank - suction filter

### Replace filter element



- To change the filter, the supply lines (B) at the AdBlue® / DEF multi-head (A) must be dismantled and the electrical connection (plug) (C) disconnected.



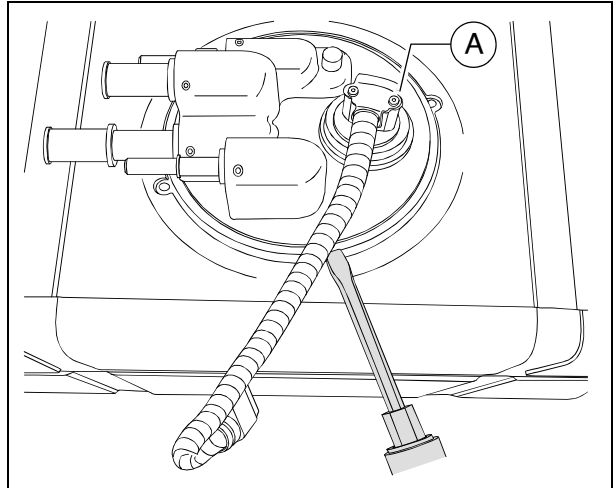
Use a suitable container or cloth to take up any leaked residues.

- Loosen screws (D) and remove retaining ring (E).

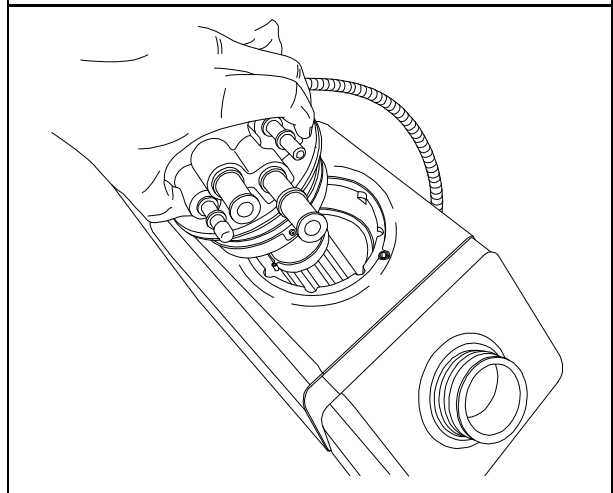
- Carefully lever the multi-head (A) from the tank surface by applying a suitable slotted screwdriver around the edge. Pull the head at the same time.



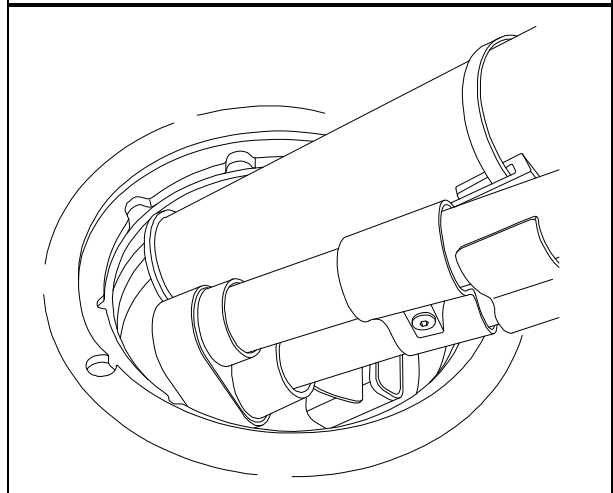
Do not pull the connection cable or connection port!



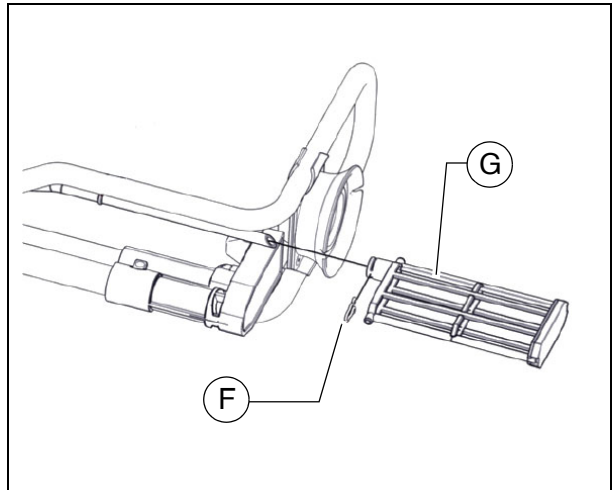
- Carefully pull the multi-head up until the lower part is beneath the tank opening.



- Carefully tilt the lower part up and turn the head until the lower part is at the tank opening.
- Carefully pull the lower part out of the tank opening.



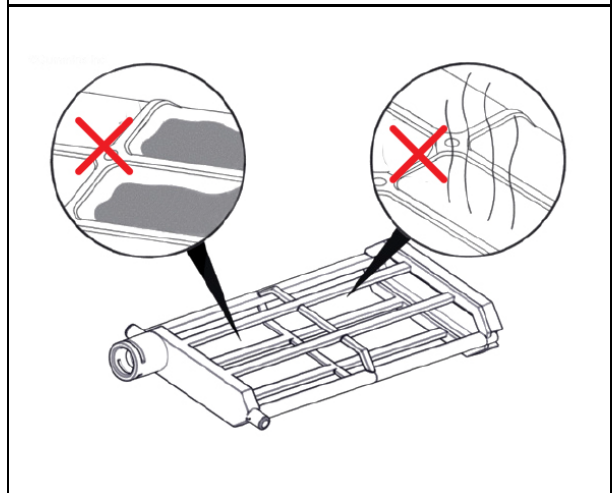
- Remove the clip (F) from the inlet connection of the filter (G) and remove the filter.



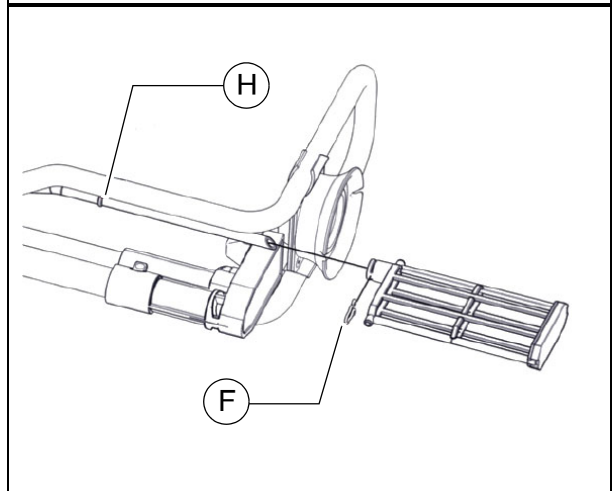
- Examine the filter for soiling, particles and cracks.



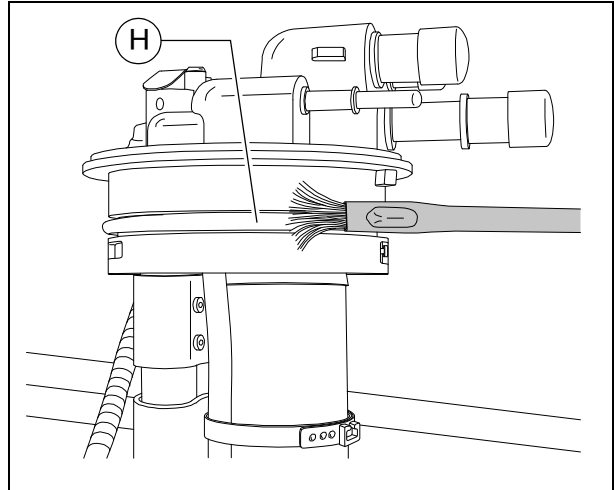
On finding particles or cracks, also check the filter of the dosing unit!



- Fit the O-ring (H) in the groove on the intake pipe
- Insert the inlet connection of the new filter into the tank intake pipe.
- Fit the clip (F) over the groove on the filter inlet connection.



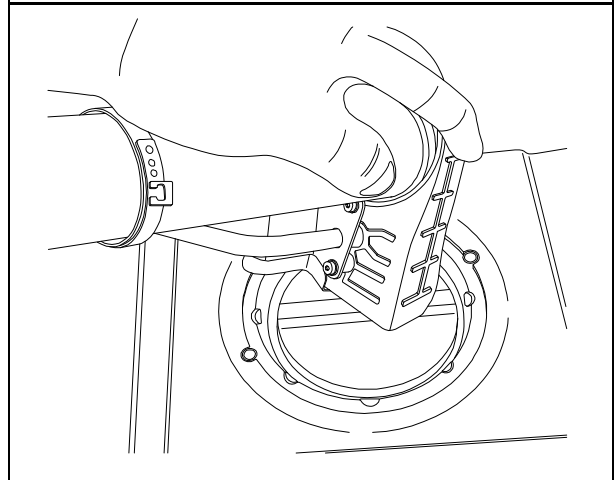
- Lightly grease the O-ring (I) of the multi-head.



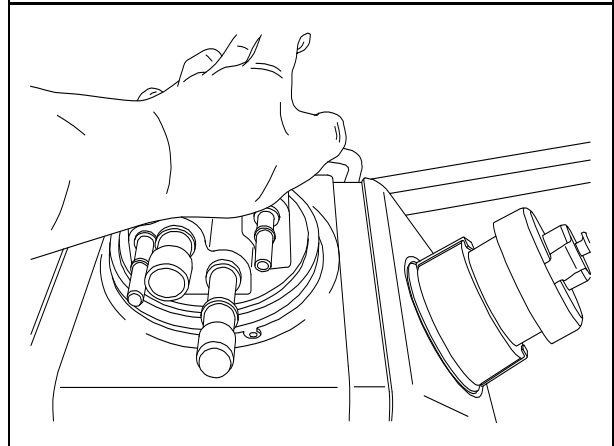
- Tilt the lower part at an angle of about 45°.
- Gradually insert the lower part in the tank opening, proceeding carefully.



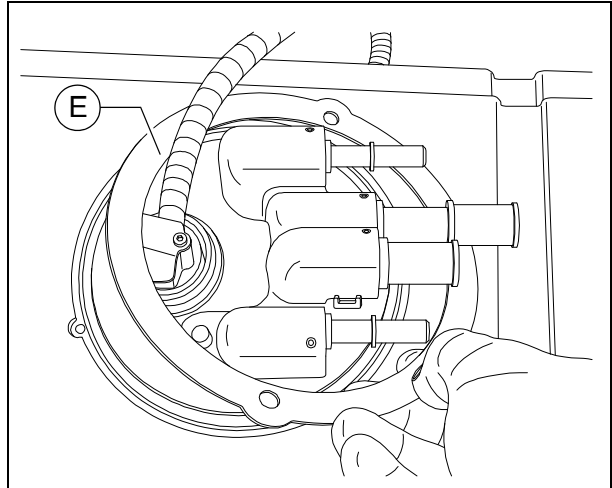
Do not push the parts with force directly into the tank opening. This will cause damage!



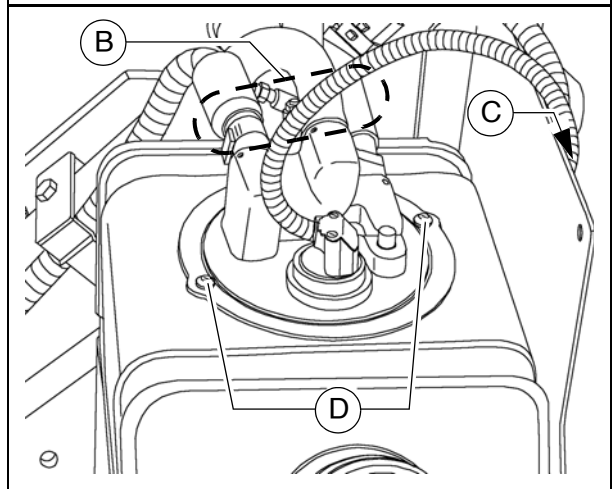
- Position the head in the required alignment and press on the top until the head fits completely in the tank opening.



- Place the retaining ring (E) over the filter head.



- Tighten the screws (D) properly.
- Then mount the supply lines (B) and connect up to the power supply (plug) (C).



After installation, check correct sealing during a trial run.

## AdBlue® / DEF tank - tank cover

### Clean tank cover



Impurities or crystals of AdBlue® / DEF on the outside and inside of the tank cover can considerably interfere with the system!



If the tank cover is visibly soiled, it must be cleaned as follows.

- Remove the drain plug (A) to empty the tank.  
Collect the remaining contents in a suitable container and then dispose of them properly.

- To remove the filler neck filter (B), turn the filter a quarter of a turn counter-clockwise and pull out of the filler neck strainer.

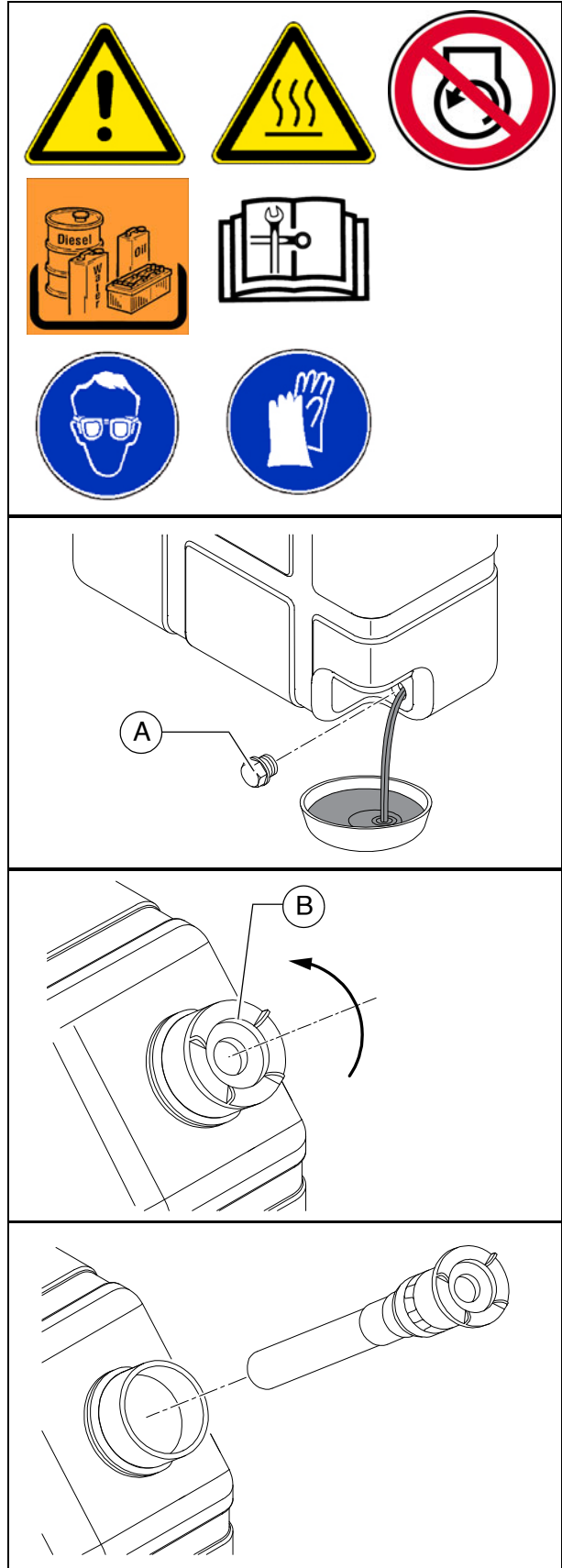


To avoid damage, do not use a sharp object to remove the filler neck filter.

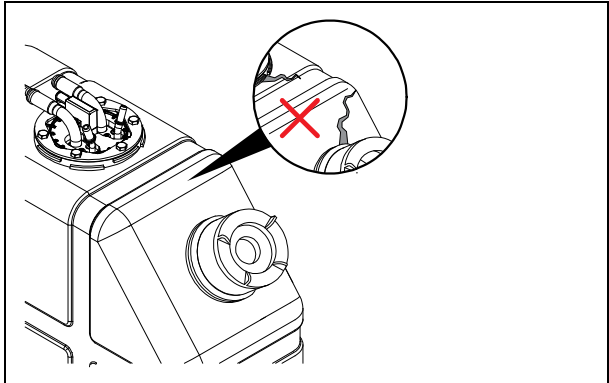
- Remove the filler neck filter.



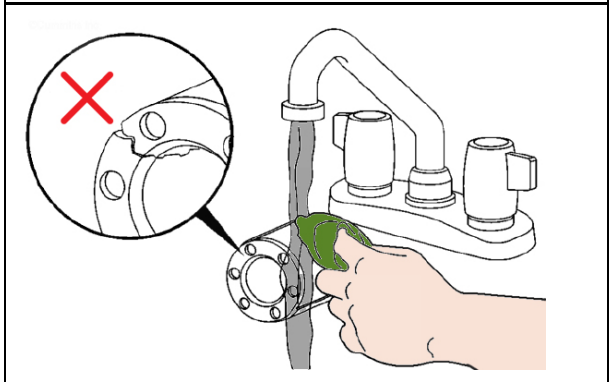
To avoid soiling, place the strainer and filter on a dry, clean surface.



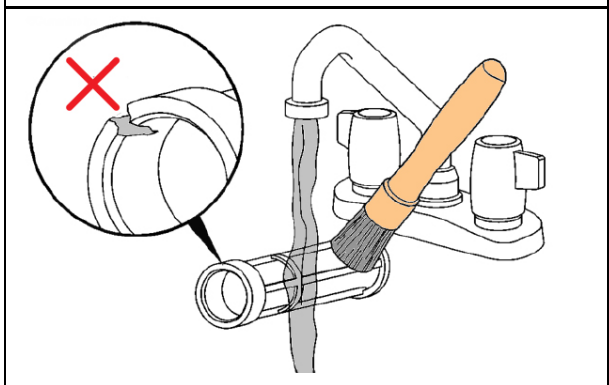
- Check tank for damage. On finding any damage, replace tank. Flush DEF tank with distilled water and clean with compressed air.



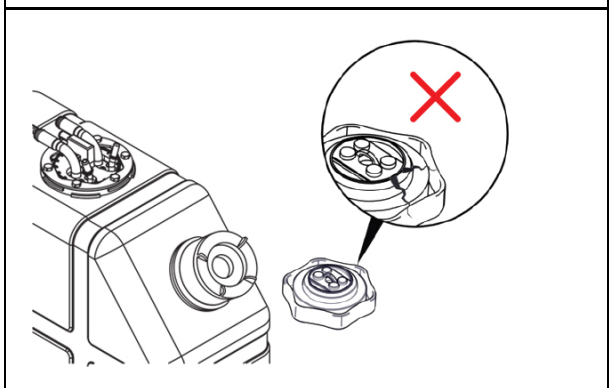
- Check filler neck for cracks and other damage. On finding any damage, replace filler neck. Clean the filler neck with warm water and a clean cloth. Dry with compressed air to avoid soiling.



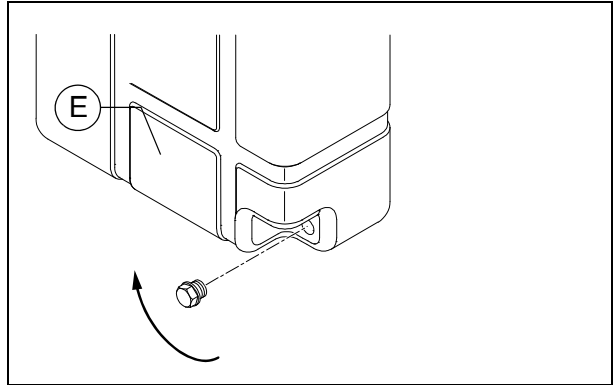
- Check the filter for cracks and other damage. On finding any damage, replace the filter.
- Clean the filter with warm water and a soft brush. Dry with compressed air to avoid soiling.



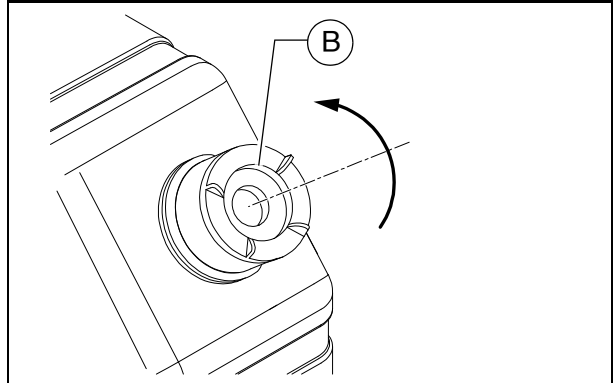
- Check the tank cover and the ventilation cap for cracks and holes, check the condition of the thread. On finding any damage, replace the tank cover and/or the ventilation cap.
- Check the thread of the DEF tank. On finding any damage, replace the complete tank
- Clean tank cover and ventilation cap with warm water and a cloth. Dry with compressed air to avoid soiling.



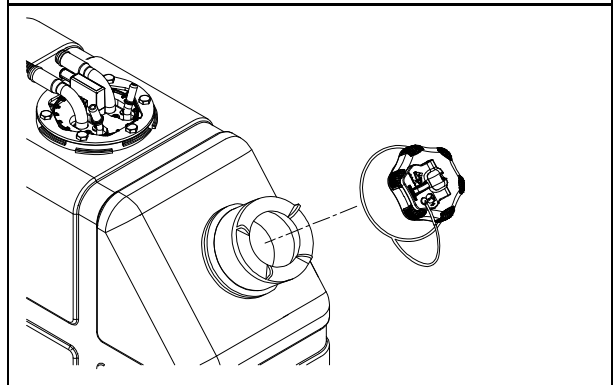
- Fit the tank drain plug and screw tight (5 Nm).



- Fit the filler neck strainer (B) in the tank.  
Insert the filler neck unit in the tank.  
Turn counter-clockwise until the unit locks.



- Fit the tank cover and tighten by hand until it locks.



## AdBlue® / DEF dosing unit

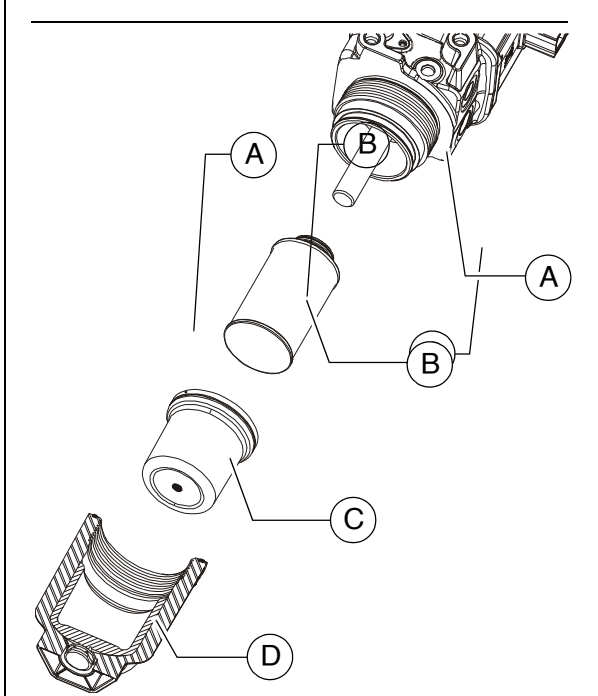
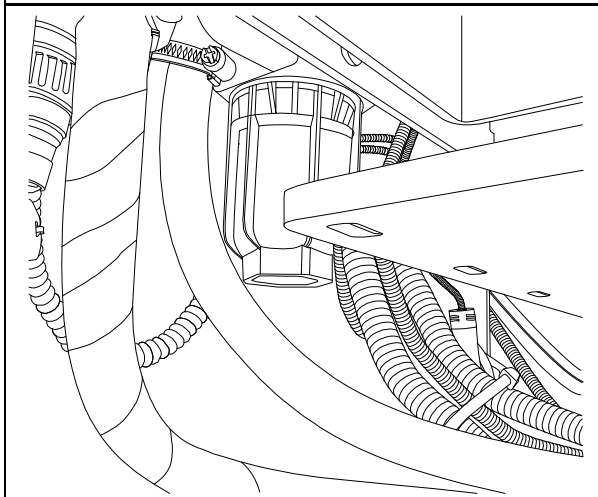


After turning the engine off, let the DEF flow back and release pressure before working on the DEF system. Depressurising can take up to 15 minutes. It is still possible for residual pressure to remain in the system. Before disconnecting any connections, open the fittings slowly to let any pressure escape. Disconnect the batteries.





The DEF dosing unit filter consists of the following components:


- DEF dosing unit (A)
- Filter element of the DEF dosing unit (B)
- Anti-freeze membrane of the DEF dosing unit (C)
- Housing of the DEF dosing unit filter (D)



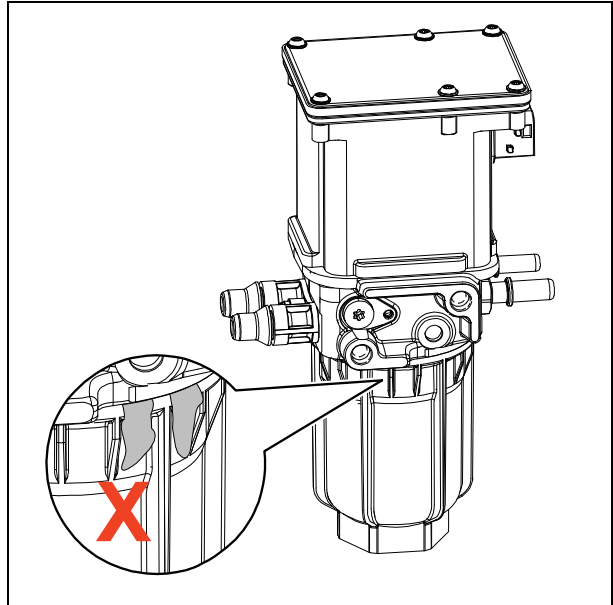
## Replace filter element

 Check the area around the seal and filter housing for any leaks. DEF leaks leave white deposits. Comply with section on "Cleaning and checking for reusability".

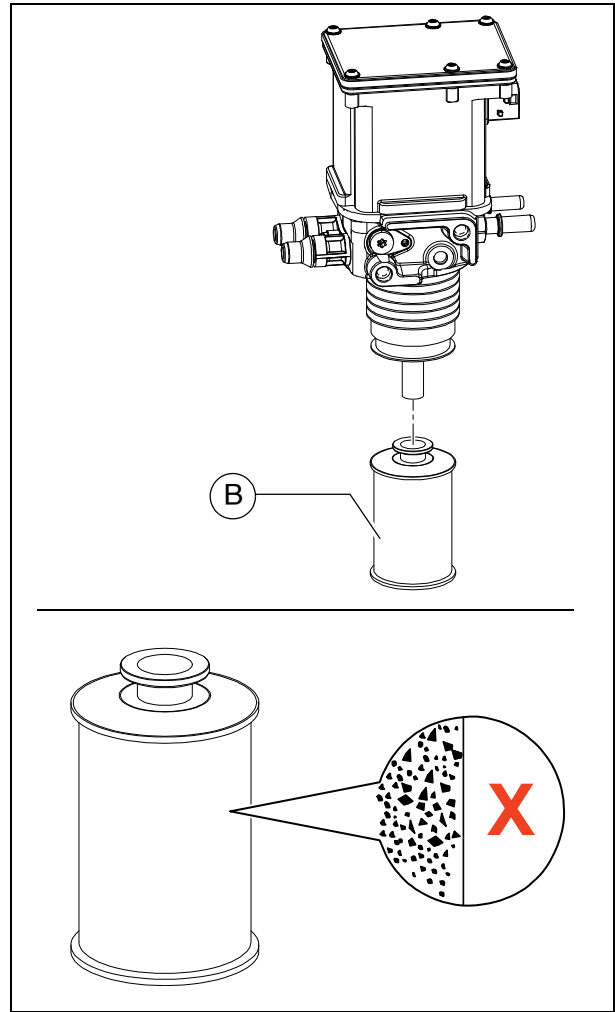
 Remove loose foreign particles with compressed air. Remove soiling with a clean damp cloth to ensure no soiling can land in the DEF dosing unit.

 Even tiny quantities of dirt particles and soiling can damage the DEF dosing system. No dirt or other foreign bodies may land in the DEF dosing unit.

- Place a suitable container under the filter housing to catch any AdBlue® / DEF residues.
- Unscrew housing (D) (46 mm wrench).
- Remove anti-freeze membrane (C) and proceed with visual inspection. A small quantity of DEF could leak at this point.



- Pull filter element (B) out of the unit. To do so, pull and turn at the same time. Take up any dripping DEF. Use a dry, clean, lint-free cloth. Dry unit. Dispose of anti-freeze membrane and filter element.
- If there is a risk that soiled DEF has flowed through the DEF dosing system, check the DEF filter prior to disposal. Check the filter of the dosing unit for signs of soiled DEF. Use the appearance and smell of the filter to ascertain whether soiled fluid has flowed through the dosing system. Contact the service department if necessary. Check the DEF filter for soiling. On finding soiling, check the following:  
DEF tank filter. Inlet connection of the DEF dosing unit: Contact the service department if necessary.

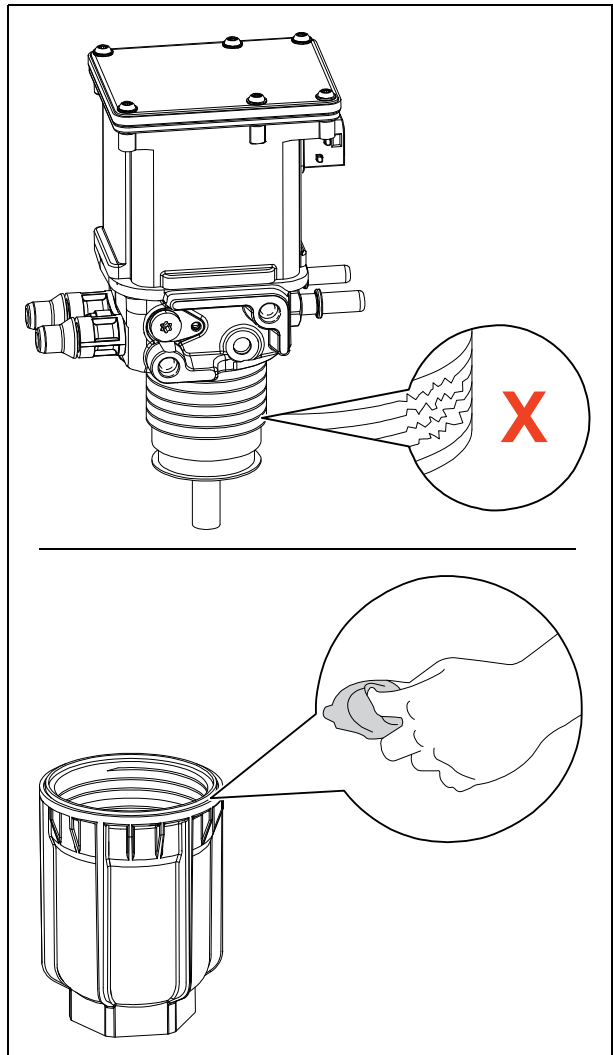


## Cleaning and checking for reusability

- Check the thread of the DEF dosing unit. This is particularly important if the cover of the DEF dosing unit was defective. If the thread of the DEF dosing unit is damaged, replace the complete DEF dosing unit. Check that the groove of the anti-freeze membrane is clean and free of soiling. Clean with a clean, damp cloth, warm water and a mild cleaner.



Never drive the vehicle when the DEF filter or filter housing is removed. Clean the cover of the new filter housing of the DEF dosing unit and the thread of the dosing unit. Use warm water and a clean cloth.



## Installation

- Insert a new filter element in the DEF dosing unit. Press the filter up to check that it fits properly. Place a new anti-freeze membrane over the filter element.



The sealing bead of the anti-freeze membrane must fit fully in the notch of the pump housing.



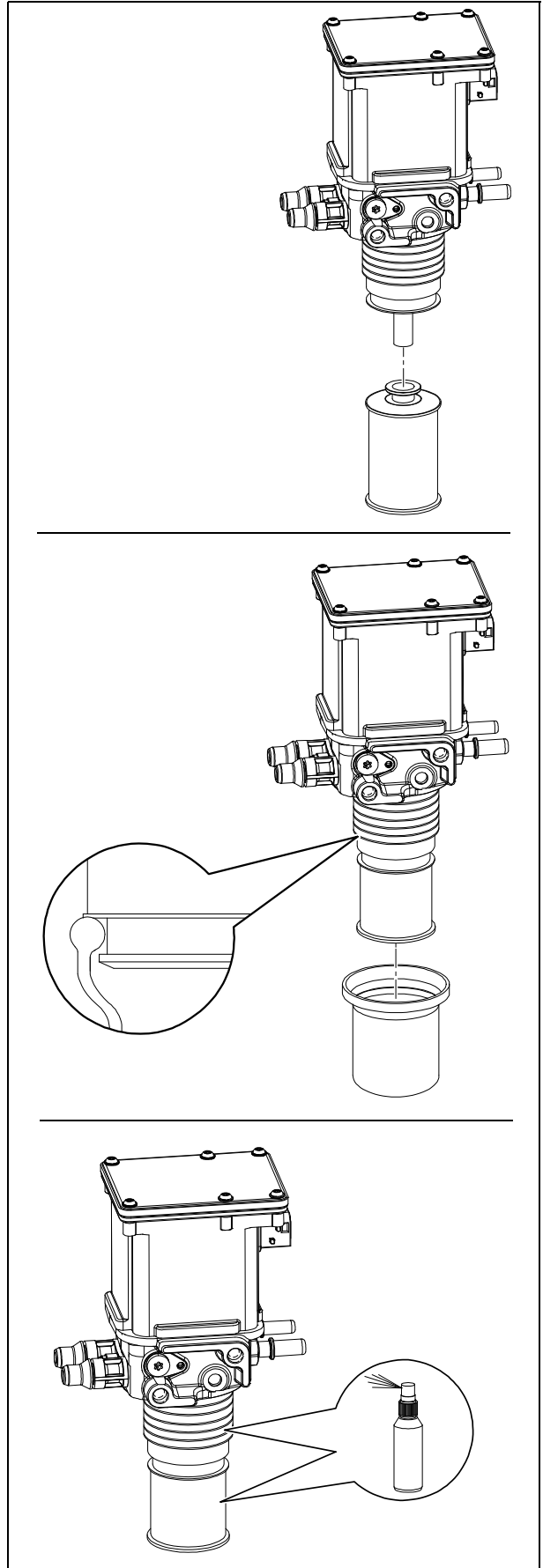
Use the supplied lubricant when fitting the filter housing. Spray the supplied lubricant on the threads of the pump housing and the sealing bead of the anti-freeze membrane. Install the filter housing and screw tight. Use a 46 mm socket wrench insert. Torque: 80 Nm

## Final jobs of work

- Connect the battery.



Let the engine run for at least 15 minutes so that the system reaches operating temperature. Look out for any leaks.



## Engine drive belt (7)

### Check drive belt

- Check the drive belt for damage.



Small transverse cracks in the belt are acceptable.



In the event of longitudinal cracks which intersect with transverse cracks and damaged material surfaces, belt replacement is necessary.

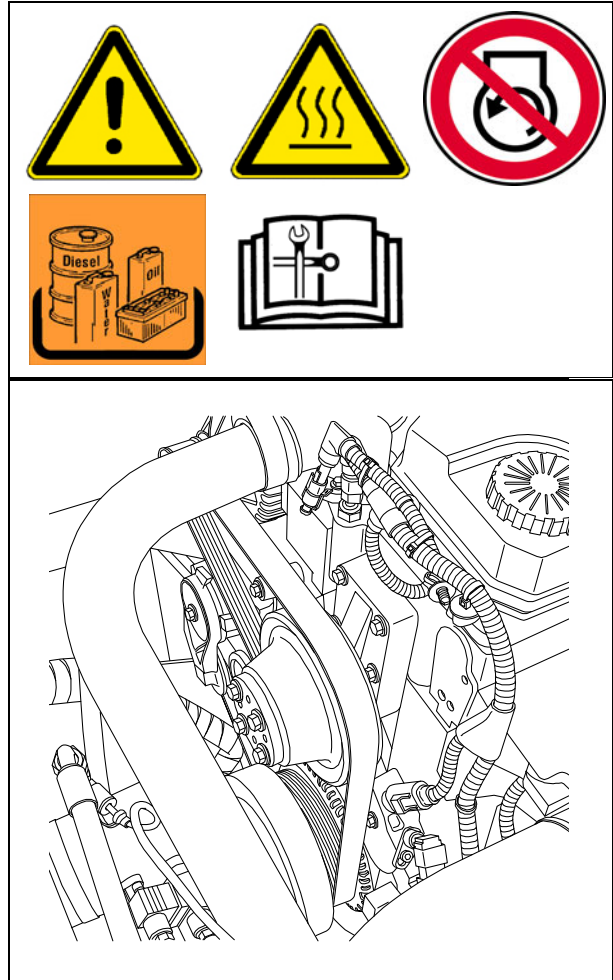


Observe engine's operating instructions!

### Replace drive belt



Observe engine's operating instructions!



## Exhaust system - diesel oxidisation catalytic converter (8)



### Inspect the exhaust system



Basically the exhaust system does not need any maintenance.  
Inspection consists of a visual check:

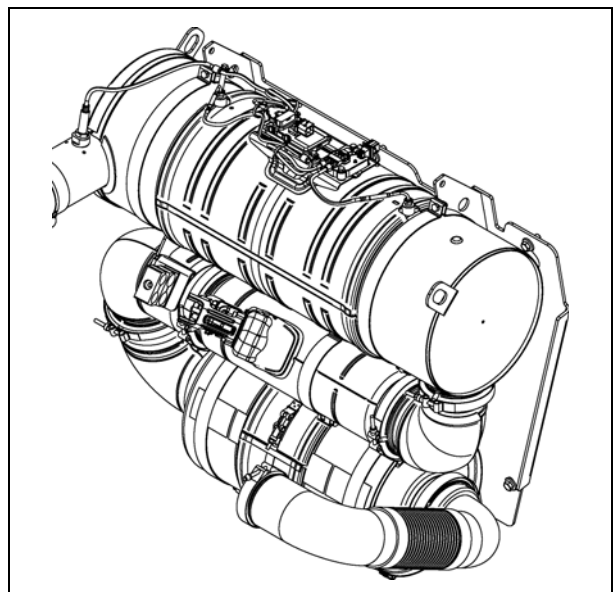
- damaged parts?
- loose screwed connections, plugs or lines?



 <b>WARNING</b>	<p><b>Risk from hot surfaces!</b></p> <p>During system cleaning, the exhaust temperature and the surface temperature of the exhaust system is very hot and can cause severe injuries! The exhaust and exhaust components remain hot after the engine has stopped.</p> <ul style="list-style-type: none"> <li>- Let the exhaust system cool down before starting inspection work.</li> <li>- Make sure that no flammable materials can come into contact with the exhaust system.</li> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Comply with all further information in the engine operating instructions and in the safety manual.</li> </ul>
	

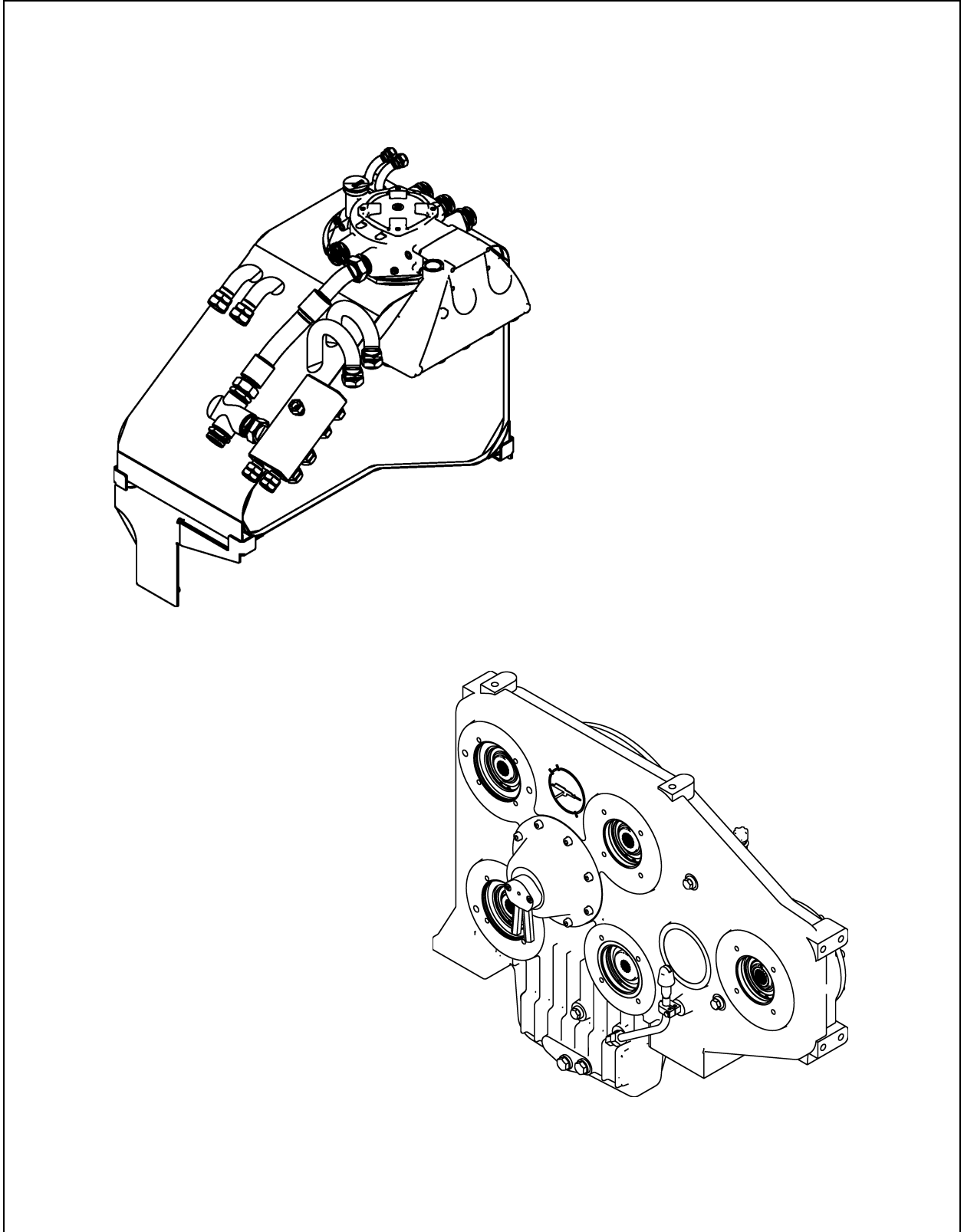




The Dynapac Customer Service must be consulted whenever the exhaust system is to be repaired!








# F 61 Maintenance - hydraulic system

## 1 Maintenance - hydraulic system



 <b>WARNING</b>	<b>Danger due to hydraulic oil</b>
	<p>Hydraulic oil under high pressure can cause severe to fatal injuries!</p> <ul style="list-style-type: none"><li>- Only competent staff should work on the hydraulic system!</li><li>- Any hydraulic hoses that are cracked or soaked through must be replaced immediately.</li><li>- Depressurise the hydraulic system.</li><li>- Lower screed and open hopper.</li><li>- Stop the engine and remove the ignition key before any maintenance work.</li><li>- Secure the vehicle to prevent it being switched on again.</li><li>- Consult a doctor immediately if injured.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"><li>- Wear your personal safety gear.</li><li>- Do not touch hot parts of the vehicle.</li><li>- Only perform maintenance and repair work after the vehicle has cooled down.</li><li>- Comply with all further information in these instructions and in the safety manual.</li></ul>

 <b>WARNING</b>	<b>Danger from residual pressure in hydraulic lines</b>
	<p>Residual pressure in the hydraulic system can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Proceed as follows before working on the hydraulic system:             <ol style="list-style-type: none"> <li>1. Place the machine on a level surface, secure it against accidentally rolling away and activate the parking brake if necessary.</li> </ol> </li> <li>- Depressurise the hydraulic system for maintenance:             <ol style="list-style-type: none"> <li>2. Open hopper.</li> <li>3. Move levelling cylinder to lower limit position.</li> <li>4. Retract screed.</li> <li>5. Lower the screed to the floating position.</li> <li>6. Set crowning to 0°.</li> <li>7. Move front hopper cylinder to lower limit position.</li> <li>8. Retract the auger lifting cylinder.</li> <li>9. Centre the platform in the centre position.</li> </ol> </li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Secure the machine against being switched on, disconnect the battery from the vehicle electrical system.</li> <li>- Let the hydraulic oil cool down.</li> <li>- Allow a waiting period to relieve residual pressures.</li> <li>- Depressurise the diaphragm accumulator by waiting at least 20 minutes after stopping the engine.</li> <li>- Do not carry out any maintenance work on the drive system until the system pressure has been relieved. Make sure that the oil pressure of the diaphragm accumulator is completely released with a measurement at the measuring connections contained in the switching circuit.</li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Secure the vehicle to prevent it being switched on again.</li> <li>- Let the hydraulic oil cool down.</li> </ul> <p> After depressurising, begin slowly and carefully when opening the threaded connections in the hydraulic lines.</p> <p>Continue to loosen the threaded connections with caution in order to notice possible dangers resulting from any still remaining pressure in the hydraulic fluid (here it may help to knock gently on the threaded connection) so that precautions can be taken.</p> <p>Do not continue loosening the threaded connection if there is still any remaining pressure in the system. Depressurise the system again and check once more that this has been effective.</p>

## 9.1 Maintenance intervals


Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years If necessary		
1	■							- Hydraulic oil tank - Check fill 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/re- turn flow hydraulic filter	
						■		- Hydraulic oil tank - Change ventilation filter	
3	■							- High-pressure filter - Check maintenance indicator	
						■	■	- High-pressure filter - Replace filter element	

Maintenance	■
Maintenance during the running-in period	▼

Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years if necessary		
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	
5	▼ ■							- Hydraulic hoses - Visual inspection	
	▼ ■							- Hydraulic system Leak test	
							■	- Hydraulic system Retighten screw connections	
						■	■	- Hydraulic hoses - Replace hoses	
6					■	■	- Auxiliary flow filter- Replace filter element	((○))	

Maintenance	■
Maintenance during the running-in period	▼

## 10 Safety instructions for working on the hydraulic system

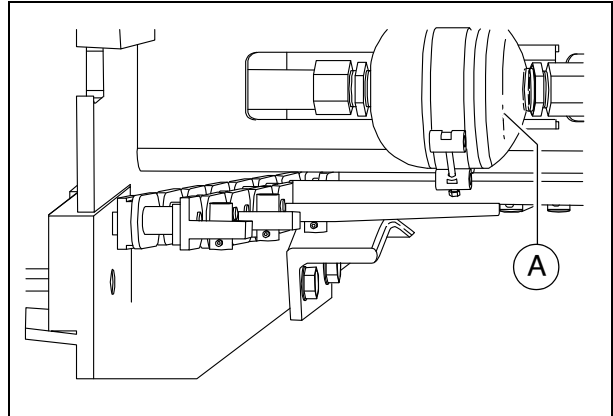
 The vehicle's hydraulic system has two hydraulic reservoirs!




Before working on the hydraulic system, depressurise the system and secure it from inadvertent starting!



Before working on the travel drive hydraulic circuit:  
wait for 15 minutes after turning the diesel engine off!



 The hydraulic reservoirs (A) are on the frame crossbeam at the rear axle.

### Safety instructions hydraulic reservoir



The hydraulic reservoir may only be assembled, maintained and repaired by authorised, trained and familiarised personnel!



Risk of explosion during welding and soldering work!



Mechanical treatment leads to the risk of bursting and loss of the operating licence!



Improper mounting can cause severe accidents!




The vehicle must only be put into operation by qualified specialist personnel!


 Please comply with the national pressure vessel directives!


## 10.1 Points of maintenance

### Hydraulic oil tank (1)

- Check **oil level** on sight glass (A).


 The hydraulic oil should have reached a temperature of at least 50°C for the check.


 If all the cylinders are extended, the level can fall below the sight glass. The movable control platform (○) must be moved to the left when doing so.


 The sight glass is located on the side of the tank.

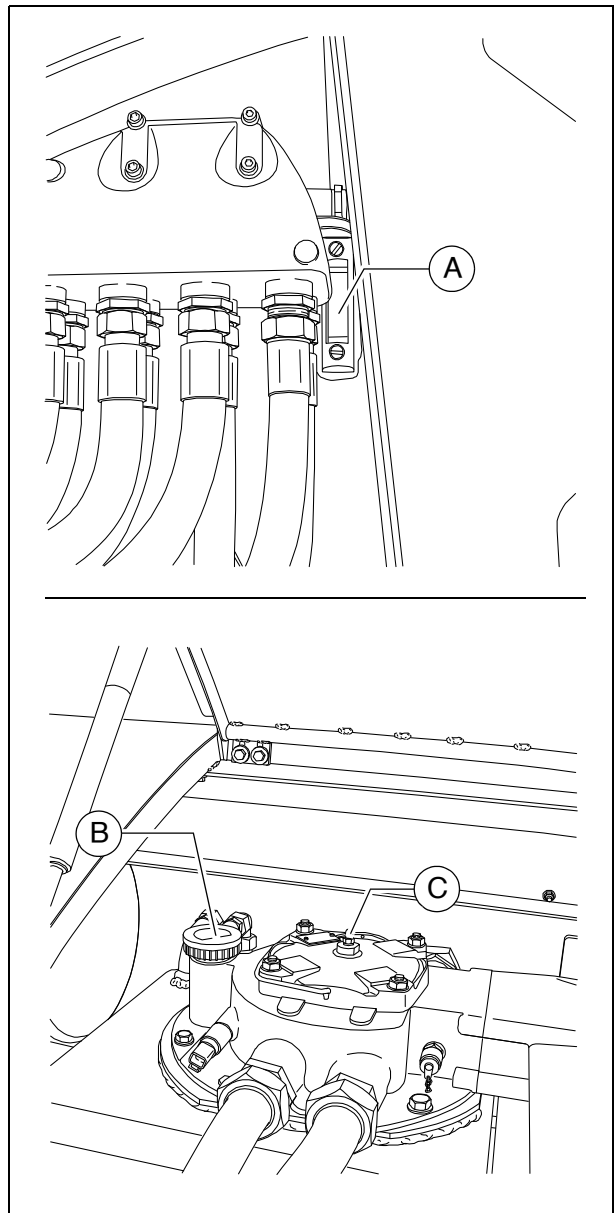
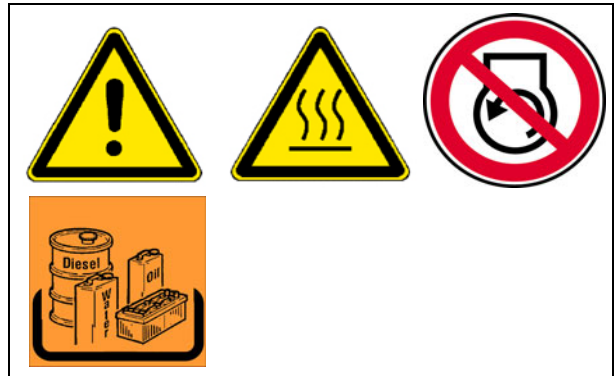
#### For **filling in** the oil:

- Remove cap (B).
- Fill in oil through the filler opening until the oil level rises to the centre of the sight glass (A) (+/- 5 mm).
- Screw cap (B) on again.

 Regularly remove dust and dirt from the oil tank vent (C). Clean the surfaces of the oil cooler.

 Use only the recommended hydraulic oils - see section "Recommended hydraulic oils".

 When filling for the first time, all hydraulic cylinders should be extended/retracted at least 2x for ventilation!



To **change** oil:

- To drain the hydraulic oil unscrew the drain plug (D) at the bottom of the tank.
- Collect the oil in a container using a funnel.
- When fastening the screw again after draining, make sure to use a new seal.



When using the drainage hose (○):

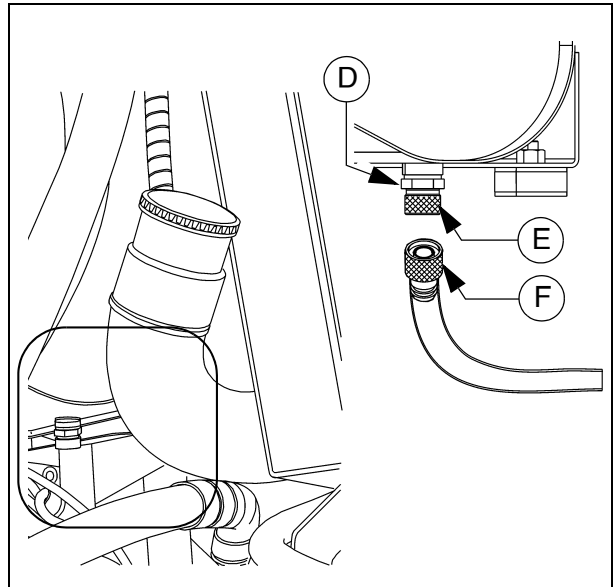
- Unscrew seal cap (E).
- Screwing on the oil drainage hose (F) opens the valve to let the oil drain out.
- Place the end of the hose in the collecting vessel and let the oil drain completely.
- Unscrew the drainage hose and return the screw cap.



The oil should be changed when at operating temperature.

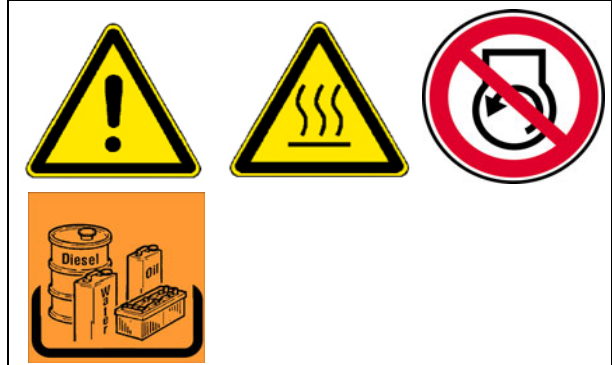


When changing the hydraulic oil also change the filter.

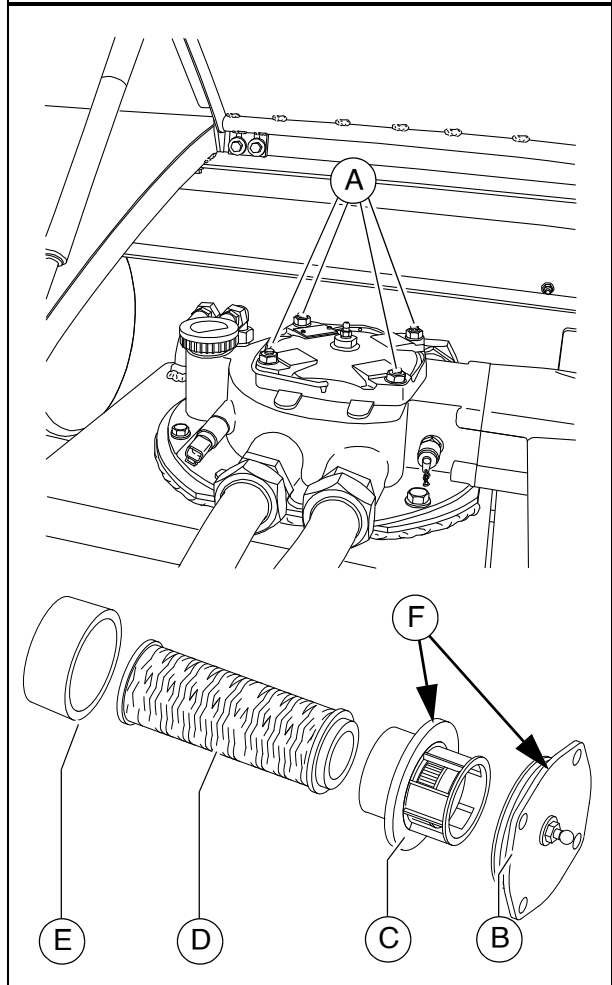


## Suction/return flow hydraulic filter (2)

Carry out **filter replacement** according to the interval or the indicator lamp in the operating panel!



- Remove cover securing screws (A) and lift off cover.
- Disassemble the removed unit into:
  - Cover (B)
  - Separating plate (C)
  - Filter (D)
  - Dirt trap (E)
- Clean the filter housing, cover, separating plate and dirt trap.
- Check the O-rings (F), replace if necessary.
- Coat the sealing surfaces and O-rings with clean operating fluid.



The filter must be bled following filter replacement!

### Bleeding the filter

- Fill the opened filter housing with hydraulic oil up to approx. 2 cm below the top edge.
- If the oil level drops, replenish oil again.



Slow oil level reduction of approx. 1 cm / min. is normal!

- If the oil level remains stable, slowly insert the assembled unit with new filter element into the housing and tighten the cover mounting screws (A).
- Open the bleed screw (G).
- Place a transparent hose (H) onto the bleed screw, ending in a suitable container.
- Start the up drive engine at idle speed.
- Close the bleed screw (G) as soon as the oil forced through the hose is clear and therefore free of air bubbles.



The process from assembling the filter cover to starting the drive engine should take place in less than 3 minutes, as the oil level in the filter housing otherwise falls too far.



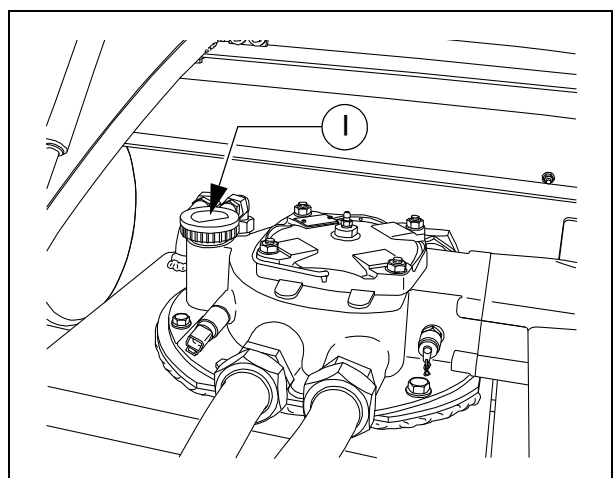
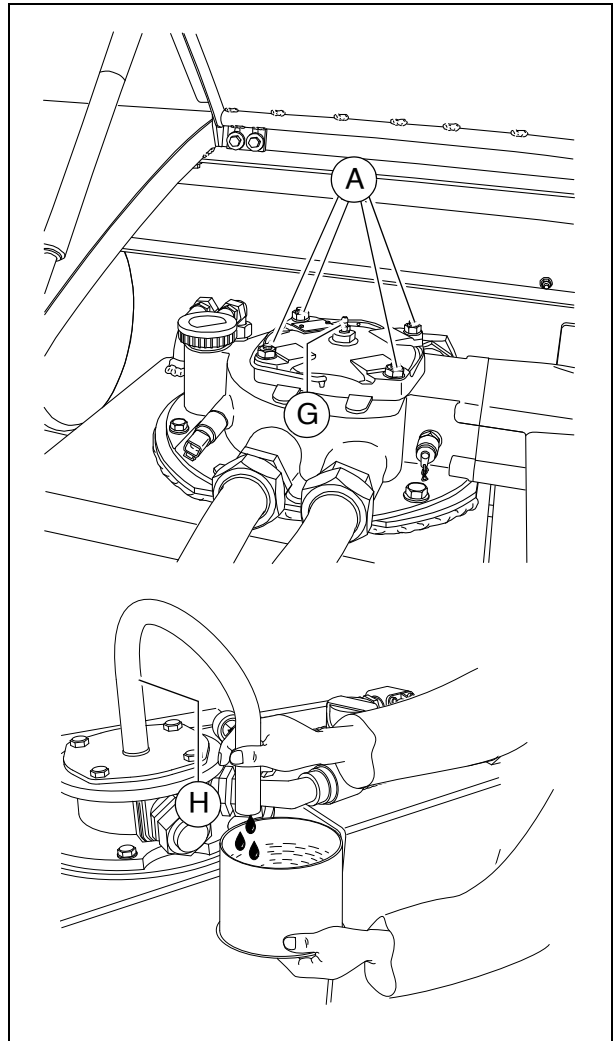
Ensure seal integrity is good after changing the filter.

### Ventilation filter



The ventilation filter is contained in the filler cap.

- Replace ventilation filter / filler cap.



### High-pressure filter (3)

The filter elements must be replaced when the maintenance indicator (A) turns red.



The vehicle's hydraulic system contains 3 high-pressure filters.

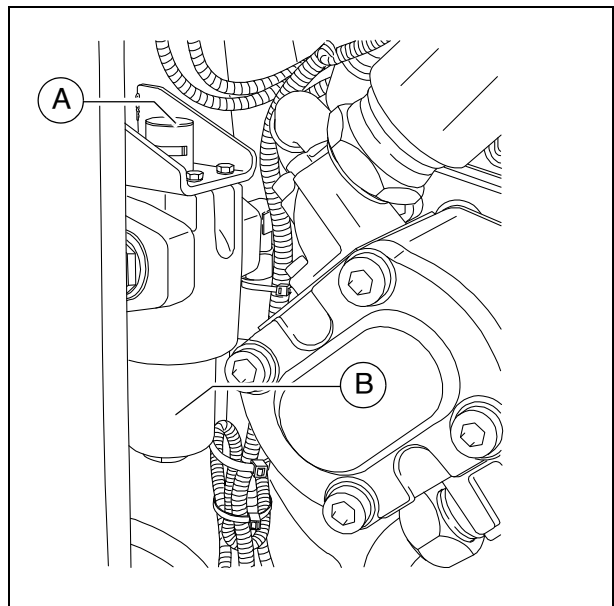
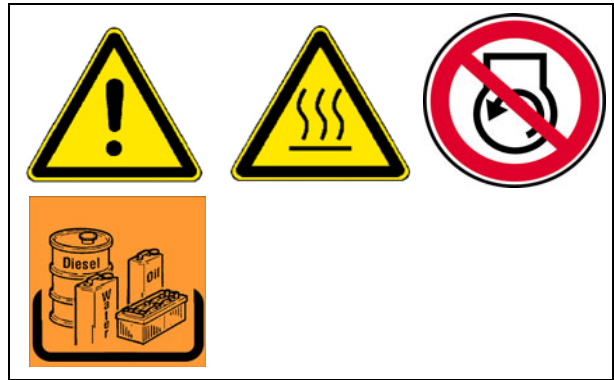
- Unscrew filter housing (B).
- Remove the filter cartridge.
- Clean the filter housing.
- Insert the new filter cartridge.
- Replace the seal ring of the filter housing.
- Turn on the filter housing by hand and tighten it using a wrench.
- Start trial operation and check the tightness of the filter.



Replace the seal ring whenever the filter cartridge is replaced.



After replacing the filter element, the red mark in the maintenance indicator (A) automatically reverts to green.

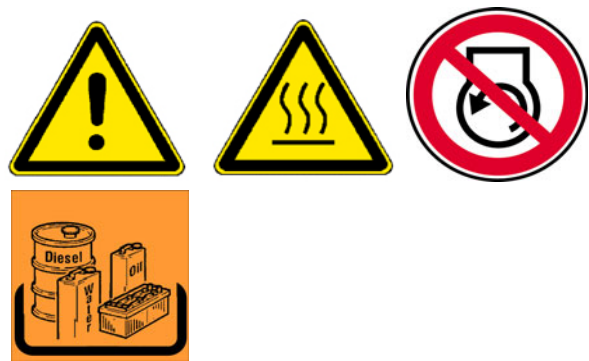


### Pump distribution gear (4)

- **Check oil level** check on sensor rod (A).



The oil level must lie between the upper and lower marks.



#### For filling in the oil:

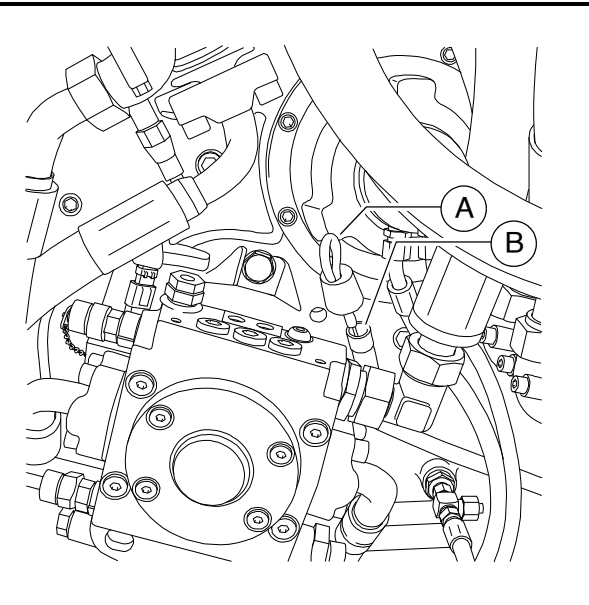
- Pull out the dipstick (A) completely.
- Replenish new oil through the dipstick opening (B).
- Check the fluid level using the dipstick.



Before checking with the dipstick, wait for a moment, as the oil which has been poured in first has to flow off.



Make sure to clean the screw and the vicinity of the drain bore!

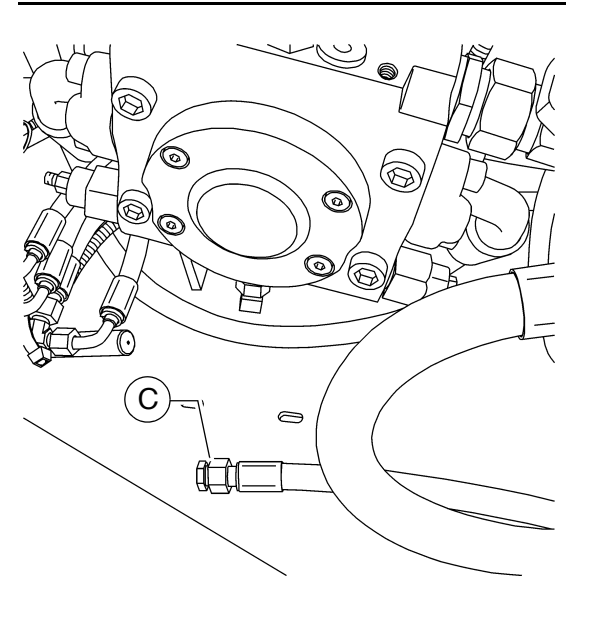


#### Oil change:

- 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.
- Pour in the prescribed quality of oil through the dipstick opening (B).
- Check the fluid level using the dipstick.



The oil should be changed when at operating temperature.

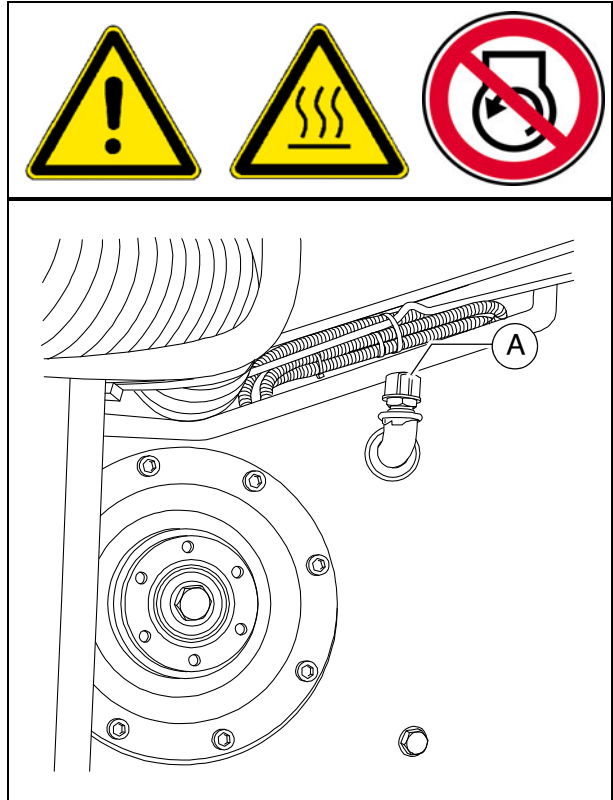


## Bleeder



The bleeder (A) can be found on the rear of the pump distribution gear housing.

- The functioning of the bleeder must be ensured.  
If soiling has occurred, the bleeder should be cleaned.

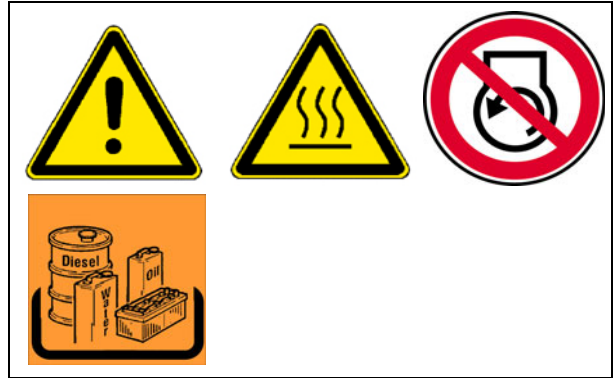


## Hydraulic hoses (5)

- Specifically check the condition of the hydraulic hoses.
- Immediately replace any damaged hoses.



Replace hydraulic hoses if the following criteria are found on inspection:



- damage of the outer layer to the inlay (e.g. chafing, cuts, cracks).
- brittleness of the outer layer (cracking of the hose material).
- deformation that does not correspond to the natural shape of the hose or pipe when depressurised or under pressure or when bent (e.g. separated layers, blistering, pinched or buckled points).
- leaks.
- damage or deformation to the hose fittings (affecting the sealing function); replacements are not necessary for minor damage to the surface.
- hose coming away from the fitting.
- corrosion of the fitting with a detrimental effect on function and strength.
- failure to comply with the installation requirements.
- period of use has exceeded 6 years. Here it is the date of manufacture of the hydraulic hose stated on the fitting that counts, plus 6 years. If the fitting states "2004" as the date of manufacture, the period of use ends in February 2010.



See the section on "Marking hydraulic hoses".



Ageing hoses become porous and may burst! Danger of accidents!



Always comply with the following instructions when installing and removing hydraulic hoses:

- Always only use original Dynapac hydraulic hoses!
- Always observe high standards of cleanliness!
- Hydraulic hoses must always be fitted to ensure that in all operating statuses,
  - there is no tensile load apart from dead weight.
  - there is no compressive load for short lengths.
  - any external mechanical impact on the hydraulic hoses is avoided.
  - appropriate positioning and fastening of the hoses prevents them from chafing on components or on each other.
  - components with sharp edges must be covered when installing hydraulic hoses.
  - bending radii are not smaller than the permitted values.
- When hydraulic hoses are connected to moving parts, the length of the hose must be dimensioned to ensure that the bending radii are not smaller than the permitted smallest values right across the full range of movement and/or that the hydraulic hose is not also exposed to tension.
- Fasten the hydraulic hoses to the provided fastening points. the hoses must not be hindered in their natural movement and change in length.
- Painting the hydraulic hoses is forbidden!

### Marking hydraulic hoses / storage period, period of use



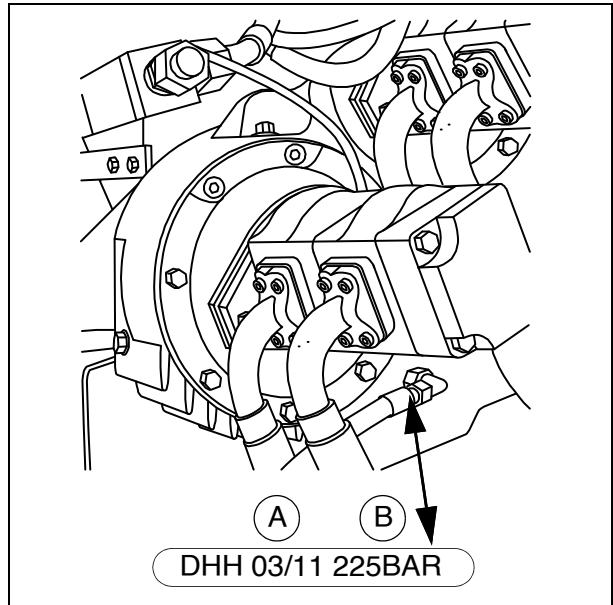
A number stamped onto the screwed connection provides information about the date of manufacture (A) (month / year) and the maximum pressure permitted for this hose (B).



Never install hoses on top of one another and always ensure that they are at the correct pressure.

In individual cases, the period of use can be stipulated according to experience and may differ from the following general indications:

- When producing the hose pipe, the hose (purchased by the meter) should not be more than four years old.
- The period of use of a hose pipe should not exceed six years, including any possible storage period.  
The storage period should not exceed two years.



## Auxiliary flow filter (6)

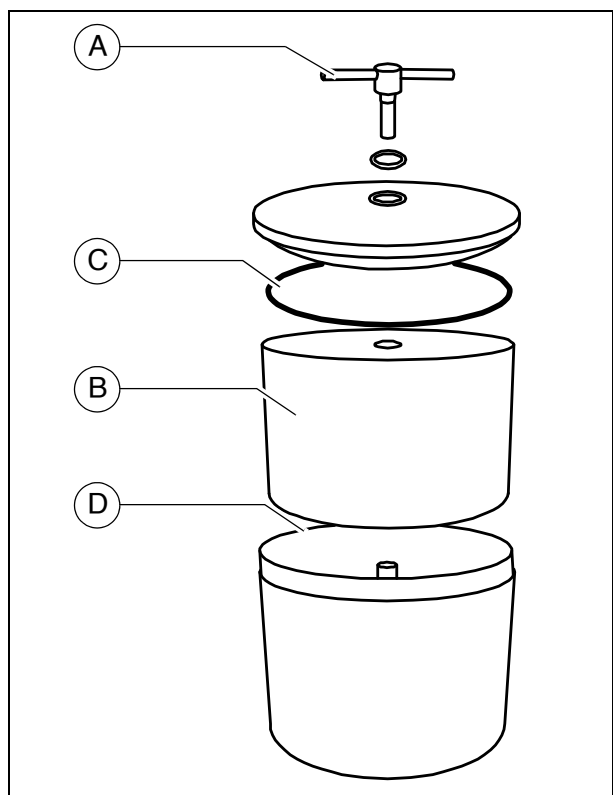


The hydraulic oil change is omitted on use of an auxiliary flow filter!  
The quality of the oil must be checked regularly.  
The oil level must be topped up if necessary!



### Replacing filter element:

- Release the threaded cover connection (A) then open the non-return valve briefly to lower the oil level in the filter, then close the non-return valve again.
- Replace filter element (B) and sealing ring (C):
  - Turn filter element clockwise with the help of carrier straps and, at the same time, raise it slightly.
  - Wait for a moment until the oil has escaped downwards, then remove the filter element.
- Check inlet and outlet in filter housing (D).
- As required, top up hydraulic oil level in filter housing then screw down the cover.
- Bleed the hydraulic system.

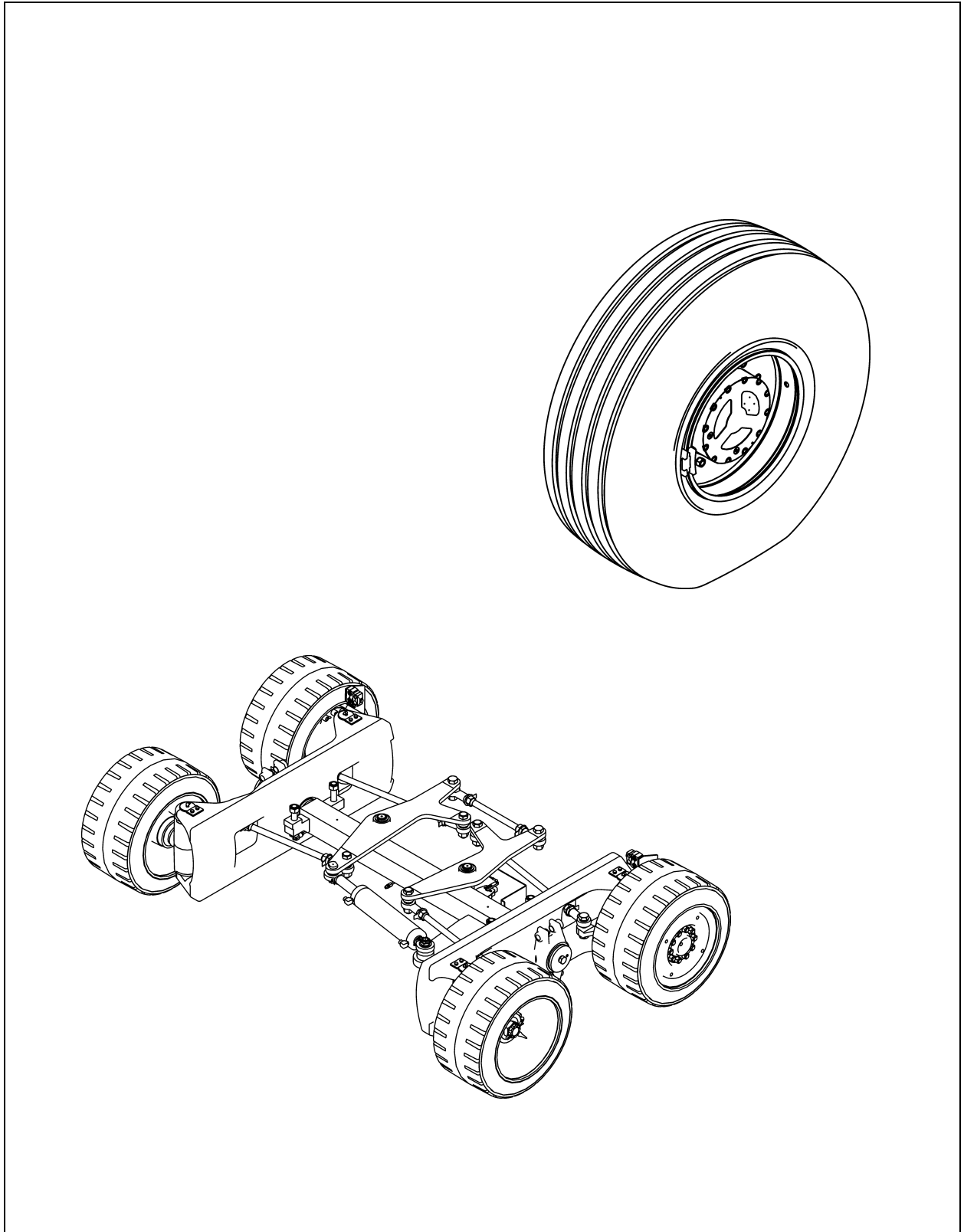




Do not remove the cardboard sleeve from the filter element! This is part of the filter!







# F 72 Maintenance - travel drive, steering

## 1 Maintenance - travel drive, steering



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Do not enter the danger zone.</li> <li>- Do not reach into rotating or conveying parts.</li> <li>- Only wear close-fitting clothing.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Danger from heavy loads</b>
	<p>Lowering vehicle parts may cause injuries!</p> <ul style="list-style-type: none"> <li>- When the vehicle is parked and during maintenance and transport, close both halves of the hopper and fit the corresponding hopper transport safeguards.</li> <li>- When the vehicle is parked and during maintenance and transport, raise the screen and fit the corresponding screed transport safeguards.</li> <li>- Ensure that opened hoods and covering parts are locked properly.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Only perform maintenance and repair work after the vehicle has cooled down.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>



The rear tyre "Snowking" may only be used in regions with a temperature of max. 30° C and after consulting the Customer Service!

## 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note	
	10	50	100	250	500	1000 / annually	2000 / every 2 years			If necessary
1		■							- Planetary gear - Check oil level	
								■	- Planetary gear - Top up oil	
			▼			■			- Planetary gear - Change oil	
					■				- Planetary gear - Check oil quality	

Maintenance	■
Maintenance during the running-in period	▼

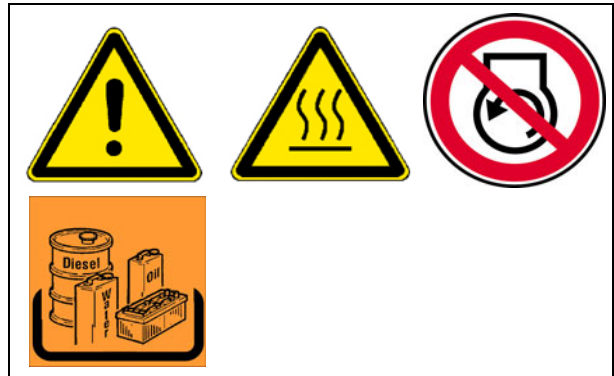
Item	Interval							Maintenance point	Note	
	10	50	100	250	500	1000 / annually	2000 / every 2 years			If necessary
2	■								- Drive wheels - Check tyres for damage	
								■	- Drive wheels - Replace tyres	
		■							- Drive wheels - Check air pressure	
								■	- Drive wheels - Adjust air pressure	
	▼								- Drive wheels - Check wheel nuts	
								■	- Drive wheels - Tighten wheel nuts	
3		■							- Lubrication points Lubricate king pins	
		■							- Lubrication points Lubricate steering	
		■							- Lubrication points Lubricate floating axle	
		■							- Lubrication points Lubricate (○) wheel bearings	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Points of maintenance

### Planetary gear (1)

- Turn the rear wheel so that the drain plug (B) is located at the bottom.
- For **oil level check** unscrew and remove the inspection bolt (A).



When oil level is correct, the oil comes up to the lower edge of the inspection bore or a small amount of oil escapes through the aperture.

For **filling in** the oil:

- Unscrew the filler screw (A).
- Fill in the specified oil into the filler bore at (A) until the oil level has reached the lower edge of the filler bore.
- Screw the filler screw (A) back in.

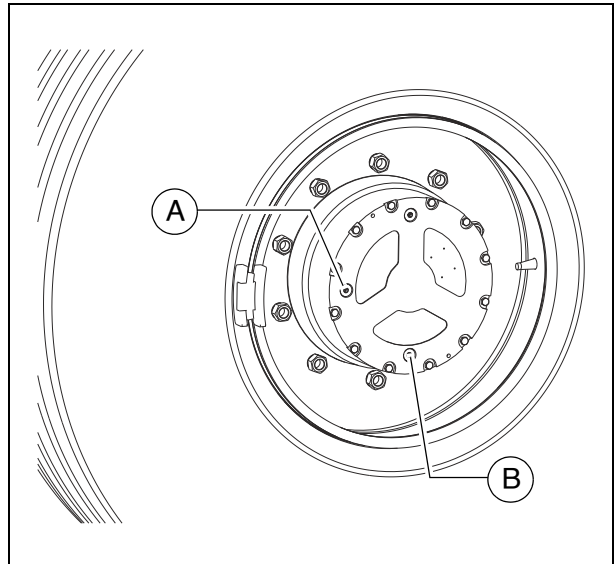
### Oil change:



The oil should be changed when at operating temperature.



Ensure that no dirt or foreign bodies are able to enter the gear.



- Turn the rear wheel so that the drain plug (B) is located at the bottom.
- Unscrew and remove the drain plug (B) and filler screw (A) and drain off oil.
- Check gaskets on both screws and replace if necessary.
- Screw the drain plug (B) in.
- Fill new oil through the filler opening until the lower edge of the opening is reached.
- Tighten the filler screw (A).

## Drive wheels (2)

### Check tyres / replace tyres:

- Check the tyres on a daily basis for signs of damage, cracks or blister formation.

Regularly check compliance with the minimum profile depth.



Replace damaged or worn tyres immediately.

## Replacing/dismantling and installing the wheels



The jack must be rated for at least 10t.



The jack is only intended to lift a load and not as a support. Work should only be performed to and under raised vehicles when they have been secured and correctly supported to prevent them tilting over and rolling or sliding away.



The jack must only be used on smooth, firm ground.



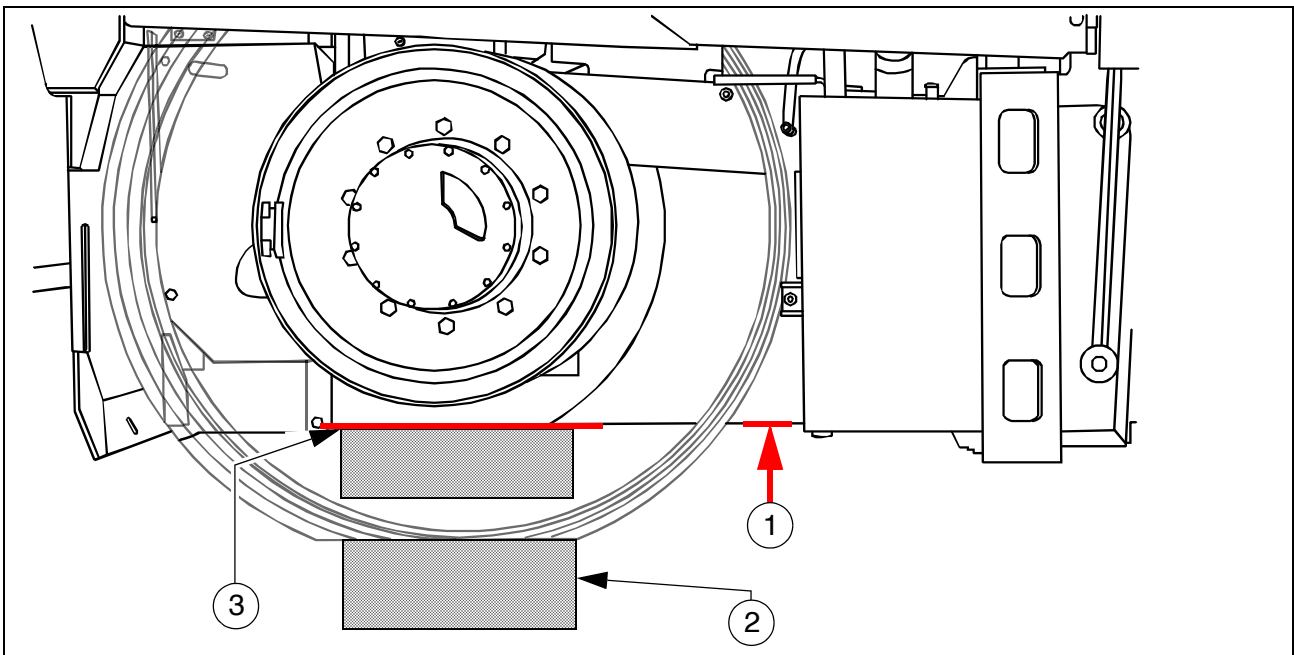
Roller-type jacks must not be moved when under load.



Chocks or supporting beams positioned so that they cannot be shifted or tilted must be adequately dimensioned and be able to take the corresponding weight.



There must not be anyone on the machine while it is being lifted.



- Dismantle the arm.
- Lift the machine with the jack at the intended position (1) under the machine frame.
- Place the wooden block (2) under the wheel as a safeguard.
- Place another wooden block under the machine frame at point (3).
- Remove the wooden block (2) and gently lower the machine onto the remaining wooden block (3).
- Dismantle the wheel nuts and remove the wheel.



Reassemble in reverse order.

**Check air pressure / adjust air pressure:**



Never work with the tyre pressure too high or too low!

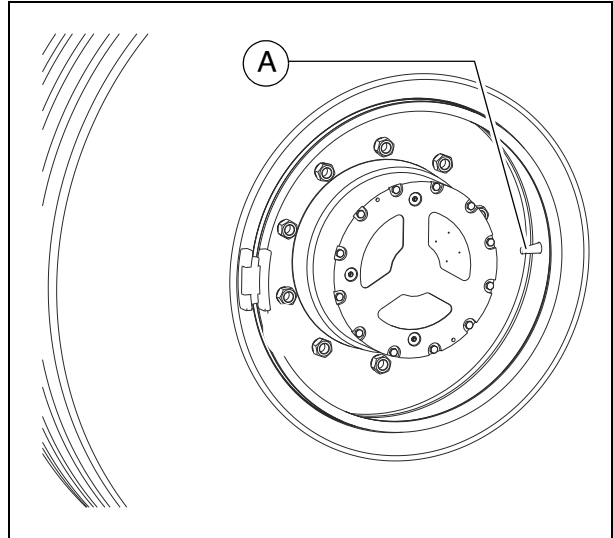


Please consult the following tables for the necessary air pressures.

Check the air pressure at valve (A), adjust if necessary.



Check the tyre pressure in cold condition. A slight increase in tyre pressure during operation is normal and there is no need to relieve pressure.



Only ever set the tyre pressure using a self-regulating filler connection. Never stand directly in front of the tyres when filling them with air!



Please comply with the safety instructions for checking and adjusting the air pressure!



Bear in mind that tyres may be filled with water!

## Air pressure table

Depending on the equipment, the corresponding table is also affixed to the machine as a label.

 <small>4812039737</small> <b>6,0 bar</b>								
	V5100 min	3,0	4,5	bar	V5100 min	5,5	bar	
	V6000 min	3,0	4,5	bar	V6000 min	6,0	bar	
	max	7,0		bar	max	7,0		bar
A	D	E	G	F	D	E	G	

- (A): Recommended air pressure
- (B): Max. / min. air pressure at operating speed
- (C): Max. / min. air pressure at transportation speed
- (D): Screed type
- (E): Max. air pressure for screed without extension parts
- (F): Max. air pressure for screed with extension parts
- (G): Max. air pressure

Ascertain the tyre type before adjusting the pressure!

### Pressures for equipment Bandag on Michelin XHA

 <small>4812039738</small> <b>4,5 bar</b>								
	V5100 min	4,0	4,5	bar	V5100 min	4,0	bar	
	max	4,5		bar	max	4,5		bar

### Pressures for equipment Michelin XGC / Techking ETGC

 <small>4812039737</small> <b>6,0 bar</b>								
	V5100 min	3,0	4,5	bar	V5100 min	5,5	bar	
	V6000 min	3,0	4,5	bar	V6000 min	6,0	bar	
	max	7,0		bar	max	7,0		bar

**Check wheel nuts / tighten wheel nuts:**

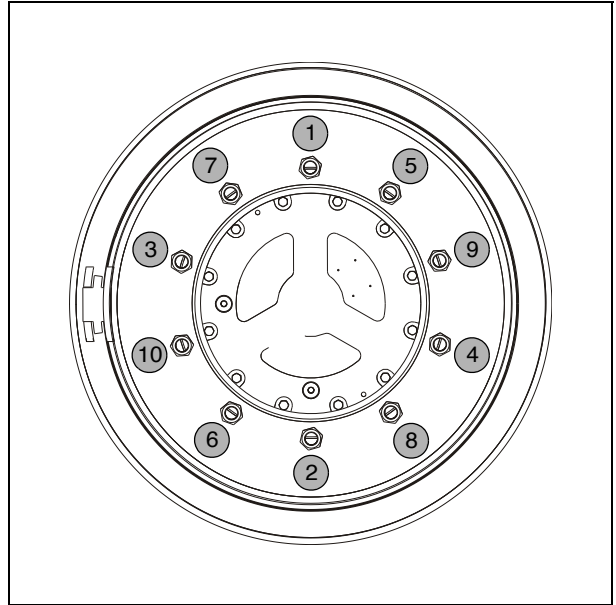


Following wheel replacement, check the wheel nuts after the running-in time.

- Check / tighten all wheel nuts using a torque wrench as shown.



Adjust the torque to 510Nm.



### Lubrication points (3)

- ➡ Manual lubrication does not apply for vehicles with central lubrication system.



### King pins

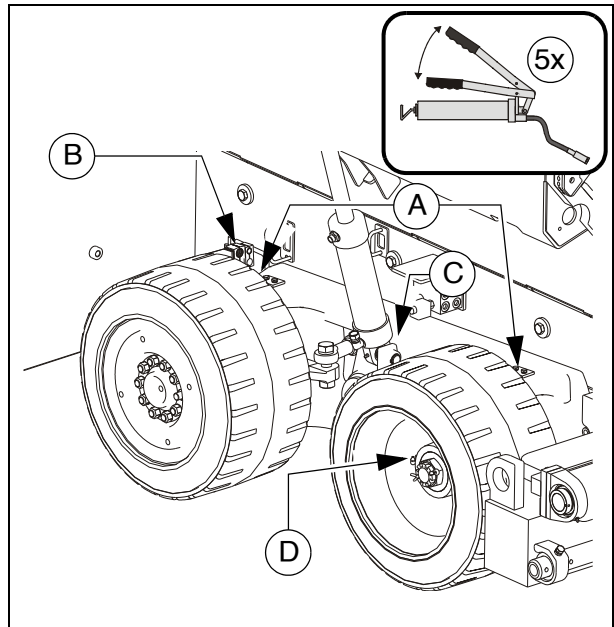
- ➡ Each of the four king pins is equipped with one lubricating nipple (A).

### Steering

- ➡ The lubricating nipples (B) are on the rear axle of the main frame and supply the steering linkage with grease via a lubrication line.

### Floating axle

- ➡ The lubricating nipples (C) are located on the left and right of the floating axle's centre bearing.



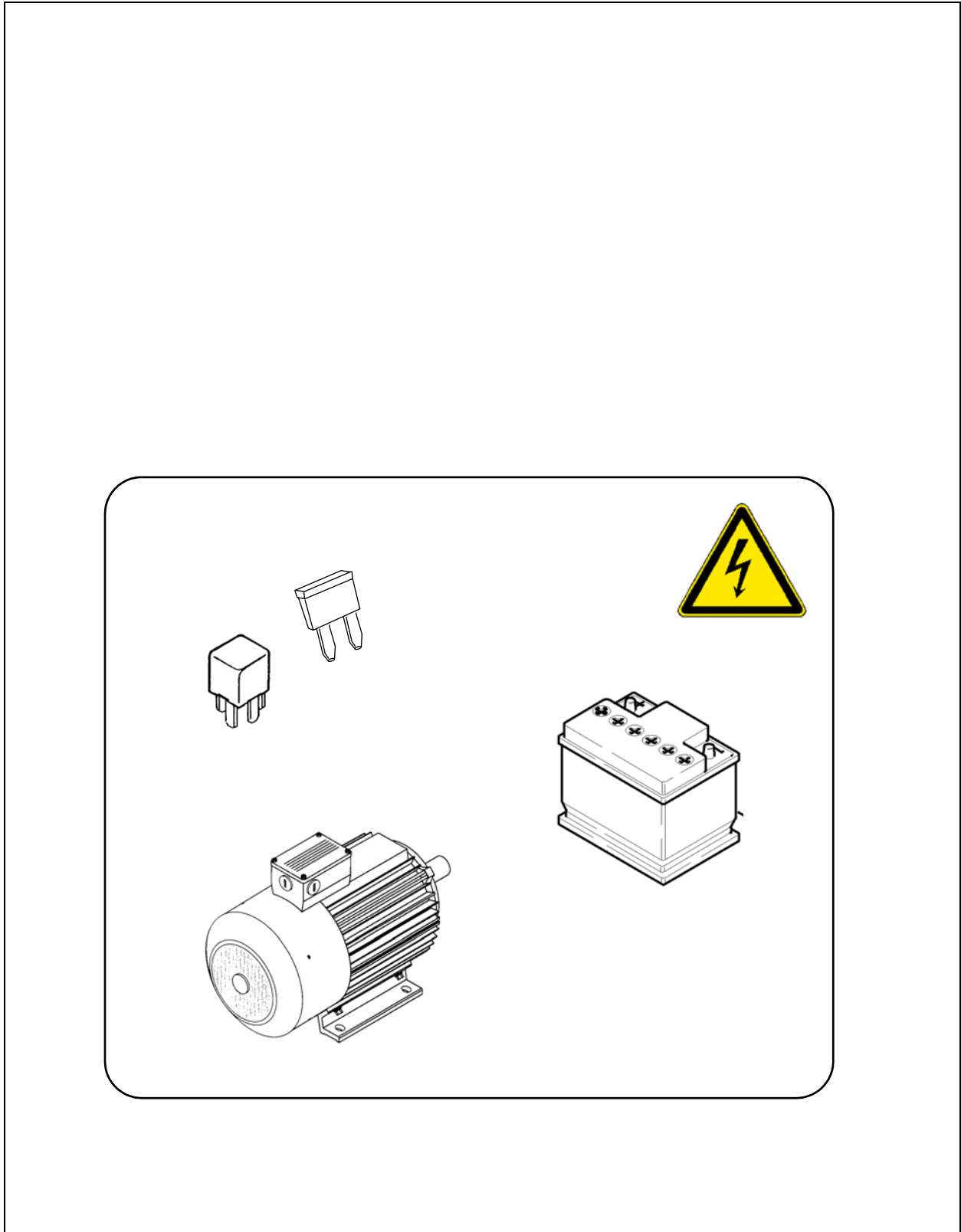
### Wheel bearings (○)



- ➡ Each of the wheels is equipped with a lubricating nipple (D) on the wheel hub. In the case of front-wheel drive, the drive wheels have no lubricating nipples.







# F 83 Maintenance - electrical system

## 1 Maintenance - electrical system



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Do not enter the danger zone.</li> <li>- Do not reach into rotating or conveying parts.</li> <li>- Only wear close-fitting clothing.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Danger due to electric shock</b>
	<p>Injuries can be caused by touching live parts directly or indirectly!</p> <ul style="list-style-type: none"> <li>- Do not remove any protective safeguards.</li> <li>- Never spray water on electric or electronic components.</li> <li>- Maintenance work to the electric system should only be carried out by trained specialist staff.</li> <li>- When equipped with electric screed heater, check the insulation monitoring every day according to the instructions.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Danger from batteries</b>
	<p>Incorrect handling of the batteries poses a danger of injuries!</p> <ul style="list-style-type: none"> <li>- Wear your personal safety gear.</li> <li>- Do not smoke, avoid any open flames.</li> <li>- Ensure the working area is well ventilated after opening the battery compartment.</li> <li>- Avoid short-circuiting the battery terminals.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

## 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually 2000 / every 2 years	If necessary		
1			■					Check fill level of battery acid	
							■	Top up with distilled water	
				■				Apply grease to battery terminals	
2	■							- Alternator Insulation monitoring, check electric system is functioning	(○)
		■						- Alternator Visual check for pollution or damage - Check the cooling air openings for pollution or clogging, clean if necessary.	(○)
3							■	Electrical fuses	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Maintenance points

### Batteries (1)

#### Maintenance of batteries



The batteries are factory-filled with the correct quantity of acid. The fluid level should come up to the top mark. If required, top up the battery, but only use distilled water to do so!



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.



Keep the battery surfaces clean and dry, use only a damp or antistatic cloth for cleaning.



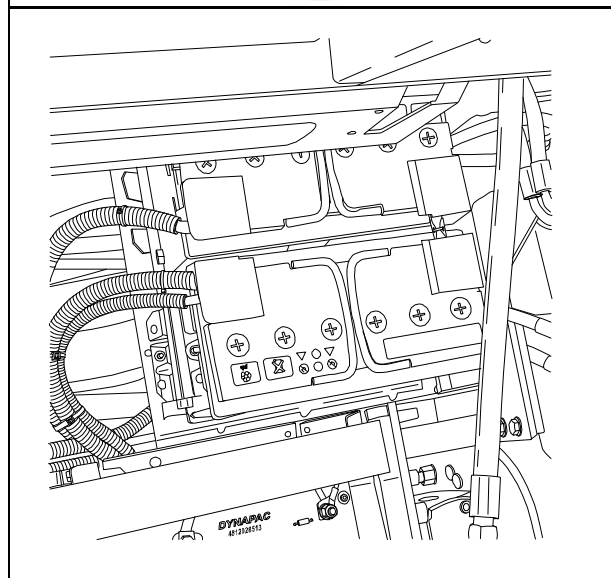
Do not open batteries without plugs!



If the starting capacity is insufficient, check and possible recharge the batteries.



Regularly check the charge of the battery and recharge if necessary.



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## Recharging the batteries

Both batteries must be recharged individually and must be dismantled from the vehicle for this purpose.



Always keep batteries upright during transport!

Before and after recharging a battery, always check the electrolyte level in every cell; if this needs to be topped up, only use distilled water.



When recharging batteries, every cell must be opened, i.e. plugs and/or covers must be removed.



Only use commercially available automatic battery chargers according to the manufacturer's instructions.

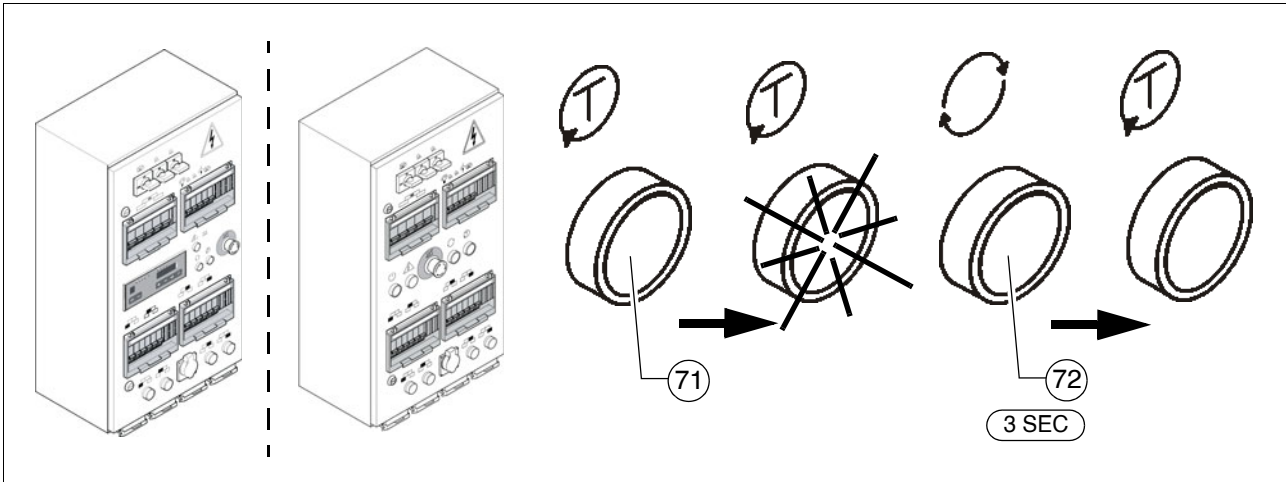


Preferably use the slow recharging procedure and adjust the charge current according to the following rule of thumb:

Battery capacity in Ah divided by 20 results in the safe charge current in A.

## Alternator (2)

### Electrical system insulation monitoring



The function of the protective insulation monitoring measure must be checked every day before starting work.



This check only checks the function of the insulation monitor, not whether an insulation error has occurred on the heating sections or consumers.

- Start the paver finisher's drive engine.
- Press test button (1).
- The indicator lamp integrated into the test button signals "insulation fault".
- Press reset button (2) for at least 3 sec. to delete the simulated fault.
- The indicator lamp goes out.



If the "insulation fault" indicator lamp already indicates a fault before pressing the test button, or if no fault is indicated during the simulation (indicator lamp OFF), at first no switch-off is necessary and operation can be continued. However, the cause of the fault must be determined and rectified immediately by a specialist electrician.



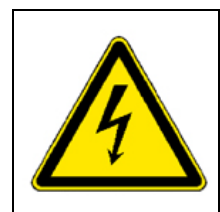
### Danger due to electrical voltage





**Non-adherence to the safety precautions and safety regulations when operating the electric screed heating system leads to a risk of electric shock.**

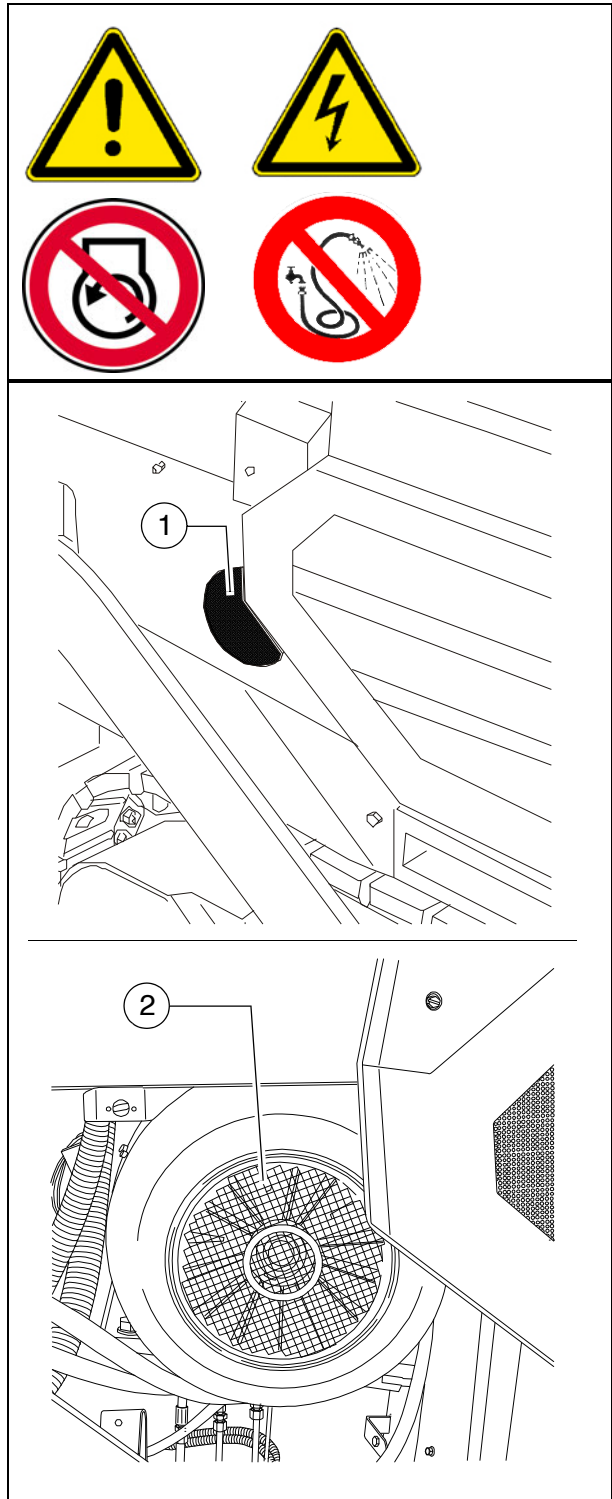
**Danger to life!**

**All maintenance and repair work on the screed's electrical system may be carried out by a specialist electrician only.**



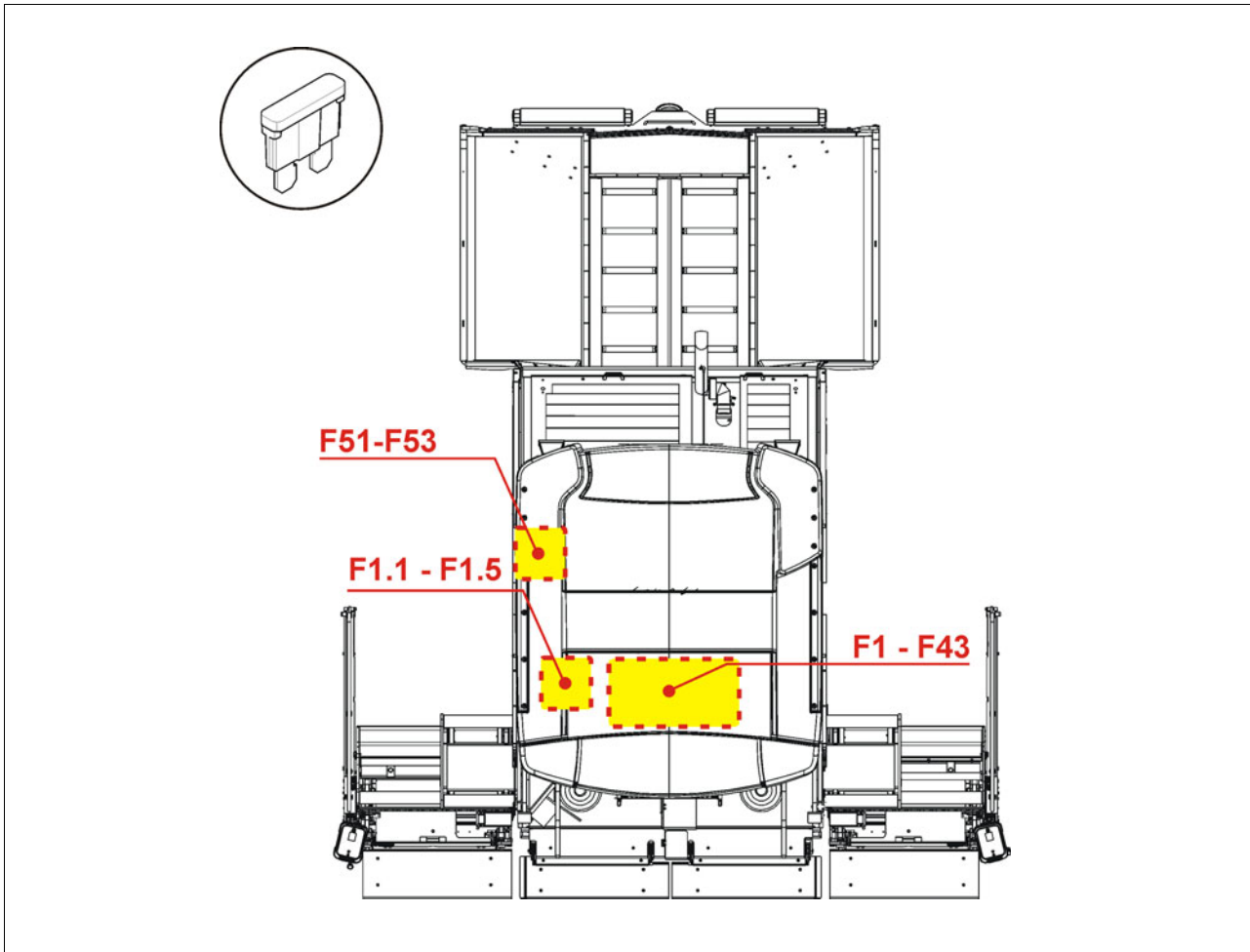
## Cleaning the alternator


-  The alternator must be regularly checked for excessive dirt and must be cleaned if necessary.
  - The air intake (1) and fan shroud (2) must be kept free of dirt.
-  Cleaning with a high-pressure cleaner is not permissible!



## Electrical fuses / relays (3)

### Fuses



 The fuses installed may differ depending on equipment.

<b>F</b>	<b>Function</b>	<b>A</b>
F1.2	Main fuse 1	50
F1.2	Main fuse 2	50
F1.3	Diesel engine preheating ignition system	125
F1.4	Engine T4F	30
F1.5	Raise / lower roof	23
F1	Levelling	10
F2	Brake light	5
F3	Operating panel / emergency stop	5
F4	Brake sensor	7,5

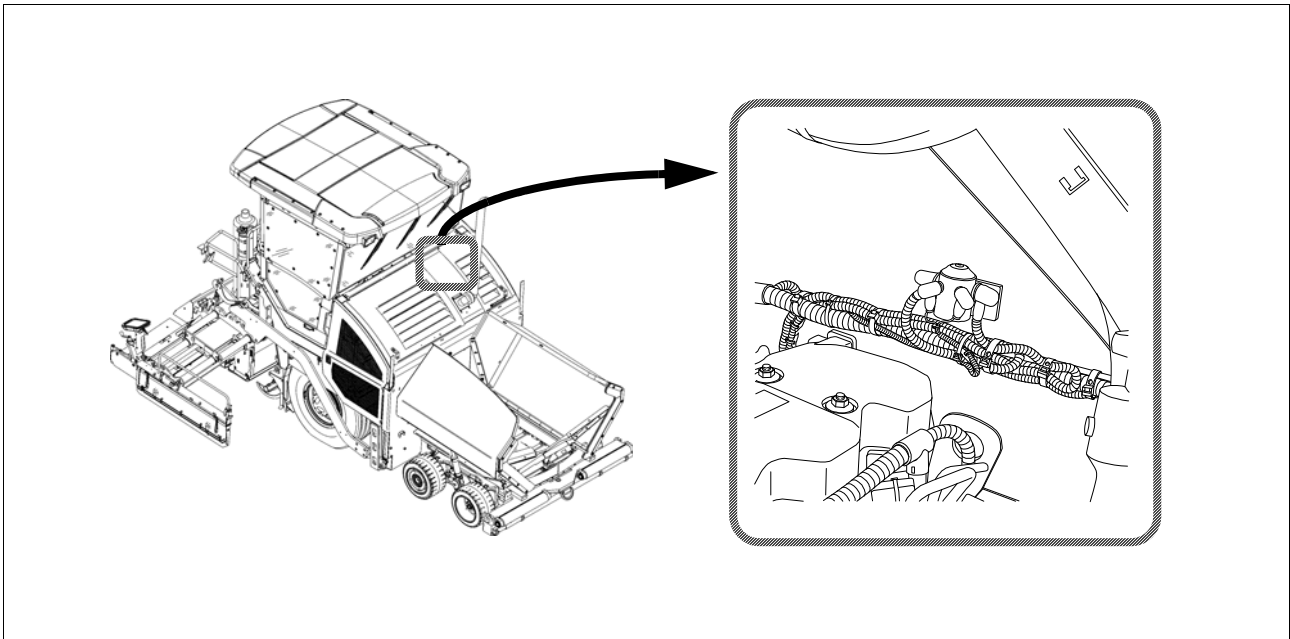
F	Function	A
F5	Auger working light	15
F6	Screed / England stop button / front-wheel drive	5
F7	Truck Assist	10
F8	Heating system	10
F9	Left / right remote control	10
F10	Screed	10
F11	T4F Adblue heating	15
F12	Engine control unit	30
F13	Engine T4F system	15
F14	Sensor move platform / pave IR	7,5
F15	Connector 24V	10
F16	Sensor auger height	10
F17	Hazard flashers	10
F18	Operating panel	3
F19	Diagnostic interface control unit / display	2
F20	Diagnostic interface engine	2
F21	Power supply, slave A11	25
F22	Power supply, slave A1	5
F23	Connector 12V	10
F24	Power supply master / slave / screed controller	5
F25	Power supply, Master A1	25
F26	Fuel pump	10
F27	Operating panel	2
F28	Horn	10
F29	Hazard flashers / coming home light	10
F30	Power supply, slave A11	5
F31	Reversing alarm	7,5
F32	Rotary beacon	7,5

<b>F</b>	<b>Function</b>	<b>A</b>
F33	Front working lights	10
F34	Seat heating	7,5
F35	Rear working lights	10
F36	Windscreen wiper	10
F37	Central lubrication	7,5
F38	Main fuse lighting	25
F39	Left-hand parking lights	5
F40	Parking lights, right	5
F41	Operating panel illumination	5
F42	Low-beam headlights	10
F43	High-beam headlights	10
F51	Control voltage raise / lower roof *	5
F52	Raise roof *	15
F53	Lower roof *	15



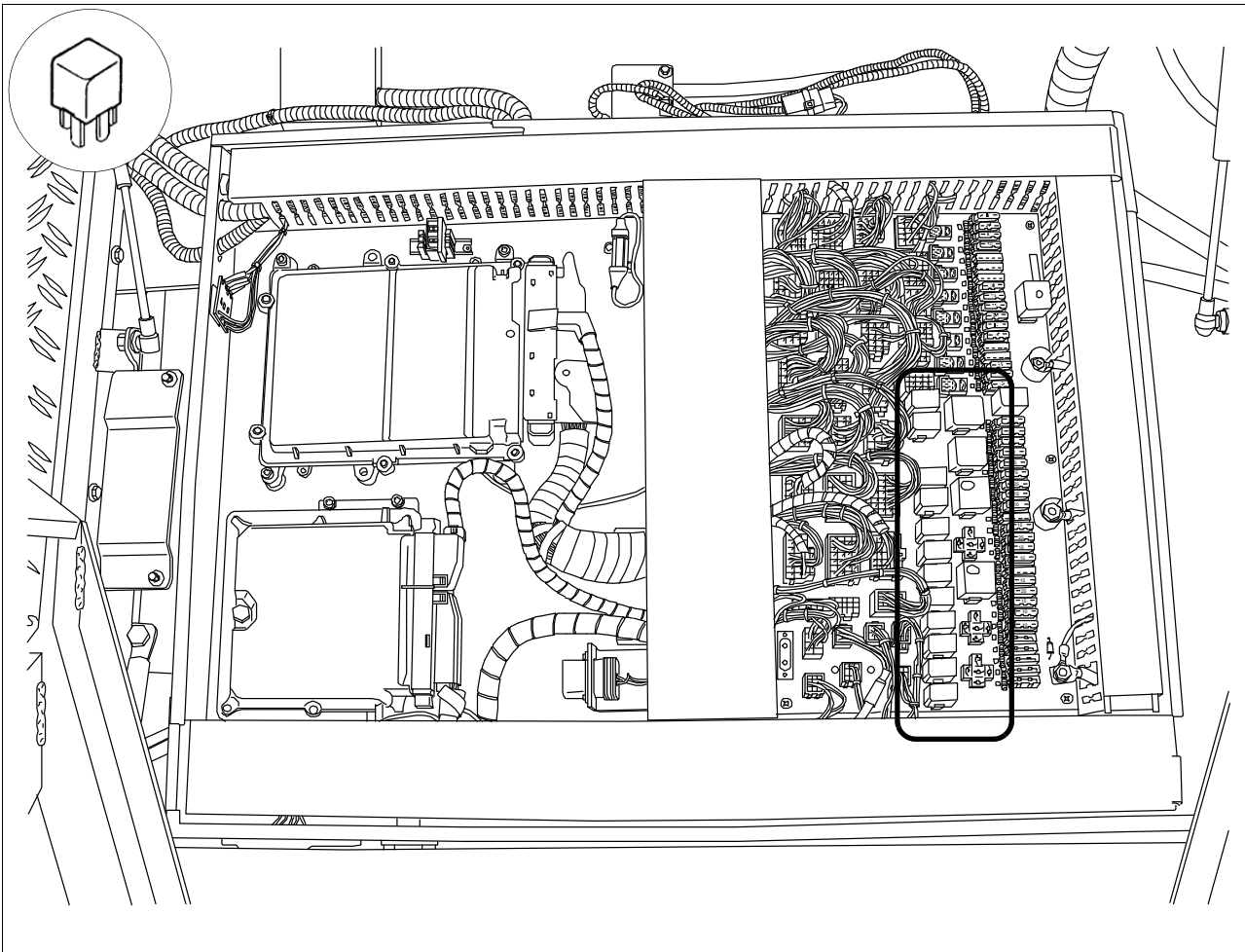
\* The fuses are under the control platform.  
 Move the platform out to the left for access!


## Relays in the engine compartment



K	Function
0	Engine start

## Relays in terminal box



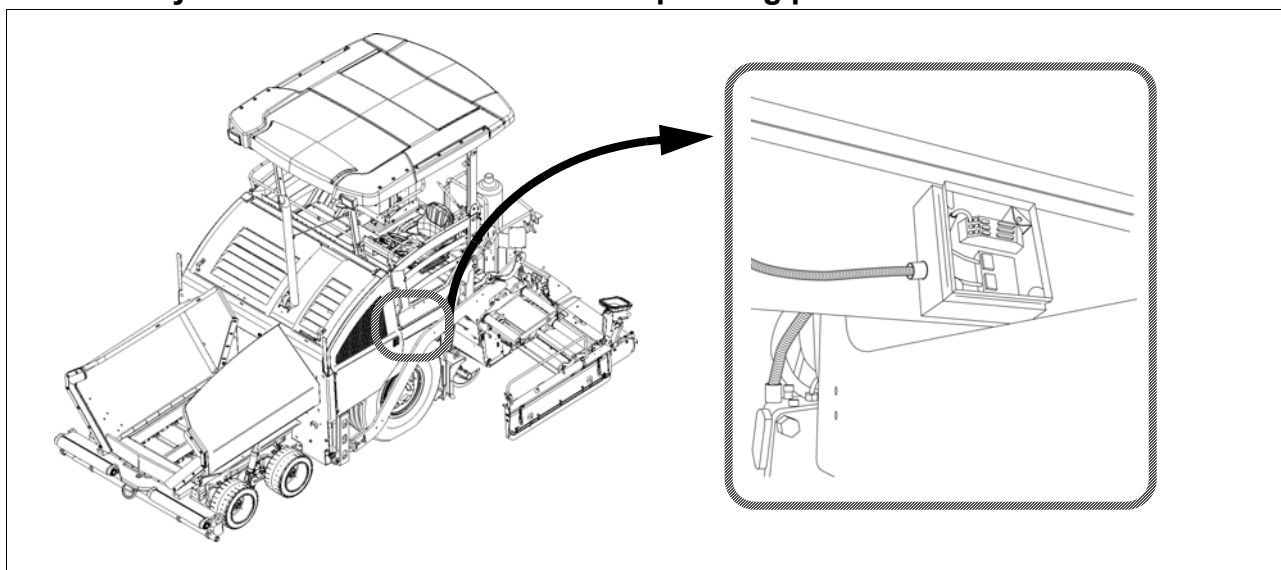
 The relays installed may differ depending on equipment.

K	Function
1	Ignition
2	Drive engine start / stop
3	Master / slave / screed controller
4	Engine start
5	Front lighting
6	Rear lighting
7	Auger lighting front
8	Horn
9	Parking light
10	T4F - Adblue heating

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<b>K</b>	<b>Function</b>
11	T4F - Adblue heating
12	T4F - Adblue heating
13	Diesel pump
14	Adblue supply module
15	Flashers
16	Rotary beacon
17	Seat heating
18	Windscreen wiper
19	Windscreen washer system
20	Reverse buzzer
21	Central lubrication
22	Light in accordance with German Road Traffic Regulations
23	High beam / low beam
24	Coming home light
25	Coming home light
30	Preheating ignition system

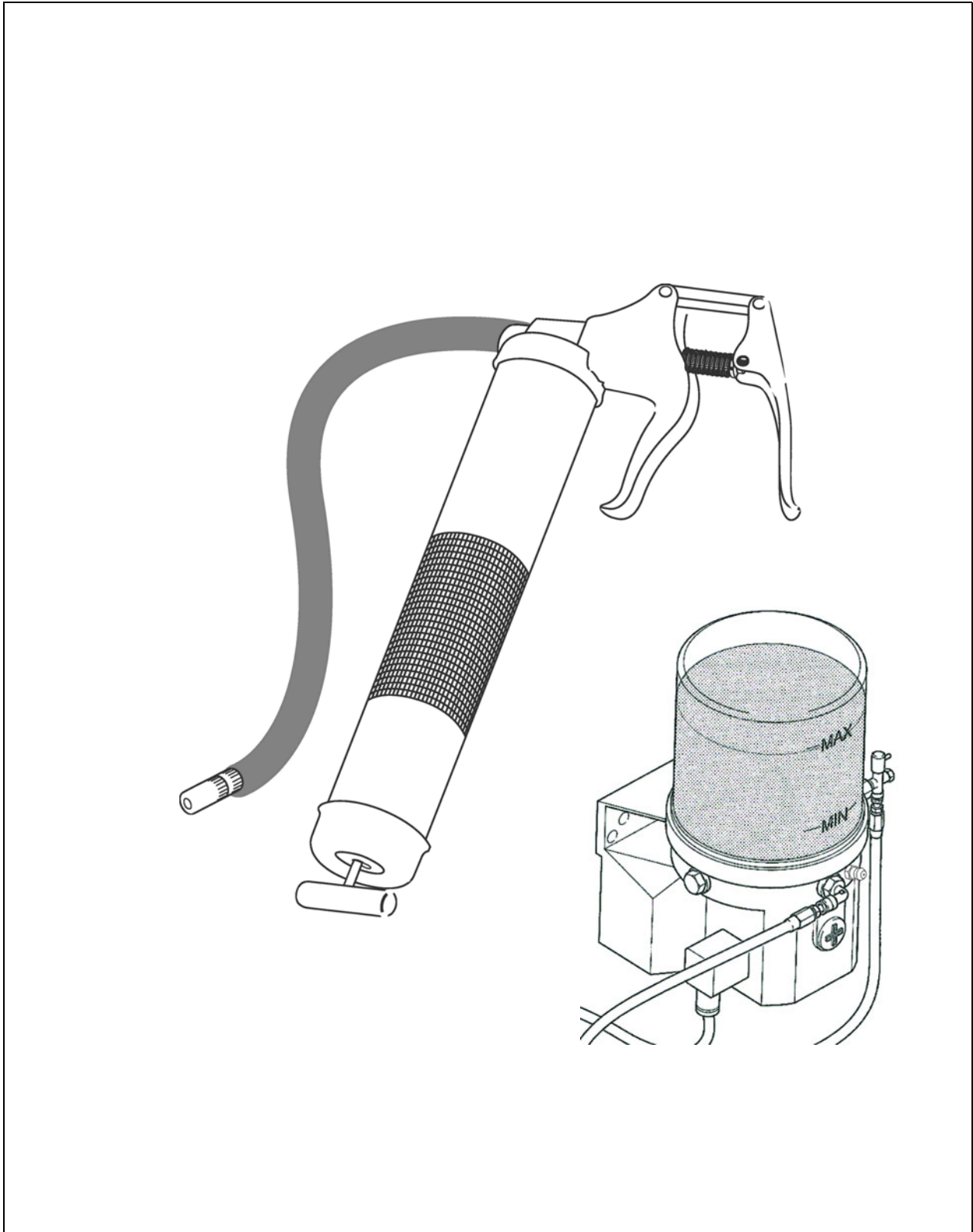
### Relay in connection box under the operating platform




K	Function
40	Raise roof
41	Lower roof

# F 90 Maintenance - lubricating points

## 1 Maintenance - lubricating points



The information on the lubricating points for the various assemblies is assigned to the specific maintenance descriptions and must be read there!

 Due to the use of a central lubrication system (○), the number of lubricating points may deviate from the description.

### 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note	
	10	50	100	250	500	1000 / annually	2000 / every 2 years			If necessary
1	■								- Check lubricant tank fill level	(○)
								■	- Top up lubricant tank	(○)
								■	- Bleed central lubrication system	(○)
	■								- Check pressure limiting valve	(○)
								■	- Check flow of lubricant at the consumer	(○)
2		■							- Bearing points	

Maintenance	■
Maintenance during the running-in period	▼

## 1.2 Points of maintenance

### Central lubrication system (1)

#### Danger of injuries!



Do not reach into the tank when the pump is running!



The central lubrication system must only be operated with the safety valve installed!



Do not undertake any work on the pressure relief valve during operation!



Risk of injury due to escaping lubricant, as the system operates at high pressures!



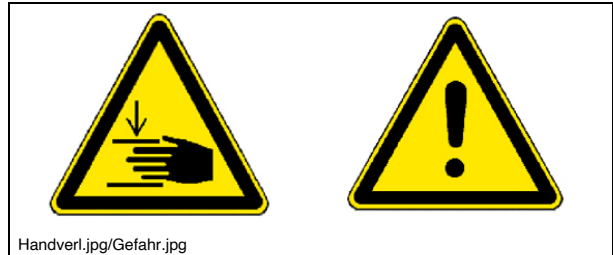
Ensure that the diesel engine cannot be started when working on the system!



Observe safety regulations for handling hydraulic systems!

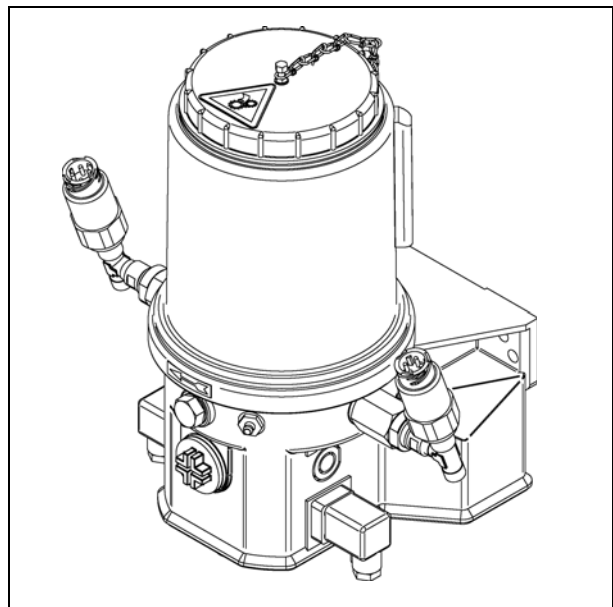


Ensure maximum cleanliness when working on the central lubrication system!



The following assemblies' lubricating points can be automatically supplied with grease by the central lubrication system:

- Conveyor
- Auger
- Steering, axles (wheeled pavers)
- Screed (tamper / vibration)

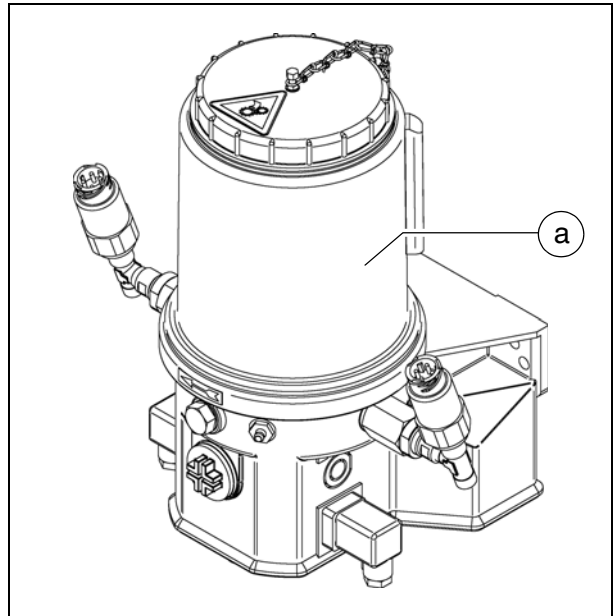


## Central lubrication system Check filling level

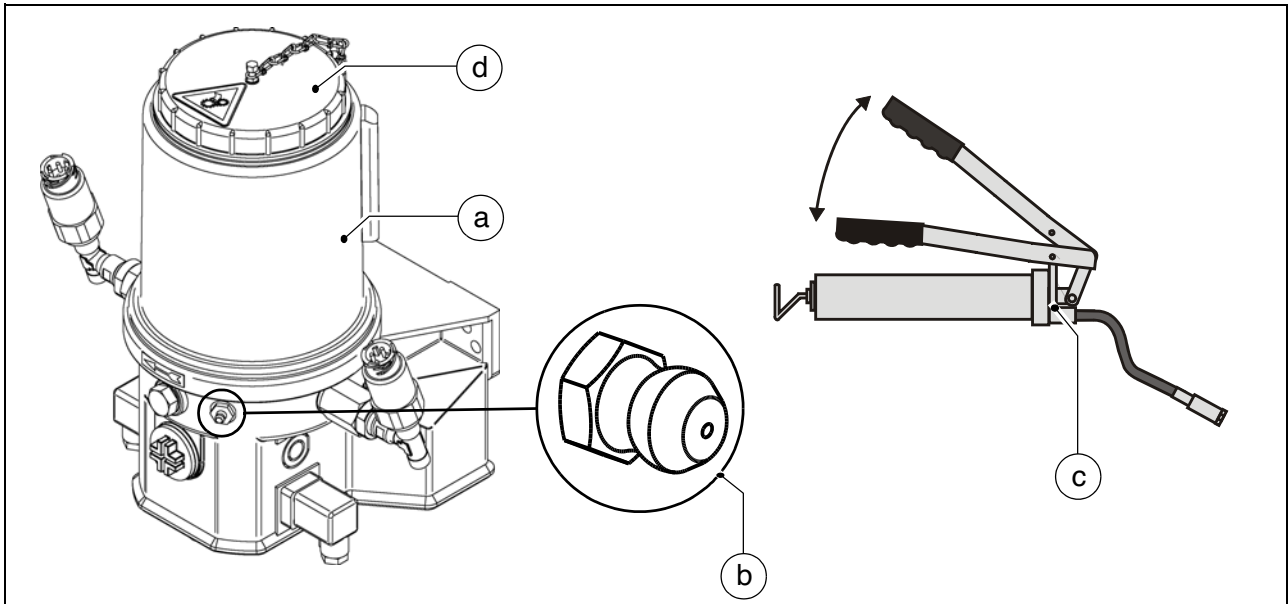


The lubricant tank should always be filled sufficiently to ensure that the system does not "run dry", that adequate lubricating point supply is ensured and that time-consuming bleeding does not become necessary.

- Always maintain a fill level above the "MIN" mark (a) on the tank.



## Top up lubricant tank



- A lubricating nipple (b) is located on the lubricant tank (a) for filling purposes.
- Connect the grease gun (c) enclosed on delivery to the filling nipple (b) and fill the lubricant tank (a) up to the MAX mark.
- Alternatively, unscrew cover (d) and fill tank from above.

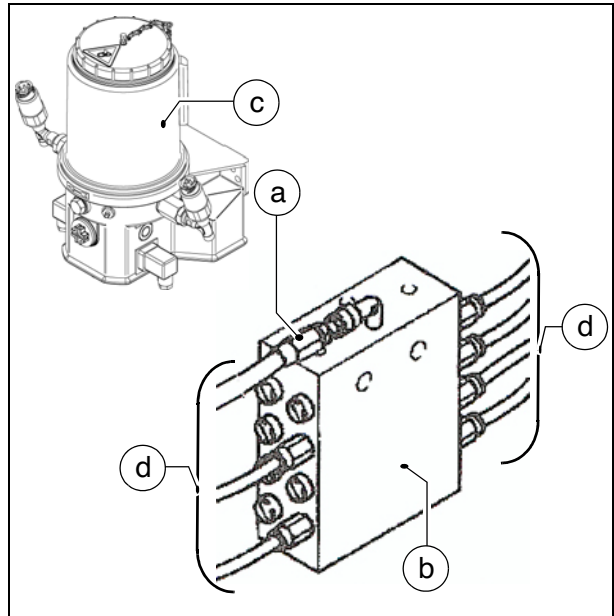


When the lubricant tank is completely empty, the pump may have to run for up to 10 minutes until the full delivery rate is achieved after filling.

## Bleed central lubrication system

Bleeding the lubrication system is necessary if the central lubrication system has been operated with an empty lubricant tank.

- Release the main lubrication line (a) at the distributor (b).
- Start up the central lubrication system with the filled lubricant tank (c).
- Allow the pump to run until lubricant emerges from the previously released main line (a).
- Reconnect the main line (a) to the distributor.
- Release all distribution lines (d) from the distributor.
- Reconnect all distribution lines as soon as lubricant has emerged.
- Check all connections and lines for leaks.



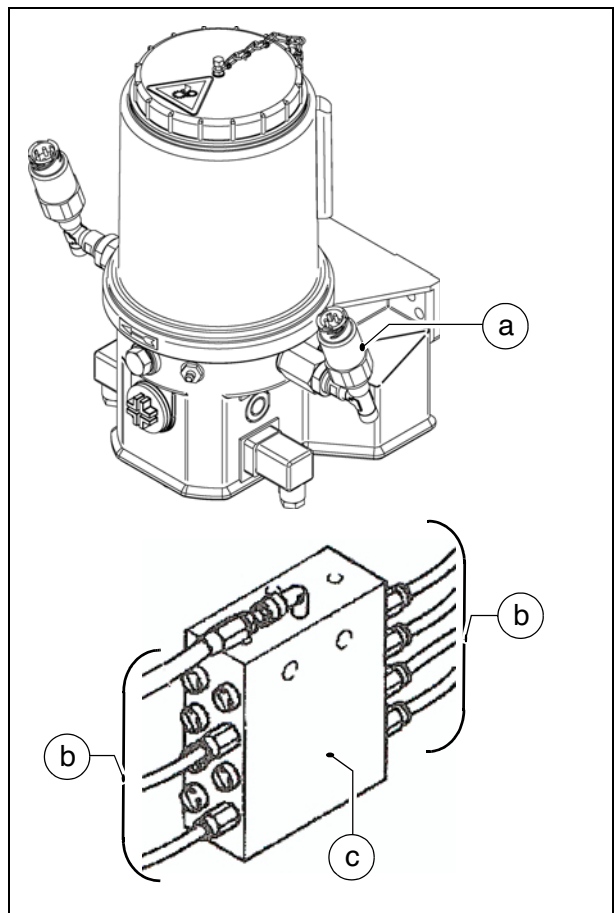
## Check pressure limiting valve



If lubricant emerges at the pressure limiting valve (a), this indicates a malfunction in the system.

The consumers are no longer adequately supplied with lubricant.

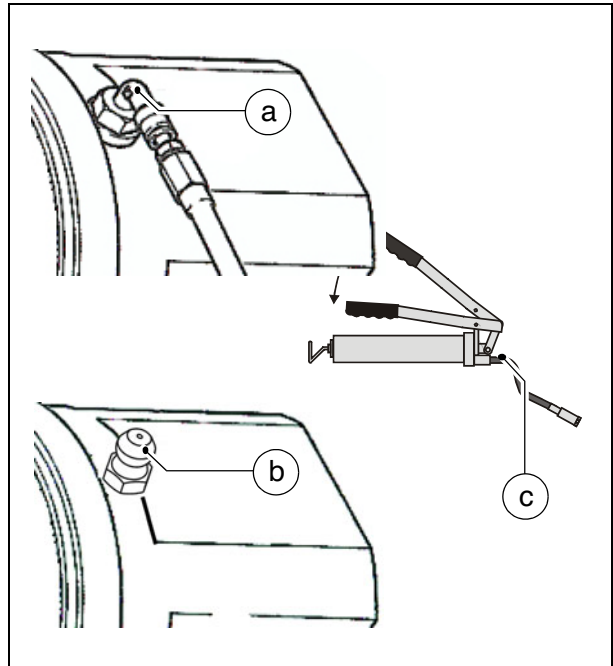
- Release all distribution lines (b) leading from the distributor (c) to the consumers in succession.
- If lubricant emerges from one of the released distribution lines (b) under pressure, search in this lubrication circuit for the cause of the blockage which has triggered the pressure limiting valve.
- After rectifying the malfunction and reconnecting all lines, again check the pressure limiting valve (a) for lubricant emergence.
- Check all connections and lines for leaks.



## Check the flow of lubricant at the consumers

Each lubrication channel at the consumers must be checked as regards clearance.

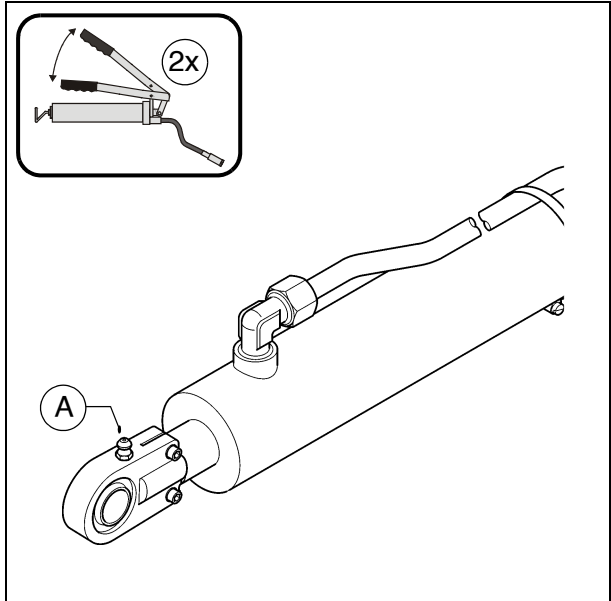
- Remove the lubrication line (a) and install a normal lubricating nipple (b).
- Connect the grease gun (c) enclosed on delivery to the lubricating nipple (b).
- Operate the grease gun until the lubricant visibly emerges.
- Rectify any faults in the flow of lubricant.
- Reinstall the lubrication lines.
- Check all connections and lines for leaks.



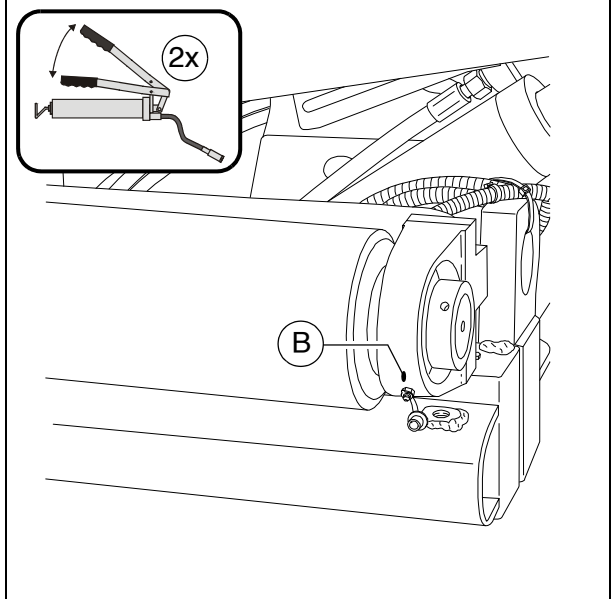
## Bearing points (2)



One lubricating nipple (A) is located at each hydraulic cylinder bearing point (top and bottom).



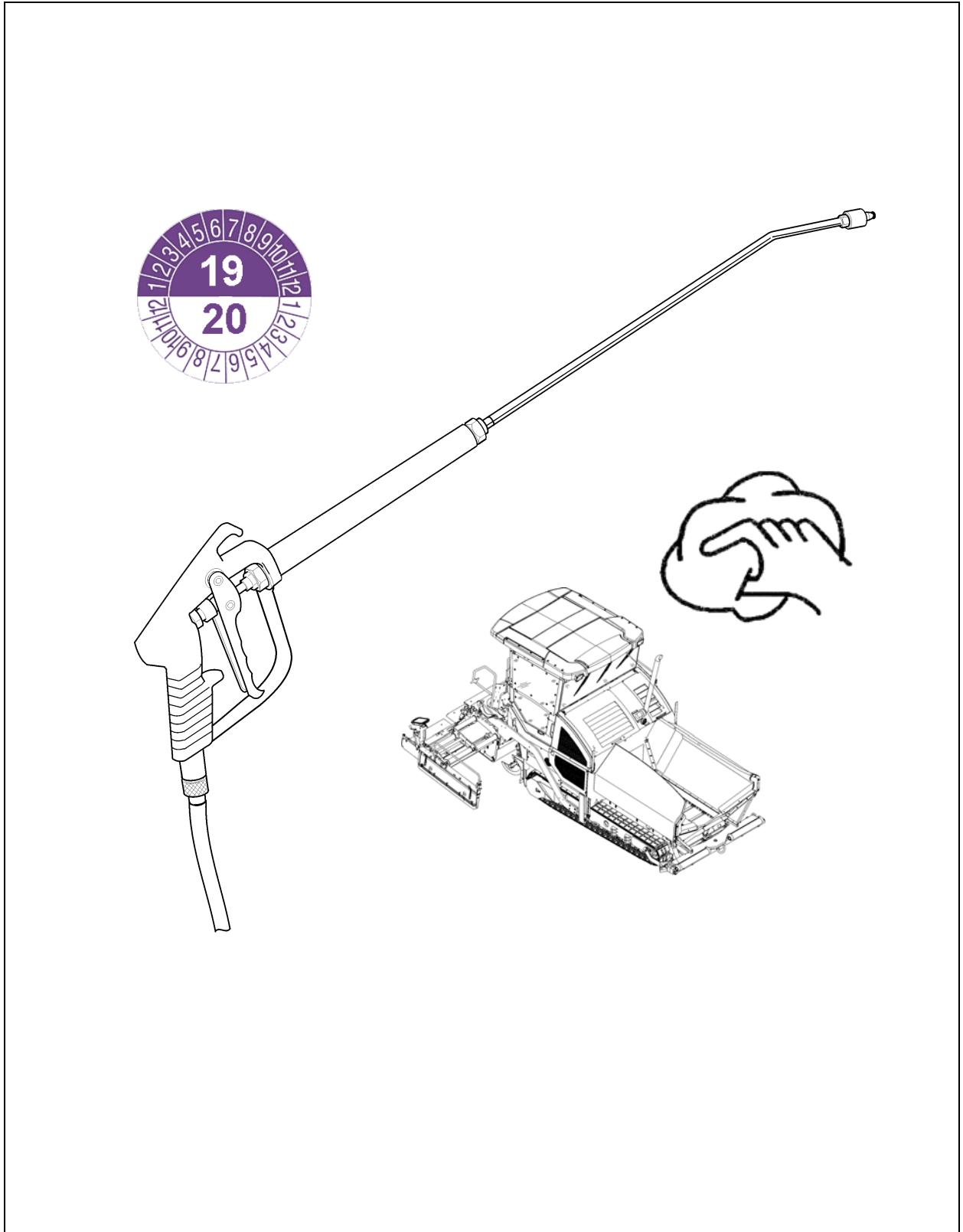
One lubricating nipple (B) is located at each push roller bearing point.





# F 100 Tests, stopping ...

## 1 Tests, checks, cleaning, stopping



## 1.1 Maintenance intervals

Item	Interval							Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years If necessary		
1	■							- General visual inspection	
2	regularly							- Check that the bolts and nuts fit firmly	
3						■	■	- Inspection by an expert	
4							■	- Cleaning	
4							■	- Cleaning sensors	
5							■	- Preserving the paver finisher	

Maintenance	■
Maintenance during the running-in period	▼

## 2 General visual inspection


The daily routine should comprise a visual inspection around the entire paver finisher. The following items must be checked:

- Are components or controls damaged?
- Are there leaks on the engine, the hydraulics, the gearbox, etc.?
- Are all fastening points (conveyor, auger, screed, etc.) in order?
- Are the warnings affixed to the vehicle complete and legible?
- Are the non-slip surfaces at ladders, steps, etc. in correct condition, not worn or soiled?



Immediately take actions to correct any detected malfunction to avoid damages, dangers or environmental hazards!

## 3 Check that the bolts and nuts fit firmly

NOTE	<b>Caution! Possible damage to or destruction of parts!</b>
	<ul style="list-style-type: none"> <li>- Self-locking nuts must always be replaced after removal.</li> <li>- Special torques not mentioned in this manual are stated at the corresponding place in the spare parts catalogue.</li> <li>- Screws locked with screw cement must be cemented in again if found to have come loose. Always use the stated torque.</li> <li>- Stated torques for screwed connections apply to dry (un-oiled) state</li> <li>- Do not reuse screws inserted with the maximum permitted torque; instead, replace with new screws.</li> <li>- Screws in strength class 12.9 should only be used once.</li> <li>- All screwed connections must be clean.</li> <li>- Check all reused components of the screwed connection for any signs of damage.</li> </ul>

Bolts and nuts must be checked regularly to ensure that they fit firmly; retighten them if necessary.



The spare parts catalogue states the special torques at the corresponding parts.



For the necessary standard torques, please refer to the section "Bolts - torques"

#### 4 Inspection by an expert



Have finisher, screed and optional gas or electric system checked by a trained specialist

- when required (according to the operating conditions and the nature of application),
- however, at least once a year, check that they are all in good operational condition.

## 5 Cleaning

- Clean all parts coming into contact with paving material.
  - Spray contaminated parts with the separator fluid spraying system (○).



**Before** cleaning work with the high pressure cleaner, grease all lube points acc. to specification.

- Clean the vehicle with water after laying mineral aggregates, lean-mixed concrete, etc.



Do not spray bearing points, electrical or electronic components with water.

- Remove residual paving material.







**After** cleaning work with the high pressure cleaner, grease all lube points acc. to specification.




Danger of slipping! Ensure that all steps and ladders are free of grease and oil!



 <b>WARNING</b>	<b>Danger of being pulled in by rotating or conveying vehicle parts</b>
	<p>Rotating or conveying vehicle parts can cause severe or fatal injuries!</p> <ul style="list-style-type: none"> <li>- Do not enter the danger zone.</li> <li>- Do not reach into rotating or conveying parts.</li> <li>- Only wear close-fitting clothing.</li> <li>- Comply with the warning and information signs on the vehicle.</li> <li>- Stop the engine and remove the ignition key before any maintenance work.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

 <b>CAUTION</b>	<b>Hot surfaces!</b>
	<p>Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries!</p> <ul style="list-style-type: none"> <li>- Wear your personal safety gear.</li> <li>- Do not touch hot parts of the vehicle.</li> <li>- Only perform maintenance and repair work after the vehicle has cooled down.</li> <li>- Comply with all further information in these instructions and in the safety manual.</li> </ul>

## 5.1 Cleaning the hopper


 Clean the hopper regularly

To clean the hopper, park the vehicle on a smooth surface with the hopper open. Switch off the engine.

## 5.2 Cleaning the conveyor and auger

 Clean the conveyor and auger regularly.

If necessary, let the conveyor and auger run at low speed during cleaning.

 There must always be an assistant at the operator's platform whenever cleaning work is being carried out to intervene in the event of any potential danger.

### 5.3 Cleaning optical or acoustic sensors

Heavily soiled sensors can have a negative effect on measuring results or functions.



Daily cleaning with a dry, lint-free cloth.

## **6 Preserving the paver finisher**

### **6.1 Shutdowns for up to 6 months**

- Park the vehicle in a place where it is protected from great exposure to direct sunlight, wind, humidity and frost.
- Grease all lube points in accordance with specifications. Allow optional central lubricating unit to run if necessary.
- Change oil in diesel engine.
- Seal exhaust silencer to make it airtight.
- Remove batteries, charge them and store them in a well ventilated place at room temperature.



Recharge removed batteries every 2 months.

- Protect all bare metal components, e.g. piston rods on hydraulic cylinders, with a suitable corrosion inhibitor.
- If it is not possible to park the vehicle in an enclosed building or under cover, it must be covered with a suitable size of tarpaulin. In all cases, seal all air intake and exhaust apertures with plastic film and adhesive tape.

### **6.2 Shutdowns lasting from 6 months to 1 year**

- Carry out all the actions listed for "Shutdowns of up to 6 months".
- Once the engine oil has been drained off, fill the diesel engine with a manufacturer-approved grade of preserving oil.

### **6.3 Recommissioning the machine**

- Reverse all the steps described in the "Shutdown" sections.


#### 6.4 Operating the vehicle in special climatic conditions or environments.



Salty air in coastal regions, high UV radiation, sand, soil or changing conditions may cause permanent damage to vehicle parts and surfaces.


There may be visible corrosion or changes to the surfaces.

This has a negative impact on preserving the value of the machine!

NOTE	Caution! Possible damage to or destruction of parts!
	<ul style="list-style-type: none"> <li>- Corrosion can damage individual metal components or also the whole installation. As a result, the stability of fastenings and structures can be impaired. Corresponding preventive treatment must be applied to the machine. This should be repeated at appropriate intervals when necessary.</li> <li>- All possible harmful influences must be taken into consideration. This includes high salt content in the air near the coast together with the use of de-icing agents on the roads or strong UV radiation.</li> <li>- The vehicle should be treated with corrosion and surface protection adjusted to the prevailing conditions.</li> <li>- Any signs of emerging corrosion must be stopped and sealed air-tight.</li> <li>- A second layer of preserving agent can help to safeguard corrosion protection.</li> <li>- Measures for corrosion or surface protection that entail coating the surface must be coordinated with the Customer Service for the machine.</li> </ul>


## 7 Environmental protection, disposal


### 7.1 Environmental protection

 Packaging materials, used operating substances, cleaning agents and machine accessories must be correctly recycled.

 Always observe the local regulations!

### 7.2 Disposal

 Correctly sorted disposal must be carried out after replacing wear and spare parts and after the machine has been withdrawn from service (scrapped).  
The materials must be sorted correctly according to metal, plastic, electronic scrap, various operating substances etc.  
Any oily or greasy parts (hydraulic hoses, lube pipes etc.) must be treated separately.

 Electric devices, accessories and packaging should be recycled in an environment-friendly manner.

 Always observe the local regulations!

## 8 Bolts - torques

### 8.1 Standard metric threads - strength class 8.8 / 10.9 / 12.9

Treatment	dry/lightly oiled						Molykote®					
	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)
Strength class	8.8	8.8	10.9	10.9	12.9	12.9	8.8	8.8	10.9	10.9	12.9	12.9
M3	1	0,3	1,5	0,4	1,7	0,4	1	0,3	1,4	0,4	1,7	0,4
M4	2,4	0,6	3,5	0,9	4	1	2,3	0,6	3,3	0,8	3,9	1
M5	5	1,2	7	1,7	8	2	4,6	1,1	6,4	1,6	7,7	1,9
M6	8	2,1	12	3	14	3	7,8	1,9	11	2,7	13	3,3
M8	20	5	28	7,1	34	8	19	4,7	26	6,6	31	7,9
M10	41	10	57	14	70	17	37	9	52	13	62	16
M12	73	18	97	24	120	30	63	16	89	22	107	27
M14	115	29	154	39	195	45	100	25	141	35	169	42
M16	185	46	243	61	315	75	156	39	219	55	263	66
M18	238	60	335	84	402	100	215	54	302	76	363	91
M20	335	84	474	119	600	150	304	76	427	107	513	128
M22	462	116	650	162	759	190	410	102	575	144	690	173
M24	600	150	817	204	1020	250	522	131	734	184	881	220
M27	858	214	1206	301	1410	352	760	190	1067	267	1281	320
M30	1200	300	1622	405	1948	487	1049	262	1475	369	1770	443
M33	1581	395	2224	556	2669	667	1400	350	1969	492	2362	590
M36	2000	500	2854	714	3383	846	1819	455	2528	632	3070	767






## 8.2 Fine metric threads - strength class 8.8 / 10.9 / 12.9

Treatment	dry/lightly oiled						Molykote ®					
	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)	Torque (Nm)	Permitted deviation (+/- Nm)
Strength class	8.8	8.8	10.9	10.9	12.9	12.9	8.8	8.8	10.9	10.9	12.9	12.9
M3x0,35	1,2	0,3	1,7	0,4	2,1	0,5	1,1	0,3	1,5	0,4	1,8	0,5
M4x0,5	2,8	0,7	3,9	1	4,7	1,2	2,5	0,6	3,5	0,9	4,2	1
M5x0,5	5,7	1,4	8	2	9,6	2,4	5,1	1,3	7,1	1,8	8,5	2,1
M6x0,75	9,2	2,3	12,9	3,2	15,5	3,9	8,3	2,1	11,6	2,9	13,9	3,5
M8x1	21,7	5,4	30,6	7,6	36,7	9,2	19,5	4,9	27,4	6,8	32,8	8,2
M10x1,25	42,1	10,5	59,2	15	71	17,8	37,7	9,4	53	13	63,6	15,9
M12x1,25	75,7	18,9	106,2	26	127	31,9	67,2	16,8	94,5	24	113	28,3
M14x1,5	119	29,7	167	42	200	50,1	106	26	149	37	178	44,6
M16x1,5	183	45,6	257	64	308	77	162	40	227	57	273	68,2
M18x1,5	267	66,8	376	94	451	112,7	236	59	331	83	398	99,4
M20x1,5	373	93,2	524	131	629	157,3	328	82	461	115	553	138,3
M22x1,5	503	126	707	177	848	212,1	442	110	621	155	745	186,3
M24x2	630	158	886	221	1063	265,8	556	139	782	195	938	234,5
M27x2	918	229	1290	323	1548	387,1	807	202	1136	284	1363	340,7
M30x2	1281	320	1802	450	2162	540,6	1124	281	1581	395	1897	474,3
M33x2	1728	432	2430	607	2916	728,9	1514	378	2128	532	2554	638,5
M36x3	2126	532	2990	747	3588	897,1	1876	469	2638	659	3165	791,3

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# F 115 Lubricants and operating substances

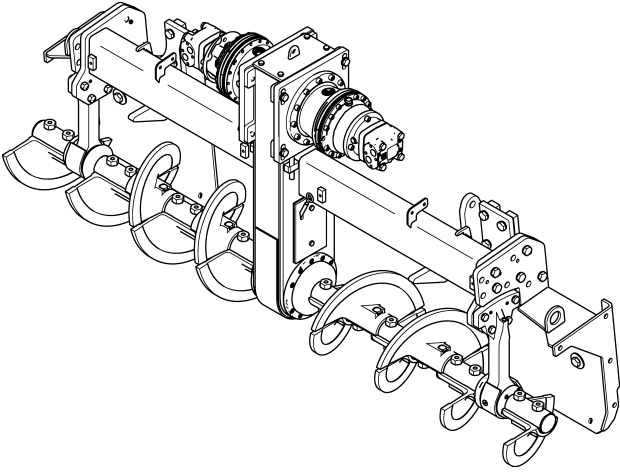
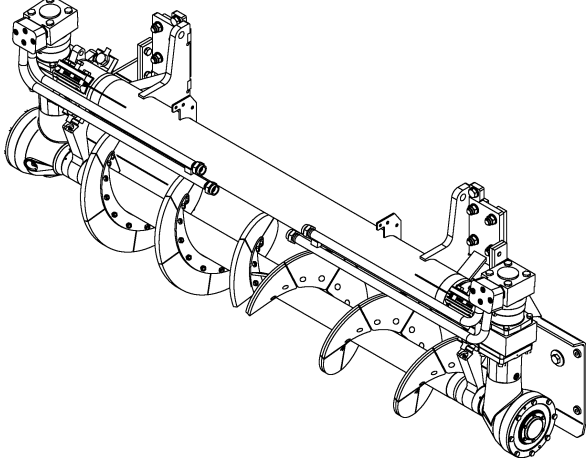
## 1 Lubricants and operating substances

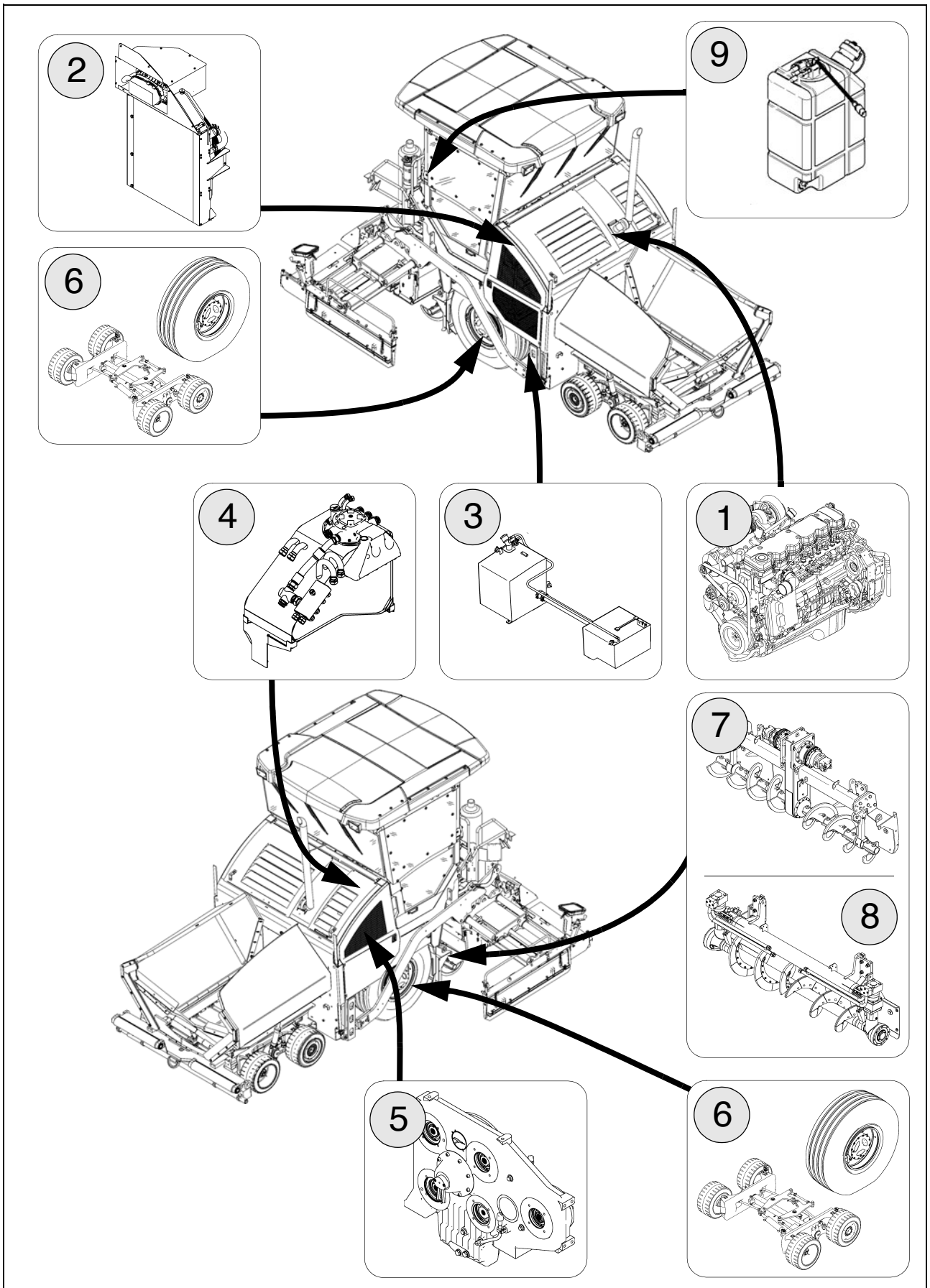
-  Use only the lubricants listed below or comparable qualities of well-known brands.
-  Only use containers which are clean on inside and outside for filling oil or fuel.
-  Note capacities (see section "Capacities").
-  Incorrect oil or lubricant levels promote rapid wear and machine failure.
-  Never mix synthetic oils with mineral oils!

## 2 Optional assemblies



Two different auger systems are available as options.  
Check which auger type is used in your machine and comply with the corresponding installation, operation and maintenance instructions!

<p>- Auger <b>-Type A-</b> Central drive</p>	
<p>- Auger <b>-Type B-</b> External drive</p>	



## 2.1 Capacities

		Substance	Volume
1	Diesel engine (with oil filter change)	Engine oil	13 litres
2	Engine cooling system	Cooling liquid	23,0 litres (Tier 3) 23.0 litres (Tier 4F)
3	Fuel tank	Diesel fuel	315 litres (Tier3 ) 290 litres (Tier4F; StageV)
4	Hydraulic oil reservoir	Hydraulic oil	240 litres (Tier3 ; Tier4F) 215 litres (StageV)
5	Pump distribution gear	Gearbox oil	7,0 litres
6	Planetary gear Travel drive	Gearbox oil	2,5 litres
7	Planetary gear augers (on each side) - Auger type A	Gearbox oil	1,5 litres
7	Auger box - Auger type A	Gearbox oil	4,0 litres
7	Outer auger bearing (per bearing)** - Auger type A	Hot bearing grease	115 grams
8	Auger bevel gear (on each side) - Auger type B	Gearbox oil	0,6 litres
9	AdBlue® / DEF tank (○)	AdBlue® / DEF - fluid	19 litres (Tier 4F) 37 litres (Stage V)
	Separator fluid tank	Separator emulsion	25 litres
	Central lubrication system (option)	Grease	
	Batteries	Distilled water	



Note specifications on the following pages!

\*\* for new installation

### 3 Operating substance specifications

#### 3.1 Drive engine TIER 4i, 4F / Stage IIIb, IV; V (O)- fuel specification



Low-sulphur diesel fuel is prescribed for correct operation of the exhaust-gas treatment system!

The maximum sulphur level must not exceed 15 ppm!

If low-sulphur diesel fuel is not used, the prescribed exhaust values cannot be met and damage will be caused to the engine and to the exhaust-gas treatment system!



Danger of explosion! Never mix diesel fuel with ethanol, petrol or alcohol!



Diesel fuel contaminated with water or dirt can cause serious damage to the fuel system! Keep fuel and fuel system free of water and impurities!



Observe the instructions for fuel recommendations and the specification in the maintenance instructions of the engine manufacturer!

#### 3.2 Engine - lubricating oil

<b>Dynapac</b>	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
<b>Engine Oil 200 (*)</b>							



(\*) = recommended



Observe the instructions for lubricant recommendations and the specification in the maintenance instructions of the engine manufacturer!

#### 3.3 Cooling system

<b>Dynapac</b>	AGIP	Chevron	Caltex	Delo	Petronas		Finke
<b>Coolant 200 (*)</b>	-Antifreeze Special	Extended Life Coolant			Antifreeze G12		Aviaticon Finkofreeze P12+



(\*) = recommended


### 3.4 Hydraulic system

Dynapac	AGIP	Chevron	Caltex	Fuchs	Mobil	Shell	Castrol
Hydraulic 100 (*)		Rando HDZ 46	Rando HDZ 46			-Tellus Oil S2 V46 -Tellus S2 VX46	Hyspin AWH-M 46

 (\*) = recommended

### 3.5 Pump distribution gear

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	Castrol
Gear Oil 400 (*)				-Titan ATF 6000 SL (*)		-Spirax S4 ATF HDX -Spirax S6 ATF VM	Transmax Dex III Multivehicle

 (\*) = filled in at the factory

### 3.6 Travel drive planetary gear

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	Castrol
Gear Oil 100 (*)						-Omala S2 GX 220	Alpha SP 220

 (\*) = recommended

### 3.7 Planetary gear auger drive type A

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	Castrol
Gear Oil 100 (*)						-Omala S2 GX 220	Alpha SP 220

 (\*) = recommended

### 3.8 Auger box type A

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
						-Omala S4WE460 (*)	

 (\*) = recommended

### 3.9 Auger bevel gear type B

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
						-Spirax S2 G 80W-90 -Spirax G80W-90	

 (\*) = recommended

### 3.10 Grease

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	Chevron
Paver Grease (*)						-Gadus S5 T460 1.5	-High Temp Premium2

### 3.11 Drive engine - AdBlue® / DEF



For correct operation of the exhaust gas treatment system, the use of AdBlue® / DEF fluid is prescribed pursuant to ISO 22241-1 respectively DIN 70070!

For vehicles operating in North America, the use of a DEF fluid with API approval is urgently recommended!



Observe the instructions for the AdBlue® / DEF recommendations and specification in the maintenance instructions issued by the engine manufacturer!

Dynapac							




(\*) = recommended

### 3.12 Separator emulsion

Dynapac	Dynapac	Dynapac					
Belt Guard 20L 4812215842 (*)	Belt Guard 208L 4812215846 (*)	Belt Guard 1000L 4812216094 (*)					



(\*) = recommended

<b>NOTE</b>	<p><b>Caution! Possible subsequent damage from not approved separator emulsion</b></p> <p>Considerable damage can be caused to the vehicle by using separator emulsions and other cleaning agents not approved by the factory without prior consultation.</p> <p>The use of separator emulsions and cleaning agents that are not approved makes the vehicle guarantee null and void.</p> <ul style="list-style-type: none"> <li>- Only use approved separator emulsions, cleaning agents and operating substances!</li> </ul>
	

### 3.13 Hydraulic oil

Preferred hydraulic oils:

a) Synthetic hydraulic liquids based on ester, HEES

Manufacturer	ISO viscosity class VG 46
Dynapac	Hydraulic 120 (*)
Shell	Natural HF-E46
Panolin	HLP SYNTH 46
Esso	Univis HEES 46
Total	Total Biohydran SE 46
Aral	Vitam EHF 46
Finke	Aviaticon HY-HE 46



(\*) = recommended



When changing from mineral oil pressure fluids to biodegradable pressure fluids, please contact our factory advisory service!





