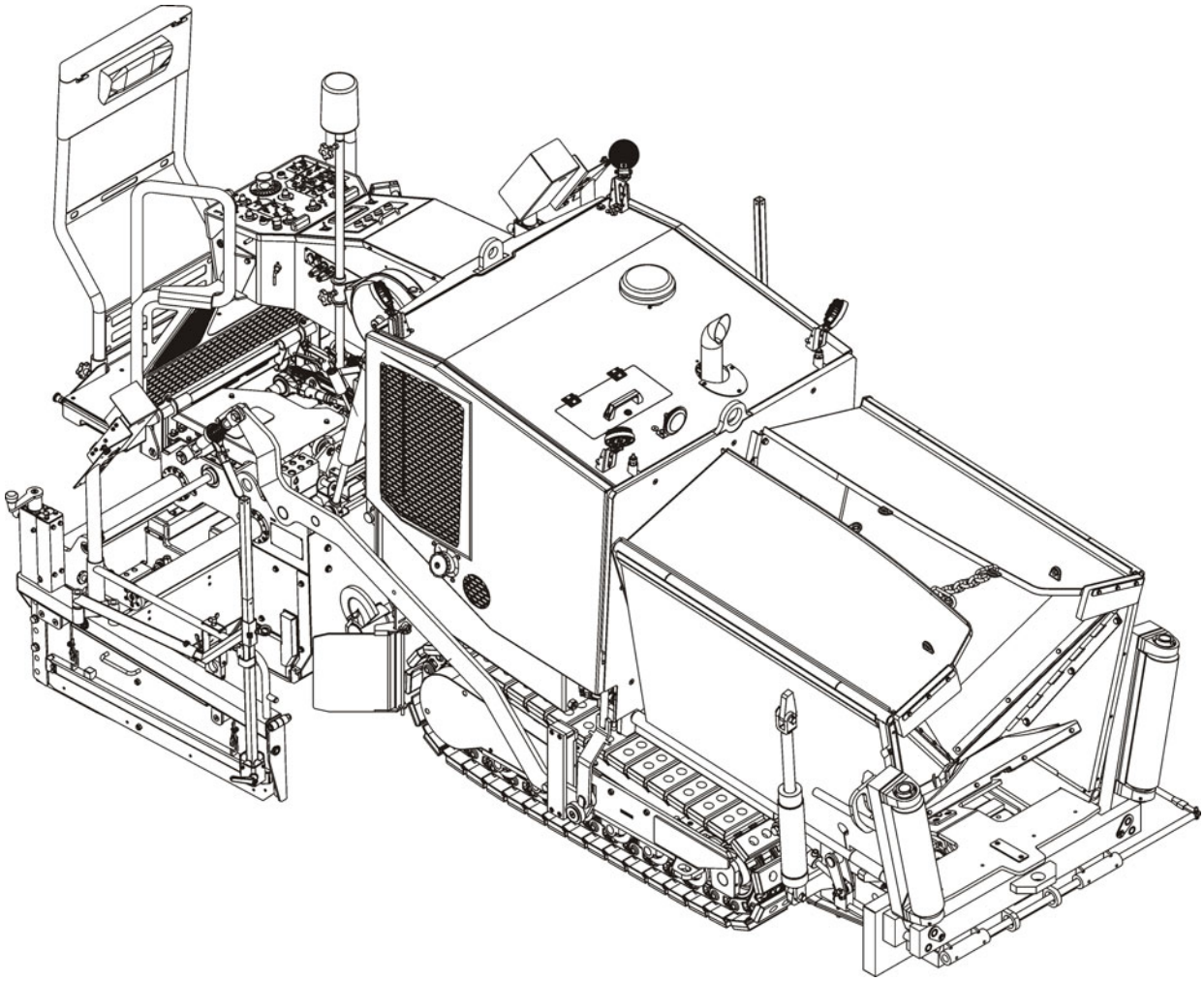
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OPERATION & MAINTENANCE

Paver Finisher
F1250CS
Type 458



EN 01-1019
4812076240

DYNAPAC
FAYAT GROUP

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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!

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1.2 Safety signs, signal words

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

"Danger"!



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

"Warning" !



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

"Caution" !



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

"Note" !



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

1.3 Other supplementary information

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



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



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



Precedes general notes and explanations.

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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!



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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!



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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!



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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!



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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!

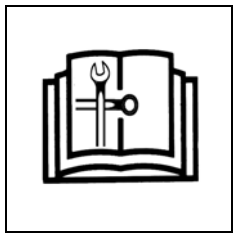
Fire extinguisher!
(optional equipment)



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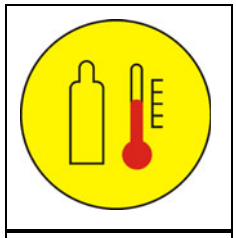
1.9 Additional information

⚠ Also observe the manufacturer's documentation and additional documentation!

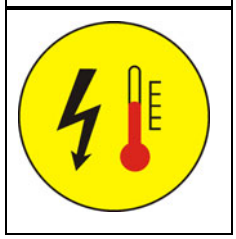


☞ For example, the maintenance instructions of the engine manufacturer

⚠ 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.

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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 occurrs 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.

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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

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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.

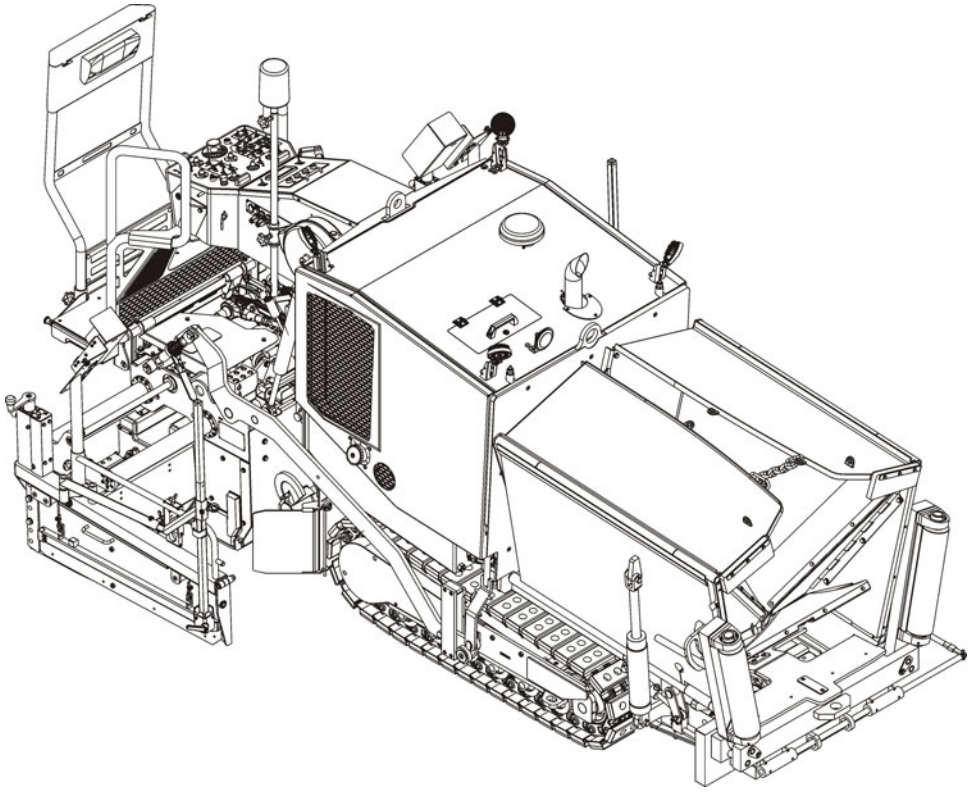
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B Vehicle description

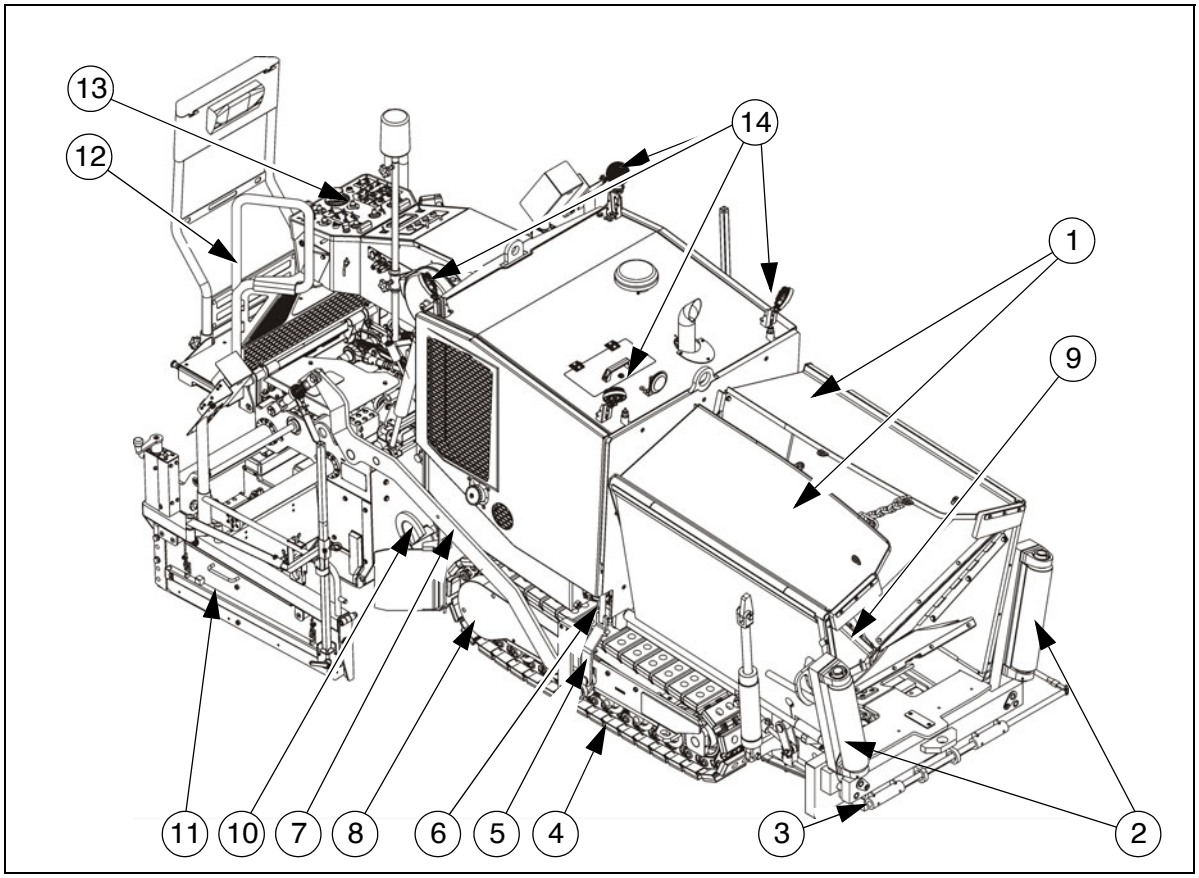
1 Application

The DYNAPAC F1250CS paver finisher is a paver finisher with a caterpillar drive which is used for laying bituminous mixed material, roll-down or lean-mixed concrete and unbound mineral aggregates for foundations for paving.



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2 Description of assemblies and functions



Item		Designation
1	●	Material compartment (hopper)
2	●	Truck push rollers
3	●	Tube for sensor rod (direction indicator) holder
4	●	Caterpillar drive
5	●	Levelling cylinder for paving thickness
6	●	Paving thickness indicator
7	●	Crossbeam
8	●	Travel drive of the caterpillar drive
9	●	Conveyor
10	●	Auger
11	●	Screed
12	●	Operator’s platform
13	●	Operating panel
14	●	Working lights

● = Standard equipment	○ = Optional equipment

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2.1 Vehicle

Construction

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

The caterpillar drives are part of the frame structure; the suspension of the attached screed additionally helps to attain 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 independent travel drives and the clearly structured operating components and controls.

The following extra equipment (option) is available:

○ Hydraulic front hopper flap

○ Material chute / hinged material chute

○ Remote control

○ Additional headlights, warning lamps

○ Emulsion spraying system

○ Automatic levelling system

○ Larger working widths

○ Alternator for electric heater

○ Further equipment and upgrade options on request

Engine: The paver finisher is equipped with a water-cooled 4-cylinder Deutz diesel engine. For further information please refer to the operating instructions for the engine.

Drive unit: Both caterpillar drives are directly driven by separate drives. They operate directly, without any drive chains which require maintenance or servicing.
The tension of the caterpillar chains can be readjusted using tensioners.

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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 hydraulic motors drive the caterpillar chains via planetary gears that are mounted directly inside the drive units of the caterpillar chains.

Steering system/operator's platform: The independent hydrostatic travel drives allow the paver finisher to be turned on the spot.
The adjustable synchronisation, controlled from the operating panel, ensures that the paver finisher runs straight ahead.

Push roller crossbar: The push rollers for material trucks are fastened to a cross bar that is pivoted at its centre.
The finisher deviates less from its course, thereby facilitating paving in curves.
For adaptation to various truck design types, the push roller crossbar can be shifted to two positions.
The push rollers and the hopper can be swivelled up together to reduce the transport width.

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. 5.0 t.
To facilitate emptying and achieve even material transfer, each of the lateral covers of the hopper can be hydraulically folded in.
With the asymmetrical hopper (○)□a hopper wall can be extended to enlarge the volume.

Material transfer: The paver finisher has a conveyor that brings the material from the hopper to the distribution augers.
By scanning the filling height during the paving procedure, the transfer amount is regulated fully automatically.

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 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.

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Levelling/slope control system: The standard paver finisher is prepared electrically and hydraulically to fit an automatic levelling system.
The levelling system monitors the paving thickness and corrects any deviations from the nominal level automatically.

The system consists of optional combinations of:

- Height controllers
- Slope controller
- Digital controllers

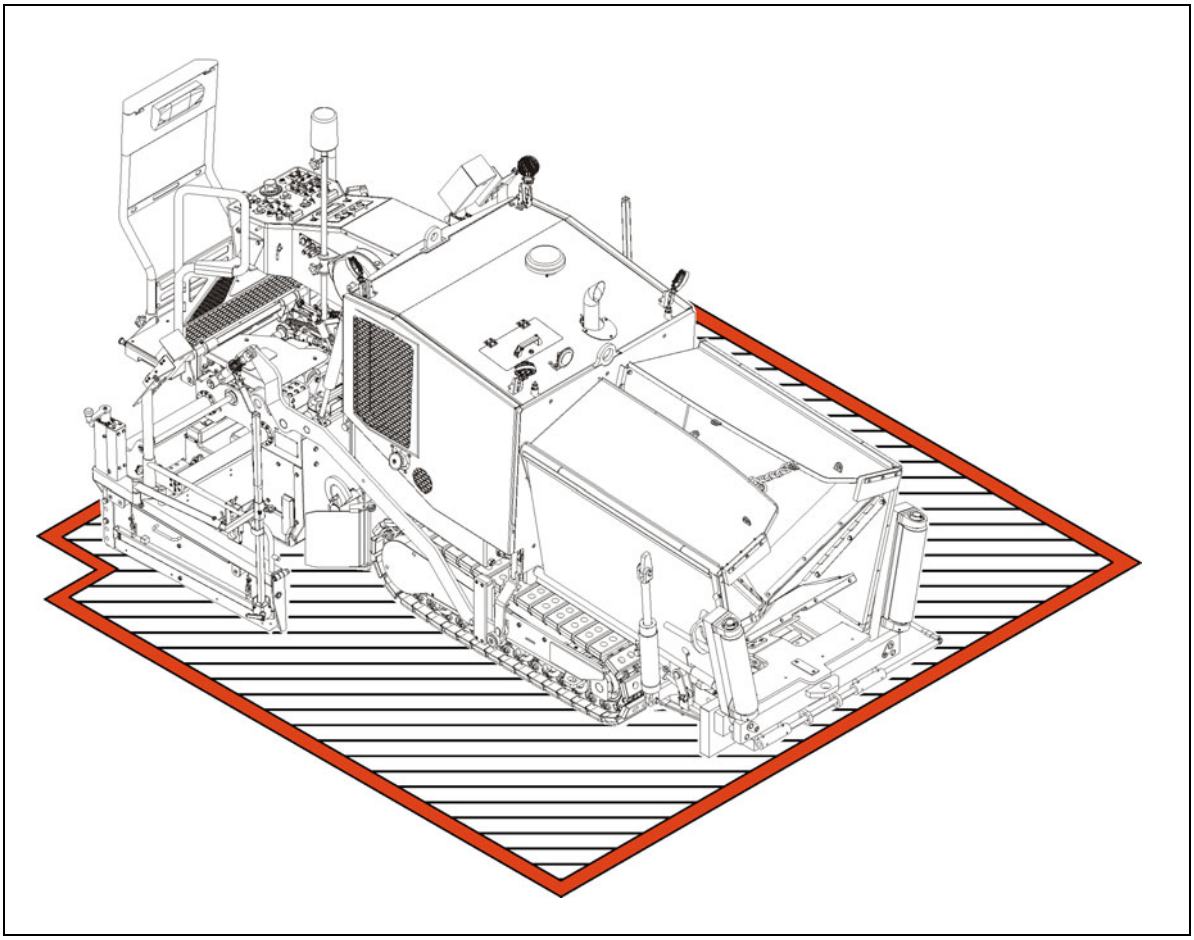
The slope control system always operates in conjunction with the levelling cylinders on the opposite side.

By adjusting the height of the traction point of the crossbeam, the paving thickness of the material or the laying height of the screed can be controlled.
Actuation occurs electrohydraulically on both sides and can be controlled manually by means of toggle switches or automatically by means of an electronic grade control system.

Screed lifting device: The screed lifting device is used to lift the screed during transportation. This takes place by hydraulic means by actuating a hydraulic cylinder.

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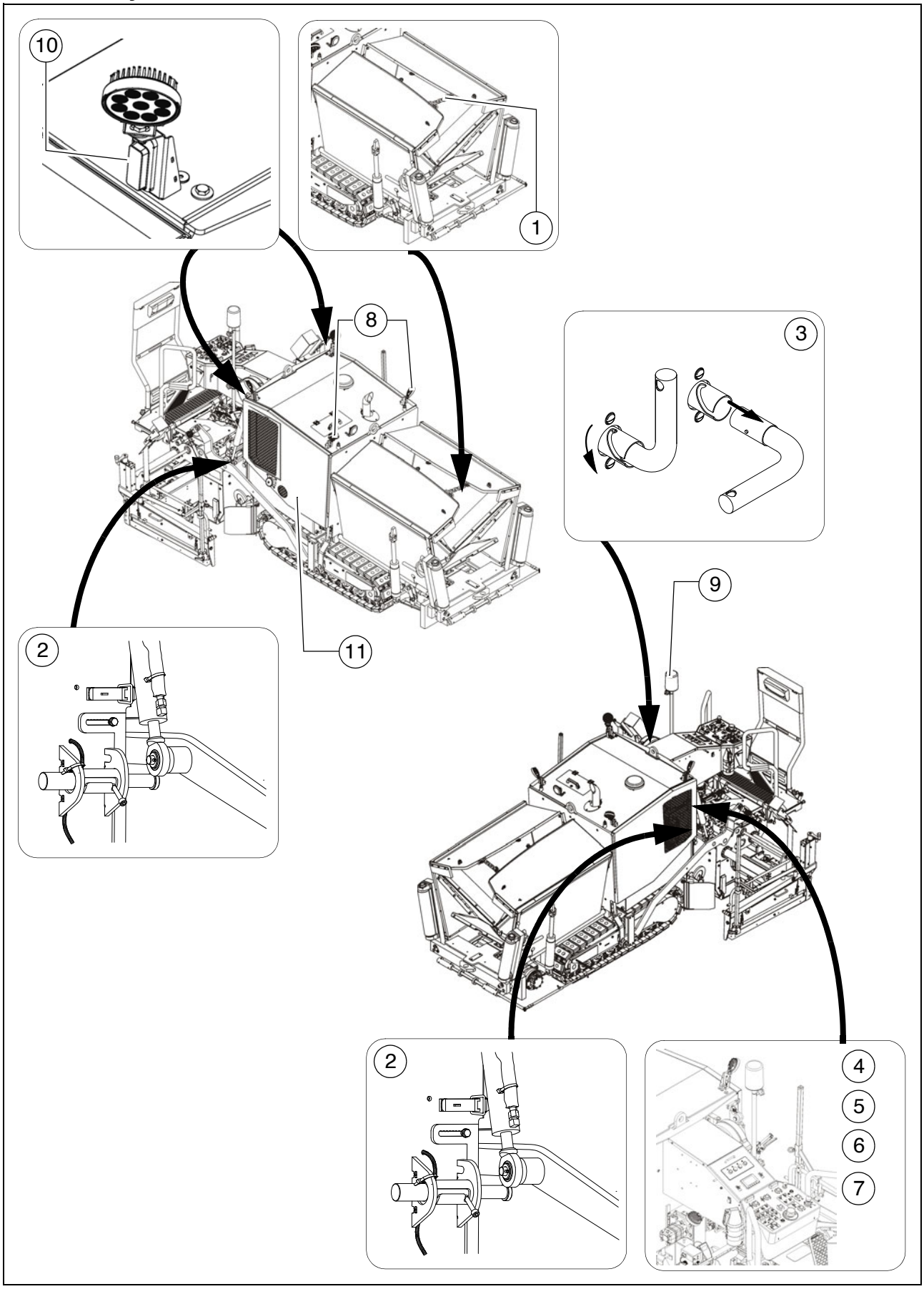
3 Danger zones



WARNING	Danger for persons in the danger zone
	Persons in the danger zone can suffer severe to 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.

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4 Safety devices



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Item	Designation	
1	Hopper transport safeguard	
2	Screed transport safeguard	
3	Main switch	
4	Travel drive safety switch	
5	Emergency stop button	
6	Horn	
7	Ignition key	
8	Lights	**
9	Rotary beacon	
10	Screed warning light	**
11	Covers, lateral flaps, coverings	**

** 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.

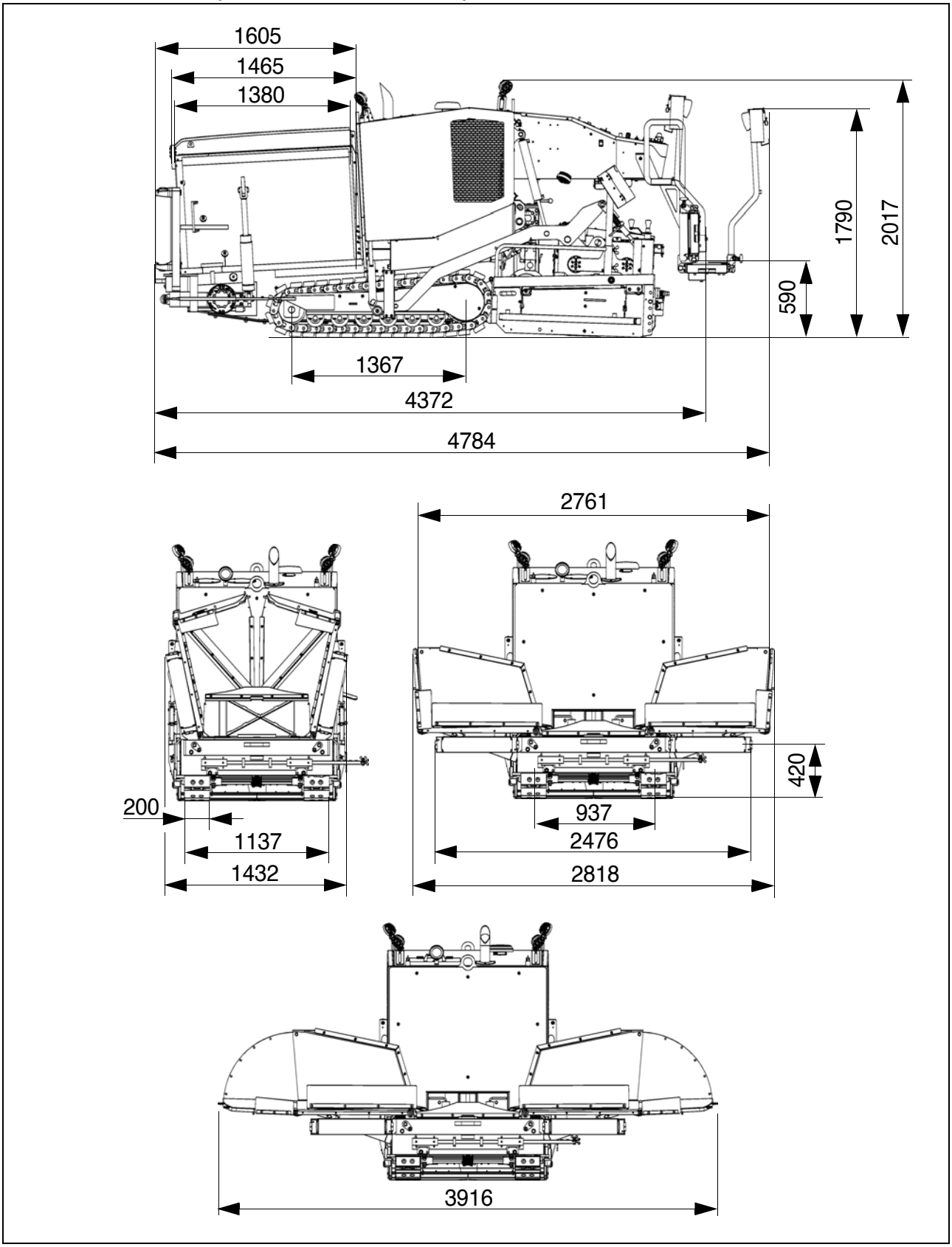
⚠ Check the function of these devices at regular intervals.

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

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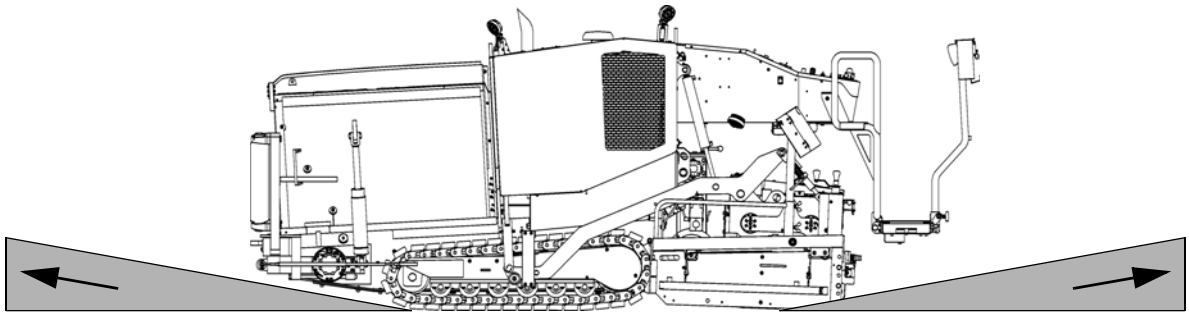
5 Technical data, standard configuration

5.1 Dimensions (all dimensions in mm)



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5.2 Permissible approach angle



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5.3 Weights F1250CS (all weights in t)

Paver finisher without screed	Approx. 5.71
Paver finisher with screed: - V2400TV - V2400TV-E	Approx. 6.94 Approx. 6.94
With filled hopper additionally max.	approx. 5.0

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

5.4 Performance data F1250CS

Screed used	Basic width (without cut-off shoes)	Minimum paving width (with cut-off shoe)	Fully variable hydr. adjustment up to	Maximum paving widths (with extension parts)	
V2400TV	1.20	0.30	2.40	3.10	m
V2400TV-E	1.20	0.30	2.40	3.10	m

Transport speed	0 - 3,3	km/h
Operating speed	0 - 27	m/min
Paving height	-150 - 250	mm
Theoretical paving performance	300	t/h

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5.5 Travel drive/traction unit

Drive	Hydrostatic drive, continuously controllable
Drive unit	Two separately driven caterpillar drives with rubber grouser chains
Turning capacity	Turning on the spot
Speed	See above

5.6 Engine EU 3A / Tier 3

Make/type	Deutz TD 2.9 L4
Version	4-cylinder diesel engine
Performance	50 KW / 68 PS (at 2200 rpm)
Fuel consumption, full load Fuel consumption, 2/3 load	14.1 l/h 9.4 l/h
Fuel tank capacity	(See chapter F)

5.7 Engine EU 3B / Tier 4f

Make/type	Deutz TD 2.9 L4
Version	4-cylinder diesel engine
Performance	50 KW / 68 PS (at 2200 rpm)
Fuel consumption, full load Fuel consumption, 2/3 load	14.1 l/h 9.4 l/h
Fuel tank capacity	(See chapter F)

5.8 Stage V engine

Make/type	Deutz TD 2.9 L4
Version	4-cylinder diesel engine
Performance	55 KW / 74 PS (at 2200 rpm)
Fuel consumption, full load Fuel consumption, 2/3 load	15.3 l/h 10.2 l/h
Fuel tank capacity	(See chapter F)

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5.9 Material compartment (hopper)

Volume	Approx. 2.3 m^3 = approx. 5.0 t
Input height	570 mm

5.10 Material transfer

Type	Simple conveyor belt
Width	620 mm
Conveyor operation	Automatic by means of mechanical limit switches

5.11 Material distribution

Augers	Ø 320 mm
Drive	Left and right auger separately controllable Hydrostatic central drive, continuously controllable
Conveying volume controller	Fully automatic via configurable switching points
Auger height adjustment	- continuously mechanical, 150mm
Auger extension	With extension parts (see auger extension chart)

5.12 Electrical system

On-board voltage	24 V
Batteries	2 x 12 V, 74 Ah
Alternator (○)	10 kVA / 400 V
Fuses	See chapter F, section 5

5.13 Permissible temperature ranges

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

☞ For the filling volumes of the various lubricants and operating substances, see chapter F.

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5.14 Radio remote control

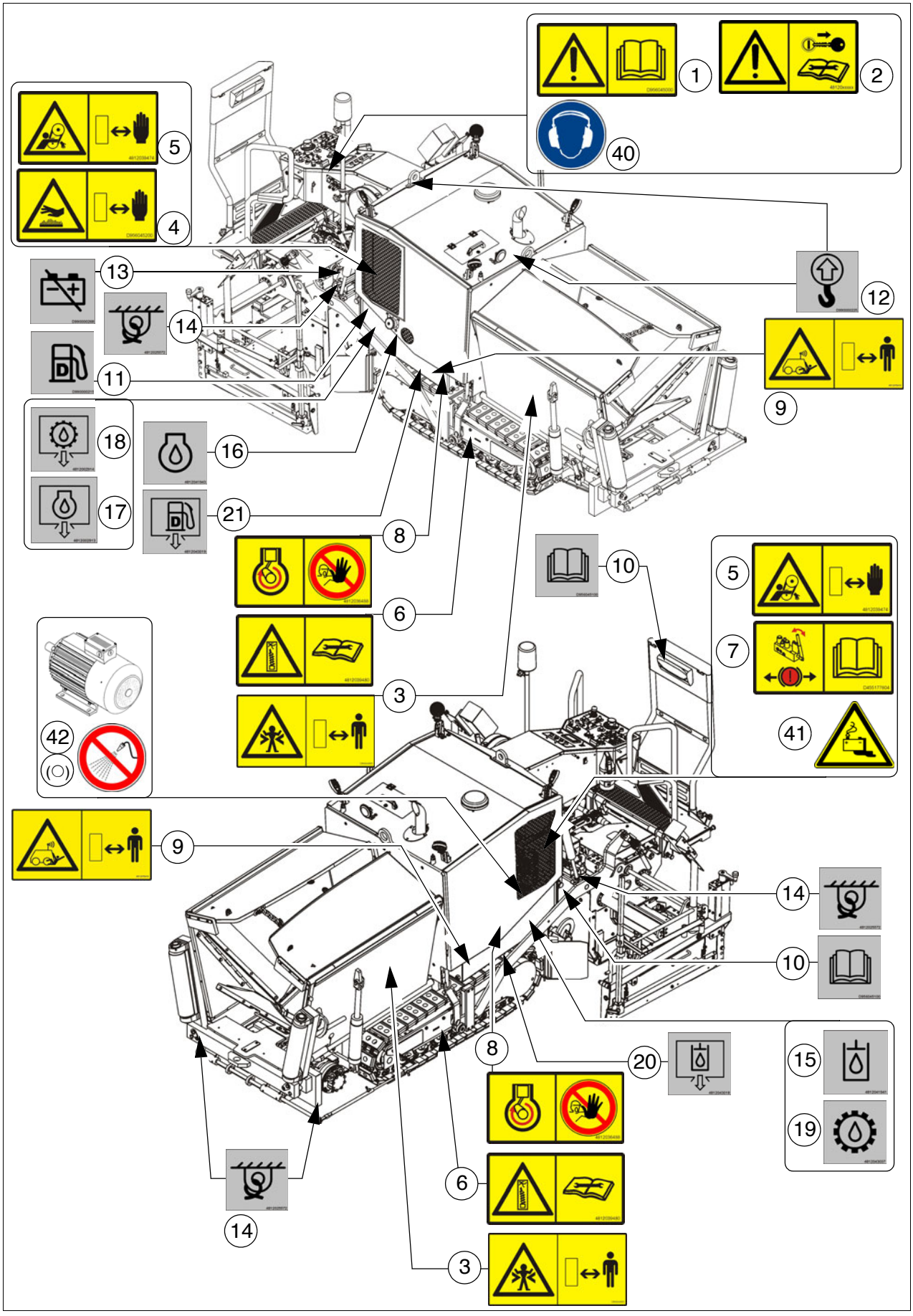
Transponder voltage	3.6V
Transponder frequency range	2400- 2483.5Mhz
Transmitter frequency band	E
Transmitter frequency range	2400- 2483.5Mhz
Number of transmitter channels	2
Transmitter power consumption	30mA
Receiver frequency range	2400- 2483.5Mhz
Rechargeable battery voltage	3.6V
Rechargeable battery capacity	2Ah
Battery charger	10-30V DC

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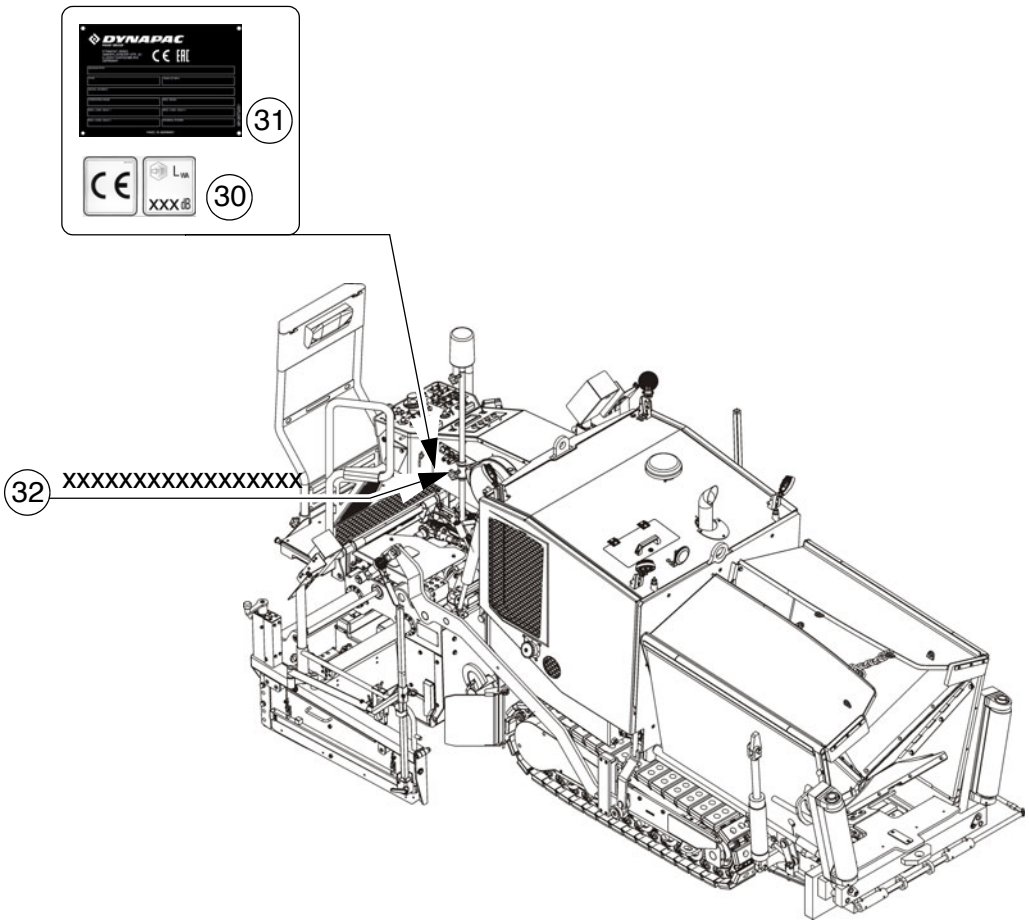
6 Identification points

⚠ CAUTION	**Danger due to missing or misunderstood vehicle signs**
	Missing or misunderstood vehicle signs pose a danger of injuries! - Never remove any warnings or information signs from the vehicle. - Damaged or lost warning or information signs must be replaced immediately. - Make yourself familiar with the meaning and position of the warning and information signs. - Comply with all further information in these instructions and in the safety manual.

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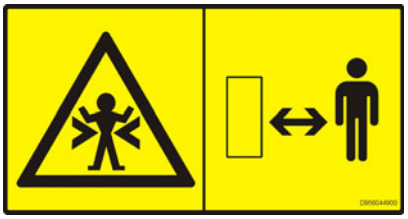
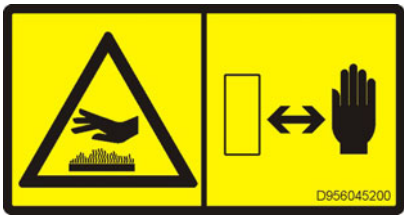
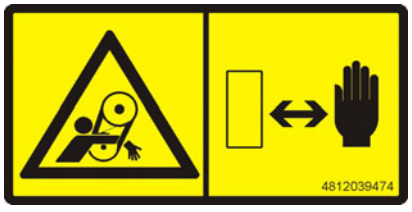


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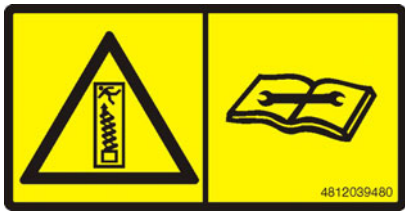
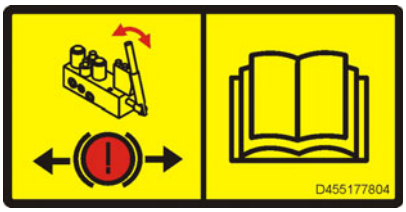


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6.1 Warning signs

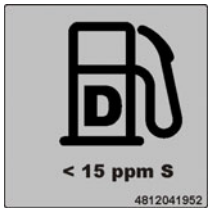
No.	Pictogram	Meaning
1		- **Warning - Operating instructions!** Danger due to improper operation. The machine personnel must have read and understood the safety, operating and maintenance instructions for the machine before the machine is put into operation! Failure to comply with the operating and 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!
2		- **Warning - Switch off the engine and remove the ignition key before performing any maintenance and repair work!** 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.
3		- **Warning - Danger of crushing!** Crushing points can cause severe or fatal injuries! Maintain a safe distance from the danger area!
4		- **Warning - Hot surface - Risk of burning!** Hot surfaces can cause severe injuries! Keep your hands a safe distance away from the danger area! Use protective clothing or protective equipment!
5		- **Warning - Danger of being pulled in by the belt drive!** Being pulled in by the belt drive can cause severe injuries to the hands and arms. Keep your hands a safe distance away from the danger area!

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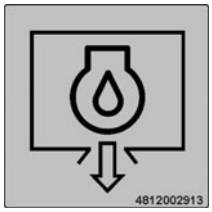
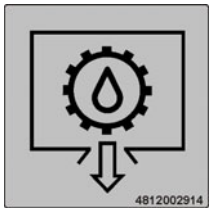
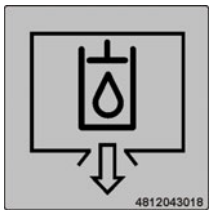
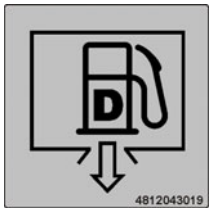
No.	Pictogram	Meaning
6		- **Warning - Spring-loaded part!** Performing work incorrectly can cause severe to fatal injuries. Always observe the maintenance instructions!
7		- **Caution - Danger from incorrect towing!** Vehicle movements can cause severe to fatal injuries. The traction system brake must be released before towing. Always observe the operating instructions!
8		- **Warning - Danger from running engine!** If the drive engine is left running, this can cause severe to fatal injuries. Never open the engine hood while the engine is running!
9		- **Warning - remote-controlled vehicle!** The remote-controlled vehicle can cause severe to fatal injuries! Maintain a safe distance from the danger area!

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6.2 Information signs

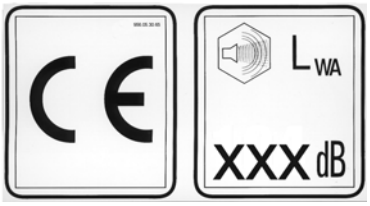
No.	Pictogram	Meaning
10		- **Operating Instructions** Position of the storage compartment.
11		- **Diesel fuel** Position of the filling point.
11		- **Diesel fuel, sulphur level < 15 ppm** Position of the filling point, specification.
12		- **Lifting point** Lifting the machine is only permitted at these lifting points!
13		- **Main battery switch** Position of the main battery switch.
14		- **Lashing point** Lashing the machine is only permitted at these points!
15		- **Hydraulic oil** Position of the filling point.

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No.	Pictogram	Meaning
16		- **Engine oil** Position of the filling and control point.
17		- **Engine oil drainage point** Position of the drainage point.
18		- **Gear oil drainage point** Position of the drainage point.
19		- **Gearbox oil** Position of the filling and control point.
20		- **Hydraulic oil drainage point** Position of the drainage point.
21		- **Fuel drainage point** Position of the drainage point.

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6.3 CE marking

No.	Pictogram	Meaning
30		- CE, sound output level

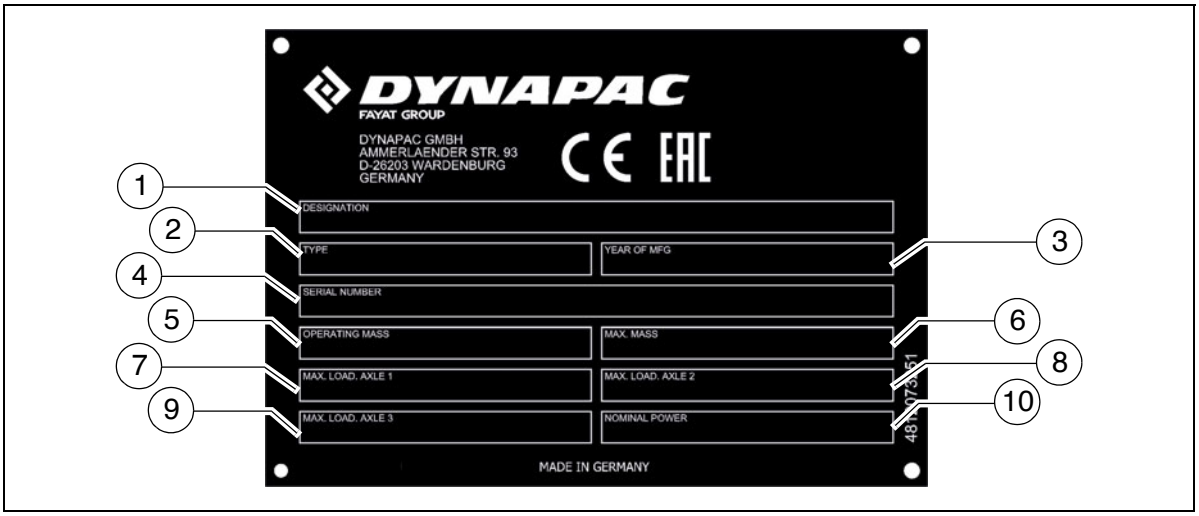
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6.4 Instructive symbols, prohibitive symbols, warning symbols

No.	Pictogram	Meaning
40		- Wear ear protectors
41		- Warning on dangers posed by batteries!
42		- Do not spray the area or component with water!

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6.5 Identification label for the paver finisher (41)

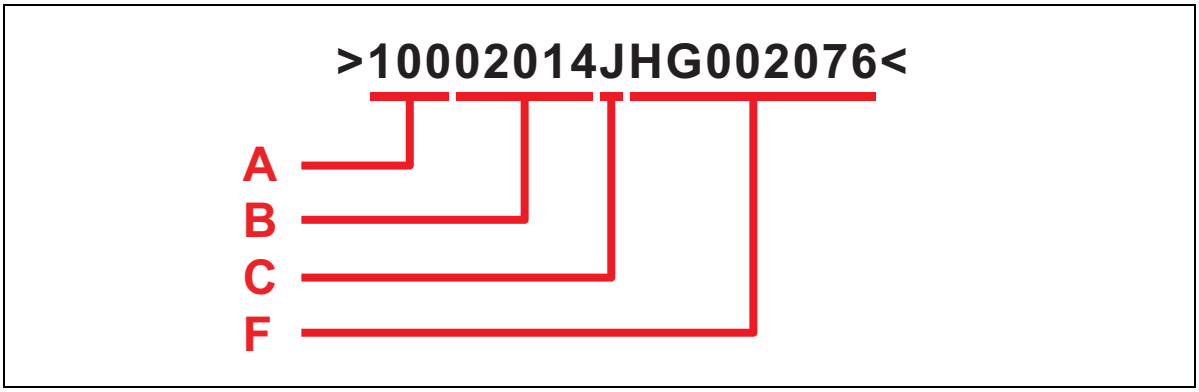


Pos.	Description
1	Vehicle designation
2	Designation type
3	Year of construction
4	Serial number (product identification number (PIN))
5	Operating weight, incl. all extension parts, in kg
6	Maximum permitted total weight in kg
7	Maximum permitted axle load kg - axle 1
8	Maximum permitted axle load kg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

☞ The punched vehicle identification number (VIN) on the vehicle must match the product identification number (4).

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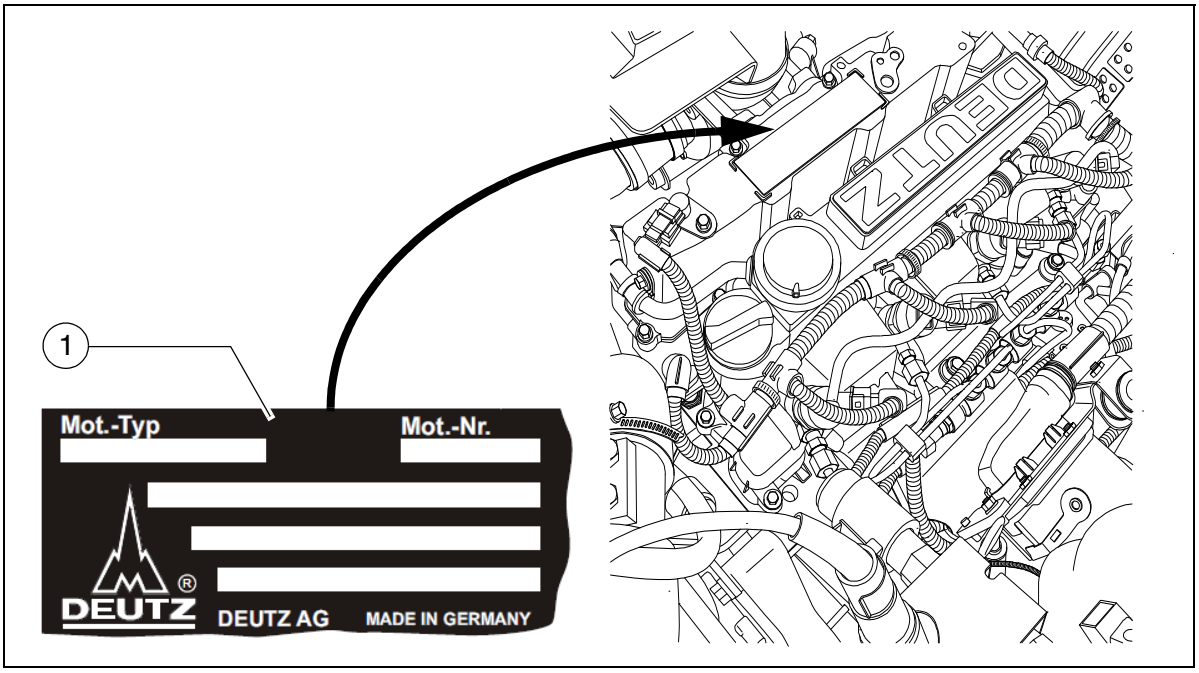
6.6 Explanation of 17-digit PIN serial number



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

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6.7 Engine type plate



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.

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7 EN standards

7.1 Continuous sound pressure level

⚠ 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 noise emission level of the paver finisher was measured under free-field conditions according to the EN 500-6 draft dated March 1997, and ISO 4872.

Sound pressure level at the operator's position (at the height of the head): L_{AF} = 86.0dB(A)

Sound capacity level: L_{WA} = 104.0dB(A)

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7.2 Vibration acting on the entire body

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

7.3 Vibrations acting on hands and arms

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

7.4 Electromagnetic compatibility (EMC)

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

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

- Interference immunity against electrostatic discharge (ESD)
  according to DIN EN 13309:
  The paver finisher did not show any discernible reactions to contact discharges of ± 4 KV and to air discharges of ± 4 KV.
  The modifications according to test criterion "A" are being met, i.e. the paver finisher continues to work without malfunction during the test.

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

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C 10.12 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, side shields, etc.).

Close the hopper lids and engage the hopper transport safeguards. Lift the screed and engage the screed transport safeguards.

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:

⚠ In Germany, caterpillar paver finishers **must not be driven as self-propelling vehicles** on public roads.
Note that in other countries different regulations may apply.

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

The driving lights must be properly adjusted.

Only attachments 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.

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2 Directing of the vehicle

⚠ WARNING	**Danger due to incorrect directing of the vehicle**
	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! The banksmen assigned for directing vehicles may only consist of personnel - 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. - who have been assigned to act as banksmen by the company and - who can be expected to reliably perform the tasks assigned to them. - High-visibility clothing must be worn. - The banksman and vehicle driver must have made themselves familiar with the dimensions of the vehicle and the transportation vehicle. - 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. - 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. - Comply with all further information in these instructions and in the safety manual.

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3 Transportation on low-bed trailers

⚠ WARNING	**Danger due to vehicle loading**
	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! - The transportation vehicle must always meet the requirements for transportation and be designed for this. - Ensure that the transportation vehicle is secured correctly during loading and unloading. - Do not enter the danger zone. - Always work with a banksman during loading and unloading. - Do not leave any load or loose parts on the vehicle. - Comply with all further information in these instructions and in the safety manual.

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

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3.1 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) and store securely.
  These include:

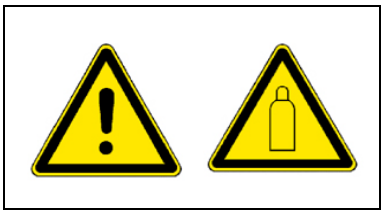
  - Rotary beacon
  - Direction of travel indicator
  - All parts of the levelling system

- Close open electrical connections with the related screw caps.

⚠ Move the auger to the uppermost position to avoid collisions!

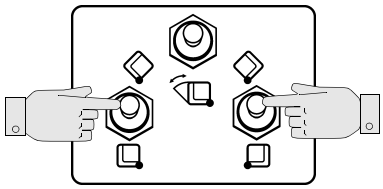
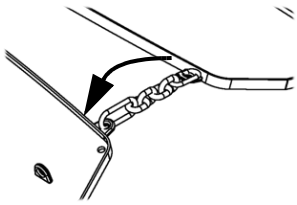
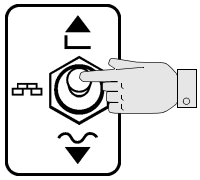
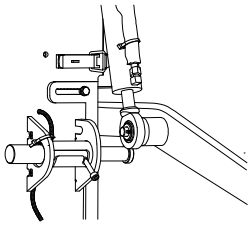
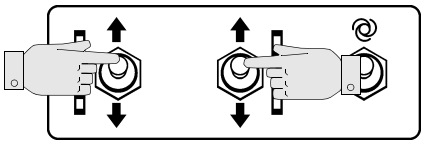
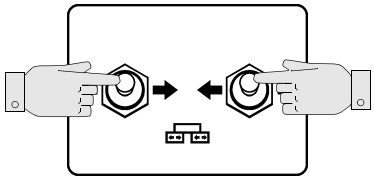
⚠ Swivel the holder of the height controller on the left and right side of the machine into the front position and secure properly.

STOP When screed is operated with the optional gas heating system:



- Remove the gas bottle for the screed heater system:
  - Close main shut-off valve and bottle valve.
  - Turn off the bottle valve and remove the gas bottle from the screed.
  - Transport the gas bottle on a second vehicle, adhering to all safety regulations.

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Operation	Switch
- Close the hopper lids.	
- Insert hopper transport safeguards.	
- Lift the screed.	
- Insert the transportation safeguards of the screed.	
- Fully extend the levelling cylinder.	
- Retract the screed parts until the screed matches the basic width of the paver finisher.	



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4 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.

⚠ If the contact surfaces are not swept clean and are not free of frost, ice and snow, the low loader must have the required number of lashing points with a lashing strength of LC 4,000 daN.

⚠ If the contact surfaces are swept clean and are free of frost, ice and snow, the low loader must have the required number of lashing points with a lashing strength of LC 2,000 daN.

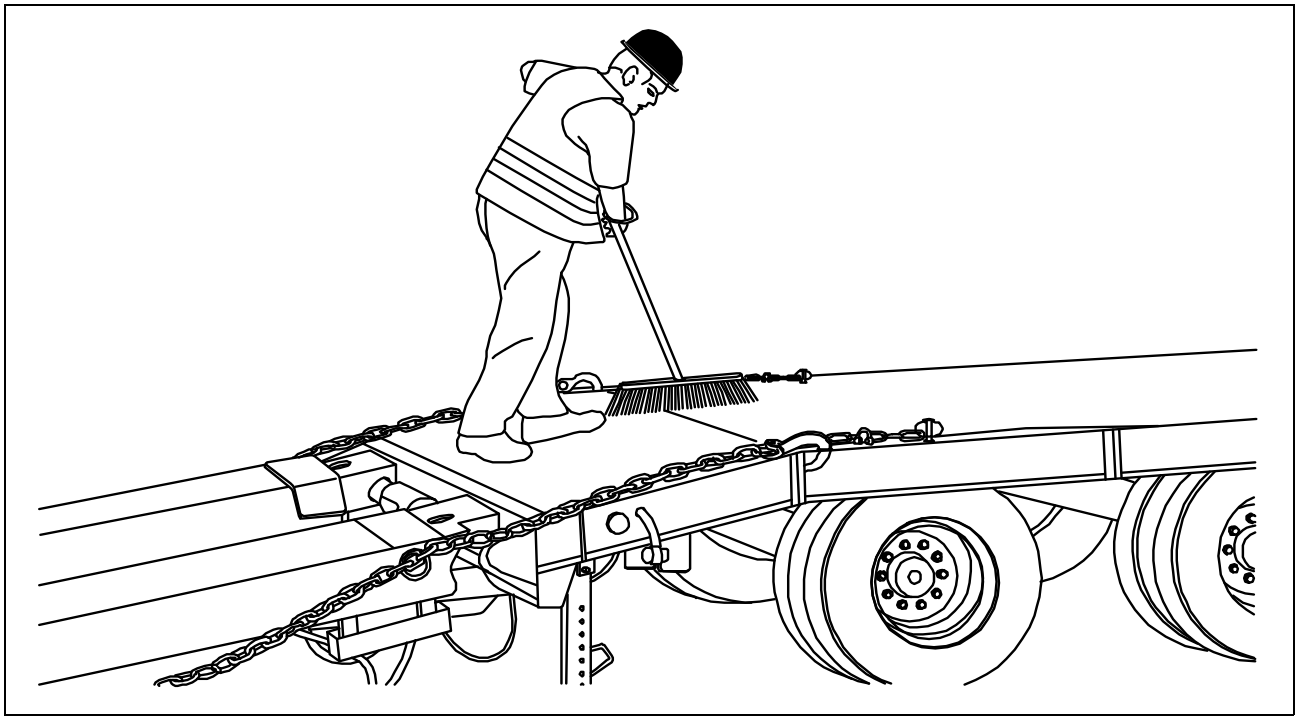
⚠ The total height and total width must not exceed the maximum permissible dimensions.

⚠ The ends of lashing chains and straps must be secured to prevent them working loose and falling down unintentionally!

⚠ The loading ramps of the transportation vehicle may not exceed a vertical angle of 14° during forward loading and 12.8° during backward loading.

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4.1 Prepare the low-bed trailer

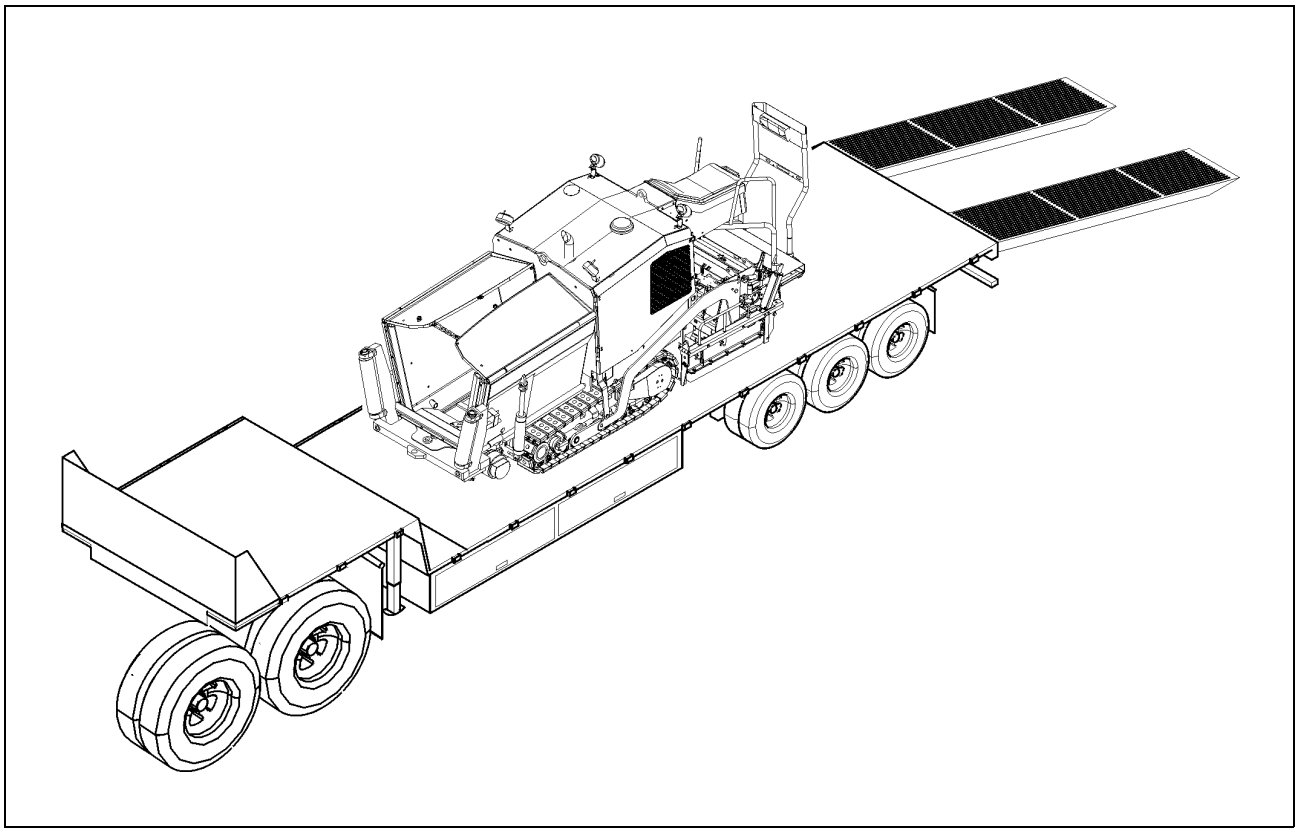


⚠ The floor of the loading space must always be undamaged, free of oil and mud, dry (residual moisture is permitted without accumulations of water) and swept clean!

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4.2 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.

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4.3 Lashing equipment

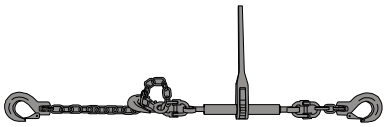
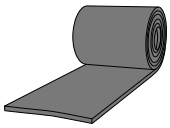
Use the load securing equipment, lashing straps and chains belonging to the vehicle. Additional shackles, eyebolts, edge guards and non-slip mats may be needed depending on the type of load securing equipment.

⚠ 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).

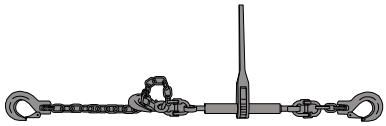
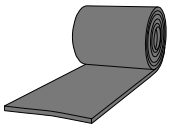
⚠ Lashing equipment must be checked by the user for any signs of damage before use. On detecting any signs of damage that affect safety, the lashing equipment must be withdrawn from further use.

Lashing equipment - contact surfaces not swept clean and not free of frost, ice and snow

- Lashing chain permissible lashing force LC 4,000 daN	
- Heavy load strap permissible lashing force LC 4,000 daN	
- Shackles Load rating 4,000 daN	
- Non-slip mats	

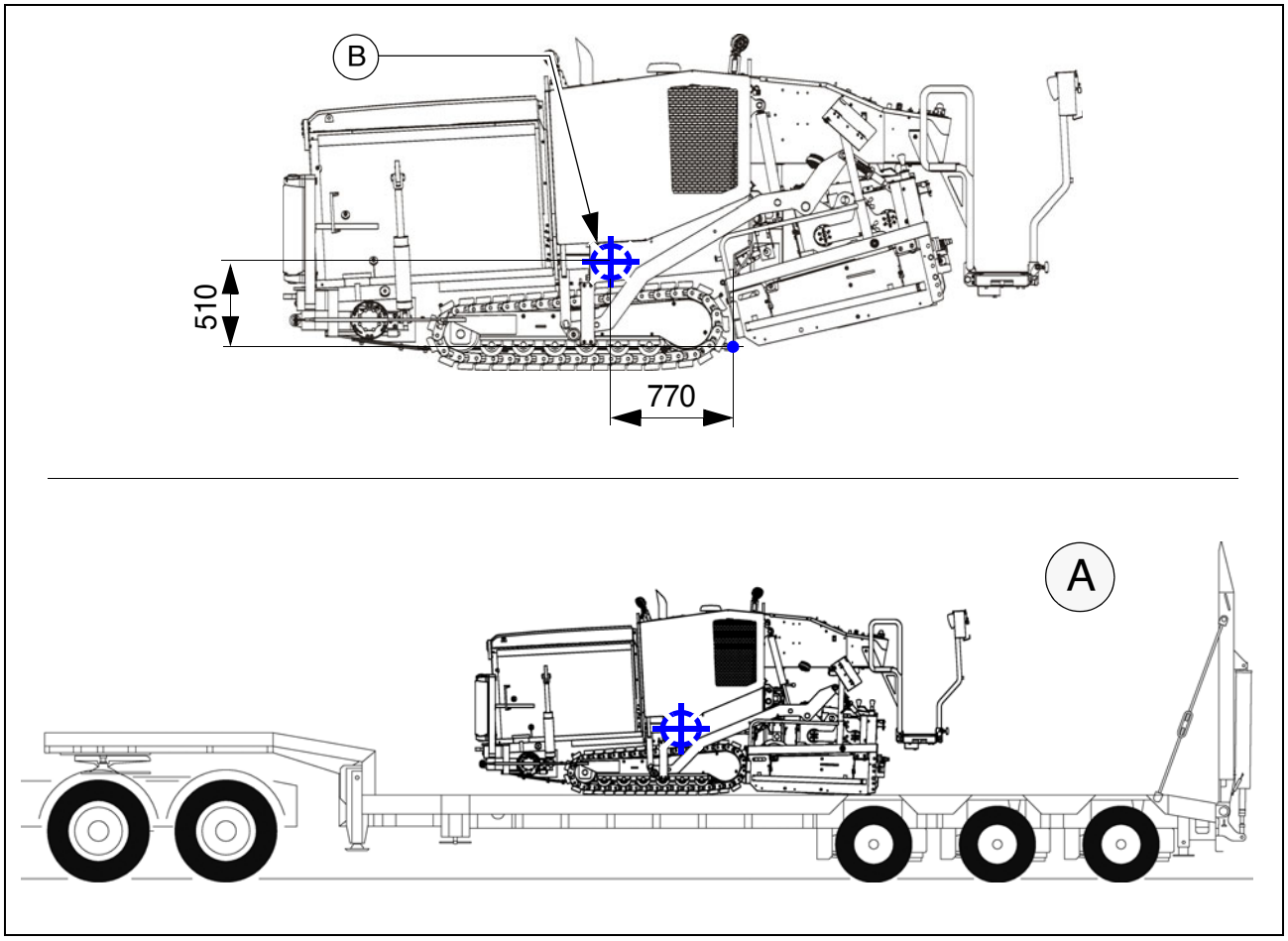
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Lashing equipment - contact surfaces swept clean and free of frost, ice and snow

- Lashing chain permissible lashing force LC 2,000 daN	
- Lashing straps permissible lashing force LC 2,000 daN	
- Non-slip mats	

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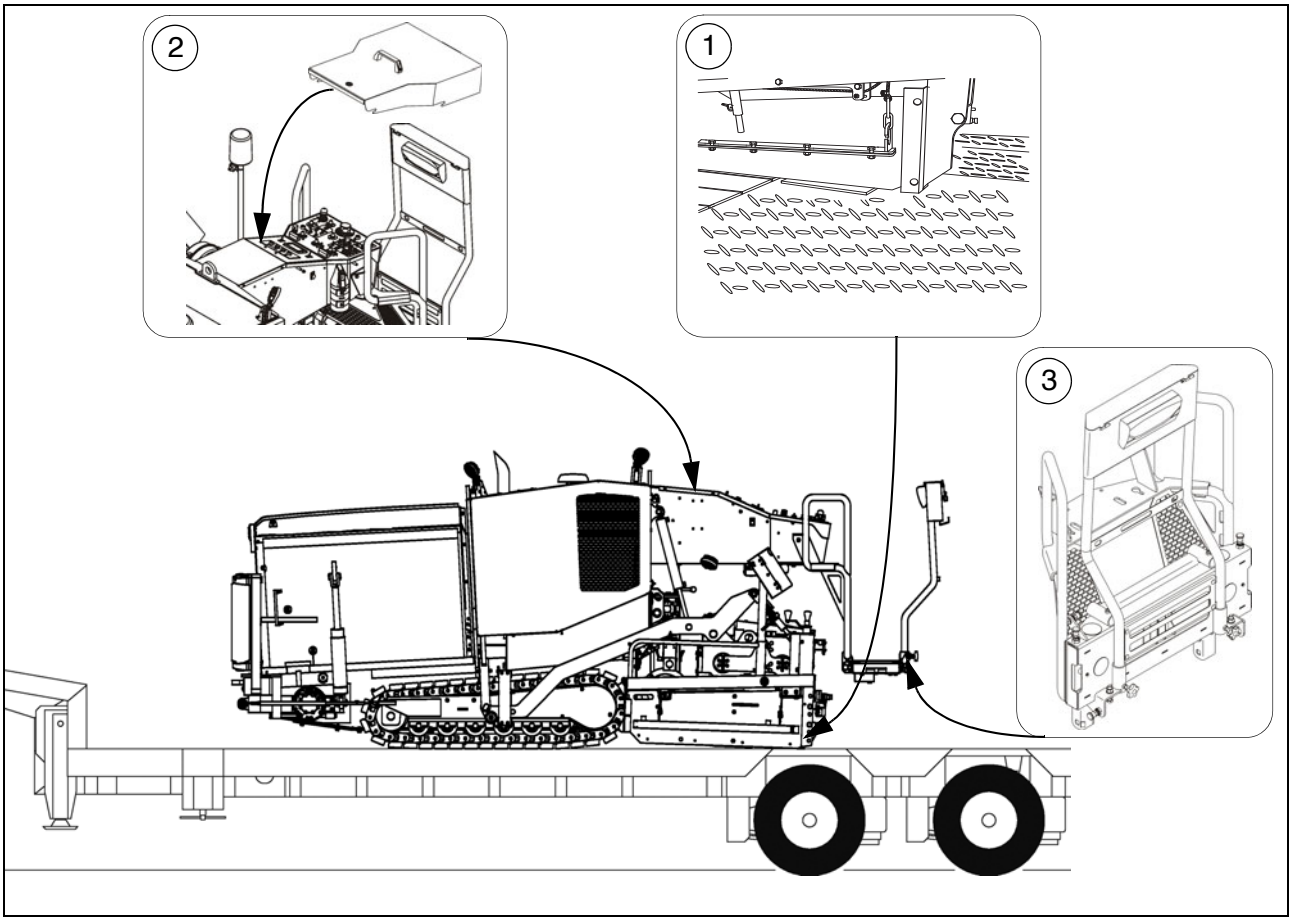
4.4 Loading



⚠ 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 (B).

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4.5 Preparing the vehicle



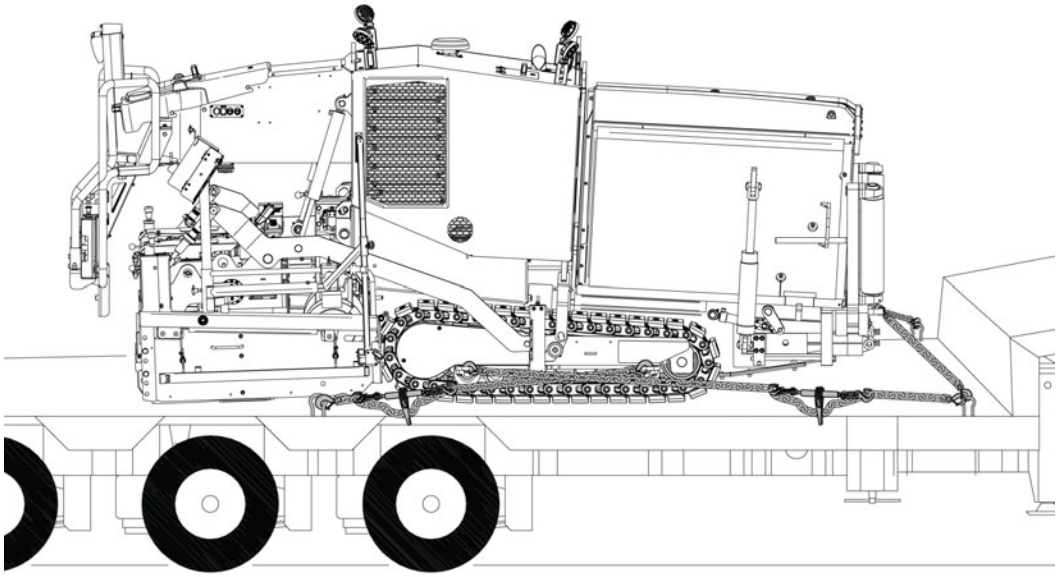
After the vehicle has been positioned on the low-bed trailer, the following preparations must be carried out:

- Position the non-slip mats under the screed across the whole width of the vehicle (1) and lower the screed.
- Switch off the paver finisher.
- Attach and secure the protective hood (2) to the operating panel.
- Convert control platform (3) in transportation position (if necessary).

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5 Securing the load

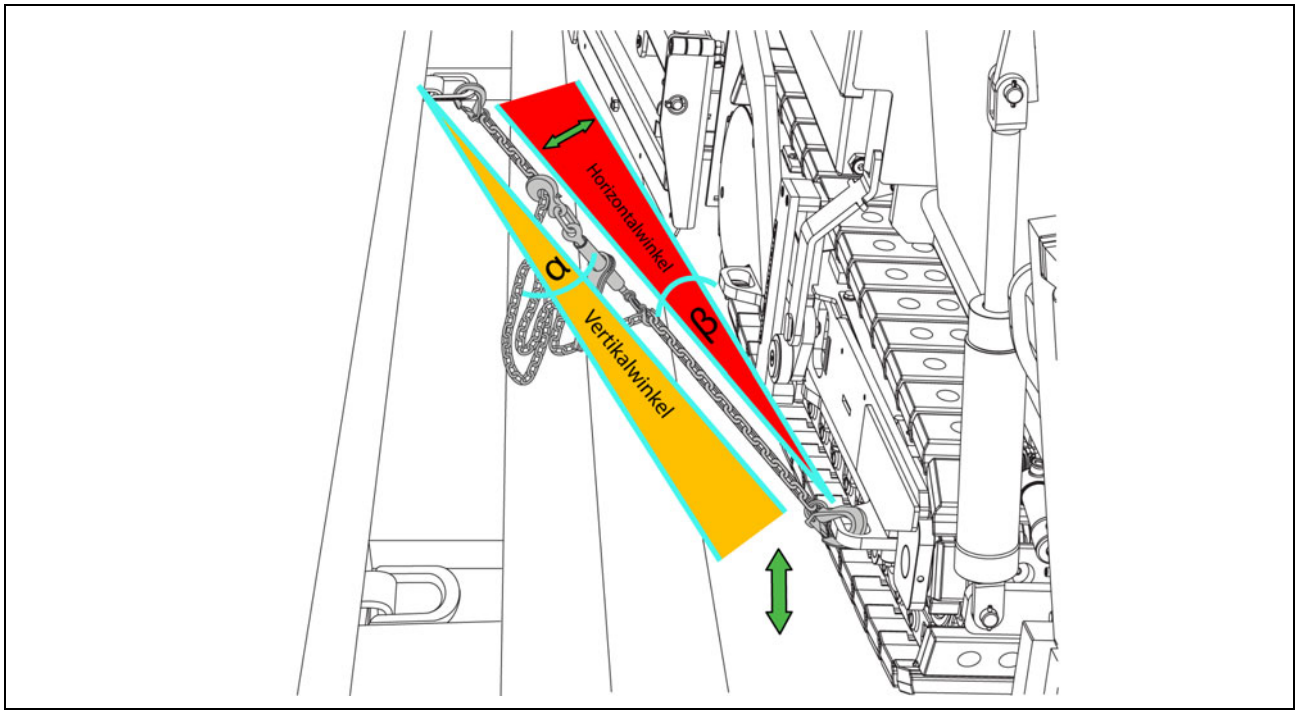
5.1 Securing in direction of travel



⚠ Diagonal lashing secures the paver finisher at the front using the lashing points on the paver finisher and on the low-load trailer. The lashing equipment must be installed as shown.

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Lashing angle

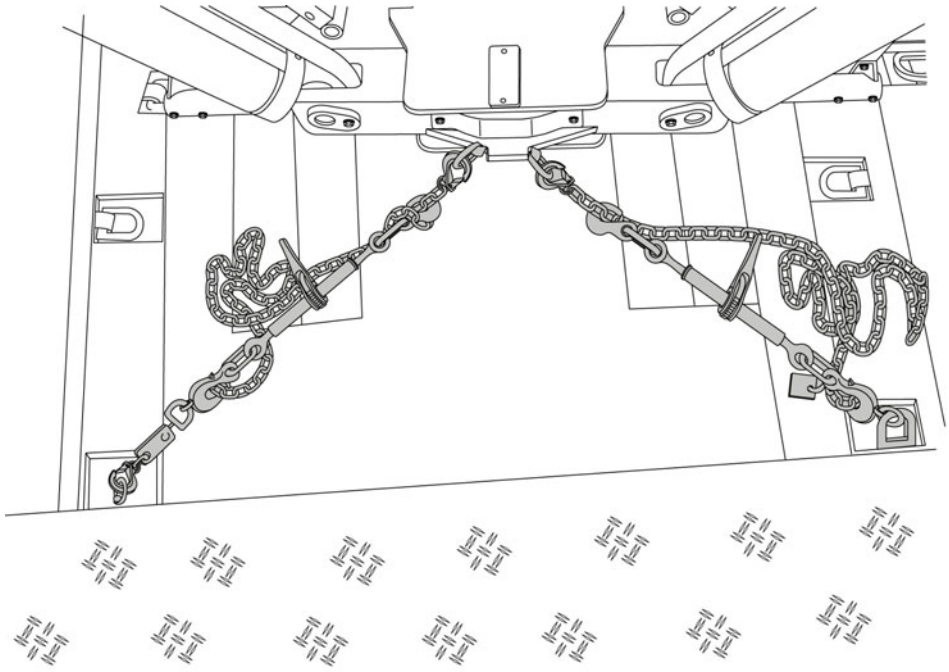


⚠ Contact surfaces swept clean and free of frost, ice and snow:
The lashing angles should be: "ß" between 15° - 30° and "a" between 9° - 50°!

⚠ Contact surfaces not swept clean and not free of frost, ice and snow:
The lashing angles should be: "ß" between 17° - 50° and "a" between 5° - 45°!

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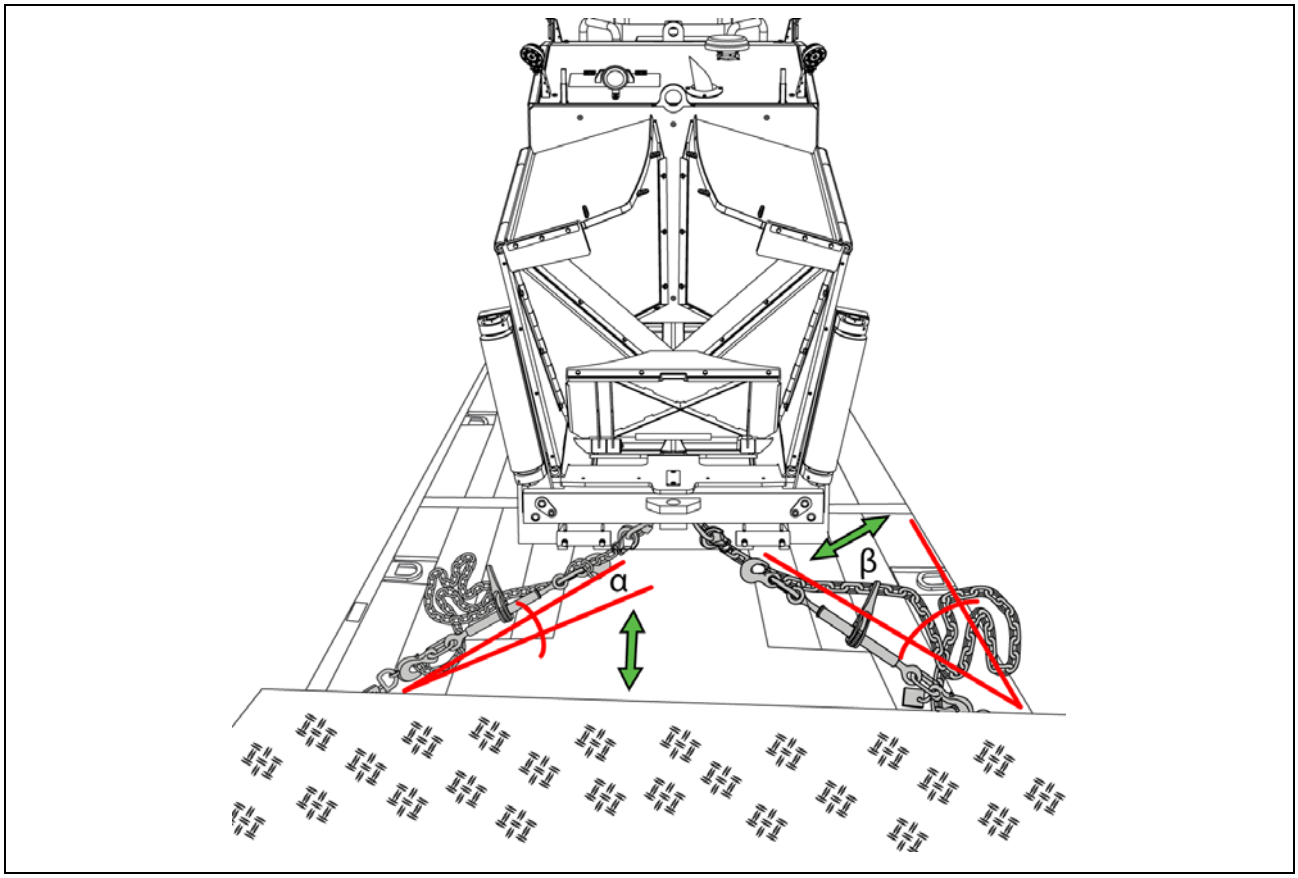
5.2 Securing opposite direction of travel



⚠ Diagonal lashing secures the paver finisher at the front using the lashing points on the paver finisher and on the low-load trailer. The lashing equipment must be installed as shown.

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Lashing angle



⚠ Contact surfaces swept clean and free of frost, ice and snow:
The lashing angles should be: "ß" between 20° - 55° and "a" between 5° - 65°!

⚠ Contact surfaces not swept clean and not free of frost, ice and snow:
The lashing angles should be: "ß" between 17° - 55° and "a" between 5° - 45°!

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5.3 After transportation

- Remove the attachment devices.
- Start engine.
- Lift the screed to the transportation position.
- Drive from the trailer at a low engine revs/speed.
- 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.

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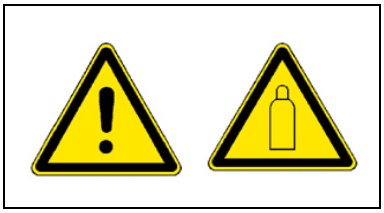
6 Transportation

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

6.1 Preparations

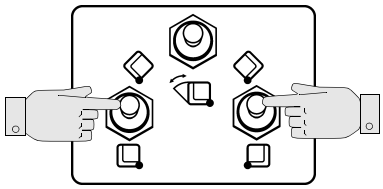
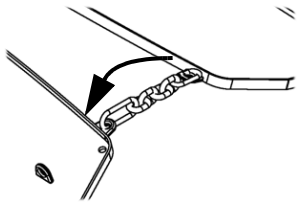
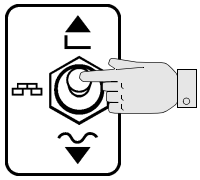
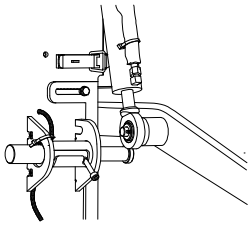
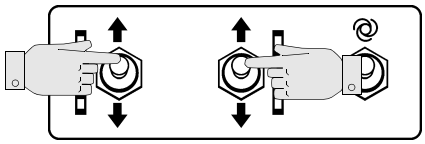
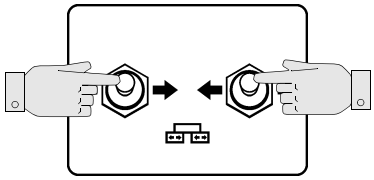
- Prepare the paver finisher for transportation (see chapter D).
- Remove all overlaying or loose parts from finisher and screed (see also operating instructions for the screed). Store these parts in a safe place.

STOP When screed is operated with the optional gas heating system:



- Remove the gas bottle for the screed heater system:
  - Close main shut-off valve and bottle valve.
  - Turn off the bottle valve and remove the gas bottle from the screed.
  - Transport the gas bottle on a second vehicle, adhering to all safety regulations.

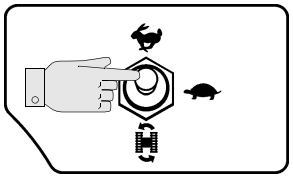
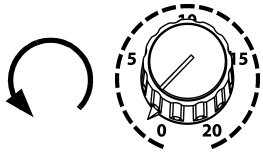
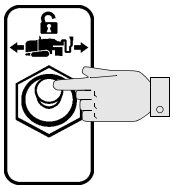
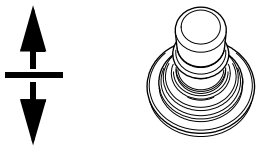
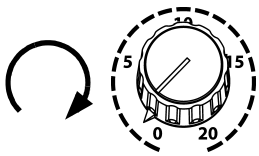
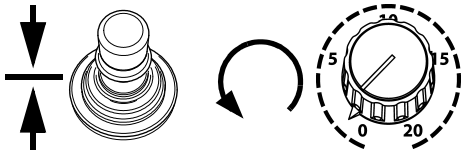
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Operation	Switch
- Close the hopper lids.	
- Insert hopper transport safeguards.	
- Lift the screed.	
- Insert the transportation safeguards of the screed.	
- Fully extend the levelling cylinder.	
- Retract the screed parts until the screed matches the basic width of the paver finisher.	



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6.2 Driving mode

Operation	Switch
- Set the fast/slow switch to "Hare" if necessary.	
- Turn the preselector to "zero".	
- Press the safety switch ☞ The safety switch must always be pressed when the drive lever is moved out of the neutral position. Otherwise the travel drive is blocked!	
- Swivel the drive lever to maximum. STOP The vehicle already advances slightly on deflecting the drive lever!	
- Adjust required vehicle speed with the preselector.	
- To stop the vehicle, swivel the drive lever to the middle setting and set the preselector to "zero".	

STOP Press the emergency stop button when a dangerous situation arises!

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7 Loading by crane

WARNING	Danger from suspended loads
	Crane and/or lifted vehicle can tip when lifted and cause injuries! - The vehicle may only be raised at the marked lifting points. - Heed the operating weight of the vehicle. - Do not enter the danger zone. - Use only lifting gear that can bear the load. - Do not leave any load or loose parts on the vehicle. - Comply with all further information in these instructions and in the safety manual.

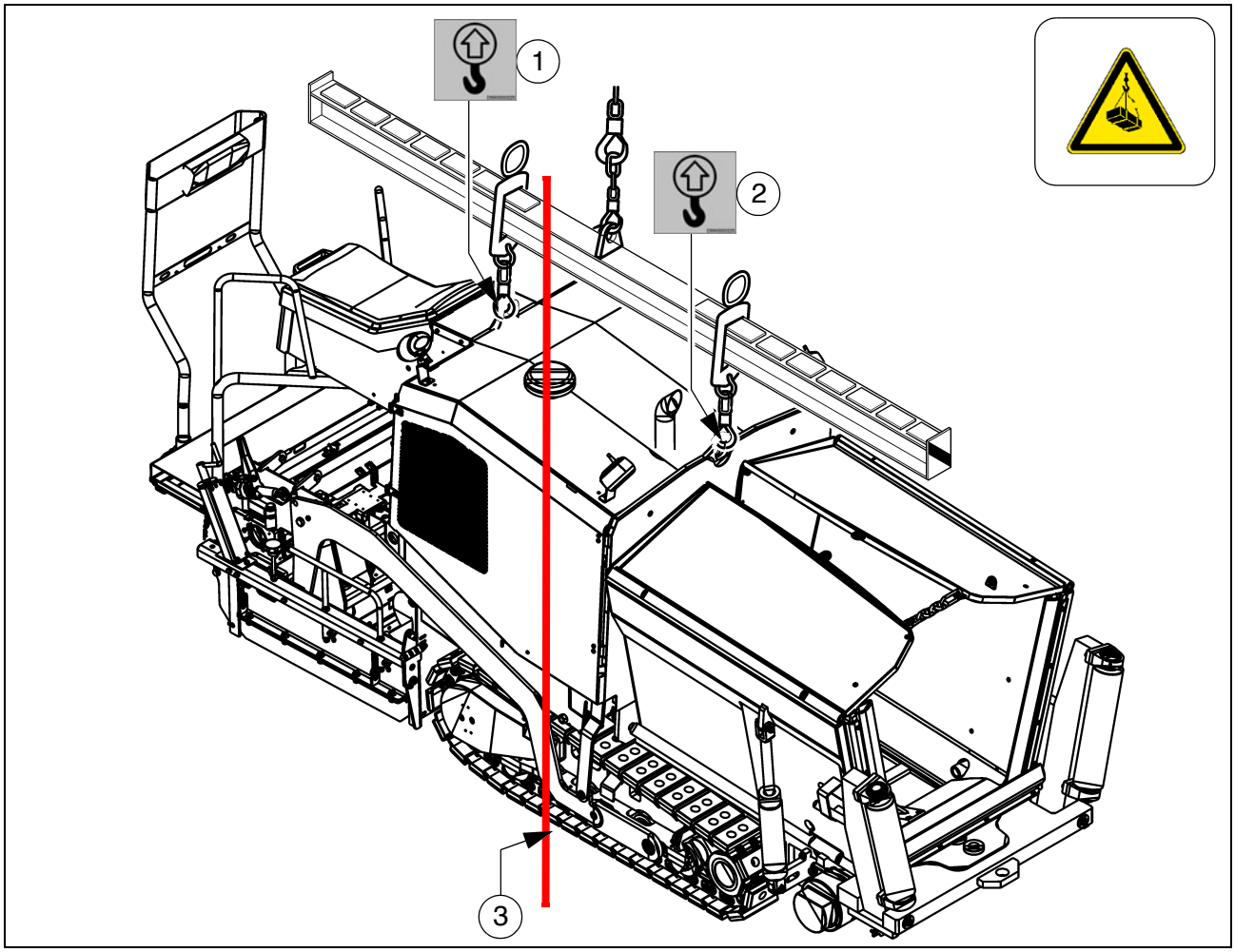
⚠ Use only lifting gear that can bear the load.
(See chapter B for weights and dimensions).

⚠ 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.

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Example:



☞ Four lifting eyes (1, 2) are provided for loading the vehicle with a crane.

☞ Depending on the type of screed which is used, the paver finisher's centre of gravity, with the screed mounted, is located in area (3) of the vehicle.

- Secure vehicle wherever it is parked up.
- Engage the transport safeguards.
- Remove any attachments and extension parts from the paver finisher and the screed until the basic width has been attained.
- Take off all protruding or loose parts and the gas bottles of the screed heater (see chapters E and D).
- Attach lifting gear to the four attachment points (1, 2).

⚠ The max. permissible attachment point load is:
Attachment point (1): 138 kN.
Attachment point (2): 91 kN

⚠ The permissible load applies in the vertical direction!

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

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8 Towing

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

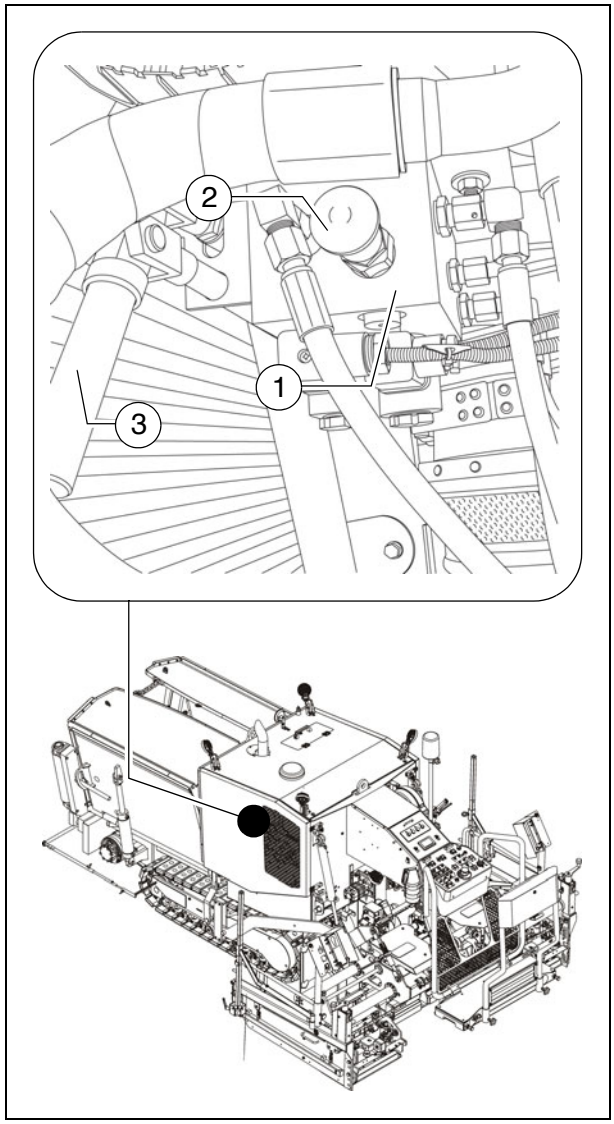
The towing vehicle must be capable of securing the paver finisher, even on slopes.

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.

A hand pump (1) is located in the engine compartment (left side); 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.

- The drive engine is switched off,
- Push knob (2) into the valve body. While pumping (next step), check that the knob remains in the pressed position.
- Actuate lever (3) 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.

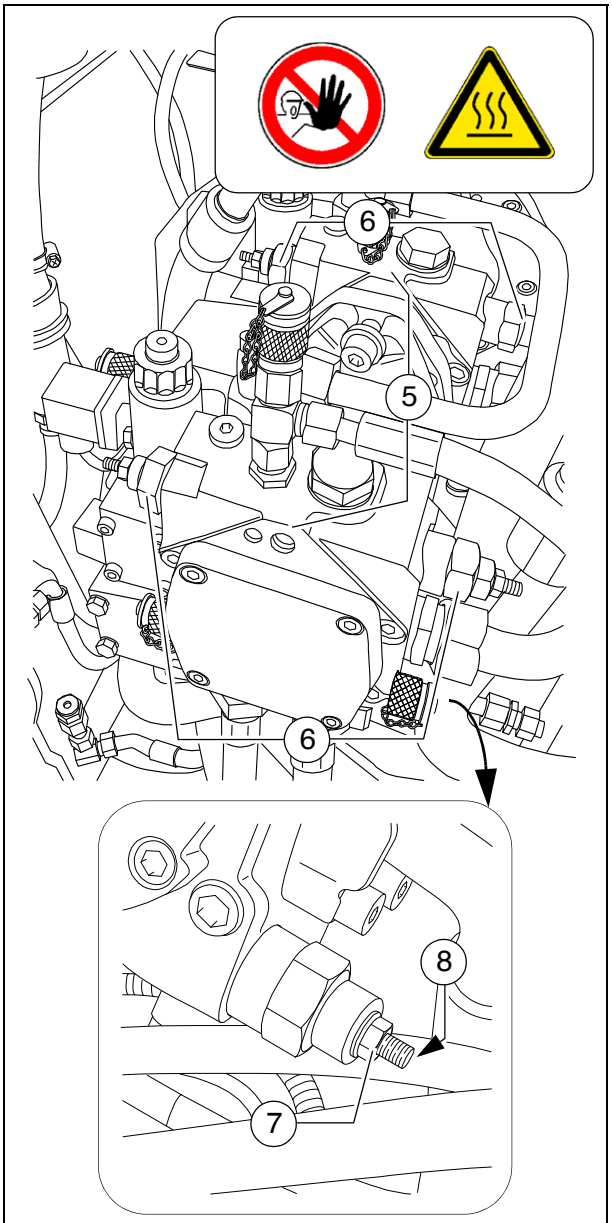
Only release the traction system brakes when the machine is sufficiently secured against accidental rolling or is already properly connected to the towing vehicle.

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☞ Two high-pressure cartridges (6) are located on both of the travel drive pumps (5).
The following activities must be carried out to activate the towing function:

- Loosen lock nut (7) half a turn.
- Screw in the bolt (8) until increased resistance occurs. Then screw the bolt a further half turn into the high-pressure cartridge.
- Tighten the lock nut (7) to a torque of 22 Nm.

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



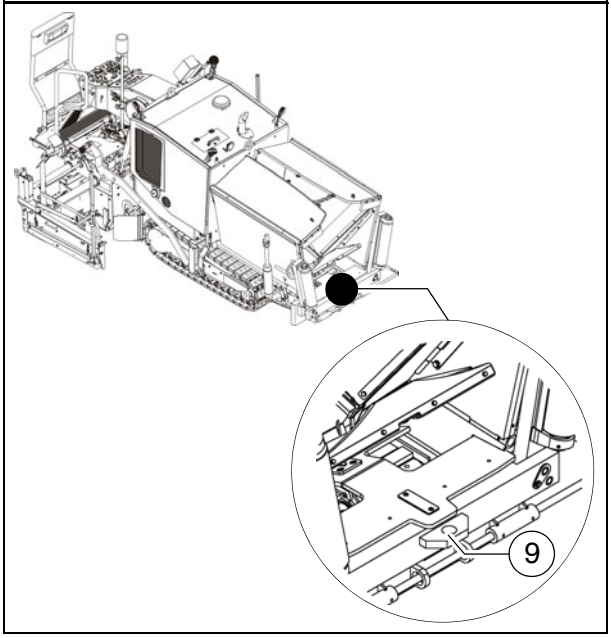
- Attach the tow bar to the coupling (9) located in the bumper.

☞ 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: 91 kN

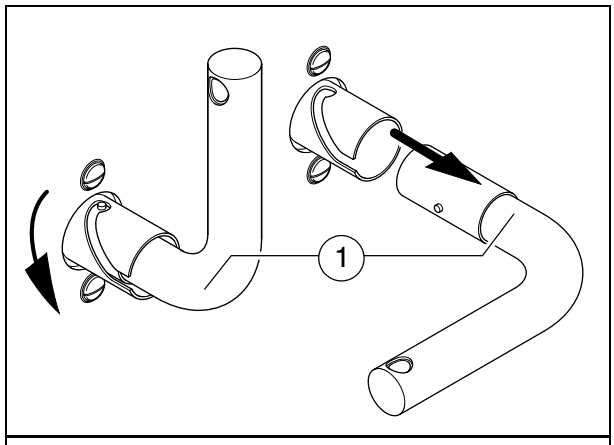


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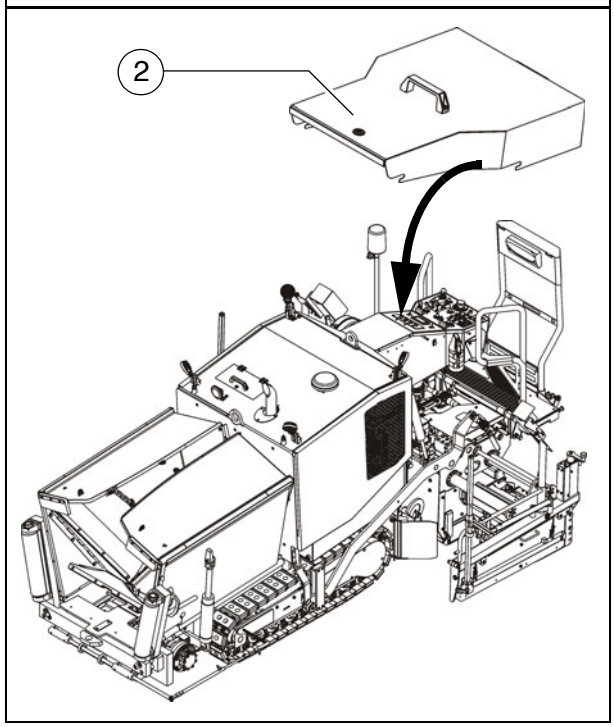
9 Safely parking the vehicle

⚠ 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.

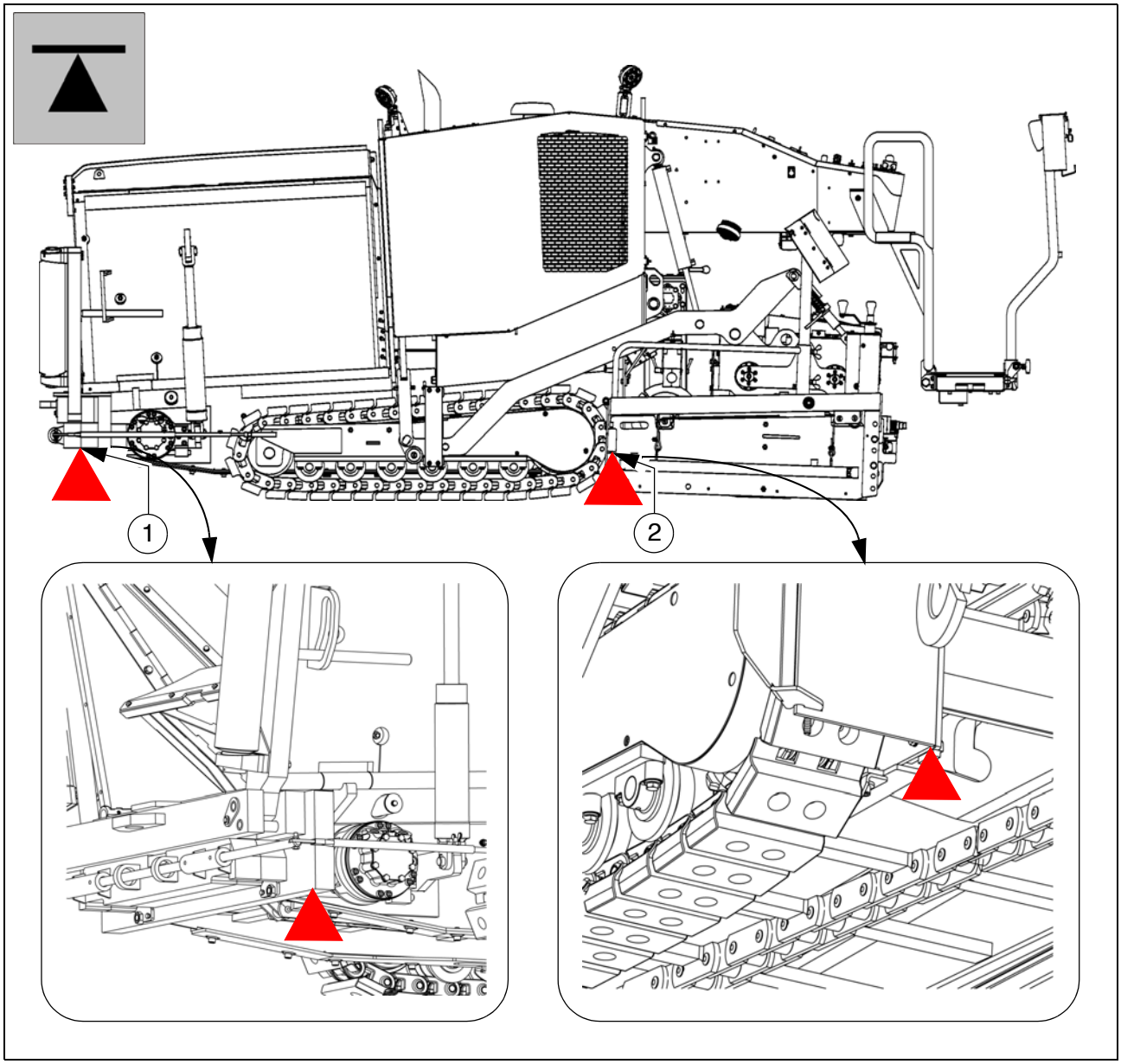


- Protect the operating panel with the dust cover (2) and lock it.
- Store loose parts and accessories in a safe place.



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9.1 Lifting the vehicle with hydraulic lifts, lifting points



STOP The hydraulic lift must be rated for at least 8t.

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

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

STOP 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 tilling over and rolling or sliding away.

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

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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!

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D 10.12 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 as 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 the operator's control station that is opposite to the flowing traffic! Lock the external control.
- 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!

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DANGER	**Danger due to improper operation**
	Improper operation of the vehicles can cause severe to fatal injuries! - The vehicle may only be used in the proper manner for its intended purpose. - The vehicle may only be operated by trained staff. - The vehicle operators must have made themselves familiar with the contents of the operating instructions. - Avoid jerky movements of the vehicle. - Do not exceed the permissible angle of rise and slope. - Keep hoods and covering parts closed during operation. - Comply with all further information in these instructions and in the safety manual.

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

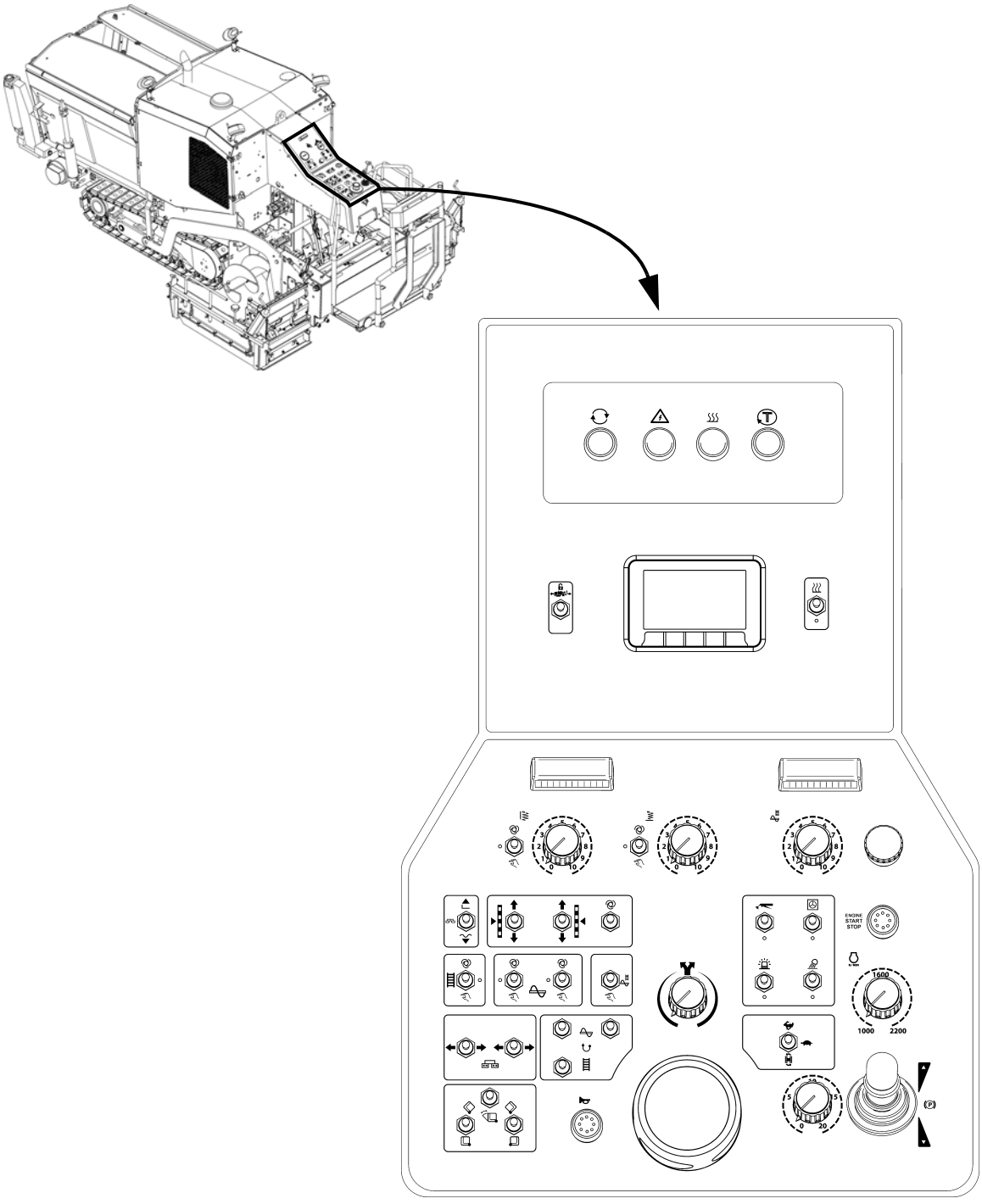
WARNING	**Danger of crushing due to moving vehicle parts**
	Vehicle parts performing movements can cause severe to fatal injuries! - Remaining in the vehicle's danger zone during operation is prohibited! - Do not reach into the danger zone. - Comply with the warning and information signs on the vehicle. - Comply with all further information in these instructions and in the safety manual.

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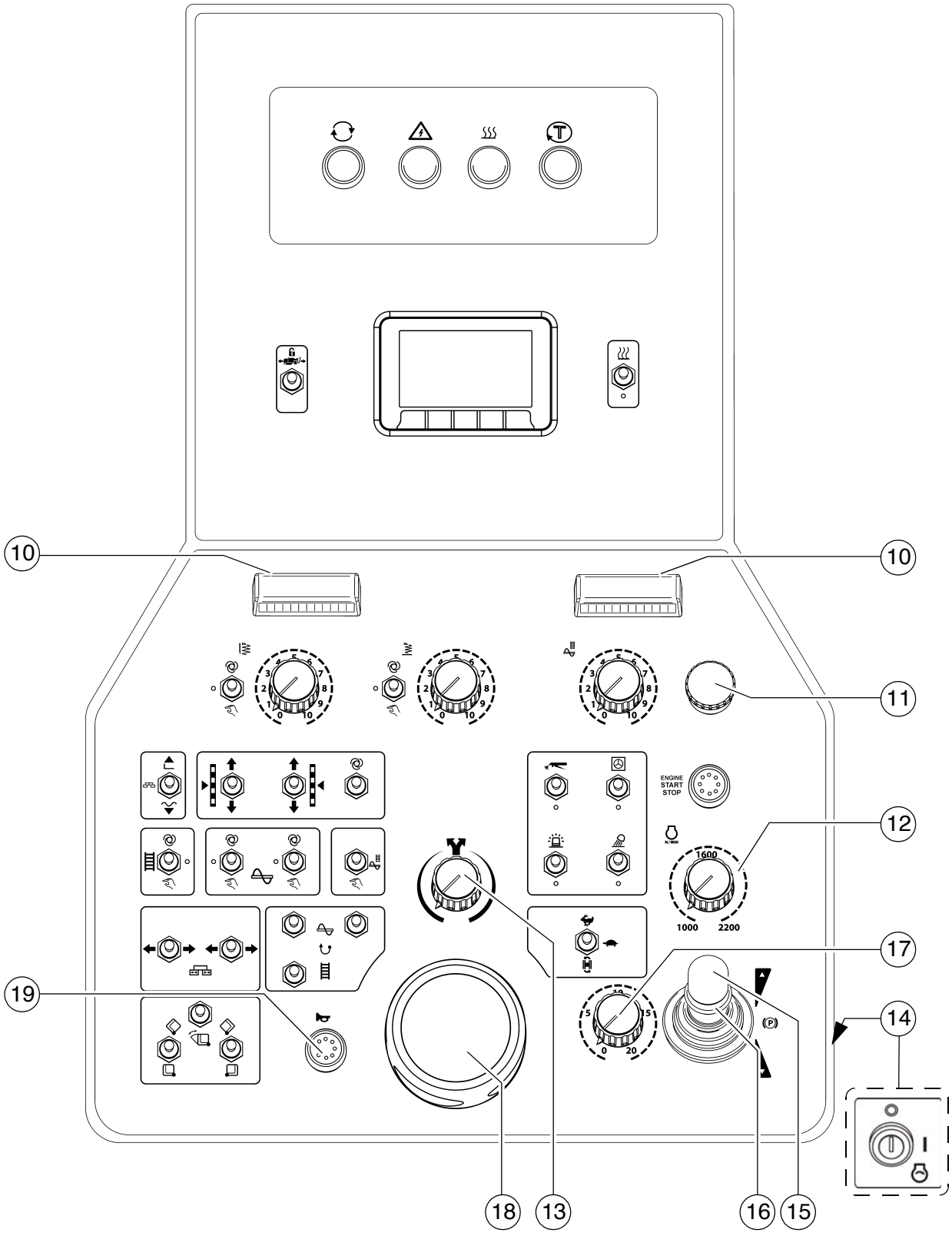
2 Controls

2.1 Operating panel

☞ All detent switch functions that can pose a hazard when the diesel engine starts up (conveying function of auger and conveyor) prevent the engine from starting when set to "MANUAL". To be able to use the functions in the "MANUAL operating mode, they must be switched off and then to "MANUAL" to release them.



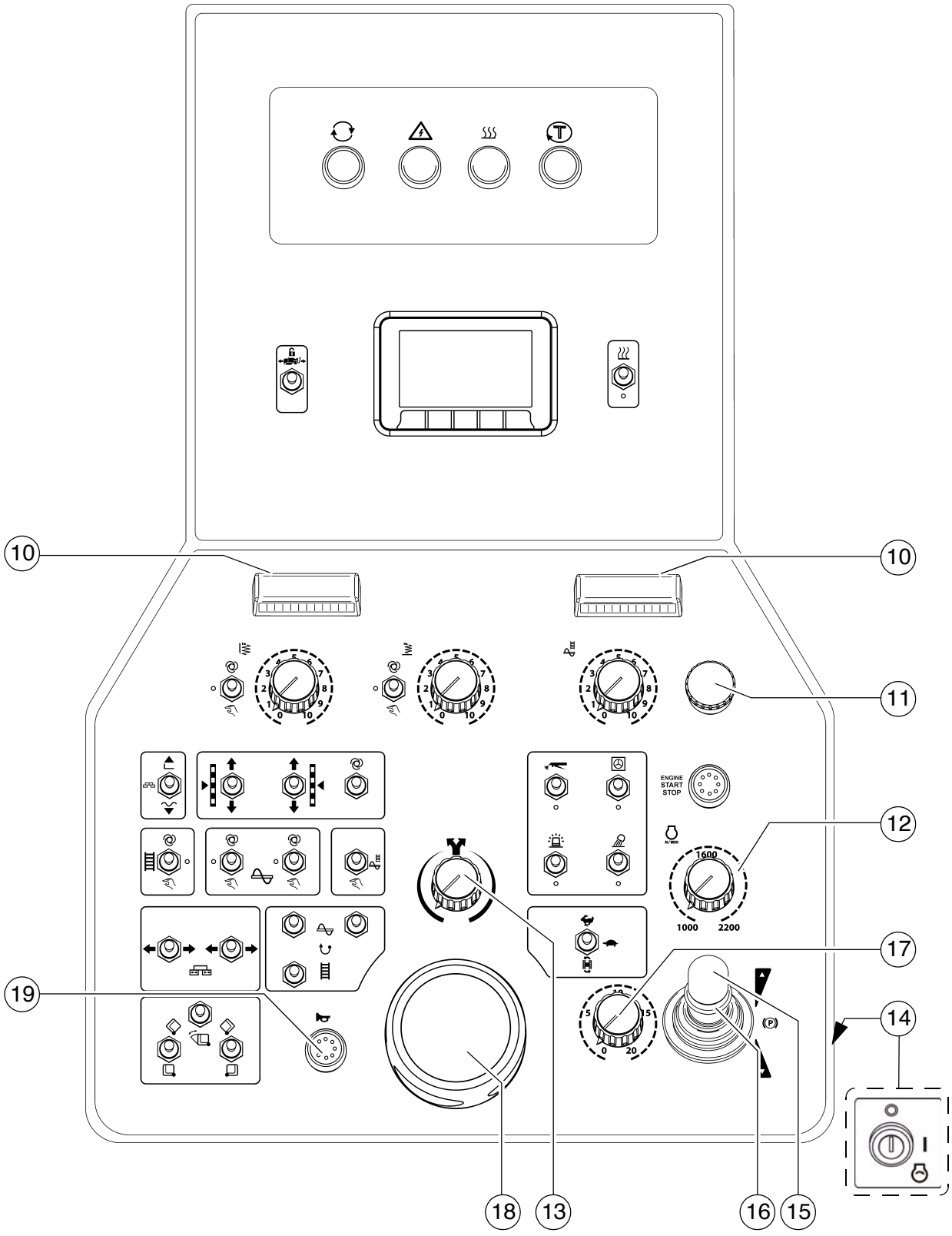
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Item	Designation	Brief description
10	Lights	Lights up instrument panel A/B when the parking light is switched on
11	Emergency stop button	Press in an emergency (danger to persons, impending collision, etc.)! - Pressing the emergency stop button switches 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! - 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! - To restart the engine, the button must be unlocked again.
12	Engine speed adjuster	Continuously variable engine speed setting (if drive lever is extended). Min. setting: Idling speed Max. position: Nominal speed ☞ For paving, select the rated speed; reduce the speed for transportation. ☞ The automatic speed control keeps the set speed constant even under a load.
13	Straight-ahead travel synchronisation	Using this potentiometer, both chains can be synchronised for straight-ahead travel while driving: - Set the steering to position "0"; then adjust the potentiometer until the paver finisher is travelling straight ahead.
14	Ignition lock	Switch positions: - P: Park position + warning lamps can be engaged when desired. - 0: Ignition OFF - 1: Ignition ON, lighting and separator fluid spray system can be activated. - 2: Starter function ☞ The engine can only start up if the drive lever is in the middle setting and no "AUTO" or "MANUAL" functions are switched on. ☞ Removal of the key is only possible in position 0.

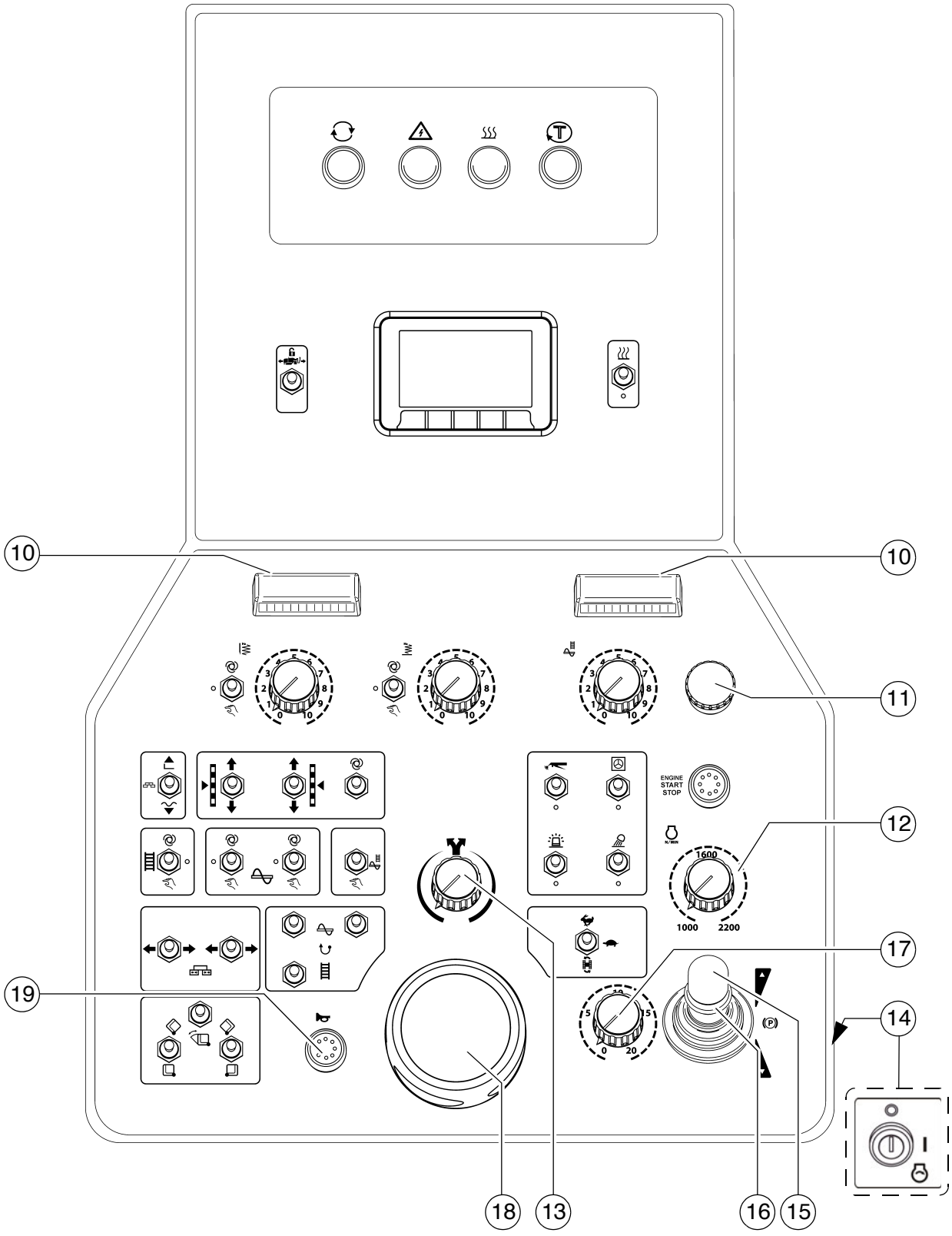
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Item	Designation	Brief description
15 / 16	Drive lever (traction)	For switching on the paver finisher functions and for continuously regulating the road speed – forward or reverse. Centre position: Engine in neutral; no travel drive; - To swivel the drive lever out, release by pulling the handle (16) up. If the drive lever is pushed out, then the following "AUTO" functions are activated: - Conveyor / auger - Tamper / vibration - Levelling as well as increasing the vehicle speed as far as it will go. ☞ Before pushing the drive lever out, the safety switch must be pressed to release the travel drive. Otherwise the travel drive is blocked. ☞ Use the preselector to set the maximum speed. STOP 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! ☞ The motor cannot be started with the drive lever swivelled out To be able to start the travel drive, the drive lever must first be returned to the centre position.

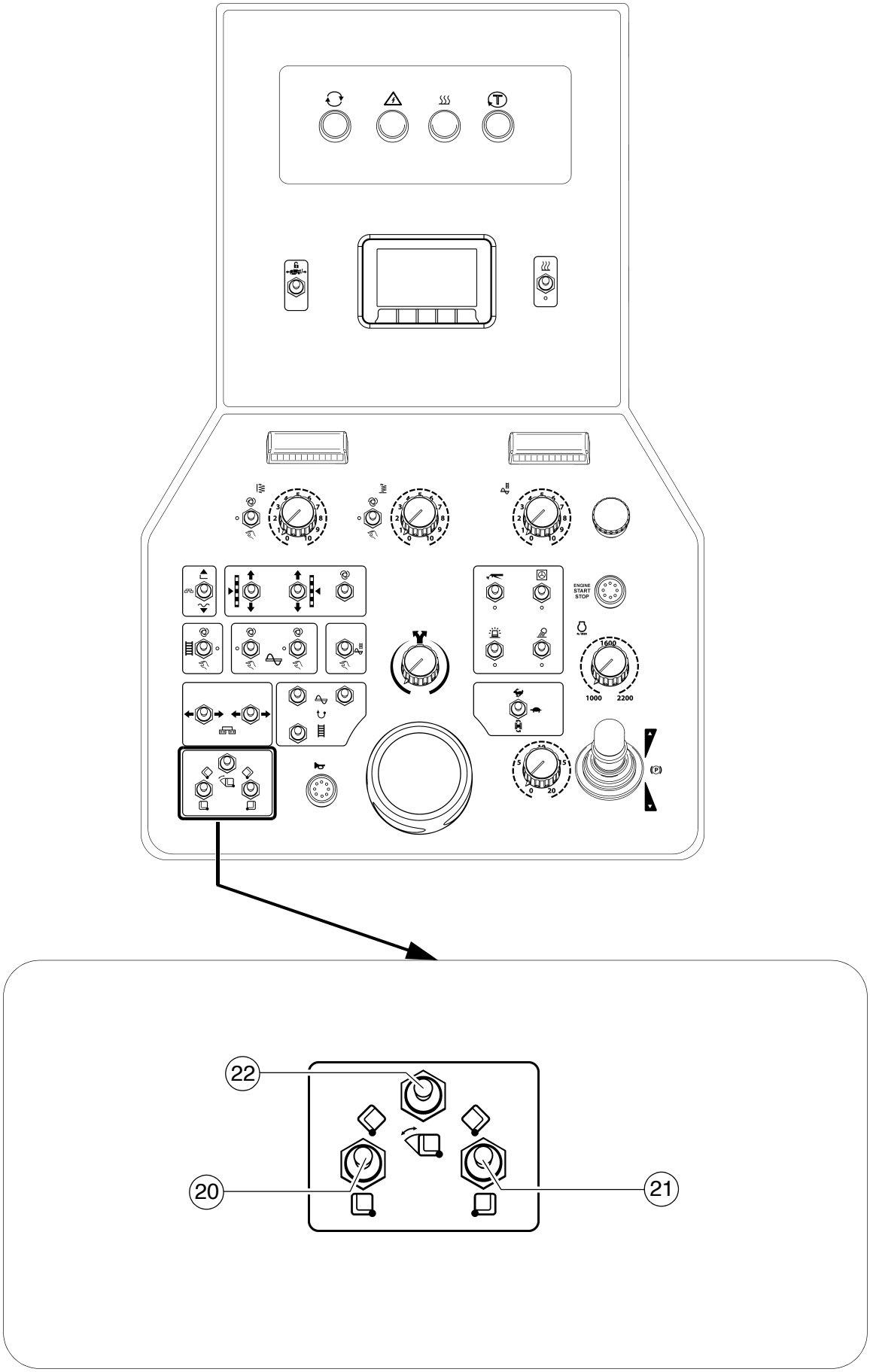
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Item	Designation	Brief description
17	Travel drive preselector	For setting the maximum speed that can be reached when the drive lever is at its stop. ☞ The scale roughly matches the speed in m/min (during paving). STOP The vehicle speed cannot be reduced to "0" with the preselector. The vehicle advances slightly with deflected drive lever, even if the travel drive preselector is set to zero!
18	Steering potentiometer	The steering wheel movement is transferred electrohydraulically. ☞ For precise adjustments (position "0" = straight-ahead), see the straight-ahead travel synchronisation. For turning on the spot, see switch (Turning on the spot).
19	Horn	Press in the case of emergencies and to indicate when the vehicle starts to move! ☞ The horn can also be used to communicate acoustically with the truck driver for material loading!

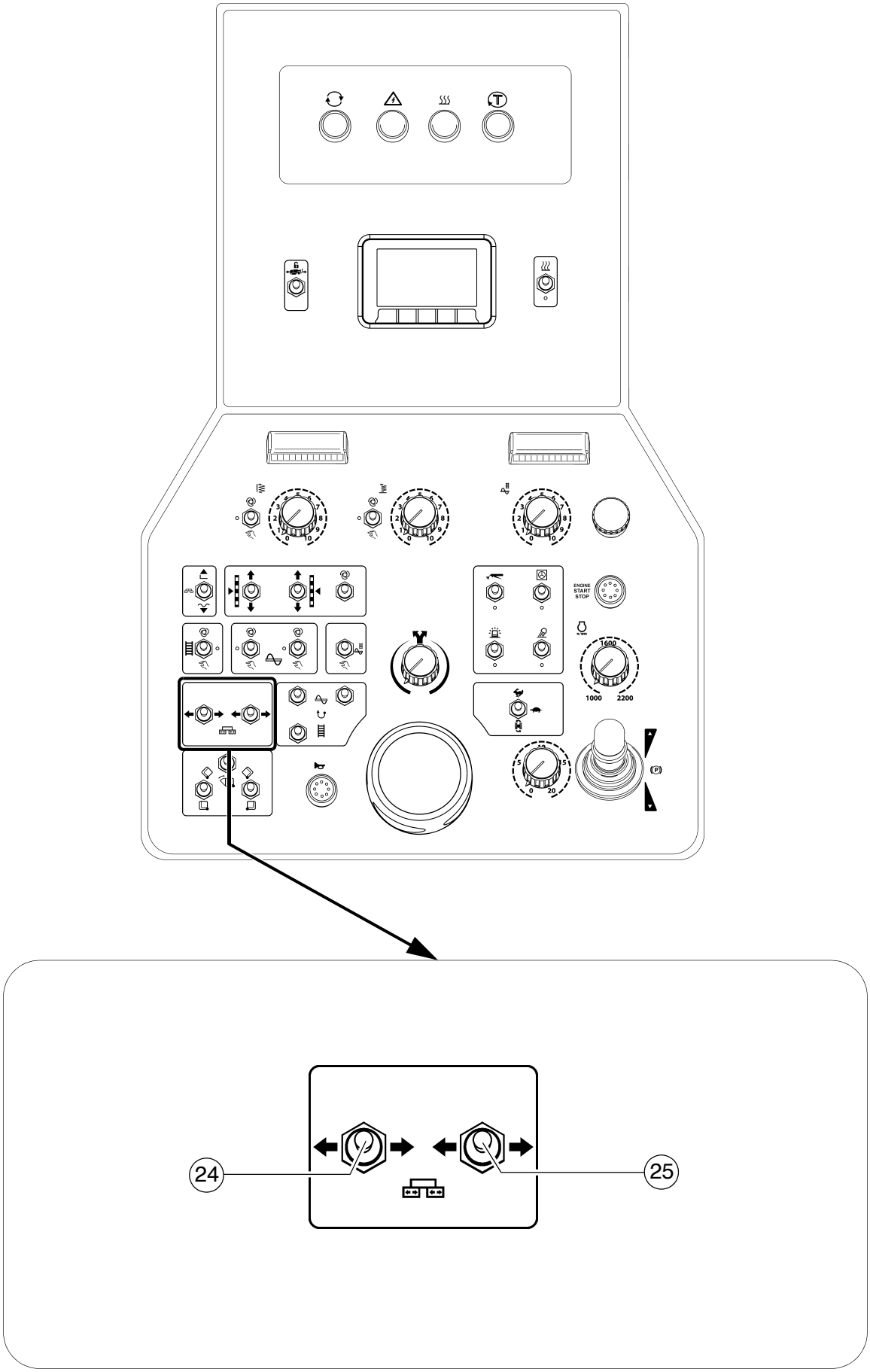
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Item	Designation	Brief description
20	Open / close left hopper	Pushbutton function: - Upper switch position: Close left hopper lid. - Lower switch position: Open left hopper lid. STOP On actuation, heed danger zones of moving parts of the vehicle!
21	Open / close right hopper	Pushbutton function: - Upper switch position: Close right hopper lid. - Lower switch position: Open right hopper lid. STOP On actuation, heed danger zones of moving parts of the vehicle!
22	Open/close asymmetrical hopper (○)	Pushbutton function: - Upper switch position: Close hopper side. - Lower switch position: Open hopper side. STOP On actuation, heed danger zones of moving parts of the vehicle! ☞ Depending on the vehicle configuration, the asymmetrical hopper can be located on the left or the right side.

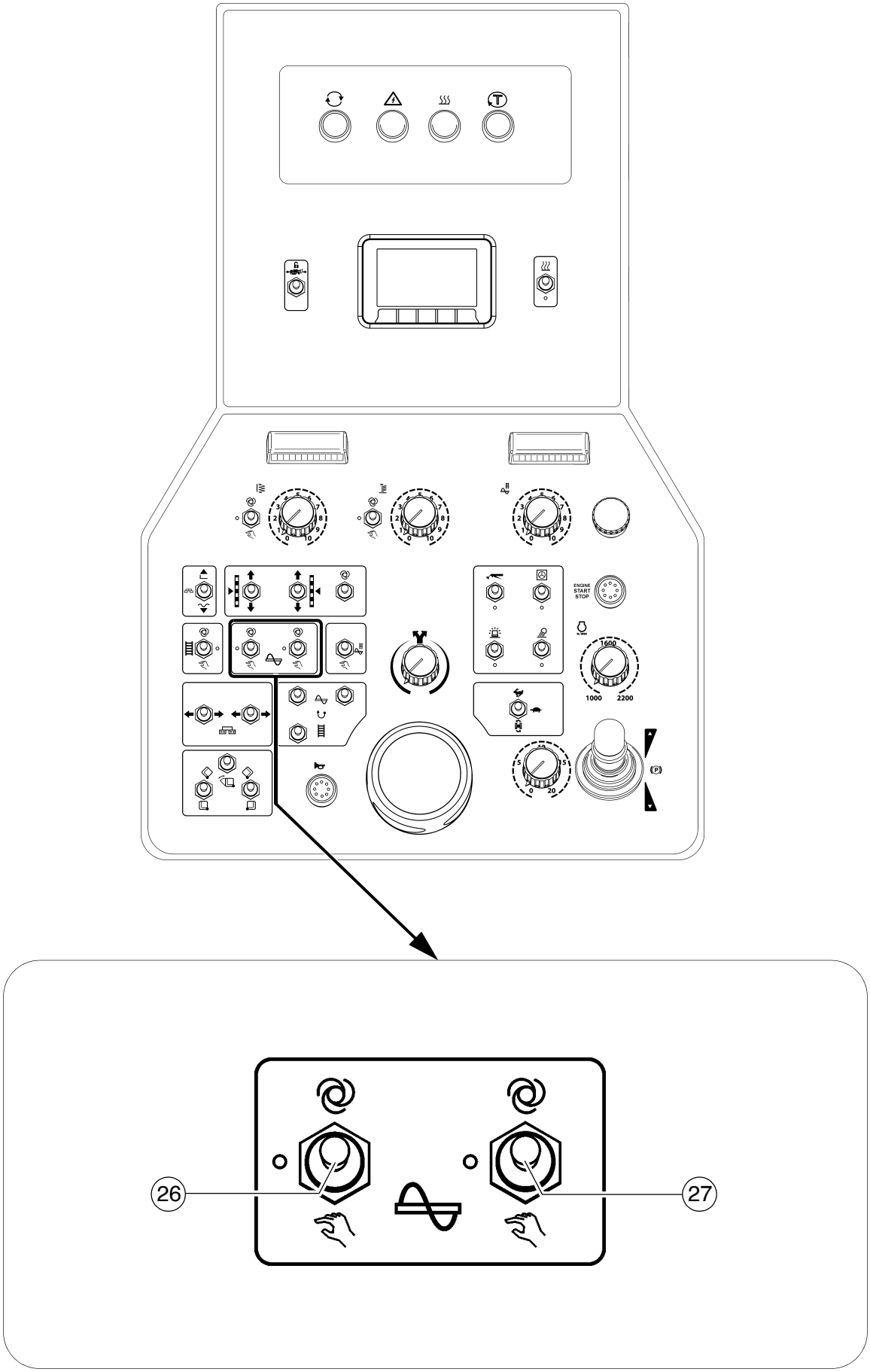
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Item	Designation	Brief description
24	Retract / extend left screed	Pushbutton function: - Left switch position: Extend left half of screed. - Right switch position: Retract left half of screed. STOP On actuation, heed danger zones of moving parts of the vehicle!
25	Retract / extend right screed	Pushbutton function: - Left switch position: Retract right half of screed. - Right switch position: Extend right half of screed. STOP On actuation, heed danger zones of moving parts of the vehicle!

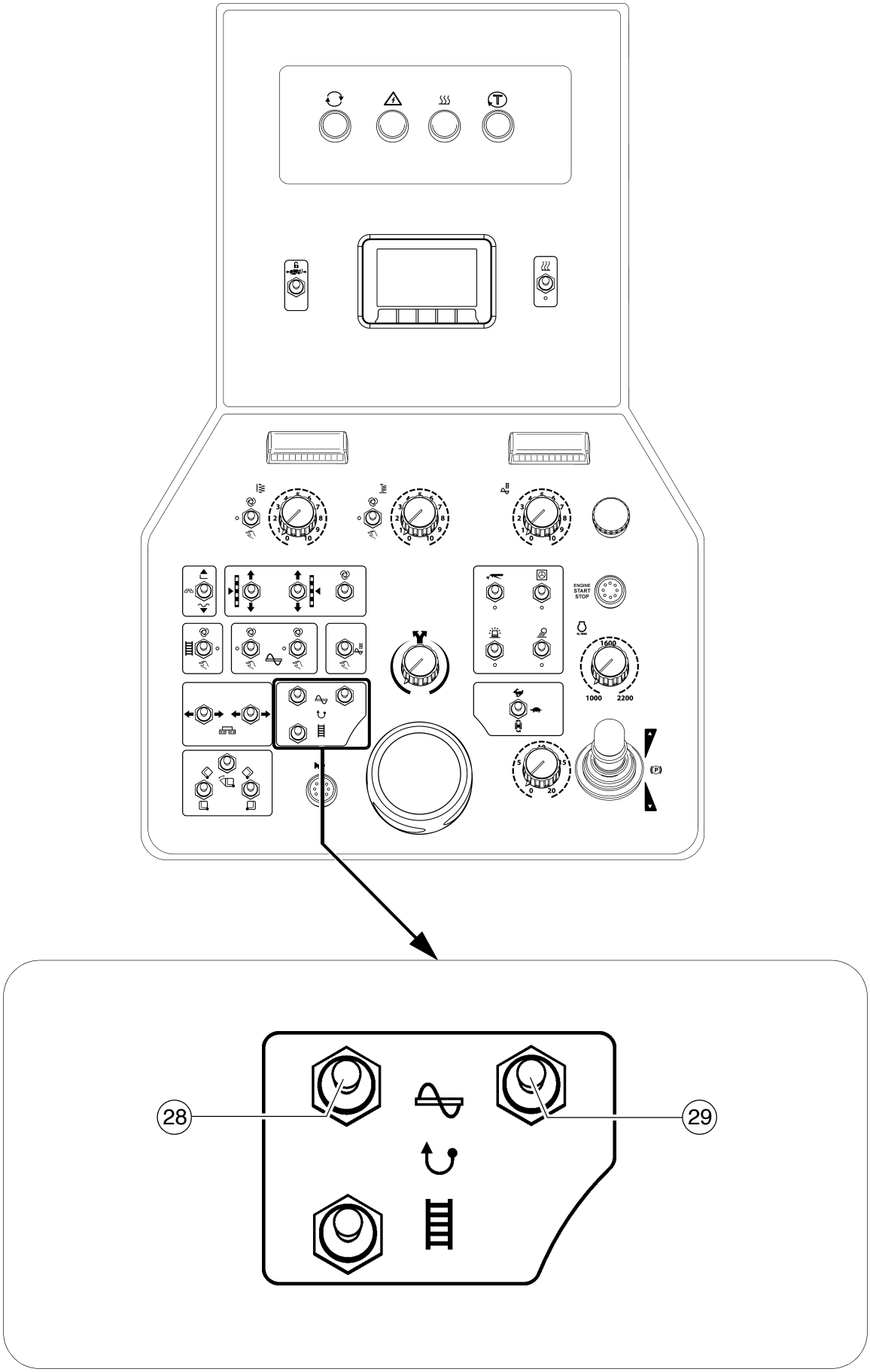
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Item	Designation	Brief description
26	Left auger - Operating mode "AUTO" / "OFF" / "MANUAL"	Detent switch function: -Operating mode "AUTO": The conveying function of the left half of the auger is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches. -Operating mode "OFF": The conveying function of the left half of the auger is switched off. -Operating mode "MANUAL": 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. STOP On actuation, heed danger zones of moving parts of the vehicle!
27	Right auger - Operating mode "AUTO" / "OFF" / "MANUAL"	Detent switch function: -Operating mode "AUTO": 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. -Operating mode "OFF": The conveying function of the right half of the auger is switched off. -Operating mode "MANUAL": 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. STOP On actuation, heed danger zones of moving parts of the vehicle!

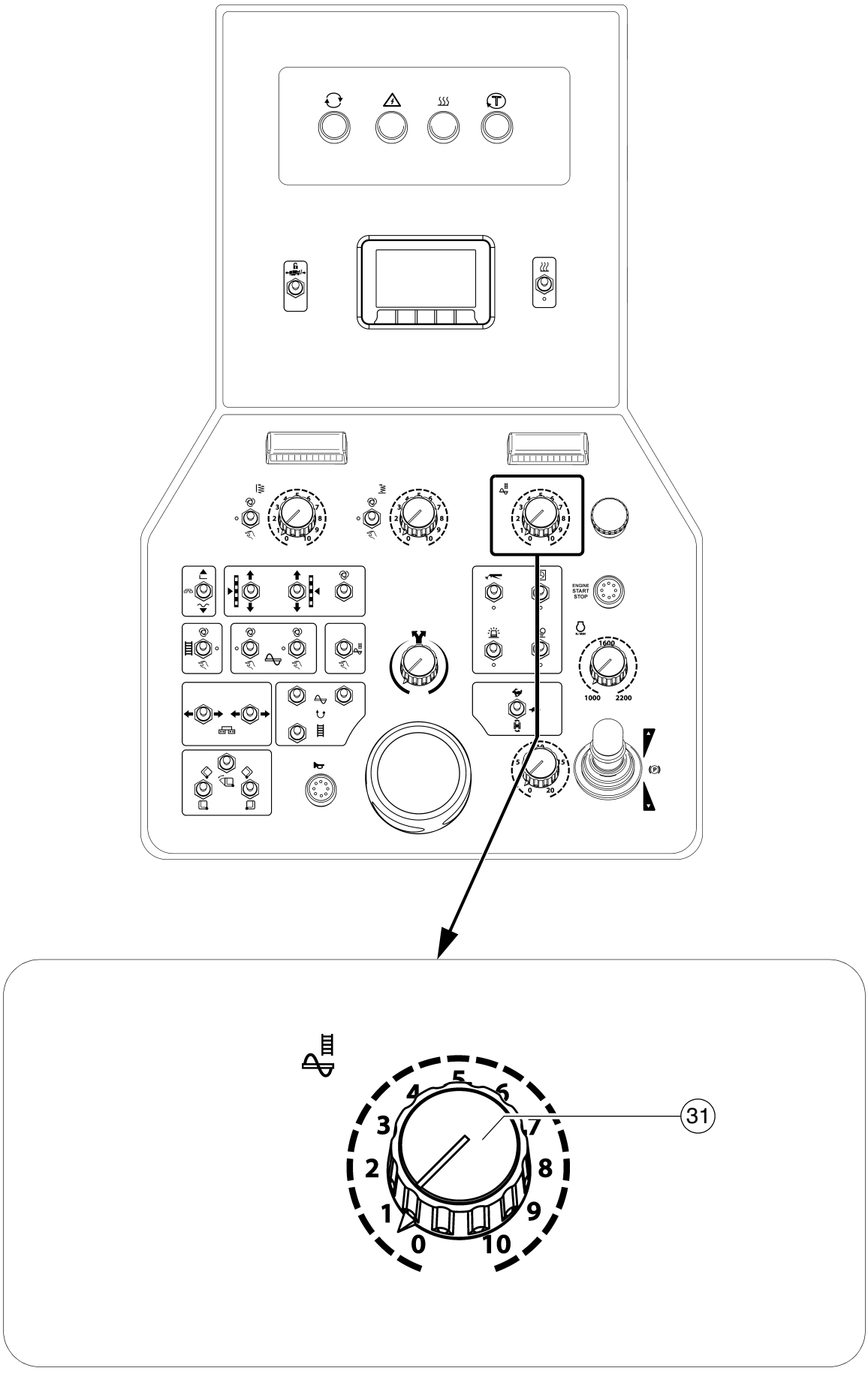
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Item	Designation	Brief description
28	Reversing switch Left auger	Pushbutton function: - Right switch position: The conveying direction of the left half of the auger can be reversed in order to slightly reverse paving material for example. ☞ The function can be triggered in all modes of the auger. STOP On actuation, heed danger zones of moving parts of the vehicle!
29	Reversing switch Right auger	Pushbutton function: - Left switch position: The conveying direction of the right half of the auger can be reversed in order to slightly reverse paving material for example. ☞ The function can be triggered in all modes of the auger. STOP On actuation, heed danger zones of moving parts of the vehicle!
30	Not used	

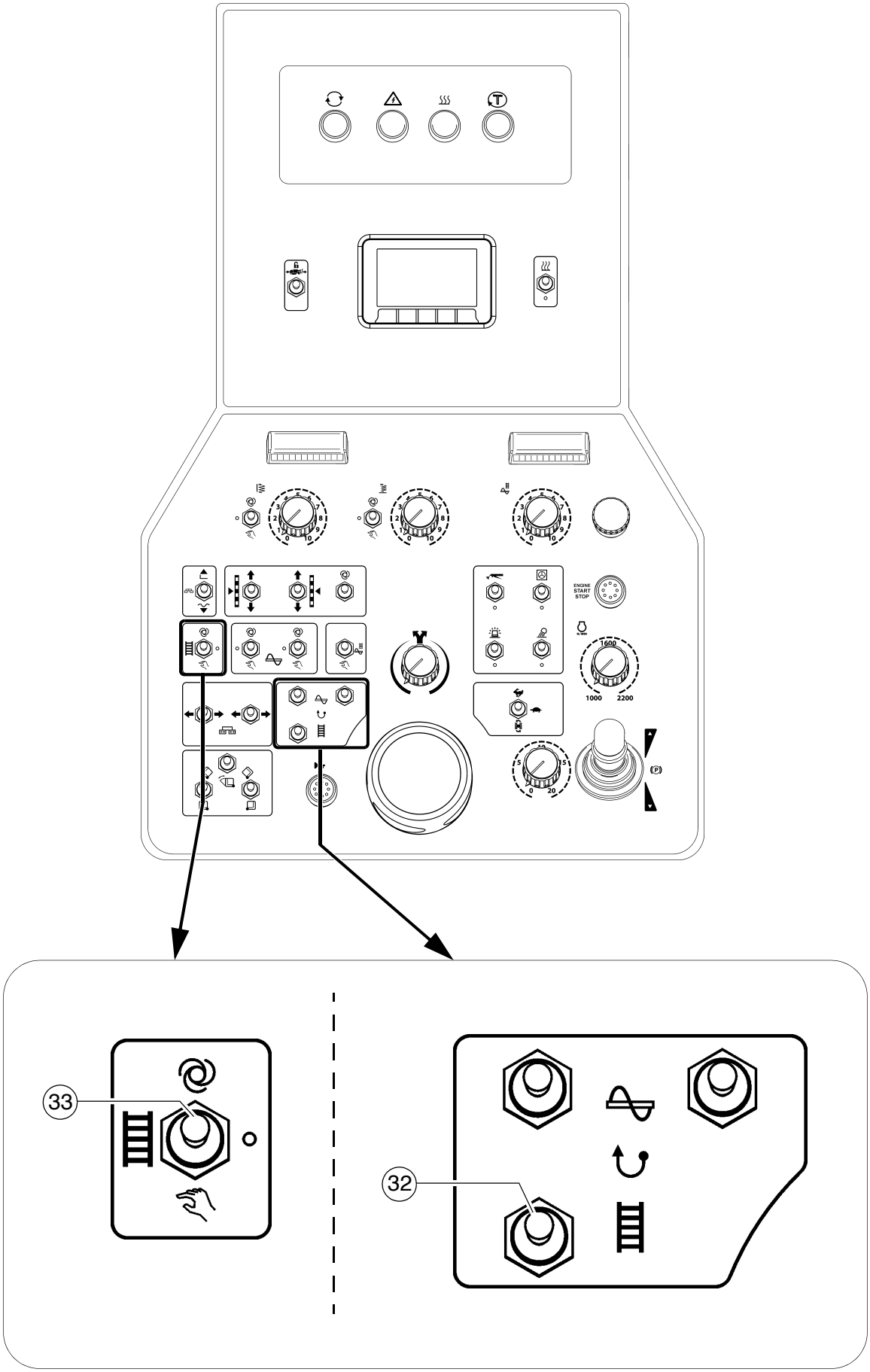
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Item	Designation	Brief description
31	Transfer amount controller Auger, conveyor	Joint, continual adjustment of the auger and conveyor speed. ☞ The transfer amount must be matched to the existing paving situation. Adjustment is possible during operation.

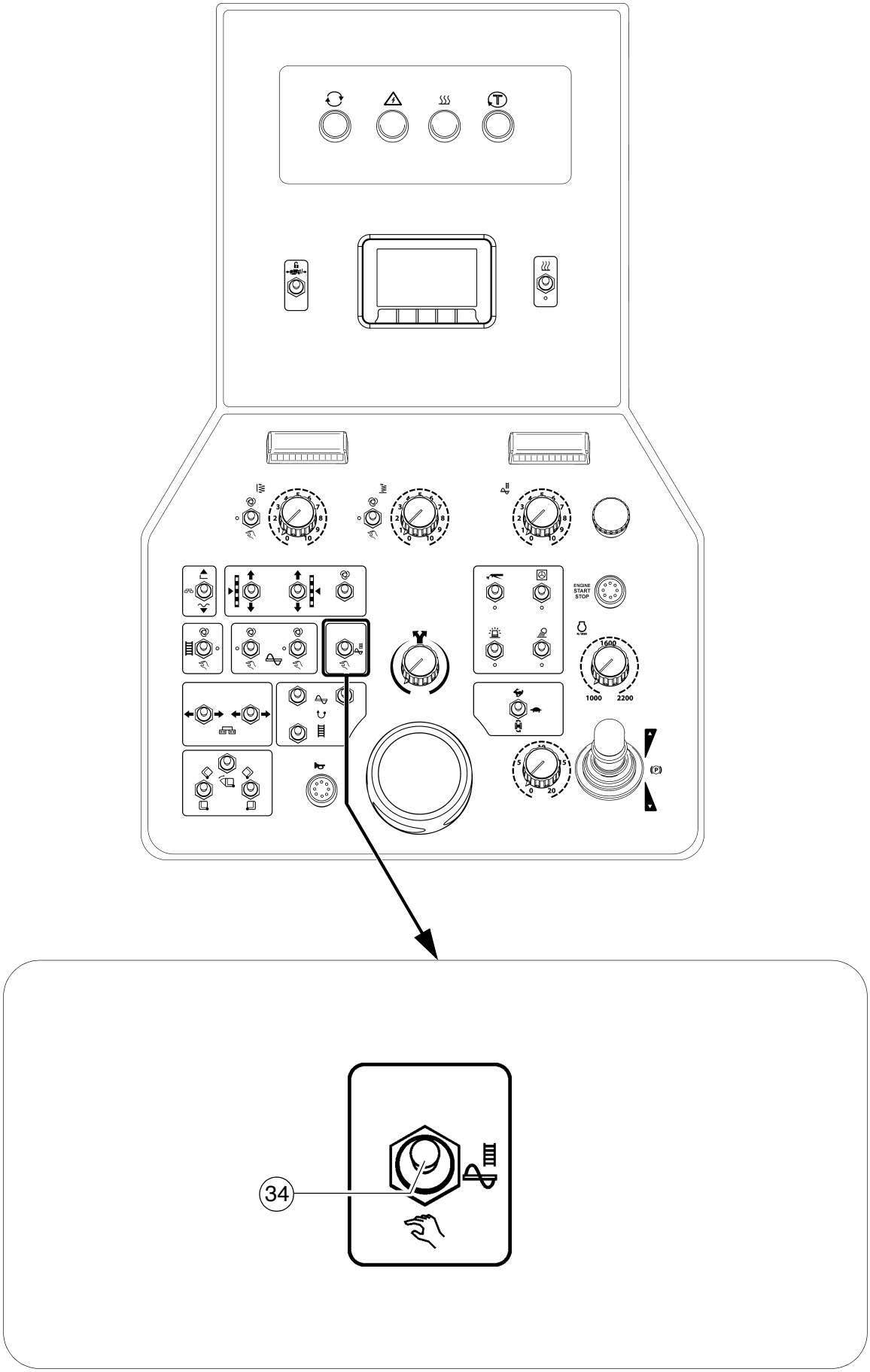
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Item	Designation	Brief description
32	Conveyor Operating mode "AUTO" / "OFF" / "MANUAL"	Detent switch function:  -Operating mode "AUTO": The conveying function of the conveyor is switched on when the drive lever is swivelled out and is switched off via the material limit switches.  -Operating mode "OFF": The conveying function of the conveyor is switched off.  -Operating mode "MANUAL": The conveying function of the conveyor is switched on constantly, without material control via the limit switches.  On actuation, heed danger zones of moving parts of the vehicle!
33	Reversing switch Conveyor	Pushbutton function: - Upper switch position: 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.  The function can be triggered in all modes of the conveyor.  The function can only be triggered in the "Auto" mode when the vehicle is moving.  On actuation, heed danger zones of moving parts of the vehicle!

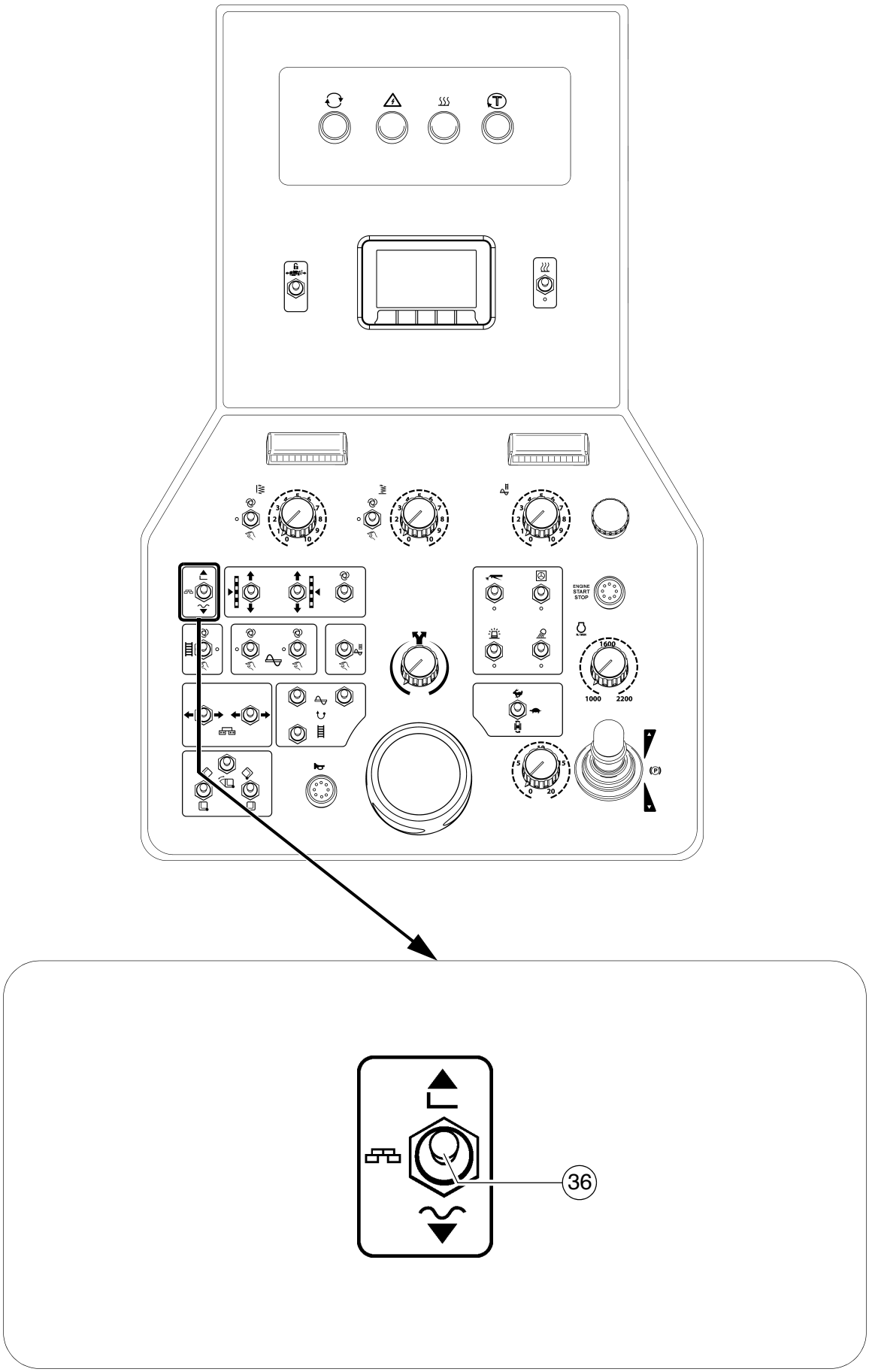
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Item	Designation	Brief description
34	Fill vehicle for paving process	Detent switch function: - Filling function for the paving process. The conveying functions set to "automatic" (conveyor and auger) are switched on. ☞ The engaged function is shown in the display of the vehicle as "activated". ☞ Once the set material height is reached at the limit switches, the conveying functions are switched off. ☞ When the vehicle is restarted, the function is switched OFF. STOP On actuation, heed danger zones of moving parts of the vehicle!
35	Not used	

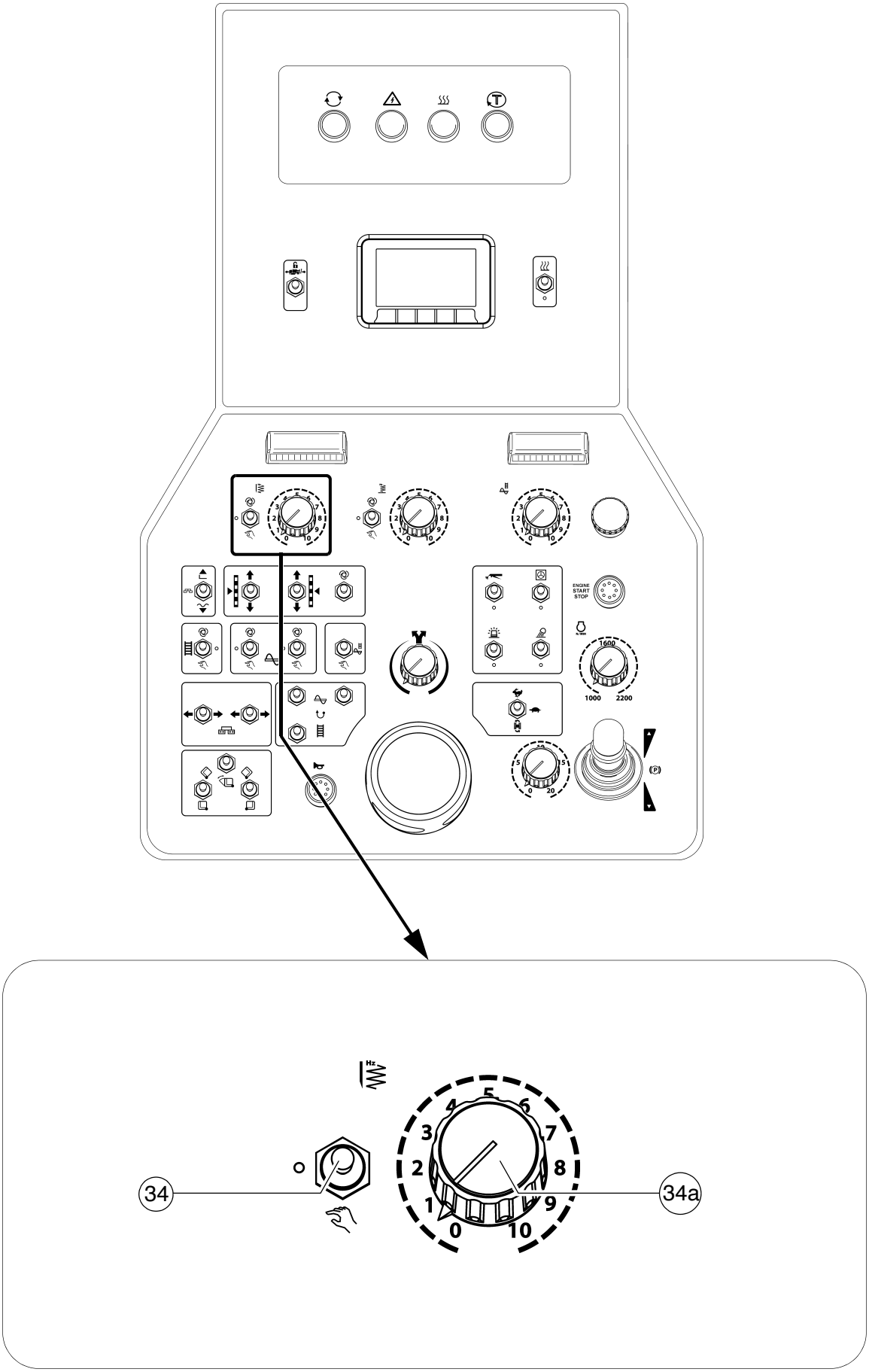
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Item	Designation	Brief description
36	Raise / lower screed Screed stop (floating position OFF) / Lower screed + floating position	Pushbutton/detent switch function: - Upper switch position: Lift the screed. - Switch position, central: Screed stop (floating position OFF): Screed is hydraulically blocked in position. - Lower switch position: Lower screed + floating position: Screed is lowered and released in the floating position when the drive lever is swivelled out. ☞ To prevent the screed from lowering during an intermediate stop (drive lever in centre position), the screed is hydraulically held in position via relief pressure and the counter pressure of the material. ⚠ Check whether the screed transport safeguard is inserted! STOP On actuation, heed danger zones of moving parts of the vehicle!

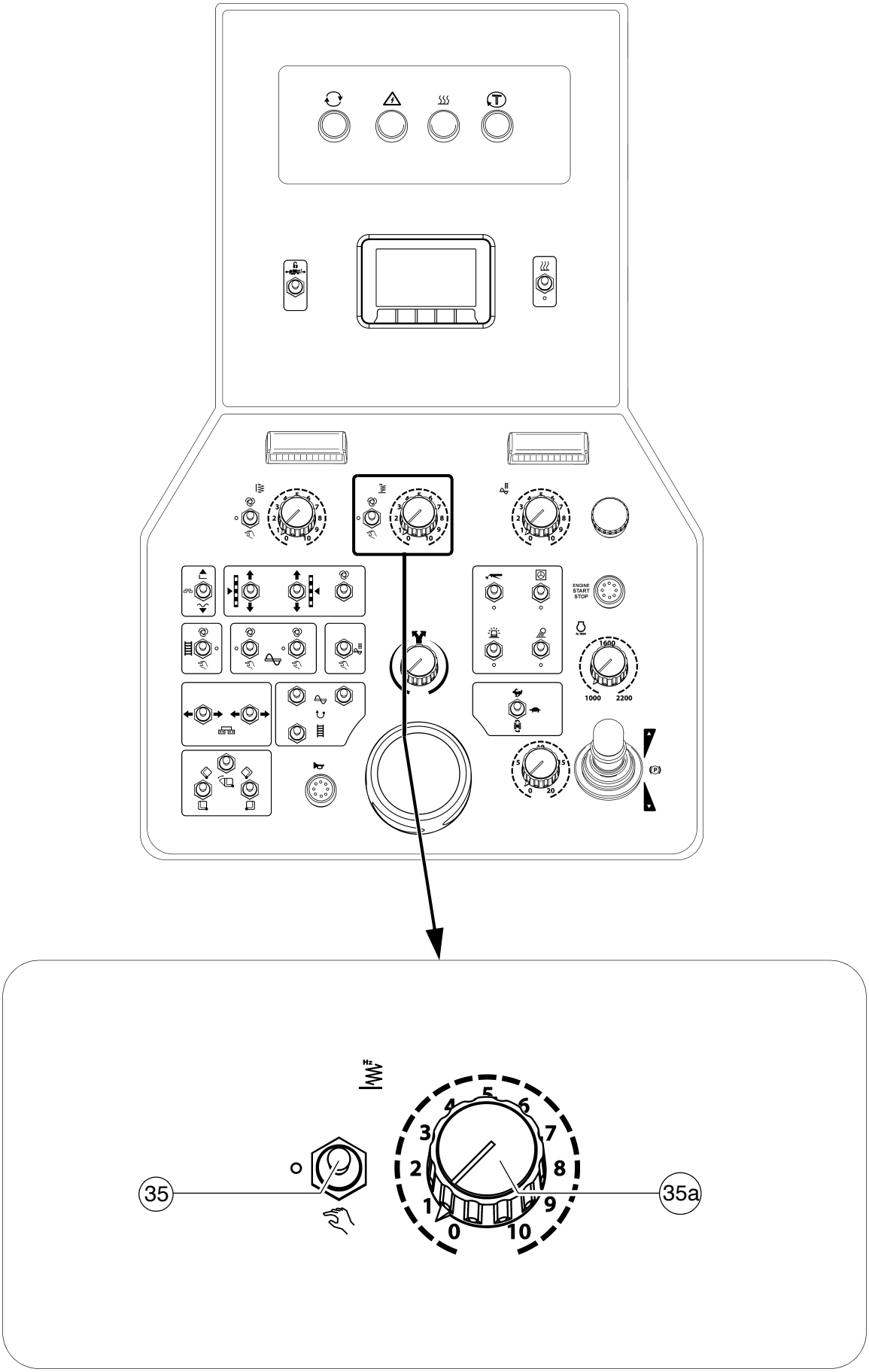
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Item	Designation	Brief description
34	Tamper - Operating mode "AUTO" / "OFF" / "MANUAL" (○)	Detent switch function:  -Operating mode "AUTO": The screed tamper is switched on when the drive lever is swivelled out.  -Operating mode "OFF": The screed tamper is switched off.  -Operating mode "MANUAL": The screed tamper is switched on constantly.
34a	Tamper speed regulator (○)	Continually adjustable tamper speed setting. ☞ The tamper frequency (number of strokes per minute) is set fully variable using the rotary regulator.

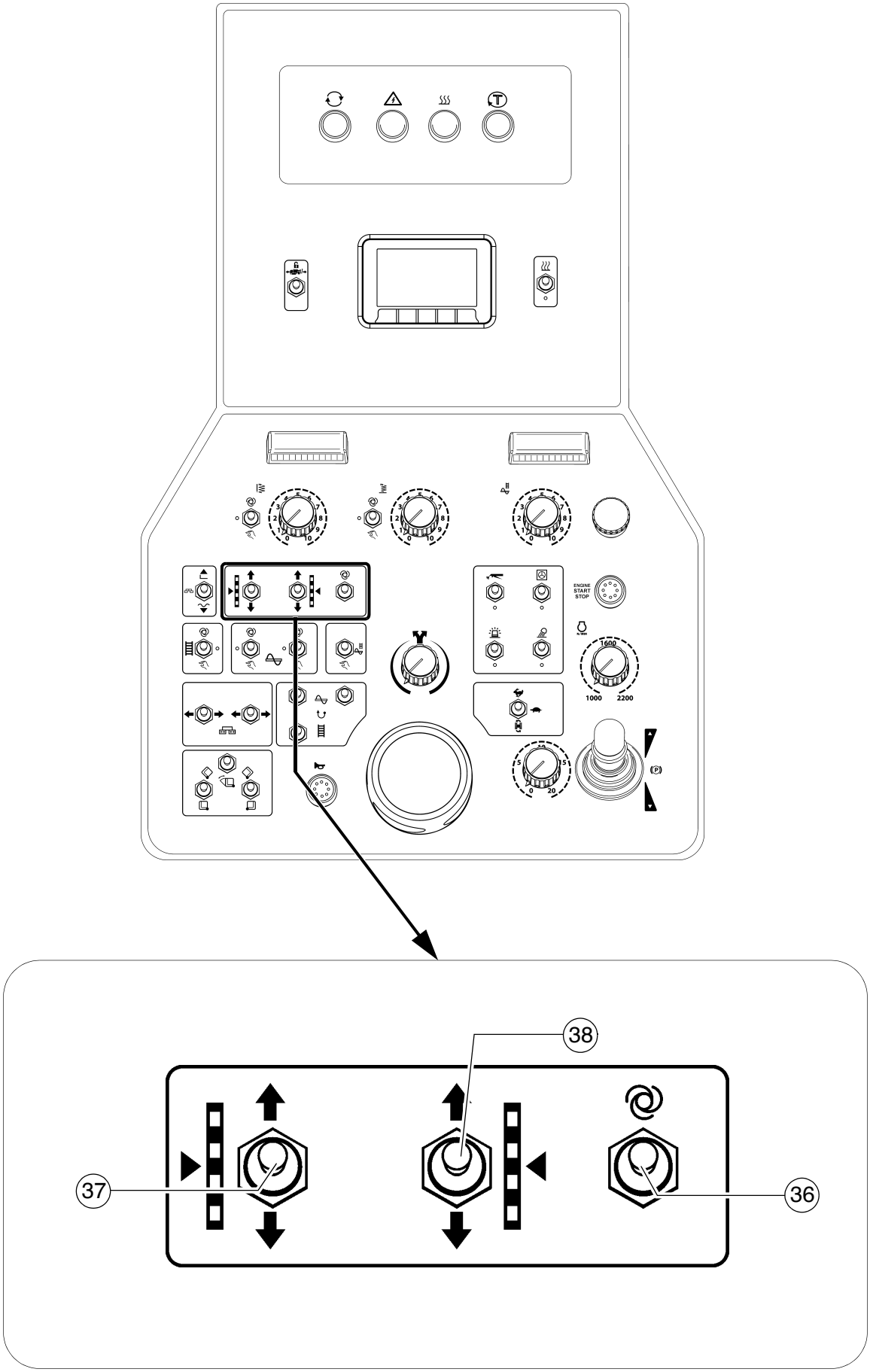
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Item	Designation	Brief description
35	Vibration - Operating mode "AUTO" / "OFF" / "MANUAL"	Detent switch function:  -Operating mode "AUTO": Screed vibration is switched on when the drive lever is swivelled out.  -Operating mode "OFF": Screed vibration is switched off.  -Operating mode "MANUAL": Screed vibration is switched on constantly.
35a	Vibration speed regulator (○)	Continually adjustable vibration speed setting. ☞ The vibration frequency (number of strokes per minute) is set fully variable using the rotary regulator.

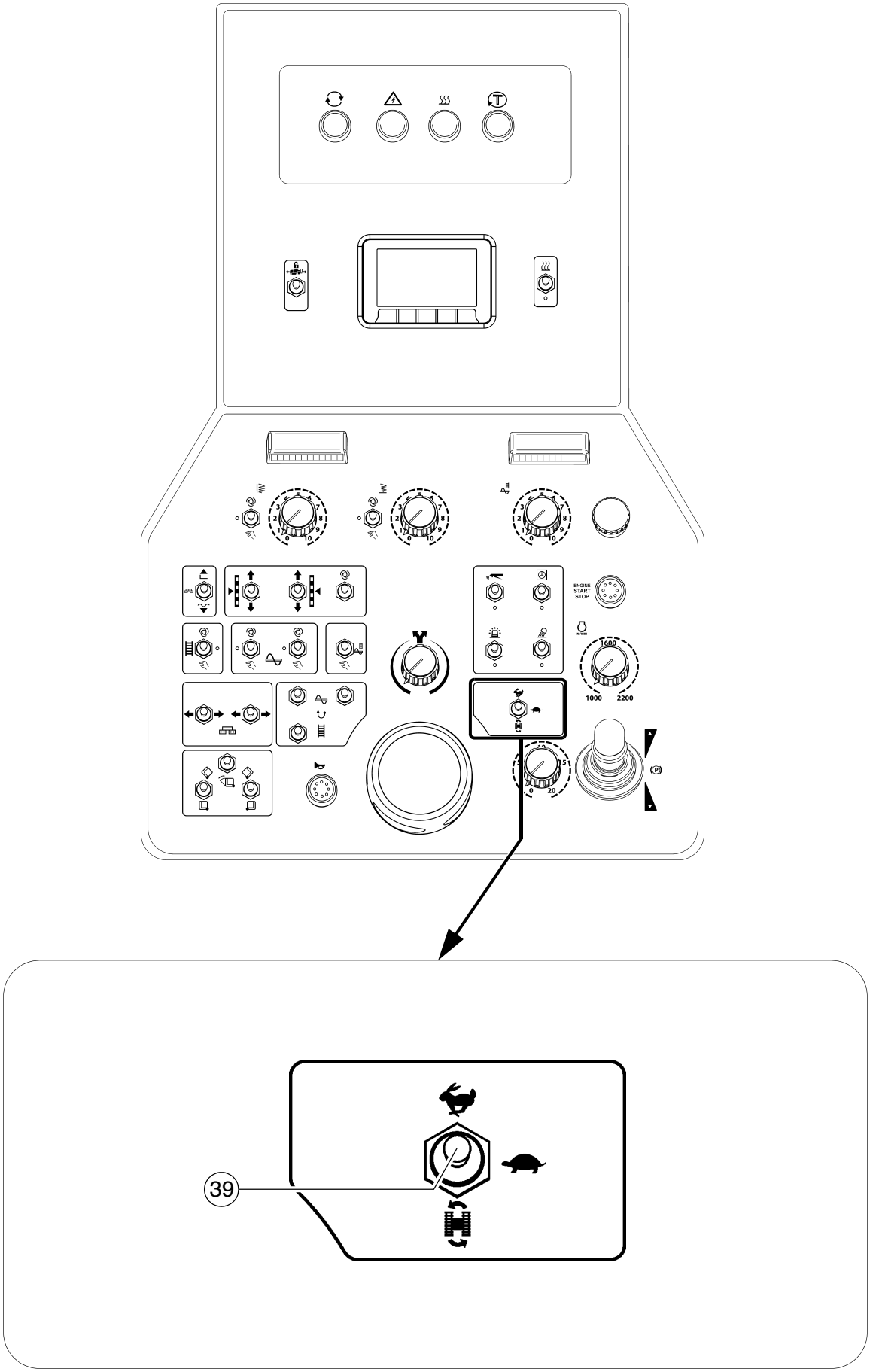
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Item	Designation	Brief description
36	Levelling Operating mode "AUTO" / "OFF"	Detent switch function: -Operating mode "OFF": The automatic levelling function is switched off. -Operating mode "AUTO": height adjustment is carried out automatically via the connected grade control system.
37	Retract / extend left levelling cylinder	Pushbutton function: - Upper switch position: Retract left levelling cylinder. - Lower switch position: Extend left levelling cylinder. The "AUTO" and "OFF" mode are overriden when actuated. On actuation, heed danger zones of moving parts of the vehicle!
38	Retract / extend right levelling cylinder	Pushbutton function: - Upper switch position: Retract right levelling cylinder. - Lower switch position: Extend right levelling cylinder. The "AUTO" and "OFF" mode are overriden when actuated. On actuation, heed danger zones of moving parts of the vehicle!

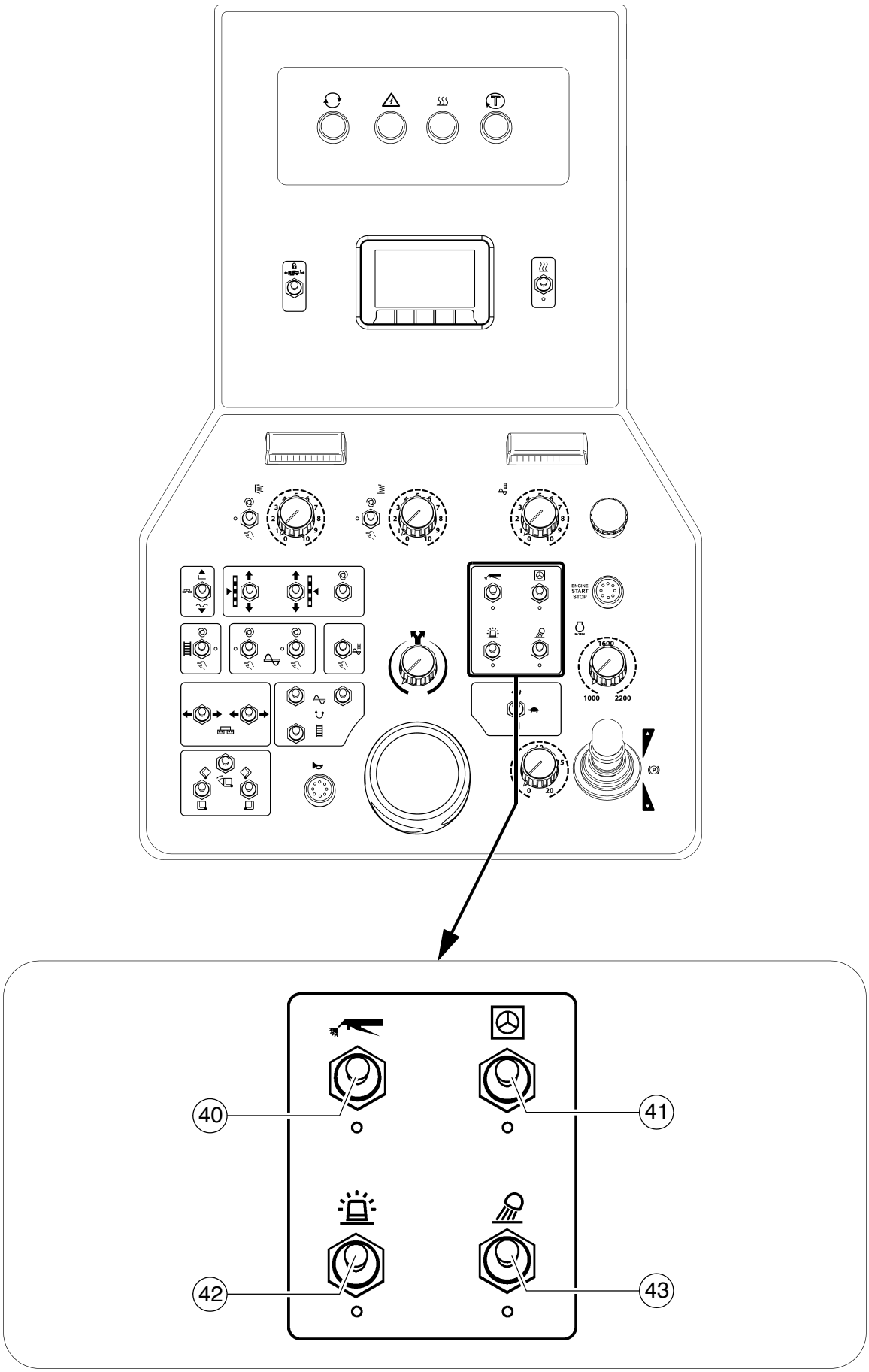
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Item	Designation	Brief description
39	Travel drive fast / slow / turning on the spot	Detent / pushbutton function:  -Upper switch position: Preselection of the speed level - transportation speed (fast).  -Switch position, central: Preselection of the speed level - operating speed (slow).  -Lower switch position: Turning on the spot - The paver finisher turns on the spot (the caterpillar chains run in opposite directions), when the steering potentiometer is turned. - Steering potentiometer turned to the left = vehicle turns to the left - Steering potentiometer turned to the right = vehicle turns to the right ☞ The function can only be activated when the button is pressed and held and the steering potentiometer is in the neutral position. ☞ The turning speed of the vehicle changes in proportion to the turning of the potentiometer.  When the vehicle turns, persons and objects next to the paver finisher are in extreme danger. Note the danger area!

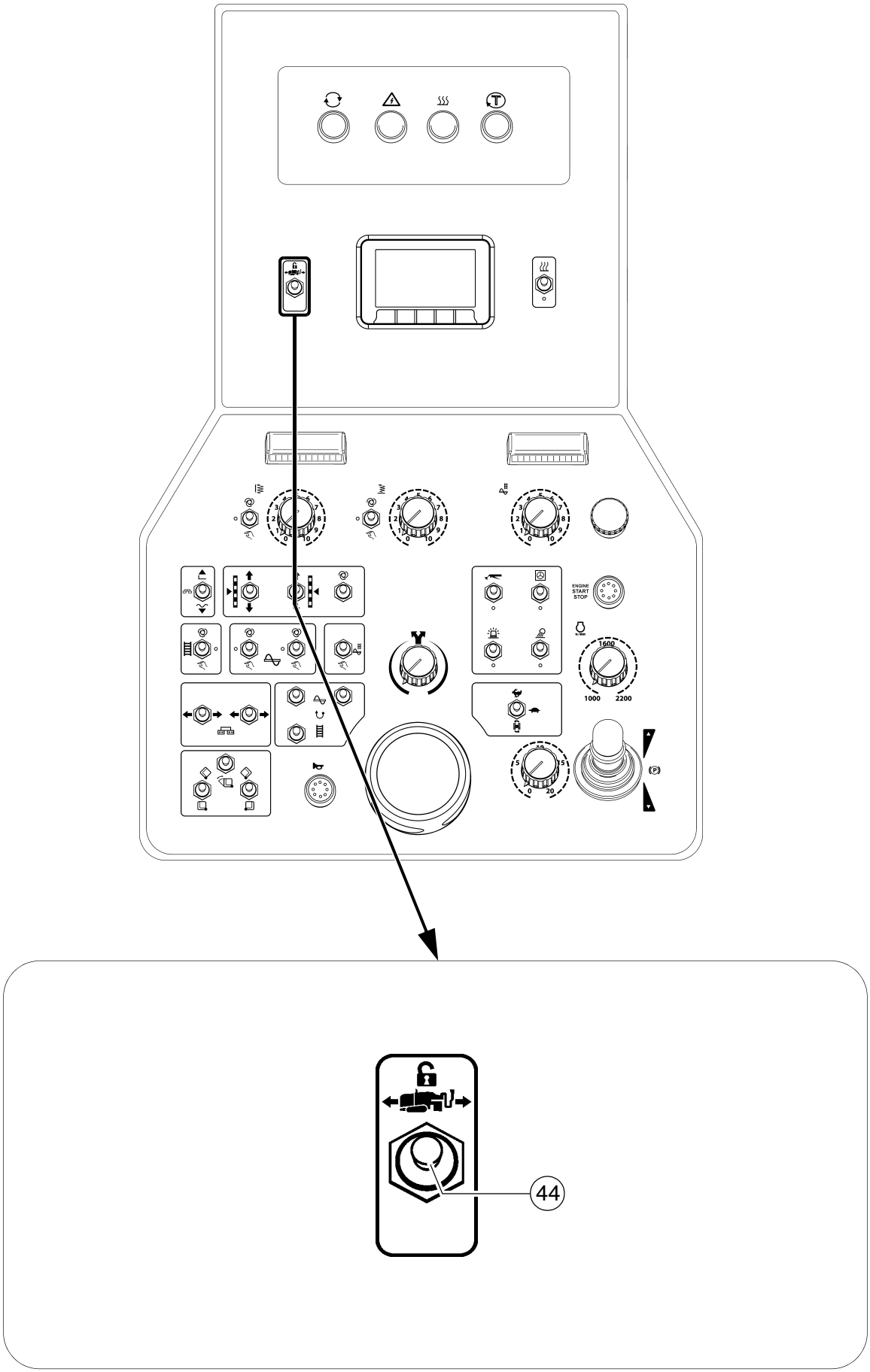
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Item	Designation	Brief description
40	Separator fluid spray system ON / OFF (○)	Detent switch function: - Upper switch position: Spray system "ON" - Lower switch position: Spray system "OFF"
41	Operating mode Radio remote control / operator's platform (○)	Detent switch function: - Lower switch position: Vehicle control takes place on the paver finisher operator's platform - Upper switch position: Vehicle control takes place on the radio remote control. ☞ In the "Radio remote control" operating mode, the radio connection can be established between the radio remote control and the vehicle. ⚠ In the "Radio remote control" operating mode, the control elements - Steering potentiometer - Drive lever - Travel drive preselector on the main operating panel has no function. Intervention can only be carried out via the radio remote control.
42	Rotary beacon ON / OFF (○)	Detent switch function: - Upper switch position: Rotary beacon ON. - Lower switch position: Rotary beacon OFF. ☞ Switch on for safety on roads and in the construction site area
43	Working lights ON / OFF (○)	Detent switch function: - Upper switch position: Working lights ON. - Lower switch position: Working lights OFF. STOP Avoid dazzling other road users!

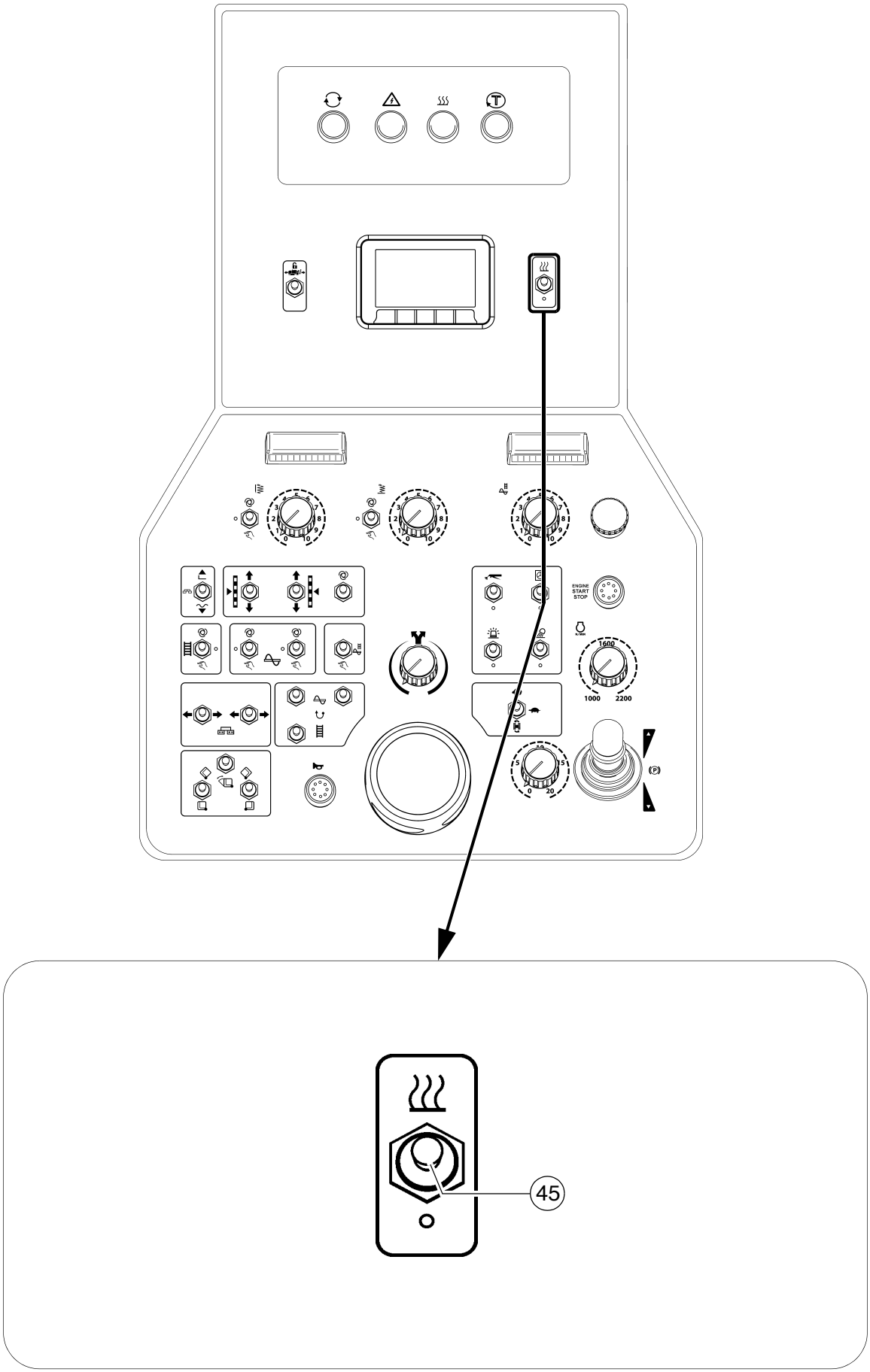
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Item	Designation	Brief description
44	Release travel drive	Pushbutton function: - Upper switch position: Release travel drive for 2 seconds. ☞ The drive lever must be operated in this period of time, otherwise the travel drive is blocked.

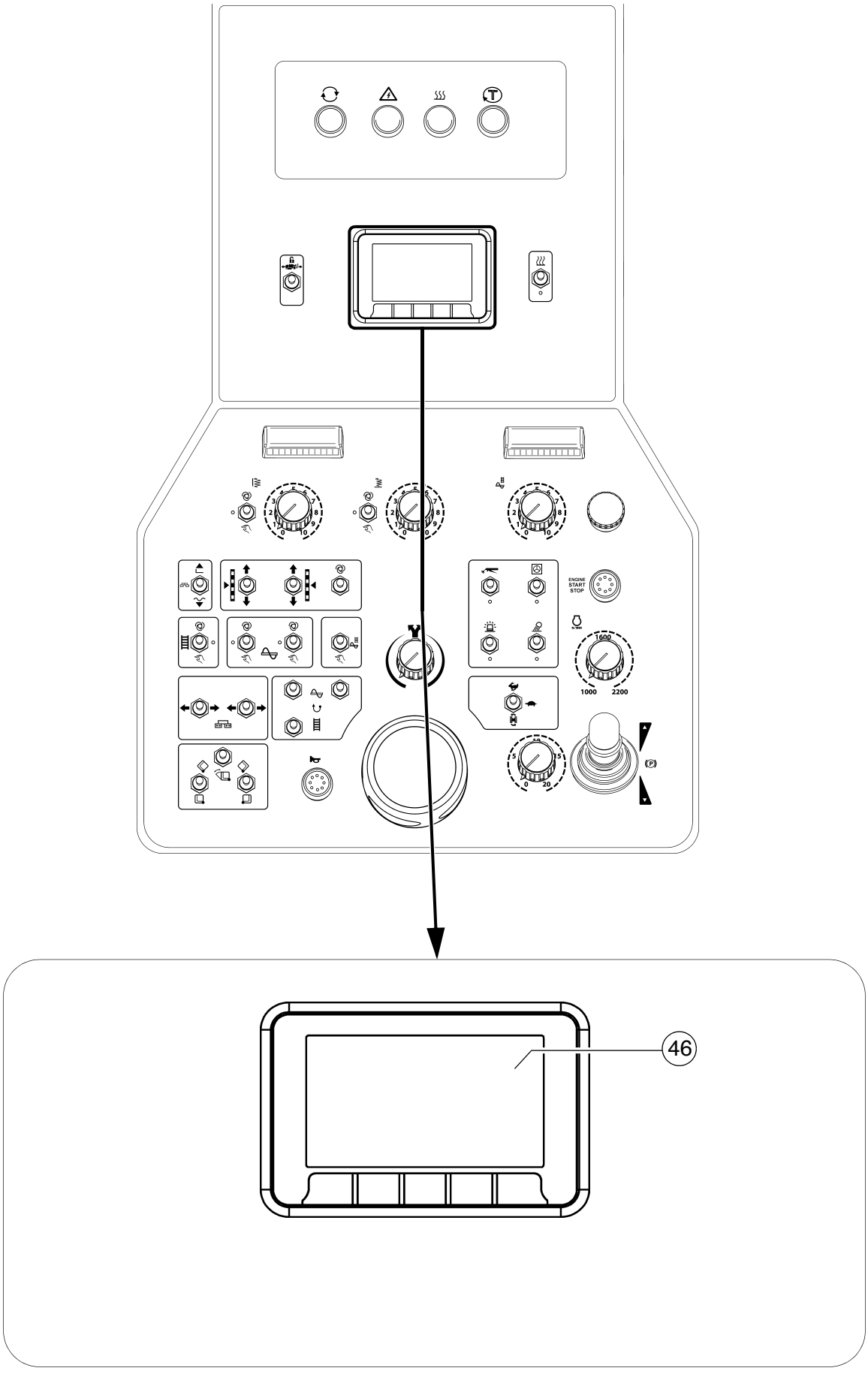
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Item	Designation	Brief description
45	Heating ON/OFF	Detent switch function: - Upper switch position: Screed heater system "ON“. - Lower switch position: Screed heater system "OFF". ☞ The automatic temperature control of the screed heater system is carried out with activation. ☞ Gas heating (○): This opens the non-return valves for the gas supply to the burners and activates the electronic ignition system and the flame monitoring system

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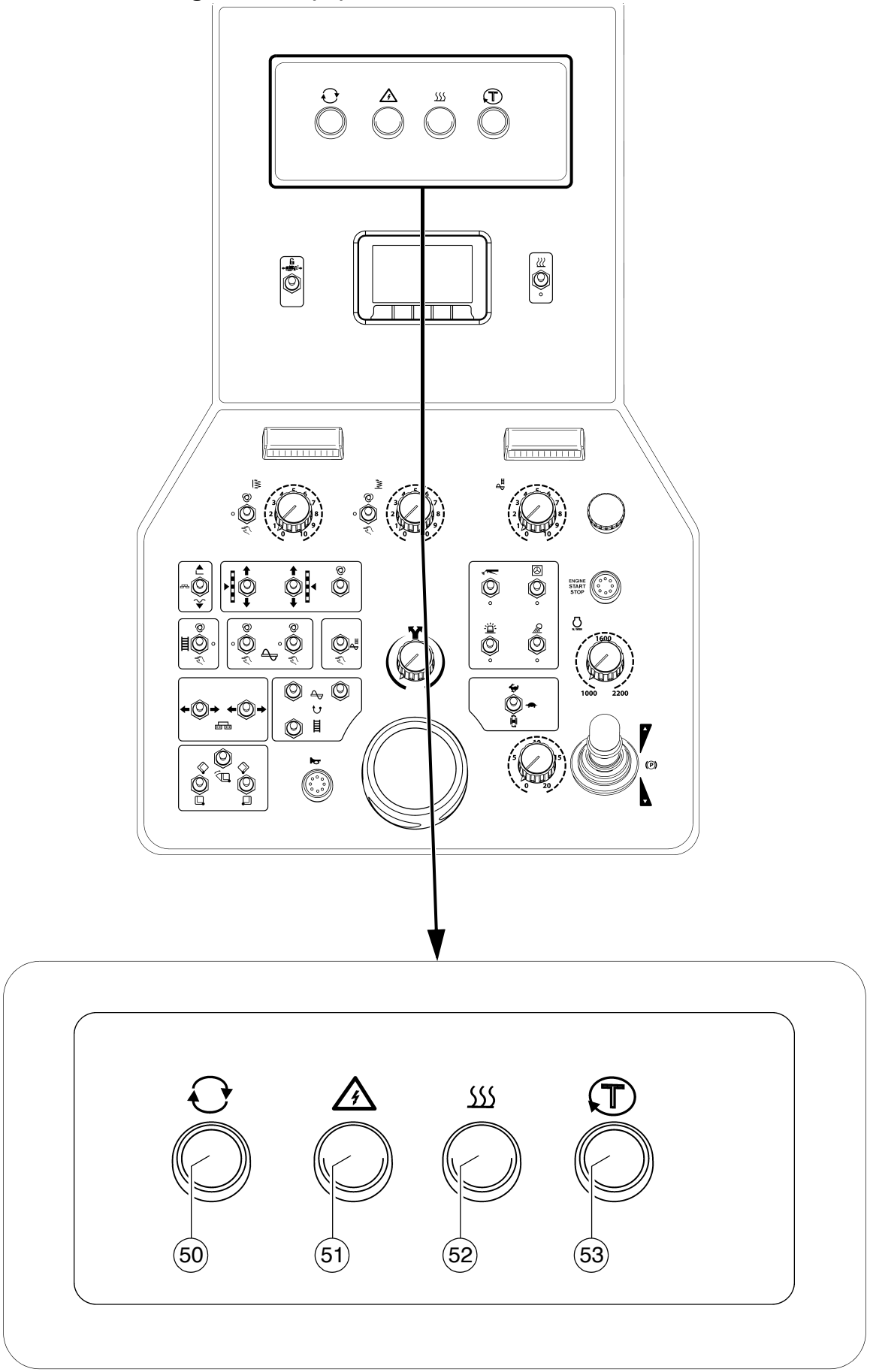


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Item	Designation	Brief description
46	Display	Input and display terminal for showing various vehicle parameters, activation of functions, etc. ☞ To operate the display, see the corresponding part of this manual.

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Electric heating element (○)

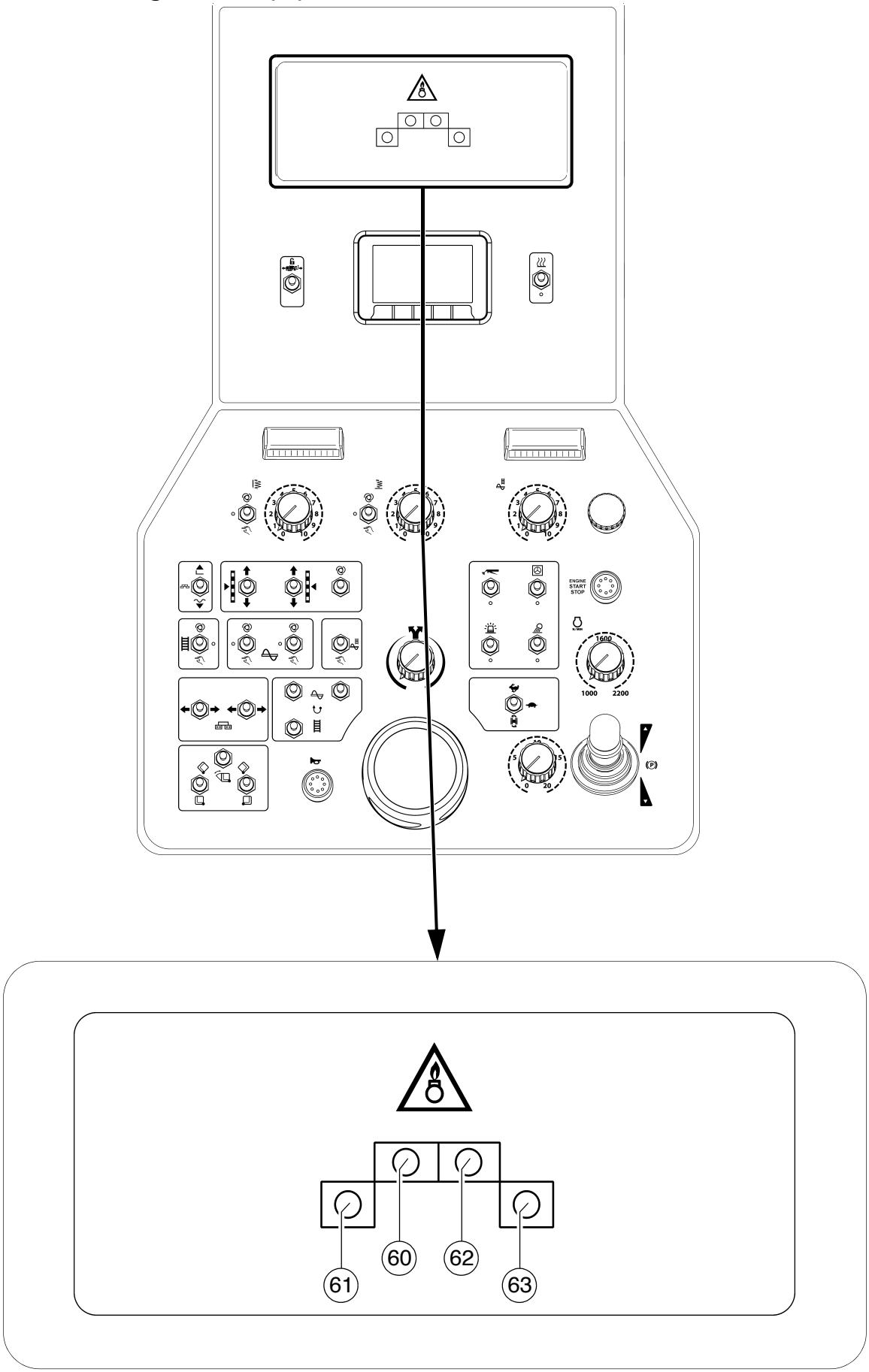


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Item	Designation	Brief description
50	Reset key for insulation monitoring	☞ See the section "Insulation monitoring" in the screed operating instructions.
51	Indicator lamp Alternator	☞ The indicator lamp shows that the alternator is switched on by the activated screed heating system.
52	Indicator lamp Heating	☞ The indicator lamp is active as soon as the screed heating system is switched on by the automatic control system (heating process).
53	Test key for monitoring of insulation / indicator lamp for insulation faults	☞ See the section "Insulation monitoring" in the screed operating instructions.

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Gas heating element (○)



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Item	Designation	Brief description
60	Malfunction display	Left middle section malfunction display, red
61	Malfunction display	Left extendable part malfunction display, red
62	Malfunction display	Right middle section malfunction display, red
63	Malfunction display	Right extendable part malfunction display, red

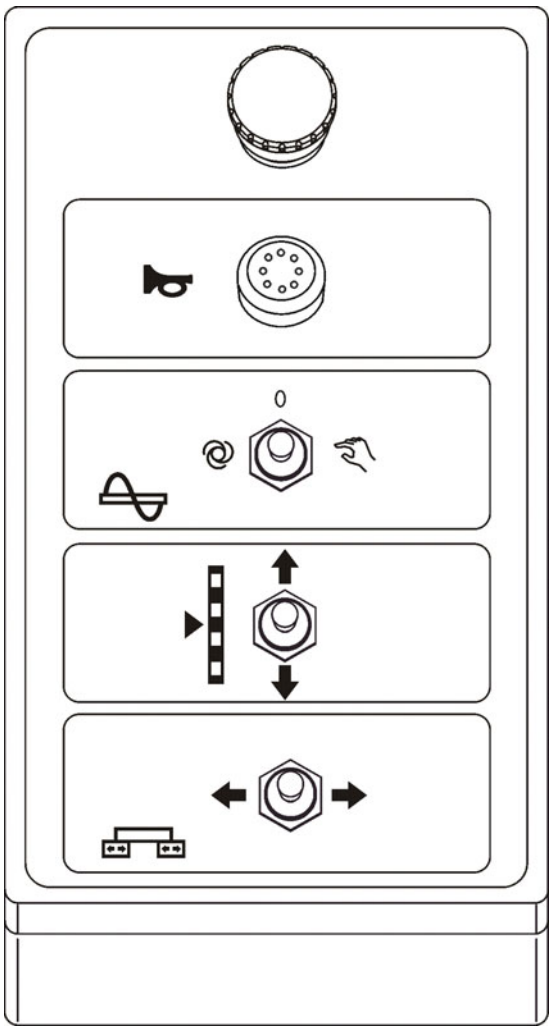
☞ Via the temperature sensor and flame monitoring system, the electronics monitor gas heater operation. If there is no stable flame at the ignition burner within 7 seconds, the electronics indicate a malfunction.
The gas supply is interrupted and the indicator lamps light up.

☞ Please comply with further instructions for the flame monitoring function in the corresponding Operating Instructions for the screed.

☞ Please comply with further instructions for the screed heater function and operation in the corresponding Operating Instructions for the screed.

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3 Remote control

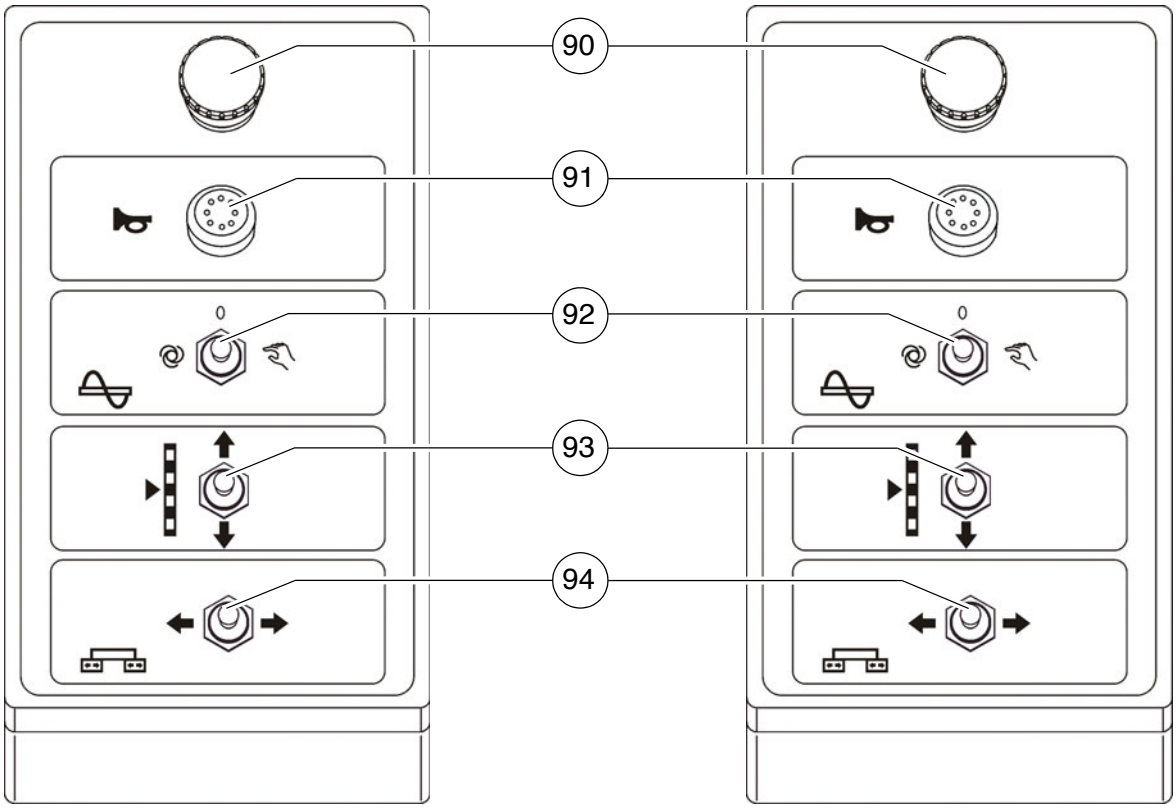


☞ Depending on the side of the machine (left/right), the function switches only control the corresponding function on the particular side of the machine.

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Item	Designation	Brief description
80	Left remote control	- For controlling paving-relevant paver and screed functions on the left side of the vehicle.
81	Right remote control	- For controlling paving-relevant paver and screed functions on the right side of the vehicle.
82	Socket Left levelling system	- For connecting the external levelling system to the left of the vehicle. ☞ When not needed, close the socket with the corresponding protective cap.
83	Socket Right levelling system	- For connecting the external levelling system to the right of the vehicle. ☞ When not needed, close the socket with the corresponding protective cap.
84	Vandalism protection facility	- Lock the vandalism protection facility at the end of work. - For attaching external levelling units. ☞ Remove the levelling unit before the vandalism protection facility is locked.

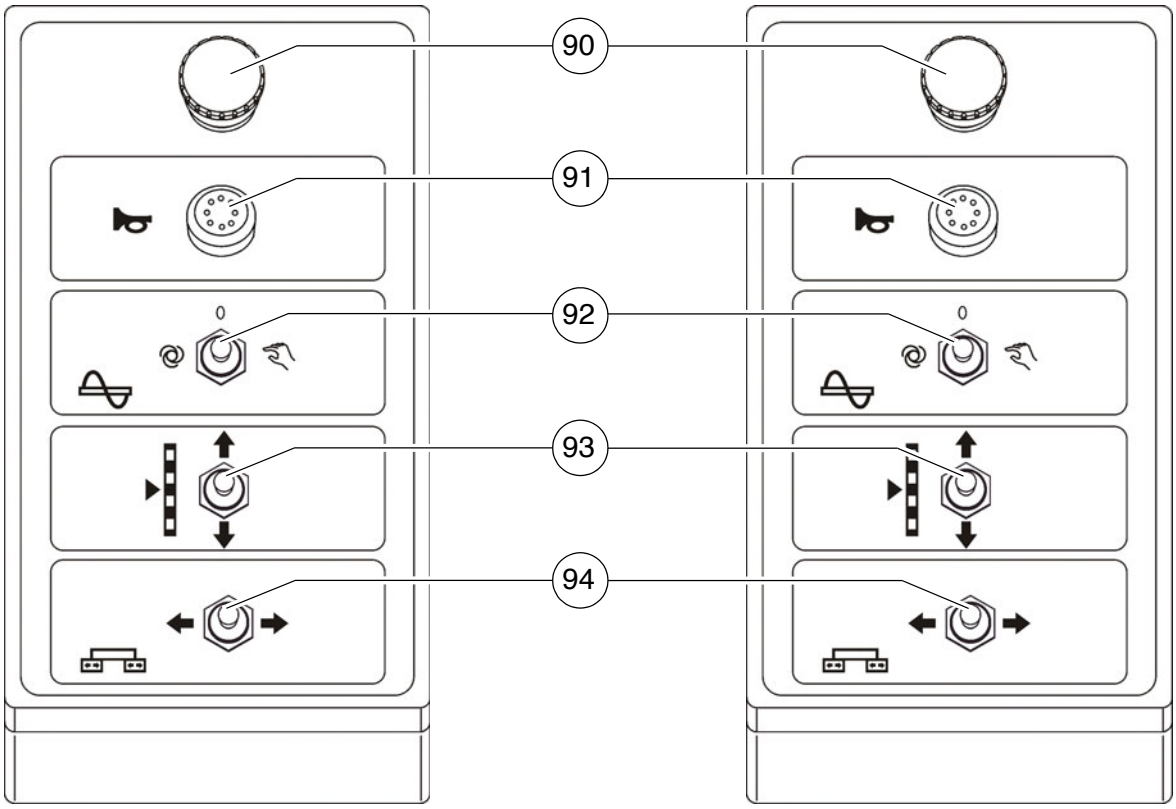
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Item	Designation	Brief description
90	Emergency stop button	Press in an emergency (danger to persons, impending collision, etc.)! - Pressing the emergency stop button switches off the engine, the drives and the steering system. Making way, lifting the screed or other actions are then no longer possible! Danger of accident! - 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! - To restart the engine, the button must be unlocked again.
91	Horn	Press in the case of emergencies and to indicate when the vehicle starts to move! ☞ The horn can also be used to communicate acoustically with the truck driver for material loading!
92	Auger left/right Operating mode "AUTO" / "OFF" / "MANUAL"	Detent switch function: - Left switch position: Operating mode "AUTO": The conveying function of the left / right half of the auger is switched on when the drive lever is swivelled out and is continuously controlled via the material limit switches. - Switch position, central: Operating mode "OFF": The conveying function of the left / right half of the auger is switched off. - Right switch position: Operating mode "MANUAL": The conveying function of the left / right half of the auger is switched on continuously with full delivery capacity, without material control via the limit switches. STOP On actuation, heed danger zones of moving parts of the vehicle!
93	Retract / extend left / right levelling cylinder	Pushbutton function: - Upper switch position: Retract left / right levelling cylinder. - Lower switch position: Extend left / right levelling cylinder. STOP On actuation, heed danger zones of moving parts of the vehicle!

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Item	Designation	Brief description
94	Retract / extend left / right screed	Pushbutton function: - Switch position in the corresponding direction: extend or retract left / right screed half.  On actuation, heed danger zones of moving parts of the vehicle!

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4 Radio remote control

WARNING	Danger due to improper operation of radio remote control
	Improper operation of the vehicles with the radio remote control can cause severe to fatal injuries! - The vehicle may only be used in the stipulated manner for its intended purpose. - The vehicle may only be operated with the radio remote control by trained staff. It is forbidden to stay in the danger zone of the vehicle. This also applies to the person operating the radio remote control. - When operating the vehicle with the radio remote control, the operator must always have a clear view of the vehicle. - Before starting up, check the radio remote control for any signs of damage and test all functions. - Immediately shut down a defective radio remote control. - The radio remote control may only be repaired by the manufacturer or skilled workers authorised by the manufacturer! - The radio remote control must never by left unsupervised. - When several vehicles are being operated with radio remote control at the same time, always ensure that the respective operator is using the right radio remote control belonging to the vehicle in each case, to rule out the risk of unintentionally operating another vehicle that is within range. - The operator may not operate more than one machine at the same time! - Comply with all further information in these instructions and in the safety manual.

In the "Radio remote control" operating mode, the control elements

- Steering potentiometer
- Drive lever
- Travel drive preselector

on the main operating panel have no function. Intervention can only be carried out via the radio remote control.

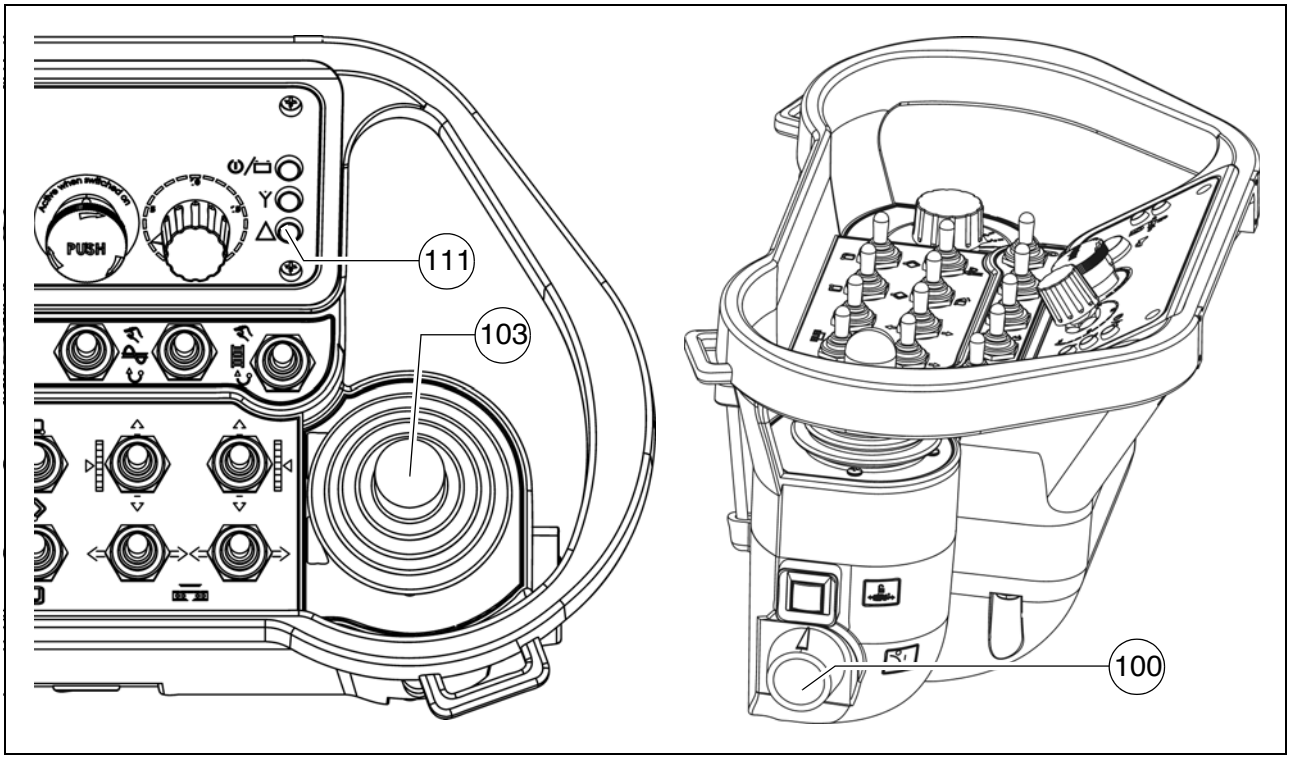
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☞ All other functions stored on the radio remote control, main operating panel or remote control can be carried out by all control units!

⚠ A radio link must be established before beginning work for operation with the radio remove control.
See the section "Establish radio link".

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4.1 Safety switch (tilt sensor)



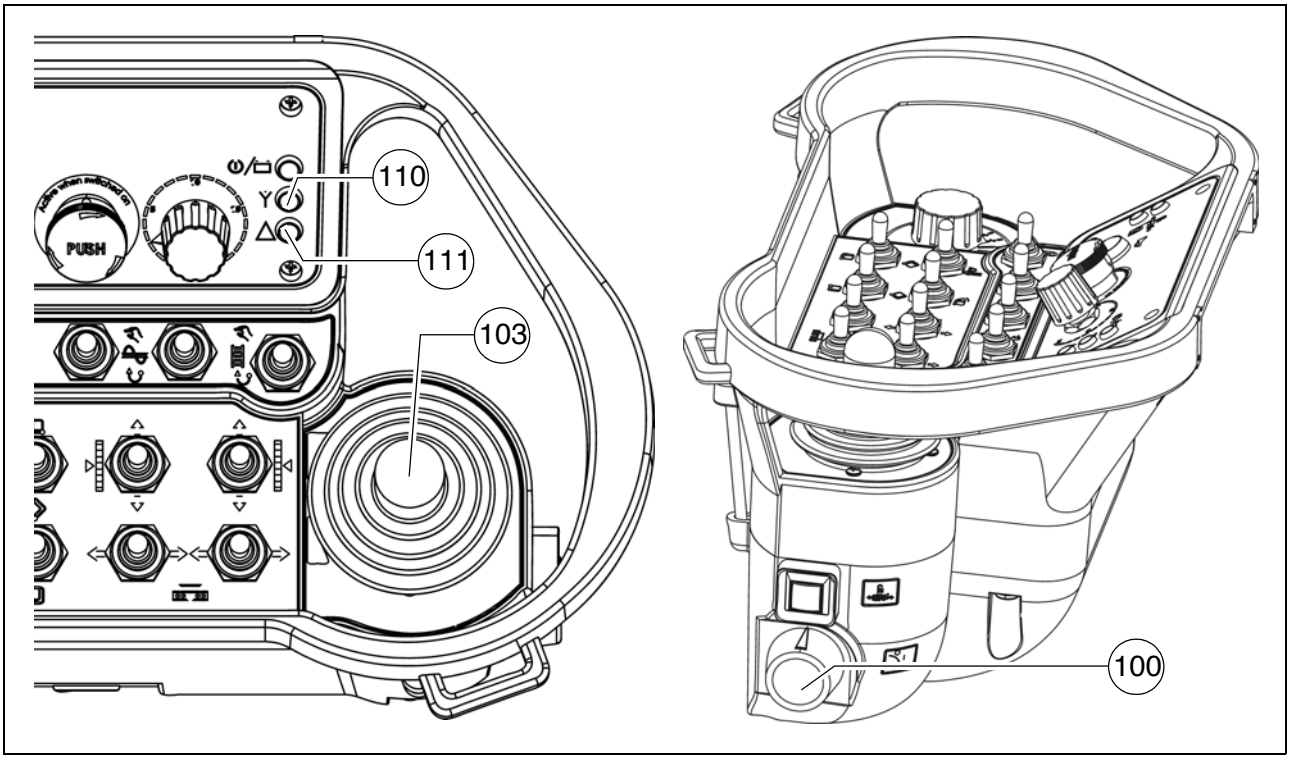
⚠ The radio remote control is equipped with a tilt sensor as a safety measure!
An acoustic warning signal is output at an angle of > 45° (all axles). Another 3 seconds later, the travel drive and the operating functions of the vehicle are switched off! The switch-off is signalled as an error message in the vehicle display and with an LED (111).

Procedure after a safety shut-off:

- Reduce the angle of inclination of the radio remote control.
- Move the drive lever (103) in the neutral position.
- Turn the key switch (100) to Position "II" (Reset) to acknowledge the error message.
  - The LED (111) goes out.

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4.2 Safety switch-off with radio interruption



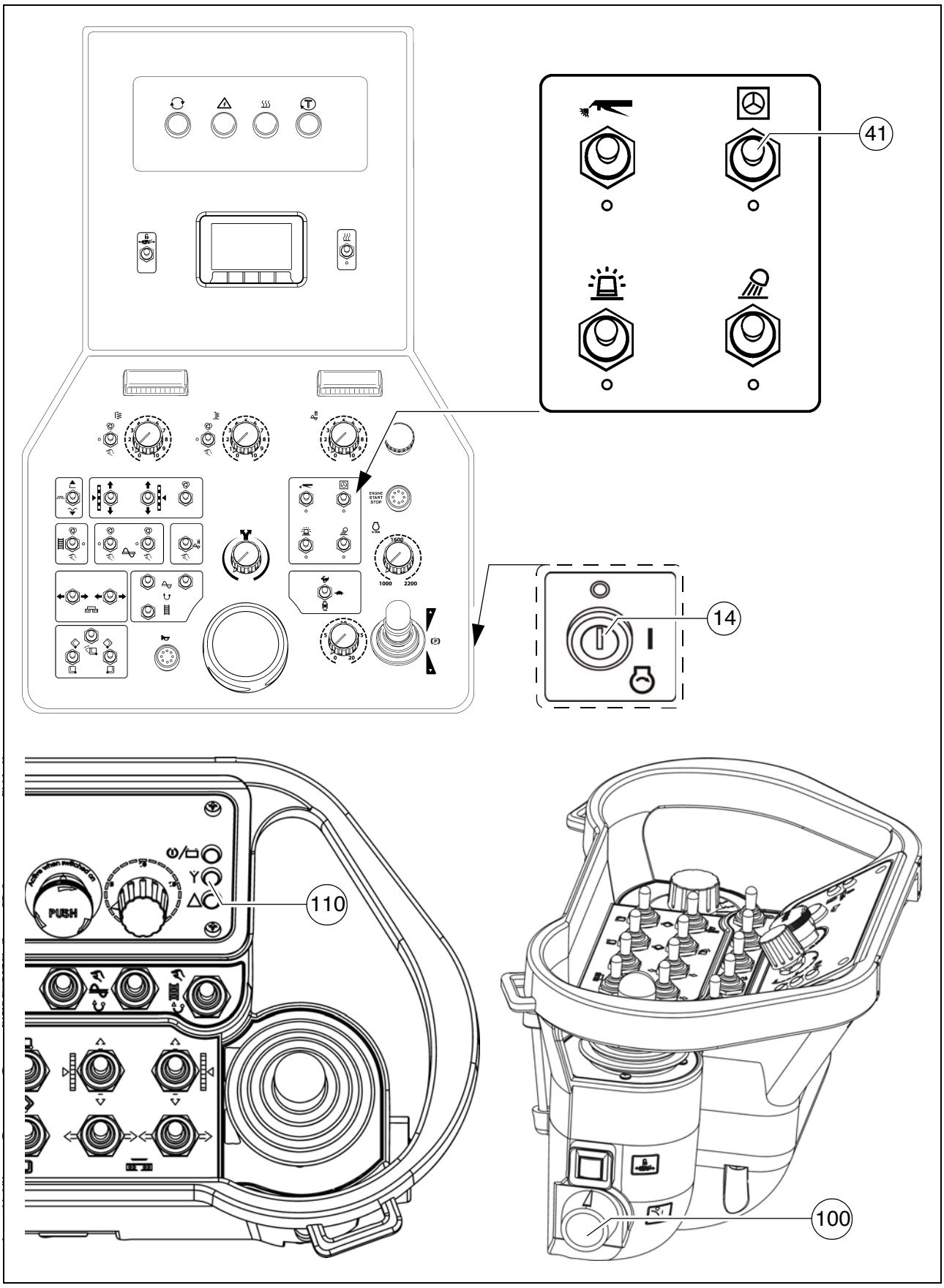
⚠ As a safety measure, the travel drive is switched off when the radio link fails.
The cause of the radio link failure can be too great a distance between the radio remote control and the paver finisher.
An acoustic warning signal is output for 5 seconds prior to switch-off.
During this time, the safety switch-off can be cancelled by reducing the distance (radio link established).
If there continues to be no radio link, the travel drive and the operating functions of the vehicle are switched off after 3 seconds!
The switch-off is signalled as an error message in the vehicle display and with an LED (111). The LED (110) goes out.

Procedure after a safety shut-off:

- Re-enter the reception area with the radio remote control.
- Move the drive lever (103) in the neutral position.
- Turn the key switch (100) to Position "II" (Reset) to acknowledge the error message.
- The LED (111) goes out.
- The LED indicator lamp (110) signals the established radio link.
- Deflect the drive lever (103) to restart the travel drive of the vehicle.

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4.3 Establish radio link



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☞ The drive engine need not be started to establish the radio link.

- Insert the ignition key of the vehicle (14) in position "0" and turn it to Position "I" (Ignition On).
- On the main operating panel, set the "Operating mode radio remote control/operator's platform" (41) to radio remote control (switch position at top).

⚠ In the "Radio remote control" operating mode, the control elements

- Steering potentiometer
- Drive lever
- Travel drive preselector

on the main operating panel have no function. Intervention can only be carried out via the radio remote control.

- Insert the key switch (100) in position "0", turn it to Position "I" to switch on the radio remote control and establish the radio link.
  - Radio link established: short beep

☞ The LED indicator lamp (110) signals the established radio link.

  - Radio link failed: continuous beep.
- Turn key switch to Position "II" (Reset) if no radio link could be established and repeat the linking attempt in Position "I".
- Turn the key switch to Position "0" to end the radio link and to switch off the radio remote control.

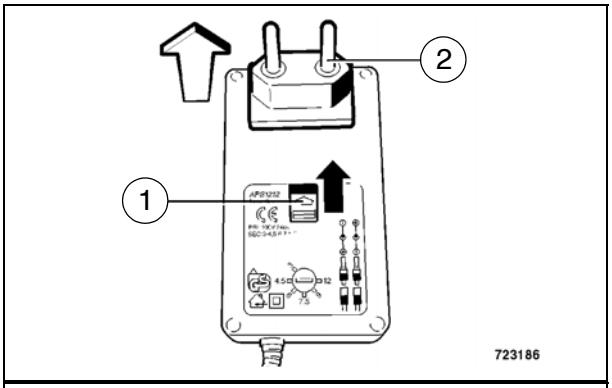
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4.4 Rechargeable battery of radio remote control

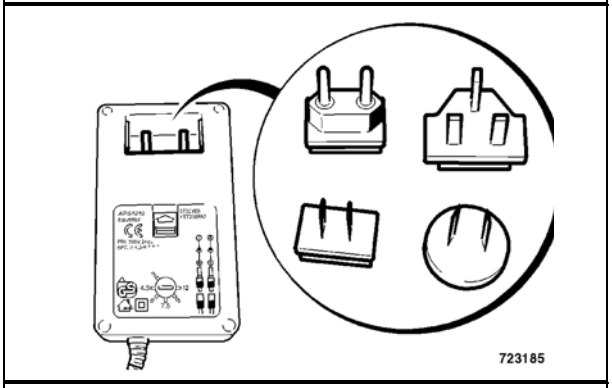
☞ The rechargeable battery of the radio remote control is charged in an external battery charger (accessory). Charging time of rechargeable battery: approx. 1.5 hours. Operating time of the remote control with a battery charge: approx. 8 hours.

Charge rechargeable battery in external battery charger

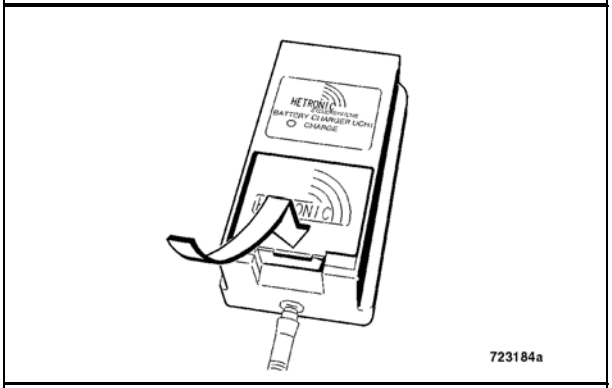
- Slide the lock (1) on the power supply unit forward and pull the plug (2) upward out of the power supply unit.



- Fit the country-specific plug on the power supply unit.



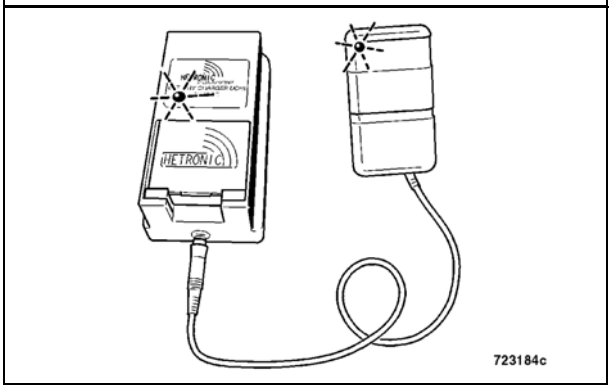
- Insert the rechargeable battery of the remote control in the battery charger.



- Connect the power supply unit of the battery charger to a power source.

☞ The two light-emitting diodes on the battery charger and on the power supply unit must light up.

- The green LED on the battery charger flashes when the rechargeable battery has been charged.

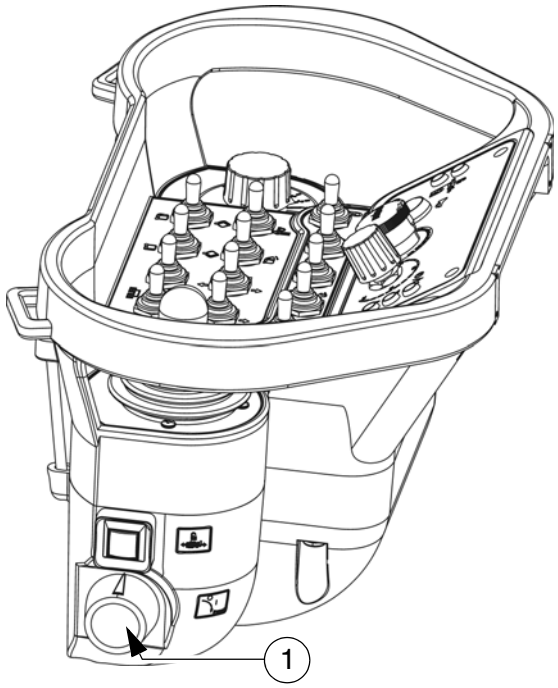


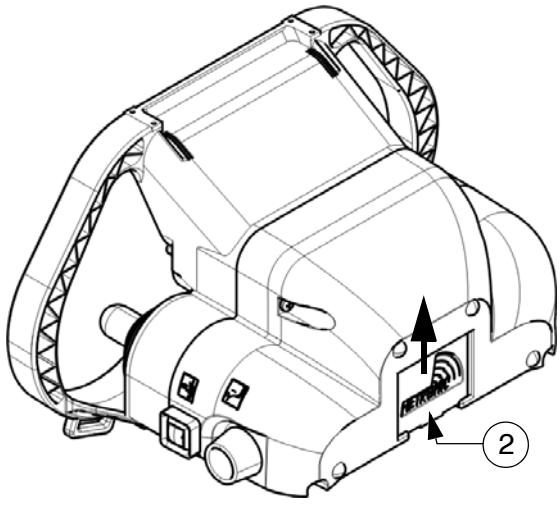
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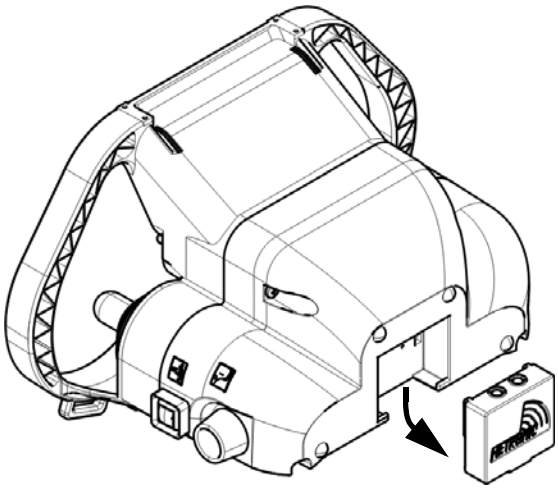
Change/insert rechargeable battery

⚠ If the rechargeable battery is removed during an active radio link and with the vehicle running, the vehicle will be switched off!

- Turn the On/Off switch (1) to Position "0" and pull it out.
- Press in the rechargeable battery (2) toward the front and remove it downward out of the battery compartment.
- Insert the replacement rechargeable battery in the battery compartment and lock it in place.
- If necessary, establish a radio link with the vehicle (see the section "Establish radio link").

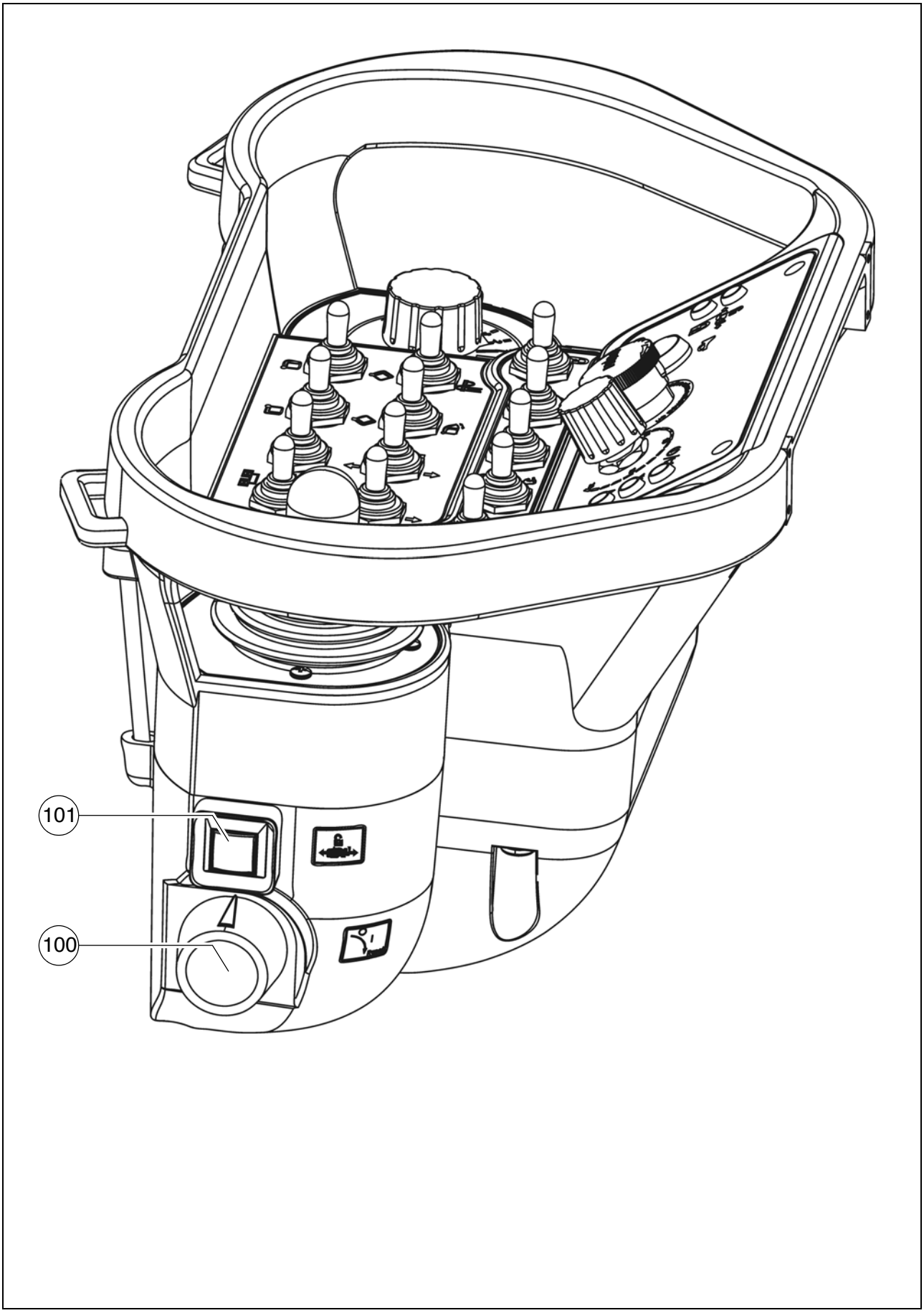






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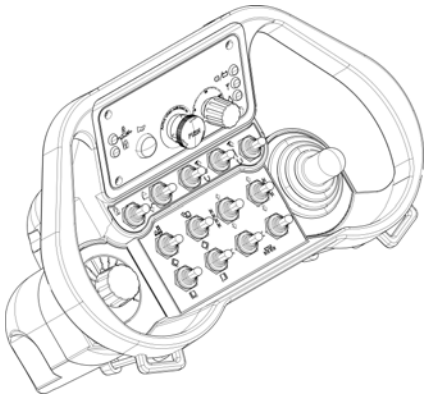
4.5 Control elements of radio remote control

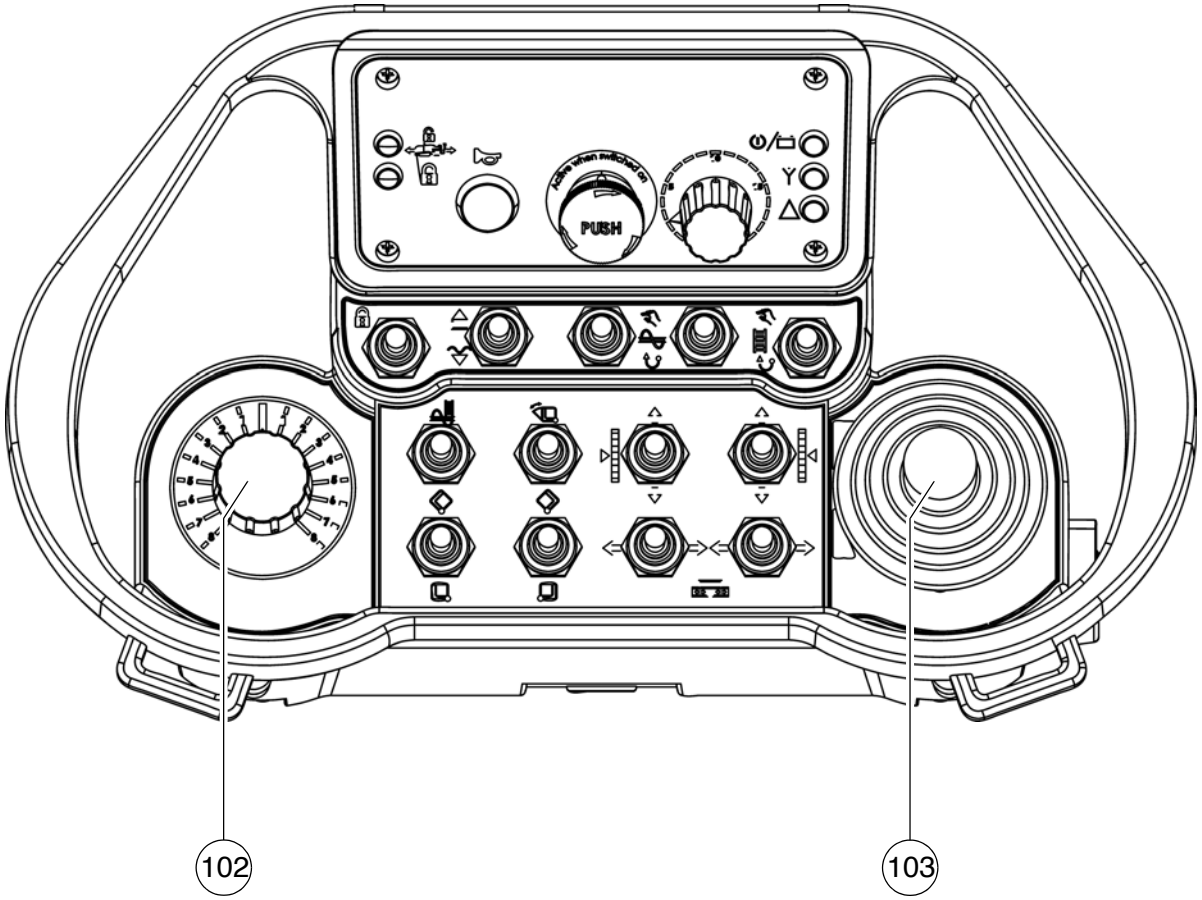


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Item	Designation	Brief description
100	Key switch (removable) - Radio remote control ON / OFF	☞ The radio remote control is switched on and off and the radio link to the vehicle is established with the key switch. - Turn the key switch Position "I" to switch on the radio remote control and establish the radio link. - Radio link established: short beep ☞ The LED indicator lamp (110) signals the established radio link - Radio link failed: continuous beep. - Turn key switch to Position "II" (Reset) if no radio link could be established and repeat the linking attempt in Position "I". - Turn the key switch to Position "0" to end the radio link and to switch off the radio remote control. ☞ Pull off the key switch after the end of work
101	Release travel drive	Pushbutton function: - When actuated: Release travel drive for 2 seconds. ☞ The LED indicator lamp (107) signalled the release of the travel drive. ☞ The drive lever of the radio remote control must be operated in this period of time, otherwise the travel drive is blocked.

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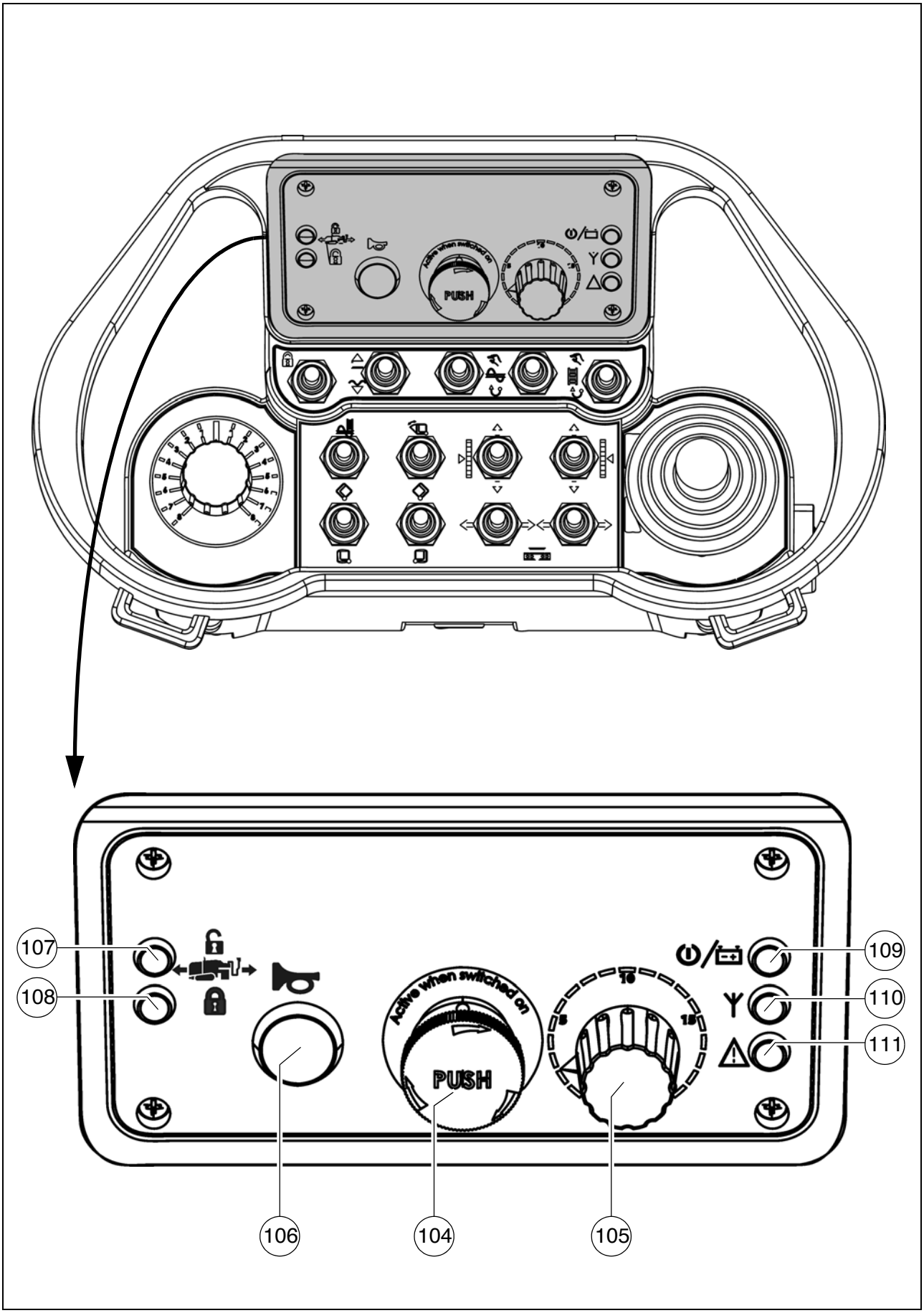




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Item	Designation	Brief description
102	Steering potentiometer	The steering wheel movement is transferred electrohydraulically. ☞ For precise adjustments (position "0" = straight-ahead), see the straight-ahead travel synchronisation (main operating panel).
103	Drive lever (traction)	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; - If the drive lever is swivelled out, then the "AUTO" functions connected on the main operating panel and on the remote controls are activated: - Conveyor / auger - Tamper / vibration - Levelling as well as increasing the vehicle speed as far as it will go. ☞ Before deflecting the drive lever, the safety switch "Release travel drive (101)" must be operated. Otherwise the travel drive is blocked. ☞ Use the preselector to set the maximum speed. STOP 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! ☞ The motor cannot be started with the drive lever swivelled out To be able to start the travel drive, the drive lever must be moved into the centre position.

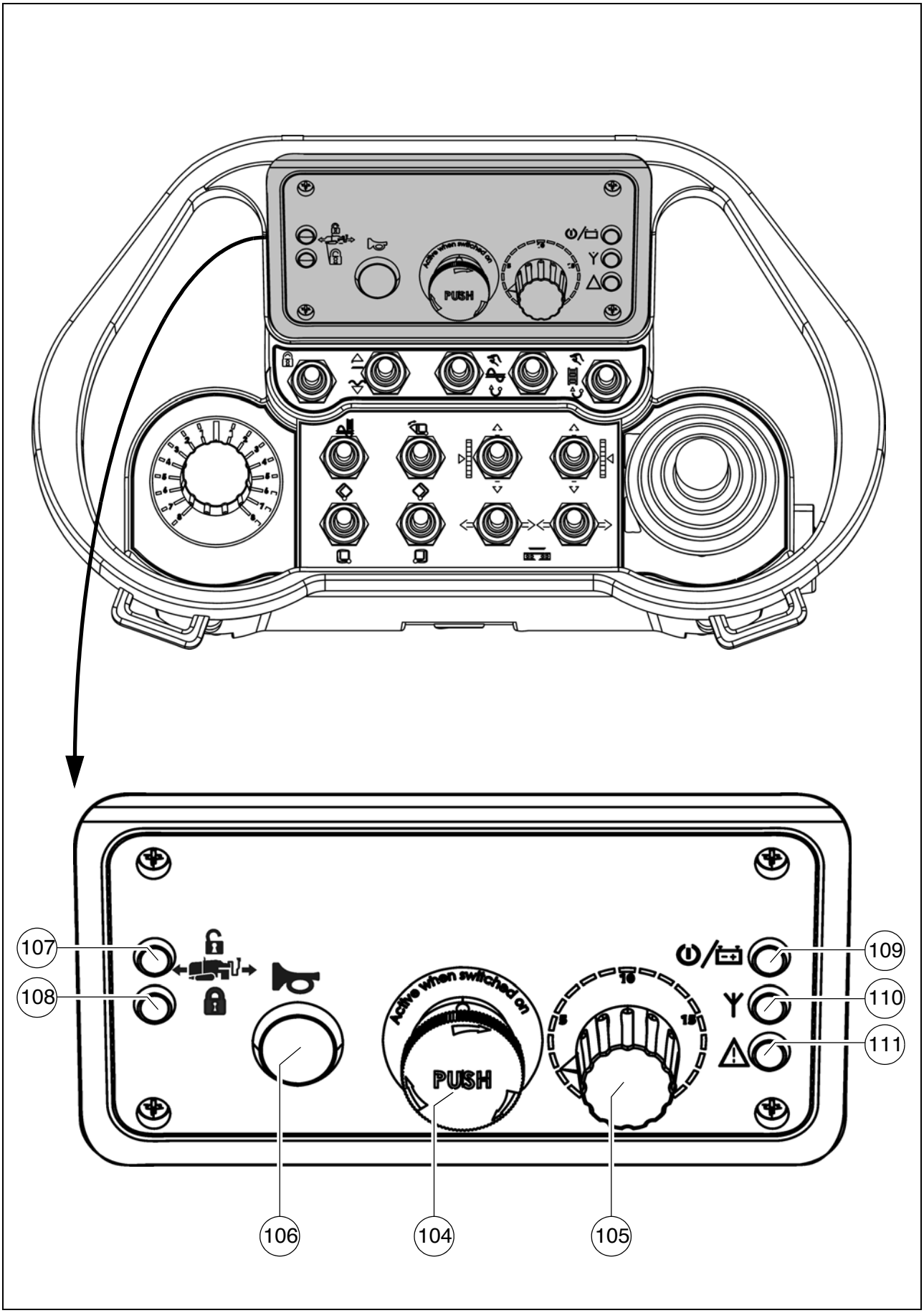
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Item	Designation	Brief description
104	Emergency stop button	Press in an emergency (danger to persons, impending collision, etc.)! - The engine, drives and steering system are switched off when the emergency stop button is pressed. Making way, lifting the screed or other actions are then no longer possible! Danger of accidents! - 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! - To restart the engine, the button must be unlocked again.
105	Travel drive preselector	For setting the maximum speed that can be reached when the drive lever is at its stop. ☞ The scale approximately matches the speed in m/min (during paving). STOP 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!
106	Horn	Press in the case of emergencies and to indicate when the vehicle starts to move! ☞ The horn can also be used to communicate acoustically with the truck driver for material loading!
107	LED indicator lamp " Release travel drive" (green)	☞ Confirms the drive release (for 2 seconds) after operating the release switch of the travel drive (101).
108	LED indicator lamp Main function switch - "Lock function" (green)	☞ Confirms the activated "Lock function" See switch (112).

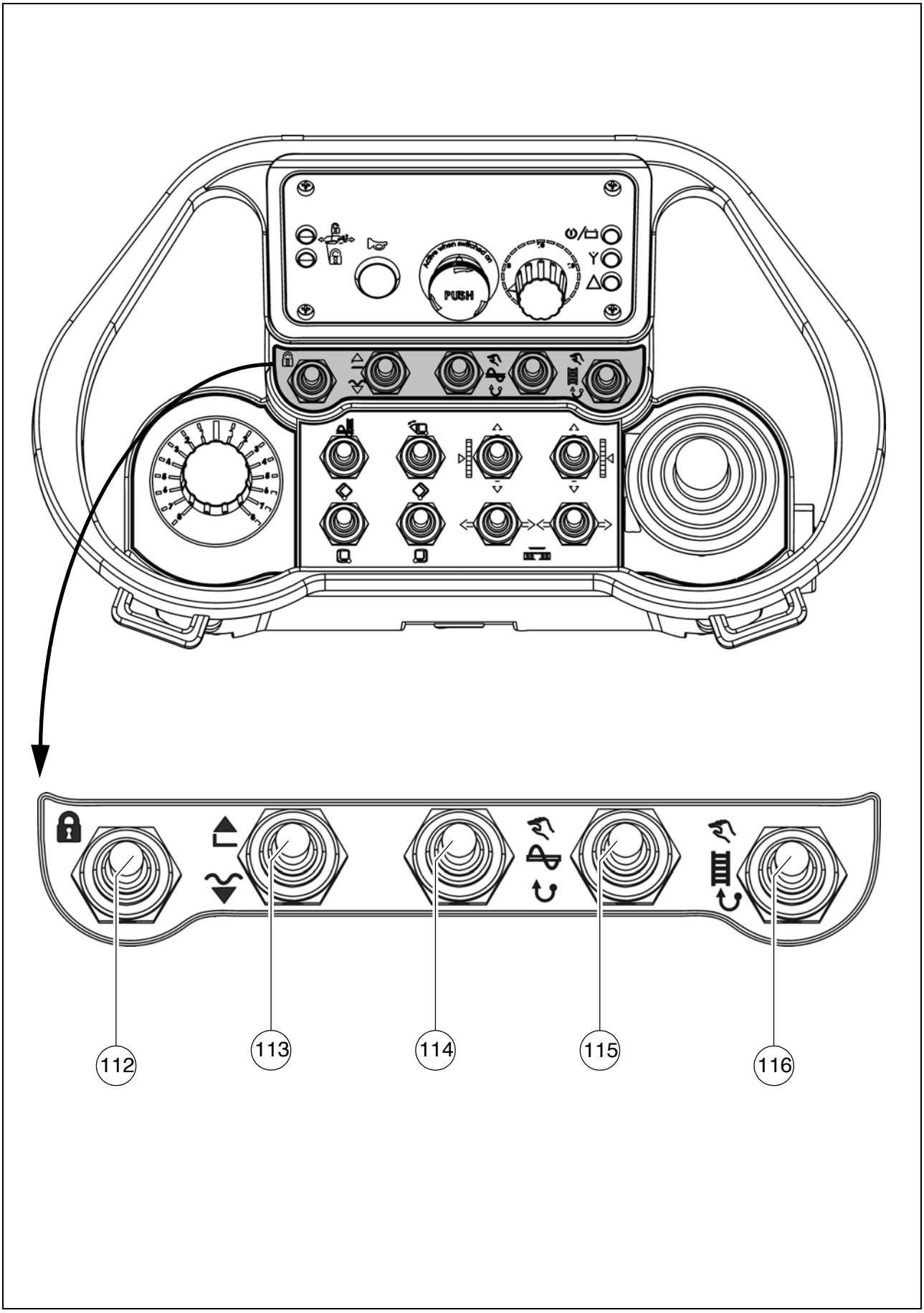
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Item	Designation	Brief description
109	LED indicator lamp "Radio remote control ON"/ "Battery voltage of remote control" (green/red)	☞ Confirms the switched-on radio remote control and indicates the charging state of the rechargeable battery: - LED green: Radio remote control connected, battery charged. - LED red-green: Radio remote control connected, battery weak. - LED red: Radio remote control connected, battery heavily discharged. - LED OFF: Radio remote control OFF, battery may be completely discharged.
110	LED indicator lamp "Radio link" (green)	☞ Confirms an established radio link between the radio remote control and the receiver of the vehicle.
111	LED indicator lamp Error message (red)	☞ Indicates that an error message is active. The error display is carried out on the main operating panel of the paver finisher.

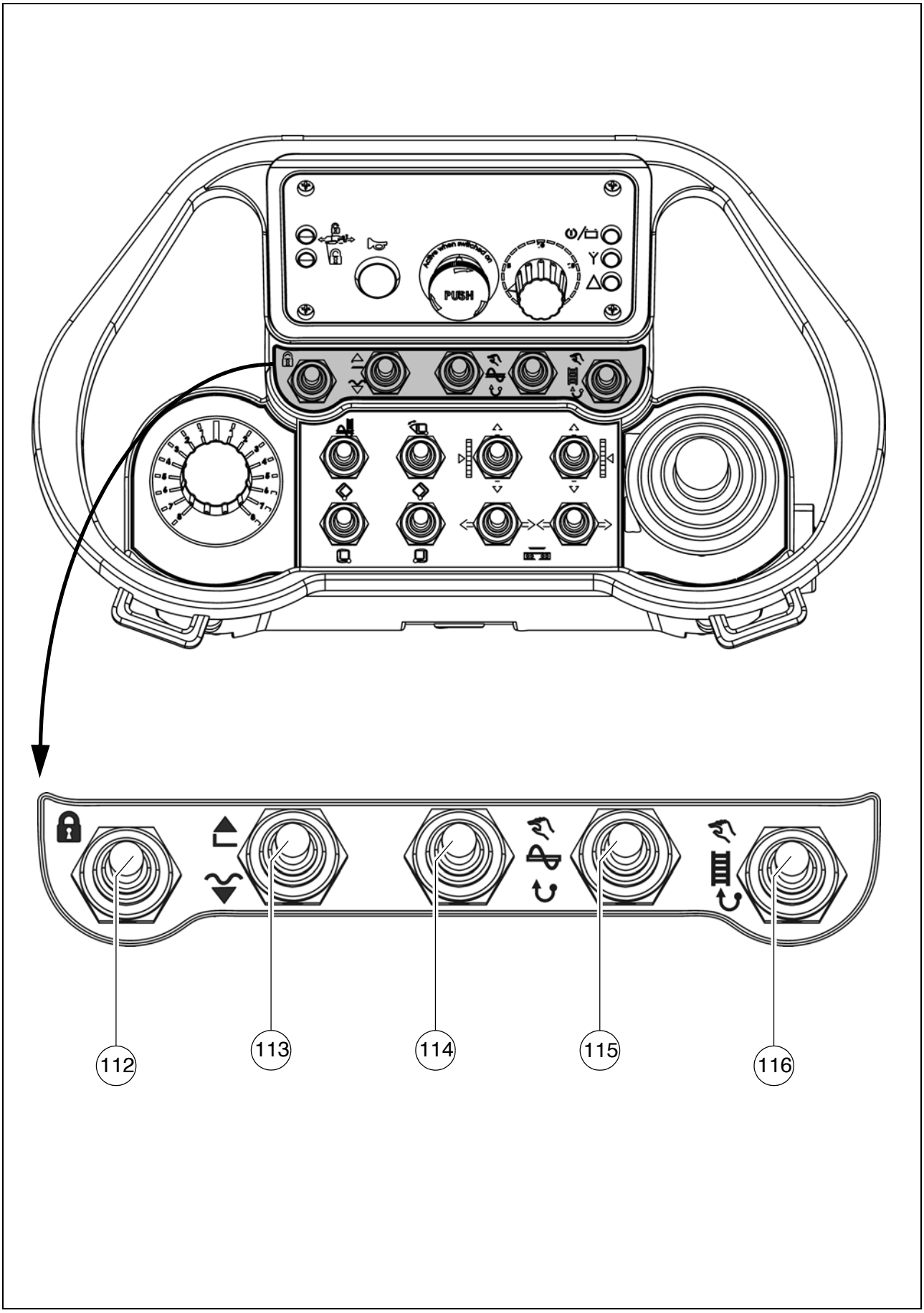
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Item	Designation	Brief description
112	Main function switch "Lock function"	Pushbutton function: - To lock all functions relevant to paving. Despite "Auto" settings in the individual functions, these are not activated when the drive lever is swivelled out or when the drive lever is swivelled out and stopped. - The tamper, vibration and levelling functions are not deactivated until the drive lever has been brought into the zero position! ☞ LED indicator lamp (108) confirms the activated function. ☞ The preset vehicle can be relocated and released at the new paving location.
113	Raise / lower screed Lower screed + floating position	Pushbutton/detent switch function: - Button switching position at top: Lift the screed. After end of operation: Screed is hydraulically blocked in position. - Locked switch position at bottom: Lower screed + floating position: Screed is lowered and released in the floating position when the drive lever is deflected. ☞ To prevent the screed from lowering during an intermediate stop (drive lever in centre position), the screed is hydraulically held in position via relief pressure and the counter pressure of the material. ⚠ Check whether the screed transport safeguard is inserted! STOP On actuation, heed danger zones of moving parts of the vehicle!

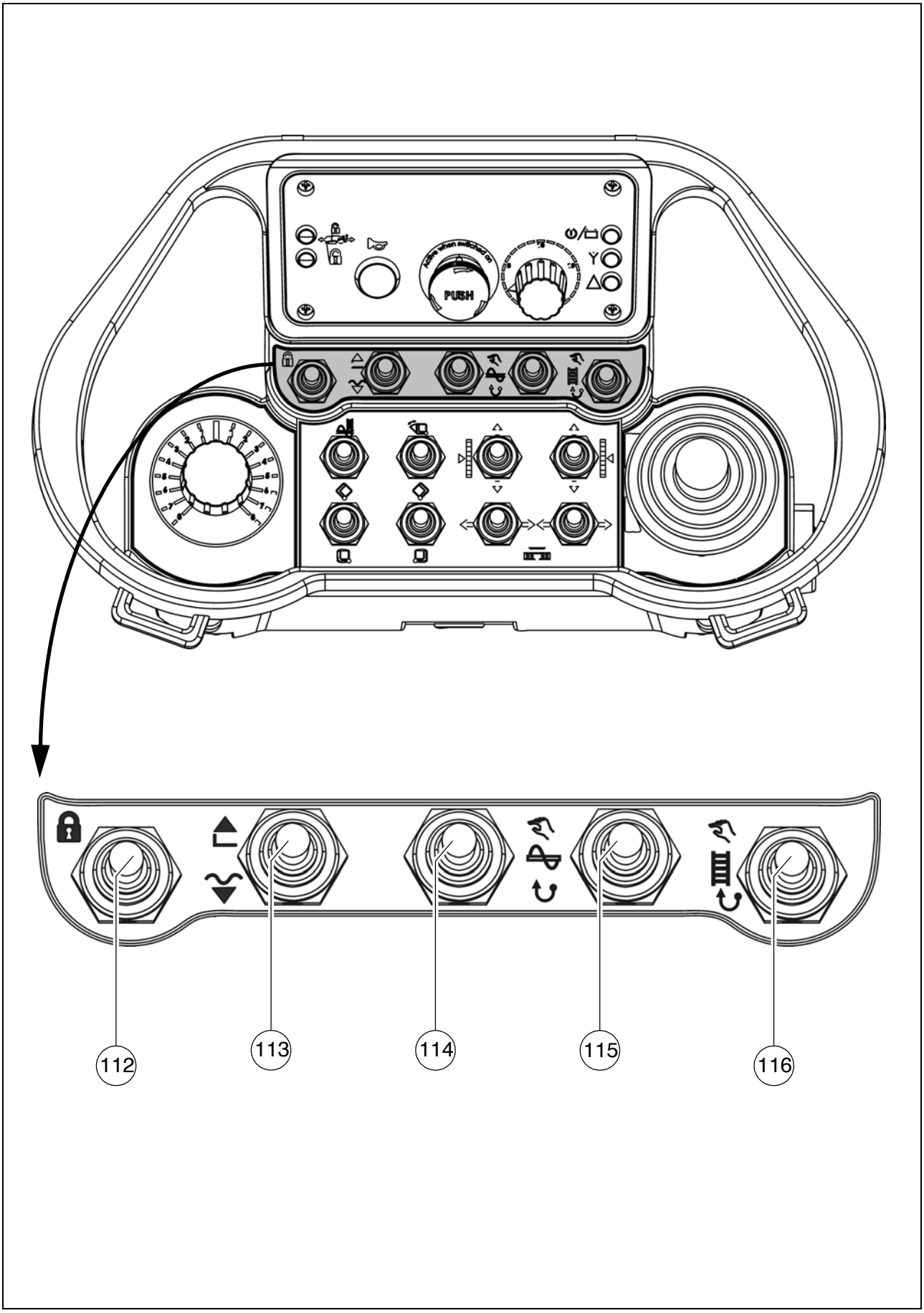
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Item	Designation	Brief description
114	Left auger - Operating mode "MANUAL" / "OFF" / "Reverse"	Pushbutton function: - Upper switch position: Operating mode "MANUAL": The conveying function of the left half of the auger is connected with the full conveying rate; no material control is carried out via the limit switches. The "Auto function" connected on the main operating panel is overridden. - Switch position, central: Operating mode "OFF": The conveying function of the left half of the auger is switched off, or is controlled via the connected "AUTO" function on the main operating panel. - Lower switch position: "Reverse"operating mode: The conveying direction of the left half of the auger is reversed in order, for example, to transport back paving material. ☞ The reversing function can be triggered in all modes of the auger. STOP On actuation, heed danger zones of moving parts of the vehicle!

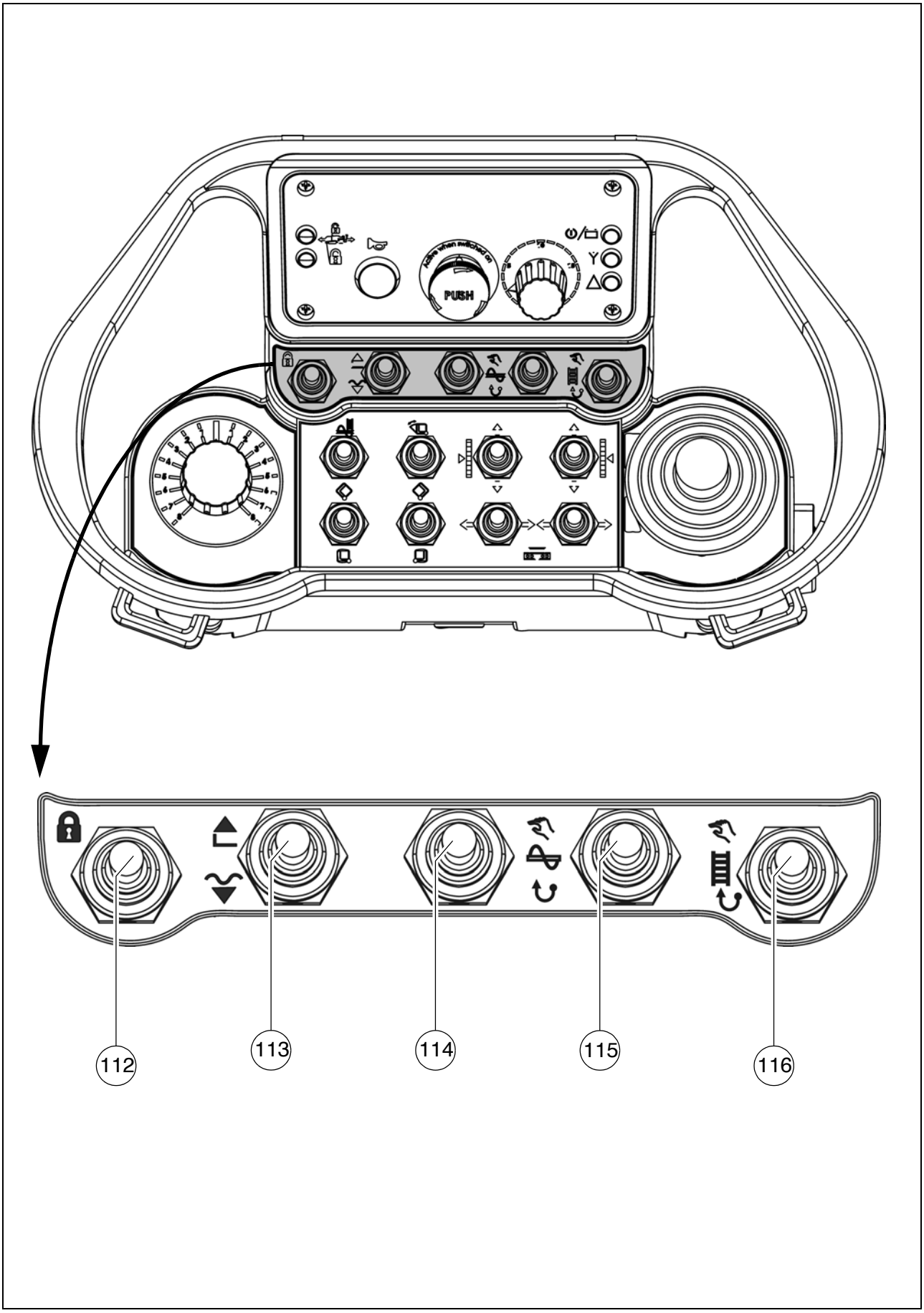
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Item	Designation	Brief description
115	Right auger - Operating mode "AUTO" / "OFF" / "MANUAL"	Pushbutton function: - Upper switch position: Operating mode "MANUAL": The conveying function of the right half of the auger is connected with the full conveying rate; no material control is carried out via the limit switches. The "Auto function" connected on the main operating panel is overridden. - Switch position, central: Operating mode "OFF": The conveying function of the right half of the auger is switched off, or is controlled via the connected "AUTO" function on the main operating panel. - Lower switch position: "Reverse"operating mode: The conveying direction of the right half of the auger is reversed in order, for example, to transport back paving material. ☞ The reversing function can be triggered in all modes of the auger. STOP On actuation, heed danger zones of moving parts of the vehicle!

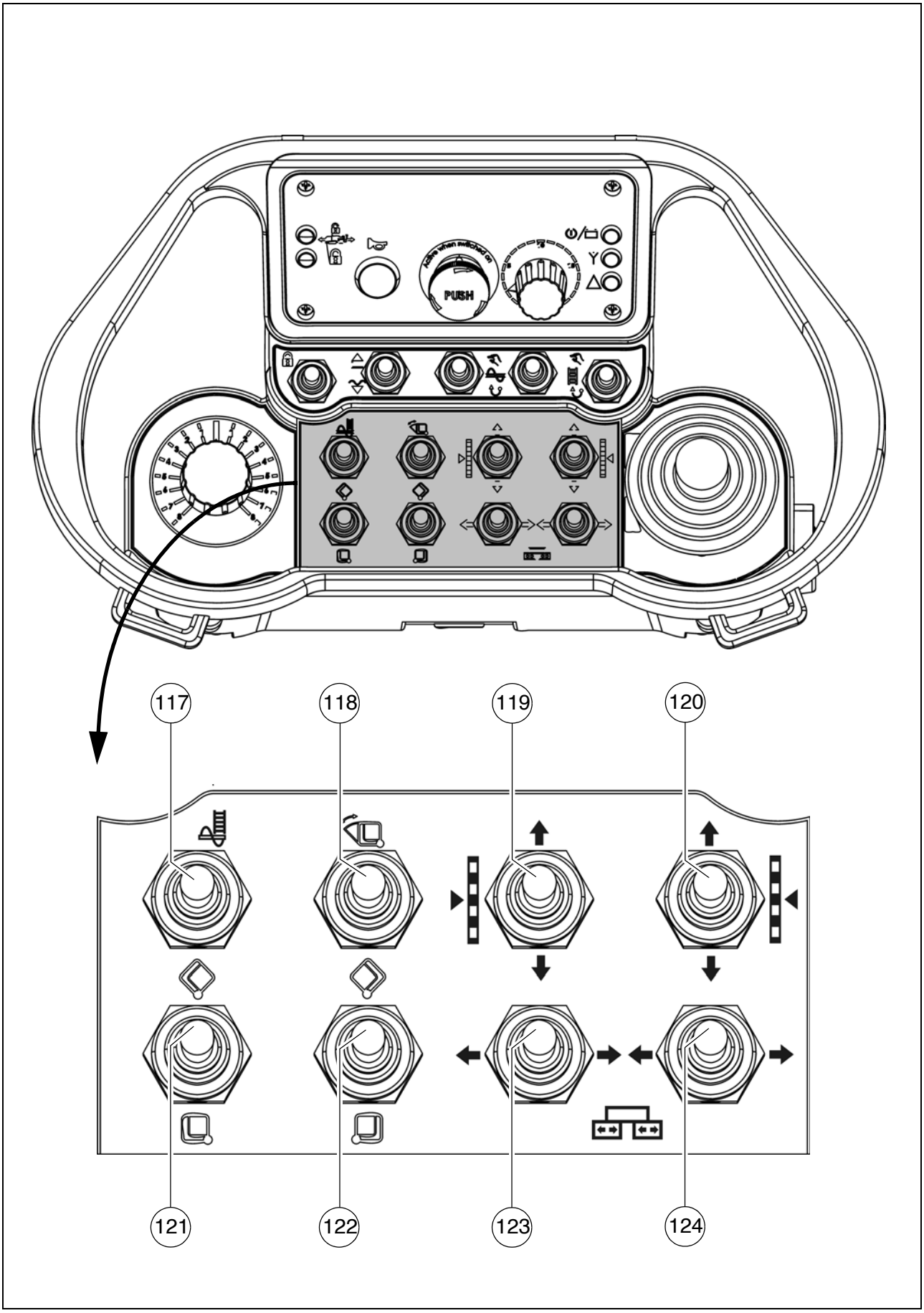
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Item	Designation	Brief description
116	Conveyor Operating mode "AUTO" / "OFF" / "MANUAL"	Pushbutton function: - Upper switch position: Operating mode "MANUAL": The conveying function of the conveyor is connected with the full conveying rate; no material control is carried out via the limit switches. The "Auto function" connected on the main operating panel is overridden. - Switch position, central: Operating mode "OFF": The conveying function of the conveyor is switched off, or is controlled via the connected "AUTO" function on the main operating panel. - Lower switch position: "Reverse"operating mode: The conveying direction of the conveyor is reversed in order, for example, to slightly reverse conveying of paving material. ☞ The reversing function can be triggered in all modes of the conveyor. STOP On actuation, heed danger zones of moving parts of the vehicle!

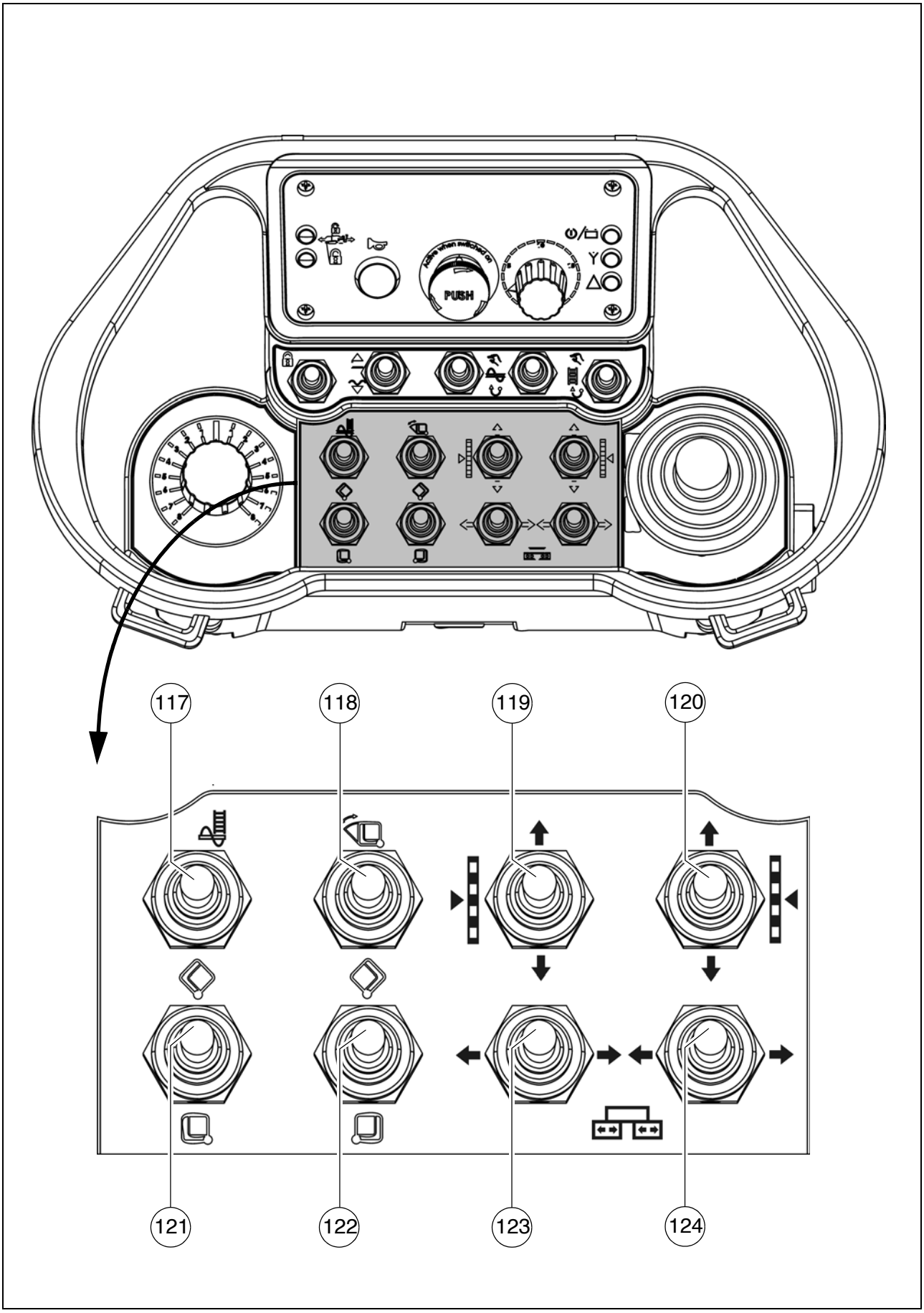
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Item	Designation	Brief description
117	Fill vehicle for paving process	Pushbutton function: - Filling function for the paving process. The conveying functions set to "automatic" (conveyor and auger) are connected without deflecting the drive lever. ☞ Once the set material height is reached at the limit switches, the conveying functions are switched off. STOP On actuation, heed danger zones of moving parts of the vehicle!
118	Open/close asymmetrical hopper (○)	Pushbutton function: - Upper switch position: Close hopper side. - Lower switch position: Open hopper side. STOP On actuation, heed danger zones of moving parts of the vehicle! ☞ Depending on the vehicle configuration, the asymmetrical hopper can be located on the left or the right side.

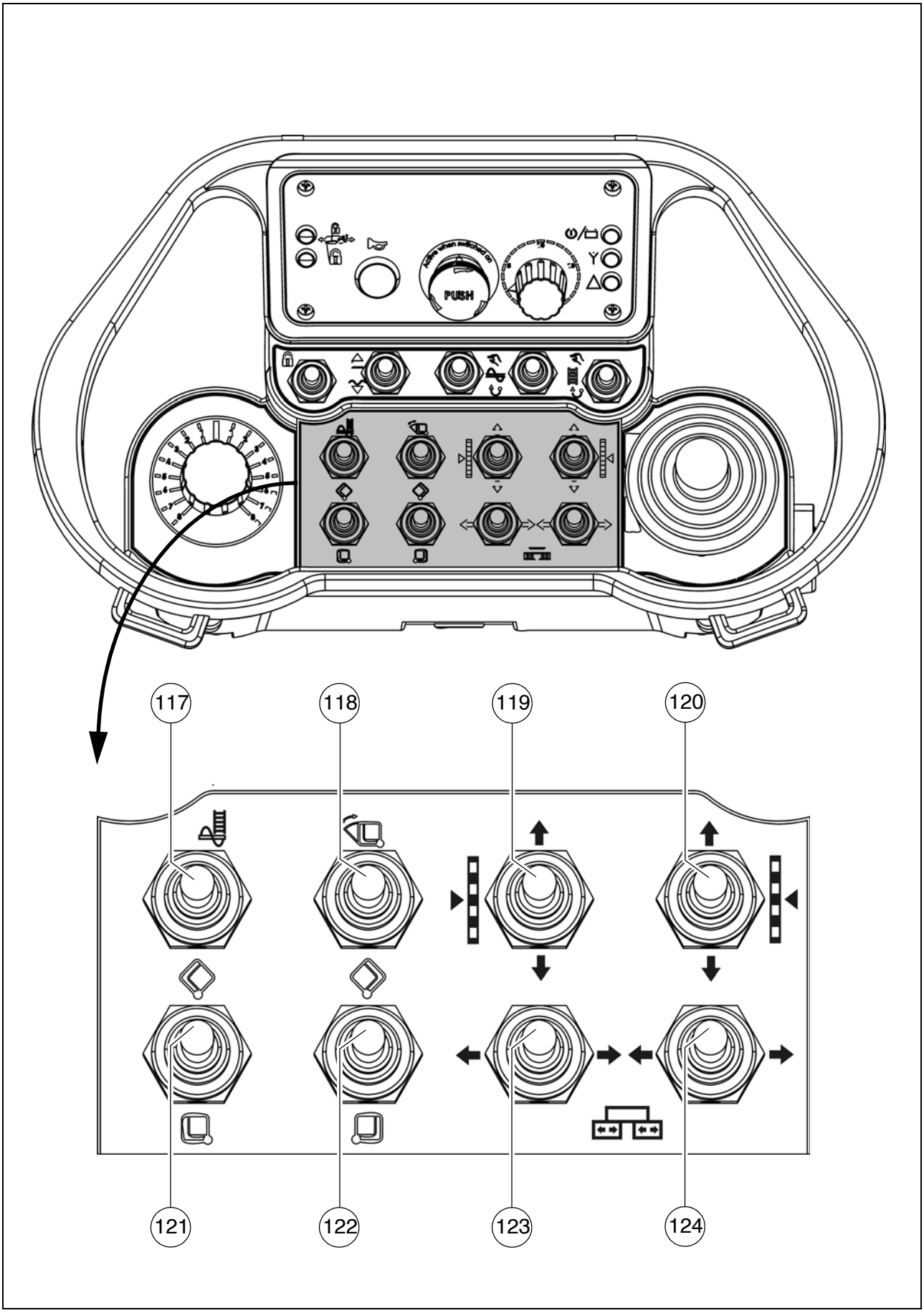
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Item	Designation	Brief description
119	Retract / extend left levelling cylinder	Pushbutton function: - Upper switch position: Retract left levelling cylinder. - Lower switch position: Extend left levelling cylinder. ☞ The "AUTO" and "OFF" operating modes switched on the main operating panel or remote control are overridden when operated. STOP On actuation, heed danger zones of moving parts of the vehicle!
120	Retract / extend right levelling cylinder	Pushbutton function: - Upper switch position: Retract right levelling cylinder. - Lower switch position: Extend right levelling cylinder. ☞ The "AUTO" and "OFF" operating modes switched on the main operating panel or remote control are overridden when operated. STOP On actuation, heed danger zones of moving parts of the vehicle!
121	Open / close left hopper	Pushbutton function: - Upper switch position: Close left hopper lid. - Lower switch position: Open left hopper lid. STOP On actuation, heed danger zones of moving parts of the vehicle!
122	Open / close right hopper	Pushbutton function: - Upper switch position: Close right hopper lid. - Lower switch position: Open right hopper lid. STOP On actuation, heed danger zones of moving parts of the vehicle!

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Item	Designation	Brief description
123	Retract / extend left screed	Pushbutton function: - Left switch position: Extend left half of screed. - Right switch position: Retract left half of screed. STOP On actuation, heed danger zones of moving parts of the vehicle!
124	Retract / extend right screed	Pushbutton function: - Left switch position: Retract right half of screed. - Right switch position: Extend right half of screed. STOP On actuation, heed danger zones of moving parts of the vehicle!

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5 Malfunctions in radio remote control

Malfunction	Possible Cause	Remedy
Vehicle does not react	- Antenna defective	- Have checked by and, if necessary, renewed by an expert
	- Receiver is not connected or is connected incorrectly	- Check plug connector from receiver to vehicle
	- Receiver and radio remote control have different system numbers	- Check system numbers and use radio remote control with identical system number
	- Rechargeable battery discharged or defective	- Charge battery, replace if necessary
	- Distance between vehicle and radio remote control is too great	- Reduce distance
	- Operating mode toggle switch defective	- Have checked by and, if necessary, renewed by an expert
	- Receiver or radio remote control defective	- Have checked by and, if necessary, renewed by an expert
	- Emergency stop button actuated or defective	- Pull out emergency stop button - Have checked by and, if necessary, renewed by an expert
Engine dies without recognisable reason	- Rechargeable battery discharged or defective	- Charge battery, replace if necessary
	- Antenna defective	- Have checked by and, if necessary, renewed by an expert
	- Distance between vehicle and radio remote control is too great	- Reduce distance
	- Operating mode toggle switch defective	- Have checked by and, if necessary, renewed by an expert
	- Emergency stop button actuated or defective	- Pull out emergency stop button - Have checked by and, if necessary, renewed by an expert
	- Receiver or radio remote control defective	- Have checked by and, if necessary, renewed by an expert
	- Wiring harness defective	- Have checked by and, if necessary, renewed by an expert

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D 24.12 Operating the display

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1 Operation of the input and display terminal

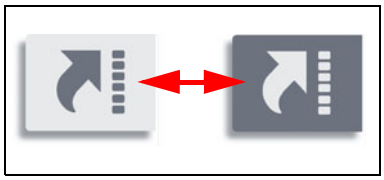


Button layout on the display

- (A) Function buttons:
- To select the menus assigned in the display area (A1).

☞ For orientation, the corresponding symbol shows an opened menu in the status line (B).

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



- (B) Display area for status, warning and error messages:
- Existing warnings or error messages are displayed.

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

Colour code	Explanation
	- RED - error message - Reports a serious fault that must be checked and rectified immediately.
	- YELLOW - warning message - Reports a current condition that needs to be observed or rectified at short notice to ensure correct working.
	- BLUE / GREEN - status message - Confirms an activated function.

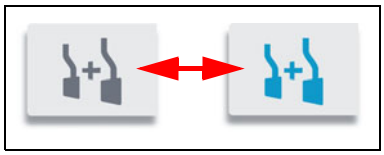
☞ Detailed explanations for the individual displays can be found in the section "Symbols for status, warning and error messages"

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Display of activated functions



☞ Pressing the corresponding function button activates or deactivates the functions that can be switched on and off. The function is activated when the corresponding symbol (1) appears blue.



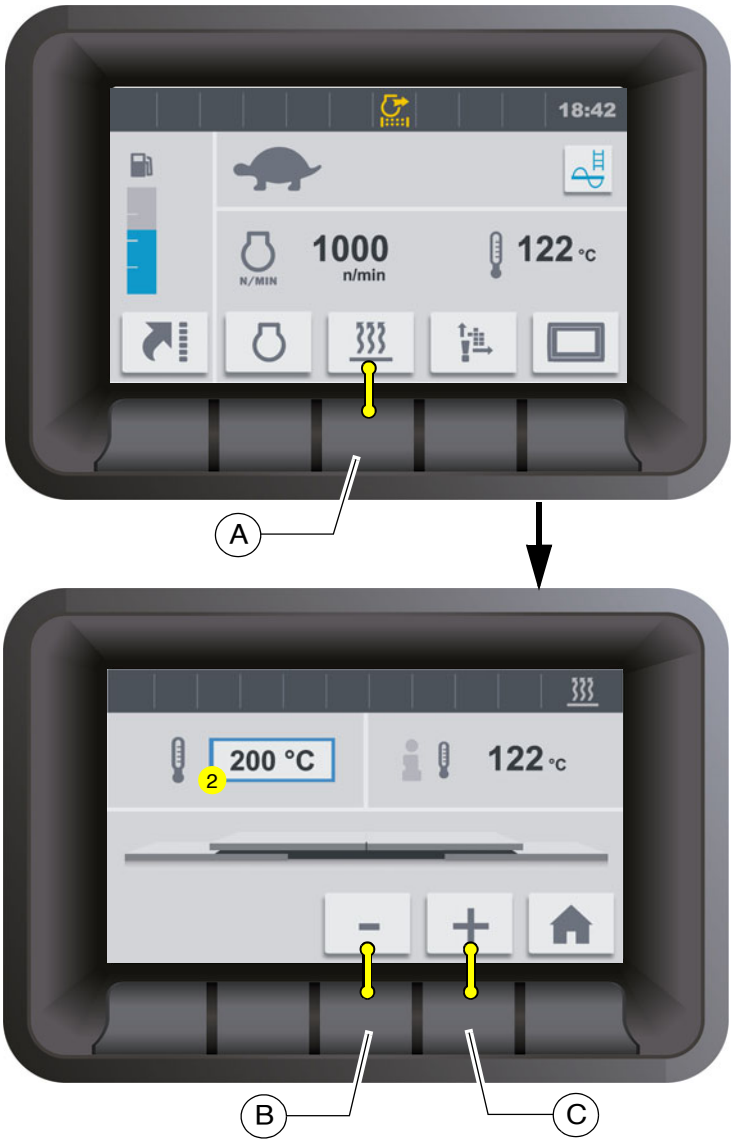
☞ Some functions switched on with the operating panel are shown for confirmation in the display area (A).
The function is activated when the corresponding symbol appears blue.

- (2): Main function switch (on radio remote control) activated
- (3): Filling function activated



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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 "screed heater" menu.
- Press the plus / minus button (B) / (C) to activate the selected parameter to be adjusted.

☞ A blue frame appears around the temperature parameter.

  - Press the plus / minus button (B) / (C) until the desired temperature is displayed.

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Selecting and changing an adjustment parameter in a menu



- Press button (A) to activate the selected parameter to be adjusted.

☞ A blue frame appears in the area which is activated for the adjustment.

- Press button (A) until the blue frame is around the required adjustment parameter
- Press button (B) to activate the selected parameter to be adjusted.
- Press buttons (C) / (D) until the desired value is displayed.
- Press button (B) to accept the set value.
- Press button (A) to accept the set value.

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2 Menu structure

Menu of the "Home" displays



Displays:

- (1) Speed:
  - Paving (tortoise)
  - Driving (hare)
- (2) Fuel gauge
- (3) Actual temperature of the screen heater (°C) / (°F)

☞ The display shows the average temperature of all screed sections.

- (4) Actual diesel engine speed (n/min)
- (5) Time of day (hh:mm) (AM/PM)

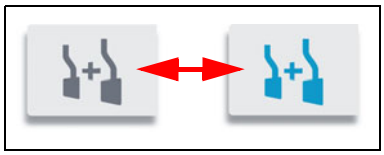
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"Home" functions / "Quick Settings"



Menu for directly activating various functions.

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



- (1) "Conveyor switch-off" function

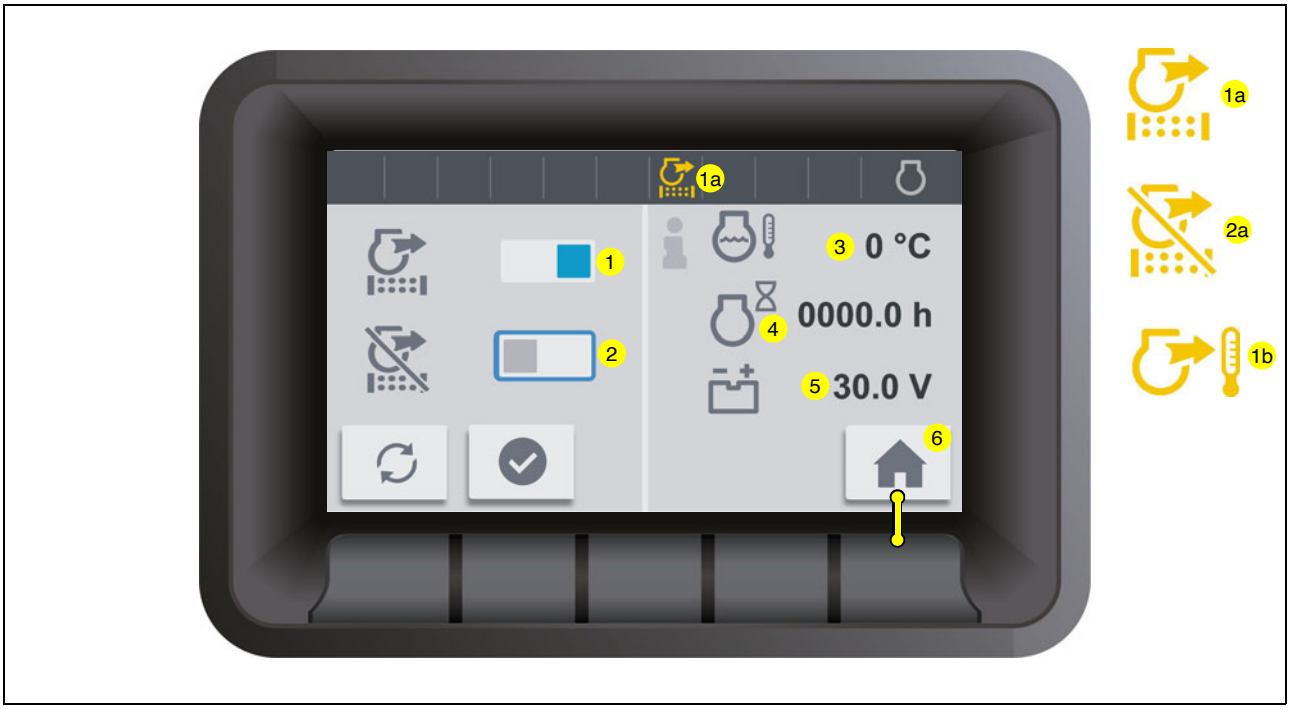
☞ With the function activated, the conveyor switch-off is only carried out with when both conveyor switches are operated simultaneously.
If the function is deactivated, the conveyor switch-off is carried out by operating a limit switch.

- (2) "Fill vehicle for paving process" function.

☞ The functions are activated by operating the corresponding switch on the operating panel.

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"Particulate Filter Regeneration" menu (○) / Engine measured value display



Menu for triggering requested active filter regeneration, for disabling automatic filter regeneration and for checking various measured values of the engine.

☞ The menu for filter regeneration is only displayed for vehicles with corresponding exhaust gas aftertreatment.

- (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 (1b) comes on permanently and the regeneration warning sign (1a) flashes.
(HEST=High Exhaust System Temperature)

☞ Particulate filter regeneration takes about 30-45 minutes.

⚠ Regeneration may only be carried out if the vehicle is parked correctly and is not currently paving!
The regeneration is interrupted by pushing the drive lever out.

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DANGER	**Danger from particulate filter regeneration**
	Improper particulate filter regeneration can cause severe to fatal injuries! - Keep the outlet of the exhaust pipe out of the reach of people and of objects that can burn, melt or explode! - There may not be any people or objects within a radius of 0.6 m of the exhaust outlet! - 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). - In an emergency, turn the engine off so that no more exhaust gas is emitted! - Comply with all further information in these instructions and in the engine operating instructions.

☞ 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.

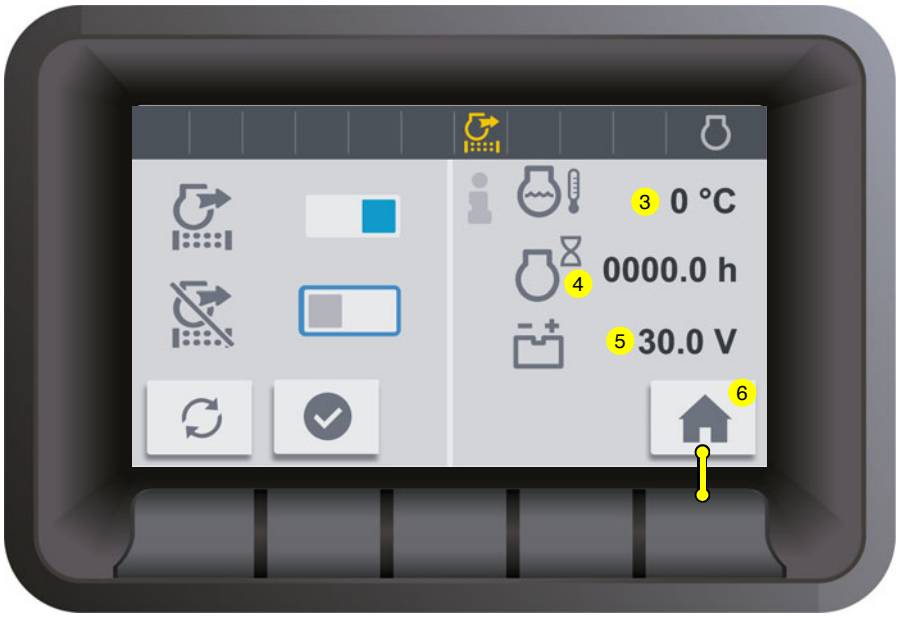
  - For disabling/enabling automatic triggering of particulate filter regeneration.

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

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

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Drive engine measured value display



☞ The menu for filter regeneration is only displayed for vehicles with corresponding exhaust gas aftertreatment.

- (3) Engine coolant temperature (°C) / (°F)
- (4) Engine operating hours (h)
- (5) On-board voltage (V)

Call up the following menus:

- (6) "Home" menu

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"Screed Heater" adjustment and display menu



Menu for adjusting the nominal screed heater temperature and for checking the actual temperatures.

- (1) Nominal screed heater temperature display and adjustment parameters.
- (2) Average actual temperature of all screed sections (°C) / (°F)

☞ Direct adjustment of the nominal temperature by pressing the plus / minus buttons (3) / (4).

☞ Setting range 50-200 °C

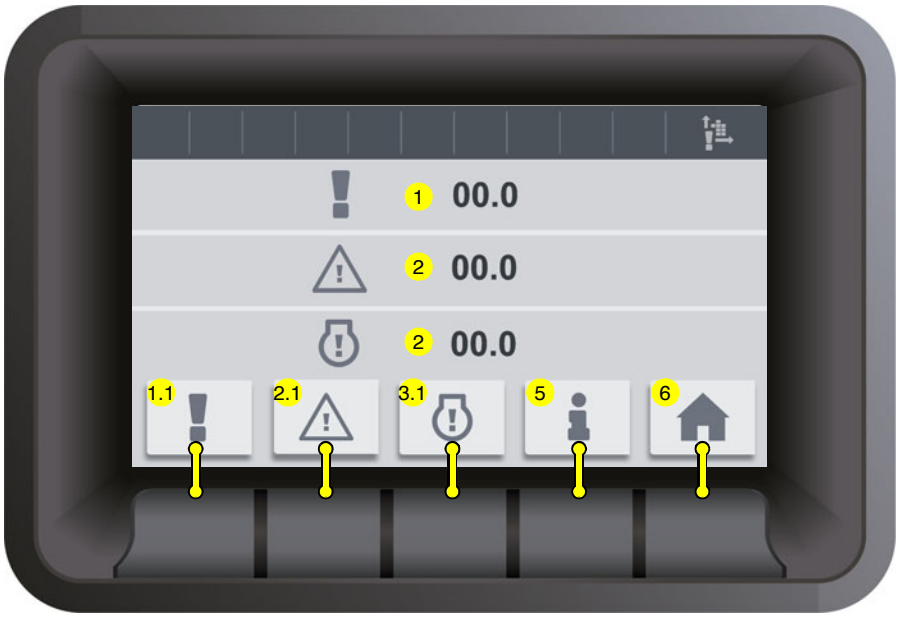
☞ When the heater is switched on and off, the colour of the screed symbol changes (5) (yellow = ON)

Call up the following menus:

- (6) "Home" menu

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"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).

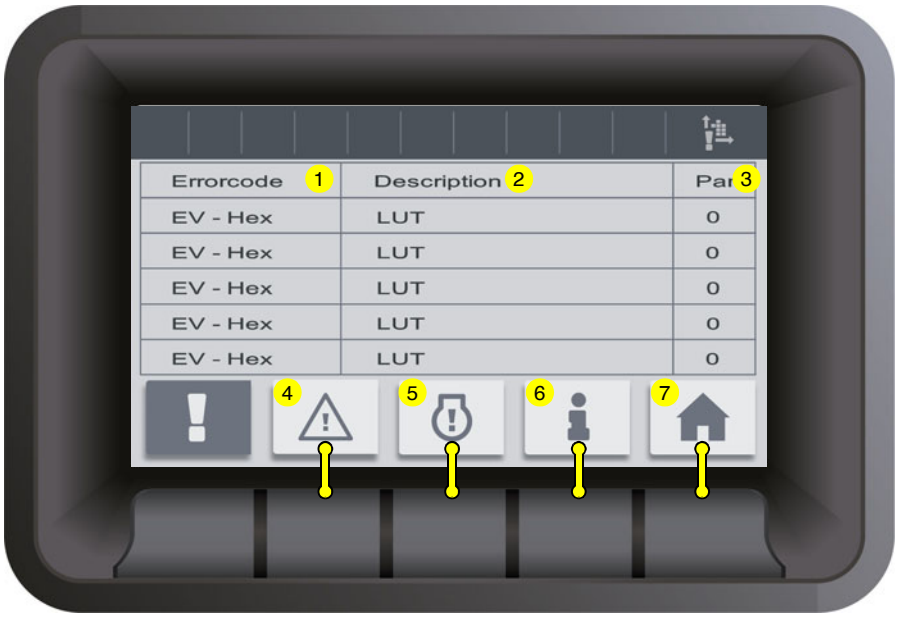
☞ Possibly notify customer service of the system error number displayed on your paver finisher; the customer service department will then discuss with you how to proceed.

Call up the following menus:

- (5) "Info" menu
- (6) "Home" menu

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Detailed display "Error Messages With Travel Drive Stop"



Display of existing error messages in a table.

- (1) Error code.
- (2) Error description.
- (3) Parameters (see Bodas error list).

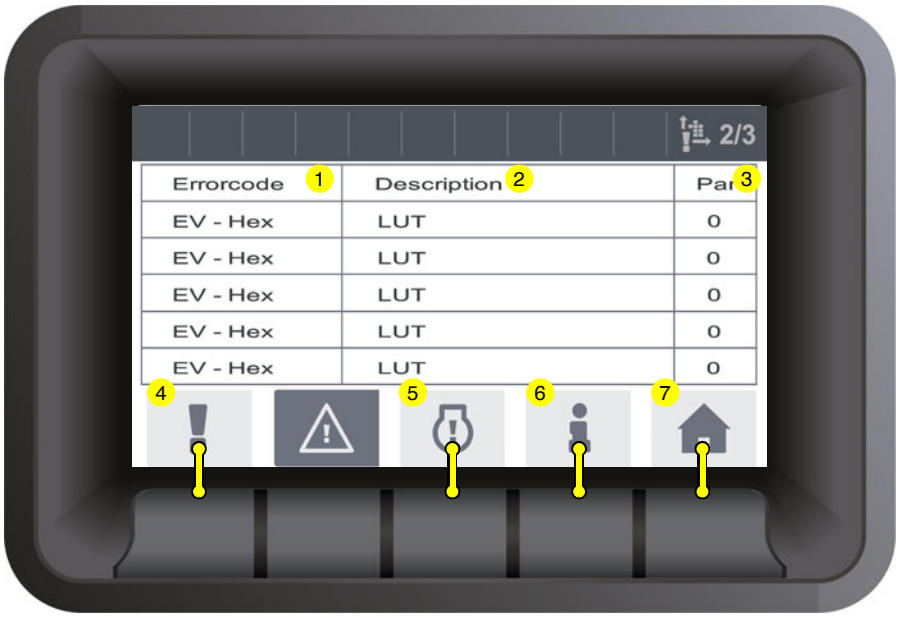
☞ If present, the following page of the list is shown after a few seconds in each case.

Call up the following menus:

- (4) "Vehicle Warning Messages" menu
- (5) "Engine Error Messages" menu
- (6) "Info" menu
- (7) "Home" menu

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Detailed display "Vehicle Warning Messages"



Display of existing error messages in a table.

- (1) Error code.
- (2) Error description.
- (3) Parameters (see Bodas error list).

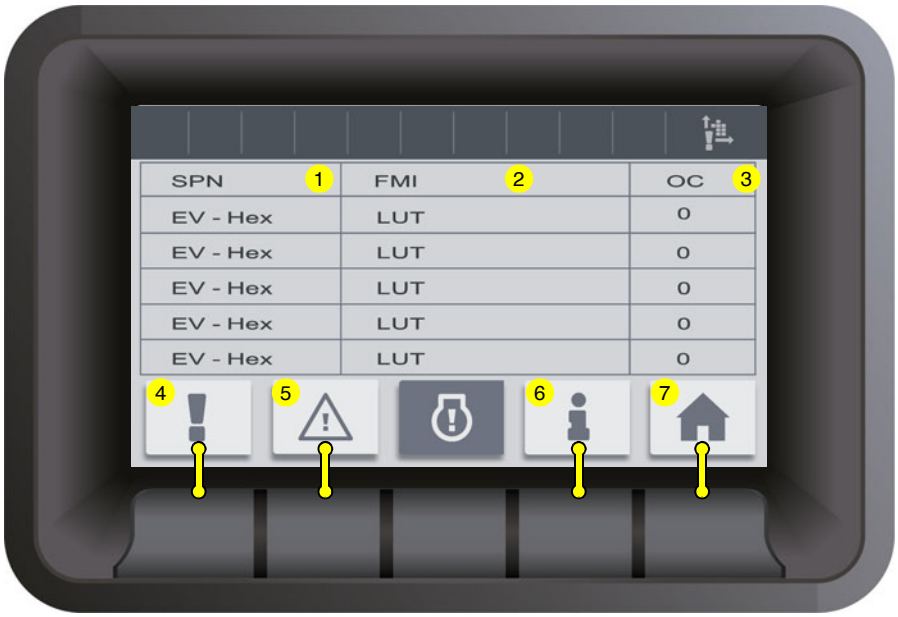
☞ If present, the following page of the list is shown after a few seconds in each case.

Call up the following menus:

- (4) "Error Messages With Travel Drive Stop" menu
- (5) "Engine Error Messages" menu
- (6) "Info" menu
- (7) "Home" menu

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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".

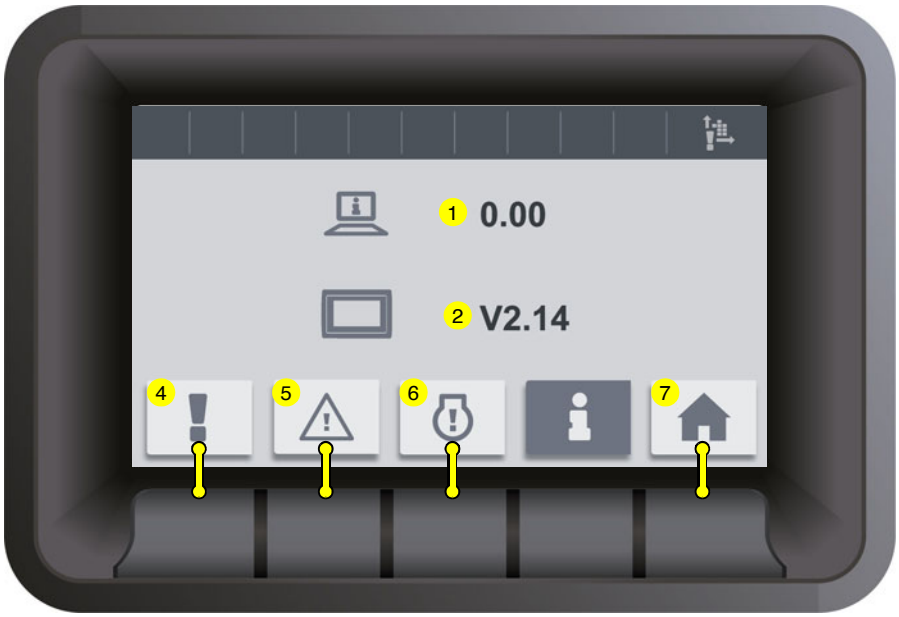
☞ If present, the following page of the list is shown after a few seconds in each case.

Call up the following menus:

- (4) "Error Messages With Travel Drive Stop" menu
- (5) "Vehicle Warning Messages" menu
- (6) "Info" menu
- (7) "Home" menu

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"Info" 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

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

Call up the following menus:

- (4) "Error Messages With Travel Drive Stop" menu
- (5) "Vehicle Warning Messages" menu
- (6) "Engine Error Messages" menu
- (7) "Home" menu

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"Display" set-up menu



Menu for setting up basic display settings.

- "Time" display and adjustment parameters
  - (1.1) h/h : min/min
  - (1.2) 24hrs / PM/AM
- (2) Selection "System Language"
  - English / German
- (3) Selection "Units of measurement"
  - Metric / Imperial (US)
- Monitor brightness display and adjustment parameters
  - (4.1): Daytime light (%)
  - (4.2): Nighttime light (%)

☞ Setting range 10-100%

Open the following sub-menus:

Call up the following menus:

- (5) "Home" menu

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2 Terminal error messages

Status, warning and error messages symbols

Command	Symbol in the display
- Driving release (for 2 seconds), display only at standstill	
- Particulate filter indicator lamp. Particulate filter regeneration is necessary. - 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. - Indicator lamp flashes: Urgent maintenance, level II. Particular filter regeneration must be carried out as soon as possible. The engine output may be automatically reduced under certain circumstances. - 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. - Indicator lamp goes off + indicator lamp "Engine malfunction" is on permanently: Particulate filter regeneration is no longer possible. ⚠ Operation must be stopped immediately. - Consult the Dynapac service department	

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Command	Symbol in the display
- Indicator lamp automatic particulate filter regeneration - deactivated Particulate filter regeneration is deactivated. - Automatic regeneration should only be deactivated if the operating status of the paver finisher does not permit any automatic function.	
- Warning - high exhaust gas temperature! (HEST) The indicator lamp indicates a high exhaust gas temperature! ☞ It is normal that the indicator lamp switches on and off during an ongoing cleaning process. STOP Keep the outlet of the exhaust pipe out of the reach of people and of objects that can burn, melt or explode! STOP There may not be any people or objects within a radius of 0.6 m of the exhaust outlet! STOP 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). ☞ In an emergency, turn the engine off so that no more exhaust gas is emitted!	
- Warning - Filter regeneration For DPF filter regeneration, the vehicle must be brought to a complete stop. ⚠ Operation must be interrupted to carry out the required service.	
- Warning - Filter regeneration DPF filter change required due to high ash load. ⚠ Operation must be stopped to carry out the required service.	

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Command	Symbol in the display
- Indicator lamp fuel reserve The fuel is down to the reserve level in the tank. ☞ Approx. 10% remains ⚠ Urgent need to refuel!	
- Pre-heating indicator (yellow) ☞ 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. ⚠ Do not switch the start button until the pre-heating phase has finished!	
- 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! ☞ An error code query can be shown in the corresponding menu of the display. ☞ Lights up for a few seconds once the ignition has been switched on for checking purposes.	
- Hydraulic oil temperature indicator lamp Hydraulic oil temperature too low! ⚠ Bring vehicle up to temperature with stationary acceleration! ☞ The engine speed cannot be increased when the hydraulic oil temperature is too low!	
- Warning: The vehicle has one or more errors. ☞ Error details can be viewed in the "Error Memory" display menu.	

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Command	Symbol in the display
- Error message "Serious error" There is a serious error in the engine. ⚠ Switch off the drive engine immediately! ☞ Error details can be viewed in the "Error Memory" display menu. ☞ Lights up for a few seconds once the ignition has been switched on for checking purposes.	
- Emergency Stop One or more emergency stop buttons have been pressed.	
- Engine coolant temperature The engine temperature is too high. ⚠ 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. ☞ This error is displayed together with "Error Message".	
- Battery charge indicator: Must go out after starting when the engine revs up. ⚠ If the light does not go out, switch off the engine	

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Command	Symbol in the display
- Engine stop: Display for all error messages with machine stop. Travel drive blocked - release switch not operated.	
- Engine oil pressure ⚠ The oil pressure is insufficient. Switch off the engine immediately! For other possible errors, see engine's operating instructions. ☞ This error is displayed together with "Error Message".	
- Emergency mode active	
- 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. ☞ Error details can be viewed in the "Error Memory" display menu.	
- Master display communication error Communication between master and display is interrupted.	

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2.1 Drive engine error codes



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

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☞ The error message that can be viewed in the corresponding menu contains several numerical codes, which clearly define the fault after decoding.

☞ If present, the following page of the list is shown after a few seconds in each case.

⚠ 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.

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Example:



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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

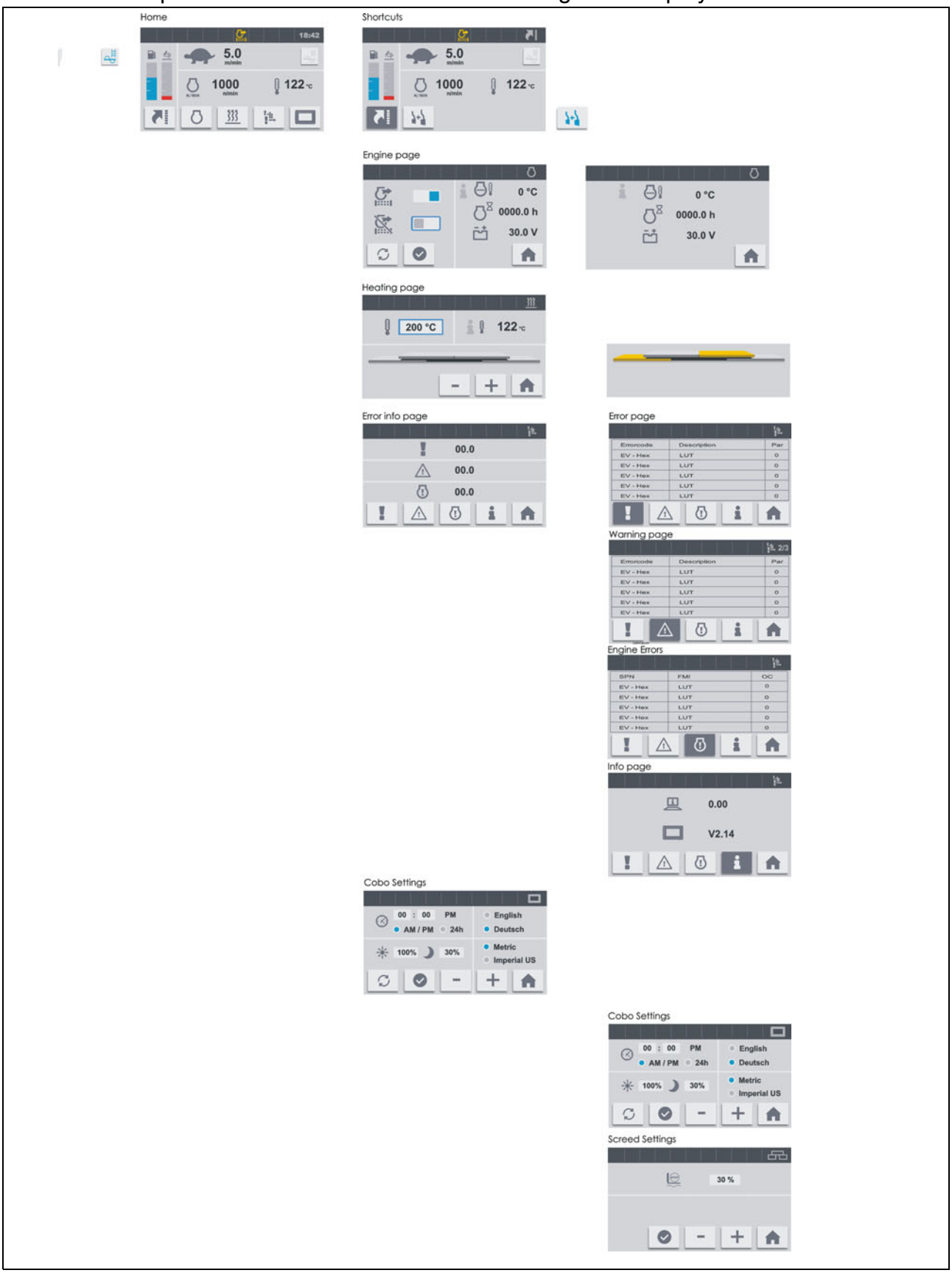
Cause: Cable break on sensor for rail pressure.
Effect: Engine shut-down.
Frequency: Fault occurs for the 1st time.

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

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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.



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D 30.12 Mode of operation

1 Control elements on the paver finisher

1.1 Control elements on the operator's control station

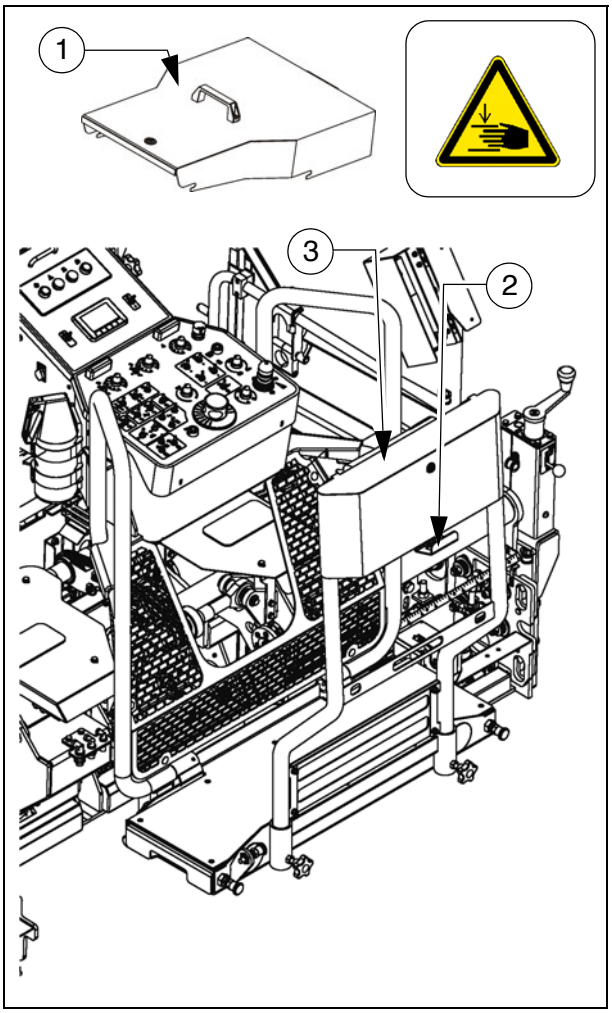
WARNING	Danger of falling from the vehicle
	Entering and leaving the vehicle and the driver's seat during operation poses a risk of falling from the vehicle, which can cause severe to fatal injuries! - The operator must be at the intended driver's seat during operation. - Never jump onto or off a moving vehicle. - Keep accessible surfaces free of any soiling, e.g. operating substances, to avoid the risk of slipping. - Use the steps provided and hold onto the handrail with both hands. - Comply with all further information in these instructions and in the safety manual.

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Control platform

The control platform is designed for operating standing up.

- After work has been completed, place the vandalism protection facility (1) on the operating panel and secure with the corresponding lock.
  - The vandalism protection facility can be kept in bracket (2) during operation.
- The storage space (3) can be used to store the on-board tool kit, operating instructions and other attachments.
  - Keep the storage space closed after work has been completed.

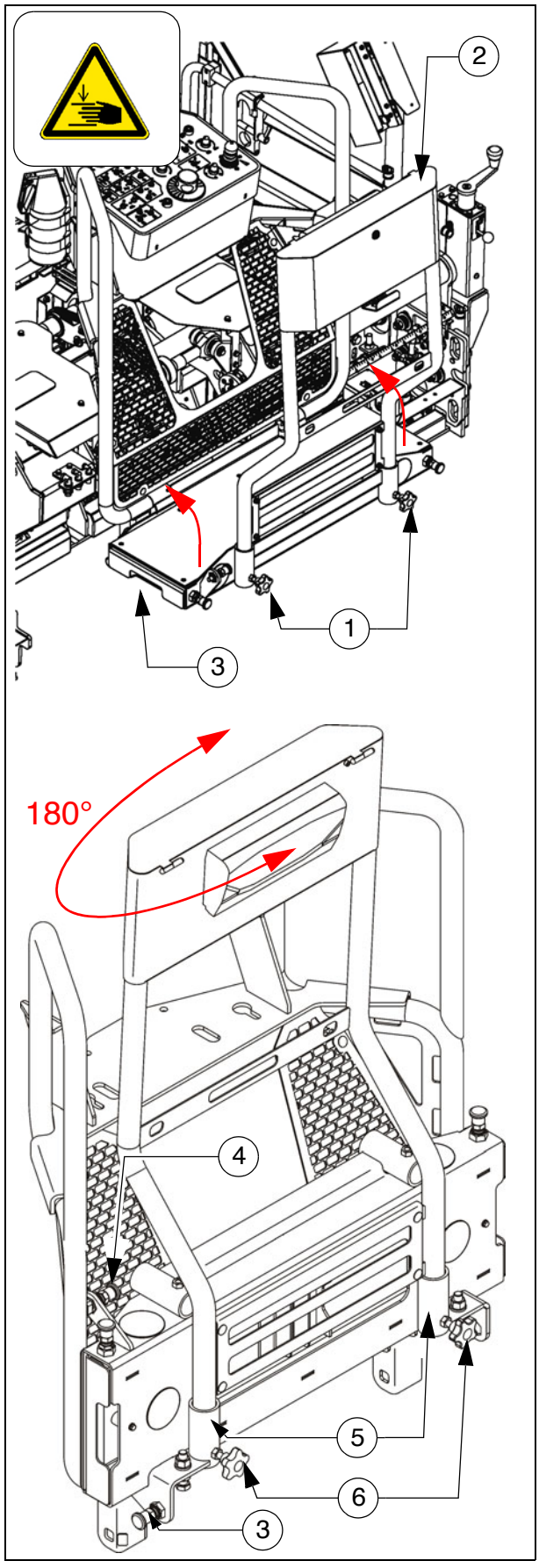


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Control platform, transportation position,

The control platform can be folded up to reduce the transportation length.

- Unscrew the stop screws (1) and remove the handrail (2).
- Unscrew the detent pin (3) on the underside of the running board.
- Swivel the running board upward and secure it in the top position with the detent pin (4).
- Turn the handrail (2) by 180° and guide it into both tubes (5) and secure it with the corresponding stop screws (6).



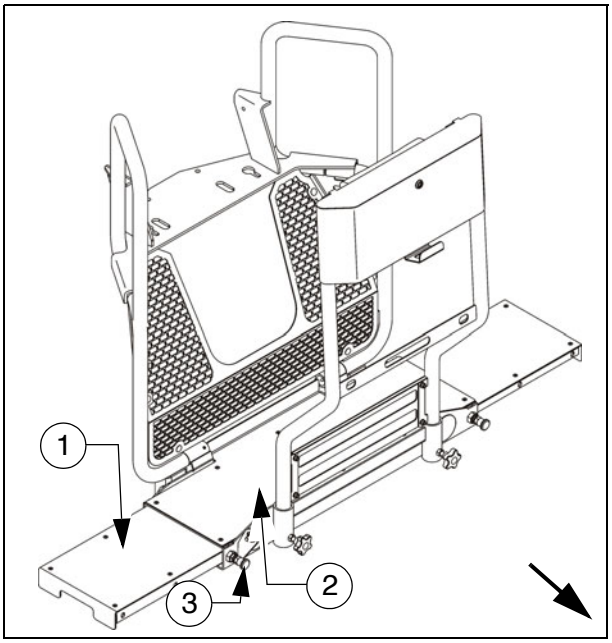
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WARNING	**Danger from damaged or missing operating instructions**
	Failure to comply with the operating instructions can cause severe to fatal injuries! - Familiarise yourself with the contents of the operating instructions. - Always keep the operating instructions in the intended place on the vehicle. - Replace any missing or damaged operating instructions immediately. - Comply with all further information in the operating instructions and in the safety manual.

Running board extension

The telescopic extension (1) is located on both sides of the footplate for the operator's control station (2).

- Raise the extension gentle in the opening and pull out to the required size. Ensure that the extension locks in one of the intended positions with detent pins (3).



STOP Extending the running board extension enlarges the basic width of the paver finisher.

STOP Ensure that nobody or nothing is in the danger area!

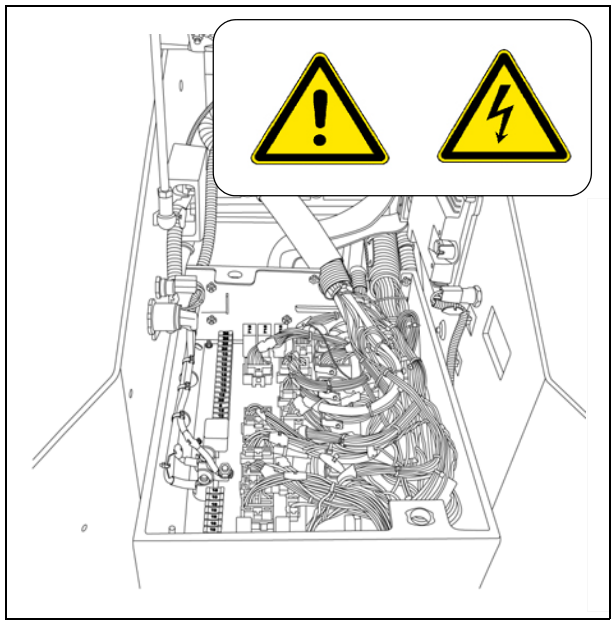
STOP Only adjust the operating position whilst the vehicle is stationary!

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Fuse box

The terminal box, which contains all fuses and relays, etc. is located beneath the operating panel.

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



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Batteries

The batteries (1) of the 24 V system are located under the operating panel of the vehicle.

☞ 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)")

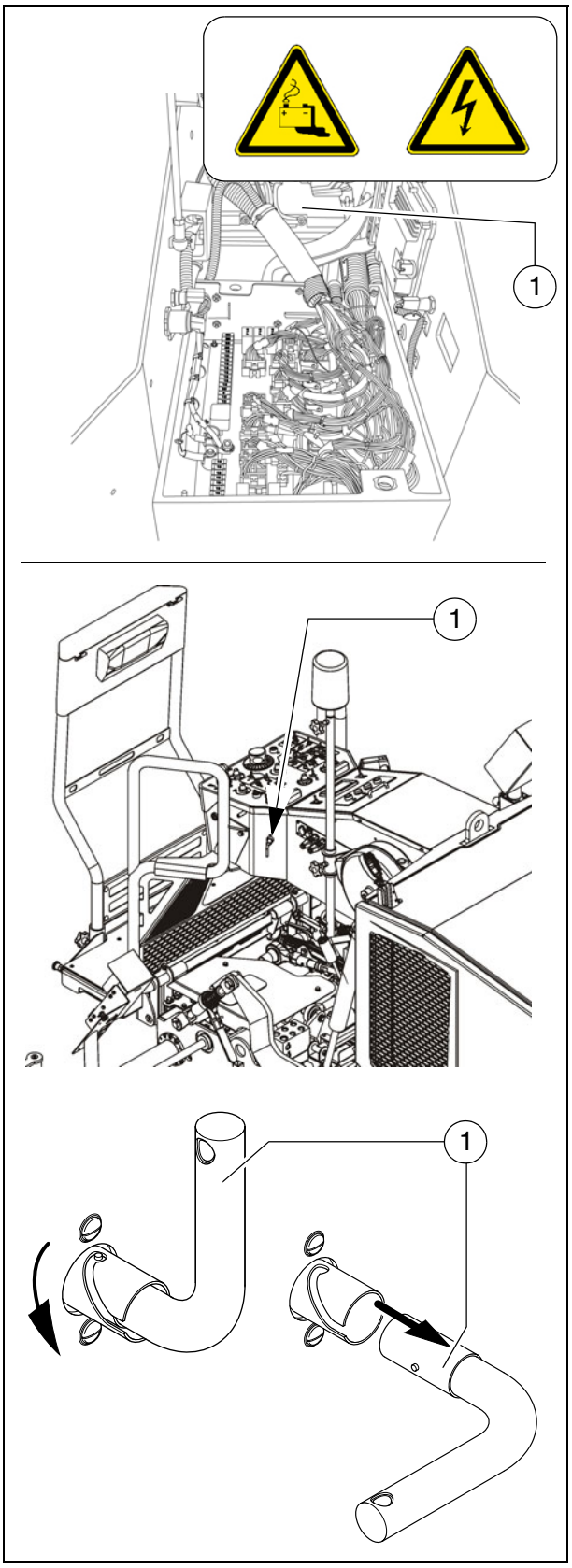
Main battery switch

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 (1) 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!

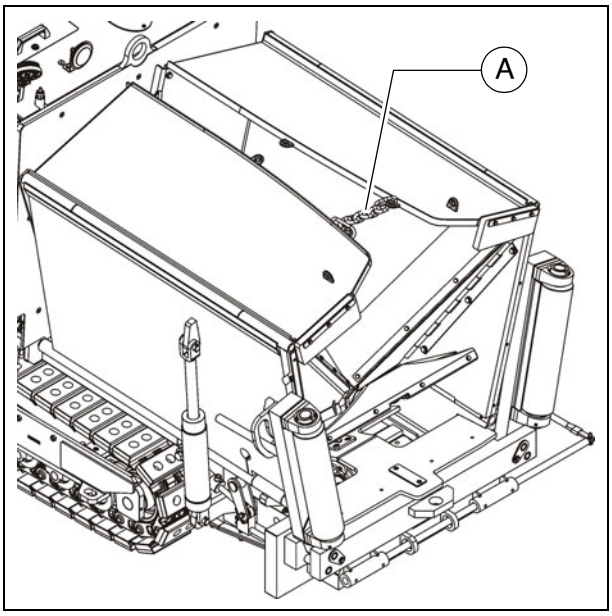


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Hopper transport safeguard

Before parking or transporting the paver finisher, the hopper lids must be swung upwards and the transport safeguards for the hopper must be inserted.

- Insert snap hook (A) in the corresponding shackle of the opposite hopper lid.



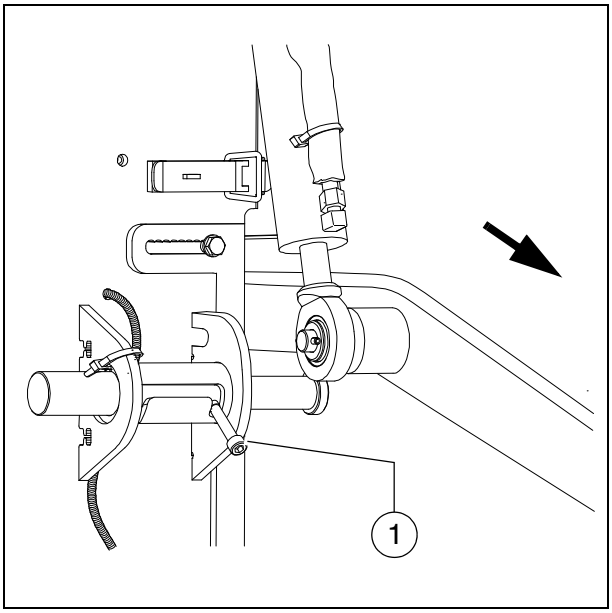
STOP Do not enter the hopper while the engine is running! Danger of being caught by the conveyor!
Without transport safeguards inserted, the hopper halves will slowly open; danger during transportation!

Crossbeam lock, mechanical

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

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

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



⚠ **ATTENTION!**
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! **Danger of accident!**

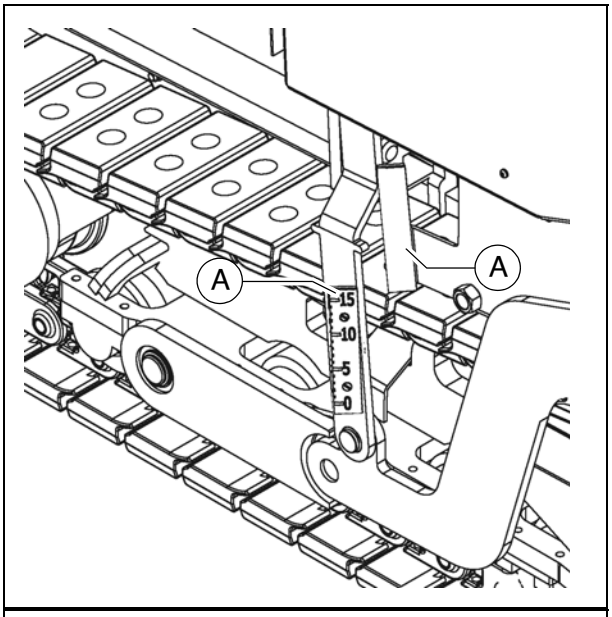
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Paving thickness indicator - at bottom

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

- Pointer (B) shows the paving thickness.

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

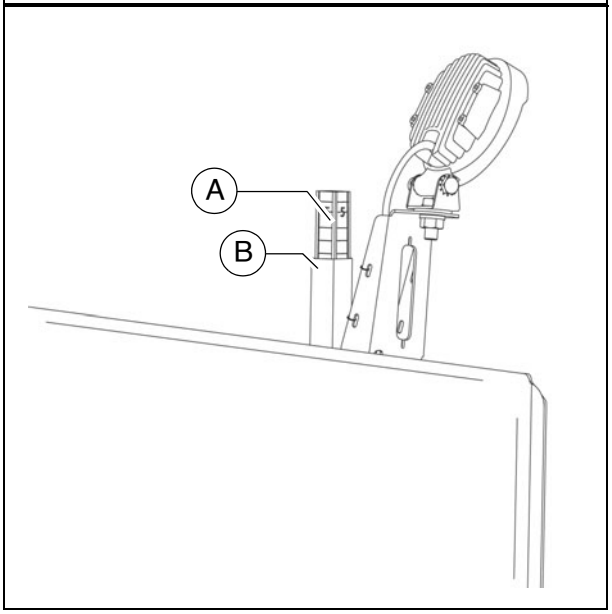


Paving thickness indicator - at top

One scale each (A), on which the currently set paving thickness can be read off, is located on the left and right on the upper side of the engine hood.

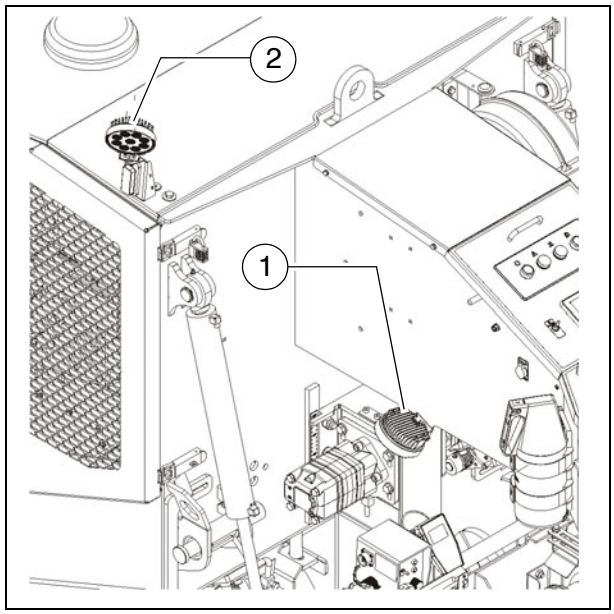
- The coloured marking (B) shows the paving thickness.

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



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Headlight for auger compartment (○)



☞ Two swivelling working lights (1) are provided to illuminate the auger compartment.

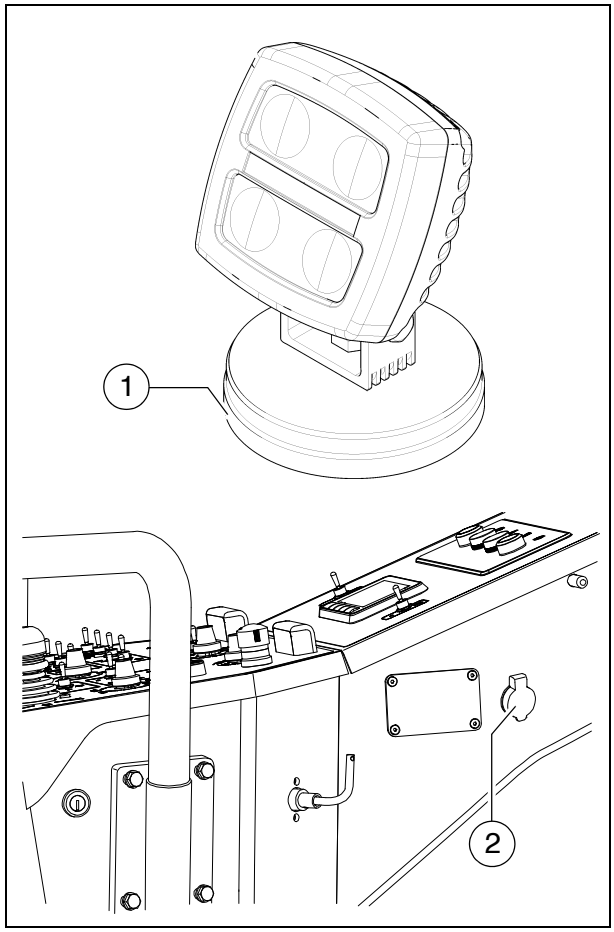
☞ They are engaged together with the working lights.

LED working light (○)

There are two LED spotlights (2) at the front and rear of the vehicle.

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

LED working light, magnetic foot (○)



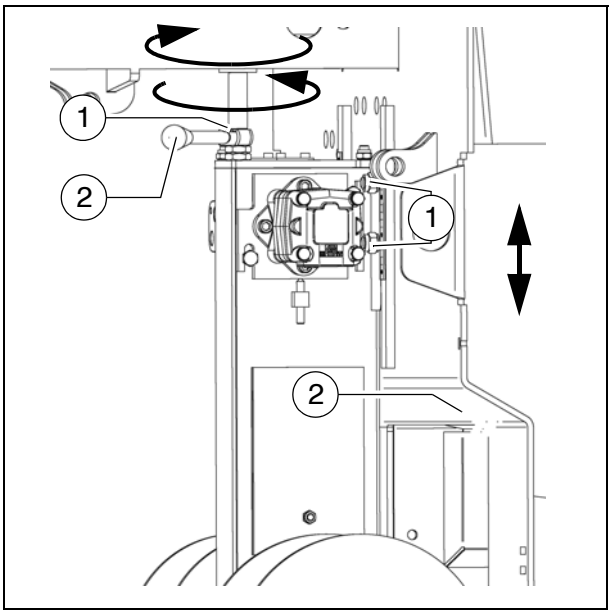
The working lights are fitted in any position on the machine using the magnetic foot.

- Connect the lead with the 24V sockets (2) on the vehicle.

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

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Auger height adjustment ratchet (○)



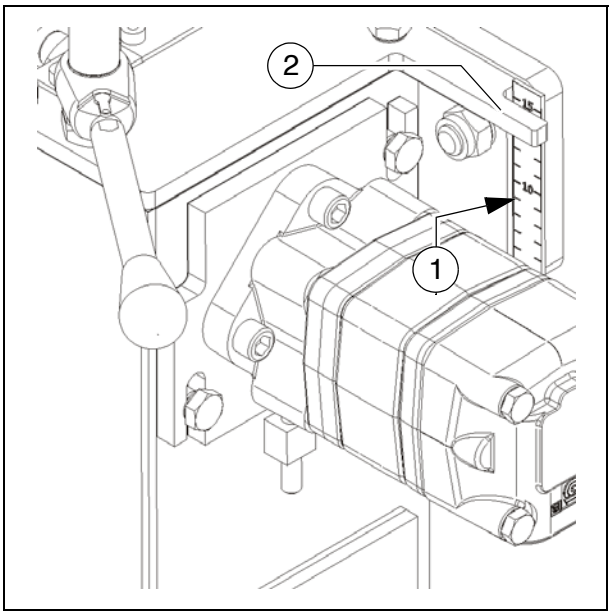
For mechanical adjustment of the auger height

- 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 alternatingly 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



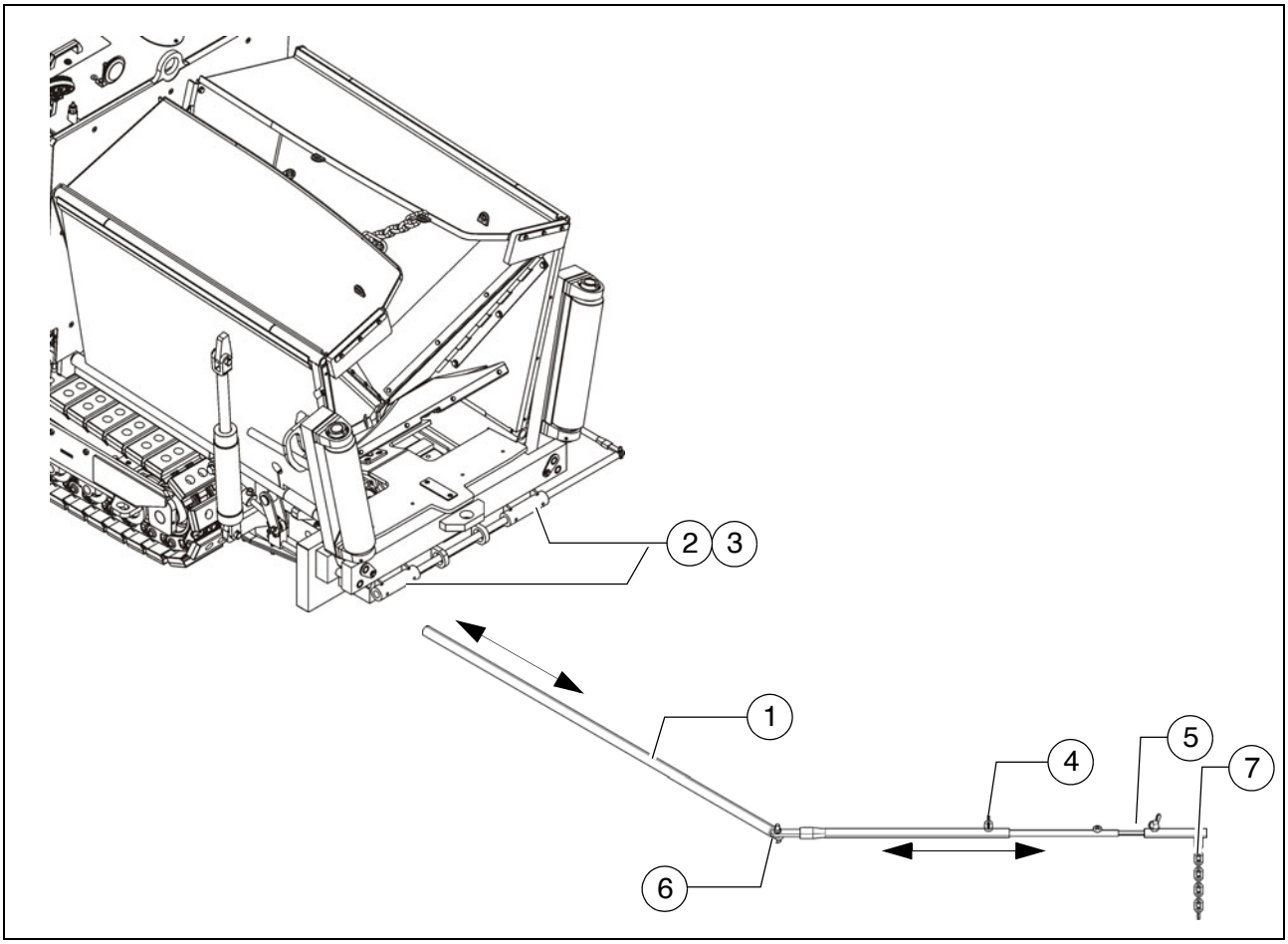
A scale (1), on which the currently set auger height can be read off, is located on the left and right sides of the ladder.

☞ Display in cm

- Pointer (2) shows the auger height.

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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.

STOP 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 fitted to the head end of the vehicle on either the left or right.
  - Push the sensor rod into the mounting (2). Fasten by tightening the corresponding clamping bolts (3).

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- After releasing the wing nuts (4), the end section of the sensor rod (5) can be set to the desired length; the angle can additionally be changed by swivelling on the joint (6).

☞ The chain (7) can be used as a guide.

⚠ Tighten all assembly parts properly after setting up!

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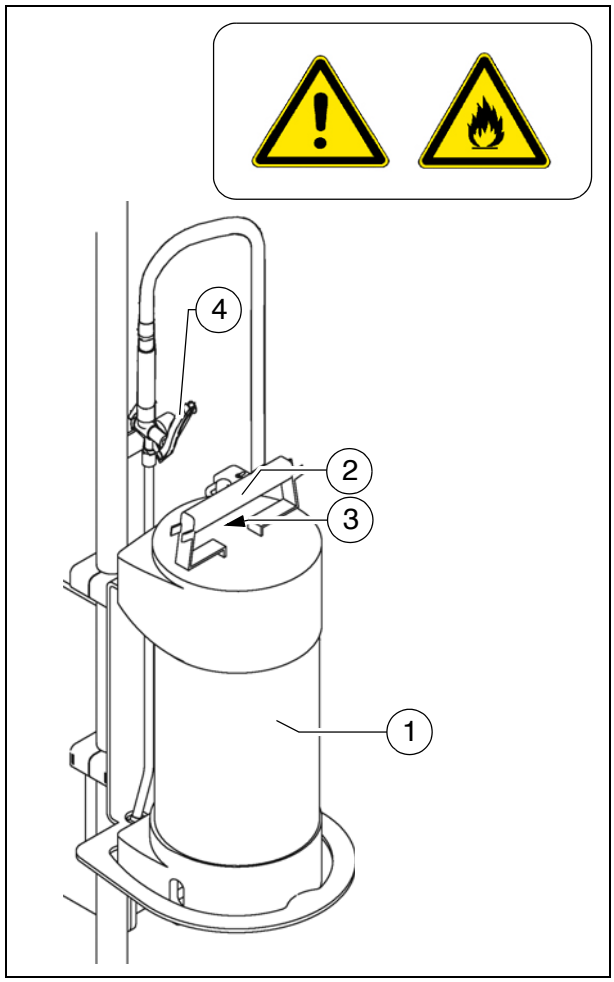
Manual separator fluid spray (○)

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

⚠ Only use approved separator emulsion in the spray (1)!

- Build up pressure by actuating the pump lever (2).
  - The pressure is indicated on the manometer (3).
- Actuate the manual valve (4) to spray.

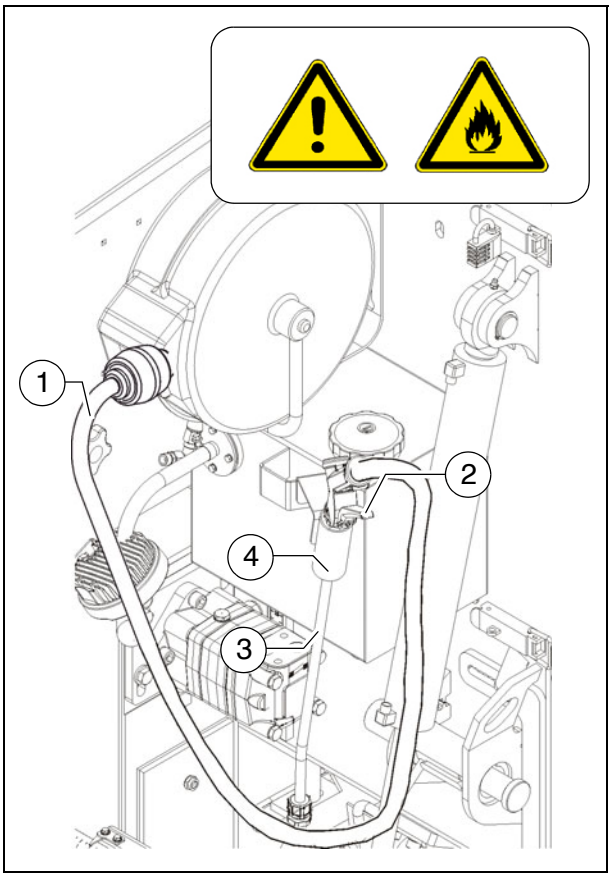
STOP Do not spray into open flame or on hot surface Danger of explosion!



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Separator fluid spraying system (○)

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



⚠ 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 (1) 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 the manual valve (2) to spray.

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

☞ The function is switched on and off at the vehicle operating panel.

- If the system is not in use, place the spray lance (3) in the provided holder (4).

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Conveyor limit switches

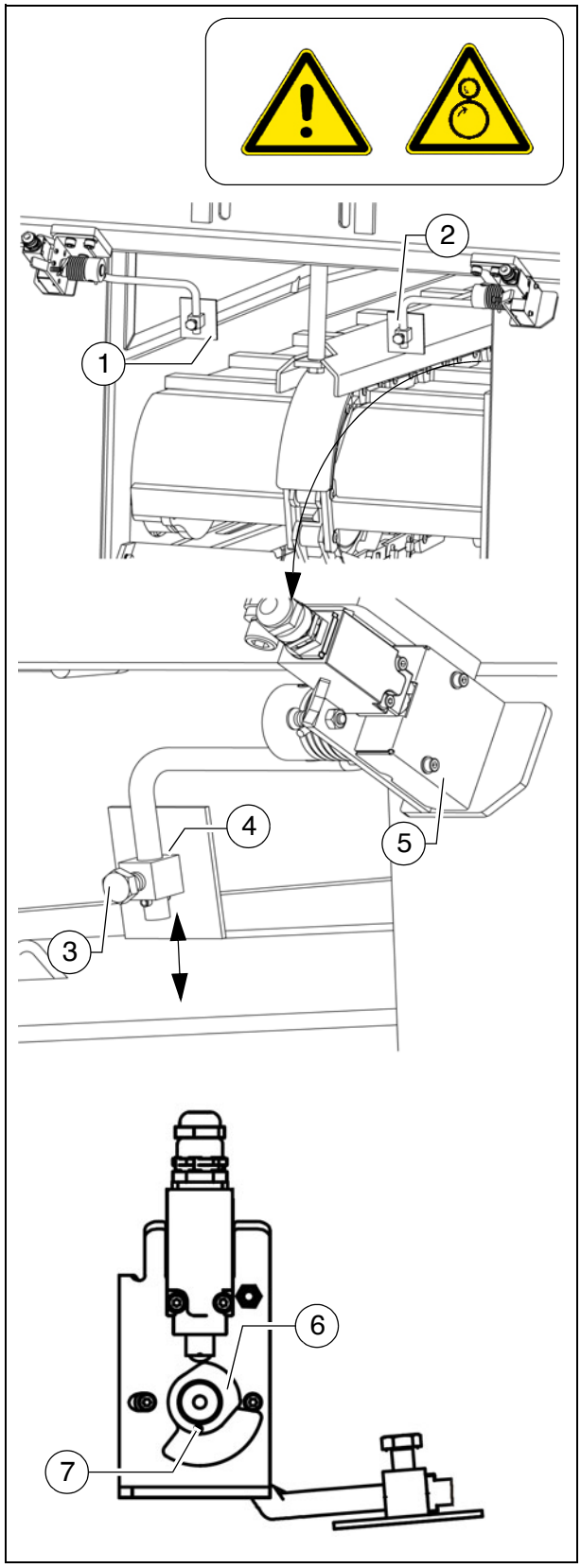
The conveyor is switched "ON" and "OFF" using the paddles (1) and (2).

- To set the deactivation point:
  - Loosen the screw (3) and move the paddle (4) until the required switching point is reached.
    Retighten screw (3) properly.

or

  - Loosen the housing (5) and turn the switching cam (6) on the shaft until the required switching point is reached.
    Loosen the stud bolt (7) to do this.

- After adjusting, retighten all mounting parts properly / close housing.



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Auger limit switches

The augers are controlled by sensors.

Mounting the sensors:

Fasten the sensors to the side shield (1 sensor for each auger) in the provided clamp bracket (1) on the holding tube (2).

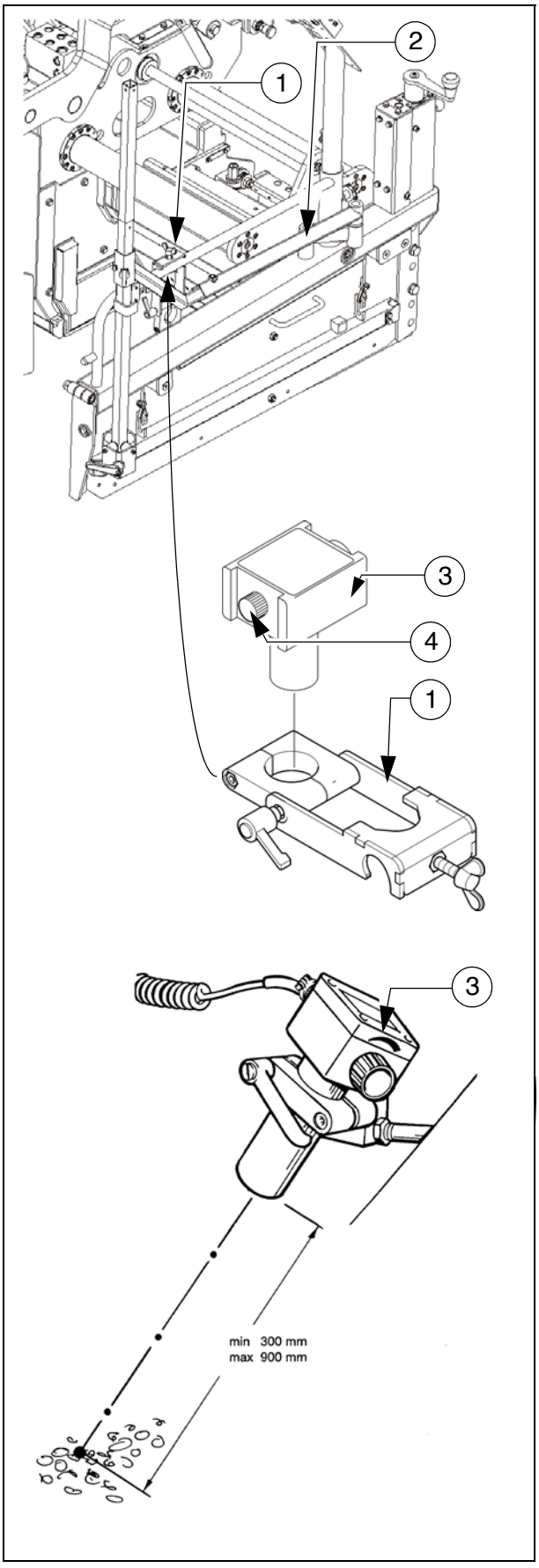
⚠ Always mount the sensors (3) to ensure that they are not damaged on extending and retracting the screed.

Align the ultrasound sensor (3) towards the mixed materials in front of the auger. The sound waves should impact on the mixed materials at right angles.

Adjust the deactivation point with the desired material height by regulating the potentiometer (4).

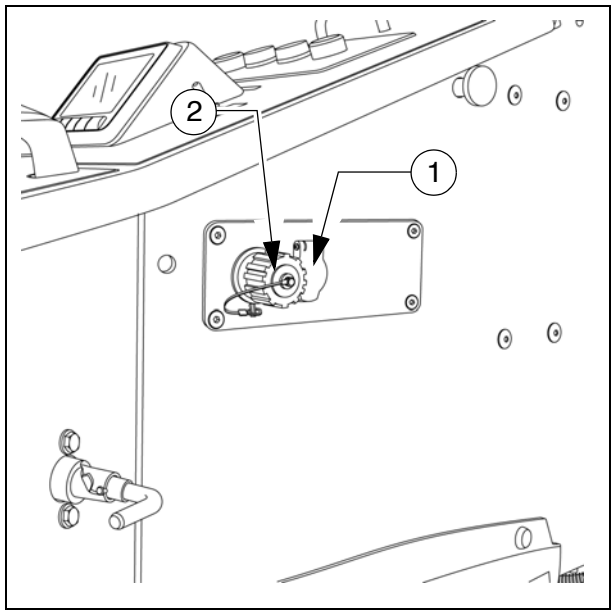
Repeat these tasks everyday before starting work.

☞ Always keep the sensors free of impurities.



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24 volt sockets (○)



There is one socket (1) on each side of the operating panel console.
Additional working lights can be connected here, for example.

- 24V socket

☞ Voltage is present when the main switch is switched on.

USB interface

There is a USB interface (2) on the right side of the operating panel console.
Here, for example, devices with a corresponding connection can be charged.

☞ Voltage is present when the main switch is switched on.

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Fire extinguisher (○)

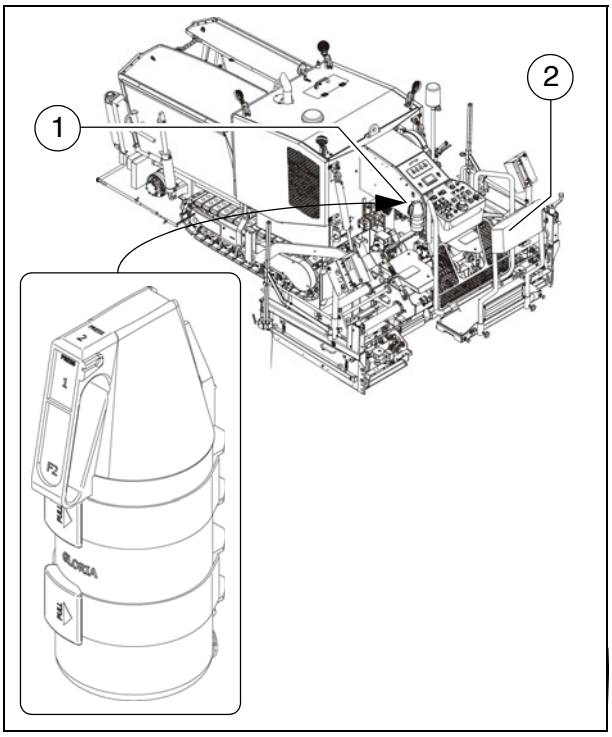
☞ The paver finisher personnel must be familiarised with operation of the fire extinguisher (2).

☞ Observe the inspection interval for the fire extinguisher!

First-aid kit (○)

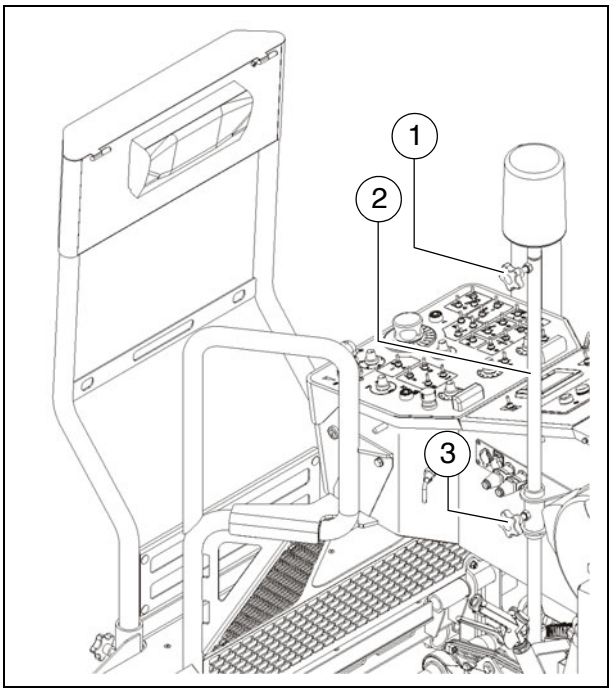
STOP Any dressings that have been used must be replaced immediately!

☞ Heed the expiry date of the first-aid kit!



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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 clamping bolt (1).
- Extend the rotary beacon with tube (2) to the desired height and secure with the clamping bolt (3).
- 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.

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D 40.12 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
- Personal protective equipment of the personnel.

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⚠ CAUTION	**Danger due to restricted vision**
	Restricted vision poses a risk of injury! - Before starting work, arrange the intended driver's seat to ensure adequate vision. - Signalmen must be used when vision is restricted, also to the sides and when reversing. - Only reliable persons 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. - Adequate lighting must be provided when working at night. - Comply with all further information in these instructions and in the safety manual.

⚠ WARNING	**Danger of falling from the vehicle**
	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! - The operator must be at the intended driver's seat during operation. - Never jump onto or off a moving vehicle. - Keep accessible surfaces free of any soiling, e.g. operating substances, to avoid the risk of slipping. - Use the steps provided and hold onto the handrail with both hands. - Comply with all further information in these instructions and in the safety manual.

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Before starting work
(in the morning or when starting paving)

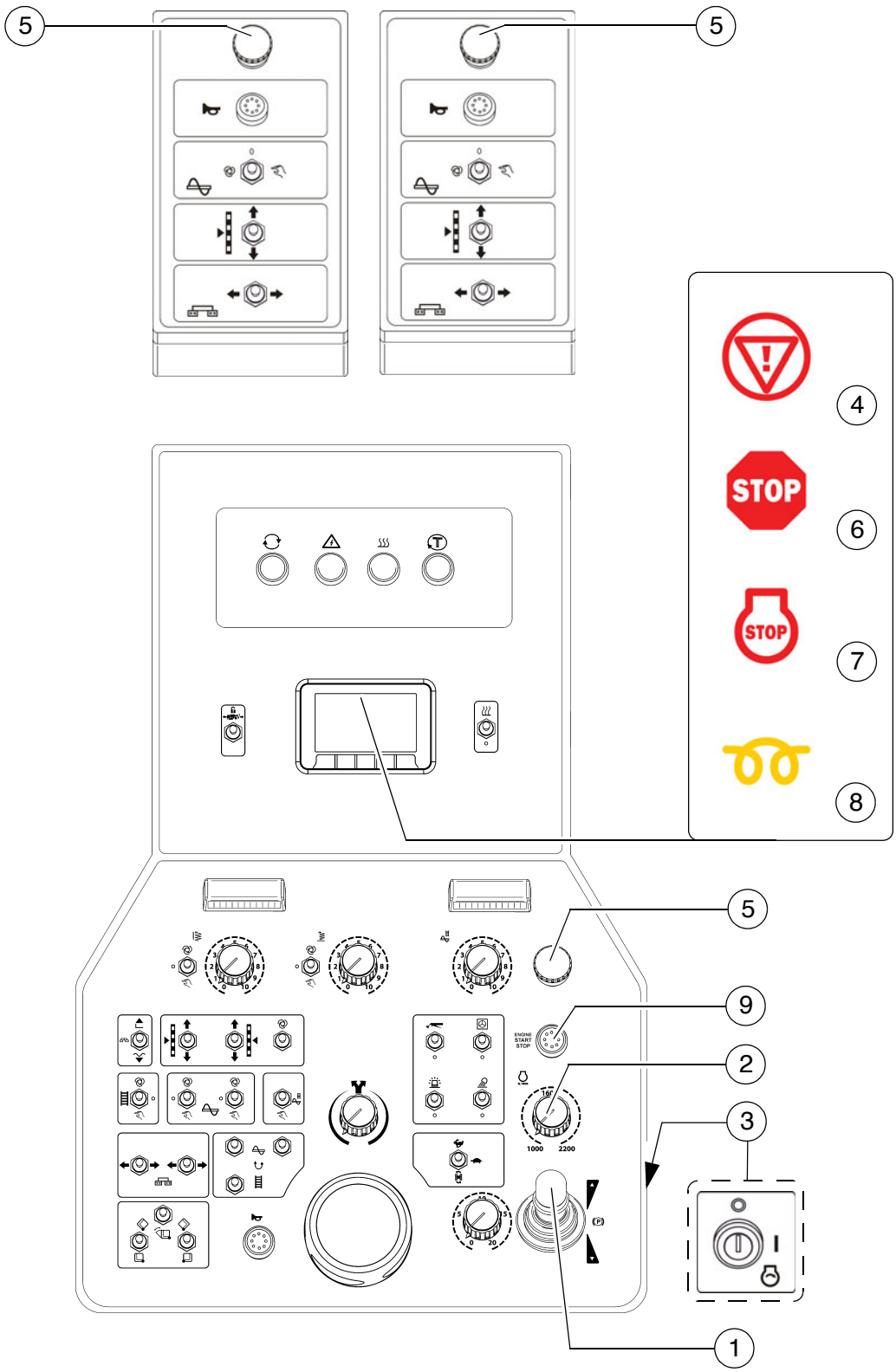
- Heed the safety instructions.
- Check the personal protective equipment.
- Take an inspection walk around the paver finisher and check for leaks and damages.
- Install parts removed for transportation or for the night.
- When screed is operated with the optional gas heating system, open the closing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

Check list for the vehicle 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 warning light	With the ignition switched on, press the switches for extending/retracting the screed parts. The warning lamps 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

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Check!	How?
Screed transport safeguard	When the screed is lifted, it must be possible to push out both retaining pins and the crossbeams.
Hopper transport safeguard	When the hopper is closed, it must be possible to insert the safety chain between the two hopper lids.
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!


5
5
4
STOP
6
STOP
7
8
5
9
2
3
1
1000
2200



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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 hour counter to determine whether or not additional maintenance work (e.g. monthly or annual maintenance) must be performed.

- Check the safety devices and protective devices.

"Normal" starting

Set the drive lever (1) to the centre position and the speed adjuster (2) to minimum.

- Insert the ignition key (3) in position "0".

⚠ The lights should be switched off during starting to reduce the current drain on the battery.

☞ The vehicle cannot be started if the indicator lamps are on:
- "Start inhibit" (4) - Emergency stop button (5) pressed
- "Error message" (6) - drive lever (1) swivelled out
- "Engine error with stop" (7) - engine error with start inhibit.

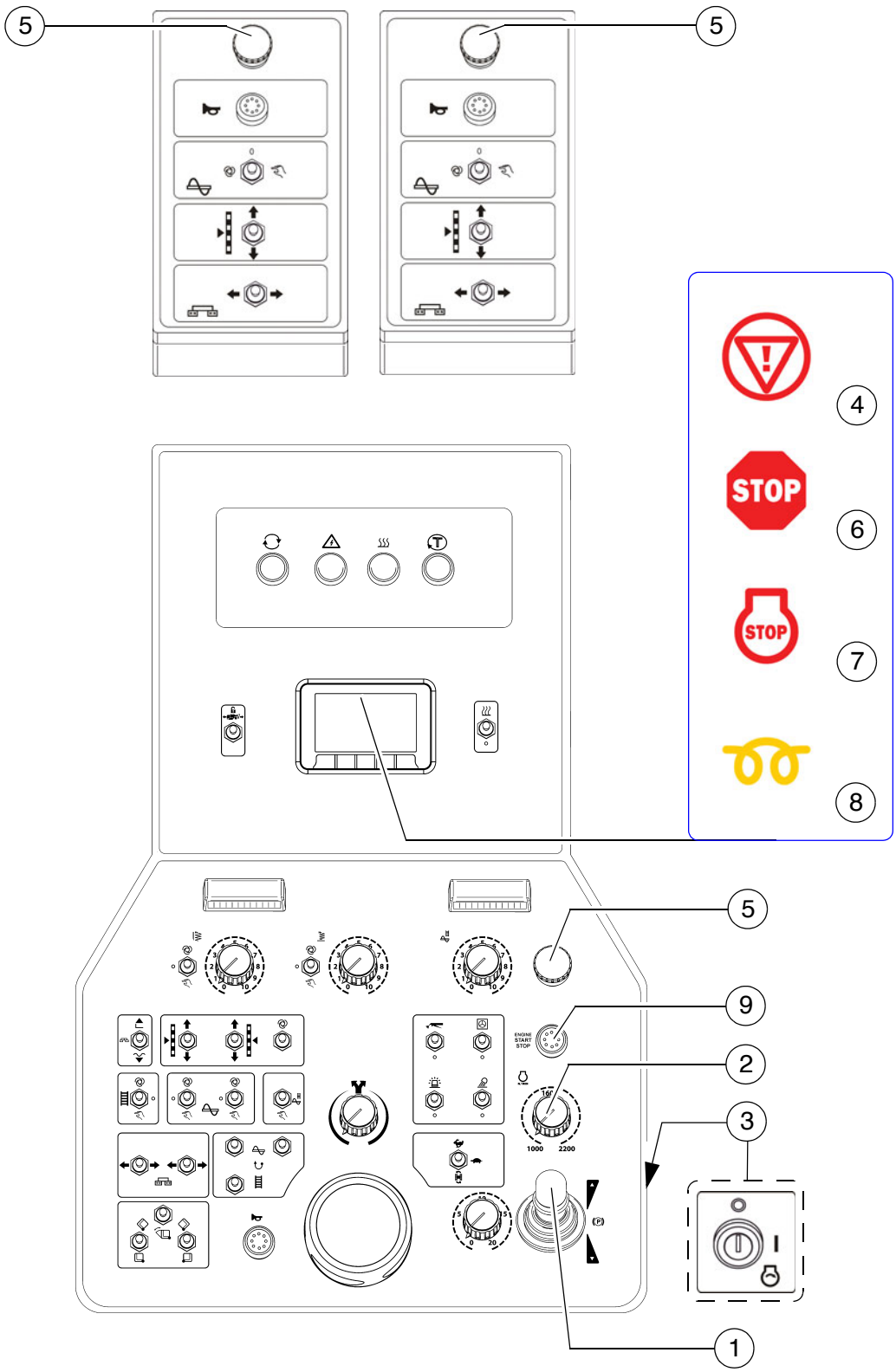
- Turn ignition key (3) to position 1 and wait for the preheat check (8) (○) to go off.

- Press the starting button (9) to start the engine.
  Do not let the starter run permanently for more than 20 seconds, then allow for a break of one minute!

☞ If the engine does not start and the error message (6) is shown, then the electronic engine control system has activated the start inhibit to protect the engine.
To deactivate the start inhibit, turn the system off with the ignition key (3) for approx. 30 s.

⚠ If the engine still has not started after two attempts, ascertain the cause!

STOP Do not use aerosol types such as ether as starting aid. This can cause an explosion and lead to personal injuries.


5
5
4
STOP
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STOP
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1000
2200



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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).

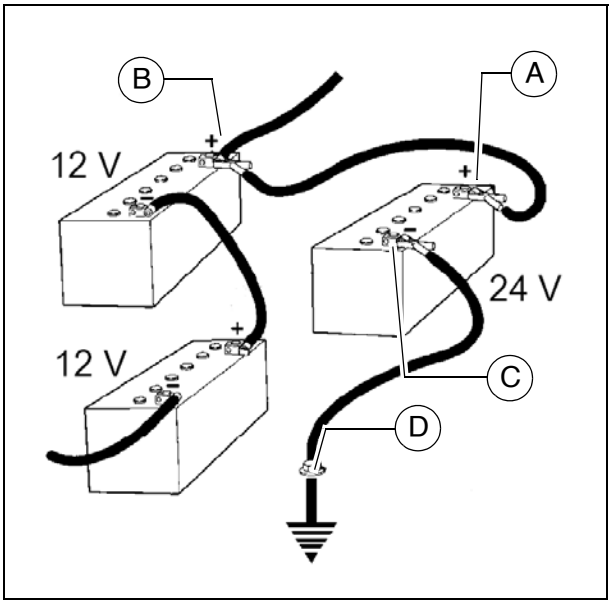
Standard chargers or quick chargers cannot be used for external starting.

To externally start the engine:
Set the drive lever (1) to the centre position and the speed adjuster (2) to minimum

- Insert the ignition key (3) in position "0".

The starting aid cable must be connected to 24 V.

- First connect the positive terminal (A) of the starting aid battery to the positive terminal (B) of the vehicle battery.
- Then connect the negative terminal (C) of the starting aid battery to the ground of the discharged vehicle, e.g. to the engine block or to a bolt (D) 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.

The vehicle cannot be started if the indicator lamps are on:
- "Start inhibit" (4) - Emergency stop button (5) pressed
- "Error message" (6) - drive lever (1) swivelled out
- "Engine error with stop" (7) - engine error with start inhibit.

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

Now try to start the other vehicle:

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- Turn ignition key (3) to position 1 and wait for the preheat check (8) to go off.

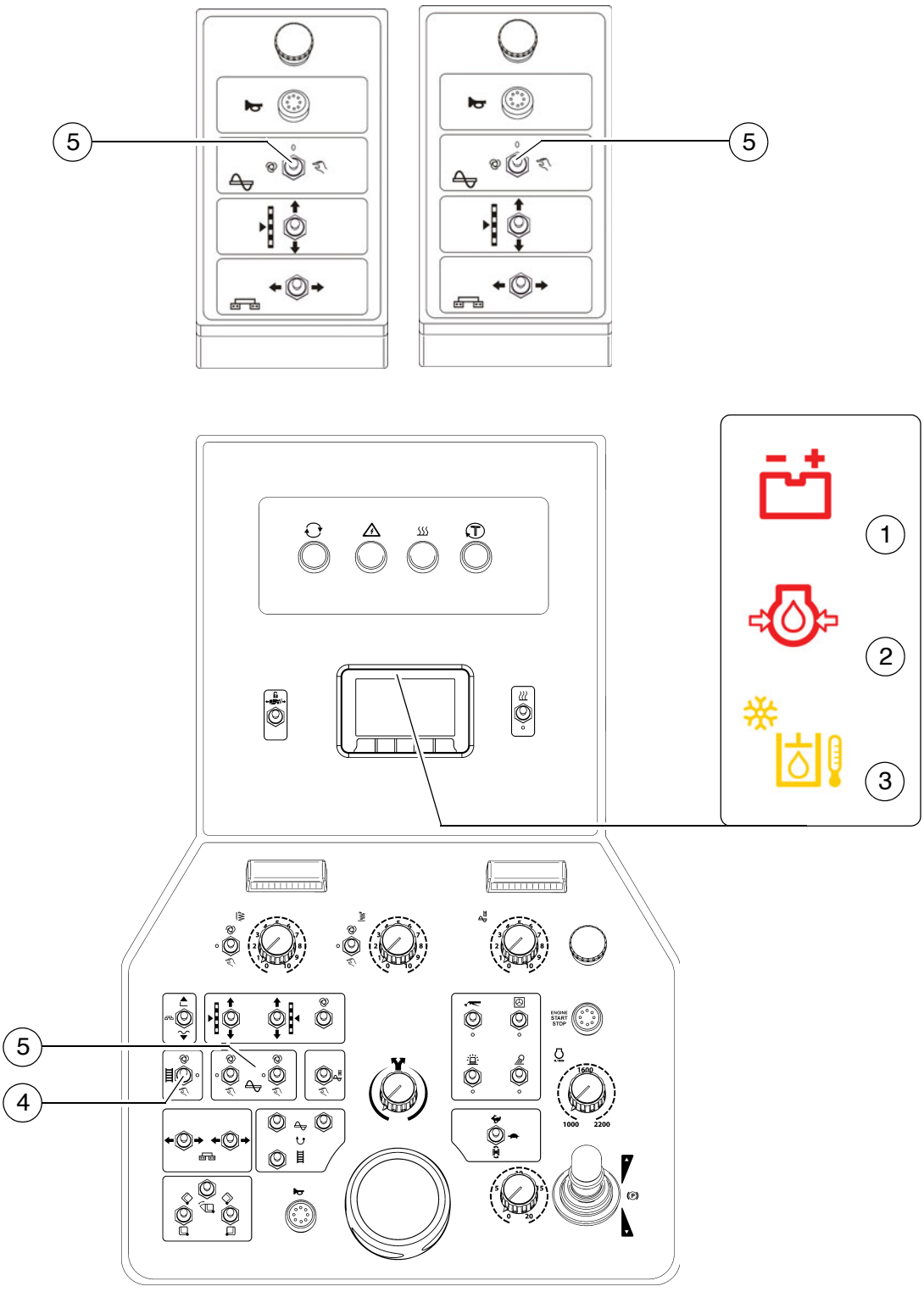
- Press the starting button (9) to start the engine.
  Do not let the starter run permanently for more than 20 seconds, then allow for a break of one minute!

☞ If the engine does not start and the Error message (6) indicator lamp flashes, then the electronic engine control system has activated the start inhibit.
To deactivate the start inhibit, turn the system off with the ignition key (3) for approx. 30 s.

- 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.

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After starting

⚠ 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.

Battery charge indicator (1)

Must go out after starting.

⚠ If the lamp does not go out or lights up during operation: Briefly rev up the engine.

☞ The engine speed can be increased by switching on a conveying function.

Switch off the engine and determine the fault if the lamp does not go out.

For further possible malfunctions, refer to the section “Malfunctions”.

Oil pressure indicator lamp for the diesel engine (2)

Must go out after starting.

⚠ If the lamp does not go out or lights up during operation:
Switch off the engine, check the engine oil level.

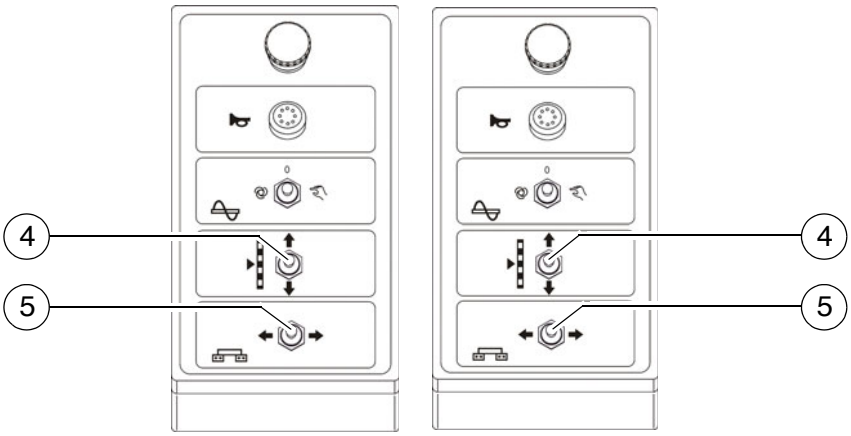
For other possible errors, see engine's operating instructions.

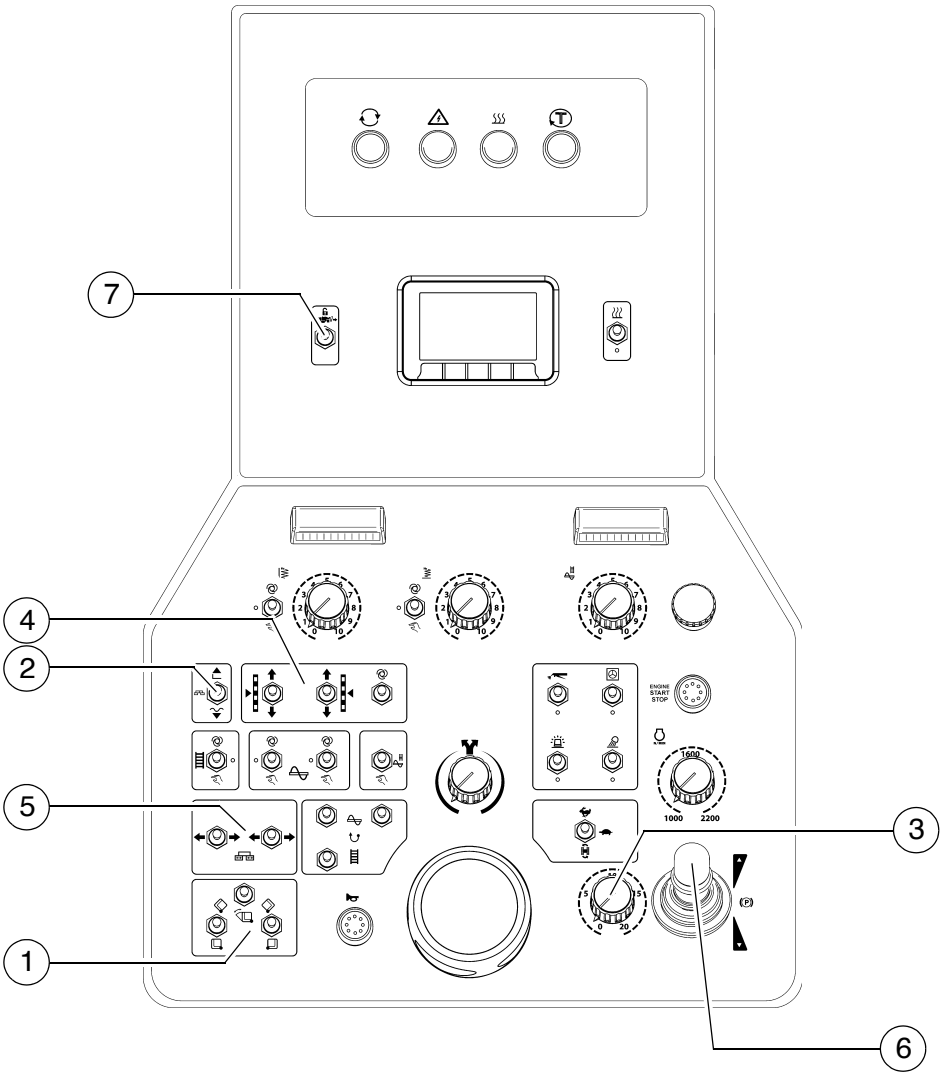
Hydraulic oil temperature (3)

When the hydraulic oil is cold:

- Switch conveyor (4) and auger (5) to "MANUAL" operating mode.
- Allow the function for increasing the hydraulic oil temperature to run until the lamp goes out.

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1.2 Preparation for transportation

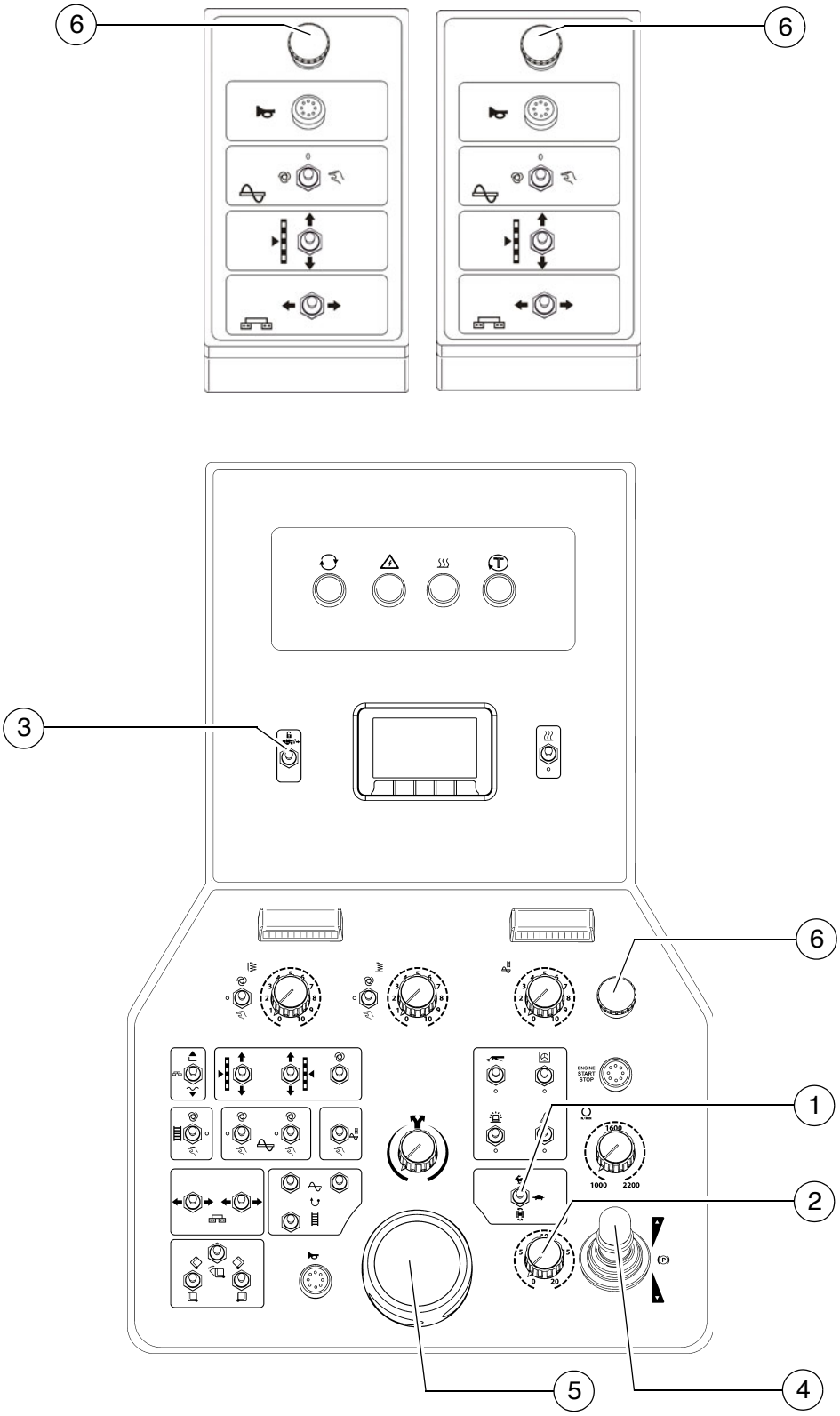
- Use switch (1) to close the hopper.
- Insert hopper transport safeguards.
- Lift the screed completely using switch (2), insert screed transport safeguard.
- Turn the travel drive preselector (3) to zero.
- Fully extend the levelling cylinders with the switch (4).
- Use switch (5) to adjust the screed to the basic width of the paver finisher.

⚠ Lift the auger if necessary!

☞ The engine cannot be started with the drive lever (6) swivelled out.
To be able to start the travel drive, the drive lever must first be returned to the centre position.

☞ Before pushing the drive lever (6) out, the safety switch (7) must be pressed to release the travel drive. Otherwise the travel drive is blocked.

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Driving and stopping the paver finisher

- Set the travel drive to the desired speed level, fast/slow (1).
  - Upper switch position: transport speed (hare)
  - Switch position, central: operating speed (tortoise)
- Turn the travel drive preselector (2) to medium speed.
- Press the safety switch (3).
- For driving, carefully tilt the drive lever (4) forward or backward according to the drive direction desired.
  - Adjust the speed with the preselector (2).
- Carry out steering movements by actuating the steering potentiometer (5).



In emergency situations, press the emergency stop button (6)!

- To stop, set the preselector (2) to "0" and move the drive lever (4) into its centre position.

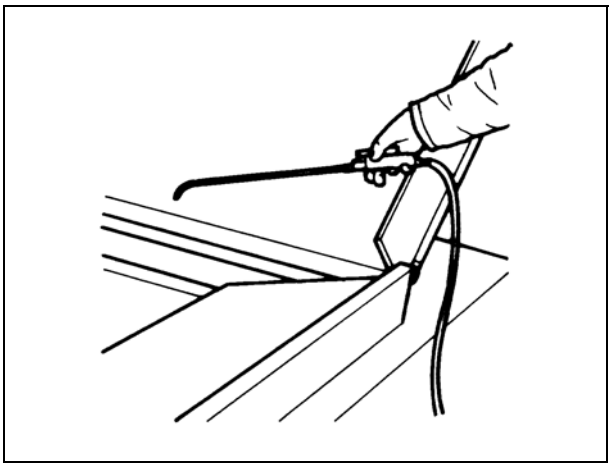


The safety switch must always be pressed when the drive lever is moved out of the neutral position. Otherwise the travel drive is blocked.

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1.3 Preparations for paving

Separator fluid



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

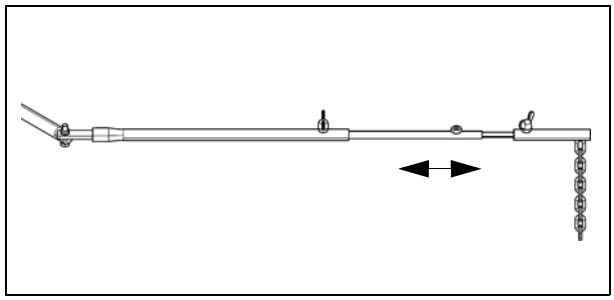
⚠ Do not use diesel fuel as it dissolves the bitumen (prohibited in Germany!).

Screed heater

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.

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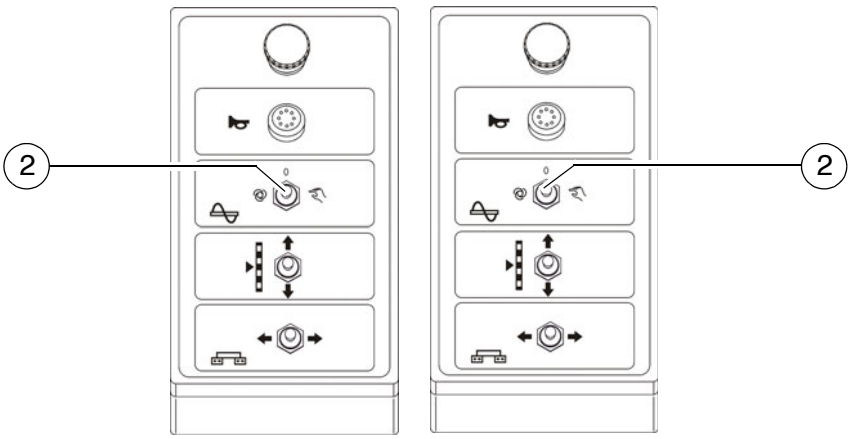
Direction marks

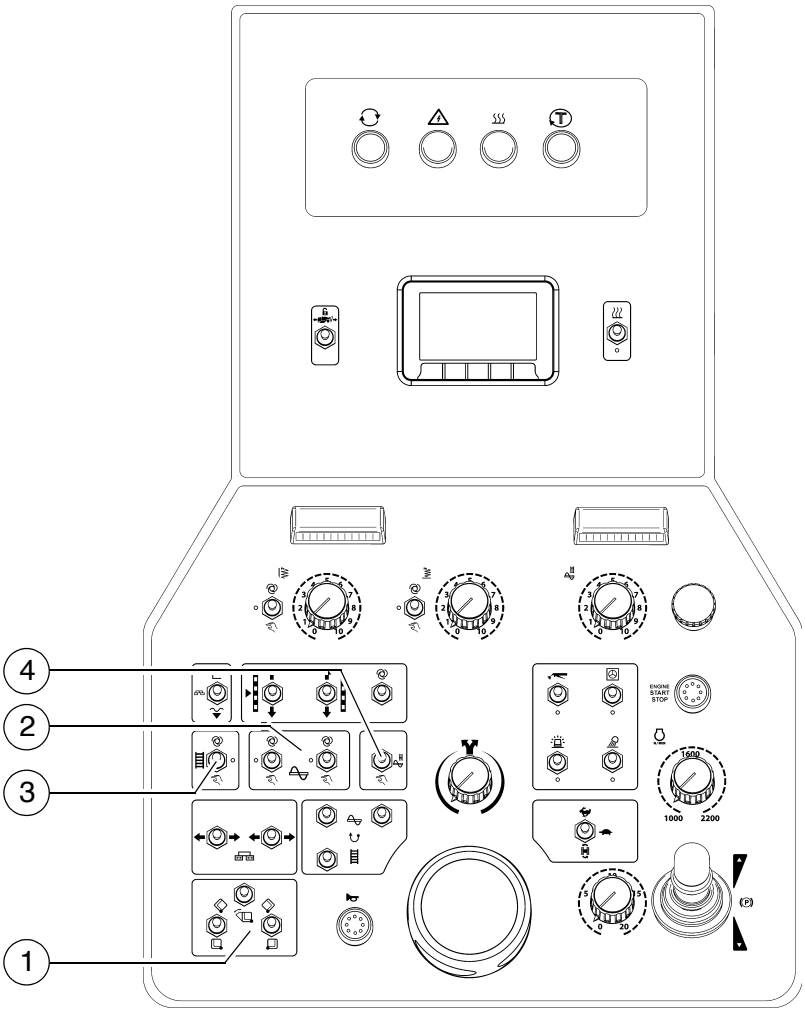


To ensure straight paving, a direction mark must be present or established (road edge, chalk lines or similar).

- Pull the direction indicator out of the bumper (arrow) and adjust it accordingly.

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Loading/conveying material

- Use switch (1) to open the hopper.
  Instruct the truck driver to dump the material.
- Set the switches for the auger (2) and the conveyor (3) to "AUTO".

☞ The conveying function starts by deflecting the drive lever.

☞ Check that the material is transferred properly.
Readjust the auger limit switches if conveying is not satisfactory. Adjust the conveyor limit switches with the vehicle turned off until sufficient material is conveyed in front of the screed.

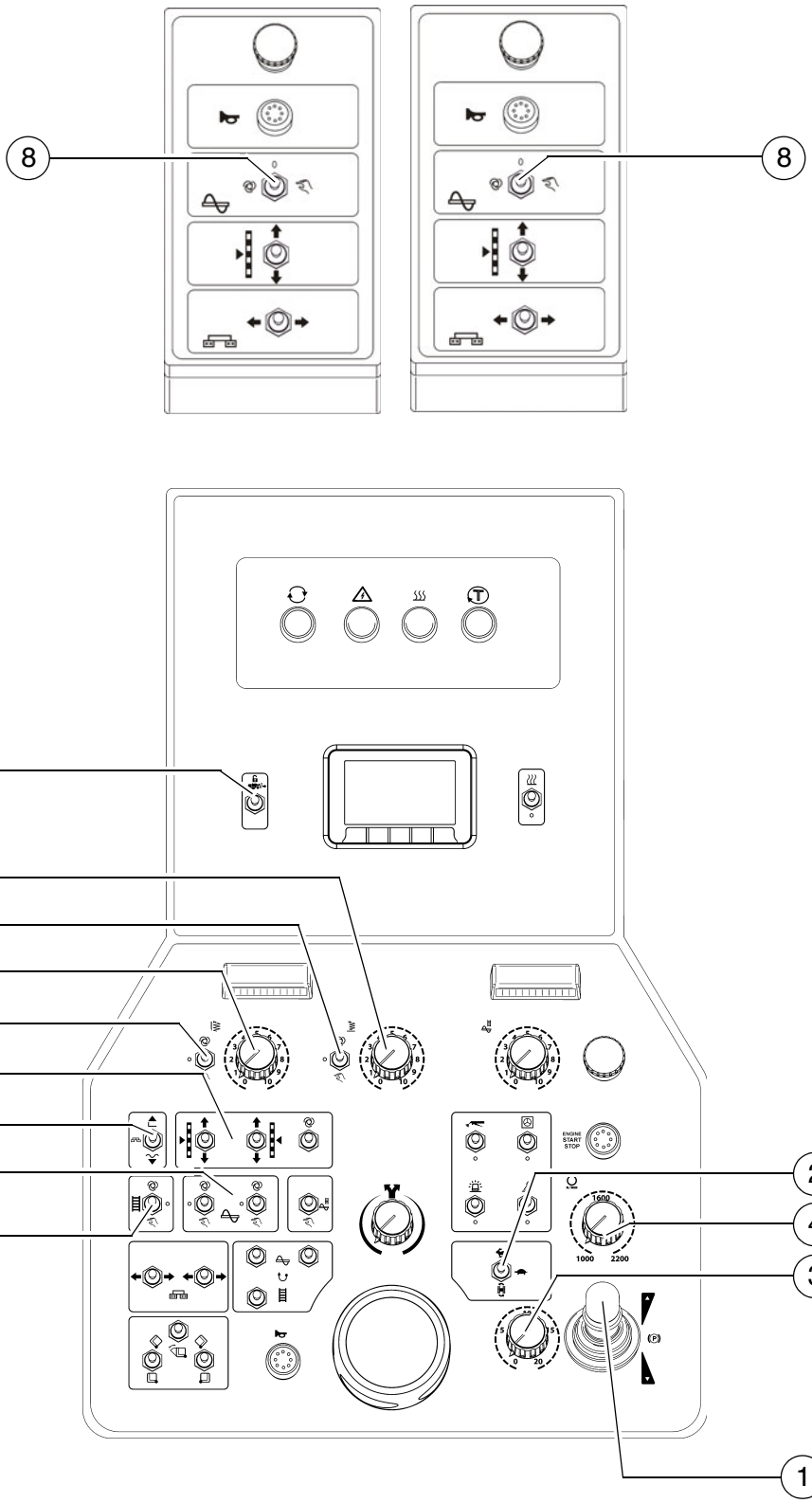
Filling function

☞ The "filling function" can additionally be used to convey the material in front of the screed at the start of paving:

- Set the switches for the auger (2) and the conveyor (3) to the "AUTO" operating mode.
- Actuate switch (4):
  The engine speed is increased, the conveying functions (conveyor and auger) are switched on without deflecting the drive lever.

☞ Once the set material height is reached at the limit switches, the conveying functions are switched off.

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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	Switch	Position
1	Drive lever	Centre position
2	Travel drive fast / slow	Slow ("tortoise")
3	Travel drive preselector	Mark 6-7
4	Engine speed	Maximum
5	Screed position	Floating position
6	Vibration	Auto
7	Tamper	Auto
8	Auger left/right	Auto
9	Conveyor	Auto
10	Levelling	Auto
11	Speed control for the tamper	adapted to the paving situation
12	Speed regulator, vibration	adapted to the paving situation

- Press the safety switch (13).
- Push the drive lever (1) 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 and/or vibration) according to the required compaction ratio.
- Let the paving master check the paving thickness after 5–6 meters and correct if necessary.

Check the area of the caterpillar chains as uneven ground is levelled by the screed. The caterpillar chains act as reference points for the layer thickness.

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.

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1.5 Checks during paving

The following points must be constantly observed during paving:

Paver function

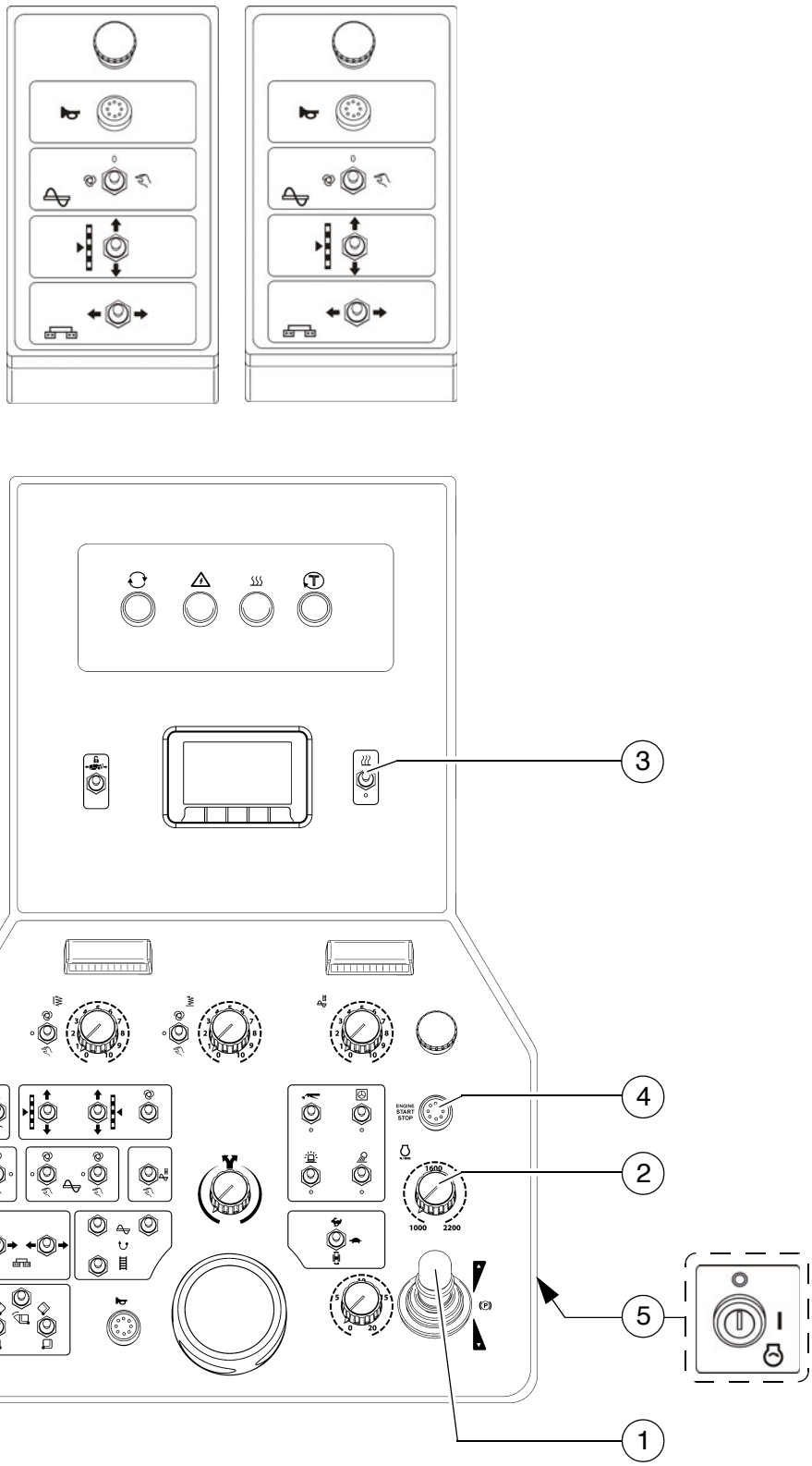
- Screed heater
- Tamper and vibration
- Engine oil and hydraulic oil temperature
- The screed parts must be retracted and extended in time when obstacles are in the way
- Uniform material transport and distribution or supply to the screed; may require corrections to settings of the material switches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

☞ See the section "Malfunctions" when paver functions fail.

Quality of the layer

- Paving thickness
- 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.


3
4
2
5
1
1000
2200



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1.6 Interrupting/terminating operation

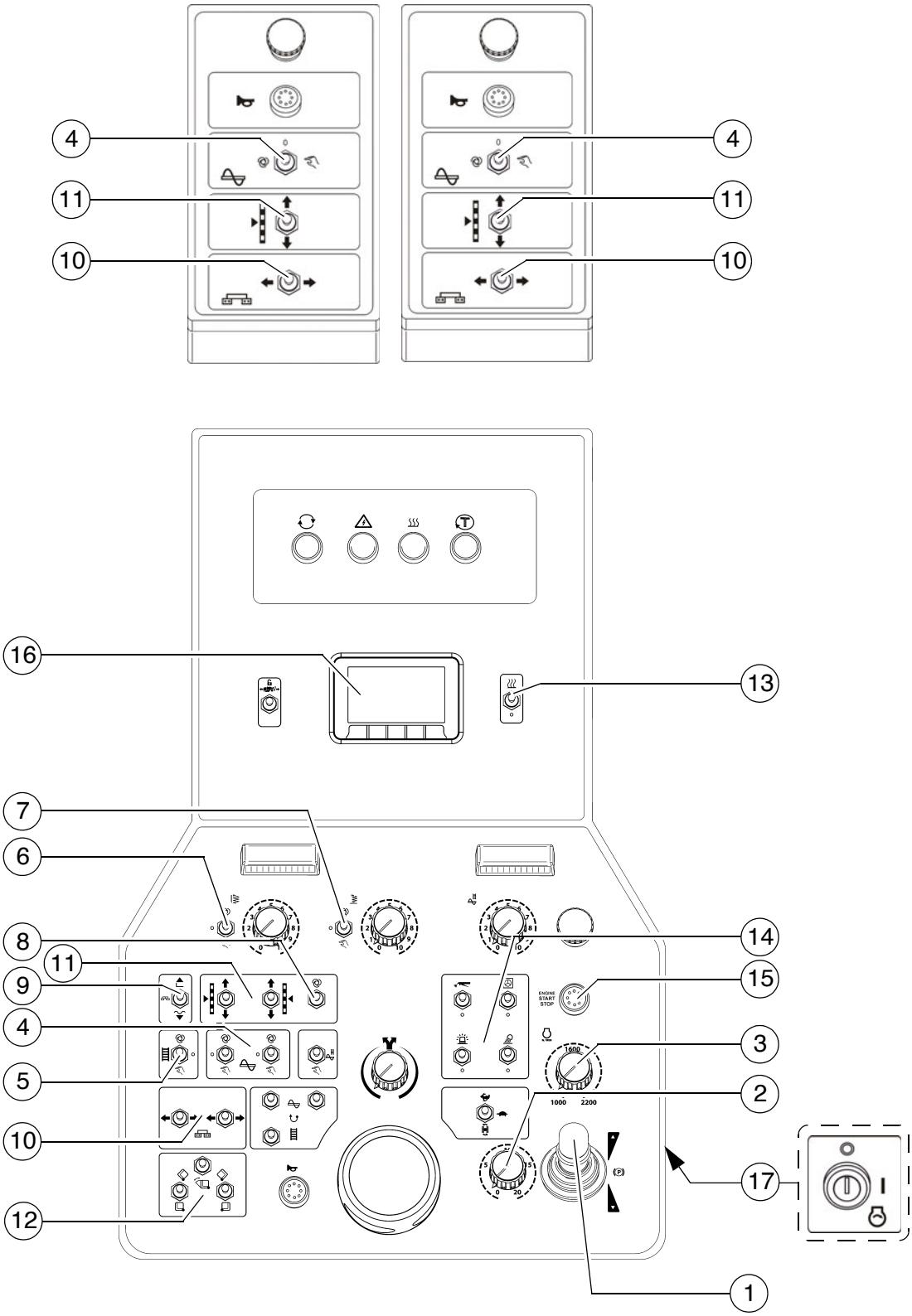
During breaks in paving (e.g. delay due to material trucks)

- 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 (1) to the centre position.

During longer breaks
(e.g. lunch break)

- Set the drive lever (1) to the centre position and the speed adjuster (2) to minimum
- Switch off screed heater (3).
- Switch off drive engine (4) and switch off ignition (5).
- When the screed is operated with the optional gas heating system (○), close the valves of the bottles.

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


4
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4
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13
7
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5
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15
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17
1
1600
1000
2200



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When work is finished

- Run the paver finisher empty and stop it.
- Move the drive lever (1) to the central position, set preselector (2) to "0" and set the speed adjuster (3) to minimum.
- Switch the auger (4), conveyor (5), tamper (6), vibration (7) and levelling (8) functions to "OFF".
- Lift the screed with switch (9).
- Insert the screed transport safeguard.
- Retract screed to basic width with switch (10).
  Where applicable, completely extend the levelling cylinders using switch (11).

- Use switch (12) to close the hopper lids.
- Insert the hopper transport safeguards.

  - Set tampers (6) to "manual"; while operating the tampers at a low speed, let any material residues which have penetrated drop out.

- Switch tampers (6) to "OFF".
- Switch off screed heater (13).
- Switch the working and warning lights (14) to "OFF".
- Switch off the drive engine (15)
- Read and check the operating hour meter (16) to determine whether maintenance work must be performed (see chapter F).
- Switch off the ignition (17).
- Close the main shut-off valves and the bottle valves for the screed gas heating system (○).
- 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.

⚠ Do not turn off main switch until 15 seconds after the ignition has been turned off!

☞ The engine electronics need this length of time to back up data.

- Cover and lock the operating panel.
- Remove material residues from the screed and the paver finisher and spray all parts with separator fluid.

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1.7 Problems during paving

Problem	Cause
Wavy surface ("short waves")	- change in the material temperature, demixing - wrong material composition - incorrect operation of the roller - incorrectly prepared foundation - long standstill times between loads - grade control reference line is not suitable - grade control jumps to the reference line - grade control toggles between up and down (inertia setting is too high) - bottom plates of the screed are loose - bottom plates of the screed are warped or not uniformly worn - screed does not work in the floating position - too much play in the mechanical screed link/suspension - paver finisher speed is too high - augers are overloaded - changing material pressure against the screed
Wavy surface ("long waves")	- change in the material temperature - demixing - roller has stopped on the hot material - roller has turned or roller speed has been changed too fast - incorrect operation of the roller - incorrectly prepared foundation - truck brake is applied too tight - long standstill times between loads - grade control reference line is not suitable - incorrect installation of the grade control - limit switch is not correctly set - screed is empty - screed has not been switched to the floating position - too much play in the mechanical screed link - auger is set too deep - auger is overloaded - changing material pressure against the screed
Cracks in the layer (over the entire width)	- material temperature is too low - change in the material temperature - moisture on the foundation - demixing - wrong material composition - wrong paving thickness for maximum grain size - cold screed - bottom plates of the screed are worn or warped - paver finisher speed is too high

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Problem	Cause
Cracks in the layer (centre strip)	- material temperature - cold screed - bottom plates are worn or warped - wrong crowning
Cracks in the layer (outer strip)	- material temperature - screed extendable parts are incorrectly installed - limit switch is not correctly set - cold screed - bottom plates are worn or warped - paver finisher speed is too high
Layer composition is not uniform	- material temperature - change in the material temperature - moisture on the foundation - demixing - wrong material composition - incorrectly prepared foundation - wrong paving thickness for maximum grain size - long standstill times between loads - vibration is too slow - screed extendable parts are incorrectly installed - cold screed - bottom plates are worn or warped - screed does not work in the floating position - paver finisher speed is too high - auger is overloaded - changing material pressure against the screed
Marks in the surface	- truck hits too much against the finisher while aligning to the finisher - too much play in the mechanical screed link/suspension - truck brake is applied - vibration is too high while standing on a spot
Screed does not react to corrective measures as expected	- material temperature - change in the material temperature - wrong paving thickness for maximum grain size - incorrect installation of the grade control - vibration is too slow - screed does not work in the floating position - too much play in the mechanical screed link - paver finisher speed is too high

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1.8 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"
Tamper or vibration is not functioning	Tamper 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 is 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

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Malfunction	Cause	Remedy
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

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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
	Power supply is 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 is 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

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Malfunction	Cause	Remedy
Traction does not work	Travel drive fuse defective	Replace (fuse strip on the operating panel)
	Power supply is 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

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E 10.12 Set-up and modification

1 Special safety instructions

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.

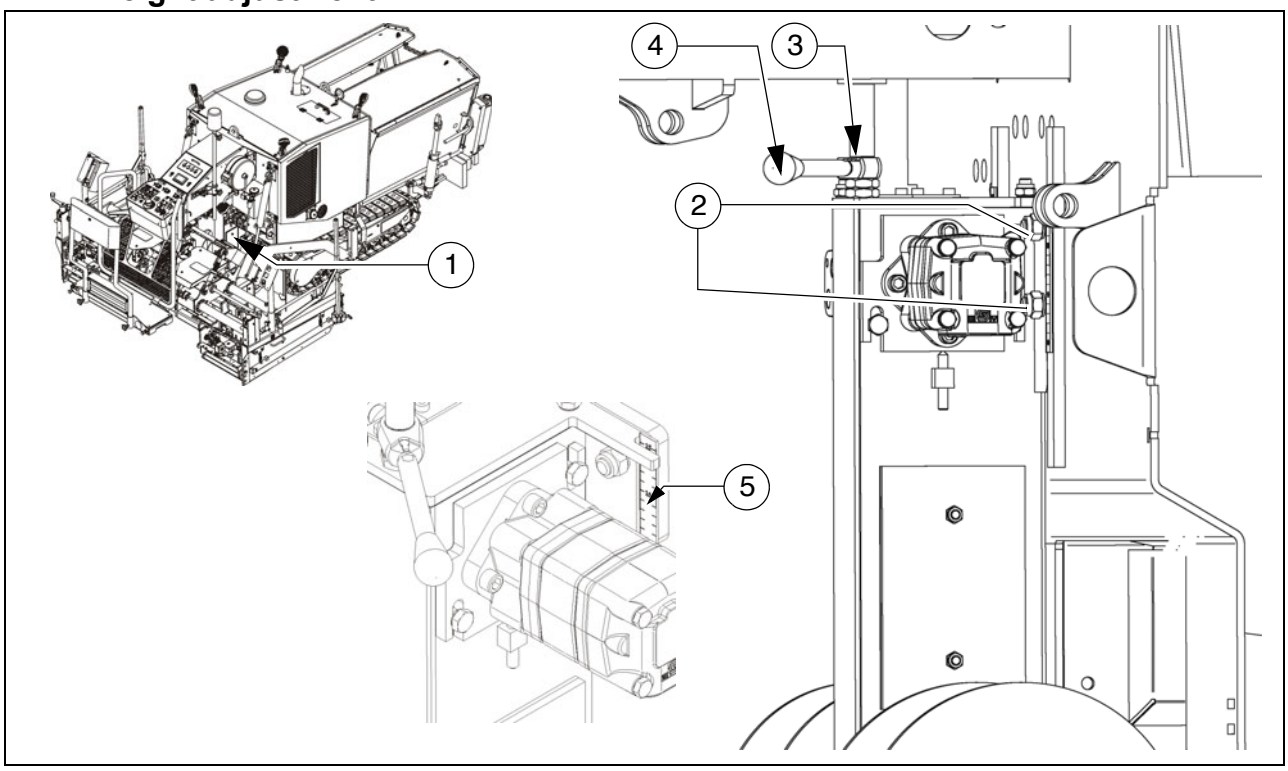
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DANGER	**Danger due to changes at the vehicle**
	Structural chances to the vehicle make the operating licence null and void and can cause severe to fatal injuries! - Only use original spare parts and approved accessories. - After maintenance and repair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

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2 Distribution auger

2.1 Height adjustment



Depending on the material, the height of the auger (1) – measured from its lower edge – should be at least 50 mm (2 inches) above the height of the material layer.

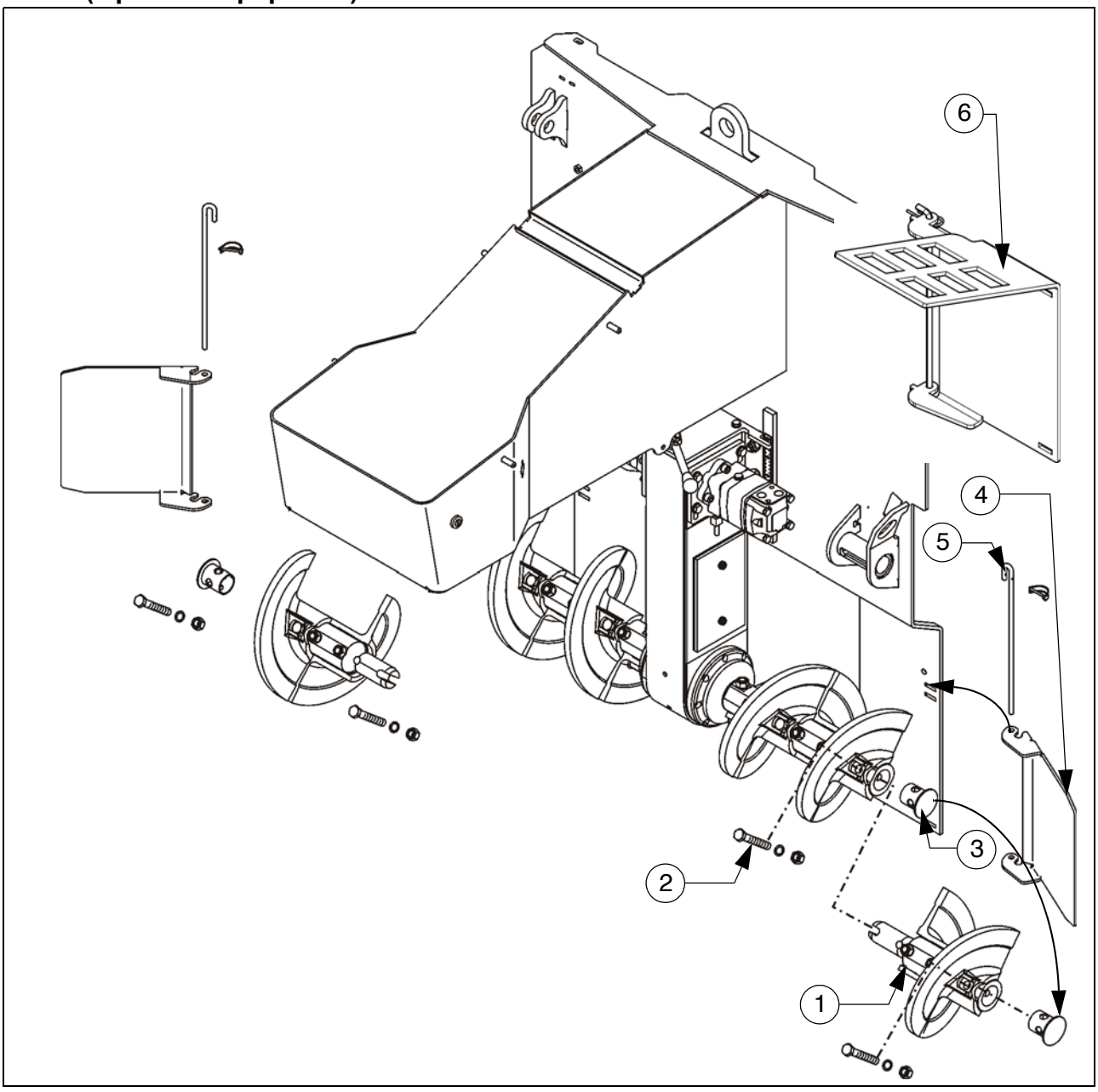
Example: Paving thickness 10 cm
Adjustment: 15 cm from the ground

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.
- Loosen the 4 mounting screws (2).
- Set the ratchet direction lever (3) to the clockwise or anti-clockwise direction.
- Adjust the required height by actuating the ratchet (4).
- The current height can be read at the scale (5).
- Retighten the mounting screws (2) properly.

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2.2 Auger width extension and material shaft with protective cover (Optional equipment)



To fit auger extensions, an additional auger segment (1) is fitted to the auger shaft.

Assembly:

- Remove outermost screw connection (2) from the basic auger.
- Remove plug (3).
- Fit the auger extension (1) to the corresponding side.
- Fit screw connection (2).
- Fit plugs (3) to the auger extension.

The relevant material shaft must be fitted to each auger extension.

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Material shaft, protective cover

Suspend the material shaft (4) in the provided bracket on the basic unit and secure with the rod (5) and the corresponding splint pin.

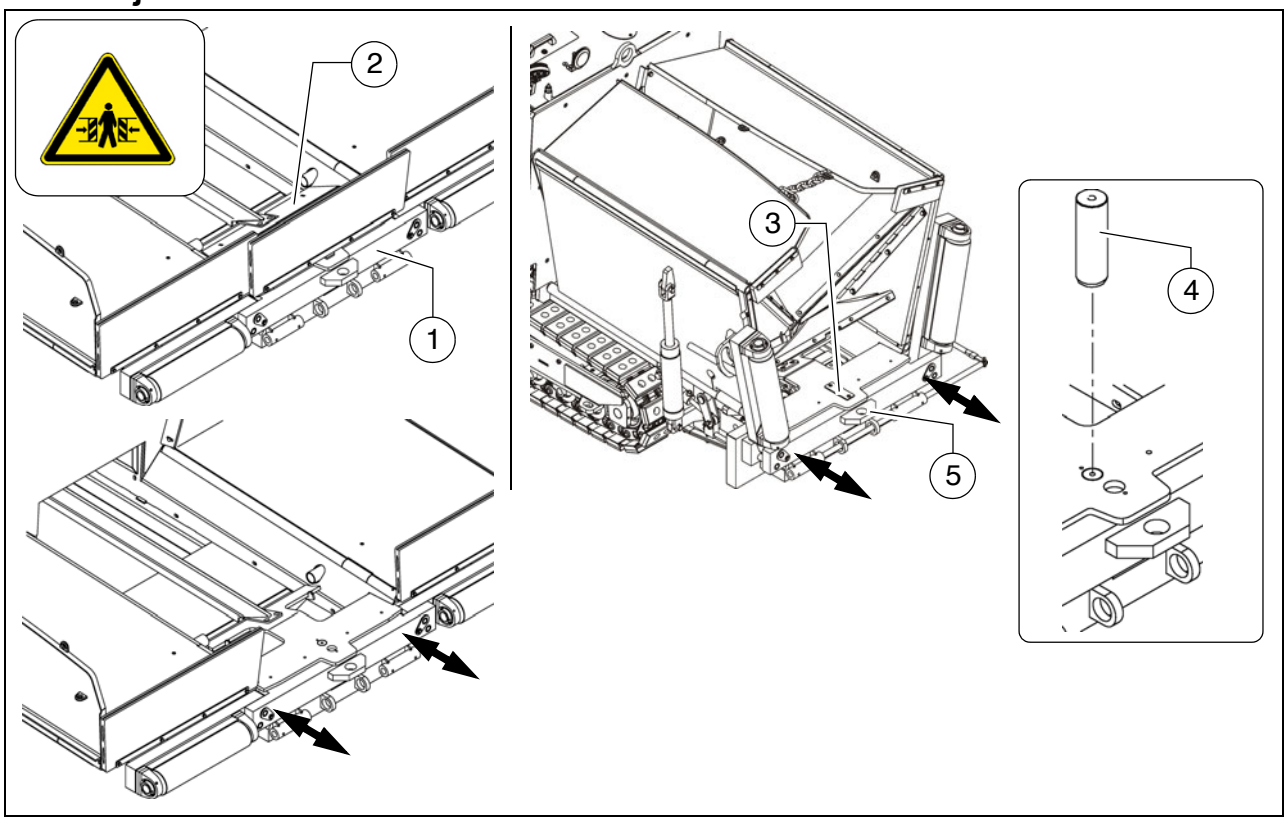
For larger paving widths:

- Remove original shaft (4)
- Fit extension shaft (6)
- Secure original shaft (4) to extension shaft (6).

⚠ Switch off engine and secure the device before carrying out any work on equipment.

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3 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 60 mm.

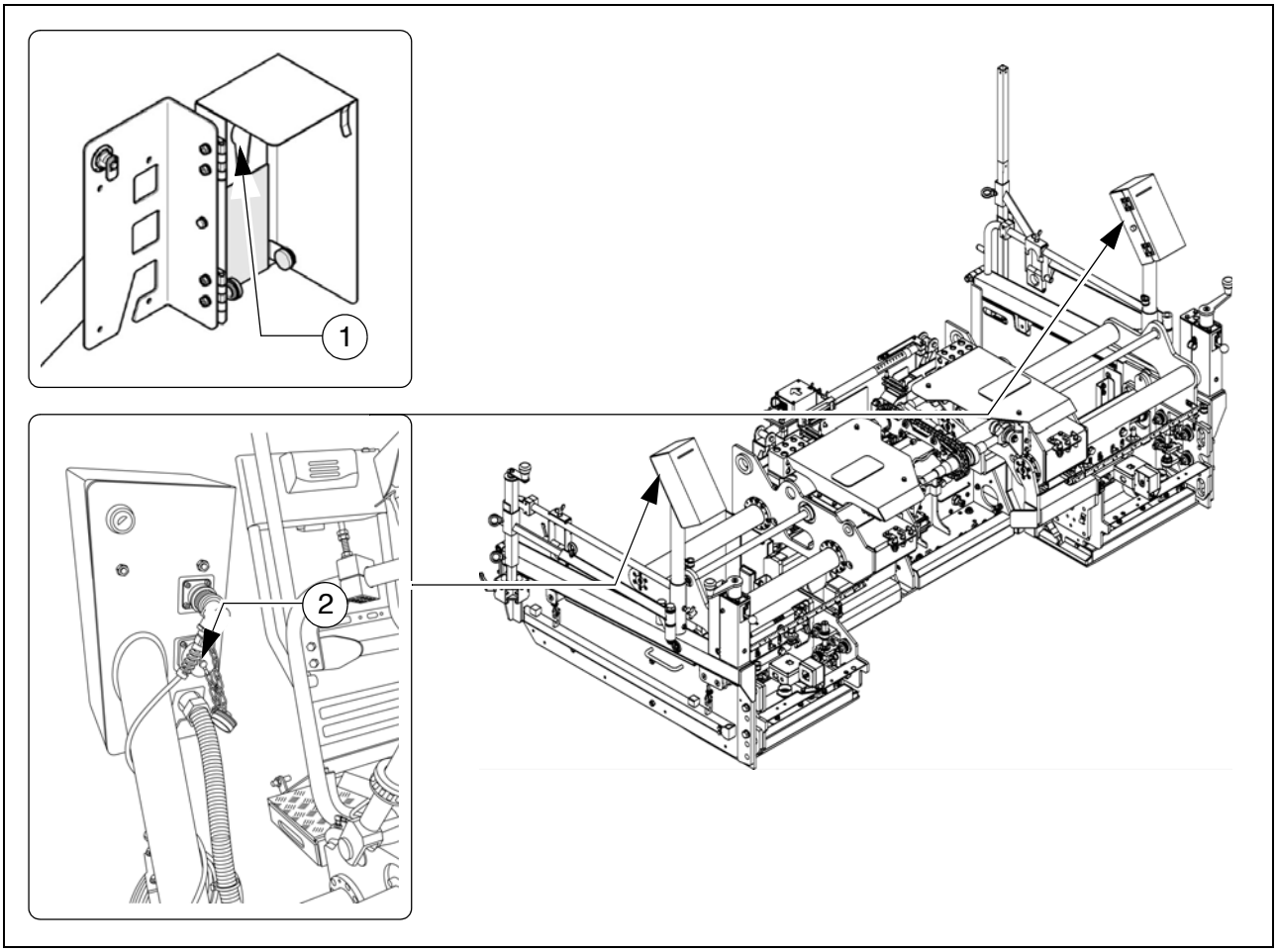
- Hopper without front hopper flap: Open hopper halves and remove cover plate (2).
- Hopper with front flap: Close hopper halves and remove cover (3).
- Dismantle retaining pin (4) using a suitable bolt extractor.
- Bring the push roller crossbar into the front / rear position.

☞ Shift the push roller crossbar at the towing eye (5) or use a suitable assembly lever in its guide (left and right) to push it into the corresponding position.

- Put the retaining pin (4) correctly back into the intended position.
- Properly reinstall all parts removed previously.

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4 Connecting the automatic levelling system



The paver finisher has two control circuits for levelling.

One for the right side of the vehicle and one for the left side.

☞ The automatic levelling system can be suspended in the opened vandalism protection facility in guide (1).

- Connect the coiled cable of the left and right-hand automatic levelling system with the corresponding sockets (2) on the remote controls.

☞ Always seal unused sockets or plugs with the corresponding protective caps!

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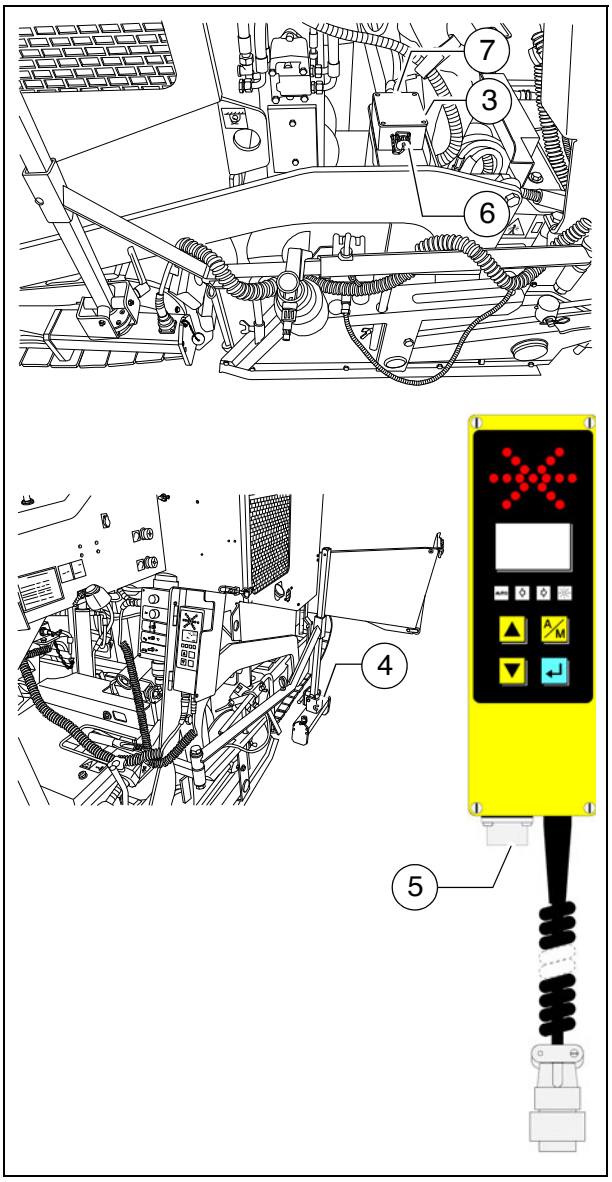
Connecting the slope controller / height controller

The slope controller (3) and height controller (4) are connected to either the left or right automatic levelling system.
Connect the coiled cables of the controllers with the corresponding sockets (5) of the automatic levelling system.

- Slope controller to left automatic levelling system - socket (6)
- Slope controller to right automatic levelling system - socket (7)
- Connect the height controller (4) to the automatic levelling system on the corresponding side of the vehicle.

☞ If the connections are confused, the automatic levelling system works in reverse.

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



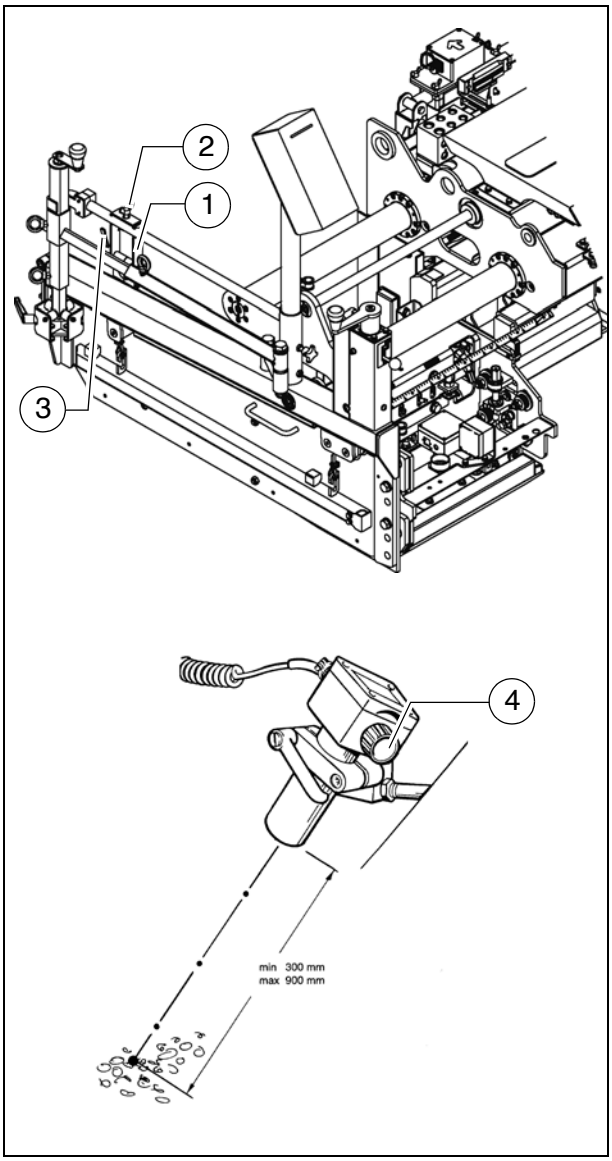
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5 Limit switch

5.1 Install auger limit switches (left and right)

The auger's ultrasonic limit switch is mounted on both sides on the side board's handrail.

- Position the sensor bracket (1) on the bracket at the side board of the screen, align and tighten with a wing bolt (2).
- Align the sensor and secure with a clamping lever (3).
- Connect the left or right sensor's connection cable to the intended remote control bracket sockets.



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

- Adjust the deactivation point with the desired material height by regulating the potentiometer (4).

☞ 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.

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F 10 Maintenance

1 Notes regarding safety

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

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

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⚠ CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion fuels from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

⚠ CAUTION	**Danger due to electric shock**
	Injuries can be caused by touching live parts directly or indirectly! - Do not remove any protective safeguards. - Never spray water on electric or electronic components. - Maintenance work to the electric system should only be carried out by trained specialist staff. - When equipped with electric screed heater, check the insulation monitoring every day according to the instructions. - Comply with all further information in these instructions and in the safety manual.

STOP **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.

STOP **Working in enclosed environments:** Exhaust fumes must be conducted into the open air. Propane gas bottles must not be stored in closed rooms.

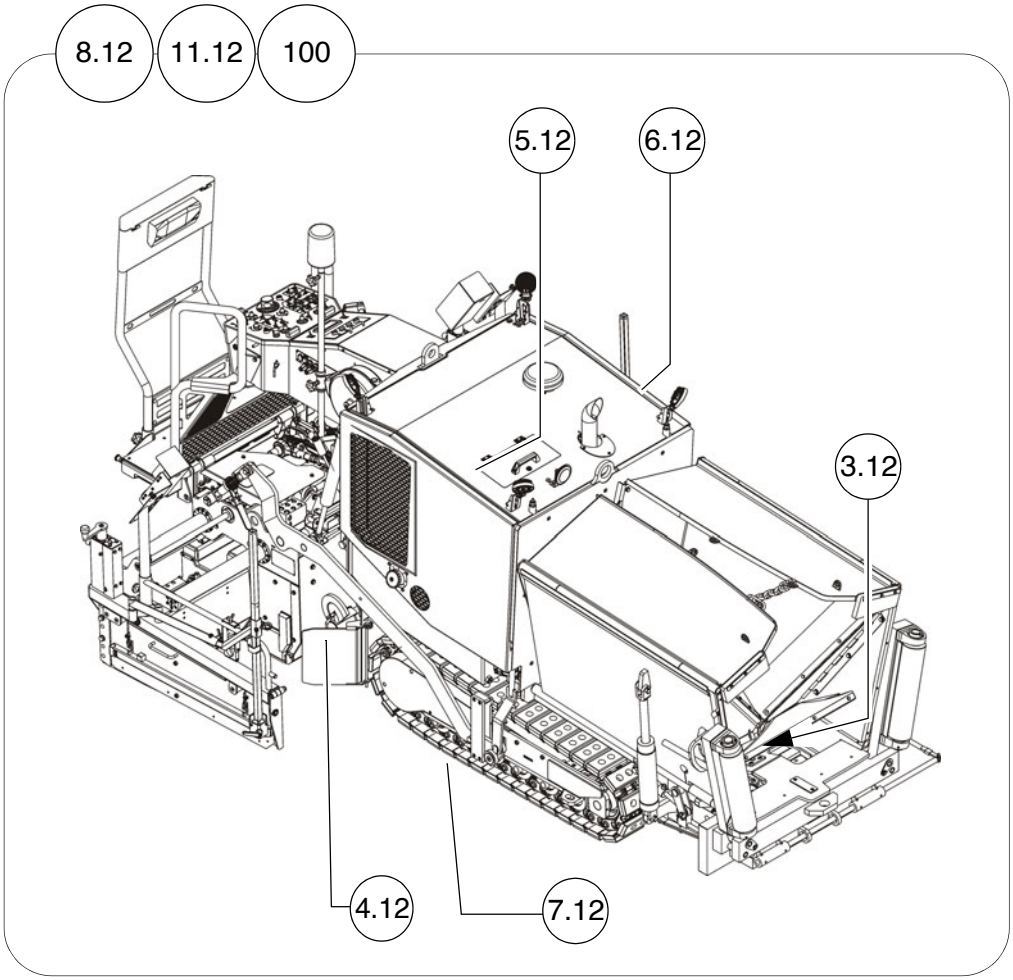
⚠ In addition to these maintenance instructions, the maintenance instructions issued by the engine manufacturer must be adhered to under all circumstances. All maintenance work and service intervals itemised here are binding in nature.

☞ Information on how to maintain the optional equipment can be found in the individual sub-sections of this chapter!

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F 2.12 Maintenance overview

1 Maintenance overview



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Assembly	Chapter	Maintenance necessary after operating hours									
		10	50	100	250	500	1000 / annually	2000 / every 2 years	5000	20000	If necessary
Conveyor	F3.12	■									■
Auger	F4.12			■			■				■
Engine	F5.12	■			■	■	■	■			■
Hydraulic system	F6.12	■	■	■		■	■	■			■
Drive units	F7.12	■	■	■	■	■	■				■
Electrical system	F8.12	■	■	■	■		■				■
Checking/shutdown	F100	■					■				■

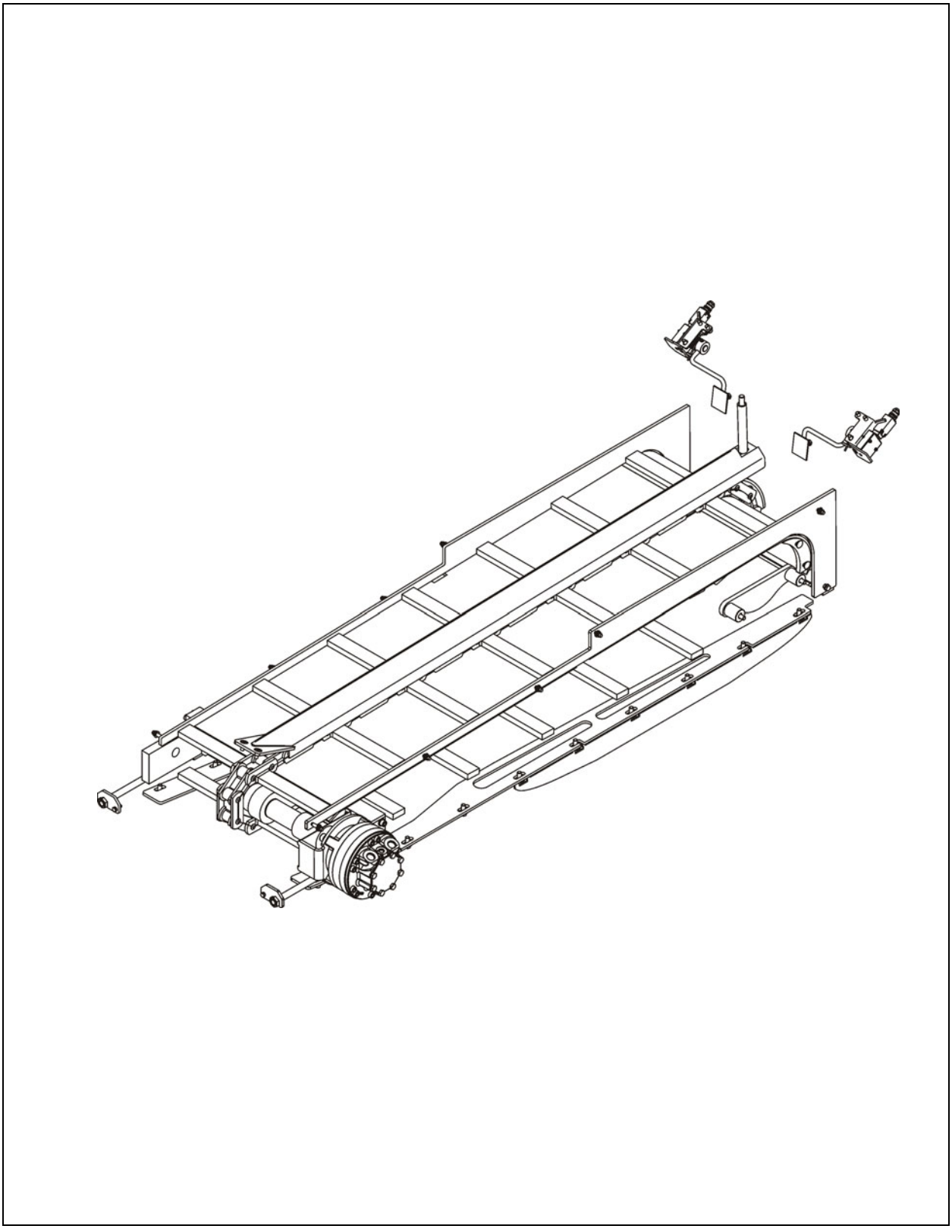
Maintenance required	■

☞ In this overview, you will find the maintenance intervals for optional machine equipment!

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F 3.12 Maintenance - conveyor

1 Maintenance - conveyor



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

WARNING	**Danger from heavy loads**
	The raised machine can slide away and cause severe to fatal injuries! - The vehicle may only be raised at the marked lifting points. - Heed the operating weight of the vehicle. - Do not enter the danger zone. - Only use approved ramps and adequately dimensioned ramps or pits. - Use only lifting gear that can bear the load. - Do not leave any load or loose parts on the vehicle. - Comply with all further information in these instructions and in the safety manual.

CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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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 tension	
								■	- Conveyor chain - Adjust tension	
								■	- Conveyor chain - Replace chain	
2								■	- Replace conveyor / conveyor drive - wear parts	

Maintenance	■
Maintenance during the running-in period	▼

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1.2 Maintenance points

Chain tension, conveyor (1)



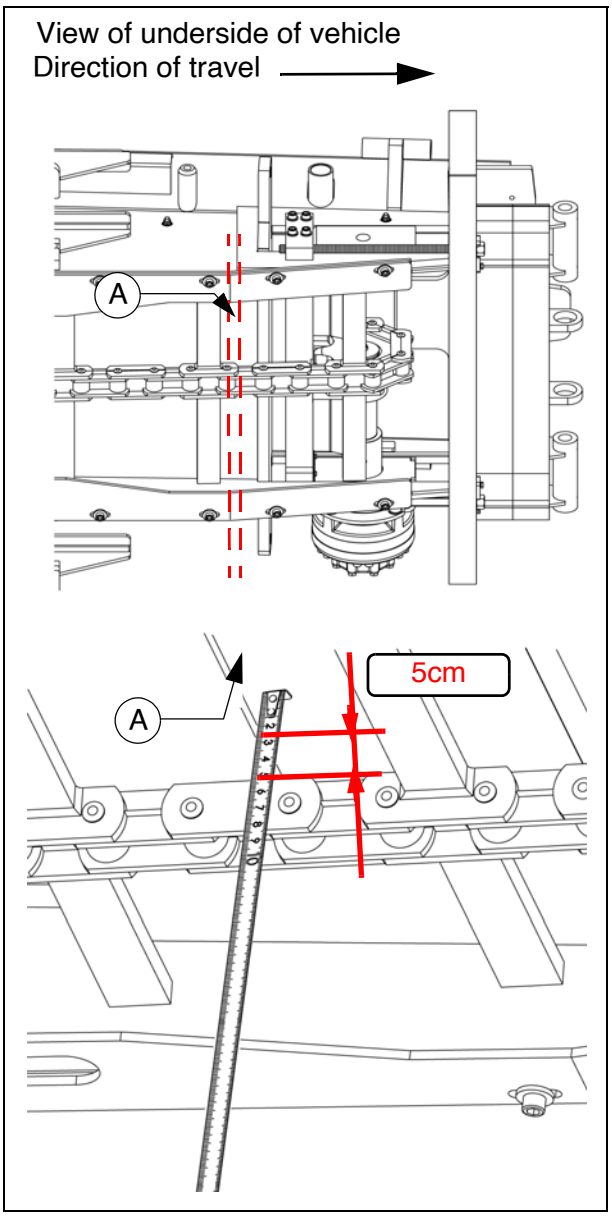
Check chain tension:

☞ To check and adjust the chain tension, the paver finisher must be located over a pit, on ramps or on a platform.

☞ The underside of the first crossmember (A) of the vehicle frame serves as a reference.

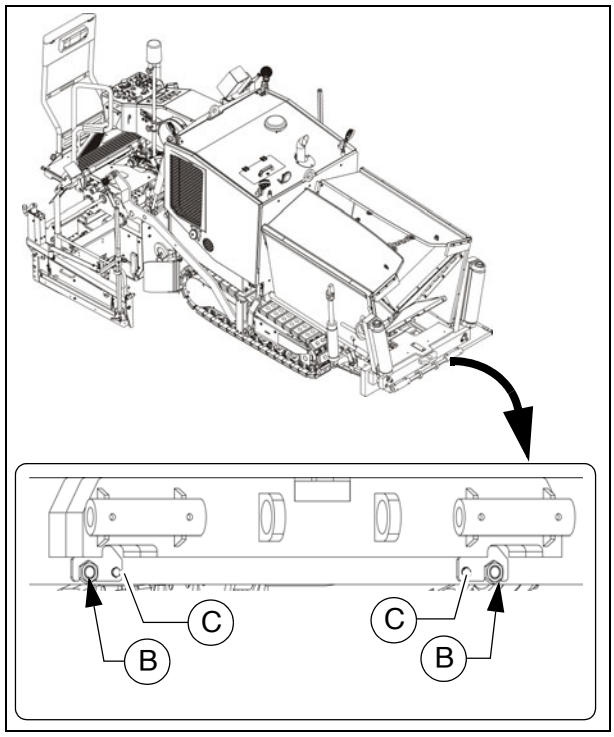
When the conveyor chain is tensioned correctly, there is a sag of approx. 50mm between the upper edge of the chain and the crossmember (A).

⚠ 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.



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Adjustment of chain tension:



☞ The adjusting screws (B) are located at the front of the vehicle on the cross-beam.

- Dismantle the locking plates (C) of the adjusting screws.
- Adjust the chain tension using the adjusting screw (B).
  - Increase chain tension: turn clockwise
  - Reduce chain tension: turn counterclockwise.

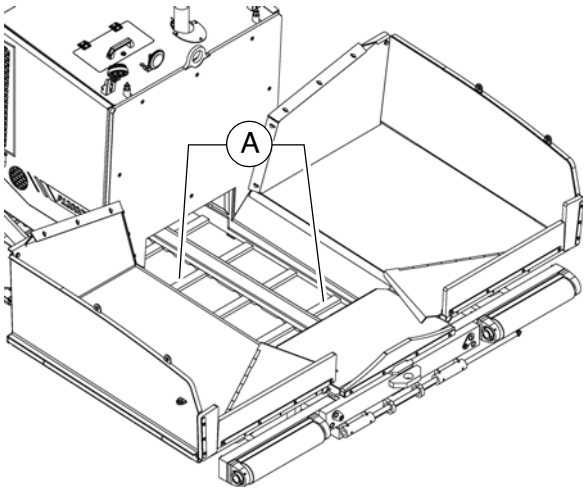
⚠ Adjust the chain tension evenly at both adjusting screws.

- Remount the locking plates (C) again properly.

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Check / replace chain:





☞ The conveyor chain must be replaced at the latest when:

- the conveyor webs (A) are worn or
- the chain has lengthened to such an extent that it can no longer be retightened.

⚠ Chain links must not be removed to shorten the chain!
Incorrectly dividing the chains would lead to destruction of the drive wheels!

☞ Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

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Replace conveyor / conveyor drive - wear parts (2)

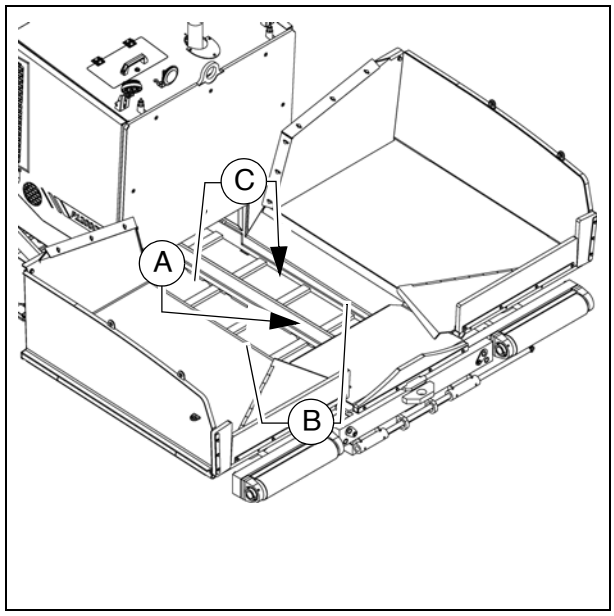


⚠ Check the following wear parts in the material tunnel and replace if necessary:

- Drive chain cover (A)
- Bottom plate (B):
- Wear plates (C):

☞ These must be replaced if the system is no longer sealed or there are holes in the parts.

⚠ The conveyor chain is not offered protection by worn cover!



⚠ Check the following wear parts in the conveyor drive section and replace if necessary:

- Conveyor chain reversing roller
- Conveyor drive chain sprocket

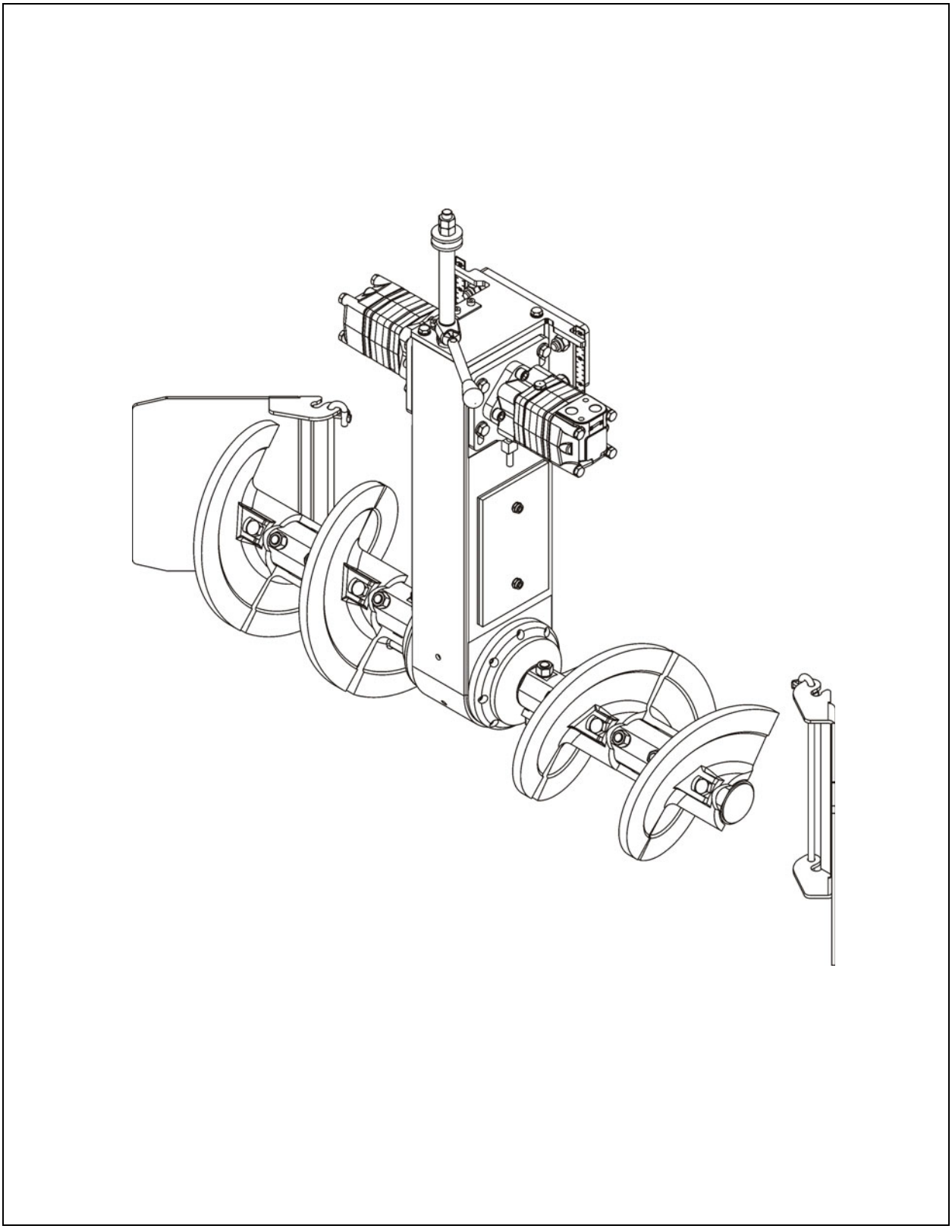
☞ Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

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F 4.12 Maintenance - auger assembly

1 Maintenance - auger assembly



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

CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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1.1 Maintenance intervals

Item	Interval									Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	5000	If necessary		
1			■							- Auger drive chains - Check tension	
									■	- Auger drive chains - Adjust tension	
									■	- Auger drive chains - Replace chains and chain sprockets	
2						■				- Auger box - Check grease fill	
									■	- Auger box - Top up grease	
									■	- Auger box - Change grease	
3						■				- Seals and sealing rings - Check wear	
									■	- Seals and sealing rings - Replace seals	
4			■							- Auger segments - Check wear	
									■	- Auger segments - Replace auger segments	

Maintenance	■
Maintenance during the running-in period	▼

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1.2 Maintenance points

Auger drive chains (1)



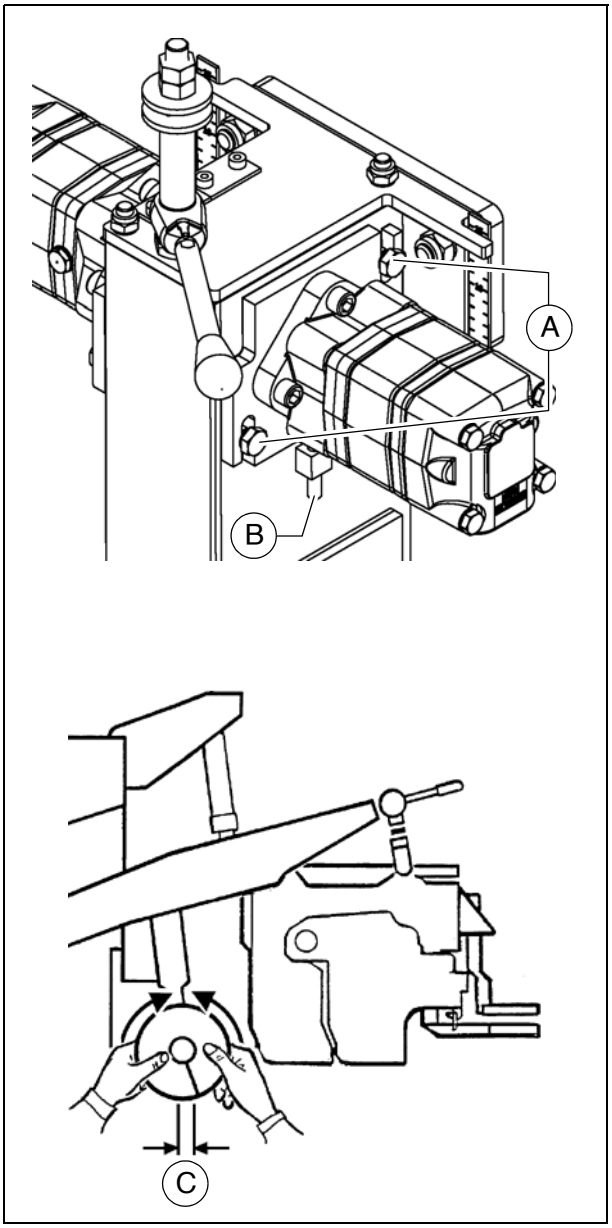
To **check the chain tension**:

- Manually turn both augers to the right and left. In this case, movement clearance (C) at the augers' outer circumference should be 3-4 mm.

STOP Risk of injury due to sharp-edged parts!

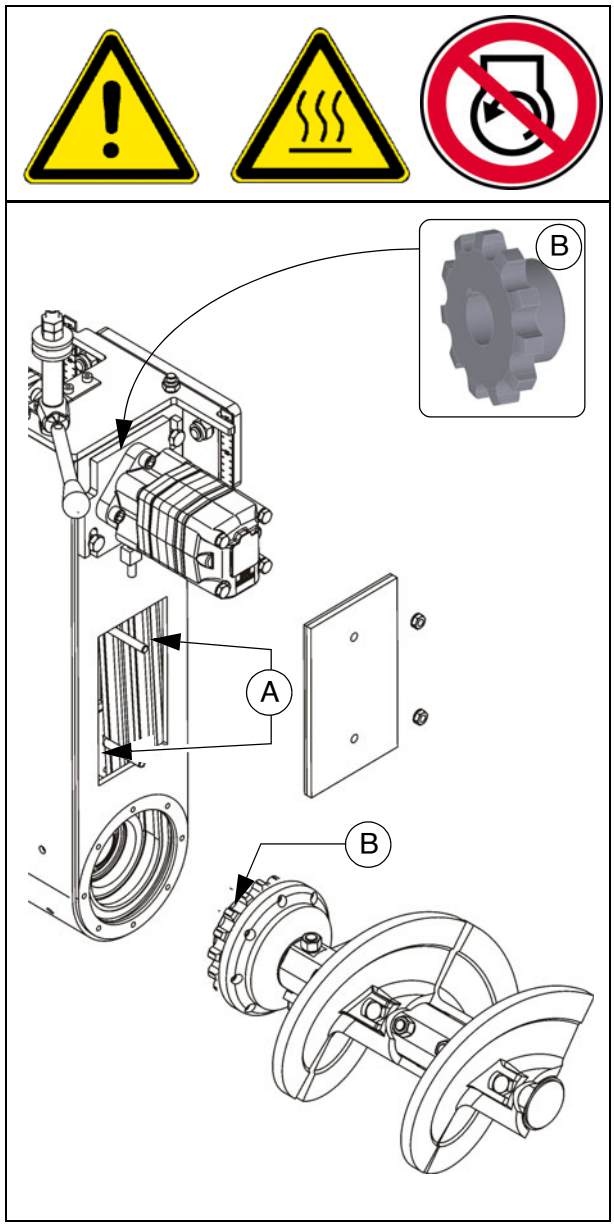
To **re-tension** the chains

- Release the mounting screws (A).
- Set the chain tension correctly using the threaded pins (B):
- Retighten the bolts (A).



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Check / replace chain:



☞ The drive chains (A) must be replaced at the latest when:

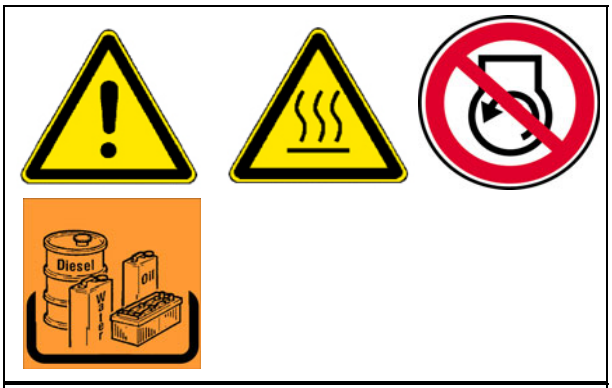
- The sprockets (B) on the auger shaft or drive are worn.
- The chains (A) have lengthened to such an extent that they can no longer be retightened.

⚠ Chains and chain sprockets must always be replaced in sets.

☞ Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

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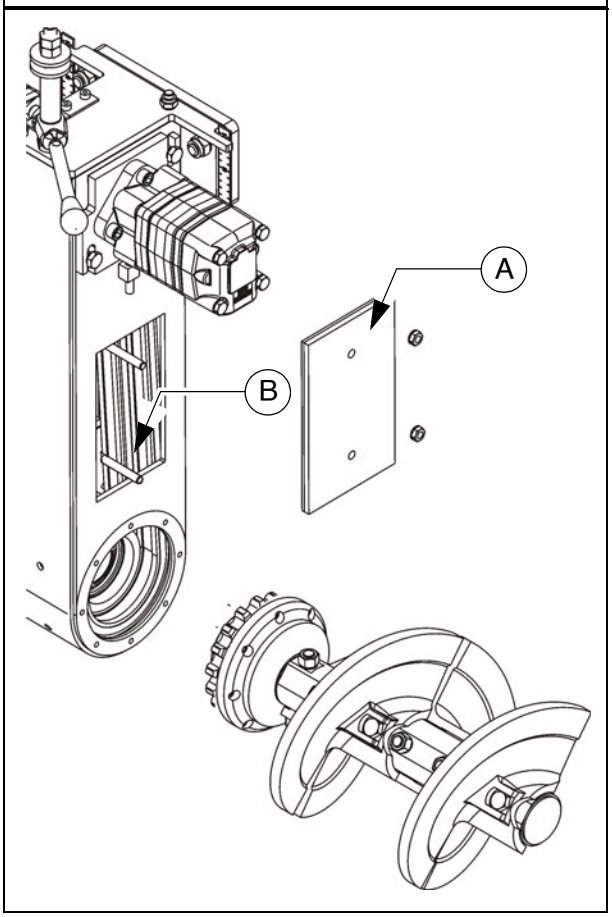
Auger box (2)



Check grease fill

To **check** the grease fill:

- Remove side cover (A)



☞ No reduction in the quality and quantity of the grease fill is normally expected. However, the grease fill must always be replaced if there is a considerable change in colour or any lumps have formed.

☞ When grease is present in the correct quantity and quality, a film of grease adheres to the full length of both chains (B).

- Top up with grease if necessary.
- Reinstall cover (A).

Change grease

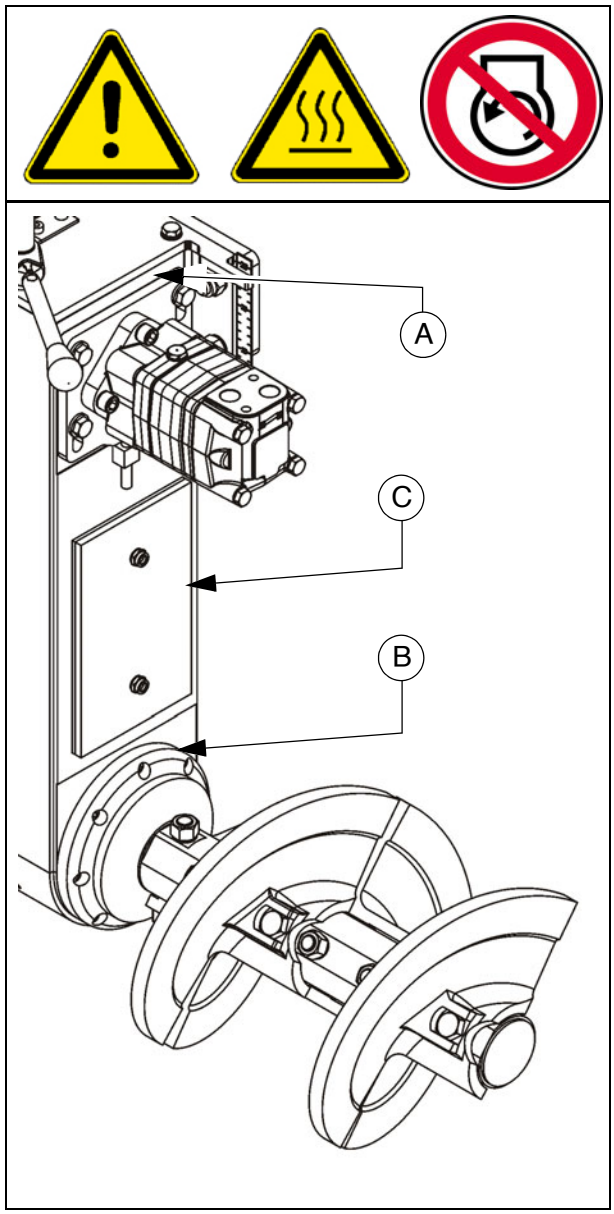
☞ The grease should be changed regularly when proceeding with wear-related change of the chains and chain sprockets.

- After dismantling the worn parts, clean the auger box on the inside.
- Once all parts have been mounted, fill with new grease, then fit cover (A).

☞ Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

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Seals and sealing rings (3)



☞ After reaching operating temperature, check the gearbox for leaks.

⚠ In case of visible leaks, e.g. between the flange surfaces (A) of the drive, auger shaft (B) or at the side cover (C), replacement of the seals and sealing rings is necessary.

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Auger segments (4)



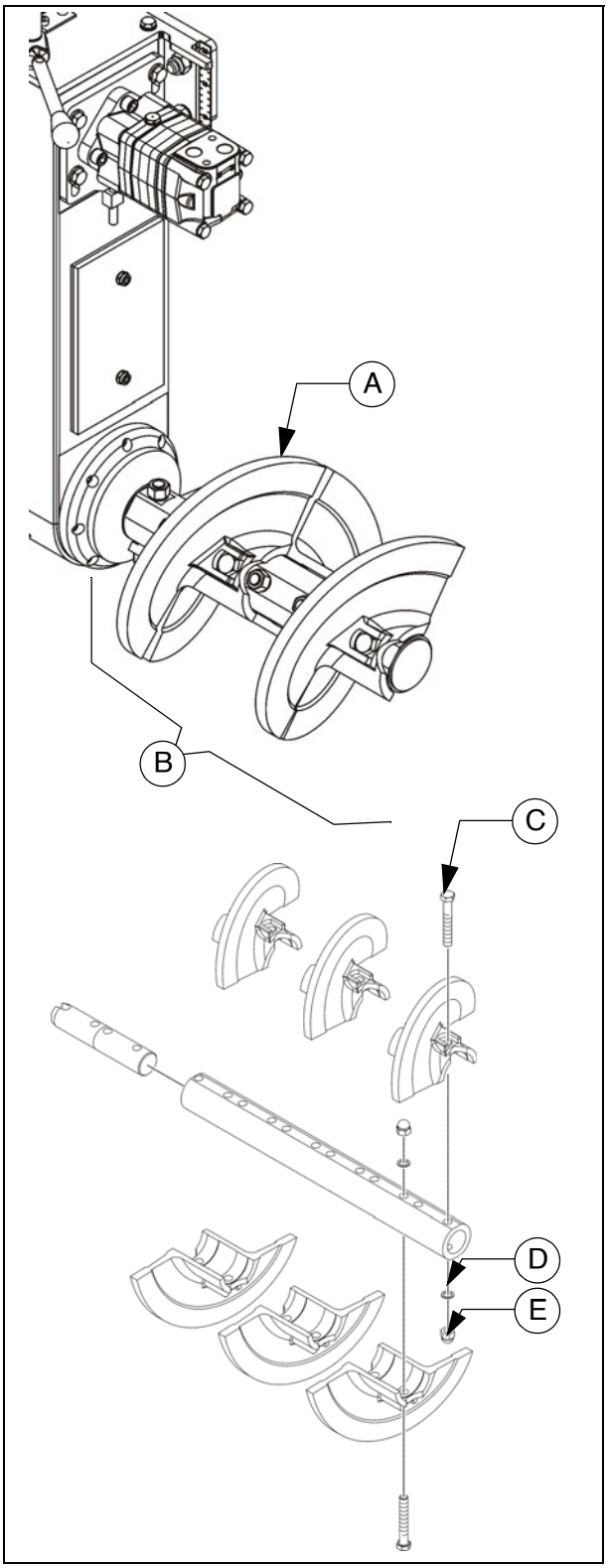
☞ If the surface of the auger blade (A) becomes sharp-edged, the diameter of the auger is reduced and the blades (B) have to be replaced.

☞ Remove the bolts (C), washers (D), nuts (E) and auger blade (B)

STOP Risk of injury due to sharp-edged parts!

⚠ Auger blades must be installed play-free; the contact surfaces must be dirt-free!

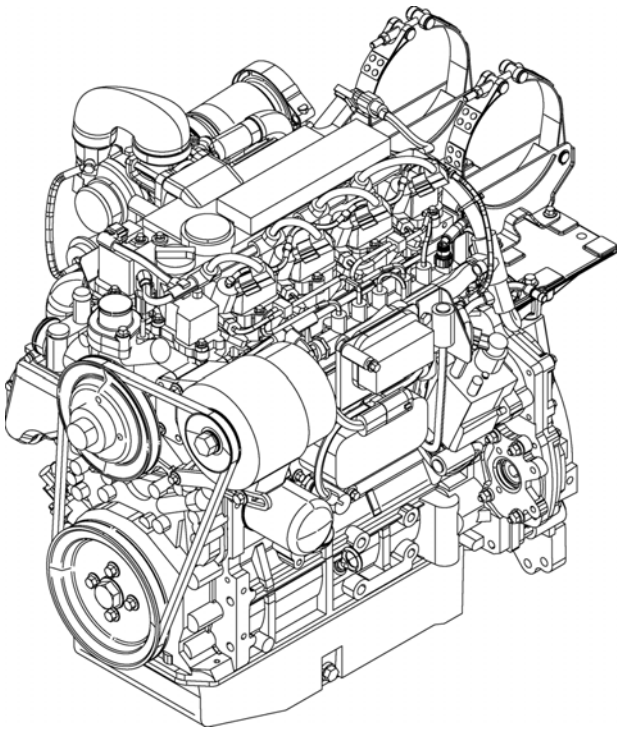
- Install the new auger blade (B); replace the bolts (C), washers (D) and nuts (E) if necessary.



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F 5.12 Maintenance - engine assembly

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.

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

CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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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	▼

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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 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	▼

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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	▼

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1.2 Maintenance points

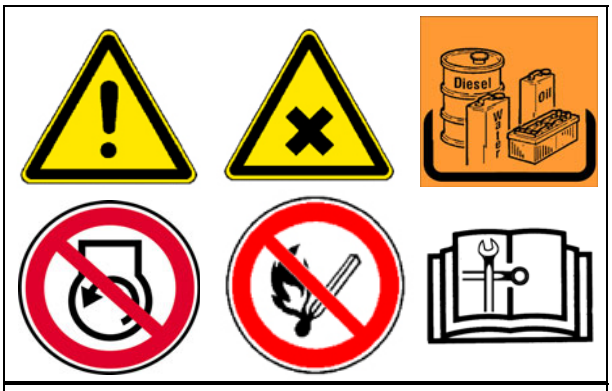
Engine fuel tank (1)

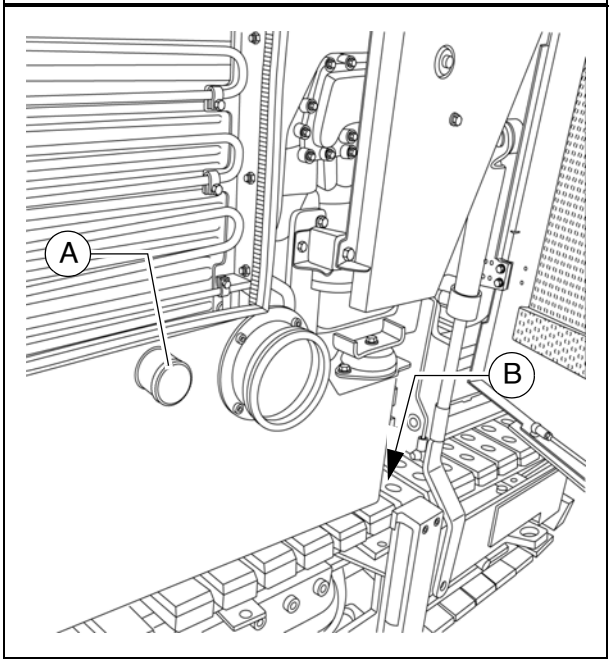
- Check the **filling level** on the gauge on the operating panel.

☞ 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.

For **filling** with fuel:

- Open lateral flap.
- Remove cover (A).
- Fill in fuel through the filling port until the required fill lever is achieved.
- Replace the cover (A).



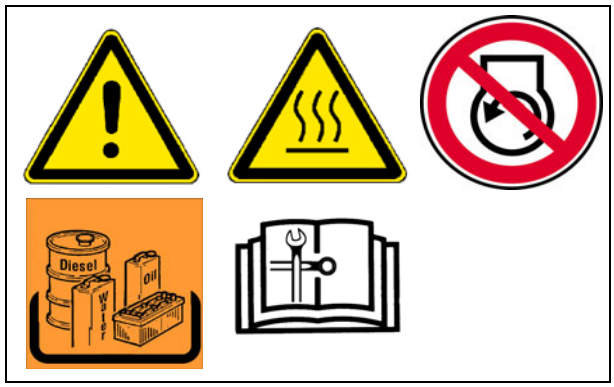


Clean the tank and system:

- Unscrew the drain plugs (B) of the tank and drain about 1 l fuel into a collection pan.
- When returning the screw, make sure to use a new seal.

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Engine lube oil system (2)



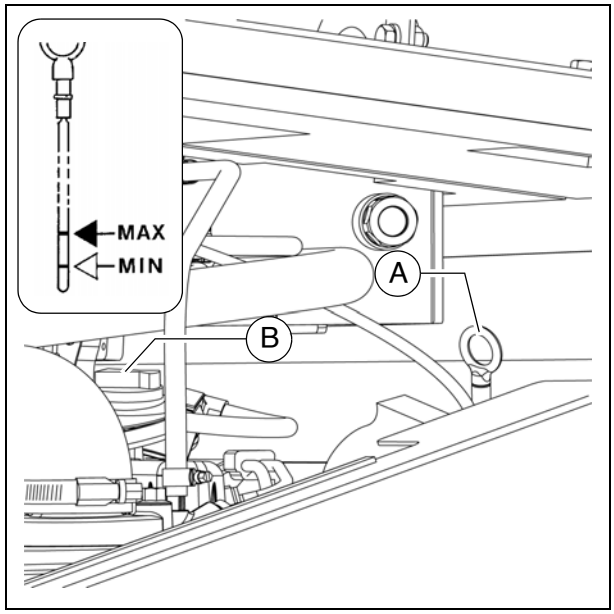
Check oil level

☞ 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!

☞ The dipstick is located at the front end of the engine.

⚠ Too much oil in engine damages gaskets; too little oil results in overheating and engine destruction.



For **filling in** the oil:

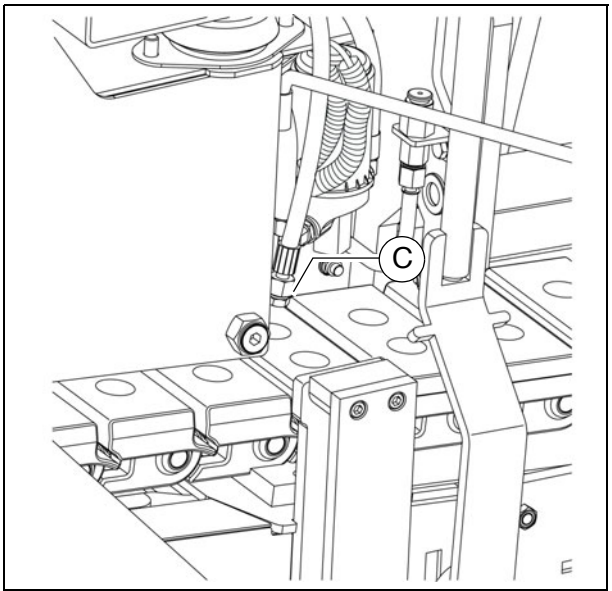
- Remove cover (B).
- Fill up oil to correct level.
- Return cover (B).
- Use dipstick to check level again.

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Oil change:

☞ The oil should be changed when at operating temperature.

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

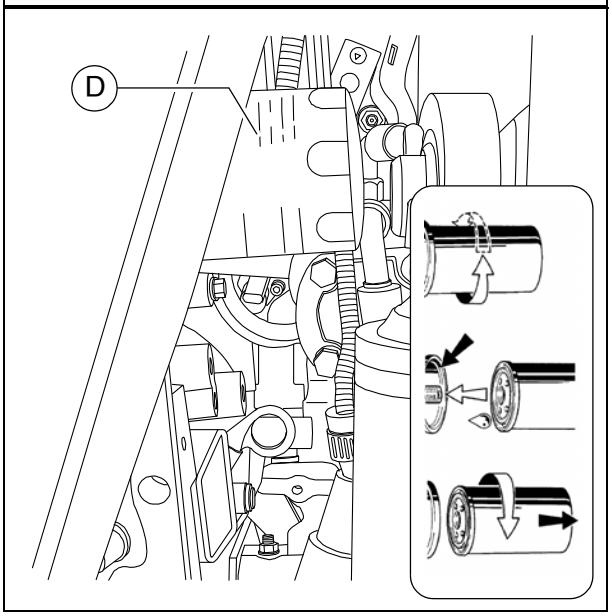


Changing the oil filter:

☞ The new filter is inserted during an oil change once the used oil has been drained out.

☞ The oil filter is located at the front end of the engine.

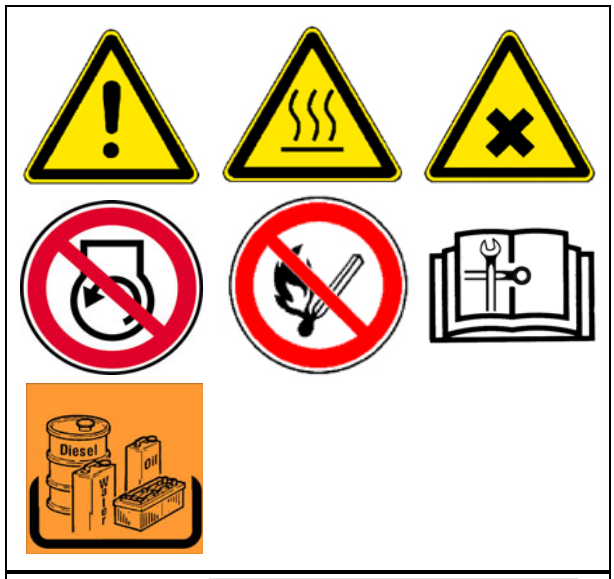
- Loosen the filter (D) using a filter wrench or filter strap and unscrew. Clean the contact surface.
- Apply light coating of oil to the gasket on the new filter and fill filter with oil before installing it.
- Tighten filter by hand.



☞ 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.

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Engine fuel system (3)



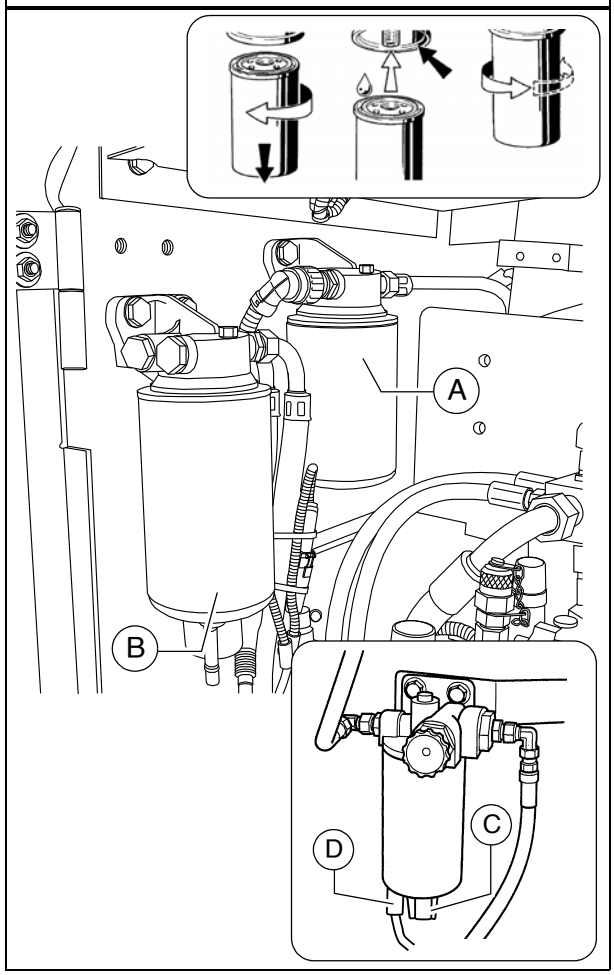
☞ The fuel filter system consists of two filters:

- Prefilter (A) with water separator
- Main filter (B)

Prefilter - draining of water

☞ Drain the collecting vessel at regular intervals, or in response to an error message from the engine control unit.

- Put a suitable drip pan underneath.
- Disconnect the electrical connection/ cable connection.
- Loosen drain plug (C).
- Drain off liquid until pure diesel fuel emerges.
- Tighten the drain plug (C) again.
- Restore the electrical connection/cable connection.



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Changing the prefilter:

- Put a suitable drip pan underneath.
- Disconnect the electrical connection/cable connection.
- Loosen drain plug (C) and drain off liquid.
- Untighten the filter cartridge (A) using a pair of oil filter tongs or oil filter strap and unscrew it.
- Clean any dirt from the sealing face of the new filter cartridge and the opposite side of the filter head.
- Lightly coat the oil filter cartridge seal with fuel and screw hand-tight under the bracket (17-18 Nm).
- Restore the electrical connection/cable connection.
- Tighten the drain plug (C).
- Bleed the fuel system

Bleed the fuel system:

☞ The fuel system is bled using the electric fuel feed pump. Do not attempt to start the vehicle while the fuel system is being bled to ensure that no error message is generated.

- Ignition "ON"

☞ The electronic fuel feed pump switches on for 20 seconds to bleed the fuel system and build up the necessary fuel pressure.

☞ Wait until the electric fuel feed pump is switched off by the control unit.

- Ignition "OFF"

☞ Repeat at least twice until the fuel system is bled.

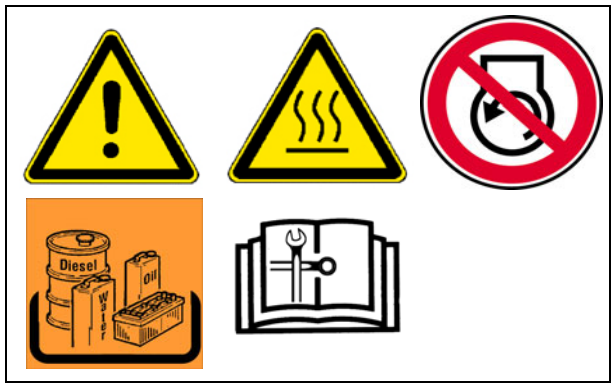
Replacing the main filter:

- Untighten the filter cartridge (B) using a pair of oil filter tongs or oil filter strap and unscrew it.
- Clean any dirt from the sealing face of the new filter cartridge and the opposite side of the filter head.
- Lightly coat the oil filter cartridge seal with fuel and screw hand-tight under the bracket (17-18 Nm.

☞ After fitting the filter, ensure good sealing action during the test run.

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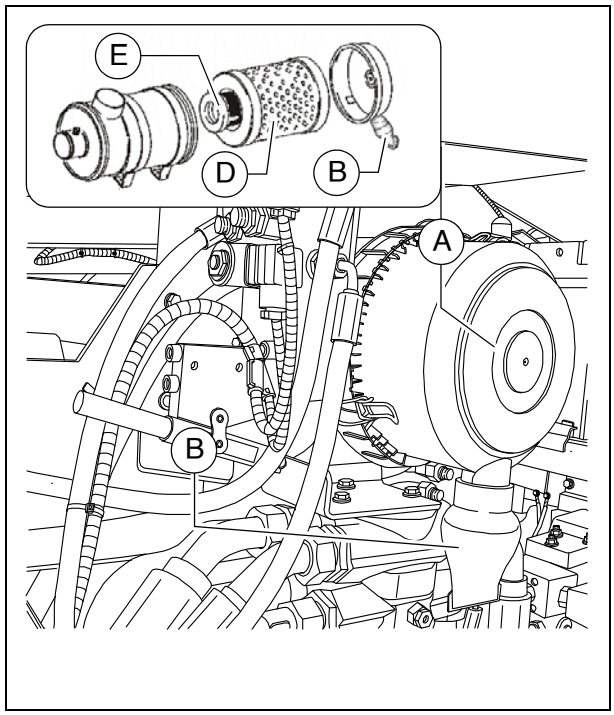
Engine air filter (4)



Empty dust collector

- Empty the dust removal valve (B) on the air cleaner housing (A) by pressing the discharge port in the direction of the arrow.
- Remove any baked on dust by pressing together the upper valve section.

☞ Clean the discharge port from time to time.



Cleaning / replacing the air filter cartridge

☞ Pollution of the combustion air filter depends on the dust content of the air and the mesh size of the filter selected.

☞ Filter maintenance becomes necessary if:

- Maintenance interval or
- Engine electronics service indicator
- Open the air filter lid.
- Pull out the filter cartridge (D) and the safety cartridge (E).

☞ Clean the filter cartridge (D) 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.

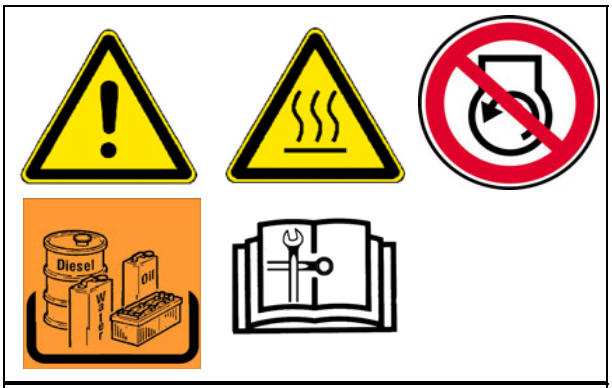
☞ Replace the safety cartridge (E) together with the filter cartridge (D)

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Engine cooling system (5)

Checking / topping up coolant

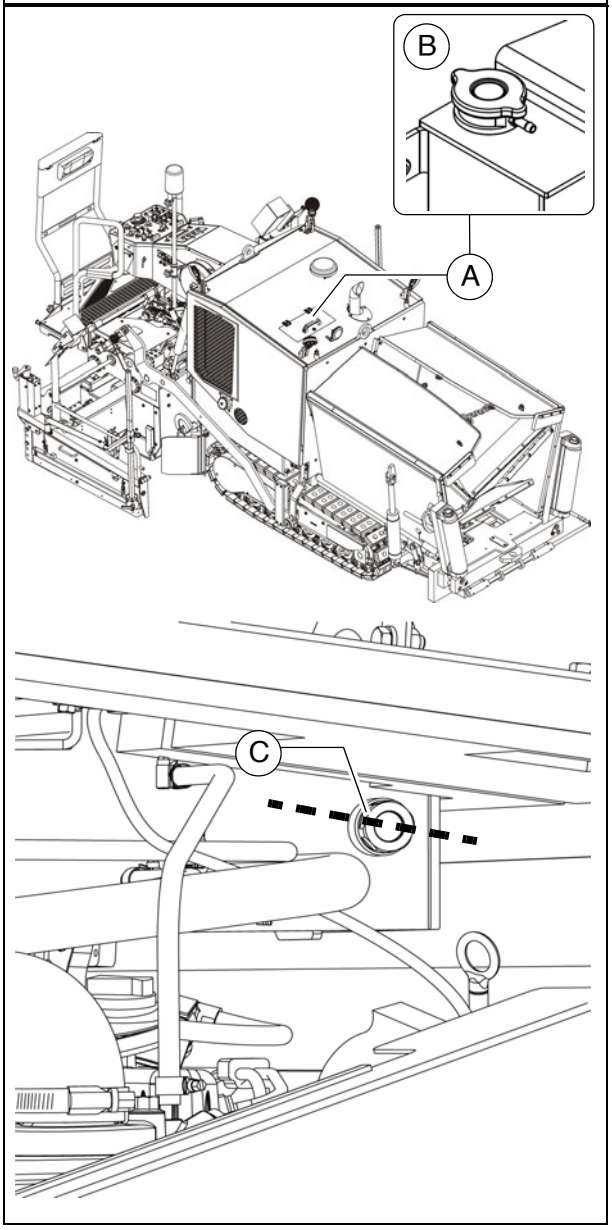
The cooling water level must be checked when the system is cold. Make sure that sufficient anti-freeze and anti-corrosion agent is available (-25°C).



STOP When hot, the system is under pressure. When it is opened, there is danger of scalding!

- The fluid level must be up to the centre of the sight glass (C).

☞ The filler neck is accessed via the service flap (A) on top of the vehicle:



☞ If necessary fill in a sufficient amount of coolant through the open port (B) of the compensating tank.

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Change coolant

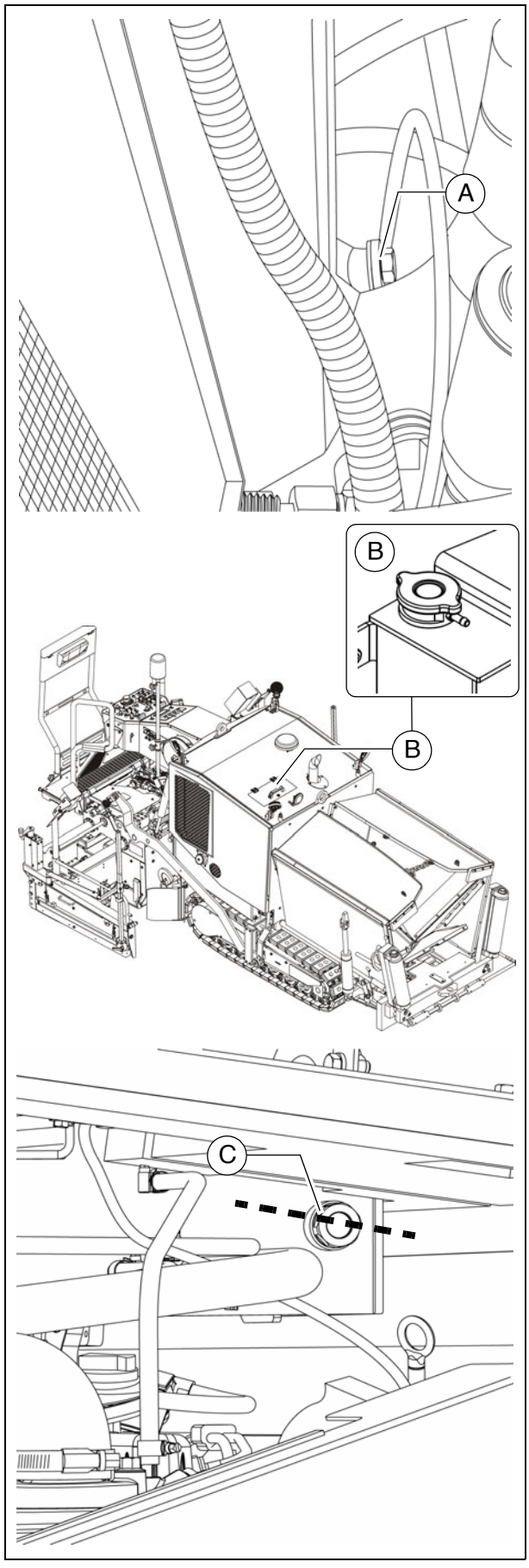
When hot, the system is under pressure. When it is opened, there is danger of scalding!

Use only approved coolants!

Observe the instructions in the chapter entitled "Operating substances"!

- Remove the drain screw (A) on the radiator and let the coolant drain completely.
- Reinstall the drain screw (A) and tighten properly.
- Fill in coolant through the filling opening (B) 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.



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Checking and cleaning the radiator fins

- If necessary, remove leaves, dust or sand from the radiator.

☞ Observe engine's operating instructions!

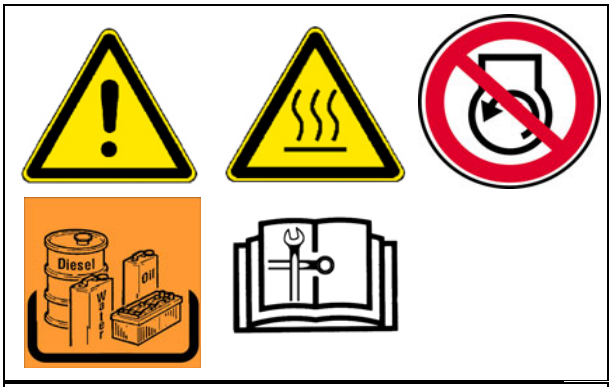
Check coolant concentration

- Check the concentration using a suitable tester (hydrometer).
- Adjust the concentration if necessary.

☞ Observe engine's operating instructions!

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Engine drive belt (6)



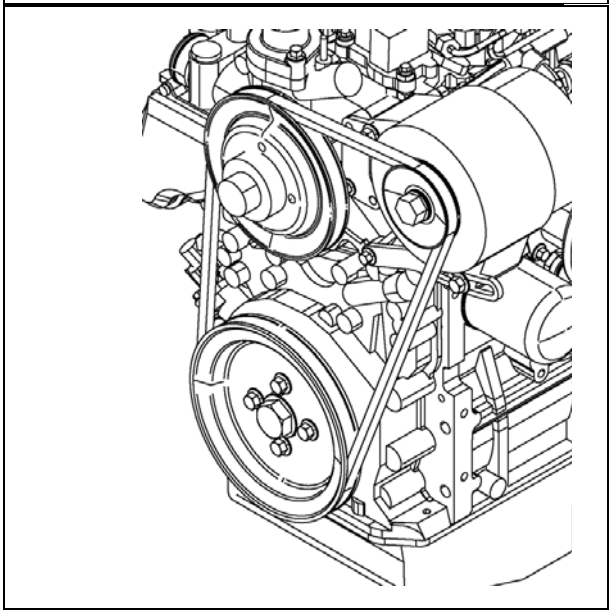
Check drive belt

- 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

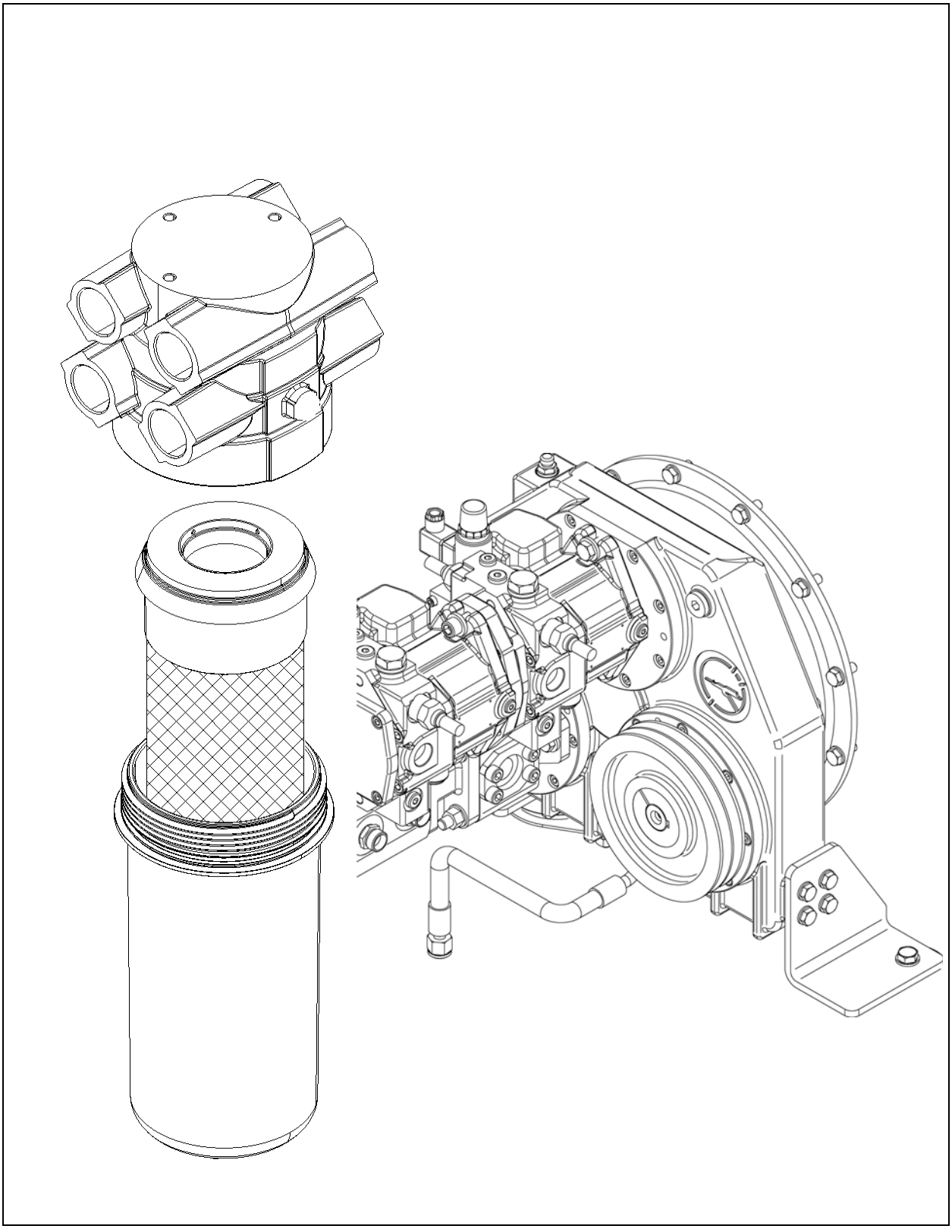
☞ Observe engine's operating instructions!

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F 6.12 Maintenance - hydraulic system

1 Maintenance - hydraulic system



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WARNING	**Danger from hydraulic oil**
	Hydraulic oil under high pressure can cause severe to fatal injuries! - Only competent staff should work on the hydraulic system! - Any hydraulic hoses that are cracked or soaked through must be replaced immediately. - Depressurise the hydraulic system. - Lower screed and open hopper. - Stop the engine and remove the ignition key before any maintenance work. - Secure the vehicle to prevent it being switched on again. - Consult a doctor immediately if injured. - Comply with all further information in these instructions and in the safety manual.

CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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1.1 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 filling level	
								■	- Hydraulic oil tank - Top up with oil	
							■		- Hydraulic oil tank - Change oil and clean	
						■			- Hydraulic oil tank - Change ventilation filter (dipstick)	
2	■								- Hydraulic oil tank - Check maintenance indicator	
						■		■	- Hydraulic oil tank - Change and vent the suction/return flow hydraulic filter	
3		▼			▼	■		■	- High-pressure filter - Replace filter element	

Maintenance	■
Maintenance during the running-in period	▼

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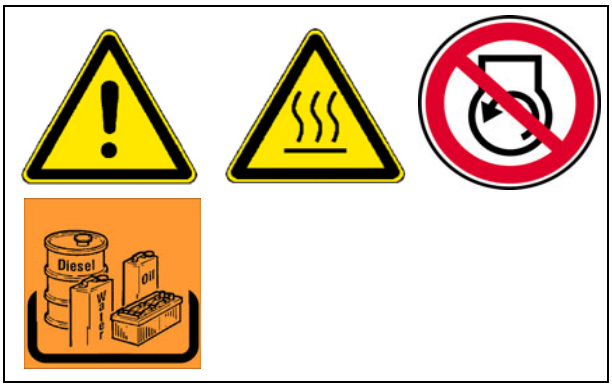
Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
4	■								- Pump distribution gear - Check oil level	
								■	- Pump distribution gear - Top up oil	
			▼			■			- Pump distribution gear - Change oil	
	■								- Pump distribution gear - 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	▼

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1.2 Maintenance points

Hydraulic oil tank (1)

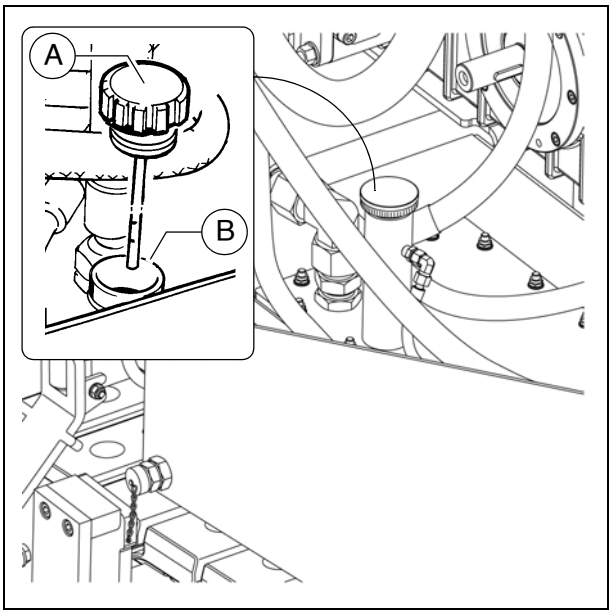


- **Check oil level** on dipstick (A).

☞ The paver finisher must be positioned horizontally with all hydraulic cylinders retracted.

☞ If all the cylinders are extended, the level can fall below the dipstick marking.

☞ The dipstick (A) should be coated with oil up to the upper marking.



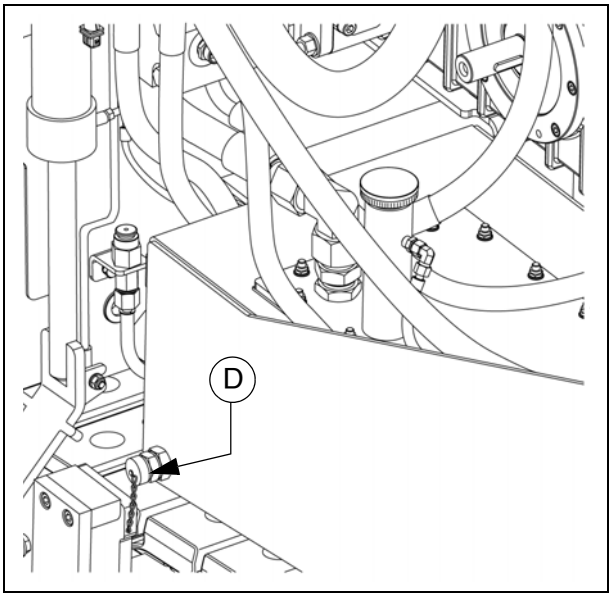
For **filling in** the oil:

- Fill oil in at the filler neck (B) until the oil level on the dipstick reaches the upper marking.
- Screw in the dipstick (B) again.

⚠ 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 returning the screw, make sure to use a new seal.
- 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).

☞ The oil should be changed when at operating temperature.

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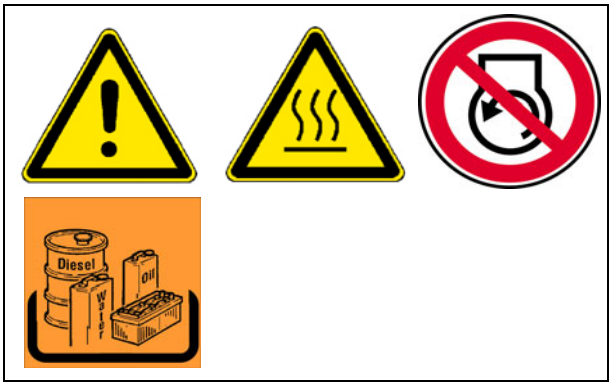
⚠ When changing the hydraulic oil also change the filter.

Ventilation filter

☞ The ventilation filter is integrated in the dipstick.
The dipstick must be replaced according to the maintenance interval.

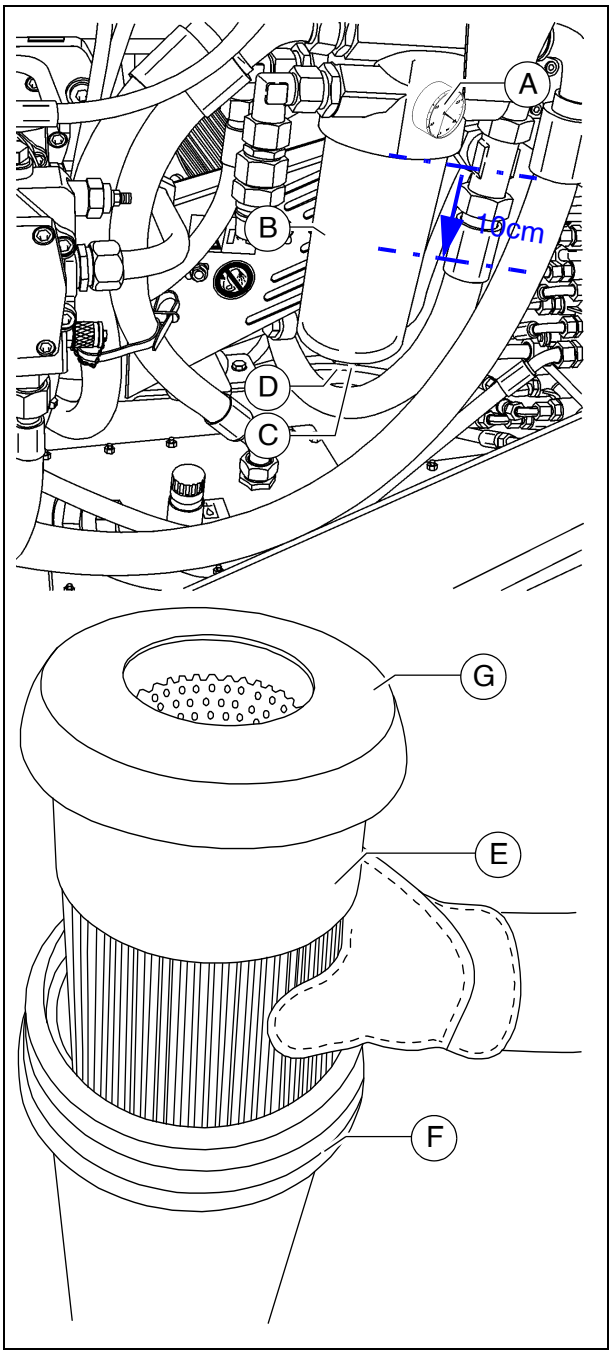
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Suction/return flow hydraulic filter (2)



Replace the filter element when the **service indicator** (A) turns red at a hydraulic oil temperature of more than 80° or the interval has been reached.

- Place an oil collecting vessel under the filter housing (B), unscrew the drain plug (C) and let the oil drain out.
- Tighten the drain plug (C) properly again.
- Loosen the filter housing (B) at hex (D).
- Unscrew the filter housing (B) and push approx. 10 cm down.
- Loosen the filter cartridge (E) from the filter head and take out of the engine compartment together with the filter housing.



☞ To avoid impurities, do not let the filter cartridge fall back into the housing again!

- Remove the filter cartridge (E).
- Empty and clean the filter housing (B), clean the sealing faces in the filter head.
- Replace the O-ring (F) on the filter housing.
- Insert new filter cartridge and fill filter housing with oil up to the top edge.
- Coat sealing face (G) and O-ring (F) with oil.

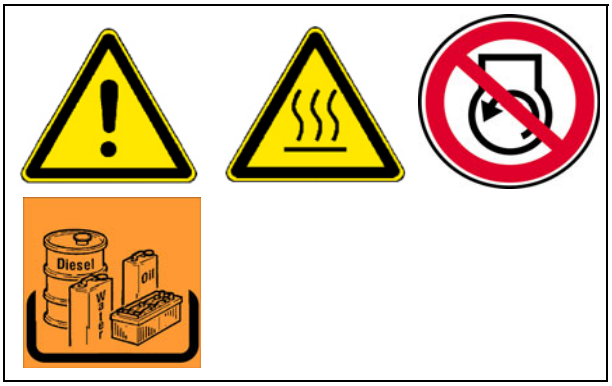
⚠ Only use hydraulic oils of the prescribed specification!

- Screw the filter housing (B) hand tight into the filter head, then tighten gently with a wrench.
- Start trial operation and check the tightness of the filter.

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High-pressure filter (3)

The filter (B) is in the engine compartment on the left of the vehicle.

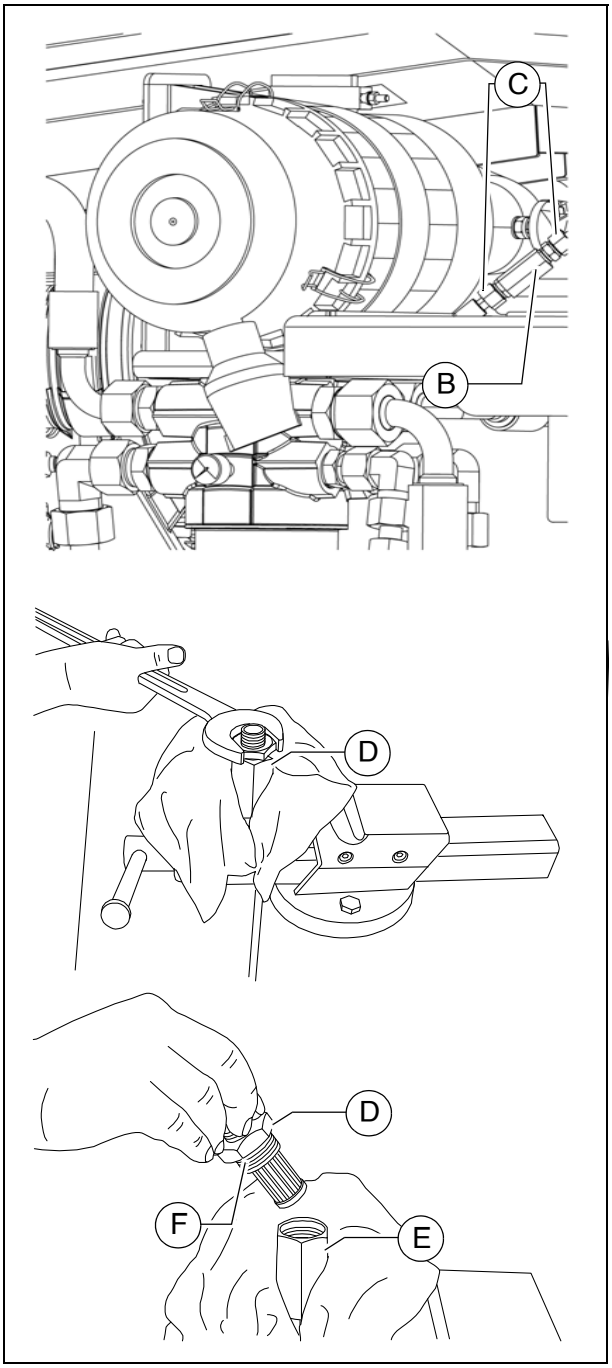


☞ During the run-in time, the filter element can be cleaned with cleaning solvent, later it will have to be changed.

- Loosen the fittings (C) and remove the filter housing (B).
- Fix the filter in a vice.
- Loosen and unscrew the screw-in neck (D) with a screw wrench.

☞ Put a vessel underneath to collect the draining oil.

- Remove the screw-in neck with strainer element (D).
- Shake any remaining oil out of the housing (E) into a vessel for used oil, then clean the filter housing with cleaning solvent.
- Check that the O-ring (F) at the screw-in neck is in perfect condition, replace if necessary.
- Push the screw-in neck with strainer element (D) carefully into the housing (E) and screw in as far as it will go. Tighten with a screw wrench (torque 120 +/- 5 Nm)
- Start trial operation and check the tightness of the filter.



☞ Replace the seal ring whenever the filter cartridge is replaced.

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Pump distribution gear (4)

- **Check the oil level** at the sight glass (A) (at the side of the gear housing).

☞ The oil level must be up to the centre of the sight glass.

For **filling in** the oil:

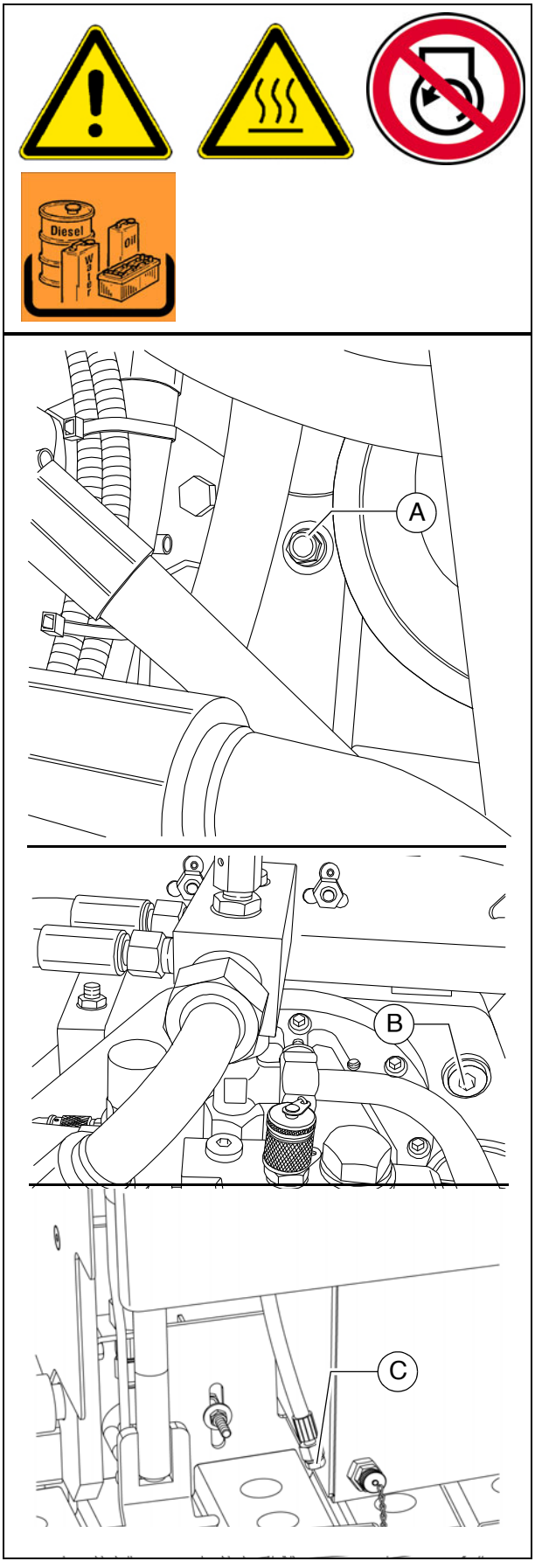
- Unscrew the filler screw (B).
- Fill oil in through the filling port until the required filling level is achieved at the sight glass (A).
- Screw in the filler screw (B) again.

⚠ Make sure to clean the screw and the vicinity of the drain bore!

Oil change:

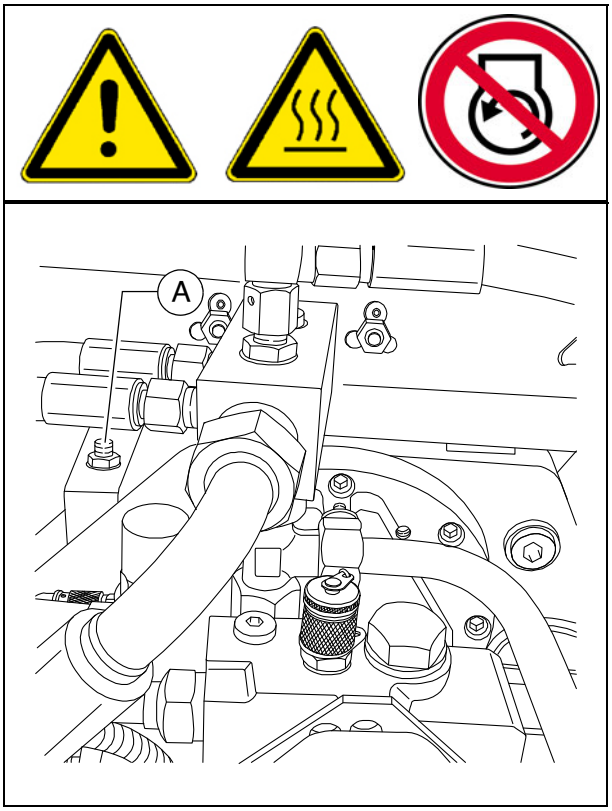
- Place the end of the oil drain port hose (C) in the collection container.
- Remove the screw cap with a wrench and allow the oil to drain completely.
- Replace the screw cap and tighten properly.
- Fill in the oil of specified quality through the filling port on the gearbox (B) until the oil level rises to the centre of the sight glass (A).

☞ The oil should be changed when at operating temperature.



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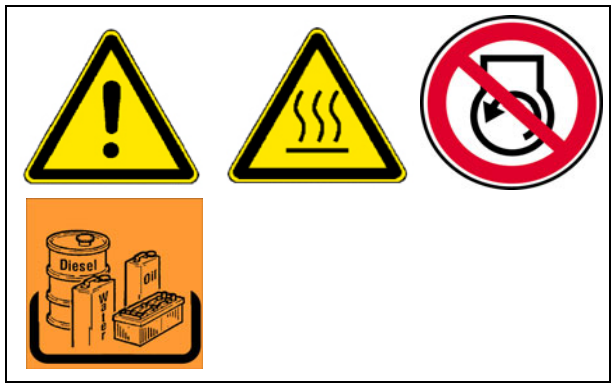
Bleeder



- The functioning of the bleeder (A) must be ensured.
  If soiling has occurred, the bleeder should be cleaned.

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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 "2013" as the date of manufacture, the period of use ends in February 2019.

☞ See the section on "Marking hydraulic hoses".

STOP Ageing hoses become porous and may burst! Danger of accident!

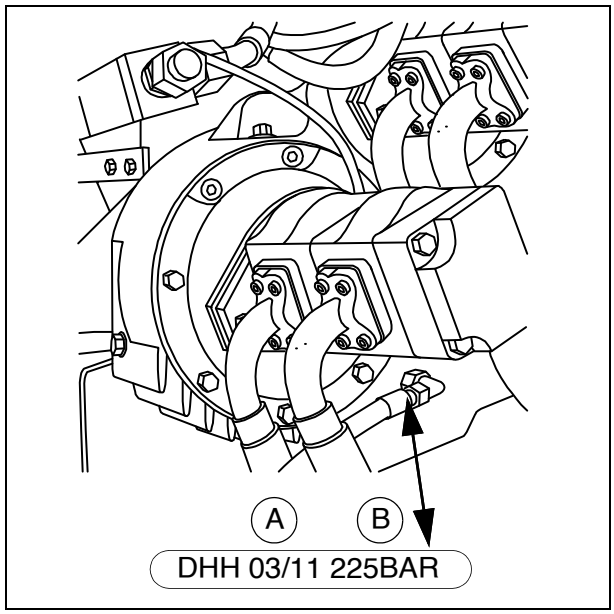
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⚠ Always comply with the following instructions when installing and removing hydraulic hoses:

- 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!

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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).

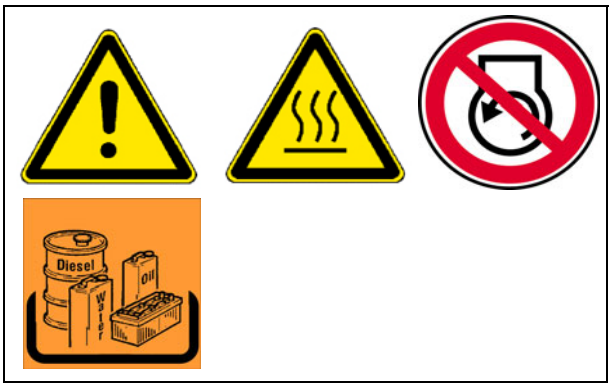
⚠ Never install hoses on top of one another and always ensure that they are at the correct pressure.

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.

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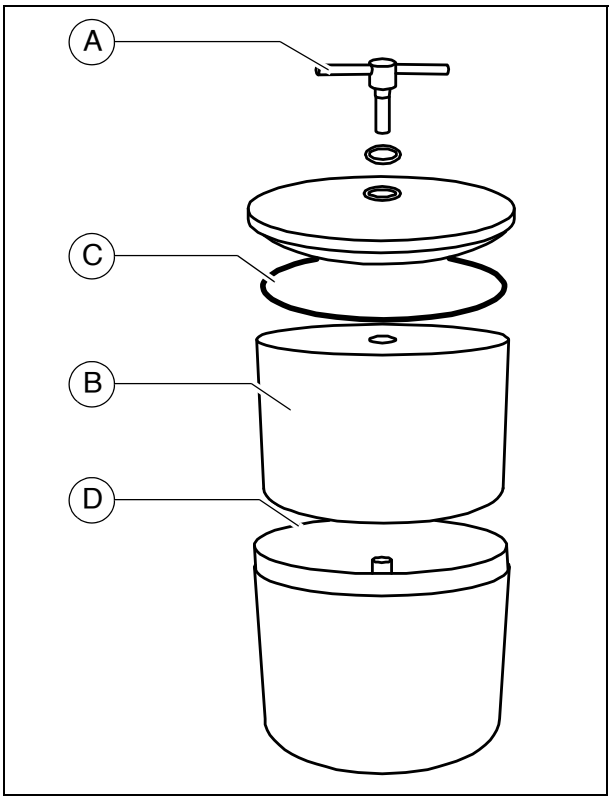
Auxiliary flow filter (6)



☞ 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!

Replace 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.

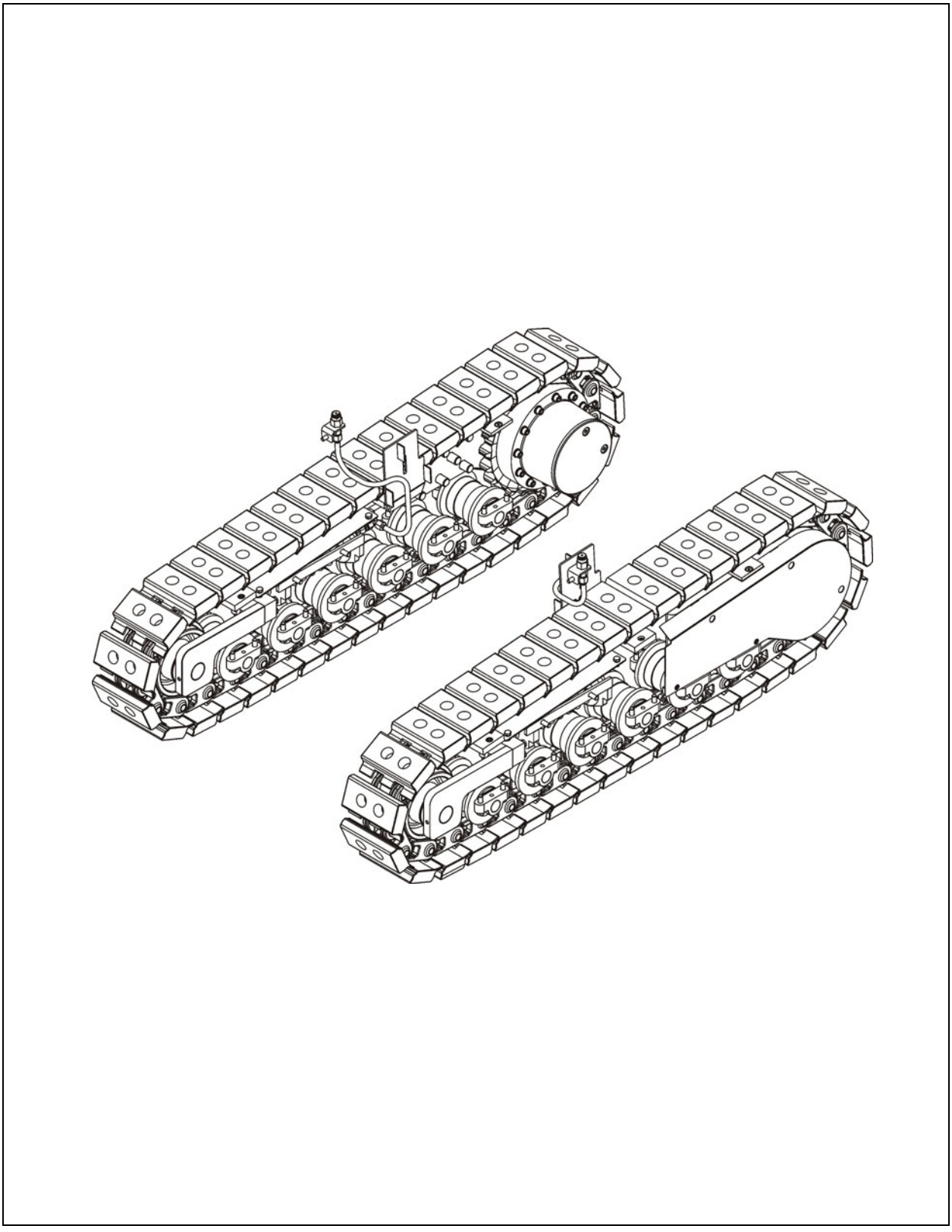


⚠ Do not remove the cardboard sleeve from the filter element! This is part of the filter!

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F 7.12 Maintenance - drive unit

1 Maintenance - drive unit



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

⚠ WARNING	**Danger from heavy loads**
	The raised machine can slide away and cause severe to fatal injuries! - The vehicle may only be raised at the marked lifting points. - Heed the operating weight of the vehicle. - Do not enter the danger zone. - Only use approved ramps and adequately dimensioned ramps or pits. - Use only lifting gear that can bear the load. - Do not leave any load or loose parts on the vehicle. - Comply with all further information in these instructions and in the safety manual.

⚠ CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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1.1 Maintenance intervals

Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
1	■								- Chain tension - Check	
								■	- Chain tension - Adjust	
								■	- Chains - Relieve	
2				■					- Bottom plates - Check wear	
								■	- Bottom plates - Replace	
3	■								- Rollers - Check for leaks	
				■					- Rollers - Check wear	
								■	- Rollers - Replace	

Maintenance	■
Maintenance during the running-in period	▼

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Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
4		■							- 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	▼

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WARNING	**Danger from pretensioned springs**
	Incorrectly performed maintenance and repair work can cause severe to fatal injuries! - Always observe the maintenance instructions. - Do not perform any unauthorised maintenance or repair work to pretensioned springs. - Comply with all further information in these instructions and in the safety manual.

STOP Any work on the pretensioned spring element of the chain tightener must only be carried out by trained, specialist personnel!

STOP The spring elements must only be removed by a specialist workshop! The following applies to all spring elements in the event of a necessary repair: replace the complete unit only!

STOP Repairing the spring elements involves significant safety measures and should only be carried out by a specialist workshop!

☞ Your Dynapac customer service will be happy to provide support during maintenance, repair and the replacement of wearing parts!

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1.2 Maintenance points

Chain tension (1)

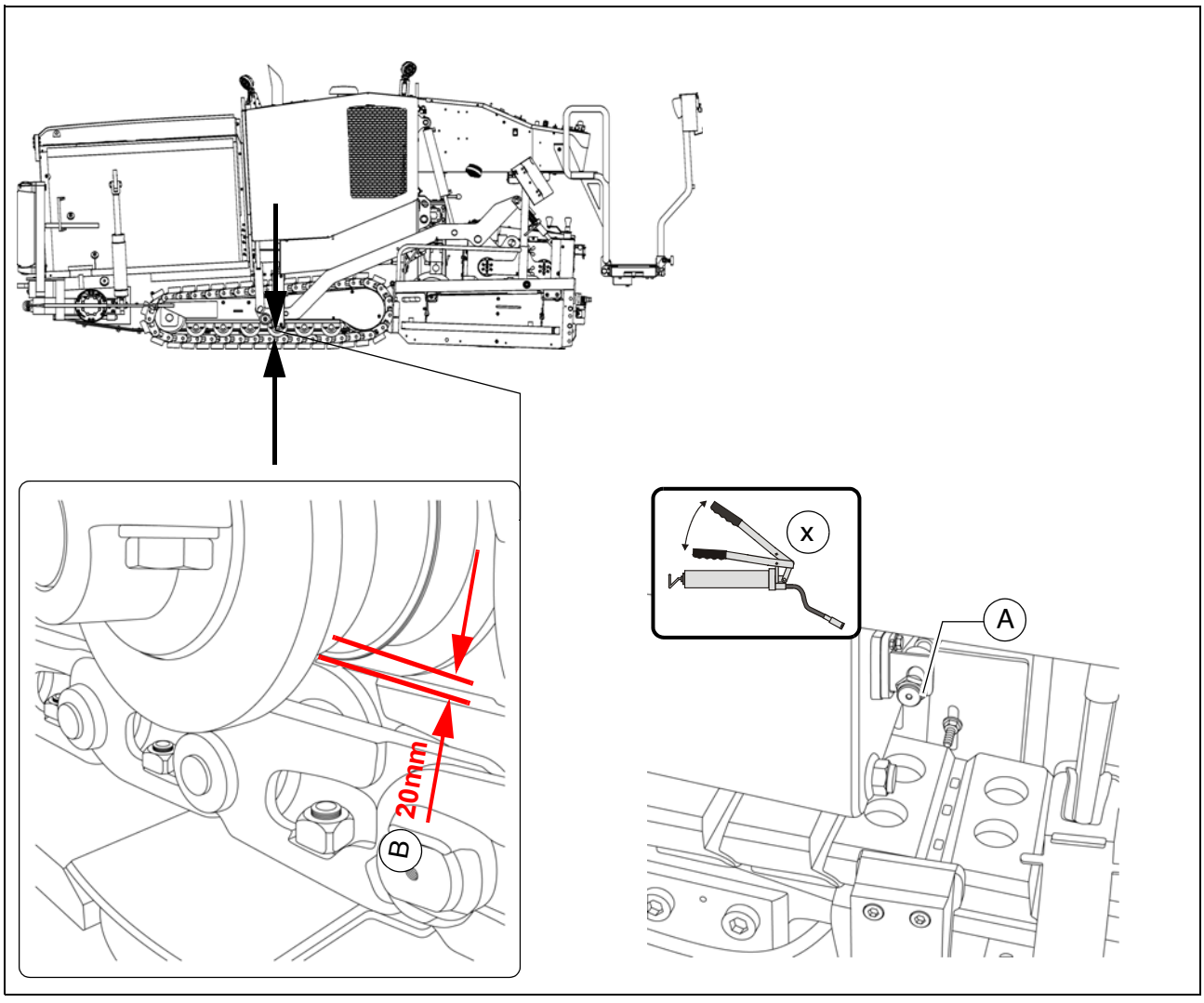


⚠ If the chains are not tensioned sufficiently, they can slip out of their guide formed by rollers, drive gear and idler wheel, thereby increasing wear levels.

⚠ If the chains are tensioned too tightly, this increases wear on the idler wheel and drive unit mounting, and also increases wear on track bolts and bushes.

Checking / adjusting chain tension (grease tensioners)

- The chain tension is adjusted with grease tensioners. The filling connections (A) are located behind the lateral flaps on the left and right.



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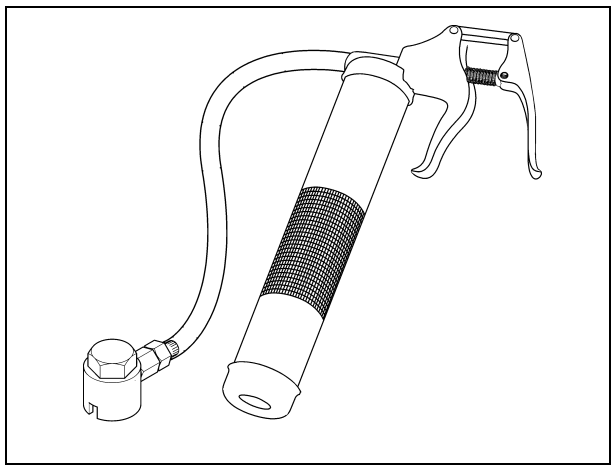
- To check the chain tension, carry out the following steps:
  - Lift vehicle:

☞ See the section "Lifting the vehicle with hydraulic lifts, lifting points".

- Measure the sag of the chain under the 3rd rollers from behind.
  - The sag (B) between the drive surface of the roller and the drive surface of the chain must be 20 mm.

☞ If a different level of slack is detected during the measurement process, proceed as follows:

- Screw head section for flat nipple (tool box) onto the grease gun.
- Refill the chain tensioner with grease at the filler connection (A), then remove the grease gun.
- Check the chain tension once again, as described above.



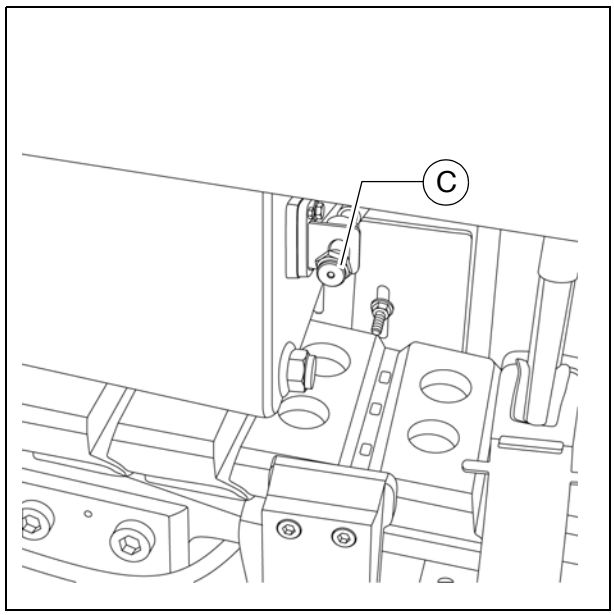
☞ If the tension is too high: see section "Relieving the chain".

☞ Repeat this procedure on both drive units!

Relieving the chain:

STOP The grease in the tensioning element is under pressure. Carefully and slowly unscrew the filling valve, but not too far.

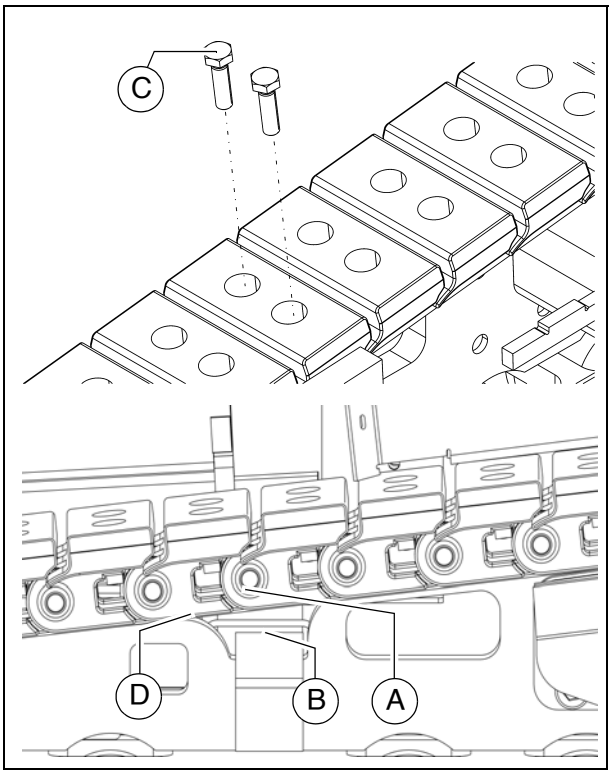
- Unscrew the lubricating nipple (C) on the grease tensioner using a tool until the grease is able to emerge from the nipple's lateral hole.



☞ The idler wheel moves back independently or must be reset manually.

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Bottom plates (2)



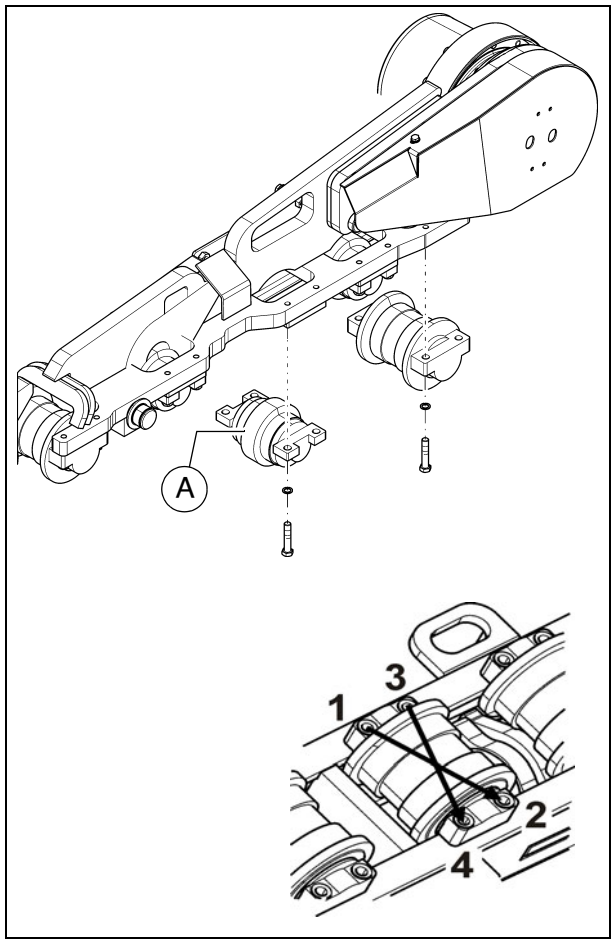
⚠ Always use new bolts and nuts when installing new bottom plates!

- After removing the worn bottom plates, the adhesions must be cleaned from the contact surfaces of the chain links and the nut seats.
- Place the bottom plate with the front edge (A) over the chain links' bolt eye (B).
- Lubricate the threads and the contact surfaces beneath the bolt heads with a thin film of oil or grease.
- Insert the bolts (C) into the holes and screw them into the nuts (D) a few turns.
- Tighten the bolts without applying significant torque.
- Tighten the bolts to the required torque 98+/- 5 Nm.

⚠ Check that each bolt has attained the full tightening torque!

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Rollers (3)



⚠ Rollers with damaged surfaces or which are leaking should be replaced immediately!

- Relieving the caterpillar chain:
- Raise the track chassis using suitable lifting equipment and remove adhering dirt.

STOP Observe the safety measures when raising and securing loads!

- Remove the defective roller.
- Install the new roller using new assembly parts.

- Tighten the bolts without applying significant torque.
- Tighten the bolts diagonally to the required torque.

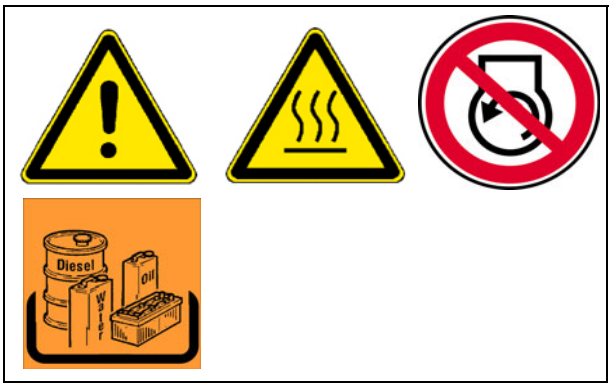
- Tighten to the following torques:
  - Rollers (A): 83 Nm

⚠ Check that each bolt has attained the full tightening torque!

- Lower the track chassis and tension the caterpillar chain properly.

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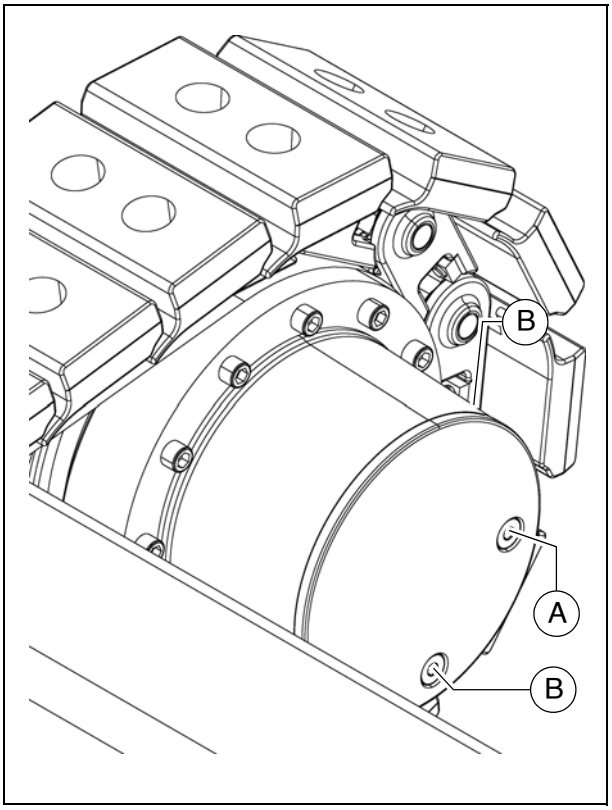
Planetary gear (4)



- Turn the conveyor chain sprocket 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.

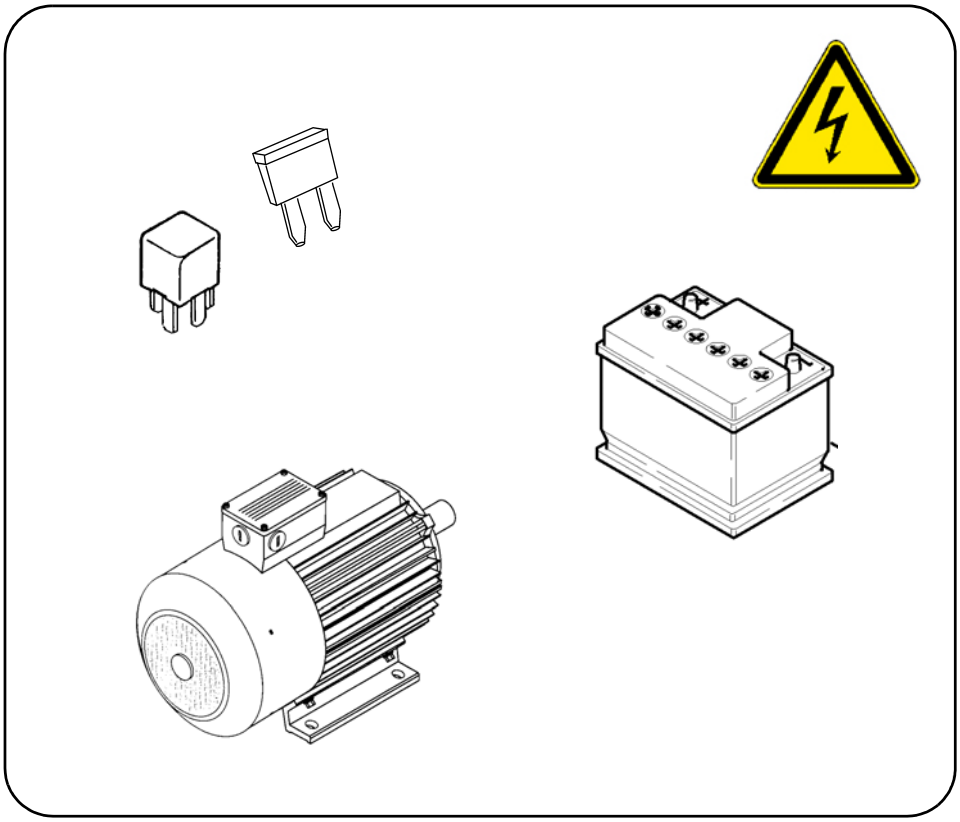
⚠ Ensure that no dirt or foreign bodies are able to enter the gear.

- Turn the conveyor chain sprocket 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).

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F 8.12 Maintenance - electrical system

1 Maintenance - electrical system



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

⚠ CAUTION	**Danger due to electric shock**
	Injuries can be caused by touching live parts directly or indirectly! - Do not remove any protective safeguards. - Never spray water on electric or electronic components. - Maintenance work to the electric system should only be carried out by trained specialist staff. - When equipped with electric screed heater, check the insulation monitoring every day according to the instructions. - Comply with all further information in these instructions and in the safety manual.

⚠ CAUTION	**Danger from batteries**
	Incorrect handling of the batteries poses a danger of injuries! - Wear your personal safety gear. - Do not smoke, avoid any open flames. - Ensure the working area is well ventilated after opening the battery compartment. - Avoid short-circuiting the battery terminals. - Comply with all further information in these instructions and in the safety manual.

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1.1 Maintenance intervals

Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
1				■				■	Check batteries	
								■	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.	(○)
		■							- Check the drive belts for damage and replace them as required.	(○)
	▼		■						- Drive belts - check tension, adjust if necessary.	(○)
						■			- Replace drive belts	(○)
3								■	Electrical fuses	

Maintenance	■
Maintenance during the running-in period	▼

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1.2 Maintenance points

Batteries (1)

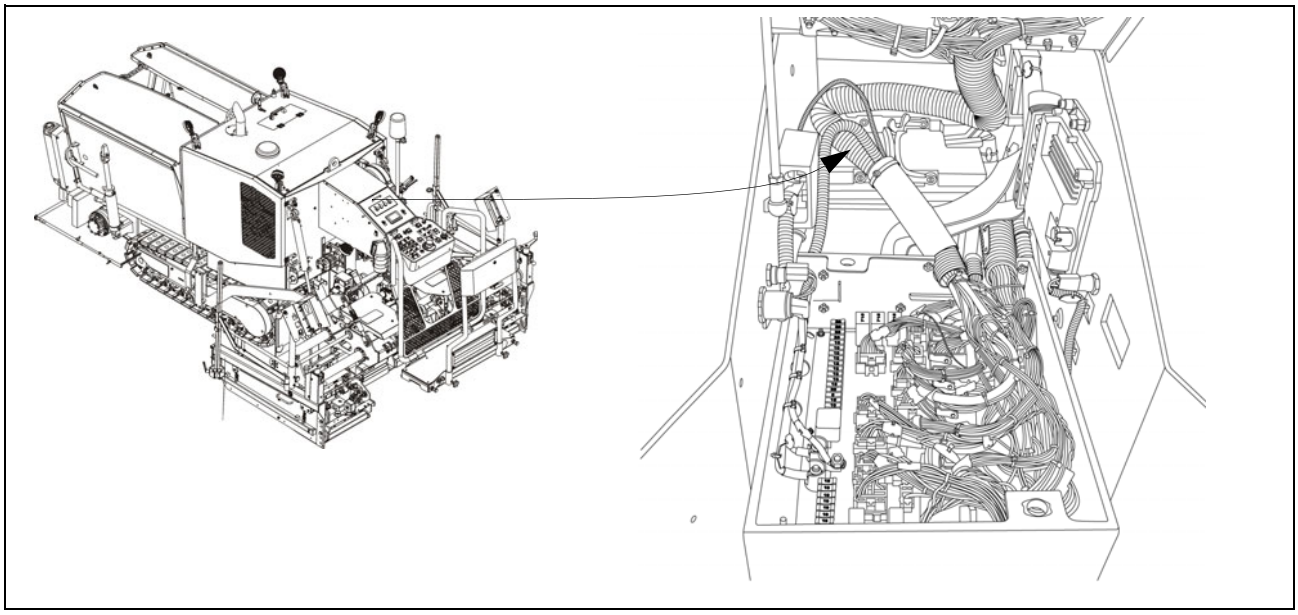
Check batteries



☞ The maintenance-free batteries are in the factory with the correct quantity of acid. There is no need to top up water or acid!

☞ 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.

⚠ A maintenance-free battery must be recharged slowly with a special battery charger. Do not use conventional chargers as these can damage the battery. Heed the corresponding operating instructions.

⚠ The battery terminal clips must be free of corrosion (oxide) and protected with a special grade of terminal grease.

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

Recharging the batteries

Both batteries must be recharged individually and must be dismantled from the vehicle for this purpose.

STOP 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.

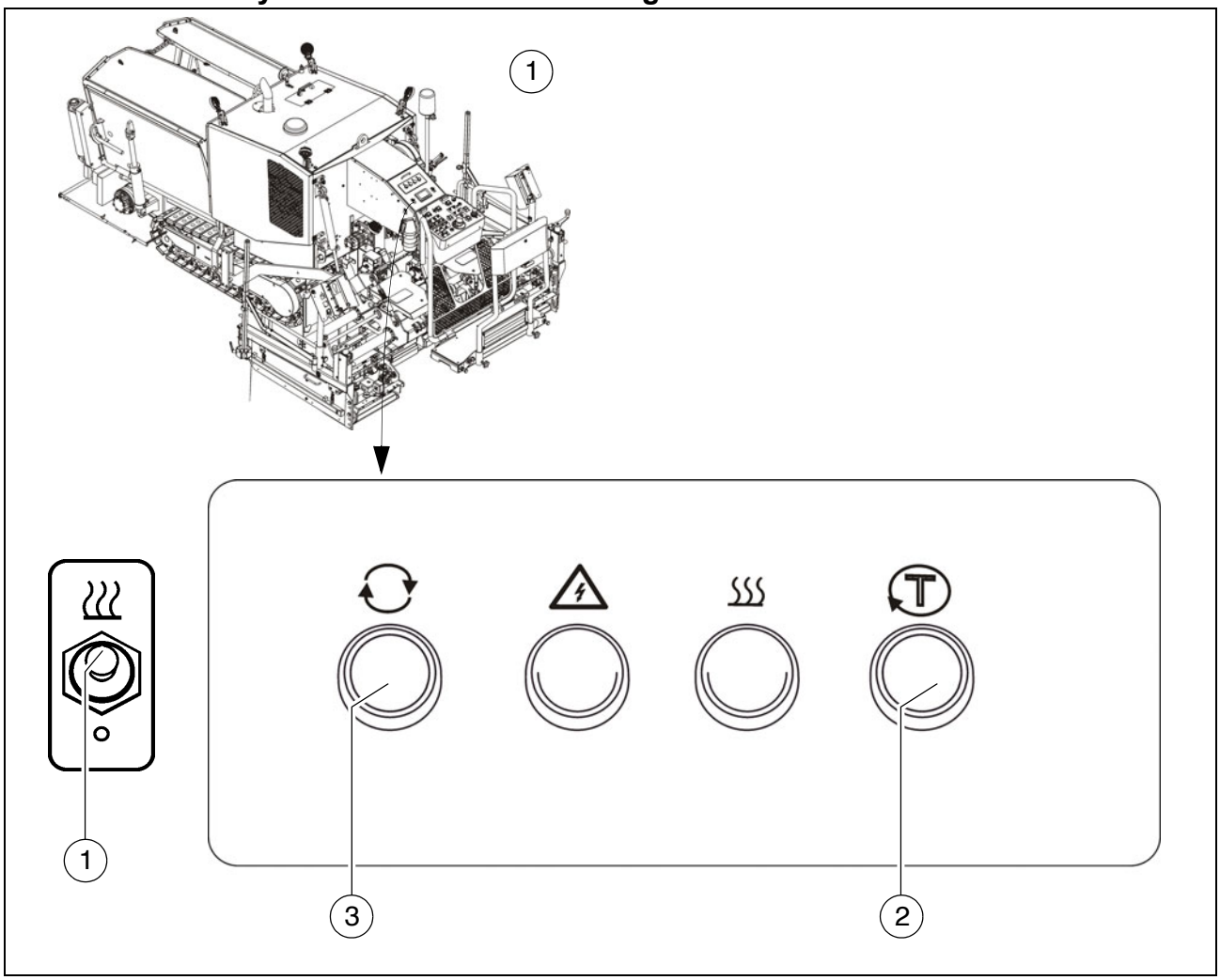
⚠ Only use commercially available automatic battery chargers according to the manufacturer's instructions.

☞ 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.

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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.
- Switch on heating system with button (1).
- Press test button (2).
- The indicator lamp integrated into the test button signals "insulation fault".
- Press reset button (3) for at least 3 sec. to delete the simulated fault.
- The indicator lamp goes out.

STOP 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.

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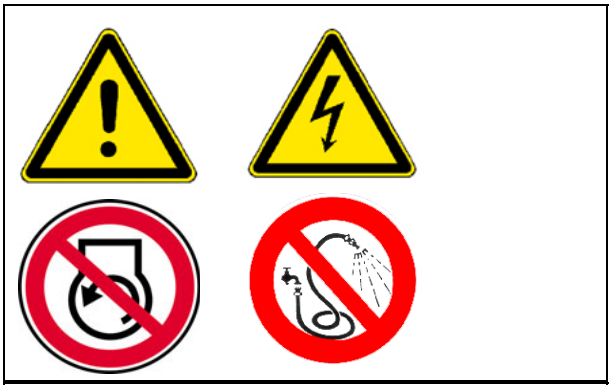
Danger due to electrical voltage

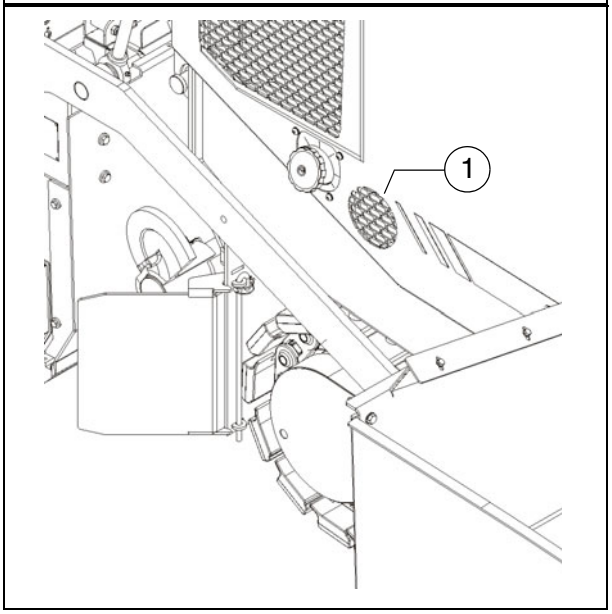


Non-adherence to the safety precautions and safety regulations when operating the electric screed heating system leads to a risk of electric shock.
Danger to life.
All maintenance and repair work on the screed's electrical system may be carried out by a specialist electrician only.

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Cleaning the alternator





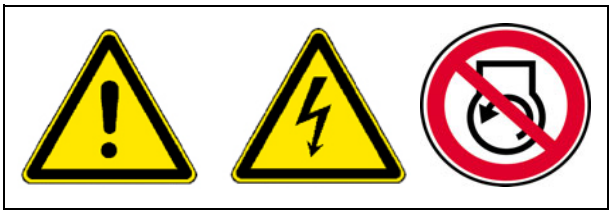
⚠ The alternator must be regularly checked for excessive dirt and must be cleaned if necessary.

- The air intake (1) must be kept free of dirt.

⚠ Cleaning with a high-pressure cleaner is not permissible!

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Check belts



Replace belts if there are clear signs of cracking on the ribbed side or any other signs of damage.

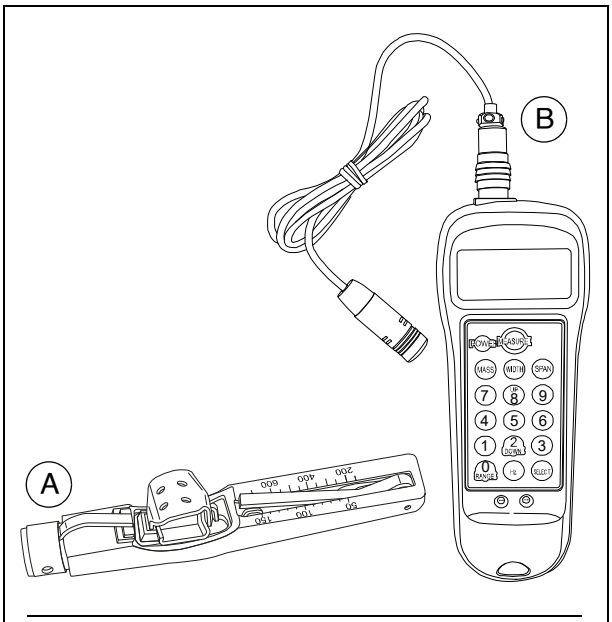
Checking belt tension

The tension of both belts must be inspected with a tension measuring instrument.

New belt		Used belt	
min	max	min	max
679 N	728 N	582 N	631 N
171 Hz	177 Hz	158 Hz	165 Hz

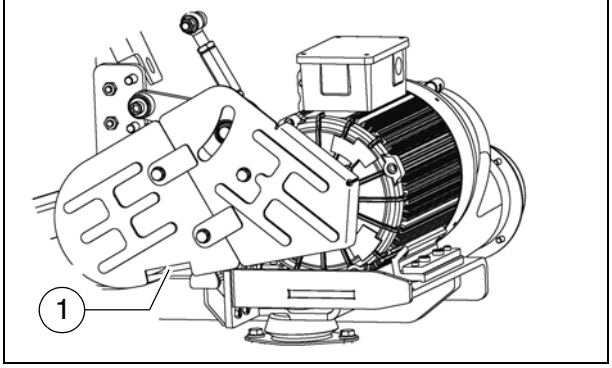
☞ The following tension measuring instruments are available:

- Mechanical tension measuring instrument (A): Article number 4753200045
- Electronic tension measuring instrument (B): Article number 4812034810



☞ Comply with instructions for checking tension in the manual of the tension measuring instrument!

- Check the belt in the area of the cutout (1) on the belt guard.



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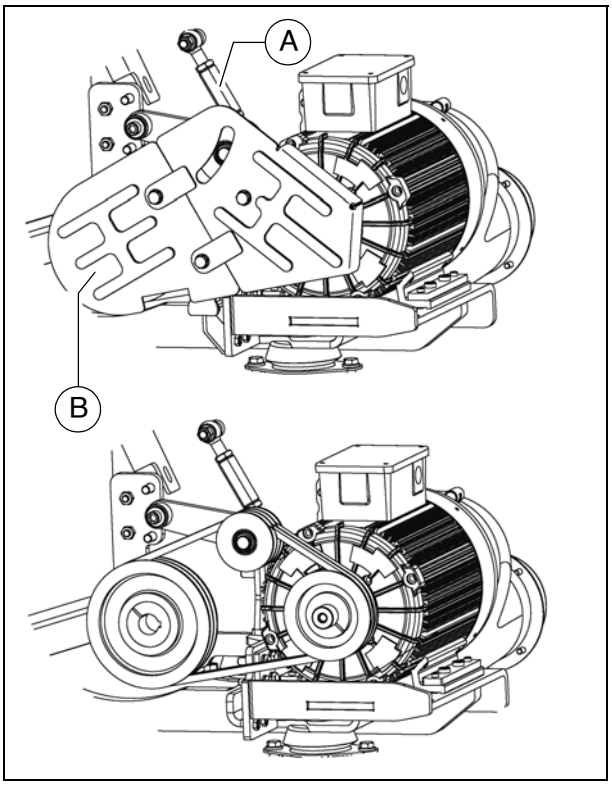
Adjusting belt tension

- Unscrew the lock nuts of the clamping lock (A).
- Turn the clamping lock (A) until the correct tension is adjusted on the belt.
- Properly tighten the lock nuts of the clamping lock (A).

Replacing belt

- Remove the belt guard (B).
- Reduce the belt tension on the clamping lock (A) so that the belt can be removed from the pulleys.
- Mount the new belt and adjust tension correctly.
- Install the belt guard (B),

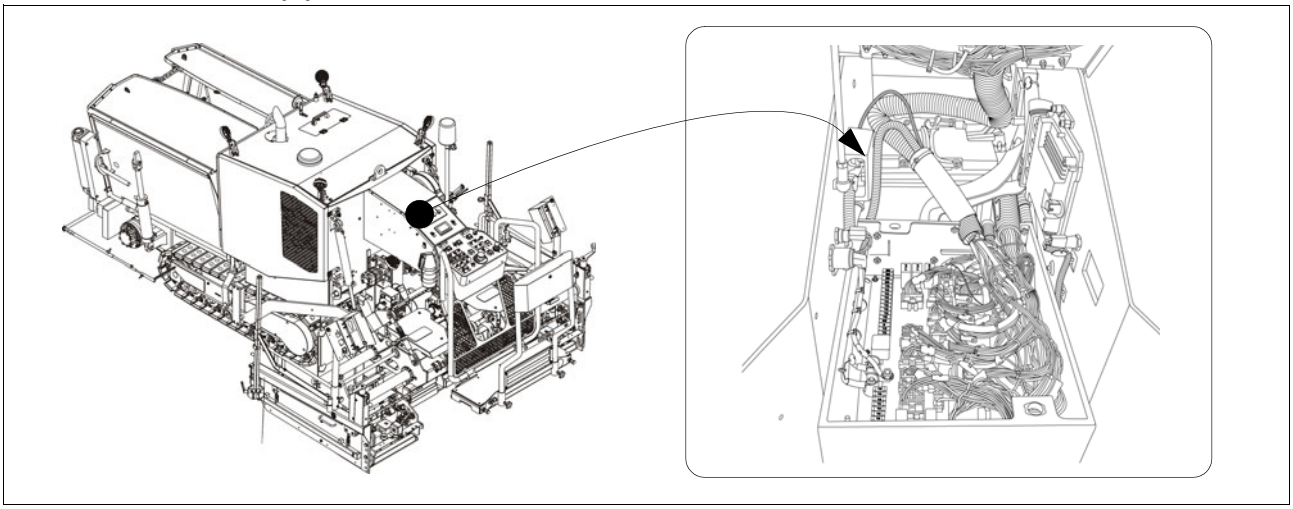
☞ Always replace the belts in sets.



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2 Electrical fuses

2.1 Main fuses (1)

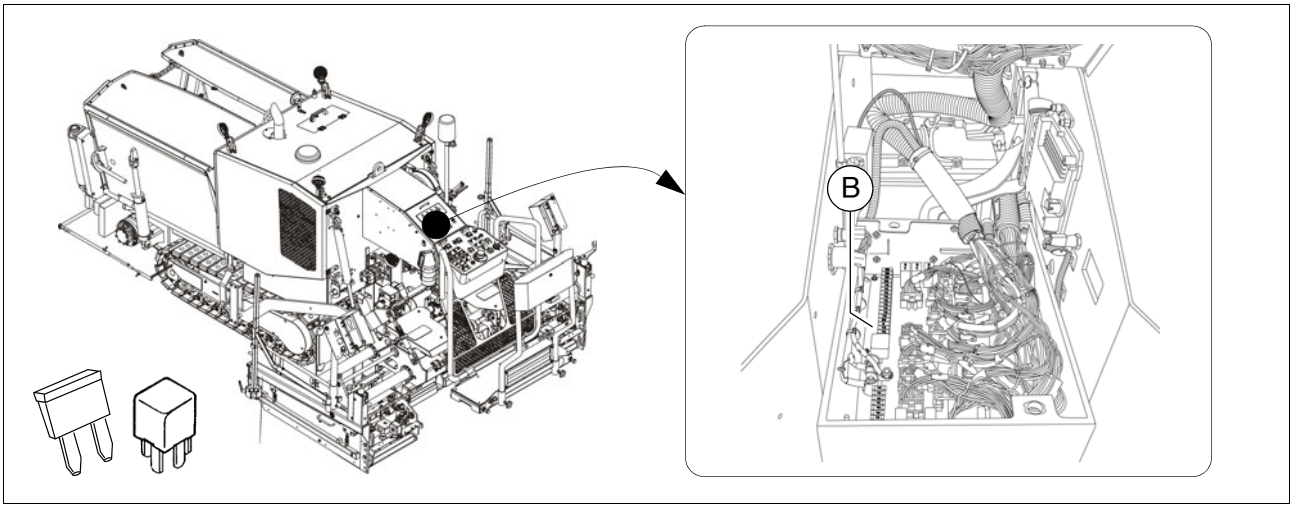


Main fuses (A)

F		A
1.1	Main fuse	50
1.2	Main fuse	30
1.4	Preheating ignition system	100

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2.2 Fuses in main terminal box (operating panel)



Fuses (mainboard) (B)

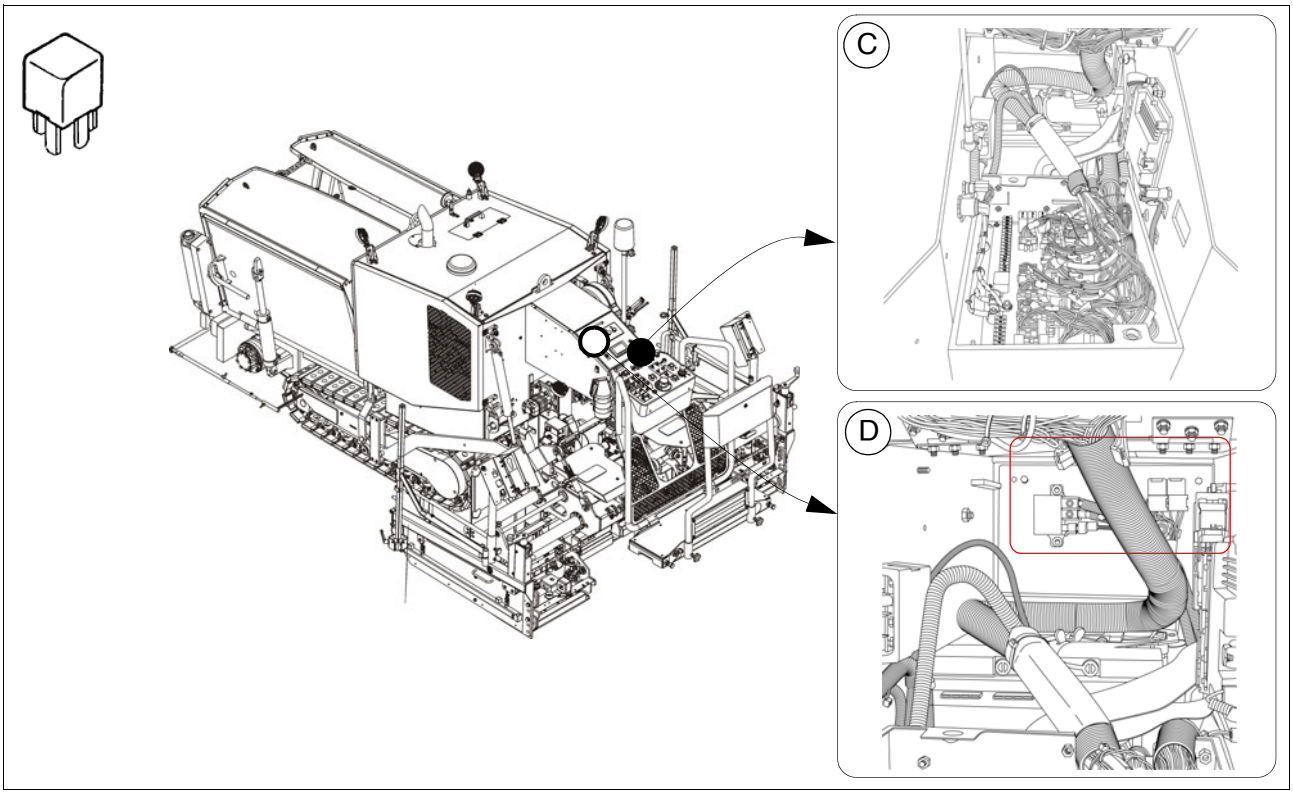
F		A
F1	Screed	15
F2	Screed	10
F3	Front hopper, hopper, emulsion spraying system	10
F4	Engine start / stop	7,5
F5	Asymmetrical hopper	7,5
F6	Raise / lower screed	7,5
F7	Travel drive, steering, engine speed, horn	7,5
F8	Spare	10
F9	Engine control unit A2	7,5
F10	Auger	7,5
F11	Display, GPS module, emergency stop	10
F12	Conveyor limit switch	7,5
F13	Control unit A1	5
F14	Levelling	7,5
F15	Screed	10
F16	24V socket	15
F17	GPS module, D+	10
F18	Screed heater	10
F19	Warning lights	10
F20	Control unit A1	30
F21	Horn	10

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F		A
F22	Spare	10
F23	Engine control unit A2	30
F24	GPS module	2
F25	Diesel pump	10
F26	Ignition	7,5
F27	Control unit A1	10
F28	Rear working light, auger lighting, operating panel lighting	15
F29	Front working lights	10
F30	Diagnosis for engine control unit A2	2
F31	Diagnosis for control unit A1	2

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Relays



K		
K0	Starter	C
K1	Ignition	C
K2	Engine start / stop	C
K3	Screed heater	C
K4	Control unit A1	C
K5	Levelling	C
K6	Engine start / stop	C
K7	Horn	C
K30	Preheating ignition system	C
K31	Diesel pump	C
K13	Conveyor	C
K14	Left auger	C
K15	Right auger	C
K30	Pre-heating	D
K31	Fuel pump	D
K32	Neutral shifting	D

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F 11.12 Lubricants and operating substances

1 Lubricants and operating substances

⚠ Use only the lubricants listed below or comparable qualities of well-known brands.

⚠ Use only clean containers (inside and outside) for pouring oil or fuel in.

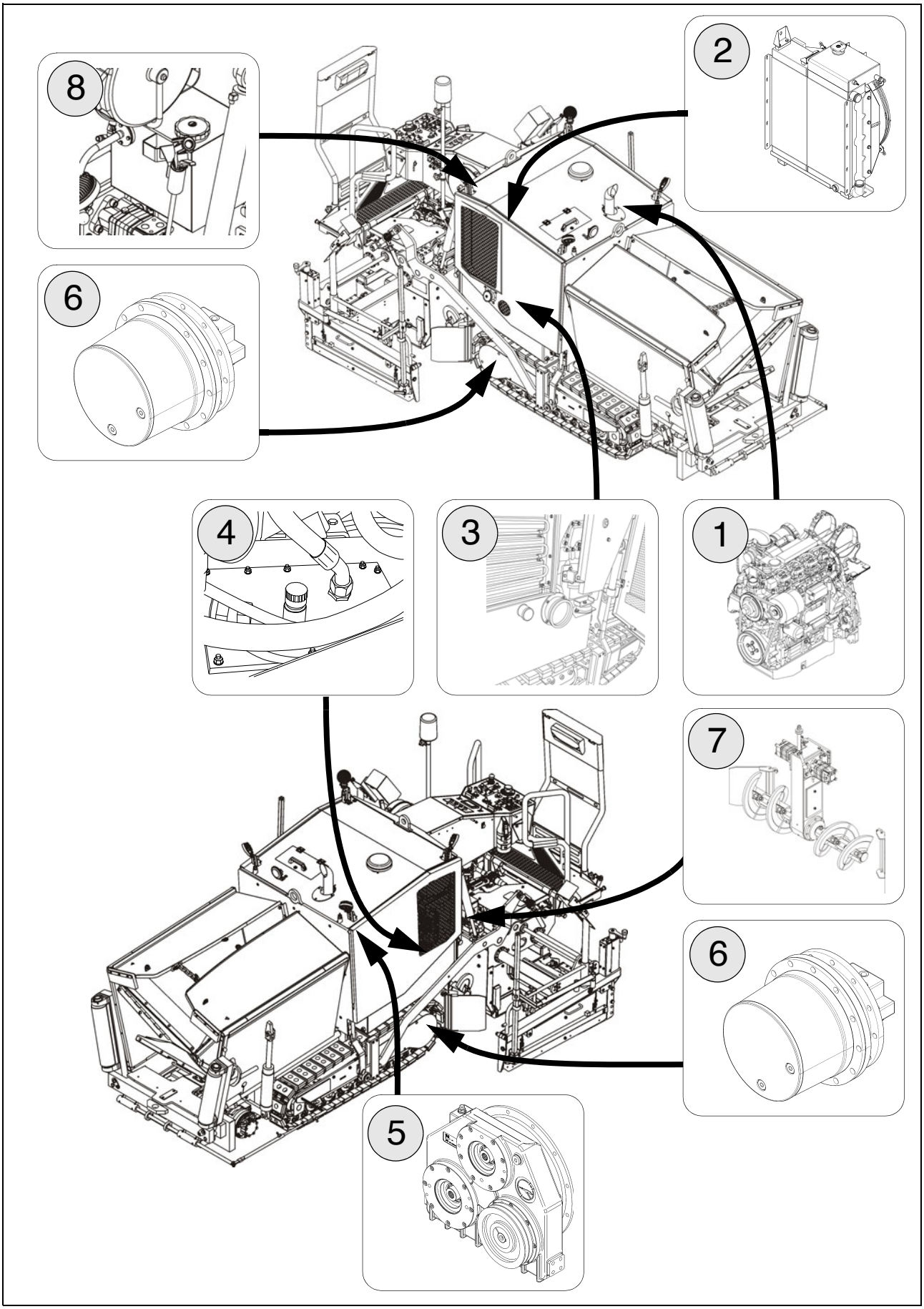
☞ Note capacities (see section "Capacities").

⚠ Incorrect oil or lubricant levels promote rapid wear and cause the paver finisher to fail.

⚠ Never mix synthetic oils with mineral oils!

⚠ Please heed the equipment-related fuel specification requirements!

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1.1 Capacities

		Operating substance	Volume
1	Diesel engine (with oil filter change)	Engine oil	8.3 litres
2	Engine cooling system	Cooling liquid	14.0 litres
3	Fuel tank	Diesel fuel	50.0 litres
4	Hydraulic oil reservoir	Hydraulic oil	70.0 litres
5	Pump distribution gear	Gearbox oil	1.7 litres
6	Planetary gear drive unit	Gearbox oil	approx. 1.6 litres (0.8 l per side)
7	Auger box	Liquid grease	3.0 kg
8	Separator fluid tank	Separator emulsion	14.0 litres
	Batteries	Distilled water	

⚠ Note specifications on the following pages!

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2 Operating substance specifications

2.1 Notes on diesel fuel

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!

2.2 Drive engine TIER III (○) fuel specification

Permissible diesel fuels

Specifications				
Diesel fuel as specified in the engine manufacturer's requirements * sulphur level max. 2000mg/kg	EN 590	ASTM D975	JIS K 2204 HFRR max. 460µm	

* Detailed information at:

http://www.deutz.com

de	\Service\Betriebsstoffe und Additive\Kraftstoffe
en	\Service\Operating Liquids and Additives\Fuels

2.3 Drive engine TIER IV (○) - 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!

Permissible diesel fuels

Specifications				
EN 590	ASTM D975 S15	JIS K 2204 HFRR max. 460µm		

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2.4 Engine - lubricating oil

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
Engine oil 200 (*)							

☞ (*) = recommended

⚠ Observe the instructions for lubricant recommendations and the specification in the maintenance instructions of the engine manufacturer!

2.5 Cooling system

Dynapac	AGIP	Chevron			Petronas		Finke
Coolant 200 (*)	-Antifreeze Special	Extended Life Coolant			Antifreeze G12		Aviaticon Finkofreeze P12+

☞ (*) = recommended

2.6 Hydraulic system

Dynapac	AGIP	Chevron	Caltex	Fuchs	Mobil	Shell	Finke
Hydraulic 100 (*)		Rando HDZ 46	Rando HDZ 46			-Tellus Oil S2 V46 -Tellus S2 VX46	Aviaticon HV 46

☞ (*) = recommended

2.7 Pump distribution gear

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
Gear Oil 400 (*)				-Titan ATF 6000 SL (*)		-Spirax S4 ATF HDX -Spirax S6 ATF VM	

☞ (*) = filled in at the factory

2.8 Drive unit planetary gear

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
Gear Oil 100 (*)						-Omala S2 GX 220	

☞ (*) = recommended

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2.9 Auger box

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	
Auger Grease (*)						-Gadus S5 V142W 00	

☞ (*) = recommended

2.10 Grease

Dynapac	Aral	BP	Esso / Exxon	Fuchs	Mobil	Shell	Chevron
Paver Grease (*)						-Gadus S5 T460 1.5	-High Temp Premium2

☞ (*) = recommended

2.11 Separator emulsion

Dynapac	Dynapac	Dynapac					
Belt Guard 20L 4812215842 (*)	**Belt Guard 208L 4812215846 (*)**	**Belt Guard 1000L 4812216094 (*)**					

☞ (*) = recommended

NOTE	**Caution! Possible subsequent damage from not approved separator emulsion**
	Considerable damage can be caused to the vehicle by using separator emulsions and other cleaning agents not approved by the factory without prior consultation. The use of separator emulsions and cleaning agents that are not approved makes the vehicle guarantee null and void. - Only use approved separator emulsions, cleaning agents and operating substances!

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2.12 Hydraulic oil

Preferred hydraulic oils:

a) Synthetic hydraulic liquids based on ester, HEES

Manufacturer	ISO viscosity class VG 46
Dynapac	Hydraulic 120 (*)
Shell	Naturelle 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

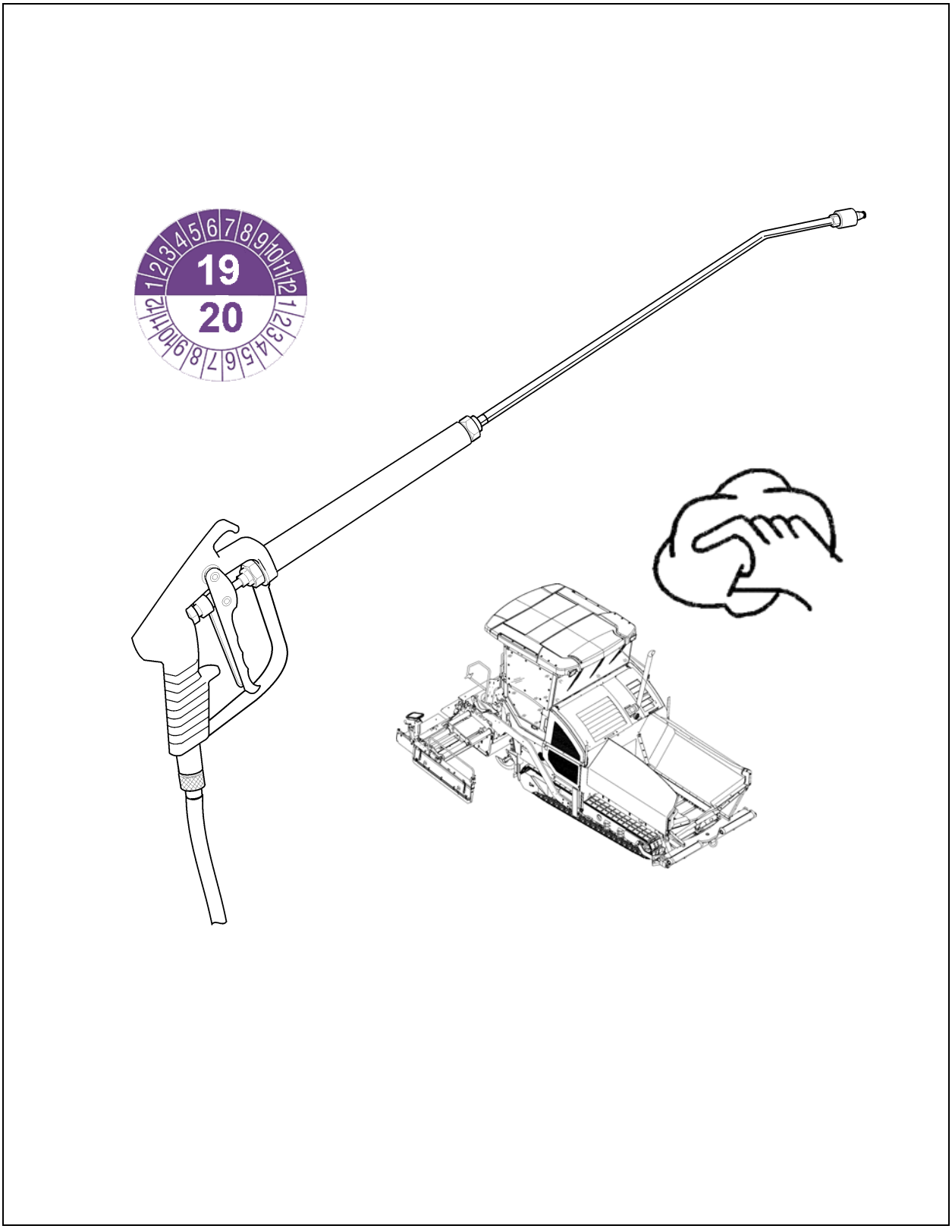
When changing from mineral oil pressure fluids to biodegradable pressure fluids, please contact our factory advisory service!

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F 100 Checking, shutdown ...

1 Tests, checks, cleaning, shutdown and disposal



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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	
	■								- Cleaning sensors	
5								■	- Preserving the paver finisher	

Maintenance	■
Maintenance during the running-in period	▼

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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	Caution! Possible damage to or destruction of parts!
	- Self-locking nuts must always be replaced after removal. - Special torques not mentioned in this manual are stated at the corresponding place in the spare parts catalogue. - Screws locked with screw cement must be cemented in again if found to have come loose. Always use the stated torque. - Stated torques for screwed connections apply to dry (unoiled) state - Do no reuse screws inserted with the maximum permitted torque; instead, replace with new screws. - Screws in strength class 12.9 should only be used once. - All screwed connections must be clean. - Check all reused components of the screwed connection for any signs of damage.

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"

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4 Inspection by an expert

☞ Finisher, screed and optional gas or electric system must be 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.

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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.

STOP Danger of slipping! Ensure that all steps and ladders are free of grease and oil!



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

⚠ CAUTION	**Hot surfaces!**
	Surfaces including those behind covering parts, together with combustion gases from the engine or screed heater can be very hot and cause injuries! - Wear your personal safety gear. - Do not touch hot parts of the vehicle. - Only perform maintenance and repair work after the vehicle has cooled down. - Comply with all further information in these instructions and in the safety manual.

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.

⚠ Switch off the engine.

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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.

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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 is 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.

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7 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!
	- 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. - 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. - The vehicle should be treated with corrosion and surface protection adjusted to the prevailing conditions. - Any signs of emerging corrosion must be stopped and sealed air-tight. - A second layer of preserving agent can help to safeguard corrosion protection. - Measures for corrosion or surface protection that entail coating the surface must be coordinated with the Customer Service for the machine.

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8 Environmental protection, disposal

8.1 Environmental protection

☞ Packaging materials, used operating substances, cleaning agents and vehicle accessories must be correctly recycled.

☞ Always observe the local regulations!

8.2 Disposal

☞ Correctly sorted disposal must be carried out after replacing wear and spare parts and after the vehicle 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 dispose of drained batteries in an environment-friendly manner.
Batteries contain toxic lead!

☞ Always observe the local regulations!

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9 Bolts - torques

9.1 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

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9.2 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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