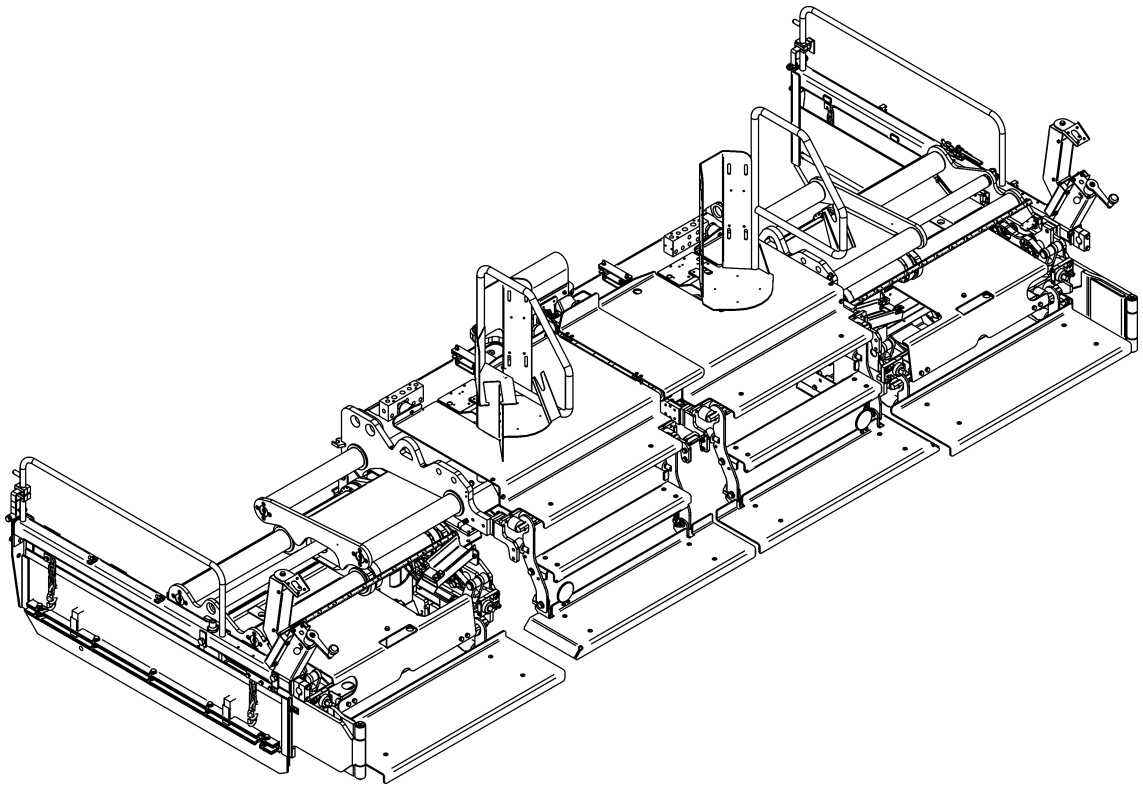
OPERATION & MAINTENANCE



Screed
Dynapac
V5100TV-(E) / V6000TV-(E)
Type 616 / 617

EN

02-0513 4812008846 (A5)

Keep for later use in document compartment

Valid for:

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Sustainable Productivity

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Table of contents

V Preface

Translation of the original operating instructions.

If the vehicle is to be operated safely, the information provided in these operating instructions will be required. The information is provided in a concise, clearly structured form. The individual chapters are arranged in alphabetical order. and every chapter starts with page 1. The individual pages are identified by the chapter letter and the page number.
Example: Page B 2 is the second page of chapter B.

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

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

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1 General safety instructions

1.1 Laws, guidelines, accident prevention regulations

☞ The locally applicable laws, guidelines and accident prevention regulations must always be observed, even if these are not expressly named here.
The user himself/herself is responsible for compliance with the resulting regulations and measures!

☞ The following warnings, prohibitive symbols and instructive symbols indicate dangers for persons, the vehicle and the environment due to residual risks when operating the vehicle.

☞ Failure to observe this information, prohibitions and instructions can result in life-threatening injuries!

☞ The "Guidelines for the Correct Use and Application of Paver Finishers" compiled by Dynapac must also be observed!

1.2 Safety signs, signal words

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

"Danger"!

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

"Warning" !

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

"Caution" !

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

"Note" !

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

1.3 Other supplementary information

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

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

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

Precedes general notes and explanations.

1.4 Warnings

Warning on a dangerous area or hazard!
Failure to observe the warnings can result in life-threatening injuries!

Warning on danger of being pulled in!

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

Warning on dangerous electrical voltage!

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

Warning on suspended loads!

⚠ Never stand under suspended loads!

Warning on danger of crushing!

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

Warning on hand injuries!

Warning on hot surfaces or hot liquids!

Warning on danger of falling!

Warning on dangers posed by batteries!

Warning on hazardous or irritating substances!

Warning on substances which constitute a fire hazard!

Warning on gas bottles!

1.5 Prohibitive symbols

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

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

Spraying with water is prohibited!

Extinguishing with water is prohibited!

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

☞ Consult the Dynapac Service Department

Fire!, naked flames and smoking are prohibited!

Do not switch!

1.6 Protective equipment

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

Wear safety goggles to protect your eyes!

Wear suitable head protection!

Wear suitable hearing protection to protect your hearing!

Wear suitable safety gloves to protect your hands!

Wear safety shoes to protect your feet!

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

Wear respiratory equipment if breathing air is contaminated!

1.7 Environmental protection

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

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

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

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

Environmentally hazardous substance!

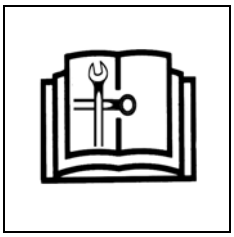
1.8 Fire prevention

☞ Locally applicable regulations may require suitable extinguishing agents to be carried on the vehicle!
Always observe these regulations!

Fire extinguisher!
(optional equipment)

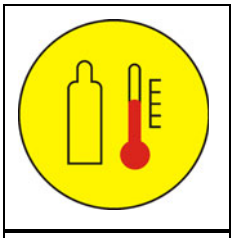
1.9 Additional information

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

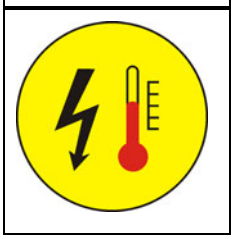


☞ For example, the maintenance instructions of the engine manufacturer

⚠ Description / depiction applicable when equipped with gas heater!



⚠ Description / depiction applicable when equipped with electric heater!



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

2 CE identification and Declaration of Conformity

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

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

3 Guarantee conditions

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

The guarantee becomes null and void if

- damage 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.

4 Residual risks

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

Residual risks in the form of

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

caused by:

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

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

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

5 Sensibly predictable incorrect usage

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

Sensibly predictable incorrect usage of the machine includes:

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

A Correct use and application

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

The road construction machine described in these operating instructions is a paver finisher that is suited for laying mixed materials, roll-down concrete or lean-mixed concrete, track-laying ballast and unbound mineral aggregates for foundations for paving.
The paver finisher must be used, operated and maintained according to the instructions given in the present operating instructions. Any other use is regarded as improper use and can cause injury to persons or damage to the paver finisher or other equipment or property.

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

Duties of the user: A "user" within the meaning of these operating instructions is defined as any natural or legal person who either uses the paver finisher himself, or on whose behalf it is used. In special cases (e.g. leasing or renting), the user is considered to be the person who, in accordance with existing contractual agreements between the owner and the user of the paver finisher, is charged with the observance of the operating duties.
The user must ensure that the paver finisher is only used in the stipulated manner and that all danger to life and limb of the operator, or third parties, is avoided. In addition to this, it must be ensured that the relevant accident prevention regulations and other safety-related provisions as well as the operating, servicing and maintenance guidelines are observed. The user must also ensure that all persons operating the paver finisher have read and understood the present operating instructions.

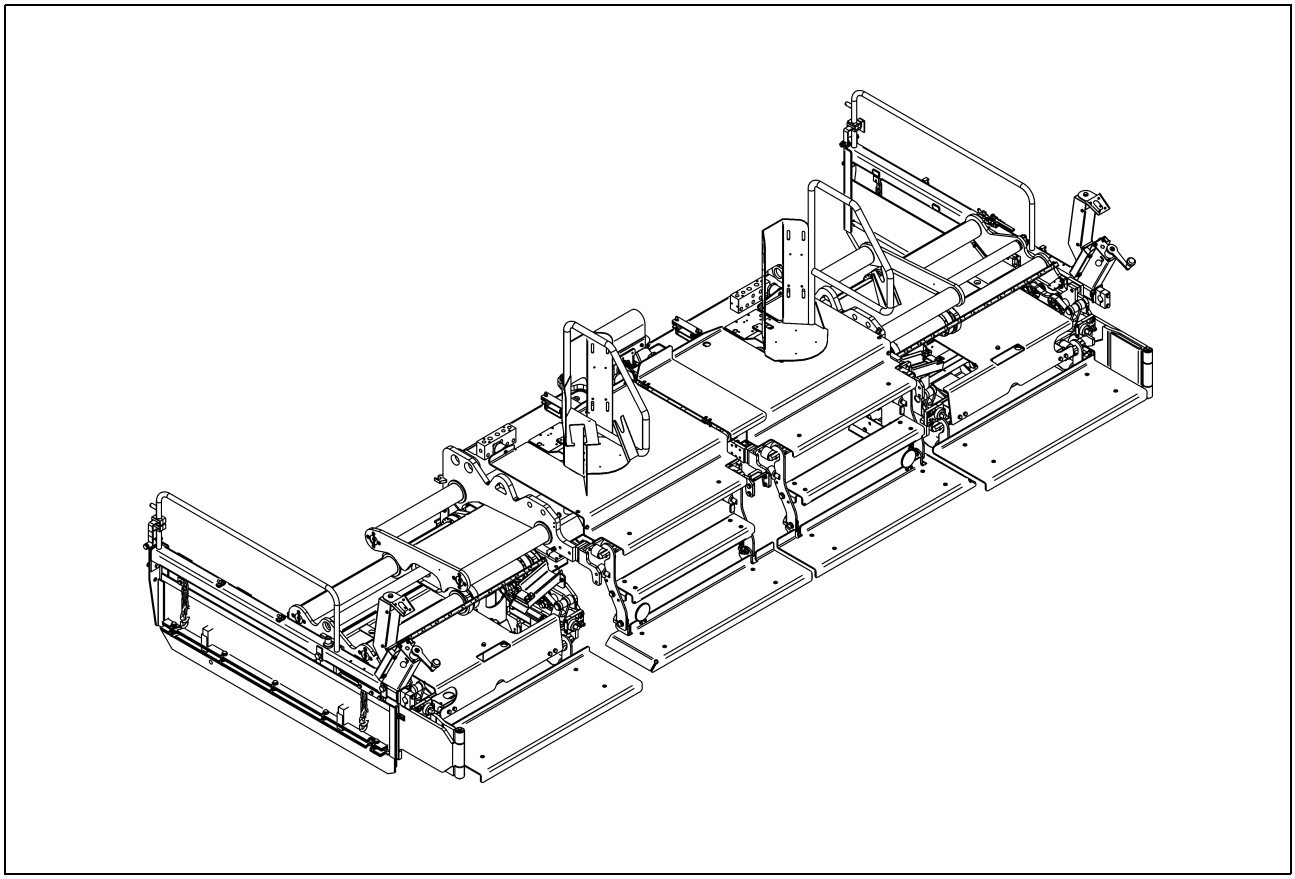
Mounting of attachments: The paver finisher must only be operated in conjunction with screeds that have been approved by the manufacturer. Mounting or installation of any attachments that will interfere with or supplement the functions of the paver finisher is permitted only after written approval by the manufacturer has been obtained. If necessary, the approval of local authorities must be obtained.
Any approval obtained from local authorities does not, however, make approval by the manufacturer unnecessary.

B Description of the screed

1 Application

The Dynapac V5100TV / V6000TV attached screed is operated in conjunction with a paver finisher.

The screed is used for laying:
- bitumen materials,
- roll-down concrete or lean-mixed concrete,
- track-laying ballast or
- unbound mineral aggregates for foundations for paving.



☞ The hydraulically extendable screed is intended for laying with variable operating widths.

For the screed's technical specifications, refer to the section "Technical data".

2 Assemblies

Tamper and vibration elements: The tamper knives converging in the middle area prevent seams in the middle.
Auxiliary vibration (option) supports the compacting process, thus improving the texture.
The tamper and the vibration elements can be individually switched on and off and controlled with regard to speed.
Continuous speed control always ensures optimum compacting results for the different materials and layer thicknesses.

Main screed and extendable parts: The screed parts which can be hydraulically extended from the middle section ("main screed") extend the working width of the screed at the push of a button.
A sophisticated guide system – two telescopic tubes with intermediate box per side – ensure high stability.
The angle and the height of the extendable parts in relation to the main screed can be quickly and easily readjusted.

☞ These settings, the basic settings of the screed in relation to the paver finisher and adjustment of the crowning are described in chapter E, "Set-up and modification".

Extension parts: With a co-ordinated system of extension parts, the operating width can be increased in several stages.

Side shields: The side shields serve to prevent the material from overflowing to the outside.
The following components are available as options.

- Heated side shields
- Hinged side shields
- Edge compactors
- Cut-off shoes

Walkway plates: The hinged walkway plates are attached to the bracket provided.
Only in special cases (e.g. laying close to a wall) may the walkway plates be temporarily detached.
The walkway plates are available in the following version for optimally reduced transportation lengths:

- Removable / hinged version

Lubricating system: All important lubricating points on the main screed are comprised to form central distribution blocks. This system facilitates lubrication and reduces the time required for maintaining the screed.
The extendable parts have individual lubricating points for the application of lubricating grease.
The automatic central lubricating system, which is available as an option, facilitates maintenance even further, ensuring that the screed is always properly lubricated.

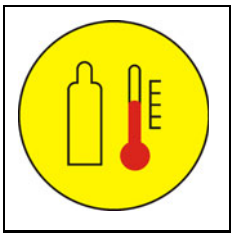
Screed heater: Two different heater systems are available as options:

Gas heater: The propane gas flame band heater features a tried-and-tested design and is easy to handle.
The electronic temperature and flame monitoring system ensures short heating times and constant temperatures.
Intermediate insulation above the bottom plates and the air ducts to the tamper knives and side plates ensure efficient usage of the heat.

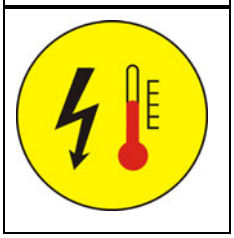
Electric heater: The advantages of the electric screed heater are its tried-and-tested design, problem-free handling and maximum possible service friendliness thanks to maintenance-free operation.
Short heating times, constant temperatures and efficient heat utilisation are therefore assured thanks to the various, separately monitored and controlled heating sections. These are designed in the form of heating strips, sensibly arranged in the bottom plates and tamper knives of each screed section.
If extension parts are fitted to the screed, only one single, easily installed plug connection need be fitted to the supply and control cable leading to the neighbouring screed component.
The heating system is monitored and controlled in the switch cabinet.
Via electrical heating of the side shields (O), adherence of mixed material is prevented and the surface texture within this area is improved.

☞ Both types of heater and their operation are described in the following chapters of these operating instructions.
Symbols are assigned to the different descriptions and figures:

- Description / depiction when equipped with gas heater



- Description / depiction when equipped with electric heater



3 Safety

The safety devices of the paver finisher and of the screed are described in chapter B, section 3 of the operating instructions for the paver finisher.

3.1 Remaining risks at the screed

Danger of squeezing!

At all moving parts of the screed, there is a danger of crushing, trapping or shearing.
Keep away from these parts!

Danger of being pulled in!

A danger of catching, winding or drawing-in exists at all rotating or circulating parts of the screed.
Keep away from these parts!

Danger of falling!

Never jump on or off the when the vehicle is in motion! Only use the access boards and steps provided!

Danger of fire and explosions!

Work on the heater system involves the danger of fire and explosion.
Do not smoke! No naked flames!

Danger of electric voltage

Any failure to follow the safety precautions and safety regulations when operating the electric screed heater (○) leads to the 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.

Danger of burning!

Heating the screed heater leads to danger due to hot surfaces, particularly on the bottom plates and side shields.
Keep away from these parts! Or wear protective gloves!

- Always wear all protective clothing required!
  Failure to wear protective clothing or wearing protective clothing in an improper manner can be dangerous to health.
- 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!
- Always make sure during work that no-one is endangered by the vehicle!

4 Technical data

4.1 Dimensions

	V5100	V6000	
Basic width	2.55	3.00	m
Working width: min. width with 2 cut-off shoes hydraulically extendable to	 2.00 5.10	 2.50 6.00	m
Depth of the bottom plates: Main screed extendable parts	 380 380	 380 380	mm

☞ As regards extension of the screed, refer to the chapter entitled "Set-up and modification".

4.2 Weights

	V5100	V6000	
Main screed with extendable parts	3.36	3.80	t
plus: side shields per extension part 350 mm per extension part 750 mm	 335 185 300	 335 185 300	kg

4.3 Adjustment/equipment features

Crowning: - Adjustment range - Adjusting mechanism	 -2.0%... +4.5% with ratchet via chain with hydraulic motor via chain (○)
Height/angle adjustment of extendable parts	4-point spindle adjustment
Hinged walkway plate	Standard
Lubrication system:	Individual lubrication points and central lubrication system

4.4 Compacting system

Tamper system	Vertical impact tamper
Tamper stroke max.	4.8 mm
Tamper frequency (infinitely adjustable)	1560 rpm (26 Hz)
Vibration (infinitely adjustable)	3480 rpm (58 Hz)
Hydraulic motors: - for tamper (in basic screed/extendable part) - for vibration (in basic screed/extendable part)	 2/2 2/2

4.5 Gas heater system V 5100

Fuel (liquefied gas)	Propane gas
Burner type	Flame band burner
Heater control system (switch cabinet on the screed)	Electronic ignition, flame monitoring, temperature monitoring (○)
Gas bottles (on the screed) - Capacity per bottle - Gross weight per bottle	2 units 78 l 33 kg
Operating pressure (downstream of pressure reducer)	Approx. 1.5 bar
Heater output	57.4 kW
Gas consumption, main screed + ext. parts Gas consumption per 350 mm extension part Gas consumption per 750 mm extension part Heated side shield	4.48 kg/h 0.34 kg/h 0.63 kg/h 0.16 kg/h

4.6 Gas heater system V 6000

Fuel (liquefied gas)	Propane gas
Burner type	Flame band burner
Heater control system (switch cabinet on the screed)	Electronic ignition, flame monitoring, temperature monitoring (○)
Gas bottles (on the screed) - Capacity per bottle - Gross weight per bottle	2 units 78 l 33 kg
Operating pressure (downstream of pressure reducer)	Approx. 1.5 bar
Heater output	72.6 kW
Gas consumption, main screed + ext. parts Gas consumption per 350 mm extension part Gas consumption per 750 mm extension part Heated side shield	5.68 kg/h 0.34 kg/h 0.63 kg/h 0.16 kg/h

4.7 Electric heater V 5100 (○)

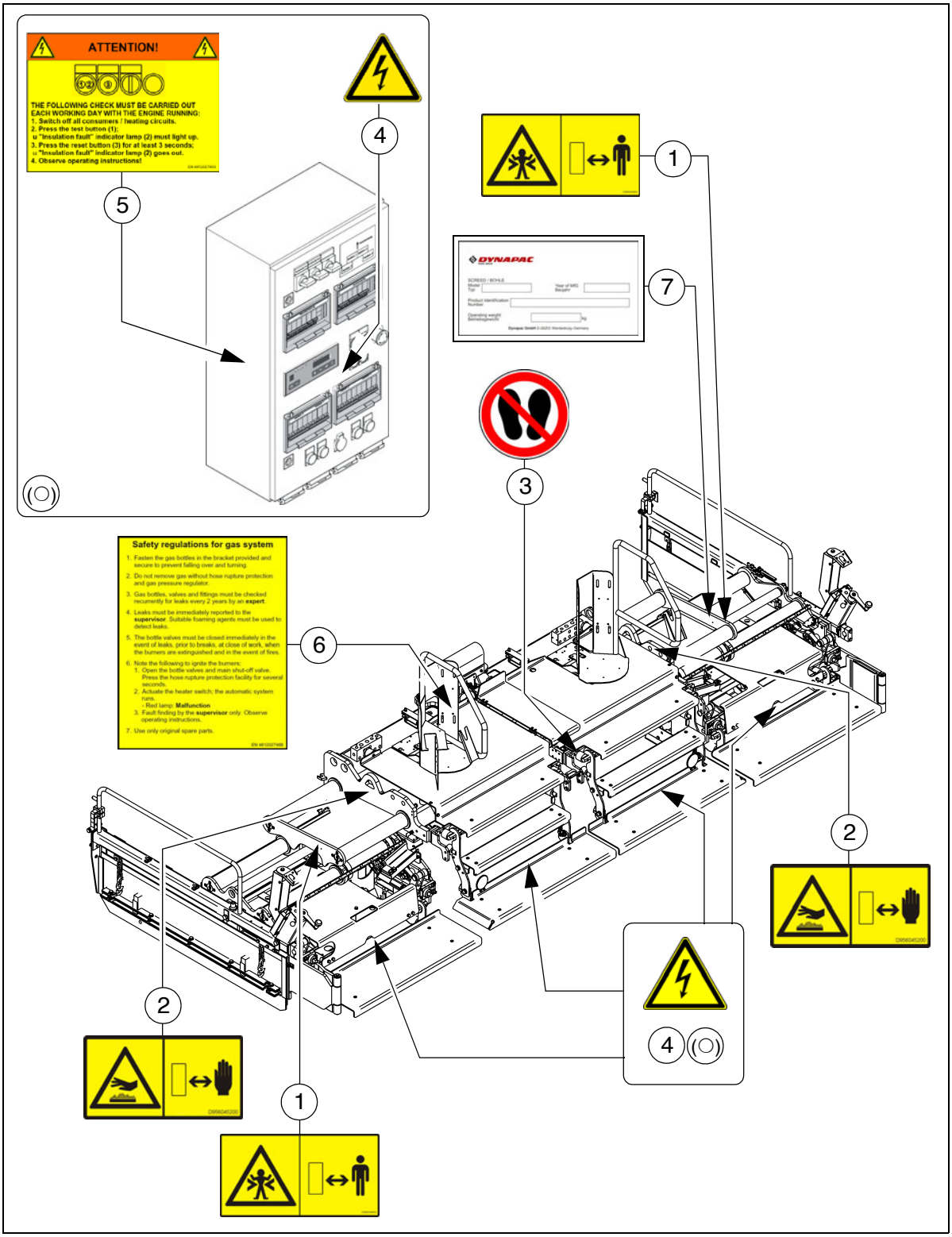
Type of heating	Electric heater with heating strips in bottom plates and tamper knives	
Number of heating strips - On each bottom plate - On each tamper blade - Per side shield (O)	 2 1 1	items
Screed heating system total output: - Main screed and extendable parts - 350mm extension part - 750 mm extension part - +side shields (O)	 18,000 1300 2700 1000	Watt

4.8 Electric heater V 6000 (○)

Type of heating	Electric heater with heating strips in bottom plates and tamper knives	
Number of heating strips - On each bottom plate - On each tamper blade - Per side shield (O)	 2 1 1	items
Screed heating system total output: - Main screed and extendable parts - 350mm extension part - 750 mm extension part - +side shields (O)	 20,800 1300 2700 1000	Watt

5 Location of instruction labels and type plates

⚠ CAUTION	**Danger from 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.


ATTENTION!
THE FOLLOWING CHECK MUST BE CARRIED OUT EACH WORKING DAY WITH THE ENGINE RUNNING:
1. Switch off all consumers / heating circuits.
2. Press the test button (1):
u "Insulation fault" indicator lamp (2) must light up.
3. Press the reset button (3) for at least 3 seconds;
u "Insulation fault" indicator lamp (2) goes out.
4. Observe operating instructions!
Safety regulations for gas system
1. Fasten the gas bottles in the bracket provided and secure to prevent falling over and turning.
2. Do not remove gas without hose rupture protection and gas pressure regulator.
3. Gas bottles, valves and fittings must be checked recurrently for leaks every 2 years by an expert.
4. Leaks must be immediately reported to the supervisor. Suitable foaming agents must be used to detect leaks.
5. The bottle valves must be closed immediately in the event of leaks, prior to breaks, at close of work, when the burners are extinguished and in the event of fires.
6. Note the following to ignite the burners:
1. Open the bottle valves and main shut-off valve. Press the hose rupture protection facility for several seconds.
2. Actuate the heater switch; the automatic system runs.
- Red lamp: Malfunction
3. Fault finding by the supervisor only. Observe operating instructions.
7. Use only original spare parts.
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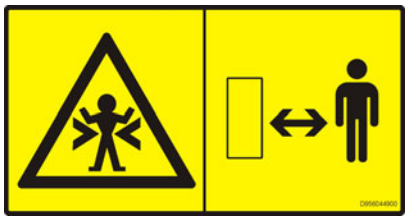
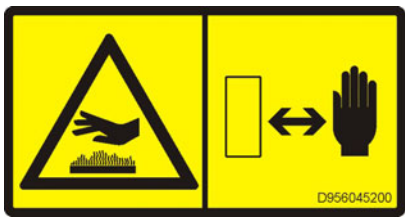
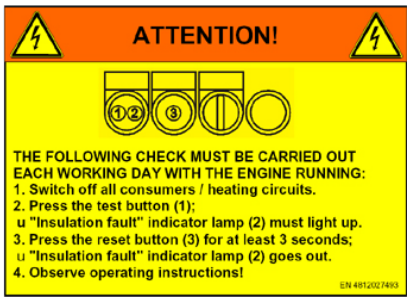
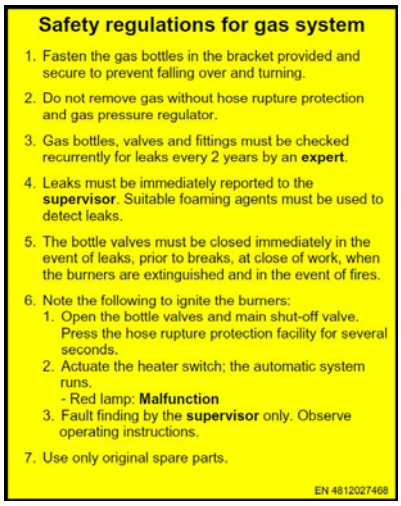
5.1 Warning signs

No.	Pictogram	Meaning
1		- **Warning - Danger of crushing!** Crushing points can cause severe or fatal injuries! Maintain a safe distance from the danger area!
2		- **Warning - Hot surface - Danger of burning!** Hot surfaces can cause severe injuries! Keep your hands at a safe distance from the danger area! Use protective clothing or protective equipment!

5.2 Instructive symbols, prohibitive symbols, warnzeichen

No.	Pictogram	Meaning
3		- Do not enter the area!
4 **		- Warning of dangerous electrical voltage!  Components bearing this symbol may only be opened, check and replaced by specialist electricians.

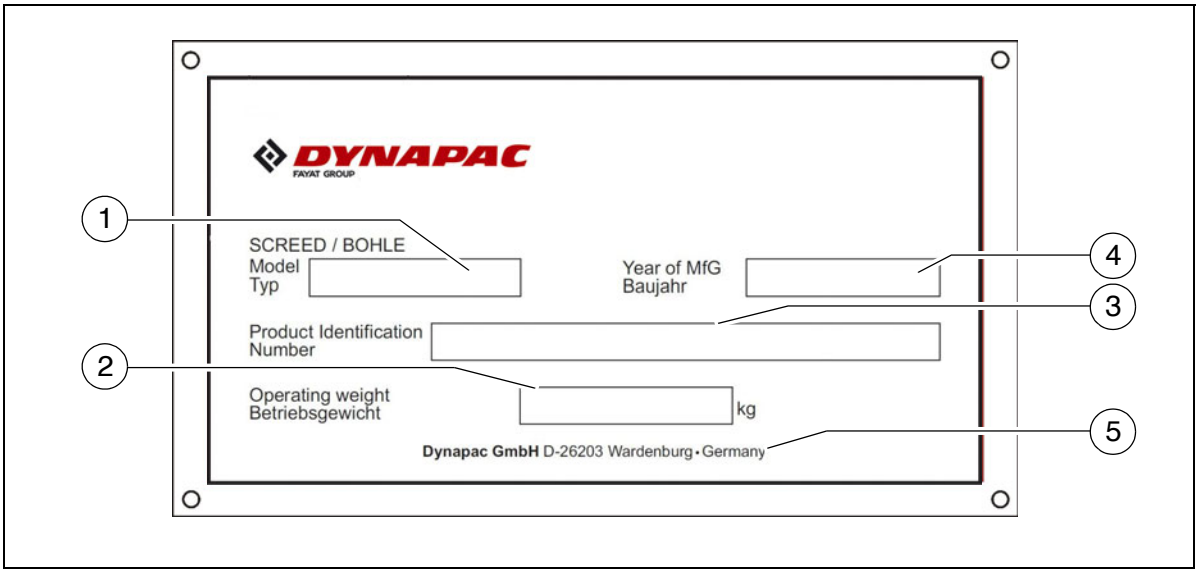
5.3 Further warnings and operating instructions

No.	Pictogram	Meaning
5 **		- **Important!** Danger due to dangerous electrical voltage. The machine personnel must check the insulation monitoring every day before starting the machine! Failure to comply with the daily routine can cause severe or fatal injuries. Comply with the information in the operating instructions
6 *		- **Safety regulations for gas system!** Danger due to improper operation. The machine must have read and understood the safety regulations before starting the machine! Failure to comply with the safety regulations can cause severe or fatal injuries.

* With "gas heater" equipment only

** With "electric heater" equipment only

5.4 Screed type plate (7)



Item	Designation
1	Screed type
2	Maximum operating weight of the screed
3	Screed number
4	Year of construction
5	Manufacturer

C 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!

Retract the extension parts of the screed to the basic width and remove all extension parts that may have been attached.

Remove all loose and protruding parts (side shields, remote controls, etc.). When transporting under a special permit, secure these parts!

Secure hinged side shields (O) in swivelled-in position!

Stow all parts that are not permanently installed on the screed in the boxes provided for this purpose.

Properly reattach all guards after transportation.

2 Transporting the removed screed

The procedure required to load and transport the screed **when installed** on the paver finisher is described in the operating instructions for the paver finisher.

The screed must be retracted to the basic width. All protruding or loose parts and the gas bottles for the screed heating system (○) (see Chapters E and D) must be removed. Hydraulic and electrical connections must be disconnected.

Heed the capacity of the fork-lift truck / of the crane and the lifting gear (chains, cables, hooks, etc.)!

For the weights and the dimensions of the screed, refer to Chapter B, section "Technical data".

2.1 Transportation by crane

WARNING	**Danger from suspended loads**
	Crane and/or raised vehicle can tilt when lifted 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. - 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.

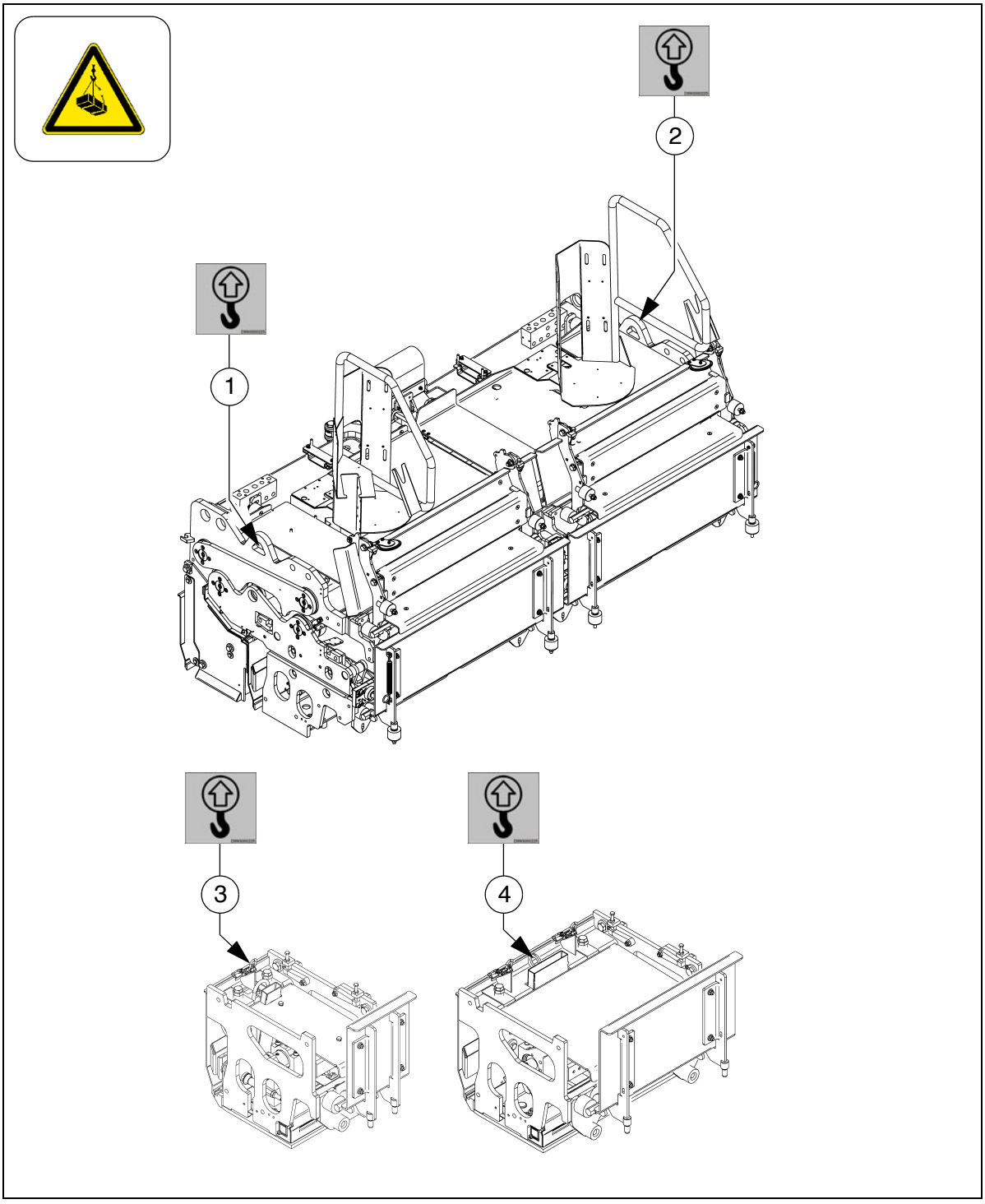
- Attach the hooks to the attachment points (1, 2) provided for this purpose.
- Use the securing points (3) and (4) provided on the extension parts.

Make sure that the screed is in a completely horizontal position when attached to the gear; otherwise, oil and grease can leak out.
This is harmful to the environment!

2.2 Transportation by fork-lift truck

Always note that the centre of gravity of the screed or accessories box may be **off-centre**.

When a fork-lift truck is used for transportation, there is the danger that the load may tip over or that parts may fall down. Keep away from the danger area!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D Operation

1 Notes regarding safety

Improper operation of the screed or the screed heater can endanger persons.

- Ensure that all protective devices and covers are available and appropriately secured!
- Immediately rectify damage which as been ascertained! Operation must not be continued when the vehicle is defective!
- Always ensure that no person is endangered when working!
- Do not let any person ride along on the screed!

DANGER	**Danger due to improper operation**
	Improper operation of the vehicle 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 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 allowed angle of rise and slope. - Keep hoods and covering parts closed during operation. - In driving mode, all moving parts must be locked/ secured. - 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 or fatal injuries! - Do not enter the danger zone. - Do not reach into rotating or conveying parts. - Only wear close-fitting clothing. - Comply with the warning and information signs on the vehicle. - Stop the engine and remove the ignition key before any maintenance work. - Comply with all further information in these instructions and in the safety manual.

⚠ WARNING	**Danger of crushing from moving vehicle parts**
	Vehicle parts performing movements can cause severe or fatal injuries! - Never stand in the danger zone of the vehicle! - Do not reach into the danger area. - Comply with the warning and information signs 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 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.

⚠ WARNING	**Danger from the gas system**
	Incorrectly performed operation and maintenance of the gas system can cause severe or fatal injuries! - Only ever transport full and empty gas bottles with safety caps to protect the bottle valves. - Use the supplied strap retainers to secure gas bottles on the paver finisher to prevent them from turning, tipping over and falling down. - Before starting the heating, check the whole heating area for leaking gas pipes. Replaced damaged hoses immediately. - Close the main shut-off valves and the bottle valves when the gas system is not in use. - When travelling, ensure that the gas bottles from the paver finisher are transported in another vehicle, complying with the safety regulations. - Proceed with expert inspection every twelve months. - Only skilled workers with a corresponding qualification are allowed to work on the gas heater system! - Only original spare parts may be used! - Comply with all further information in these instructions and in the safety manual.

2 Operation of the screed

For all general functions of the paver finisher and the screed that are not specially related to the **present** screed, refer to the operating instructions of the paver finisher.

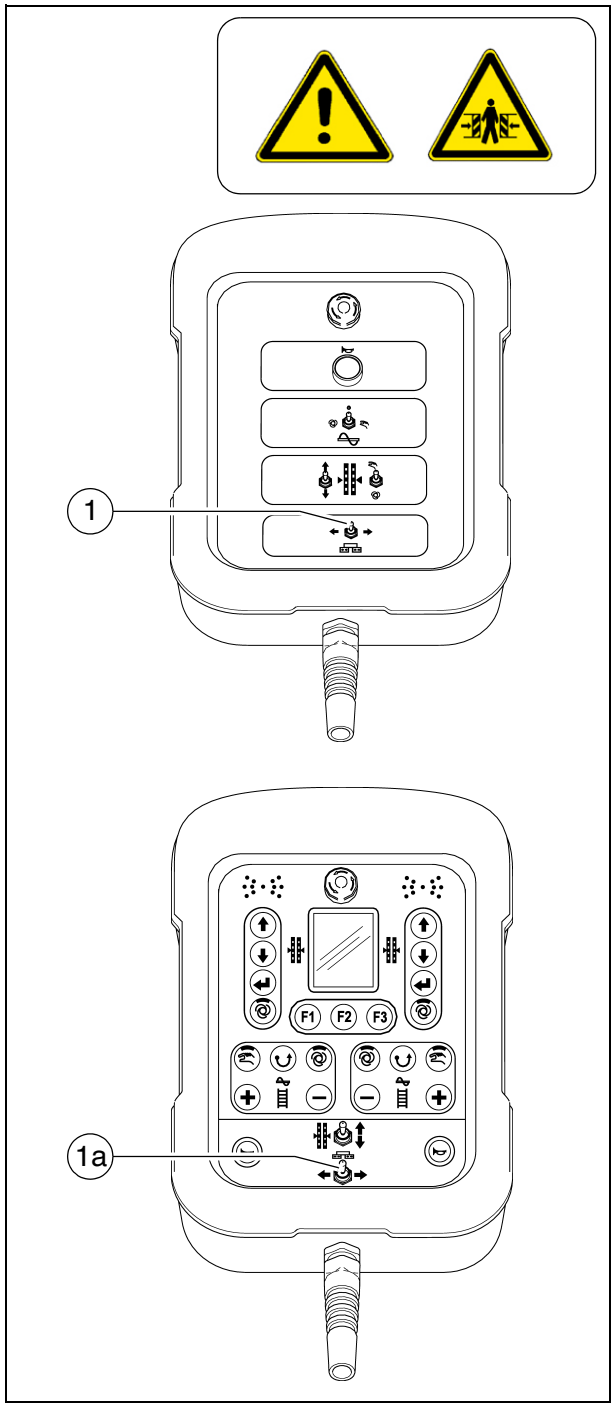
2.1 Extend/retract screed

To extend or retract the hydraulically adjustable extension parts,

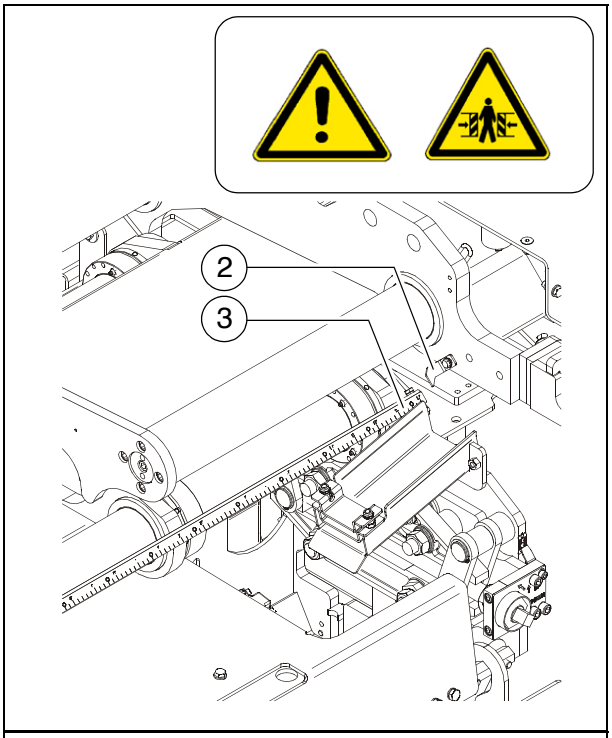
- actuate the switch (1) on the remote controls installed on the right-hand and the left-hand side of the screed.
  (○ Paver finishers equipped with PLC system: Buttons (1a)).
- The screed hazard warning system (on the paver finisher) flashes.

The extend/retract screed function can also be carried out from the paver finisher's operating panel.

There is a danger of squeezing while the extension parts are extended or retracted.
Make sure that there is no-one in the danger area!



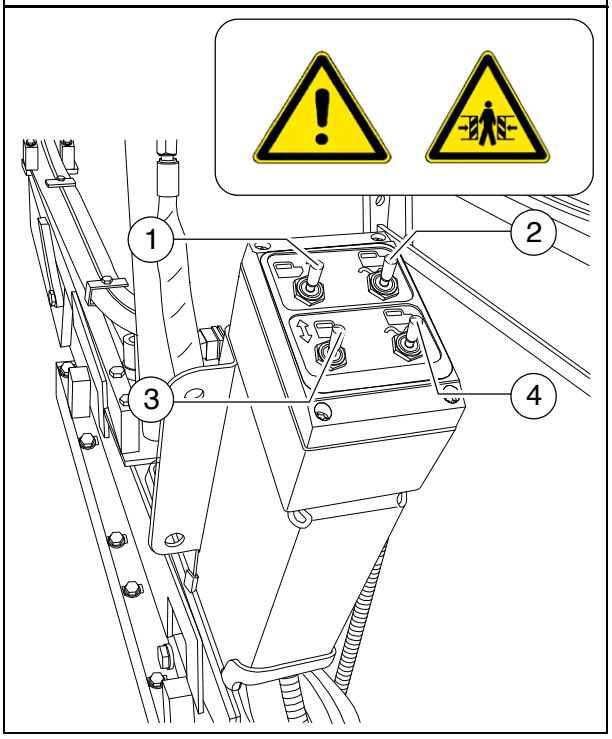
- A pointer (2) and a scale (3), from which the extended width can be read off, can be found on each of the extendable parts.



Hydraulic side shields
(○)

Both side shields have an operating unit for hydraulic adjustment.

- Raise / lower at front (1)
- Front floating position ON / OFF (2)
  - Upper switch position: ON
  - Lower switch position: OFF
- Raise / lower at rear (3)
- Rear floating position ON / OFF (4)
  - Upper switch position: ON
- Lower switch position: OFF



STOP On actuation, heed danger zones of moving parts of the vehicle!

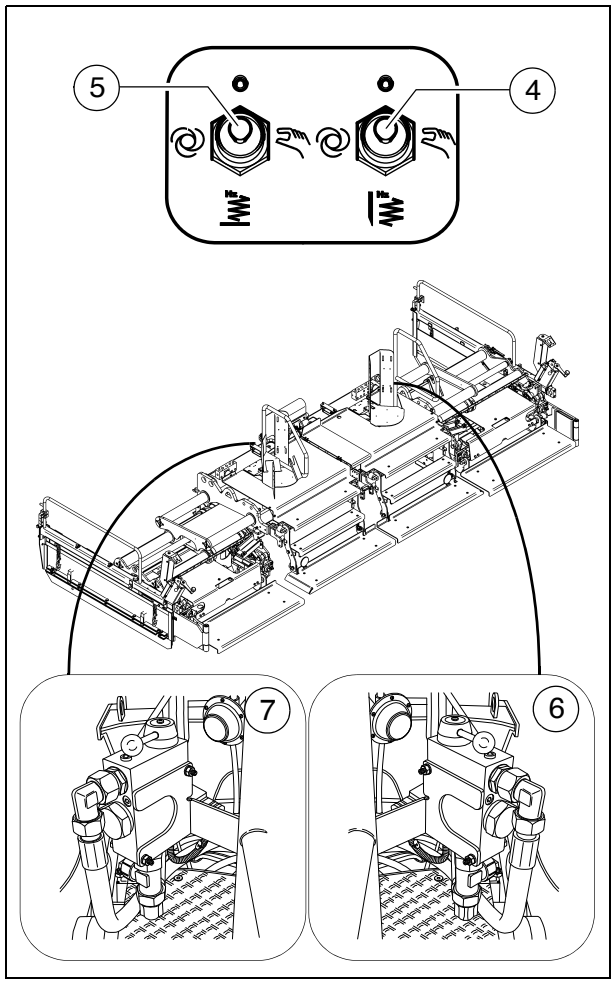
2.2 Adjusting the compacting elements - conventional version

Adjusting the tamper

The tamper function is switched on and off using the switch (4) on the paver finisher's operating panel (see paver finisher operating instructions).

The tamper frequency (number of strokes per minute) is set using the rotary regulator (6).

Range of adjustment:
1560 rpm =
26 strokes per second



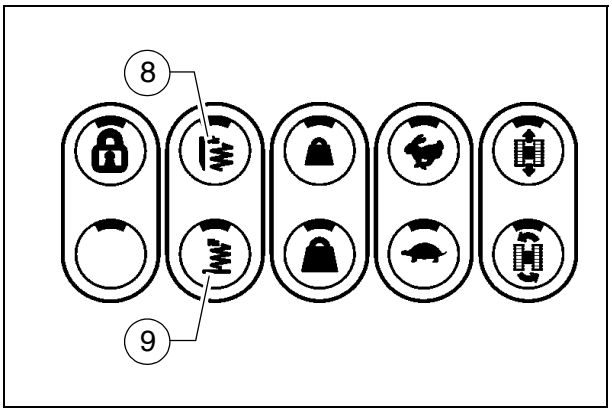
Adjusting the vibration

The vibration function is switched on and off using the switch (5) on the paver finisher's operating panel (see paver finisher operating instructions).

The vibration frequency (number of vibrations per minute) is set using the rotary regulator (7).

Range of adjustment:
3480 rpm =
58 strokes per second

2.3 Adjusting the tamper - PLC version



The tamper function is switched on and off using the button (8) on the paver finisher's operating panel (see paver finisher operating instructions).

☞ The tamper frequency (number of strokes per minute) is set and displayed in the paver finisher control system / remote control compacting element setting menu (see paver finisher operating instructions).

Range of adjustment:
1560 rpm =
26 strokes per second

Adjusting the vibration

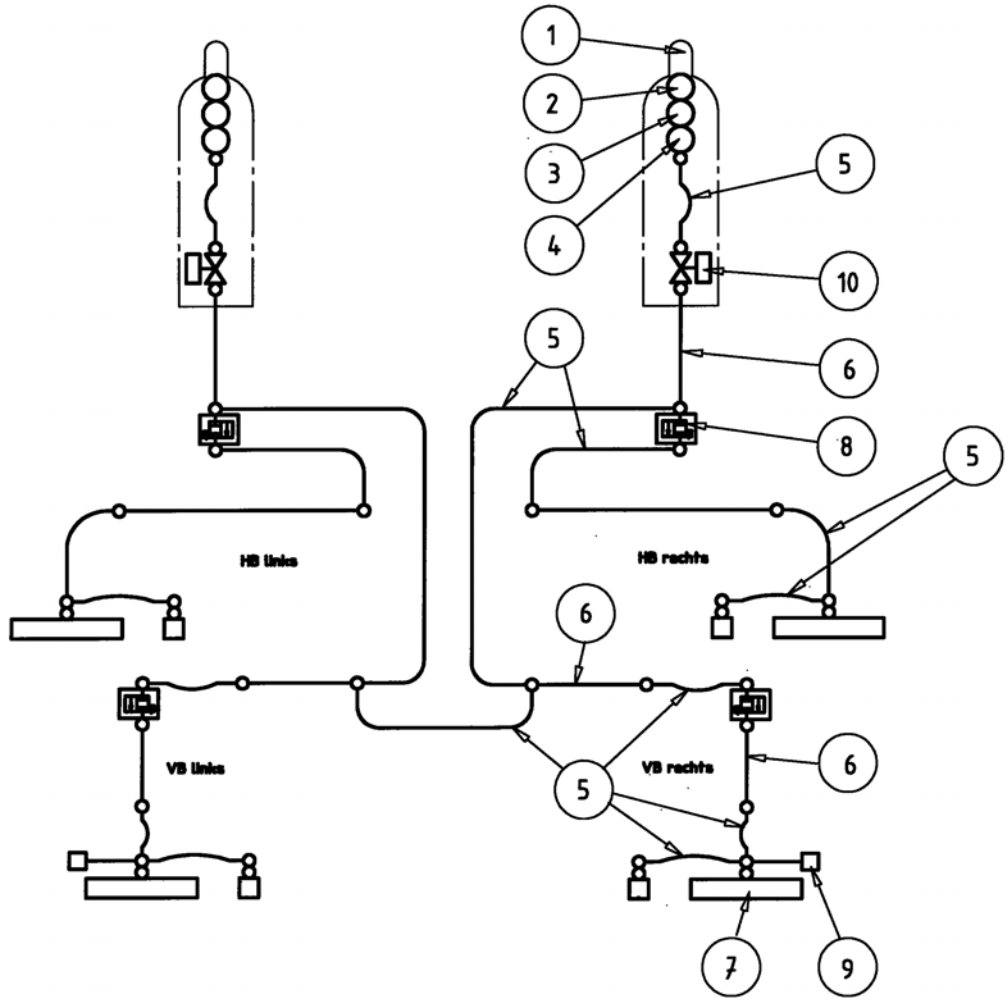
The vibration function is switched on and off using the button (9) on the paver finisher's operating panel (see paver finisher operating instructions).

☞ The vibration frequency (number of strokes per minute) is set and displayed in the paver finisher control system / remote control compacting element setting menu (see paver finisher operating instructions).

Range of adjustment:
3480 rpm =
58 strokes per second

3 Operation of the gas heater system with flame monitoring

3.1 Schematic diagram of the gas supply system



Item	Designation
1	Gas bottles
2	Bottle valves
3	Pressure reducer with pressure gauge
4	Hose break safety devices
5	Hose connections
6	Pipe connections
7	Flame band burner
8	Solenoid valves
9	Hose couplings for extension parts
10	Quick action valves

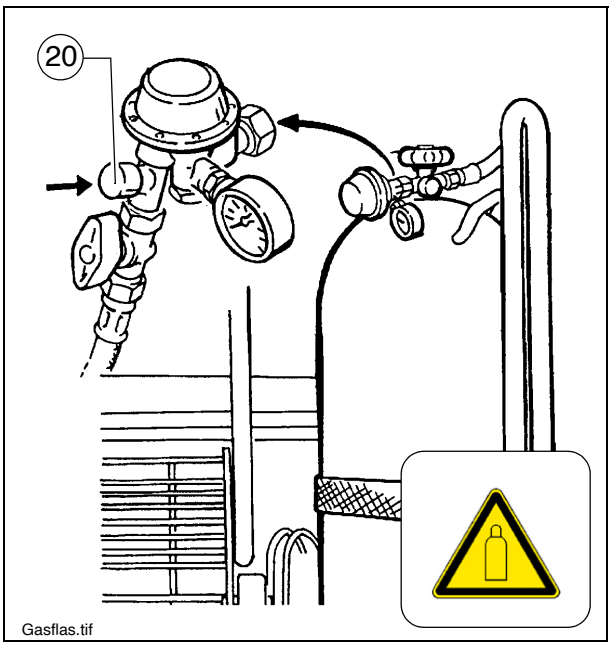
3.2 General notes on the gas heater system

The heater of the screed burns propane gas (liquefied gas). The two gas bottles are on the screed.

The heater is equipped with an electronic flame and temperature monitoring system. The spark plug on the burner simultaneously serves to monitor the flame. The switch cabinet is mounted on the screed.

In the case of the temperature monitoring system, the temperature sensor is secured on the sliding plate; the ignition box is also located on the screed.

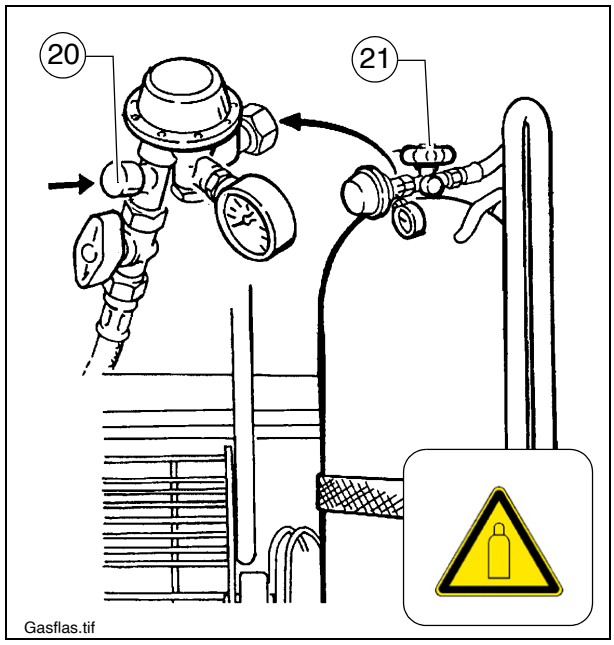
Heed the following points before commissioning the heater system:



- The gas bottles must always be in the position provided for this purpose on the screed, and must be secured using the supplied strap retainers.
  The bottles must be fixed in position so that they cannot turn around their longitudinal axis even while the paver finisher is in operation.
- The liquefied gas system must not be operated without the hose break safety device (20). It is also absolutely necessary that the pressure reducing valve is installed before the system is put into operation.
- The gas pressure must not fall below 1.0 bar. Danger of explosion in the burner!
- Check all gas hoses for externally visible damage before using them. If any defect is found, immediately replace the hose in question with a new one.

STOP There is a danger of fire and explosions when handling gas bottles and working on the gas heater.
Do not smoke! No naked flames!

3.3 Connection and leak test



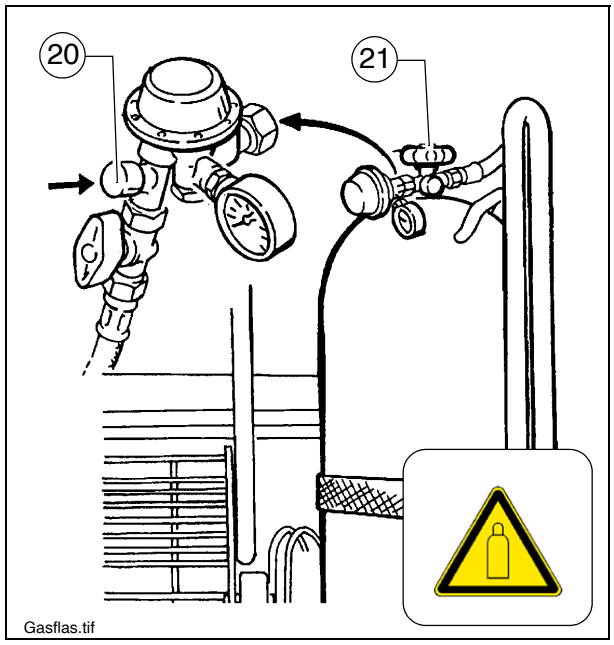
The gas pipe system of the main screed and the extendable parts is permanently installed. To connect the gas bottles:

- Unscrew the protective caps from the bottle valves and screw onto the rear of the bottle bracket.
- Check whether the quick action valves are closed.
- Check that the bottle valves (21) are properly closed.
  Install the gas hoses with the pressure reducers and the hose break safety devices (20) on the bottles.

☞ Note:
The gas connections always have left-handed threads!

⚠ Make sure the gas pipe system has no leaks.

3.4 Commissioning and checking the heater



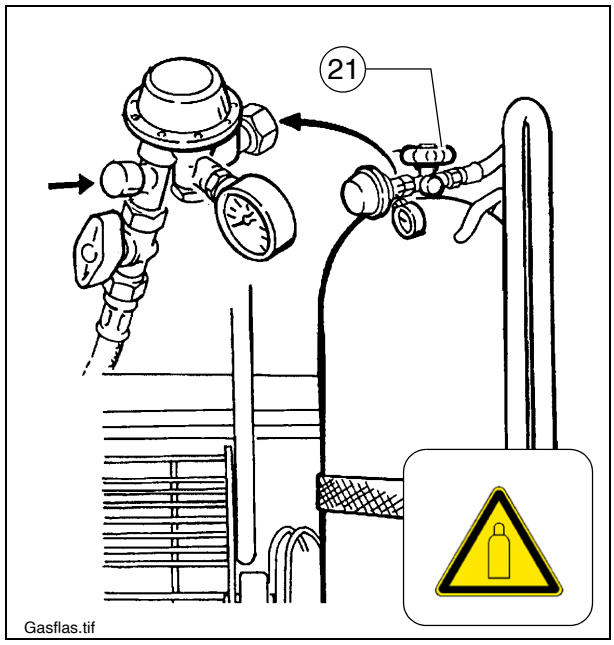
The gas heating system is operated with two gas bottles.

- Check whether the battery master switch is switched on.
- Open the bottle valves (21).
  Unlock the safety valve by pressing the hose break safety device (20).
- Open the quick action valves.

☞ The following sequence must be adhered to in order to guarantee a malfunction-free ignition and heating phase:

- 1. Place screed on the ground
- 2. Fully retract the paver finisher's levelling cylinders
- 3. Ignite the screed and allow to heat slightly in this position
- 4. As soon as sufficient heat is available, the screed can be raised

3.5 Exchanging the gas bottles



- Check whether the quick action valves and both bottle valves (21) are closed.
- Unscrew the gas hoses.
- Screw the protective caps for the bottle valves onto the gas bottles.
- Screw pressure reducer onto the available mounting bracket.

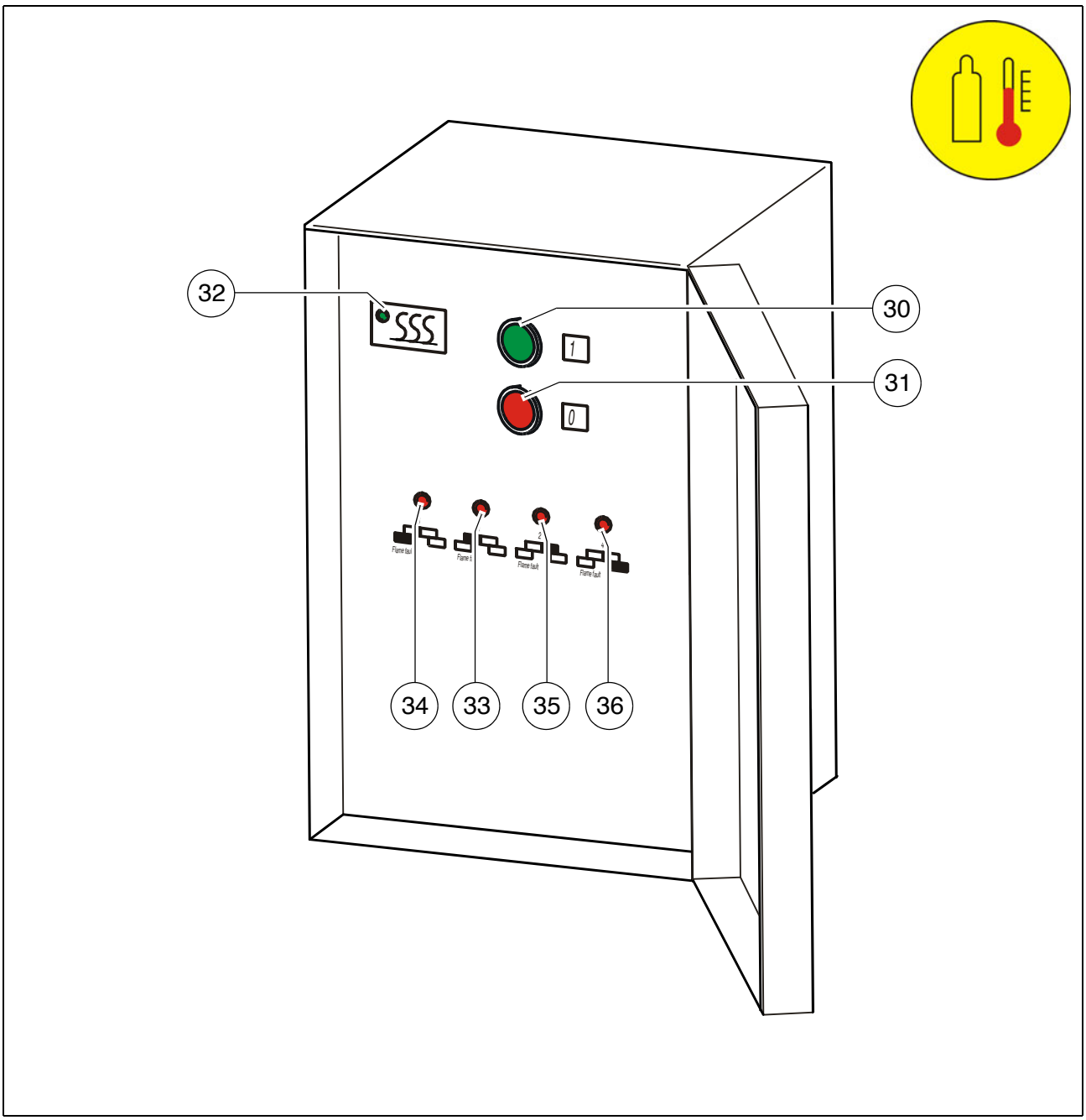
STOP

Gas bottles that are full or not completely emptied are under pressure.
Therefore, make sure that bottles with their protective valve caps removed are protected from severe impact (particularly in the area of the valves or on the valves themselves)!

- Connect new gas bottles (see the section "Connecting gas bottles and performing a leak test").

4 Screed heater - conventional version

4.1 Switch cabinet for screed heater

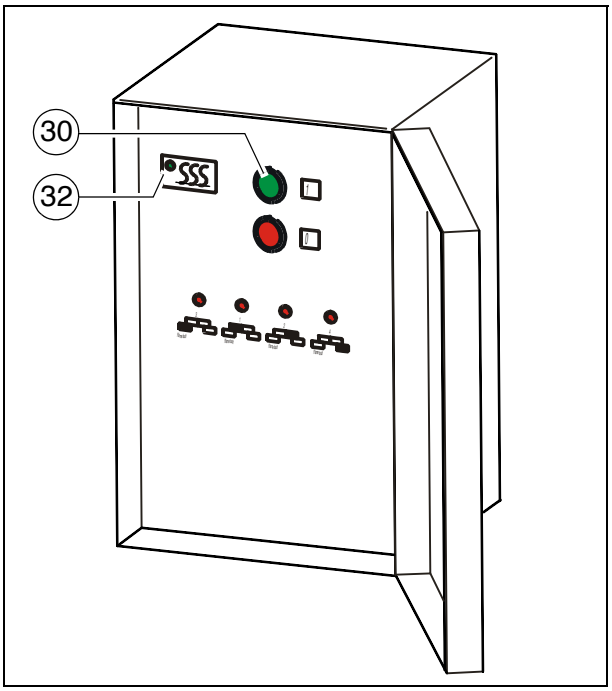


Item	Designation
30	Heater ON (button) - This opens the non-return valves for the gas supply to the burners and activates the electronic ignition system and the flame monitoring system.
31	Heater OFF (button) This closes the non-return valves for the gas supply to the burners and switches off the electronic ignition system and the flame monitoring system.
32	Operating display (green) - heater ON
33	Left middle section malfunction display, red
34	Left extendable part malfunction display, red
35	Right middle section malfunction display, red
36	Right extendable part malfunction display, red

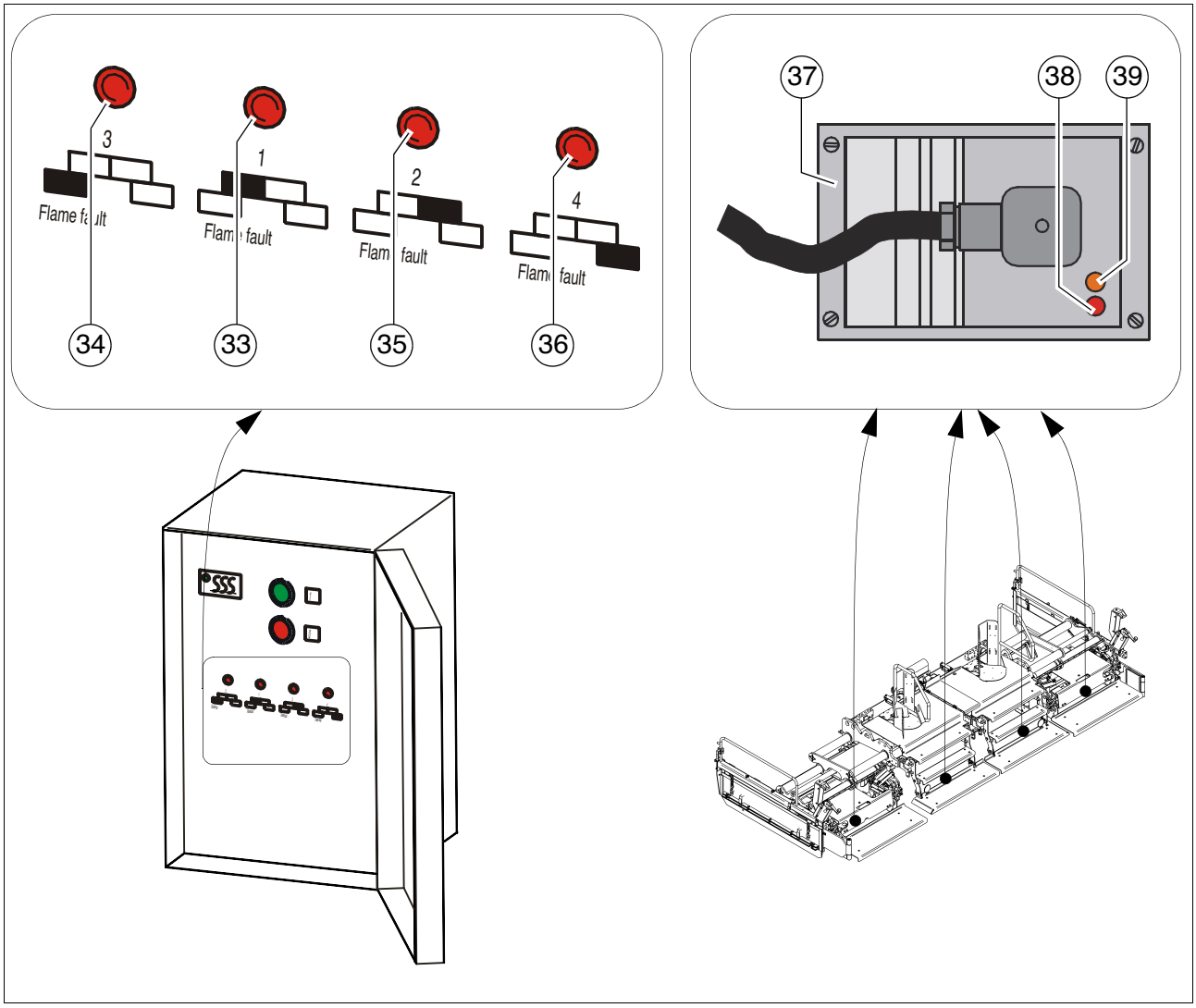
Ignition process

- Actuate the on/off switch (30) in the switch cabinet; this
  - opens the electromagnetic non-return valves for the gas supply to the burners;
  - activates the electronic ignition system, causing the gas to be automatically ignited by the spark plugs and controlled by the flame monitoring system.

☞ Indicator lamp (32) indicates that the heater is switched ON.



4.2 Function of the flame monitoring system



Item	Designation
33	Left middle section malfunction display, red
34	Left extendable part malfunction display, red
35	Right middle section malfunction display, red
36	Right extendable part malfunction display, red
37	Ignition boxes on the individual screeds
38	Red indicator lamp on the ignition box in the corresponding screed
39	Yellow indicator lamp on the ignition box in the corresponding screed

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 red indicator lamps on the ignition box and in the switch cabinet light up.

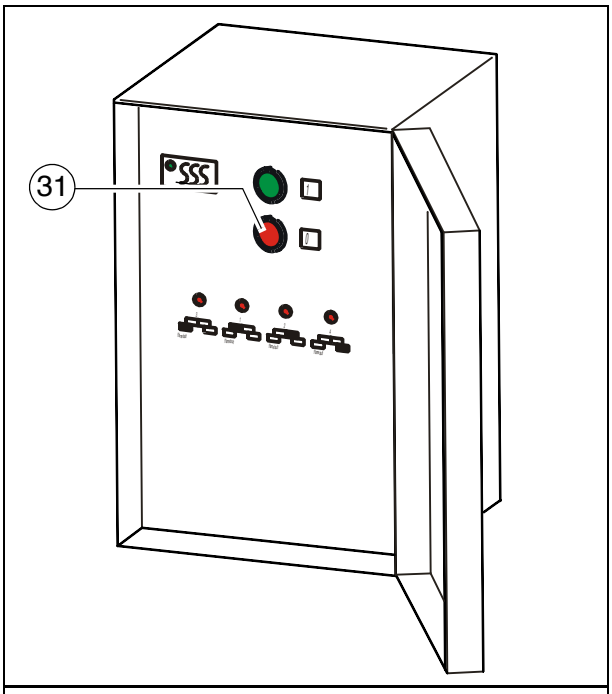
☞ In the event of a malfunction during the switch-on phase, the starting process can be repeated up to three times. If the malfunction still occurs after three start-ups, the cause of the malfunction has to be eliminated before starting again.

When the flame is correct, the screed is heated until the temperature sensors in the individual screeds interrupt the heating process. During the heating phase, the yellow indicator lamps on the ignition boxes (39) indicate a correct flame at the burners.

In the event of a malfunction, the red indicator lamps (33, 34, 35, 36) in the switch cabinet and the red indicator lamps on the ignition boxes (38) indicate that the flame at the burners is not correct.

⚠ The indicator lamps are important for trouble-free operation of the ignition system. Therefore, defective bulbs should be immediately replaced!

4.3 Switching off the heater

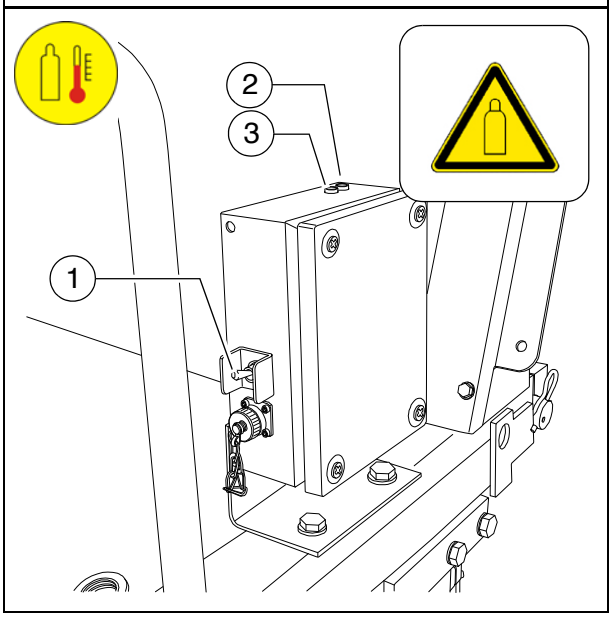


After work has been completed, or when the heater is no longer required:

- Switch off the On/Off switch (31) in the switch cabinet.
- Close the quick action valves and both bottle valves.

⚠ If these valves are not closed, there is a danger of fire and explosion due to the possible escape of uncombusted gas! Always close the valves during breaks and after work has been completed!

Gas heater side shield (○)



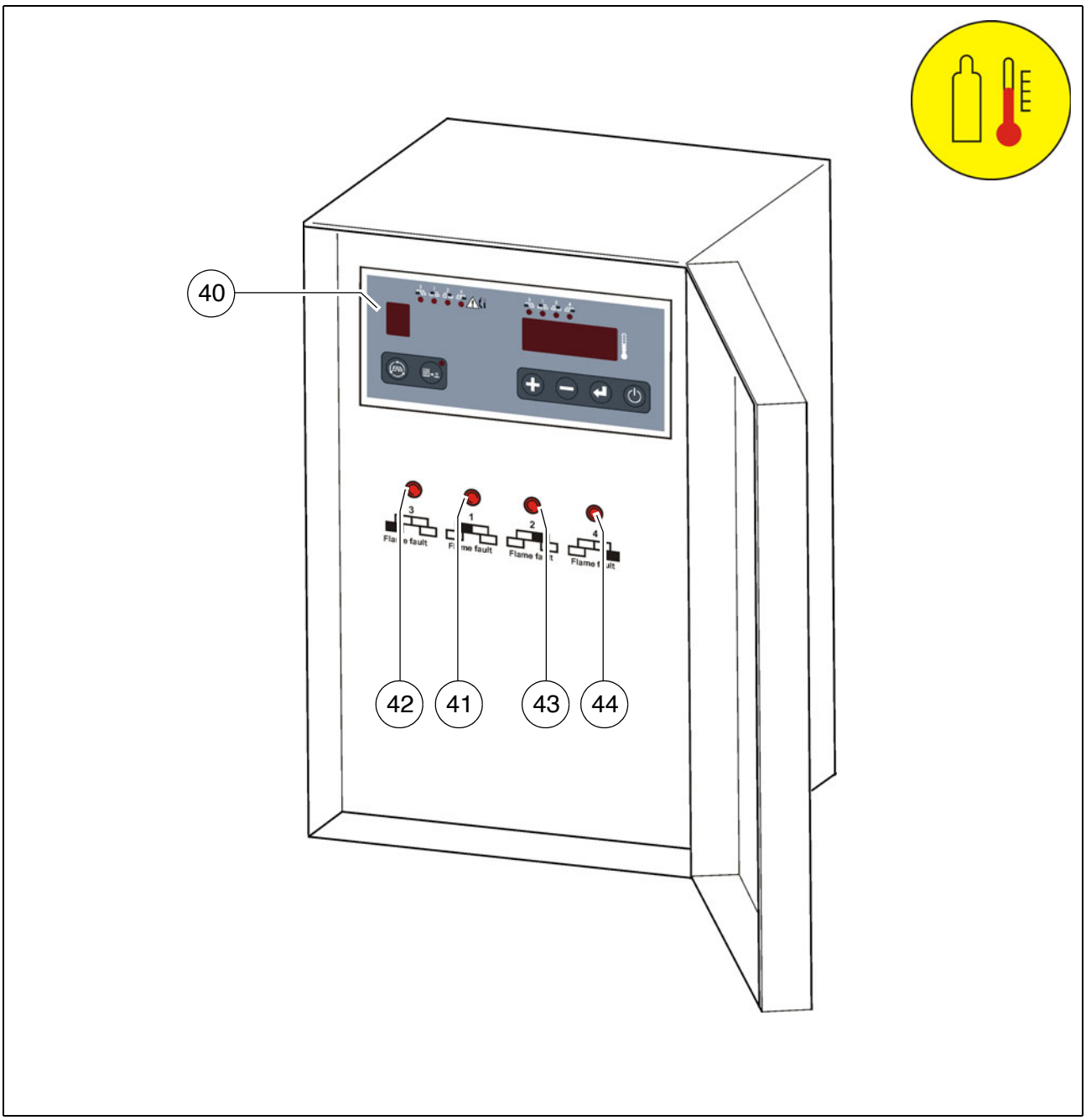
The side shields have separate flame monitoring and separate ON/OFF switching.

- Actuate the on/off switch (1) on the switch cabinet; this
  - opens the electromagnetic non-return valves for the gas supply to the burners;
  - activates the electronic ignition system, causing the gas to be automatically ignited by the spark plugs and controlled by the flame monitoring system.

☞ Indicator lamp (2) indicates that the heater is switched ON.
A malfunction is shown by the indicator lamp (3).

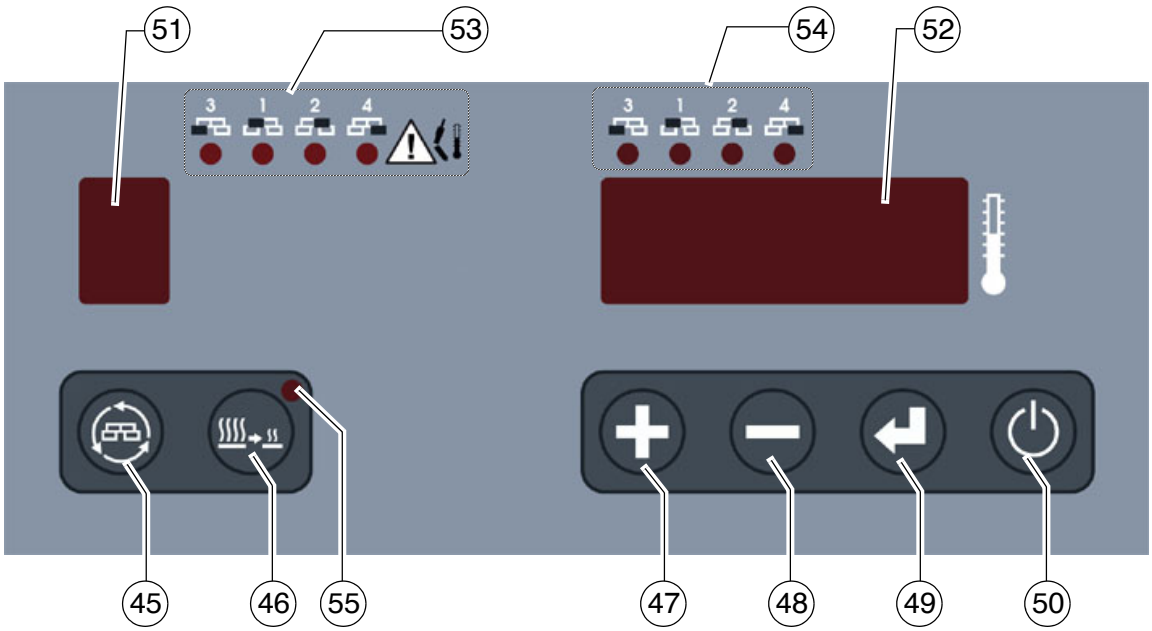
5 Screed heater - PLC version

5.1 Switch cabinet for screed heater

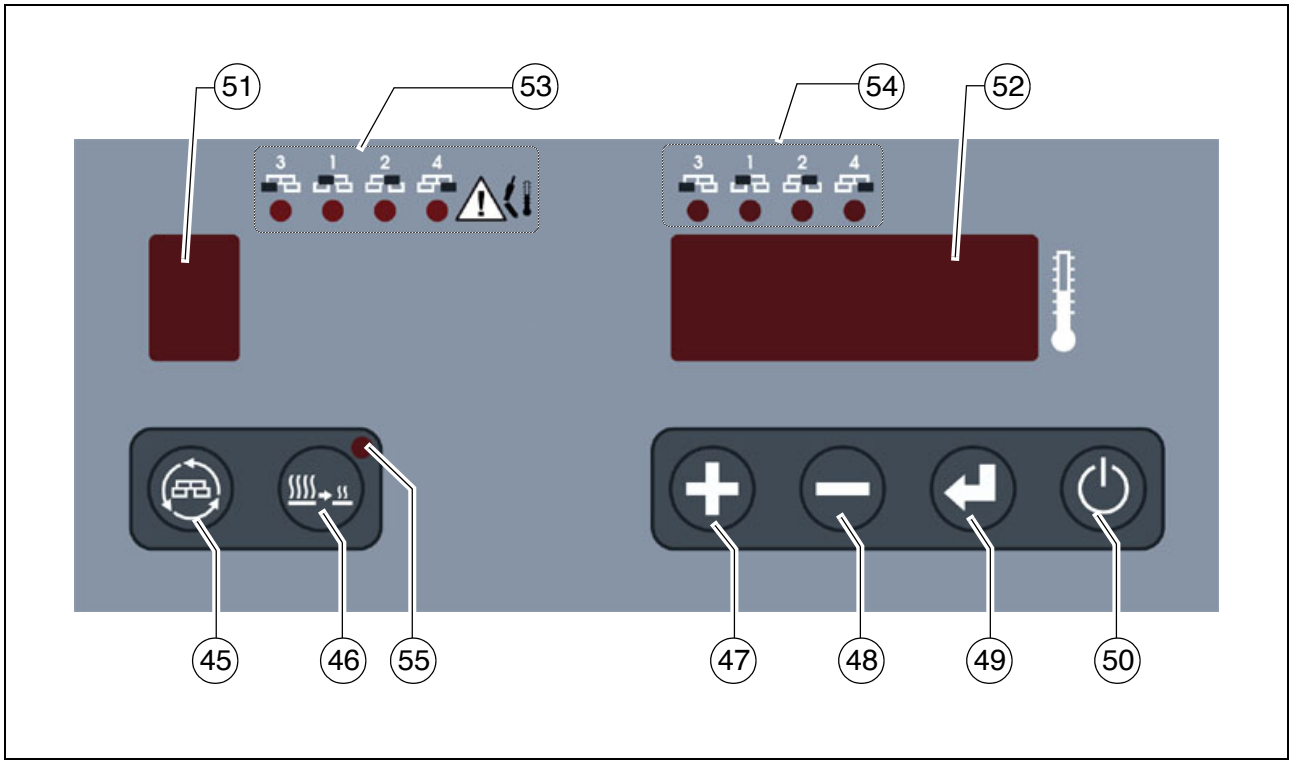


Item	Designation
40	Control and monitoring unit - For actuating the heating system, setting and monitoring the set temperature.
41	Left middle section malfunction display, red
42	Left extendable part malfunction display, red
43	Right middle section malfunction display, red
44	Right extendable part malfunction display, red

5.2 Operating the control and monitoring unit



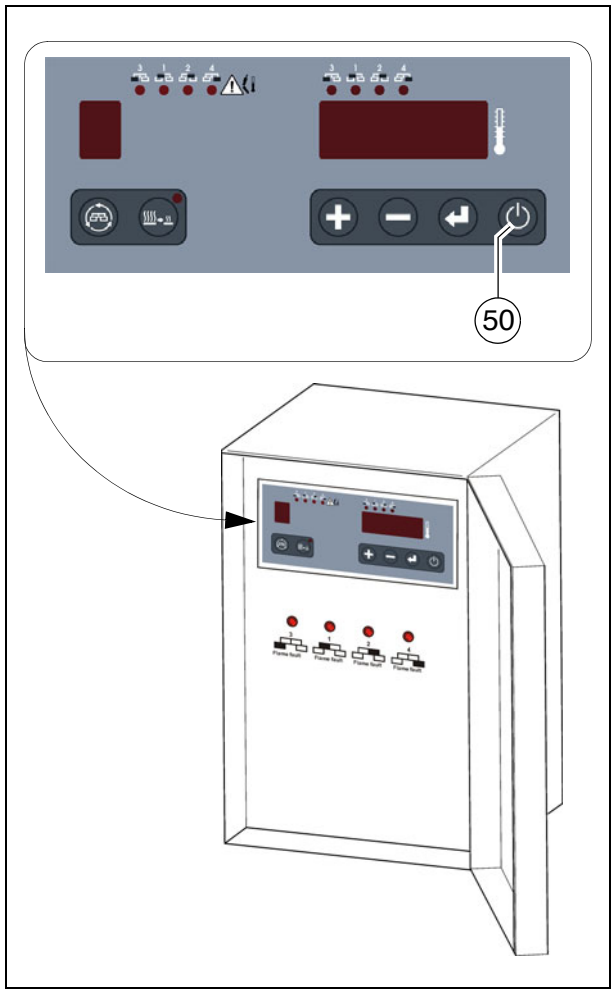
Item	Designation / function
45	- Screed section selection ☞ For selecting the screed sections for temperature display and adjustment. ☞ The temperature is adjusted for all sections together.
46	- "Energy saving" selection ☞ To reduce the heater output. ☞ After switching on, the "Energy saving" status (ON/OFF) set during previous operation is assumed again.
47	- Plus button ☞ To adjust the temperature.
48	- Minus button ☞ To adjust the temperature.
49	- Enter ☞ To confirm the input / temperature change
50	- Standby ☞ To switch between standby off / standby on.
51	- Screed section display ☞ Displays the selected screed section. The temperature of the selected screed section is shown in display (52). ☞ If no button has been pressed for a long time, the display is off, and the mean temperature value for all screed sections is shown in display (52). Return to the basic status takes place after 3 seconds without button actuation.
52	- Temperature gauge ☞ Displays the temperature of the selected screed section. ☞ If no screed section has been selected or no button has been pressed for a long time, the mean temperature value for all screed sections is shown. Return to the basic status takes place after 3 seconds without button actuation.



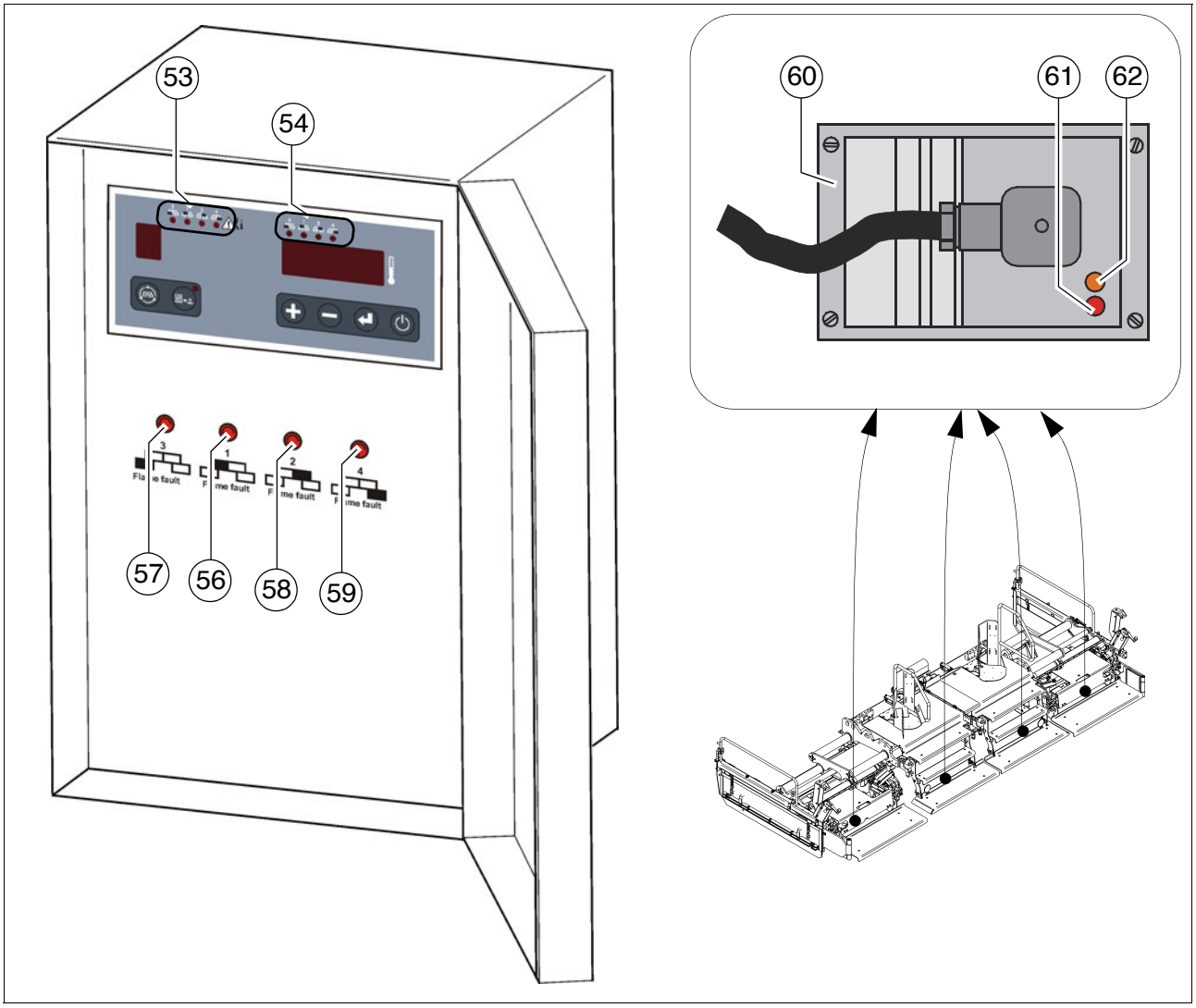
Item	Designation / function
53	- "Sensor error" warning lamps ☞ Warning lamps 1-4 for the individual screed sections light up if a defect is present on the corresponding sensor. ☞ Check sensor. The controller operates in the emergency programme.
54	- Heater status display ☞ Indicator lamps 1-4 for the individual screed section heaters light up if the corresponding heater circuit is engaged. ☞ The lamps flash when the controller requests heating for the relevant section and this cannot be carried out at present due to a delay time or energy saving mode.
55	- "Energy saving" indicator lamp ☞ Lights up when reduced heater output (energy saving) is activated.

Ignition process - PLC version

- Actuate the on/off switch (50) in the switch cabinet; this
  - opens the electromagnetic non-return valves for the gas supply to the burners;
  - activates the electronic ignition system, causing the gas to be automatically ignited by the spark plugs and controlled by the flame monitoring system.



5.3 Function of the flame monitoring system



Item	Designation
56	Left middle section malfunction display, red
57	Left extendable part malfunction display, red
58	Right middle section malfunction display, red
59	Right extendable part malfunction display, red
60	Ignition boxes on the individual screeds
61	Red indicator lamp on the ignition box in the corresponding screed
62	Yellow indicator lamp on the ignition box in the corresponding screed

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 red indicator lamps on the ignition box and in the switch cabinet light up.

☞ In the event of a malfunction during the switch-on phase, the starting process can be repeated up to three times. If the malfunction still occurs after three start-ups, the cause of the malfunction has to be eliminated before starting again.

When the flame is correct, the screed is heated until the temperature sensors in the individual screeds interrupt the heating process. During the heating phase, the red indicator lamps (54) in the switch cabinet and the yellow indicator lamps on the ignition boxes (62) indicate a correct flame at the burners.

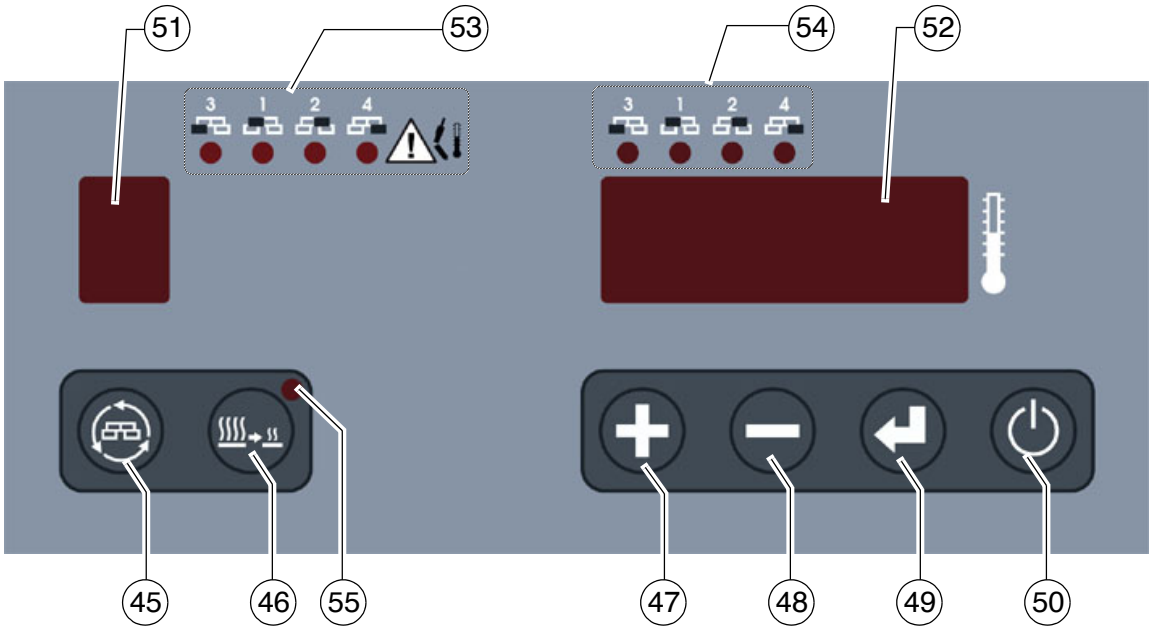
In the event of a malfunction, the red indicator lamps (56, 57, 58, 59) in the switch cabinet and the red indicator lamps on the ignition boxes (61) indicate that the flame at the burners is not correct.

⚠ The indicator lamps are important for trouble-free operation of the ignition system. Therefore, defective bulbs should be immediately replaced!

5.4 Temperature display, setting temperature level

The temperature display and temperature level setting for the screed heater are carried out on the control and monitoring unit in the screed heater's switch cabinet.

5.5 Temperature setting



- Press button (47) or (48) to show the current nominal temperature on the display (52).
- According to the desired adjustment, press button (47) or (48) to change the nominal temperature.

☞ Adjustment is carried out in 5°C steps. The maximum nominal temperature is 180°C.

- Confirm the new nominal value setting by pressing the Enter button (49). The current actual temperature is again shown on the display (52).

☞ Adjustment is carried out for all screed sections together.

Energy saving mode / "Energy saving"

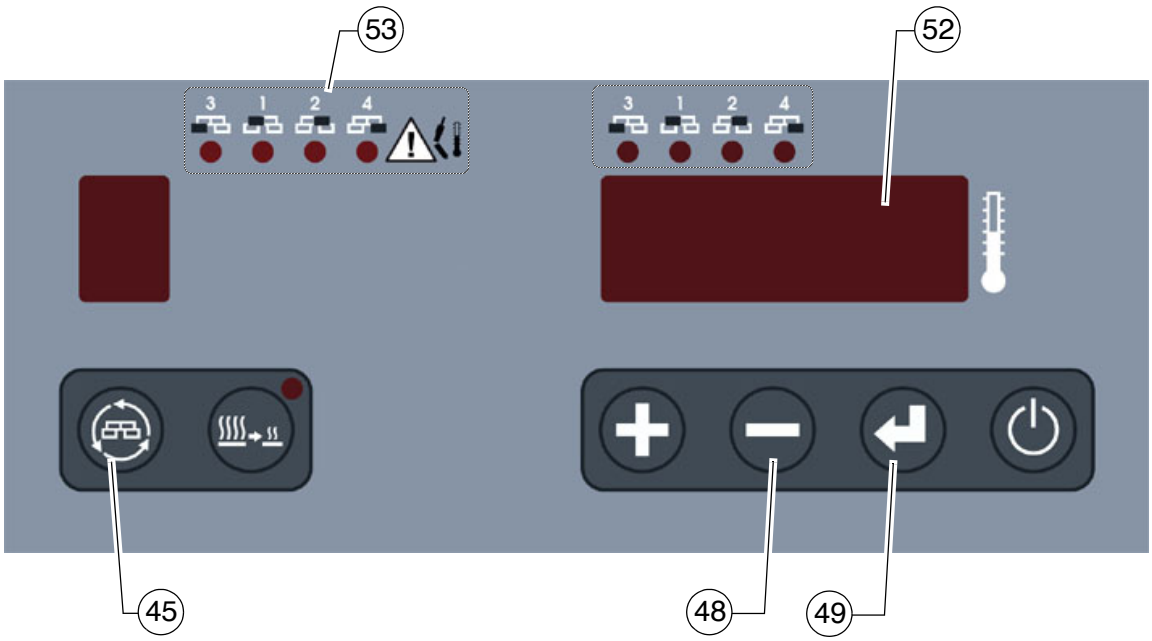
In this operating status, not all of the different screed sections' heaters are active at the same time.
Switching is carried out via temperature regulation. Whenever the nominal temperature is achieved in an actively heated section, the control system switches these sections off and activates those with the lowest temperature.

It is possible to heat the following sections together in this case.

- Section 1 and section 3
- Section 2 and section 4
- Section 1 and section 4
- Section 2 and section 3
- Section 1 and section 2

☞ After switching on, the "Energy saving" status (ON/OFF) set during previous operation is assumed again.

5.6 Status and error messages



☞ When an error occurs, the warning lamp (53) for the affected screed section lights up and the controller runs in an emergency programme.
A warning signal is additionally sounded. The warning signal is acknowledged with the minus button (48).
After pressing the Enter button, an error code is shown on the display (52).

☞ On selection of a faulty heater section with button (45), ---°C is displayed.
If several errors occur, the errors are shown in rolling form on pressing the Enter button (49).

Error code	Cause of error	Measure
Error messages without button call-up		
Warning lamp (53-1) lights up	- Sensor F1 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (53-2) lights up	- Sensor F2 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (53-3) lights up	- Sensor F3 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (53-4) lights up	- Sensor F4 defective	- Check sensor, the controller operates in the emergency programme
EP	- Data loss in the parameter memory	- Controller repair
Error messages with the Enter button pressed		
F1L	- Sensor error F1, short-circuit	- Check sensor, the controller operates in the emergency programme
F1H	- Sensor error F1, sensor break	
F2L	- Sensor error F2, short-circuit	- Check sensor, the controller operates in the emergency programme
F2H	- Sensor error F2, sensor break	
F3L	- Sensor error F3, short-circuit	- Check sensor, the controller operates in the emergency programme
F3H	- Sensor error F3, sensor break	
F4L	- Sensor error F4, short-circuit	- Check sensor, the controller operates in the emergency programme
F4H	- Sensor error F4, sensor break	

Emergency programme with sensor error

In the event of sensor errors, the controller operates in an emergency programme. All zones with an intact sensor are regulated as normal. The temperature is only displayed with the intact sensors.

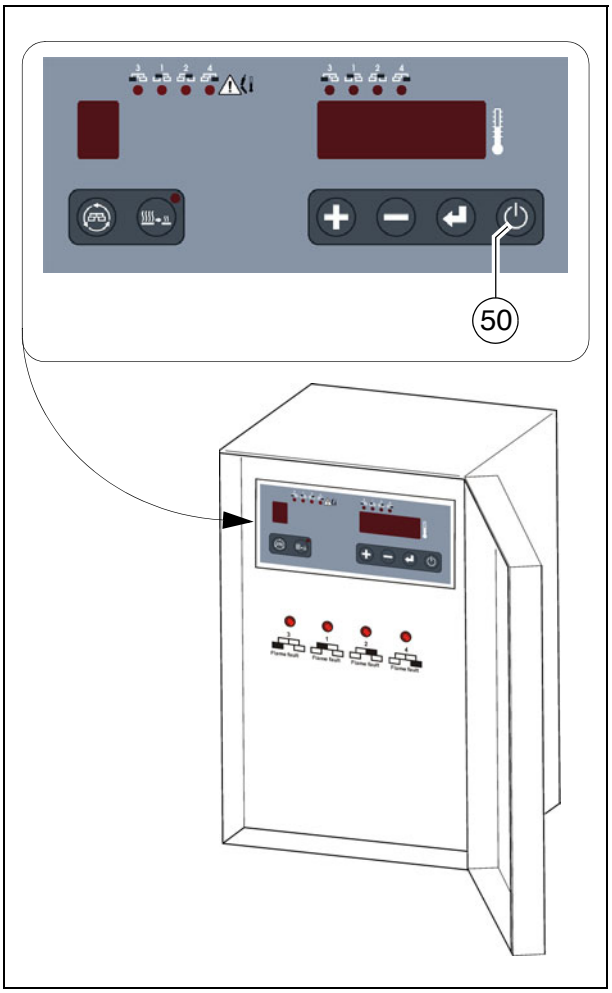
If more than 2 sensors are defective, the controller still continues to operate as long as at least 1 zone is intact. The zones with the defective sensors are then handled as if their temperature corresponds precisely to the mean value of the intact zones.

5.7 Switching off the heater

After work has been completed, or when the heater is no longer required:

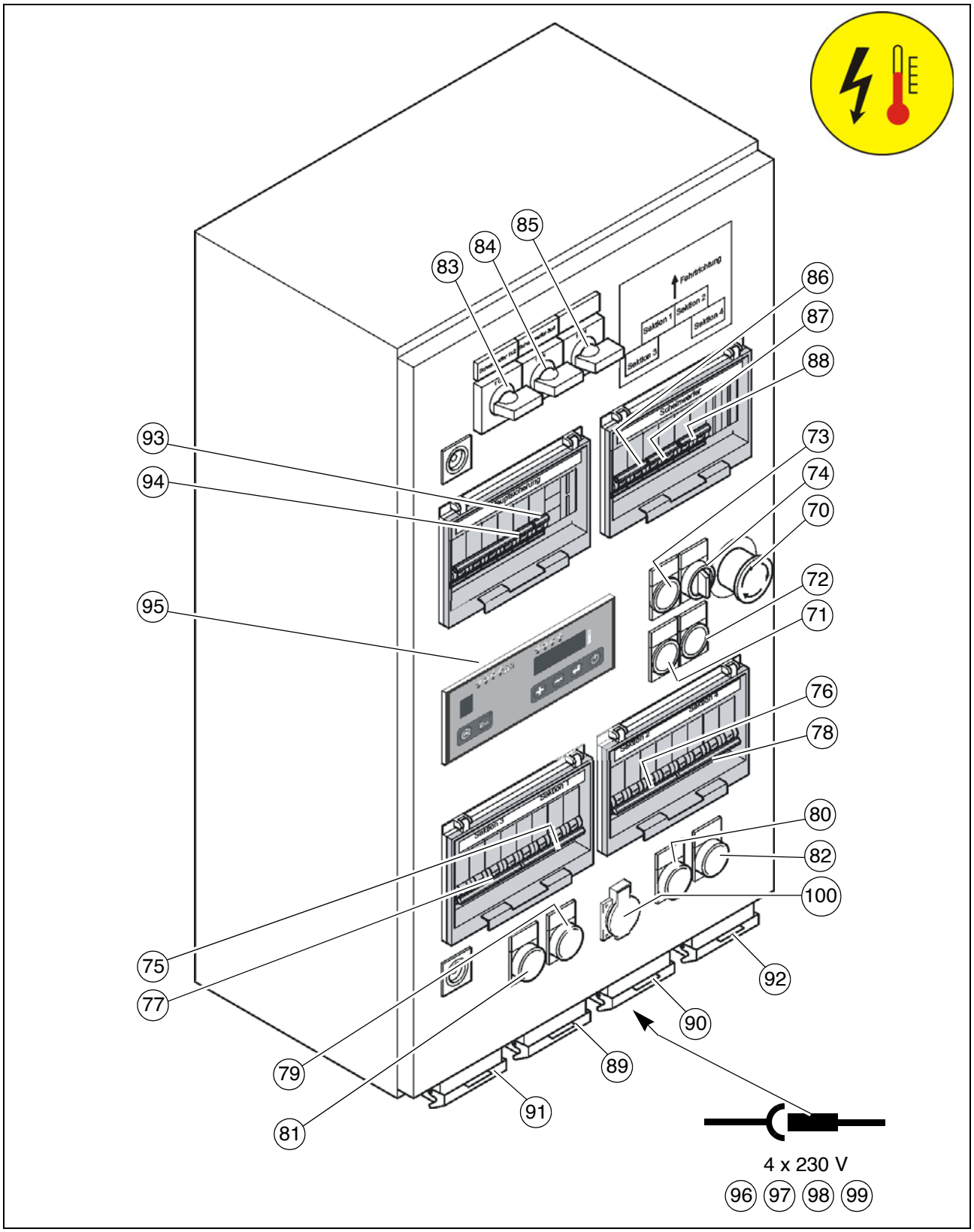
- Press the on/off button (50) in the switch cabinet.
- Close the quick action valves and both bottle valves.

⚠ If these valves are not closed, there is a danger of fire and explosion due to the possible escape of uncombusted gas! Always close the valves during breaks and after work has been completed!



6 Operating the electric heater

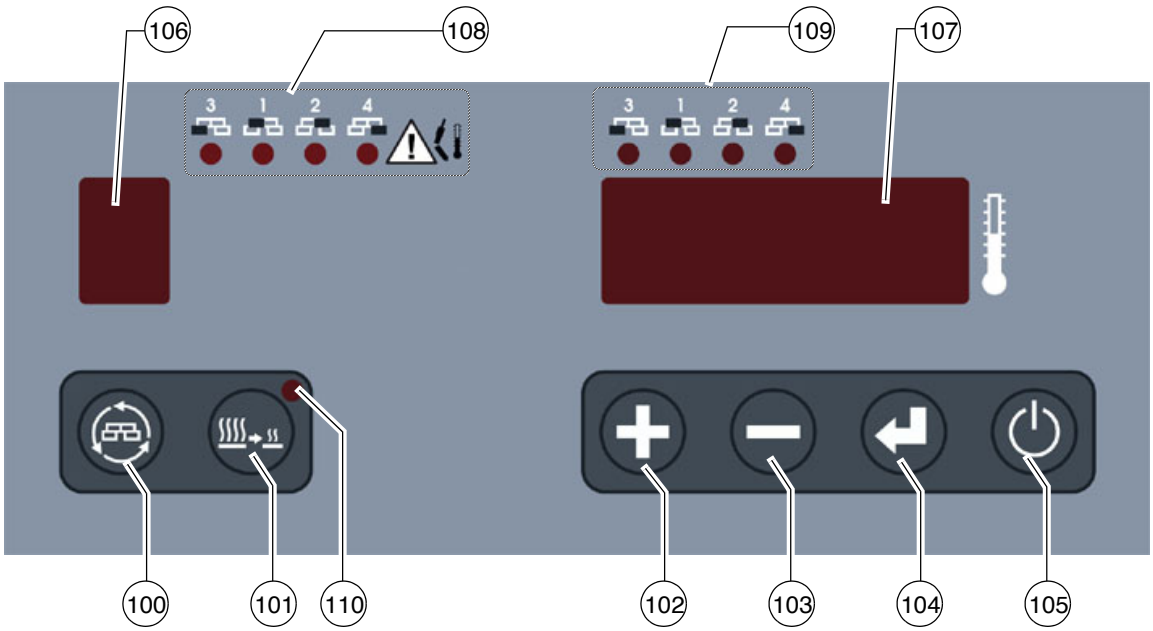
6.1 Switch cabinet for screed heater



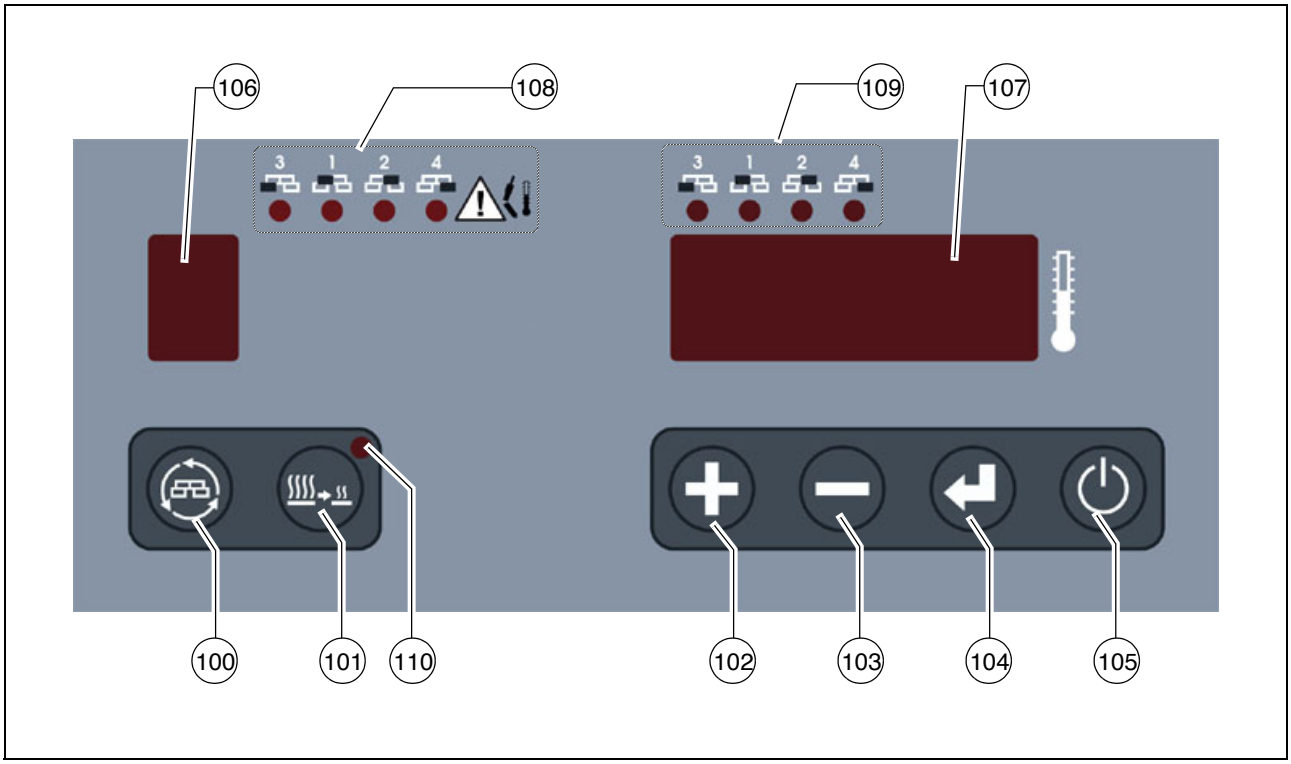
☞ The configuration of individual elements may vary slightly!

Item	Designation
70	EMERGENCY STOP button
71	Test key for monitoring of insulation and indicator lamp for insulation defects
72	Reset key for insulation monitoring
73	Generator indicator lamp
74	Heating ON/OFF (○)
75	Circuit breaker for heating section 1
76	Circuit breaker for heating section 2
77	Circuit breaker for heating section 3
78	Circuit breaker for heating section 4
79	Heating section 1 indicator lamp
80	Heating section 2 indicator lamp
81	Heating section 3 indicator lamp
82	Heating section 4 indicator lamp
83	Electrically heated side shield On / Off
84	Headlights On / Off (sockets 27+28)
85	Headlights On / Off (sockets 29+30)
86	Circuit breaker for sockets 27+28
87	Circuit breaker for sockets 29+30
88	Circuit breaker for electrically heated side shield
89	Socket (heater) for main screed on left
90	Socket (heater) for main screed on right
91	Socket (heater) for extendable part on left
92	Socket (heater) for extendable part on right
93	Circuit breaker for generator indicator lamp
94	Main fuse and EMERGENCY STOP trigger
95	Control and monitoring unit
96	230 volt socket for additional headlight
97	230 volt socket for additional headlight
98	230 volt socket for additional headlight
99	230 volt socket for additional headlight
100	Shock-proof socket 230V for external consumers, max. 16A. (○) with/without frequency control. ⚠ Before connecting external consumers, check whether they have to be operated with controlled frequency.

6.2 Operating the control and monitoring unit

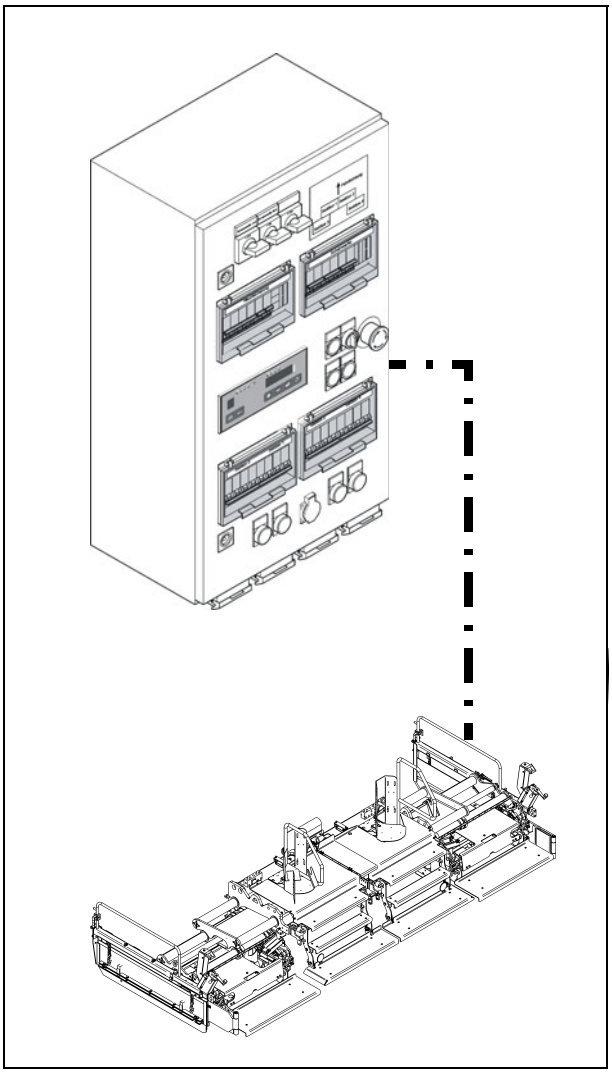


Item	Designation / function
100	- Screed section selection ☞ For selecting the screed sections for temperature display and adjustment. ☞ The temperature is adjusted for all sections together.
101	- "Energy saving" selection ☞ To reduce the heater output if the generator output is insufficient. ☞ After switching on, the "Energy saving" status (ON/OFF) set during previous operation is assumed again.
102	- Plus button ☞ To adjust the temperature.
103	- Minus button ☞ To adjust the temperature.
104	- Enter ☞ To confirm the input / temperature change.
105	- Standby ☞ To switch between standby off / standby on.
106	- Screed section display ☞ Displays the selected screed section. The temperature of the selected screed section is shown in display (8). ☞ If no button has been pressed for a long time, the display is off, and the mean temperature value for all screed sections is shown in display (8). Return to the basic status takes place after 3 seconds without button actuation.
107	- Temperature gauge ☞ Displays the temperature of the selected screed section. ☞ If no screed section has been selected or no button has been pressed for a long time, the mean temperature value for all screed sections is shown. Return to the basic status takes place after 3 seconds without button actuation.



Item	Designation / function
108	- "Sensor error" warning lamps ☞ Warning lamps 1-4 for the individual screed sections light up if a defect is present on the corresponding sensor. ☞ Check sensor. The controller operates in the emergency programme.
109	- Heater status display ☞ Indicator lamps 1-4 for the individual screed section heaters light up if the corresponding heater circuit is engaged. ☞ The lamps flash when the controller requests heating for the relevant section and this cannot be carried out at present due to a delay time or energy saving mode.
110	- "Energy saving" indicator lamp ☞ Lights up when reduced heater output (energy saving) is activated.

6.3 General information on the heating system



The electric heating system is supplied with power by a generator on board the paver finisher which is controlled fully-automatically in accordance with requirements.
Heating resistors in the form of heating strips ensure direct temperature transition and even distribution of heat.
Each screed section is heated by three heating strips. Two can be found on the bottom plate and one on the tamper knife.
The temperature display can be called up for the individual screed sections or as a mean value for all sections. Temperature regulation is carried out for all screed sections together.
The heater is connected to other fitted screed components via simple plug connections.
The heating system can be operated in an energy saving mode in which not all heating sections are active at the same time.
In the event of sensor failure, the heater can continue to be operated via an emergency programme.
The switch cabinet is equipped with an additional 230 V socket for external consumers (e.g. additional lighting).

Since fuels (gas, diesel) are not handled and insulation monitoring takes place, maximum possible protection of personnel is offered.

STOP Beware of hot surfaces! Danger of burning!

STOP Maintenance and repair work on electrical systems with medium voltage levels, e.g. the screed heater, may only be carried out by specialist electricians or persons instructed in electrical engineering work if the appropriate test devices are used.
Always comply with relevant technical electrical protection precautions. Danger to life as a result of accidents involving medium voltage levels.

Energy saving mode / "Energy saving"

Under certain conditions, e.g. large working widths, it is sensible to activate energy saving mode.

In this operating status, not all of the different screed sections' heaters are active at the same time.
Switching is carried out via temperature regulation. Whenever the nominal temperature is achieved in an actively heated section, the control system switches these sections off and activates those with the lowest temperature.

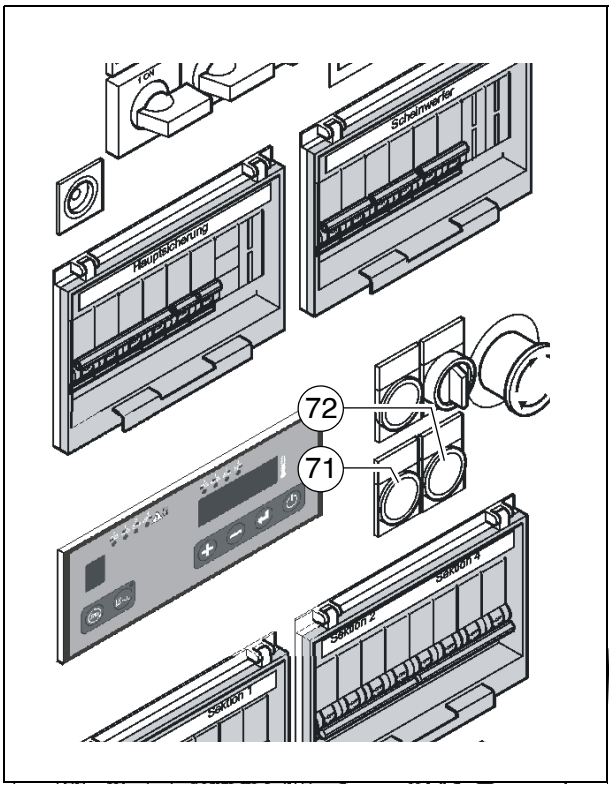
It is possible to heat the following sections together in this case.

- Section 1 and section 3
- Section 2 and section 4
- Section 1 and section 4
- Section 2 and section 3
- Section 1 and section 2

☞ After switching on, the "Energy saving" status (ON/OFF) set during previous operation is assumed again.

6.4 Insulation monitor

The function of the protective insulation monitoring measure must be checked every day before starting work.



☞ This check only checks the function of the insulation monitor, not whether an insulation error has occurred on the heating sections or consumers.

- Start the paver finisher's drive engine.
- Press test button (71).
- The indicator lamp integrated into the test button signals "insulation fault".
- Press reset button (72) for at least 3 sec. to delete the simulated fault.
- The indicator lamp goes out.

STOP If the test is conducted successfully, work may be undertaken with the screed and external consumers may be used.
If the "insulation fault" indicator lamp displays a fault even before the test button is pressed or if no fault is displayed during the simulation, work must not be undertaken with the screed or with connected, external equipment.

STOP **The screed and equipment must be checked or repaired by a specialist electrician. Only then may work again be undertaken with the screed and equipment.**

STOP **Danger due to electrical voltage**

STOP **Non-adherence to the safety precautions and safety regulations when operating the electric screed heater 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.

Insulation faults

If an insulation fault occurs during operation, and the indicator lamp displays an insulation fault, the operator may proceed as follows:

- Switch the switches of all external equipment and the heater to OFF and press the reset button for at least 3 seconds to delete the fault.
- If the indicator lamp does not go out, the fault lies in the generator.

No further work may be carried out.

- If the indicator lamp goes out, the switches of the heater and external equipment can be switched back to ON one after another until a message again appears and the system is shut-down.
- The equipment found to be faulty must be removed or must not be engaged, and the reset button must be pressed for at least 3 seconds to delete the fault.

Operation may now be continued - without the faulty equipment, of course.

The generator or electrical consumer found to be faulty must be checked or repaired by a specialist electrician. Only then may work again be carried out with the screed and equipment.

6.5 Commissioning and checking the heater

☞ In order to reach the required temperature, the heater should be switched on approx. 15 - 20 minutes before the start of paving.

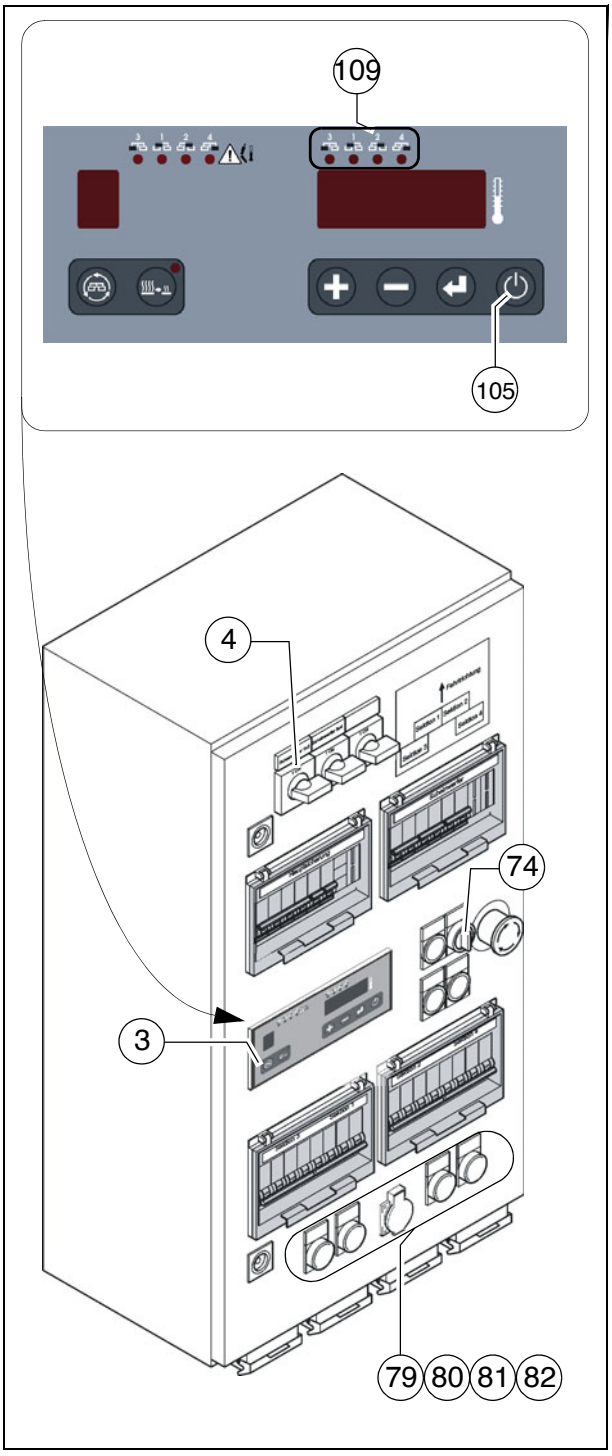
- Switch on the paver finisher's engine.
- Switch on heating system ON / OFF switch (74) (○).
- Switch on the control and monitoring unit ON / OFF switch (105).
- Switch on the electrically heatable side shields' (○) ON / OFF switch (83).

The heating system is activated and the heating process begins.
During the heating process, the individual screed section heaters' indicator lamps (79-81) and the status displays (109) of the control and monitoring unit light up.
Once the set temperature has been reached, the indicator lamps go out one after another.

Once all screed parts have reached the desired temperature, paving operation may begin.

If additional heating occurs during paving operation, this is indicated by the indicator lamps (79-81).

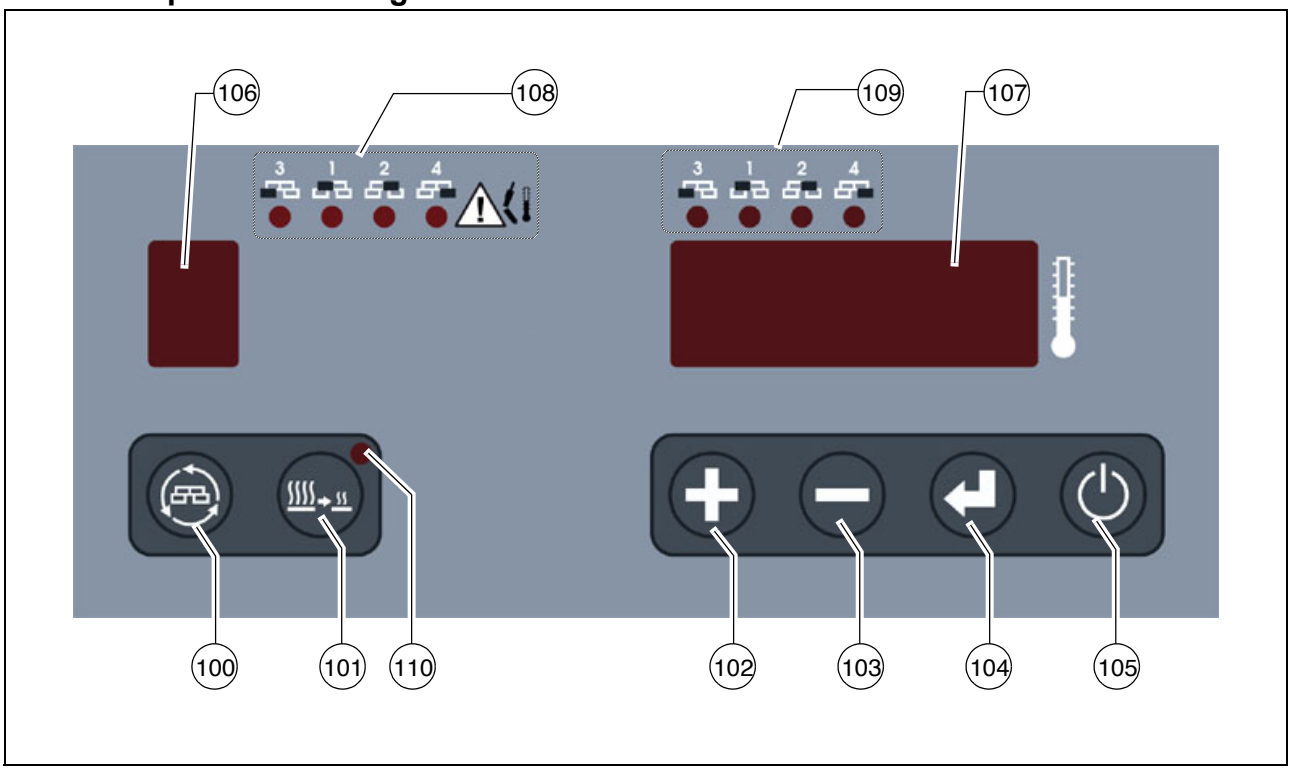
☞ The heater indicator lamps (109) in the control and monitoring unit can additionally be monitored.



6.6 Temperature display, setting temperature level

The temperature display and temperature level setting for the screed heater are carried out on the control and monitoring unit in the screed heater's switch cabinet.

6.7 Temperature setting



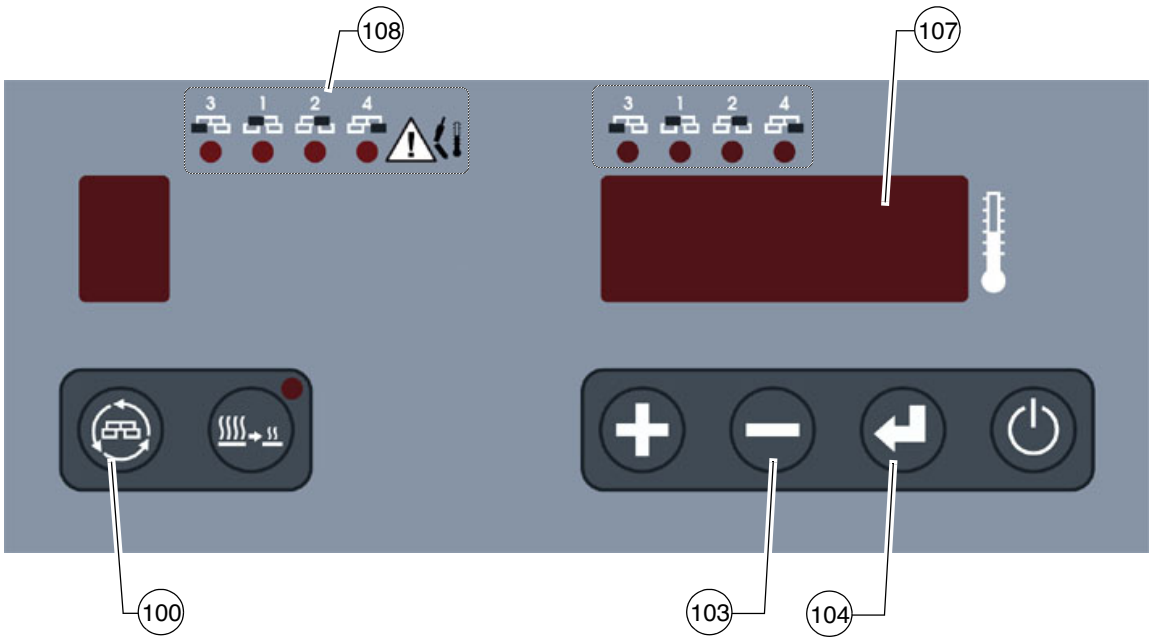
- Press button (102) or (103) to show the current nominal temperature on the display (107).
- According to the desired adjustment, press button (102) or (103) to change the nominal temperature.

☞ Adjustment is carried out in 5°C steps. The maximum nominal temperature is 180°C.

- Confirm the new nominal value setting by pressing the Enter button (104). The current actual temperature is again shown on the display (107).

☞ Adjustment is carried out for all screed sections together.

6.8 Status and error messages



☞ When an error occurs, the warning lamp (108) for the affected screed section lights up and the controller runs in an emergency programme.
A warning signal is additionally sounded. The warning signal is acknowledged with the minus button (103).
After pressing the Enter button, an error code is shown on the display (5).

☞ On selection of a faulty heater section with button (100), ---°C is displayed.
If several errors occur, the errors are shown in rolling form on pressing the Enter button (104).

Error code	Cause of error	Measure
Error messages without button call-up		
Warning lamp (1) lights up	- Sensor F1 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (2) lights up	- Sensor F2 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (3) lights up	- Sensor F3 defective	- Check sensor, the controller operates in the emergency programme
Warning lamp (4) lights up	- Sensor F4 defective	- Check sensor, the controller operates in the emergency programme
EP	- Data loss in the parameter memory	- Controller repair
Error messages with the Enter button pressed		
F1L	- Sensor error F1, short-circuit	- Check sensor, the controller operates in the emergency programme
F1H	- Sensor error F1, sensor break	
F2L	- Sensor error F2, short-circuit	- Check sensor, the controller operates in the emergency programme
F2H	- Sensor error F2, sensor break	
F3L	- Sensor error F3, short-circuit	- Check sensor, the controller operates in the emergency programme
F3H	- Sensor error F3, sensor break	
F4L	- Sensor error F4, short-circuit	- Check sensor, the controller operates in the emergency programme
F4H	- Sensor error F4, sensor break	

Emergency programme with sensor error

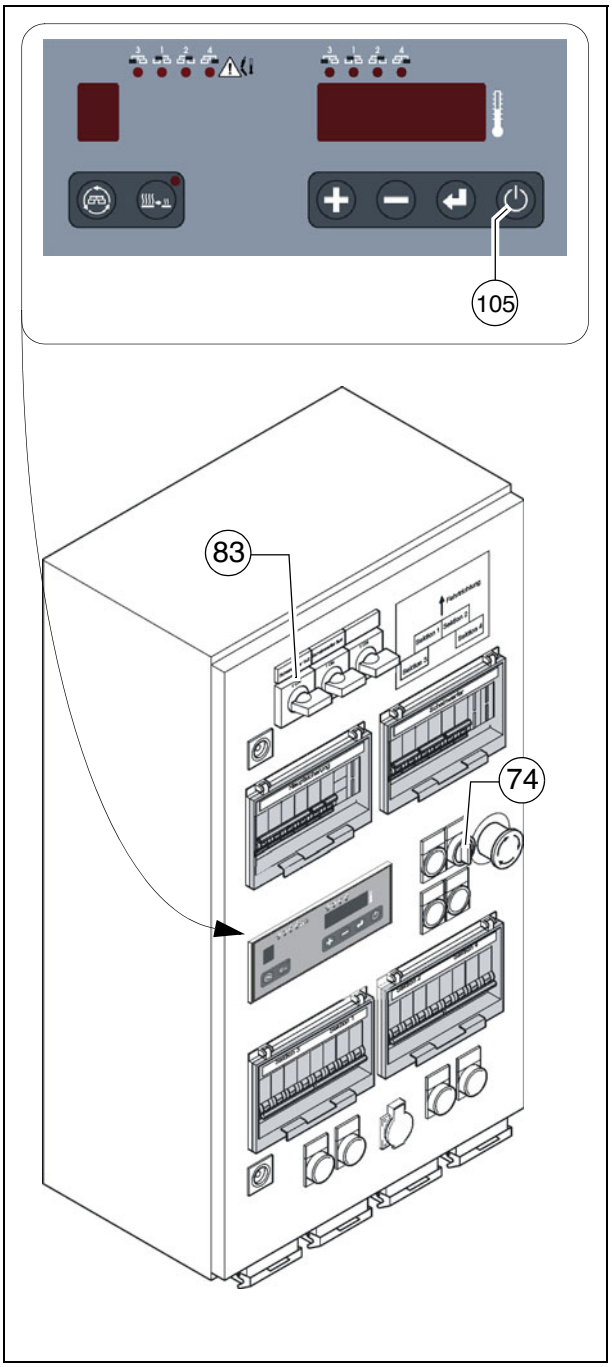
In the event of sensor errors, the controller operates in an emergency programme. All zones with an intact sensor are regulated as normal. The temperature is only displayed with the intact sensors.

If more than 2 sensors are defective, the controller still continues to operate as long as at least 1 zone is intact. The zones with the defective sensors are then handled as if their temperature corresponds precisely to the mean value of the intact zones.

6.9 Switching off the heater

After work has been completed, or when the heater is no longer required:

- Switch off the electrically heated side shields' (○) ON / OFF switch (83).
- Switch on the control and monitoring unit ON / OFF switch (105).
- Switch off ON/OFF switch (74) of heating system (○).



7 Malfunctions

7.1 Problems during paving

Problem	Reason
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 is not operated 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

Problem	Reason
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 layer height for maximum grain size - cold screed - bottom plates of the screed are worn or warped - paver finisher speed is too high
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 inconsistent	- material temperature - change in the material temperature - moisture on the foundation - demixing - wrong material composition - incorrectly prepared foundation - wrong layer height 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 is not operated 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 paver finisher while aligning to the paver finisher - too much play in the mechanical screed link/suspension - truck brake is applied - vibration is too high while standing on a spot

Problem	Reason
screed does not react as expected to corrective measures	- material temperature - change in the material temperature - wrong layer height for maximum grain size - incorrect installation of the grade control - vibration is too slow - screed is not operated in the floating position - too much play in the mechanical screed link - paver finisher speed is too high

7.2 Malfunctions on the screed

Malfunction	Reason	Remedy
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 the 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
Screed cannot be lifted	Oil pressure too low	Increase the oil pressure
	Leaking seal	Replace the collar
	Screed relieving or charging is switched on	Switch must be in the centre position
	Power supply interrupted	Check fuse and cables; replace if necessary

E Set-up and modification

1 Notes regarding safety

Inadvertent starting of the paver finisher can endanger persons working on the screed.
Only carry out such work with the paver finisher motor at a standstill unless the instructions state the opposite!
Ensure that the paver finisher is secured to prevent unintentional starting.

When lifted, the screed can still slide downwards if the mechanical screed transport safeguard is not inserted on the paver finisher.
Only carry out work when the screed is secured by mechanical means!

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!

Always install extension parts and conversion parts in the proper manner! If in doubt, contact the manufacturer!

Mount all protective devices before re-commissioning the paver finisher.

The walkway must always reach over the entire working width of the screed.
The hinged walkway plate (option) may only be folded up under the following conditions:

- If the vehicle has to be backed up very closely to a wall or another obstacle,
- During transportation on a low-bed trailer.

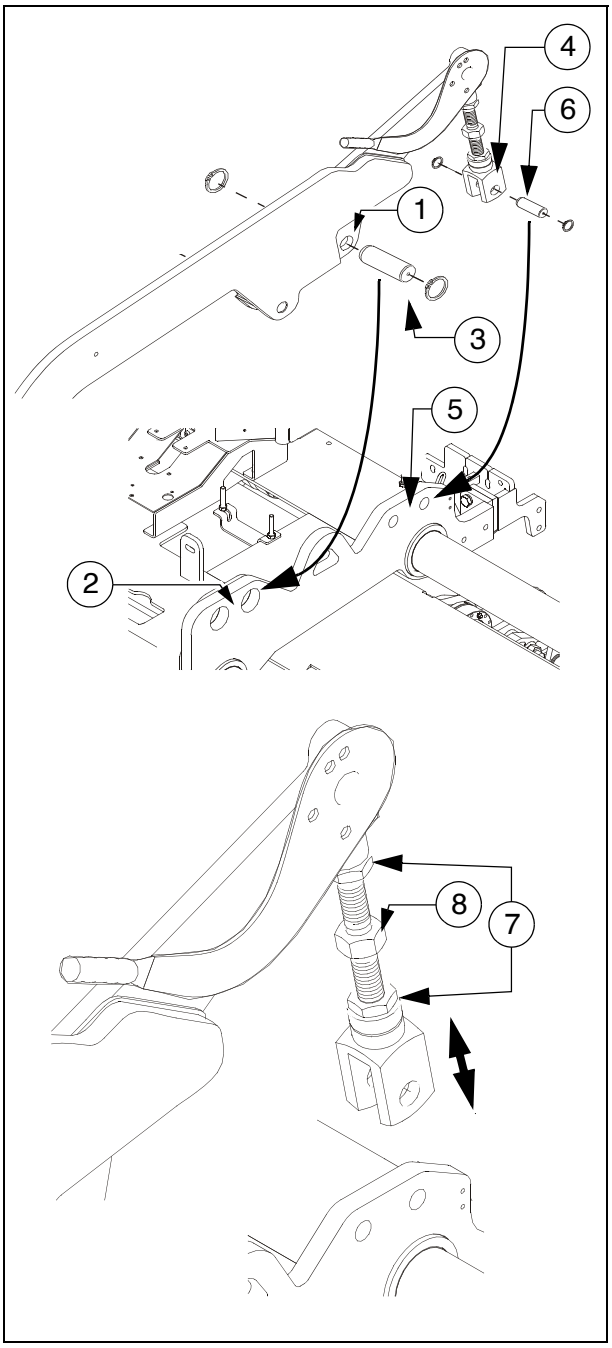
⚠ DANGER	**Danger due to changes at the vehicle**
	Structural changes to the vehicle make the operating licence null and void and can cause severe to fatal injuries! - Only use original spare parts and approved accessories. - After maintenance and repair work, ensure that any dismantled protective and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

2 Mounting the screed to the paver finisher

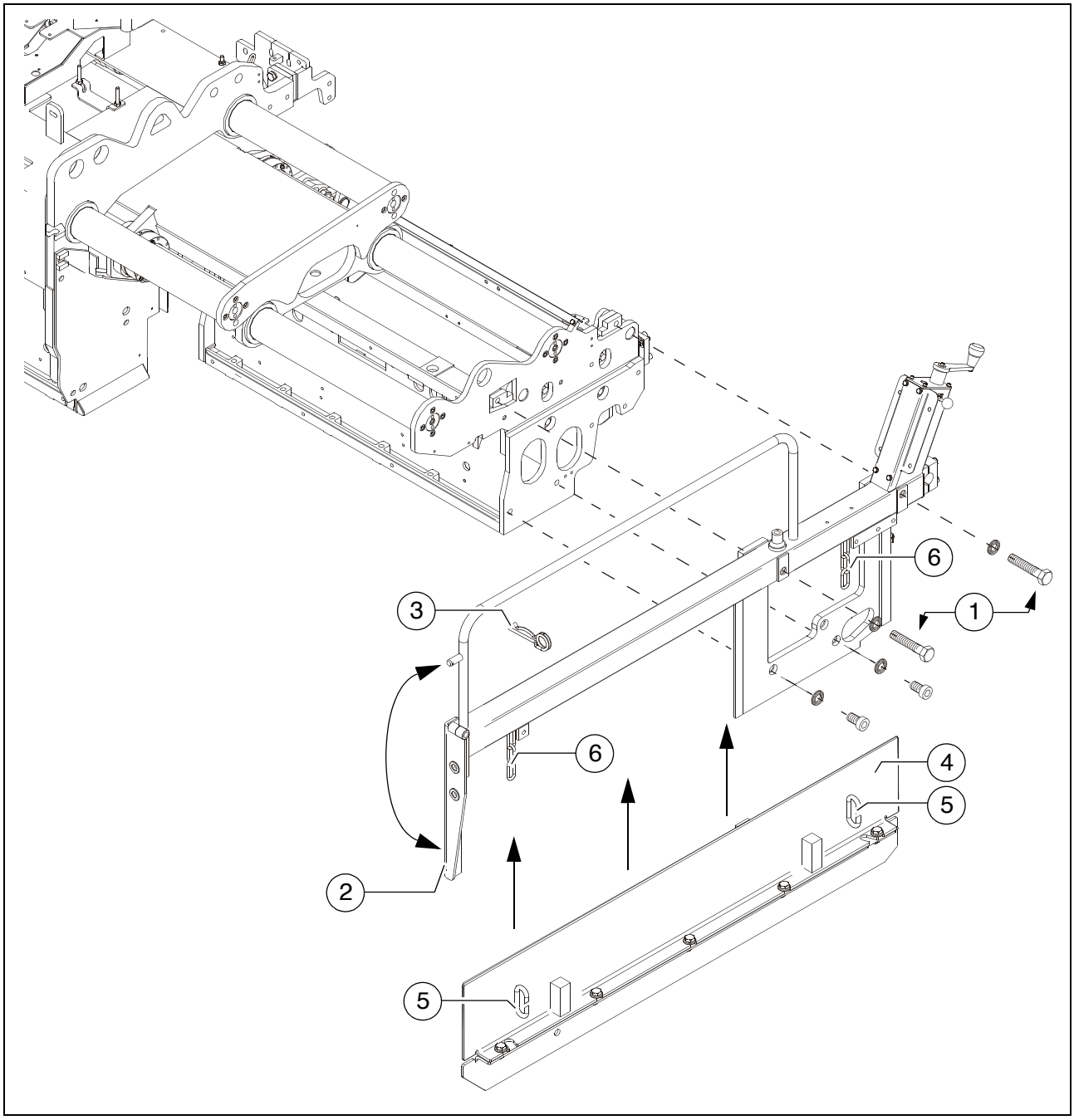
- Place the screed on a suitable support (squared timber sections, etc.) and back up the paver finisher to the screed.
- Lower the crossbeams and position them in such a manner that the crossbeam shackles (1) are located above the required attaching points (2) on the screed.
- Insert bolts (3) and secure with the relevant retaining rings.
- Guide cable heads (4) via the required attaching points (5) on the screed.
- Insert bolts (6) and secure with the relevant retaining rings.

☞ If necessary, spindles must be extended or shortened:

- Loosen lock nuts (7), set to the desired length by turning on the hexagon (8) to enable the relevant assembly parts to be inserted.
- Retighten the lock nuts (7) properly.



2.1 Mounting the side shields

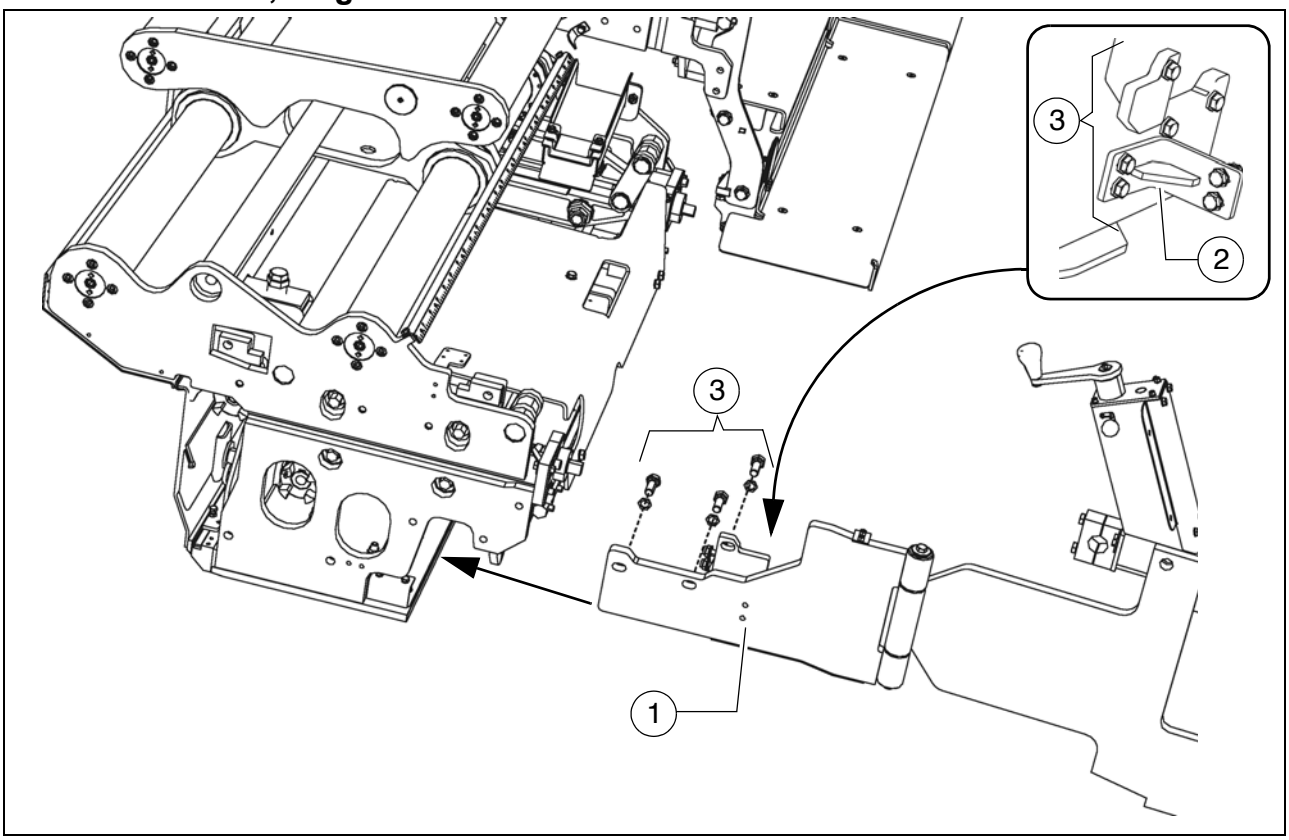


☞ The side shields are only mounted once all other mounting and adjustment work on the screed has been completed.

- Secure the side shields to the screed with the assembly parts provided (1).
- Secure the front mounting bracket (2) in the top position with the cotter pin (3).
- Attach the lower section of the side shield (4) to the chains (6) of the upper section via the former's hooks (5).
- Secure the front mounting bracket (2) in the bottom position with the cotter pin (3).

2.2 Mount side shield, hinged (○)

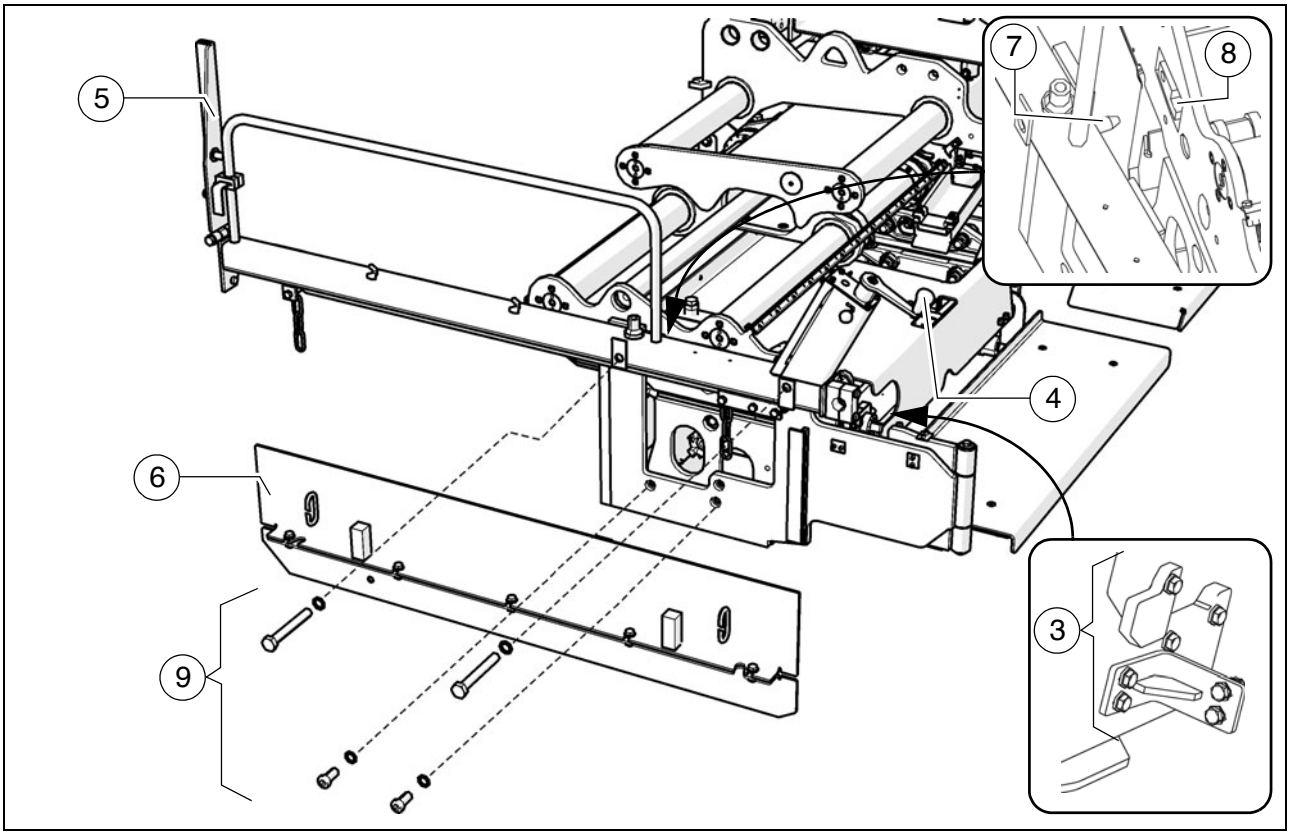
Installation, hinge



- Guide the hinge (1) with the already premounted angle bracket (2) against the inside of the extendable part and fasten to the screed using the provided assembly parts (3).

☞ Do not screw the assembly parts of the hinge and angle bracket (3) tight until the hinged side shields have been fitted and aligned in the working position to start with!

Installation, working position

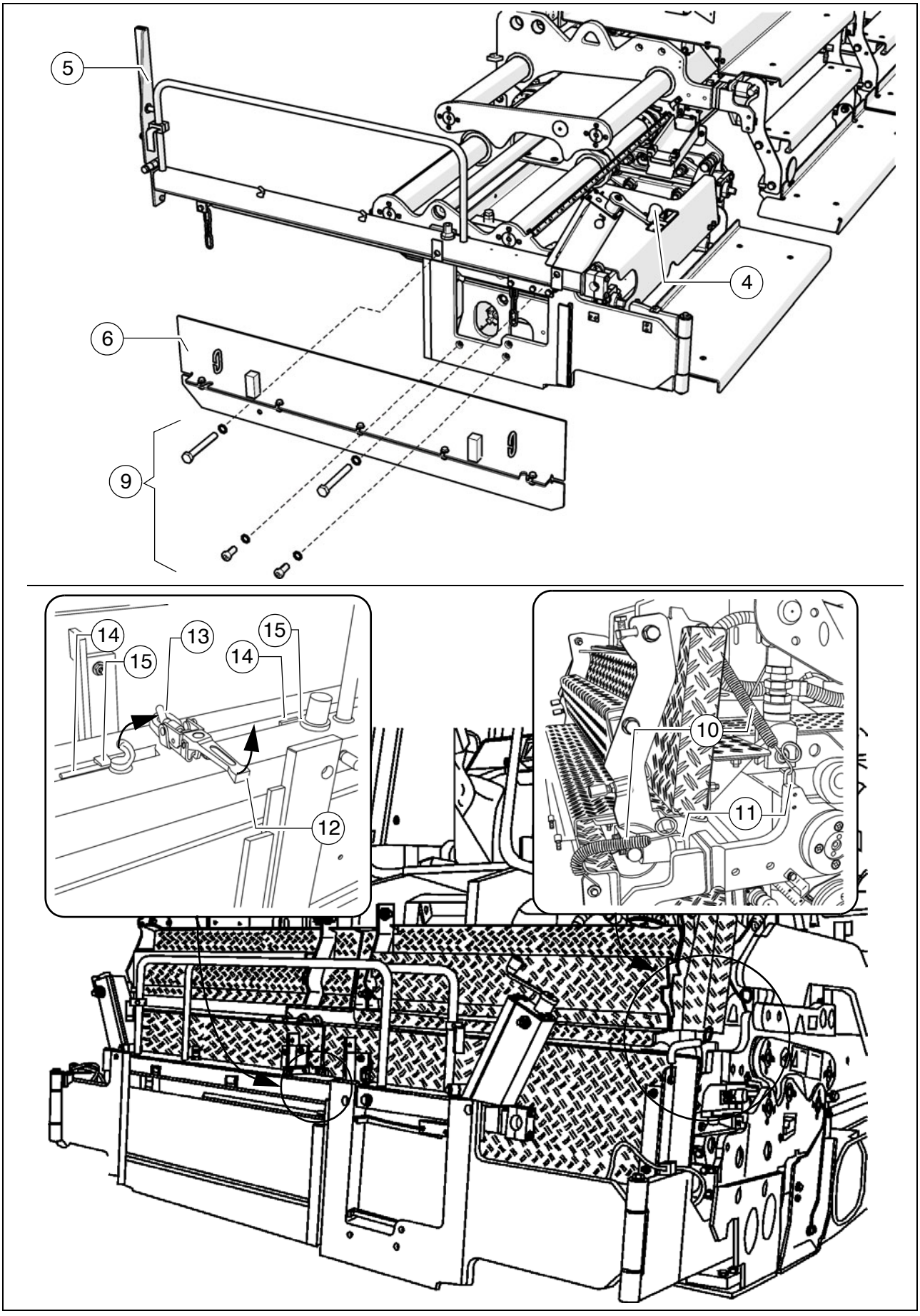


- Dismantle the lower part of the side shield:
  - Lower side shield using crank (4).
  - Secure the front mounting bracket (5) in the top position with the cotter pin.
  - Unhinge the lower part of the side shield (6) from the chains of the upper part.

☞ When swivelling the side shields in, a journal (7) engages on a support surface (8) of the extendable screed part and simplifies installation.

- Screw side shield upper part and screed together:
  tighten assembly parts (9) correctly.
- Only for previous hinge installation: tighten assembly parts of hinge and angle bracket correctly (3).
- Fit the lower part of the side shield (6) back in position again correctly.

Transport position



The following steps must be carried out to enable the side shields to be folded in front of the walkway plates when swivelled up:

- Dismantle the lower part of the side shield:
  - Lower side shield using crank (4).
  - Secure the front mounting bracket (5) in the top position with the cotter pin.
  - Unhinge the lower part of the side shield (6) from the chains of the upper part.
- Unscrew side shield upper part and screed from each other: dismantle assembly parts (9).
- Fit the lower part of the side shield (6) back in position again correctly.
- Swivel walkway plates on left and right and secure with springs (10) in eyelet/ hole (11).
- Swivel first the left and then the right side shield into the transport position in front of the walkway plates and secure firmly here:
  - Set latch (12) over the tab (13).

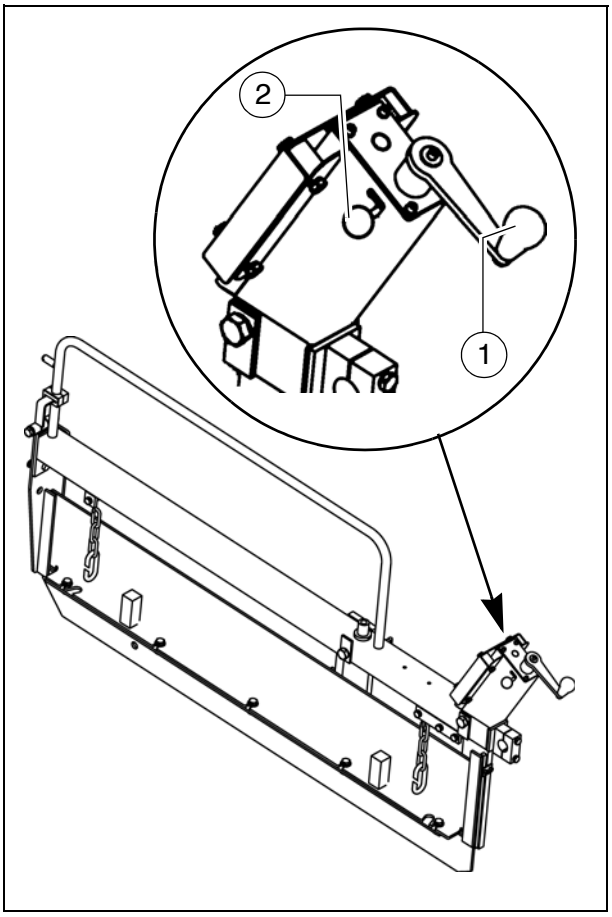
☞ To lock correctly, the two supports (14) must engage in the round steel bar (15). If necessary, lift the side shields slightly to permit this or adjust the crowning to +/-1%.

⚠ Risk of damage to equipment!
The screed must not be extended when the side shields are locked!

2.3 Adjusting the side shield height and support angle

The height and support angle of the side shield can be adjusted with the aid of the crank (1).

- Knob (2) in top position: Adjustment of the support angle.
- Knob (2) in bottom position: Adjustment of the height.

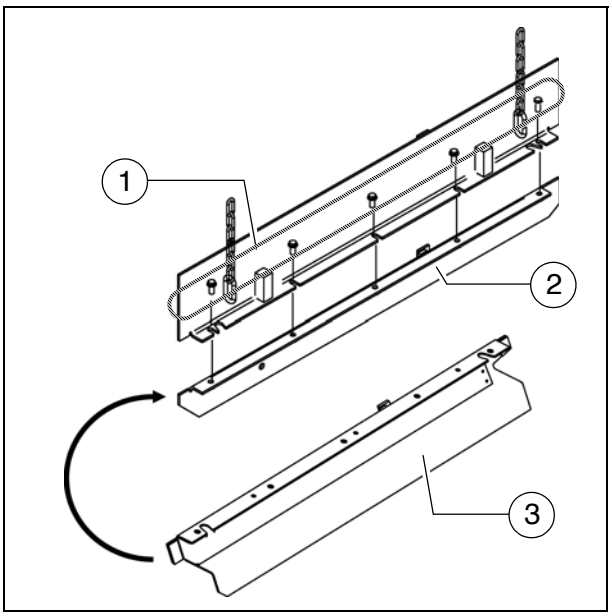


2.4 Mounting the edge compactor

The side shields are divided so that instead of the bottom, normal, vertical edge compactor (1), various other angle edge compactors can be mounted.

Exchanging the edge compactor:

- Loosen mounting screws (1), remove edge compactor (2).
- Correctly mount the desired edge compactor (3) using mounting screws (1).

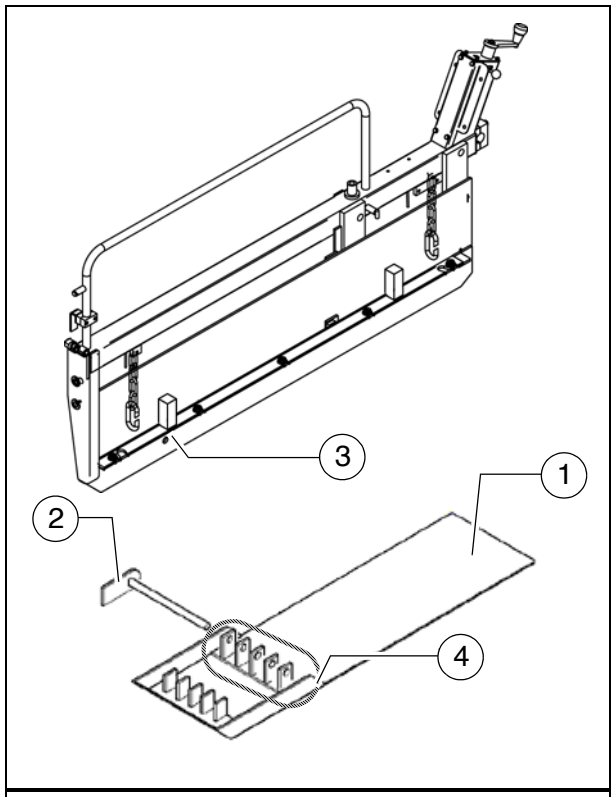


2.5 Mounting the cut-off shoe

Cut off shoes for operating widths of less than the basic width can be secured to the lower sections of the side shields.

- Lower side shield onto cut-off shoe (1).
- Use retaining rod (2) to join cut-off shoe and side shield together (hole (3)).

☞ Various cut-off widths can be set via the different support options (4).



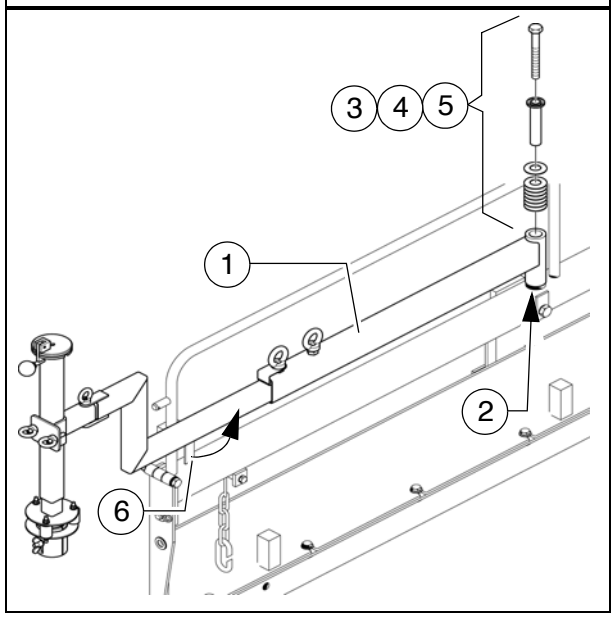
2.6 Fitting the height sensing device

Fit the sensor arm to the required side of the machine.

- Place the holder (1) on the corresponding journal (2) of the side board and fasten with the pin (3), bush (4) and spring washers (5).
- Tighten the pin (3) so that the sensor arm is just still able to swivel.

☞ Mount the spring washers (5) in the opposite direction

☞ The sensor arm can be secured on the side board with the lock (6).

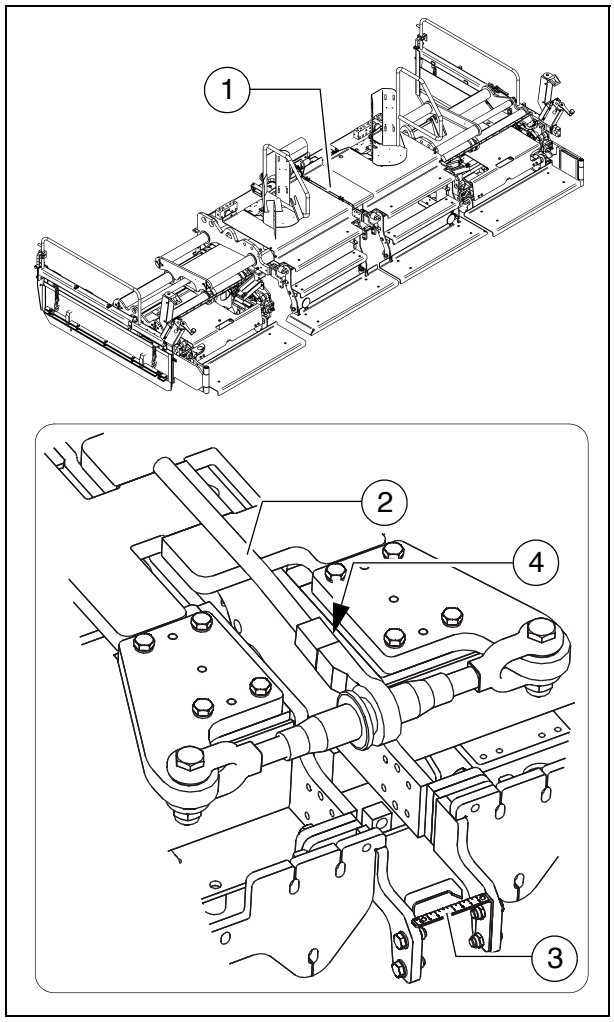


2.7 Adjusting the crowning

The screed is equipped with a spindle that can be used to set the required crowning.

- Open centre cover (1) of the screed.
- Operate ratchet lever (2) until the desired crowning is set.
- Check the set angle against the scale (3).
- If necessary, switch the adjustment angle at the drive pin (4).

☞ A hydraulic crowning adjuster is available as an option.
Adjustment is carried out and displayed in the remote control setting menu (see paver finisher operating instructions).



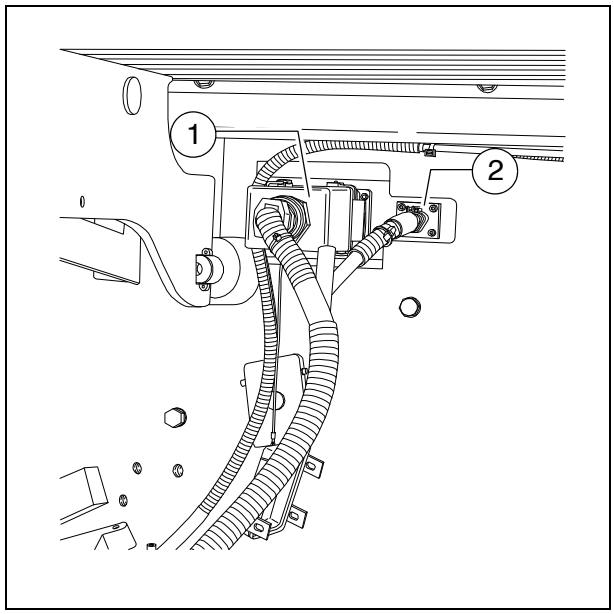
⚠ WARNING	**Danger of getting trapped and crushed from moving parts**
	Moving vehicle parts can cause severe injuries! - Only open flaps and covers for making adjustments! - Do not reach into the danger area. - Comply with all further information in these instructions and in the safety manual.

2.8 Electrical connections

On the rear wall of the paver finisher:

- Plug connector (1) for the electrical consumers on the screed on the screed heater's screed switch cabinet.
- Secure the positioned connector using the locking clips on the socket.

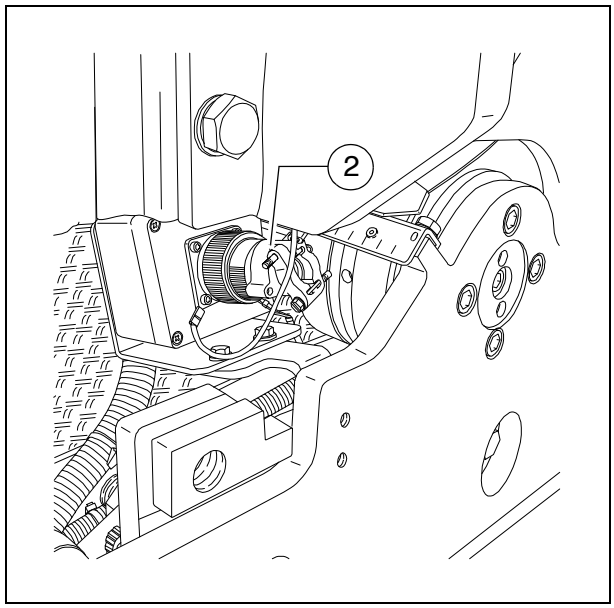
- PLC electronics: Additionally establish plug connection (2).



☞ Always seal unused connectors and sockets with the relevant protective caps.

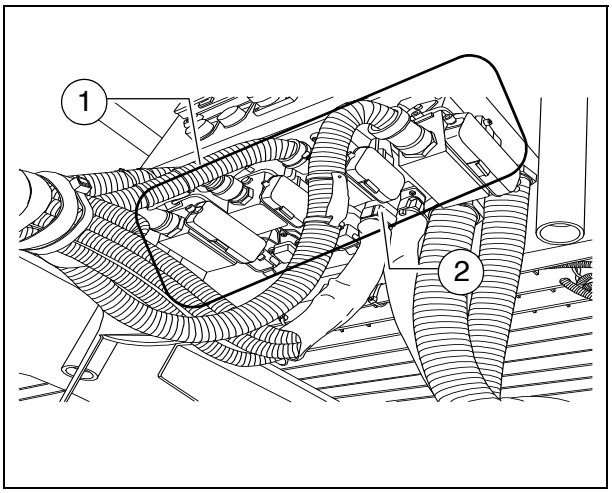
On the side of the screed (left and right):

- Sockets (2) for the connection cables of the remote controls.



☞ The screed settings on the paver finisher can only be carried out after the electrical connections have been established.

2.9 Connection for the electric heater (○)



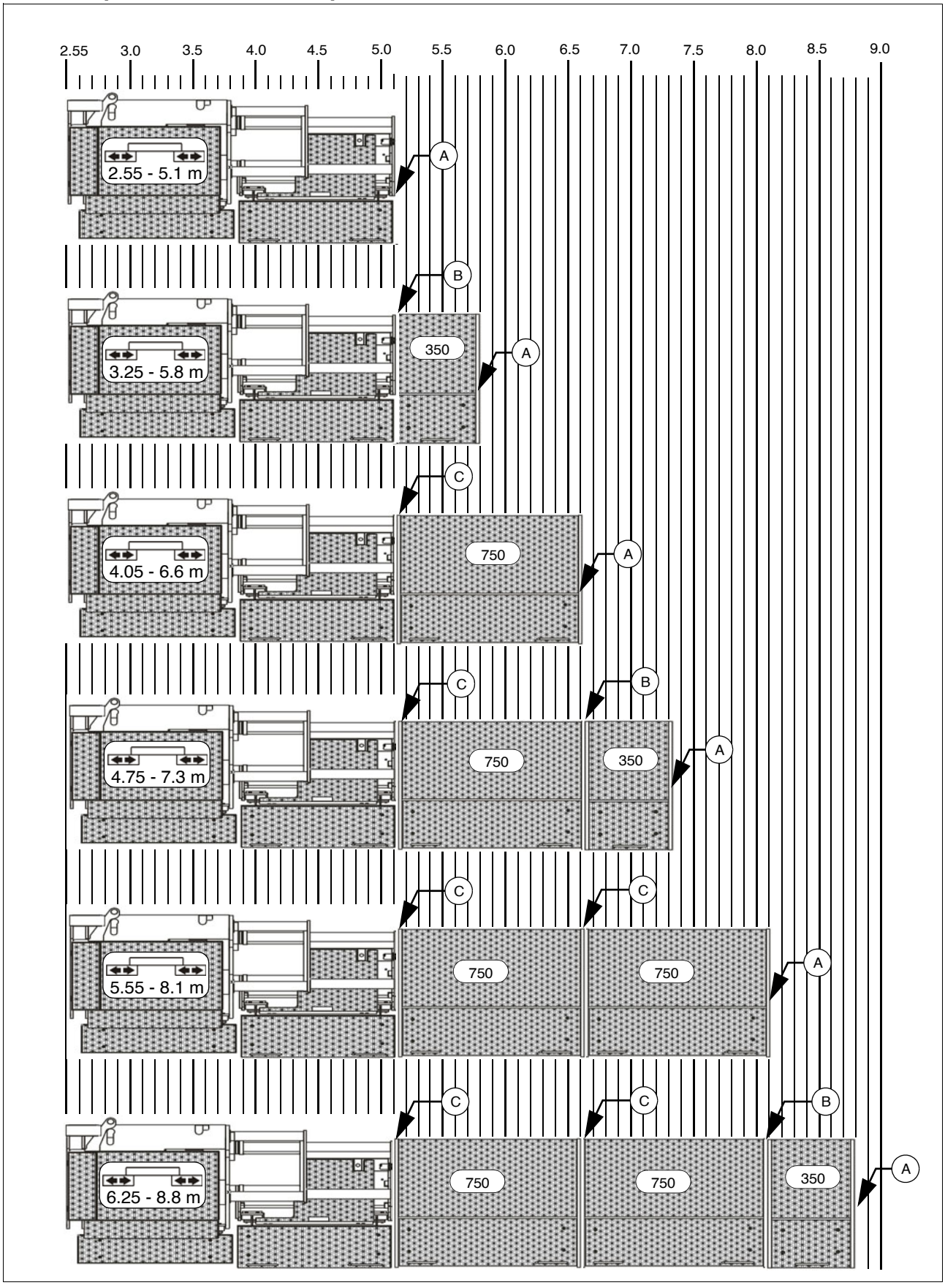
On the lower side of the switch cabinet:

- Connect the connectors for the individual heater circuits (1) to the relevant sockets.
  - Secure the positioned connector using the locking clips on the socket.
- Insert temperature sensor connectors (2).

☞ Always seal unused connectors and sockets with the relevant protective caps.

3 Screed extension V5100

3.1 Expansion - extension parts

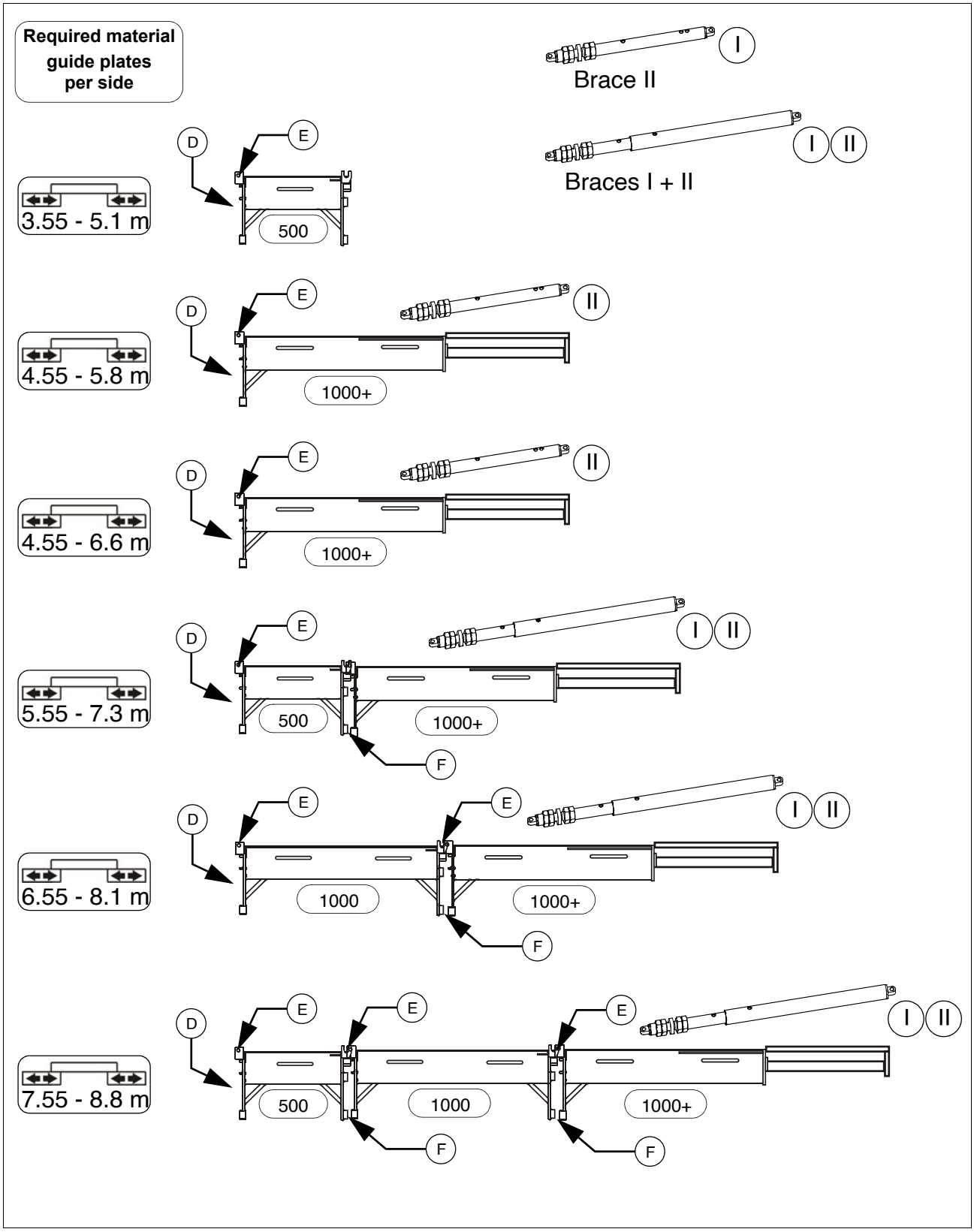


3.2 Assembly parts - extension parts

Connection Screed - extension part / extension part – extension part		A	B	C
Connection shafts Vibration (1a)	Article No.: 4812035437		2	
Connection shafts Tamper (1b)	Article No.: 4720004332		2	
Connection shafts Vibration (2a)	Article No.: 614217500			2
Connection shafts Tamper (2b)	Article No.: 614217600			2
Clutch crown wheel (3)	Article No.: 4749400265		8	8
Assembly parts for screed / extension parts Assembly parts for extension part / extension part (4) - 4 x hex bolts, Art. No.: 4749900124 (4a) - 4 x washers with flattened side, Art No.: 4730013152 (4b)			2	2
Assembly parts for side shield (5) - 2 x hex bolts, Art. No.: 4749900798 (5a) - 4 x bolt locking devices, Art. No.: 4749900037 (5b) - 2 x cheese head screws, Art. No.: 4749901446 (5c)		2		

☞ The number of sets of parts applies to extension on both sides of the screed!

3.1 Extension - material guide plates V5100



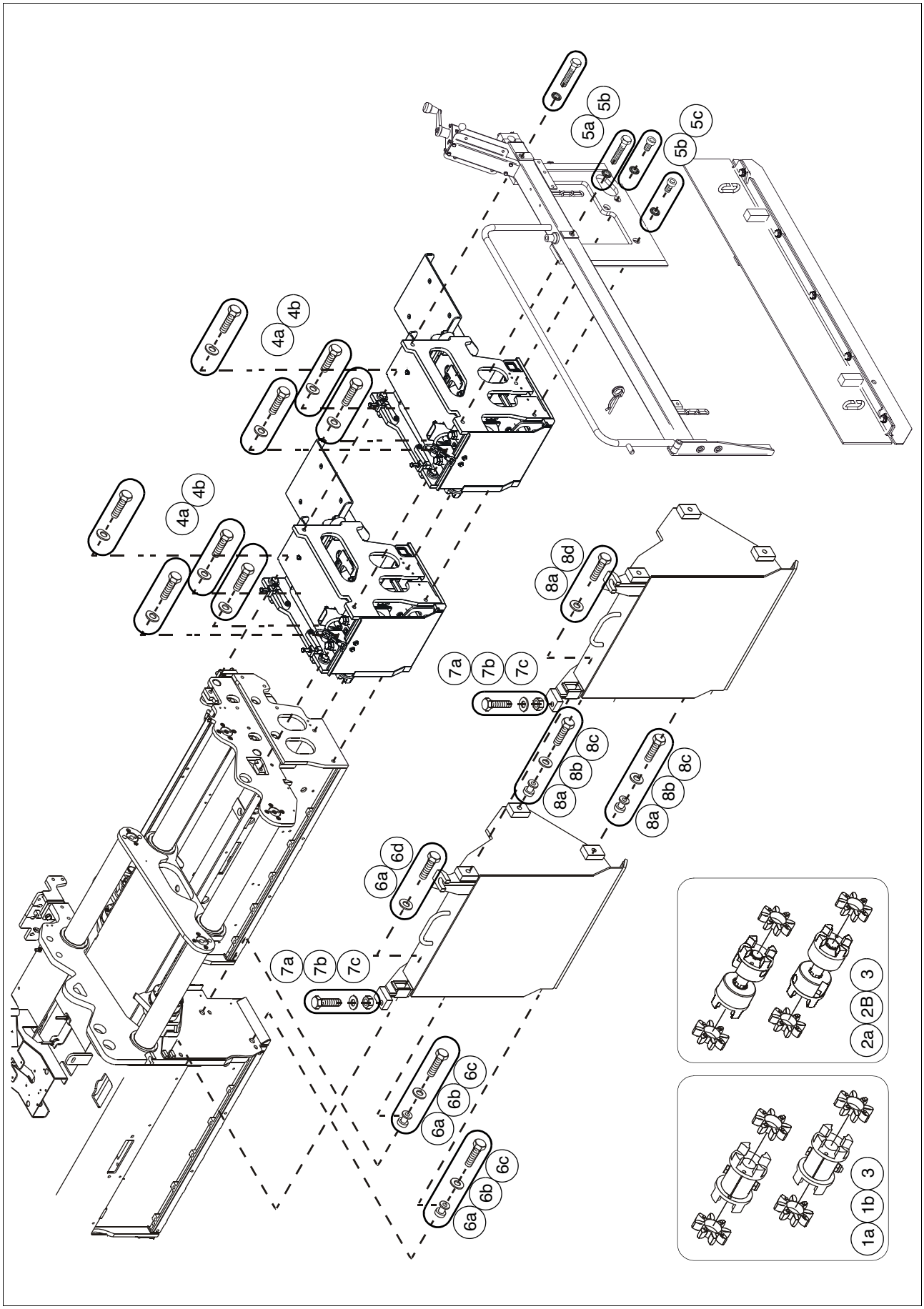
☞ As soon as an adjustable material guide plate is inserted, a support must be attached!

3.2 Assembly parts – material guide plates

Connection	D	E	F
Assembly parts for screed / material guide plate (6) - 3 x hex bolts, Art. No.: D938111728 (6a) - 2 x bolt locking devices, Art. No.: 4749901809 (6b) - 2 x bushes, Art. No.: 4730010815 (6c) - 1 x washer, Art. No.: 4749900550 (6d)	2		
Height adjustment for material guide plate (7) - 1 x hex bolt, Art. No.: D938165878 (7a) - 1 x cheese head screw, Art. No.: 4700570008 (7b) - 2 x washers, Art. No.: 4749900013 (7c)		2	
Assembly parts for material guide plate / material guide plate (8) - 3 x hex bolts, Art. No.: D938111723 (8a) - 2 x bushes, Art. No.: 4730009179 (8b) - 2 x bolt locking devices, Art. No.: 4749901809 (8c) - 1 x washer, Art. No.: 4749900550 (8d)			2

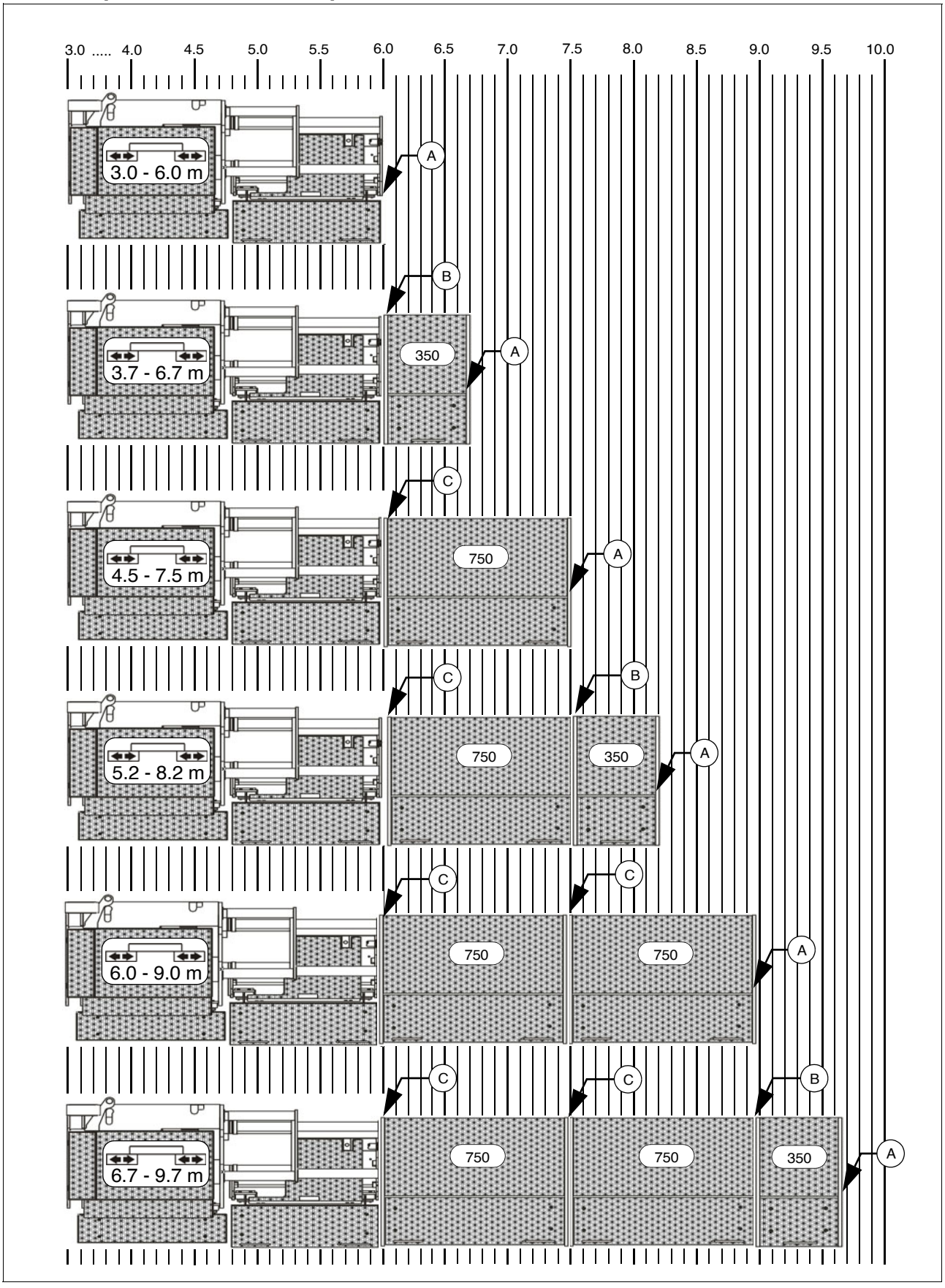
☞ The number of sets of parts applies to extension on both sides of the screed!

Assembly description – extension parts, material guide plates, side shields



4 Screed extension V6000

4.1 Expansion - extension parts

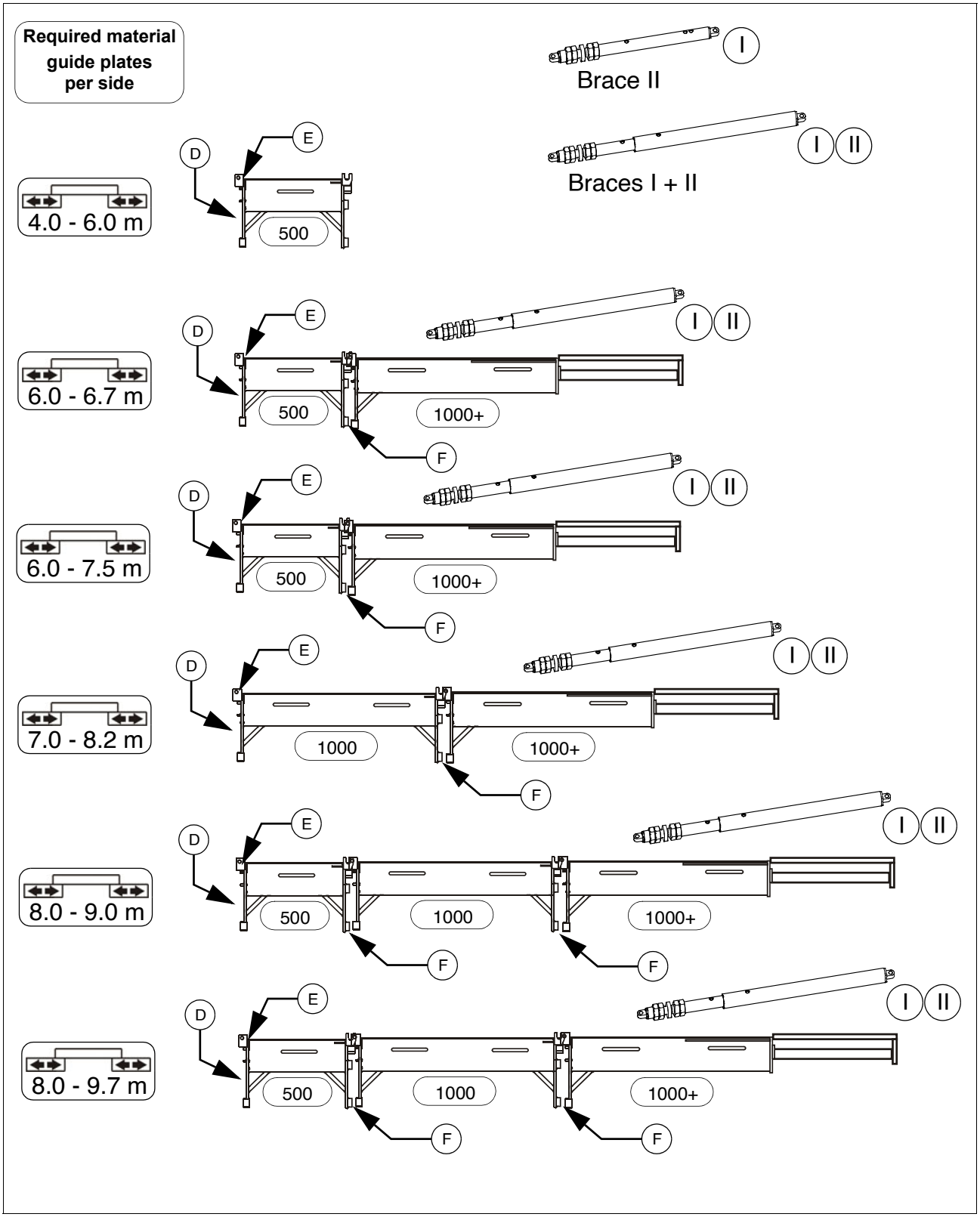


4.2 Assembly parts - extension parts

Connection Screed - extension part / extension part – extension part		A	B	C
Connection shafts Vibration (1a)	Article No.: 4812035437		2	
Connection shafts Tamper (1b)	Article No.: 4720004332		2	
Connection shafts Vibration (2a)	Article No.: 614217500			2
Connection shafts Tamper (2b)	Article No.: 614217600			2
Clutch crown wheel (3)	Article No.: 4749400265		8	8
Assembly parts for screed / extension parts Assembly parts for extension part / extension part (4) - 4 x hex bolts, Art. No.: 4749900124 (4a) - 4 x washers with flattened side, Art. No.: 4730013152 (4b)			2	2
Assembly parts for side shield (5) - 2 x hex bolts, Art. No.: 4749900798 (5a) - 4 x bolt locking devices, Art. No.: 4749900037 (5b) - 2 x cheese head screws, Art. No.: 4749901446 (5c)		2		

☞ The number of sets of parts applies to extension on both sides of the screed!

4.3 Extension - material guide plate V6000



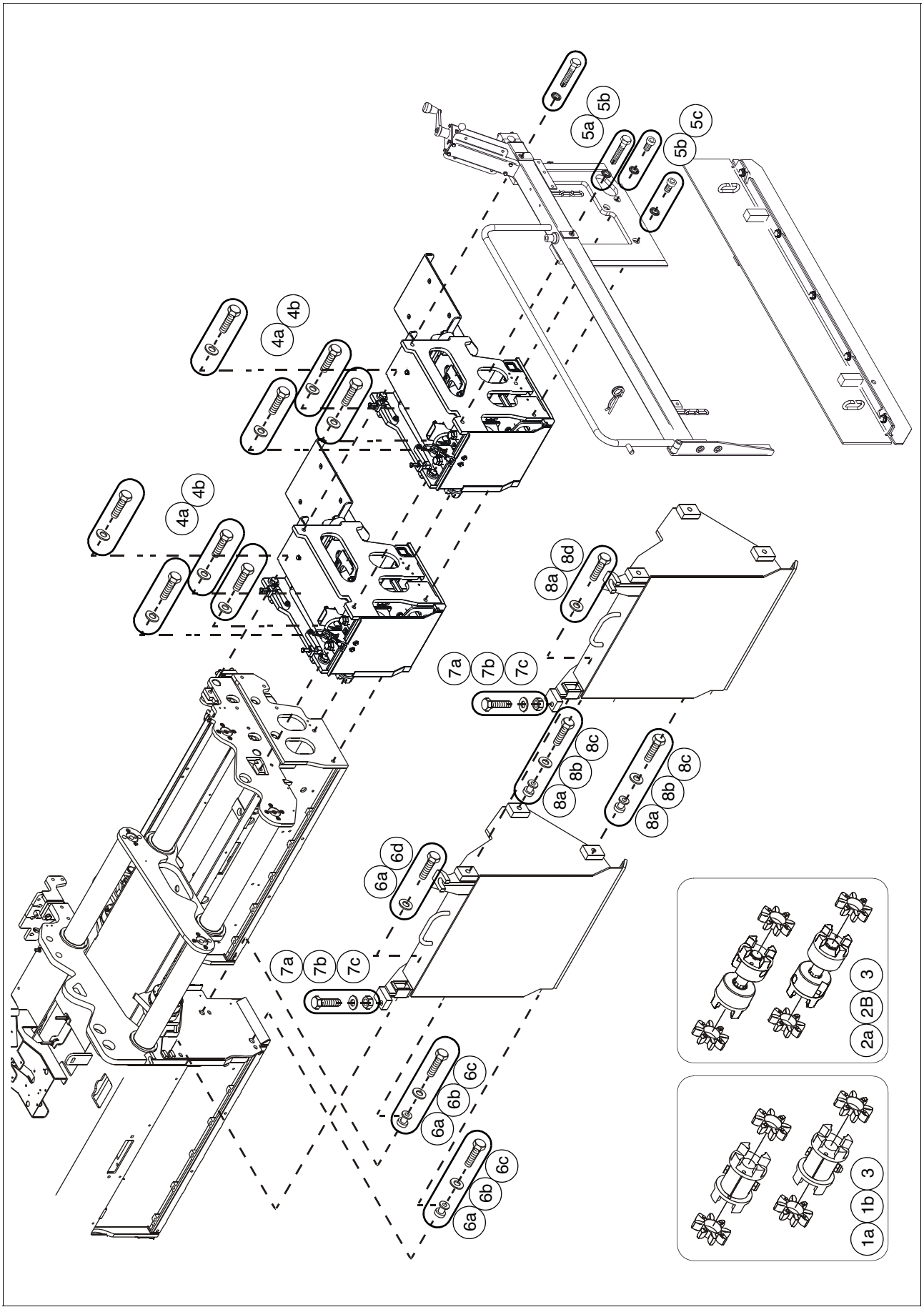
As soon as an adjustable material guide plate is inserted, a support must be attached!

4.4 Assembly parts – material guide plates

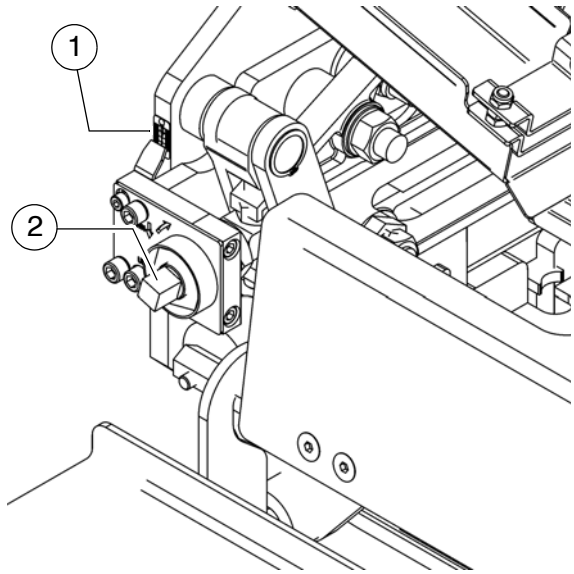
Connection	D	E	F
Assembly parts for screed / material guide plate (6) - 3 x hex bolts, Art. No.: D938111728 (6a) - 2 x bolt locking devices, Art. No.: 4749901809 (6b) - 2 x bushes, Art. No.: 4730010815 (6c) - 1 x washer, Art. No.: 4749900550 (6d)	2		
Height adjustment for material guide plate (7) - 1 x hex bolts, Art. No.: D938165878 (7a) - 1 x cheese head screw, Art. No.: 4700570008 (7b) - 2 x washers, Art. No.: 4749900013 (7c)		2	
Assembly parts for material guide plate / material guide plate (8) - 3 x hex bolts, Art. No.: D938111723 (8a) - 2 x bushes, Art. No.: 4730009179 (8b) - 2 x bolt locking devices, Art. No.: 4749901809 (8c) - 1 x washer, Art. No.: 4749900550 (8d)			2

☞ The number of sets of parts applies to extension on both sides of the screed!

Assembly description – extension parts, material guide plates, side shields



5 Adjusting extendable parts



Anstell.tif

To ensure that the screed lays without marks and the extendable parts can also be adjusted to the various operating conditions during use, the height of the extendable parts can be adjusted.

☞ The approach angle of the extendable parts is pre-set in the factory.

Two spindles, with which the positioning angle of the extendable parts can be adjusted in relation to the main screed with a ratchet, are located on each extendable part.

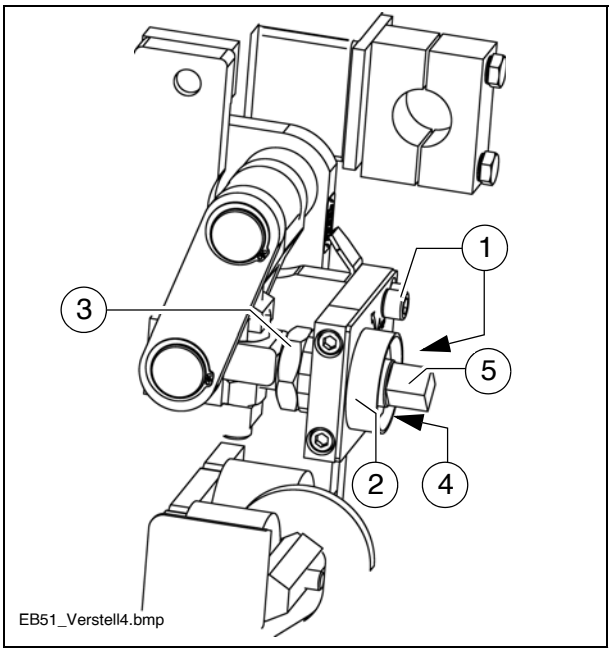
The extendable parts are adjusted at the factors in such a way that they are 3 mm higher on the inner and outer side than the main screed. The scales (1) are set to "0" with this adjustment.

5.1 Setting the height of the extendable parts

If the extendable screed parts do not lay without marks, this can be corrected during laying.

Turning the spindle (2) counter-clockwise with the ratchet lifts the extendable screed parts. Turning clockwise lowers the extendable screed parts.

5.2 Adjusting the approach angle of the extendable parts



☞ The middle sections and extendable screed parts are adjusted parallel to each other at the factory.

The positioning angle of the extendable screed parts can be varied in relation to the middle sections if required:

- Loosen cheese head screws (1) and remove locking plate (2).
- Loosen lock nut (3). Turn adjusting nut (4) with an open-end wrench. Spindle (5) must not also turn.
- Turning clockwise = increases positioning angle
- Turning counter-clockwise = reduces positioning angle

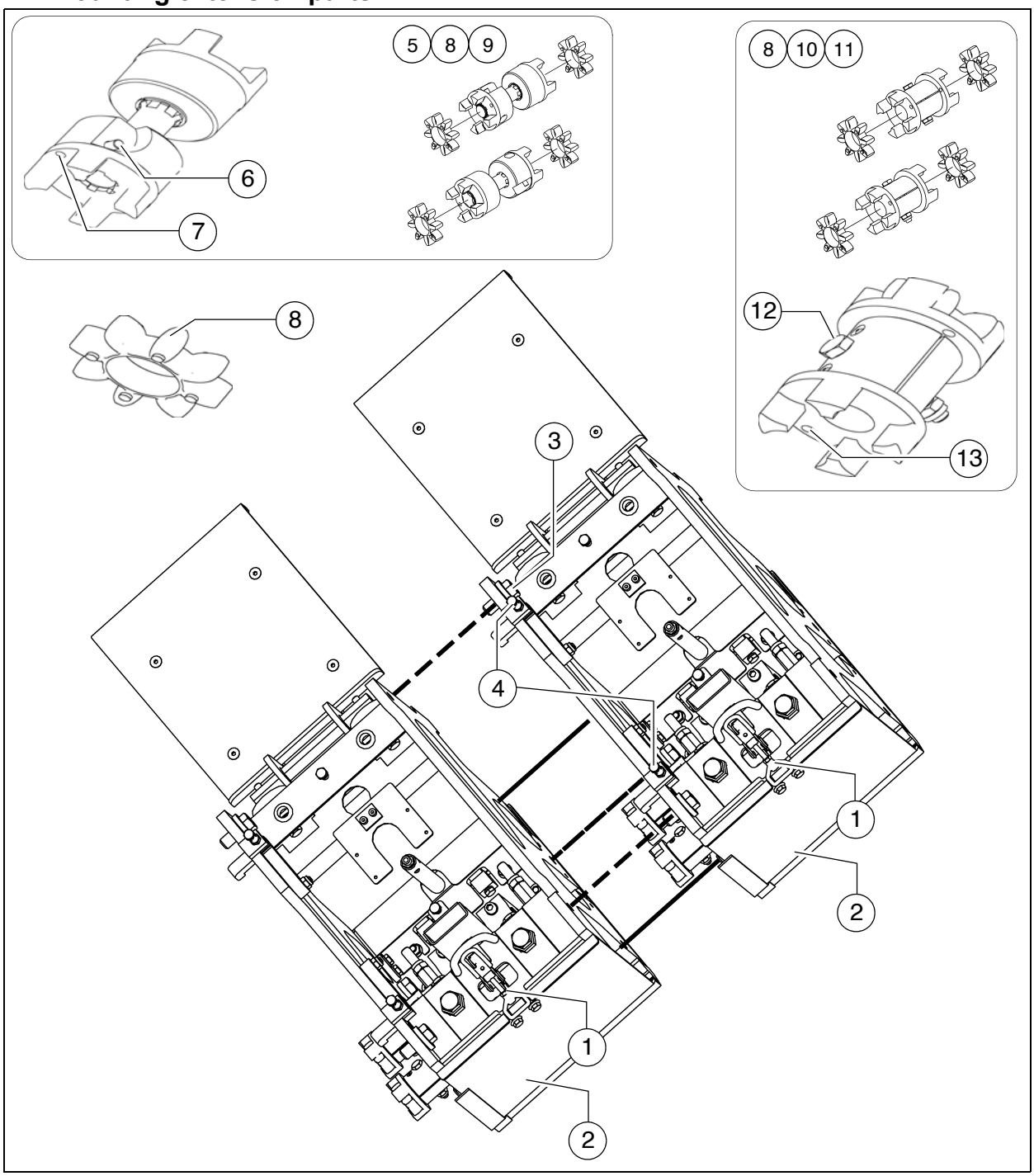
☞ Evenly adjust both adjusting nuts (4) at each extendable part alternately.

- Retighten the lock nut (3).

- Re-install locking plate (2) with cheese head screws (1).

6 Extending the screed

6.1 Mounting extension parts



When equipping the paver finisher, the following working steps must be carried out:

1. Place extension parts next to the screed on squared timbers.

2. Remove paint and dirt from the contact surfaces between the extension parts and extendable screed parts and mount the extension part.

3. Lift the screed and extend;

4. Release quick release couplings (1); push temper deflector plate (2) downwards out of the bottom mounting bracket.

5. Insert extension part mounting screws (4 x (3)) and tighten by hand;

6. Align the extension part with adjusting screws (4) so that it corresponds precisely to the extendable part or extension part. In the case of fine-grained layers, even minimal differences will be visible in the surfacing.

7. Use the upper adjusting screws to set a "spatula-thick" gap between the extension part and the extendable screed part;
   This measure compensates the screed's differences in expansion in the upper and lower areas when heated.

8. Tighten mounting screws (3) of the extension part.

9. Mount the vibration drive shaft (5). To do this, the coupling half must be shifted on the shaft by pressing the detent pin (6). During assembly, allow the coupling half to engage in the required position.
   Ensure that the positioning pin on the drive shaft in the screed engages in the locating bore (7) of the connecting shaft.

☞ Prior to assembly, ensure that a crown wheel (8) is inserted into each of the coupling halves.

10. The tamper of the extension parts is driven, as in the case of vibration, via one shaft each with quick action coupling (9). The tamper frames of the extendable screed part and the extension part are not bolted together. If this is not ensured by "pins", it must be ensured when mounting the tamper drive shaft that the tampers of the extendable screed part and the extension part operate offset by 180°, i.e. when one is located at the upper reversal point, the other must be located at the lower reversal point. If further extension parts are mounted, it must be ensured that the tampers also operate offset by 180° to the previously mounted extension part.

☞ In the case of 350 mm extension parts, the relevant coupling (10) / (11) must be used on connection of the tamper and vibration drive! In the case of these shafts, the threaded connection (12) must be released, the shaft pushed out to the required length and the threaded connection re-installed.
Ensure that the positioning pin on the drive shaft in the screed engages in the locating bore (13) of the connecting shaft.

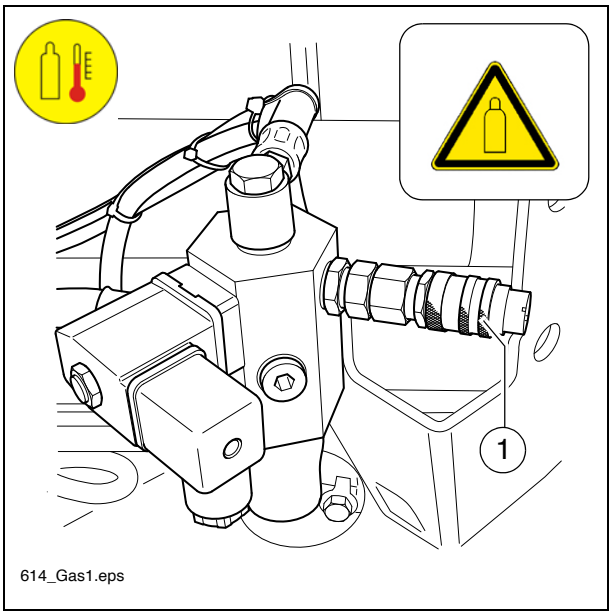
11. Connect extension part heating systems to the neighbouring screed parts.

☞ See section entitled "Screed heater gas connections" / "Screed heater electrical connections".

6.2 Screed heater gas connections

After the extension parts have been mounted, the connection hoses for the extension parts' burners must be connected to the screed's pipe system.

- All hoses must be checked for external damage prior to use and, if any defects are found, must be immediately replaced with new hoses.
- The connections can be easily established by means of quick action couplers (1).



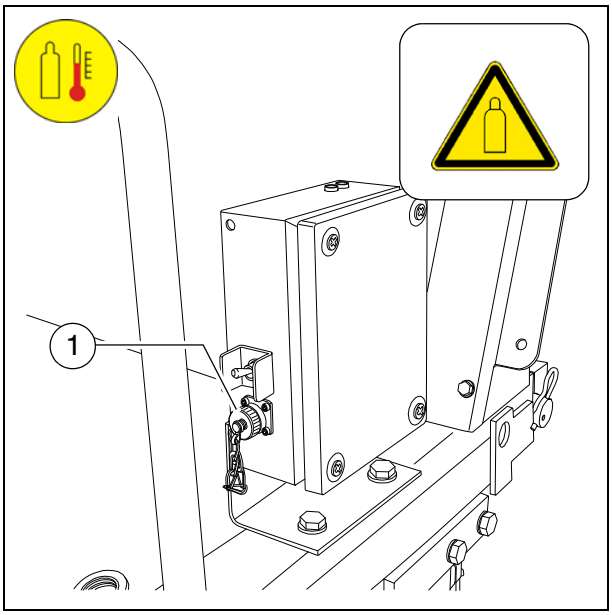
STOP

Danger of fire and explosions!
Work on the heating system involves the danger of fire and explosion.
Do not smoke! No naked flames!

- After the extension parts have been removed, the hoses remain with the extension part to which they are screwed.

Connect gas heater side shield (○)

- Connect the hose (quick-release coupling) of the gas system.
- Connect the power supply (1) to the corresponding socket of the basic screed / next extension part.



Connect hydraulic side shields (○)

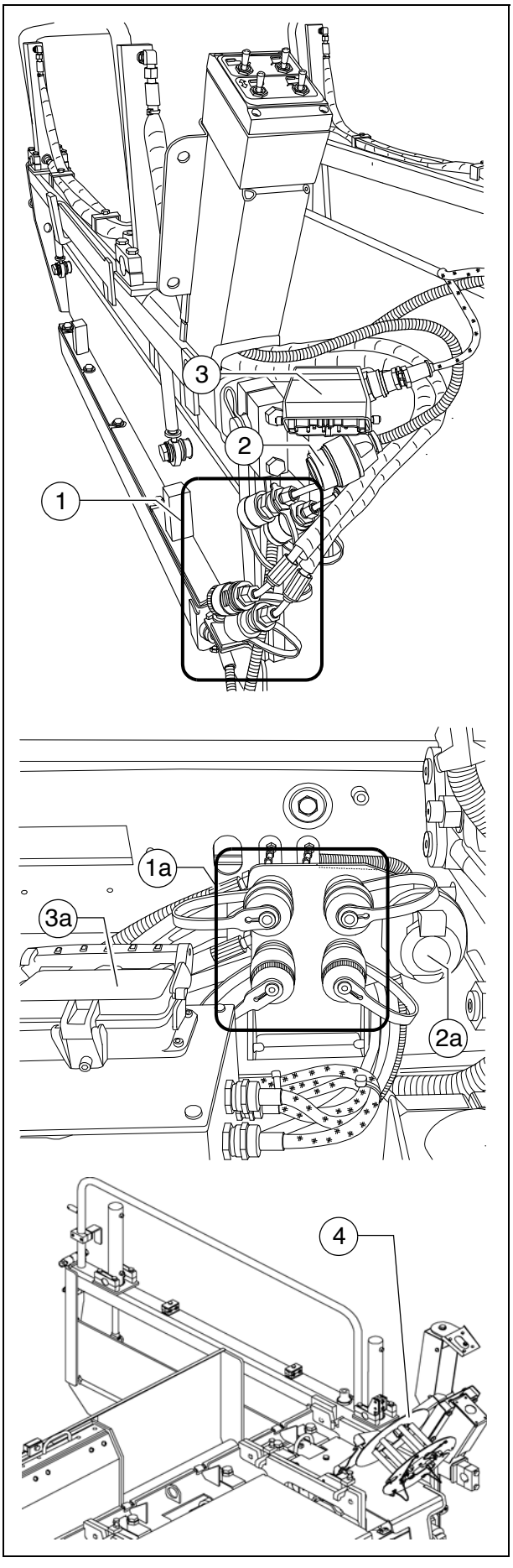
- Connect hydraulic lines (1) with the corresponding connections (1a) of the paver finisher (quick-release coupling).

☞ Heed the colour markings!

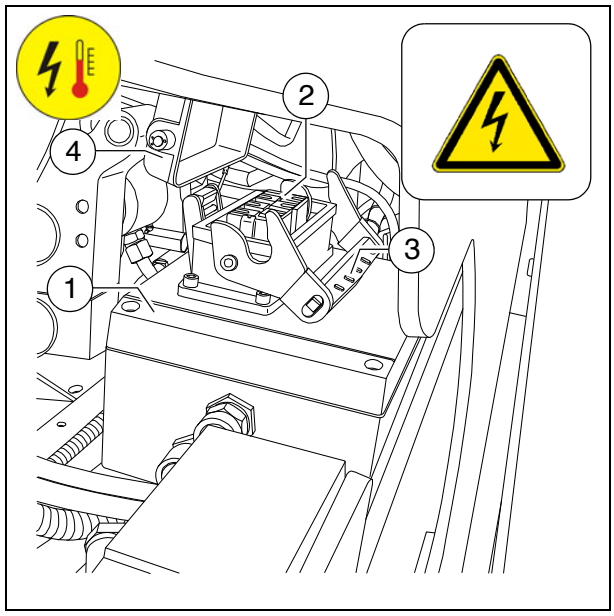
- Connect the control cable (2) to the corresponding socket (2a) of the basic screed.
- Connect plug (3) (○) of the heating with the corresponding socket (3a) of the basic screed / next extension part.

☞ When working with screed extension parts for larger working widths, use the corresponding extension hoses and cables.
The corresponding hose roller must be fitted to the side shields.

⚠ Wind surplus lengths of hose and cable onto the hose roller (4).



6.3 Screed heater electrical connections



Once extension parts have been fitted, the screed heater's corresponding electrical connections must be connected to one another.

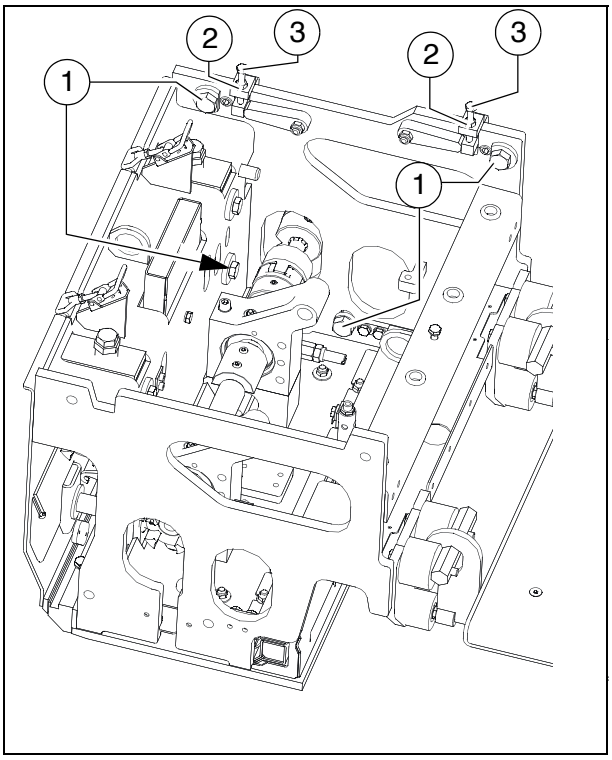
Each screed section contains a distributor box (1) with the electric heater's internal wiring.

- The connection (2) for the supply and control cable to the neighbouring screed section
  can be found on the upper side of the distribution box.
- Open the retaining tab (3) and protective cover (4), plug in cable between extension part and neighbouring screed part and secure using the retaining tab.

STOP Before being used, all cables must be checked for externally visible damage and, if defects are found, must be replaced immediately with new cables.

STOP Properly seal connections which are not required using a protective cover (4) and retaining tab (3)!

6.4 Adjusting the height of the extension parts



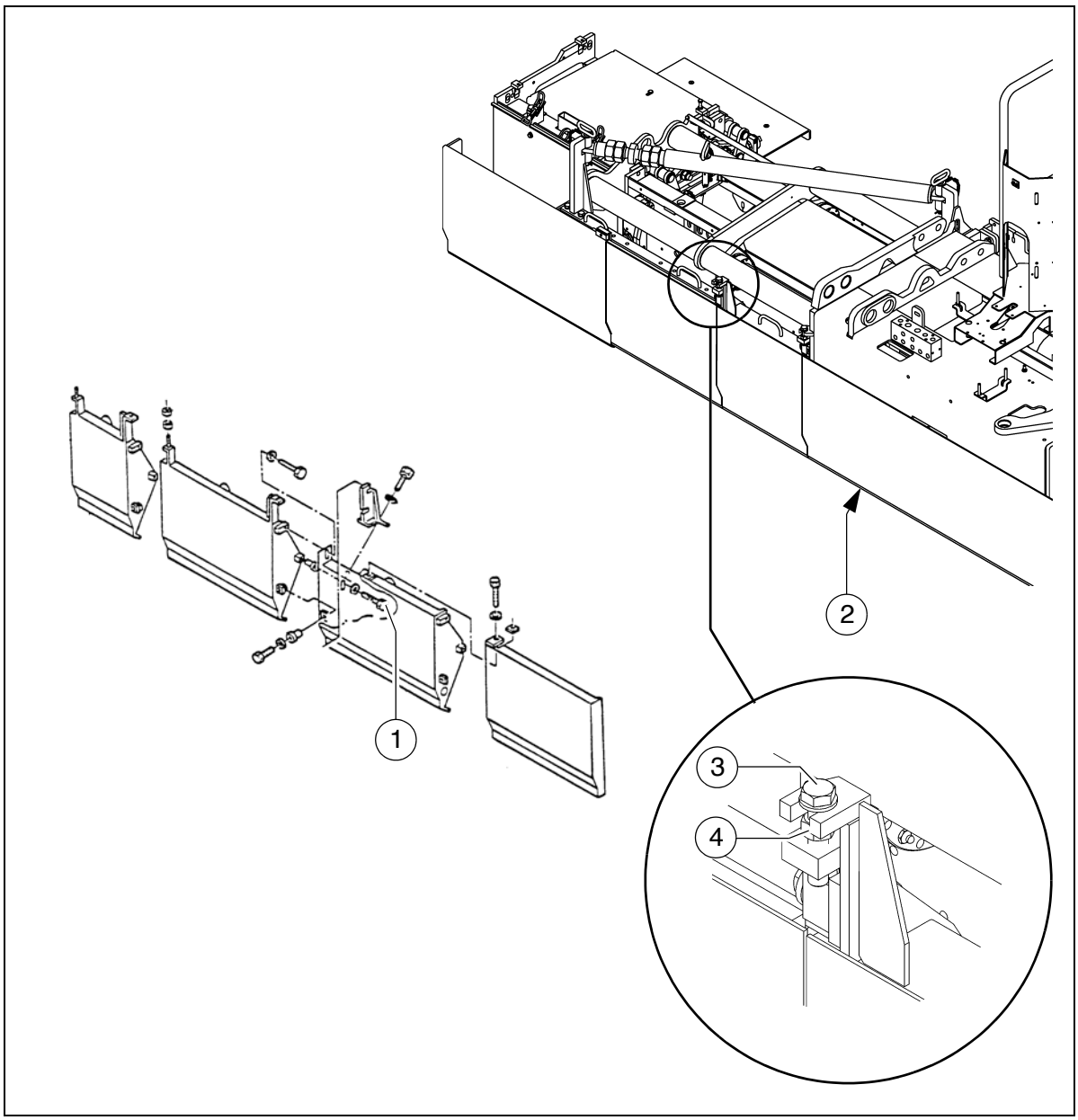
To ensure that the screed lays without marks and the extension parts can also be adjusted to the various operating conditions during use, the height of the extension parts can be adjusted:

- Loosen mounting screws (1)
- Loosen lock nuts (2)
- Set to the desired height using adjusting screws (3)
  - Turning clockwise = raises extension part
  - Turning clockwise = lowers extension part

☞ Adjust both adjusting screws (3) alternately and evenly.

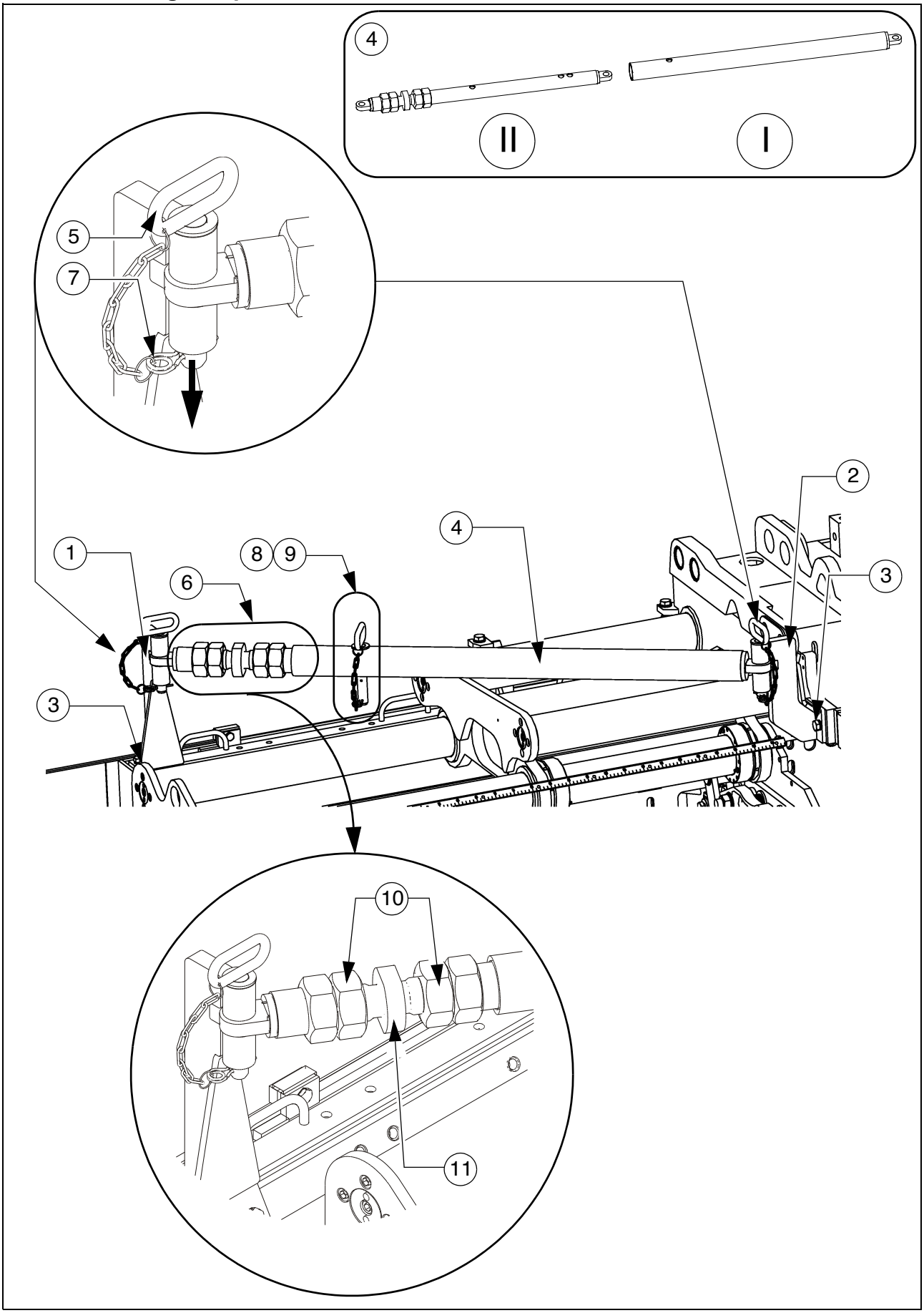
- Retighten the lock nut (2).
- Retighten the mounting screws (1).

6.5 Mounting the material guide plates



- Pre-assemble material guide plates using screws (1); do not tighten screws.
- Set material guide plates approx. 1 cm higher than the sliding plates (2):
  - Set height using adjusting screw (3), then lock with nut (4).
- Tighten mounting screws (1).

6.6 Material guide plate brace



6.7 Installing material guide plate brace

☞ Depending on the paving width, the material tunnel is braced with brace tube II or with brace tubes I + II.
Brace tube II can be inserted into brace tube I in order to extend it.

- Mount the front bracket (1) and rear bracket (2) with the relevant assembly parts (3) on the adjustable 1000 mm material tunnel or on the frame of the main screed.

☞ The front bracket (1) can be mounted in four different positions on the material guide plate. The position must be selected appropriate to the brace and the paving width!

- Insert the brace (4) into the rear bracket (2) and secure with a retaining pin (5).

☞ The adjustable section (6) of the brace must point to the outer edge of the vehicle in each case!

- Secure the retaining pins (5) with a spring cotter pin (7).
- Secure brace II at the front bracket (1) with a retaining pin (5) and spring cotter pin (7).
- If brace I and brace II are used together:
  - Remove the retaining pin (8) and spring cotter pin (9), and pull brace II (10) out until it can be secured at the front bracket.
  - Secure brace II at an aligning locating bore in brace I with a retaining pin (8) and a spring cotter pin (9).

☞ If brace II cannot be secured at the front brace (1), longitudinal adjustment must additionally be carried out on the adjustable section (6):

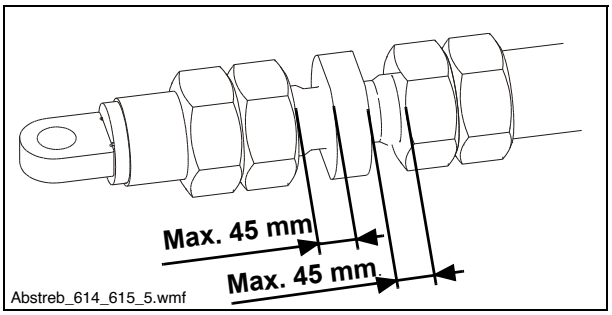
- Loosen the lock nuts (10) on the adjustable section.
- Adjust the length of the adjustable section using the relevant wrench on the hex (11).
- Retighten the lock nuts (10).

6.8 Setting the material tunnel compressive stress

☞ After mounting the brace tubes, the compressive stress between the material tunnel and the brace has to be set. The compressive stress to be set is dependent on the material supply upstream of the material tunnel and the paving width.

- Loosen the lock nuts (10) on the adjustable section.
- Adjust the compressive stress by changing the length of the adjustable section using the relevant wrench on the hex (11).
- Retighten the lock nuts (10).

⚠ When setting the brace tube to compressive stress, the spindles on both sides may be unscrewed a maximum of 45 mm!

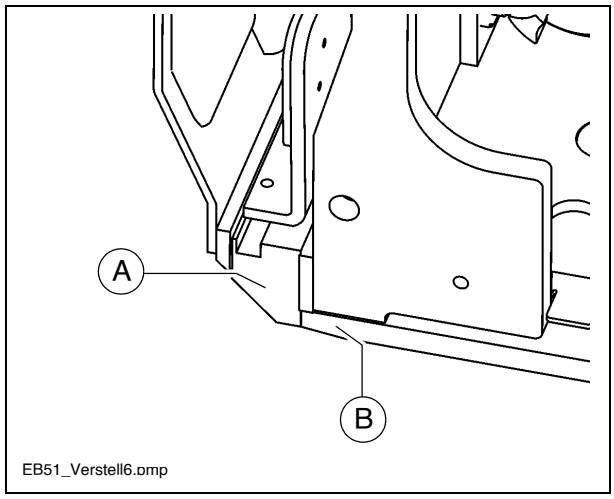


7 Settings

7.1 Adjusting the tamper height

Before each laying operating, check the tamper adjustment.

The tamper knives (A) must be located at bottom dead centre flush with the inclined edges of the sliding plates (B).

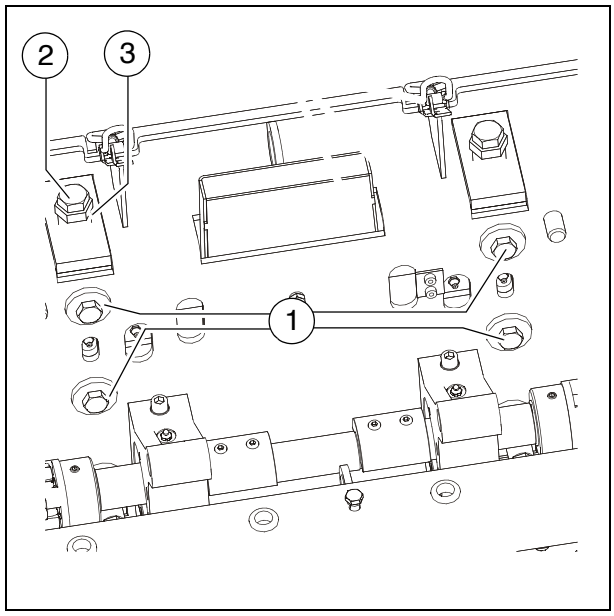


If correction should be necessary, proceed as follows:

☞ Two adjustment points per screed part!

Adjust tamper lower:

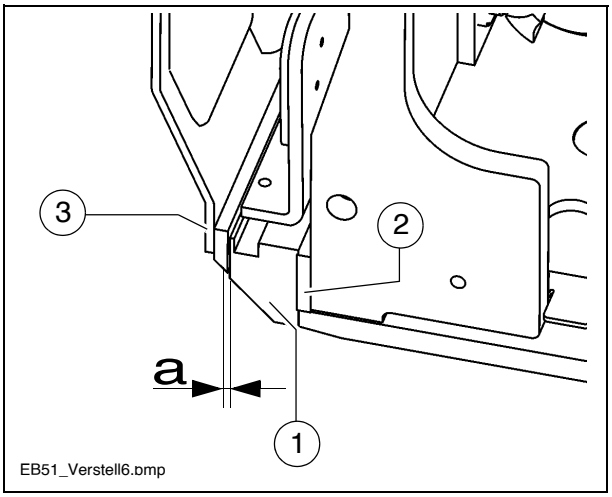
- Loosen the mounting screws (1) of the tamper bearing brackets
- Loosen screw (2)
- Turn screw (3) clockwise until the desired setting is achieved
- After making the adjustment, retighten screw (2) under all circumstances.
- Tighten the mounting screws (1) of the tamper bearing brackets.



Adjust tamper higher:

- Loosen mounting screws (1) of the tamper bearing brackets.
- Loosen screw (2).
- Turn screw (3) counter-clockwise until the setting is correct.
- After making the adjustment, retighten screw (2) under all circumstances.
- Tighten the tamper bearing bracket mounting screws (1).

7.2 Adjusting the tamper deflector plate



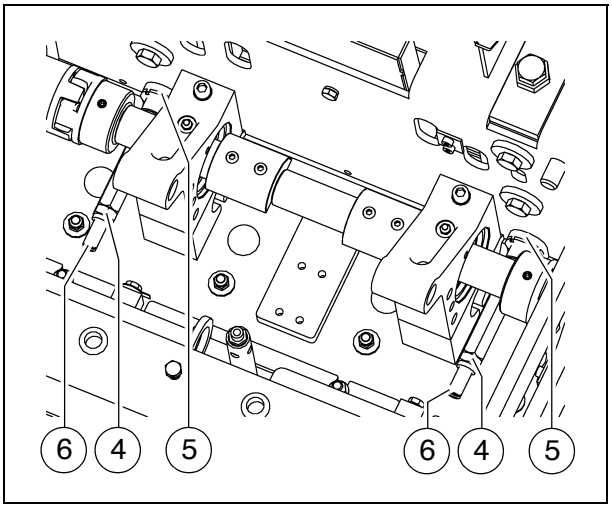
Before each laying operating, check the tamper adjustment.

The tamper knife (1) should touch the knife bar ((2) on the screed).

The play (a) between the tamper deflector plate (3) and the tamper knife (1) should be 0.5 mm across the entire width.

If correction should be necessary, proceed as follows:

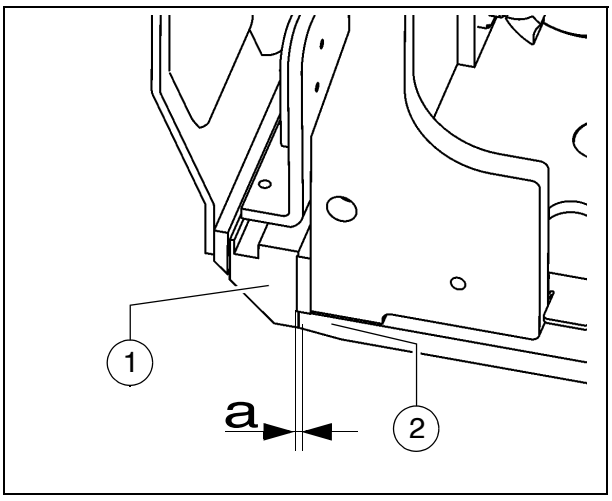
☞ Two adjustment points per screed part!



Adjusting the tamper deflector plate:

- If readjustment is required, loosen the nut (4) and the slotted nut (5).
- Adjust play by turning the support tube (6):
  - Screw it in to increase the gap.
  - Screw it out to reduce the gap.
- Firmly tighten the nut (4).
- Check play. If necessary, repeat the adjustment procedure.
- Then firmly lock the slotted nut (5).

7.3 Adjust sliding plates



☞ The sliding plates only need to be adjusted if they have been replaced.

For new installation, the play (a) between the tamper knife (1) and the sliding plate (2) should be 2.0 - 2.5 mm across the whole width.

7.4 Basic adjustments

Prior to basic adjustment, the extendable parts must be adjusted as described in Chapter 5.

Carry out basic adjustment as follows:

1. In the case of finishers fitted with tyres, set the correct tyre pressure.

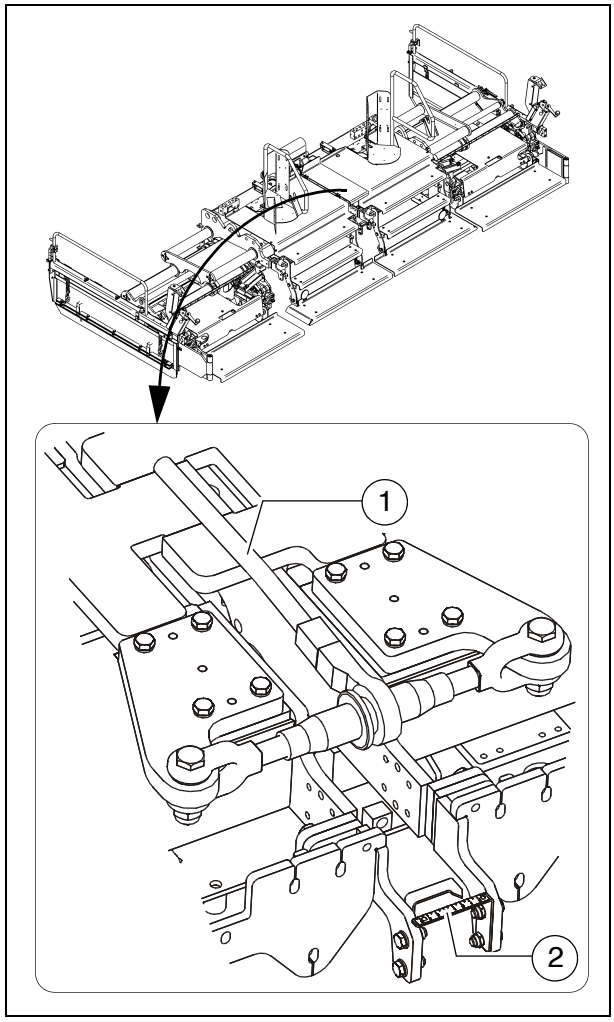
2. Drive the paver finisher onto a level surface. The size of the area must correspond to the total base of the paver finisher. The engine remains in operation.

3. Lower the screed hydraulically.

4. P-equipment: Set the lever of the switch box to the zero position.

5. Bring the screed to the floating position. (see operating instructions for the paver finisher).

6. Set the crowning setting to zero with the ratchet (1). The value can be read off on the scale (2).

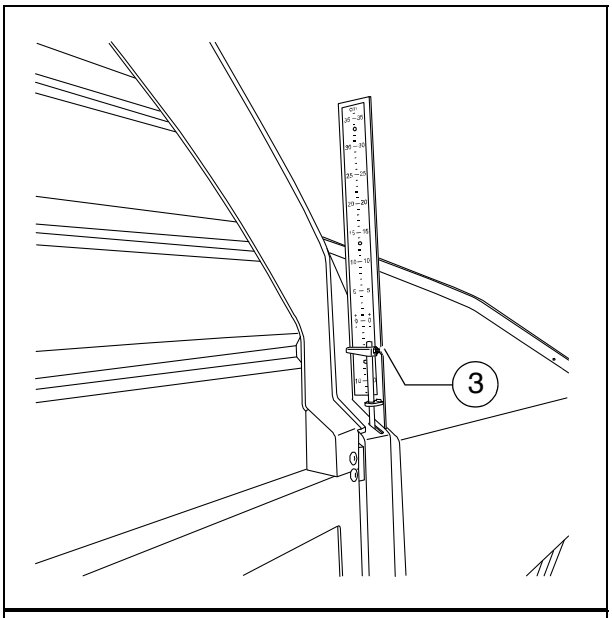


☞ A hydraulic crowning adjuster is available as an option.
Adjustment is carried out and displayed in the remote control setting menu (see paver finisher operating instructions).

7. Fully extend both levelling cylinders.

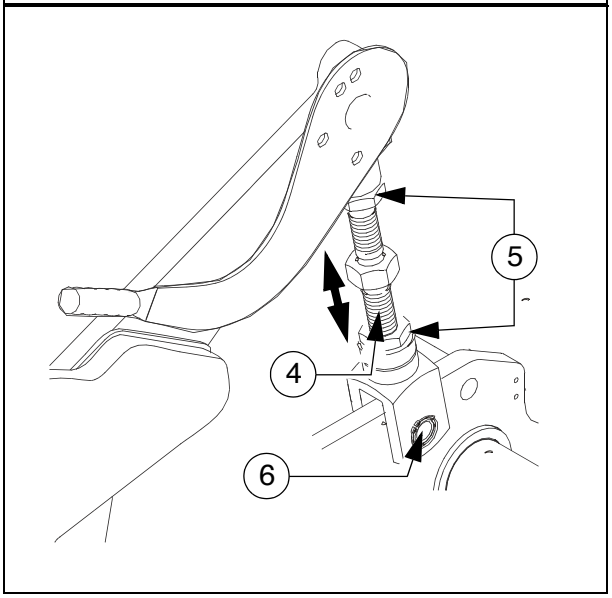
8. Tighten the pointers (3) on the scale on the front of the paver finisher in the bottom position.

9. Retract the levelling cylinders until both pointers are located approx. 1 cm below the zero mark.



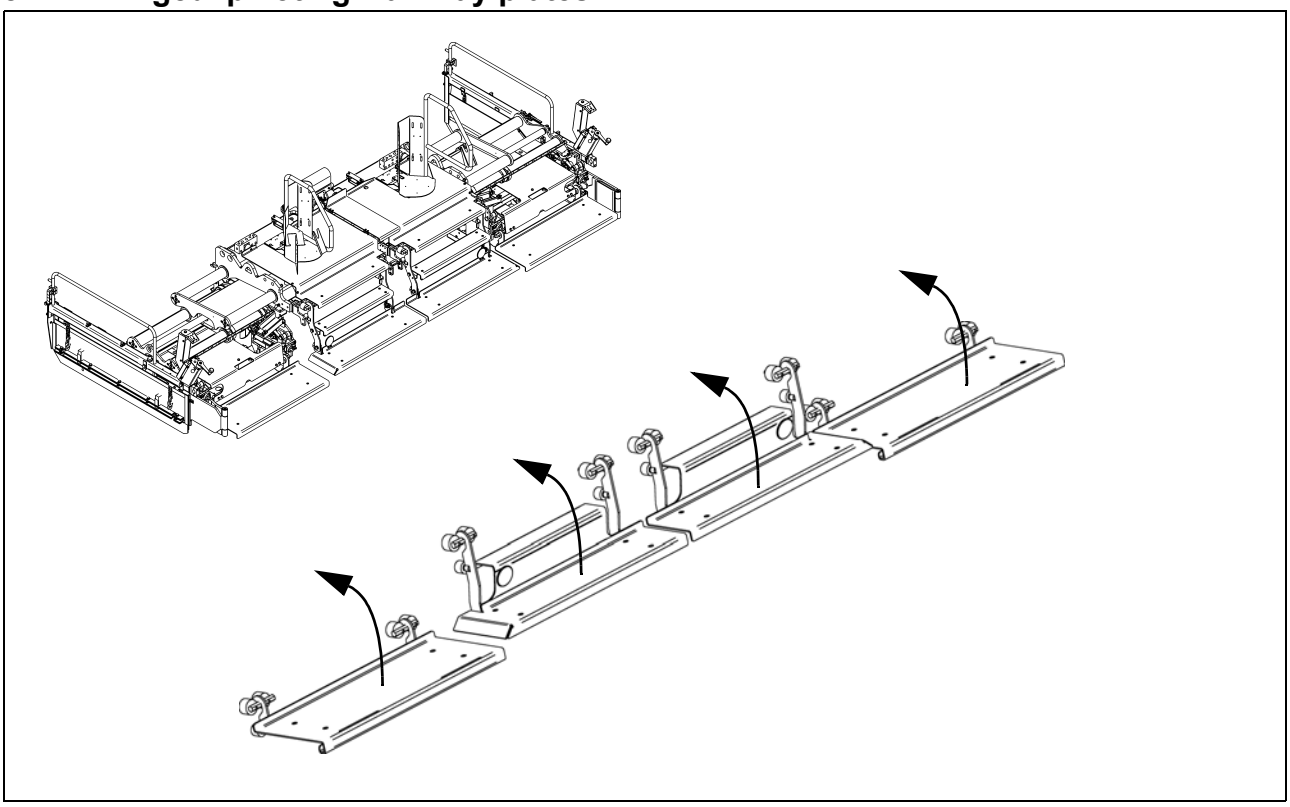
10. Loosen the lock nuts (5) at both spindles (4) and turn the spindles so that the bolts (6) are stress-free, i.e. can easily be withdrawn and inserted again.

⚠ Lock turnbuckles in this basic position with lock nuts (5).



8 Dismantling for transportation / special operating conditions

8.1 Hinged /pivoting walkway plates



☞ The walkway plate is optionally available in the following versions:

- Hinged /pivoting walkway plates (A): The individual walkway plates can be pulled from their mounted latch and can be stored in the folded-up position at their support points.

The hinged walkway plate should only be folded up under the following operating conditions:

- If the vehicle has to be backed up very closely to a wall or another obstacle.
- When transporting the paver finisher on a low bed truck, if necessary.

☞ In all other cases, the walkway plate must be folded down and secured!

F 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.

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.

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.

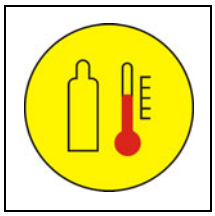
⚠ WARNING	**Danger from the gas system**
	Incorrectly performed operation and maintenance of the gas system can cause severe or fatal injuries! - Only ever transport full and empty gas bottles with safety caps to protect the bottle valves. - Use the supplied strap retainers to secure gas bottles on the paver finisher to prevent them from turning, tipping over and falling down. - Before starting the heating, check the whole heating area for leaking gas pipes. Replaced damaged hoses immediately. - Close the main shut-off valves and the bottle valves when the gas system is not in use. - When travelling, ensure that the gas bottles from the paver finisher are transported in another vehicle, complying with the safety regulations. - Proceed with expert inspection every twelve months. - Only skilled workers with a corresponding qualification are allowed to work on the gas heater system! - Only original spare parts may be used! - Comply with all further information in these instructions and in the safety manual.

2 Maintenance intervals – screed in general

	Interval								Maintenance point	Note
	10 / daily	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
		■							- Lubricate tamper/vibration bearings	
		■							- Lubricate tamper bearings of extension parts	
		■							- Lubricate vibration bearings of extension parts	
		■							- Lubricate guide tube bearings	
	■								- Clean / oil guide tubes	After work is finished
						■			- Lubricate crowning adjuster	
							■	■	- Adjust guide tube play	
	■								- Check tamper deflector plate play	
								■	- Adjust tamper deflector plate play	
					■				- Hydraulic hoses - Visual inspection	
							■	■	- Hydraulic hoses - Replace hoses	
							■		- Have screed checked by an expert	

Maintenance	■
Maintenance during the running-in period	▼

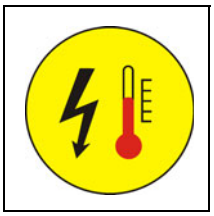
3 Maintenance intervals – gas system



Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
1				■					- Check the spark plugs	
					■			■	- Replace the spark plugs	
						■			- Have gas system checked by an expert	

Maintenance	■
Maintenance during the running-in period	▼

4 Maintenance intervals – electric heating system



Item	Interval								Maintenance point	Note
	10	50	100	250	500	1000 / annually	2000 / every 2 years	If necessary		
1	■								- Check insulation monitoring	Before starting work
2	☞ **Note national regulations on checking and inspection intervals!**								- Electrical system check by a specialist electrician	

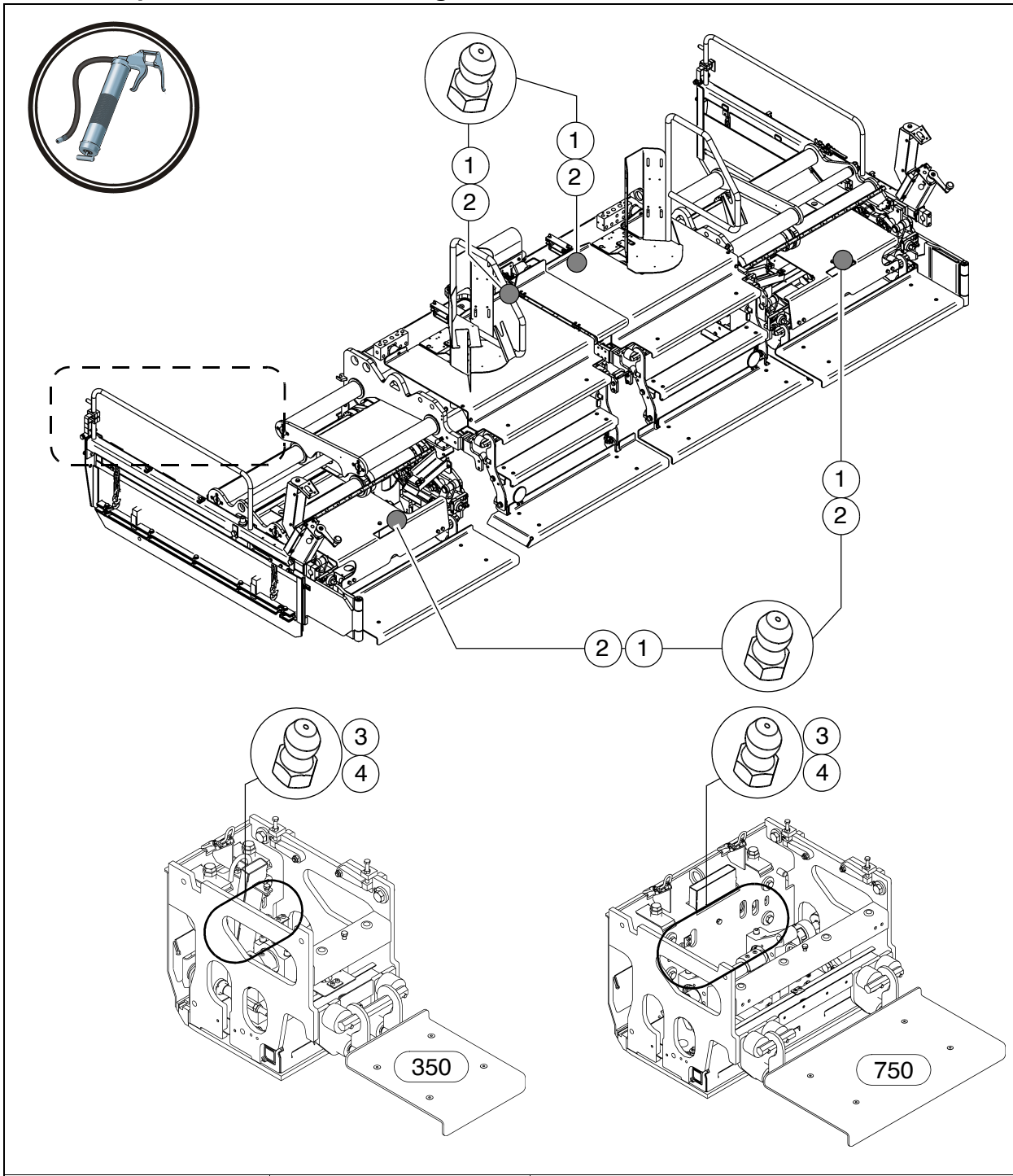
Maintenance	■
Maintenance during the running-in period	▼

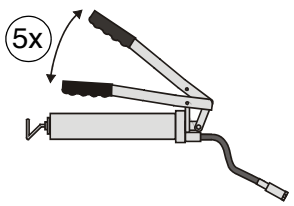
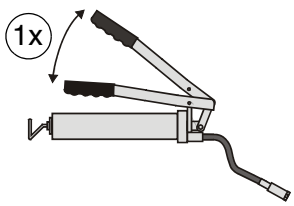
☞ All times given are the **maximum permissible** maintenance intervals. For aggravated conditions of use, **shorter** intervals must be applied!

For the maintenance intervals and maintenance work required for the paver finisher, refer to the operating instructions for the paver finisher.

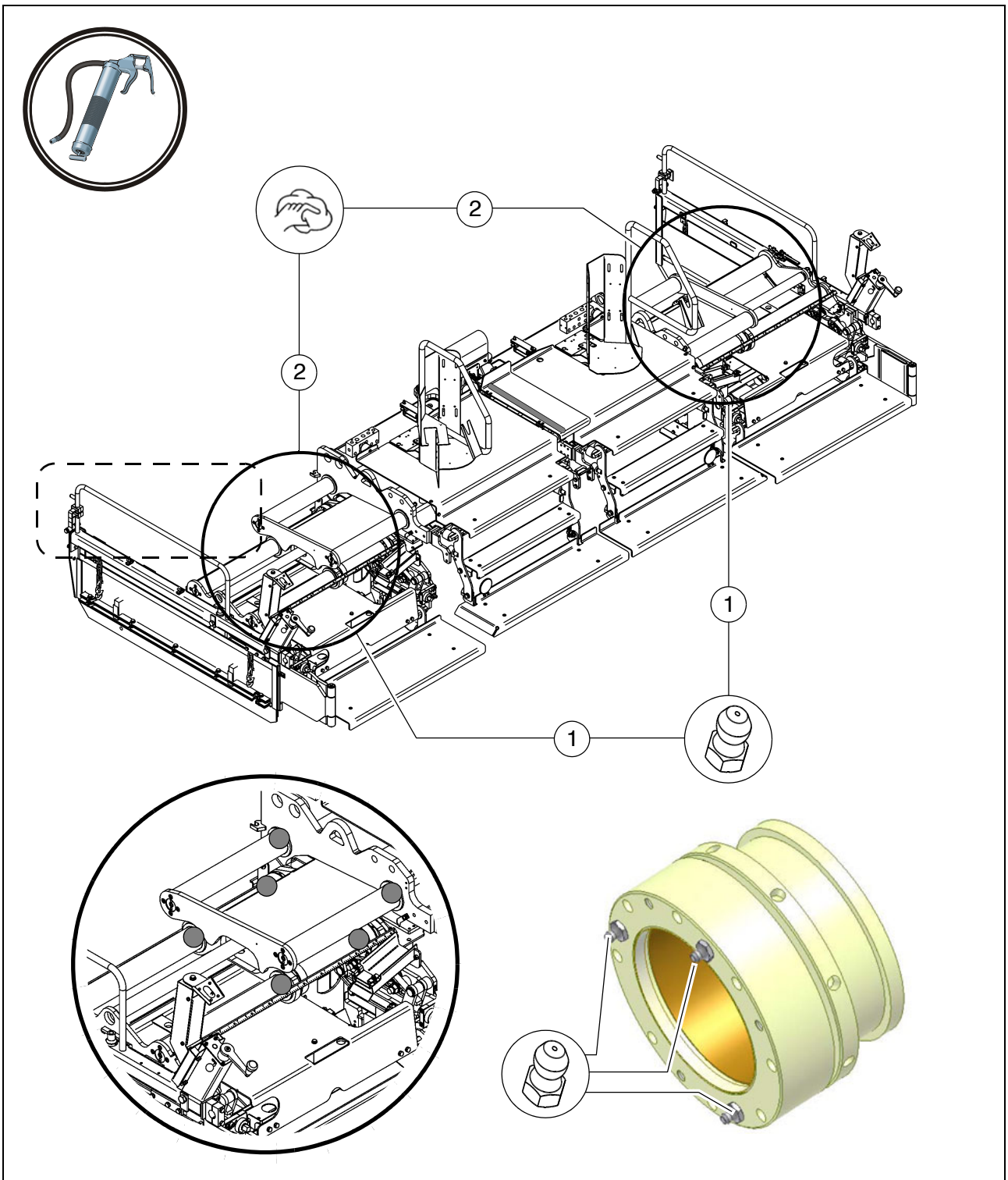
5 Lubrication points

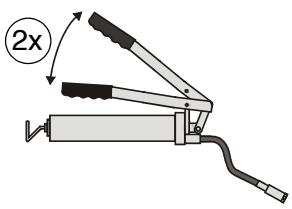
5.1 Tamper and vibration bearings



		With optional operation of a central lubrication system, manual lubrication of the main screed is omitted!
1 2	3 4	

5.2 Guide tubes



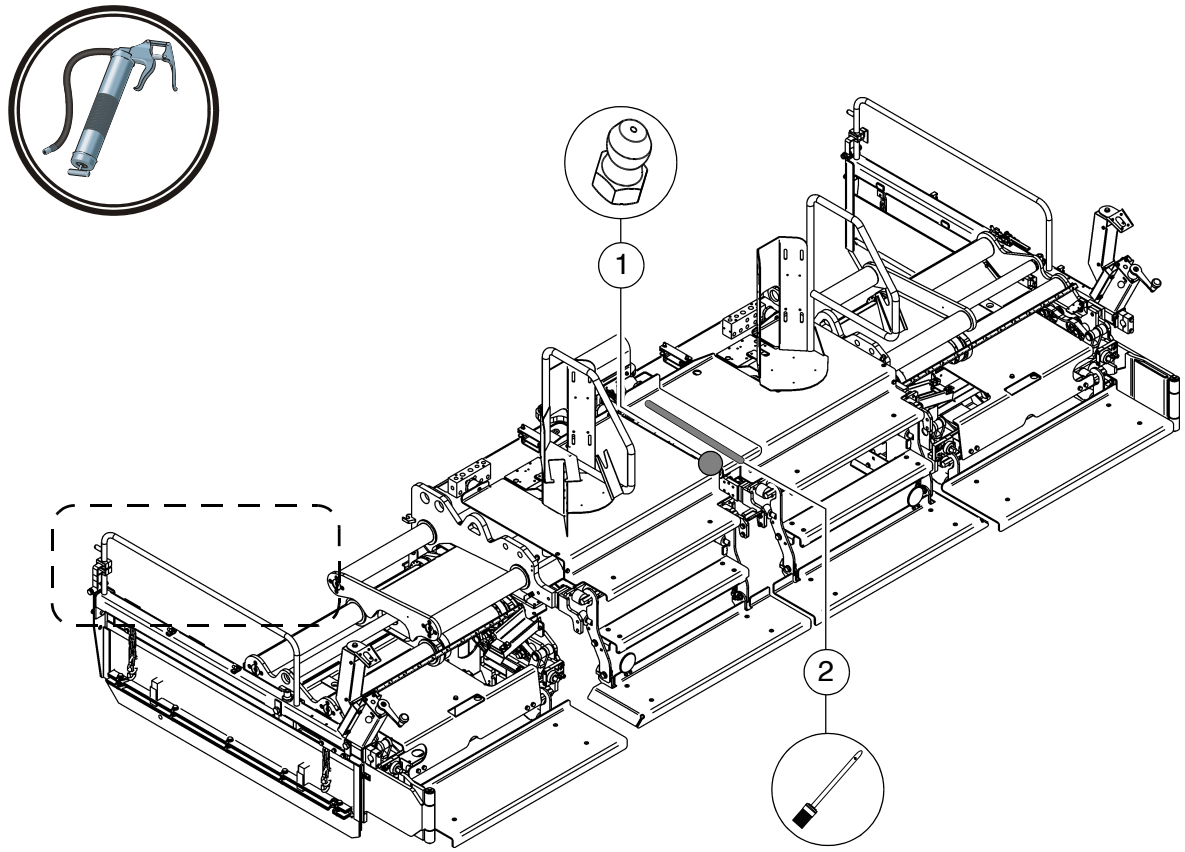
		
1	2	

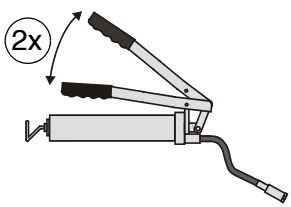
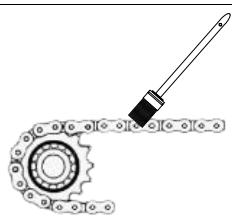
☞ To keep the wear and thus the play of the guides as low as possible, any dirt on the guide elements must be removed.

Always keep the tubes clean:

- After daily work has been terminated, clean the tubes using a piece of cloth and
- then slightly oil them.

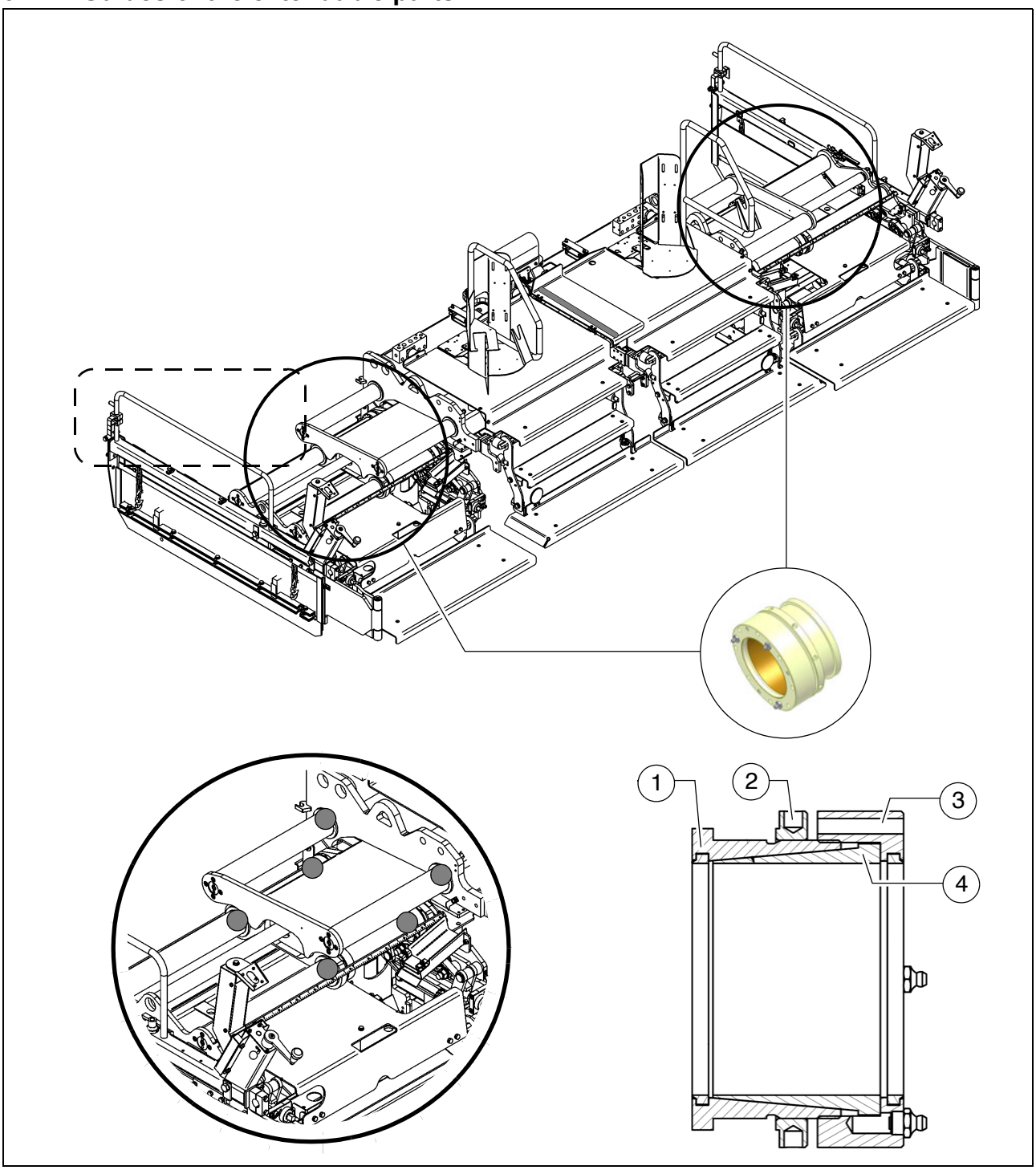
5.3 Other lubricating and maintenance points



		Grease the chains of the crowning adjuster with a brush or spray-on grease.
1	2	

6 Checkpoints

6.1 Guides of the extendable parts



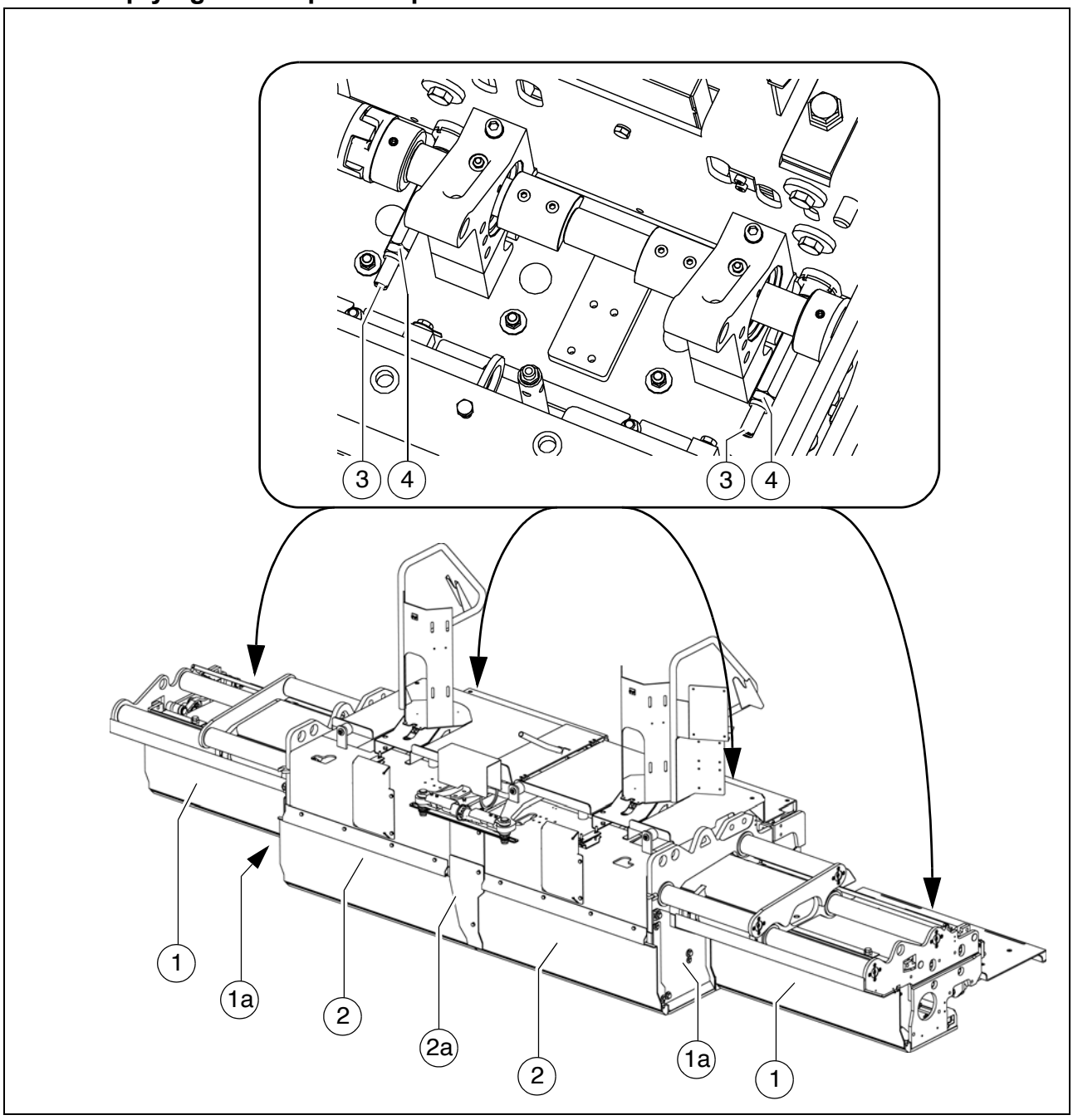
Adjustment of guide tube play

- Bush (1) is fixed with nut (2) to the screed. Conical bush (4) can be adjusted with adjusting nut (3). Play-free operation is given at about 90 Nm.

☞ The special hook-type wrench in the toolbox must be used.

6.2 Cleaning the screed

Emptying the tamper compartment



☞ During operation, bitumen and fine particles enter the tamper frame. Heating keeps them in a plastic state, thus making them available for lubricating the tamper knife. When the screed cools down, these substances solidify. They must be liquefied by heating before the tamper is put into operation again.

- Usually, the only cleaning work required at the end of the day is to operate the tamper at slow speed for approx. 15 minutes and to spray some separator fluid into the tamper compartment.
- If the tamper is not to be used for a longer period of time, the tamper compartment should be emptied as long as the material is still in a liquid state. If necessary, switch on the heater!

To empty the tamper compartment, the tamper deflector plates (1), (2) of the screed parts can be loosened:

- Loosen nut (3).
- Loosen screw plug (4) a few turns at slot.

⚠ Ensure that the screw plug slot is positioned horizontally!

- Allow the tamper to run at low speed for a few minutes.
- Tighten screw plug (4) again.
- Tighten nut (3).
- Check gap dimension between tamper and tamper deflector plate (0.5 mm).
- If necessary, adjust the gap dimension. See chapter E.

☞ Also carry out this procedure on all extension parts!

Removing the tamper deflector plates

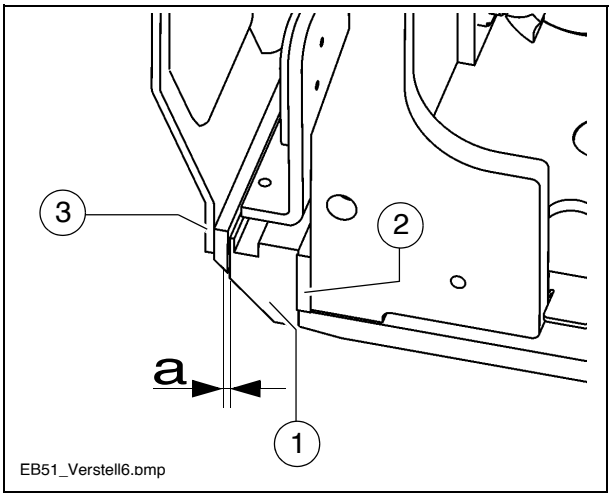
- Loosen nut (3).
- Loosen screw plug (4) 90° at slot.
- Remove side plates (1a).
- Remove middle plates (2a).
- Swivel tamper deflector plate forwards slightly (out of screw plug) and push deflector to side out of mounting bracket.
- Reinstall tamper deflector places (1), (2) side plates (1a) and middle plates (2a) in reverse sequence and tighten using screw plugs.
- Check gap dimension between tamper and tamper deflector plate (0.5 mm).
- If necessary, adjust the gap dimension. See chapter E.

6.3 Checking / adjusting the tamper deflector plate

Before each laying operating, check the tamper adjustment.

The tamper knife (1) should touch the knife bar ((2) on the screed).

The play (a) between the tamper deflector plate (3) and the tamper knife (1) should be 0.5 mm across the entire width.

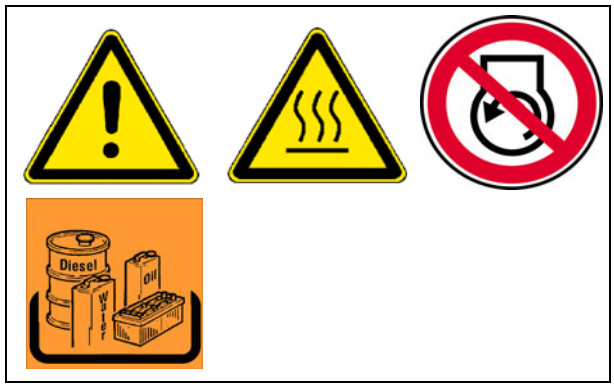


☞ If correction is necessary: See chapter E.

6.4 Cleaning the screed with high pressure cleaners

NOTE	Caution! Possible damage to parts
	When cleaning is performed with a high pressure cleaner, it is possible for parts to be damaged by the jet of water: - Do not spray bearing positions, lubricate correctly after cleaning. - Cover electric or electronic components, do not spray with water. - Do not spray parts of the gas heater (○), cover these first. Possibly dry the nozzles and filter of the gas system and readjust the air supply.

7 Hydraulic hoses



- Specifically check the condition of the hydraulic hoses.
- Immediately replace any damaged hoses.

☞ Replace hydraulic hoses if the following criteria are found on inspection:

- damage of the outer layer to the inlay (e.g. chafing, cuts, cracks).
- brittleness of the outer layer (cracking of the hose material).
- deformation that does not correspond to the natural shape of the hose or pipe when depressurised or under pressure or when bent (e.g. separated layers, blistering, pinched or buckled points).
- leaks.
- damage or deformation to the hose fittings (affecting the sealing function); replacements are not necessary for minor damage to the surface.
- hose coming away from the fitting.
- corrosion of the fitting with a detrimental effect on function and strength.
- failure to comply with the installation requirements.
- period of use has exceeded 6 years. Here it is the date of manufacture of the hydraulic hose stated on the fitting that counts, plus 6 years. If the fitting states "2004" as the date of manufacture, the period of use ends in February 2010.

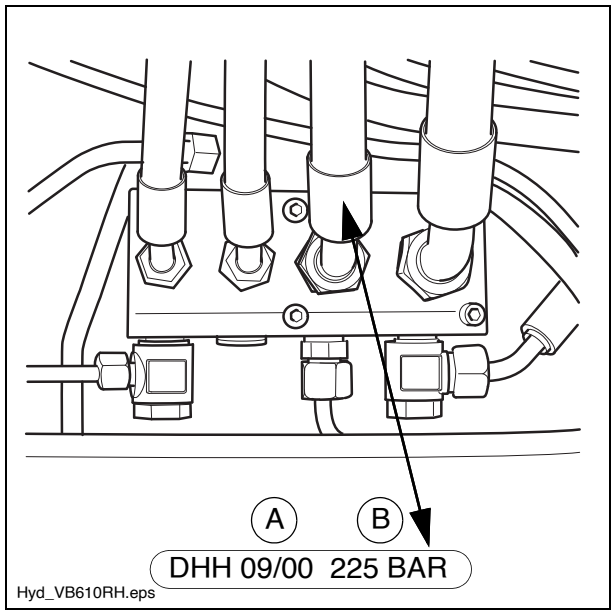
☞ See the section on "Marking hydraulic hoses".

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

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

- Always only use original Dynapac hydraulic hoses!
- Always observe high standards of cleanliness!
- Hydraulic hoses must always be fitted to ensure that in all operating statuses,
  - there is no tensile load apart from dead weight.
  - there is no compressive load for short lengths.
  - any external mechanical impact on the hydraulic hoses is avoided.
  - appropriate positioning and fastening of the hoses prevents them from chafing on components or on each other.
    components with sharp edges must be covered when installing hydraulic hoses.
  - bending radii are not smaller than the permitted values.
- When hydraulic hoses are connected to moving parts, the length of the hose must be dimensioned to ensure that the bending radii are not smaller than the permitted smallest values right across the full range of movement and/or that the hydraulic hose is not also exposed to tension.
- Fasten the hydraulic hoses to the provided fastening points. the hoses must not be hindered in their natural movement and change in length.
- Painting the hydraulic hoses is forbidden!

Marking hydraulic hoses / storage period, period of use



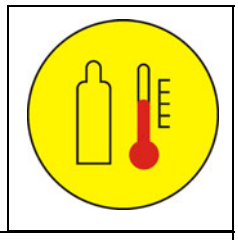
A number stamped onto the threaded connection provides information about the date of manufacture (A) (month / year)and the maximum pressure permitted for this hose (B).

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:

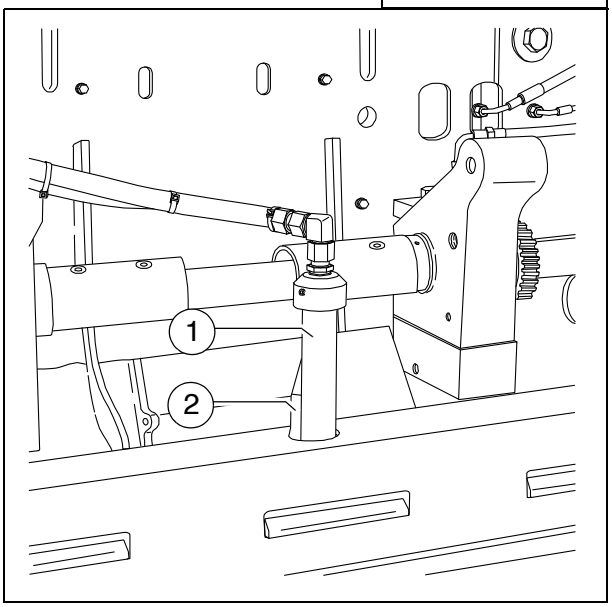
- When producing the hose pipe, the hose (purchased by the meter) should not be more than four years old.
- The period of use of a hose pipe should not exceed six years, including any possible storage period.
  The storage period should not exceed two years.

8 Gas system



The gas system consists of the following main components:

- Ignition burner (1)
- Spark plug (2)



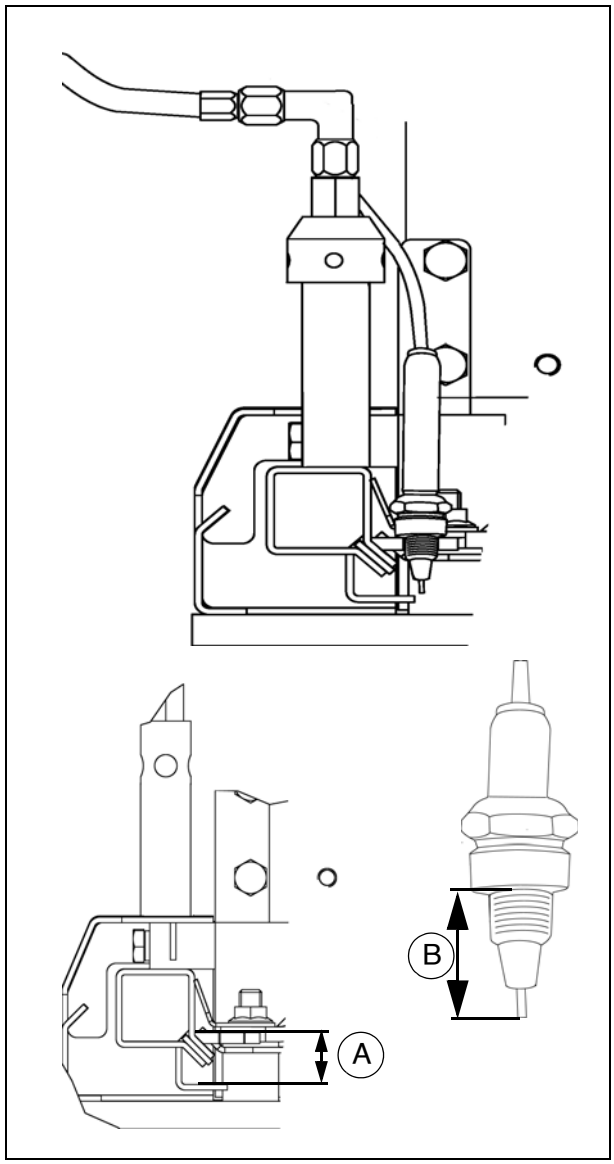
8.1 Spark plugs

The spark plugs of the gas heater should be checked once a month:

- Pull off the connectors of the spark plugs.
- Remove the spark plug insert from the screed body.
- Check:
- Is there any visible damage to the insulator of the centre contact?

☞ The correct electrode gap calculated from dimensions A and B is 4 mm!

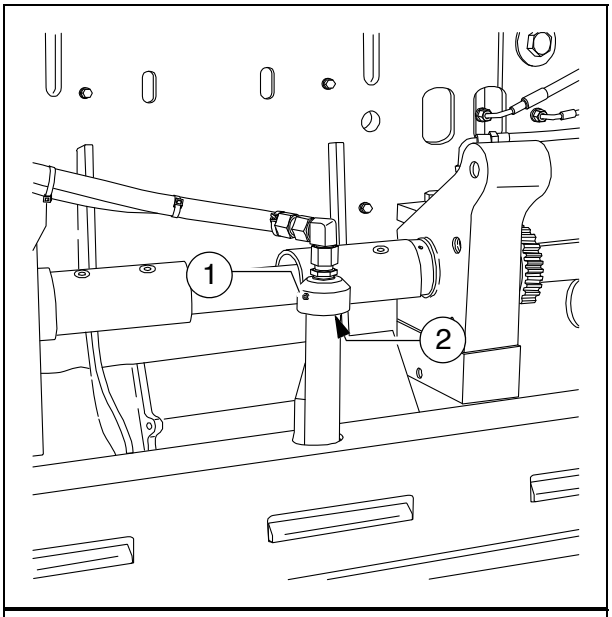
☞ The spark plugs should be replaced every six months to ensure that the screed heater always functions properly.



8.2 Adjusting the ignition burner

To ensure proper ignition, the adjusting ring (1) of the ignition burner must be adjusted.

- Loosen the fastening screws of the adjusting ring.
- The adjusting ring (1) should cover roughly 50% of the air holes (2).
- Tighten the fastening screws of the adjusting ring again.



8.3 Injectors of the gas heater system

The injectors for preparing the gas/air mixture are not subject to any maintenance intervals.

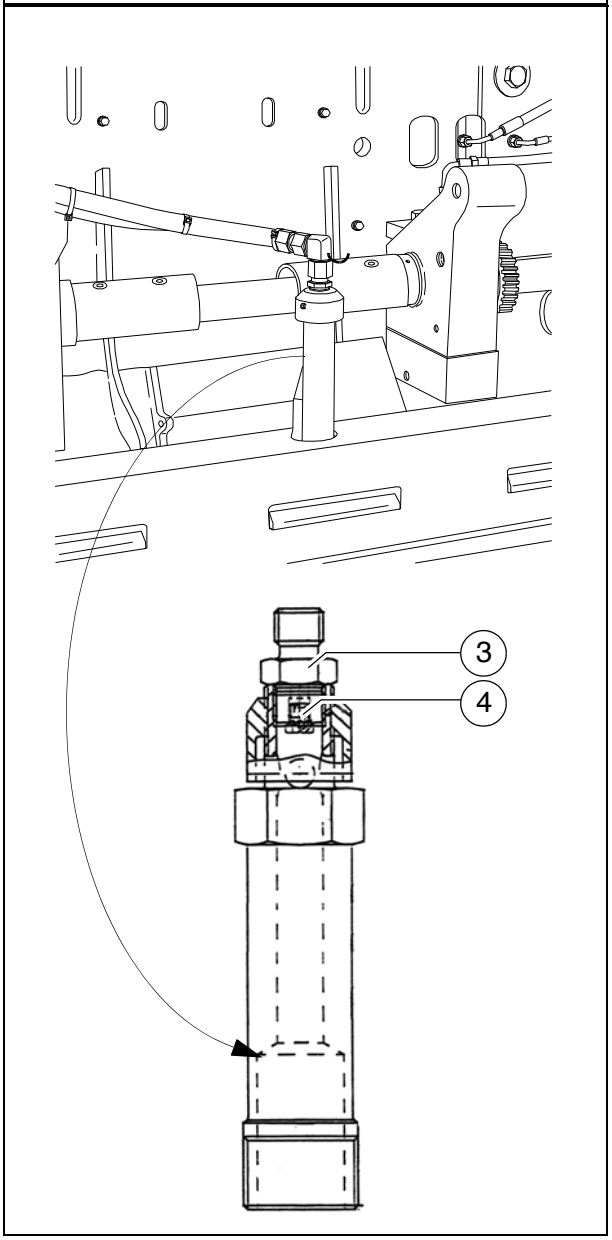
Impurities in the propane gas may soil the filter.
In this case, unscrew the screwed fitting (3) and then the gas nozzle (4). The filter is connected with the gas nozzle. Carefully clean the filter using air.

⚠ Never use a pointed object to clean the gas nozzle and the filter since this could damage the filter or the bore hole of the gas nozzle.

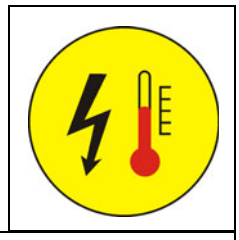
☞ The screwed fitting (3) and the gas nozzle (4) have been glued-in at the factory using "Loctite blue".

After cleaning, glue in the gas nozzle (4) and the screwed fitting (3) and screw them down.

STOP Make sure that all gas pipe connections are firmly screwed together.
Danger of explosions in case of leaks.

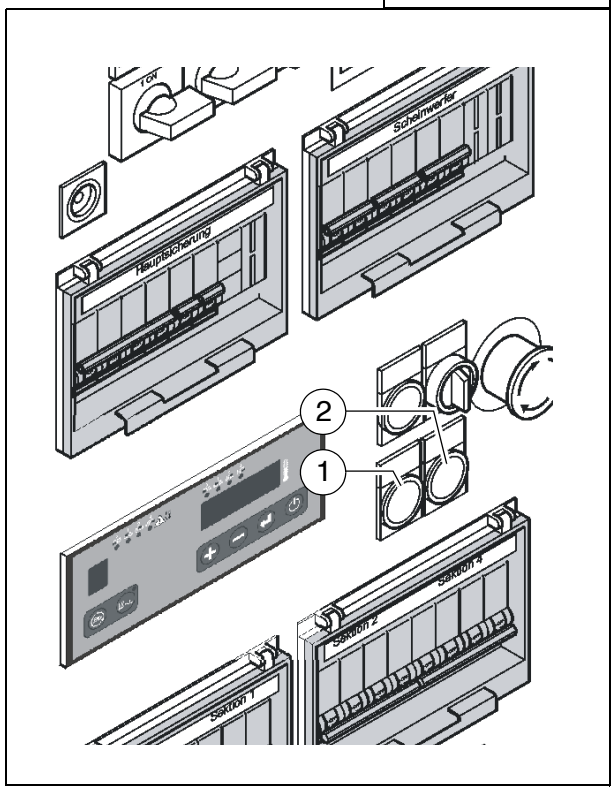


9 Electric heating system



9.1 Check insulation monitoring

The function of the protective insulation monitoring measure must be checked every day before starting work.



☞ This check only checks the function of the insulation monitor, not whether an insulation error has occurred on the heating sections or consumers.

- Start the paver finisher's drive engine.
- Press test button (1).
- The indicator lamp integrated into the test button signals "insulation fault".
- Press reset button (2) for at least 3 sec. to delete the simulated fault.
- The indicator lamp goes out.

STOP If the test is conducted successfully, work may be undertaken with the screed and external consumers may be used.
If the "insulation fault" indicator lamp displays a fault even before the test button is pressed or if no fault is displayed during the simulation, work must not be undertaken with the screed or with connected, external equipment.

STOP **The screed and equipment must be checked or repaired by a specialist electrician. Only then may work again be undertaken with the screed and equipment.**

STOP **Danger due to electrical voltage**

STOP **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.

Insulation faults

☞ If an insulation fault occurs during operation, and the indicator lamp displays an insulation fault, the operator may proceed as follows:

- Switch the switches of all external equipment and the heating system to OFF and press the reset button for at least 3 seconds to delete the fault.
- If the indicator lamp does not go out, the fault lies in the generator.

STOP No further work may be carried out.

- If the indicator lamp goes out, the switches of the heating system and external equipment can be switched back to ON one after another until a message again appears and the system is shut-down.
- The equipment found to be faulty must be removed or must not be engaged, and the reset button must be pressed for at least 3 seconds to delete the fault.

☞ Operation may now be continued - without the faulty equipment, of course.

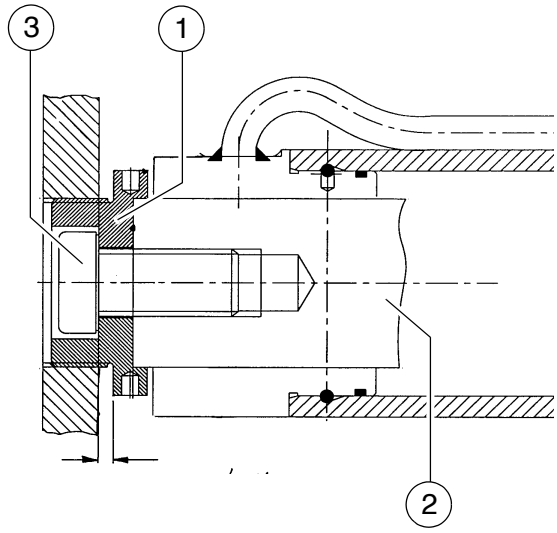
☞ **The generator or electrical consumer found to be faulty must be checked or repaired by a specialist electrician. Only then may work again be carried out with the screed and equipment.**

Adjustment process when exchanging screed extension cylinder

For adjustment purposes, the extendable screed parts are fully extended. The tolerances between the screed and cylinder stroke are compensated with the adjusting nut (1) in the plate.

The nut rests directly against the piston rod (2). The piston rod is secured to the nut with cheese head screw (3).

The nut in the plate is secured with a suitable adhesive to prevent it from rotating.



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10 Lubricants

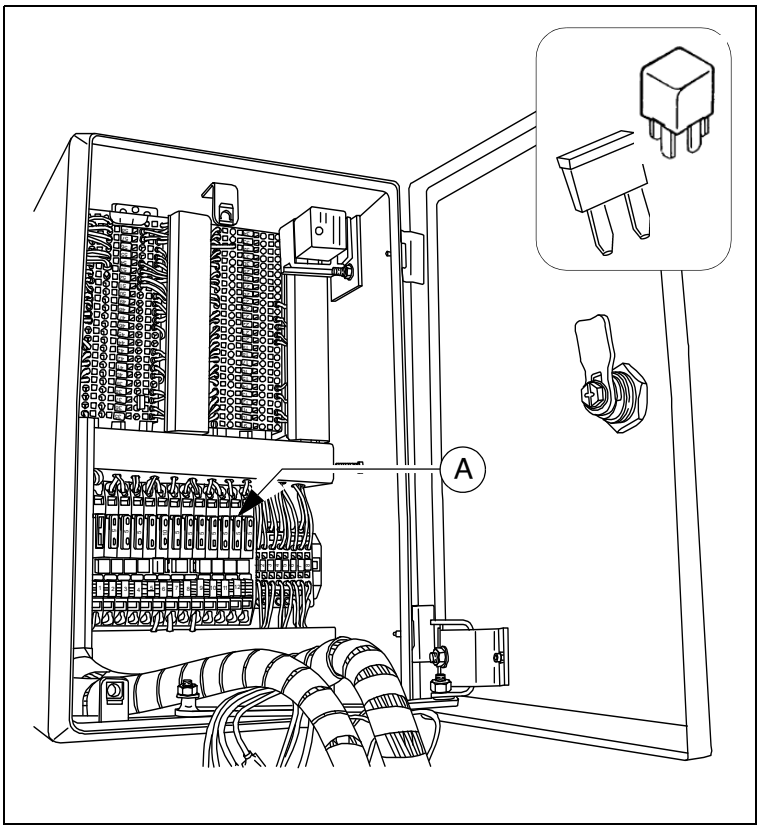
⚠ Use only the lubricants listed below or comparable qualities of well-known brands.

- Dynapac high-temperature grease

11 Electrical fuses / relays

11.1 Conventional version, gas heater

Fuses in the switch cabinet of the screed heater



A	Fuses
B	Relays

Fuses (A)

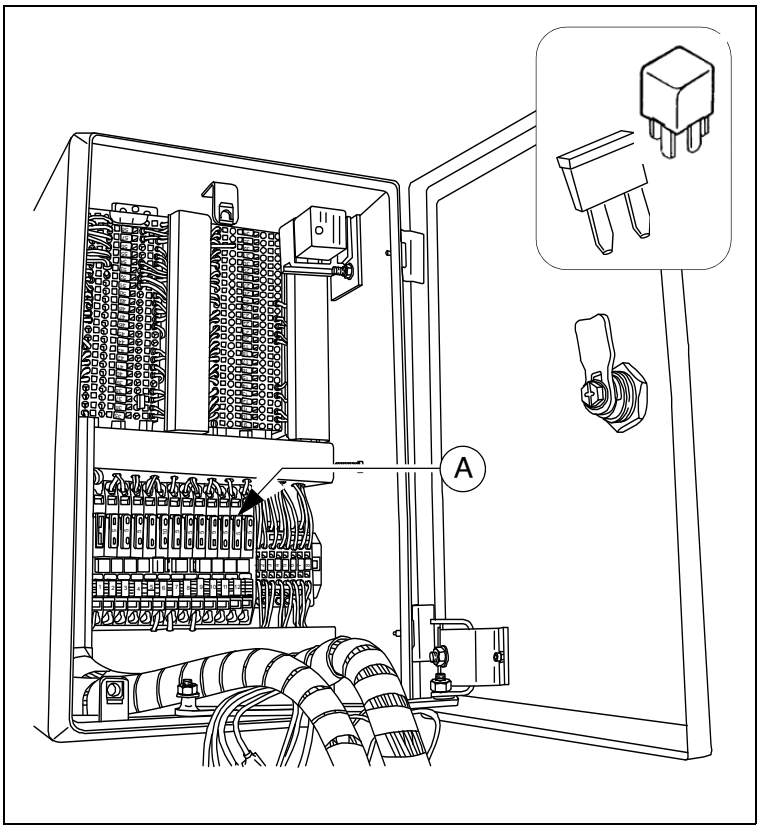
F		A
F1	Heater ON	3
F6	Ignition box relay	10
F7	Right remote control connection box	5
F8	Left remote control connection box	5
F9	Right/left side board ignition system	5
F10	Left middle section ignition box	5
F11	Right middle section ignition box	5
F12	Left adjustable section ignition box	5
F13	Right adjustable section ignition box	5

Relay (B)

K	
1	Autohold
2	Ignition box

11.2 PLC version, gas heater

Fuses in the switch cabinet of the screed heater



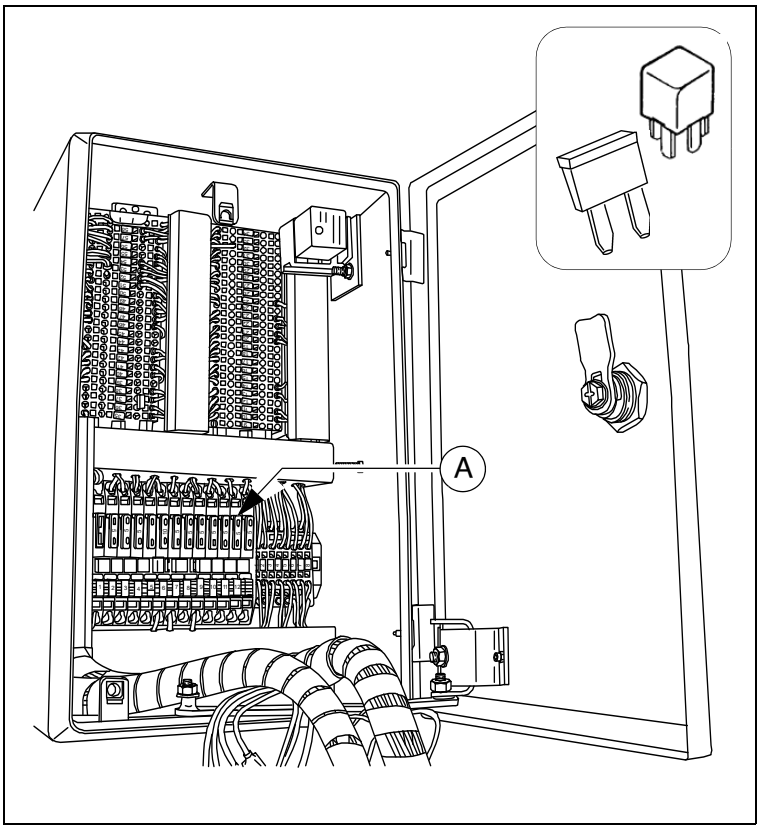
A	Fuses

Fuses (A)

F		A
F1	Heater control system / screed controller / diagnosis	3
F2	Screed controller output	5
F3	Screed controller output	5
F4	Vibration sensor / tamper sensor	5
F5	Crowning sensor / slope control sensor	3
F6	Heater control system output	10
F7	Left remote control connection box	5
F8	Right remote control connection box	5
F9	Right/left side board ignition system	5
F10	Heater control system output 1	5
F11	Heater control system output 2	5
F12	Heater control system output 3	5
F13	Heater control system output 4	5

11.3 PLC version, electric heater

Fuses in the terminal box of the screed heater

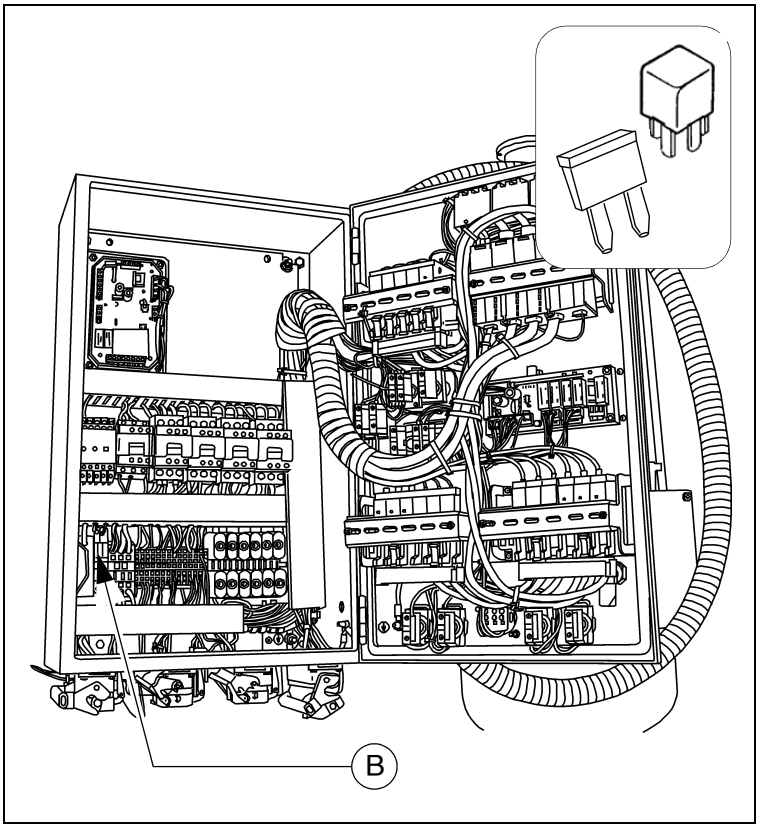


A	Fuses

Fuses (A)

F		A
F1	Screed controller / diagnosis	1
F2	Screed controller output	5
F3	Screed controller output	5
F4	Vibration sensor / tamper sensor	5
F5	Crowning sensor / slope control sensor	3
F6	Spare	10
F7	Left remote control connection box	5
F8	Right remote control connection box	5

Fuses in the control unit of the screed heater



B	Fuses

Fuses (B)

F		A
F10	Heater control system	1
F11	Emergency stop	3

Parts & Service

Training

We offer our customers training courses on DYNAPAC equipment in our dedicated factory training centre. We hold regular training courses in this training centre as well as courses outside the scheduled hours.

Service

Please contact one of our responsible service outlets if you encounter any operational problems or have enquiries about spare parts.
Our trained, specialist staff will ensure that you receive prompt attention and repairs in the event of any accident or malfunction you may encounter.

Factory Advisory Service

If ever for any reason our dealership network encounters limits to what it is able to do for you, please always feel free to contact us directly.
Our team of technical advisers is on hand to assist you.
gmbh-service@atlascopco.com

Atlas Copco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