INSTRUCTION MANUAL

Compactor
H 5i / H 7i

H270 Series	**0001** Valid from serial no.
10.12.2018 Date of first issue	
2661603 Order number	**en** Language

Version 08

Publisher	HAMM AG Hammstraße 1 95643 Tirschenreuth Germany Phone: +49 (0) 96 31 / 80-0 www.hamm.eu
Name of the document	2661603_08_BAL_H5i_H7i_H270_en Original instruction manual
SMC document version	1531875694980_H270_08
Date of first issue	10.12.2018
Date of change	26.02.2021
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This instruction manual is valid for the following roller types:

Compactor	H 5i H 7i
	H 5i P H 7i P
	H 7i VIO

TABLE OF CONTENTS

1 GENERAL

When working at the machine please always adhere to the instructions given in your Safety instructions!

1.00 Preface

1.00.01 Preface to the instruction manual

This chapter contains important instructions for the operating personnel on how to operate the machine and to use this instruction manual.

Read the instruction manual carefully and get to know the machine.

Following the instruction manual:

- Helps to avoid risks.
- Helps to avoid malfunctions due to improper use.
- Increases the reliability when working on the construction site.
- Increases the service life.
- Reduces maintenance costs and downtimes.

Please note:

- the instruction manual.
- the safety manual.
- supplementary information.
- regulations and provisions applying at the building site (e.g. accident prevention regulations).

Maintain and care the diesel engine according to the instructions for the motor. Observe the safety instructions.

1.00.02 Product information

You have received a quality product. All the components of this machine have been carefully inspected and tested. Therefore they comply with the quality that you expect.

The reliability of the machine is preserved through correct use and careful maintenance. Only use the specified operating supply items and the original HAMM spare parts of the machine manufacturer.

Our representations will help you to keep your roller in perfect operating condition.

After the warranty period, our representatives will also assist you with advice and service. They will supply you with our original spare parts which do not only meet the technical requirements but also ensure exchangeability and quality.

The instruction manual contains

- safety instructions,
- operating instructions and
- maintenance instructions.

They are intended to be used by the operating personnel. Thus, keep the instruction manual always at hand!

1.00.03 Guarantee

Warranty claims can only be accepted:

- if you operate the machine correctly.
- if you use original spare parts.
- if you use the specified operating supply items.
- if you install the accessory equipment that the manufacturer has approved.
- if you maintain the machine as prescribed.
- if you use the machine how described in the instruction manual.

In all other cases, the warranty is excluded.

1.00.04 Modifications/reservations

The instruction manual describes the current version of the machine. But we may not exclude errors completely. We can modify the product and its operation so that we do not lose our technological lead. We assume no liability for malfunctions, downtimes and resulting damage.

1.00.05 Packaging and storage

We pack the machine carefully for shipment. Please check both packaging and the machine for any damage to the machine upon receipt of the goods. The machines must not be operated if they are damaged. Only use undamaged cables and plug connections.

Please contact your supplier if the machine damaged.

After unpacking, protect the machine from moisture and contamination if it is not going to be brought into operation immediately.

1.00.06 Signs and symbols

The signs and symbols used in this instruction manual are to help you use this instruction manual and the machine in a safe and fast manner.

Note

Informs about application hints and useful information.

Enumeration

- Unordered lists list various possibilities.

Operating step

▶ Action steps describe the activities required to use the machine correctly and safely.

Result

✔ Describes the result of a sequence of action steps.

Directions

Information on directions always describe to the directions of the machine driving forwards. Possible is information on directions like:

- left or right
- front or rear

Cross-references

Cross-references allow you to quickly find certain sections in the operating manual that provide additional important information. The cross-reference provides the page for the relevant section.

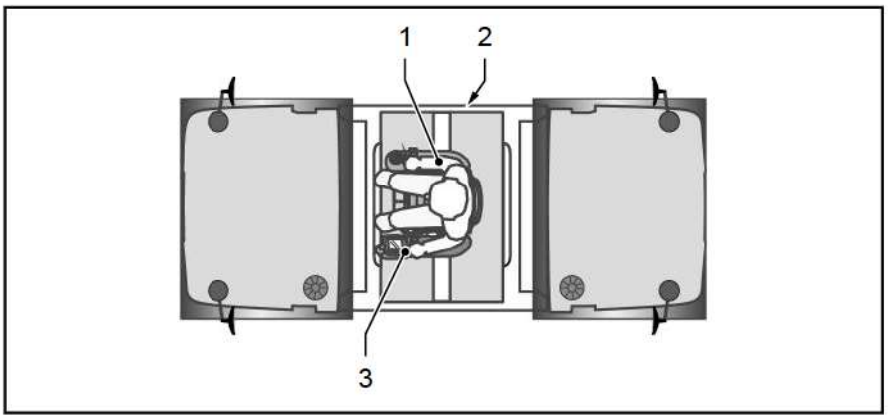
Example: (see "Hydraulic oil supply", page 176)

Positioning in illustrations

Figures are labelled with numbers.
Item lines connect the correct items in the figure with the numbers. The numbers only annotate the items for the text section to which the figure belongs. The numbering starts anew for each figure.
In descriptive text, these numbers are in square brackets. So you can obtain important and additional information quickly.
The end of the item line is a point or an arrow. A point marks a visible element in the figure. An arrow marks an invisible element, which lies in the direction of the arrow.

If necessary, figures have legends to provide the information required.

Example



[1]	Driver	[2]	Engine compartment
[3]	Drive lever		

Descriptive text

You use the drive lever [3] to determine the direction of travel and driving speed.

1.00.07 Explanation of Abbreviations

Abbreviations are used for machine elements and processes in this instruction manual

Abbreviations that are not in the list are explained at the first positions in the text that they occur in the instruction manual.

Abbreviation	Meaning
DOC	Diesel oxidation catalyst Exhaust gas after-treatment system
DPF	Diesel Particulate Filter

Abbreviation	Meaning
	Exhaust gas after-treatment system
FOPS	Falling Object Protective Structure *Protective structures for the driver's cabin and driver's cab to protect against falling objects*
HMV	HAMM Measurement Value *Measured value for HAMM compaction indicator*
RMV	Resonance Measurement Value *Measured value for the resonance behaviour of the compaction system*
ROPS	Roll Over Protective Structure *Roll-over protection structure for the driver's cabin and driver's cab*
SCR	Selective Catalytic Reduction *Exhaust gas after-treatment system*

1.00.08 Warning notes

Warning notices inform about sources of danger, and state risks and how to avoid them.
Always follow the instructions to avoid risks!

Warning notices always apply to the complete section of the instruction manual that they precede.

Signal words

The signal word indicates the particular seriousness of the danger to persons and machines, objects and the environment.

⚠DANGER

Indicates an immediate danger to persons.
If the danger is not averted, death or the most serious, irreversible injuries will ensue.

⚠WARNING

Indicates a possible danger to persons.
If it is not averted, death or the most serious, irreversible injuries could ensue.

⚠CAUTION

Indicates a possible danger to persons.
If this situation is not avoided, minor or light injuries may be caused.

NOTICE

Indicates a danger to machines, objects or the environment.
If it is not averted, material damage will ensue.

1.01 Documentation

This instruction manual is intended to make the operating personnel familiar with the basic work and activities on and with the machine.

The entire instruction manual consists of:

- Safety manual
- Instruction manual of the machine
- Instruction manual of the diesel engine
- If necessary, additional information (e. g. QR code)

This instruction manual must be kept on the machine at all times. Read this instruction manual carefully. Let someone explain to you the things that you do not understand. Until this has been done, do not carry out any work with or on the machine.

1.02 Use

1.02.01 Intended use

The machine represents state-of-the-art technology and complies with all valid safety regulations concerning its intended use at the time the machine was launched on the market.

When designing the machine it was not possible to avoid all possible foreseeable misuse or residual risks without restricting the machine's intended functionality.

The machine's intended use is:

- To pave roads and traffic areas.
- To ram and smooth loose earth, road bedding, pavement or similar ramable subgrade in layers.

Use the machine only on load-bearing soil.

Not capable of bearing are e.g. high fillings, batters, roadside ditches.

The machine may not be used in explosive areas, on landfill sites and in mining.

The machine is only used for commercial applications within fenced construction sites.

The machine must only be operated by authorized operating personnel and only if in proper technical condition and in accordance with this instruction manual.

All unintended use and/or all machine-related activities not described in this instruction manual is to be deemed as unauthorised misuse outside the legal limits of indemnity of the manufacturer.

1.02.02 Abnormal use

Any abnormal use or any misuse of the machine can cause serious personal injury and/or death and will void the manufacturer's warranty obligation, and the owner will bear the sole responsibility in this case.

Abnormal uses shall be deemed to include:

- Non-compliance with this instruction manual.
- Operating errors by operating personnel not qualified or not instructed.
- Conveyance of passengers.
- Leaving the driver's position during operation.
- Starting, using the machine outside the driver's position.
- Errors due to reflexive behaviour and/or choosing the easiest way.
- Operating the machine if it is not in a proper technical condition.
- Using the machine with improper ambient conditions (e.g. temperature, gradient, transverse gradient).

- Using the machine with the protective equipment removed.
- Spraying with high-pressure cleaners or fire extinguishing equipment.
- Towing trailing loads.
- Non-compliance with maintenance intervals.
- Omission of measurements and tests to detect damages early.
- Omission of replacing wear parts.
- In the case the spare parts used are no original spare parts.
- Omission of maintenance and repair work.
- Improper maintenance and repair work.
- Unauthorized modifications of the machine.

1.02.03 Residual risks

Residual risks have been analysed and evaluated prior to starting the construction and planning the machine. Existing residual risks are referred to in the documentation. However, the manufacturer cannot foresee all situations that may pose a risk in practice.

You can avoid existing residual risks if you comply with and implement the following instructions:

- Special warnings at the machine.
- General safety instructions in this instruction manual and in the safety instructions.
- Special warnings in this instruction manual.
- Instructions contained in the safety instructions.
- Operating instructions of the operator.

Danger of life/risk of personal injury when operating the machine due to:

- Misuse.
- Improper operation.
- Transport.
- Missing protective equipment.
- Defective and/or damaged components.
- Operation/usage by personnel not trained and/or instructed.

The machine may cause risk to the environment e.g. with:

- Improper operation.
- Operating supply items (lubricants etc.).
- Noise emission.

Property damage may occur at the machine e.g. with:

- Improper operation.
- Non-compliance with operating and maintenance instructions.
- Improper operating supply items.

Property damage may occur at further assets within the machine's operating area e.g. with:

- Improper operation.

Reduction in performance and/or the machine's functionality may occur at the machine e.g. with:

- Improper operation.
- Improper maintenance and/or repair work.
- Improper operating supply items.

1.02.04 Climatic conditions

The permissible ambient temperature range for using the machine is –20 °C (–4 °F) up to 55 °C (130 °F).

Operation outside this temperature range requires the express authorization of the manufacturer. Use under extreme climatic conditions places special demands on equipment and fuel.

⚠WARNING

Explosion!
Severe injury and death due to burns and moving parts.

- Do not use aerosol start-up aid (e.g. ether).
- Do not use any liquids as start-up aid (e.g. alcohol).
- Adapt operating materials, such as oils and coolant, to the ambient temperature.
- Observe the instruction manuals for the battery and diesel engine.

Low ambient temperature

The diesel engine's starting behaviour and the machine's operation depend on:

- The fuel used.
- The viscosity of the motor, gear and hydraulic oil.
- The battery's charge state.

Please note:

The acceleration and braking behaviour of the machine are influenced by viscous hydraulic oil. Before starting operation at a low ambient temperature, adapt the operating materials (coolant, oils etc.) to the low temperatures.

At temperatures below 0 °C (32 °F), use winter-grade fuel. Do not charge batteries at temperatures below 0 °C (32 °F).

Extensive ambient temperature, extensive height

At high ambient temperature and/or use of the machine at high altitudes:

- Do not completely fill the fuel and operating liquid tanks/ reservoirs.
- Adjust the control system to reduce the amount of fuel injected quality fuel engine.

Observe the instruction manual for the diesel engine.

1.03 Environmental protection

Send packaging, cleaning materials and used or residual operating materials for recycling. Observe the environmental protection regulations applicable at the place of use.

When operating the machine, observe the notes in this instruction manual in order to avoid unnecessary impact on the environment.

1.04 Disposal

Conservation of nature is one of our major tasks. Properly disposed devices avoid negative impacts on human beings and the environment and allows re-using our precious resources.

Operating supply items

Please dispose all operating supply items according to relevant specifications and local regulations of the relevant country.

Materials (metal, plastics)

To be able to dispose materials professionally, these materials need to be correctly sorted. Cleanse materials of adhesive impurities.

Please dispose all materials as demanded by local provisions of the relevant country.

Electrical/electronic system/battery

Electrical/electronical components are not subject to Directive 2012/19/EC and relevant national regulations (in Germany e.g. ElektroG).

Dispose electrical/electronic components directly at a specialised recycling company.

1.05 EC conformity

The declaration of conformity is part of the documentation provided separately and will be submitted to you together with the machine.

The pictogram represents the machine's conformity.

For machines without EC Conformity, neither an EC Declaration of Conformity nor a CE type plate can be issued. This is the case if, for example, the machine does not have a drum drive, drum brake or ROPS.

If the machine type plate does not bear a CE pictograph, the machine does not correspond to the applicable EU Directives. Any operation of this machine in the European Economic Area (EEA), in Switzerland and in Turkey is inadmissible.

In case the machine has been modified in a way that has not been agreed by the manufacturer, the EC declaration of conformity expires.

EC declaration of conformity

HAMM

Manufacturer: HAMM AG - Hammstraße 1 - D-95643 Tirschenreuth

CE

EC DECLARATION OF CONFORMITY
according to EC Machinery Directive 2006/42/EC, Annex II A

Original EC Declaration of Conformity (en)

We hereby declare that the

Designation of the machinery:

Type:

Serial no.:

complies with the following provisions:

- EC Machinery directive 2006/42/EC
- EMC Directive 2014/30/EU
- EC Sound directive 2000/14/EC
  - with evaluation form: Annex VIII
  - Notified Body: Notified Body Number: 0515 [1]
  - measured L_{WA} [dB(A)]:
  - guaranteed L_{WA} [dB(A)]:
  - Power [kW/min^{-1}]:
- Emissions standard EU/USA:
- Exhaust gas after-treatment:

Applied harmonised standards, in particular:

- EN 500-1:2006+A1:2009:	Mobile road construction machinery - Safety Part 1: Common requirements
- EN 500-4:2011:	Mobile road construction machinery - Safety Part 4: Specific requirements for compaction machines
- EN ISO 3744:2010:	Allocation of the sound capacity level of sound sources

Authorised agent for the composition of the relevant technical documents:

Mr. Matthias Löb, HAMM AG (CE representative)

Tirschenreuth, _____
Date

_____
Dr. Axel Römer
Head of Research and Development

[1] Notified Body, Kenn-Nr. 0515 - DGUV Test, Prüf- und Zertifizierungsstelle, Fachbereich Bauwesen - Landsberger Straße 309 - D-80687 München (Germany)

1.06 Type plate

The entire marking represents an official document and must not be altered or effaced.

The pictogram represents the machine's conformity.

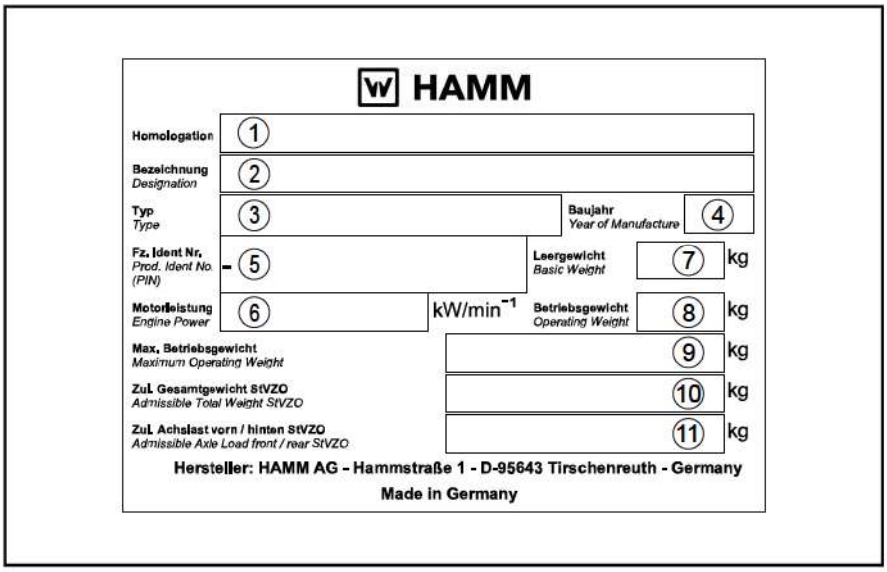
If the machine type plate does not bear a CE pictograph, the machine does not correspond to the applicable EU Directives. Any operation of this machine in the European Economic Area (EEA), in Switzerland and in Turkey is inadmissible.

The EAC (Eurasian Conformity) pictogram confirms the conformity of the machine with the requirements of the Eurasian Customs Union

Please state the vehicle identification number (VIN) and the type of your machine for every spare part order.

Machine type plate

The type plate is fixed to the machine frame ("Chassis/safety devices", page 37).



[1]	Homologation (for example the registration driving on public roads)	[2]	Description
[3]	Type	[4]	Year of construction
[5]	Vehicle identification number (VIN / PIN)	[6]	Engine power / Nominal speed
[7]	Basic weight	[8]	Operating weight
[9]	Max. Operating weight	[10]	Gross vehicle weight rating STVZO (only valid on public roads)
[11]	Permissible axle load, front / rear STVZO (only valid on public roads)		

17-digit vehicle identification number

The vehicle identification number [5] is used to identify, among other data, the machine's series and serial number, e.g., WGH0H184CHAA01234. Digits # five to eight indicate the series (H184), while the last four digits represent the serial number within this series (1234).

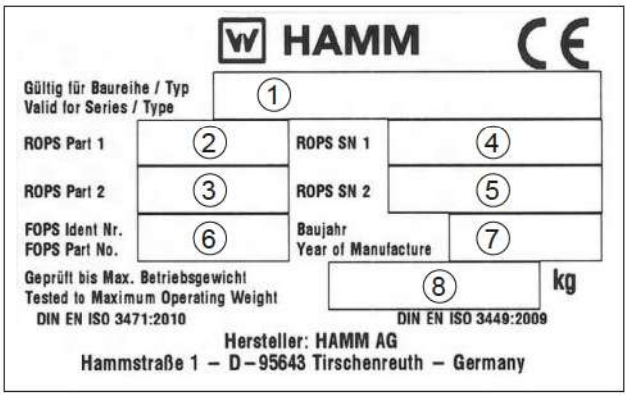
The maximum operating weight [9] is the static weight of the machine including:

- Working substances and lubricants
- 100 % fuel tank contents × 0.84 specific weight
- 100 % water & additive tank contents
- 75 kg for the driver
- the static weight of all options or attachments manufacturer the same time and approved by manufacturer (e.g., chip spreader).

No additional ballasting is allowed.

ROPS/FOPS type plate

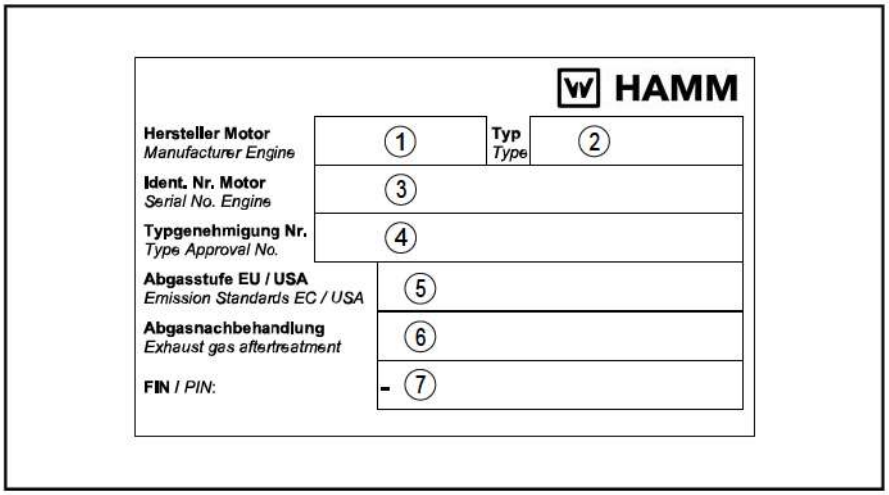
The ROPS (cab, roll-over bar) and/or FOPS (falling-object protective structure) approved for this machine by the manufacturer is identified by a nameplate and is fastened to the cab/roll-over bar ("Control stand", page 45).



[1]	Series / type (part of the VIN / PIN)	[2]	Cabin / ROPS identification number 1
[3]	Cabin / ROPS Identification number 2	[4]	Cabin / ROPS Serial number (if available) 1
[5]	Cabin / ROPS Serial number (if available) 2	[6]	FOPS identification number (if installed)
[7]	Year of construction	[8]	Tested up to the maximum operating weight

Engine nameplate

The engine approved by the manufacturer for this machine is also indicated by a specially produced type plate. It is located on the side of the machine type plate (in the engine compartment).



[1]	Engine Supplier	[2]	Type
[3]	Engine identification number	[4]	Number of the type approval
[5]	Exhaust emissions category EU / USA	[6]	Exhaust gas after-treatment
[7]	Vehicle identification number		

1.07 Noise and vibration requirements

The sound emission of the machine was measured according to the CE Sound Emission Directive in the version 2000/14/EC.

The noise and vibration data at the driver's seat correspond to the requirements of the EC Machinery Directive, version 2006/42/EC.

Sound power level

Sound indication of the machine

The guaranteed sound power level is specified in the technical data (see "Technical data").

Emissions sound pressure level

Noise data at the driver's seat

The emissions sound pressure level at the driver's seat is specified in the technical data (see "Technical data") (measurement uncertainty in accordance with DIN EN ISO 11201).

When working in the immediate vicinity of the machine, values may exceed 85 dB(A). In this case, please always wear personal protective equipment (ear protection).

Vibration data at the driver's seat

Whole-body vibrations

The weighted effective acceleration values, as per DIN EN 1032, for whole-body vibrations at the driver's seat of a_w = 0.5 m/s² are not exceeded.

Hand arm vibrations

The weighted rms values of the acceleration with hand arm vibrations have been accessed in accordance with DIN EN 1032 and do not exceed a_{hw} = 2.5 m/s².

1.08 Personnel

1.08.01 Qualification and duties

Operating personnel

All activities at the machine must be carried out by authorised operating personnel only. For the purpose of this instruction manual, operating personnel shall be deemed to include every authorized person entrusted with operating, maintaining, installing, setting, cleaning or transporting the machine.

This comprises the following persons:

- Machine operator
- Maintenance personnel

Persons are deemed as authorised that have been trained, qualified and instructed for carrying out relevant activities at the machine and that have proven their skills to the operating organization. The operating personnel must be authorized by the operating organization for those activities at the machine.

In addition to the qualifications specified in the safety instructions, the operating personnel must:

- Have read and understood the instruction manual.
- Be trained and instructed according to the rules of action in case of trouble.

Please adhere to the following instructions:

- Please drive the machine only if you are entirely familiarized with the operating and control elements and the method of operation.
- Please use this machine only according to its intended purpose.
- In case you detect any defects, such as at the safety equipment, that may affect the safe operation of the machine, please immediately notify the supervising body.
- With defects that may endanger persons, please stop operating the machine immediately.
- Please ensure that the machine is compliant with all requirements concerning traffic law.

Banksman/Spotter

Only such persons are allowed to instruct others in machines independently who also:

- Have been trained in instructing others (the machine).
- Have successfully proven their participation in such a course.
- Have proven their skills to the operating organization.
- Fulfil their tasks in a reliable manner.
- Have been appointed by the operating organization as a banksman/spotter.

The meaning of signals must be unambiguous between driver and banksman/spotter.

To avoid ambiguities, clarify hand signal, such as specified by the German BG Directive "Safety and Health Protection Signals at Work", must be used.

Please adhere to the following instructions:

- Please make yourself familiar with the machine's and the loading vehicle's dimensions.
- Wear reflective clothing.
- For instructing please use voice radio (e.g when loading with a crane) or via hand signals (e.g. when reversing the machine).

1.09 General safety instructions

Safety manual

The safety manual is part of the instruction manual. Please make yourself familiar with these safety instructions prior to working with the machine.

Warning notes

Observe and follow the warning notes in this instruction manual and on the machine (warning signs) without fail.

Regulations and Provisions

In addition to this instruction manual, it is also necessary to adhere to all laws, standards, regulations and provisions applicable in the country of use and at the building site.

Additional information

If you obtain additional technical and/or safety-relevant information for the machine, they also must be adhered to and need to be attached to the instruction manual.

Electrical system

During working at the electrical system, the machine must be de-energised at the battery isolation switch (if available) or by disconnecting the negative terminal (ground strap) at the battery.

ROPS/FOPS protective structures

The machine frame in the area of the ROPS/FOPS mounting must not be warped, bent or cracked (deformation). The reinforcing elements of the cab/roll-over bar (ROPS)/protective roof (FOPS) must not show any signs of rust, damage, hairline cracks or overt breakages. All screwed connections for the reinforcing elements must meet the prescribed specifications and must be securely screwed together. Pay attention to the tightening torques! Screws and nuts must not be damaged, bent or deformed. Any changes or repairs/fixes to the reinforcing elements are prohibited (see chapter "Auxiliary equipment").

It is absolutely necessary to use a safety belt in proper working condition to be protected by the protective structures of the machine.

Safety belt

The condition and function of the machine's safety belt must not show any damage or unacceptable wear such as to make the safety belt non-functional. It is absolutely necessary to use a safety belt in proper working condition. It is absolutely necessary to use a safety belt in proper working condition.

1.10 Driving on public roads

The following is applicable in Germany (StVZO – German Road Traffic Type Approval Law)

The government of Upper Palatinate grants an exception permit (see the details indicated on the original) for this machine pursuant to section 70, subsections 1 and 2 of the German Road Traffic Type Approval Law (StVZO).

Notes:

- This exemption permit may be revoked at any time and applies to This corresponding vehicle owner only.
- A corresponding driving licence is required for operating this vehicle on public roads.
- The exemption may not be used unless an insurance cover is available.
- Both the original exemption permit and the original proof of insurance must be carried when driving the machine.

Increasing road safety
Before driving on public roads, remove the protective grille from the lighting package and/or the protective bar from the water tank.

The following is applicable outside

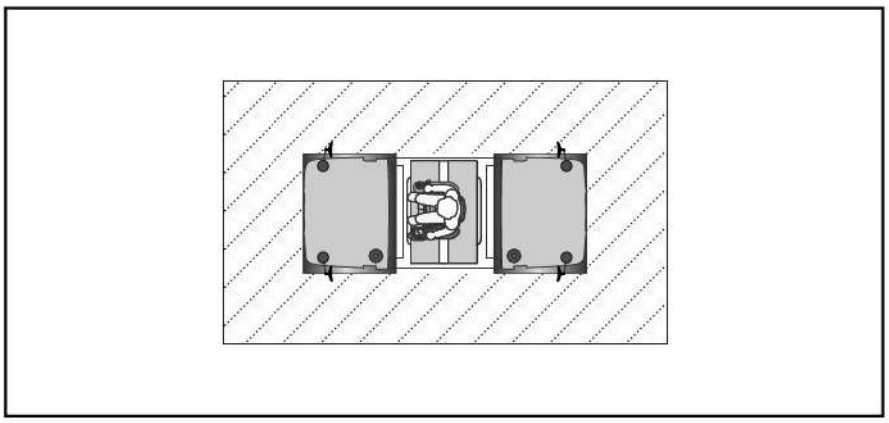
The laws, regulations, guidelines and standards applicable at the place of use must be observed (for example those concerning the lighting and warning systems).

1.11 Danger zone

The machine's danger zone is divided into the areas inactive and moving.

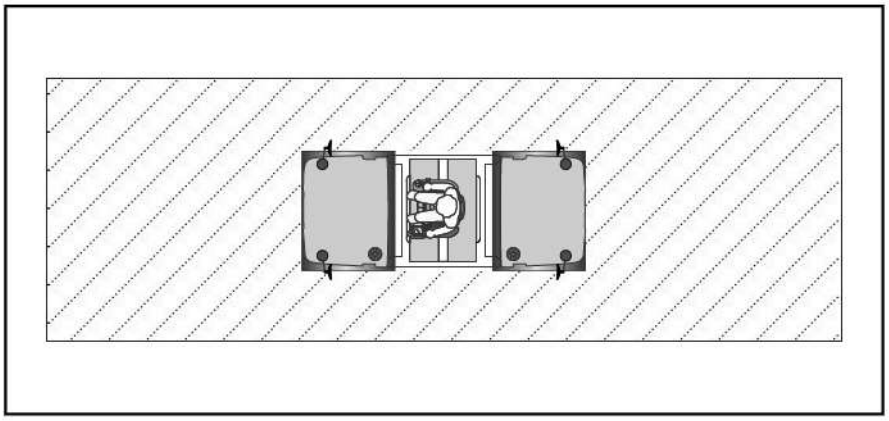
There are other danger areas when the machine is loaded by crane and transported. Also observe the instruction manual and the notes for the loading and transporting machines.

Zone "inactive"



With the machine put out of operation and with the diesel engine switched off, an area 1 metre around the machine is defined as danger zone. No entry is allowed to the danger zone unless to operating personnel.

Zone "moving"



For a moving machine the danger zone is defined as follows:

13 metres	In front of and in the rear of the machine
3 metres	To the left and right of the machine

During compacting work and transport operations ensure that no persons are within the danger area.

2 DESCRIPTION

2.00 Information on the machine

When working at the machine please always adhere to the instructions given in your Safety instructions!

2.00.01 Technical characteristics

Drive	Hydrostatic all-wheel drive ▪ infinitely variable ▪ Single lever operation
Dynamic compaction system	Direct hydrostatic drive for vibration or vibration/oscillation
Steering	Hydrostatic assisted steering via 3-point pendulum articulated joint ▪ Large steering lock to both sides ▪ Pendulum compensation upwards and downwards
Service brake	During operation, the machine is braked by the hydrostatic drive. ▪ Wear-free brakes
Parking brake	Spring-operated brake acting upon each hydro motor of the drive. ▪ Manual and automatic
EMERGENCY STOP	Machine is braked with spring-operated brakes and hydrostatic drive.
Electrical system	Operating voltage 12 V
Drive system	Diesel engine
Exhaust gas after-treatment	Diesel oxidation catalyst (DOC) with diesel particulate filter (DPF)

2.00.02 List of auxiliary equipment

The following list shows possible (optional) special attachments. This operating manual also describes special attachments that may not be present on your machine. Please contact your customer service if you have any questions about availability.

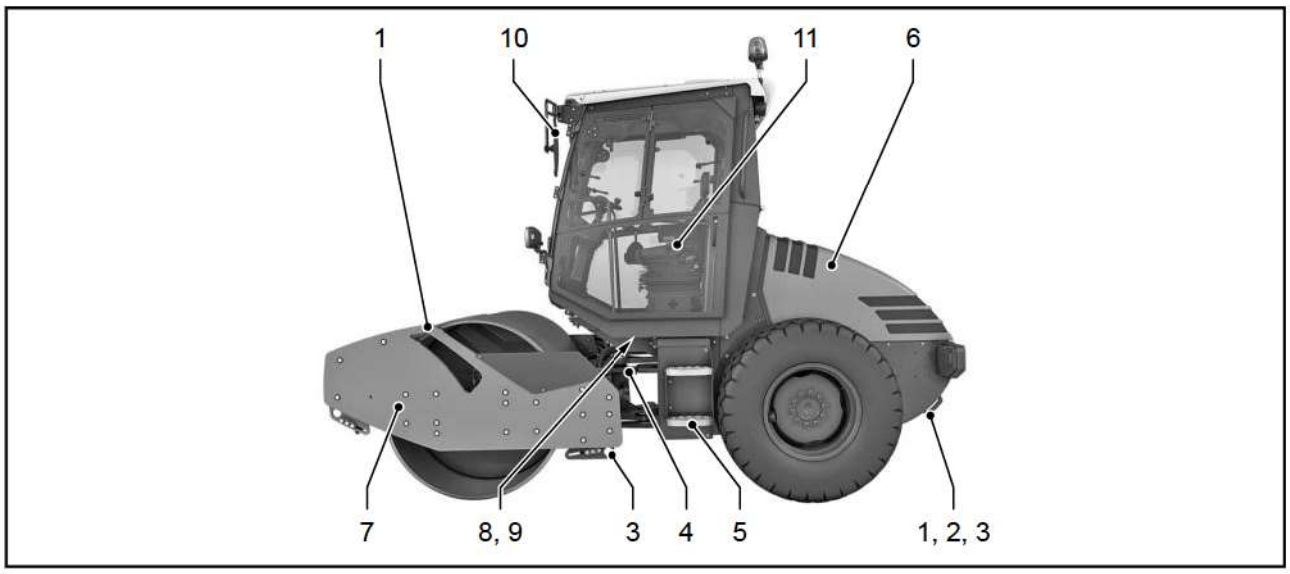
Special attachments are not specifically marked in the operating manual. Please observe chapter 6. You will find more detailed information about special attachments here.

Auxiliary devices may change the sequence of action steps or events. This is indicated by an additional note in the text, for example: **For versions with an air conditioning system**.

- ROPS cab
- FOPS
- Heating and air-conditioning system
- Steering column with adjustment
- Tachograph
- Seatbelt monitoring
- HAMM compaction meter
- HAMM temperature meter
- Automatic engine stop
- Reversing alarm
- Lighting package for driving on public roads
- Working spotlights
- Rotating beacon
- Electronic battery isolation switch
- Version with German approval for road use (TÜV)
- Fire extinguisher
- Dozer blade
- Padfoot shells
- Smooth drum scraper
- Padfoot drum scraper
- Seat belt buckle monitoring device
- Lockable instrument panel cover

2.01 General view of machine

2.01.01 Chassis/safety devices



[1]	Towing eyes for crane loading	[2]	Towing eye
[3]	Lashing point	[4]	Steering block
[5]	Steps	[6]	Engine hood
[7]	Chassis	[8]	VIN
[9]	Machine type plate	[10]	Operation mirror/rear-view mirror
[11]	Seat belt		

2.01.02 Stickers on the machine

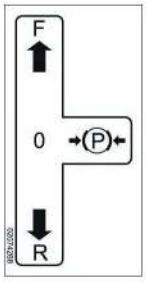
Below please find a list of warning signs and information signs affixed to the machine. The images and values may vary according to the type of machine.

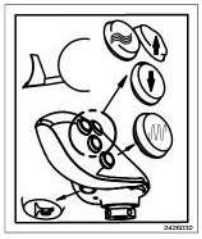
For the detailed arrangement of warning and information signs, please refer to the spare parts catalogue.

Be sure to observe the warning signs and information signs affixed to the machine and strictly follow their instructions.

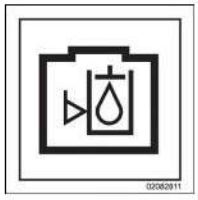
Information signs

Below is a list of examples of the information signs. The images and values may vary according to the machine type.



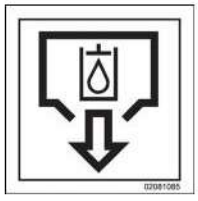


Drive lever function



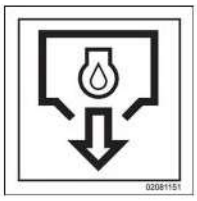
Hydraulic oil fill level

Filling opening for hydraulic oil tank



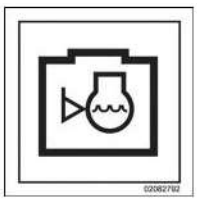
Drain outlet for hydraulic oil tank

12 V socket



Drain outlet for engine oil

Drain outlet for fuel filter water sump



Coolant fill level

Coolant inlet

Tyre pressure
Tyre without water filling

Guaranteed sound power level

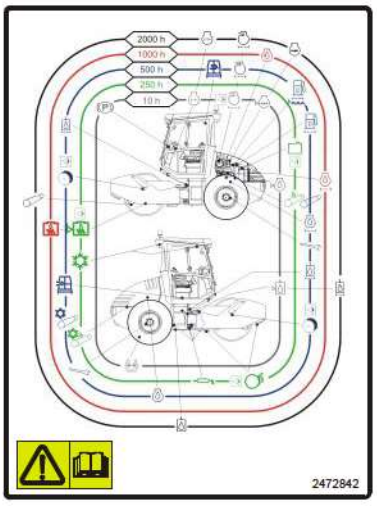
Emergency exit

The panel labelled with this symbol is to be smashed using the emergency hammer if it is not possible to exit the machine on the left in the direction of travel.

First aid

Labels the tray/compartment for the first aid kit

Expert inspection test badge



Maintenance overview

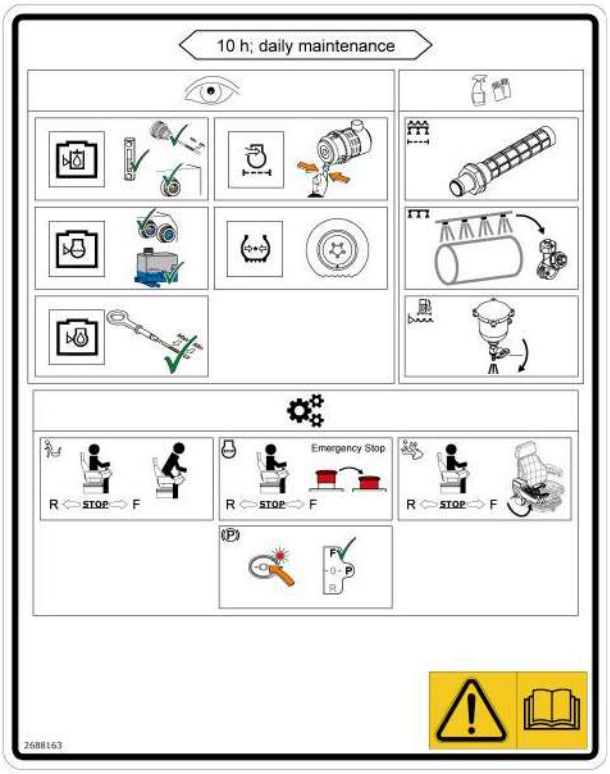
10 hrs; daily maintenance

The activities that are shown on the sign must be carried out on a daily basis before starting up the machine – at least every 10 hours.

The check and maintenance work that is to be carried out may deviate from what is shown, depending on the model and equipment of the machine.

This is not an exhaustive representation of the activities. The sections "Functional checks before starting work" and "Maintenance overview" in this operating manual are binding and must be followed.

The sign is for informational purposes only. It should not and cannot replace instructions/training from the operator on how to handle the machine.



Check:

- Hydraulic oil fill level (top up if required)
- Coolant fill level (top up if required)
- Engine oil fill level (top up if required)
- Dust valve at the air filter (clean if required)
- Tyre pressure (correct if required)

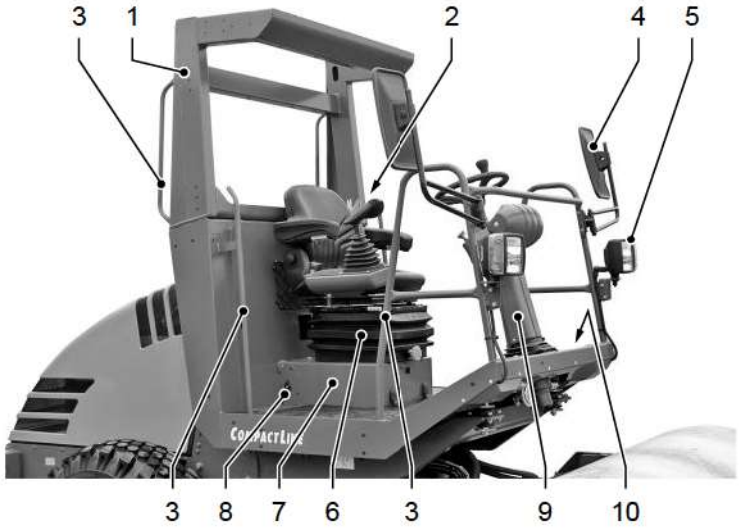
Clean:

- Filter for the water-sprinkling system
- Sprinkler nozzles
- Drain the water sump on the water separator

Functional check in the case of an existing machine:

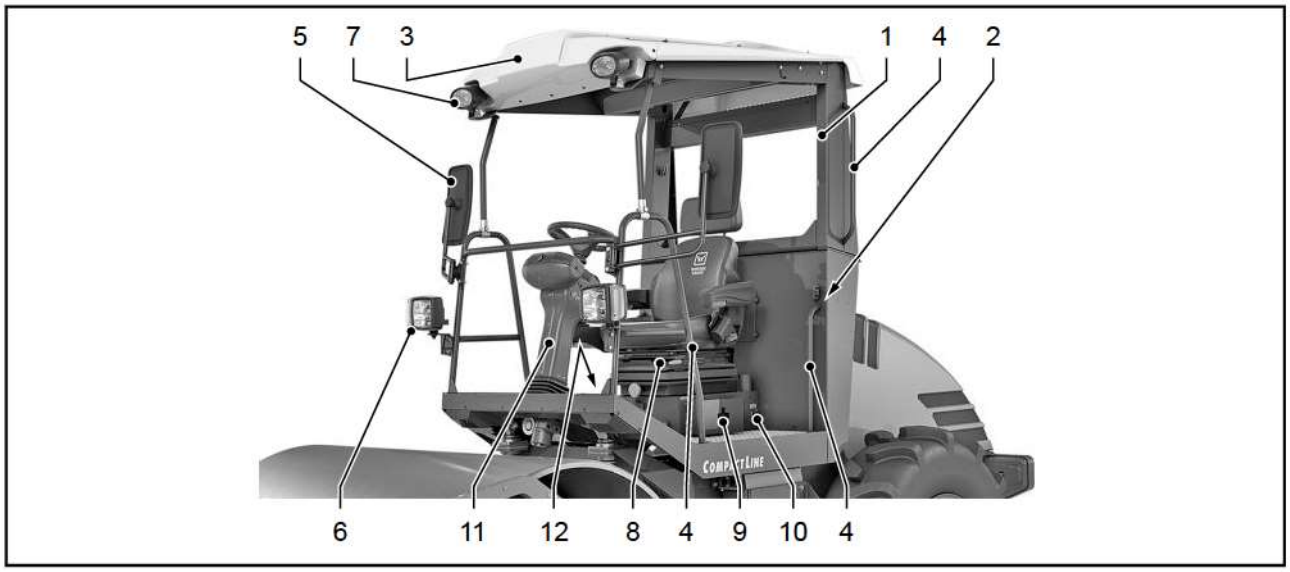
- Seat contact switch
- EMERGENCY STOP
- Safety switch for multifunction armrest
- Parking brake

2.01.03 ROPS



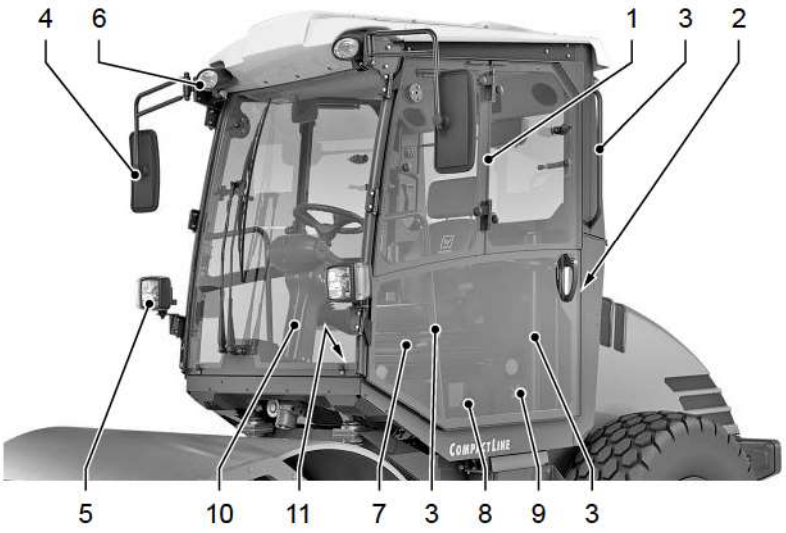
[1]	ROPS roll-over bar	[2]	ROPS roll-over bar type plate
[3]	Handrails	[4]	Operation mirror/rear-view mirror
[5]	Headlight/turn signal	[6]	Seat console
[7]	Storage compartment for instruction manual/first aid kit	[8]	12 V socket
[9]	Steering column	[10]	Position for fire extinguisher

2.01.04 FOPS



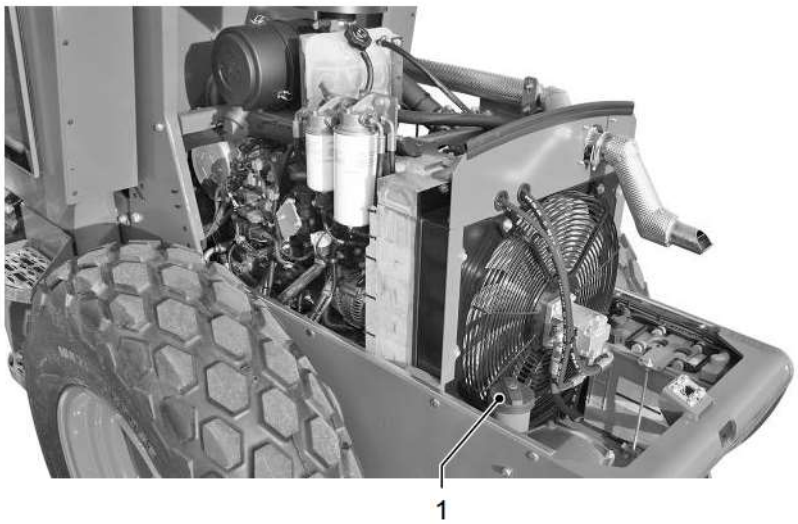
[1]	ROPS roll-over bar	[2]	ROPS roll-over bar type plate
[3]	Protective roof with integrated FOPS	[4]	Handrails
[5]	Operation mirror/rear-view mirror	[6]	Headlight/turn signal
[7]	Working spotlights	[8]	Seat console
[9]	Storage compartment for instruction manual/first aid kit	[10]	12 V socket
[11]	Steering column	[12]	Position for fire extinguisher

2.01.05 Cab



[1]	ROPS cab	[2]	ROPS roll-over bar type plate
[4]	Handrails	[4]	Operation mirror/rear-view mirror
[5]	Headlight/turn signal	[6]	Working spotlights
[7]	Seat console	[8]	Storage compartment for instruction manual/first aid kit
[9]	12 V socket	[10]	Steering column
[11]	Position for fire extinguisher		

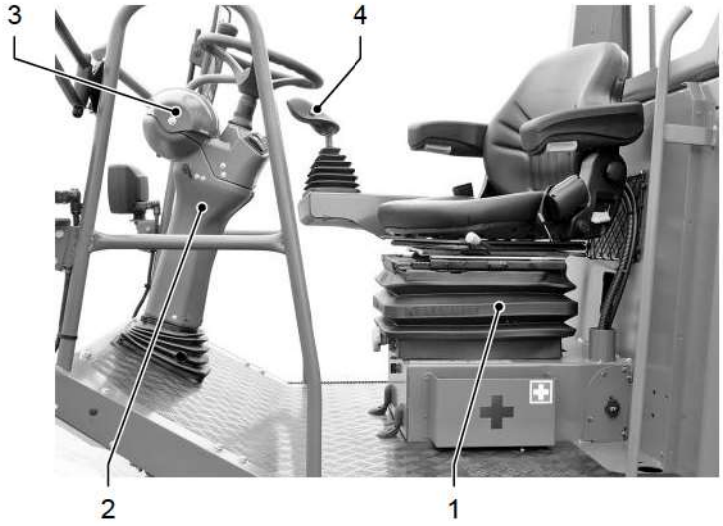
2.01.06 Consumable fill holes



[1]	Fuel

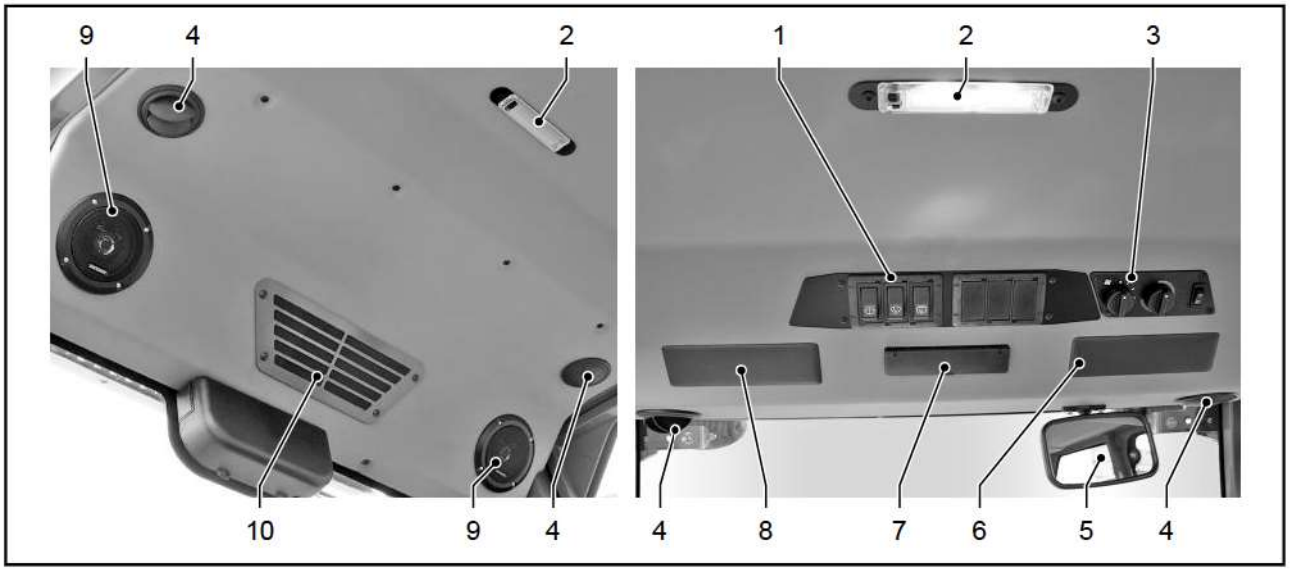
2.02 Control stand

2.02.01 Operating station controls



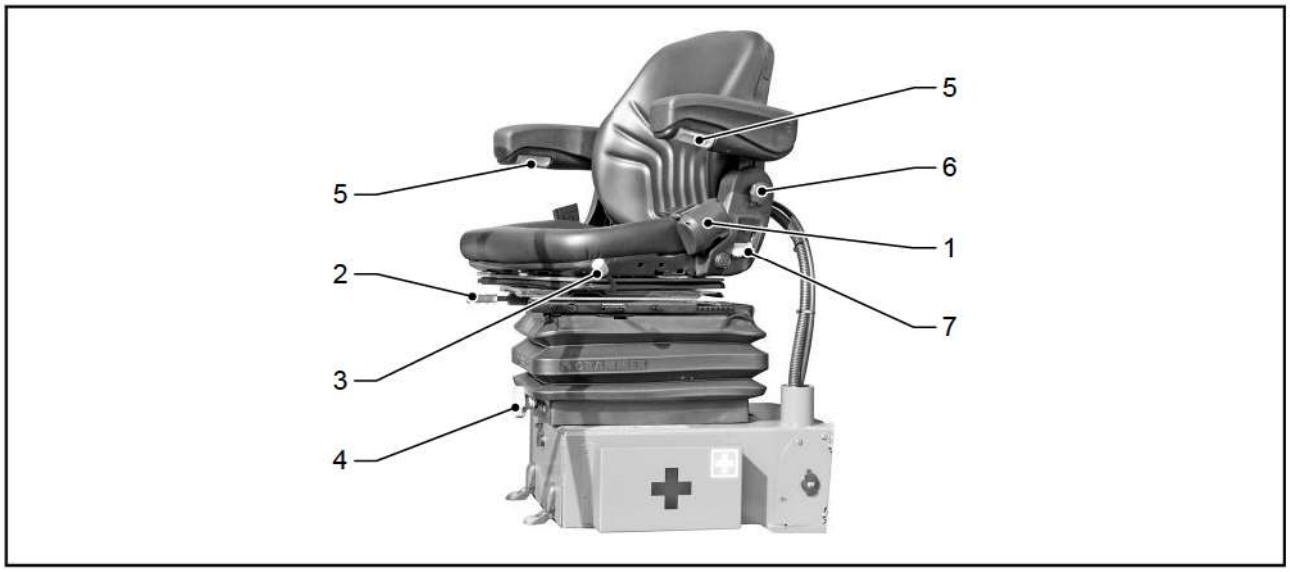
[1]	Seat console	[2]	Steering column
[3]	Control panel	[4]	Drive lever

Cab roof section



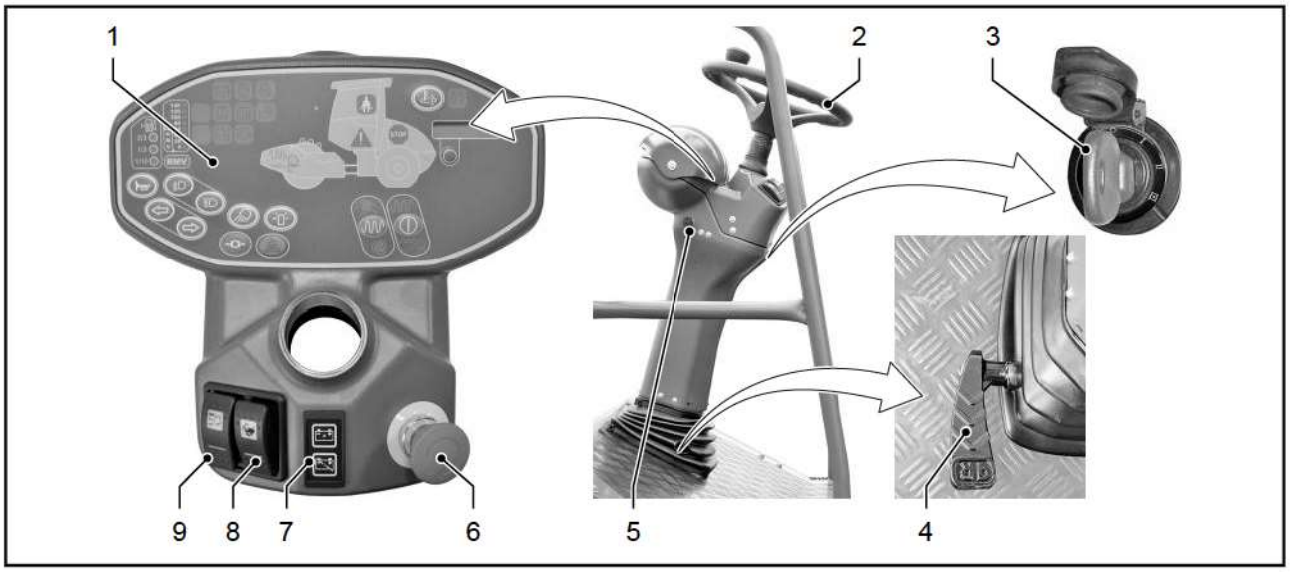
[1]	Windscreen wiper switch unit	[2]	Interior lighting
[3]	Heating/air-conditioning system switch unit	[4]	Heating/air-conditioning system ventilation nozzles
[5]	Inside mirror	[6]	Position for tachograph
[7]	Cab fuses	[8]	Position for radio
[9]	Loudspeaker	[10]	Air intake scoop for air-conditioning system

2.02.02 Seat console



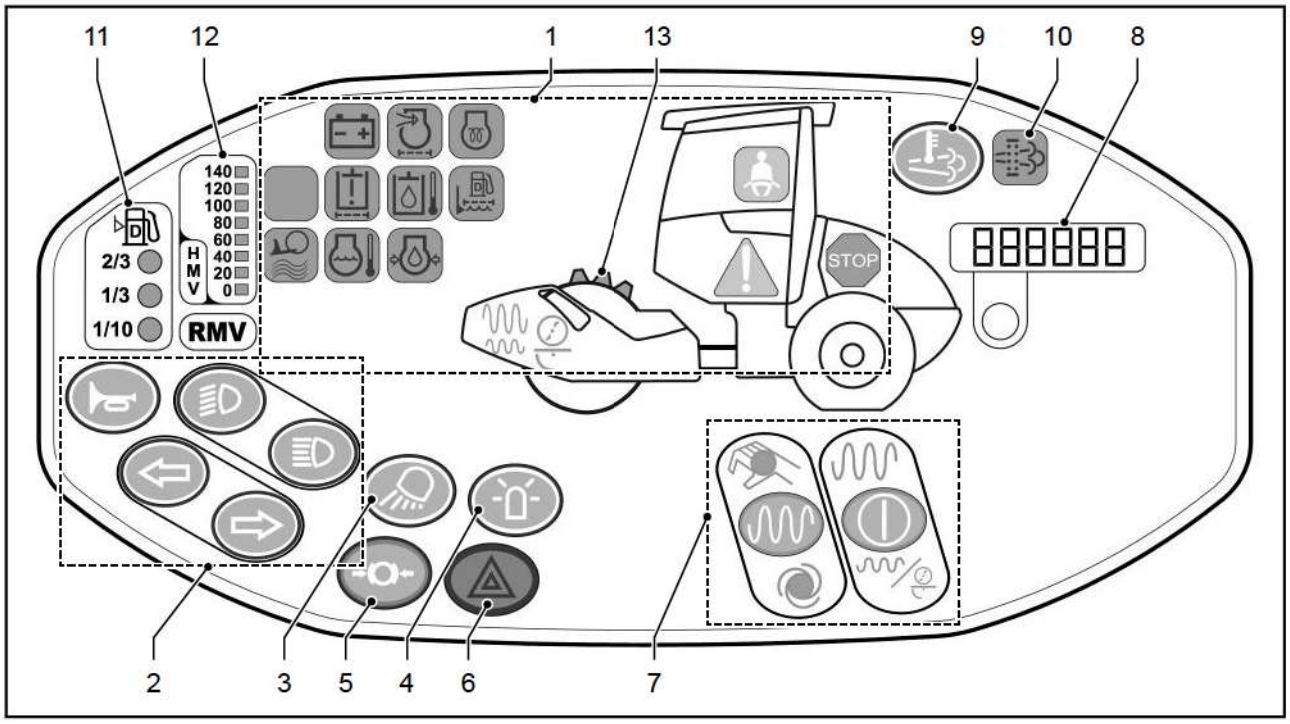
[1]	Seat belt	[2]	Seat adjustment forwards/backwards
[3]	Seat adjustment seat rotation	[4]	Seat adjustment weight
[5]	Armrest inclination adjustment	[6]	Armrest height adjustment
[7]	Backrest inclination adjustment		

2.02.03 Steering column



[1]	Control panel	[2]	Steering wheel
[3]	Electrical system/engine start switch	[4]	Steering column inclination adjustment
[5]	Machine diagnostic interface	[6]	EMERGENCY STOP switch
[7]	Battery isolating switch	[8]	Gear shifting switch
[9]	Engine speed switch		

2.02.04 Control panel

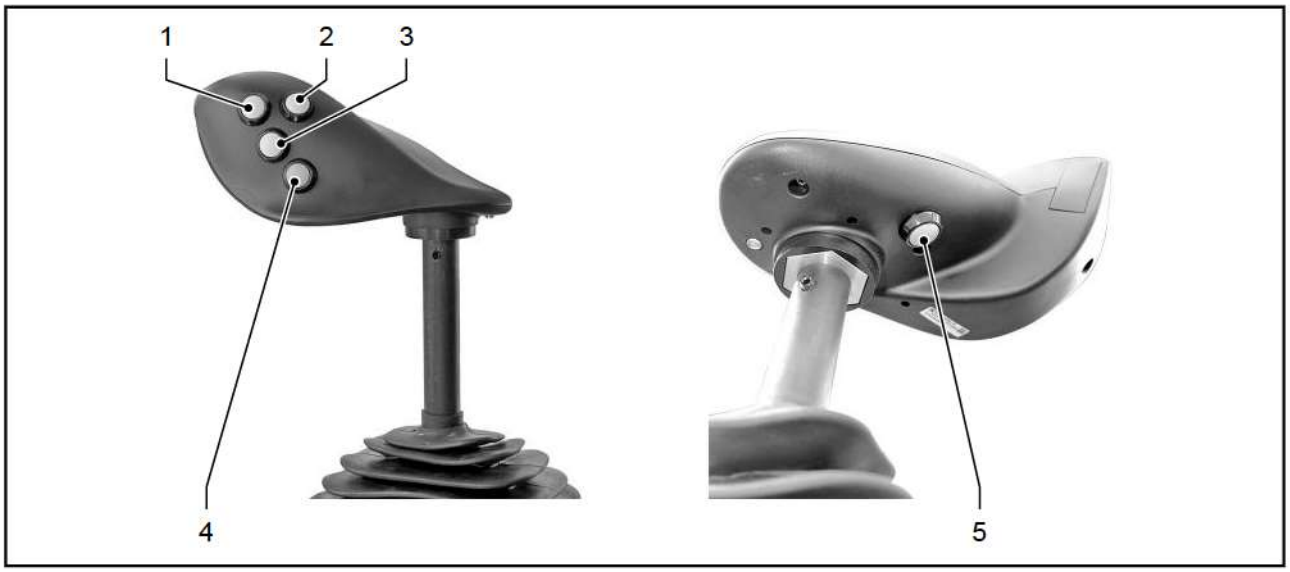


[1]	Warning and indicator lights	**[2]**	Driving light/turn signal/signal horn switch
[3]	Work light	**[4]**	Rotating beacon
[5]	Parking brake	**[6]**	Hazard warning light
[7]	Dynamic compaction system	**[8]**	Info display for system info/diagnostic codes
[9]	DPF regeneration switch	**[10]**	DPF indicator light
[11]	Fuel fill level indicator	**[12]**	Compaction display
[13]	No function		

2.02.08 Drive lever

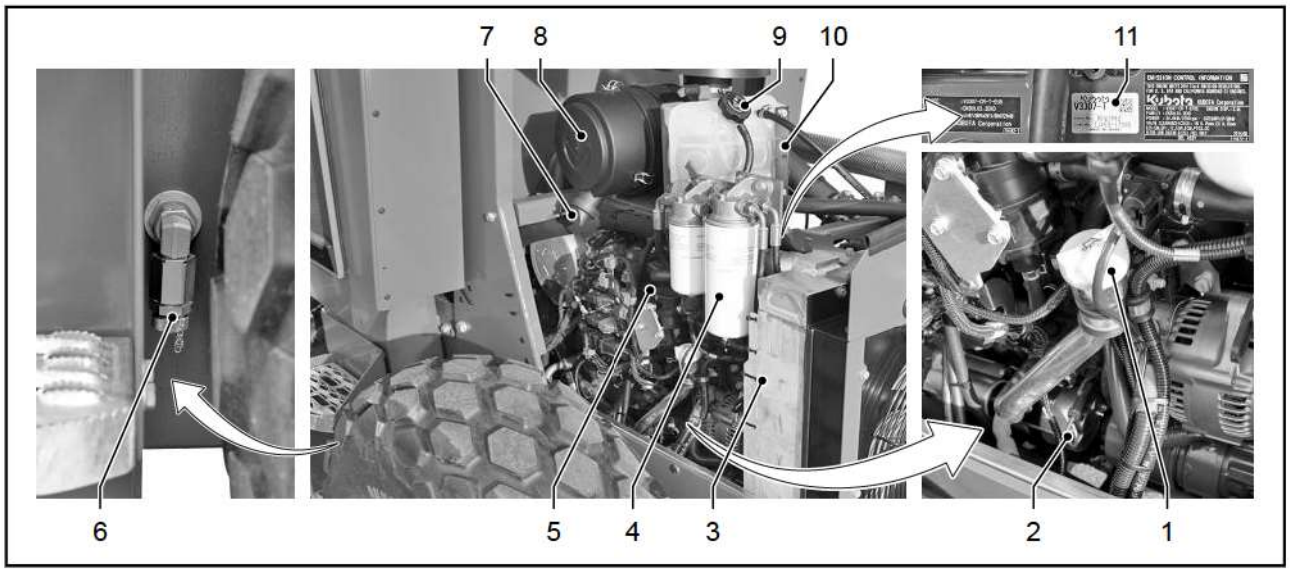
[1]	Dynamic compaction system switch	[2]	Signal horn switch

Version with dozer blade



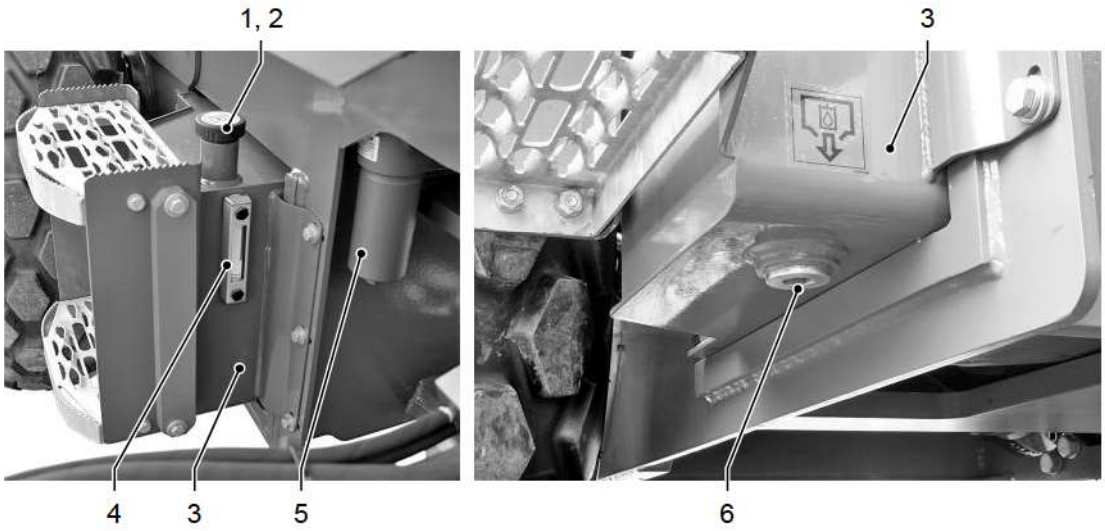
[1]	Floating position of dozer blade switch	[2]	Raise the dozer blade switch
[3]	Lower the dozer blade switch	[4]	Dynamic compaction system switch
[5]	Signal horn switch		

2.04 Drive unit/diesel engine



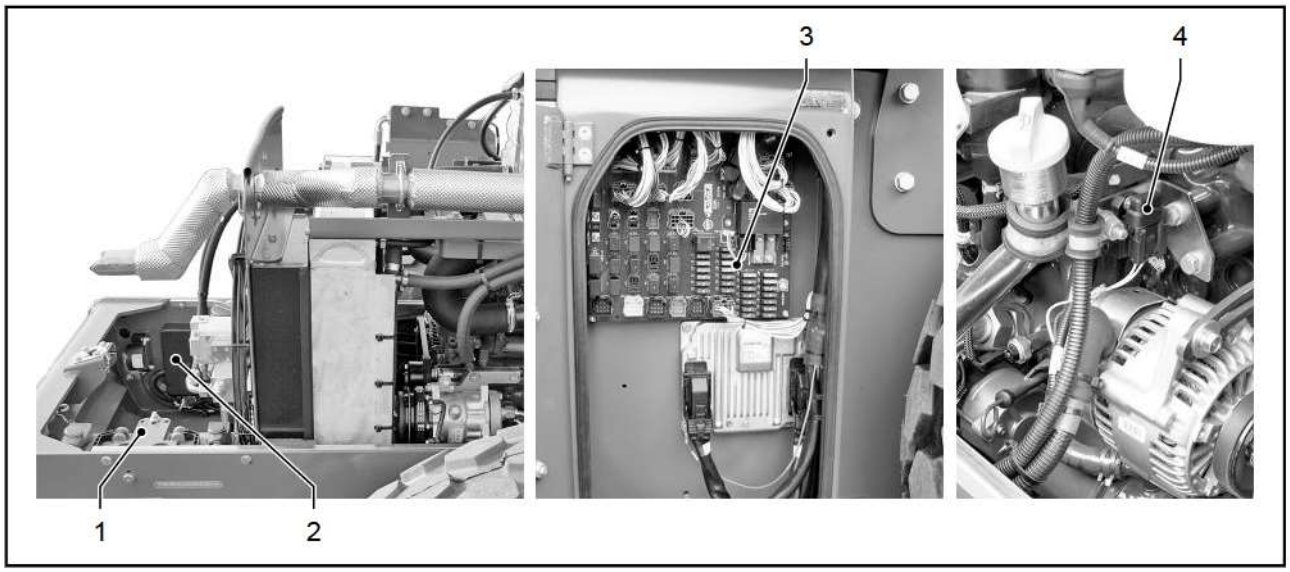
[1]	Filling opening for engine oil	[2]	Dipstick
[3]	Cooling system	[4]	Fuel system
[5]	Diesel engine with drive units	[6]	Drain outlet for engine oil
[7]	Dust valve	[8]	Air filter
[9]	Coolant filling opening	[10]	Coolant fill level
[11]	Diesel engine type plate		

2.05 Hydraulic oil supply



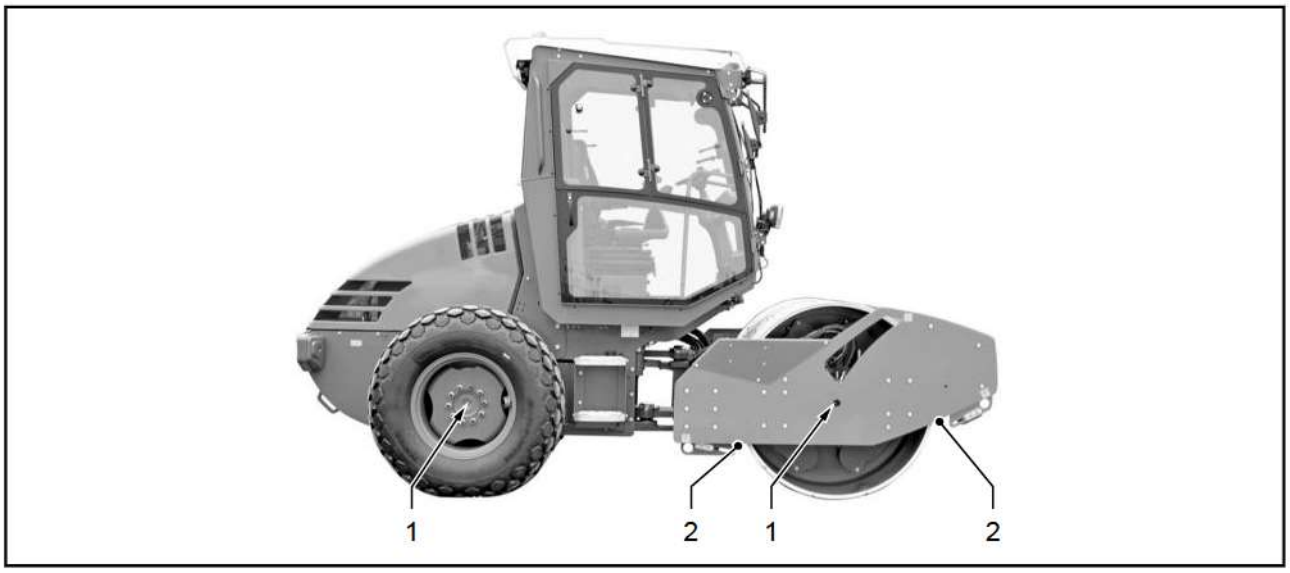
[1]	Hydraulic oil filling opening	[2]	Hydraulic oil tank ventilation filter
[3]	Hydraulic oil tank	[4]	Fill level indicator
[5]	Hydraulic oil filter	[6]	Hydraulic oil drain outlet

2.06 Electrical system



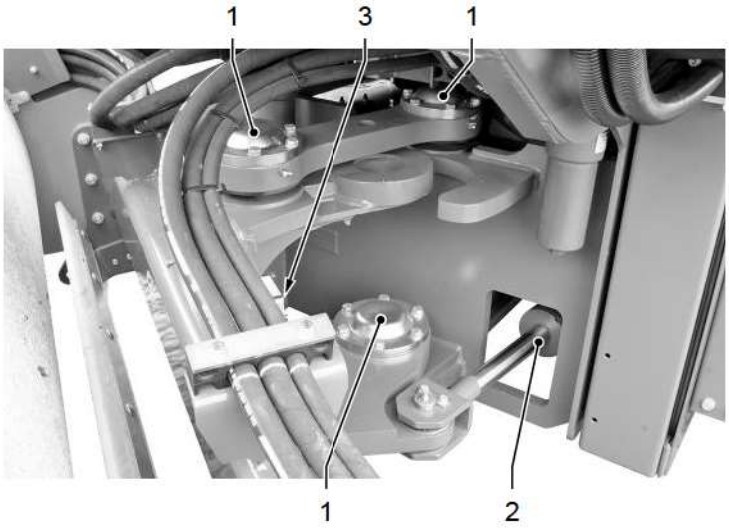
[1]	Battery	[2]	Main fuses
[3]	Fuses, electrical box	[4]	Fuse, alternator D+

2.08 Transmission



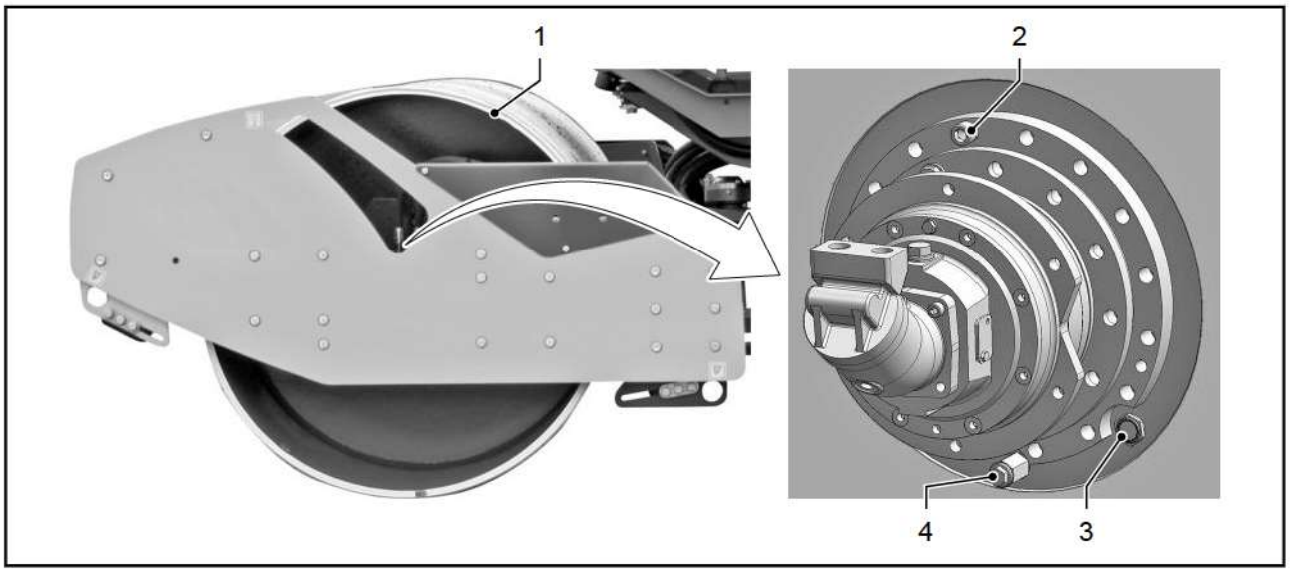
[1]	Drive motor	[2]	Scraper

2.09 Steering system



[1]	3-point pendulum articulated joint	[2]	Steering cylinder
[3]	Steering block		

2.26 Dynamic compaction system



[1]	Drum with vibrator	[2]	Vibrator oil filling opening
[3]	Vibrator oil fill level indicator	[4]	Drain outlet for vibrator oil

3 OPERATION

3.00 Important information about operating the machine

Operating the machine requires specialist knowledge about driving construction machines. Only authorized operating personnel may operate the machine.

The following safety instructions apply to all operating activities machine.

⚠DANGER

Operating errors!

Danger to life and limb and risk of injuries and material damage through improper operation of the machine.

- Check the machine for operational and traffic safety.
- Read and observe the instruction manual and the safety manual.
- Ensure that there are no persons or objects in the danger zone of the machine.

⚠DANGER

Uncontrolled driving behavior!

Risk of fatal injury due to the machine's own driving movements or due to any uncontrolled movement.

- Do not continue to operate the machine in the event of error messages about safety-related components. Switch off the machine, park it in a safe place, and inform customer service.
- Allow only specially trained and authorized personnel to work on safety and control-relevant components.
- After work on control-relevant component, the control system must be reset by authorized service personnel.

⚠WARNING

Exposed, rotating parts!

Risk of being trapped, pulled in, and injured by rotating engine parts.

- Operate the machine only with the engine bonnet and the engine compartment door closed.
- Do not perform any testing and adjusting work in the area of the engine unless the diesel engine has been switched off.
- Do not lay down any object or tool in the engine compartment.

⚠WARNING

Unintended machine movement!

Serious injuries or death through unexpected movement of the machine during testing and setting work, and outside the operation.

- Do not carry out any testing and adjusting work unless the engine has been stopped and the ignition has been switched off.
- Park the machine on safe ground, i.e., flat and horizontal ground with sufficient bearing capacity.
- Secure machine against rolling away.

⚠WARNING

Unintended engine start!

Severe injury and death caused in case of an unintended engine start during testing and adjusting work.

- Do not carry out any testing and adjusting work unless the engine has been stopped and the ignition has been switched off.
- Before starting testing and adjusting work, set the battery isolating switch to off in order to de-energize the electrical system. As an alternative, disconnect the earthing/grounding strip from the battery.
- To avoid any unintended engine start by any third person, affix a warning notice at the driver's position indicating that work is in progress on the machine.

⚠WARNING

Noxious exhaust gases!

Risk of serious injury or death caused by poisoning or suffocation after breathing in exhaust gases when operating the machine in an enclosed space.

- Only operate the machine outdoors.
- If the engine has to run in enclosed spaces:
  - Guide the exhaust gases outside (extension hose).
  - Ensure that there is a sufficient supply of fresh air, e.g. by using a ventilation system or by opening the doors.

NOTICE

High self-weight of machine!

Material damage under the heavy weight of the machine.

- When loading and transporting the machine use hoisting gear and means of transport suitable for the weight of the machine.
- Use the machine only on sufficient load-bearing soil.

NOTICE

Uncontrolled movements!

Damage to machine or environment by uncontrolled steering system movements and by consequent front or rear end swings.

- Applying safety strut before:
  - crane loading the machine.
  - transporting the machine.
  - maintenance and repair work.

3.01 Before loading/transporting/commissioning

⚠WARNING

Heavy weight!
Serious injuries or death caused by crushing or getting caught during assembly.

- Perform installation work on firm ground (flat, stable, horizontal).
- Carry out fitting work only when the engine is stopped.
- Use suitable load suspension and hitching gear with an adequate loading capacity.
- Do not step underneath suspended loads.

3.01.01 Safety strut

⚠WARNING

Unintentional movement of the machine!
Severe injury or death due to unexpected machine movement during setting work.

- Do not connect or disconnect the safety strut unless the engine is stopped and the ignition is set to off.
- Park the machine on safe ground, i.e., flat and horizontal ground with sufficient bearing capacity.
- Secure machine against rolling away.

The safety strut is used to prevent uncontrolled steering system movements. This helps to prevent, e.g., the machine's front end or rear ends from swinging out.

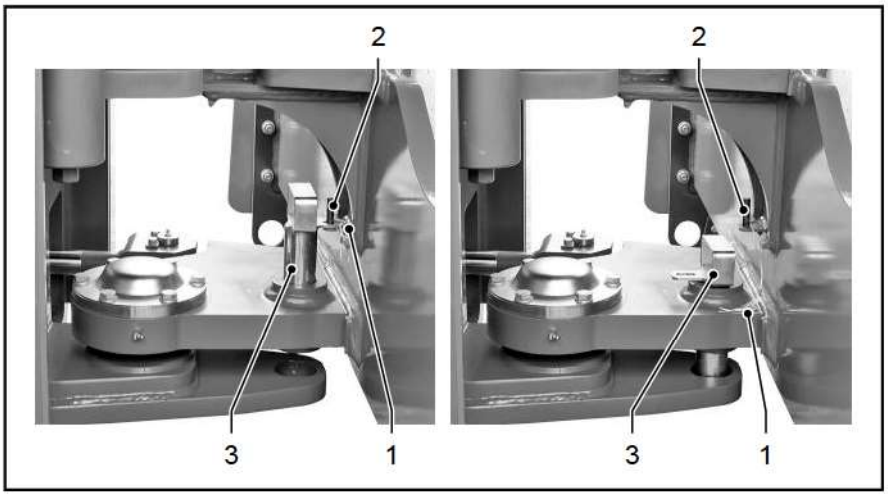
Applying safety strut **always** before:

- crane loading the machine.
- transporting the machine.
- maintenance and repair work.

Before inserting the safety strut, safely stop the machine

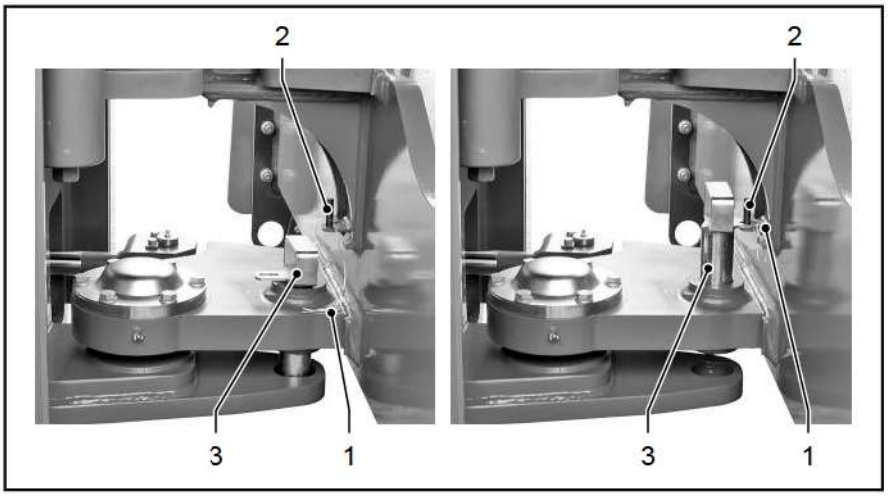
- Remove any steering angle (set the steering system to straight-line motion) and
- Remove any track offset.

Applying the steering block



- ▶ Remove the pin retainer [1].
- ▶ Lift the locking pin [3] off the mounting bracket [2] on the console.
- ▶ Rotate the locking pin [3] by 180° and lower it.
- ✔ Steering block is applied.

Releasing the steering block



- ▶ Lift the locking pin [3].
- ▶ Rotate the locking pin [3] by 180° and secure it on the mounting bracket [2] on the console.
- ▶ Position the pin retainer [1].
- ✔ The steering block is now released.

3.02 Loading and Transporting

⚠WARNING

Open doors, windows and hatches during loading and transport!

Serious injuries or material damage can be caused by doors, windows and hatches that have become unfastened during loading and transport.

- Keep doors, windows and hatches closed and locked during loading and transport.
- Check the locks after loading by crane and strong vibrations.

Observe all regulations when loading and transporting the machine to and from its place of use!

Regulations and Provisions

When loading rollers onto trucks, trailers or semitrailers, it is essential to secure the machine properly on the carrying vehicle. The duty for tie-down on street vehicles arises from StVO § 22, StVO § 23, StVZO § 30, StVZO § 31, HGB § 412 as well as from VDI guideline 2700 or other national requirements. Loading and transporting the machine requires sufficient knowledge about the loading of vehicles and their behavior under load. The machine may only be loaded by trained loading personnel. The machine must be fixed or stowed in transport-safe way to the vehicle by an form-locked or friction-locked manner or by a combination with friction. The machine must not change its position on the vehicle during normal traffic loads. Typical transport stresses also include emergency braking, evasive manoeuvres and unevenness of the road. If it is impossible to secure the machine properly onto the vehicle, or if the loading vehicle shows visible defects which do not ensure safe transport, loading must not be performed. This condition or requirement also applies to too little or damaged lashing tackle.

The transport company involved is always responsible for the safe transport of the machine and accessories.

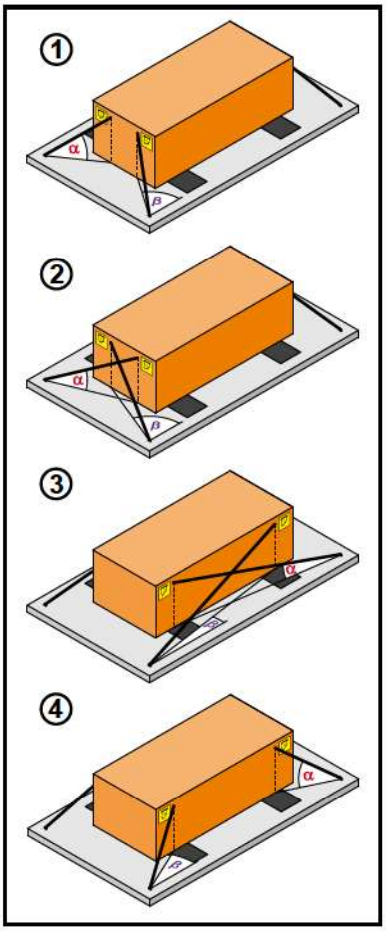
Loading instructions

When loading please observe the following instructions:

- Adhere to section Transport as specified in the safety instructions.
- Note the weight and dimensions ("Technical data", page 190).
- Observe the legally required maximum height.
- Only use approved gantries or planks that are provided with an antiskid coating.
- Never drive with metal on metal.
- Keep all loading bridges, planks and loading areas clean. Remove grease, dirt, ice, etc.
- Clean roller drums and tyres prior to driving on the gantries.
- Guarantee a frictional force value μ of ≥ 0.6, e.g. using anti-slip mats.
- For machines with an all-wheel lock, switch this on before driving over ramps or inclines.

- Drive the machine onto/off these with a 2/3 speed setting and the drive lever extended by 1/4.
- Either remove every loose or movable part in or at the machine, or secure such parts separately.
- Lower attachments.
- When transporting rollers with articulated steering, insert the steering block.
- Remove wedges and lashing devices completely before unloading. Unblock steering system by unblocking the safety strut.
- Drive the roller slowly and carefully from the loading area.
- For crane loading, always attach the suitable lifting tackle to the suspension eyelets provided for this. Position the crane vehicle on flat ground with the necessary load-bearing capacity, while taking into consideration all of the relevant safety regulations. Take suitable precautions to block access to the lifting area in order to prevent any persons from entering or moving in the danger zone. The crane's load table must correspond to the machine that is to be lifted. If just one of these points is not fulfilled, the crane loading must not take place.

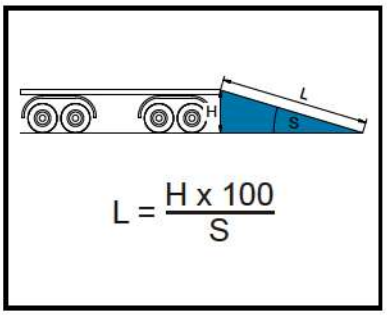
Load securing



Special notes

- Variant ① and variant ② may be combined. The lashing devices must not necessarily be arranged crosswise.
- Do not use any lashing device unless it is of sufficient dimension, bears the corresponding marking, and has been subjected to a valid inspection.
- Lash the machine with appropriate lashing devices onto the loading area, using only the marked lashing eyes.
- Observe the load for the lashing point(s) at the vehicle/load platform and at the load/roller. Do not overload the lashing points with a tensioning device (see the loading chart).
- To increase load safety, use additional precautions for securing the load including, e.g., wheel stop wedges, or a positive fit at the goose-neck.

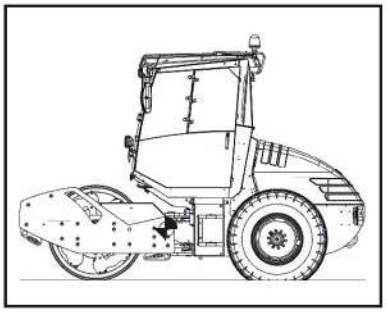
Store the machine on the load platform, placing two continuous and clean strips of anti-slide mats (grammage approx. 10 kg/m², loadable up to 630 t/m², 10 mm thick, friction factor $\mu \geq 0.6$) under every roller drum/tyre.



Maximum permissible ramp slope: See loading charts

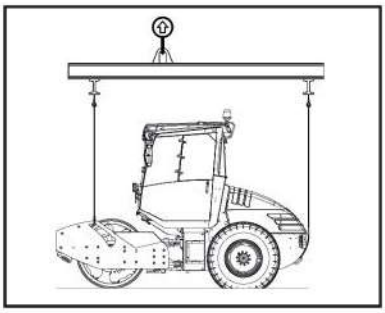
[L]	Ramp length [mm]
[H]	Difference in height [mm]
[S]	Ramp slope [%]

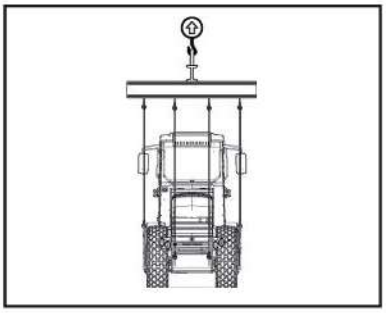
Always use the correct load distribution plan.



[◓]	Centre of gravity

Crane loading





Special instructions

- Park the crane vehicle on flat ground with the necessary load-bearing capacity. Comply with all applicable safety regulations when doing so.
- The crane's load table must correspond to the weight and to the centre of gravity of the machine to be lifted.

If the weight of the machine is unknown, set the maximum operating weight (see type plate).

- Take suitable precautions to block access to the lifting area in order to prevent any persons from entering the danger zone.
- Attach lifting tackle to the suspension eyelets provided.
- Note the load-bearing capacity of the lifting tackle!
- Use lifting frames or spreader beams if necessary!
- Apply the steering block to the machine before crane loading!

Loading chart

Diagram of the transport position

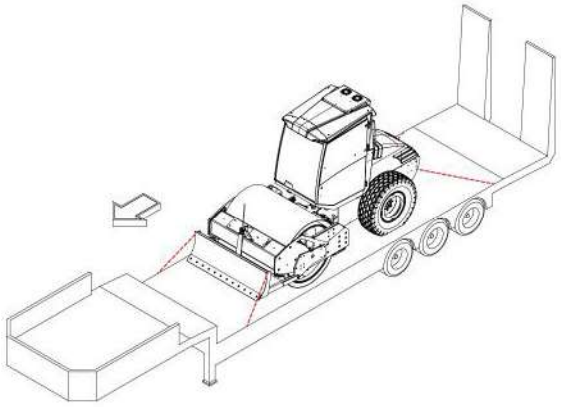
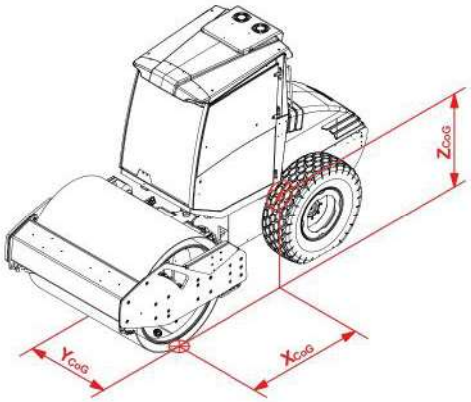
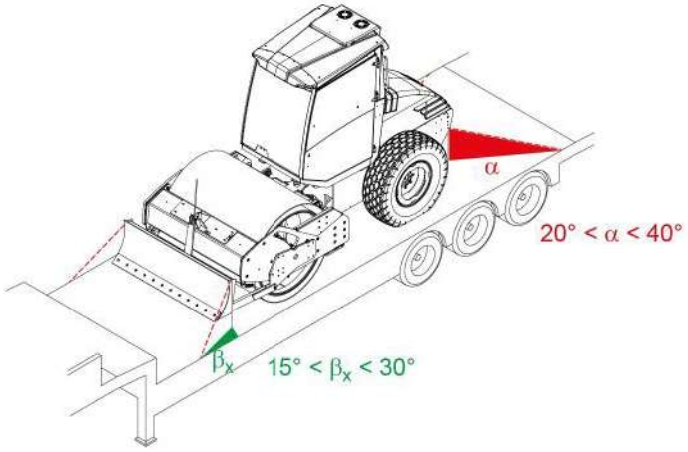


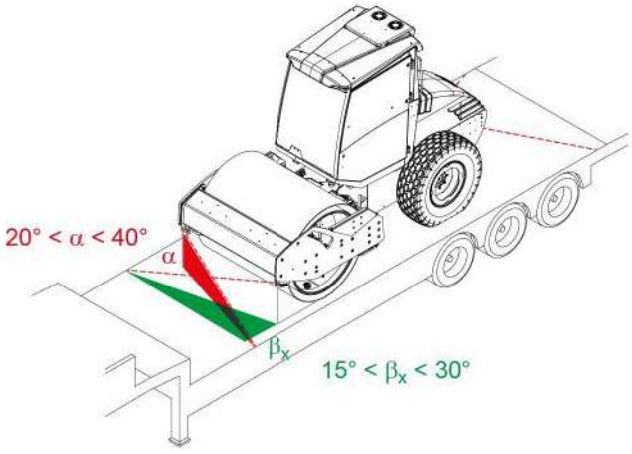
Diagram of the centre of gravity specifications





Lashing variant 1

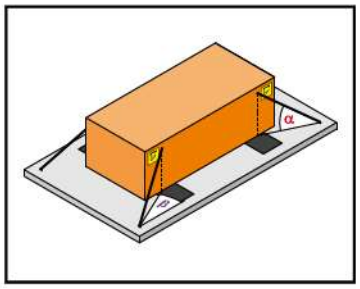
Weight class [t]	Lashing capacity LC (μ=0.6) [daN]
up to 8.1	2000

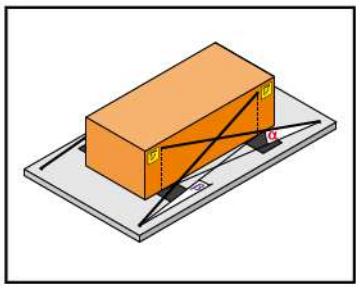


Lashing variant 2

Weight class [t]	Lashing capacity LC (μ=0.6) [daN]
up to 8.1	2000

Machine parameters	
Weight of machine [t]	5.0 t < m < 8.1 t
Centre of gravity range [mm]	X_{CoG} = 703–947 Y_{CoG} = 685–840 Z_{CoG} = 580–660
Identification reference point:	Centre drum, front left
Interface parameters:	
Type of contact:	Slip-resistant material
Frictional force [µ]:	0.6
Heavy load capacity:	Yes
Contact points:	Under contact pair
Vertical lashing angle α:	20° < α < 40°
Longitudinal, horizontal angle β_x:	15° < β_x < 30°





Specification of attachment points on the load:			
Tensile capacity of lashing point [daN]:	2000		
Marking of lashing point:	Symbol ISO 6405-1		
Number of lashing points:	4		
Specification of lashing points on the means of transport:			
Tensile capacity of lashing point [daN]:	≥ 2000		
Number of lashing points:	4		
Load securing equipment:			
Wedge blocks:	No	Quantity: 0	Miscellaneous:
Other types of blocking:	Positive blocking longitudinally/transversely to the direction of travel		
Lashing equipment capacity [daN]:	10000	Quantity: 4	Miscellaneous:
Recommended type of lashing equipment:	Chain (6/8 2200 daN),		
	Belt (2000 daN) as an alternative		
Connecting pieces to the lashing point:	Hook with safety latch		

Specific safety instructions

- Drive the machine slowly onto/off the loading area using the working gear and medium speed setting of the diesel engine (ECO or 2/3).
- Observe maximum permissible ramp slope (28%, approx. 16°).
- Secure the clamping devices.
- Check the tyre pressure at least every 24 hours and refill with air, if necessary (see Technical data).
- Apply the steering block after loading machine on the means of transport.
- Release the steering block before unloading machine from the means of transport.

Miscellaneous

- Slot in the seat console, close the cab doors, set down attachments.
- Completely close and lock the door panes.

3.03 Functional tests before starting work

Check the following to ensure safe operation of the machine:

Check	Refer to
Can the machine be accessed safely?	"Access to the machine", page 71
Are the cab doors in the correct positions?	"Operating doors and windows", page 74
Has the driver's seat been adjusted?	"Adjusting the driver's seat", page 77
Has the seat belt been tested?	"Using the seat belt", page 80
Has the position of the seat been adjusted?	"Adjusting the driver's seat", page 77
Has the steering column been adjusted?	"Adjusting the steering column", page 81
Has the power supply to the battery disconnect control unit been switched on?	"Switching the electrical system/on-board power supply on and off", page 84
Are the turn signal and hazard warning lights working?	"Switching the signal horn and lighting on and off", page 87
Is the signal horn working?	"Switching the signal horn and lighting on and off", page 87
Are the lights working?	"Switching the signal horn and lighting on and off", page 87
Is the reversing warning system working?	"Driving in normal operation", page 97
Is the rotating beacon working?	"Rotating beacon ", page 209
Are the rear-view and working mirrors adjusted?	"Adjusting the inside mirror, working mirror and rear-view mirror", page 82
Is the parking brake working?	"Checking that the parking brake is working properly", page 143
Is the seat contact switch working?	"Checking that the seat contact switch is working properly", page 144
Is the EMERGENCY STOP working?	"Checking the EMERGENCY STOP function", page 144
Has the fuel tank fill level been checked?	"Control panel – fill level control indicator", page 113
Has the coolant fill level been checked?	"Checking the coolant fill level", page 157
Has the hydraulic oil tank fill level been checked?	"Checking the hydraulic oil fill level", page 159
Has the windscreen washer system fill level been checked?	"Checking the fill level of the windscreen washer fluid", page 148
Has the air pressure in the tyres been checked?	"Checking the air pressure in the tyres", page 168
Have the scrapers been checked?	"Checking the drum scrapers", page 166

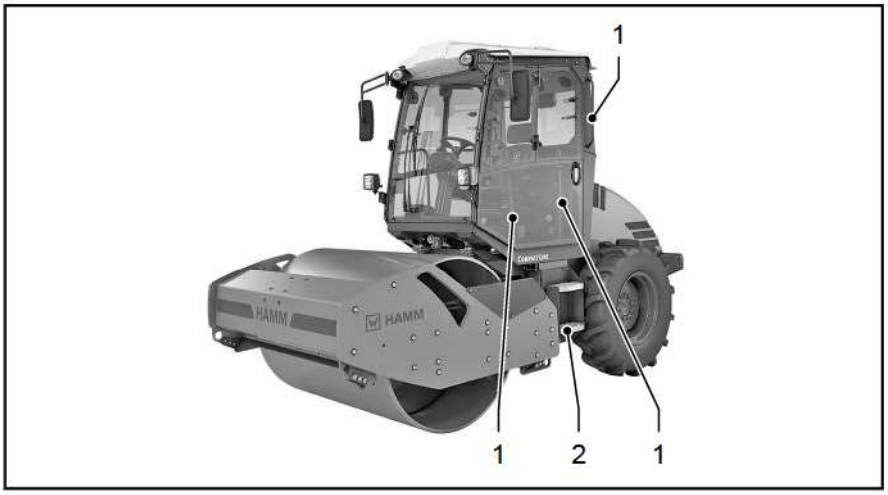
3.04 Access to the machine

⚠WARNING

Slipping when climbing in and out!
Risk of injury caused by slipping when climbing into and out of the machine.

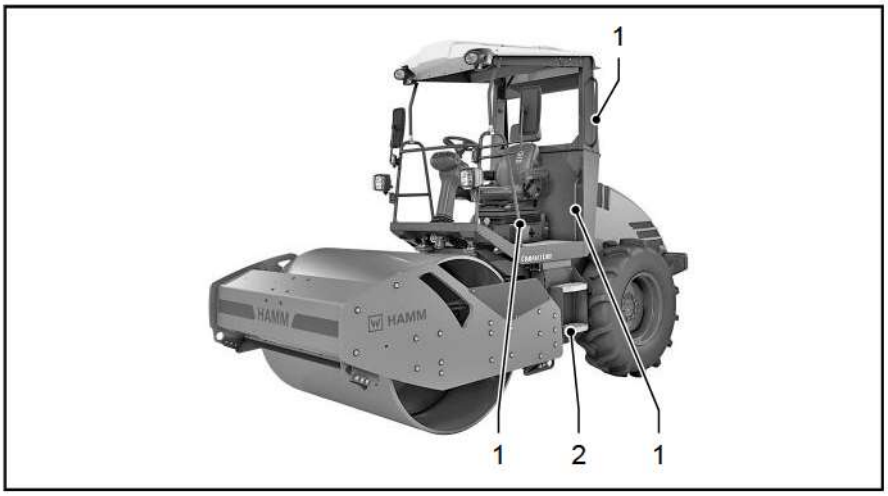
- Use only the ladders, handrails and steps provided.
- Only climb into or out of the machine when it is at a standstill and secured in place.
- When climbing in and out, always ensure that any three of your hands and feet are in secure contact with the machine at all times.
- Keep ladders and steps clean and free of frost.
- If the anti-slip surfaces of the steps and treads are worn, repair or replace these.

Cab



[1]	Handrails	[2]	Step to the driver's platform

ROPS/FOPS



[1]	Handrails	[2]	Step to the driver's platform

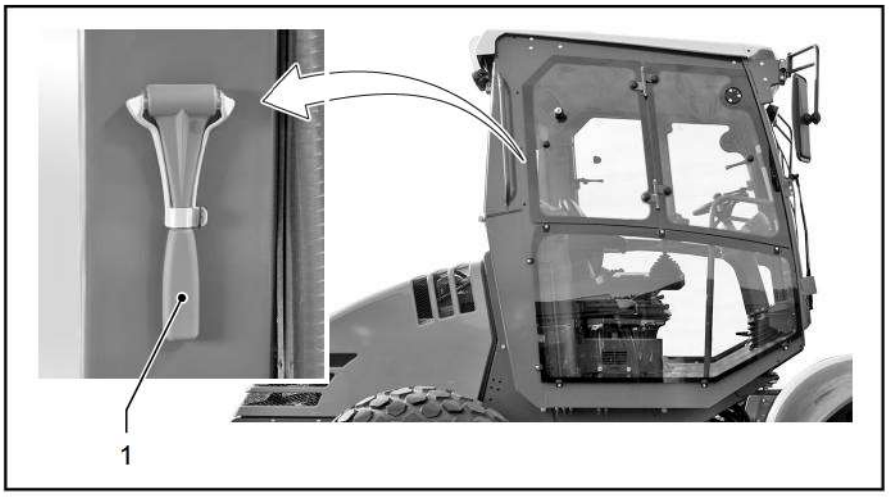
3.04.01 Access to the driver's platform

It is possible to access the driver's platform from both sides of the machine.

Steps and handrails are arranged so that they are within easy reach and offer secure footing and handholds.

For versions with the ROPS cab, access is provided via the cab doors.
On the version with a cab door, the access to the driver's platform is on the left-hand side in the direction of travel.
On the version with two cab doors, the access to the driver's platform is on the left-hand side in the direction of travel. The access to the driver's platform on the right-hand side in the direction of travel is used as emergency access and exit, and must only be used if access on the left-hand side in the direction of travel is not possible.

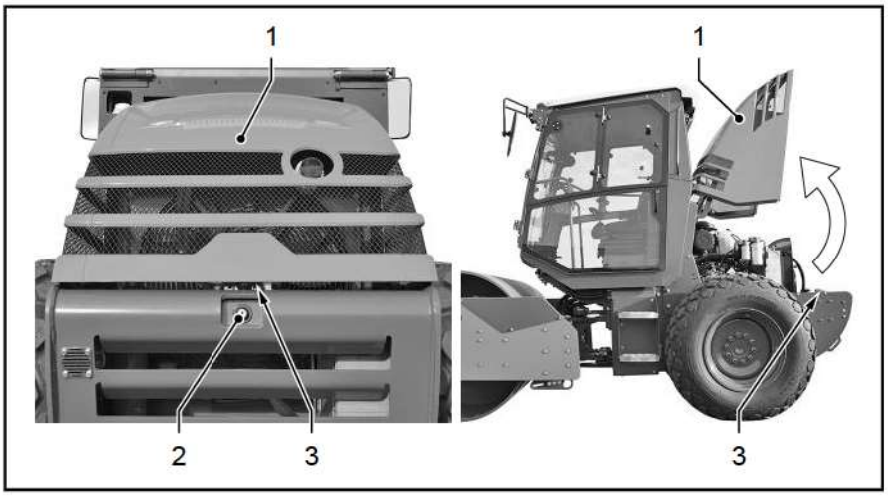
3.04.02 Emergency exit



Prerequisite: No exit is possible on the left-hand side in the direction of motion.

- Take the emergency hammer [1] out of its holder.
- Break the pane which is marked as the emergency exit.
- Remove broken glass and slithers of glass from the window frame.
- Carefully exit the cab through the opening.

3.04.03 Opening and closing the engine hood



Opening the engine hood

- ▶ Use the ignition key in the lock [2] to unlock the engine hood [1].
- ▶ Press the push button [2].
- ▶ Raise the engine hood [1].
- ✔ The engine hood is open.

Closing the engine hood

- ▶ Lower the engine hood [1] and push it into the lock [3].
- ▶ Use the ignition key in the lock [2] to lock the engine hood [1].
- ✔ The engine hood is closed.

The engine hood must be locked while the machine is operating.

3.05 Operating doors and windows

⚠CAUTION

Projecting cab doors or windows!
Injuries caused by impacts and crushing, as well as material damage caused by cab doors or windows that are not locked.

- Before opening cab doors or windows, make sure that no persons or objects are in the danger zone of the machine.
- Keep the cab doors closed while driving and operating the machine. (at split cab door: lower door halves).
- Keep the windows locked in a completely closed or completely open position while driving and operating the machine. (Exception: ventilation position).
- Use the 90° position of the cabin door and window only to climb up or down the machine.

⚠CAUTION

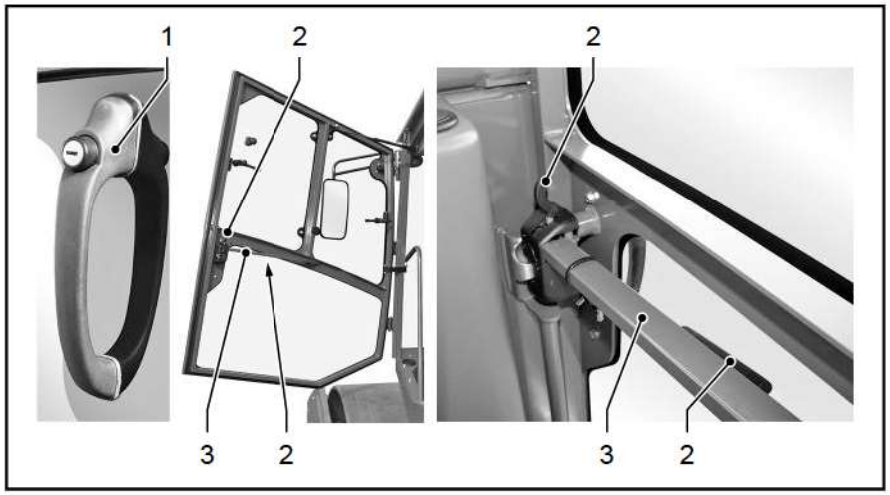
Force exerted by gas-pressure spring!
Injuries caused by impacts with fast moving cab doors or windows.

- When opening and closing cab doors and windows, hold them against the forces exerted by gas-pressure springs and their dead weight.

Door panes that can be opened, must always be locked against falling down. If your cabin door is split, the lower half door must be closed and latched in place in the lock while driving.

3.05.01 Opening and closing the cab door

The door of the operator's cab is locked by a latch lock. Elements [1] or [2] only have to be actuated in order to open the door. The door is locked by pressing/pulling it into the lock.



Open door from outside

- ▶ Press the push button at the handle [1].
- ▶ Pull the door by the handle [1] and swing out the door to its final click-stop position.
- ✔ The door is opened at a 90° position.

Open door from inside

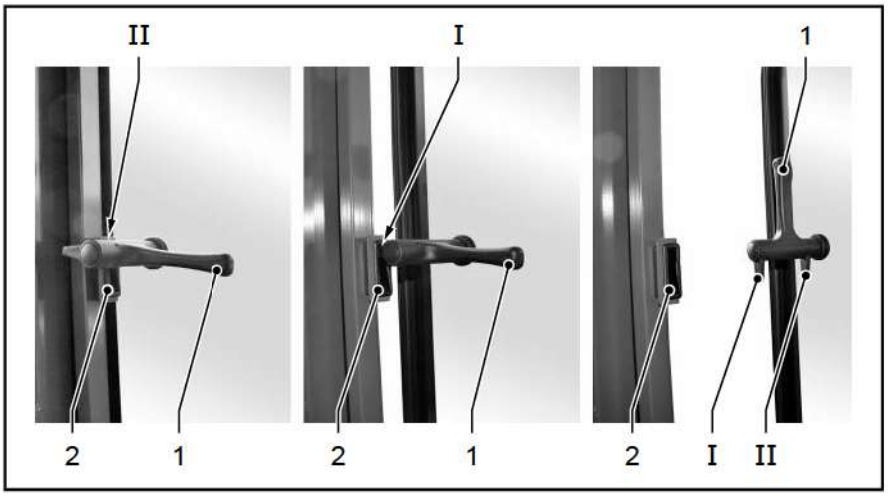
- ▶ Press the handle [2] into the fastening frame [3].
- ▶ Swing out the door by the fasting frame [3] to the final click-stop position.
- ✔ The door is opened at a 90° position.

Closing and locking the door

- ▶ Close the door and push or pull it into the lock.
- ✔ Door is closed and locked.

The doors can be locked from the outside using the door lock. It is then no longer possible to open the doors from the inside or the outside.

3.05.02 Opening and closing the window



Ventilation position

- ▶ Pull the handle [1] up to release cam II from the lock [2].
- ▶ Open the window slightly until cam I is underneath the lock [2].
- ▶ Push the handle [1] down to lock cam I.
- ✔ The window is opened in the ventilation position.

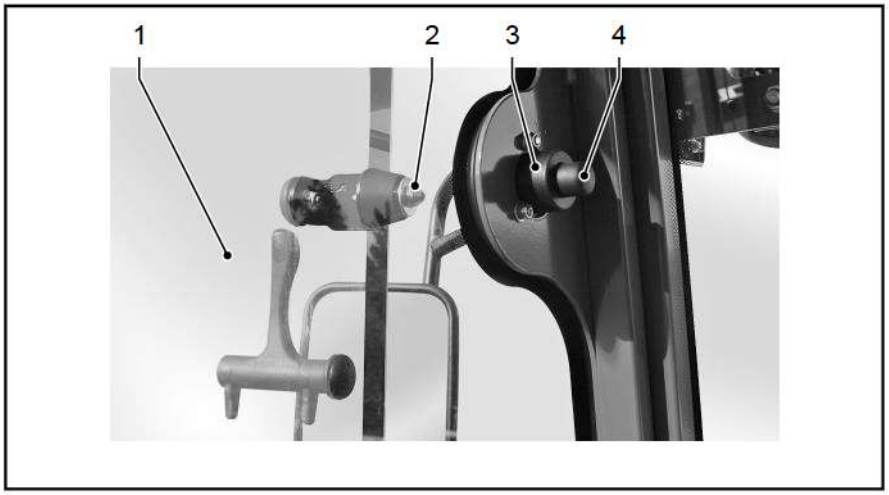
Closing the window

- ▶ Pull the handle [1] up.
- ▶ Raise the window until cam II is underneath the lock [2].
- ▶ Push the handle [1] down to lock cam II.
- ✔ The window is closed and locked.

Opening the window fully

- ▶ Pull the handle [1] up to release cam I or II from the lock [2].
- ▶ Push the window all the way outwards.
- ✔ The window is open but not locked in the open position.

Locking and releasing the window



- ▶ Open the window [1] fully and tilt it forwards by 180°.
- ▶ Let the cam [2] engage in the bushing [3].
- ✔ The window is fully open and locked.
- ▶ Press the push button [4].
- ✔ The lock is released.
- ✔ The window can be tilted back and closed.

3.06 Adjusting the driver's seat

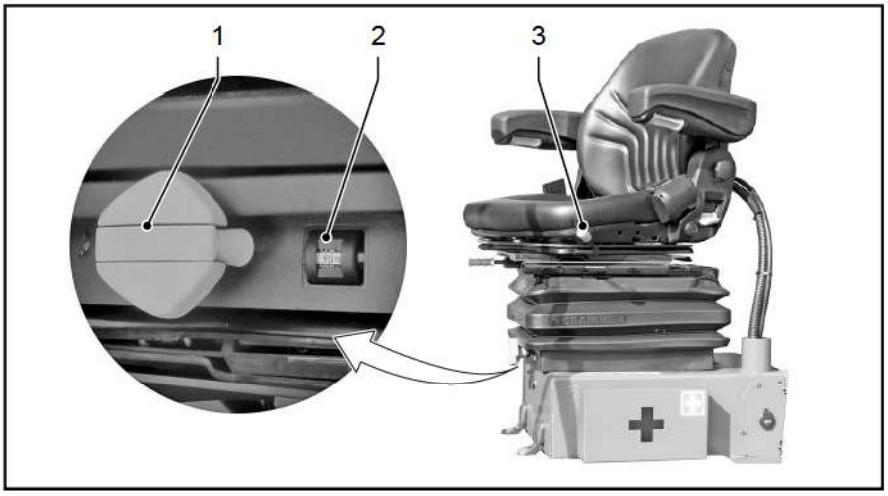
⚠WARNING

Uncontrolled motion!
Injuries due to uncontrolled movements when changing the driver's seat position when driving.

- Only drive with latched operator's seat.
- Do not adjust the driver's seat during travel.
- Free access to bodywork and engine parts.

The seat is adjusted to suit the size of the driver's body with the various setting options.

Seat console



Setting driver's weight

There is damping built into the driver's seat that compensates for shock-like machine movements. For this damping to function optimally, the seat must be adjust to the weight of the driver.

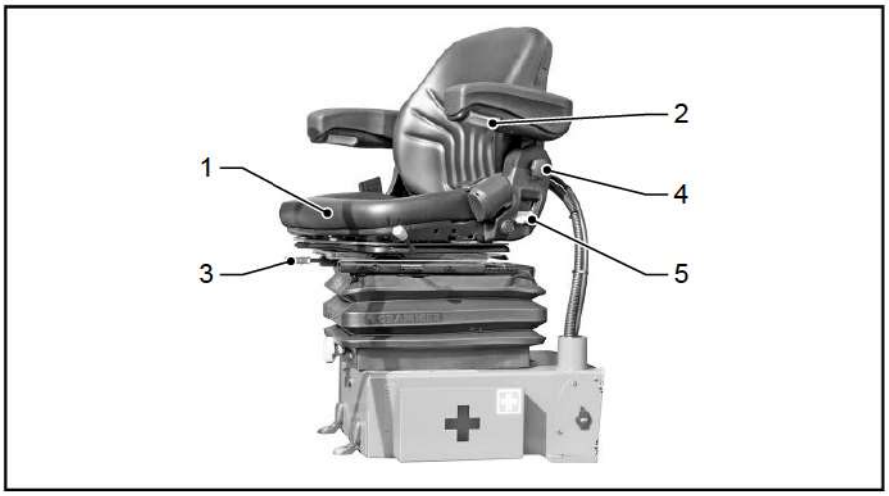
- ▶ Turn the knob [1] until the desired driver's weight is set.
- ✔ The indicator [2] shows the set driver's weight.

Rotate the driver's seat (on version with seat swivel adapter)

The driver's seat can be rotated to the left in lock-in positions.

- ▶ Pull the lever [3].
- ✔ The lock is released.
- ▶ Use physical force to shift the driver's seat to the desired position.
- ▶ Press the lever [3].
- ✔ Driver's seat is locked.

Driver's seat



Raising the driver's seat

- ▶ Raise the driver's seat [1] with both hands until the required height is set.
- ✔ The driver's seat [1] latches in place every 30 mm.

Lowering the driver’s seat

- ▶ First raise the driver's seat [1] as far as it will go with both hands.
- ▶ Then fully lower the driver's seat [1] with both hands.
- ✔ The driver's seat goes down to its lowest position.
- ▶ Set the height of the driver's seat accordingly from the lowest setting.

Seat adjustment forward/backward

- ▶ Lift the lever [3].
- ▶ Slide the seat forward or backward to reach the desired position.
- ▶ Release the lever [3] and let the seat pedestal snap in place.

Setting the slope of the backrest

- ▶ Tilting the backrest forwards: Lift the lever [5] and tilt the backrest forwards.
- ▶ Tilting the backrest backwards: Lift the lever [5] and tilt the backrest backwards.
- ▶ Release lever [5].

Setting armrest height

- ▶ Unscrew clamping screw [4].
- ▶ Raise the armrest Pull the armrest up the guideway.
- ▶ Lower the armrest: Push the armrest down the guideway.
- ▶ Tighten clamping screw [4] again.

Adjusting the inclination of the armrest

- To raise the armrest: Turn the hand wheel [2] clockwise.
- To lower the armrest: Turn the hand wheel [2] anticlockwise.

3.07 Using the seat belt

⚠WARNING

Driving without safety belt!
Serious injuries or death can occur if the machine brakes suddenly or tips over and the seat belt is damaged or not worn correctly.

- Only drive the machine when wearing the seat belt.
- Put on the seat belt correctly and do not twist it.
- Make a visual examination of the seat belt when putting it on.
- Have the seat belt immediately replaced by an authorized service provider:
  - If it is worn or damaged
  - After an accident
  - As a general rule, every 3 years

When putting on and taking off the seat belt, avoid pulling it jerkily or tightening it excessively.

Putting on belt

- ▶ Pass the seat belt closely over the hips.
- ▶ Adapt the length of the safety belt to your body size so as to ensure that your freedom of movement is not restricted.
- ▶ Insert the locking plate [1] into the belt lock [2].
- ✔ Seat belt is applied and locked.

Loosing belt

- ▶ Press knob at the buckle [2].
- ✔ Seat belt is released.
- ▶ Place the seat belt on the driver's seat or allow it to roll into the belt retainer.

Seat belt buckle monitoring device (optional)

For versions with auxiliary equipment:

When the safety belt is not fastened, a warning lamp lights up on the operator control panel (see "Operator control panel – Warning and pilot lights") and an audible signal is heard.

3.08 Adjusting the steering column

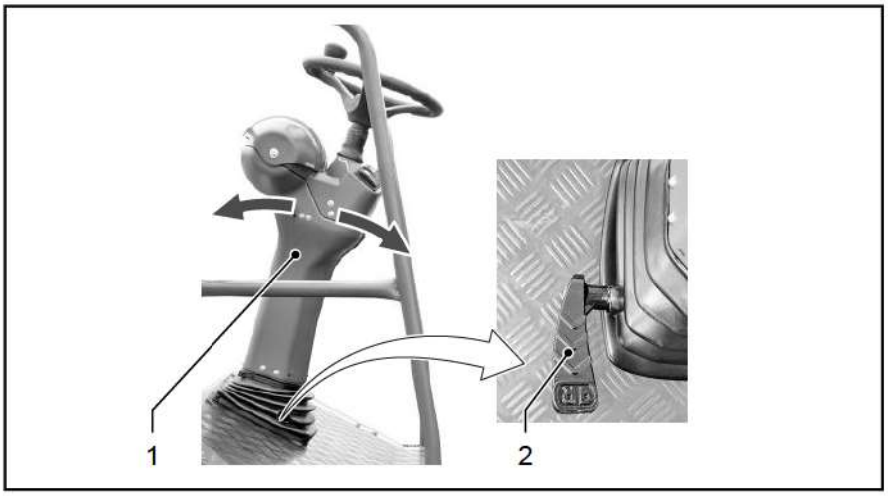
⚠WARNING

Uncontrolled motion!
Injuries due to uncontrolled movements when changing the steering column position when driving.

- Only drive with latched unit of control panel with steering wheel.
- Do not adjust the steering column when the machine is driving.
- Free access to bodywork and engine parts.

The steering column can adapted to suit the driver.

The angle between the control panel unit and the steering wheel is adjustable. This enables an ergonomic operating position to be achieved.



Ergonomic adjustment

- ▶ Press foot lever [2].
- ▶ The control panel with steering wheel unit [1] is swiwelled forward/backward.
- ▶ Release the pedal [2] when the desired adjustment position is reached.
- ✔ The steering column is set and locked.

3.09 Adjusting the inside mirror, working mirror and rear-view mirror

Adjust the mirrors so that you can watch the traffic in the rear of the machine.

⚠WARNING

Falling off the machine!
Severity injuries or death through falling off the machine while adjusting the working mirrors.

- Adjust the working mirrors only when the machine has been safely parked.
- To reach the working mirrors use only the ladders, handrails and steps provided.

Clean mirrors at regular intervals.
Replace defective mirrors immediately.

Adjusting the working mirror and rear-view mirror

- The working mirror is adjusted by two persons:
  - The person on the outside of the machine adjusts the working and rear-view mirrors manually.
  - The driver inside checks the setting from a seated position.
- Align the mirror to the work edge of the roller drum/tyre.
- Adjust the mirrors so as to ensure that you still see the machine at the inside of the mirrors. This is the only way of avoiding a blind spot.

Folding in the working mirror and rear-view mirror

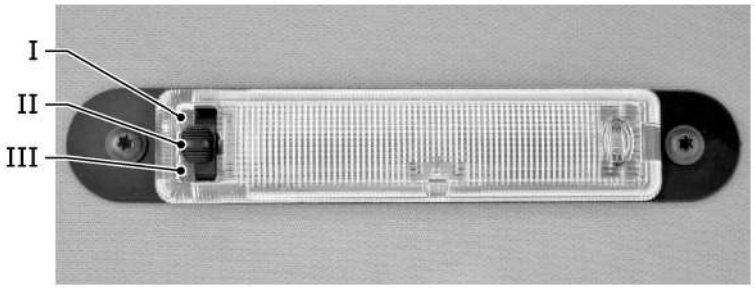
- Fold in the mirror.
- Turn the mirror holder until the mirror is locked.

Fold in and lock the operation mirror before transporting the machine on a lorry.

Adjusting the inside mirror

- Adjust the mirror from the driver's seated position.
- Adjust the mirror so as to ensure that you can see the area behind the machine in the mirror.

3.10 Interior lighting



Setting the light permanently to on

- ▶ Move switch in position I.

Switching the light on and off automatically

- ▶ Move switch in position II.
- ✔ The door contact switch switches the lighting on and off.

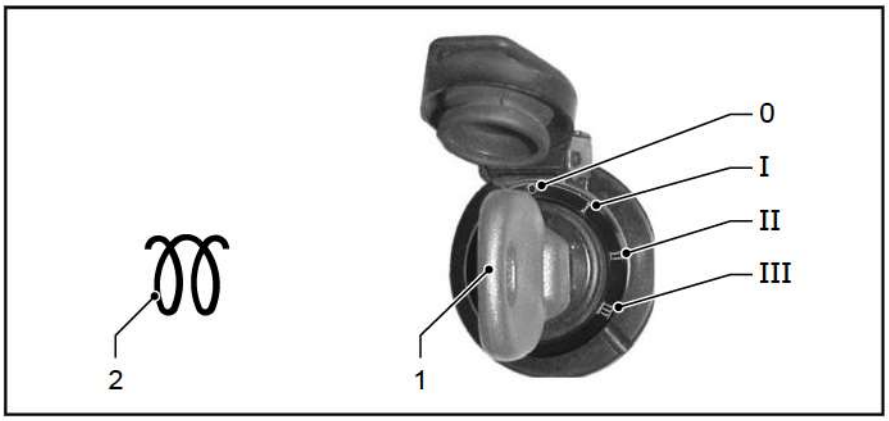
Setting the light permanently to off

- ▶ Move switch in position III.

3.11 Switching the electrical system/on-board power supply on and off

Ignition key

The electrical system is switched on and off and the diesel engine started and stopped with the ignition key.



The pilot light for cold start assistance can also look different in different machine types.

Switching on the electrical system

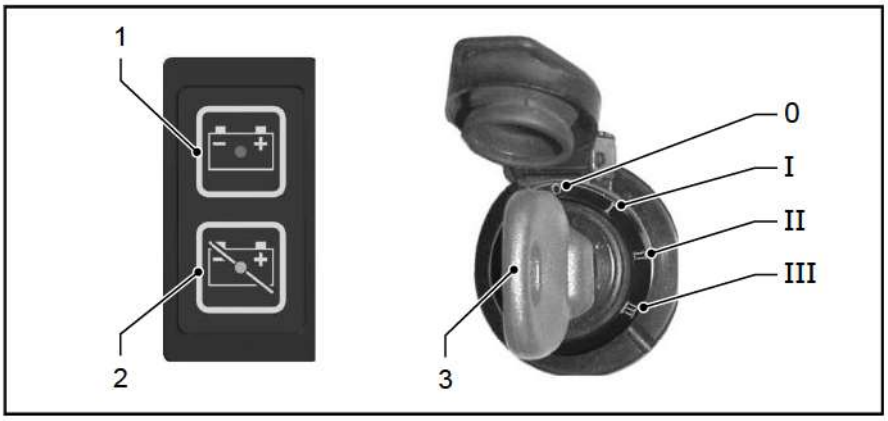
- ▶ Turn the ignition key [1] to position I.
- ✔ The electrical system is switched on.
- ✔ Functional control of warning and indicator lights.
- ✔ Indicator light for cold start assistance [2] lights up until the start temperature is reached.
- ✔ The diesel engine remains switched off.

Switching off the electrical system

- ▶ Turn the ignition key [1] to position 0.
- ✔ The diesel engine is stopped.
- ✔ The electrical system is switched off.

For versions with electronic battery switch-off

By switching off the battery, the internal power supply can be disconnected from the voltage source.
The electrical system can only be started if the on-board power supply is connected to the battery voltage.



The battery is disconnected if the machine is to be shutdown time for a

- lengthy time (night, weekend, lengthy transport).
- During maintenance and repair work, especially on the electrical system.

After the battery is switched off, the power supply from the battery remains disconnected even when the electrical system is switched on (ignition key [3] in position I). The displays on the operating panel are switched off and the diesel engine cannot be started.

Battery switch-off control unit

The control unit with the on [1] and off [2] switches ensures a controlled, time-delayed switching off of the battery power. This ensures that the required testing and storage routines may be performed in the control unit for the diesel engine.

Pressing the switch [2] starts the battery switch-off. However, the switch off does not take place until the electrical system has been switched off (ignition key [3] in position 0) and after an after-running time of approx. 2 minutes.

Activating control unit of battery switch-off

Requirement:
electrical system ON (ignition key [3] in position I)

- ▶ Press switch [1].
- ✔ LED lights up green.
- ✔ Control unit is activated.

Requirement:
electrical system OFF (ignition key [3] in position 0)

- ▶ Press switch [1].
- ✔ LED flashes green.
- ✔ Control unit in standby mode.

Switch off with preselection

Prerequisites:

- electrical system ON (ignition key [3] in position I)
- Control unit of battery switch-off is activated

- ▶ Press switch [2].
- ✔ Battery switch-off is preselected, LED lights up red.
- ▶ Switching off electrical system: ignition key [3] in position 0.
- ✔ After-running time starts, LED flashes red.
- ✔ The battery is disconnected after approx. 2 minutes.
- ✔ Control unit switches to standby mode.
- ✔ All LEDs off.

Switch off without preselection

Prerequisites:

- electrical system OFF (ignition key [3] in position 0)
- Control unit of battery switch-off is activated

- ▶ Press switch [2].
- ✔ After-running time starts, LED flashes red.
- ✔ The battery is disconnected after approx. 2 minutes.
- ✔ Control unit switches to standby mode.
- ✔ All LEDs off.

Standby mode

Requirement:
Control unit of battery switch-off is activated

- ▶ Switching off electrical system: ignition key [3] in position 0.
- ✔ Control unit in standby mode, LED flashes green.
- ✔ Battery is disconnected after approx. 24 hours.
- ▶ Circuit breaker [2] is pressed in stand-by mode.
- ✔ After-running time of approx. 2 minutes starts, LED flashes red.
- ✔ Battery is disconnected after expiry of the after-running time.
- ▶ Electrical system switched on in standby mode (ignition key [3] in position I).
- ✔ Machine can be operated normally, the control LED of the control unit is off.
- ✔ The control unit remains in stand-by mode.

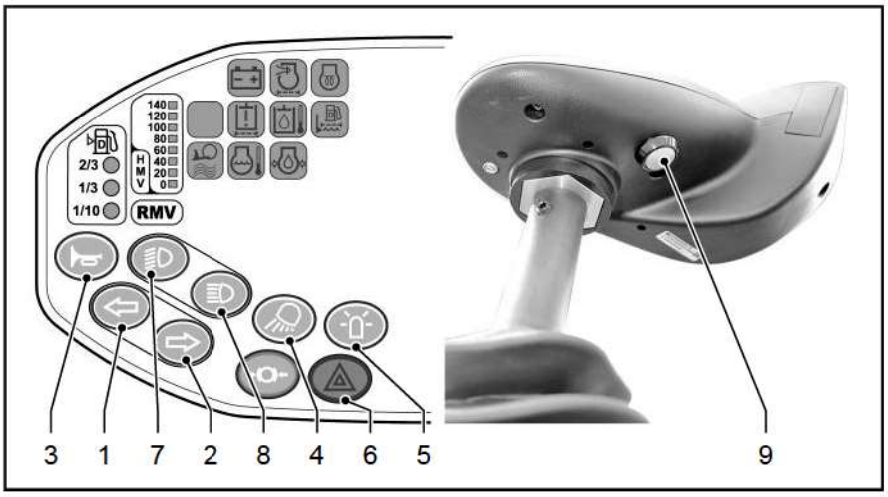
Switch on battery power, start diesel engine

After the battery has been disconnected, the control unit has to be activated in order to switch on the battery voltage. The battery voltage is switched on without delay.

- ▶ Press switch [1].
- ✔ LED flashes green.
- ▶ Switch on electrical system: ignition key [3] in position I.
- ✔ LED lights up green.
- ✔ Brief functional check of all pilot lights
- ✔ The diesel engine can be started.

3.12 Switching the signal horn and lighting on and off

When the lights are set to on for a longer period of time although the engine is stopped, the battery will be discharged quickly.



Operating the signal horn

Prerequisite: The electrical system is ON.

- ▶ Press the signal horn switch [3] on the control panel or
- ▶ press the signal horn switch [9] at the drive lever.
- ✔ An acoustic warning signal sounds as long as one of the switches remains pressed.

Switching the hazard warning lights on and off

- ▶ Press switch [5].
- ✔ Switch [5] flashes: The hazard warning light is switched on.
- ▶ Press the switch [5] again.
- ✔ Switch [5] is not lit up: The hazard warning light is switched off.

Signalling left/right

Prerequisite: The electrical system is ON.

- ▶ Press switch [1] for signalling left.
- ▶ Press switch [2] for signalling right.
- ✔ The relevant switch [1/2] flashes: The turn signal light is switched on.
- ▶ Press the switch [1/2] again.
- ✔ Switch [1/2] is not lit up: The turn signal light is switched off.

If the light bulb in one of the direction indicators is defective, the indicator lights/switches flash rapidly. To guarantee road safety, the defective light bulb must be replaced.

Switching the parking light on and off

Prerequisite: The electrical system is OFF.

- ▶ Press switch [7].
- ✔ Switch [7] lights up: The parking light is switched on.

- ▶ Press the switch [7] again.
- ✔ Switch [7] is not lit up: The parking light is switched off.

Switching the driving light on and off

Prerequisite: The electrical system is ON.

- ▶ Press switch [7].
- ✔ Switch [7] lights up: The driving light is switched on.
- ▶ Press the switch [7] again.
- ✔ Switch [7] is not lit up: The driving light is switched off.

When it is set to on, the parking light will automatically change to driving light as soon as the electrical system is set to on.
When it is set to on, the driving light will automatically change to parking light as soon as the electrical system is switched off.

Switching the high beam on and off

Prerequisite: The electrical system is ON.

- ▶ Press switch [8].
- ✔ Switch [8] lights up: The high beam is switched on.
- ▶ Press the switch [8] again.
- ✔ Switch [8] is not lit up: The high beam is switched off.

If the high beam is switched on, it switches off as soon as the electrical system is switched off.

Switching the work light on and off

Depending on the machine's configuration, the working light can consist of various components, e.g.
- front and/or rear working spotlights.
- Drum edge lighting.

Prerequisite: The electrical system is ON.

- ▶ Press switch [4].
- ✔ Switch [4] lights up: The work light is switched on.
- ▶ Press the switch [4] again.
- ✔ Switch [4] is not lit up: The work light is switched off.

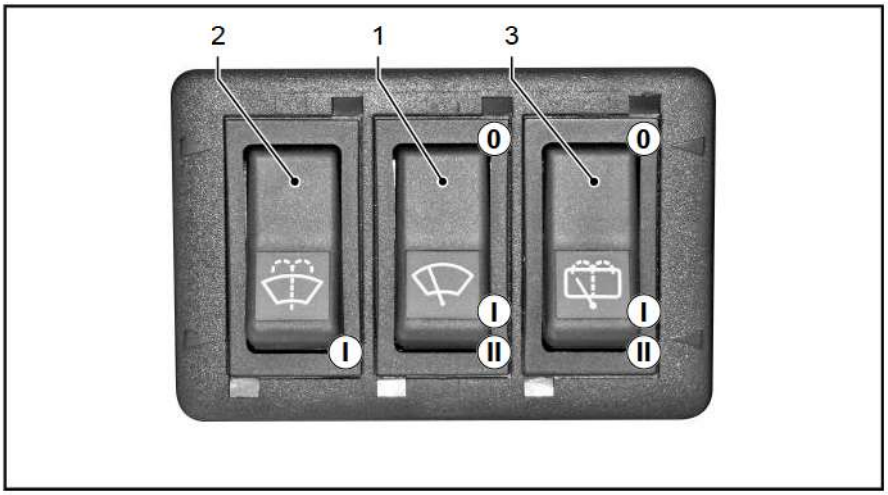
Switching the rotating beacon on and off

Prerequisite: The electrical system is ON.

- ▶ Press switch [6].
- ✔ Switch [6] lights up: The rotating beacon is switched on.
- ▶ Press the switch [6] again.
- ✔ Switch [6] is not lit up: The rotating beacon is switched off.

3.13 Switching the windscreen wiper and windscreen washer system on and off

Before starting a journey, check that the windscreen wipers and the windscreen washer system are working. Check the windscreen washer system fill level. Top up the windscreen washer system tank if necessary.



[1]	Front windscreen wiper switch	[2]	Front windscreen washer system switch
[3]	Rear windscreen wiper/ windscreen washer system switch		

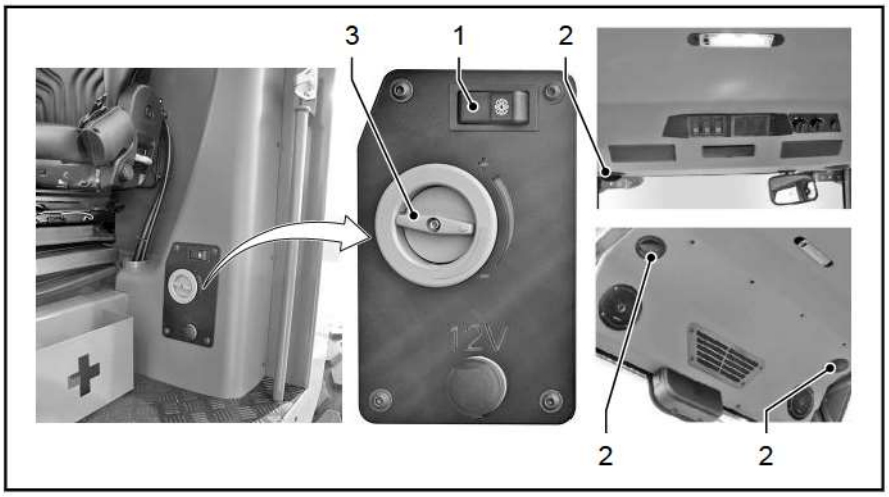
- ▶ Push the switch [1] to position I.
- ✔ The front windscreen wiper is now working at stage 1.
- ▶ Push the switch [1] to position II.
- ✔ The front windscreen wiper is now working at stage 2.
- ▶ Push the switch [3] to position I.
- ✔ The rear windscreen wiper is now on.
- ▶ Push the corresponding switch [1] or [3] into position 0.
- ✔ Windscreen wiper off.
- ▶ Push the switch [2] into position I and hold it there.
- ✔ The front windscreen is wetted when the switch is pressed.
- ▶ Push the switch [3] into position II and hold it there.
- ✔ The rear windscreen is wetted when the switch is pressed.
- ▶ Release the corresponding switch [1] or [3] or push it into position 0.
- ✔ Windscreen washer system off.

3.14 Heating and air-conditioning system

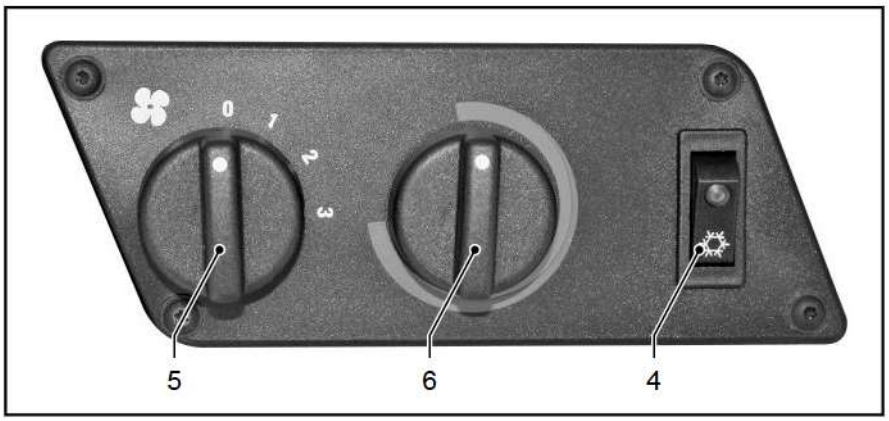
The heating and ventilating system enables the driver to set an optimum room air condition inside the cab and maintain free visibility through the window panes. You can adjust temperature and air supply.

The air flow can be cooled if the machine is equipped with an air conditioning system.

Cab heating



Air-conditioning system



3.14.01 Fan

Switching on the fan/setting the ventilation stage

Prerequisite: Electrical system is ON.

- Turn the switch [1] to position 1 or 2.
- For the air-conditioning system: Turn the switch [5] to position 1, 2 or 3.
- To open or close the ventilation nozzles [4]: Open or close the fins.
- To adjust the direction of the ventilation nozzles [4]: Turn the fin ring in the required direction.

For drying or de-icing the front or rear windscreen: Direct the air flow onto the windscreens.

Switching off the fan

- ▶ Turn the switch [1] to position 0.
- ▶ For the air-conditioning system: Turn the switch [5] to position 0.
- ✔ The fan is switched off.

3.14.02 Heating

The heat exchanger for the heater is connected to the diesel engine's coolant circuit. The air flow is heated in the heat exchanger and guided into the cab.

Switching on the heating/setting the ventilation stage

- ▶ Set the ventilation stage: Turn the switch [1] to position 1 or 2.
- ▶ To adjust the heating temperature: Turn the infinitely variable switch [3].

Switching off the heating

- ▶ Turn the switch [1] to position 0.
- ✔ The heating is switched off.

3.14.03 Cooling

For versions with an air-conditioning system

The cab heating must be switched off before turning on the cooling function on the air-conditioning system.

Switch on the air-conditioning system at least once a month (even in winter) for approx. 15 minutes.

Switching on the air-conditioning system/setting the ventilation stage

- ▶ Close the cab windows and doors to cool the cab quickly.
- ▶ Turn the air-conditioning system on: Turn the switch [4] to position 1.
- ✔ The air-conditioning system is switched on, the indicator light is lit.
- ▶ Adjust the ventilation stage: Turn the switch [5] to position 1, 2 or 3.
- ▶ Fold the ventilation nozzles [2] on the headliner open or shut.

Adjusting the cooling temperature

- ▶ Turn the infinitely variable switch [6] to a position between minimum and maximum.

Switch off air-conditioning system

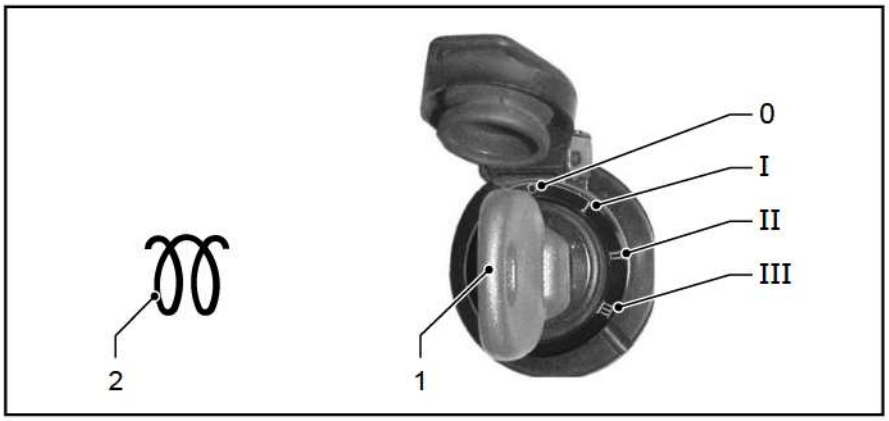
- ▶ Move the switch [4] to position 0.
- ✔ Air-conditioning system is switched off.
- ✔ The system only runs in ventilation mode.

3.15 Starting the machine

Requirement: Fill levels for the operating materials, for example fuel, water etc., are adequate.

Before starting the machine, check all functions and settings (see "Function tests before starting work").

The electrical system is switched on and off and the diesel engine started and stopped with the ignition key.



[0]	Electrical system OFF, diesel engine STOP	**[I]**	Electrical system ON
[II]	without function	**[III]**	Engine start

The pilot light for cold start assistance can also look different in different machine types.

When the engine is at a standstill and the electrical system is switched on for a longer period (position I), the battery discharges rapidly.

Switching on the electrical system

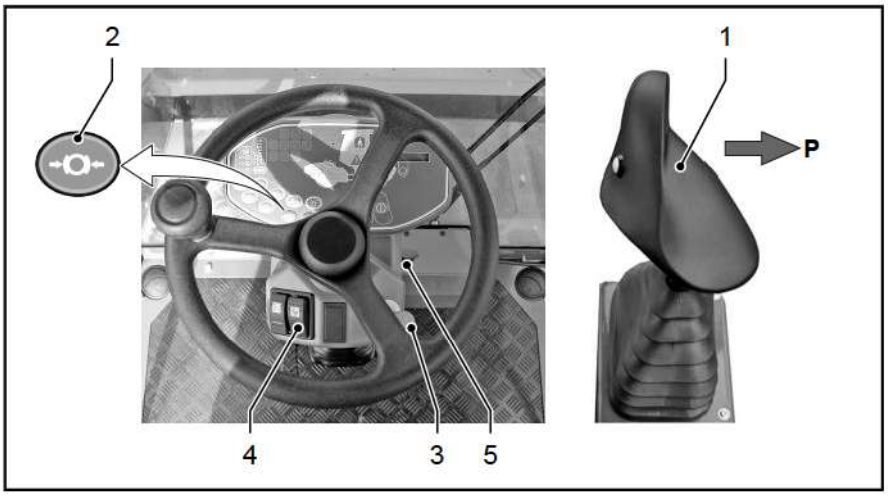
- ▶ Turn the ignition key [1] to position I.
- ✔ The electrical system is switched on.
- ✔ Functional control of warning and indicator lights.
- ✔ Indicator light for cold start assistance [2] lights up until the start temperature is reached.
- ✔ The diesel engine remains switched off.

Starting the diesel engine

NOTICE

Damage of the starter!
Damage or destruction of the starter as a result of an excessively long start phase.

- Keep the ignition key not lonager than 5 seconds in position III.
- If a starting attempt fails, make a fault diagnosis.



The starter is only connected to the start switch when the drive lever is in position P. This is the only way to start the diesel engine.

Conditions for starting the engine:

- The drive lever [1] is engaged in the position P. Indicator light [2] on.
- The EMERGENCY STOP button [3] is released.
- The on-board power supply and electrical system are switched on: The ignition key [5] is in position I.
- The gearshift [4] is set to the transportation gear or working gear.
- The cold start assistance indicator light is off.

▶ Turn the ignition key [5] to position III and hold it there until the diesel engine starts.

✔ Diesel engine starts.

✔ Ignition key turns back to position I after releasing.

3.16 Driving

⚠WARNING

Braking delay!
Severe injury or death due to a longer braking distance at a low operating temperature and especially when freezing.

- After starting the diesel engine, wait for a few minutes before driving off until the machine reaches the operating temperature.
- Whilst the hydraulic oil temperature warning light is on, drive the machine at only a moderate speed.

⚠WARNING

Full braking!
Severe injuries caused by a strong braking force.

- Drive with foresight and adjust your speed to the environmental and weather conditions.
- In case of visible obstacles reduce speed in good time.

NOTICE

Contamination!
Material damage to scrapers and other parts of the machine as a result of soiled drums or tires.

- Before driving off, ensure that there are no clumps of earth sticking to the drums or tyres.
- Park machine on boards or dry gravel if there is a risk of frost.

Operate the machine sitting on the operator's seat only! Multiple safety systems prevent the machine from being driven further as soon as the driver stands up from his seat.

3.16.01 Seat contact switch

Machine may only be operated from the operator platform. In order to ensure this, the machine is equipped with a seat contact switch. If the driver rises from his seat while driving, the seat contact switch is activated and the machine is braked after a delay.

⚠WARNING

Fast automatic braking!
Delayed, fast braking of the machine that starts automatically can lead to serious injuries or death.

- Only drive the machine when seated.
- Do not use the function of the safety switch to stop the machine.
- Brake and stop the machine with the driving lever.

Operator's seat monitoring

▶ If the operator does not remain seated while driving, an audible
✔ signal **is heard immediately**.

- ▶ If the driver fails to react,
- ✔ the machine will be braked until it stops after a total of **3 seconds**, and the working functions will be set to off.
- ✔ The diesel engine continues running.

Braking is not initiated if the driver returns to his seat within 2 seconds of leaving it.

If the machine is braked by the safety switch, the machine has to be returned to its home position before operation.

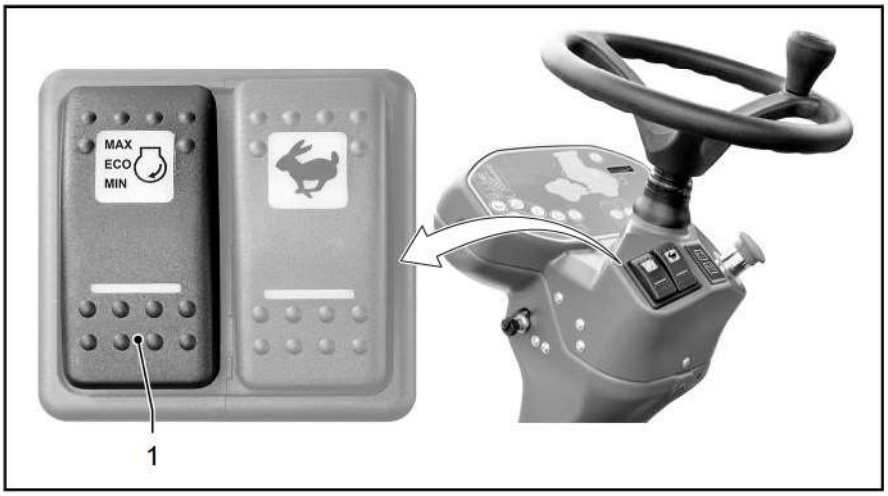
Bring the machine into the home position - drive on after the delayed braking.

Prerequisites:

- Machine at a standstill, after the delayed braking.
- Driver sitting on the seat again.
- Diesel engine is running.

- ▶ Move drive lever in position 0.
- ✔ The work functions are active again.

3.16.02 Adjusting the engine speed



The switch [1] is used to control the speed of the diesel engine between idling and the maximum speed.

- Push the switch down: MIN – idling speed
- Neutral position: ECO – 2/3 of maximum speed
- Push the switch up: MAX – maximum speed

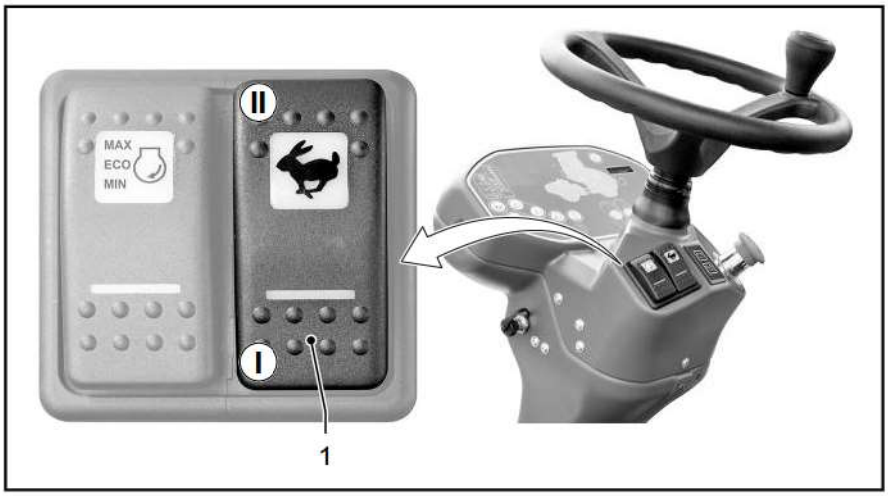
The vibration frequency is coupled to the engine speed. The adjustment of the engine speed will elements in the vibration frequency (see Technical Data).

3.16.03 Gearshift

⚠WARNING

Excessive speed!
Risk of serious injuries due to machine behaviour at excessive speeds.

- Use transportation gear only to manoeuvre on paved roads.
- Drive longer slopes or inclines at reduced speed (working gear).
- Work may only be performed in the working gear.



The machine has a working gear and a transportation gear. The driving speed is infinitely variable in both ranges, depending on the selected engine speed, and can be adjusted using the drive lever.

Working gear

- For performing all work with the machine.
  Some functions are only available when the working gear is engaged (vibration/oscillation, dozer blade).
- For driving on steeper slopes or inclines.

Transportation gear

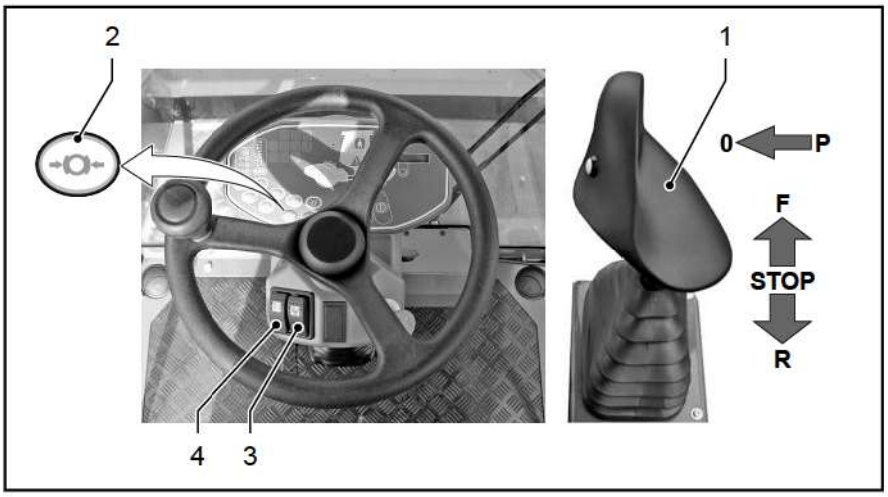
- For manoeuvring the machine on paved roads.

Selecting a gear

The switchover is only enabled once the drive lever is engaged in position P. Switching whilst driving is not possible.

- ▶ The switch [1] is in position I.
- ✔ Working gear is selected.
- ▶ The switch [1] is in position II.
- ✔ Transportation gear is selected.
- ✔ The switch [1] lights up.

3.17 Driving in normal operation



Make ready to drive/release parking brake

Requirement: Diesel engine running, drive lever in position P

- ▶ Select a gear [3].
- ▶ Push the drive lever [1] out of position P to the left and into position 0.
- ✔ The indicator light on the parking brake switch [2] is off.
- ✔ Machine is ready to start.

Driving forwards

- ▶ Preselect the engine speed [4].
- ▶ Move the drive lever in the F direction.
- ✔ The machine moves forwards.
  The final speed depends on the deflection of the drive lever, the selected gear and the selected engine speed.

Driving backwards

- ▶ Preselect the engine speed [4].
- ▶ Move the drive lever in direction R.
- ✔ The reversing lights are switched on.
- ✔ The machine reverses.
  The final speed depends on the deflection of the drive lever, the selected gear and the selected engine speed.

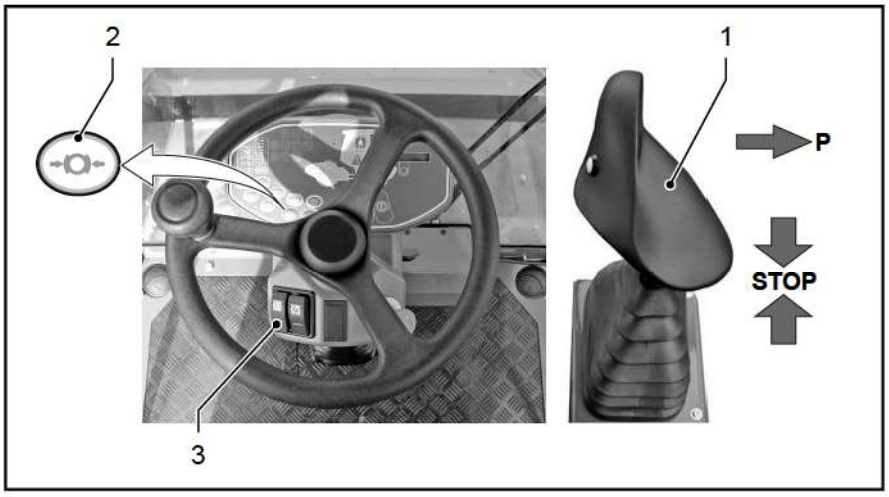
For versions equipped with a back-up alarm, an audible signal is heard as soon as the drive lever is in position R.

Reversing

- ▶ Quietly and steadily move the drive lever in the opposite direction via the zero position.
- ✔ The machine brakes to a standstill and accelerates in the opposite direction, maximally up to the preset final speed.
- ✔ The infodisplay [2] shows the current driving speed.

3.18 Stopping the machine in normal operation

Stopping



- ▶ Smoothly and steadily move the drive lever [1] to position 0 and stop it/let it click into place there.
- ▶ Set the engine speed [3] to idling (MIN).
- ✔ The hydrostatic travel drive brakes until the machine comes to a standstill.
- ✔ The parking brake has not been activated.

Activating the parking brake

- ▶ Push the drive lever [1] out of position 0 to the right and into position P.
- ✔ The drive lever is blocked.
- ✔ The parking brake indicator light [2] lights up: The parking brake is active.

3.19 Stopping the machine in an emergency – EMERGENCY STOP

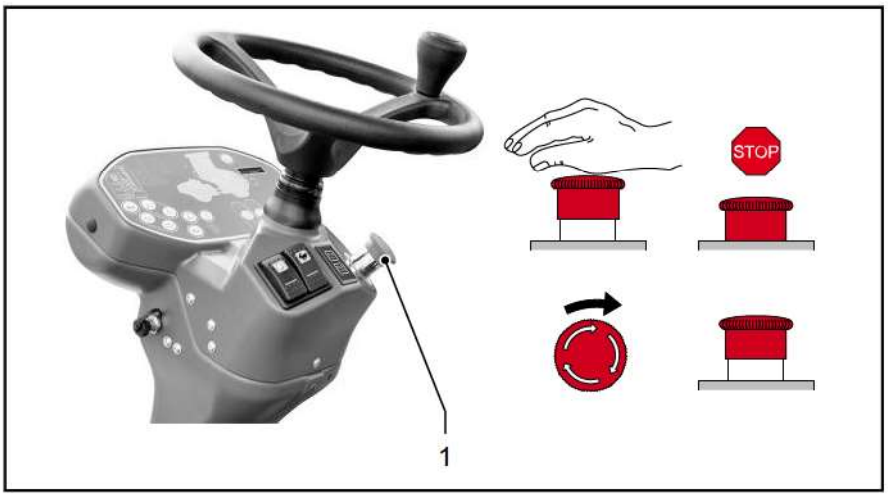
⚠WARNING

Full braking!
Stopping the machine suddenly can lead to serious injuries or death.
- Only use the EMERGENCY STOP in the event of danger.
- Do not use the EMERGENCY STOP as the service brake.

NOTICE

Incorrect performance of an EMERGENCY STOP!
Material damage to electronic or mechanical components of the machine as a result of incorrect performance of an EMERGENCY STOP.
- Always use the EMERGENCY STOP function to switch off the machine in the event of danger.

Performing an EMERGENCY STOP in the event of danger



In an emergency, the EMERGENCY STOP brings the machine to a controlled stop and switches it off.
Using the EMERGENCY STOP is the only way to guarantee that all operating functions will be disabled immediately without causing any further danger to driver, the machine or the environment.

- ▶ Press down hard on the EMERGENCY STOP button [1].
- ✔ The machine will disable all operating functions automatically and
  - stop the travel drive immediately.
  - switch the diesel engine off.
  - apply the brakes.

Restarting the machine after an EMERGENCY STOP

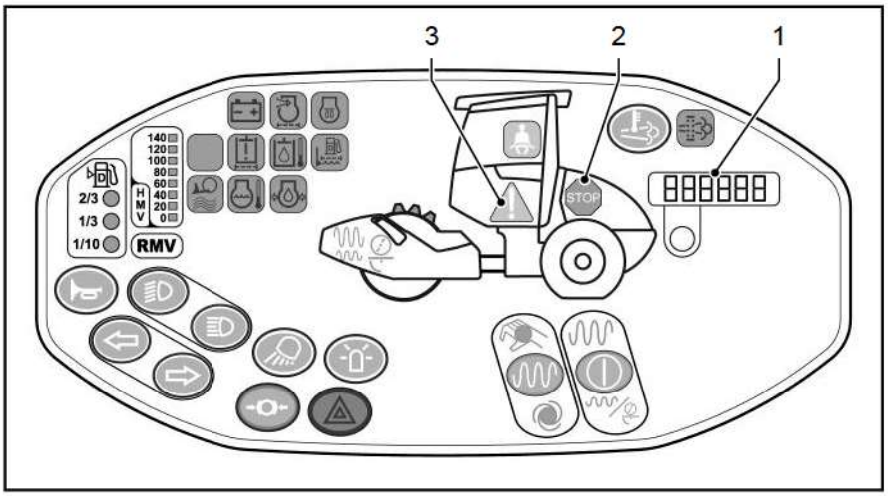
- ▶ Switch off the electrical system using the ignition key.
- ▶ Engage drive lever in position P.
- ▶ To release the EMERGENCY STOP [1]: Turn the button clockwise until the lock is released.

- ▶ Switch on the electrical system using the ignition key.
- ✔ The diesel engine can be started.

3.20 Stopping the machine because of a fault

NOTICE

Severe malfunctions!
Damage or destruction of machine components caused by continuing operation despite serious faults.
- When a serious fault is indicated, immediately stop the machine at a safe position outside the danger zone.
- Determine and remove the cause of the alfuction.
- Do not use the machine again until the fault has been rectified.



Serious fault

In the event of a serious fault:

- ✔ A permanent acoustic signals sounds.
- ✔ At least one warning light lights up.
- ✔ The system info [1] displays an error code.
- ✔ The STOP warning light [2] flashes.

- ▶ Stop using the machine.
- ▶ Park the machine out of the danger zone.
- ▶ Switch off the diesel engine immediately.
- ▶ Rectify the cause immediately.

Write down the error code indicated. If you cannot correct the error yourself, please contact the customer service.

The STOP symbol appears when:
- Hydraulic oil temperature is too high
- Engine/coolant temperature is too high
- Coolant fill level is too low
- Engine oil pressure is too low/too high
- Water in diesel (water sump fuel prefilter)
- Diesel particulate filter (DPF) is too heavily loaded.

Note on a fault

If there is a deviation from the normal operating status:

- ✔ The indicator light lights up [3].
- ✔ An acoustic signal sounds briefly.
- ✔ At least one warning light lights up.
- ✔ The system info [1] displays an error code.

- ▶ Further operation of the machine is admissible for a short period of time.
- ▶ Park the machine out of the danger zone.
- ▶ Rectify the cause of the fault without delay, no later than at the end of the work shift.

No further operation of the machine is admissible unless the error messages indicated do not cause any immediate risk to the safety of people, machinery or environment.

3.21 Driving with the dynamic compaction system

⚠WARNING

Reduced road adhesion!

Serious injuries or death through the machine tipping over because of reduced ground adhesion.

- Never switch on the dynamic compaction system when traveling across a slope or on hard ground.

⚠WARNING

Explosion!

Severe injury or death by gas explosion.

- Before switching on vibration, make certain that no gas line is buried in the ground you will be working on.

NOTICE

Vertical oscillations caused by vibration!

Collapse or damage at buildings or on lines laid in the underground.

- Do not switch on vibration system near buildings!
- Prior to switching on the vibration function, it must be ensured that there are no lines laid in the underground in the vibration area.

Vibration

In the vibration mode the roller drum is shifted to vertical oscillations. These hammering impacts produce a manifold increase in the compaction force of the machine.

Effect on the environment:

Vibration oscillations can spread in the ground over a wide area. They are generated in circles around the roller drum and effect also the deeper ground. This may cause a damage to buildings or pipe systems under the machine.

Amplitudes/frequency:

For the vibration two amplitudes with aligned frequency ranges can be selected.

Oscillation

In the oscillation mode the roller drum is shifted to tangential oscillations. The compression of the material to be compacted is conducted by flexing movements.

Effect on the environment:

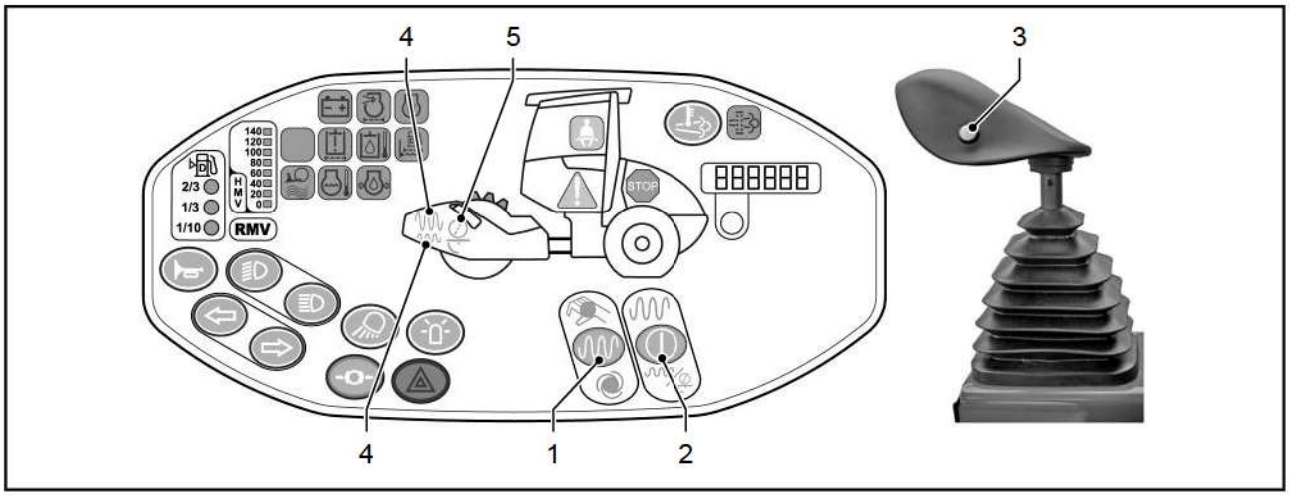
Oscillation vibrations are developed predominantly on the surface of the ground and spread only in front of the roller drum and on its rear. Thus the damaging force is reduced considerably.

Amplitudes/frequency:

Oscillation uses a tangential amplitude. The frequency depends on the preselected motor speed.

3.21.01 Switching the compaction system on and off

The dynamic compaction system is deactivated every time the engine is started.



No.	Switch/symbol	Meaning
[1]		Operating mode switch
		Manual
		Automatic
[2]		Switch for activating the drum/selecting the amplitude
[3]		Dynamic compaction system ON/OFF switch
[4]		Vibration with large amplitude
[4]		Vibration with small amplitude
[5]		Oscillation

Preparing for working with dynamic compaction system

Requirement: Electrical system ON

Selecting manual operating mode

- ▶ Press switch [1].
- ✔ LED *Manual* lights up green.
- ✔ Use the switch [6] at the drive lever to set the dynamic compaction system to ON or OFF.

Selecting automatic operating mode

- ▶ Press switch [1].
- ✔ LED *Automatic* lights up green.
- ✔ The dynamic compaction system is switched on/off automatically depending on the vehicle speed. The dynamic compaction system is switched off when at low or high speed.

Always preset manual mode when restarting the machine.

Activating/deactivating the compaction system

Activating the drum

- ▶ Press the switch [2] several times.

Each activation switches to the next step:

- Vibration with large amplitude
- Compaction system deactivated
- Vibration with small amplitude or oscillation (for VIO drum)
- Compaction system deactivated.

- ✔ The symbol [4] or [5] lights up and indicates the activated compaction system.
- ✔ The drum is ready for operation with vibration/oscillation.

Setting drum in vibration

Requirement: Diesel engine is running.

- ▶ Press switch at drive lever [6].
- ✔ In accordance with the settings, the compaction system works immediately (manual) or when driving starts (automatic).

Switch off vibrations

- ▶ Press the switch on the drive lever [6] again.

3.21.02 Jump operation (RMV)

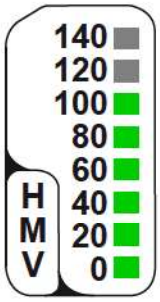
No even compaction measurement can be realised during jump operation. In this case, the compaction parameters (HM value) are not reliable any longer.

The vibrating drum must not be lifted from the ground (jump operation) during compaction in earth moving work.

- A slow flashing of the display indicates that the drum is immediately before jump operation.
- A fast flashing of the display indicates that the drum is in jump operation.

- ▶ Increase or decrease the driving speed.
- ▶ Increase or decrease the engine speed.

3.21.03 Compaction (HMV)



The HMV value indicates the currently achieved compaction. The driver can see whether the subsoil needs further compaction or where there is a weak point.

If the machine is not equipped with a computer unit for HMV, nothing will be displayed.

Indicator lights indicate the height of material compaction. The compaction value depends on the material to be compacted. When performing compaction work with the vibration switched on, increasing HMV values indicate increasing material compaction or load-bearing capacity. If the value remains the same at a precompacted place, no further compaction is possible there.

3.22 Adjusting scrapers

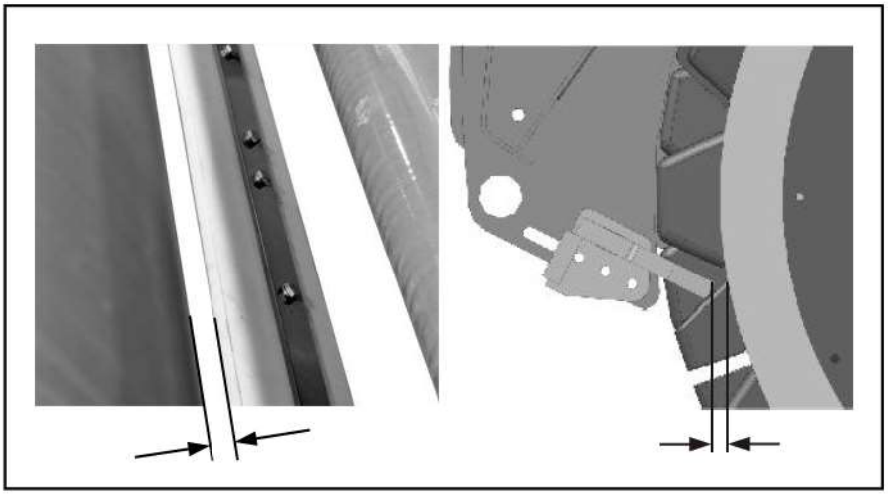
The scrapers remove dirt adhering to the surfaces of the drums/ tyres.

NOTICE

Colliding machine parts!
Material damage to the drum or the scraper bracket due to machine parts colliding.

- Avoid any contact between the drum and scraper bracket.
- Check the clearance between the drum and scraper bracket after inspection and adjustment work.

Rinse out dirt embedded between drums/tyres and scrapers with a water jet. Remove any extremely stubborn dirt with a spatula or similar tool.



The scrapers are mounted on a rigid console. Because the drum is suspended elastically, the scraper must not touch the drum. Therefore, a clearance must be maintained between the drum and scraper:

- Smooth drum clearance: 10 mm
- Padfoot drum clearance: 15 mm.

see "Checking the drum scrapers", page 166

3.23 Exhaust gas after-treatment

Goal: Lowering emissions

Harmful constituents in the exhaust gas (such as carbon monoxide, unburnt hydrocarbons, diesel particulate, nitrogen oxides etc.) are reduced/converted in catalysers or collected in special filters to prevent them escaping into the environment.

For that purpose, HAMM uses the following components:

- Diesel oxidation catalyst (DOC)
- Diesel particulate filter (DPF)
- SCR catalytic converter (SCR = selective catalytic reduction)

Diesel oxidation catalyst (DOC)

The diesel oxidation catalyst has a catalytic surface, which oxidises the carbon monoxide and unburnt hydrocarbons. In addition, it oxidises nitrogen monoxide, turning it into nitrogen dioxide.

In normal operation, these oxides are burnt at a high exhaust gas temperature.

Diesel particulate filter (DPF)

The sealed diesel particulate filter collects all the diesel particulates. At a sufficiently high exhaust gas temperature, they are burnt with the nitrogen dioxide. This enables the diesel particulate filter to be continuously and automatically regenerated during operation.

Ash deposits, e.g. from lube oil residues or metal abrasion, cannot be removed from the diesel particulate filter by thermal regeneration. Therefore, the diesel particulate filter has to be replaced at certain intervals.

Malfunctions in the exhaust gas after-treatment system

If there is a fault in the exhaust gas after-treatment system, warning and indicator lights appear on the control panel. Error codes are displayed on the info display/system info.

3.23.01 Initiating parked regeneration

If the temperatures required for automatic cleaning of the exhaust gas are not reached during operation, the elements for the cleaning the exhaust gas must be cleaned with the park regeneration function. For this purpose, the machine must be brought to a safe place. It is only possible to start parked regeneration when the parked regeneration switch flashes.

⚠WARNING

High exhaust temperature, increased exhaust emission!
Serious injuries as a result of burning or poisoning by exhaust gases during the park regeneration.

- Keep a safe distance away from the flow of exhaust gas.
- Perform park regeneration only in the open air or in well ventilated rooms.

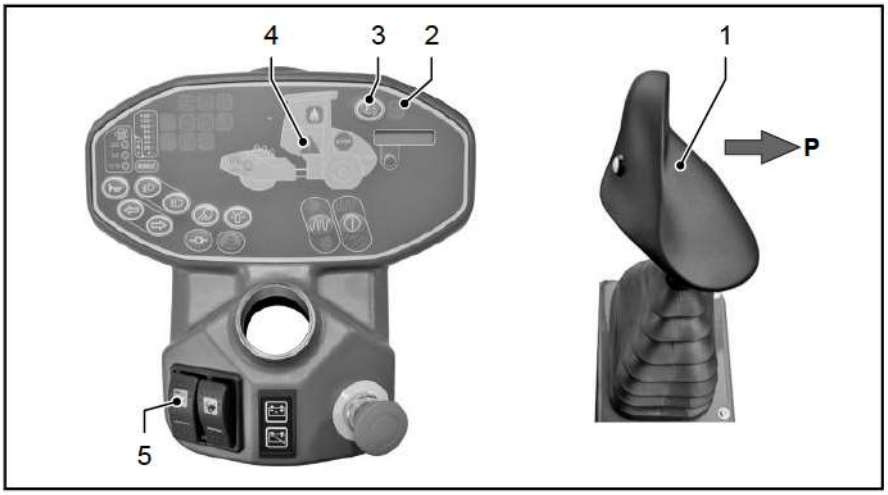
NOTICE

High gas temperature!

Property damage by fire during the parked regeneration of the diesel particulate filter.

- During park regeneration, prevent hot exhaust gases or the end of the exhaust pipe from igniting objects in the vicinity (e.g. do not perform the regeneration under trees or on dry grass).
- Initiate park regeneration only in a safe place: firm, non-combustible surface.

Initiating parked regeneration



Prerequisites:

- Machine is at standstill,
- Diesel engine is running,
- Operating temperature is achieved,
- The switch [3] flashes.

▶ Push the drive lever [1] out of position 0 to the right and into position P.

▶ Set the engine speed [5] to idling (MIN).

▶ Press switch [3].

✔ The engine speed is automatically increased.

✔ The parked regeneration starts.

✔ The engine speed is automatically decreased once parked regeneration is successfully completed.

No operating functions may be activated during parked regeneration (duration approx. 30 minutes). Only turn off the diesel engine once parked regeneration is successfully completed.

Parked regeneration may only be cancelled in cases of emergency.

Cancelling parked regeneration

▶ Move the drive lever [1] forwards or backwards.

The switch [3] flashes if parked regeneration has been cancelled. Parked regeneration must be initiated again as soon as possible.

3.23.02 Urgency of regeneration

Stage 1: Regeneration required

- ✔ The switch [3] flashes.

The diesel particulate filter cannot be regenerated at low operating temperatures.

- ▶ Raise the machine's operating temperature by increasing the engine load (e.g. by increasing the engine speed to the maximum, switching on the vibration)

If independent regeneration is not possible, parked regeneration must be carried out in a safe location as soon as possible.

Stage 2: Carry out parked regeneration immediately

- ✔ The switch [3] flashes.
- ✔ The indicator light [2] flashes yellow.
- ✔ The speed and output of the diesel engine are reduced.

The machine is locked for normal operation to prevent damage to the diesel engine and the exhaust gas system.

- ▶ Drive the machine out of the danger area.
- ▶ Carry out parked regeneration.

Stage 3: Regeneration by service personnel required

- ✔ The switch [3] flashes.
- ✔ The indicator light [2] lights up yellow.
- ✔ The warning light [4] lights up.
- ✔ The speed and output of the diesel engine are reduced.

The machine is locked for normal operation to prevent damage to the diesel engine and the exhaust gas system.

- ▶ Move the machine out of the danger area and park it in a safe location.
- ▶ Contact customer service.

Stage 4: Replace the diesel particulate filter

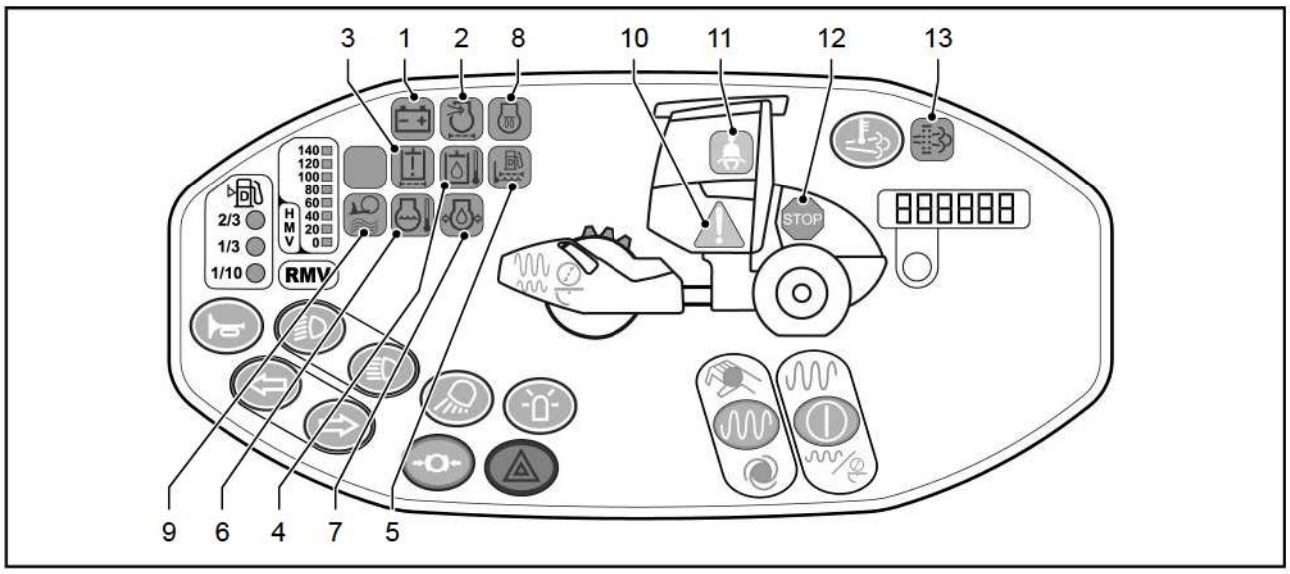
- ✔ The indicator light [2] lights up red.

If the level of ash in the diesel particulate filter has reached its maximum value, the filter must be replaced. This work may only be carried out by trained personnel.

- ▶ Move the machine out of the danger area and park it in a safe location.
- ▶ Contact customer service.

3.24 Operation monitoring

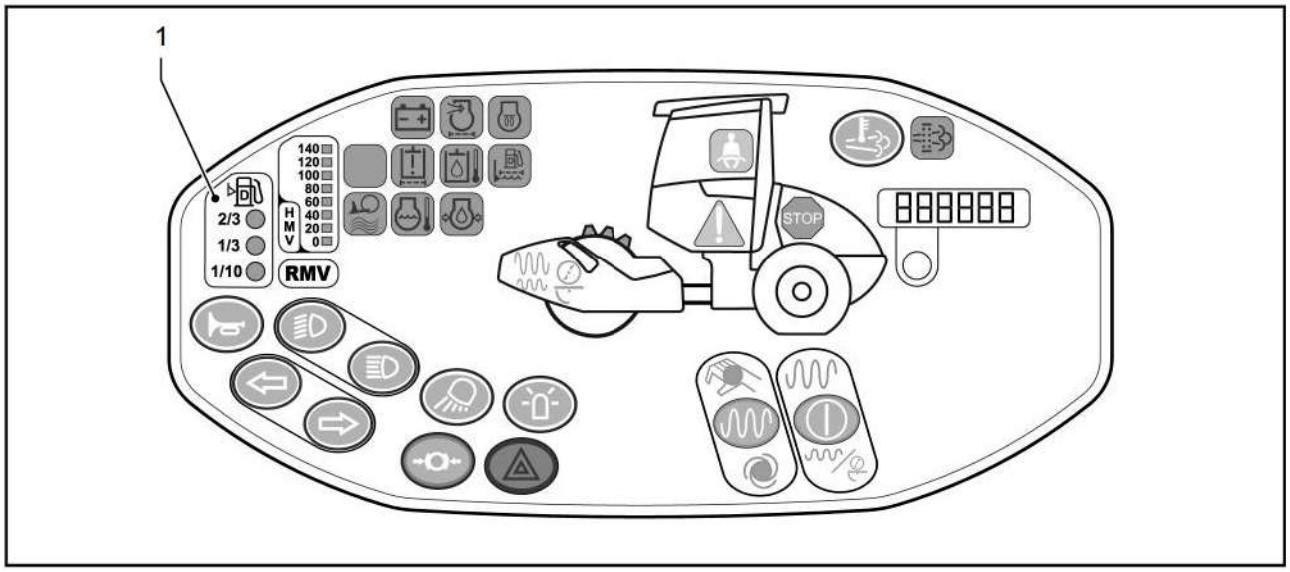
Control panel – warning and indicator lights



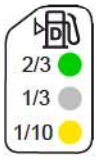
No.	Symbol	Warning and indicator light	Status	Meaning/measure
[1]		Charge current (battery)	Flashes red	No charge current: Check the electrical system. Contact customer service.
[2]		Air filter	Flashes red	The air filter cartridge is contaminated. Check the air filter.
[3]		Pressure filter hydraulics	Flashes red	Filter cartridge of the hydraulic oil filter is contaminated. Replace the filter insert of the pressure filter for the hydraulic system.
[4]		Hydraulic oil temperature	Flashes red	Hydraulic oil temperature is high or the hydraulic oil has overheated. Switch off the engine, request assistance from customer service if necessary.
[5]		Water sump fuel prefilter	Flashes red	Water sump in the fuel prefilter too high. Drain the filter cartridge in the fuel prefilter.
[6]		Engine temperature	Flashes red	Engine temperature is high or the engine has overheated. Switch off the engine, check the coolant fill level, check the radiator.
[7]		Engine oil pressure	Flashes red	Engine oil pressure is too low. Check the engine oil fill level.

No.	Symbol	Warning and indicator light	Status	Meaning/measure
[8]		Cold start assistance	lights up yellow	Lights up during preliminary annealing. Goes out once the start temperature has been reached.
[9]		Floating position of dozer blade	lights up green	Dozer blade is in floating position
[10]		Warning, notification, fault	lights up yellow	Deviation from the normal operating status. At least one warning light is flashing and an error code is displayed.
[11]		Seat belt monitoring device (optional)	lights up yellow	Lights up when the seat belt is not being used. Put on the seat belt.
[12]		Serious fault	Flashes red	Indicates a serious fault. At least one warning light is flashing and an error code is displayed. Stop using the machine.
[13]		DPF service	flashes or lights up yellow	Diesel particulate filter regeneration required.
			lights up red	Diesel particulate filter must be replaced.

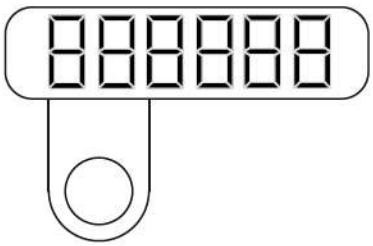
3.24.01 Control panel – fill level control indicator



The filling levels in the service fluid tanks are indicated by luminous spots. One or more luminous spots light up according to the filling level.

No.	Symbol	Indicator	Status	Meaning/measure
[1]		Fuel fill level	lights up green	Fuel available
			flashes green	Fuel fill level between 2/3 and 1/3: Top up the fuel.
			flashes yellow	Fuel fill level below 1/10: Top up the fuel.

3.24.02 Control panel – Info display/system info



The driver can use this further developed display unit to access information about the machine status, settings and system messages.

In the "System info" menu, you can choose between two levels by pressing and holding the switch.

Within the levels, you can change between various displays by briefly pressing the switch.

Level 1

- **Operating hours**
  After the electrical system is switched on, the operating hours of the machine are shown in the display field.
  Maintenance work has to be carried out according to the accumulated operating hours.
- **Engine speed**
  The engine speed is displayed as: RPM ----.
- **Asphalt temperature** (if a system for measuring the asphalt temperature is installed)
  Asphalt temperature display under the machine in °C or °F.
- **Diagnostic code**
  A short acoustic signal sounds when a fault is detected. The display shows all the existing faults one after the other in the form of diagnostic codes.

→ Press and hold the switch to change to level 2.

Level 2

- **Roller type** e.g. HD 10 VV
- **Dashboard software version**
- **Compaction computer software version**

3.25 Switching diesel engine off

Requirement: Diesel engine is running.

- ▶ Latch driving lever in position 0.
- ▶ Fully lower attached accessory equipment.
- ▶ Switch off accessory equipment.
- ▶ Apply parking brake.
- ✔ Parking brake is applied.
- ✔ Diesel engine is running in idle speed.
- ▶ Allow the diesel engine to continue to idle for 1 to 2 minutes.
- ▶ Turn ignition key to position 0.
- ✔ Diesel engine is switched off.
- ✔ Electrical system is switched off.

3.26 Automatic engine stop

The automatic engine stop automatically sets the diesel engine to off during a longer halt. This is done after a preset period of inactivity when the following conditions are met:

- Diesel engine is running.
- Working functions set to off.
- The drive lever is latched into the position 0.
- The parking brake is activated.

The automatic engine stop system will react unless any of the above conditions changes during the period of inactivity:

- ✔ Diesel engine is switched off.
- ✔ Functions, such as parking light and warning flashers, function in this case as well.

The automatic engine stop system will not react whenever any of the above conditions required changes before the period of inactivity is over.

After activation of the engine stop automatic, a machine is **NOT** regarded as being switched off and safely parked.

Bringing the machine back into operation

After activation of the engine stop automatic, the machine has to be restarted in order to resume operation.

- ▶ Turn ignition key to position 0.
- ✔ Machine is switched off and can be restarted (see "Starting machine").

3.27 Shutting down and leaving the machine safely

⚠WARNING

Unintended machine movement!

Severe injury or death due to unexpected machine movements.

- The driver may only leave the machine when it has been properly and safely shut down.
- Observe the road traffic regulations.
- Park the machine on safe ground, i.e., flat and horizontal ground with sufficient bearing capacity.
- Secure machine against rolling away.

Prior leaving the machine

- ▶ Apply parking brake.
- ▶ Switch off the diesel engine.
- ▶ Latch the seat console in the centre of the machine.
- ▶ Pull off the ignition key.
- ▶ Switch off the machine at the battery isolation switch (if applicable).
- ▶ Completely close and block door panes and the roof hatch.
- ▶ Lock cabin doors, the instrument panel covering, as well as all cladding covers.
- ▶ Use suitable precautions (e.g., parking chock) to secure the machine against rolling away in addition when parking on an uphill or downhill gradient.

3.28 Towing the machine

A machine that has become inoperable can be towed by another vehicle for short distances.

For distances longer than 500 m, the machine must be loaded for further transport.

⚠WARNING

Spring-operated brake out of function!
Severe injury or death due to machine rolling away.

- Prevent the machine from rolling away with chocks before releasing the spring-operated brake.
- Do not attach the machine for towing unless at the points intended for this.
- Use a towing vehicle with enough pulling power.
- Tow machine only with low speed 1 km/h (0.6 mph).
- Only tow the machine for short distances (max. 500 m).

⚠WARNING

Towing equipment live!
Serious injuries or death due to tensioning or tearing towing equipment.

- Keep your distance from towing equipment (at least the length of the towing rope or chain).
- The tractive force of the towing equipment must correspond to at least double the operating weight of the machine.
- Keep the length of the towing equipment as short as possible in accordance with the rescue situation.

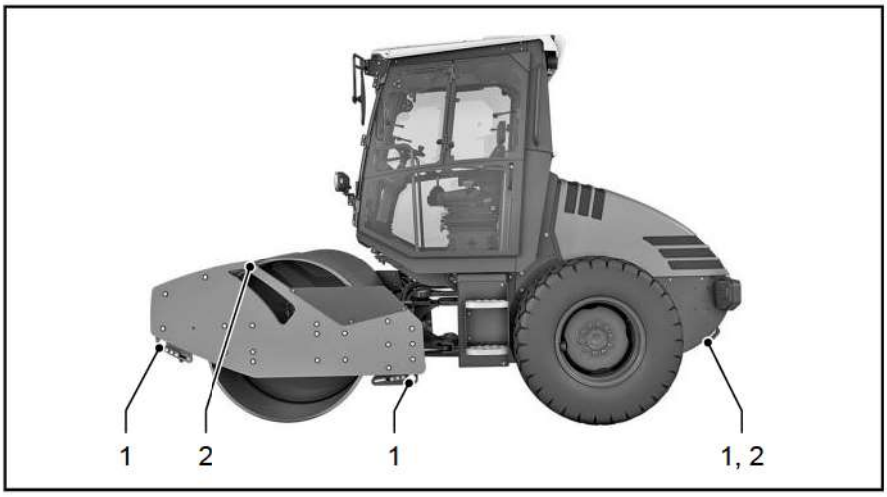
Towing of the machine requires sufficient knowledge of the functioning of the hydrostatic travel drive and the operation of the spring-operated brake.
Only specialist personnel with appropriate training may release the spring-operated brake and depressurise the hydraulic system. If this is not possible, the machine must be towed while working against its own resistance. Alternatively, the machine can be hoisted out of dangerous situations (see page 62).

Only allow towing to be performed by persons with towing experience, who have been informed of the dangers.

Necessary towing tool

- **Towing bar (normal towing)**
  Use a towing bar with adequate pulling power (at least the operating weight of the machine) for a normal case of use on a flat surface with the spring-loaded brake released.
- **Towing chains (for towing the machine out of dangerous situations)**
  Towing chains with sufficient pulling power (at least double the machine's operating weight) for towing the machine up slopes and/or with the spring-operated brake still applied.

3.28.01 Preparing the machine for towing



- ▶ Move the drive lever to position P.
- ✔ Parking brake is active.
- ✔ The drive is not active.
- ▶ Shut down the diesel engine if it is still operational.
- ▶ Use parking chocks to secure the machine against rolling away.
- ▶ Replace any damaged pipes or hoses which are leaking oil before towing (to protect the environment).
- ▶ Attach towing tools to the machine's lashing points [1] and the towing vehicle.
- ▶ Alternatively, attach lifting tackle for hoisting the machine to the machine's lifting lugs [2] and the crane vehicle.

Towing

- ▶ Depressurise the hydraulic system and release the spring-operated brake (only trained specialist personnel).
- ▶ Alternatively, release the parking brake: Move the drive lever to neutral position 0.
- ▶ Remove the chocks.
- ▶ Tow the machine.

3.28.02 After towing/before repair

Shutting down the machine safely at the location it has been towed to

- ▶ Prevent the machine from rolling away with suitable protective measures (e.g. chocks).
- ▶ Reapply the parking brakes and re-establish the frictional connection of the hydrostatic travel drive (only trained specialist personnel).
- ▶ Apply the parking brake: Drive lever in position P.
- ▶ Remove the towing tools/lifting tackle.
- ✔ Machine safely shut down.
- ✔ The prerequisites for repair are fulfilled.

After carrying out the repair: The machine may only be recommissioned after a full functional check.

3.29 Start with jump leads

Preparation for start assistance

- Observe precaution measures for handling batteries (see Safety instructions).
- A discharged battery can freeze already at 0 °C (32 °F). Thaw a frozen battery in a warm room. Remove the plug.
- Do not disconnect the battery from the vehicle's internal power supply.

Connecting jump leads

⚠WARNING

Explosion and electric shock!
Severe injury and death due to moving parts, burns or electric shock.

- Charging vehicle and discharged vehicle may not come in contact with each other.
- The pole terminals of the jump leads must not be allowed to touch each other.
- Move the pole terminal on the vehicle ground of the unloaded vehicle as far as possible away from the negative pole of the discharged vehicle.
- Pay attention to the nominal voltage of the batteries.
- Use jump leads with an insulated terminal clamp and a cross section of at least 25 mm^2.

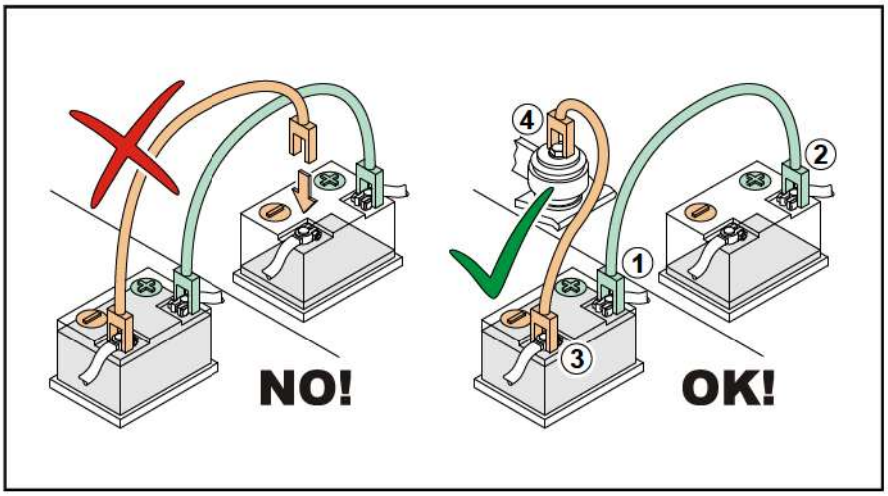
⚠WARNING

Exposed, rotating parts!
Risk of being trapped, pulled in, and injured by rotating engine parts.

- Ensure that no parts of the body or items of clothing can be drawn into rotating or moving engine parts.
- Do not reach into the engine compartment during the start assistance process.
- Route cables such that they cannot be drawn into rotating engine parts.
- Always lay the leads so that they can be removed safely even when the engine is running.

The positive pole of a battery is marked by a Plus (+) sign. The negative pole of a battery is marked by a Minus (–) sign.

The vehicle ground is, for example, the engine block or the fastening screw of the engine mounting.



- Remove the terminal caps from the poles of the batteries.
- Connect the pole terminal [1] of the first lead to the positive pole of the charged battery.
- Connect the other terminal clamp [2] of the first lead to the positive terminal of the discharged battery.
- Connect one terminal clamp [3] of the second lead to the negative terminal of the charged battery.
- Connect the other terminal clamp [4] of the second lead with the ground of the discharged vehicle.

Starting process

- Start the engine of the charging vehicle and let it run with medium engine speed.
- Start the diesel engine of the discharged vehicle after approx. 5 min.
- For approx. 3 min let both engines run with medium engine speed and the jump leads connected.

Removing jump leads from the batteries

- Switch on an electric consumer on the discharged vehicle (e.g. driving light) in order to avoid overvoltages in the electrical system.
- Remove the jump leads in reverse order: Disconnect pole terminal [4], then [3], then [2], then [1].
- Put the terminal caps on the poles of the batteries.

3.30 Shutting down

3.30.01 Temporarily shutting down the machine and starting it up again

⚠WARNING

Dangerous operating materials!
Risk to health and the environment caused by operating materials that have not been disposed of properly.

- Dispose of operating materials in accordance with the applicable safety and environmental regulations.
- Wear personal protective equipment when disposing of the materials.

If the machine will not be used for an extended period of time, it must be decommissioned and stored correctly.

After storage, the machine must be prepared for recommissioning before it is used again.

The work to temporarily shut down and to recommission the machine requires expert knowledge and may require special tools and equipment.
This work must only be carried out by trained specialists.

The work steps listed below are **NOT INSTRUCTIONS**. They are a non-exhaustive list of examples of work that must be carried out in order to temporarily shut down and/or recommission the machine.
For precise information or for carrying out the decommissioning and/or recommissioning process, contact customer service.

Decommissioning – temporarily shutting down

All activities that are carried out for the temporary shutdown must be documented. This is the only way to guarantee that the machine can be properly recommissioned following a temporary shutdown.

Catch all liquids in suitable containers and dispose of them properly in accordance with the relevant specifications and national regulations.

- ▶ Wear personal protective equipment:
  - Protective work wear
  - Safety goggles
  - Protective gloves
  - Safety shoes.
- ▶ Thoroughly clean the inside and outside of the machine.
- ▶ Preserve any sealing elements using acid-free grease.
- ▶ Check the drive unit, auxiliary units, hoses, hose connections and flange-mountings for leaks and/or escaping operating and auxiliary materials. If there are any anomalies, repair any affected components.

- ▶ Remove the batteries and store them in a frost-free environment.
  Follow the battery manufacturer's instruction manual.
- ▶ Drain and preserve the fuel system.
- ▶ Fill the AdBlue®/DEF reservoir to 25%.
- ▶ Check the coolant level and, if required, top it up.
- ▶ Drain the engine oil and preserve the engine using running-in preserving oil.
- ▶ Check the gear oil level and, if required, top it up.
- ▶ Drain the liquids from the tanks for water sprinkling, additive sprinkling and the windscreen washer system.

Storage

- ▶ Store the machine and machine components in well-ventilated, lockable, temperature-controlled and dry rooms.
- ▶ When storing outdoors, place the machine and machine components on suitable underlays in order to protect them against moisture and cover them using tarpaulins that open at the bottom. Secure the tarpaulins using suitable lashings.

Recommissioning

- ▶ Check the drive unit, auxiliary units, hoses, hose connections and flange-mountings for leaks and/or escaping operating and auxiliary materials. If there are any anomalies, repair or replace any affected components.
- ▶ Drain and dispose of the preserving liquids.
- ▶ Fill pipe systems with operating and auxiliary materials e.g.: engine coolant, engine oil, gear oil, AdBlue®/DEF, water sprinkling, additive sprinkling.
- ▶ Check and, if required, repair all of the components.

3.30.02 Permanently shutting down and disposing of the machine

⚠WARNING

Dangerous operating materials!
Risk to health and the environment caused by operating materials that have not been disposed of properly.

- Dispose of operating materials in accordance with the applicable safety and environmental regulations.
- Wear personal protective equipment when disposing of the materials.

If the machine is no longer designated or suitable for the intended use, it must be decommissioned in accordance with the applicable regulations.

The work to permanently decommission the machine requires expert knowledge and may require special tools and equipment.
This work must only be carried out by trained specialists.

The work steps listed below are **NOT INSTRUCTIONS**. They are a non-exhaustive list of examples of work that must be carried out in order to permanently decommission the machine.
For precise information or for carrying out the decommissioning, contact customer service.

Disposing of operating materials

Catch all liquids in suitable containers and dispose of them properly in accordance with the relevant specifications and national regulations.

- Wear personal protective equipment:
  - Protective work wear
  - Safety goggles
  - Protective gloves
  - Safety shoes.
- Remove the batteries and dispose of them in accordance with the statutory provisions.
  Follow the battery manufacturer's instruction manual.
- Drain the fuel tank.
- Drain the AdBlue®/DEF reservoir.
- Drain the hydraulic oil tank.
- Drain the engine coolant circuit.
- Drain the engine oil circuit.
- Evacuate the air-conditioning system.
- Drain the gear oil.
- Drain the tanks for water sprinkling, additive sprinkling and the windscreen washer system.

Disposing of the machine

- Hand over any electrical/electronic components to a specialised recycling company.
- Hand over the machine to an approved recycling company so that it can be destroyed and disposed of.
- Observe any national and, if required, regional disposal regulations.

4 MAINTENANCE

When working at the machine please always adhere to the instructions given in your Safety instructions!

4.00 General maintenance instructions

This section describes the work on the machine required for its care and to maintain operational safety.

The extent and the frequency of the maintenance work depends on the operating and deployment conditions, which may differ in many cases. In case of more difficult operating conditions, the machine must have maintenance in shorter intervals as scheduled for normal operation.

The maintenance intervals are based on the operating time indicated by operating hours meter.

Various warning and pilot lights make the driver aware of essential interventions during operation.

Additional maintenance work must be carried out in the running-in time.They are described in the running-in regulations.

The running-in regulations, servicing intervals and care measures for diesel engine muast be adhered as specified in the instruction manual of the diesel engine manufacturer.

4.00.01 Important information about maintenance works

Testing and maintenance work require expert knowledge. Only trained, specialist personnel may perform the maintenance work.

The warning notices indicated below apply to all maintenance work:

⚠WARNING

Unintended machine movement!

Severe injury or death due to unexpected machine movements during maintenance work.

- Park the machine on safe ground, i.e., flat and horizontal ground with sufficient bearing capacity.
- Secure machine against rolling away.
- Do not carry out any maintenance work unless the engine has been stopped and the ignition has been switched off.
- On machines with safety strut, apply the safety strut before maintenance work.

⚠WARNING

Unintended engine start!

Severe injury and death caused in case of an unintended engine start during maintenance work.

- Do not carry out any maintenance work unless the engine has been stopped and the ignition has been switched off.
- Before starting maintenance work, set the battery isolating switch to off in order to de-energize the electrical system. As an alternative, disconnect the earthing/grounding strip from the battery.
- To avoid any unintended engine start by any third person, affix a warning notice at the driver's position indicating that work is in progress on the machine.

⚠WARNING

Exposed, rotating parts!

Risk of being trapped, pulled in, and injured by rotating engine parts.

- Do not perform any testing, adjusting or maintenance work in the area of the engine unless the diesel engine has been switched off.
- Do not reach with your hands into the area of the engine unless after every part has come to a standstill.
- Do not lay down any object or tool in the engine compartment.
- Keep a safety distance when making a visual inspection while the diesel engine is running.

⚠WARNING

Hot surfaces, hot fluids!

Injury by burns on hot surfaces or by hot fluids.

- Before starting any work on the diesel engine, the cooling system, the exhaust system, or the hydraulic system: Allow machine to cool down less than 30 °C (86 °F).
- Do not touch hot machine parts.
- Do not check the filling level, do not drain or top up any fluid unless the machine has cooled down.

⚠WARNING

Fluids under pressure!

Serious injury can be caused by liquids escaping under high pressure.

- Do not perform any maintenance work on the hydraulic system, the cooling system, the fuel system, or the air conditioning system unless the lines have turned off.
- Lower raised devices to the ground.
- After switching off the diesel engine, wait at least 1 minute until the pressure has been reduced.
- Wear personal protective equipment.

⚠WARNING

Work above floor level!

Injury caused by falling.

- Do not perform any maintenance or repair work above ground level unless using a stable ladder or a maintenance scaffold.
- To reach the maintenance points on the machine, use the steps indicated. Do not step on any other machine element or add-on part.

⚠WARNING

Noxious exhaust gases!

Risk of serious injury or death caused by poisoning or suffocation after breathing in exhaust gases when operating the machine in an enclosed space.

- Only operate the machine outdoors.
- If the engine has to run in enclosed spaces:
  - Guide the exhaust gases outside (extension hose).
  - Ensure that there is a sufficient supply of fresh air, e.g. by using a ventilation system or by opening the doors.

⚠CAUTION

Electrical voltage!

Risk of injury due to electric shock.

- Before starting maintenance work, set the battery isolating switch to off in order to de-energize the electrical system. As an alternative, disconnect the earthing/grounding strip from the battery.
- Wear personal protective equipment.
- When working on the electrical system, be sure to only use suitable and approved tools.

NOTICE

Short-circuits on electrical components!
Destruction or damage of machine parts by a short-circuit.
- Before starting maintenance work, set the battery isolating switch to off in order to de-energize the electrical system. As an alternative, disconnect the earthing/grounding strip from the battery.
- Observe the operating instructions when using a jumper cable.
- Do not lay any tool or machine element on the battery.

NOTICE

Engine hood swinging range!
Material damage when opening the engine hood.
- Keep a sufficient distance to other objects located either above or at the rear.

NOTICE

Uncontrolled movements!
Damage to machine or environment by uncontrolled steering system movements and by consequent front or rear end swings.
- Applying safety strut before:
  - crane loading the machine.
  - transporting the machine.
  - maintenance and repair work.

Note on the environment:
Catch and properly dispose of any liquid escaping or drained during any maintenance work.

4.00.02 Running-in instructions

For engine maintenance, see the operating manual for the diesel engine.

After 50 operating hours

Diesel engine maintenance

- ▶ Change the engine oil (see page 151).
- ▶ Replace the lubricating oil filter (see page 151).

Hydraulic system maintenance

- ▶ Replace the filter insert of the pressure filter for the hydraulic system (see page 160).
- ▶ Replace the filter insert of the pressure filter for the steering (see page 161).

Axle maintenance

- ▶ Checking that wheel nuts/wheel bolt connections are tight (see page 168).

4.00.03 Maintenance overview

For engine maintenance, see instruction manual for diesel engine.

Every 10 operating hours

10 h

	Checking that the parking brake is working properly	see page 143
	Checking that the seat contact switch is working properly	see page 144
	Checking the EMERGENCY STOP function when the machine is at a standstill	see page 144
	Checking the hydraulic oil fill level	see page 159
	Checking the air pressure in the tyres	see page 168
	Checking the engine oil fill level	see the instruction manual for the diesel engine
	Checking the coolant fill level	see page 157
	Checking and cleaning the air filter/dust valve	see page 154 see page 154
	Draining the water separator	see page 152

Every 250 operating hours

250 h

	Checking/lubricating the smooth drum/padfoot drum scrapers	see page 166
	Checking the vibrator oil fill level	see page 174
	Checking the V-belt tension	see the instruction manual for the diesel engine
	Checking the air-conditioning system's V-belt tension	see page 146
	Lubricating the articulated joint bearings	see page 172
	Lubricating the steering cylinder pins	see page 172
	Checking the radiator	see page 156
	Checking the air-conditioning system	see page 146

Every 500 operating hours, at least once a year

500 h

	Replacing circulating air filter of the air conditioning system	see page 147
	Replacing the fresh air filter for the driver's cab	see page 147
	Replacing the filter insert in the pressure filter for the hydraulic system	see page 160
	Replacing the filter insert of the pressure filter for the steering system	see page 161
	Replacing the V-belt	see the instruction manual for the diesel engine
	Replacing the V-belt on the air-conditioning system	see page 146
	Checking the damping elements	see page 174
	Checking the wheel nuts/wheel bolts for tightness	see page 168
	Replacing the filter cartridge on the fuel filter	see page 152
	Replacing the filter cartridge for the fuel prefilter	see page 152
	Changing the engine oil	see the instruction manual for the diesel engine
	Replacing the lubrication oil filter in the diesel engine	see the instruction manual for the diesel engine
	Replacing the air filter cartridge	see page 155
	Checking the starter battery	see page 164

Every 1000 operating hours, at least once a year

	Checking the EMERGENCY STOP function when driving	see page 144
	Changing the vibrator oil	see page 175
	Replacing the oil separator filter insert	see the instruction manual for the diesel engine
	Replacing the valve cover seal	see the instruction manual for the diesel engine

Every 2000 operating hours, at least every two years

	Changing the hydraulic oil	see page 160

Changing the coolant see page 158

Replacing the safety cartridge see page 156

Replacing the hydraulic oil tank's ventilation filter see page 160

4.00.04 Required maintenance parts

The specifications for the filling capacities of liquids and operating materials refer to the standard version of machine. However, they may deviate, e.g. for hydraulic oil and where attachments and auxiliary devices are installed.
Always observe the operating manual when filling. Fill liquids and operating materials up to the respective mark.

H 5i, all types (V3307-CR-T)

H2700001 → H2700718

Quantity	Maintenance part			first time after	Maintenance intervals in operating hours			
					every 250	every 500 or once per year	every 1000 or once per year	every 2000 or every 2 years
10.5 l	Engine oil	□		50 D		D		
60.0 l	Hydraulic oil	▭						D
11.0 l	Coolant	○						D
5.2 l	Vibrator oil	◇			A		D	
1	V-belt	Generator	2428657		A	D		
1	*V-belt	Air-conditioning system	1225812		A	D		
1	Air filter cartridge		2051604		A	D		
1	Safety cartridge		2051606					D
1	Filter cartridge	Lubrication oil	2373069	50 D		D		
1	Filter cartridge	Fuel	2275738			D		
1	Filter cartridge	Fuel prefilter	2367788			D		
1	Filter insert	Oil separator	2428712				D	
1	Seal	Valve cover	2428661				D	
1	Filter insert	Hydraulic system	1296396			D		
1	Filter insert	Steering	1296396			D		
1	Ventilation filter	Oil tank	2247029					D
1	*Dryer	Air-conditioning system	2429591					D
1	*Filter insert, air-conditioning system	Recirculating air	2429338			D		
1	Filter insert, driver's cab	Fresh air	2429589			D		
10	Damping elements for the drum suspension		1487116			A		

Quantity	Maintenance part	first time after	Maintenance intervals in operating hours			
			every 250	every 500 or once per year	every 1000 or once per year	every 2000 or every 2 years
A = Check! Replace/Refill if required. D = Replace!						
1	Service kit	2373069		2428761	2428764	2428766

All necessary maintenance parts for the corresponding maintenance interval are included in the service kit. You can find the current order numbers for individual service kits in the WIRTGEN GROUP document "Parts and more".

Maintenance parts marked as options (*) are not included in the service kit.

H 5i, all types (V3307-CR-T)

H2700719 →

Quantity	Maintenance part			First time after	Maintenance intervals in operating hours			
					Every 250	Every 500 or 1 × per year	Every 1000 or 1 × per year	Every 2000 or every 2 years
10.5 l	Engine oil	□		50 D		D		
60.0 l	Hydraulic oil	▭						D
11.0 l	Coolant	○						D
5.2 l	Vibrator oil	◇			A		D	
1	V-belt	Alternator	2428657		A	D		
1	*V-belt	Air-conditioning system	1225812		A	D		
1	Air filter cartridge		2051604		A	D		
1	Safety cartridge		2051606					D
1	Filter cartridge	Lubricating oil	2373069	50 D		D		
1	Filter cartridge	Fuel	2275738			D		
1	Filter cartridge	Fuel prefilter	2367788			D		
1	Filter insert	Oil separator	2428712				D	
1	Seal	Valve cover	2428661				D	
1	Filter insert	Hydraulic system	2574029	50 D		D		
1	Filter insert	Steering	2574029	50 D		D		
1	Ventilation filter	Oil tank	2247029					D
1	*Dryer	Air-conditioning system	2429591					D
1	*Filter insert, air-conditioning system	Recirculating air	2429338			D		
1	Filter insert, driver's cab	Fresh air	2429589			D		
10	Damping elements for the drum suspension		1487116			A		
A = Check! Replace/refill if required. D = Replace!								
1	Service kit			2935352		2946581	2946583	2946599

All necessary maintenance parts for the corresponding maintenance interval are included in the service kit. You can find the current order numbers for individual service kits in the WIRTGEN GROUP document "Parts and more".

Maintenance parts marked as options (*) are not included in the service kit.

H 7i, all types (V3307-CR-T)

H2700001 → H2700718

Quantity	Maintenance part			first time after	Maintenance intervals in operating hours			
					every 250	every 500 or once per year	every 1000 or once per year	every 2000 or every 2 years
10.5 l	Engine oil	□		50 D		D		
60.0 l	Hydraulic oil	▭						D
11.0 l	Coolant	○						D
10.0 l	Vibrator oil	◇			A		D	
1	V-belt	Generator	2428657		A	D		
1	*V-belt	Air-conditioning system	1225812		A	D		
1	Air filter cartridge		2051604		A	D		
1	Safety cartridge		2051606					D
1	Filter cartridge	Lubrication oil	2373069	50 D		D		
1	Filter cartridge	Fuel	2275738			D		
1	Filter cartridge	Fuel prefilter	2367788			D		
1	Filter insert	Oil separator	2428712				D	
1	Seal	Valve cover	2428661				D	
1	Filter insert	Hydraulic system	1296396			D		
1	Filter insert	Steering	1296396			D		
1	Ventilation filter	Oil tank	2247029					D
1	*Dryer	Air-conditioning system	2429591					D
1	*Filter insert, air-conditioning system	Recirculating air	2429338			D		
1	Filter insert, driver's cab	Fresh air	2429589			D		
12	Damping elements for the drum suspension		1487116			A		
A = Check! Replace/Refill if required. D = Replace!								
1	Service kit			2373069		2428761	2428764	2428766

All necessary maintenance parts for the corresponding maintenance interval are included in the service kit. You can find the current order numbers for individual service kits in the WIRTGEN GROUP document "Parts and more".

Maintenance parts marked as options (*) are not included in the service kit.

H 7i, all types (V3307-CR-T)

H2700719 →

Quantity	Maintenance part			First time after	Maintenance intervals in operating hours			
					Every 250	Every 500 or 1 × per year	Every 1000 or 1 × per year	Every 2000 or every 2 years
10.5 l	Engine oil	□		50 D		D		
60.0 l	Hydraulic oil	▭						D
11.0 l	Coolant	○						D
10.0 l	Vibrator oil	◇			A		D	
1	V-belt	Alternator	2428657		A	D		
1	*V-belt	Air-conditioning system	1225812		A	D		
1	Air filter cartridge		2051604		A	D		
1	Safety cartridge		2051606					D
1	Filter cartridge	Lubricating oil	2373069	50 D		D		
1	Filter cartridge	Fuel	2275738			D		
1	Filter cartridge	Fuel prefilter	2367788			D		
1	Filter insert	Oil separator	2428712				D	
1	Seal	Valve cover	2428661				D	
1	Filter insert	Hydraulic system	2574029	50 D		D		
1	Filter insert	Steering	2574029	50 D		D		
1	Ventilation filter	Oil tank	2247029					D
1	*Dryer	Air-conditioning system	2429591					D
1	*Filter insert, air-conditioning system	Recirculating air	2429338			D		
1	Filter insert, driver's cab	Fresh air	2429589			D		
12	Damping elements for the drum suspension		1487116			A		
A = Check! Replace/refill if required. D = Replace!								
1	Service kit			2935352		2946581	2946583	2946599

All necessary maintenance parts for the corresponding maintenance interval are included in the service kit. You can find the current order numbers for individual service kits in the WIRTGEN GROUP document "Parts and more".

Maintenance parts marked as options (*) are not included in the service kit.

4.00.05 Welding work on the machine

Welding work on the machine must only be carried out by specially trained and authorised personnel.

Welding work on the machine may change the properties of the machine and is only permitted with the agreement of the manufacturer.

Welding work on safety-relevant components must only be carried out by the manufacturer's authorised customer service.

⚠WARNING

Fire and explosion!

Serious injuries or death as a result of ignition or explosion of combustible materials (fuels, oil, gases).

- Make sure that there are no flammable or explosive materials in the vicinity of the welding work.
- Put down welding covers.
- Wear personal protective equipment.

⚠WARNING

Toxic fumes and dust!

Risk of serious injury or death caused by poisoning or suffocation after breathing in toxic fumes or particles when welding.

- Wear personal protective equipment (protective mask).
- Remove any paint within at least a 100 mm radius of the areas that are affected by the heat from welding.
- Avoid breathing in dust when sanding paint.
- Do not use solvents or paint strippers to remove paint in enclosed spaces if there is not sufficient supply of fresh air.
- Do not breathe in the fumes from solvents or paint strippers.
- Before welding:
  - Remove any solvent and paint stripper residues using water and soap.
  - Allow the fumes from solvents or paint strippers to evaporate for at least 15 minutes.
  - Remove any containers for solvents and paint strippers (or any other flammable liquids) from the operating area.

NOTICE

Overvoltage and heat!

Material damage to electric/electronic components of the machine caused by electric current or the effects of heat.

- Before starting electrical welding work, remove all connection plugs from electronic components of the machine.
- Connect negative terminal of the welding appliance at the component to be welded in the vicinity of the weld.
- Remove insulating layers of paint before starting welding work.
- Keep welding leads away from the electrical leads of the machine. If not possible, the welding leads cross the machine leads.
- Touch only the welds with live electrodes.
- Prior to welding work remove components which may get damaged by heat or welding work.
- Observe the instruction manual of the diesel engine.

Procedure

- ▶ Switch off diesel engine and remove ignition key.
- ▶ Wait for the 2 minutes after-running time of the machine to pass.
- ▶ Disconnect battery, first negative then positive terminal.
- ▶ Remove plug of the control devices of the machine.
- ▶ Connect negative terminal of the welding appliance in the vicinity of the weld.
- ▶ Do not get too close to other components when welding.
- ▶ Reconnect all connection plugs after welding.
- ▶ Attach battery.

4.01 Chassis/safety devices

⚠WARNING

Uncontrolled driving behaviour!
Severe injury or death due to separate machine movements.
- Ensure that there are no persons or objects in the danger zone of the machine (moved).
- Do not check functioning of safety devices in case there is not enough space.

The machine must not be used if the safety devices do not work.
Call the customer service!

4.01.01 Basic maintenance work

- Check operating and safety instructions on the machine: Replace damaged and/or non-readable signs.
- Ensure that hinges and links move easily and lubricate lightly.
- Check the function of the warning systems (e.g. signal horn, reflectors, back-up alarm, blinker and warning flasher). Repair/ change defective alarm devices/defective parts of the alarm devices.
- Check the function of the lighting. Replace defective lamps.
- Check the firm fit of the screw connections which are subjected to high loads, e.g. articulated joint, tie rod, drum suspension, wheel suspension, drum drive, wheel drive.
- Check that the air filter system is undamaged (e.g. no cracks in hoses or enclosures). Replace defective parts.

4.01.02 Checking and replacing steps/slip-resistant surface

Regularly check the non-slip property of the surfaces of the steps and in the driver's cab (e.g. sand-coated foil).

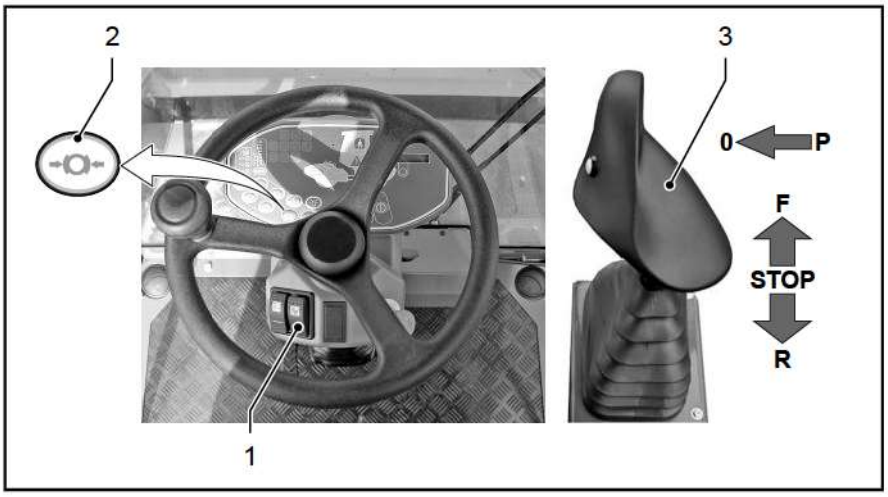
For steps:

▶ Replace or regrind non-slip profiles with a minimum height of 1 mm.

For sand-coated foils:

▶ Replace ineffective or worn foils.

4.01.03 Checking that the parking brake is working properly



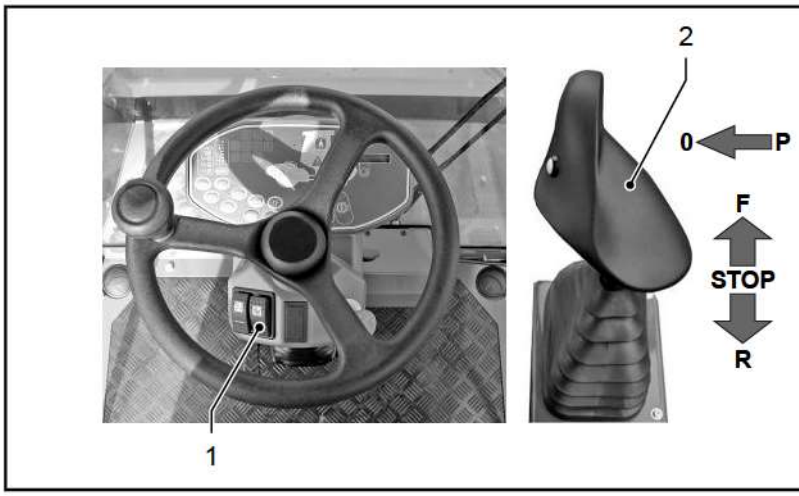
Checking the parking brake when the machine is stationary

Requirement: The drive lever is engaged in position P.

- ▶ Start the diesel engine.
- ▶ Engage the working gear [1].
- ▶ Move the drive lever [3] to position 0.
- ▶ Apply the parking brake: Press and hold the parking brake switch [2].
- ▶ Briefly push the drive lever [3] forwards.
- ✔ The parking brake is working properly if the travel drive is disabled when the parking brake is applied.
- ▶ After the check: Release the parking brake [2] and return the drive lever [3] to position P.
- ✔ Machine is ready to start.

If the parking brake is worn to such an extent that driving off is possible even when the switch [2] is pressed, the parking brake must be inspected or replaced. The machine must not be operated until this work has been carried out. Request assistance from customer service.

4.01.04 Checking that the seat contact switch is working properly



Checking the seat contact switch when the machine is stationary

- Start the diesel engine.
- Engage the working gear [1].
- Stand up from the driver's seat (looking forwards). Be sure of your footing and hold on tight.
- Push the drive lever [2] out of position P to the left and into position 0.
- Briefly push the drive lever [2] forwards.
- ✔ The machine does not start moving: The seat contact switch is working properly.
- ✔ The machine starts moving: The seat contact switch is not working properly.

If the seat contact switch does not work, it must be tested and repaired without delay. The machine must not be operated until this work has been carried out. Request assistance from customer service.

4.01.05 Checking the EMERGENCY STOP function

Checking function with machine at standstill (daily)

- ▶ Start the diesel engine.
- ▶ Parking brake active: The drive lever [2] is latched into the P position.
- ▶ Press EMERGENCY STOP [1] when engine at standstill.

The machine:

- ✔ Switches off the working functions.
- ✔ Shuts down the diesel engine.

Checking function during machine operation (annually)

Carry out functional tests with the diesel engine running and the work functions (e.g. vibration) switched on.

- ▶ Press EMERGENCY STOP [1] with low speed 0.5 km/h (0.3 mph).

The machine:

- ✔ Stops immediately.
- ✔ Switches off the working functions.
- ✔ Shuts down the diesel engine.

If the machine reacts other than as described above or if the EMERGENCY STOP does not work, it must be tested and repaired without delay. The machine must not be used until this has been done. Request assistance from customer services!

4.02 Control stand

4.02.01 Maintaining air conditioning system

⚠CAUTION

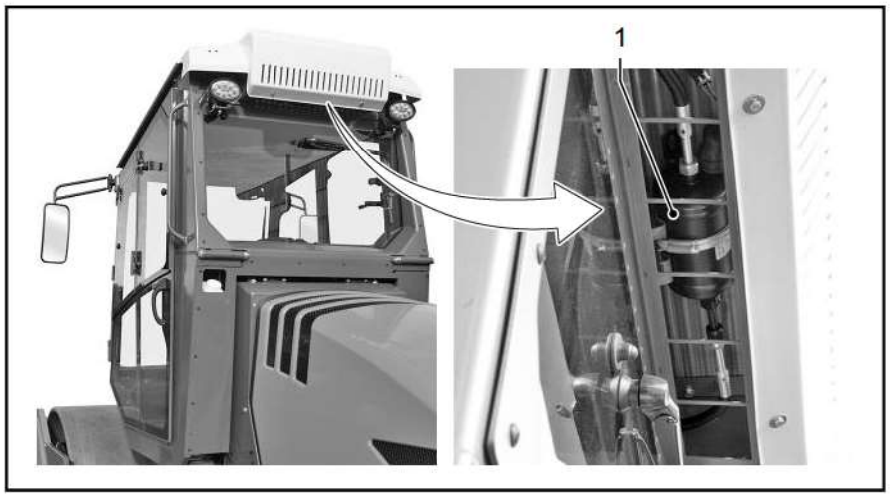
Refrigerating agent harmful to health!
Injuries as a result of freezing or inhaling harmful vapors.

- Do not touch any part of the air-conditioning system until it has reached room temperature.
- Do not open the pipe system of the air conditioning.
- Wear personal protective equipment.

Maintenance work on the air-conditioning system may only be performed by the customer service or trained, skilled personnel with suitable workshop equipment.

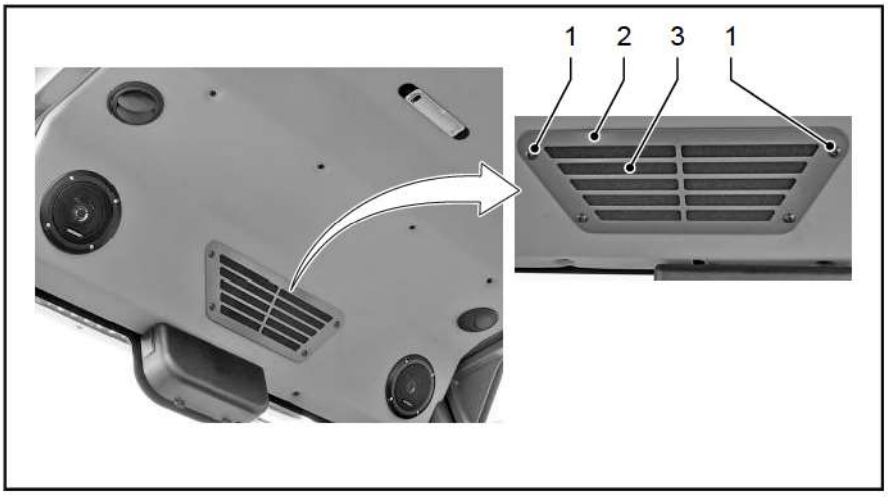
Switch on air conditioning at least 1 per month (even in winter) for ca. 15 minutes.

Replacing the drain bottle



▶ If the indicator pearl is discoloured, replace the drain bottle [1].

4.02.02 Replacing the circulating air filter of the air-conditioning system



Change the filters according to the amount of dust accumulated.

- Switch off diesel engine and remove ignition key.
- Loosen screws [1] and remove with the cover [2] and remove the filter element [3].
- Replace the filter element [3] by a new one.
- Mount the cover [2] with the filter element [3] and tighten screws [1].

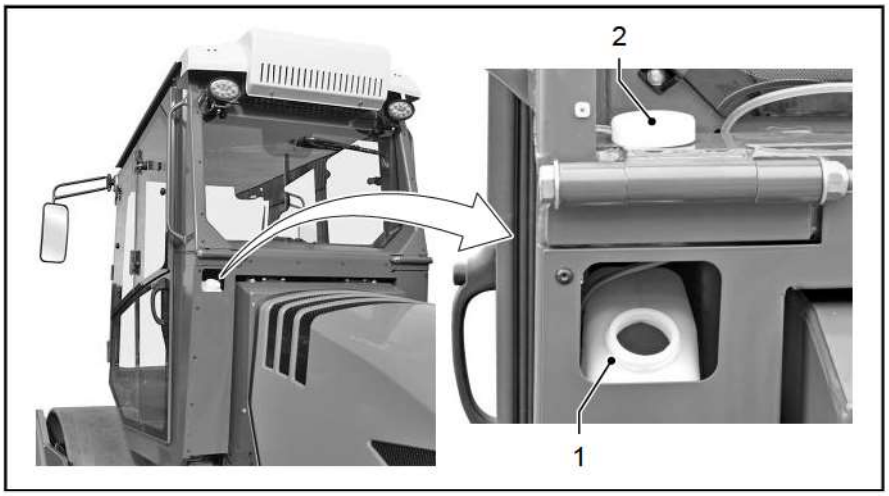
4.02.03 Replacing the fresh air filter for the driver's cab

Change the filters according to the amount of dust accumulated.

Check the proper alignment of the filter element (airflow - ↑).

- Switch off the diesel engine and remove the ignition key.
- Undo the screws [1].
- Pull the filter unit [2] out of the ventilation housing [3].
- Replace the dust filter [4].
- Slide the filter unit [2] into the ventilation housing [3].
- Screw in and tighten the screws [1].

4.02.04 Checking the fill level of the windscreen washer fluid



The tank [1] for the windscreen washer fluid is located behind the driver's cab.

Pure water can be used to wash the windscreen. However, we recommend adding a standard windscreen washer agent (algae growth).

Add an antifreeze solution when outdoor temperatures are below the freezing point of water. Make sure you use the mixing ratio specified by the manufacturer.

Top up windscreen washer fluid in good time.

- Open the cover [2] and top up the reservoir [1] with windscreen washer fluid.
- Close the tank by replacing the lid [2].

4.04 Drive unit/diesel engine

⚠WARNING

Inflammable fuel!

Severe injury and death due to fire, explosion and moving parts.

- Do not smoke. No open fire!
- Do not inhale fuel fumes.
- Catch spilling fuel or water sump, do not allow to seep away into the ground!

⚠WARNING

Fuel is under very high pressure!

Serious injury can be caused by liquids escaping under very high pressure.

- Carry out maintenance works only with depressurized fuel system.
- Wait 1 minute after you switched off the diesel engine until the pressure is relieved.
- Work on the high-pressure lines of the fuel injection system may be carried out by trained specialised personnel only.
- Wear personal protective equipment.

NOTICE

Inadmissible fuel or inadmissible lubricating oil for the diesel engine!

Property damage to the diesel engine or to the system for exhaust treatment.

- Only use the fuel specified in the operating instructions.
- Only use the engine oil specified in the operating instructions.
- Observe the indicating labels affixed at the filler necks for fuel and engine oil.

NOTICE

Dirt in the fuel system!

Material damage to the diesel engine as a result of contamination in the fuel system.

- Ensure that no dirt or dust can get into the fuel system (cover dirty areas with foil).
- Thoroughly clean and dry components and the surrounding areas (e.g. with a high-pressure cleaner).

NOTICE

Contaminated inlet air

When it is defective, clogged, or contaminated, the air filter can damage the engine.

- Inspect all lines, flexible tubes and the casing of the air filter for tightness and integrity on a regular basis (at least once per year).
- Immediately replace any damaged part. Further operation is inadmissible.
- Check the operating readiness of the air filter on a regular basis.
- Regularly clean the air filter casing.
- Do not clean but always replace the air filter cartridge and the safety cartridge.
- Never run the diesel engine without an air filter cartridge and a safety cartridge in the air filter.

The fuel system must be bled after all work on an open fuel system or if the fuel tank has been run empty.
Check the fuel system for leaks with a trial run!

Adhere to running-in regulations, servicing intervals and care measures for diesel engine as specified in the instruction manual of the engine manufacturer.

4.04.01 Lubricating oil change intervals

These intervals depend, e.g., on:

- Lubricating oil quality
- Fuel sulphur content
- The mode in which the diesel engine is used

Change lubricating oil after half the interval indicated, e.g., when at least one of the following conditions is true:

- Continuous ambient temperature below –10 °C (14 °F) or lubricating oil temperature below 60 °C (140 °F)
- Operation using biodiesel fuel

Change the lubricating oil at least once per year if the lubricating oil change intervals are not reached before the year ends.

4.04.02 Engine oil change for parked regeneration

Each park regeneration slightly dilutes the engine oil with fuel. The number and total duration of the park regenerations is therefore monitored by the engine control unit. If the number or total duration of the park regenerations exceeds a specified value, an additional oil change is required. This is shown on the info display.

However, under normal engine operating conditions, the number of park regenerations and the associated total time of park regenerations within the change lubricating oil interval (500 h) does

not lead to a critical dilution of the lubricating oil. No additional oil change is required.

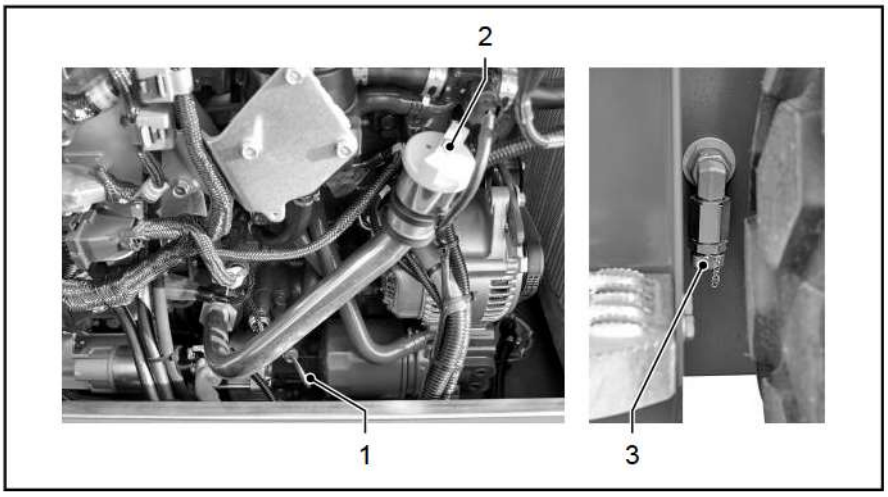
The following applies to every oil change:

- The engine oil change may only be performed by trained, skilled personnel with suitable workshop equipment.
- Before each engine oil change, a service park regeneration must be successfully performed with the SERDIA service tool.
- Then allow machine to cool down less than 30 °C (86 °F). Do not change the engine oil until this has been done.
- The entries for the number and total duration of park regenerations is reset in the memory of the engine control unit with the SERDIA service tool.

4.04.03 Maintenance points on the diesel engine when changing oil

For engine maintenance, see the operating manual for the diesel engine.

☐ Only lubricants with this symbol are permitted ("Technical data", page 176).

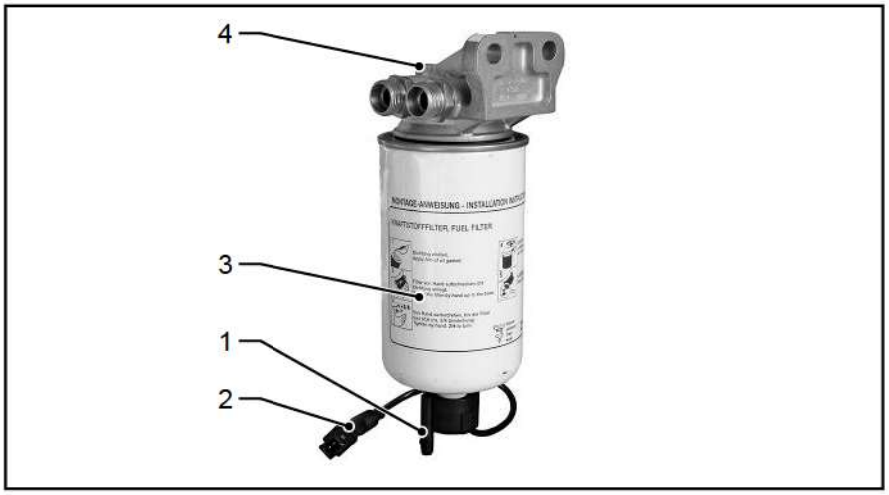


[1]	Engine oil dipstick	[2]	Filling opening for engine oil
[3]	Drain outlet for engine oil		

4.04.04 Replacing filter cartridge for the fuel filter

- Switch off the diesel engine and remove the ignition key.
- Allow the machine to cool down to below 30 °C (86 °F).
- Unscrew the filter cartridge [1] and dispose of it properly.
- Before fitting, apply a thin coat of oil to the rubber seal and screw new filter cartridges [1] to the filter head until the seal makes contact. Further tighten the filter cartridge by hand by half a turn.
- Bleed the fuel system.

4.04.05 Changing filter cartridge for the fuel pre-filter



Replacing filter cartridge

- Switch off diesel engine and remove ignition key.
- Allow machine to cool down to below 30 °C (86 °F).
- Close the fuel shut-off valve if present (only if the fuel tank is installed in the high position).
- Open the vent screw [4].
- Unplug the plug-and-socket connection [2] to the sensor [1], and screw the sensor by two turns out the filter cartridge.
- Drain fuel and waste water from the filter.

- Screw in and tighten the vent screw [4].
- Unscrew filter cartridge [3].
- Place the sensor [1] into the new filter cartridge.
- Before fitting the new filter cartridge, apply a thin coat of oil to the rubber seal, and screw the filter cartridge [3] to the filter head until the seal makes contact. Tighten the filter cartridge by hand further by half a turn.
- Close the plug-and-socket connection [2].
- Open the fuel stop cock if present (only if the fuel tank is installed in the high position).
- Bleeding the fuel system.

Draining water sump

NOTICE

Water sump in the fuel!

Property damage to the diesel engine by water sump in the fuel system.

- Drain the water sump immediately when the pilot light of the fuel prefilter flashes.
- Dewater the fuel prefilter regularly at the sensor according to the water content of the fuel.

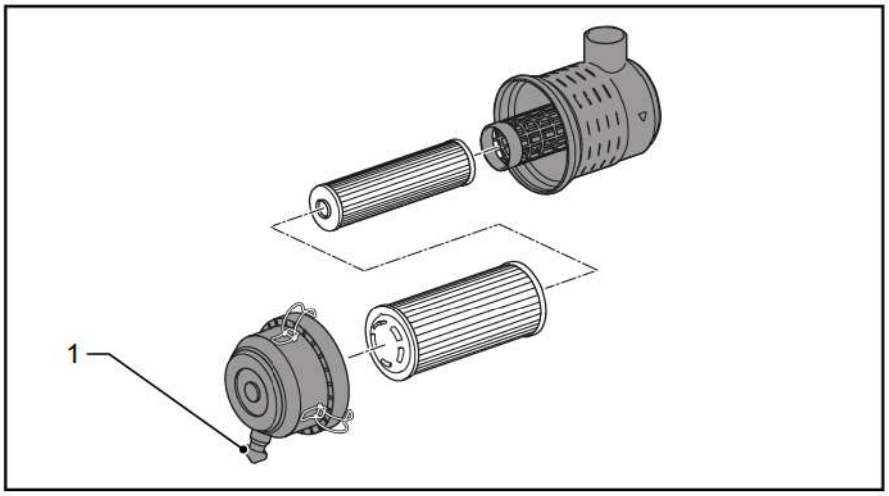
- Open the vent screw [4].
- Disconnect the connector [2] for the sensor [1] and unscrew the sensor from the filter cartridge with two turns.
- Allow the waste water to drain from the filter.
- Screw the sensor [1] into the filter cartridge and tighten.
- Connect the plug connector [2] to the sensor.
- Screw in and tighten the vent screw [4].
- Vent the fuel system.

4.04.06 Bleeding the fuel system

Fuel system bleeding is performed when the fuel pump is running (electrical system ON).
Several bleeding cycles are required.

- Open the bleed screw [1] only at the fuel filter (not at the fuel prefilter).
- Switch on the electrical system until fuel runs out of the bleed bore [1]. Do not start the diesel engine.
- Screw in and tighten the bleed screw [1].
- Briefly switch off and restart the electrical system.
- After approx. 30 seconds, briefly switch off and restart the electrical system.
- Repeat this operation four times.
- Then start the diesel engine and allow it to run at idle speed for one minute.
- Inspect all components of the fuel system for leaks.

4.04.07 Check and clean the dust discharge valve at the air filter



Before starting work, check the proper passage through the dust discharge valve:

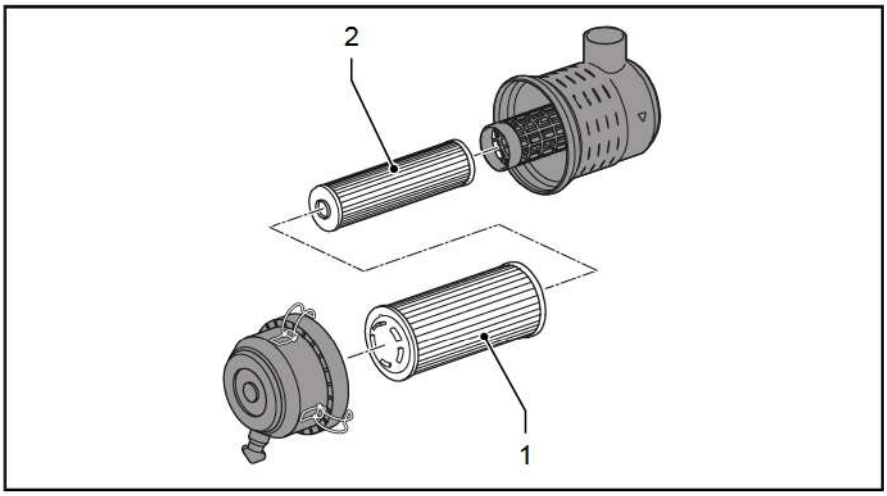
- Switch off diesel engine and remove ignition key.
- Squeeze the dust discharge valve [1] and clean the discharge slot.

4.04.08 Check the air filter

NOTICE

High pressure by high-pressure cleaner!
Damage of the air filter by power washer.

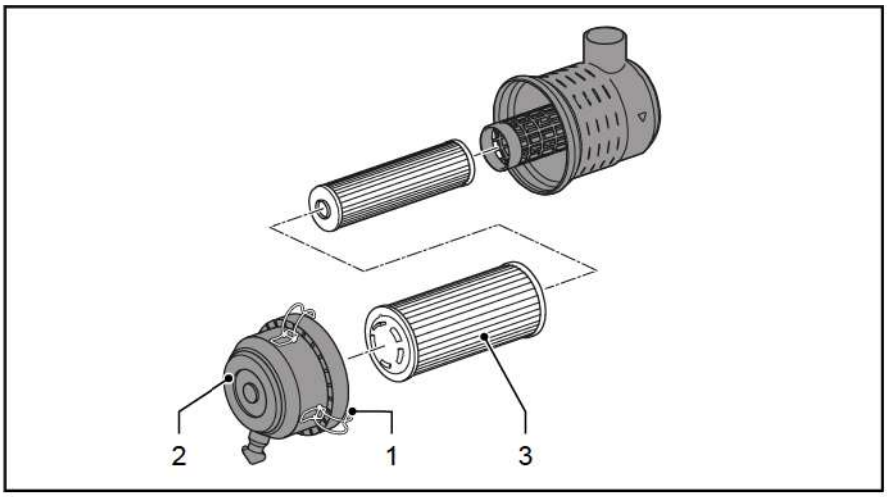
- Never use compressed air or a high-pressure cleaner for cleaning any casing part.
- Clean the interior parts of the casing only with a moist, fibre-free cloth.



Check the operating readiness of the air filter while the diesel engine is running:

- ▶ Start diesel engine and shortly rev up to maximum speed.
- ✔ The air filter pilot light is not flashing on the information display: Air filter cartridge [1] and the safety cartridge [2] are ready for operation.
- ✔ Air filter pilot light flashing on the information display: Replace the air filter cartridge [1] and/or the safety cartridge [2].

4.04.09 Replacing air filter cartridge

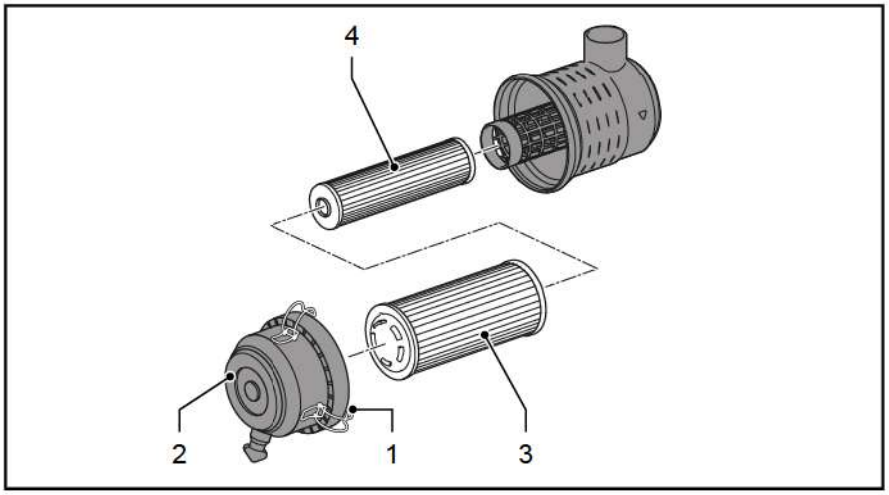


- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 °C (86 °F).
- ▶ Fold up the clips [1].
- ▶ Remove dust collection container [2].
- ▶ Clean the inside of the dust collectors.
- ▶ Pull out the air filter cartridge [3].
- ▶ Insert a new air filter cartridge.
- ▶ Put on the dust receiver bin [2].
- ▶ Snap shut the clips [1].
- ▶ Check the operating readiness of the air filter.

4.04.10 Replacing the safety cartridge at the air filter

Replace the safety cartridge:

- after having changed the air filter cartridge five times.
- After 2000 operating hours at the latest.
- If the air filter pilot light is flashing on the information display after having replaced the air filter cartridge.
- If the air filter cartridge is defective.



Changing safety cartridge

- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 °C (86 °F).
- ▶ Fold up the clips [1].
- ▶ Remove dust container [2].
- ▶ Clean the inside of the dust container.
- ▶ Pull the air filter cartridge [3] out of the air filter.
- ▶ Pull out safety filter cartridge [4].
- ▶ Slide in a new safety cartridge.
- ▶ Slide a new air filter cartridge [3] into the air filter.
- ▶ Put on the dust receiver bin [2].
- ▶ Snap shut the clips [1].
- ▶ Check the operating readiness of the air filter.

4.04.11 Checking/cleaning the radiator

NOTICE

High water pressure by high-pressure cleaner!

Damage of radiator when cleaning with high-pressure cleaner.

- Maintain a safe distance between the lance of the high-pressure cleaner and the radiator.
- Use a directed spray.
- Guide the directed spray parallel (not at an angle) to the cooling fins of the radiator.

Check the radiator

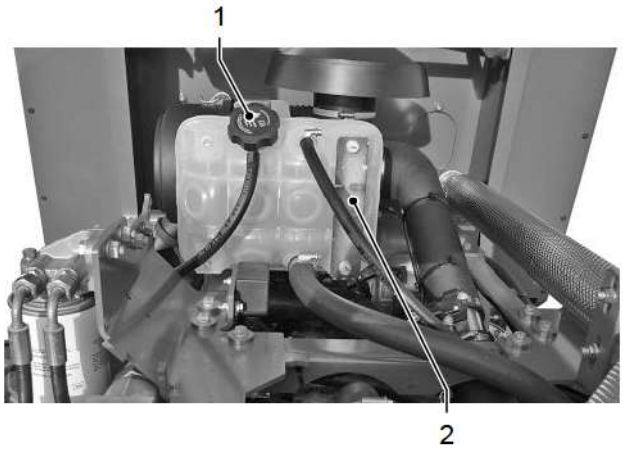
- ▶ Check the cooling fins of the radiator for fouling.
- ✔ Cooling fins not soiled: The machine is ready for operation.
- ✔ Cooling fins contaminated: Clean the cooling fins thoroughly and without delay.

Cleaning radiator

- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 °C (86 °F).
- ▶ Opening the engine hood.
- ▶ Clean the radiator [1] carefully with a high-pressure cleaner from all sides.
- ▶ Close the engine hood.

4.04.12 Checking the coolant fill level

○ Only lubricants with this symbol are permitted ("Technical data", page 176).

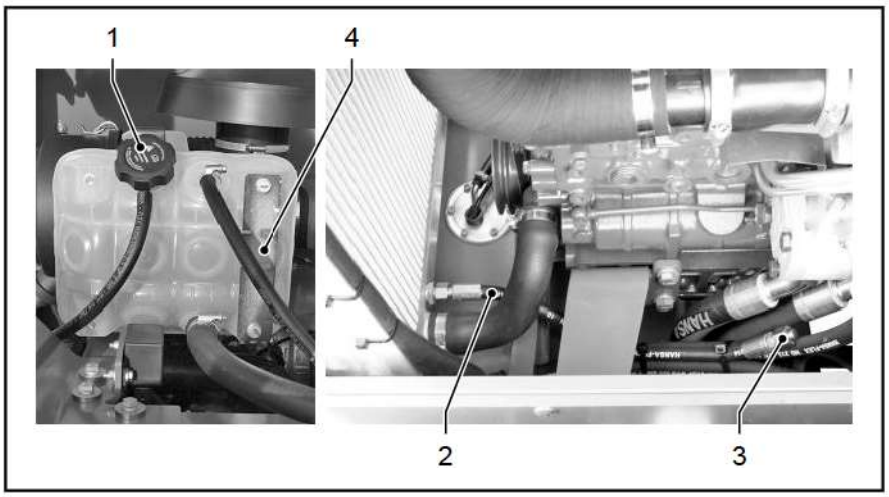


- ▶ Switch off the diesel engine and remove the ignition key.
- ▶ Only check the coolant level when the diesel engine is cold.

- Correct coolant level: Centre of fill level indicator [2]. Do not exceed this level!
- If there is insufficient coolant, only fill up coolant in the mixing concentration through filling opening [1] on the compensation tank.
- If there is a considerable loss of coolant, determine the cause and rectify.

4.04.13 Changing the coolant

O Only lubricants with this symbol are permitted ("Technical data", page 176).



- Switch off the diesel engine and remove the ignition key.
- Open the sealing cap [1] on the compensation tank.
- Remove the plug [3] from the end of the drain hose [2] and discharge the coolant in a container provided for this purpose.
- Screw the plug [3] back in.
- Set the temperature regulator for the cab heating to maximum temperature.
- Fill coolant up to the centre of the fill level indicator [4].
- Close the filling opening again with the sealing cap [1].
- Start the diesel engine and bring it to operating temperature (thermostat opens).
- Switch off the diesel engine and remove the ignition key.
- Only check the coolant level when the diesel engine is cold. If necessary, top up the coolant.
- ✔ Correct coolant level: Centre of fill level indicator [4] on the compensation tank.

4.05 Hydraulic oil supply

⚠WARNING

Leaks in hydraulic hoses!
Injuries or fire as a result of oil squirting out of a leaking hydraulic system.

- All lines, hoses and screwed connections of the hydraulic system must be checked for leaks and visible damage (at least once per year).
- Immediately replace any damaged part. Further operation of the machine is inadmissible.

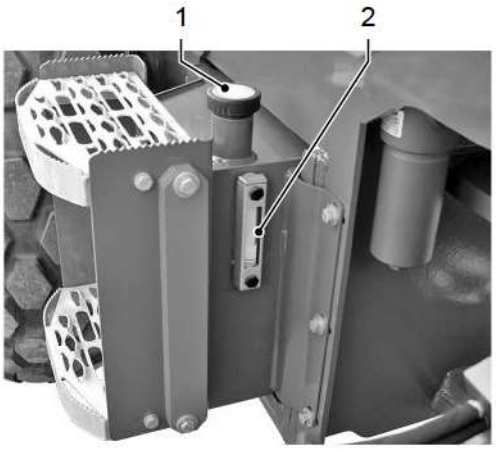
NOTICE

Foreign objects in the hydraulic system!
Consequential damage to the hydraulic system caused by foreign objects in the hydraulic system as a result of earlier damage.

- After a each damage to the hydraulic system, with a foreign object having entered the oil circuit, the entire hydraulic system must be cleaned.
- After cleaning, replace all suction, return and pressure filters in the hydraulic system after 50 hours and again after 125 operating hours.
- This work may only be performed by trained specialised personnel. Call the customer service!

4.05.01 Checking the hydraulic oil fill level

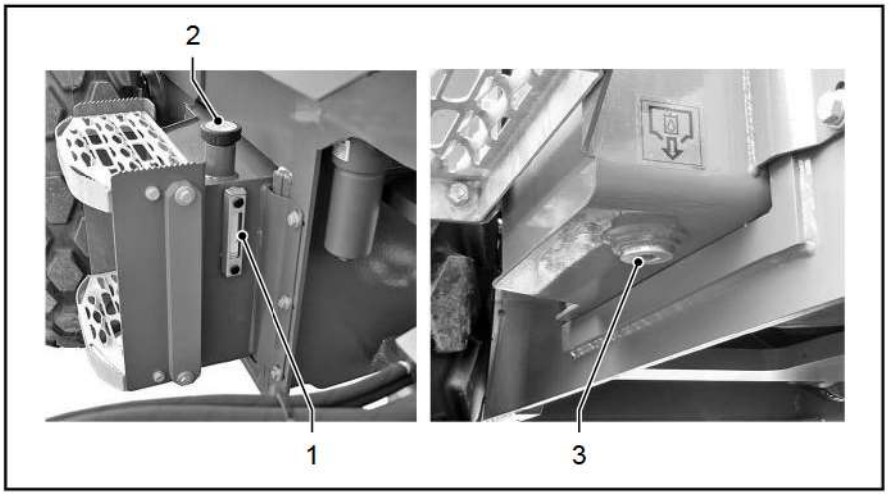
▭ Only lubricants with this symbol are permitted ("Technical data", page 176).



- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 °C (86 °F).
- ▶ Correct oil level: centre of sight glass [2].
- ▶ If the oil level is too low, fill with appropriate oil through the fill opening [1].
- ▶ In case of bigger oil losses, find out and eliminate the cause.

4.05.02 Changing the hydraulic oil and ventilation filter

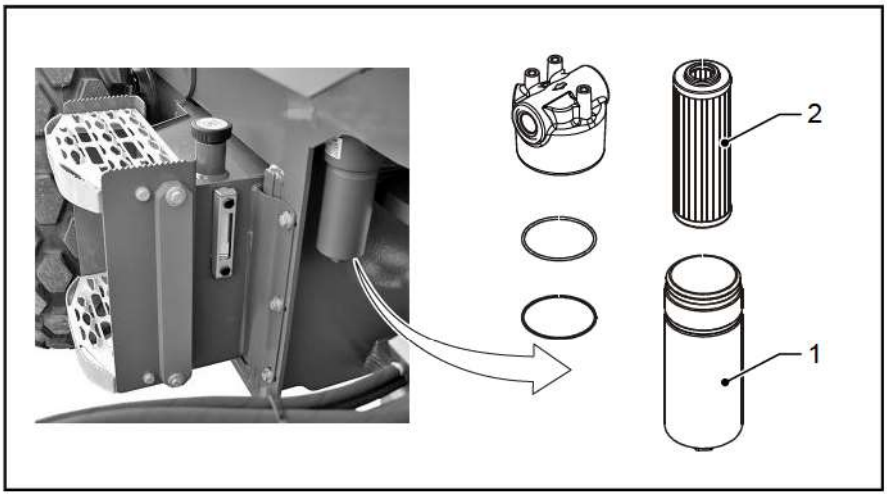
▭ Only lubricants with this symbol are permitted ("Technical data", page 176).



- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 ° (86 °F).
- ▶ Unscrew oil drain screw [3] down on the oil tank and discharge the used oil drain into a provided receptacle.
- ▶ Remove ventilation filter [2] and replace by a new one.
- ▶ Screw in oil drain screw [3] and tighten.
- ▶ Fill up specified oil through filling spout [2].
- ▶ Correct oil level: Centre of sight glass [1].
- ▶ Tighten ventilation filter [2].
- ▶ Start the diesel engine.
- ▶ Actuate drive lever with low engine speed until the transmission activates.
- ▶ Also actuate the steering.
- ✔ The pipes and hose lines will be filled with oil and vented.
- ▶ Check oil level with the diesel engine at a standstill. Top up oil if necessary.
- ▶ Check hydraulic system for leaks.

4.05.03 Replacing the filter insert in the pressure filter for the hydraulic system

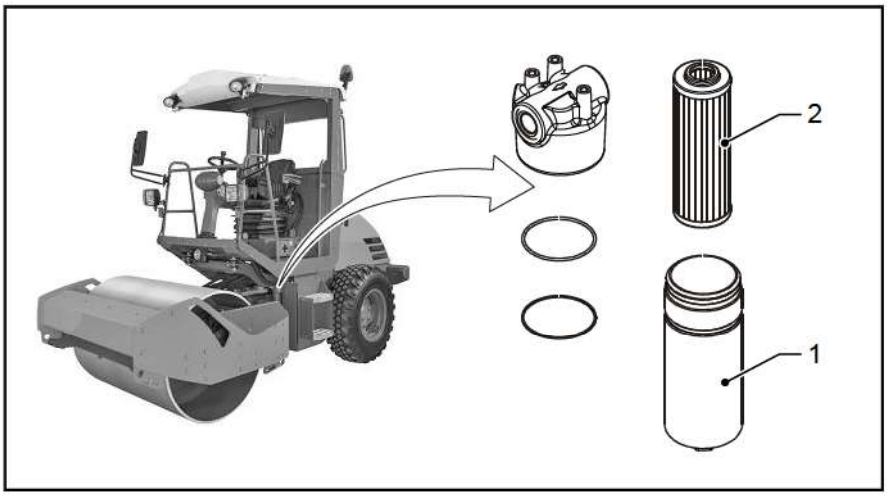
▭ Only lubricants with this symbol are permitted ("Technical data", page 176).



- Switch off diesel engine and remove ignition key.
- Allow machine to cool down less than 30 °C (86 °F).
- Unscrew the barrel casing [1].
- Unscrew the filter insert [2] from the filter head and replace with a new one.
- Clean the inside the barrel casing [1].
- Screw in and tighten the barrel casing [1] in the filter head again.
- Check hydraulic system for leaks.

4.05.04 Replacing the filter insert of the pressure filter for the steering system

▭ Only lubricants with this symbol are permitted ("Technical data", page 176).



- Switch off diesel engine and remove ignition key.
- Allow machine to cool down less than 30 °C (86 °F).
- Unscrew the barrel casing [1].
- Unscrew the filter insert [2] from the filter head and replace with a new one.

- Clean the inside the barrel casing [1].
- Screw in and tighten the barrel casing [1] in the filter head again.
- Check hydraulic system for leaks.

4.06 Electrical system

4.06.01 Starter battery

⚠WARNING

Explosion!

Serious injuries or burns caused by exploding gases.

- Naked flames and smoking are prohibited when handling any battery. Be sure to avoid any sparking.
- Do not store or charge the battery unless in a well ventilated room.
- Do not store or charge the battery unless at a temperature of between –15 °C and 45 °C (5 °F and 113 °F).
- Avoid exposure to direct sunlight.
- When charging the battery, be sure to follow the manufacturer's instructions and the operating manual.
- To charge the battery, use direct current only.

⚠WARNING

Toxic and caustic electrolytic liquid!

Serious injuries as a result of poisoning or chemical burning by contact with electrolytic liquid.

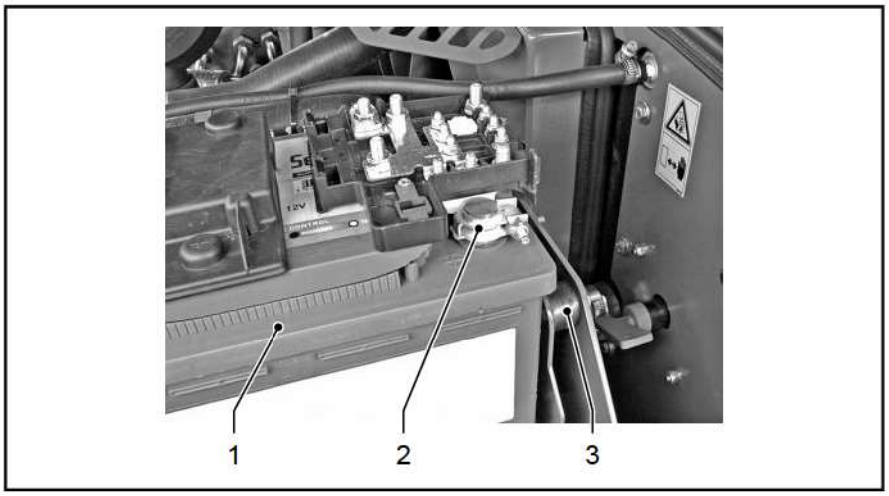
- Wear personal protective equipment when working on or handling any battery, i.e., protective clothing, glasses, face mask, acid-proof rubber gloves.
- Do not tip the battery.
- Use suitable means for binding and disposing of any spilled liquid.
- In case of contact with electrolyte fluid, rinse the area affected with clear water, and consult a physician.
- In case of having inhaled or swallowed any electrolyte fluid, initiate emergency medical aid immediately.

Perform maintenance work only in adequately ventilated rooms.

The electrical power supply is ensured by a generator and by a starter battery.

All cabels, fastenings and screwed connections must be checked for visible damage (at least once per year).

Damaged parts must be replaced immediately. Damaged cables may cause injuries and fire.



[1]	Battery case	[2]	Battery terminals and terminal clamps
[3]	Battery mounting and fastening		

Maintenance

These intervals depend on:
- Storage and ambient temperatures
- Acid level and acid concentration
- Service conditions

Do not open batteries without plugs, or VRLA batteries!
The battery must be replaced if the electrolyte level or the acid concentration falls below the minimum.

Never top up already filled batteries with acid or enhancing agents!
Top up only with distilled water.

- ▶ Switch off diesel engine and remove ignition key.
- ▶ Wear personal protective equipment.
- ▶ If preset: Remove the terminal caps from the battery.
- ▶ Check the battery casing [1] for external damage.
- ▶ Check the battery mounting and storage [3].
- ▶ Clean the battery terminals and terminal clamps [2] and treat with battery terminal grease.
- ▶ Replace the terminal caps on the battery.
- ✔ Battery securely positioned, sealed, undamaged and with its connectors preserved.
- ▶ Check the electrolyte level at the inner or outer casing mark or as indicated in the closing plug (see battery instructions).
- ▶ Top up distilled water or replace the battery as necessary.
- ▶ If possible, check the acid concentration. (1.28 kg/l ±0.1).
- ▶ Clean the battery casing [1] with a damp or antistatic cloth.
- ✔ Correct acid concentration.
- ✔ Correct electrolyte level.

- ▶ Check the battery open-circuit voltage (must be at least 11.9 V) with suitable means, and recharge if necessary.
- ✔ Full starter power.

External charging

Deeply discharged batteries must be removed from the machine for recharging.
Observe the manufacturer's specifications for charger and battery during every charging work step.
Do not charge the battery unless in a well ventilated room.

- ▶ Remove the battery from the machine.
- ▶ Before recharging, ensure that the battery degassing is intact.
- ▶ Before charging, check the electrolyte level and correct if necessary.
- ▶ Connect the battery charger according to the manufacturer's specifications, and then start recharging.
- ▶ Always watch the charging process and stop charging when the acid temperature exceeds 55 °C or in case of acid spill.
- ✔ Battery charged.
- ▶ Switch off and disconnect the charger from the battery.
- ▶ If necessary, remount the battery.
- ✔ Battery is ready for use.

4.08 Transmission

NOTICE

Colliding machine parts!
Material damage to the drum or the scraper bracket due to machine parts colliding.

- Avoid any contact between the drum and scraper bracket.
- Check the clearance between the drum and scraper bracket after inspection and adjustment work.

4.08.01 Checking the drum scrapers

Only scrapers in the correct condition ensure a clean drum surface.

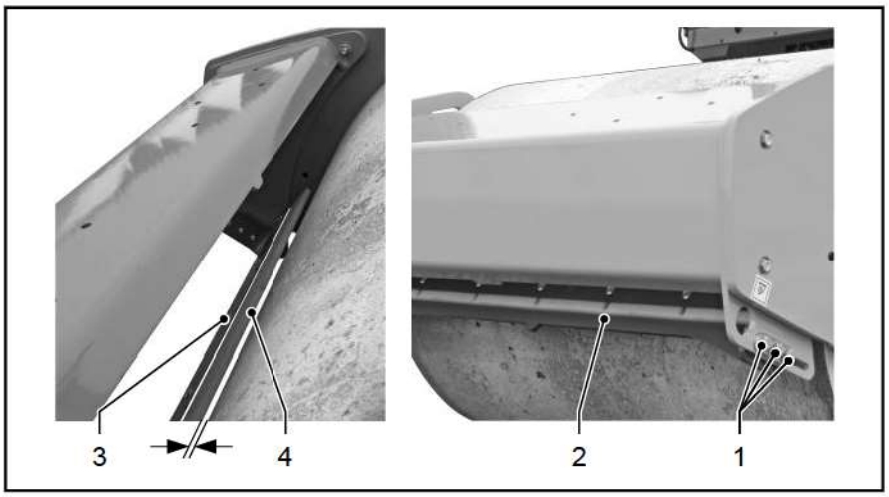
- ▶ Check the scrapers for cleanliness. Clean soiled scrapers.
- ▶ Check the condition of the scrapers. Replace worn scrapers in good time.
- ▶ Check the setting of the scrapers. Correct the position of any scrapers that have moved.

4.08.02 Cleaning the drum scrapers

- ▶ Rinse out dirt embedded between drums and scrapers with a water jet.
- ▶ Remove any extremely stubborn dirt with a spatula or similar tool.

4.08.03 Changing/adjusting the smooth drum scrapers

If they are worn-out to such an extent that sticking dirt is not removed from the roller drums/tyres during work any longer, the scrapers must be readjusted or replaced.



Before carrying out any work on the scrapers:

- ▶ Safely park the machine and secure it against rolling away.
- ▶ Switch off the diesel engine and remove the ignition key.

Smooth drum clearance – **10 mm**

Starting position of scraper bracket

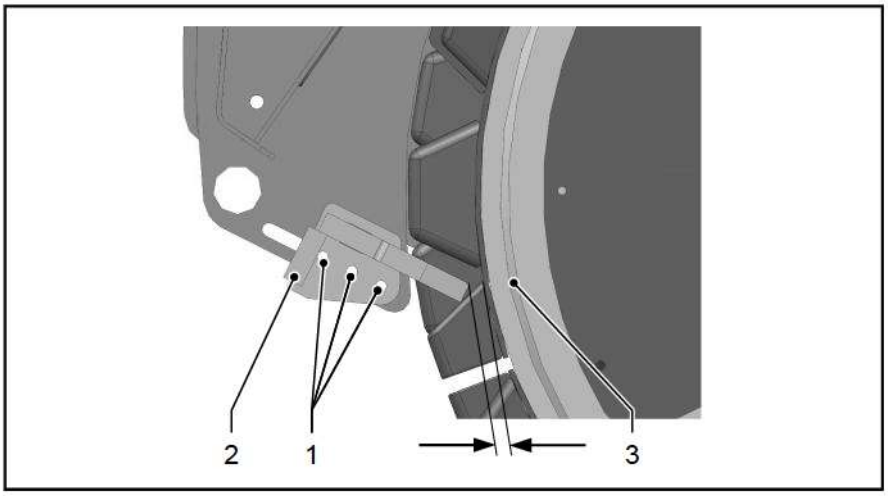
- ▶ Undo the screws [1].
- ▶ Push the scraper bracket [2] towards the drum until the clearance is reached.
- ▶ Tighten the screws [1].
- ✔ The scraper bracket is adjusted.

Readjusting the scraper

- ▶ Loosen the clamp connection [3].
- ▶ Push the scraper [4] towards the drum until the clearance is reached.
- ▶ Tighten the clamp connection [3].
- ✔ The clearance between the drum and scraper is now set.

4.08.04 Changing/adjusting the padfoot drum scrapers

If they are worn-out to such an extent that sticking dirt is not removed from the roller drums/tyres during work any longer, the scrapers must be readjusted or replaced.



Before carrying out any work on the scrapers:

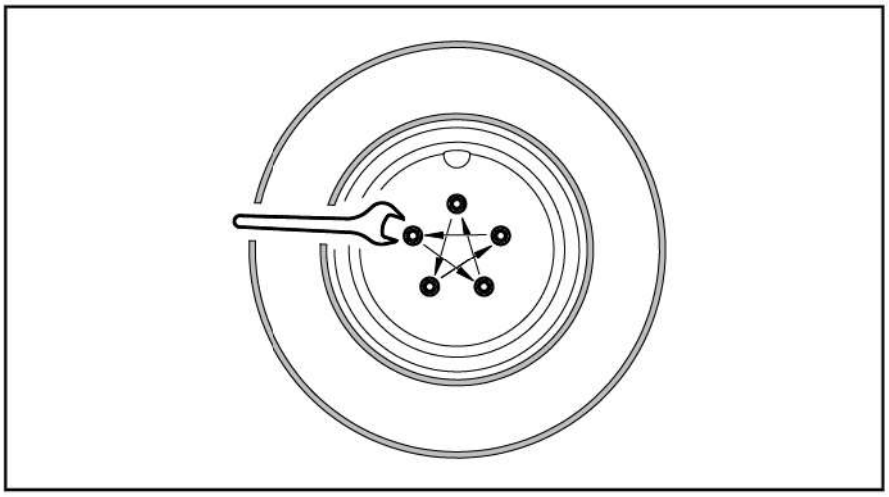
- ▶ Safely park the machine and secure it against rolling away.
- ▶ Switch off the diesel engine and remove the ignition key.

Padfoot drum clearance – **15 mm**

Starting position and adjustment of the scraper bracket

- ▶ Undo the screws [1].
- ▶ Push the scraper bracket [2] away from the drum [3]. If necessary, replace worn scraper elements with new ones.
- ▶ Push the scraper bracket [2] towards the drum [3] until the clearance is reached.
- ▶ Tighten the screws [1].
- ✔ The scraper bracket is adjusted.

4.08.05 Check that wheel nuts/wheel bolt connections are tight



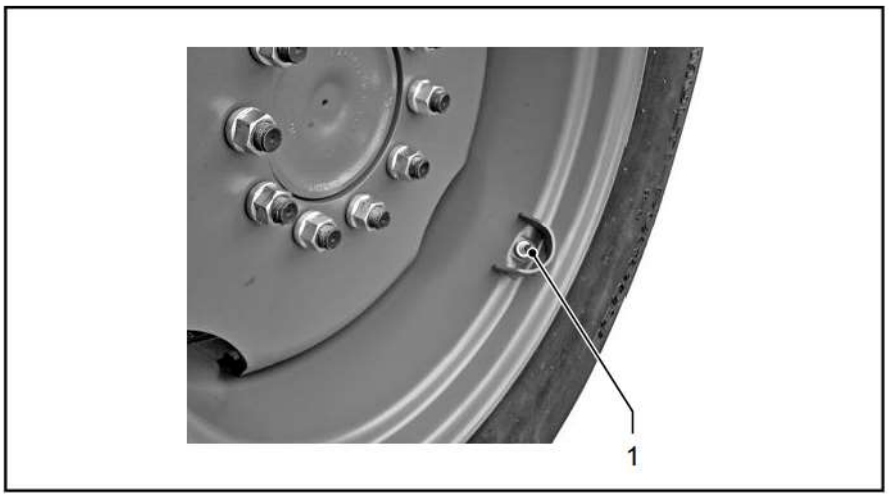
- ▶ Switch off diesel engine and remove ignition key.
- ▶ Tighten the wheel nuts/wheel bolts crosswise. For the tightening torque, see the technical data (see page 190).

4.08.06 Checking the air pressure in the tyres

⚠WARNING

Explosion!
Severe injury and death due to explosion and moving parts.

- Change damaged tyres.
- When filling, do not exceed the values of the specified air pressure.
- Use only suitable filling devices with a pressure indicator.
- When filling the tyres, be always next to the tyre, not in front of it.
- Use a tyre cage.



- ▶ Visually inspect the tyre pressure daily.
- ✔ There is no visible air shortage: The machine is ready for operation.

- ✔ Visible air shortage: Obtain the specified air pressure with appropriate filling devices.
- ▶ Switch off diesel engine and remove ignition key.
- ▶ Secure the filling hose to the valve [1] and fill the tyres with the specified air pressure ("Technical data", page 190).

4.08.07 Changing the tyres

⚠WARNING

Heavy weight!

Serious injuries or death caused by crushing or getting caught during assembly.

- Perform installation work on firm ground (flat, stable, horizontal).
- Carry out fitting work only when the engine is stopped.
- Use suitable load suspension and hitching gear with an adequate loading capacity.
- Do not step underneath suspended loads.

⚠WARNING

Tipping over the machine!

Serious injuries or death through the machine tipping over sideways because of a shift in the center of gravity.

- On one axle, only mount and use tyres that are the same type and have the same design, profile and diameter.
- Always set the tyre pressure the same for the tyres of the same axle.

NOTICE

Increased material wear!

Material damage through increased wear on tyres, running gear and drive parts as a result of a combination of different tyres on each axle.

- On one axle, only mount and use tyres that are the same type and have the same design, profile and diameter.
- Always set the tyre pressure the same for the tyres of the same axle.

Preparation

When using a jack, do not place metal on metal.

- Put machine on a safe surface (even, capable of bearing, horizontal) and secure against rolling away
- Switch off diesel engine and remove ignition key.
- Have hoisting gear ready that is appropriate for the weight of the machine and wheels.
- Lift the machine until the wheels leave the ground:
  - Apply a jack with sufficient lifting capacity to the marked lifting points on the chassis, or
  - Lift the machine only by the marked suspension points using suitable hoisting gear (crane with round sling/chain).
- Put/jack machine on the machine frame on liners capable of bearing (tyres may not be in contact with the ground).

Only persons familiar with changing tyres and aware of dangers are allowed to change the tyres.
When jacking up the machine, use only stable liners capable of bearing (e.g. support timber of sufficient size).
Perform the work with two fitters!

Disassembly

- Loosen and unscrew wheel nuts.
- Remove the circlips.
- Remove the wheels from the wheel hub.

Assembly

- Clean/derust the contact surface between the wheel rim and hub.
- Put the wheels on the wheel hub (tyre bolts must align with the fixing holes).
- Put the circlip on the tyre bolt.
- Screw the wheel nuts onto the tyre bolts and tighten them by applying the specified torque.

- Lift the machine and remove the liners.
- Put machine down, so that wheels may be in contact with the ground.

Check that wheel nuts/wheel bolt connections are tight after 50 operating hours (see page 185).

4.09 Steering system

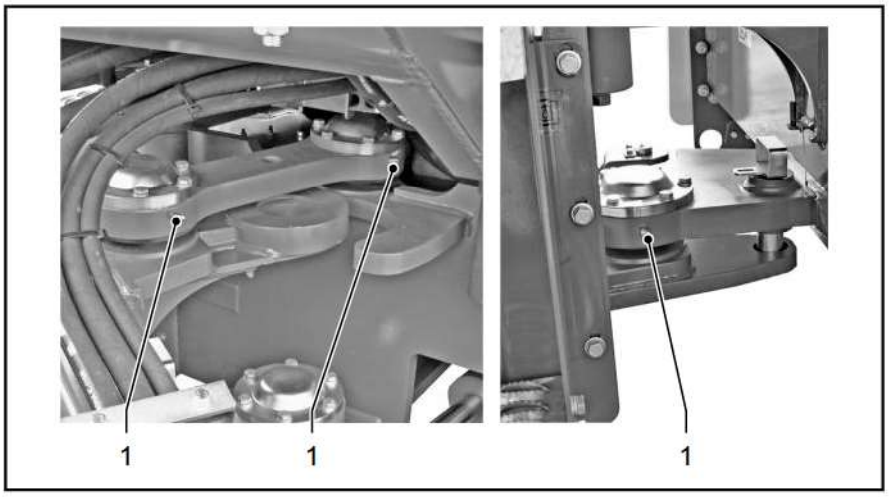
⚠WARNING

Uncontrolled movements!
Serious injuries or death caused by unexpected steering movements.

- Perform work on the steering system with the engine at rest and the electrical system switched off.
- On machines with safety strut, apply the safety strut before maintenance work.
- To avoid any unintended engine start by any third person: affix a warning notice at the driver's position indicating that work is in progress on the machine.

4.09.01 Lubricating the articulated joint bearings

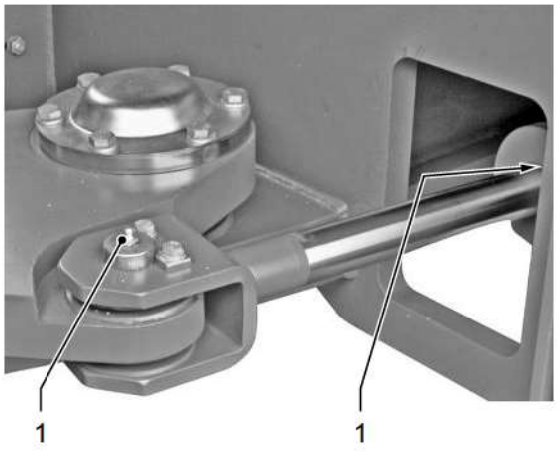
△ Only lubricants with this symbol are permitted ("Technical data", page 176).



- ▶ Switch off diesel engine and remove ignition key.
- ▶ Apply the articulated frame steering blocking.
- ▶ Grease lubricating nipple [1].

4.09.02 Lubricating the steering cylinder pins

△ Only lubricants with this symbol are permitted ("Technical data", page 176).

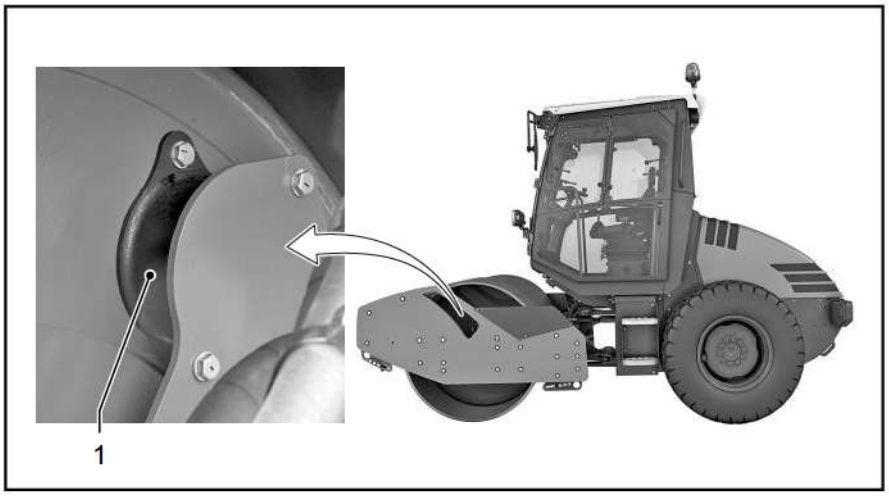


- Switch off diesel engine and remove ignition key.
- Apply the articulated frame steering blocking.
- Grease lubricating nipple [1].

4.26 Dynamic compaction system

Prior to maintenance works clean roller drums thoroughly.

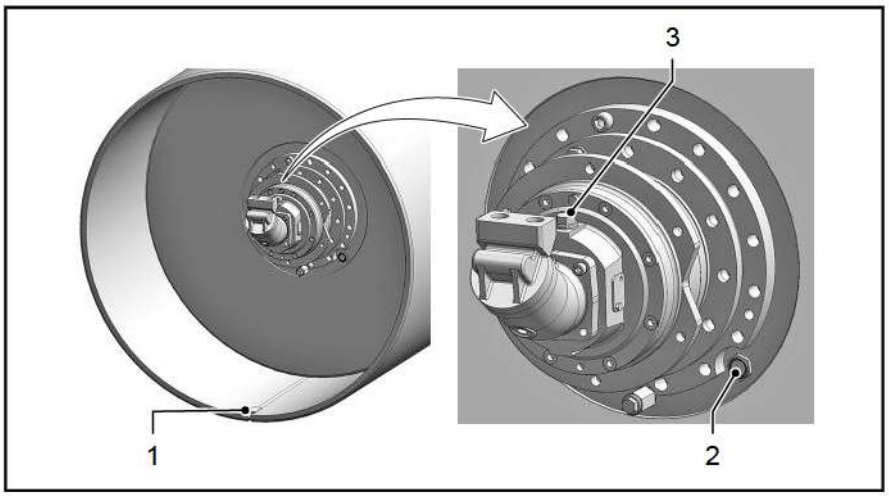
4.26.01 Checking the damping elements



- Switch off diesel engine and remove ignition key.
- Check the damping elements [1] of the roller drum suspension for cracks.
- Let replace damaged damping elements by new ones. Contact the customer service.

4.26.02 Checking the vibrator oil fill level

◇ Only lubricants with this symbol are permitted ("Technical data", page 176).

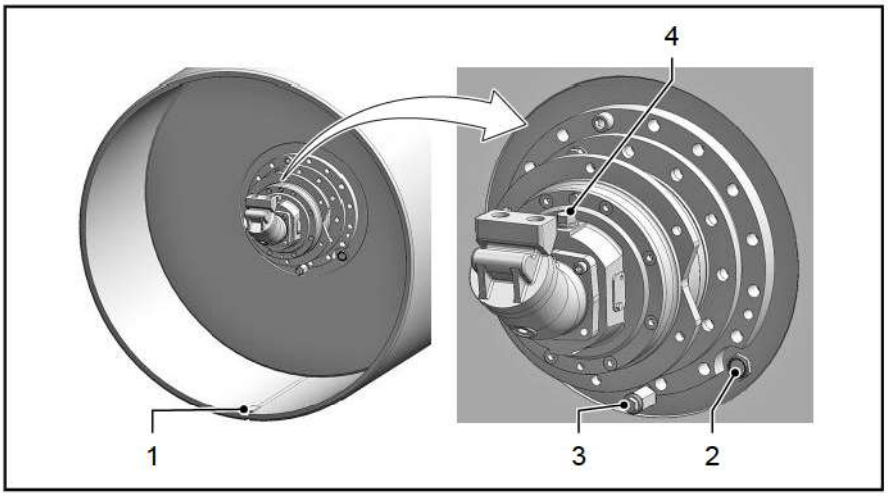


The check must be performed on the right and left side of the drum.

- ▶ Drive the machine slowly until the mark [1] is exactly perpendicular below the axle.
- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down to a temperature under 30 °C (86 °F).
- ▶ Correct oil level: centre of sight glass [2].
- ▶ If the oil level is insufficient, fill in oil through the filler bore [3].

4.26.03 Changing the vibrator oil

◇ Only lubricants with this symbol are permitted ("Technical data", page 176).



Replace the oil on the right and left side of the drum.

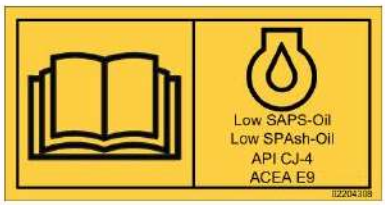
- ▶ Drive the machine slowly until the mark [1] is exactly perpendicular below the axle.
- ▶ Switch off diesel engine and remove ignition key.
- ▶ Allow machine to cool down less than 30 °C (86 °F).
- ▶ Remove filling screw [4] for pressure equalization purposes.
- ▶ Screw out oil drain screw [3] and let the used oil drain into a provided receptacle.
- ▶ Screw in and tighten the oil drain screw [3] with gasket ring.
- ▶ Fill in the specified oil type through the filler bore [4]. Correct oil level: centre of sight glass [2].
- ▶ Screw in and tighten the filling screw [4] with gasket ring.

5 TABLES

When working at the machine please always adhere to the instructions given in your Safety instructions!

5.00 Technical data

5.00.01 Engine oil



NOTICE

Wrong engine oil!

Using the wrong engine oil damages the engine, increases wear, lowers operational reliability and shortens the service life of the engine.

Statutory emission limits breached through using the wrong engine oil.

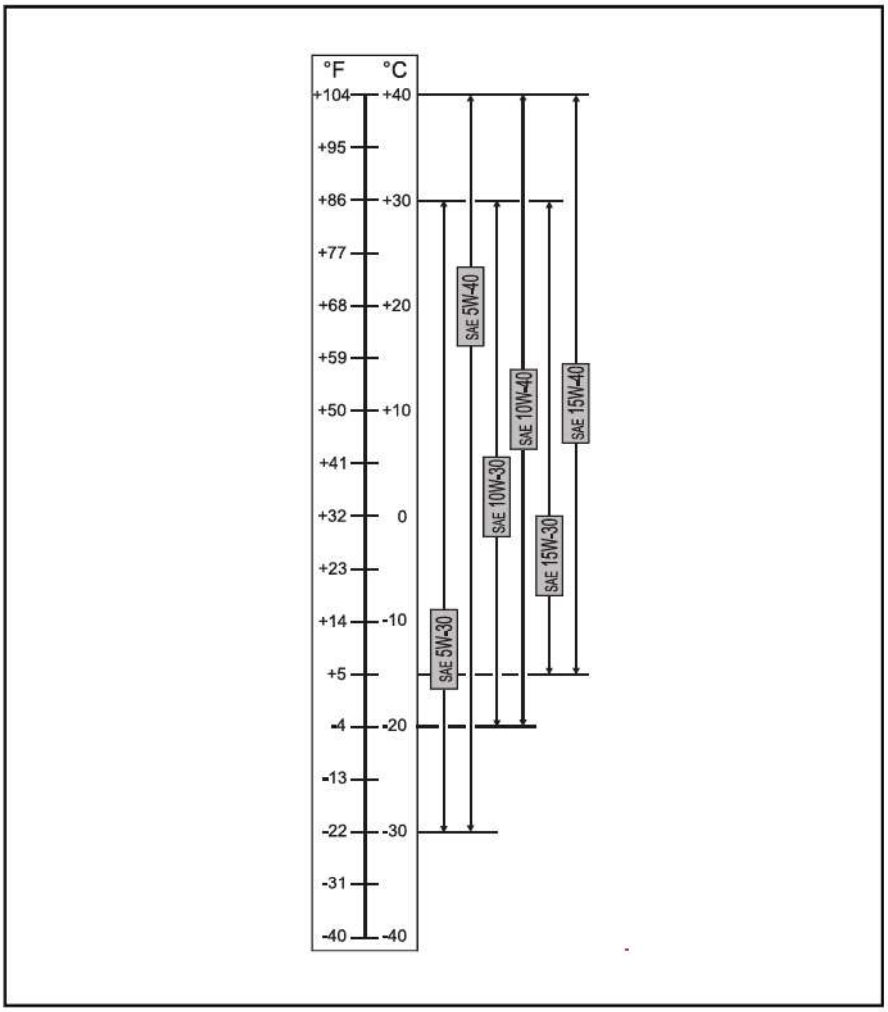
- Only use low ash engine oil in diesel engines that have an exhaust gas after-treatment system.
- Choose engine oil with a viscosity suitable for the operating temperature.
- Change the engine oil at the specified intervals!
- Do not mix different engine oils.

In order to avoid damaging the engine, each lubricating oil must have the viscosity suitable for its intended use.

Lubricating oil viscosity is classified in SAE viscosity grades. The following diagram shows the SAE viscosity grades in relation to the operating temperature.

Select the engine oil suitable for your operating temperature. Take account of the SAE viscosity grades. Use multigrade oils for work in widely ranging temperatures.

The cold starting ability of the engine can suffer if the temperature falls below the limit for a short period.


°F
°C
+104
+40
+95
+86
+30
+77
+68
+20
+59
+50
+10
+41
+32
0
+23
+14
-10
+5
-4
-20
-13
-22
-30
-31
-40
-40
SAE 5W-30
SAE 5W-40
SAE 10W-30
SAE 10W-40
SAE 15W-30
SAE 15W-40

5.00.02 Fuel

NOTICE

Wrong fuel!

Using the wrong diesel fuel damages the engine, increases wear, lowers operational reliability and shortens the service life of the engine.

Statutory emission limits breached through using the wrong diesel fuel.

- Only use sulphur-free diesel fuel in diesel engines which have an exhaust gas after-treatment system (sulphur content ≤ 15 mg/kg).
- Only use diesel fuels that comply with EN 590 and ASTM D 975.

The certification measurements to measure the compliance with statutory emission limits are carried out using the test fuels specified by law. These test fuels correspond to the diesel fuels that comply with EN 590 and ASTM D 975, which are described in this operating manual. If other fuels are used, compliance with the legally specified emission values is not guaranteed.
The guarantee only applies to diesel fuels which comply with the permissible diesel fuel specifications.

The permissible diesel fuel specifications are:

- EN 590 (sulphur content ≤ 10 mg/kg (10 ppm))
- ASTM D 975-10 grade no. 1-D S15 and 2-D S15 (sulphur content ≤ 15 mg/kg)

Winter operation with diesel fuel

NOTICE

Low operating temperature!

Engine damage caused by adding liquids or additives to the diesel fuel at low operating temperatures.

Using the wrong diesel fuel can cause clogging of the fuel system at low operating temperatures.

- Do not add any benzene, petrol or fluidity additive to the diesel fuel.
- Use winter diesel fuel for working at temperatures between 0 °C (32 °F) and –20 °C (–4 °F)
- Use special diesel fuels for working in arctic climatic zones with temperature down to –44 °C (–47 °F).

5.00.03 Cooling liquid (coolant)

NOTICE

Wrong coolant additives!
Using the wrong coolant additives damages or impairs the function of the cooling system.

- Only use coolant additives recommended by manufacturer.
- Only mix cooling system protecting agents/additives with the same specification.

If no coolant or the wrong coolant is used, liquid-cooled diesel engines may be damaged by corrosion, cavitation and freezing.

Continually check the coolant level and the concentration of the cooling system protecting agent in liquid-cooled diesel engines. Create the necessary concentration of cooling system protecting agent by adding a cooling system protecting agent to the cooling water. Check the concentration of the cooling system protection agent with commercially available test devices (e. g. gefo glycomat®).

The concentration of the cooling system protection agent in the coolant must be as follows:

Crystallisation point	Coolant antifreeze	Water (distillate or completely demineralised)
–26 °C (–15 °F)	40 Vol.%	60 %
–37 °C (–34 °F)	50 Vol.%	50 %
–40 °C (–40 °F)	52 Vol.%	48 %

HAMM uses and recommends products free of nitrites, amines, silicates and phosphates. These are listed in the "Overview of service fluid specifications" section (see page 184). HAMM supplies all the machines filled with coolant blend of 50 parts cooling system protective liquid and 50 parts water. This ensures frost protection to –37 °C (–34 °F).

5.00.04 Hydraulic oil (mineral oil)

NOTICE

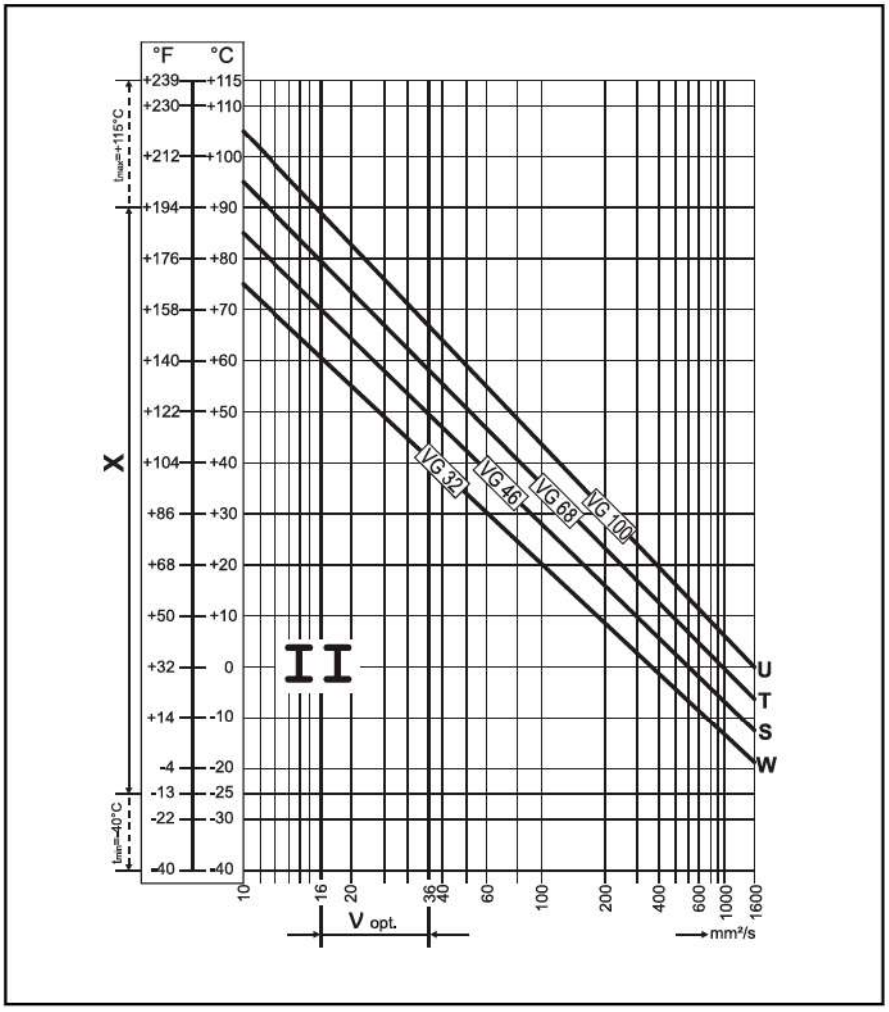
Wrong hydraulic oils!
Using the wrong hydraulic oils can damage or impair the function of the hydraulic system.

- Only use hydraulic oils recommended by manufacturer.
- Use only hydraulic oil with a viscosity appropriate for the working temperature.
- Only mix hydraulic oils with the same specification.

In order to avoid damaging the hydraulic system, each hydraulic oil must have the viscosity appropriate for its intended use.

The viscosity of hydraulic oil is classified in viscosity grades. The following diagram shows the viscosity grades as a function of the ambient temperature.

Select the hydraulic oil suitable for your ambient temperature. Take account of the viscosity grades.



[W] Winter conditions in Central Europe

[S]	Summer conditions in Central Europe or in enclosed premises
[T]	Tropical conditions or in premises subject to high amounts of heat
[U]	Excessive amounts of heat (for example from combustion engines)
[X]	Pressure fluid temperature range
[V_{opt}]	Optimal operating viscosity range
[1000 =]	Maximum permissible (short-term) viscosity
[II =]	100 mm²/s (t_{max} = +90 °C) ... 1000 mm²/s (t_{min} = –25 °C)

5.00.05 Biological hydraulic oil

NOTICE

Wrong hydraulic oils!
Using the wrong hydraulic oils can damage or impair the function of the hydraulic system.

- Only use hydraulic oils recommended by manufacturer.
- Use only hydraulic oil with a viscosity appropriate for the working temperature.
- Only mix hydraulic oils with the same specification.

The hydraulic system of the machine is supplied filled with mineral oil. All maintenance intervals in this maintenance manual relate to mineral oil.

Bio-hydraulic oil may be used under the following conditions:

- Use only bio-hydraulic oil based on specific, synthetic, saturated complex esters. The products used and recommended by manufacturer are listed in the "Overview of service fluid specifications" section. see page 184). Use other oils only when they correspond to the specifications of the oil above mentioned. The neutralization value (oil acid) may not exceed 2.
- When switching from bio-hydraulic oil to mineral oil or from mineral oil to bio-hydraulic oil, all filters in the oil circuit must be changed again after 50 operating hours.
  Then comply with the filter change intervals stated in this manual.
- Take old bio-oil and mineral oil to a reliable disposal center.
- Organic hydraulic fluid is easily biodegradable.

5.00.06 Refrigerant in air conditioning plants

Contains flourinated greenhouse gas HFC – R134a	
Quantity:	0,75 kg
CO_2 equivalent:	1,1 tons
Global warming potential:	1430

2603974

The European F-Gas Regulation 517/2014 requires the identification of media which contain F-gas and are used in refrigerating plants or in air conditioning plants.

A label is affixed to the machine for this identification.

The label provides information on:

- Type of refrigerant, e.g. R 134a
- Fill volume in kg
- CO_2 equivalent in t
- GWP value (global warming potential), e.g., 1430 for refrigerant R 134a

The information provided on the label indicates to the owner whether the system has been subjected to the corresponding tests.

5.00.07 Overview of lubricant details

Lubricant specifications

Lubricant	Quality	Viscosity	Marking
Engine oil The oil quality must correspond to the API/ACEA classification.	API: CJ-4/SM or higher ACEA: E9 or higher	See diagram	□
Hydraulic oil (mineral oil) The viscosity is defined in accordance with ISO 3448 (ISO-VG: Viscosity grade).	HVLP	**Conditions** ISO VG 22 arctic ISO VG 32 winter ISO VG 46 summer ISO VG 68 tropical ISO VG 100 extreme heat	▭
Hydraulic oil (bio-hydraulic oil) Synthetic saturated ester (ISO-VG: Viscosity grade).	HEES		
Special oil Only HAMM special oil is admissible.			◇
Special oil Only HAMM special oil is admissible.			☆
Gear oil with limited slip additives. The oil quality must meet the API classification.	API GL-5	SAE 85W-90	⬡
Coolant for diesel engine, liquid-cooled (nitrite, amine and phosphate free). Mixture: 40% coolant concentrate, 60% water.			○
Grease Lithium saponified multi-purpose grease with high-pressure additives. Temperature application range from –25 °C (–13 °F) to +120 °C (248 °F).			△

For order numbers and pack size, see the WIRTGEN GROUP "Parts and More" document and WIRTGEN GROUP lubricants (see page 186).

5.00.08 Starting torques

The starting torques indicated within the tables apply to

- nuts and screws with headrest according to ISO 4014, 4032, 4762... (frictional coefficient μ_{total}=0.095) unless otherwise specified.

Check the tightening torques of nuts and bolts at regular intervals. Tighten if necessary.

Starting torques for regular type screw threads

Threads (wrench size SW)	Starting torques MA (Nm)		
	8.8	10.9	12.9
M4 (SW7)	2.7	4.0	4.7
M5 (SW8)	5.5	8.1	9.5
M6 (SW10)	9.5	14	16.5
M8 (SW13)	21	30	36
M10 (SW16)	41	60	71
M12 (SW18)	71	104	122
M14 (SW21)	113	165	195
M16 (SW24)	175	255	300
M18 (SW27)	250	355	420
M20 (SW30)	350	500	580
M22 (SW34)	480	680	800
M24 (SW36)	600	860	1000
M27 (SW41)	880	1260	1470
M30 (SW46)	1200	1700	2000

Starting torques for fine threads

Threads (wrench size)	Starting torques MA (Nm)		
	8.8	10.9	12.9
M8x1 (SW13)	22	32	38
M10x1.25 (SW16)	43	63	74
M12x1.25 (SW18)	76	111	130
M12x1.5 (SW18)	73	108	126
M14x1.5 (SW21)	120	175	205
M16x1.5 (SW24)	183	265	315
M18x1.5 (SW27)	270	390	455
M20x1.5 (SW30)	380	540	630
M22x1.5 (SW34)	510	725	850
M24x2 (SW36)	640	910	1070
M27x2 (SW41)	930	1330	1550
M30x2 (SW46)	1300	1840	2150

5.00.09 Wirtgen Group Lubricants

General

Intensive testing and development work with leading mineral oil companies has analysed the complex and high requirements of Wirtgen Group machines. The results have been translated into optimal specifications and used for the first filling at the factory. This results in a wide range of premium lubricants from a single source accompanied by highly functional accessories for filling and lubrication.

Premium lubricants

Wirtgen Group lubricants have tailor-made specifications that combine high-quality base oils and additives. The advantages for you:

- Compatibility with the first filling
- Wear protection
- Corrosion prevention
- Traceability in the event of damage

Everything from a single source

HAMM rollers can be lubricated with the Wirtgen Group lubricant appropriate for the area of application. Together with the carefully coordinated mixture of container sizes, this results in optimised ordering, storage and filling processes.

Filling and lubricating accessories

Highly functional accessories, such as canister pumps and grease guns, are available to assist you in filling and lubricating your machines.

Engine oil ☐			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Engine	Semi-synthetic "Low SAPS" engine oil (low sulphated ash, sulphur and phosphorous content) with fuel economy technology. Its low sulphate ash content ensures that burnt	5 l	2210320
		20 l	2210322
		208 l	2210323

Engine oil ☐			
Designation	**Description**	**Packing size**	**Order no.**
Oil "Low SAPS" 10W-30	oil particles do not prematurely clog the exhaust gas after-treatment diesel particulate filter (DPF).	1000 l IBC	2118570
WIRTGEN GROUP Engine Oil "Low SAPS" 15W-40	Semi-synthetic "Low SAPS" engine oil (low sulphated ash, sulphur and phosphorous content) with fuel economy technology. Its low sulphate ash content ensures that burnt oil particles do not prematurely clog the exhaust gas after-treatment diesel particulate filter (DPF).	5 l	2573349
		20 l	2573350
		208 l	2573351
WIRTGEN GROUP Engine Oil "Low SAPS" 10W-40 MB	The very latest synthetic diesel engine oil, extremely high performance, "Low SAPS" (lower levels of sulphur, sulphated ash and phosphorus). This engine oil was specially developed for all diesel engines with a diesel particulate filter (DPF) and with SCR systems (AdBlue). Reduces the environmental load thanks to reduced harmful emissions.	5 l	2346869
		20 l	2346870
		208 l	2346871

Hydraulic oil ▭			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Hydraulic Oil HVLP 32	High-grade multi-range hydraulic oil with zinc for a high level of protection against wear, even under difficult operating conditions. Enhanced specification results in much longer replacement intervals.	20 l	2118573
WIRTGEN GROUP Hydraulic Oil HVLP 46	High-grade multi-range hydraulic oil with zinc for a high level of protection against wear, even under difficult operating conditions. Enhanced specification results in much longer replacement intervals.	20 l	2065028
		208 l	2065029
		1000 l IBC	2118571
WIRTGEN GROUP Hydraulic Oil HVLP 68	High-grade multi-range hydraulic oil with zinc for a high level of protection against wear, even under difficult operating conditions. Enhanced specification results in much longer replacement intervals.	20 l	2118574

Biodegradable hydraulic oil ▭			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Bio Hydraulic Oil 46	Biodegradable multi-use hydraulic oil made from all-synthetic esters and ash-free additives results in optimal lubricating properties and a reduced load on the environment. Bears the EU Ecolabel for Lubricants.	20 l	2118575
		208 l	2270558
WIRTGEN GROUP Bio Hydraulic Oil 68	Biodegradable multi-use hydraulic oil made from all-synthetic esters and ash-free additives results in optimal lubricating properties and a reduced load on the environment. Bears the EU Ecolabel for Lubricants.	20 l	2124179

Gear oil ⬡			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Gear Oil 85W-90	Mineral gearbox oil for versatile use in gearboxes and axle drives. Impresses with a high level of protection against wear and oxidation. Note: Do not use in HAMM vibration bearings or drum drives.	5 l	2065030
		20 l	2065031
		208 l	2065032

Special gear oil ◇			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Special Gear Oil	Special fully synthetic, high-performance gear oil for HAMM vibration bearings. Highly resistant to pressure and temperature. Note: Do not mix with mineral gearbox oil.	5 l	1238051
		20 l	2065037
		208 l	2065038

Special gear oil ☆			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Special Gear Oil	Special fully synthetic, high-performance gear oil for HAMM drum drives. Highly resistant to pressure and temperature. Note: Do not mix with mineral gearbox oil.	5 l	2571293
		20 l	2571294
		208 l	2571300

Greases △			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Multi-purpose Grease	Highly refined multi-purpose grease for a wide range of lubrication tasks, such as on pivot pins and wheel bearings. Modern additive technology makes this product particularly suitable for use in conditions subject to impacts and vibration.	400 g	2065035
WIRTGEN GROUP Drum Bearing Grease	Exclusive grease for lubricating HAMM drum bearings. Highly resistant to temperature and pressure.	1 kg	1205757
WIRTGEN GROUP Drive Bearing Grease	Special high-performance grease for use in HAMM drive bearings. Extremely resistant to pressure and water-repellent.	1 kg	1227114

Diesel engine coolant ○			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Antifreezing Compound	Anti-corrosion agents, coolants and anti-freeze for diesel engines.	5 l	2173022
		20 l	2173023
		208 l	2173024

Miscellaneous			
Designation	**Description**	**Packing size**	**Order no.**
WIRTGEN GROUP Asphalt Anti Stick	Specially developed solution for combination and pneumatic tyre rollers from HAMM: It prevents bitumen from adhering to the rubber tyres. The emulsion is based on a non-toxic solution and is biodegradable.	5 l	2117378
		20 l	2117379

5.01 Technical data

The version valid at the time the technical data was prepared for this version of the manual was used (see impressum: change date). Other values may apply if modifications are made to the machine in the course of its further development.

5.01.01 H 5i

Designation	Value	Unit
Dimensions and weights		
Basic weight without cab	4580	kg
Cab operating weight	5035	kg
Front/rear axle load	2625/2410	kg
Working width	1370	mm
Inside/outside turning radius	3375/4745	mm
Diesel engine		
Manufacturer	Kubota	
Type	V3307-CR-T	
Number of cylinders	4	
Power (ISO 14396)/rated speed	55,4/2200	kW/rpm
Exhaust emissions category EU/USA	V/Tier 4	
Carbon dioxide emissions (CO_2)(1)	807.2	g/kWh
Drive		
Working gear speed	0–6.0/(0–3.7)	km/h / (mph)
Transport speed	0–12.5/(0–7.7)	km/h / (mph)
Gradeability with/without vibration	55/60	%
Max. permitted longitudinal incline	20	°
Max. permitted transverse incline	20	°
Tyres(2)		
Number of tyres	2	units
Tyre diameter, min./max.	1040/1160	mm
Rolling circumference, min./max.	3040/3420	mm
Tyre size	12.4-24-R1 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.15/(1.5)/[21.75] 85	MPa/(bar)/[psi] kg
Tyre size	12.4-24-R3 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.22/(2.2)/[32.0] 85	MPa/(bar)/[psi] kg
Tightening torque, wheel nut	450	Nm
Vibration		
Vibration	front	
Frequency/speed	30/1800	Hz/rpm

Designation	Value	Unit
Max. amplitude	1,55	mm
Steering		
Steering lock to both sides	31	°
Pendulum compensation upwards and downwards	10	°
Filling capacities(3)		
Fuel	123,00	l
Engine oil (for oil change)	10,50	l
Diesel engine coolant	11,00	l
Hydraulic oil	60,00	l
Vibrator	5,20	l
*Air-conditioning system (R134a)	0,85	kg
Sound power level		
Sound power level L_{WA}, guaranteed	104	dB(A)
Sound power level L_{WA}, representative measurement	102	dB(A)
Emissions sound pressure level at the driver's seat		
Sound pressure level L_{pA}, measured with cab, max.	83	dB(A)
Sound pressure level L_{pA}, measured with ROPS, max.	92	dB(A)
Electrical system		
Operating voltage	12	V

5.01.02 H 5i P

Designation	Value	Unit
Dimensions and weights		
Unladen weight without cab	4700	kg
Cab operating weight	5155	kg
Front/rear axle load	2745/2410	kg
Working width	1370	mm
Padfoot, number	60	Units
Padfoot, height	80	mm
Padfoot, end face	113	cm^2
Inside/outside turning radius	3375/4745	mm
Diesel engine		
Manufacturer	Kubota	
Type	V3307-CR-T	
Number of cylinders	4	
Power (ISO 14396)/nominal speed	55.4/2200	kW/rpm
Exhaust emissions category EU/USA	V/Tier 4	
Carbon dioxide emissions (CO_2)(1)	807.2	g/kWh
Travel drive		
Working gear speed	0–6.0/(0–3.7)	km/h / (mph)
Transport gear speed	0–12.5/(0–7.7)	km/h / (mph)
Gradeability, with/without vibration	55/60	%
Max. permitted longitudinal incline	20	°
Max. permitted transverse incline	20	°
Tyres(2)		
Number of tyres	2	Units
Tyre diameter, min./max.	1040/1160	mm
Rolling circumference, min./max.	3040/3420	mm
Tyre size	12.4-24-R1 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.15/(1.5)/[21.75] 85	MPa/(bar)/[psi] kg
Tyre size	12.4-24-R3 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.22/(2.2)/[32.0] 85	MPa/(bar)/[psi] kg
Tightening torque, wheel nut	450	Nm
Vibration		
Vibration	front	
Frequency/speed	30/1800	Hz/rpm
Max. amplitude	1.45	mm
Steering		

Designation	Value	Unit
Steering lock to both sides	31	°
Pendulum compensation upwards and downwards	10	°
Filling capacities(3)		
Fuel	123.00	l
Engine oil (for oil change)	10.50	l
Diesel engine coolant	11.00	l
Hydraulic oil	60.00	l
Vibrator	5.20	l
* Air-conditioning system (R134a)	0.85	kg
Sound power level		
Sound power level L_{WA}, guaranteed	104	dB(A)
Sound power level L_{WA}, representative measurement	102	dB(A)
Emissions sound pressure level at the driver's seat		
Sound pressure level L_{pA}, measured with cab, max.	83	dB(A)
Sound pressure level L_{pA}, measured with ROPS, max.	92	dB(A)
Electrical system		
Operating voltage	12	V

5.01.03 H 7i

Designation	Value	Unit
Dimensions and weights		
Basic weight without cab	6085	kg
Cab operating weight	6540	kg
Front/rear axle load	3980/2560	kg
Working width	1680	mm
Inside/outside turning radius	3310/4990	mm
Diesel engine		
Manufacturer	Kubota	
Type	V3307-CR-T	
Number of cylinders	4	
Power (ISO 14396)/rated speed	55,4/2200	kW/rpm
Exhaust emissions category EU/USA	V/Tier 4	
Carbon dioxide emissions (CO_2)(1)	807.2	g/kWh
Drive		
Working gear speed	0–6.0/(0–3.7)	km/h / (mph)
Transport speed	0–12.5/(0–7.7)	km/h / (mph)
Gradeability with/without vibration	55/60	%
Max. permitted longitudinal incline	20	°
Max. permitted transverse incline	20	°
Tyres(2)		
Number of tyres	2	units
Tyre diameter, min./max.	1250/1265	mm
Rolling circumference, min./max.	3625/3750	mm
Tyre size	14.9-24-R1 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 115	MPa/(bar)/[psi] kg
Tyre size	14.9-24-R3 8 TL	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 103	MPa/(bar)/[psi] kg
Tightening torque, wheel nut	450	Nm
Vibration		
Vibration	front	
Stage 1: Frequency/speed	30/1800	Hz/rpm
Stage 1: Max. amplitude	1,71	mm
Stage 2: Frequency/speed	42/2520	Hz/rpm
Stage 2: Max. amplitude	0,66	mm
Steering		
Steering lock to both sides	31	°

Designation	Value	Unit
Pendulum compensation upwards and downwards	10	°
Filling capacities(3)		
Fuel	123,00	l
Engine oil (for oil change)	10,50	l
Diesel engine coolant	11,00	l
Hydraulic oil	60,00	l
Vibrator	10,00	l
*Air-conditioning system (R134a)	0,85	kg
Sound power level		
Sound power level L_{WA}, guaranteed	104	dB(A)
Sound power level L_{WA}, representative measurement	102	dB(A)
Emissions sound pressure level at the driver's seat		
Sound pressure level L_{PA}, measured with cab, max.	83	dB(A)
Sound pressure level L_{PA}, measured with ROPS, max.	92	dB(A)
Electrical system		
Operating voltage	12	V

5.01.04 H 7i P

Designation	Value	Unit
Dimensions and weights		
Unladen weight without cab	5955	kg
Cab operating weight	6410	kg
Front/rear axle load	3850/2560	kg
Working width	1680	mm
Padfoot, number	84	Units
Padfoot, height	80	mm
Padfoot, end face	113	cm^2
Inside/outside turning radius	3310/4990	mm
Diesel engine		
Manufacturer	Kubota	
Type	V3307-CR-T	
Number of cylinders	4	
Power (ISO 14396)/nominal speed	55.4/2200	kW/rpm
Exhaust emissions category EU/USA	V/Tier 4	
Carbon dioxide emissions (CO_2)(1)	807.2	g/kWh
Travel drive		
Working gear speed	0–6.0/(0–3.7)	km/h / (mph)
Transport gear speed	0–12.5/(0–7.7)	km/h / (mph)
Gradeability, with/without vibration	55/60	%
Max. permitted longitudinal incline	20	°
Max. permitted transverse incline	20	°
Tyres(2)		
Number of tyres	2	Units
Tyre diameter, min./max.	1250/1265	mm
Rolling circumference, min./max.	3625/3750	mm
Tyre size	14.9-24-R1 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 115	MPa/(bar)/[psi] kg
Tyre size	14.9-24-R3 8 TL	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 103	MPa/(bar)/[psi] kg
Tightening torque, wheel nut	450	Nm
Vibration		
Vibration	front	
Frequency/speed	30/1800	Hz/rpm
Max. amplitude	1.79	mm
Steering		

Designation	Value	Unit
Steering lock to both sides	31	°
Pendulum compensation upwards and downwards	10	°
Filling capacities(3)		
Fuel	123.00	l
Engine oil (for oil change)	10.50	l
Diesel engine coolant	11.00	l
Hydraulic oil	60.00	l
Vibrator	10.00	l
* Air-conditioning system (R134a)	0.85	kg
Sound power level		
Sound power level L_{WA}, guaranteed	104	dB(A)
Sound power level L_{WA}, representative measurement	102	dB(A)
Emissions sound pressure level at the driver's seat		
Sound pressure level L_{pA}, measured with cab, max.	83	dB(A)
Sound pressure level L_{pA}, measured with ROPS, max.	92	dB(A)
Electrical system		
Operating voltage	12	V

5.01.05 H 7i VIO

Designation	Value	Unit
Dimensions and weights		
Basic weight without cab	5870	kg
Cab operating weight	6325	kg
Front/rear axle load	3765/2560	kg
Working width	1680	mm
Inside/outside turning radius	3310/4990	mm
Diesel engine		
Manufacturer	Kubota	
Type	V3307-CR-T	
Number of cylinders	4	
Power (ISO 14396)/rated speed	55,4/2200	kW/rpm
Exhaust emissions category EU/USA	V/Tier 4	
Carbon dioxide emissions (CO_2)(1)	807.2	g/kWh
Drive		
Working gear speed	0–6.0/(0–3.7)	km/h / (mph)
Transport speed	0–12.5/(0–7.7)	km/h / (mph)
Gradeability with/without vibration	55/60	%
Max. permitted longitudinal incline	20	°
Max. permitted transverse incline	20	°
Tyres(2)		
Number of tyres	2	units
Tyre diameter, min./max.	1250/1265	mm
Rolling circumference, min./max.	3625/3750	mm
Tyre size	14.9-24-R1 8 PR	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 115	MPa/(bar)/[psi] kg
Tyre size	14.9-24-R3 8 TL	
▪ Air pressure ▪ Total weight per tyre	0.13/(1.3)/[18.8] 103	MPa/(bar)/[psi] kg
Tightening torque, wheel nut	450	Nm
Vibration		
Vibration	front	
Frequency/speed	36/2160	Hz/rpm
Max. amplitude	1,38	mm
Oscillation		
Oscillation	front	
Frequency/speed	36/2160	Hz/rpm
Max. tangential amplitude	1,37	mm

Designation	Value	Unit
Steering		
Steering lock to both sides	31	°
Pendulum compensation upwards and downwards	10	°
Filling capacities(3)		
Fuel	123,00	l
Engine oil (for oil change)	10,50	l
Diesel engine coolant	11,00	l
Hydraulic oil	60,00	l
Vibrator	10,00	l
*Air-conditioning system (R134a)	0,85	kg
Sound power level		
Sound power level L_{WA}, guaranteed	104	dB(A)
Sound power level L_{WA}, representative measurement	102	dB(A)
Emissions sound pressure level at the driver's seat		
Sound pressure level L_{PA}, measured with cab, max.	83	dB(A)
Sound pressure level L_{PA}, measured with ROPS, max.	92	dB(A)
Electrical system		
Operating voltage	12	V

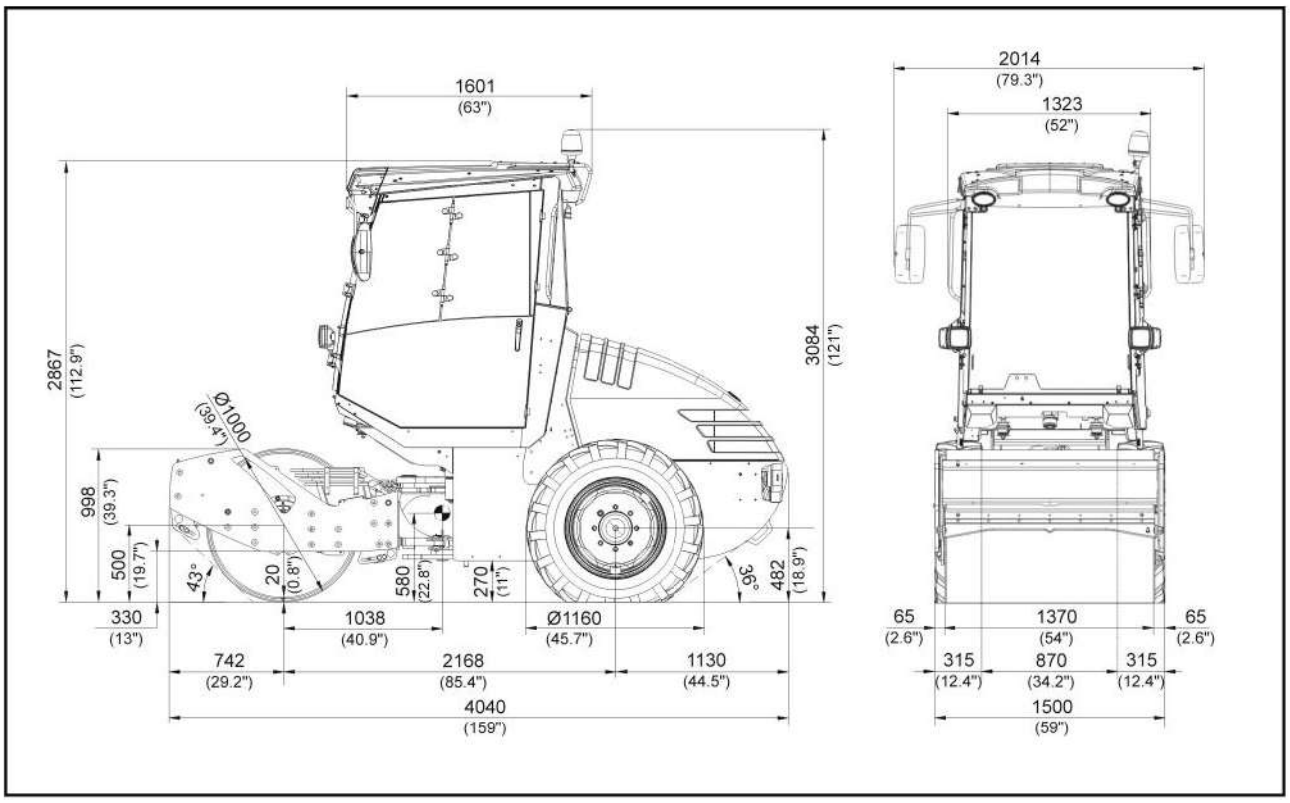
(1) This CO_2 measurement is the result of testing a (parent) engine that is representative of the engine type or the engine family in a fixed test cycle under laboratory conditions, and it does not represent an explicit or implicit guarantee for the performance of a specific engine.

(2) The tyre specifications provided in the operating manual are examples. The specifications for the tyre pressure of the fitted tyres are provided on a sticker on the machine.

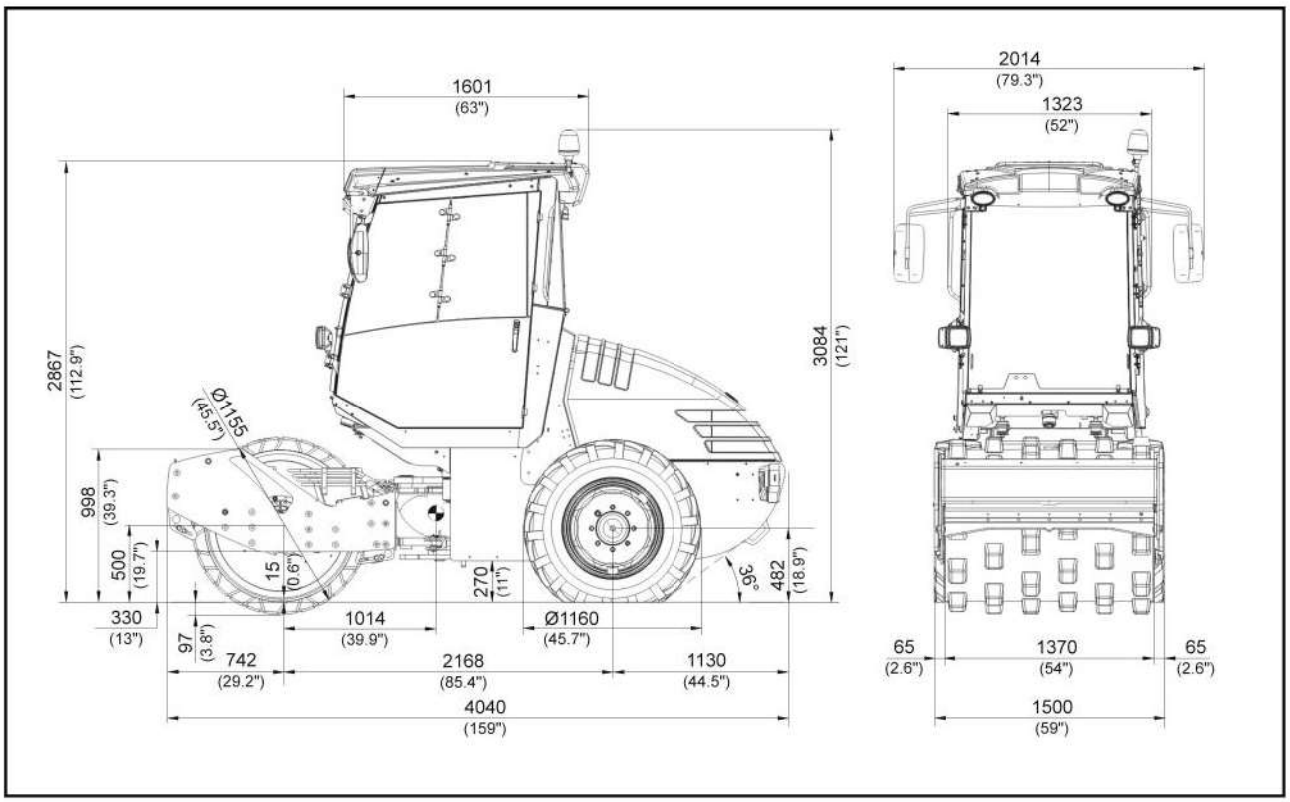
(3) The specifications for the filling capacities of liquids and operating materials refer to the standard version of machine. However, they may deviate, e.g. for hydraulic oil and where attachments and auxiliary devices are installed. Always observe the operating manual when filling. Fill liquids and operating materials up to the respective mark.

5.02 Dimension sheet

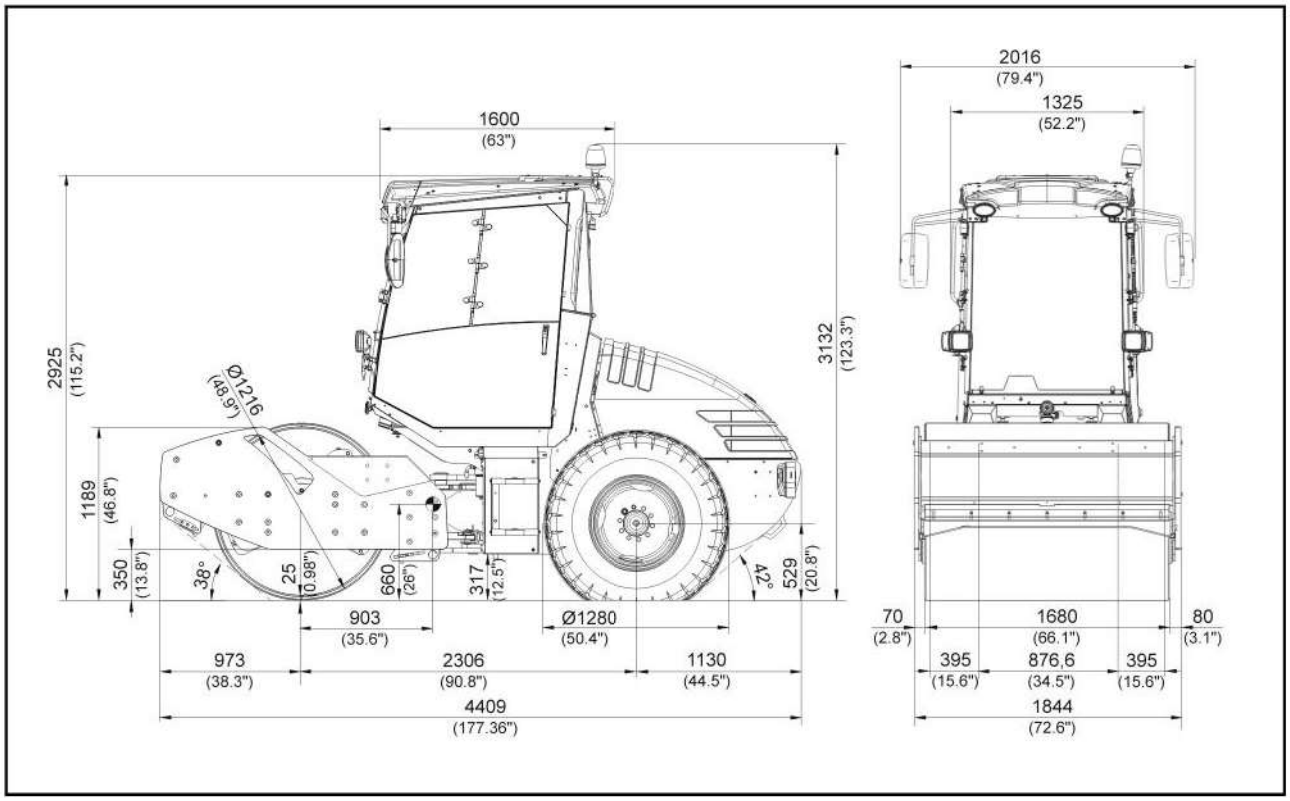
5.02.01 H 5i



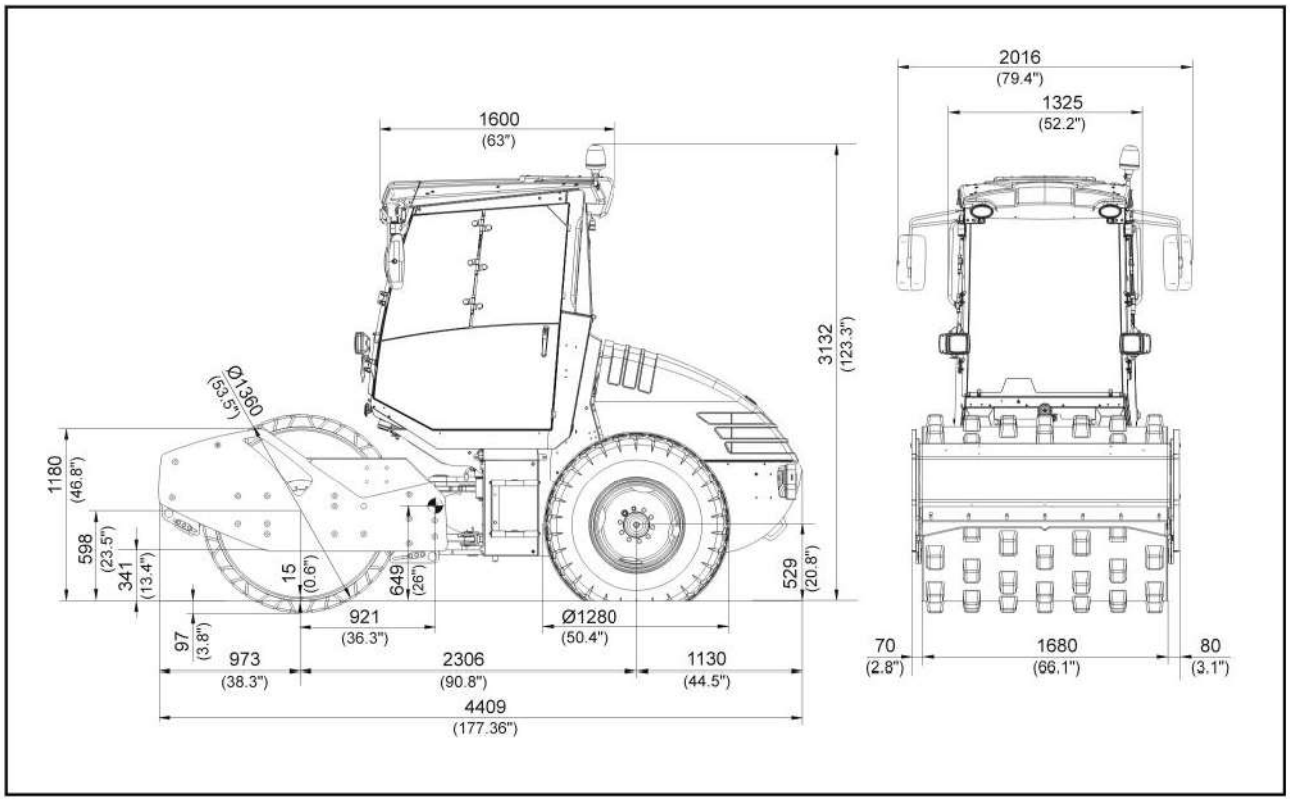
5.02.02 H 5i P



5.02.03 H 7i, H 7i VIO



5.02.04 H 7i P



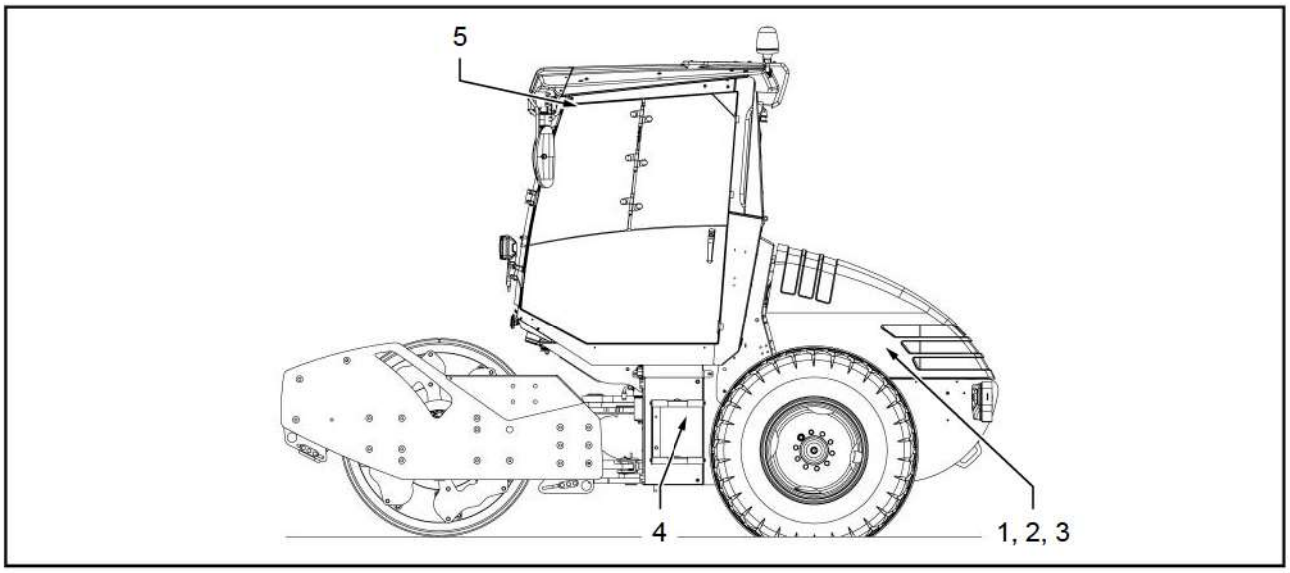
5.03 Fuses

⚠WARNING

Fire in the machine electrical system!
Serious injuries or death or material damage as a result of fire caused by using fuses not meeting specifications.

- Only use fuses specified by the manufacturer (not fuses with a higher amperage).
- Do not bridge fuses.

The fuse assignment indicates a fully equipped machine. Depending on the machine configuration (special attachments), slots are correspondingly free or occupied by fuses. Please follow the fuse assignment shown on the adhesive label in the engine compartment.



[1]	Main fuses	[2]	Alternator D+
[3]	Battery isolating switch	[4]	Central electrical system
[5]	Driver's cab		

5.03.01 Engine compartment

[1] Main fuses

Component	Fuse assignment	Fuse
F01.1	Alternator B+	100 A
F01.2	Cold starting device	100 A
F01.3	On-board power supply (terminal 30)	100 A
F01.4	Solenoid switch for starter motor	30 A

[2] Fuse, alternator D+

Component	Fuse assignment	Fuse
F02	Alternator D+	5 A

[3] Battery isolation switch

Component	Fuse assignment	Fuse
F06	Battery disconnection switch	1 A

5.03.02 Electrical box

[4] Central electrical system

Component	Fuse assignment	Fuse
F1	Rear working spotlights	15 A
F2	Front working spotlights	15 A
F3	EGR valve, throttle flap	5 A
F4	Sensors at the diesel engine	5 A
F5	Left driving light	10 A
F6	Right driving light	10 A
F7	HCN, GPS (terminal 30)	5 A
F8	Cab (terminal 30)	10 A
F9	Diesel engine control unit (terminal 30)	20 A
F10	Ignition (start) switch (terminal 30), dashboard	15 A
F11	not used (terminal 30)	10 A
F12	not used (terminal 30)	10 A
F13	Rotating beacon	10 A
F14	High beam	15 A
F15	Cab heating	10 A
F16	Reversing alarm, reversing light	10 A
F17	not used (terminal 15)	10 A
F18	Dozer blade	10 A
F19	not used (terminal 15)	10 A
F20	not used (terminal 15, engine compartment)	10 A
F21	Display (terminal 15)	20 A
F22	Socket for on-board power supply (driver's platform)	15 A
F23	Sensors	5 A
F24	Signal horn	10 A
F25	not used (terminal 15, operator's seat console)	10 A
F26	EMERGENCY STOP, diesel engine control unit	5 A
F27	Compaction meter HCM	10 A
F28	Cab (terminal 15)	60 A
FC1	Plug-in socket for fuse test	

5.03.03 Driver's cab

[5] Operator's cab

Component	Fuse assignment	Fuse
F1	Radio	10 A
F2	Tachograph, reversing camera	5 A
F3	Windscreen washer system, spare plug	15 A
F4	Air-conditioning compressor solenoid coupling, air-conditioning fan	25 A
F5	Blower signal on/off	5 A
F6	Blower motor	15 A
F7	Rear windscreen wiper	10 A
F8	Front windscreen wiper	10 A

You can use the fusible test receptacle to check a fuse.
The green light-emitted diode (LED) lights up when the fuse is functional.

5.04 Diagnostic code

Code no.	Component	Possible cause
100	Driving light	Open line, short-circuit
101	High beam	Open line, short-circuit
102	Rotating beacon	Open line, short-circuit
104	Drum edge lighting	Open line, short-circuit
105	Reversing light	Open line, short-circuit
107	Signal horn	Open line, short-circuit
108	Auto. stop fault	Open line, short-circuit
109	Regeneration fault	Open line, short-circuit
110	Working spotlight, left	Open line, short-circuit
111	Working spotlight, right	Open line, short-circuit
112	Stop solenoid	Open line, short-circuit
113	Starter relay	Open line, short-circuit
115	Amplitude preselection	Open line, short-circuit
116	Alert buzzer	Open line, short-circuit
117	Drive pump	Open line, short-circuit
118	Left turn signal	Open line, short-circuit
119	Left parking light	Open line, short-circuit
122	Parking brake	Open line, short-circuit
123	Solenoid valve vibration, front	Open line, short-circuit
124	Reversing alarm	Open line, short-circuit
125	Gearshift	Open line, short-circuit
126	Right parking light	Open line, short-circuit
127	Right turn signal	Open line, short-circuit
129	Solenoid valve vibration front or rear	Internal plausibility error
160	Machine CAN BUS	Internal plausibility error
161	Internal memory	Internal plausibility error
162	Diesel engine temperature	Diesel engine temperature fault
163	Engine CAN BUS	Engine CAN BUS fault
164	Hydraulic oil pressure or temperature sensor	Short-circuit, mechanical defect
165	Drive lever	Implausible signal
166	Starting conditions	Implausible signal
600	HCM	Fault

6 AUXILIARY EQUIPMENT

The section describes the mounting and dismounting, operation and maintenance of special attachments.

Please consider the parts included in the scope of supply. They may be different from the parts list content indicated here due to further developments in the product.

Safety Instructions

The "Special attachments" section describes components of the machine, that can be operated in addition to the equipment previously described in the manual.

For the special attachments, observe **ALL** the general warning and safety notices listed in the Operation and Maintenance chapter.

- "Important information about operating the machine"
- "Important information about maintenance works"

When working at the machine please always adhere to the instructions given in your Safety instructions!

6.00 Roll-over protection structure (ROPS)

The ROPS safety device (cab/roll-over bar) is a rollover protection structure in the case the machine tilts or rolls over. It avoids that the driver is crushed to death based on the high self-weight of the machine.

If the ROPS safety equipment is dismounted from the machine for transport or repair, it must be remounted according to specifications before the machine is used again.

⚠WARNING

High self-weight of machine!
If the machine overturns backwards, forwards or sideways there is a danger of serious injuries or death.

- Operate machine only with the ROPS safety device installed according to instructions and while wearing the safety belt.
- With detectable defects of the ROPS safety device or of its fixation it is not allowed to operate the machine.

Assembly

⚠WARNING

High self-weight of ROPS safety device!
Serious injuries or death caused by crushing or getting caught during assembly.

- Perform installation work on firm ground (flat, stable, horizontal).
- Carry out fitting work only when the engine is stopped.
- Use suitable load suspension and hitching gear with an adequate loading capacity.
- Do not step underneath suspended loads.

Observe the service manual for mounting the ROPS safety equipment.

- ▶ Use appropriate lifting devices and hoisting equipment. Observe weight (see type plate of ROPS safety device).
- ▶ Lift ROPS safety device onto platform and align with fixing holes.
- ▶ Screw ROPS safety device with operator platform. Observe specified starting torque values.

Visual test

The machine frame must not be warped, bent or cracked in the ROPS fixing area (deformation).

The reinforcement elements of the ROPS safety device must not show rust, damage, fissures or open fractures.

All screw connections of the reinforcement elements must comply with the given specifications and must be screwed tightly to each other (observe starting torque values). Bolts and nuts must not be damaged, bent or deformed.

It is absolutely forbidden to modify or repair/level the reinforcement elements in any way.

6.01 Falling-object protective structure (FOPS)

The FOPS safety equipment is a design that prevents the driver from being injured by falling objects.

If available, the FOPS safety equipment is integrated into the cabin roof, sunroof or weather-protection roof, depending on the machine's equipment. The FOPS material number is then shown on the ROPS type plate.

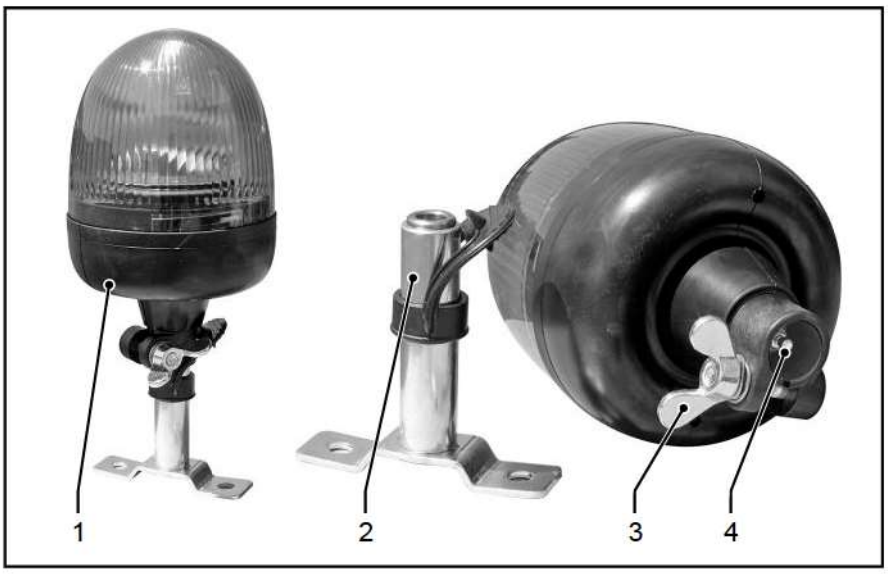
If a design with FOPS safety equipment is dismounted from the machine for transport or repair, it must be remounted according to specifications before the machine is used again.

Installation

A damaged FOPS component must only be installed or replaced by specialist personnel who are trained to do so. Inform customer service.

6.02 Rotating beacon

6.02.01 Overview



[1]	Rotating light mounted	[2]	Contact tube
[3]	Clamping screw	[4]	Plug contact

6.02.02 Description

The rotating beacon is an orange warning light that radiates light over a 360° area.

A switched on rotating beacon visual identifies, marks and safeguards danger areas.

6.02.03 Mounting/Dismounting

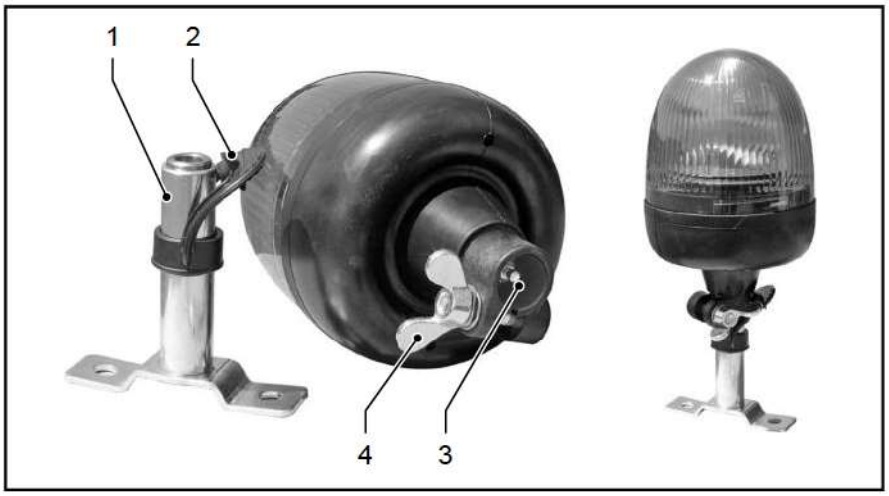
⚠WARNING

Work above floor level!

Risk of injury caused by falling.

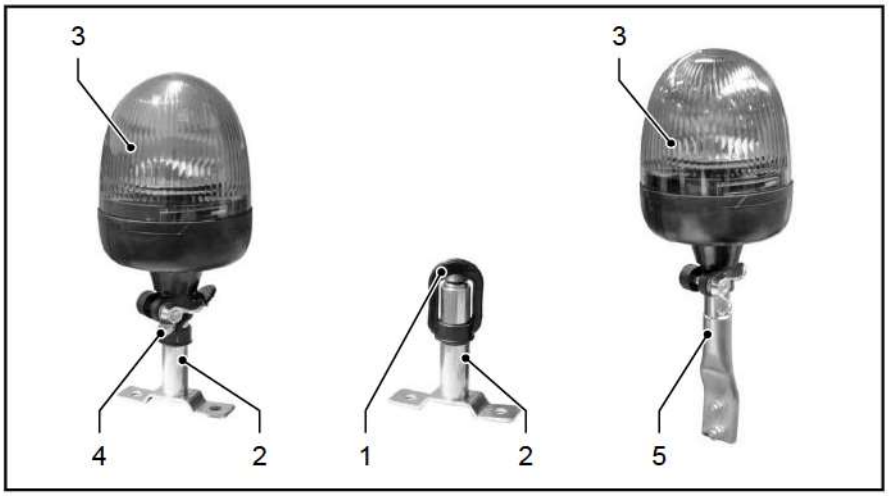
- All work above floor level must only be carried out using a stable ladder or on maintenance scaffolding.
- To reach the maintenance points on the machine, use the designated steps and treads. Do not step on any other machine element or add-on part.

Mounting rotating beacon



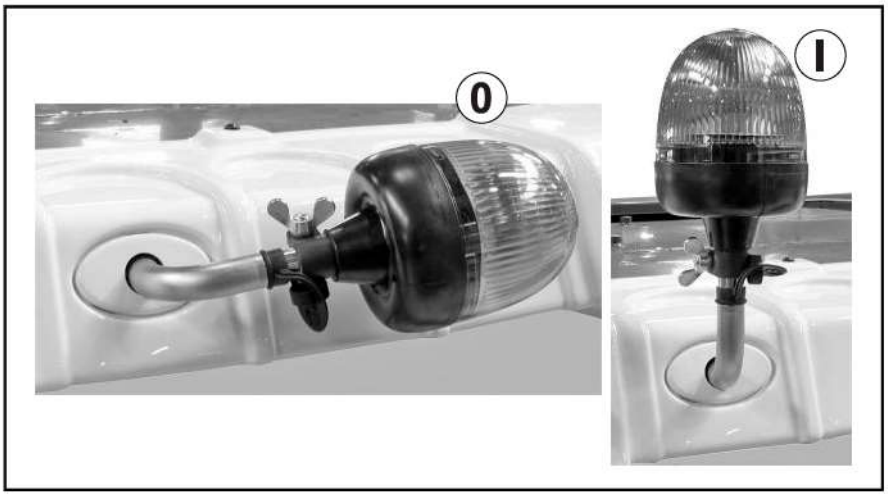
- ▶ Swivel the protective cap [2] to the side.
- ▶ Put the locating hole [3] of the rotating beacon on the contact tube [1] and slide it up to the stop.
- ✔ The electrical connection has been made.
- ▶ Tighten clamping screw [4].

Dismounting/removing rotating beacon



- ▶ Unscrew the clamping screw [4] and slide the rotating beacon [3] off the contact tube [2].
- ▶ Close the contact tube [2] with the protective cap [1].
- ▶ Stow the rotating beacon [3] on the holder [5] inside the cab.

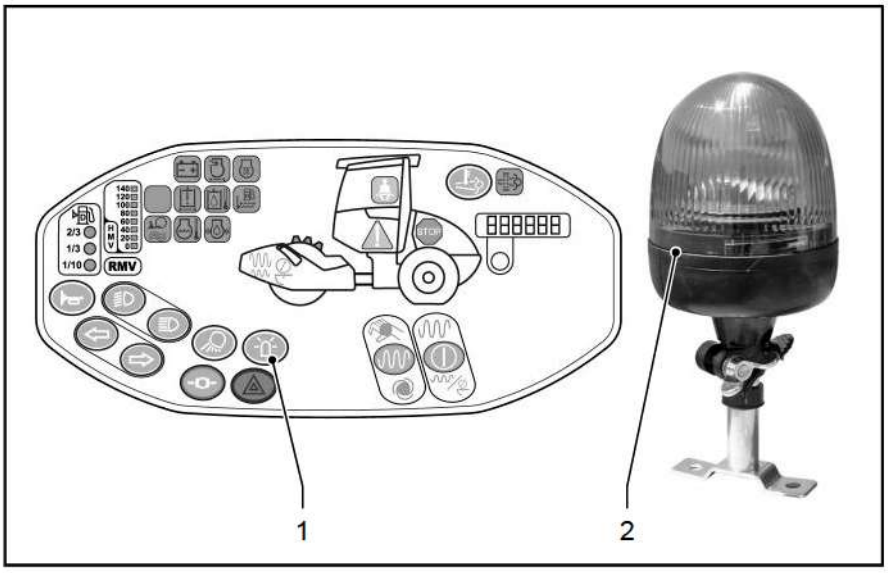
Rotating beacon, foldable



The rotating beacon can be turned through 90 degrees to reduce the height of the machine for transport on a low loader or truck.

- ▶ Move the rotating beacon to lock-in position 0 for transport.
- ▶ Move the rotating beacon to lock-in position I for work.

6.02.04 Operation



Switching on rotating beacon

- ▶ Press the rotating beacon switch [1] on the control panel.
- ✔ LED on: Rotating beacon [2] lights.

Switching off rotating beacon

- ▶ Press the rotating beacon [1] switch on the control panel again.
- ✔ LED off: Rotating beacon [2] off.

6.02.05 Maintenance

⚠WARNING

Work above floor level!

Injury caused by falling.

- Do not perform any maintenance or repair work above ground level unless using a stable ladder or a maintenance scaffold.
- To reach the maintenance points on the machine, use the steps indicated. Do not step on any other machine element or add-on part.

Dust or sand can impair the function of the rotating beacon.

Cleaning

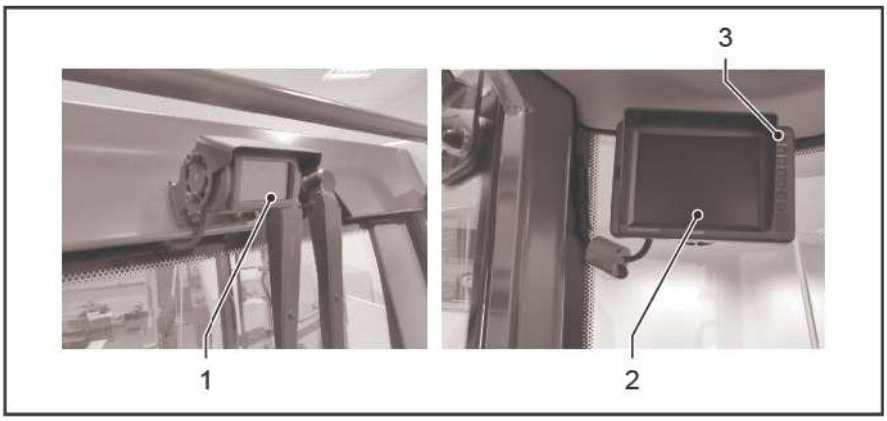
- ▶ Use a sponge and soap water to clean the rotating beacon.
- ▶ Do not clean the rotating beacon with a water jet or high-pressure cleaner.

Maintenance

- ▶ Spray electrical contacts using a contact spray.

6.03 Rear area monitoring

6.03.01 Overview



[1]	Camera	[2]	Cab monitor
[3]	AUTO POWER switch		

6.03.02 Description

The camera monitoring system for monitoring the rear area improves the vision behind the roller. The system also enables the rear area to be monitored when the machine is moving.

The system is a valuable aid to the driver, but it does not release him from his duty of care when manoeuvring the vehicle.

HAMM shall not be liable for damage caused by misuse or malfunction of the product.

6.03.03 Operation

Also follow the manufacturer's operating manual during all activities.

The monitor enables the system to be activated automatically or manually by pressing a button [3] ("AUTO POWER") at "Ignition ON".

- ▶ Select AUTO POWER ON/AUTO.
- ✔ The system switches on automatically when the ignition is turned ON.
- ✔ The system switches off automatically when the ignition is turned OFF.
- ▶ Select AUTO POWER OFF.
- ✔ The system can be switched on manually when the ignition is turned ON.
- ✔ The system switches off automatically when the ignition is turned OFF.

A sensor enables the monitor to adjust automatically to the brightness of the surroundings.

6.03.04 Maintenance

⚠WARNING

Work above floor level!
Injury caused by falling.

- Do not perform any maintenance or repair work above ground level unless using a stable ladder or a maintenance scaffold.
- To reach the maintenance points on the machine, use the steps indicated. Do not step on any other machine element or add-on part.

Care

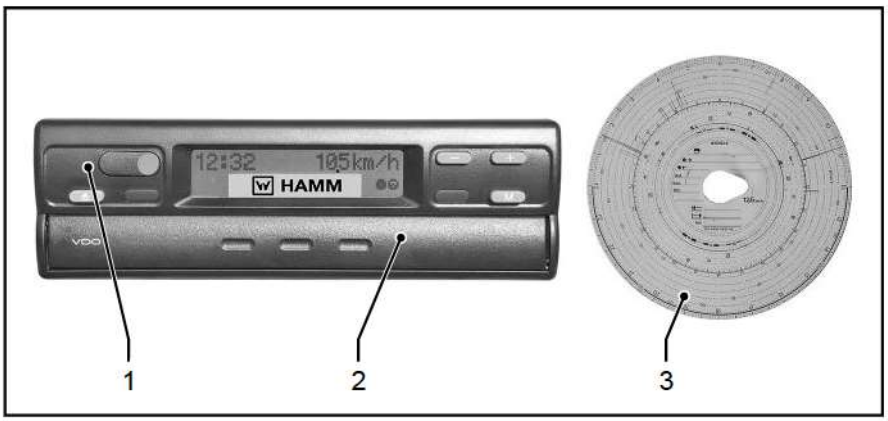
Clean the monitor and camera regularly with a soft, damp cloth.

6.03.05 Disposal

Only dispose of the device at recycling collection points for electrical and electronic devices.

6.04 Tachograph

6.04.01 Overview

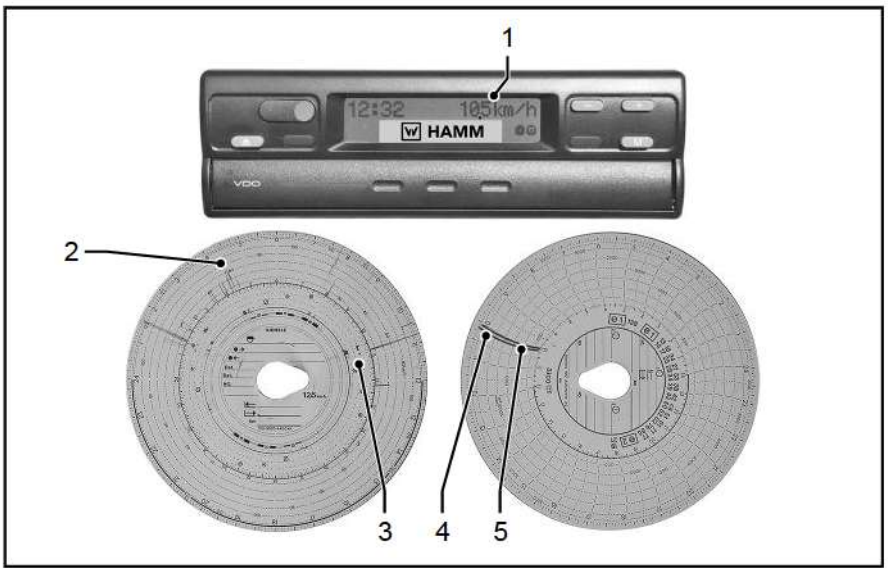


[1]	Tachograph	[2]	Drawer for record sheet
[3]	Record sheet		

6.04.02 Description

After the electrical system has been switched on, the trip recorder displays the various machine functions on the record sheet. These include amongst others:

- Driving and stopping times
- Driving speed
- Vibration amplitude
- Vibrator speed



Driving speed

When the machine is moving, the tachograph display shows the driving speed [1] to one decimal place. The point in the display window indicates the decimal point. The speed is also shown on the record sheet [2] with one digit after the decimal point. Example: A peak in the curve at 105 km/h corresponds to a real driving speed of 10.5 km/h.

Vibrator speed

The frequency of rotation [4] for the vibrator is recorded by the tachograph on the rear of the record sheet. The recording shows the revolutions per minute. The device also logs the switching on of the electrical system (electrical system ON/OFF) [5].

Vibration amplitude

The area [3] under the driving speed [2] is used to record the amplitude of the vibrations. A thick bar indicate a large amplitude, a thin bar a small amplitude. On machines with double vibration, the recording of the front drum is given priority. If the machine works with mixed vibration amplitudes, that is one drum works with a large and the other with a small amplitude, only the large amplitude is shown on the record sheet.

6.04.03 Operation

The operation of the trip recorder is described in the manufacturer's instruction manual. This corresponds to the version current when the machine is delivered.

6.05 Smart Doc

6.05.01 Description

Smart Doc is a free Android app for self-monitoring and documentation of the compaction processes in earthwork projects (without GPS positioning).

The application supports efficient compaction, fulfilling the minimum requirements for continuous compaction control.

The app cannot currently be used in all countries.
For availability in your country of use, contact the HAMM customer service.

Functions

- Creating projects with inspection lots and individual compaction lanes
- Connecting to the machine (CAN Bus) via Bluetooth® Low Energy
- Visualising the increase in compaction in live mode
- Creating and sending a compaction report PDF
- Automatic start or stop of recording when switching vibration on or off
- Automatic creation of the next pass

Recorded parameters

The following parameters are recorded by Smart Doc for each compaction lane:

- Frequency
- Amplitude
- Speed
- Compaction value (HMV)
- Jump operation, proportional
- Vibration on/off
- Direction of travel.

Options

- Automatic creation of the next lane
- Display of a map in the compaction report

Required hardware

To connect the app to an Android smartphone, the following components are required on the machine:

- HAMM Compaction Meter (HCM)
- Bluetooth® interface (the module is fitted in the steering column.)
- Speedometer
- Frequency display

Optional components:

- USB charging port
- Holder for smartphone or tablet, to secure it to the windscreen (for the cab) or to the frame (for the ROPS/protective roof)

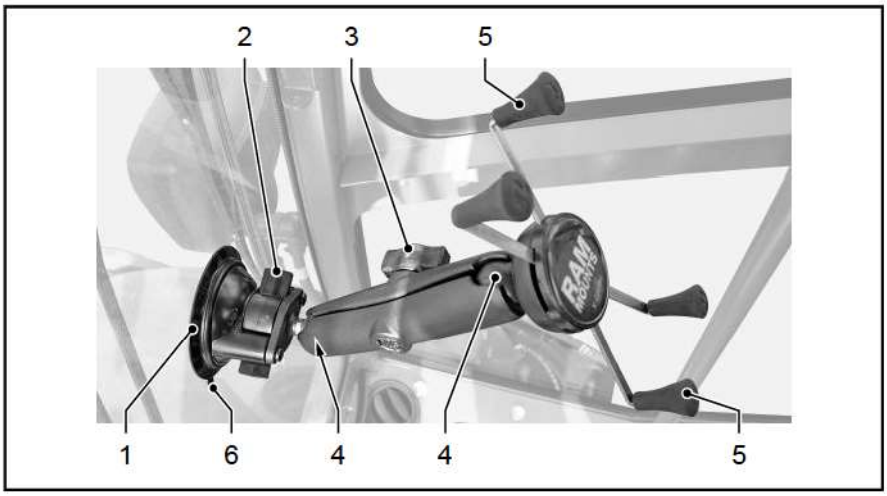
[1] Holder with suction cup [2] Holder with pipe claw

6.05.02 Holder for smartphone or tablet

Always attach the holder so that

- The machine's operating elements are clearly visible, and easy to reach and adjust.
- The working field and area around the machine are easily visible.
- The smartphone or tablet display is easily visible.
- The driver's platform can be accessed (in and out) without any obstruction.

Holder with suction cup (machine with cab)



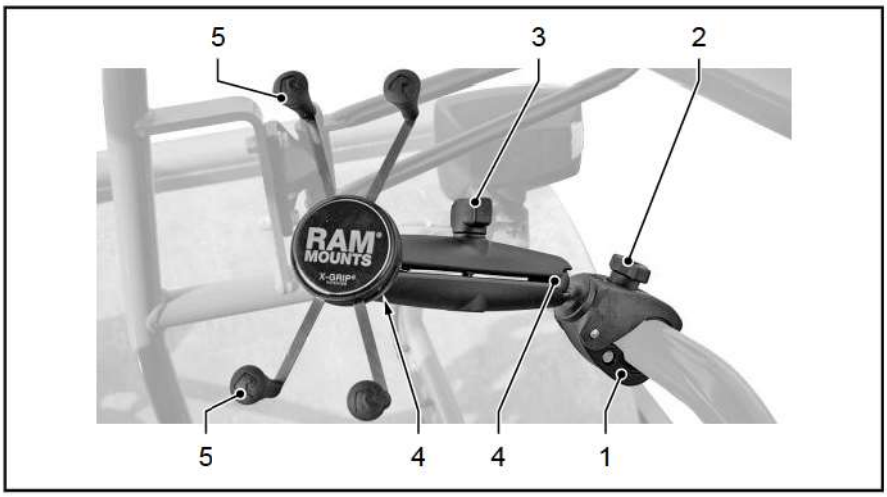
Securing the holder to the window:

- ▶ Place the holder with suction cup [1] on the clean, grease-free window and press firmly.
- ▶ Turn the lever [2] clockwise.
- ✔ The suction cup is secure.
- ▶ Undo the stop screw [3].
- ▶ Pivot the holder to the desired position using the ball joints [4].
- ▶ Tighten the stop screw [3].
- ▶ Pull the gripper arms [5] apart.
- ▶ Clamp the smartphone or tablet between the rubber pads in the grippers [5].
- ✔ The smartphone or tablet is secure.

Removing the holder from the window:

- ▶ Turn the lever [2] anti-clockwise.
- ▶ Carefully pull the tab [6] and release the suction cup [1] from the window.

Holder with pipe claw (machine with ROPS)



Securing the holder:

- ▶ Position the pipe claw [1] on one of the frame's tubes (for example, the handrail).
- ▶ Tighten the stop screw [2].

- Undo the stop screw [3].
- Pivot the holder to the desired position using the ball joints [4].
- Tighten the stop screw [3].
- Pull the gripper arms [5] apart.
- Clamp the smartphone or tablet between the rubber pads in the grippers [5].
- ✔ The smartphone or tablet is secure.

Removing the holder:

- Undo the stop screw [2].
- Remove the pipe claw [1] from the ROPS structure tube.

6.05.03 Operation

Working with Smart Doc

The app is self-explanatory and intuitive to use. The menu guides you through the operation.

- Before first use, download and install Smart Doc.
- Start the app.
- Create a project.
- Create an inspection lot.
- Connect to the machine.
- Start recording and compaction.
- Share the compaction report.

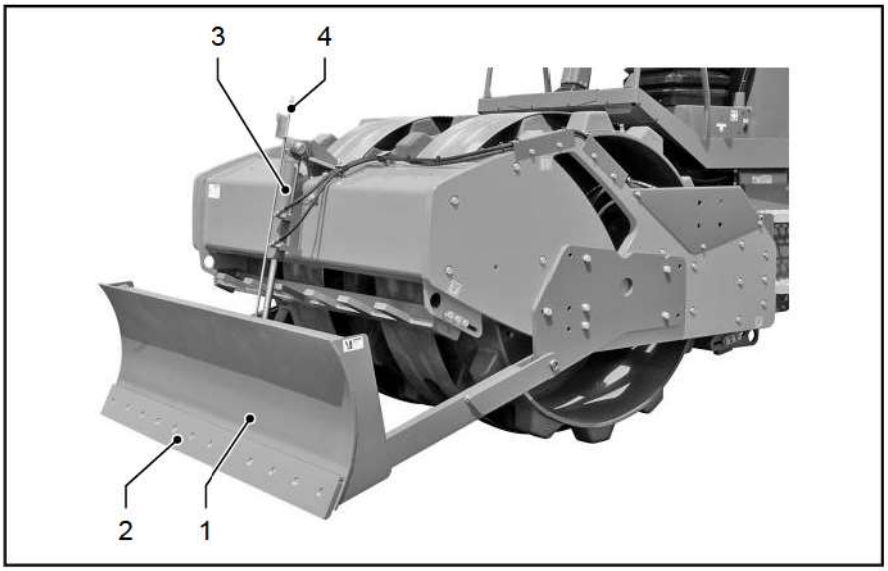
6.06 Dozer blade

⚠WARNING

Heavy dozer blade!
Risk of serious injury or death caused by crushing or getting caught during assembly.

- Perform assembly work on firm ground (flat, stable, horizontal).
- Carry out assembly work only when the engine is stopped.
- Do not perform any assembly or maintenance work on the dozer blade unless it has been set down.
- Do not step under a raised dozer blade.
- Do not step under suspended loads.

6.06.01 Overview



[1]	Dozer blade	[2]	Wearing edge
[3]	Hydraulic cylinder	[4]	Position indicator

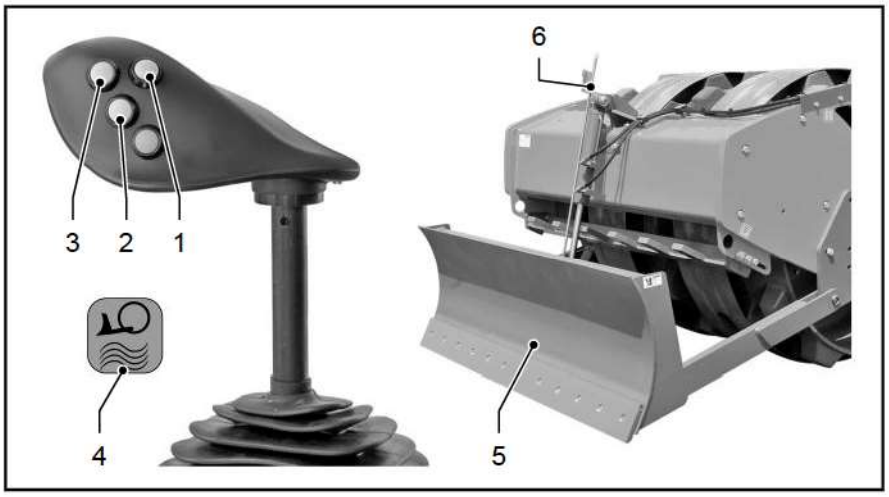
6.06.02 Description

The dozer blade is used for stripping and spreading small, loose heaps and filling in ditches.

After enabling the dozer blade (floating position), the dozer blade automatically adjusts to uneven ground.

The replaceable wear edge prevents the dozer body from becoming worn quickly.

6.06.03 Operation



Activating the floating position

- ▶ Press the button [3].
- ✔ Floating position active.
- ✔ The dozer blade [5] then follows the irregularities of the ground.
- ✔ The indicator LED [4] lights up.

If the floating position is activated with the dozer blade raised, then the dozer blade lowers to the ground and remains enabled.

Deactivating the floating position

- ▶ Press button [1] or [2].
- ✔ The floating position is deactivated.
- ✔ The indicator blade [5] then does not follow the irregularities of the ground.
- ✔ The indicator LED [4] is off.

Lower the dozer blade

- ▶ Press the button [2] on the drive lever until the desired position is reached.
- ✔ The dozer blade [5] is lowered.

Raise the dozer blade

- ▶ Press the button [1] on the drive lever until the desired position is reached.
- ✔ The dozer blade [5] rises from the ground.

The position of the dozer blade relative to the structure can be judged from the position indicator [6].

6.06.04 Maintenance

△ Only lubricants with this symbol are permitted ("Technical data", page 176).

Basic maintenance work

- Remove dirt deposits from the dozer blade.
- Check that the screwed connections on the console are tight.
- Replace the wearing edge in good time in order to prevent damage to the body of the blade.

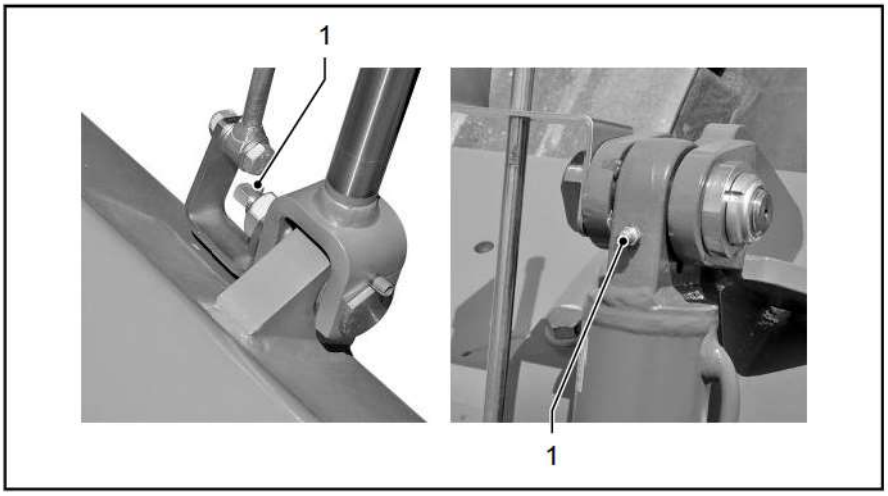
Maintenance overview

Every 250 operating hours

250 h

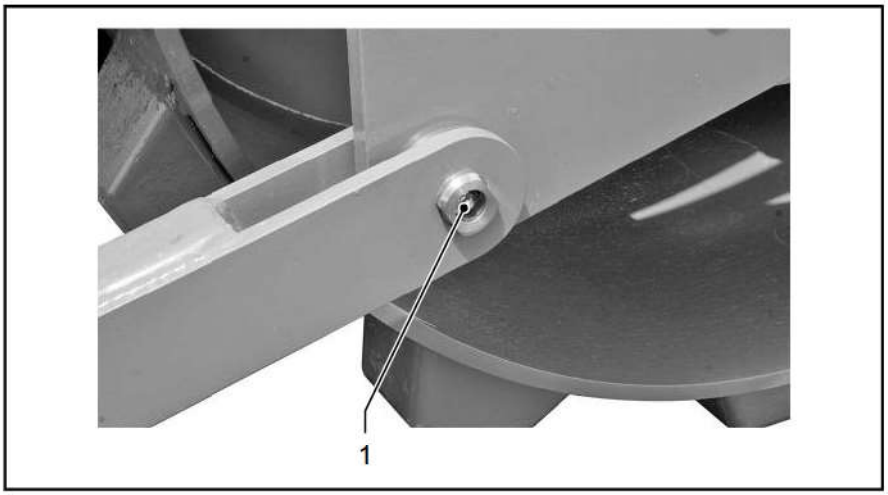
Lubricating the bearings

Lubricating the lifting cylinder bolts



- Switch off the diesel engine and remove the ignition key.
- Grease lubricating nipple [1] (2 each).

Lubricating the pivot pin

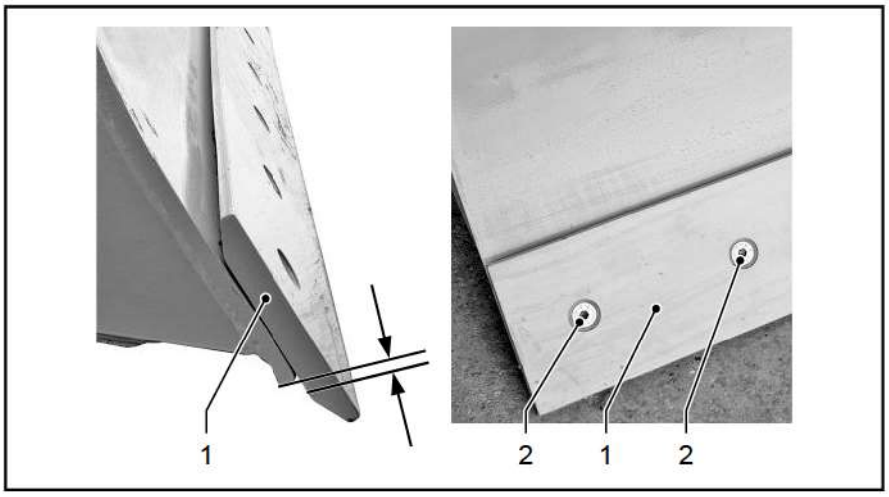


- Switch off diesel engine and remove ignition key.
- Lubricate lubrication nipple [1] (2 nipples).

Checking/changing the wearing edge

⚠CAUTION

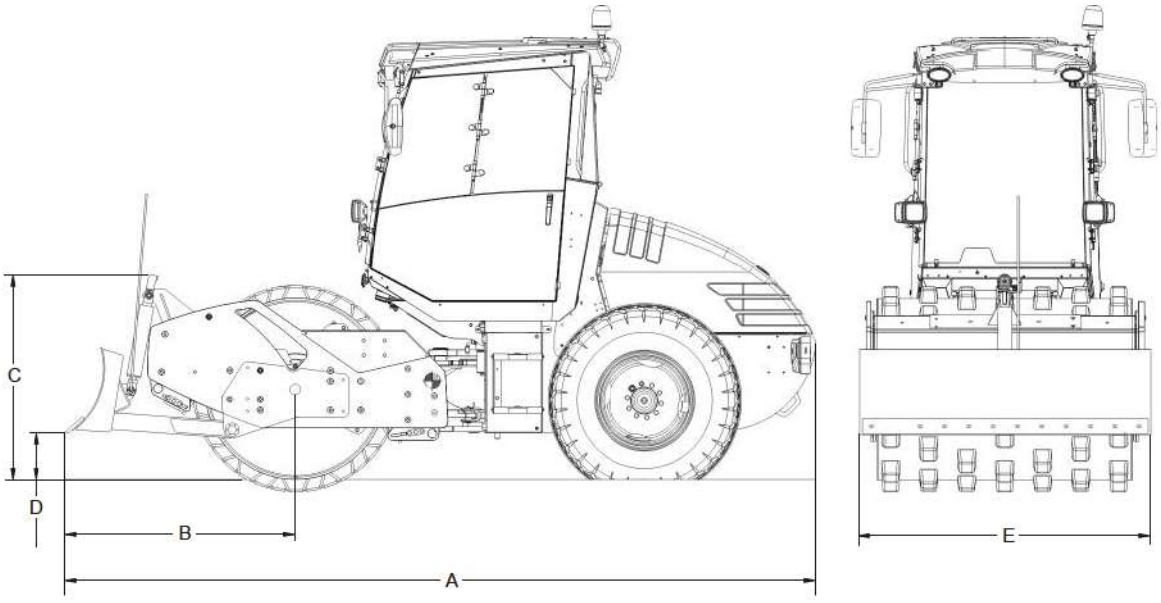
Heavy wear edge!
Injuries caused by crushing or getting caught.
- The wear edge must be replaced by two persons.
- Wear personal protective equipment.



Prerequisite: Wearing edge overhang [1] ≤ 3 mm.

- Switch off the diesel engine and remove the ignition key.
- Undo all screwed connections [2] and remove the screws.
- Turn the wearing edge or replace it, if necessary.
- Insert all screws and tighten the screwed connections [2].

6.06.05 Dimension sheet



Typ/ Type	A		B		C		D		E	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
H 5i	4630	182.3	1332	52.4	1118	44.0	357	14.1	1585	62.4
H 7i	4951	194.9	1515	59.6	1339	52.7	308	12.7	1915	75.4

6.07 Padfoot shells

⚠DANGER

Risk of being run over by the roller!

Risk of extremely serious injuries or death as a result of being run over by the roller during installation work.

- Ensure that no persons are within the danger zone while the machine is moving.
- Affix warning signs to secure the danger zone.
- Be sure to pull out the ignition key even if you only leave the driver's platform for a short time.
- To prevent third parties from accidentally switching the machine on: Affix a warning sign to the driver's platform indicating that work is in progress on the machine.

⚠WARNING

Heavy weight!

Serious injuries or death caused by crushing or getting caught during assembly.

- Perform installation work on firm ground (flat, stable, horizontal).
- Carry out fitting work only when the engine is stopped.
- Use suitable load suspension and hitching gear with an adequate loading capacity.
- Do not step underneath suspended loads.

NOTICE

Heavy padfoot shell!

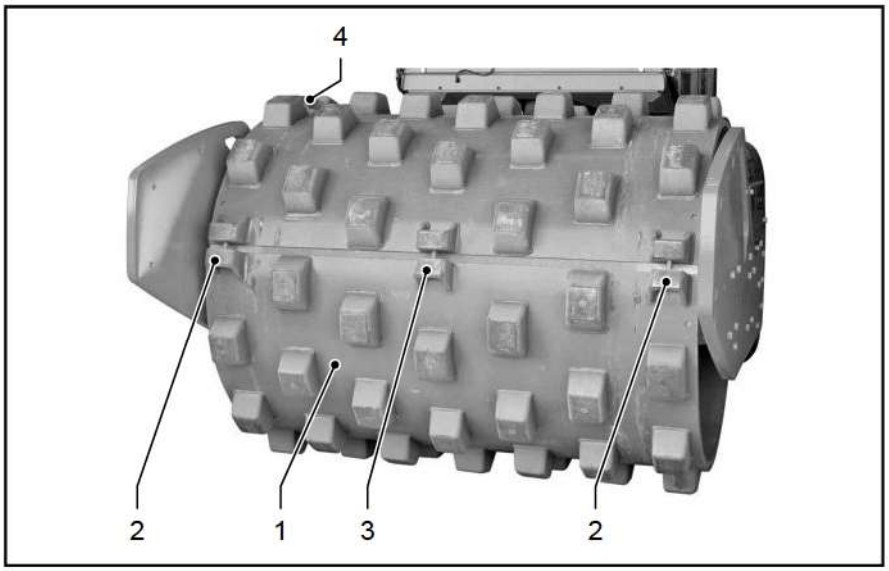
Material damage to the machine when fitting/removing the padfoot shells.

- Use suitable hoisting gear and lifting tackle with a sufficient load-bearing capacity.
- All work must be carried out by two persons.
- Use safety ropes.
- Remove components that could be damaged in advance

The machine needs to be moved during assembly and disassembly. To allow for the machine's forward and backward movement, make certain that there is sufficient space both in front and behind the machine.

6.07.01 Overview

View without front crossbeam



[1]	Padfoot shells	[2]	Clamp connection, drum outside
[3]	Clamp connection, drum centre	[4]	Mounting bracket

The supplied padfoot shells may deviate from those shown in the illustration. The deviations relate to the version of the contact points (smooth or toothed), and the arrangement and number of padfeet.
The processes described for attaching and removing the device remain unchanged.

6.07.02 Description

Using padfoot shells, a smooth drum can be converted into a padfoot drum. The increase in surface area widens the field of application of the compactor to cover not only non-cohesive and sandy mixed soils but also cohesive and highly cohesive soils.

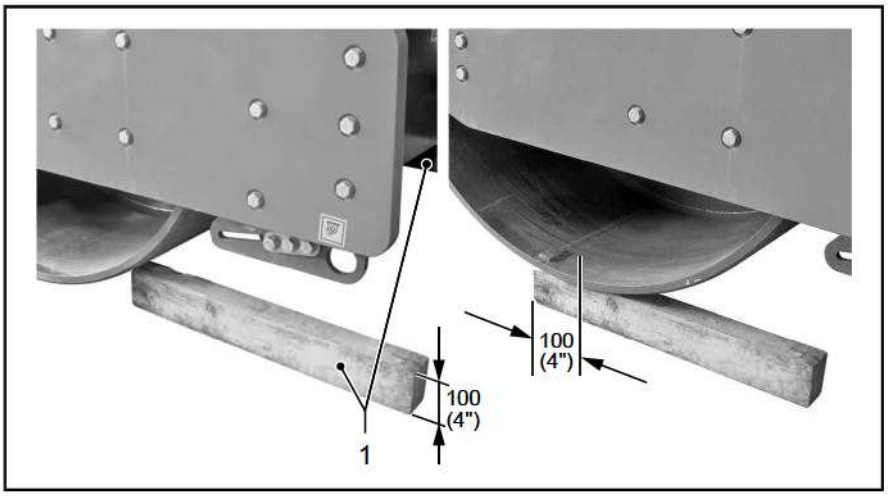
6.07.03 Fitting the padfoot shells

If there are foreign objects between the drum and the padfoot shells, fitting is not possible. Remove any coarse dirt or stones between the drum and the padfoot shells.

Preparation

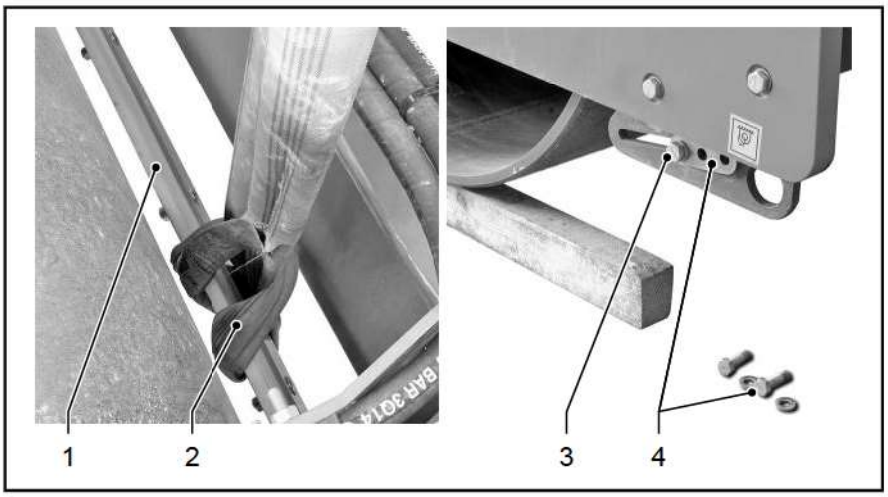
Clean the drum and padfoot shells.

Driving the machine onto wooden mounting blocks



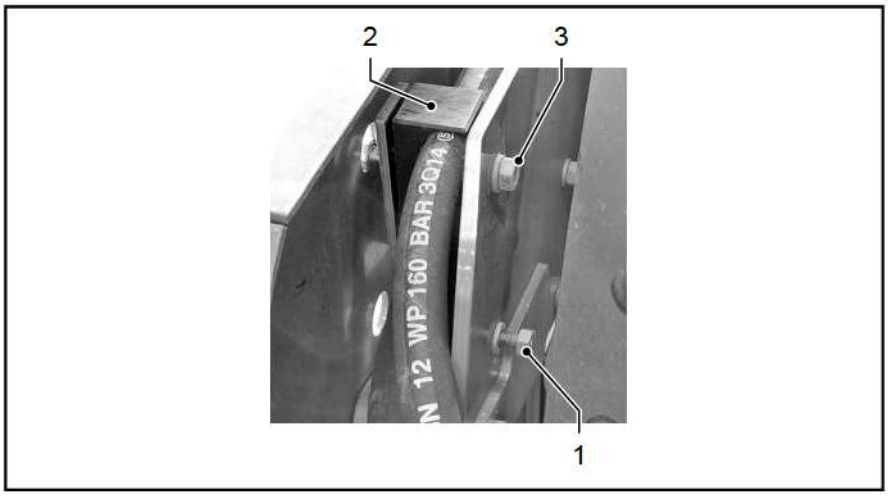
- Place two square timbers [1] of 100 mm × 100 mm × 800 mm (4" × 4" × 32") on both sides of the drum from behind.
- With the working gear engaged, slowly reverse the machine onto the square timbers until the drum is centred approx. 100 mm (4") from the end of the square timbers (the square timbers may rise up briefly when you drive onto them).
- Switch off the diesel engine and remove the ignition key.

Removing the rear smooth drum scraper



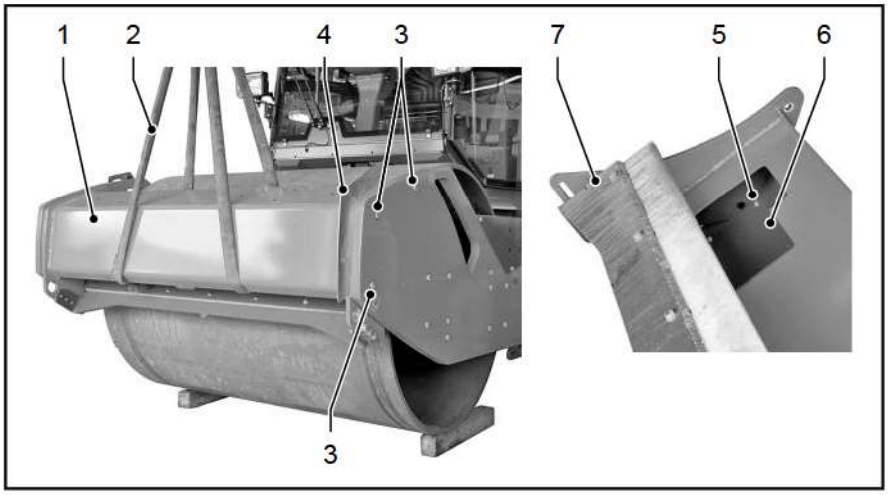
- Secure the scraper bracket at the rear [1] with a round sling [2].
- Loosen the screws [3] on one side and remove the fastening elements [4].
- On the opposite side, loosen the screws [3] and remove two of them.
- Keep hold of the scraper bracket [1] with one hand and remove the final screw.
- Set down the scraper bracket [1].
- Place all dismounted parts outside the working range of the machine.

Loosening the fastening screws on the hose clamp



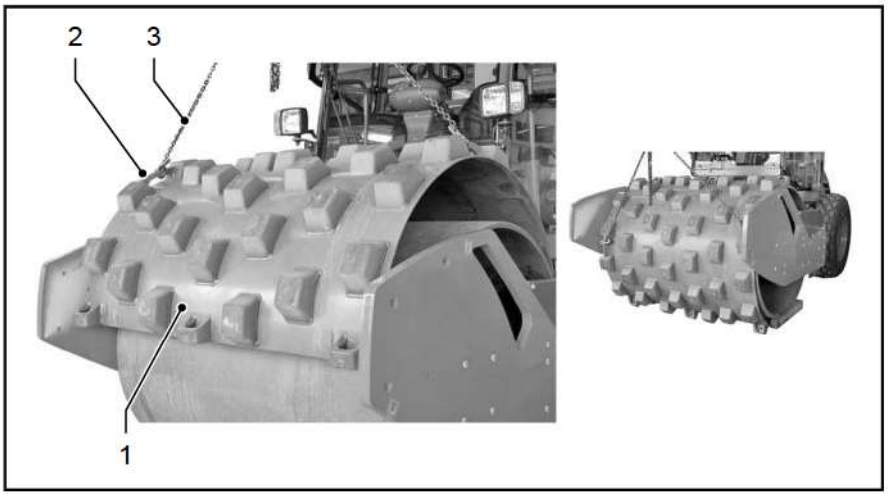
- Loosen the hexagon nut [1] on the hose clamp [2] and turn it until it is flush with the end of the screw thread.
- Slide the screw back until the hexagon nut [3] is flush with the plate.

Removing the front crossbeam



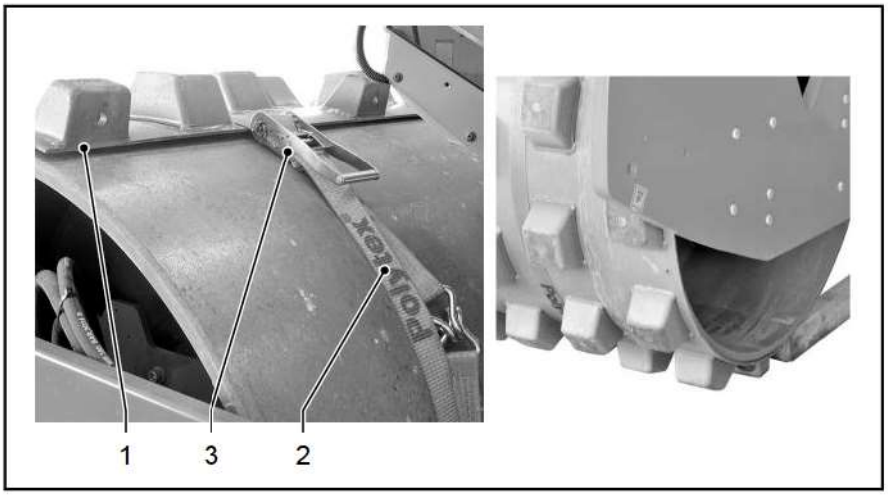
- Attach the front crossbeam [1] to the crane with the round sling [2] and tension it slightly. Note the position of the centre of gravity.
- For versions with assembly opening on the rear of the crossbeam: Loosen the screws [5] and remove them together with the cover [6].
- For versions with spacer plates [4]: Loosen three screwed connections [3] on each side. Remove the spacer plates [4] first. Then remove the screwed connections [3].
- Remove the front crossbeam [1]. Set it down outside the machine's working area so that the scraper [7] can be removed.

Mounting the first padfoot shell



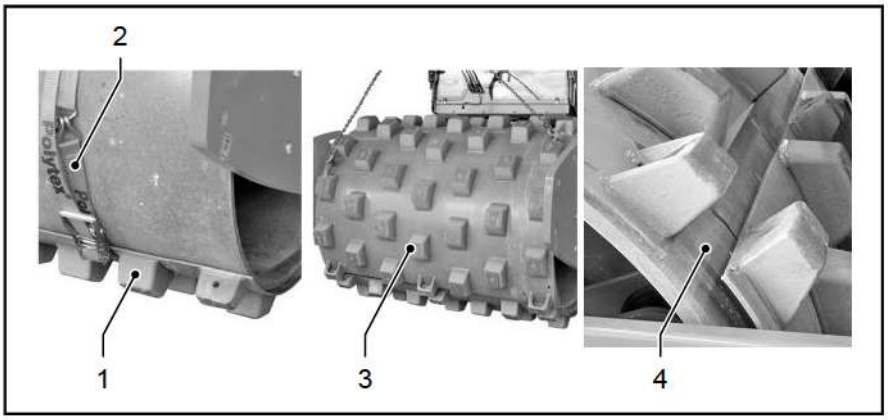
- Attach one half of a shell [1] on the mounting bracket [2] to the crane with the chain [3]. Let it slide along the drum to the ground from above.
- Use a crowbar to align the half of the shell [1] on the ground so that it is flush with both ends of the drum.

Tightening the first padfoot shell



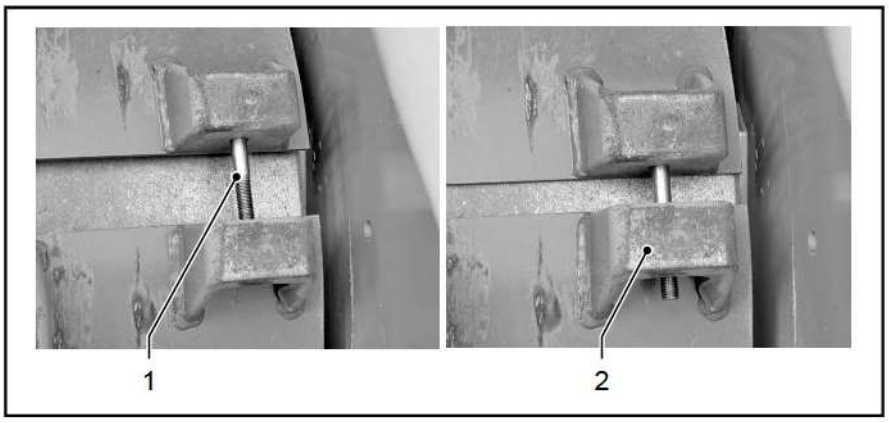
- Secure the shell half [1] with a tension strap [2] to prevent it from coming away: Attach the tension strap [2] so that the buckle [3] is behind the upper edge of the shell. Tighten the tension strap [2].

Mounting the second padfoot shell



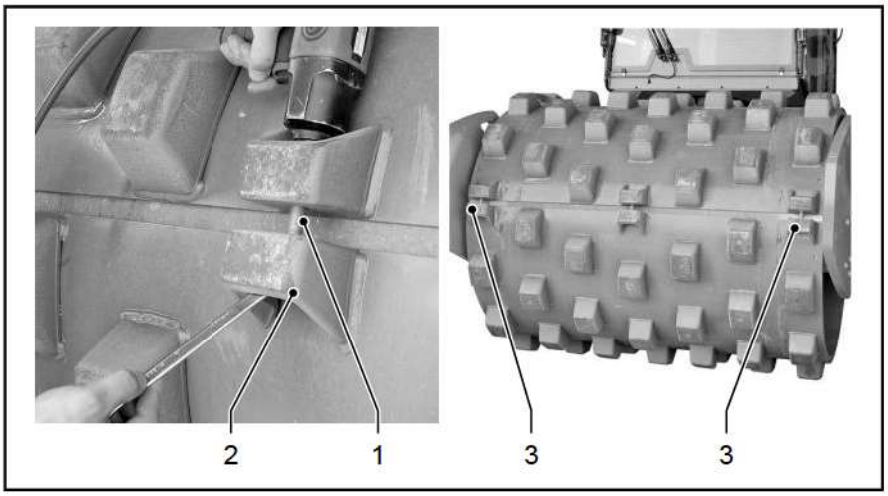
- Start the diesel engine and drive the machine slowly forwards until the shell half [1] lies horizontally.
- Switch off the diesel engine and remove the ignition key.
- Remove the square timbers from the working range of the machine.
- Loosen and remove the tension strap [2].
- Place the second half of the shell [3] on the drum. Make sure that the clearance [4] is identical on both sides.

Screwing the halves together



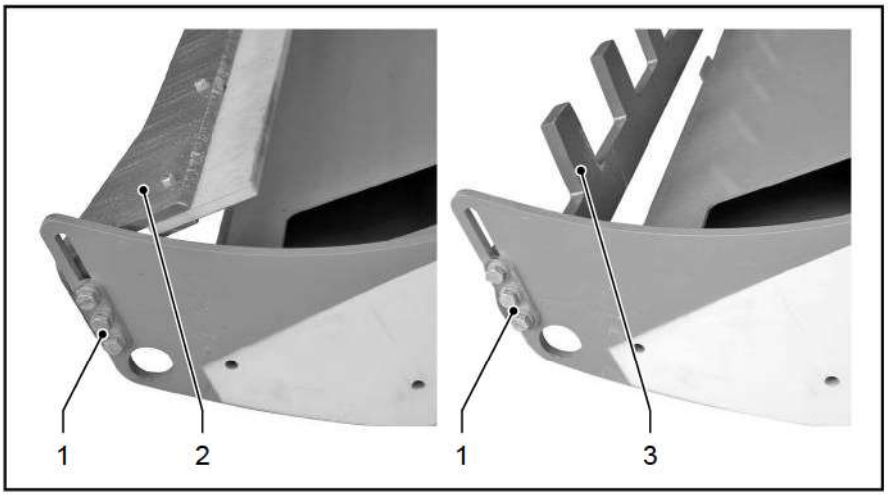
- At the front of the drum, insert the long mounting screws [1] from above into the holes on the clamp connections [2] on the outside of the drum. Screw on the mounting nut by hand.
- At the rear of the drum, insert the long mounting screws from below into the holes on the clamp connections [2] on the outside of the drum. Screw on the mounting nut by hand.
- Use a crowbar to align the top half shell [A] flush with both ends of the drum. Tighten the mounting nuts slightly.
- Start the diesel engine and drive the machine slowly backwards until the top half shell lies horizontally under the drum.
- Switch off the diesel engine and remove the ignition key.
- Use a crowbar to align the top half shell [A] flush with both ends of the drum again.
- Tighten the clamp connection [2] on the front of the drum to a clearance of approx. 30 mm using the mounting screws [1] on the screw head. Hold the nuts still with a wrench.
- Start the diesel engine, and drive the machine slowly forwards again until the top half shell lies horizontally under the drum once more.
- Switch off the diesel engine and remove the ignition key.
- If required, use a crowbar to align the top half shell [A] flush with both ends of the drum again.
- Tighten the clamp connection [2] on the front of the drum to a clearance of approx. 30 mm again using the mounting screws [1] on the screw head. Hold the nuts still with a wrench.

Completing the clamp connection



- At the front of the drum, insert a short fastening screw [1] from above into the hole on the clamp connections [2] in the middle of the drum. Put on the fastening nut, and lightly tighten by hand.
- Tighten the clamp connection [2] on the front of the drum with the fastening screw [1] on the screw head. Hold the nuts still with a wrench.
- Replace the long mounting screws in the clamp connections [3] with the short fastening screws [1] and tighten them.
- Start the diesel engine and drive the machine slowly forwards again until the rear clamp connections [2] are at the front of the drum.
- Switch off the diesel engine and remove the ignition key.
- Complete the clamp connections as described under points 1 to 3.

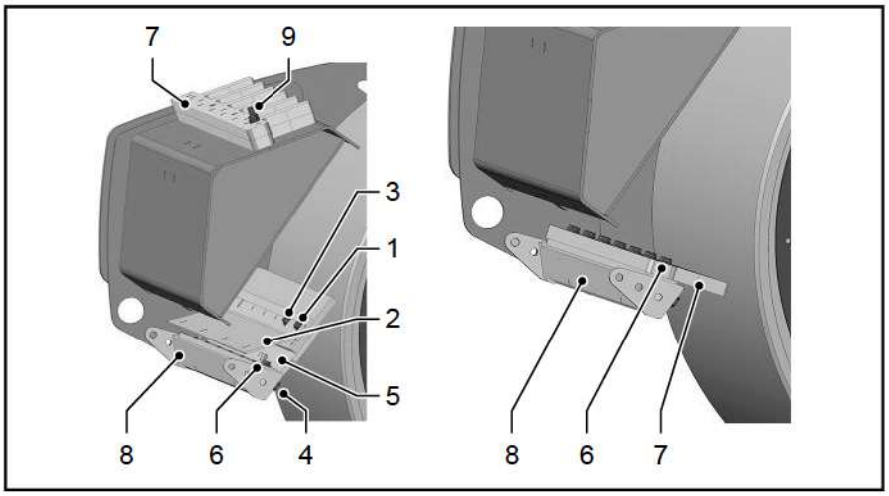
Fitting the padfoot drum scrapers – method 1



- Loosen the clamp connection [1] and replace the smooth drum scrapers [2] with the padfoot drum scrapers [3] in the front crossbeam (observe lateral spacer plates).
- Tighten the clamp connection [1] on both sides.

Perform this work on the front and rear scrapers.

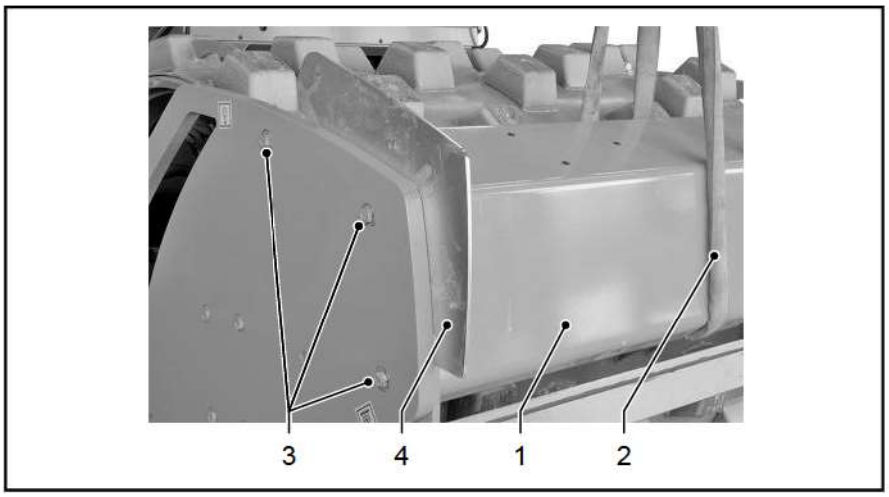
Fitting the padfoot drum scrapers – method 2



- Remove the padfoot drum scrapers [7] from the front crossbeam after loosening the fastening nut [9].
- Loosen the screwed connection [1] for fastening the guard plate [2] on the smooth drum scraper (do not loosen the screwed connection [3] on the opening) and remove the guard plate [2].
- Fit the screws in the mounting holes [1] again and tighten them.
- Loosen the fastening screws [4] for the scraper holder [5] and remove them together with the scraper holder.
- Move the threaded protective screws [6] to the threaded holes [4] and tighten them.
- Place the scraper [7] for the padfoot drum on the scraper bracket [8], screw it into the threaded holes [6] using the fastening screws and tighten it.

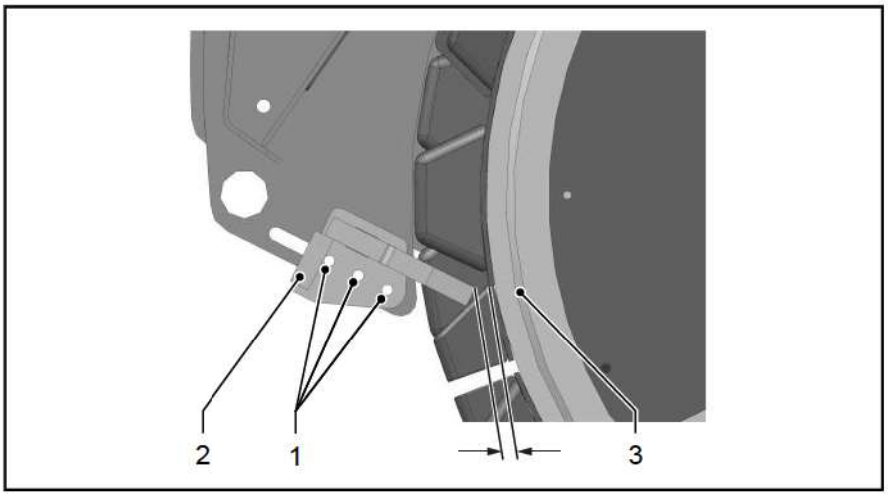
Perform this work on the front and rear scrapers.

Mounting the front crossbeam



- Attach the front crossbeam [1] to the crane with a round sling [2]. Note the position of the centre of gravity.
- Insert the fastening screws [3].
- Fit the spacer plates [4].
- Complete and tighten the screwed connections [3].

Adjusting the padfoot drum scrapers – method 1

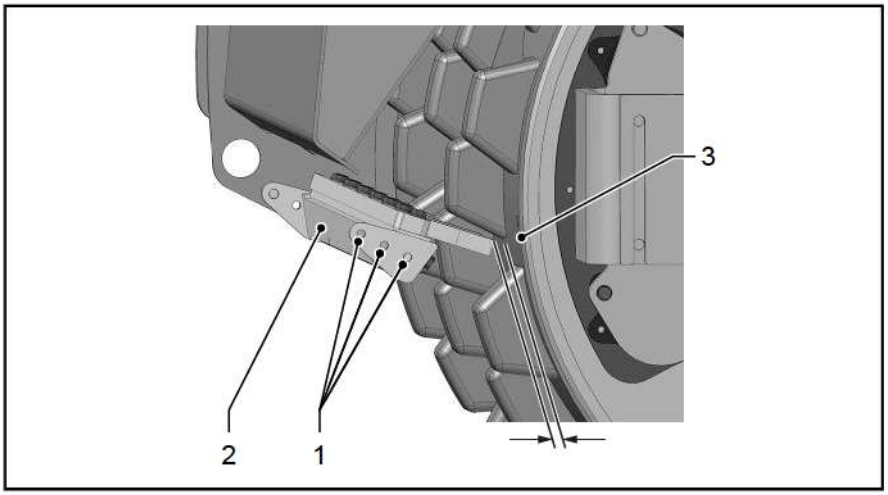


Padfoot drum clearance – **15 mm**

- Loosen the hexagon screw [1].
- Create the clearance between the drum [3] and the scraper bracket [2].
- Tighten the hexagon screw [1].

Perform this work on the front and rear scrapers.

Adjusting the padfoot drum scrapers – method 2

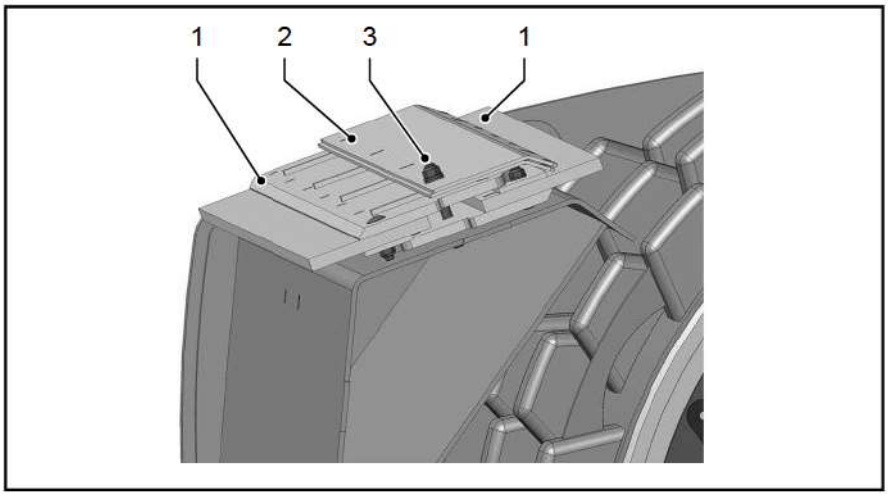


Padfoot drum clearance – **15 mm**

- Loosen the hexagon screw [1].
- Create the clearance between the drum [3] and the scraper bracket [2].
- Tighten the hexagon screw [1].

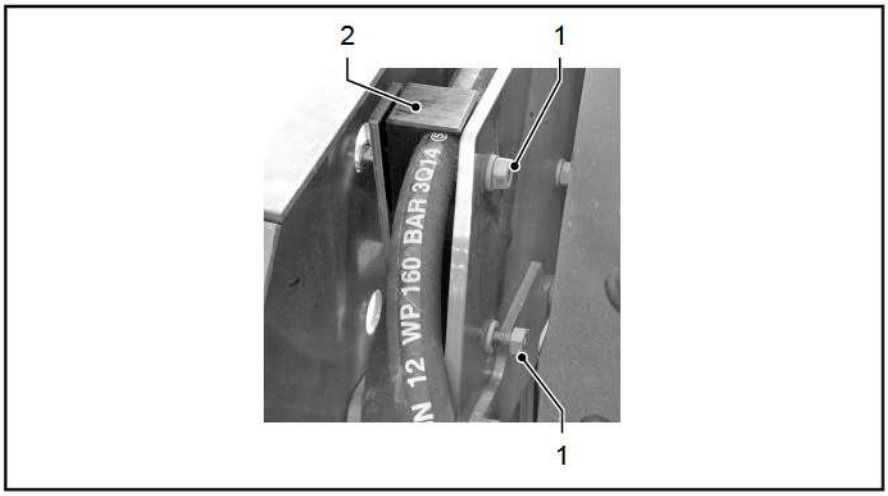
Perform this work on the front and rear scrapers.

Stowing away the smooth drum scraper



- Place both scrapers [1] for the smooth drum on the front crossbeam facing opposite directions.
- Place both guard plates [2] on the scrapers [1].
- Screw the nut [3] onto the stud and tighten it.

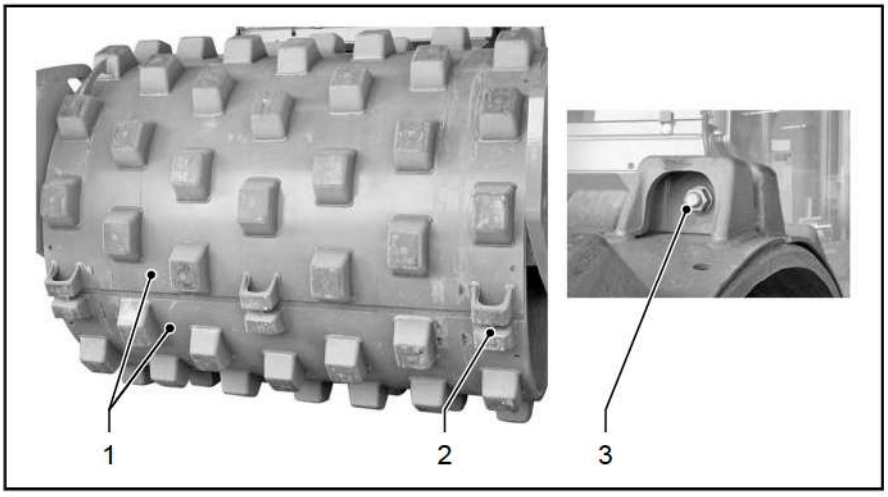
Tightening the bolts on the hose clamp mounting



- Tighten the hexagon nut [1] of the hose clamp [2].

Perform this work on the left and right-hand hose clamp mountings.

6.07.04 Removing the padfoot shells

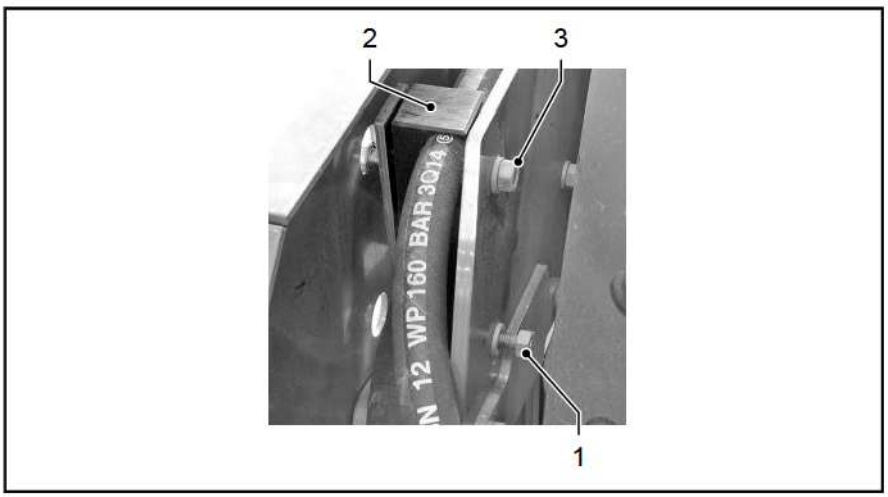


[1]	Padfoot shells	[2]	Clamp connections
[3]	Fixing screws		

Preparatory work

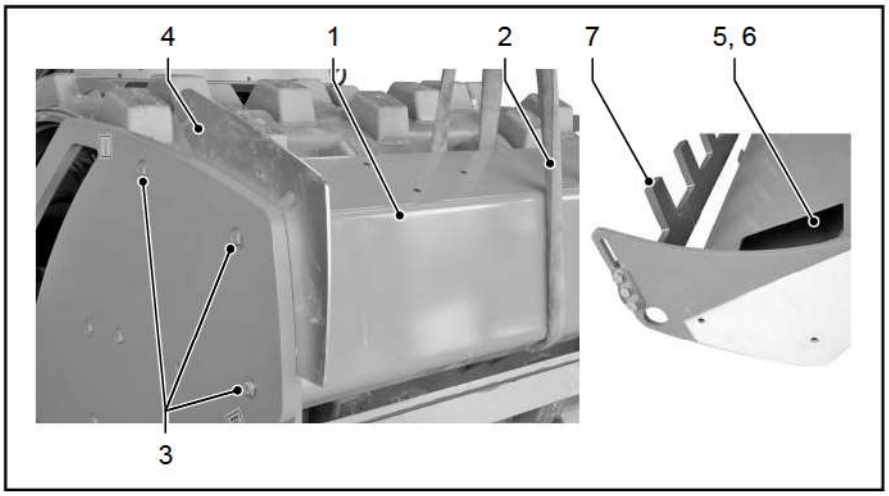
- Park the roller on flat, firm and clean ground.
- Thoroughly clean the drum and the padfoot shells.

Loosening the fastening screws on the hose clamp



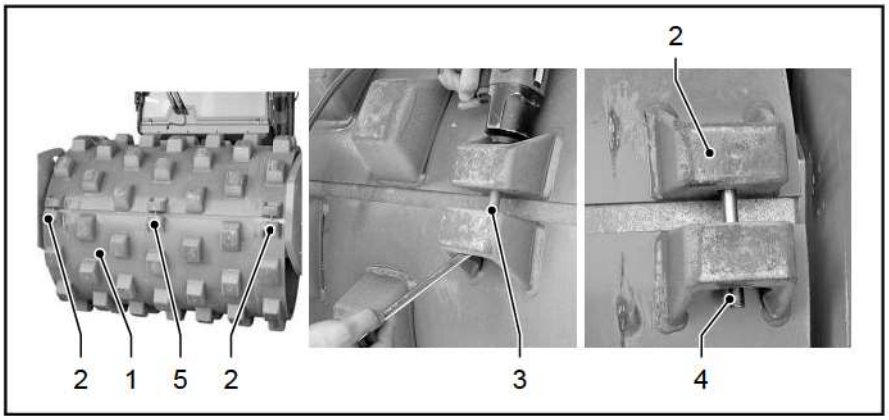
- Loosen the hexagon nut [1] on the hose clamp [2] and turn it until it is flush with the end of the screw thread.
- Slide the screw back until the hexagon nut [3] is flush with the plate.

Removing the front crossbeam



- Attach the front crossbeam [1] to the crane with the round sling [2] and tension it slightly. Note the position of the centre of gravity.
- For versions with assembly opening on the rear of the crossbeam: Loosen the screws [5] and remove them together with the cover [6].
- For versions with spacer plates [4]: Loosen three screwed connections [3] on each side. Remove the spacer plates [4] first. Then remove the screwed connections [3].
- Remove the front crossbeam [1]. Set it down outside the machine's working area so that the scraper [7] can be removed.

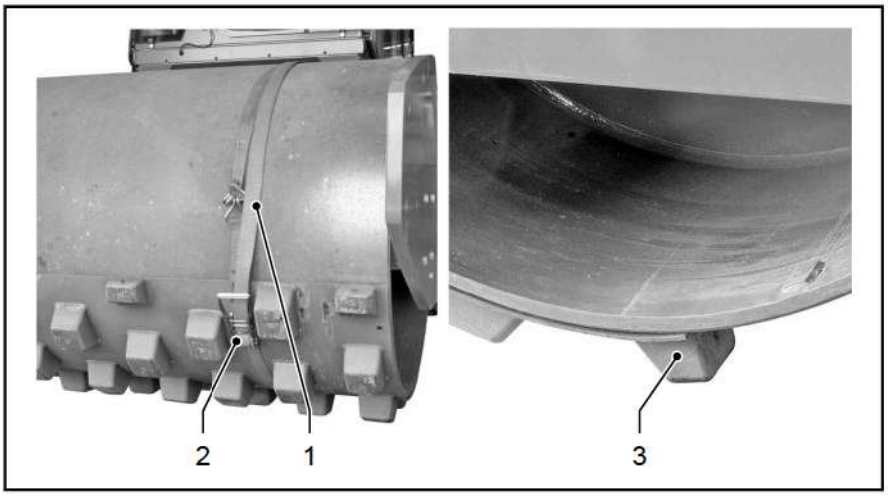
Loosening the clamp connection



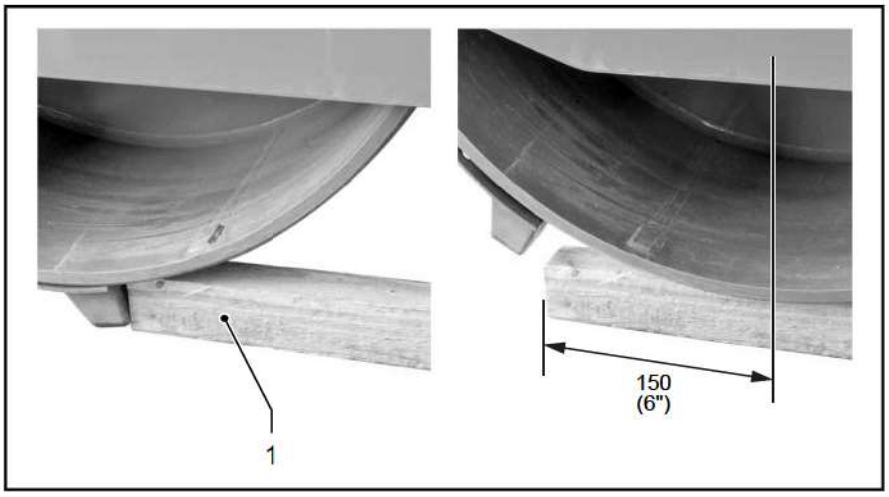
- Start the diesel engine and drive the machine slowly forwards until one half of the shell [1] lies horizontally.
- Switch off the diesel engine and remove the ignition key.
- On the clamp connections [2] (only on the outside of the drum) at the front of the drum, loosen the fastening screws [C] on the screw head. Hold the nuts still with a wrench.
- Replace the short fastening screws [3] with long mounting screws [4] with mounting nuts and tighten them by hand (insert the mounting screws in the clamp connection [2] from below).
- Remove the fastening screw [3] on the clamp connection [5] in the middle of the drum.

- Now loosen both mounting screws [4] on the screw head until the nut is flush with the screw (shell halves are detensioned).
- Start the diesel engine and drive the machine slowly backwards until the other half of the shell [1] lies horizontally at the bottom.
- Switch off the diesel engine and remove the ignition key.
- On the clamp connection [5] (only in the middle of the drum) at the front of the drum, loosen the fastening screw [3] on the screw head. Hold the nuts still with a wrench.
- Replace the short fastening screw [3] with a long mounting screw [4] with a mounting nut and tighten by hand.
- Remove the fastening screws [2] on the clamp connection [3] on the outside of the drum.
- Now remove the mounting screws [4] on clamp connection [5] and clamp connection [2] (rear of the drum).

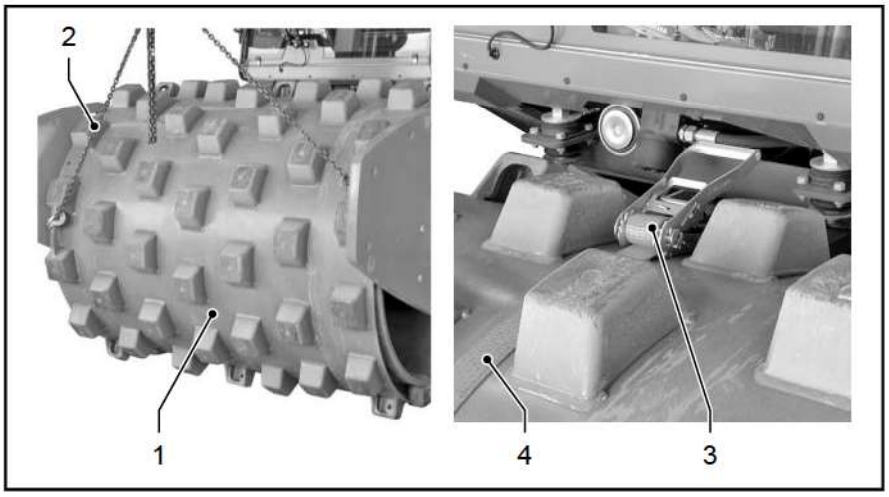
Removing the padfoot shells



- Hitch the top half shell to the crane with a chain, and carefully lift it off the drum.
- Attach the tension strap [1] such that the buckle [2] is located before the end of the shell half.
- Start the diesel engine.
- Slowly reverse the machine until the drum is on the clamp connection [3].
- Switch off the diesel engine and remove the ignition key.

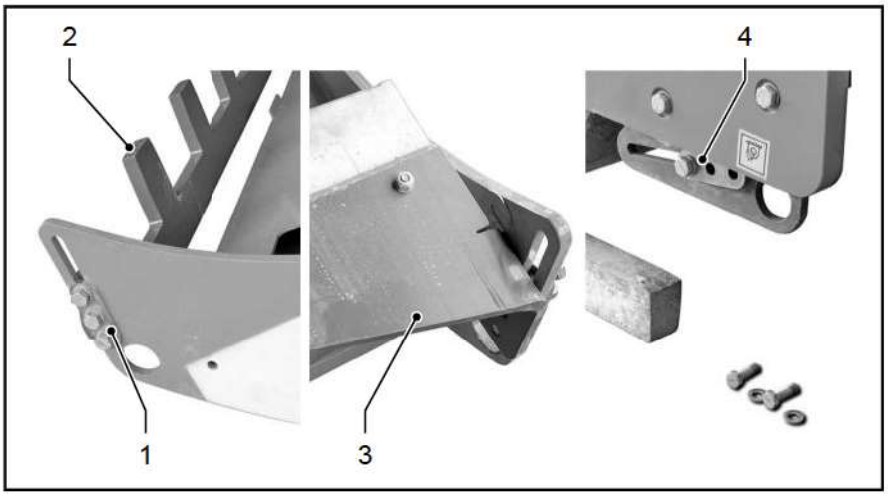


- Push a square timber [1] to each clamp connection.
- Start the diesel engine, and drive the machine slowly backwards until the centre of the drum lies approximately 150 mm (6") from the ends of the square timbers [C].
- Switch off the diesel engine and remove the ignition key.



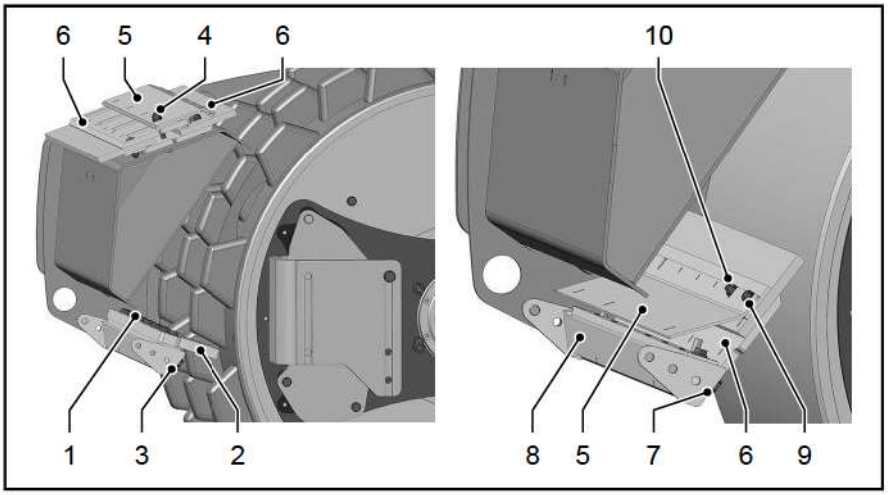
- Attach the shell half [1] to the crane with a chain [2] and tension it slightly.
- Open the buckle [3] and remove the tension strap [4].
- Remove the shell half [1] from the drum.

Fitting the smooth drum scrapers – method 1



- Loosen the clamp connection [1] and replace the padfoot drum scrapers [2] with the smooth drum scrapers [3] (observe lateral spacer plates).
- Tighten the clamp connection [1] on both sides.
- Fit the rear smooth drum scraper [4].

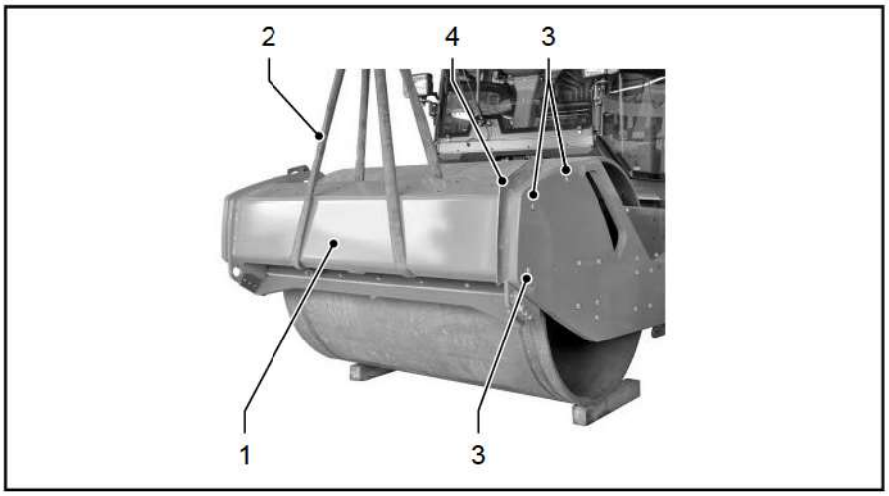
Fitting the smooth drum scrapers – method 2



- Loosen the fastening screws [1] and remove them together with the padfoot drum scrapers [2].
- Move the threaded protective screws to the threaded holes [3] and tighten them.
- Remove the nut [4] and take the scraper elements [5] and [6] for the smooth drum off the front crossbeam.
- Screw the scraper holder [6] to the scraper bracket [8] using the fastening screws [7] and tighten.
- Remove the fastening screws [9] from the scraper holder [6] (do not remove screws [10]).
- Fit the guard plate [5] and tighten the screwed connection [10].

Perform this work on the front and rear scrapers.

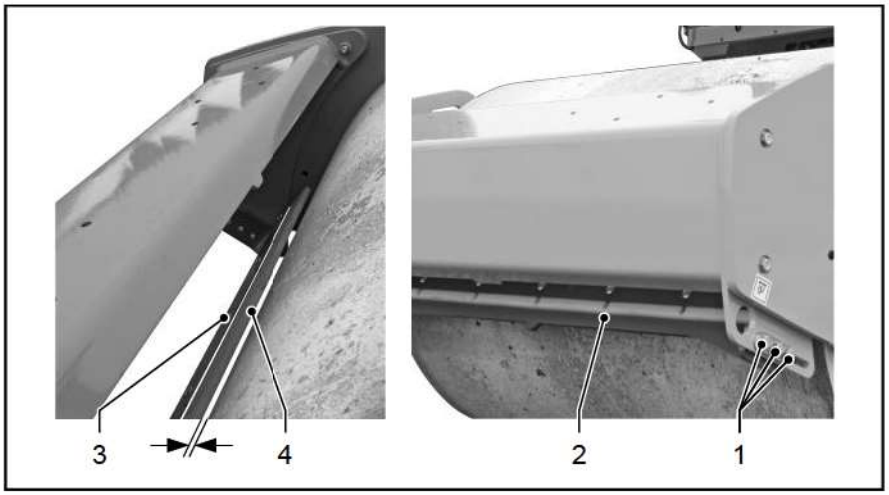
Mounting the front crossbeam



- Attach the front crossbeam [1] to the crane with a round sling [2]. Note the position of the centre of gravity.
- Insert the fastening screws [3].
- Fit the spacer plates [4].
- Complete and tighten the screwed connections [3].

Changing/adjusting the smooth drum scrapers

If they are worn-out to such an extent that sticking dirt is not removed from the roller drums/tyres during work any longer, the scrapers must be readjusted or replaced.



Smooth drum clearance – **10 mm**

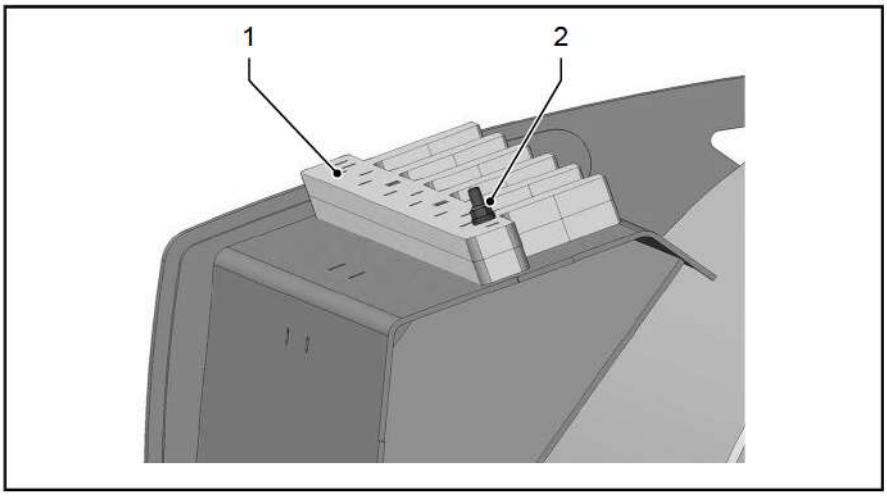
Starting position of scraper bracket

- Undo the screws [1].
- Push the scraper bracket [2] towards the drum until the clearance is reached.
- Tighten the screws [1].
- ✔ The scraper bracket is adjusted.

Readjusting the scraper

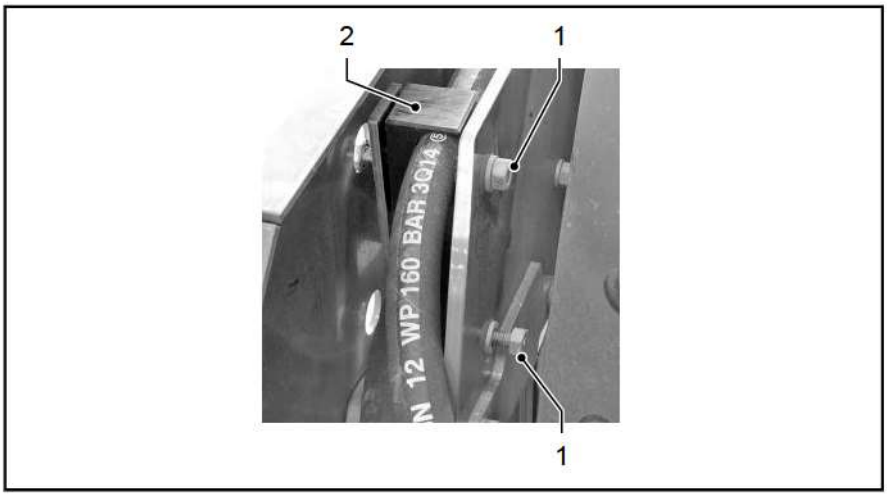
- Loosen the clamp connection [3].
- Push the scraper [4] towards the drum until the clearance is reached.
- Tighten the clamp connection [3].
- ✔ The clearance between the drum and scraper is now set.

Stowing the padfoot drum scrapers



- Place both scrapers [1] for the padfoot drum on the front crossbeam facing opposite directions.
- Screw the nut [2] onto the stud and tighten it.

Tightening the bolts on the hose clamp mounting



- Tighten the hexagon nut [1] of the hose clamp [2].

Perform this work on the left and right-hand hose clamp mountings.

6.07.05 Maintenance

Maintenance overview

For the first time after 10 operating hours

10 h

Tighten the padfoot shell screwed connections

Every 100 operating hours

100 h

Tighten the padfoot shell screwed connections

Technical data

H 5i

Designation	Value	Unit
Weight of shell half	240	kg
Weight of front crossbeam with scraper	140	kg
Weight of rear scraper	50	kg

H 7i

Designation	Value	Unit
Weight of shell half	330	kg
Weight of front crossbeam with scraper	220	kg
Weight of rear scraper	70	kg