Operator’s manual

Track dumper

DT15

Vehicle model	DT15
Edition	1.5
Language	en
Article number	1000268385

WACKER NEUSON

1000268385

Documentation

Title	Language	Order no.
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Legend

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The vehicle shown on the title page can be equipped with optional fittings (options).

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Order no.: 1000268385
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1 Introduction

1.1 Important information on this Operator's Manual

The Operator's Manual is located in the corresponding compartment on the right side of the undercarriage.

This Operator's Manual contains important information on how to work safely, correctly and economically with the machine. Therefore, it aims not only at new operators, but it also serves as a reference for experienced ones. It helps to avoid hazardous situations and reduce repair costs and downtimes. Furthermore, the reliability and the service life of the machine will be increased by following the instructions in the Operator's Manual. This is why the **operator's manual must always be kept at hand in the machine.**

The safety of the operator and other persons heavily depends on how safely the machine is used. Therefore, carefully read and understand this Operator's Manual prior to the first drive. This Operator's Manual will help to familiarize yourself more easily with the machine, thereby enabling you to use it more safely and efficiently.

Prior to the first drive, carefully read chapter "Safety Instructions" as well, in order to be prepared for possible hazardous situations, as it will be too late for it during operation. As a rule, keep the following in mind:

Careful and prudent working is the best way to avoid accidents!

Operational safety and readiness of the vehicle do not only depend on your skill, but also on maintenance and servicing of the vehicle. This is why regular maintenance and servicing is absolutely necessary. Extensive maintenance and repair work must always be performed by a technician with appropriate training. Insist on using original spare parts when performing maintenance and repair work. This ensures operational safety and readiness of your machine, and maintains its value.

Your Wacker Neuson dealer will be pleased to answer any further questions regarding the machine or the Operator's Manual.

Abbreviations/symbols

- Identifies a list
  - Subdivision within lists or an activity. Follow the steps in the recommended order.

☞ *Identifies an activity*

➥ Description of the effects or results of an activity

s. fig. (w/o. fig.) = without figure

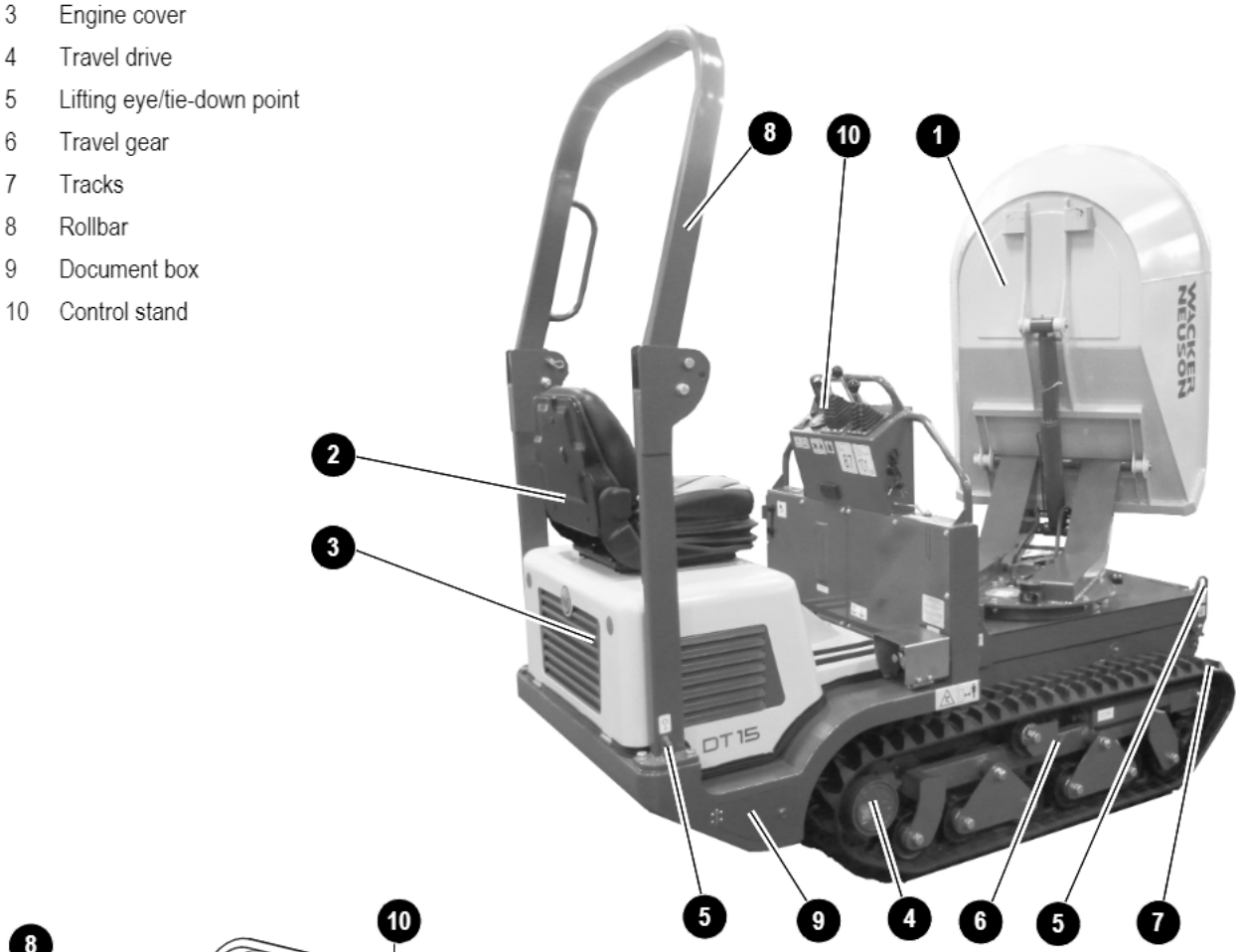
"Opt." = Optional

The abbreviation "Opt." indicates control elements or other groups of the machine that can be installed as an option.

 This symbol shows the travel direction – for better orientation in figures and graphics.

1.2 Overview of the vehicle DT15 with swivel skip and 3-sided skip (optional)

1 Skip
2 Operator seat
3 Engine cover
4 Travel drive
5 Lifting eye/tie-down point
6 Travel gear
7 Tracks
8 Rollbar
9 Document box
10 Control stand



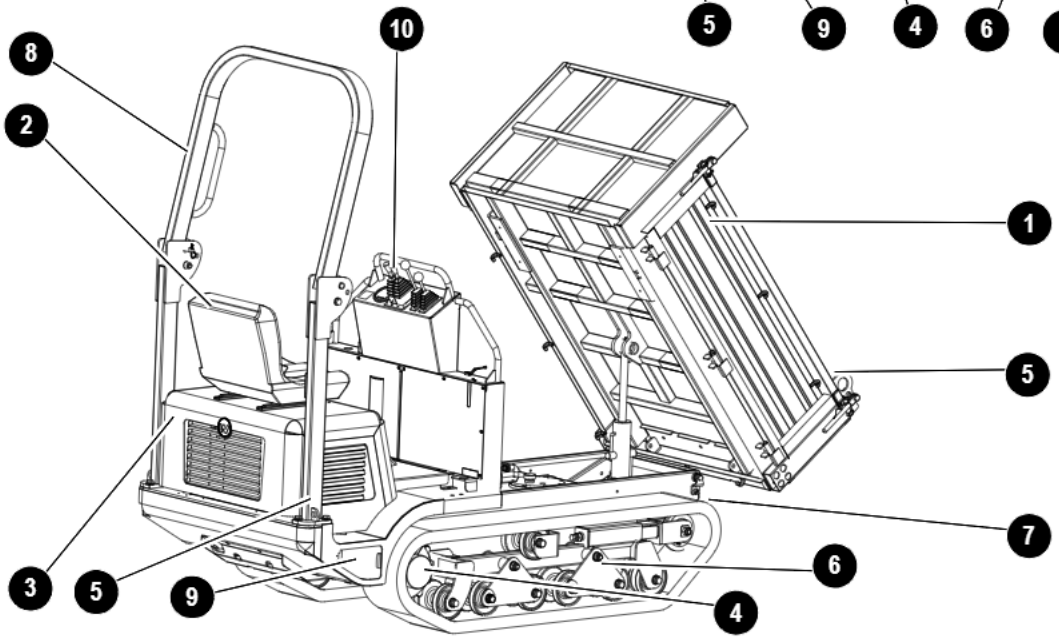


Fig. 1: Vehicle outside views

1.3 Machine overview DT15 with with skip for earth-movement (optional) and high tip skip (optional)

1 Skip
2 Operator seat
3 Engine cover
4 Travel drive
5 Lifting eye/tie-down point
6 Travel gear
7 Tracks
8 Rollbar
9 Document box
10 Control stand

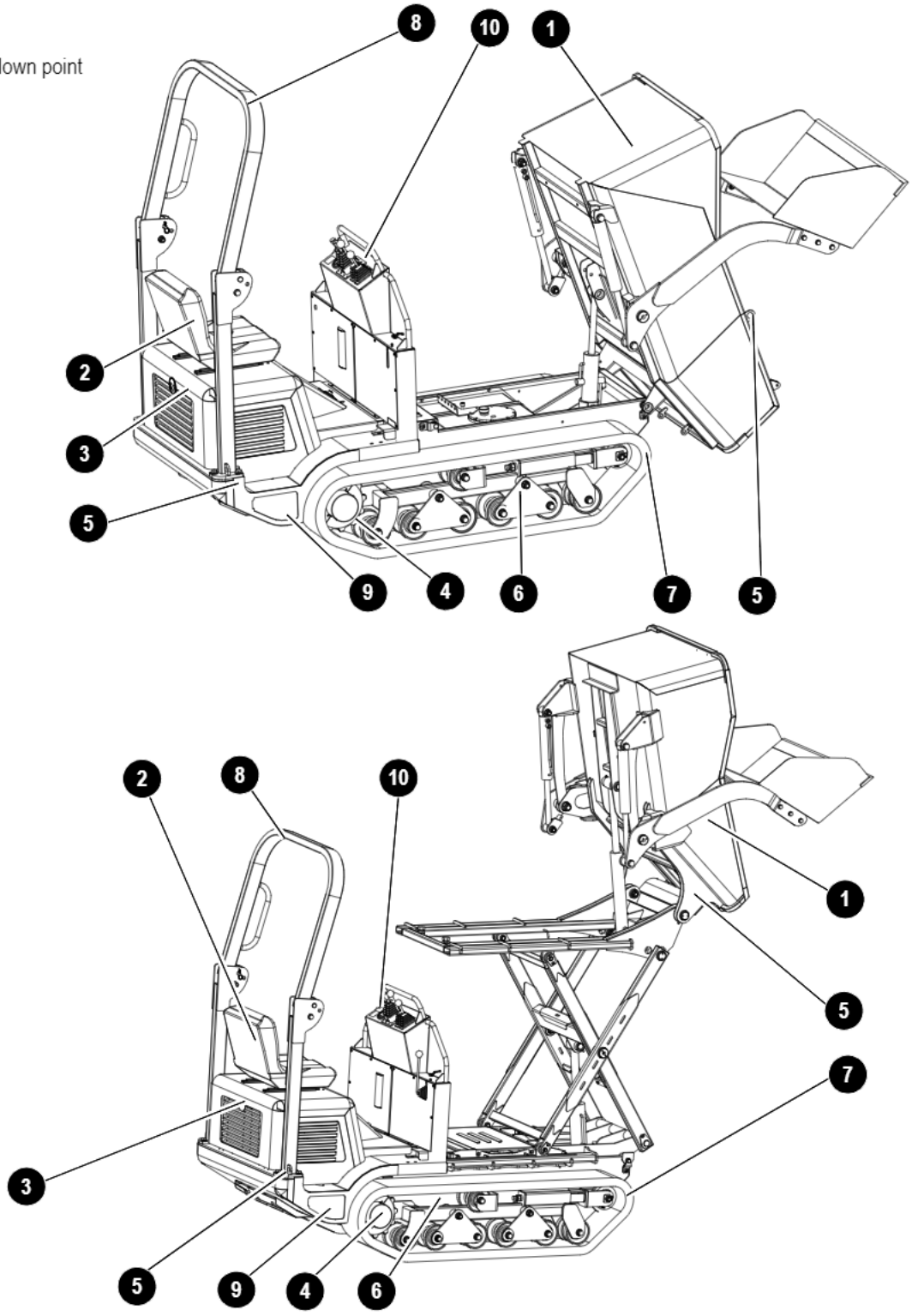


Fig. 1: Vehicle outside views

1.4 Overview of the vehicle DT15 with concrete mixer (optional)

1 Concrete mixer
2 Operator seat
3 Engine cover
4 Travel drive
5 Lifting eye/tie-down point
6 Travel gear
7 Tracks
8 Rollbar
9 Document box
10 Control stand

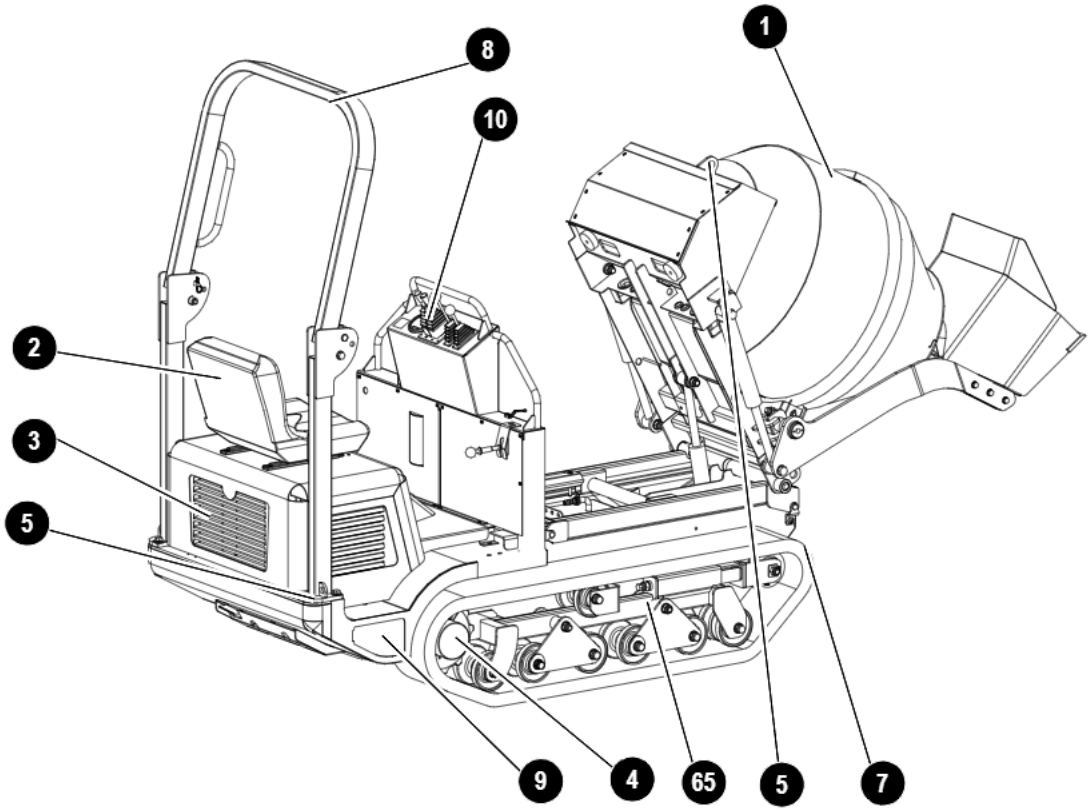


Fig. 1: Vehicle outside views

1.5 Brief description

The model DT15 dumper is a self-propelled work machine.
Get informed on and follow the legal regulations of your country.
The main components of the vehicle are:

- Rollbar
- Swivel skip
- 3-way skip (option)
- Earth-movement skip (option)
- High-tip skip (option)
- Concrete mixer (option)
- Internal combustion engine
  - Type DT15: Water-cooled three cylinder diesel engine
  - Type DT15: Water-cooled three cylinder diesel engine according to the standards EPA Tier 4 (optional)
- Sturdy steel sheet chassis

1.6 Regulations

Requirements to be met by the operator

Earth moving machines may be driven and serviced only by persons who meet the following requirements:

- 18 years or older
- Physically and mentally suited for this work
- Persons have been instructed in driving and servicing the earth moving machine and have proven their qualifications to the contractor
- Persons are expected to perform work reliably.

They have been appointed by the contractor for driving and servicing the earth moving machine.

Observe the legal regulations of your country.

1.7 EC declaration of conformity for vehicles with CE mark on type label

EC declaration of conformity

According to Machine Directive 2006/42/EC, appendix II A

Manufacturer

Wacker Neuson Linz GmbH
Haidfeldstr. 37
A4060 Linz-Leonding

Product

Machine designation:	Compact Dumper
Machine model:	DT15
Chassis no.:	_____
Output kW:	15 kW
Measured sound power level:	100 dB (A)
Guaranteed sound power level:	101 dB (A)

Conformity assessment procedure

Notified body according to Directive 2006/42/EC, appendix XI:
Fachausschüsse Bau und Tiefbau
Prüf- und Zertifizierungsstelle im BG-PRÜFZERT
Landsberger Str. 309
D80687 Munich
Identifcation number EU 0515

Notified body according to Directive 2000/14/EC, appendix VI:
TÜV SÜD Industrie Service GmbH
Westendstr. 199
D-80686 Munich

Directives and standards

We hereby declare that this product corresponds to the relevant regulations and requirements of the following Directives and standards:
2004/108/EC, 2000/14/EC, 97/68/EC, EN ISO 12100;
EN 474-1 (up to 5.5.8.1, 5.9, 5.19.1), EN 474-6 (up to 5.7.3.3)

Leonding, _____	_____	_____
Place, date	Responsible for documentation	Managing director

1.8 Declaration of conformity for machines without CE mark on the type label

Declaration of conformity

Manufacturer

Wacker Neuson Linz GmbH
Haidfeldstr. 37
A4060 Linz-Leonding

Product

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EN 474-1 (up to 5.5.8.1, 5.9, 5.19.1), EN 474-6 (up to 5.7.3.3)

Leonding, _____	_____	_____
Place, date	Responsible for documentation	Managing director

1.9 Type labels and component numbers

Fig. 1: Position of the type label

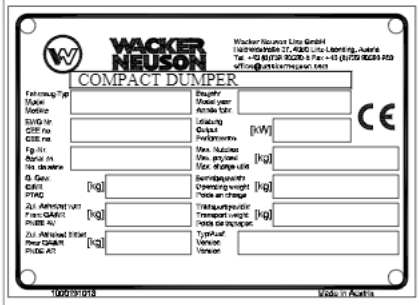


Fig. 1: Type label

Fig. 2: Engine number

Serial number

The number is located on the type label.

The model type label is located on the control panel.

Type label information (example):

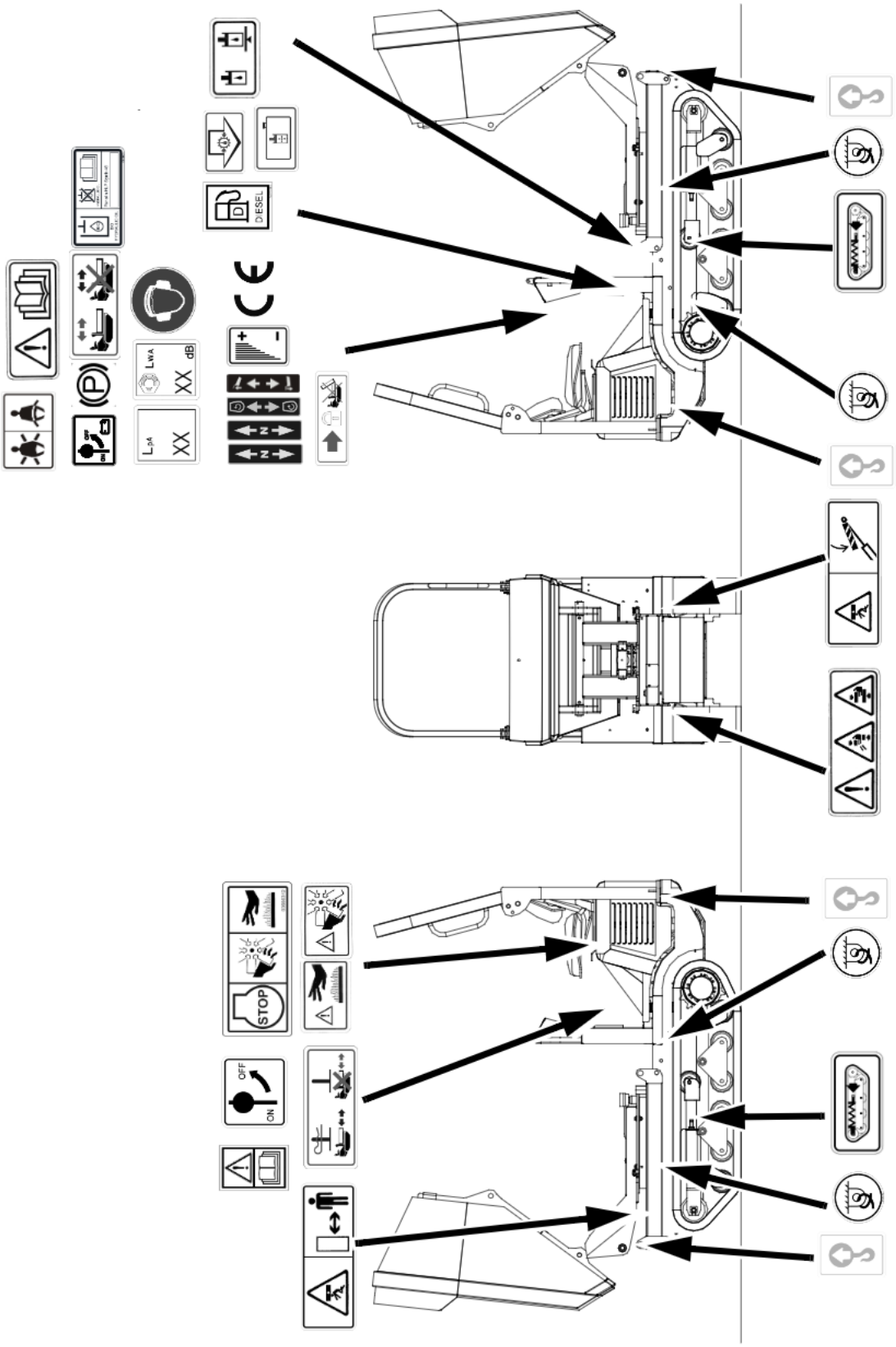
Machine designation:		COMPACT DUMPER
Model:		----------
Model year:		----------
CEE no.	(EEC no.)	----------
Output:		----------
Serial no.:		----------
Max. payload:		----------
GWR:		----------
Operating weight:		----------
Front GAWR:		----------
Transport weight:		----------
Rear GAWR:		----------
Version:		----------

Other information – *see chapter 6 Technical data* on page 6-1

Engine number

The type label (arrow) is located on the cylinder-head cover of the engine.

1.10 Signs and symbols



The following states signs and symbols which are not unequivocally comprehensible. They do not contain explanatory text and are not explained in the following chapters.

Fig. 3: Lifting eye label

Meaning

Machine is raised by the lifting eyes

– *see chapter Load the vehicle with crane* on page 3-30

Application

On the chassis near the front and rear lifting eyes

Fig. 4: Label for points used for tying down the machine

Meaning

Tie-down points for tying down the machine for transport.

– *see chapter Tying down the machine* on page 3-33

Application

On the chassis at the front and rear anchoring points

Fig. 5: Noise level label

Meaning

Noise levels produced by the machine.

L_{Wa} = sound power level

Other information – *see chapter 6.12 Noise levels* on page 6-4

Application

Protective plate on control stand

Fig. 6: Label with indication of sound pressure

Meaning

Indication of operator-perceived sound pressure level.

L_{Pa} = sound pressure level

Other information – *see chapter 6.12 Noise levels* on page 6-4

Application

Protective plate on control stand

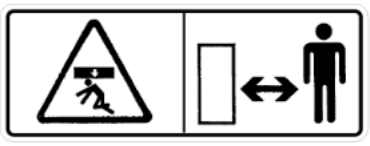


Fig. 7: Danger label

Meaning

General indication of danger

This symbol alerts persons standing or working near the machine of an existing danger.

Application

On either side of the undercarriage

Meaning

The CE mark means that the machine meets the requirements of the Machine Directive and that the conformity procedure has been performed. The machine meets all the health and safety requirements of the Machine Directive.

Application

On the type label

Fig. 8: CE mark

Fig. 9: Diesel

Meaning

Add diesel fuel only!

Application

Protective plate on control stand

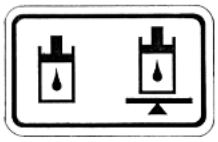


Fig. 10: Hydraulic oil

Meaning

The tank contains hydraulic oil – *see chapter Adding hydraulic oil* on page 5-21.

Application

On the protective plate of the hydraulic tank filler inlet

Fig. 11: Filter in tank

Meaning

Oil suction filter in hydraulic oil tank.

Application

On the protective plate of the hydraulic tank filler inlet

Fig. 12: Oil pressure check point

Meaning

Oil pressure check point of oil-dynamic system of undercarriage.

Application

On protective plate of pumps

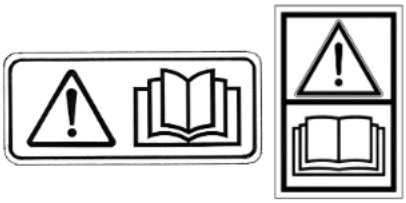


Fig. 13: Read and understand the Operator's Manual

Meaning

Read the Operator's Manual before using the machine.

Application

Protective plate on control stand

Fig. 14: Compulsory wearing of seat belt

Meaning

Compulsory wearing of seat belt.

Application

Protective plate on control stand

Fig. 15: Safety prop

Meaning

Use a safety prop before performing work under the skip.

– *see chapter Maintenance prop* on page 5-2

Application

Front undercarriage plate

Fig. 16: Shearing hazard

Meaning

General indication of danger

This symbol alerts persons standing or working near the machine of an existing shearing hazard around the machine.

Application

Beside the skip

Fig. 17: Battery master switch

Meaning

Battery master switch – *see chapter Battery master switch* on page 3-24

Application

Protective plate on control stand

Fig. 18: Hot surfaces

Meaning

Do not touch hot surfaces, wait for parts to cool down.

Application

On undercarriage plate under the engine cover

Fig. 19: Danger due to fan rotation

Meaning

Danger due to rotating fan! Stop the engine before opening the engine cover. Stay clear of the fan if the engine is still running.

Application

On the radiator under the engine cover

Fig. 20: Engine stop

Meaning

Danger of burns, and danger due to rotating fan! Stop the engine before opening the engine cover.

Application

On the engine cover

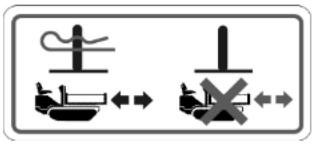


Fig. 21: Closing the engine cover

Meaning

Ensure that the split pin is inserted before actuating the undercarriage. Danger of accidents – *see chapter Engine cover* on page 3-28!

Application

On the engine cover

Fig. 22: Master switch of the hydraulic PTO shaft

Meaning

Master switch for switching the hydraulic PTO shaft ON and OFF – *see chapter Hydraulic PTO shaft (HPTO) (Opt.)* on page 3-44

Application

On the protective plate next to the hydraulic PTO shaft

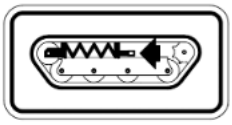


Fig. 23: Track tension adjustment

Meaning

Danger due to components under spring tension! Indicates the device for adjusting track tension. – *see chapter Increasing track tension* on page 5-26

Application

Right and left side of chassis

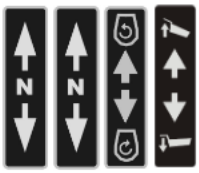


Fig. 24: Main label

Meaning

This label explains the machine's control elements

– see chapter 3.1 Overview of control stand (swivel skip, 3-sided skip, skip for earth-moving (up to Series FA0 1985) on page 3-1

Application

On the control stand

Fig. 25: Throttle

Meaning

Indication of throttle – *see chapter 3.7 Throttle lever overview* on page 3-5.

Application

On the control stand

Fig. 26: Lock for the working hydraulic levers

Meaning

Indicator of the locking device for working hydraulic levers

Application

On the control stand

Fig. 27: Parking brake

Meaning

Indicates the control element for applying the parking brake – *see chapter Mechanical brake* on page 3-15.

Application

On the control stand

Fig. 28: Ear protection

Meaning

The machine's control stand is not enclosed, therefore always carry an ear protection.

Application

On the control stand

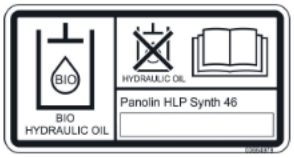


Fig. 29: Biodegradable hydraulic oil

Importance (optional)

The reservoir contains biodegradable hydraulic oil.

– *see chapter Important information on the use of biodegradable oil* on page 5-24

Application

On the protective plate of the hydraulic tank filler inlet

2 Safety instructions

2.1 Identification of warnings and dangers

Important indications regarding the safety of the personnel and the machine are identified in this Operator's Manual with the following terms and symbols:

Danger!

Failure to observe the instructions identified by this symbol can cause injury or death for the operator or other persons.

☞ *Measures for avoiding danger*

Caution!

Failure to observe the instructions identified by this symbol can cause damage to the machine.

☞ *Measures for avoiding danger for the vehicle*

Notice!

This symbol identifies instructions for a more efficient and economical use of the vehicle.

Environment!

Failure to observe the instructions identified by this symbol can cause damage to the environment. These types of dangers may be due to improper disposal of environmentally hazardous substances (e.g. waste oil).

2.2 Warranty

Warranty claims can be brought forward to your Wacker Neuson dealer only.
Furthermore, the instructions in this Operator's Manual must be observed.

2.3 Disposal

All fluids, lubricants, material, etc., used on the machine are subject to specific regulations regarding collection and disposal. Dispose of different materials and consumables separately and in an environmentally friendly manner!

Disposal may only be performed by a Wacker Neuson dealer. Also observe the national regulations regarding disposal!

Environment!

Avoid environmental damage! Do not allow the oil and oily wastes to get into the ground or stretches of water!

2.4 Designated use and exemption from liability

- The vehicle is intended for:
  - Moving earth, gravel, coarse gravel or ballast and rubble
  - Every other application is regarded as not designated. Wacker Neuson shall not be liable for damage resulting from this and the risk shall be fully borne by the user. Designated use also includes observing the instructions set forth in the Operator's Manual and observing the maintenance and service conditions.
- The safety of the vehicle can be negatively affected by performing vehicle modifications without proper authority and by using spare parts, equipment, attachments and optional equipment that have not been checked and released by Wacker Neuson. Wacker Neuson will not be liable for damage resulting from this.
- Wacker Neuson Linz shall not be liable for personal injury and/or damage to property caused by failure to observe the safety instructions and the operator's manual, and by the negligence of the duty to exercise due care when:
  - Maneuvering operation
  - Operating
  - servicing and performing maintenance and
  - repairing the machine. This is also applicable in those cases in which special attention has not been drawn to the duty to exercise due care, in the safety instructions, the Operator's Manuals and maintenance manuals (machine/engine).
  - Read and understand the Operator's Manual before starting up, servicing or repairing the vehicle. Observe all safety instructions!
- The machine may not be used for transport jobs on public roads!

2.5 General conduct and safety instructions

Organizational measures

- The machine has been designed and built in accordance with state-of-the-art standards and the recognized safety regulations. Nevertheless, its use can pose a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property!
- The machine must only be used in technically perfect condition in accordance with its designated use and the instructions set forth in the Operator's Manual, and only by safety-conscious persons who are fully aware of the risks involved in operating the machine. Any malfunctions, especially those affecting safety, must therefore be rectified immediately!
  Basic rule:
  Before commissioning the machine, inspect the machine for safety on the road and operational safety!
- Careful and prudent working is the best way to avoid accidents!
- The Operator's Manual must always be at hand at the place of use of the machine, and must therefore be kept in its storage bin.
  Immediately replace an incomplete or illegible operator's manual by a new one.
- In addition to the Operator's Manual, observe and instruct the operator in all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection.
  These compulsory regulations may also deal with handling hazardous substances, issuing and/or wearing personal protective equipment, or traffic regulations
- With regard to specific operational features, for example those relevant to job organization, work sequences or the persons entrusted with the work, supplement the Operator's Manual by corresponding instructions, including those relevant to supervising and reporting duties
- Persons entrusted with work on the machine must have read and understood the Operator's Manual and in particular, chapter "Safety Instructions" before beginning work. This applies especially to persons working only occasionally on the machine, for example set-up or maintenance!
- The user/owner must check – at least from time to time – whether the persons entrusted with operation or maintenance are working in compliance with the Operator's Manual and are aware of risks and safety factors.
- The user/owner commits himself to operate and keep the machine in perfect condition, and, if necessary or required by law, to require the operating or servicing persons to wear protective clothing (for example safety shoes, hard hat).
- In the event of safety-relevant modifications or changes on the machine or of its behavior, stop the machine immediately and report the malfunction to the competent authority/person.
  Safety-relevant damage or malfunctions of the machine must be rectified immediately
- Never make any modifications, additions or conversions to the machine and its superstructures (for example control stand, loading platform, etc.), as well as to the attachments, which might affect safety without the approval of Wacker Neuson! This also applies to the installation and the adjustment of safety devices and valves, as well as to welding work on load-bearing elements
- Spare parts must comply with the technical requirements specified by Wacker Neuson. Original spare parts can be relied to do so!
- Replace hydraulic hoses within stipulated and appropriate intervals even if no safety-relevant malfunctions have been detected

- Before working on or with the machine, remove jewelry, such as rings, wristwatches, bracelets, etc., and tie back long hair and do not wear loose-fitting garments, such as unbuttoned or unzipped jackets, ties or scarves.
  Injury can result from being caught up in the machinery or from rings catching on moving parts!
- Keep the machine clean. This reduces
  - Fire hazard, for example due to oil-soaked rags lying around
  - Danger of injury due to, for example, contaminated footboards that can cause falling, and
  - Accident hazard, for example due to dirty control elements.
- Observe all safety, warning and information signs and labels on the machine
- Adhere to prescribed intervals or those specified in the Operator's Manual for routine checks/inspections and maintenance work!
- For service, inspection, maintenance or repair work, tools and service center equipment adapted to the task on hand are absolutely indispensable

Selection and qualification of personnel, basic responsibilities

- Any work on or with the machine must be performed by reliable personnel only. Do not let unauthorized persons perform machine travel or operation! Observe statutory minimum age limits!
- The machine may be used by correctly trained or competent personnel only. The personnel's authorities for operating, equipping and performing maintenance and repair of the machine must be defined clearly and distinctly!
- Define the machine operator's responsibilities – also with regard to observing traffic regulations. Give the operator the authority to refuse instructions by other persons that are contrary to safety.
- Do not allow persons to be trained or instructed or persons taking part in a general training course to work on or with the machine without being permanently supervised by an experienced person!
- Work on the electrical system and equipment, on the travel gear and the steering and braking systems may only be performed by technical personnel that has been specially trained for such work.
  Work on the hydraulic system of the machine must only be performed by personnel with special knowledge and experience in hydraulic equipment!
- Seal off the danger zone should it not be possible to keep a safe distance.
  Stop work if persons access or do not leave the danger zone in spite of warning! Keep out of the danger zone!

Danger zone:

The danger zone is the area in which persons are in danger due to the movements of the:

- Vehicle
- work equipment
- additional equipment or
- material
- This also includes the area affected by falling material, equipment or by debris that is thrown out.
  The danger zone must be extended by 0.5 m in the immediate vicinity of
- buildings
- scaffolds or
- other elements of construction

2.6 Safety instructions regarding operation

Normal operation

- Avoid any operational mode that might be prejudicial to safety!
- Before beginning work, familiarize yourself with the surroundings and circumstances of the job site. These are, for example, obstacles in the job site and travel area, the soil bearing capacity and any necessary barriers separating the job site from public roads
- Take the necessary precautions to ensure that the machine is used only when in a safe and reliable state!
  Operate the machine only if all protective and safety-oriented devices, for example removable safety devices, soundproofing elements and mufflers, etc., are in place and fully functional!
- Check the machine at least once a day/per work shift for visible damage and malfunctions! Report any changes (incl. changes in working behavior) to the competent organization/person immediately! If necessary, stop the machine immediately and lock it!
- In the event of malfunctions, stop the machine immediately and lock it! Have any malfunctions rectified immediately!
- Start and operate the machine only from the operator seat!
- Perform start-up and shut-down procedures in accordance with the Operator's Manual, and observe the indicator lights!
- Before putting the machine/attachment into operation (start-up/moving), ensure that no one is at risk by putting the machine/attachment into operation!
- Before operating the machine, and also after interrupting work, check whether all control levers are functional!
- Before starting machine travel always check whether the supplementary equipment has safely stowed away or attached!
- Before operating the machine on public roads, ways and places for purposes of construction work, observe the traffic regulations in force and, if necessary, ensure beforehand that the machine is in a condition perfectly compatible with these regulations!
- Ensure good illumination of the job site in conditions of poor visibility or after dark!
  - Stop machine operation if this is not possible to a reasonable degree!
- Since the machine has no acoustic warning system, stop the machine or interrupt work immediately if a person is likely to approach the working range of the machine!
- No lifting, lowering or carrying persons!
- Installing a man basket or a working platform is prohibited!
- When crossing underpasses, bridges and tunnels, or when passing under overhead lines always ensure that there is enough clearance!
- Always keep a safe distance from the edges of building pits and slopes!
- When working in buildings or in enclosed areas, look out for in particular:
  - Height of the ceiling/clearances
  - Width of entrances
  - Maximum load of ceilings and floors
  - Sufficient room ventilation – poisoning hazard!
- Avoid any operation that might be a risk to machine stability!
- During operation on slopes, perform machine travel or operation uphill or downhill. If performing machine travel across a slope cannot be avoided, bear in mind the tilting limit of the machine! Always keep the work equipment close to the ground! This also applies to downhill machine travel! During machine travel across a slope, the load must be on the uphill side of the machine.
- If the skip is **less** than half full, drive backward uphill or forward downhill.

- If the skip is **more** than half full, drive forward uphill or backward downhill.
- On sloping terrain always adapt the travel speed to the prevailing ground conditions! Never change to lower gear on a slope but always before reaching it!
- The machine has no FOPS protection. Therefore, do not use the machine in areas with danger of falling objects!
- Before leaving the operator seat always secure the machine against unintentional movement and unauthorized use!
  Lower the work equipment to the ground
- Before starting work check whether
  - all safety devices are properly installed and functional
- Before starting machine travel or before taking up work:
  - Ensure that visibility is sufficient (do not forget rearview mirrors!)
  - Adjust your correct seat position,
    never adjust the operator seat during machine travel or operation!
  - Always fasten your seat belt.
  - Inspect the immediate area (children!)
  - On the job site the operator is responsible for third parties!
- Extreme caution is essential when handling fuel – increased fire hazard!
  - Ensure that fuel does not come into contact with hot parts!
    Do not smoke during refueling, and avoid fire and sparks. Stop the engine during refueling and do not smoke!
- Operation in potentially explosive areas is prohibited.
- Never get on or off a moving machine! Never jump off the machine!
- The drive levers take time getting used to them. Adjust the drive speed to your abilities and the circumstances.

Applications with lifting gear

Definition:

Applications with lifting gear are understood as procedures involving raising, transporting and lowering loads with the help of slings and load-securing devices (for example ropes, chains). In doing so, the help of persons is necessary for securing and detaching the load. This applies, for example, to lifting and lowering pipes, shaft rings or containers.

- No applications with lifting gear!

Trailer

- Hitching and towing other vehicles is prohibited!

Transportation

- The machine must be loaded and transported only in accordance with the Operator's Manual!
- Use only suitable means of transport of appropriate capacity/payload!
- Safely secure the machine on means of transport! Use suitable tie-down points and load-securing devices
- The recommissioning procedure must be strictly in accordance with the Operator's Manual!

Temperature ranges

The machine can be operated at a maximum temperature of +45°C and a minimum temperature of -15°C; If the machine is to be used in other temperature ranges (e.g. in tropical temperatures etc.), you must contact the Wacker Neuson distributor.

Carry out all maintenance and inspection work before storing the machine for the winter. Then store the machine in a dry place at ambient temperature (about +15 °C). Observe these temperature ranges so as not to affect the machine's service life.

2.7 Safety instructions for maintenance

- Avoid any operational mode that might be prejudicial to safety!
- Observe the adjustment, maintenance and inspection activities and intervals set forth in the Operator's Manual, including information on the replacement of parts/partial equipment!
  These activities must be performed by technical personnel only.
- The machine may not be serviced, repaired or test-driven by unauthorized personnel
- Brief the personnel/the operator before beginning special operations and maintenance! Appoint a person to supervise the activities!
- In any work concerning the operation, conversion or adjustment of the machine and its safety-oriented devices, or any work related to maintenance, inspection and repair, observe the start-up and shut-down procedures set forth in the Operator's Manual, and the information on maintenance.
- If required, secure the maintenance area appropriately!
- Prior to performing service, maintenance and repair work, attach a warning label, such as "Repair work – do not start machine!", to the starter or to the control elements. Remove the ignition key!
- Perform service, maintenance and repair work only if
  - the machine is positioned on firm and level ground.
  - the forward-reverse lever is in neutral
  - the parking brake is applied
  - all hydraulically movable attachments and working equipment have been lowered to the ground
  - engine is stopped
  - the starting key is removed and
  - the machine has been secured against unintentional movement.
  - the maintenance strut is installed – *see chapter Maintenance prop* on page 5-2
- If servicing or repairs are essential, you must observe the following rules:
  - Only work in groups of two.
  - Both persons must be authorized for the operation of the machine
  - One person must be seated on the seat and maintain visual contact with the other person.
  - Observe the specific safety instructions in the work manual
  - Keep the required distance from all rotating and moving parts, such as fan blades, belt drives, power take-offs, fans etc.
- Prior to performing assembly work on the machine, ensure that no movable parts will roll away or start moving
- To avoid accident hazard, parts and large assemblies being moved for replacement purposes must be carefully attached and secured to lifting gear.
  Use only suitable lifting gear and suspension systems in a technically perfect state with appropriate load-bearing capacity!
  Stay clear of suspended loads!

- Have loads fastened and crane operators guided by experienced persons only!
  The person guiding the crane operator must be within sight or sound of him.
- Always use specially designed or otherwise safety-oriented ladders and working platforms to perform overhead assembly work.
  Never use machine parts or attachments/superstructures as a climbing aid!
  Wear a safety harness when performing maintenance at greater heights!
  Keep all handholds, steps, handrails, platforms, landings and ladders free from dirt, snow and ice!
- Clean the machine, especially connections and threaded unions, of any traces of oil, fuel or preservatives before performing maintenance/repair work!
  Do not use aggressive detergents!
  Use lint-free cleaning rags!
- Before cleaning the machine with water, steam jet (high-pressure cleaner) or detergents, cover or tape up all openings which – for safety and functional reasons – must be protected against water, steam or detergent penetration. Special care must be taken with the electrical system
- After cleaning, remove all covers and tapes applied for that purpose!
- After cleaning, examine all fuel, lubricant and hydraulic oil lines for leaks, chafe marks and damage!
  Rectify all malfunctions without delay!
- Always tighten any threaded fittings that have been loosened during maintenance and repair!
- Any safety devices removed for set-up, maintenance or repair purposes must be refitted and checked immediately upon completion of the maintenance and repair work
- Ensure that all consumables and replaced parts are disposed of safely and with minimum environmental impact!
- Do not use the work equipment as lifting platforms for persons!
- Before taking up work on machine parts dangerous for life and limb (bruising, cutting), always ensure safe blocking/support of these areas.
- Perform maintenance and repair work beneath a raised machine, attachments or additional equipment only if a safe and secure support has been provided for (the sole use of hydraulic cylinders, jacks, etc. does not sufficiently secure raised machines or equipment/attachments).
- During operation and for a certain time after using the machine, do not touch hot parts such as the engine block and the exhaust system - risk of burns!
- Retainer pins can fly out or splinter when struck with force – injury hazard!
- Do not use starting aids (for example start pilot)! This especially applies to those cases in which a heater plug (intake-air preheating) is used at the same time – explosion hazard!
- Apply special care when working on the fuel system – increased fire hazard!

2.8 Warning of special hazards

Electrical energy

- Use only original fuses with the specified current rating!
  Switch off the machine immediately and rectify the malfunction if trouble occurs in the electrical system!
- During machine operation, maintain a safe distance from overhead electric lines! If work must be performed close to overhead lines, the equipment/attachments must be kept well away from them. Caution, danger! Get informed on the prescribed safety distances!
- If your machine comes into contact with a live wire
  - Do not leave the machine
  - Drive the machine out of the danger zone.
  - Warn others against approaching and touching the machine.
  - Have the live wire de-energized.
  - Do not leave the machine until the line that has been touched or damaged has been safely de-energized!
- Work on the electrical system may only be performed by a technician with appropriate training, in accordance with the applicable electrical engineering rules
- Inspect and check the electric equipment of the machine at regular intervals.
  Deficiencies such as loose connections or worn cables must be rectified immediately.
- Observe the operating voltage of the machine/attachments!
- Always remove the grounding strap from the battery when working on the electrical system or when performing welding work!
- Starting with battery jumper cables can be hazardous if performed improperly. Observe the safety instructions regarding the battery!

Gas, dust, steam, smoke

- Operate the machine only on appropriately ventilated premises! Before starting internal combustion engines or operating fuel-operated heating systems on enclosed premises, ensure that there is sufficient ventilation!
  Observe the regulations in force at the respective site!
- Perform welding, flame-cutting and grinding work on the machine only if this has been expressly authorized. for example explosion and fire hazard can exist!
- Before performing welding, flame-cutting and grinding work, clean the machine and its surroundings from dust and other flammable substances, and ensure that the premises are appropriately ventilated – explosion hazard!

Hydraulic system

- Only persons with special knowledge in hydraulics may carry out work on the hydraulic system!
- Check all lines, hoses and screw connections regularly for leaks and obvious damage! Repair any damage and leaks immediately! Splashed oil can cause injury and fire
- In accordance with the Operator's Manual/instructions for the respective assembly, release the pressure in all system sections and pressure lines (hydraulic system) to be opened before performing any implementing/repair work!
- Hydraulic and compressed-air lines must be laid and fitted properly. Ensure that no connections are interchanged. The fittings, lengths and quality of the hoses must comply with the technical requirements

Noise

- During operation all sound baffles must be closed.
- Wear ear protectors if necessary!

Oil, grease and other chemical substances

- When handling oil, grease and other chemical substances (for example battery electrolyte – sulfuric acid), observe the product-related safety regulations (safety data sheet)!
- Be careful when handling hot consumables – burn hazard!

Battery

- When handling the battery observe the specific safety instructions and regulations relevant to accident prevention. Batteries contain sulfuric acid – caustic!
- When charging batteries in particular, as well as during normal operation of batteries, an oxyhydrogen mixture is formed in the battery cells. Explosion hazard!
- In the case of a frozen battery or of an insufficient electrolyte level, do not try start-up with a battery jumper cable. The battery can burst or explode.

  ☞ Discard immediately

Tracks

- Repair work on the tracks must be performed by technical personnel or by a Wacker Neuson service center only!
- Malfunctioning tracks reduce the machine's operational safety. Therefore perform regular checks of the tracks for
  - cracks, or other damage
- Check track tension at regular intervals.

3 Operation

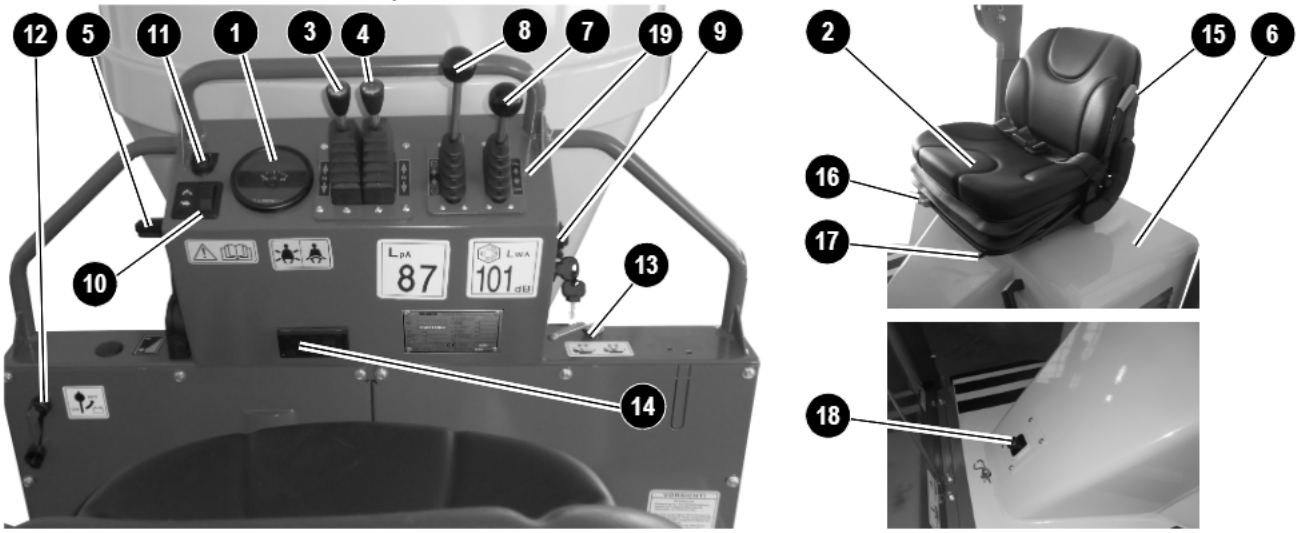
This chapter describes the controls, and contains information on the function and handling of the indicator lights and controls.

The pages stated in the table refer to the description of the controls.

Numeric or alphanumeric combinations (for example 40/**18** or 40/**A**) used for identifying control elements, mean:
figure no. 40/control element no. 18, or position **A** in figure no. 40

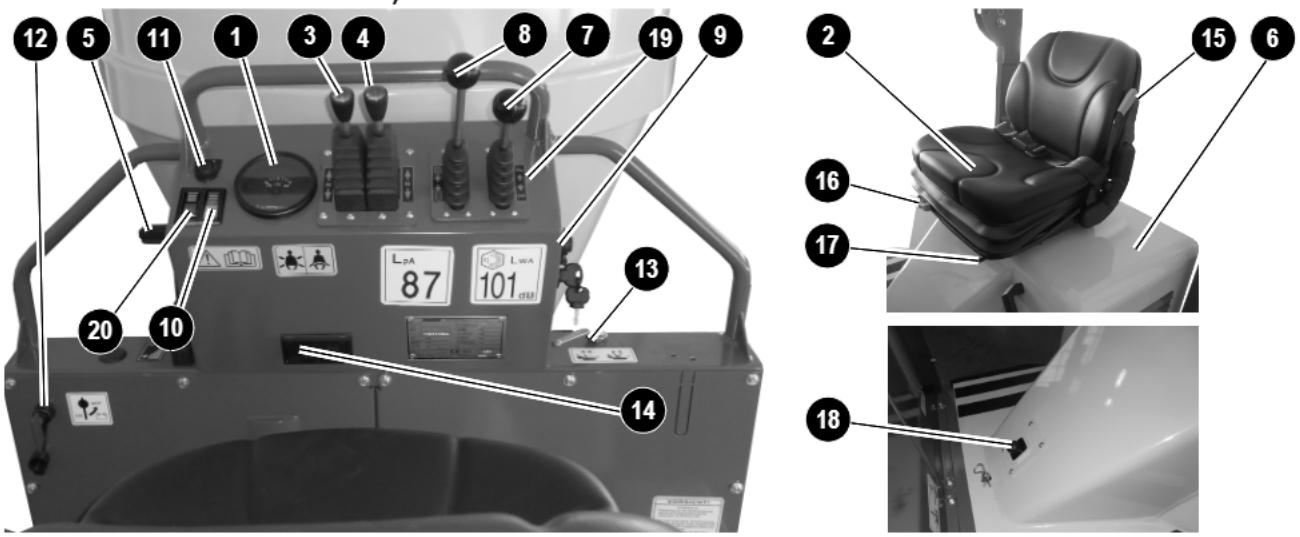
Figures carry no numbers if they are placed to the left of the text.

3.1 Overview of control stand (swivel skip, 3-sided skip, skip for earth-moving (up to Series FA0 1985)



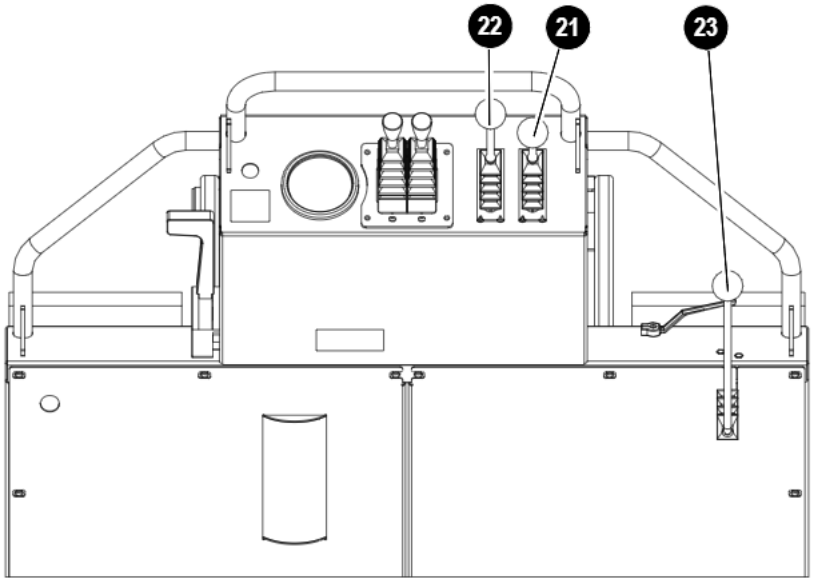
Item	Description	For more information see page
1	Instrument panel	3-4
2	Operator seat	3-26
3	Drive lever (left)	3-14
4	Drive lever (right)	3-14
5	Throttle	3-5
6	Engine cover	3-28
7	Skip operation	3-19
8	Skip rotation/loader unit operation (optional)	3-19
9	Preheating start switch	3-4
10	Control lever for slow or quick travel	3-14
11	Horn	
12	Battery master switch	3-24
13	Parking brake	3-5
14	Fuse box	6-10
15	Backrest adjustment	3-26
16	Seat suspension adjustment	3-26
17	Horizontal seat adjustment	3-26
18	Lock for cover	
19	Locking device for working hydraulics lever	

3.2 Overview of control stand (swivel skip, 3-sided skip, skip for earth-moving (up to Series FA0 1985)



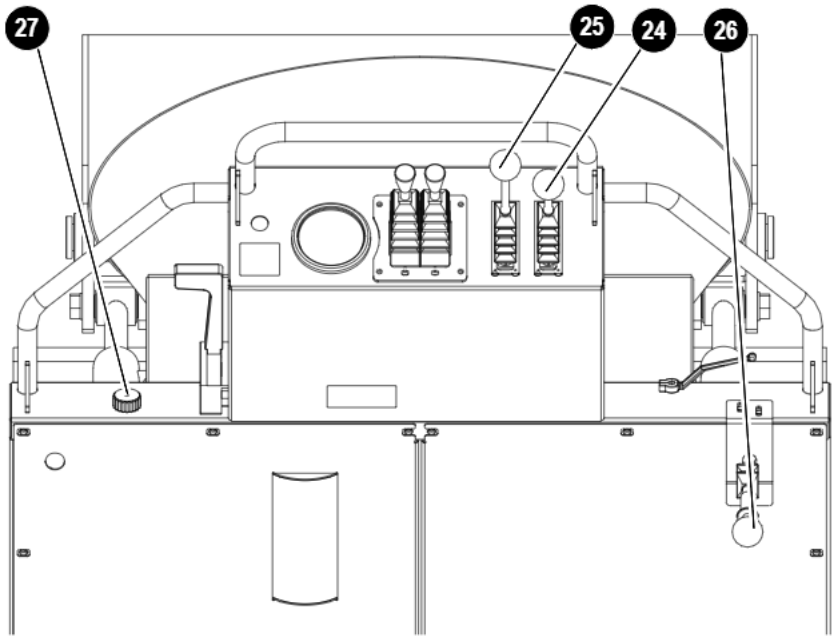
Item	Description	For more information see page
1	Instrument panel	3-4
2	Operator seat	3-26
3	Drive lever (left)	3-14
4	Drive lever (right)	3-14
5	Throttle	3-5
6	Engine cover	3-28
7	Skip operation	3-19
8	Rotating the skip rotation/loader unit operation (optional)	3-19
9	Preheating start switch	3-4
10	Control lever for slow or quick travel	3-14
11	Horn	
12	Battery master switch	3-24
13	Parking brake	3-5
14	Fuse box	6-10
15	Backrest adjustment	3-26
16	Seat suspension adjustment	3-26
17	Seat longitudinal adjustment	3-26
18	Lock for cover	
19	Locking device for working hydraulics lever	
20	Cabin working light/turn indicator switch	

3.3 Control stand overview (high-tip skip)



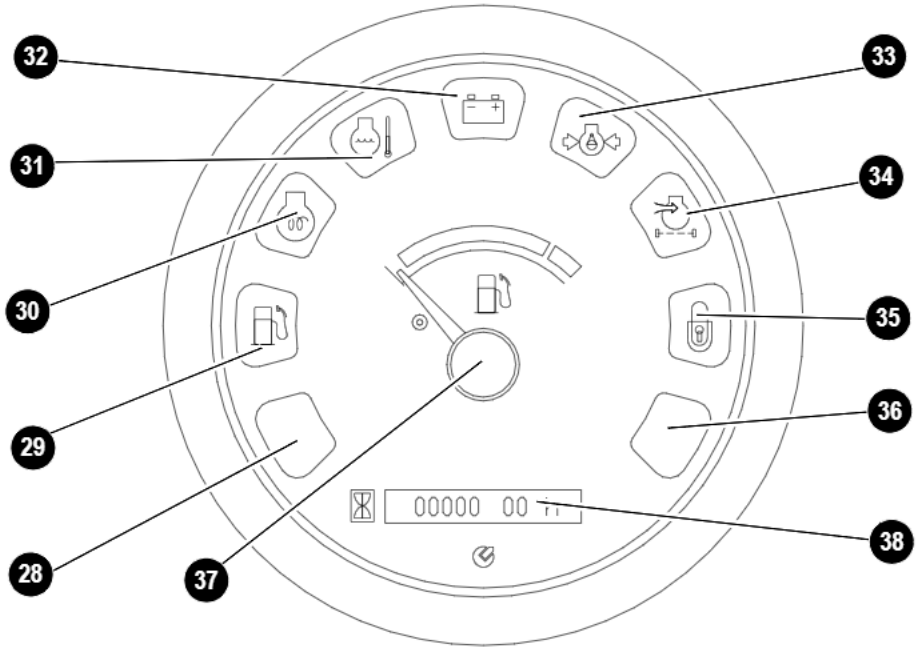
Item	Description	For more information see page
21	Skip operation	3-22
22	Loader unit operation (option)	3-23
23	Raise skip	3-22

3.4 Control stand overview (concrete mixer)



Item	Description	For more information see page
24	Concrete mixer tilt out	3-23
25	Loader unit operation (option)	3-23
26	Concrete mixer rotation	3-23
27	Concrete mixer speed control	3-23

3.5 Instrument panel overview



Item	Description	For more information see page
28	not used	
29	Indicator light (yellow) – fuel gauge	3-5
30	Indicator light (yellow) – diesel engine glow plug preheating	3-5
31	Coolant temperature indicator light (red)	3-5
32	Alternator charge function indicator light	3-6
33	Indicator light (red) – engine oil pressure	3-6
34	Indicator light (red) – air filter clogged	3-6
35	Indicator light (yellow) – oil filter clogged	3-6
36	not used	
37	Fuel level indicator	
38	Hour meter	3-6

3.6 Preheating start switch overview

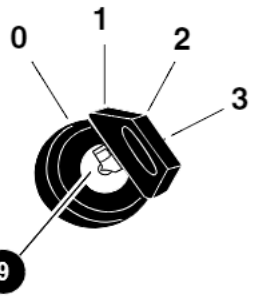


Fig. 30: Preheating start switch

Position	Function	Power consumer
0	Insertion and removal of the ignition key	None
1	ON/machine travel position	All functions are operational ➥ Indicator lights illuminate
2	Preheats the engine (10 – 15 seconds)	➥ Until the glow plug light turns off ***30***
3	Starts the engine	➥ Starter is actuated ➥ Indicator lights must go out

3.7 Throttle lever overview

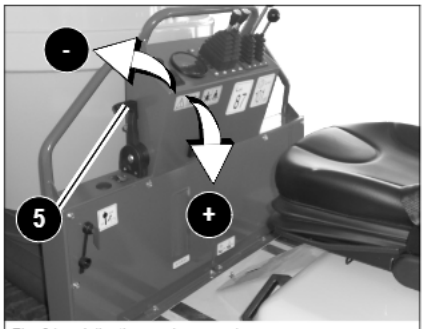


Fig. 31: Adjusting engine speed

The throttle lever controls the engine speed as follows:

- Engine speed can be set continuously with throttle lever **5**

☞ Throttle pulled backwards:

➥ Engine speed rises

☞ Throttle lever pushed forwards:

➥ Engine speed is reduced

Notice!

Always set the engine speed to maximum during machine operation!

13 Parking brake

The machine's parking brake is applied and released with this control element.

29 Fuel level indicator

Fill up immediately if this indicator light illuminates. Bleed the fuel system if it is run dry.

30 Diesel engine glow plug indicator light - preheating

Comes on if the key in the preheating start switch is in position **2**.

A glow plug preheats the air in the combustion chamber of the engine when the key is in this position.

Indicator light goes out as soon as preheating temperature is reached (10 – 15 seconds)

31 Water temperature indicator light

Danger!

Never open the radiator and never drain coolant if the engine is warm since the cooling system is under high pressure

–

Burn hazard!

If the indicator light illuminates with the engine running:

☞ *Let diesel engine cool down; let the engine run briefly*

☞ *stop the engine and wait at least 10 minutes*

☞ *Wear protective gloves and clothing*

☞ *Open the cap to the first notch and release the pressure*

☞ *check the cooling system.*

The water in the cooling system is possibly overheated, or the cooling system has a malfunction if the indicator light comes on when the engine is running.

32 Indicator light – charging function

Caution!

If the indicator light illuminates with the engine running:

☞ *Stop the engine immediately and*

☞ *Have the cause repaired by an authorized workshop.*

The alternator or the charging circuit of the alternator is faulty if the indicator light comes on with the engine running. The battery is no longer charged.

33 Indicator light - engine oil pressure

Caution!

If the indicator light illuminates with the engine running:

☞ *Stop the engine immediately and*

☞ *Fill up oil to the correct level.*

The oil pressure in the sump is possibly too low if the indicator light comes on when the engine is running. Continued running of the engine with low oil pressure could cause damage.

34 Indicator light for clogged air filter

Caution!

If the indicator light illuminates with the engine running:

☞ *Turn the engine off immediately, wait for at least 10 minutes and*

☞ *check air filter; if necessary*

☞ *replace the air filter cartridge.*

The air intake system has low output if this indicator light comes on with the engine running. The air filter cartridge is clogged.

35 Indicator light for clogged oil filter

Caution!

If the indicator light illuminates with the engine running:

☞ *Turn the engine off immediately, wait for at least 10 minutes and*

☞ *Check oil filter on the return line and, if necessary,*

☞ *replace the hydraulic oil filter cartridge on the return line.*

The dynamic oil system has low output if this indicator light comes on with the engine running. The hydraulic oil filter cartridge on the return line is clogged.

38 Operating hours counter

Counts the engine operating hours with the engine running.

3.8 Putting into operation

Safety instructions

Fig. 32: Getting on and off

- Get on and off the machine using the track and the handle on the rollbar and control stand.
- Never use control elements as handles.
- Never get on a moving machine. Never jump off the machine

Putting into operation for the first time

Important information

- The machine may be put into operation by authorized staff only – *see chapter Selection and qualification of personnel, basic responsibilities* on page 2-4 and – *see chapter 2 Safety instructions* on page 2-1 using this Operator's Manual.
- The personnel must have read and understood this Operator's Manual before putting the machine into operation.
- The machine may only be used in technically perfect condition in accordance with its designated use and the instructions set forth in the Operator's Manual, and only by safety-conscious persons who are fully aware of the risks involved in operating the machine.
- Go through the "Start-up" checklist in the following chapter.

Running-in period

Handle the machine carefully during its first 50 operating hours.

The future performance and service life of the machine are heavily dependent on the observance of the following recommendations during the running-in period.

- Do not overload the machine, but at the same time do not drive too cautiously either, as the machine will never reach its proper operating temperature.
- Do not allow the engine to run for a long period at maximum speed.
- Increase the load gradually while varying the engine speed
- Strictly observe the maintenance schedules in the appendix.

Check lists

The checklists below are intended to assist you in checking and monitoring the machine before, during and after operation.

These checklists are not intended to be exhaustive; They are only intended to help you to fulfill your obligation to exercise due care.

The checking and monitoring work listed below is described in greater detail in the following chapters.

If the answer to one of the following questions is NO, first rectify the cause of the fault before starting or continuing work.

Start-up checklist

Check the following points before putting the vehicle into operation or starting the engine:

No.	Question	
1	Enough fuel in the tank? (➠ *5-6*)	
2	Coolant level OK? (➠ *5-14*)	
3	Engine oil level OK? (➠ *5-10*)	
4	Hydraulic oil level OK? (➠ *5-19*)	
5	Lubrication points greased? (➠ *5-41*)	
6	Tracks checked for cracks, cuts etc.? (➠ *5-26*)	
7	Footholds clean?	
8	Engine cover fixedly locked? (➠ *3-28*)	
9	Especially after cleaning, maintenance or repair work: ➥ Rags, tools and other loose objects removed?	
10	Correct seat position? (➠ *3-26*)	
11	Seat belt fastened? (➠ *3-27*)	
12	ROPS bar folded up? (➠ *3-29*)	

Operation checklist

After starting the engine and during operation, check and observe the following points:

No.	Question	
1	Anyone in the danger zone of the machine?	
2	Do the indicator lights for the engine oil pressure and the alternator charge function come on? (➠ *3-4*)	
3	Temperature indicators for engine coolant do not illuminate? (➠ *3-4*)	
4	Does the lever work properly? (➠ *3-1*)	

“Parking” checklist

Check and observe the following points when parking the machine:

No.	Question	
1	Skip dumped in? Loader unit lowered to the ground?	
2	Parking brake applied?	
3	Starting key removed?	
When parking on public roads:		
4	Machine appropriately secured?	
When parking on slopes:		
5	Machine also secured with chocks under the tracks to prevent it from rolling away?	

Before starting the engine

☞ *Adjust seat position – see* ***Seat adjustment*** *on page 3-26*

Notice!

All controls must be within easy reach

☞ *Fasten your seat belt – see* ***Seat belt*** *on page 3-27*

☞ *Check whether all control levers are in neutral position*

☞ *Move the throttle to the center position (between minimum and maximum) if the engine is cold*

Starting the engine: general

- The starter cannot be actuated if the engine is already running (start repeat interlock).
- Interrupt the attempt to start after maximum 10 s.
- Repeat the attempt to start again after about 1 minute, in order not to overload the battery.

Procedure

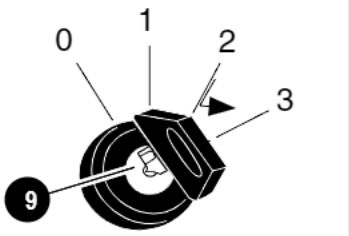


Fig. 33: Preheating start switch

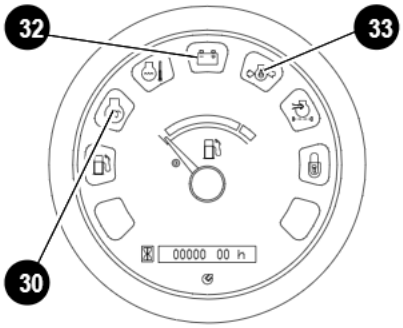


Fig. 34: Indicator lights

After you have completed the starting preparations:

☞ *Insert the ignition key in the preheating start switch* ***9***

☞ *Turn ignition key to position "**1**"*

☞ *Check whether the following indicator lights illuminate:*

➥ Indicator light for glow plug preheat **30**

➥ Indicator light for alternator charging function **32**

➥ Indicator light for engine oil pressure **33**

☞ *Replace defective indicator lights immediately*

☞ *Wait until the glow plug indicator light turns off* ***30***

☞ *Turn the starting key to position "**3**". with slight pressure overrun the position "**2**"; hold it in the position until the engine starts*

➥ If the engine does not start after 5 seconds:

☞ interrupt the start procedure and try again after about 1 minute

➥ If the engine still does not start after the second try:

☞ Contact a Wacker Neuson service center for troubleshooting

➥ As soon as the engine runs:

☞ *Release the starting key*

Notice!

Do not actuate the electric starter for more than 5 seconds.

Starting at low temperatures

When the engine runs smoothly (increased engine speed):

Notice!

In general, a battery delivers less energy in cold conditions. Therefore ensure that the battery is always well charged.

When the engine has started

☞ *Check whether all indicator lights have gone out:*

☞ *Let the engine run warm*

At cold temperatures:

☞ *Increase the engine speed slowly*

☞ *Do not run the engine at full load until it has reached its operating temperature*

Letting the engine warm up

Once it has started, let the engine warm up at slightly increased idling speed. Run the engine without any load during this phase. During the warm-up phase, check for unusual noise, exhaust color, leaks, malfunctions or damage. In case of malfunctions, damage or leaks, park and secure the machine, and find out the cause for the damage and have it repaired.

Stopping the diesel engine

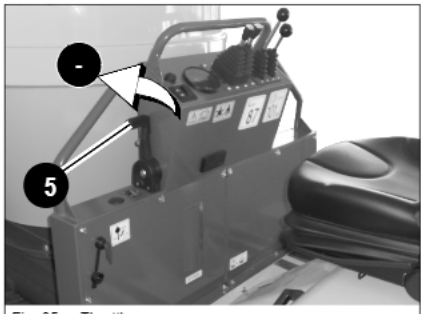


Fig. 35: Throttle

☞ *Fully move the throttle lever* **5** *forwards*

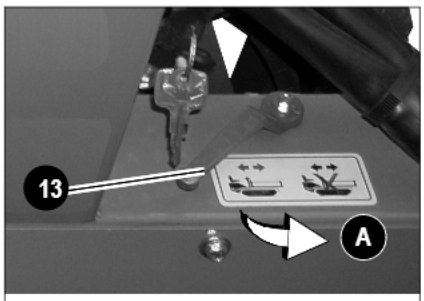


Fig. 36: Parking brake

☞ *Apply the parking brake* **13**/***A***

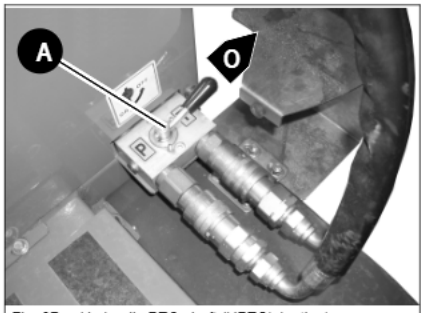


Fig. 37: Hydraulic PTO shaft (HPTO) (option)

☞ *Check whether the control lever for releasing PTO shaft* ***A*** *is in position* ***O***

➥ The PTO shaft is switched off

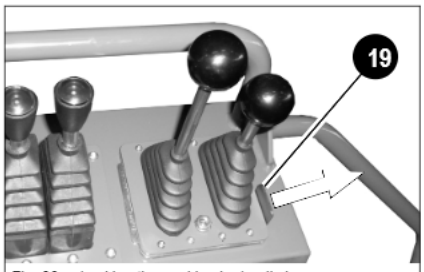


Fig. 38: Locking the working hydraulic lever

☞ *Apply the mechanical lock of the working hydraulics lever* **19**

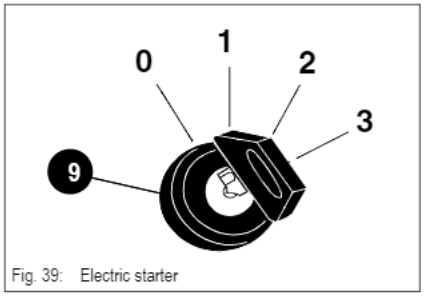


Fig. 39: Electric starter

☞ *Turn the starter* **9** *in position* ***0***

Jump-starting the engine (supply battery)

Safety instructions

- Never jump-start the engine if the battery of the machine is frozen – danger of explosion!

  ☞ Dispose of a frozen battery!
- Power supplying vehicle and the skip may not touch when bridging with jumper cables - risk of sparking!
- The voltage of the auxiliary power supply must be 12 V; higher supply voltage will damage the vehicles' electrical system!
- Use only authorized jump leads which conform to the safety requirements and which are in perfect condition!
- The jumper cable connected to the positive **+** terminal of the starting battery must never be brought into contact with electrically conductive vehicle parts ***– risk of short circuit!***
- Route the battery jumper cables so they cannot catch on rotating components in the engine compartment!

Procedure

☞ *Drive the jump-starting vehicle close enough to the machine so that the jump leads can reach to connect the two batteries*

☞ *Let the engine of the jump-starting vehicle run*

☞ *First connect one end of the red jump lead (+) to the + terminal of the flat battery, then connect the other end to the + terminal of the starting battery*

☞ *Connect one end of the black jumper cable (–) to the – terminal of the starting battery*

☞ *Connect the other end of the black cable (–) onto a solid metal component firmly screwed on the engine block or onto the engine block itself. Do not connect it to the negative terminal of the flat battery, as otherwise explosive gas emerging from the battery can ignite if sparks are formed!*

☞ *Start the engine of the machine with the empty battery*

Once the engine has started:

☞ *With the engine running, disconnect both jump leads in exactly the reverse order (first remove the – terminal, then the + terminal) – this prevents sparking near the battery!*

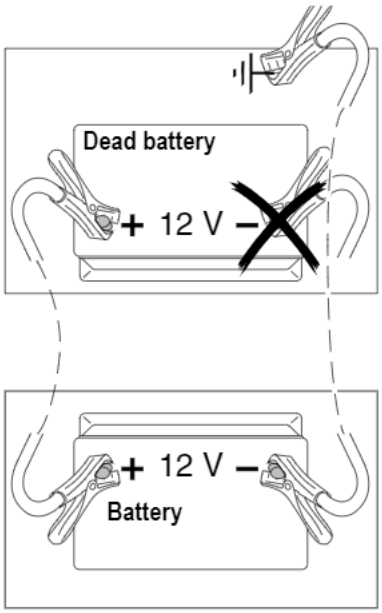


Fig. 40: Starting aid with battery jumper cables

Special instructions for driving on public roads

The machine is subject to the:

- Applicable legal regulations of your country

Also observe the applicable regulations for accident prevention of your country.

Starting vehicle travel

Danger!

Never move control levers too fast:

Accident hazard, the machine can tip over!

☞ *Carry out slow movements with the drive levers*

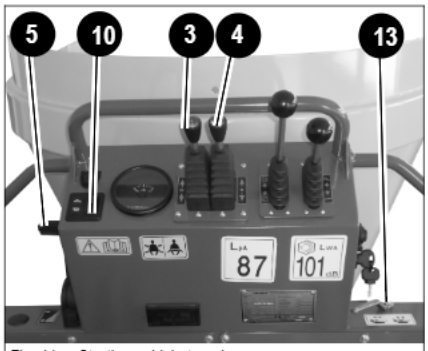


Fig. 41: Starting vehicle travel

☞ *Select the desired speed (slow or fast) with the **10** select lever*

➥ The corresponding indicator light on the select lever **10** lights up

☞ *Set the engine speed with throttle **5***

☞ *Release the parking brake with control element **13***

☞ *Slowly move drive levers **3** and **4** to move off*

➥ Machine travel starts

Drive levers

Caution!

Never move the machine with a raised skip.

☞ Tilt in the skip.

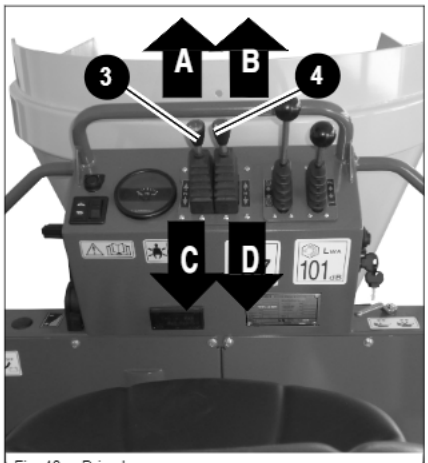


Fig. 42: Drive levers

The vehicle may be controlled with the travel control levers **3** and **4**.

Position	Function	
• A • B	Push lever **3** forward push **4** lever forward	Track dumper moves forward
• C • D	Pull the lever **3** backwards, pull lever **4** backwards	Track dumper moves backward
• C • B	Pull the lever **3** backwards, push lever **4** forwards	Track dumper turns to the left
• A • D	Push lever **3** forwards, pull lever **4** backwards	Track dumper turns to the right

The forwards or reverse drive speed depends on the position of control lever **3** and **4** of the throttle lever **5**.

The machine has two travel speeds that can be selected with the select lever **10** – *see **Instrument panel overview** on page 3-4*

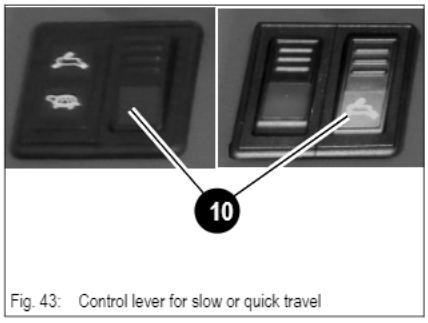


Fig. 43: Control lever for slow or quick travel

Notice!

Ensure that both tracks move as you change direction, otherwise the rubber tracks are subject to increased abrasion.

Reversing signal (optional)

A warning signal can be additionally mounted on the skip, to report reverse travel.
The reversing signal sounds during backward machine travel.
Activation of the alarm is fully automatic after lever ***3*** and ***4*** were pulled backwards.

Danger!

Accident hazard during forward/backward vehicle operation!

Serious crushing hazard causing death or serious injury.

☞ *Do not allow anyone to stay in the danger zone.*

☞ *Do not rely on the reversing signal under any circumstances*

☞ *If the reversing signal does not sound, stop machine operation immediately and get in touch with a Wacker Neuson service center (observe the relevant national regulations).*

Hydraulic brake

The drive levers automatically return to the zero position as soon as they are released. This creates sufficient hydraulic braking effect.

The closed hydraulic brake system prevents the machine from "racing" when driving downhill. The machine does not run any faster than the permissible travel speed.

Notice!

Always drive with full engine speed under all circumstances. Use the accelerator pedals to reduce the travel speed as required. A reduced engine speed can lead to malfunctions in the control system.

Mechanical brake

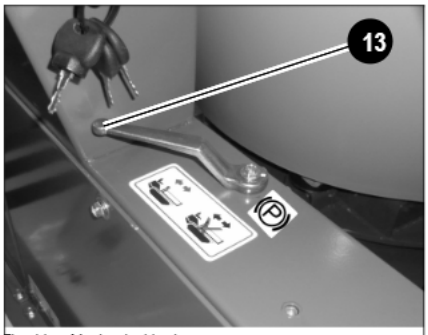


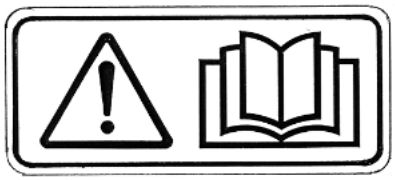
Fig. 44: Mechanical brake

A negative-action multidisc brake is used as a service and parking brake. It is operated with control element **13**.

3.9 Machine travel on slopes

Follow these safety instructions carefully when driving on slopes, in order to avoid accidents.

Specific safety instructions



☞ *Tilt in the skip during machine operation.*

☞ *Always drive in low speed on slopes!*

➥ This also ensures more precise and smooth movements of the steering system.

- During machine travel and operation on slopes or across obstacles,
- Do not steer or drive across slopes.

☞ If possible, avoid changing direction during machine travel and operation on slopes

☞ *During machine operation, ensure that you can stop safely any time if the machine starts to slip or if it becomes unstable.*

- Tilting, swiveling or using the skip on slopes can cause the machine to lose its balance and to tip over.

☞ Therefore avoid these activities.

☞ *Do not drive on slopes steeper than 15°, otherwise the machine can tip over.*

☞ *Do not drive across slopes steeper than 10° otherwise the machine can tip over laterally.*

- If the tracks slip when driving uphill and it is no longer possible to move on with the force of the tracks alone.

☞ Do not use any auxiliary means to move the machine otherwise it can tip over.

☞ *Always move straight ahead when performing uphill or downhill machine travel. Performing machine travel diagonally or at an angle to the slope is very hazardous.*

☞ *Avoid changing direction on slopes or driving across a slope.*

☞ *Perform machine travel slowly in meadows, on leaves or wet steel plates. The machine can slip even if the ground is level. If the engine stops as you drive across a slope, immediately put the control levers to neutral position and start the engine again.*

Machine travel on slopes

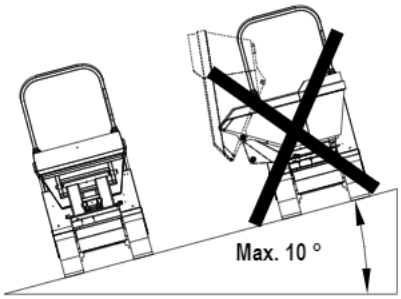


Fig. 45: Driving across slopes

The dumper may be driven on firm ground across a slope of up to 10°.

Danger!

Do not exceed the maximum slope.

Accident hazard!

- ☞ *The angle must be smaller in the case of soft and uneven ground!*
- ☞ *Do not actuate the skip as you drive on slopes*
- ☞ *Always tilt in the skip before driving on slopes*
- ☞ *Always reduce your speed as you drive on slopes – see **Drive levers** on page 3-14*
- ☞ *Always move straight ahead when performing uphill or downhill machine travel. Avoid driving diagonally or at an angle.*
- ☞ *Due to the reduced width, proceed with extreme care during machine travel on slopes, and on soft and uneven ground.*
- ☞ *Drive with extreme care on slopes in rain or if the ground is wet or slippery.*

Driving on slopes

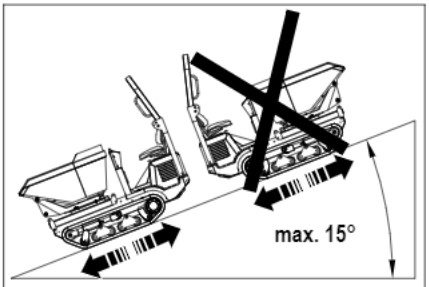


Fig. 46: Machine travel with an empty machine on slopes

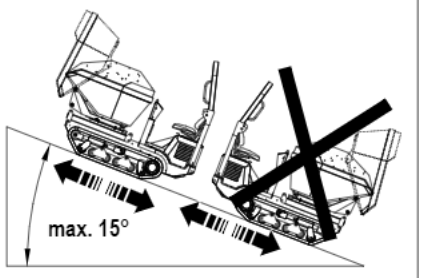


Fig. 46: Machine travel with a load on slopes

Machine travel is allowed on firm ground on a slope of up to 15°.

Danger!

Do not exceed the maximum slope.

Accident hazard!

- ☞ *If the skip is **less** than half full, drive backward uphill or forward downhill.*
- ☞ *If the skip is **more** than half full, drive forward uphill or backward downhill.*
- ☞ *The angle must be smaller in the case of soft and uneven ground!*
- ☞ *Before driving on a slope, lower the skip and do not operate it on the slope!*
- ☞ *Always reduce your speed as you drive on slopes – see **Drive levers** on page 3-14*
- ☞ *Always move straight ahead when performing uphill or downhill machine travel. Avoid driving diagonally or at an angle.*
- ☞ *Due to the reduced width, proceed with extreme care during machine travel on slopes, and on soft and uneven ground.*
- ☞ *Drive with extreme care on slopes in rain or if the ground is wet or slippery.*

Driving on slopes with a high-tip skip

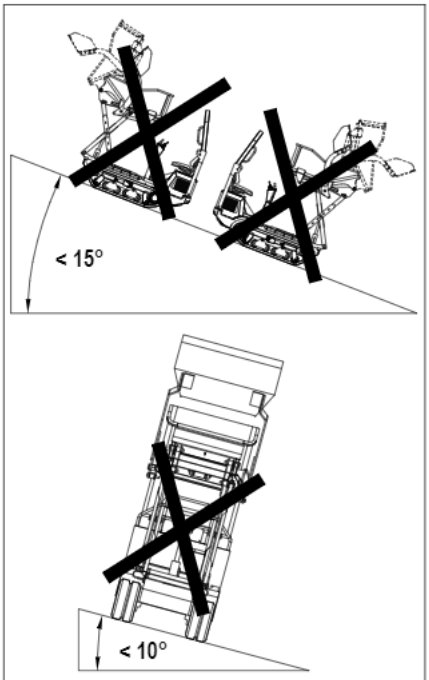


Fig. 47: Driving on slopes with a loaded and unloaded high tip skip

☞ *Do not raise or dump out the skip on slopes, otherwise the machine can tip forwards.*

☞ *Unloading on slopes is not allowed.*

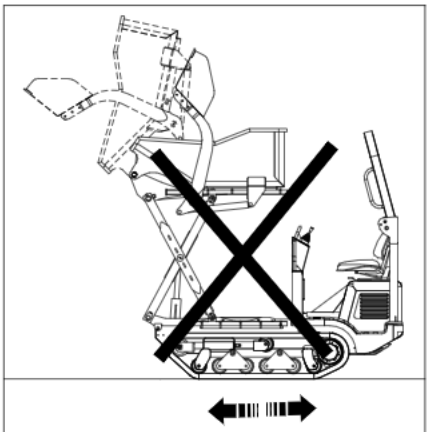


Fig. 48: Driving with a high-tip skip

☞ *Driving with a raised and tilted skip is forbidden.*

☞ Raise and dump out the skip only if the machine is at a standstill.

3.10 Control lever overview

Notice!

The speed of the work equipment can be regulated by swivelling the control lever.

Swivel skip

Danger!

Do not operate the skip during machine travel and operation on slopes, otherwise –

Accident hazard!

☞ *Do not actuate the skip when driving across slopes*

☞ *Do not actuate the skip when driving up or down slopes*

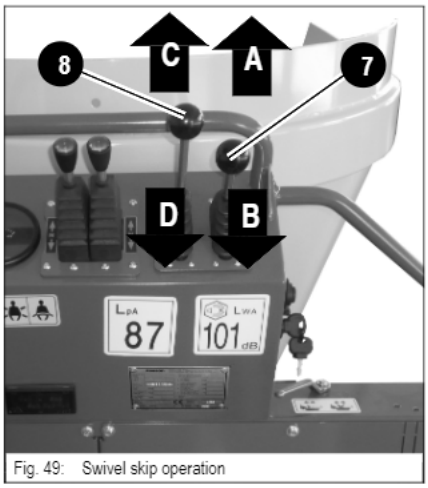


Fig. 49: Swivel skip operation

Position	Function	
• A	**7** Push forwards	Skip is tilted out
• B	**7** Pull backwards	Skip is tilted in
• C	**8** Push forwards	Skip is turned to the left
• D	**8** Pull backwards	Skip is turned to the right

- The skip can be swivelled to the left or right.
- Set the skip to the required position before dumping out the skip.

Normal position of the skip:

- Normal position is the straight-ahead position of the skip.

3-way skip (option)

Caution!

The tilting movement of the skip depends on the installation of the bolts; in order to avoid severe damage to the skip, the follow instructions are to be followed carefully.

☞ *Check the pin and the split pin before dumping the skip in or out*

Notice!

The machine's scope of delivery includes two pins and two split pins.

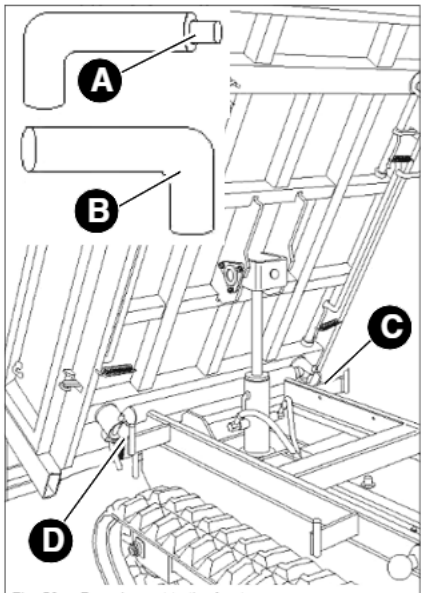


Fig. 50: Dumping out to the front

Dumping out to the front:

☞ *Park the machine on level and horizontal ground*

☞ *Dump the skip fully in*

☞ *Stop the engine*

☞ *Insert pin **A** in guide **C** and secure it with the split pin*

☞ *Insert pin **B** in guide **D** and secure it with the split pin*

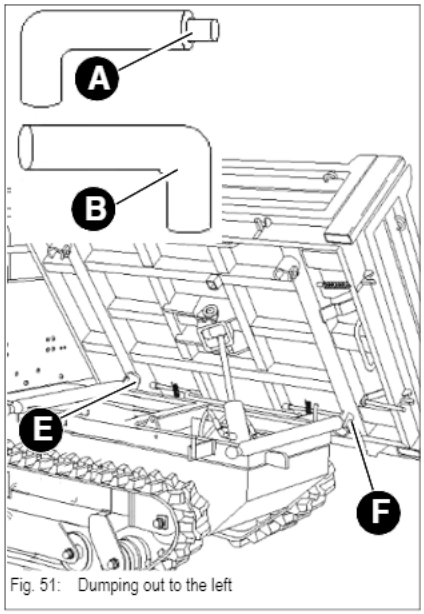


Fig. 51: Dumping out to the left

Dumping out to the left:

☞ *Park the machine on level and horizontal ground*

☞ *Dump the skip fully in*

☞ *Stop the engine*

☞ *Insert pin **A** in guide **E** and secure it with the split pin*

☞ *Insert pin **B** in guide **F** and secure it with the split pin*

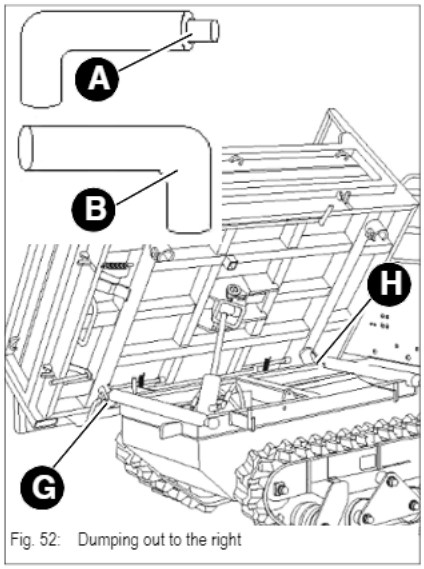


Fig. 52: Dumping out to the right

Dumping out to the right:

☞ *Park the machine on level and horizontal ground*

☞ *Dump the skip fully in*

☞ *Stop the engine*

☞ *Insert pin **A** in guide **G** and secure it with the split pin*

☞ *Insert pin **B** in guide **H** and secure it with the split pin*

Danger!

Attention must always be paid to the side of the skip selected for tilting, since accidental skipping can cause

Severe injuries!

☞ *Check the position of the pins before dumping out the skip.*

Danger!

Do not operate the skip during machine travel and operation on slopes, otherwise –

Accident hazard!

☞ *Do not actuate the skip when driving across slopes*

☞ *Do not actuate the skip when driving up or down slopes*

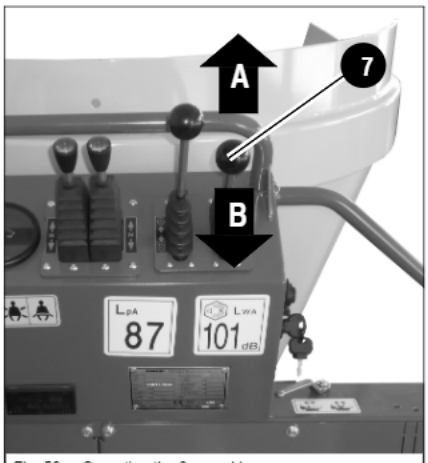


Fig. 53: Operating the 3-way skip

Position	Function	
• A	**7** Push forwards	Skip is tilted out
• B	**7** Pull backwards	Skip is tilted in

- The skip can be dumped in and out continuously, as far as it will go, by means of the control levers.
- The side board opens and closes automatically as you dump the skip in and out.

Skip for earth-moving (optional)

Danger!

Do not operate the skip during machine travel and operation on slopes, otherwise –

Accident hazard!

☞ *Do not actuate the skip when driving across slopes*

☞ *Do not actuate the skip when driving up or down slopes*

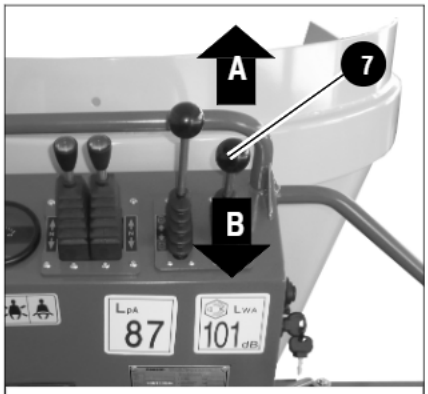


Fig. 54: Actuating the skip for earth-moving

Position	Function	
• A	**7** Push forwards	Skip is tilted out
• B	**7** Pull backwards	Skip is tilted in

- The skip can be dumped in and out continuously, as far as it will go, by means of the control levers.

Notice!

The loader unit also moves as the skip is tilted in and out.

High-tip skip (option)

Danger!

Do not operate the skip during machine travel and operation on slopes, otherwise –

Accident hazard!

☞ *Do not actuate the skip when driving across slopes*

☞ *Do not actuate the skip when driving up or down slopes*

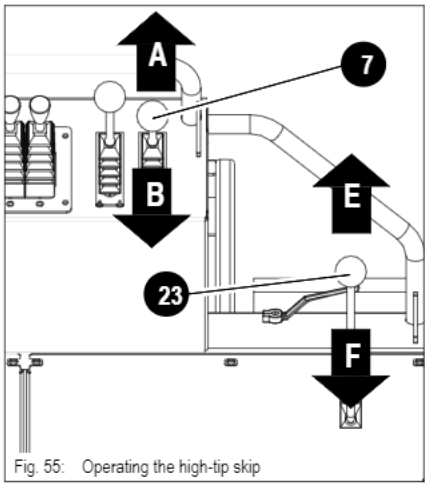


Fig. 55: Operating the high-tip skip

Position	Function	
• A	**7** Push forwards	Skip is tilted out
• B	**7** Pull backwards	Skip is tilted in
• E	**23** Pushed forward	Skip is lowered
• F	**23** Pulled to the rear	Skip is raised

Notice!

The loader unit also moves as the skip is tilted in and out.

Concrete mixer (option)

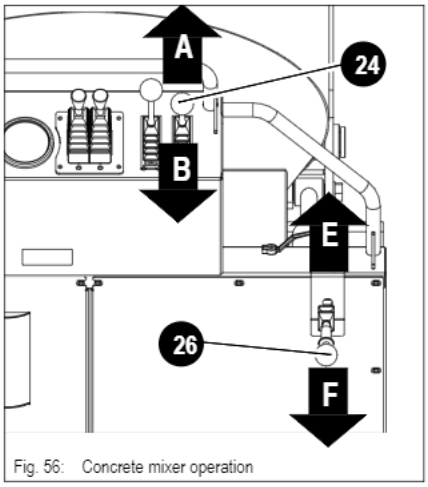


Fig. 56: Concrete mixer operation

Danger!

Dumping out the concrete mixer on slopes is forbidden –

Accident hazard!

☞ *Do not dump out the concrete mixer when driving across slopes*

☞ *Do not dump out the concrete mixer when driving up or down slopes*

Position	Function	
• A	**24** Pushed forward	Concrete mixer is dumped out
• B	**24** Pulled to the rear	Concrete mixer is dumped in
• E	**26** Pushed upward	Concrete mixer is dumped out
• F	**26** Pushed downward	Concrete mixer in mixing operation
• G	**27** Clockwise rotation	Concrete mixer speed is reduced
• H	**27** Counterclockwise rotation	Concrete mixer speed is increased

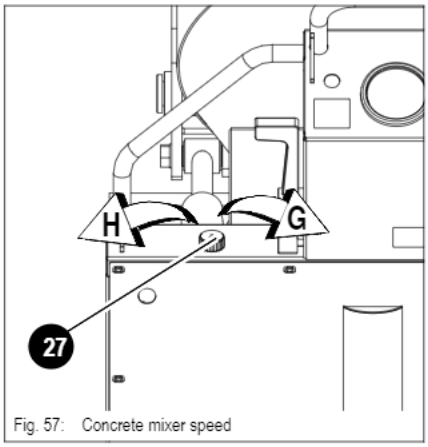


Fig. 57: Concrete mixer speed

- The recommended rotation speed is approx. 20-23 RPM. Excessive speeds lead to poor mixing and slowdown of all other skip movements, in particular the skip of concrete mixer and actuation of the loader unit.

Notice!

The loader unit also moves as the concrete mixer is dumped in and out.

Actuating the loader unit (optional)

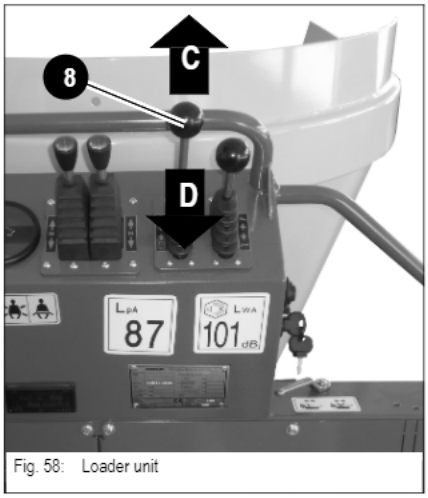


Fig. 58: Loader unit

Position	Function	
• C	**8** Push forwards	The loader system lowers itself
• D	**8** Pull backwards	The loader system raises itself

Notice!

Always keep the loader unit 30 – 40 cm above the ground during machine operation.

Machine shut-down

Danger!

Always park the machine on firm ground.

Accident hazard!

☞ *Lower and tilt in the skip*

☞ *Turn the skip to the centre position*

☞ *select a level ground*

☞ *Fasten the tracks with fastening elements (e. g. chocks)*

☞ *Stopping the machine*

☞ *Reduce engine speed completely*

☞ *Disengage the starter*

☞ *Remove the ignition key*

Caution!

Never shut off the engine under full load, as it can cause damage due to overheating. Except in case of an emergency, always ensure that the engine can cool down before it is stopped.

☞ *Run the engine for at least 5 minutes without load and then turn it off.*

Notice!

Secure the machine against unauthorized operation.

- Remove the key.

Battery master switch

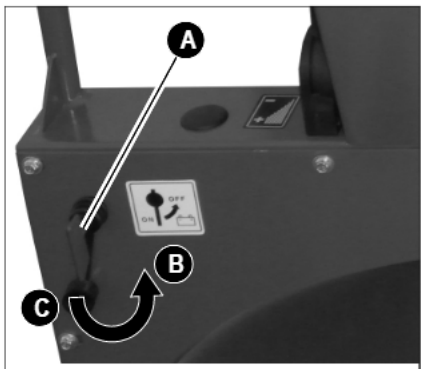


Fig. 59: Battery master switch

Notice!

Do not disconnect the battery while the engine is running!

Notice!

Interrupt the power supply with the key:

- *Before working on the electrical system*
- *As an antitheft precaution*

Interrupting power supply:

☞ *Turn key **A** of the battery master switch to position **B** and remove it*

Establishing power supply:

☞ *Insert key **A** in the battery master switch.*

☞ *Turn the key downwards to the notched position **C***

Parking the machine on slopes

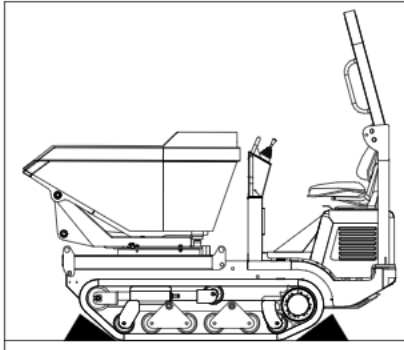


Fig. 60: Parking the machine on slopes

☞ *Avoid stopping the machine abruptly. Always ensure that there is enough space for stopping the machine.*

- Park the machine on level ground with sufficient bearing capacity. Do not park on slopes. If you cannot avoid parking the machine on a slope:
  - ☞ Always park the machine across the slope, and secure it by placing chocks under the tracks.
  - ☞ Before leaving the seat, apply the parking brake and always remove the ignition key.

☞ *Lower and dump in the skip.*

☞ *Turn the skip to the centre position.*

Seat adjustment

Danger!

Never change the seat position during machine travel or operation
– see ***Before starting the engine*** on page 3-10

Accident hazard!

☞ *Adjust the operator seat before starting machine travel*

Weight adjustment

Notice!

Adjust the seat suspension correctly to ensure a high level of ride comfort. The seat spring can be adjusted by turning the knob **16**.
The weight indicator shows the weight adjusted (kg).

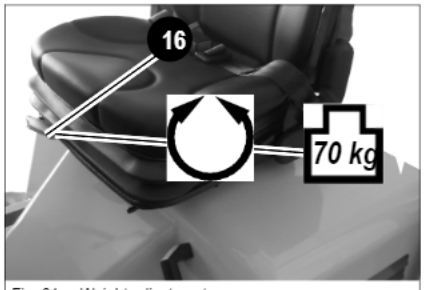


Fig. 61: Weight adjustment

☞ *Sit down on the operator seat*

Adjusting the weight of the biggest driver:

☞ *Turn lever **16** to the left*

Adjusting the weight of the smallest driver:

☞ *Turn lever **16** to the right.*

Horizontal adjustment

Fig. 62: Horizontal seat adjustment

☞ *Sit down on the operator seat*

☞ *Pull the lever **17** leftwards and at the same time*

☞ *Moving the seat forward or backward*

Backrest adjustment

Fig. 63: Backrest adjustment

☞ *Sit down on the operator seat.*

☞ *Pull the lever **15** backwards and at the same time*

☞ *Lean back to push the backrest into the required position*

☞ *Let the lever **15** lock into place.*

Seat belt

Danger!

Always fasten your seat belt when driving the machine and/or carrying out work. Otherwise there is

Injury hazard

☞ *Buckle up before starting machine travel or operation!*

- Seat belt must not be twisted.
- Seat belt must run over the hips – not over the stomach – and must always be applied tightly!
- Do not place the seat belt over hard, edged or fragile items (tools, rulers, glasses, pen) carried inside your clothes!
- Never buckle up 2 persons (children!) with one seat belt!
- Regularly check the condition of the seat belt. Damaged parts must be replaced immediately by a specialist workshop!
- Always keep the seat belt clean, as coarse dirt can impair proper functioning!
- Seat belt buckle must not be obstructed by foreign bodies (paper or similar); otherwise the buckle latch cannot lock into place!

After an accident the belt strap is stretched and no longer serviceable. In the event of an accident, the seat belt

Will not provide appropriate protection!

☞ *Replace the seat belt after an accident*

☞ *Have fastening points and seat fixture checked for bearing capacity!*

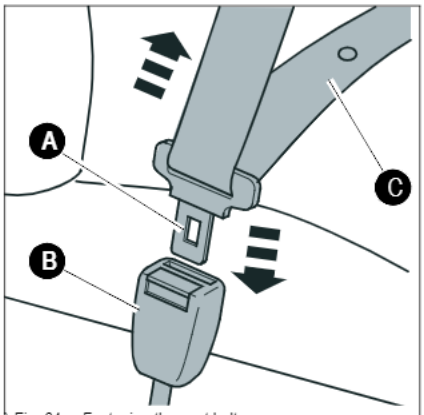


Fig. 64: Fastening the seat belt

Seat belt **C** is for the operator's safety during work on construction sites and during road travel.

Fastening the seat belt:

☞ *Fasten seat belt **C** as follows before moving the machine:*

- Hold the belt at buckle latch **A** and run it slowly and steadily over the hips to buckle **B**
- Insert the buckle latch **A** into buckle **B** and press with an audible click **(pull test)**.
- Tighten the seat belt by pulling at its end.

  ➥The seat belt must always be tightly in place over the hips!

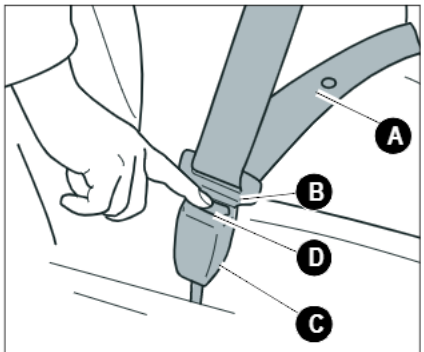


Fig. 65: Unfastening the seat belt

Unfastening the seat belt

☞ *Unfasten seat belt **A** as follows:*

- Hold the seat belt
- Press red button **D** on the buckle **C**.

  ➥the latch **B** is released from buckle **B** by spring pressure

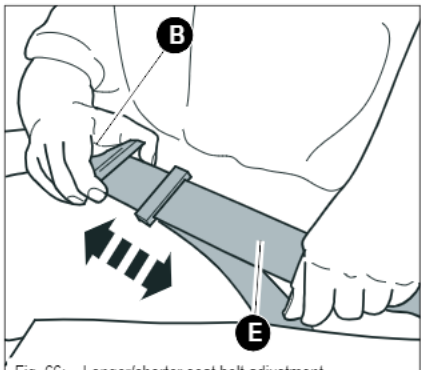


Fig. 66: Longer/shorter seat belt adjustment

Longer/shorter seat belt adjustment:

☞ *Lengthen the seat belt as follows:*

- Hold the buckle latch **B** at a right angle to the seat belt and pull the seat belt to the required length
- To shorten the seat belt, just pull the free end **E** of the belt

Engine cover

Fig. 67: Engine cover lock

Opening:

☞ *Stop the machine*

☞ *Stop the engine and let it cool down*

☞ *Remove the retaining pin **A***

☞ *Press the button on lock **B***

☞ *Raise the engine cover with handle **C***

Closing:

☞ *Firmly press down the engine cover until it engages*

☞ *Insert safety pin **A** back in again*

Locking and unlocking:

The hood can be closed with a lock on the button **B**

Notice!

Always close engine cover and insert the safety pin with the engine running!

ROPS rollbar

Fig. 68: ROPS bar

For transport, the upper part of the bracket **A** can be lowered to reduce the design size.

Danger!

The rollbar is very heavy, folding it up or down is very

Dangerous!

☞ *Get a second person to help*

☞ *Proceed with care when lowering and raising the rollbar*

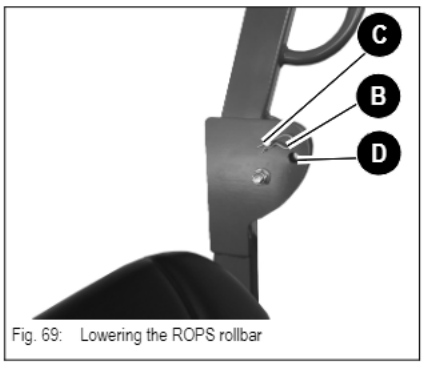


Fig. 69: Lowering the ROPS rollbar

Folding the ROPS bar down:

☞ *Park the vehicle on level ground*

☞ *Stop the engine*

☞ *Remove the two spring pins **B** and the two bolts **C***

☞ *Hold the upper part of rollbar **A** and turn it to the front of the machine*

☞ *Insert both pins **C** back in openings **D** again to block the rollbar in the lowered position*

☞ *Insert the two spring pins **B** again in the two bolts **C***

Danger!

Using the machine with a lowered shackle is only allowed for transport or when traveling in surroundings with limited height. Under normal working conditions, the shackle must always be locked in the raised position, otherwise there is:

Accident hazard!

Caution!

For safety reasons, the operation of the machine with a lowered shackle ROPS not allowed!

Fig. 70: ROPS rollbar in lowered position

Towing the caterpillar skip

Caution!

Due to its design, the track dumper cannot be towed away

☞ *Retrieve the dumper only with a suitable crane*

☞ *The track dumper can be pulled out of the immediate danger zone by means of the eye hooks only.*

Load the vehicle with crane

Safety instructions

- The crane and the lifting gear must have suitable dimensions
- Crane-lifting the machine requires suitable lifting gear
- Secure the machine against unintentional movement!

Danger!

Incorrect crane-lifting of the machine –

Accident hazard!

☞ *Ensure that no one is in the machine!*

☞ *Have loads fastened and crane operators guided by experienced persons only! The person guiding the crane operator must be within sight or sound of him.*

☞ *Ensure that the crane and the lifting gear (cables, chains) have sufficient lifting capacity!*

☞ *Raise the machine only if the standard bucket is empty*

☞ *Stay clear of suspended loads!*

☞ *It is essential that you read the safety instructions at the beginning of this chapter and follow any other safety instructions relevant in your country!*

☞ *The prescribed lengths L1 and L2 of the lifting gear must be observed*

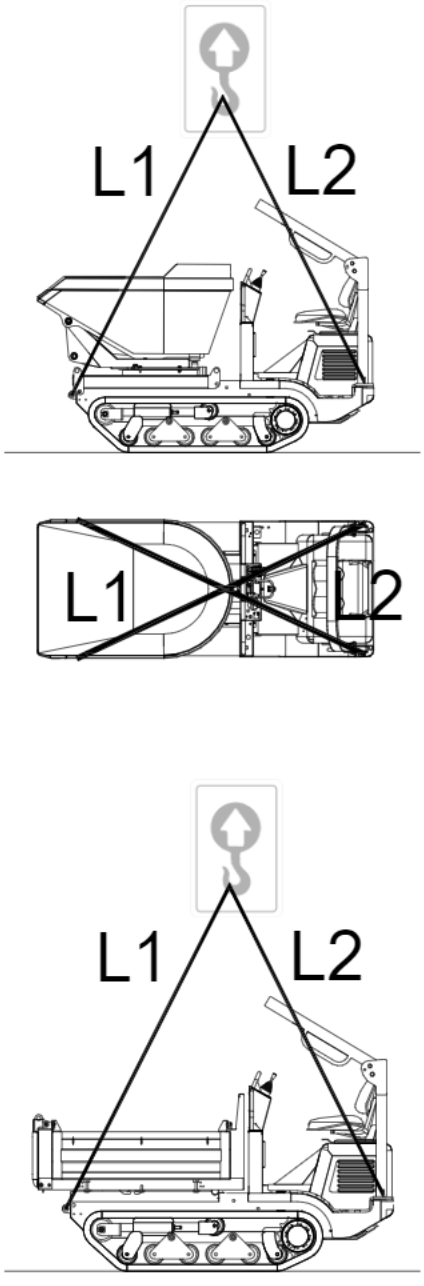


Fig. 71: Crane-lifting

☞ *Load the machine as follows:*

- Empty the skip
- Dump in and lower the skip
- Turn to centre position
- Stop the engine
- Remove the ignition key.
- Adjust the rollbar
- Use suitable lifting gear, chains, etc.
- Protect parts of the machine touching cables or chains

☞ Mount the lifting gear at the four points provided for lifting the machine

☞ Make sure the lifting gear has the required lengths L1 and L2

- Slowly raise the vehicle and check that the tracks remain parallel to the ground
- L1= or greater than 3000 mm load (perpendicular) min. 1500 kg
- L2= or greater than 3000 mm load (perpendicular) min. 1500 kg

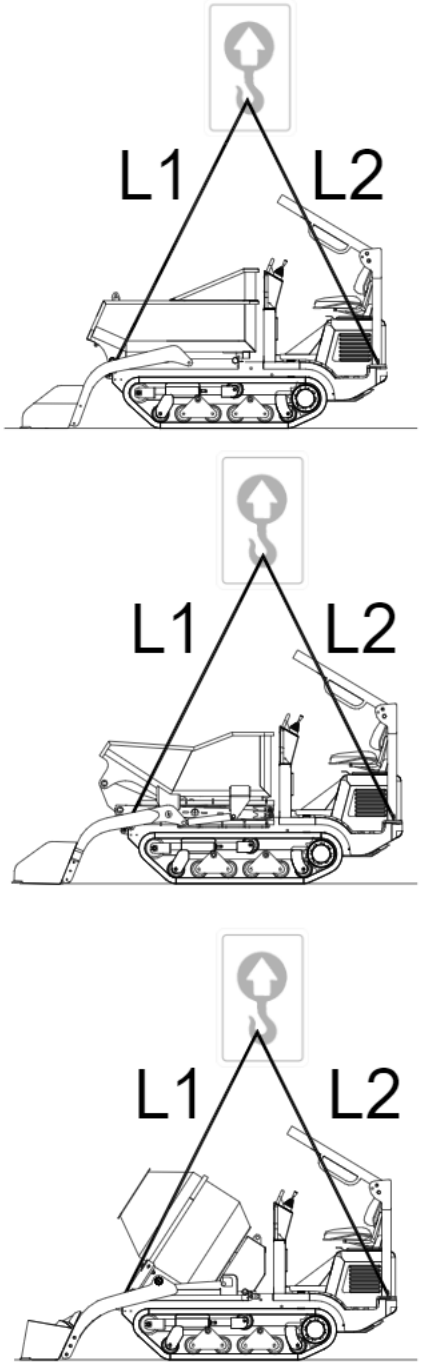


Fig. 72: Crane-lifting

Loading and transporting the machine

Safety instructions

- The means of transport must have suitable dimensions. Refer to *Chapter* ***6 "Technical data"*** for the dimensions and weights of the means of transport!
- Remove any mud, snow or ice from the tracks so that the machine can be safely driven onto the ramps
- Secure the machine against unintentional movement
  – *see* ***Machine shut-down*** on page 3-24!

Danger!

The machine must be loaded and transported properly –

Accident hazard!

☞ *It is essential that you read the safety instructions at the beginning of this chapter and follow any other safety instructions relevant in your country!*

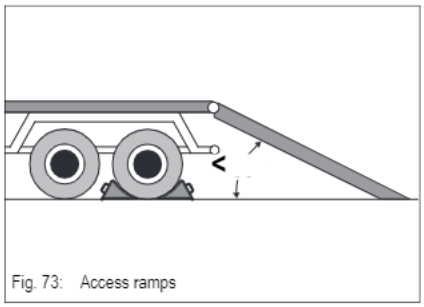


Fig. 73: Access ramps

☞ *Load as follows:*

- Secure the transportation vehicle with chocks to prevent it from rolling
- Place the access ramps at the smallest possible angle. Ensure that the grade does not exceed 15° (27 %). Use access ramps with an anti-skid surface only.
- Ensure that the loading area is clear and access to it is not obstructed – for example by superstructures
- Ensure that the ramps and the tracks of the dumper are free of oil, grease and ice
- Start the engine of the dumper
- Lower the skip of the dumper
- Carefully drive the dumper onto the middle of the transport vehicle
- Stop the engine
- Remove the ignition key.

Notice!

The manufacturer's warranty shall not apply to accidents or damage caused by loading or transporting.

Tying down the machine

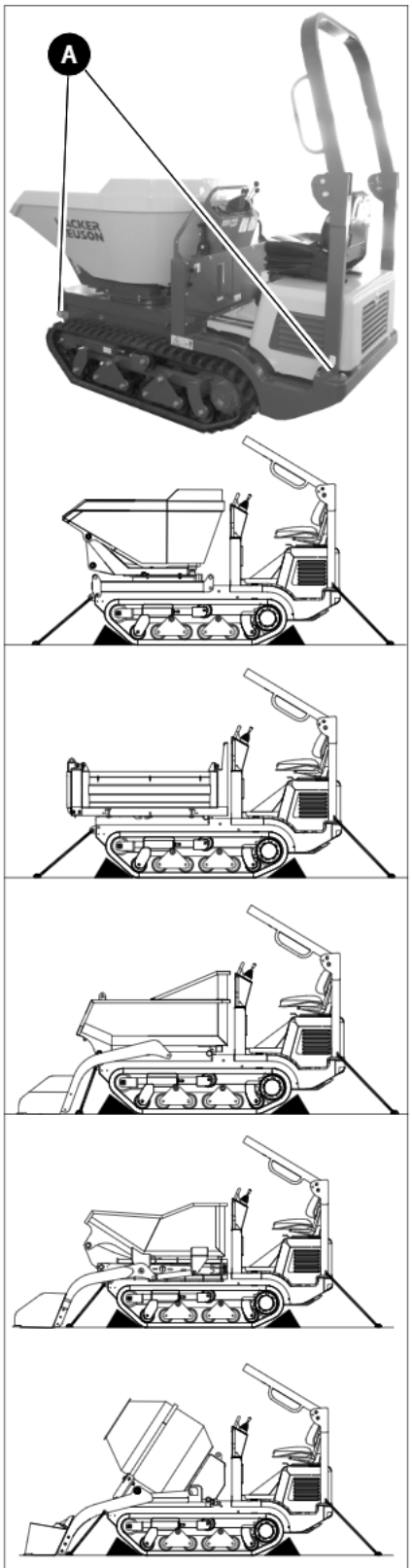


Fig. 74: Tying down the machine

Danger!

The machine must be loaded and transported properly –

Accident hazard!

☞ *It is essential that you read the safety instructions at the beginning of this chapter and follow any other safety instructions relevant in your country!*

- Ensure that the authorized maximum height is not exceeded
- Secure the tracks of the dumper at the front, rear and on the sides.
- Lower tipping trailer
- The loader unit, if present, must be lowered to the cargo area of the transport vehicle
- Adjust the rollbar
- Firmly tie down the dumper at the eye hooks **A** onto the platform, with belts or chains of adequate size
- Cover the control stand with a suitable protective sheet before transporting the machine through heavy rain.
- Ensure that the operator of the transport vehicle knows the overall height, overall width and overall weight of the vehicle (including the dumper) as well as the applicable statutory provisions for this type of transport in the country in which the transport is occurring before driving!

3.11 Machine operation

General safety instructions

- Never drive up to the edge of a pit from outside – risk of cave-in!
- Do not operate the machine under projecting earth. Stones or the projecting earth can fall onto the machine.
- When working on roofs of buildings or other structures, these are to be checked for stability before starting work; The building can collapse, causing serious injury and damage.
- Do not position the machine directly underneath the workplace during demolition, otherwise demolished parts can fall onto the machine or the building can collapse, causing serious injury or damage.
- Operation of the machine by unauthorized personnel is prohibited!
- The hydraulic system of the machine is still pressurized even when the engine is not running! Release the pressure in the sections of the system and hydraulic lines which are to be opened before starting setup or repair work, e.g. fitting/removing an attachment with hydraulic functions.
- Before tilting out the skip next to an excavation, secure the machine with suitable wheel chocks or other auxiliary means.
- Always watch the material as you tilt out the skip: ensure that the material is dumped out evenly and does not remain stuck in the skip, otherwise the machine could tip over.
- Do not dump the load when working on sloping ground.
- Transporting persons or animals in the skip is prohibited.
- Driving with a raised, tilted, dumped or turned skip is forbidden!
  - No grading or levelling with the skip dumped out!
- Always perform precise and smooth control movements, do not perform abrupt movements.
- Do not get off the machine when it is moving.
- Avoid hazardous work conditions on the job site, do not work in severe weather and ensure that no one is at risk.
- Always fasten your seat belt.

Working with the loader unit

The following section describes work operations with the machine equipped with the loader unit. The loader unit is mainly used for earth-moving applications, and for loosening, picking up and loading loose material.

Transporting with a full bucket

Caution!

No transport of material: the loader unit is designed for loading loose material only.

☞ *Loading loose material is described below*

☞ *Only load material with the skip tilted in*

Loading loose material

Caution!

Do not perform any steering movements once the bucket has penetrated the material.
Lower the loader unit only when the machine is at a standstill and if there is enough room to the front.
The loader unit is not designed for loading compacted material (hard to penetrate), serious loader unit damage can occur.

☞ *Only load loose material*

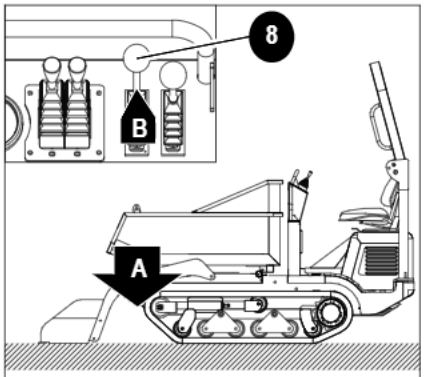


Fig. 75: Horizontal lowering of the loader unit

☞ *Lower the loader unit to the ground* ***A***

☞ Slide the control lever **8 B** forward

Caution!

Do not perform any steering movements once the bucket has penetrated the material.

Caution!

Load the machine only on firm and level ground!

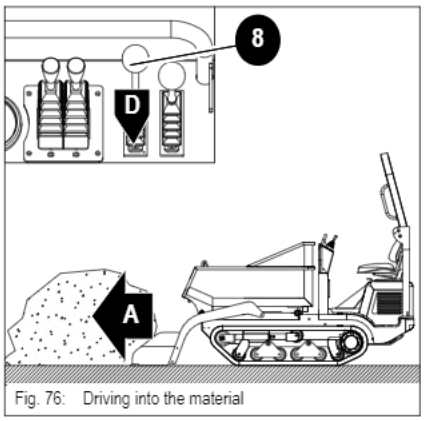


Fig. 76: Driving into the material

☞ *Drive forward into the material* ***A***

If the engine speed decreases due to too much material:

☞ *Raise the loader unit a little*

☞ Move the control lever **8 D** backwards

Notice!

If the loader unit cannot be raised in the material

- Reduce the load on the loader unit by reversing

Ending loading

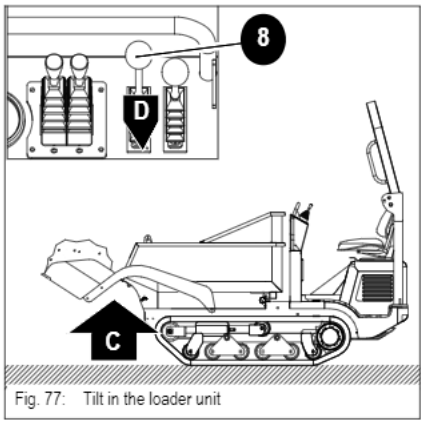


Fig. 77: Tilt in the loader unit

☞ *Set the loader unit to position* ***C***

☞ Move the control lever **8 D** backwards

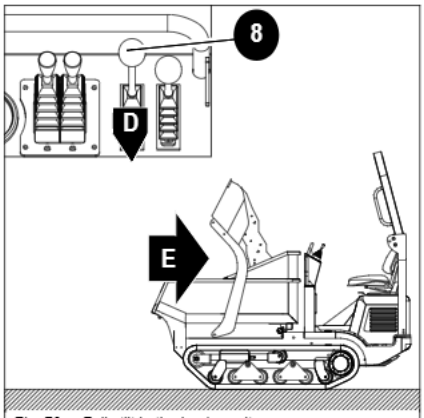


Fig. 78: Fully tilt in the loader unit

☞ *Tilt in the loader unit fully **E***

☞ Move the control lever **8 D** backwards

Notice!

Perform slow movements of the loader unit. This distributes the material evenly in the skip.

Transporting with a full skip

Danger!

Careful when driving in rough terrain with a full skip –

Accident hazard!

Pay particular attention to this when turning or performing machine travel on slopes. To avoid accidents:

☞ *Always drive in low speed when transporting loads*

☞ *Fully tilt in the skip*

☞ *Bear in mind the tilting limit during machine travel and operation on slopes*

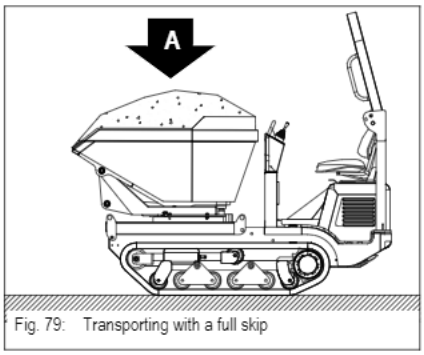


Fig. 79: Transporting with a full skip

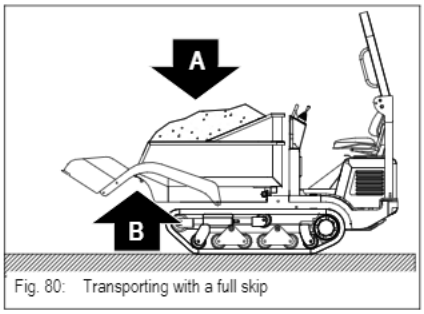


Fig. 80: Transporting with a full skip

☞ *Fully tilt in the skip **A***

☞ *Lower the loader unit (option) to transport position **B***

☞ *Always reverse up a slope at low speed with a full skip*

Tilt out the skip

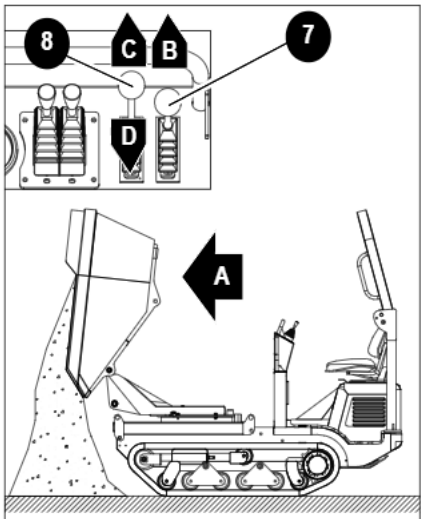


Fig. 81: Tilt out the skip

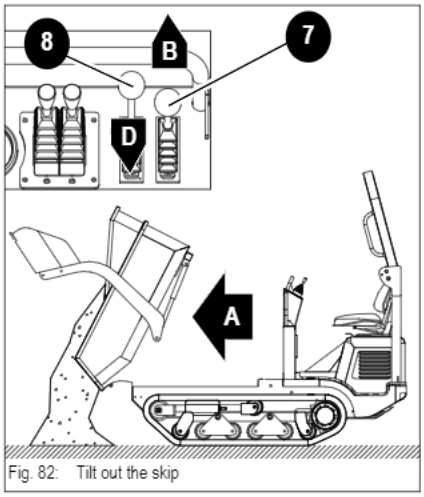


Fig. 82: Tilt out the skip

Danger!

Tilting out the skip alongside a pit is dangerous –

Accident hazard!

☞ *Ensure sufficient stability*

☞ *Do not drive too closely to the pit*

☞ Secure the machine with chocks if necessary

☞ *Slowly tilt out the skip*

☞ *Always watch the material as you tilt out the skip: ensure that the material is dumped out evenly and does not remain stuck in the skip, otherwise the machine could tip over*

☞ *Park the vehicle on level and horizontal ground*

☞ *Tilt out the skip **A***

☞ Push control lever ***7 B*** forward

- In addition, the skip can be swivelled to the left or right. To do this:

☞ *Push control lever **8 C** forward*

➥ Skip is turned to the left

☞ *Move the control lever **8 D** backwards*

➥ Skip is turned to the right

- If the dumper is equipped with loader unit (option):

☞ *Move the control lever **8 D** backwards*

➥ Raise the loader unit

Caution!

As you tilt out the skip, ensure that the loader unit does not touch the ground or the material transported in the skip, otherwise the loader unit can be damaged.

☞ *Always select the optimal position for the loader unit*

Empty the high tip skip (optional)

Danger!

Careful when handling the high-tip skip –

Accident hazard!

☞ *Do not raise or dump out the skip when driving*

☞ *Do not raise or dump out the skip on slopes or in an inclined position*

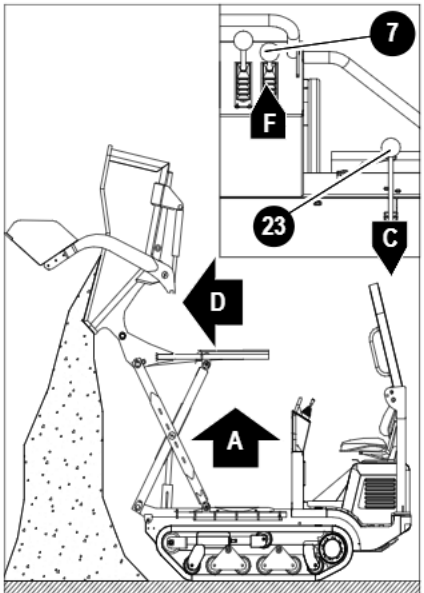


Fig. 83: Empty the high tip skip (optional)

☞ *Park the vehicle on level and horizontal ground*

☞ *Dump out skip **A** upwards*

☞ Pull the control lever ***23 C*** backwards

➥ Skip is raised

☞ *Dump out skip **D***

☞ Push control lever ***7 F*** forward

➥ Skip dumps out

Loading the machine

Danger!

Always stay clear of the machine under all circumstances when loading it with an excavator or other machines –

Injury hazard

The control stand is not protected by a cab.

☞ *Secure the machine sufficiently*

☞ *Stay clear of the control stand and the danger zone*

Caution!

Incorrect loading causes serious damage to the machine.

☞ *Ensure that the load is loaded correctly, safely and that it is not excessively high, to ensure good visibility*

☞ *Do not exceed the machine's rated output by overloading*

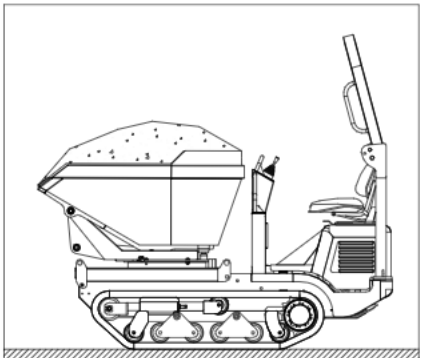


Fig. 84: Loading the machine

- Before loading:

☞ *Dump the skip fully in*

☞ *Stop the engine*

☞ *Secure the machine sufficiently*

☞ *Applying the parking brake*

☞ *Stay clear of the control stand and the danger zone*

- Once loading is over:

☞ *Remove dirt, debris, dust, etc. from the control elements*

☞ *Secure the load sufficiently*

☞ *Starts the engine*

☞ *Release the parking brake*

☞ *Start machine travel slowly!*

Freeing the machine

If the vehicle gets stuck in the ground:

☞ *Dump out the skip completely*

☞ *Dump the empty skip fully in*

☞ *Reverse slowly until the tracks reach firm ground*

Concrete mixer (option)

The dumper equipped with the mixer may only be used for making concrete. Inert materials and concrete can be filled directly with the loader unit (option) or through suitable bunkers and silos for loading.

Loading

Caution!

In order to obtain the correct ratio, cement, water and additives must be directly filled from the tank.

Caution!

Do not perform any steering movements once the bucket has penetrated the material.
Lower the loader unit only when the machine is at a standstill and if there is enough room to the front.
The loader unit is not designed for loading compacted material (hard to penetrate), serious loader unit damage can occur.

☞ *Only load loose material*

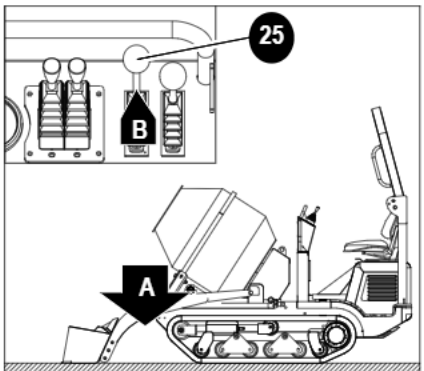


Fig. 85: Horizontal lowering of the loader unit

☞ *Lower the loader unit to the ground* ***A***

☞ Slide the control lever **25 B** forward

Caution!

Do not perform any steering movements once the bucket has penetrated the material.

Caution!

Load the machine only on firm and level ground!

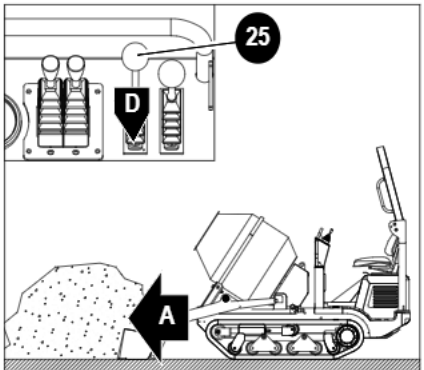


Fig. 86: Driving into the material

☞ *Drive forward into the material* ***A***

If the engine speed decreases due to too much material:

☞ *Raise the loader unit a little*

☞ Move the control lever **25 D** backwards

Notice!

If the loader unit cannot be raised in the material

- Reduce the load on the loader unit by reversing

Ending loading

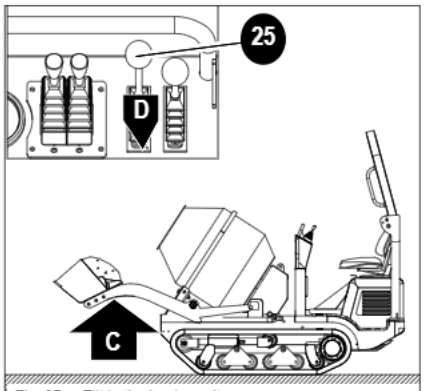


Fig. 87: Tilt in the loader unit

☞ *Set the loader unit to position **C***

☞ Move the control lever **25 D** backwards

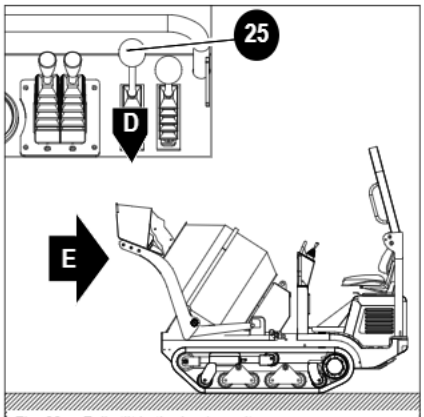


Fig. 88: Fully tilt in the loader unit

☞ *Tilt in the loader unit fully **E***

☞ Move the control lever **25 D** backwards

Notice!

Carry out the loader unit movements slowly.

Mixture

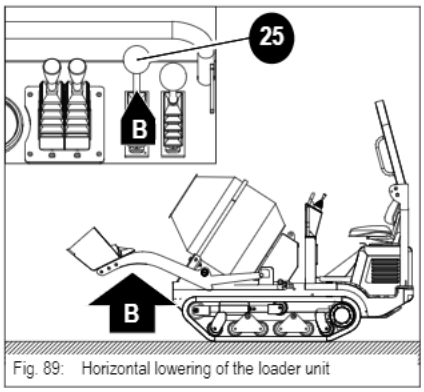


Fig. 89: Horizontal lowering of the loader unit

☞ *Lower the loader unit (option) to transport position **B***

☞ Slide the control lever **25 B** forward

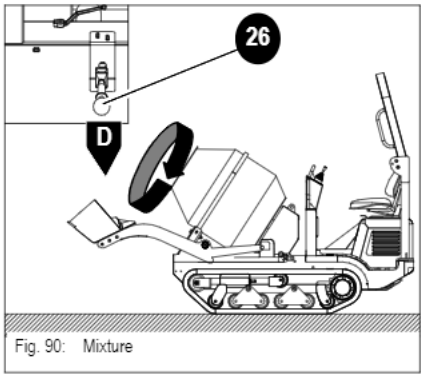


Fig. 90: Mixture

☞ *Operate the concrete mixer*

☞ Push the control lever **26** D downwards

Notice!

The lever can be blocked in the mixture position. To release, lock the slide switch on the lever.

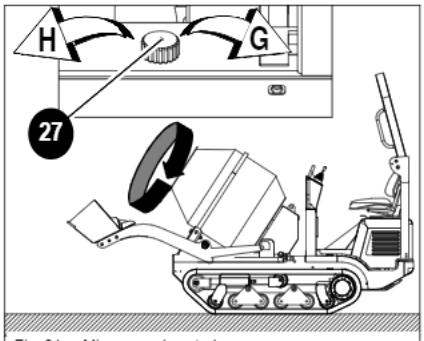


Fig. 91: Mixer speed control

☞ *Regulate concrete mixer speed*

☞ Turn selector **27** G

➥ Concrete mixer speed is reduced

☞ Turn selector **27** H

➥ Concrete mixer speed is increased

Notice!

The recommended speed is about 20 – 23 rpm. Too high speed results in a poor mix and slows down all other dumper movements, in particular the dump-out movement of the concrete mixer and loader unit operation.

Exhaust

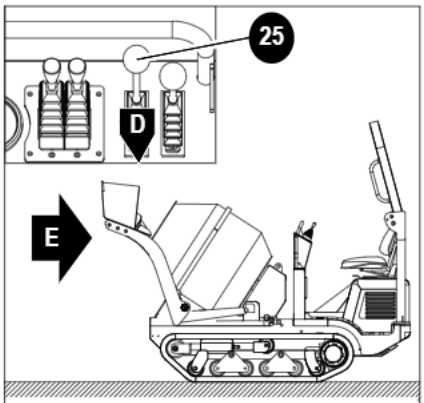


Fig. 92: Loader unit in unloading position

☞ *Move to the unloading area*

☞ *Park the vehicle on level and horizontal ground*

☞ *Move the loader unit (option) to the unloading position **E***

☞ Move the control lever **25 D** backwards

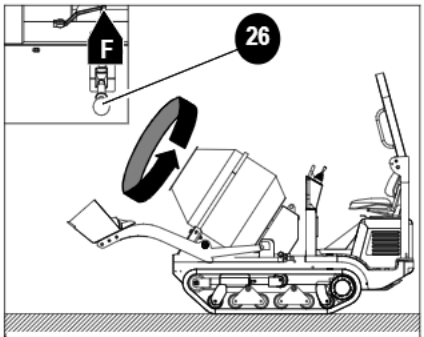


Fig. 93: Unloading the concrete mixer

☞ *Operate the concrete mixer to unload it*

☞ Move the control lever **26 F** upwards

Notice!

The lever can be locked in the unloading position. To release, lock the slide switch on the lever.

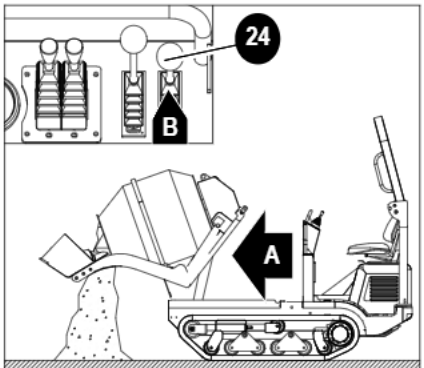


Fig. 94: Emptying the concrete mixer

☞ *Dump out concrete mixer **A***

☞ Slide the control lever **24 B** forward

Notice!

Dump out very slowly and step by step to avoid the dumper losing it balance dangerously. Rotation speed must be slow to avoid too much accumulation of concrete in the mixer which could also cause the dumper to lose its balance.

Hydraulic PTO shaft (HPTO) (Opt.)

The dumper can be equipped with a hydraulic PTO shaft (H.P.T.O.). (Opt.) For connecting single-acting hydraulic equipment such as a hydraulic manual demolition hammer.

The hydraulic PTO shaft has an operating pressure of 170 bar and an output of 20 l/min.

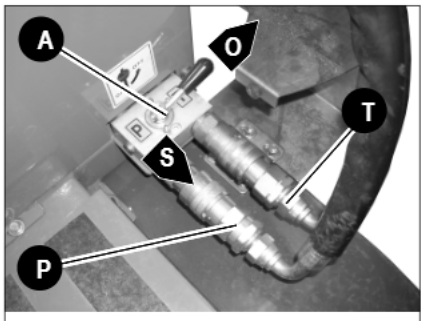


Fig. 95: Hydraulic PTO shaft (HPTO)

☞ *Stop the engine*

☞ *Check whether the control lever for releasing PTO shaft **A** is in position **O***

➥ The PTO shaft is switched off

☞ *Connect the quickcouplers of the equipment to the corresponding connections **P** (input) and **T** (output) of the PTO shaft of the machine.*

☞ *Connect PTO shaft; To do this: move control lever **A** to position **S***

☞ *Regulate the throttle of the dumper until reaching the output required for correct operation of the work equipment*

Caution!

Release the hydraulic PTO shaft only with the quickcouplers used for the work equipment. Switching on the PTO shaft with no work equipment connected can be the cause of starting failure or output loss of the dumper, or of oil overheating in the hydraulic system

4 Malfunctions

The information given in this chapter is provided for maintenance personnel, for fast and reliable detection of malfunctions and their appropriate repair.

Repairs must only be performed by authorized personnel.

4.1 Engine trouble

Problem	Possible causes	See
Engine does not start or is not easy to start	Wrong SAE class / grade of engine lubrication oil	5-36
	Fuel grade does not comply with specifications	5-36
	Malfunctioning or empty battery	5-31
	Loose or oxidized cable connections in starter circuit	
	Malfunctioning starter, or pinion does not engage	
	Wrong valve clearance	
	Malfunctioning fuel injector	
Engine starts, but does not run smoothly or faultless	Fuel grade does not comply with specifications	5-36
	Wrong valve clearance	
	Injection line leaks	
	Malfunctioning fuel injector	
Engine overheats. Temperature warning system responds	Oil level too low	5-11
	Oil level too high	5-10
	Dirty air filter	5-17
	Dirty oil radiator fins	
	Malfunctioning fuel injector	
Insufficient engine power	Oil level too high	5-10
	Fuel grade does not comply with specifications	5-36
	Dirty air filter	5-17
	Wrong valve clearance	
	Injection line leaks	
	Malfunctioning fuel injector	
Engine does not run on all cylinders	Injection line leaks	
	Malfunctioning fuel injector	
Insufficient or no engine oil pressure	Oil level too low	5-11
	Excessive machine inclination (max. 15°)	
	Wrong SAE class / grade of engine lubrication oil	5-36
Engine oil consumption too high	Oil level too high	5-10
	Excessive machine inclination (max. 15°)	

Problem		Possible causes	See
Engine smoke	Blue	Oil level too high	5-10
		Excessive machine inclination (max. 15°)	
	White	Engine starting temperature too low	
		Fuel grade does not comply with specifications	5-36
		Wrong valve clearance	
		Malfunctioning fuel injector	
	Black	Dirty air filter	5-17
		Wrong valve clearance	
		Malfunctioning fuel injector	

5 Maintenance

5.1 Introduction

The working order and the service life of vehicles are heavily dependent on maintenance.

It is therefore in the interest of the machine owner to perform the mandatory maintenance.

Before performing servicing and maintenance, always read, understand, and follow the instructions given in:

- *Chapter 2 "Safety instructions"* of this Operator's Manual and
- the provisions in the Operator's Manual of the attachments.

Perform the prescribed inspections and rectify any disorders before putting the machine into operation.

Secure open (engine) covers appropriately. Do not open (engine) covers on slopes or in strong wind.

Dirt can be blown away and cause serious injury when using compressed air. Always wear safety glasses, protective masks and clothing.

Daily and weekly service and maintenance work must be performed by a specifically trained operator in accordance with the maintenance plan **"A"**; all additional maintenance work may only be performed by technically trained and qualified personnel.

The maintenance plans indicate when the maintenance mentioned below must be performed (– *see Maintenance plan (overview)* on page 5-38).

Maintenance prop

Danger!

Careful when performing maintenance on or under the skip, and in general when performing maintenance with the skip tilted out –

Accident hazard!

☞ *Use the maintenance prop*

Proceed as follows to attach the maintenance prop:

☞ *Remove the maintenance prop **A** from the transport bracket*

☞ The maintenance prop is fastened with lock pins **C** and pins **D**

☞ *Insert the maintenance prop **A** on the tipping cylinder **B***

☞ *Secure maintenance prop **A** with lock pins **C** and pins **D***

During transport fit maintenance point **A** in the seat as shown in *Fig. 96.*

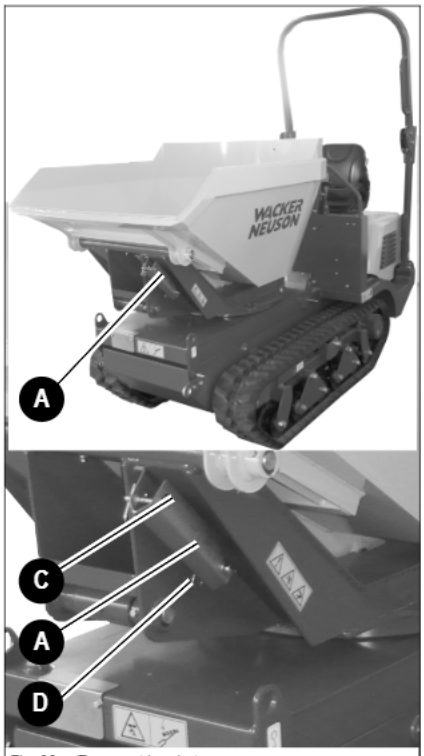


Fig. 96: Transport bracket

Fig. 96: Maintenance strut

Maintenance support for high-tip skip (from Series FA02117)

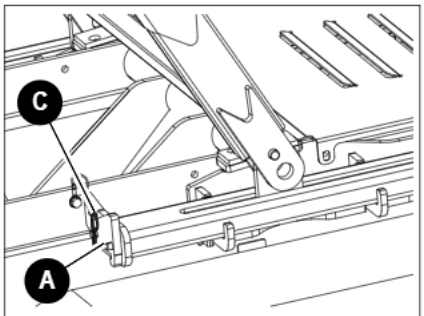


Fig. 97: Transport bracket

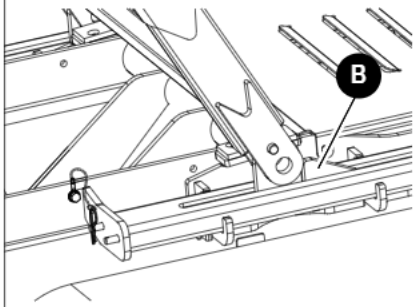


Fig. 97: Maintenance support

Danger!

Careful when performing maintenance on or under the skip, and in general when performing maintenance with the skip tilted out –

Accident hazard!

☞ *Use the maintenance prop*

To lock the lifting equipment of the skip, attach the maintenance support as follows:

☞ *Raise the skip completely*

☞ *Remove the maintenance prop **A** from the transport bracket*

☞ Fix the support with the cotter pin ***C***.

☞ *Fix the maintenance support **A** in the guide of the lifting device of the skip **B**.*

During transport fit maintenance strut ***A*** as depicted in *Fig. 97*.

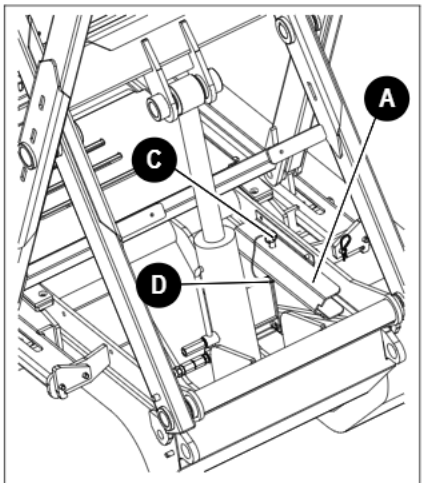


Fig. 98: Transport bracket

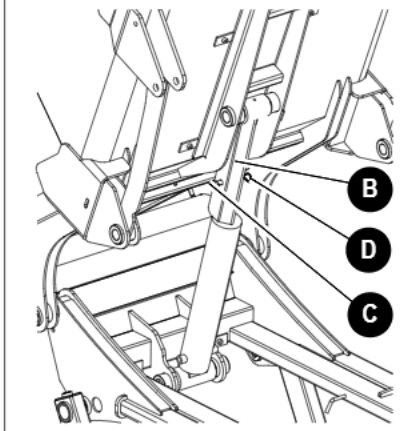


Fig. 98: Maintenance support

Proceed as follows to attach the maintenance prop:

☞ *Remove the maintenance prop **A** from the transport bracket*

☞ The maintenance prop is fastened with lock pin **C** and pin **D**

☞ *Insert the maintenance prop **A** on the tipping cylinder **B***

☞ *Secure maintenance prop **A** with lock pins **C** and pins **D***

➥ During transport fit maintenance point **A** in the seat as shown in *Fig. 98*.

5.2 Changing work equipment

When replacing the attached work equipment (swiveling skip, skip for earth-moving, concrete mixers, etc.) proceed as follows:

Removal

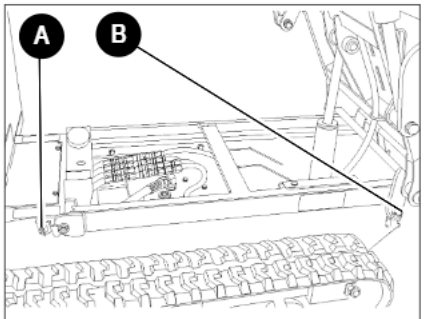


Fig. 99: Changing work equipment

☞ *Place the dumper on a level surface*

☞ *Stop the engine*

☞ *Remove both lock pins **A** and **B***

☞ *Raise the work equipment with the help of the provided connectors until the quick connectors of the control lines can no longer be separated from the actuating cylinders.*

☞ *Set down the work equipment in a suitable and protected area.*

Danger!

During the raising process, lingering in the danger area of the vehicle is prohibited; this is imminent:

Accident hazard!

☞ *Ensure that no one is in the danger zone of the dumper.*

☞ *For the weight of the work equipment – see chapter 6 Technical data on page 6-1*

Assembly

☞ *Bring the work equipment close to the undercarriage to establish the hydraulic connections with the help of the quick couplers installed*

☞ *If the equipment is equipped with a loader unit (optional), the skip actuating cylinder must be connected to the middle quick connectors, while the loader unit must be connected to the right and left of the quick connectors.*

☞ *Lower the work equipment and align the bores with those of the chassis*

☞ *Then insert pins **A** and **B**, and secure them with the locks.*

Mounting high-tip skip (optional)

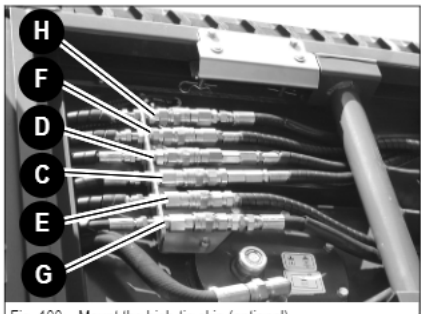


Fig. 100: Mount the high-tip skip (optional)

☞ *Bring the work equipment close to the undercarriage to establish the hydraulic connections with the help of the quick couplers installed*

☞ *Connect the skip to the middle quick connections **C** and **D***

☞ *If the equipment is equipped with a loader unit (optional), it must be connected to the quick connections **E** and **F***

☞ *Connect the cylinder for raising the skip to the quick connections **G** and **H***

☞ *Lower the work equipment and align the bores with those of the chassis*

☞ *Then insert pins **A** and **B**, and secure them with the locks.*

Mounting concrete mixer (optional)

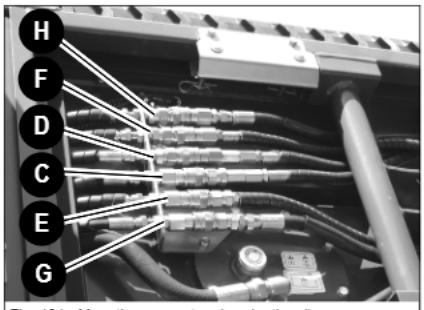


Fig. 101: Mounting concrete mixer (optional)

- ☞ *Bring the work equipment close to the undercarriage to establish the hydraulic connections with the help of the quick couplers installed*
- ☞ *Cylinder for tilting the concrete mixer to the middle quick connections **C** and **D***
- ☞ *If the equipment is equipped with a loader unit (optional), it must be connected to the quick connections **E** and **F***
- ☞ *Connect the equipment for rotating the reservoirs to the quick connections **G** and **H***
- ☞ *Lower the work equipment and align the bores with those of the chassis*
- ☞ *Then insert pins **A** and **B**, and secure them with the locks.*

5.3 Fuel system

Specific safety instructions

- Extreme caution is essential when handling fuel – increased fire hazard!
- Never perform work on the fuel system near open flames or sparks!
- Do not smoke when working on the fuel supply system and while refueling!
- Before refueling, stop the engine and remove the starting key!
- Do not refuel in closed rooms!
- Wipe away fuel spills immediately!
- Keep the vehicle clean to reduce the fire hazard!

Refueling

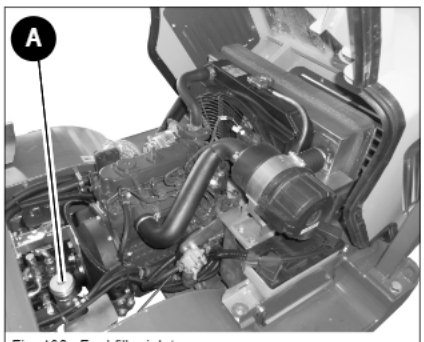


Fig. 102: Fuel filler inlet

Fuel filler neck **A** is located under the engine cover.

Danger!

When using the fuel there is high

Fire and poisoning hazard!

☞ *Do not refuel in closed rooms.*

☞ *Never perform work on the fuel system near open flames or sparks.*

☞ *No smoking, no fire!*

Environment!

Use a suitable container to collect the fuel as it drains and dispose of it in an environmentally friendly manner!

Notice!

Do not run the fuel tank completely dry. Otherwise, air is drawn into the fuel system. This requires bleeding the fuel system – *see Bleeding the fuel system* on page 5-9.

Notice!

Fill up the tank with the correct fuel type at the end of each working day. This prevents condensation water from forming in the fuel tank over night. Do not fill the tank completely but leave some space for the fuel to expand.

Drain fuel

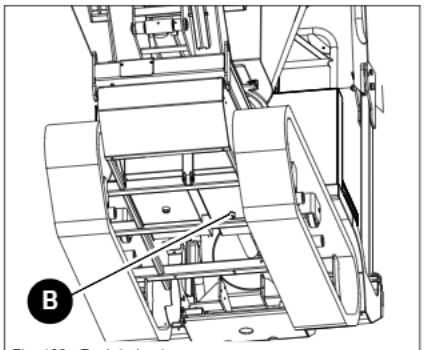


Fig. 103: Fuel drain plug

☞ *Proceed as follows:*

- Clean the area around cover of the closure screw **B** with a clean lint-free cloth
- Place a sufficiently large container under the place where the fuel is drained
- Open filler cap **B**
- Wait for a moment (about 3 minutes) until the oil has been completely drained from the tank.
- Close filler cap **B**

Environment!

Use a suitable container to collect the fuel as it drains off and dispose of it in an environmentally friendly manner!

Stationary fuel pumps

General

Only refuel from stationary fuel pumps. Fuel from barrels or cans is usually dirty.

Even the smallest particles of dirt can cause:

- Increased engine wear
- Malfunctions in the fuel system and
- Reduced effectiveness of the fuel filters.

Refueling from barrels

If refueling from barrels is unavoidable, please note the following (see Fig. 104):

- Barrels must neither be rolled nor tilted before refueling
- Protect the suction pipe opening of the barrel pump with a fine-mesh screen
- Immerse it down to a max. 15 cm above the floor of the barrel
- Only fill the tank using refueling aids (funnels or filler pipes) with integral micro-filter
- Keep all refueling containers clean.

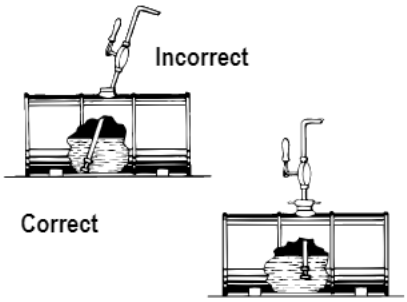


Fig. 104: Refuelling from a barrel

Diesel fuel specification

Use only high-grade fuels

Grade	Cetane number	Usage:
• No. 2-D according to DIN 51601	Min. 45	4° to 45 °C
• No. 1-D according to DIN 51601		For outside temperatures below 4 °C or for operation above 1500 m altitude

Cleaning the filter cup/replacing the filter cartridge

Danger!

Fuel is extremely flammable, and explosive under certain circumstances.

Accident hazard!

☞ *No smoking in the job site, no open flames or sparks.*

☞ *Once the filter cup is back in position, check for leaks and ensure that all gasoline spills have been wiped away before starting the engine.*

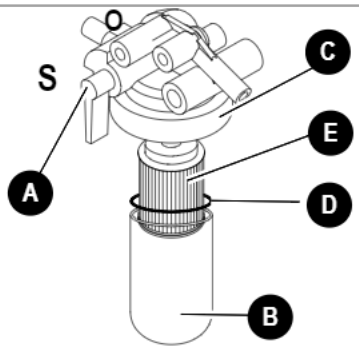


Fig. 105: Filter cup

☞ *Set fuel cock **A** to **S** (OFF)*

☞ *Unscrew filter cup **B** with a suitable tool by loosening ring **C***

☞ *Remove filter cup **B** and O-ring **D**, and wash with a nonflammable solvent.*

☞ *Allow filter cup **B** to dry thoroughly*

☞ *Take out filter element **E** and rinse it with diesel fuel or replace it*

☞ *Screw filter cup **B** back on again with a suitable tool by tightening ring **C***

☞ *Set fuel cock **A** to **O** (ON) and check for leaks*

Environment!

Dispose of the drained fuel in an environmentally friendly manner.

Bleeding the fuel system

Danger!

If fuel comes into contact with hot engine parts or the muffler, there is an increased

Fire hazard!

☞ *Never bleed the fuel system if the engine is hot!*

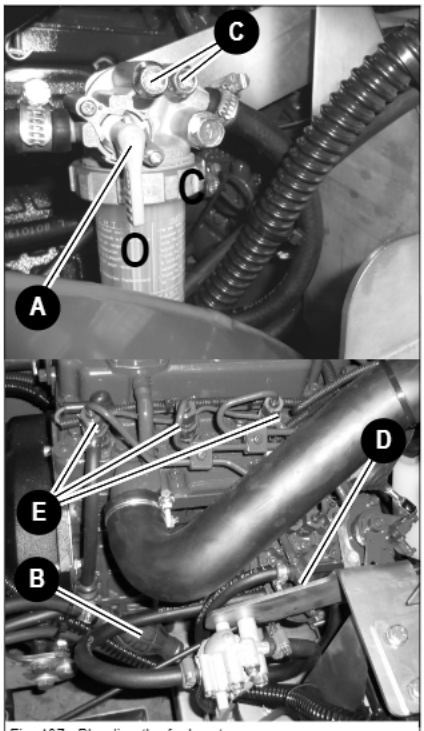


Fig. 107: Bleeding the fuel system

Bleed the fuel system in the following cases:

- After removing and fitting the fuel filter, prefilter or the fuel lines back on again
- After running the fuel tank empty
- After running the engine again, after it has been out of service for a longer period of time.

☞ *Bleed the fuel system as follows:*

☞ Park the vehicle on level and horizontal ground

☞ Stop the engine

☞ Fill the fuel tank

☞ Open fuel filter valve **A** by turning the lever to the bottom onto **O**

☞ Loosen the drain plugs of fuel filter **C**

☞ Actuate manual pump **B** of the fuel feed line

➥ until fuel comes out of the filter without any air

☞ Tighten screw **C** again with a suitable tool

☞ Drain plug **D** above the fuel injection pump using a suitable device

☞ Actuate manual pump **B** of the fuel feed line

➥ until fuel comes out of the prefilter without any air

☞ Tighten screw **D** again with a suitable tool

☞ Starts the engine

➥ If the engine runs smoothly for a while and then stops, or if it does not run smoothly:

☞ Stop the engine

☞ Bleed the fuel system again as described previously and bleed also the injectors; loosen the screws **E**

☞ Have a check performed by authorized personnel if necessary.

5.4 Engine lubrication system

Caution!

If the engine oil level is too high or too low, if the wrong oil is used or if an oil change is overdue, this can cause

Engine damage and loss of output!

☞ *Have the oil changed by a Wacker Neuson service center*
– see chapter 5.13 Maintenance plan (overview) on page 5-38

Checking the oil level

Notice!

Check the oil level once a day.
We recommend checking it before starting the engine. After stopping a warm engine, wait at least 5 minutes before checking.

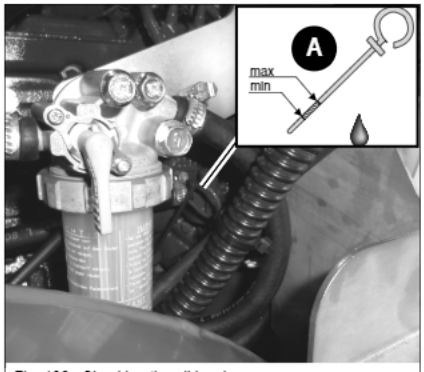


Fig. 108: Checking the oil level

☞ *Proceed as follows:*

- Park the vehicle on level ground
- Stop the engine!
- Let the engine cool down
- Open the engine cover
- Clean the area around the oil dipstick with a lint-free cloth
- Oil dipstick **A**:

☞ Pull it out
☞ Wipe it with a lint-free cloth
☞ Push it back in as far as possible
☞ Withdraw it and read off the oil level

☞ *However, if need be add oil when the oil level has reached the MIN mark on the dipstick **A***

Adding engine oil

Caution!

Too much or incorrect engine oil can cause engine damage! Therefore:

☞ *Do not add engine oil above the MAX mark of oil dipstick **108/A***

☞ *Use only the specified engine oil*

Environment!

Use a suitable container to collect the engine oil as it drains and dispose of it in an environmentally friendly manner!

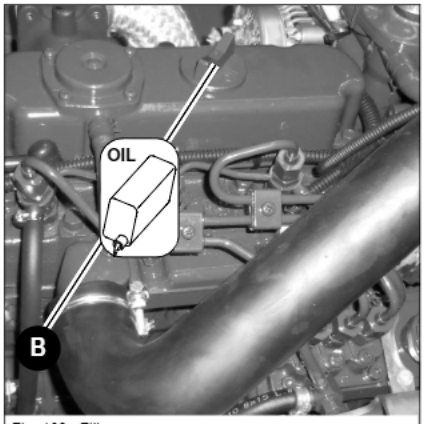


Fig. 109: Filler cap

☞ *Proceed as follows:*

- Clean the area around cover of the closure screw **B** with a clean lint-free cloth
- Open filler cap **B**
- Raise oil dipstick **A** slightly to allow any trapped air to escape
- Adding engine oil
- Wait about 3 minutes until all the oil has run into the oil sump
- Check the oil level – *see Checking the oil level* on page 5-10
- Add oil if necessary and check the oil level again
- Close filler cap **B**
- Push oil dipstick **A** back in as far as possible
- Completely remove all oil spills from the engine.

Drain engine oil

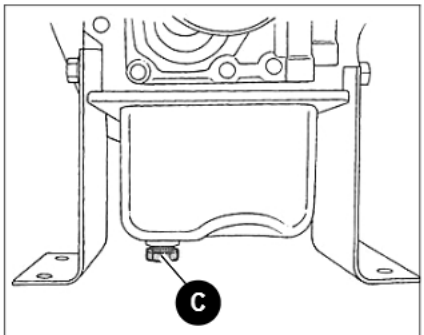


Fig. 110: Oil drain plug

☞ *Proceed as follows:*

- Clean the area around filler cap **C** with a lint-free cloth
- Place a sufficiently large container under the place where the oil is drained
- Open filler cap **C**
- Wait for a short while (appr. 3 minutes), until the oil has drained completely from the sump
- Close filler cap **C**

Environment!

Use a suitable container to collect the engine oil as it drains and dispose of it in an environmentally friendly manner!

Replacing the oil filter cartridge

Danger!

Replace the oil filter cartridge only if the engine is stopped.

Caustic injury hazard!

☞ *Wait at least 15 minutes after stopping the engine!*

☞ *Wear protective gloves and clothing*

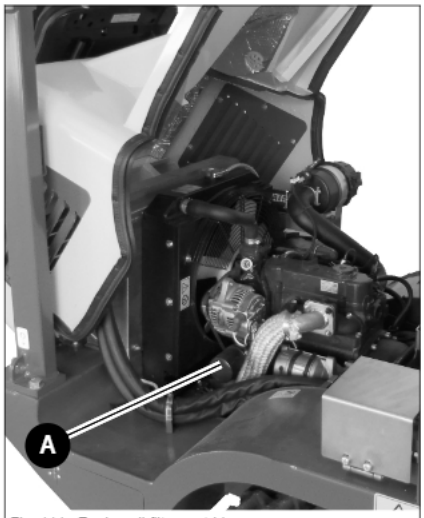


Fig. 111: Engine oil filter cartridge

☞ *Remove filter cartridge **A** with a key*

☞ *Apply a thin coat of oil to the seal of the new cartridge*

☞ *Tighten the new filter cartridge **A** by hand*

☞ *Do not tighten the cartridge too much! Do not use a key!*

☞ *Check the engine oil level and add oil if necessary*

Environment!

Use a suitable container to collect the engine oil as it drains and dispose of it in an environmentally friendly manner!

5.5 Engine and hydraulics cooling system

The oil and water radiator is located in the engine compartment, in front of the engine. It cools the diesel engine, and the hydraulic oil of the drive and operating hydraulics.

The coolant reservoir is also located in the engine compartment, in front of and above the oil cooler.

Specific safety instructions

- Dirt on the radiator fins reduces the radiator's cooling capacity! To avoid this:
  - ☞ Clean the outside of the radiator at regular intervals. Use oil-free compressed air (max 2 bar) for cleaning; thus, keep a reasonable distance from the radiator so that the cooling fins are not damaged. Refer to the maintenance plans for the cleaning intervals.
  - ☞ In dusty or dirty work conditions, clean more frequently than indicated in the maintenance plans.
- An insufficient coolant level reduces the cooling capacity as well and can cause engine damage! Therefore:
  - ☞ Check the coolant level at regular intervals. Refer to the maintenance plans in the appendix for the intervals.
  - ☞ If coolant must be added frequently, check the cooling system for leaks and/or contact your dealer!
  - ☞ Never add cold water/coolant if the engine is warm!
  - ☞ After filling the coolant reservoir, make a test run with the engine and check the coolant level again after stopping the engine
- The use of the wrong coolant can destroy the engine and the radiator. Therefore:
  - ☞ Add enough antifreeze compound to the coolant – but never more than 50 %. If possible, use brand-name antifreeze agents since they already contain anti-corrosion agents.
  - ☞ Observe the coolant compound table
    – *see chapter 5.12 Fluids and lubricants* on page 5-36
  - ☞ Do not use radiator cleaning compounds if an antifreeze compound has been added to the coolant – otherwise this causes sludge to form that can damage the engine.
- Once you have filled the coolant reservoir:
  - ☞ Test run the engine
  - ☞ Stop the engine
  - ☞ Let the engine cool down
  - ☞ Check the coolant level again

Environment!

Use a suitable container to collect the fuel as it drains and dispose of it in an environmentally friendly manner!

Cleaning the oil/water radiator

Danger!

Warm engine –

Burn hazard!

☞ *Wait at least 10 minutes after stopping the engine!*

☞ *Wear safety glasses, protective gloves and clothing!*

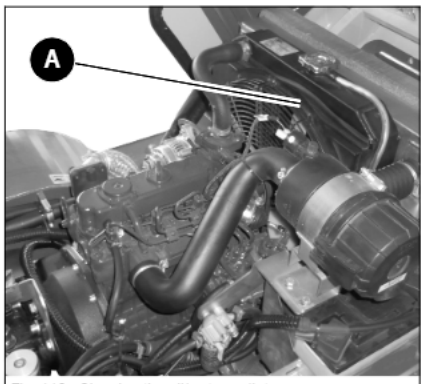


Fig. 112: Cleaning the oil/water radiator

Proceed as follows:

☞ *Park the vehicle on level ground*

☞ *Stop the engine and let it cool down*

☞ *Disengage the starter*

☞ *Open the engine cover*

☞ *Blow compressed air through radiator fins **A** to remove dirt*

Check coolant level / top off coolant

Danger!

Never open the coolant reservoir and never drain coolant if the engine is warm since the cooling system is under high pressure

–

Burn hazard!

☞ *Wait at least 15 minutes after stopping the engine!*

☞ *Wear protective gloves and clothing*

☞ *Open filler cap **B** to the first notch and allow the pressure to drop*

☞ *Ensure that the coolant temperature is sufficiently low so you can touch the radiator plug with your hands*

Danger!

Antifreeze is flammable and toxic.

Accident hazard!

☞ *Keep away from flames*

☞ *Avoid eye contact with antifreeze*

- If antifreeze comes into contact with the eyes:

➥ Immediately rinse with clean water and seek medical assistance

Checking the coolant level

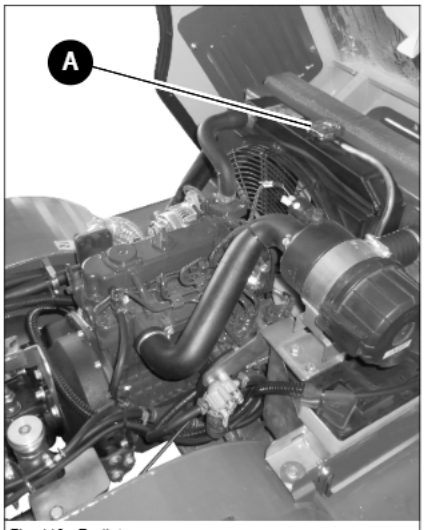


Fig. 113: Radiator

☞ *Proceed as follows:*

- Park the vehicle on level ground
- Stop the engine!
- Remove the key and carry it with you
- Let the engine and the coolant cool down
- Open the engine cover
- Check whether the coolant level reaches filler inlet ***A***

☞ If the coolant level does not reach the filler inlet of the radiator:

- Adding coolant

Notice!

Check the coolant level once a day.
We recommend checking it before starting the engine.

Adding coolant

After the engine has cooled down:

☞ *Release overpressure in the radiator*

☞ *Carefully open the cap to the first notch and fully release the pressure*

☞ *Filler cap* ***A***

☞ *Add coolant to the lower edge of the filler inlet (radiator)*

☞ *Close filler cap* ***A***

☞ *Start the engine and let it warm up for about 5 – 10 minutes.*

☞ *Stop the engine*

☞ *Remove the key and carry it with you*

☞ *Let the engine cool down*

☞ *Check the coolant level again*

➥ The coolant level must be *in the lower corner of the filler inlet (radiator)*

☞ *If necessary, add coolant and repeat the procedure until the coolant level remains constant*

Notice!

Check the antifreeze every year before the cold season sets in

Draining coolant

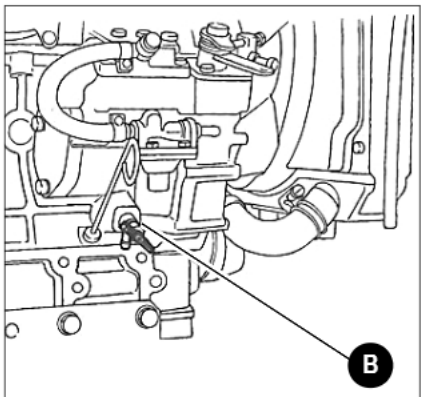


Fig. 114: Coolant drain cock

Coolant drain cock **B** is located on one side of the engine.

☞ *Proceed as follows:*

- Clean the area around cock **B** with a lint-free cloth
- Place a sufficiently large container under the place where the coolant is drained
- Open cock **B**
- Wait a moment (approx. 3 minutes) until the coolant from the radiator and engine has drained off
- Close cock **B**

Environment!

Use a suitable container to collect the coolant as it drains and dispose of it in an environmentally friendly manner!

5.6 Air filter

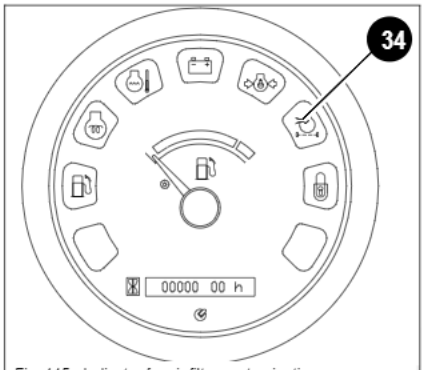


Fig. 115: Indicator for air filter contamination

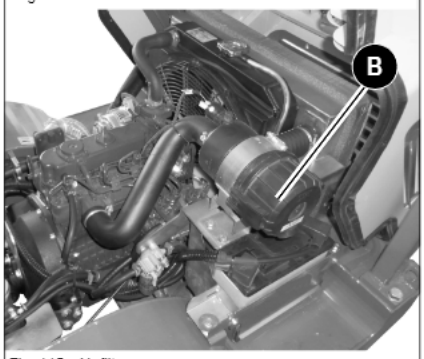


Fig. 115: Air filter

Caution!

The filter cartridge will be damaged if it is washed or brushed out!
Bear in mind the following to avoid premature engine wear!

☞ *Do not clean the filter cartridge*

☞ *Replace the filter cartridge when the indicator light illuminates*

☞ *Never reuse a damaged filter cartridge*

☞ *Ensure cleanliness when replacing the filter cartridge!*

A device on the air filter monitors the filter cartridge.

☞ *Replace filter **B** if:*

- Indicator light ***34*** illuminates
- According to the maintenance plan

Notice!

For **applications in especially dusty environment**, replace or clean the air filter more frequently.

Caution!

Filter cartridges degrade prematurely when in service in acidic air for longer periods of time. This risk is present for example in acid production facilities, steel and aluminum mills, chemical plants and other nonferrous-metal plants.

☞ *Replace filter **B** after 50 operating hours at the latest!*

General instructions for air filter maintenance:

- Store filters in their original packaging and in a dry place.
- Do not knock the filter against other objects as you install it
- Check air filter attachments, air intake hoses and air filters for damage, and immediately repair or replace if necessary
- Check the screws at the induction manifold and the clamps for tightness.

Replacing the filter

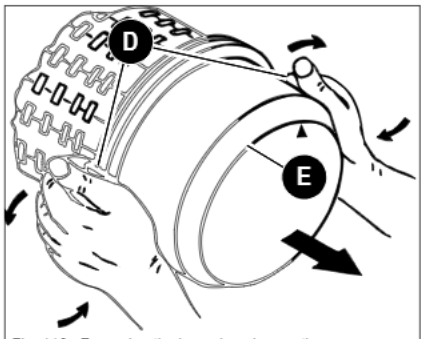


Fig. 116: Removing the lower housing section

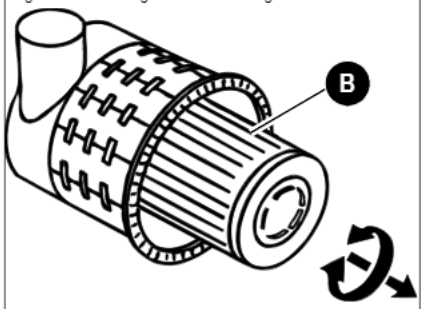


Fig. 117: Removing the filter element

- Replace filter **B** as follows:

☞ *Stop the engine*

☞ *Remove the key and carry it with you*

☞ *Let the engine cool down*

☞ *Switch off the vehicle*

☞ *Remove dirt and dust from the air filter and the area around the air filter*

☞ *Bend both hooks **D** on the lower housing section **E** outward*

☞ *Remove lower housing section **E***

☞ *Carefully remove filter **B** with slightly turning movements*

☞ **Ensure that** *all dirt (dust) inside the air filter housing has been removed*

☞ Clean the parts with a clean lint-free cloth, do not use compressed air

☞ *Check the air filter cartridges for damage, only install intact filters*

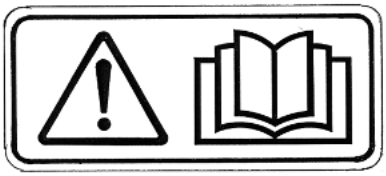
☞ *Insert the new filter **B** in the air filter housing*

☞ *Position the lower housing section **E** (ensuring that it is correctly positioned)*

☞ *Close both hooks **D***

5.7 Hydraulic system

Specific safety instructions



- Release the pressure in all lines carrying hydraulic oil prior to any maintenance and repair work. To do this:
  - Set down all hydraulically activated work equipment on the ground and
  - actuate all control levers of the hydraulic controllers several times.
- Hydraulic oil escaping under high pressure can penetrate the skin and cause serious injury. Always consult a doctor immediately, even if the wound seems insignificant – otherwise serious infections could set in!
- If the hydraulic oil in the sight glass is cloudy, this indicates that water or air has penetrated the hydraulic system. This can cause damage to the hydraulic pump!
- Oil or fuel flowing out of high pressure lines can cause fire or malfunctions, and serious injury or damage to property. Interrupt work immediately in case of loose nuts or damaged lines.

  ☞ Contact your Wacker Neuson dealer immediately
- Replace the hose or line if one of the problems mentioned below is detected.

  ☞ Damaged or leaky hydraulic seals.

  ☞ Worn or torn shells or uncovered reinforcement branches

  ☞ Expanded shells in several positions.

  ☞ Entangled or crushed movable parts.

  ☞ Foreign bodies jammed or stuck in protective layers.

Caution!

Dirty hydraulic oil, lack of oil or wrong hydraulic oil –

Risk of serious damage to the hydraulic system!

☞ *Take care to avoid dirt when working!*

☞ *Always add hydraulic oil using the filling screen!*

☞ *Only use authorized oils of the same type*
– see chapter 5.12 Fluids and lubricants on page 5-36

☞ *Always add hydraulic oil before the level gets too low*
– see Adding hydraulic oil on page 5-21

☞ *If the hydraulic system is filled with biodegradable oil, then use only biodegradable oil of the same type for adding oil – observe the sticker on the hydraulic oil reservoir!*

☞ *Contact customer service if the hydraulic system filter is contaminated with metal chippings. Otherwise, follow-on damage can result!*

Environment!

Collect drained hydraulic oil and biodegradable oil in a suitable container! Dispose of drained oil and used filters by an ecologically safe method.
Always contact the relevant authorities or commercial establishments in charge of oil disposal before disposing of biodegradable oil.

Checking the hydraulic oil level

Caution!

Do not add oil if the oil level is above the **FULL** mark, otherwise the hydraulic system can be damaged and escaping oil can cause serious injury.

☞ *Check the hydraulic oil level each time the vehicle is put into operation or once a day*

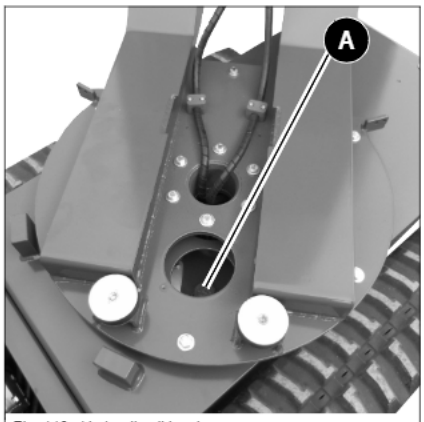


Fig. 118: Hydraulic oil level

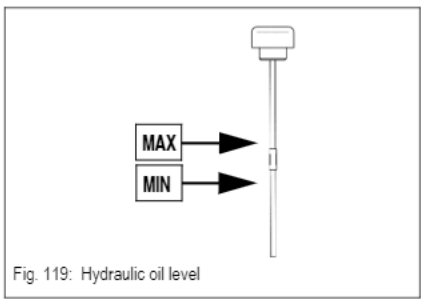


Fig. 119: Hydraulic oil level

☞ *Proceed as follows:*

- Park the vehicle on level ground
- Raise the platform and lock it in the safety position – *see Maintenance prop* on page 5-2
- Turn the skip until the access hole is over filler plug **A**
- Stop the engine
- The dipstick is integrated in filler cap **A** of the hydraulic oil tank
- Check whether the oil level is between **MIN** and **MAX**
- Add hydraulic oil if the oil level is lower

Notice!

Read off the oil level of the hydraulic system only after the machine reaches its operating temperature.

Adding hydraulic oil

Danger!

Removing the filler plug can cause oil to escape –

Accident hazard!

☞ *Carefully unscrew the plug to slowly reduce the pressure inside the reservoir.*

Do not add hydraulic oil unless the engine is stopped. Otherwise, hydraulic oil will overflow at the filler opening on the hydraulic oil reservoir.

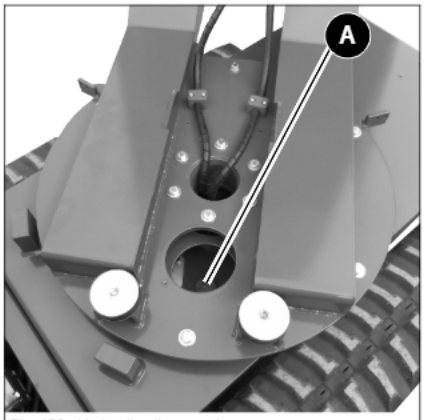


Fig. 120: Hydraulic oil reservoir

☞ *Add as follows:*

- Park the vehicle on level ground
- Raise the platform and lock it in the safety position – *see Maintenance prop* on page 5-2
- Turn the skip until the access hole is over filler plug **A**
- Stop the engine
- Clean the area around filler inlet **A** with a clean cloth
- Open filler inlet **A**

With the filter insert in place:

- Adding hydraulic oil
- Check the hydraulic oil level with the dipstick integrated in filler cap **A**
- Add if necessary and check again
- Firmly close filler inlet **A**

Drain hydraulic oil

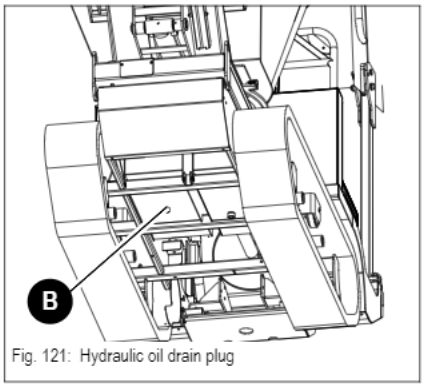


Fig. 121: Hydraulic oil drain plug

☞ *Proceed as follows:*

- Retract all hydraulic cylinders
- Clean the area around the cover of closure screw **B** with a clean lint-free cloth
- Place a sufficiently large container under the place where the oil is drained
- Open filler cap **B**
- Wait for a moment (about 3 minutes) until the oil has been completely drained from the tank.
- Close filler cap **B**

Environment!

Collect the drained oil in a suitable container and dispose of it by an environmentally safe manner!

Replacing the hydraulic oil filter cartridge

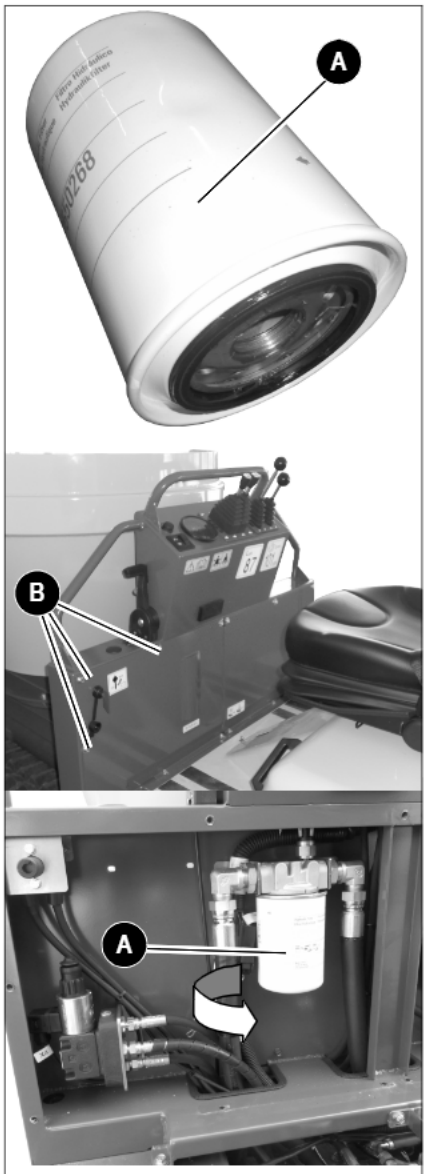


Fig. 122: Replacing the oil filter cartridge

Exchange filter cartridge **A** as follows:

☞ *Stop the engine*

☞ *Remove the cover by unscrewing screws **B***

☞ **Ensure** *that all dirt (dust) has been removed*

☞ *Remove filter **A** by unscrewing it*

☞ *Insert the new filter cartridge **A***

☞ *Install the cover and screw in screws **B***

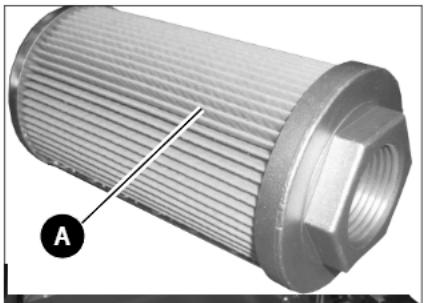
Environment!

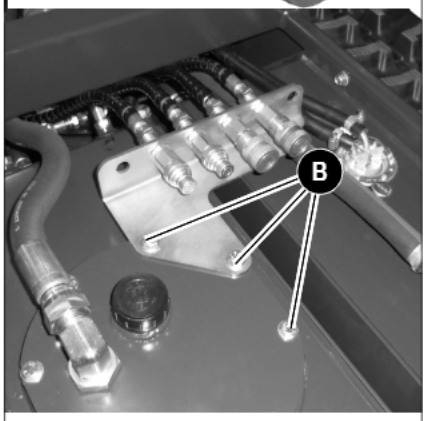
Collect the drained oil in a suitable container and dispose of it by an environmentally safe manner!

Environment!

Dispose of filter cartridge **A** in an environmentally friendly manner.

Replacing the cartridge of hydraulic oil intake filter





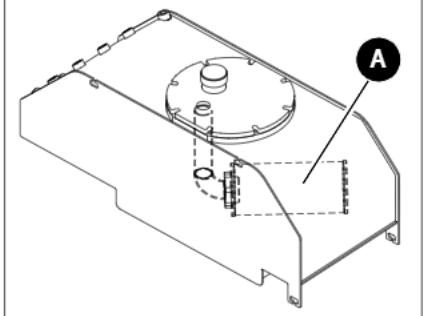


Fig. 123: Replace the oil intake filter cartridge

Exchange filter cartridge **A** as follows:

☞ *Stop the engine*

☞ *Remove the inspection flange by unscrewing screws **B***

☞ **Ensure** *that all dirt (dust) has been removed*

☞ *Remove filter **A** by unscrewing it*

☞ *Insert the new filter cartridge **A***

☞ *Retighten the inspection flange by screwing screws **B***

Environment!

Collect the drained oil in a suitable container and dispose of it by an environmentally safe manner!

Environment!

Dispose of filter cartridge **A** in an environmentally friendly manner.

Important information on the use of biodegradable oil

- Use only the biodegradable hydraulic fluids which have been tested and approved by Wacker Neuson. Always contact Wacker Neuson for the use of other products that have not been recommended. In addition, ask the oil supplier for a written declaration of guarantee. This guarantee is applicable to damage occurring on the hydraulic components that can be proved to be due to the hydraulic fluid
- Use only biodegradable oil of the same type for adding oil. In order to avoid misunderstandings, a label providing clear information is located on the hydraulic oil reservoir (next to the filler inlet) regarding the type of oil currently used! Replace missing labels!
  Mixing two different biodegradable oils can worsen the quality of one of the oil types. Therefore, ensure that the remaining amount of initial hydraulic fluid in the hydraulic system does not exceed 8 % when changing biodegradable oil (manufacturer indications)
- Do not add mineral oil – the content of mineral oil should not exceed 2% by weight in order to avoid foaming problems and to ensure biological degradability
- When running the vehicle with biodegradable oil, the same oil and filter replacement intervals are valid as for mineral oil – *see chapter 5.13 Maintenance plan (overview)* on page 5-38
- Always have the condensation water in the hydraulic oil tank drained by an authorized service centre before the cold season. The water content must not exceed 0.1 % by weight.
- The instructions in this Operator's Manual concerning environmental protection are also valid for the use of biodegradable oil.
- If additional hydraulic attachments are installed or operated, use the same type of biodegradable oil for these attachments to avoid mixtures in the hydraulic system.

Subsequent change from mineral oil to biodegradable oil must be performed by an authorized service center or by your Wacker Neuson partner

Checking hydraulic pressure lines

Specific safety instructions

Danger!

Use caution when checking the hydraulic lines; Especially when searching for leaks.
Hydraulic oil escaping under high pressure can penetrate the skin and cause serious injury.

Injury hazard

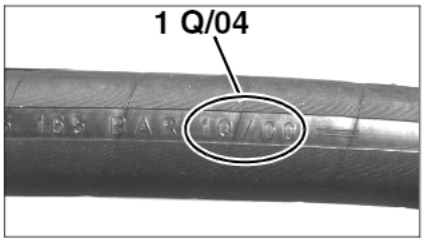
☞ *Always consult a doctor immediately, even if the wound seems insignificant – otherwise serious infections could set in!*

☞ *Always observe the following instructions:*

- Retighten leaking screw connections and hose connections only when the system is not under pressure. In other words, release the pressure before working on pressurized lines!
- Never weld or solder damaged or leaking pressure lines and screw connections. Replace damaged parts with new ones!
- Never search for leaks with your bare hands, but wear protective gloves!
- Use paper or wood to check for minor leaks. Never use an unprotected light or open flame!
- Damaged flexible lines may be replaced by an authorized service centre only!

- Leakages and damaged pressure lines must be immediately repaired or replaced by an authorized service center or after-sales personnel.
  This not only increases the operating safety of the vehicle but also helps to protect the environment.
- Replace hydraulic hoses every 6 years from the date of manufacture, even if they do not seem to be damaged

In this respect, we recommend that you observe all the relevant safety regulations for hydraulic lines, as well as the safety regulations regarding accident prevention and occupational health and safety in your country. Also observe DIN 20066, part TI. 5.



The date of manufacture (month or quarter and year) is indicated on the flexible line.

Example:

The indication **"1 Q/04"** means manufactured in the 1st quarter of 2004.

5.8 Tracks

Danger!

Careful when working on the tracks –

Accident hazard!

☞ *Use suitable means to support and secure the vehicle*

☞ *In addition, ensure that the vehicle cannot overturn*

Checking track tension

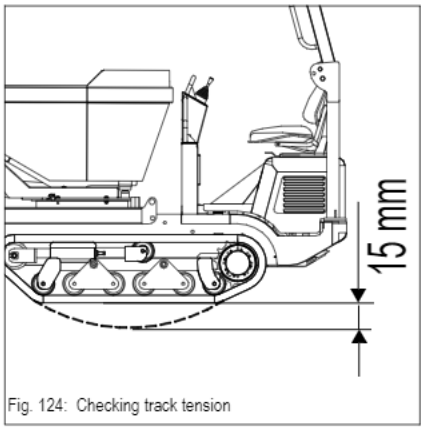


Fig. 124: Checking track tension

Check track tension as follows:

☞ *Park the dumper on firm and level ground*

☞ *Raise the dumper with suitable means*

☞ *Tracks should be raised off the ground*

☞ *Stop the engine*

☞ *Use additional supports for the dumper and ensure that it cannot overturn*

☞ *Measure the distance between the middle of the track and the horizontal line*

➥ The rubber track should not sag more than 15 mm when tight

Notice!

If possible, the distance from the rollers should be the same for both tracks.

Increasing track tension

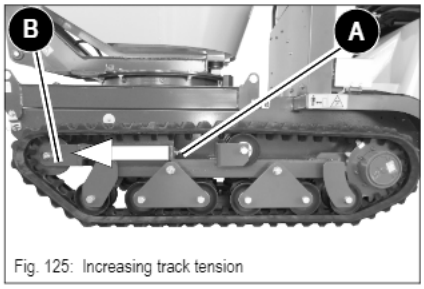


Fig. 125: Increasing track tension

☞ *Park the dumper on firm and level ground*

☞ *Raise the dumper with suitable means*

☞ *Tracks should be raised off the ground*

☞ *Stop the engine*

☞ *Use additional supports for the dumper and ensure that it cannot overturn*

☞ *Screw in setting screw **A** with a suitable tool*

➥ Ram **B** is extended

➥ The track is tensioned

☞ *Check track tension*

➥ Repeat the procedure if the tracks are not tight enough

Notice!

Check track tension once a day since excessive or insufficient track tension can damage the tracks and the rams.

Decreasing track tension

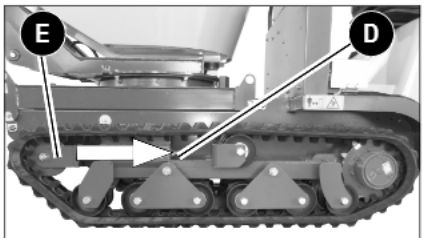


Fig. 126: Loosen the chain

☞ *Park the dumper on firm and level ground*
☞ *Raise the dumper with suitable means*
☞ *Tracks should be raised off the ground*
☞ *Stop the engine*
☞ *Use additional supports for the dumper and ensure that it cannot overturn*
☞ *Unscrew adjusting screw **D** with a suitable tool*
  ➥ Ram **E** is retracted
  ➥ The track is loosened
☞ *Check track tension*
  ➥ Repeat the procedure if the tracks are too tight

5.9 Traveling drive

Danger!

Immediately after stopping the engine, the engine's components and the oil are very hot. This can cause burns.
If the inside of the drive gear is under pressure, the oil or the plug can be squeezed out.

Burn and injury hazard!

☞ *Wait until the engine has cooled down before taking up work.*

☞ *Slowly open the plug to release the pressure inside.*

Checking the oil level and adding oil

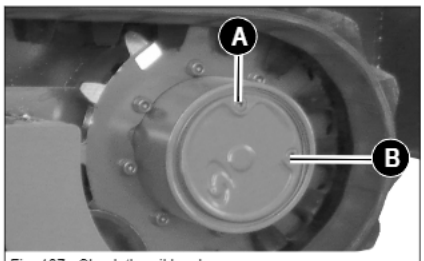


Fig. 127: Check the oil level

☞ *Park the vehicle on level and horizontal ground*

☞ *Position the vehicle so that filler plug **A** is at the top*

☞ *Stop the engine*

☞ *Let the engine cool down*

☞ *Unscrew screws **A** and **B** with a suitable tool*

☞ *The oil must slowly flow out of the opening **B***

➥ If the oil does not flow out of opening **B**, add oil:

☞ Add oil through opening **A**,

➥ until a small quantity of oil flows out of opening **B**

☞ *Screw screws **A** and **B** back in again*

☞ *Move the vehicle a few meters*

☞ *Check the oil level again*

➥ If the oil level is not correct:

☞ Repeat the procedure

Draining oil

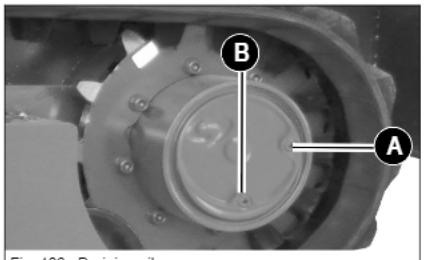


Fig. 128: Draining oil

☞ *Park the vehicle on level and horizontal ground*

☞ *Position the vehicle so that filler plug **B** is at the bottom*

☞ *Stop the engine*

☞ *Let the engine cool down*

☞ *Unscrew screws **A** and **B** with a suitable tool*

➥ The oil now flows out of opening **B**

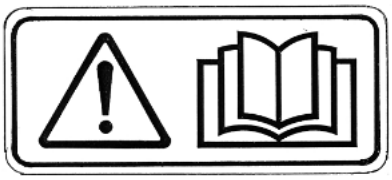
☞ Use a suitable container to collect the oil as it drains

Environment!

Collect the oil with a suitable container and dispose of it in an environmentally friendly manner.

5.10 Electrical system

Specific safety instructions



- The battery contains sulphuric acid. This acid must not be allowed to come into contact with the skin, the eyes, clothing or the machine

  Therefore when recharging or working near the battery:

  ☞ Always wear safety glasses and protective clothing with long sleeves.

If acid is spilled:

  ☞ Thoroughly rinse all affected surfaces immediately with plenty of water

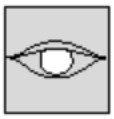
  ☞ Thoroughly wash any part of the body touched by the acid immediately with plenty of water and seek medical attention at once!

- Especially when charging batteries, as well as during normal operation of batteries, an oxyhydrogen mixture is formed in the battery cells – explosion hazard!
- Do not attempt to jump-start the machine if the battery is frozen or if the acid level is low. The battery can burst or explode!

  ☞ Replace the battery immediately

- Never work with an open flame, avoid sparks and do not smoke near open battery cells. The gas that forms during normal battery operation can ignite!
- Use only 12 V power sources. Higher voltages will damage the electrical components
- When connecting the battery leads, ensure that the poles +/− are not inverted, otherwise sensitive electrical components will be damaged.
- Do not interrupt voltage-carrying circuits at the battery terminals because of the sparking hazard!
- Never place tools or other conductive articles on the battery – risk of short circuit!
- Always disconnect the battery before starting repair work on the electrical system (-).
- Dispose of used batteries properly.

Servicing and maintenance at regular intervals



Every week

☞ *Check once a week:*

- Electric fuses
- Cable and grounding connections
- Battery charge condition – *see Battery* on page 5-31
- Condition of battery terminals.

Instructions concerning specific components

Cables, bulbs and fuses

Always observe the following instructions:

- Malfunctioning components of the electrical system must always be replaced by a Wacker Neuson service center. Bulbs and fuses may be changed by unqualified persons
- When performing maintenance on the electrical system, pay particular attention to ensuring good contact in leads

Alternator

Always observe the following instructions:

- Only test run the engine with the battery connected.
- When connecting the battery, ensure that the poles (+/–) are not inverted.
- Always disconnect the battery before performing welding work or connecting a quick battery charger.

Battery

Danger!

Battery acid is highly caustic!

Caustic injury hazard!

Therefore when recharging and/or working near the battery:

☞ *Always wear safety glasses and protective clothing with long sleeves*

If acid is spilled:

☞ *immediately flush all contaminated surfaces with plenty of water*

☞ *Thoroughly wash any part of the body touched by the acid immediately with plenty of water and seek medical attention at once!*

Especially when charging batteries, as well as during normal operation of batteries, an oxyhydrogen mixture is formed in the battery cells –

Explosion hazard!

☞ *Avoid open lights and sparks near the battery and do not smoke!*

☞ *Do not attempt to jump-start the machine if the battery is frozen or if the acid level is low. The battery can burst or explode!*

- Replace the battery immediately

☞ *Always disconnect the negative terminal (–) from the battery before starting repair work on the electrical system!*

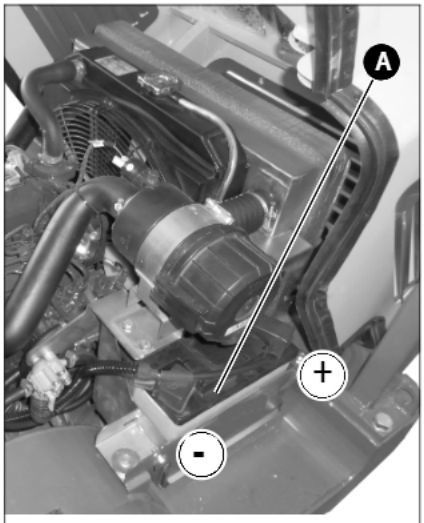


Fig. 129: Battery

Battery **A** is located under the engine cover. The battery is "maintenance-free". However have the battery checked at regular intervals to ensure that the electrolyte level is between the MIN and MAX marks.

Checking the battery requires it to be removed and must be performed by a Wacker Neuson service center.

Always follow the specific battery safety instructions!

Notice!

Do not disconnect the battery while the engine is running!

Disconnecting the battery

- – *see chapter Battery master switch* on page 3-24

Flashing headlight

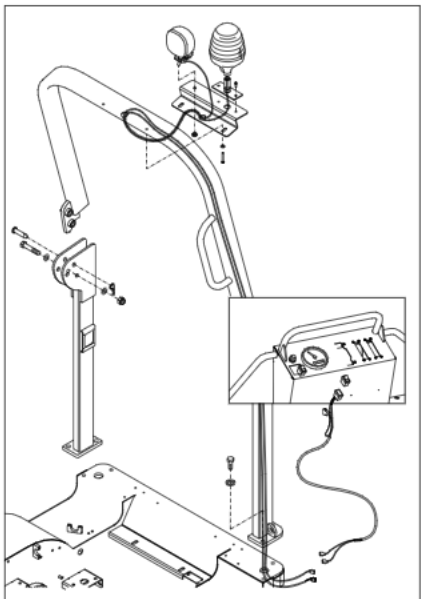


Fig. 130: Mounting the flashing headlight (optional)

A hazard warning flash light and beacon can be mounted on the roll bar, as shown adjacently *Fig. 130*.

The switch-on button is located on the control panel – *see chapter 3.2 Overview of control stand (swivel skip, 3-sided skip, skip for earth-moving (up to Series FA0 1985)* on page 3-2.

5.11 General maintenance

Cleaning

Cleaning the vehicle is divided into two separate areas:

- Exterior of the vehicle
- Engine compartment

The wrong choice of cleaning equipment and agents can impair the operating safety of the machine on the one hand, and on the other put the health of the persons in charge of cleaning the machine at risk. Therefore always observe the following instructions.

General instructions for all areas of the vehicle

Cleaning with washing solvents

- Ensure sufficient room ventilation
- Wear suitable protective clothing
- Do not use flammable liquids, such as petrol or diesel

Cleaning with compressed air

- Work carefully
- Wear safety glasses and protective clothing
- Do not aim the compressed air at the skin or at other people
- Do not use compressed air for cleaning your clothing

Cleaning with a high-pressure cleaner or steam jet

- Electrical components and damping material must be covered and not directly exposed to the jet
- Cover the vent filter on the hydraulic oil reservoir and the filler caps for fuel, hydraulic oil, etc.
- Protect the following components from moisture:
  - Hydraulic motor
  - Electrical components such as the alternator, etc.
  - Control devices and seals
  - Air intake filters, etc.

Cleaning with volatile and easily flammable anti-corrosion agents and sprays:

- Ensure sufficient room ventilation
- Do not use unprotected lights or open flames
- Do not smoke!

Exterior of the vehicle

Caution!

Cleaning the vehicle can cause engine damage.

☞ *Protect the engine against humidity*

The following articles are generally suitable:

- High-pressure cleaner
- Steam jet

Engine compartment

Danger!

Clean the engine only when it is at a standstill –

Injury hazard

☞ *Stop the engine before cleaning it.*

Caution!

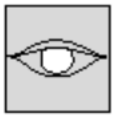
When cleaning the engine with a water or steam jet:

☞ *The engine must be cold*

☞ *and do not point the jet directly at electric sensors such as the oil pressure switch.*

The humidity penetrating any such sensors causes them to fail and leads to engine damage!

Threaded fittings and attachments



All threaded fittings must be checked regularly for tightness, even if they are not listed in the maintenance plans.

☞ *Engine fastening screws*

☞ *Fastening screws of the hydraulic system*

☞ *Line and pin fastenings on the attachment*

Immediately tighten loosened connections; Contact an authorized workshop if necessary.

Pivots and hinges

Lubricate all mechanical pivots on the vehicle (such as joints) and fittings at regular intervals even if they are not listed in the lubrication plan.

Concrete mixer

Check the supporting rollers of the concrete mixer for wear once a week. If the groove is not on the rollers when the concrete mixer is empty:

☞ *Lock mount **A***

☞ *Check whether scraper **B** is always near the groove*

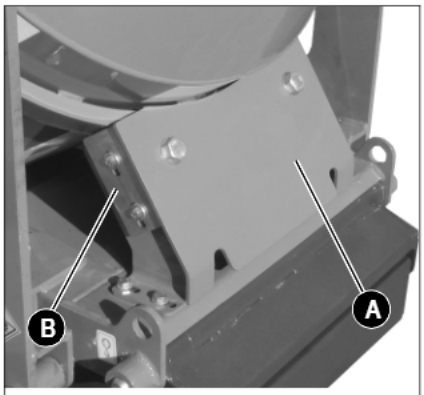


Fig. 131: Concrete mixer mount

Notice!

An incorrect position of mount **A** causes increased wear of the components.

Check the lubrication of the rotation drive chain regularly:

☞ *Park the vehicle on level ground*

☞ *Raise the platform and lock it in the safety position – see Maintenance prop on page 5-2*

☞ *Stop the engine*

☞ *Remove the rear protective plate*

☞ *Lubricate drive chain **A** as required*

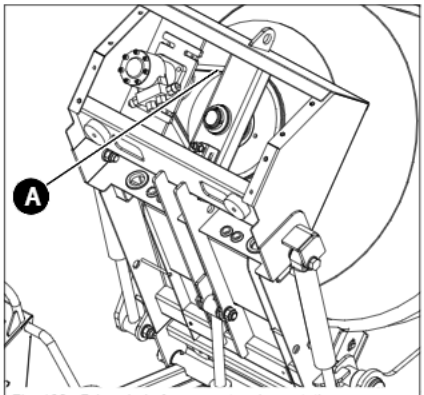


Fig. 132: Drive chain for concrete mixer rotation

5.12 Fluids and lubricants

Component/application	Fluid/lubricant	Specified	Season/temperature	Capacity[1]
Diesel engine	Engine oil	AGIP SIGMA S SAE[2] 30	Year-round	3.7 l
Travel drive	Gearbox oil SAE 85W-90	TOTAL EP SAE 85W 90	Year-round	0.5 l
Hydraulic oil radiator	Hydraulic oil	AGIP ARNICA 46[3]	Year-round	25 l
	Biodegradable oil[4]	PANOLIN HLP Synth 46		
		FINA BIOHYDRAN SE 46		
		BP BIOHYD SE-46		
Lubrication grease	Roller and friction bearings[5]	AGIP GR SM	Year-round	As required
Grease zerks	Multipurpose grease [6]	AGIP GR SM	Year-round	As required
Fuel tank	Diesel fuel[7]	No. 2-D, DIN 51601 grade	Over 4 °C	24 l
		No. 1-D, DIN 51601 grade	Below 4 °C	
Radiator	Coolant	Soft water + antifreeze ASTM D4985	Year-round	About 5 liters
		Distilled water + antifreeze ASTM D4985		

1. The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level.
1. Capacities indicated are no system fills
2. According to DIN 51511
3. According to DIN 51524 section 3
4. Biodegradable hydraulic oils based on saturated synthetic esters with an iodine value of < 10 according to DIN 51524, section 3, HVLP, HEES
5. KF2K-25 according to DIN 51502 multipurpose lithium grease with MoS^2 additive
6. KF2K-25 according to DIN 51502 multipurpose lithium grease with MoS^2 additive
7. Sulfur content below 0.05 %, cetane number over 45

5.13 Maintenance plan (overview)

Work description For servicing and maintenance on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.	Maintenance plan/operating hours (o/h)						
	Service work (daily)	Once a month or after 50 o/h	Every 6 months or after 250 o/h	Every 12 months or after 500 o/h	Every 3 years and/or after 1000 o/h	Customer	Service center service center
Fluid and filter changes ( ):							
Perform the following oil and filter changes (check oil levels after test run):							
• Engine oil[1]		●	●			●	
• Engine oil filter[2]		●	●			●	
• Replace the fuel filter element[3]		●	●			●	
• Replace the air filter insert				●		●	
• Hydraulic oil filter insert [4]		●	●			●	
• Cartridge of hydraulic oil intake filter					●	●	
• Hydraulic oil					●	●	
• Traveling drive oil					●	●	
• Coolant					●	●	
• Replacing fan belts					●		●
Inspection work ( ):							
Check the following material. Refill if necessary:							
• Check the fuel level, add fuel	●					●	
• Engine oil	●					●	
• Hydraulic oil	●					●	
• Coolant	●					●	
Check hydraulic oil radiator for dirt, clean if necessary	●					●	
Check cooling systems, hoses for leaks and pressure (visual check)	●					●	
Air filter (damage)	●					●	
Clean the filter cup			●			●	
Check injection condition of fuel injection nozzle					●		●
Check injection setting					●		●
Check the fuel injection pump					●		●
Check/set the maximum engine speed				●			●

5.13 Maintenance plan (overview)

Work description

For servicing and maintenance on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.

	Maintenance plan/operating hours (o/h)						
	Service work (daily)	Once a month or after 50 o/h	Every 6 months or after 250 o/h	Every 12 months or after 500 o/h	Every 3 years and/or after 1000 o/h	Customer	Service center service center
Check the exhaust system for damage and condition	●					●	
Check intake and exhaust valve clearance				●			●
Check battery electrolyte. Add distilled water if necessary		●		●			●
Check alternator, starter and electric connections, bearing play and function				●			●
Pressure check of primary pressure limiting valves		●		●			●
Check the tracks for cracks and cuts	●					●	
Check track tension and adjust it if necessary	●					●	
Bearing play of tread rollers, track carrier rollers, front idlers				●			●
Check piston rods for damage	●					●	
Check screws for tightness				●			●
Pin lock	●					●	
Line fixtures	●					●	
Labels and Operator's Manual				●			●
Coolant	●					●	
Clean the fan blades			●			●	
V-belt tension			●				●
Lubrication service ( ):							
Lubricate the following assemblies/components: – *see Lubrication plan DT15 with swivel skip* on page 5-41							
• Skip	●					●	
• Tilt cylinder	●					●	
• Track tension	●					●	
• Swivel cylinder	●					●	
• Lifting cylinder	●					●	

5.13 Maintenance plan (overview)

Work description

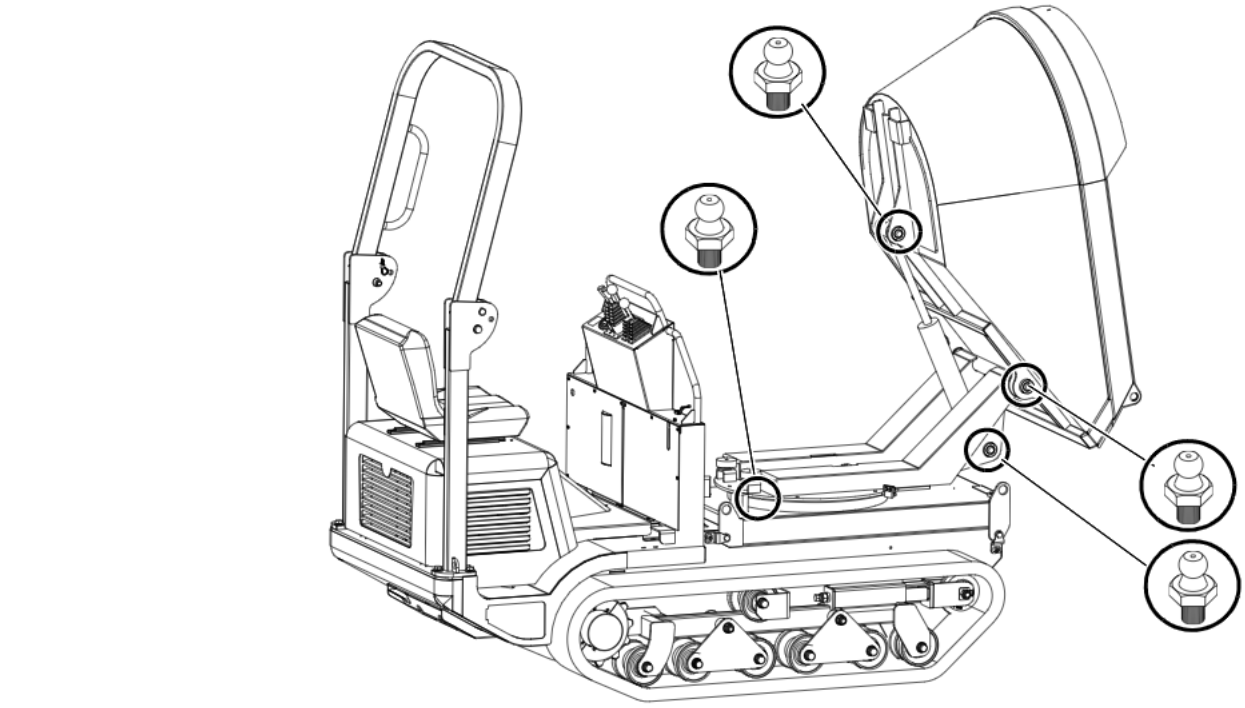
For servicing and maintenance on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.

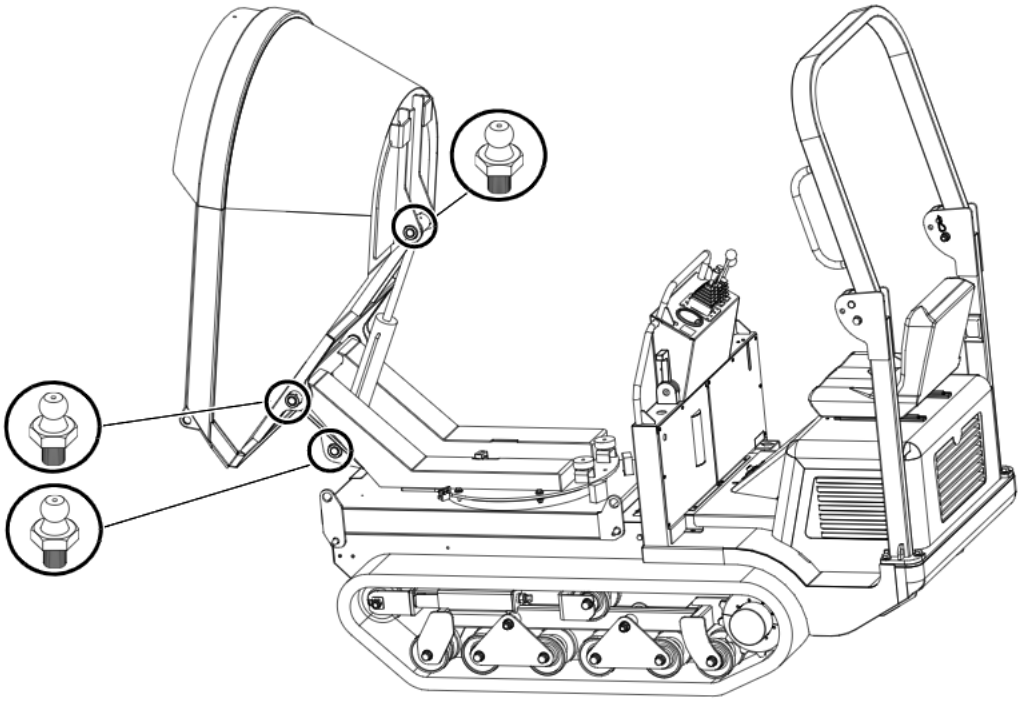
	Maintenance plan/operating hours (o/h)						
	Service work (daily)	Once a month or after 50 o/h	Every 6 months or after 250 o/h	Every 12 months or after 500 o/h	Every 3 years and/or after 1000 o/h	Customer	Service center service center
Leakage check ( ):							
Check for tightness, leaks and chafing: pipes, flexible lines and screw connections of the following assemblies and components. Repair if necessary:							
• Visual check	●					●	
☞ Engine and hydraulic system	●					●	
☞ Cooling circuit	●					●	
☞ Travel drive	●					●	

1. Replace the engine oil for the first time after 50 o/h or the first month, then every 250 o/h or after 6 months at the latest
2. Replace the engine oil filter for the first time after 50 o/h or the first month, then every 250 o/h or after 6 months at the latest
3. Replace the fuel filter for the first time after 50 o/h or the first month, then every 250 o/h or after 6 months at the latest
4. Replace the hydraulic oil filter for the first time after 50 hours run or the first month, then every 250 hours run or after 6 months at the latest

5.14 Lubrication plan DT15 with swivel skip

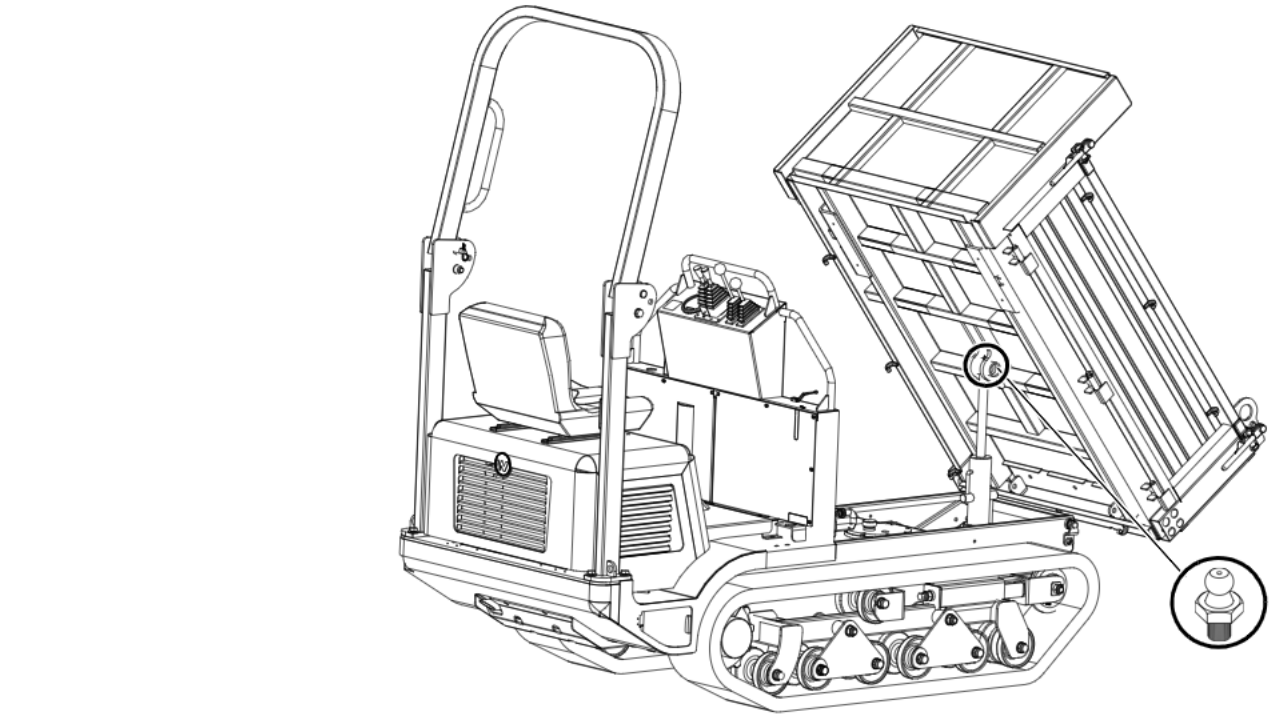
Explanation	Symbol
Grease zerks	

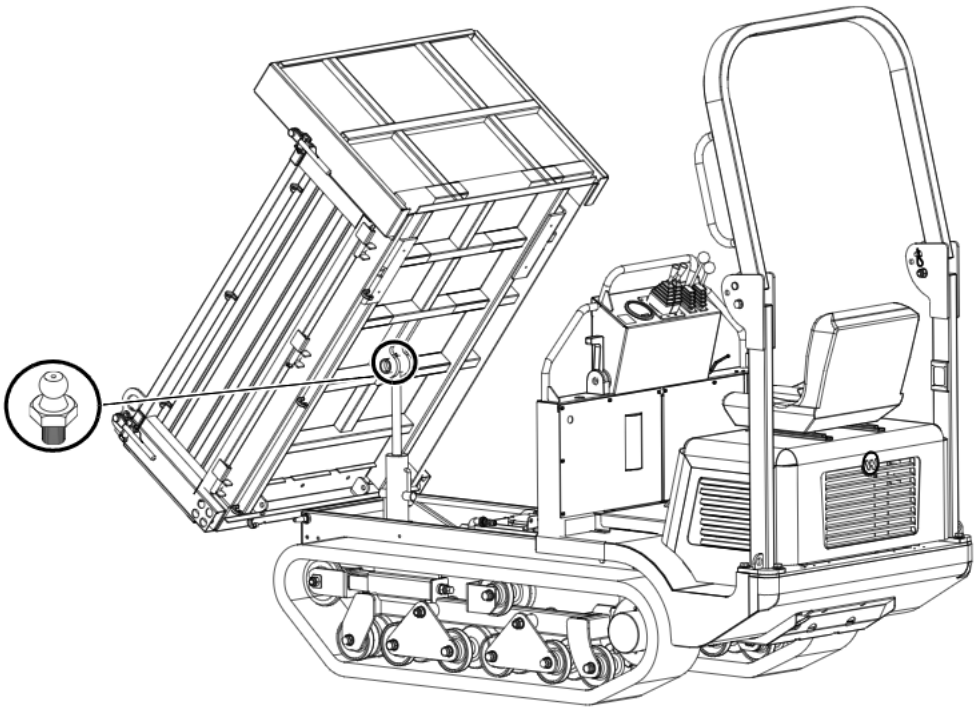




5.15 Lubrication plan DT15 with 3-sided tip skip (optional)

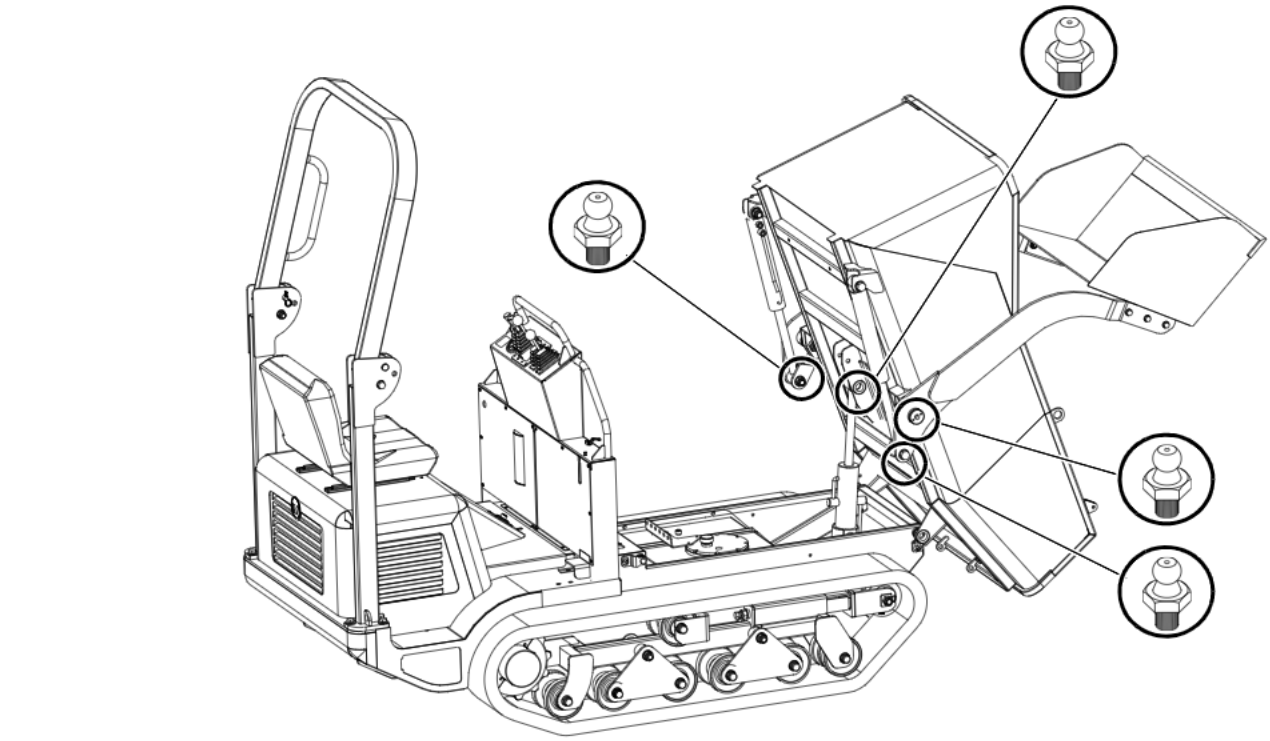
Explanation	Symbol
Grease zerks	

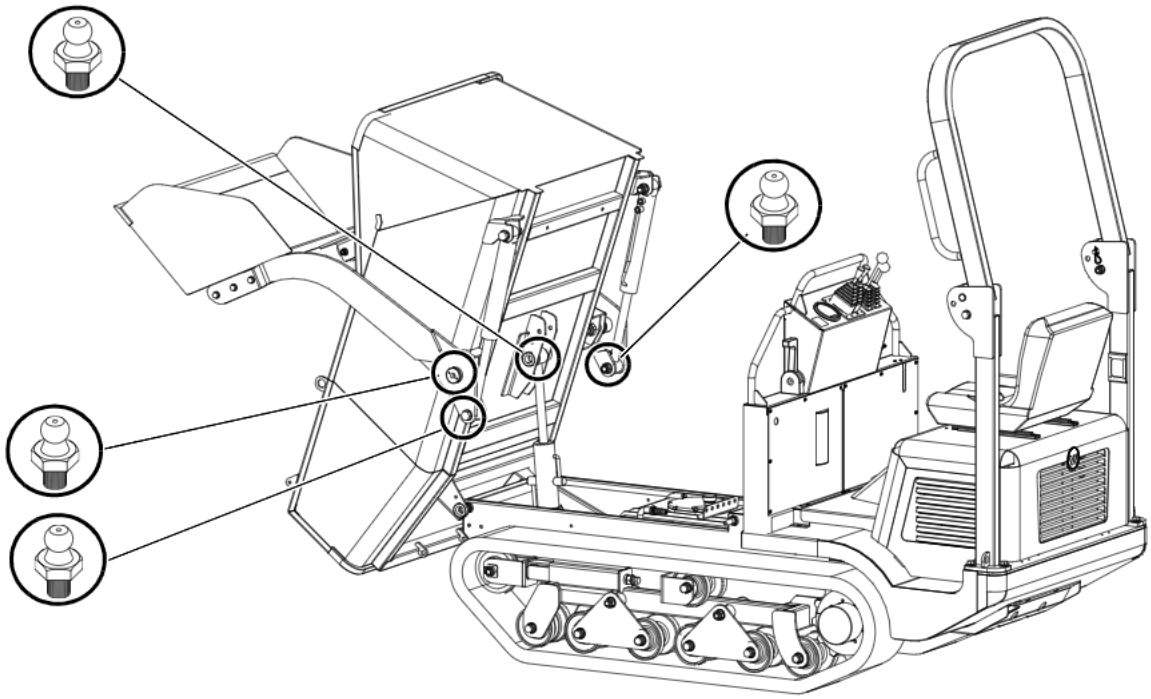




5.16 Lubrication plan DT15 with skip for earth-movement (optional)

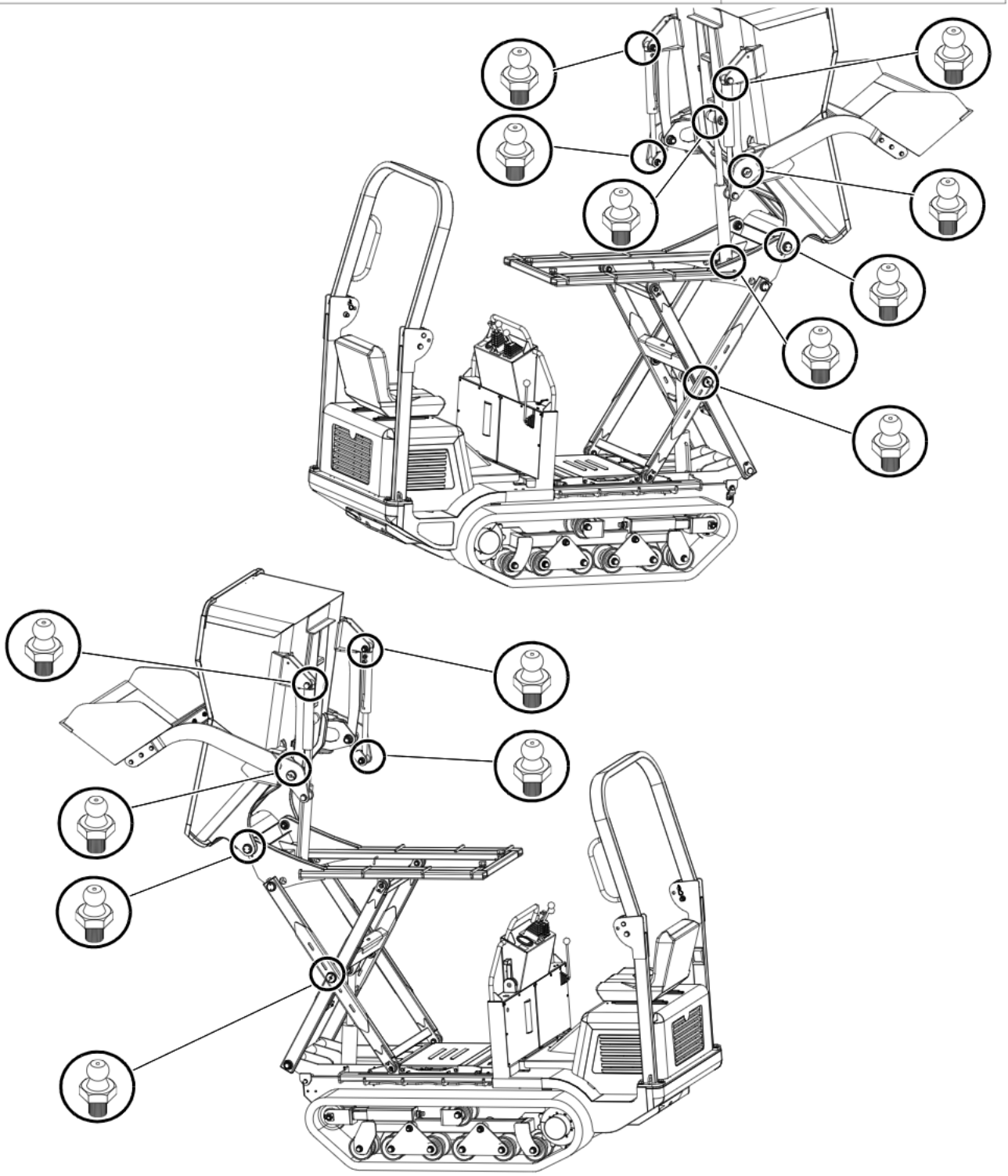
Explanation	Symbol
Grease zerks	





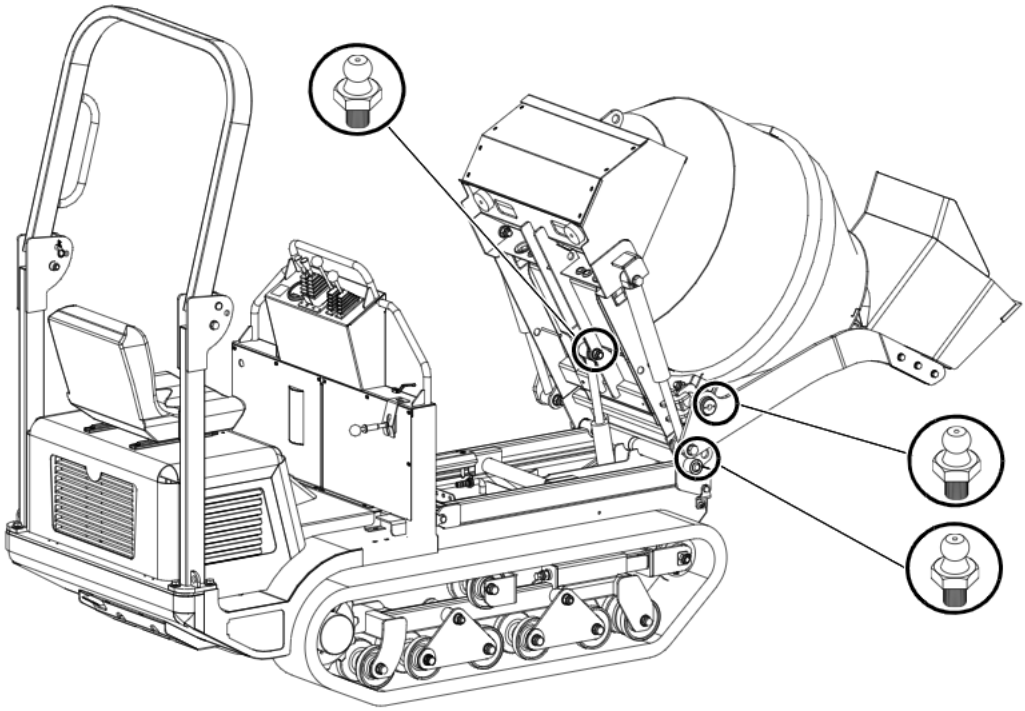
5.17 Lubrication plan DT15 with high tip skip (optional)

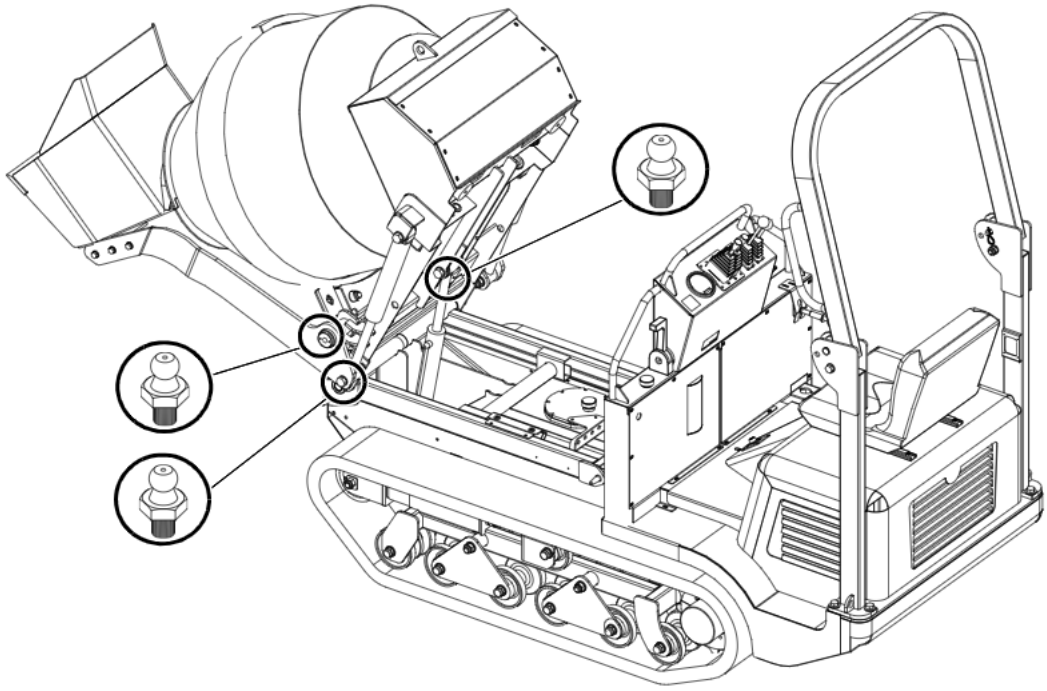
Explanation	Symbol
Grease zerks	



5.18 Lubrication plan DT15 with concrete mixer (optional)

Explanation	Symbol
Grease zerks	





6 Technical data

6.1 Diesel engine

Sturdy steel sheet chassis, rubber-mounted engine

Hydraulic motor	Model DT15
Product	Kubota diesel engine
Type	D902-E
Version	Water-cooled 4-stroke engine
Number of cylinders	3
Displacement	898 cm³
Nominal bore and stroke	72 x 73.6 mm
Power	15 kW at 3000 min^{-1}
Max. torque	56 Nm at 2400 min^{-1}
Max. engine speed without load	3000 +/- 50 min^{-1}
Idling speed	950 +/- 50 min^{-1}
fuel injection system	Bosch type MD mini-pump
Starting aid	Glow plug (preheating time about 15 seconds)
Battery	12 V/60 Ah
Max. inclined position (engine no longer supplied with oil):	20° in all directions
Comply with the emission level	97/68/EC EPA

6.2 Diesel engine EPA Tier 4 (Opt.)

Hydraulic motor	Model DT15
Product	Kubota diesel engine
Type	D902-EF03
Version	Water-cooled 4-stroke engine
Number of cylinders	3
Displacement	898 cm³
Nominal bore and stroke	72 x 73.6 mm
Power	17.7 kW at 3200 min^{-1}
Max. torque	56 Nm at 2600 min^{-1}
Max. engine speed without load	3200 +/- 50 min^{-1}
Idling speed	950 +/- 50 min^{-1}
fuel injection system	Bosch type MD mini-pump
Starting aid	Glow plug (preheating time about 15 seconds)
Battery	12 V/60 Ah
Max. inclined position (engine no longer supplied with oil):	20° in all directions
Comply with the emission level	97/68/EC EPA Tier 4

6.3 Hydraulic system

Hydraulic system	Model DT15
Pump	2 Pumps with variable displacement + 1 gear pump 35 + 35 + 25 l/min
Displacement	95 l/min at 3000 rpm
Operating pressure for operating hydraulics	170 bar
Operating pressure for drive hydraulics	275 bar
Hydraulic oil radiator	Standard
Hydraulic reservoir capacity	25 Liters

6.4 Travel gear

Travel gear	Model DT15
2 speed ranges	4.0 and 7.5 kph
Hill climbing ability	15°/27 %
Track width	230 mm
No. of track rollers on either side	6 pieces
Ground clearance	224 mm
Ground pressure	0.28 – 0.51 kg/cm²

6.5 Work hydraulics

Work hydraulics	Model DT15
Hydraulic pump displacement:	25 l/min at 3000 rpm
Directional valve	2 sections/2 sections + 1 section
Max. operating pressure	170±5 bar
Filter	Suction and return filter
Hydraulic oil reservoir	25 Liters

6.6 Swivel skip

Skip	Model DT15
Struck	632 Liters
Heaped	760 Liters
Liquid capacity	375 Liters
Skip length	1537 mm
Skip width	1102 mm
Skip height	616 mm
Swivel range	−90°/+90°
Weight of work equipment	350 kg

6.7 3-way skip (option)

Skip	Model DT15
Struck	520 Liters
Heaped	690 Liters
Liquid capacity	520 Liters
Skip length	1548 mm
Skip width	1020 mm
Skip height	425 mm
Weight of work equipment	240 kg

6.8 Earth-movement skip (option)

Skip	Model DT15
Struck	660 Liters
Heaped	800 Liters
Liquid capacity	550 Liters
Skip length	1482 mm
Skip width	1054 mm
Skip height	440 mm
Weight of work equipment with bucket	350 kg

6.9 Self-loading equipment (optional)

Skip	Model DT15
Width	1120 mm
Scraping depth	15 mm
Capacity	130 Liters

6.10 High-tip skip (option)

Skip	Model DT15
Struck	550 Liters
Heaped	650 Liters
Liquid capacity	410 Liters
Skip length	1500 mm
Skip width	1000 mm
Skip height	477 mm
Max. tilt-out height	1963 mm
Weight of work equipment with bucket	600 kg

6.11 Concrete mixer (option)

Skip	Model DT15
Concrete output	360 Liters
Length of concrete mixer	1276 mm
Width of concrete mixer	926 mm
Height of concrete mixer	1092 mm
Weight of work equipment with bucket	520 kg

6.12 Noise levels

Sound power level	Model DT15
Sound power level (L_{WA})[1]	101 dB(A)
Operator-perceived sound pressure level (L_{PA})[2]	87 dB (A)
Uncertainty factor (K_{PA})[3]	0.9 dB (A)

1. According to ISO 6395
2. According to ISO 6396
3. According to EN ISO 4871

Notice!

Sound power level measurement based on Directive 2000/14/EC. Operator-perceived noise level measured in compliance with EU Directives 84/532/EEC, 89/514/EEC and 95/27/EEC. Measurements performed on asphalted surface.

6.13 Vibration

Vibration	
Effective acceleration value of the upper limbs[1]	$< 2.5 \frac{m}{s^2}$
Effective acceleration value for the body [1]	$< 0.5 \frac{m}{s^2}$

1. Measurements as per 2002/44/EC, ISO EN 20643 and ISO/TR 25398 (measurement under the following conditions: excavating, driving). Vehicle and attachment operation and maintenance as per Operator's Manual. Uncertainty of measurement: measurements as per EN 12096:1997 standard
   Value of vibrations transmitted to human body specified under special operational and ground conditions. Therefore it does not apply to a large number of applications. Therefore, the value of the vibrations transmitted to the human body (indicated by the vehicle manufacturer in accordance with European standards) must not be used as a reference for specifying vehicle operator exposure to vibrations

6.14 Dimensions model DT15 with swivel skip

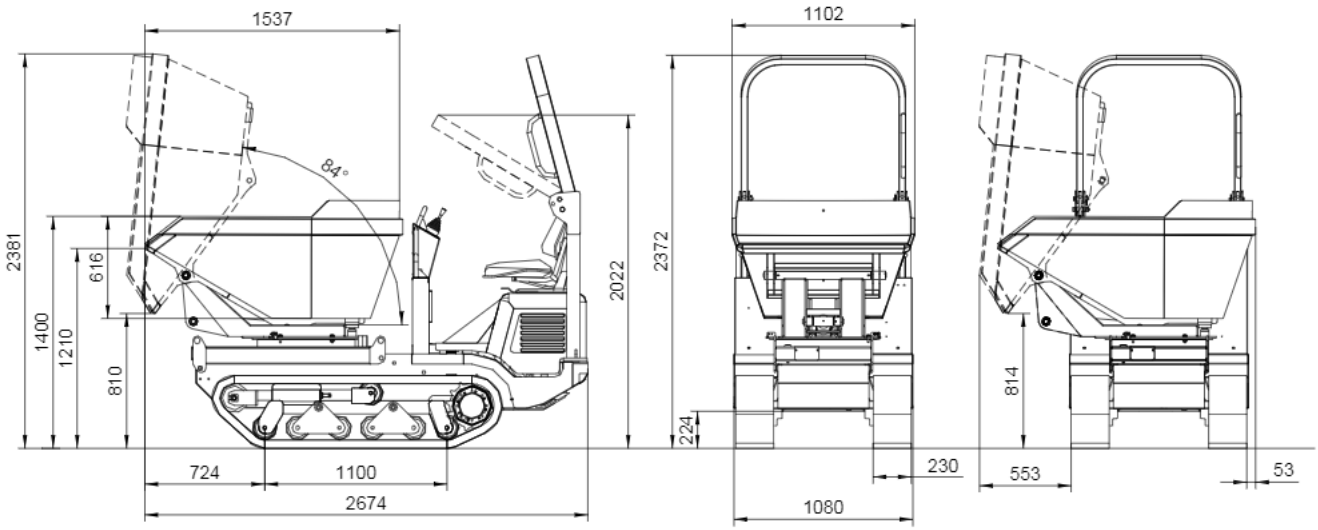


Fig. 133: Machine dimensions (model DT15 with swivel skip)

Main data	Model DT15
Payload	1500 kg
Dead weight incl. skip	1330 kg
Length indications	2674 mm
Width	1102 mm
Height	2372 mm
Track width	230 mm
Skip height	1210 mm
Skip length	1537 mm
Skip width	1102 mm
Skip depth	616 mm

6.15 Dimensions model DT15 with 3-way skip (option)

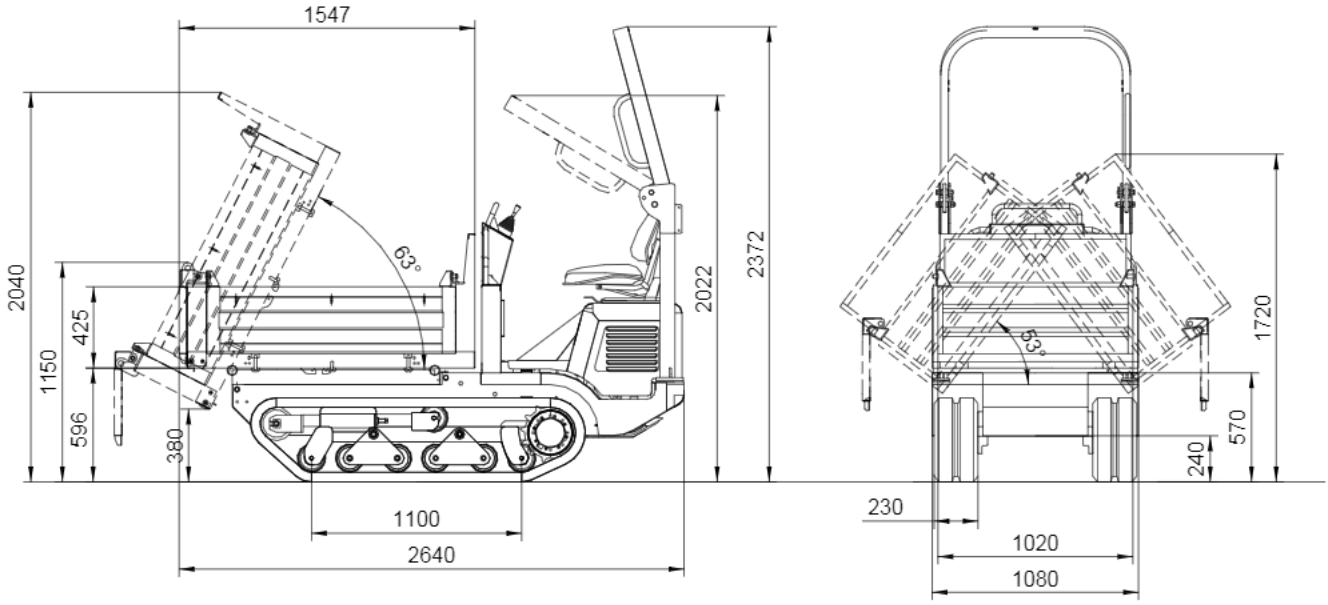


Fig. 134: Machine dimensions (model DT15 with 3-way skip)

Main data	Model DT15
Payload	1500 kg
Dead weight incl. skip	1270 kg
Length indications	2640 mm
Width	1080 mm
Height	2372 mm
Track width	230 mm
Skip height	1150 mm
Skip length	1547 mm
Skip width	1020 mm
Skip depth	425 mm

6.16 Dimensions model DT15 with earth-movement skip (option)

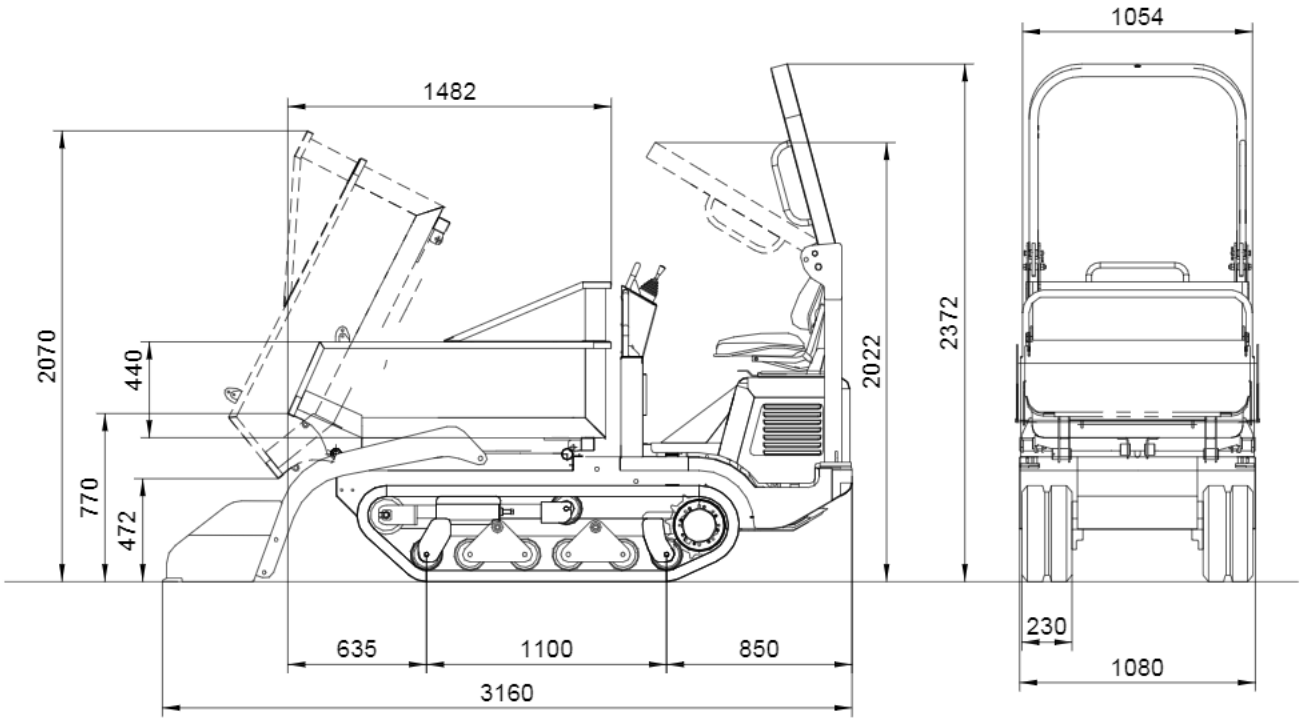


Fig. 135: Machine dimensions (model DT15 with earth-movement skip)

Main data	Model DT15
Payload	1500 kg
Dead weight incl. skip and loader unit	1390 kg
Length indications	3160 mm
Width	1080 mm
Height	2372 mm
Track width	230 mm
Skip height	770 mm
Skip length	1482 mm
Skip width	1054 mm
Skip depth	440 mm

6.17 Dimensions model DT15 with high-tip skip (option)

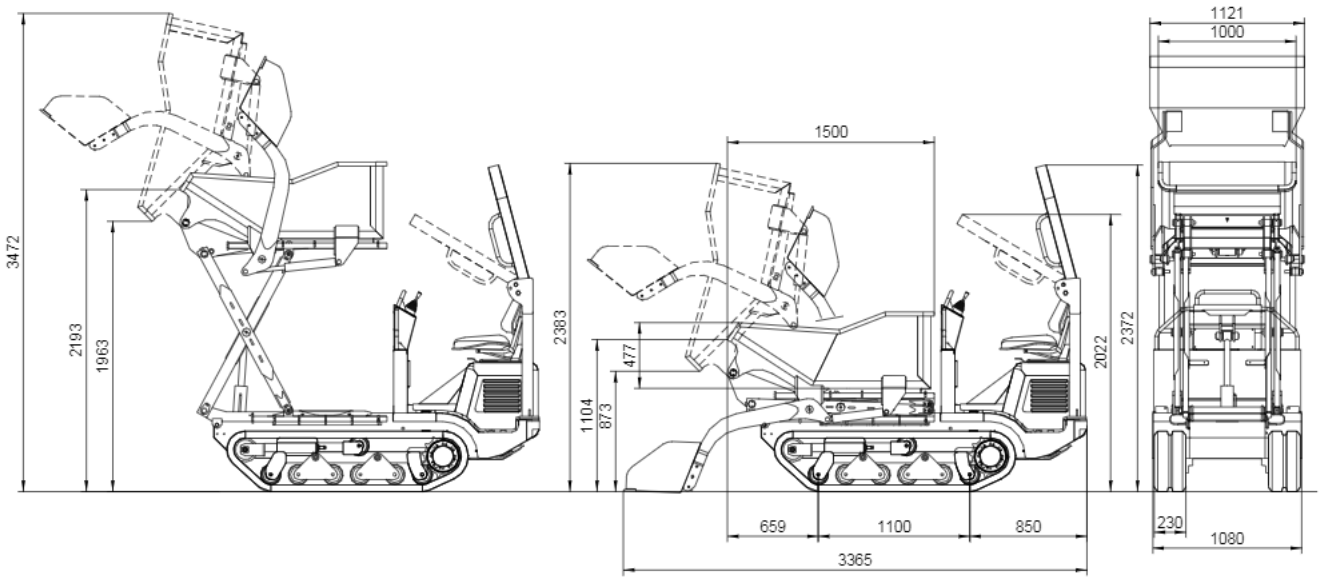


Fig. 136: Machine dimensions (model DT15 with high-tip skip)

Main data	Model DT15
Payload	900 kg
Dead weight incl. skip and loader unit	1620 kg
Length indications	3365 mm
Width	1121 mm
Height	2372 mm
Track width	230 mm
Skip height	1104 mm
Skip length	1500 mm
Skip width	1000 mm
Skip depth	477 mm

6.18 Dimensions model DT15 with concrete mixer (option)

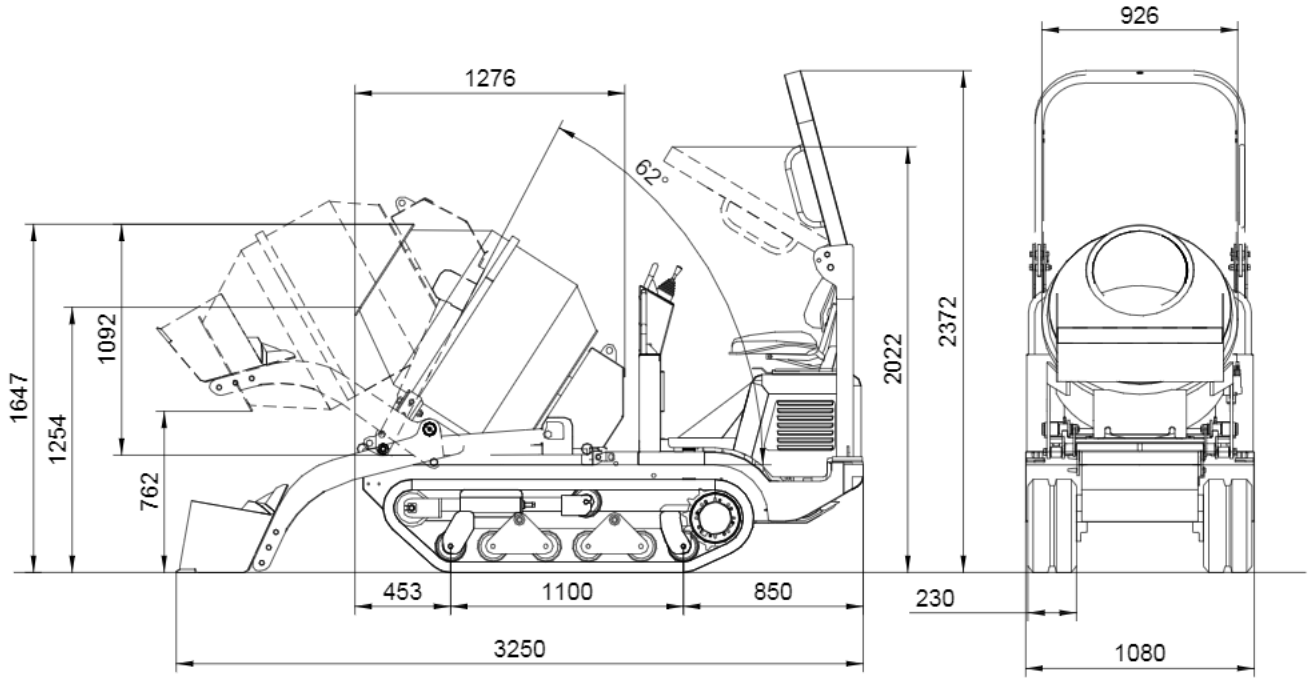


Fig. 137: Machine dimensions (model DT15 with concrete mixer)

Main data	Model DT15
Payload	1500 kg
Dead weight incl. concrete mixer and loader unit	1510 kg
Length indications	3250 mm
Width	1080 mm
Height	2372 mm
Track width	230 mm
Height of concrete mixer	1240 mm
Length of concrete mixer	1276 mm
Width of concrete mixer	926 mm
Depth of concrete mixer	1092 mm

6.19 Electrical system

Electrical system	
Dynamo	12 V 480 W
Starter	12 V 1.2 kW
Battery	12 V 60Ah

6.20 Fuses

Fuse box **A** is located on the protective plate of the control stand, whilst the three power fuses **B** under the engine cover are located on the right-hand side of the undercarriage chassis.

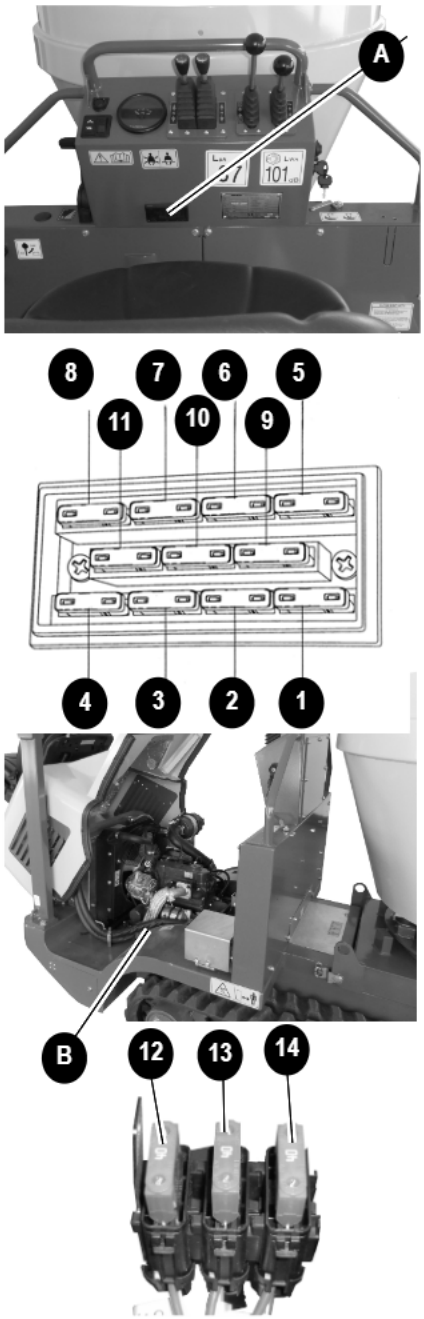


Fig. 138: Fuses

Description	Fuse	Rated current (A)
1	Non-connected consumer	2 A
2	Non-connected consumer	2 A
3	Preheating control unit, alternator excitation, electro-stop	5 A
4	Horn relay	7.5 A
5	Non-connected consumer	15
6	Non-connected consumer	5 A
7	Non-connected consumer	7.5 A
8	Main supply	15 A1
9	Instrument panel lights	5 A
10	1-Pole socket 12 V, flashing headlight	7.5 A
11	Power for high-speed switch	3 A
12	Alternator	40 A
13	Diesel engine glow plug preheating	40 A
14	Main supply	40 A

Wacker Neuson Linz GmbH keep abreast of the latest technical developments and constantly improve their products. For this reason, we may from time to time need to make changes to figures and descriptions in this documentation that do not reflect products that have already been delivered and that will not be implemented on these vehicles.

Technical data, dimensions and weights are only given as an indication. Responsibility for errors or omissions not accepted.

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