



**WACKER
NEUSON**
all it takes!

Operator's manual

Tracked excavator

ET42
EZ50



Machine model	E19-01/E19-02
Edition	1.0
Document order number	1000453263
Language	en/us

Documentation	Language	Order no.
Operator's manual	en/us	1000453263

Legend	
Original Operator's Manual	–
Translation of original Operator's Manual	x
Issue	1.0
Date	07/2020
Document	BA E19 en*

Copyright © 2020 Wacker Neuson Linz GmbH, Hörsching

Printed in Austria

All rights reserved, in particular the copyright, the right of reproduction and the right of distribution applicable worldwide.

This document may be used by the receiver only for the designated purpose. It may in no way be duplicated or translated in any other language, in whole or in part, without prior permission in writing from the manufacturer.

No reproduction or translation of this publication, in whole or in part, without the written consent from Wacker Neuson Linz GmbH.

Violations of legal regulations, in particular of the copyright protection, will be subject to civil and criminal prosecution.

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 the products that have already been delivered and which will not be implemented in these vehicles.

Technical data, dimensions and weights are only given as an indication. Non-metric values are rounded off. Responsibility for errors or omissions not accepted.

The cover features the vehicle with possible optional equipment. Not all options in this operator's manual must be available in every destination country.

Photographs and graphics are symbolic representations and may differ from the actual products.

Wacker Neuson is authorized to publish copyright-protected material, for example that owned by Perkins Engines Company Ltd.

The Operator's Manual and any amendments to it must always be available at the location where the vehicle is operated. Possible amendments are included at the end of the Operator's Manual.



Wacker Neuson Linz GmbH
 Flughafenstraße 7
 A-4063 Hörsching
 Phone: +43 (0) 7221 63000
 Fax: +43 (0) 7221 63000-2200
 E-mail: office.linz@wackerneuson.com
 www.wackerneuson.com

Table of contents

1 Foreword	
1.1 Operator's manual	1-1
1.2 Warranty and liability	1-8
2 Safety	
2.1 Safety symbols and signal words	2-1
2.2 Qualification of operating personnel	2-2
2.3 Conduct	2-3
2.4 Operation	2-4
2.5 Lifting gear applications	2-8
2.6 Trailer operation	2-11
2.7 Attachment operation	2-11
2.8 Towing, loading and transporting	2-13
2.9 Maintenance	2-15
2.10 Measures for avoiding risks	2-18
3 Introduction	
3.1 Machine overview	3-1
3.2 Brief description of the vehicle	3-2
3.3 Information and regulations on use	3-4
3.4 Labels	3-5
4 Putting into operation	
4.1 Cab	4-1
4.2 Overview of control elements	4-24
4.3 Control and warning lights overview	4-28
4.4 Preparatory work	4-36
4.5 Starting and stopping the engine	4-38
5 Operation	
5.1 Steering system	5-1
5.2 Accelerator actuation	5-2
5.3 Brake	5-5
5.4 Machine travel	5-6
5.5 Lights/signaling system	5-12
5.6 Washer system	5-16
5.7 Heating, ventilation and air conditioning	5-17
5.8 Operating hydraulics	5-19
5.9 Attachments	5-57
5.10 Work operation	5-62
5.11 Emergency lowering	5-70
5.12 Drive interlock	5-71
5.13 Immobilization/putting back into operation	5-72
5.14 Permanently putting out of operation	5-74
6 Transportation	
6.1 Towing the vehicle	6-1
6.2 Loading the vehicle	6-2
6.3 Transporting the vehicle	6-8



7	Maintenance	
7.1	Information on maintenance	7-1
7.2	Maintenance overview	7-2
7.3	Consumables	7-15
7.4	Maintenance accesses	7-18
7.5	Cleaning and maintenance	7-22
7.6	Lubrication work.....	7-26
7.7	Fuel system	7-26
7.8	Engine lubrication system.....	7-35
7.9	Cooling system	7-38
7.10	Air filter.....	7-41
7.11	V-belt	7-42
7.12	Hydraulic system	7-42
7.13	Electrical system.....	7-47
7.14	Heating, ventilation and air conditioning system.....	7-48
7.15	Washer system	7-48
7.16	Travel drive	7-48
7.17	Braking system	7-48
7.18	Tracks	7-49
7.19	Maintenance of attachments.....	7-52
7.20	Maintenance of options.....	7-52
7.21	Exhaust gas treatment.....	7-53
7.22	Machine preservation	7-59
8	Malfunctions	
8.1	Diesel engine.....	8-1
8.2	Malfunctions (display element/multi-functional display).....	8-2
9	Technical data	
9.1	Models and trade names	9-1
9.2	Engine.....	9-1
9.3	Traveling drive	9-2
9.4	Brake	9-2
9.5	Tracks	9-2
9.6	Steering system	9-2
9.7	Operating hydraulics.....	9-2
9.8	Electrical system.....	9-3
9.9	Tightening torques	9-7
9.10	Coolant	9-8
9.11	Noise emissions.....	9-8
9.12	Vibrations.....	9-8
9.13	Weights.....	9-9
9.14	Lift capacity/load	9-13
9.15	Dimensions	9-38
	S-1

EC Compliance Statement**Manufacturer**

Wacker Neuson Linz GmbH, Flughafenstraße 7, 4063 Hörsching, Austria

**Product**

Machine designation	Hydraulic excavator
Machine model	E19-01
Trade name	ET42
Serial number	-
Engine/output kW	403J-E17T / 36
Measured sound power level dB(A)	-
Guaranteed sound power level dB(A)	97

Conformity assessment procedure

Notified body according to directive 2006/42/EC, appendix XI:
DGUV Test, test and certification body
construction department, Am Knie 6, 81241 München, Germany
Notified body of the EU, identification number: 0515

For 2000/14/EG notified body involved in procedure

Industrial Supervisory Board SÜD Industrie Service GmbH
Westendstraße 199
D 80686 München
Notified Body of the EU, identification number: 0036

Directives and standards

We hereby declare that this product corresponds to the relevant regulations of the following Directives and standards:

2006/42/EC, 2005/88/EC, 2000/14/EC - Annex VIII, 2014/30/EU, 2014/53/EU (if Telematic installed); DIN EN ISO 12100:2010, DIN EN 474-1:2006+A4:2013, DIN EN 474-5:2006+A3:2013, DIN EN ISO 3471:2010, DIN EN ISO 3744:1995, DIN EN ISO 3449:2009

Authorized representative for the compilation of technical documentation

Annette Ortmayr, Team Leader Technical Documentation
Flughafenstraße 7
4063 Hörsching
Austria

Robert Finzel,
Managing director

The indications specified above correspond to the existing information at time of going to press. They have possibly changed in the meantime (refer to the original declaration of conformity supplied with the vehicle). Applies to EU countries, and countries with legislation similar to that of the EU. Applies to all vehicles with CE marks that have not been modified without authorization since the product was placed on the market.

**EC Compliance Statement****Manufacturer**

Wacker Neuson Linz GmbH, Flughafenstraße 7, 4063 Hörsching, Austria

**Product**

Machine designation	Hydraulic excavator
Machine model	E19-02
Trade name	EZ50
Serial number	-
Engine/output kW	403J-E17T / 36
Measured sound power level dB(A)	-
Guaranteed sound power level dB(A)	97

Conformity assessment procedure

Notified body according to directive 2006/42/EC, appendix XI:
 DGUV Test, test and certification body
 construction department, Am Knie 6, 81241 München, Germany
 Notified body of the EU, identification number: 0515

For 2000/14/EG notified body involved in procedure

Industrial Supervisory Board SÜD Industrie Service GmbH
 Westendstraße 199
 D 80686 München
 Notified Body of the EU, identification number: 0036

Directives and standards

We hereby declare that this product corresponds to the relevant regulations of the following Directives and standards:

2006/42/EC, 2005/88/EC, 2000/14/EC - Annex VIII, 2014/30/EU, 2014/53/EU (if Telematic installed); DIN EN ISO 12100:2010, DIN EN 474-1:2006+A4:2013, DIN EN 474-5:2006+A3:2013, DIN EN ISO 3471:2010, DIN EN ISO 3744:1995, DIN EN ISO 3449:2009

Authorized representative for the compilation of technical documentation

Annette Ortmayr, Team Leader Technical Documentation
 Flughafenstraße 7
 4063 Hörsching
 Austria

 Robert Finzel,
 Managing director

The indications specified above correspond to the existing information at time of going to press. They have possibly changed in the meantime (refer to the original declaration of conformity supplied with the vehicle). Applies to EU countries, and countries with legislation similar to that of the EU. Applies to all vehicles with CE marks that have not been modified without authorization since the product was placed on the market.

1 Foreword

1.1 Operator's manual

Information on this Operator's Manual

The operator's manual is in the left side compartment near the seat.

A document box behind the seat is available as an option.

This operator's manual contains important information on how to work safely, correctly and economically with the vehicle. Therefore, it aims not only at new personnel, but it also serves as a reference for experienced personnel.

Furthermore, the reliability and the service life of the vehicle will be increased by following the instructions in the Operator's Manual. This is why the Operator's Manual must be kept at hand in the vehicle.

The operator must carefully read and understand the Operator's Manual before starting up, servicing or repairing the vehicle.

This Operator's Manual will help to familiarize yourself more easily with the vehicle, thereby enabling you to use it more safely and efficiently.

This Operator's Manual does not include special superstructures.

Please contact your dealer if you require more information on the vehicle or the Operator's Manual.

Explanation of symbols and abbreviations

Explanation of symbols

- Identifies a list
 - Identifies a subdivision of a list
 - Description of a result
- 1. Identifies an activity
Follow the order of the activity!
- 2. Continuation of an activity
Follow the order of the activity!

A Identifies an alphabetical list

B Continuation of an alphabetical list

Cross references: see page *1-1* (page)

Cross references: **7** (pos. no. or table no.)

Cross-references: *Fig. 2* (Fig. no. 1)

Cross references: – see chapter “5 Operation” on page 5-1
(see chapter)

Cross references: – see “Operation” on page 5-1 (-see text)



Information

Identifies an information that, when followed, provides 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.

Abbreviations

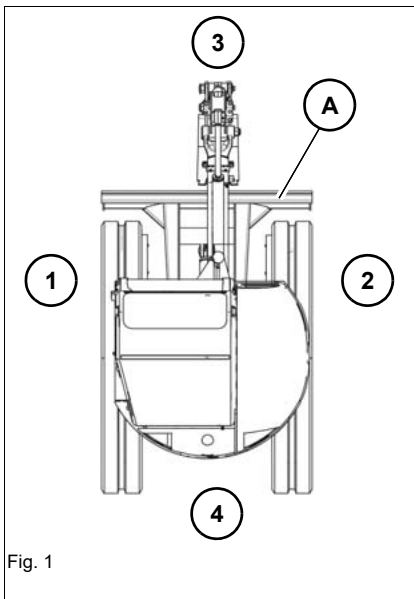
Fig.	=	Figure
AUX	=	Additional control circuit
B	=	Width
o/h	=	Operating hours
approx.	=	approximately
DPF	=	Diesel particulate filter
FGPS	=	Front Guard Protective Structure
FOPS	=	Falling Objects Protective Structure
if nec.	=	if necessary
Hydrau- lic quick- hitch	=	Hydraulic quickhitch (for example Easy Lock)
max.	=	maximum
min.	=	minimum
MSWS	=	Mechanical quickhitch
Pos.	=	Position
hp	=	Stabilizer blade
ROPS	=	Roll Over Protective Structure (without losing contact with the ground)
TOPS	=	Tip Over Protective Structure
e. g.	=	for example

Glossary

Attachment	All exchangeable equipment (for example buckets) released by Wacker Neuson and developed for work with the vehicle.
Working lights	The lights on the roof, chassis and boom are referred to as working lights.
Towing	The excavator is towed out of an immediate danger zone (railroad crossing or job site, for example).
Canopy	Open safety component for the operator
Operating company/person	A company (or person) operating the vehicle. This can be a job site operating company, for example.
Operator	Person performing vehicle travel or operation.
vehicle	Unless otherwise specified, the term " machine " refers to the excavator described in this Operator's Manual. In some cases the vehicle is also referred to as excavator to avoid confusion with other vehicles.
Machine operation	All work (for example vehicle travel, moving material, daily maintenance work) an operator is allowed to do or has to perform in connection with the vehicle. The term " vehicle operation " does not include maintenance only a Wacker Neuson service center is allowed to perform.
Lift capacity table	The maximum weight which may be lifted in excavating operations. If the upper carriage is rotated, pay attention to the values of the load diagrams .
Cab	Closed safety component for the operator. The term cab is used in this operator's manual for canopy and cab. If there are differences, these two safety components are described separately.
Creep gear	Perform vehicle travel as slowly as possible and jerk free.
Hose rupture	Hydraulic oil under pressure escapes from a hydraulic hose.
Check the threaded fittings for tightness	<ul style="list-style-type: none"> Operator: visually check the screw connections and corresponding components/sub-assemblies visually or manually (without using tools) for tightness Authorized service center: if an attachment has to be used in the event of abnormalities for the control procedures, restore the screwed connection with new materials (screws, nuts)
Visual aids	Visual aids are, for example, rearview mirrors, cameras, but also persons assisting the operator during vehicle operation.
Control lever base	The foldable control lever base on the left.

EU Stage V/Tier 4	Depending on the attachments, the vehicles can satisfy various exhaust norms. If necessary (e.g. during operation), engine versions are described separately. EU Stage V and Tier 4 are examples. Other exhaust norms could also be described in the operator's manual.
Load diagram	Specifies the maximum load at a given boom extension with which the upper carriage may be rotated by 360° and the excavator may travel in creep gear with the stabilizer blade raised without tipping over.
Loading weight	The actual weight of the vehicle at the beginning of transportation. This weight refers to vehicles which are equipped exclusively with options approved by Wacker Neuson.
Additional control circuits	Additional control circuits required for certain attachments. <ul style="list-style-type: none"> • AUX I: auxiliary hydraulics (for example for hydraulic hammer or offset bucket) • AUX II: 3rd control circuit (for example for universal grab) • AUX III: for example Powertilt • AUX IV: hydraulic quickhitch (for example Easy Lock) • AUX V: oscillating grab

Right/left/front/rear



These terms are used from the view of an operator in the cabin if the front of the cabin faces toward the stabilizer blade **A**.

- **1**: left
- **2**: right
- **3**: front
- **4**: rear

Target-group definition

This Operator's Manual is intended for professional construction site personnel.

Any operator must have fully read and understood this Operator's Manual completely.

A dealer or person renting the vehicle must instruct the operator and have this confirmed in writing.

Operator qualification and requirements for safe operation

Among other things, safe vehicle operation depends on the following points:

- Machine model and its outfitting
- Machine maintenance
- Work and driving speed
- Nature of ground and work environment

The most important points are the operator's qualification and power of judgment. A well-trained operator following the operator's manual and maintenance plan ensures a long service life and durability of the vehicle.

Specific training enables the operator to acquire, among other things, the following skills:

- Correct assessment of work situations
- Feeling for the vehicle
- Recognition of possible risk situations
- Safe working by making the correct decisions for man, vehicle and the environment

The operator is at risk if the vehicle is not operated correctly.

Follow the operating procedures and instructions described for the vehicle.

Access to the vehicle or vehicle operation is prohibited for children and persons under the influence of alcohol, drugs, or medicine.

Conversion table

The rounded imperial values are indicated in brackets, for example 1060 cm³ (64.7 in³).

Volume unit	
1 cm ³	(0.061 in ³)
1 m ³	(35.31 ft ³)
1 ml	(0.034 US fl.oz.)
1 l	(0.26 gal)
1 l/min	(0.26 gal/min)
Unit of length	
1 mm	(0.039 in)
1 m	(3.28 ft)
Weight	
1 kg	(2.2 lbs)
1 g	(0.035 oz)
Pressure	
1 bar	(14.5 psi)
1 kg/cm ²	(14.22 lbs/in ²)
Force/output	
1 kN	(224.81 lbf)
1 kW	(1.34 hp)
1 PS	(0.986 hp)
Torque	
1 Nm	(0.74 ft.lbs.)
Speed	
1 km/h	(0.62 mph)
Acceleration	
1 m/s ²	(3.28 ft/s ²)

1.2 Warranty and liability

Exemption from warranty and liability

Warranty

Warranty claims can be made only if the conditions of warranty have been observed. They are included in the General Conditions of Sales and Delivery for new vehicles and spare parts sold by the dealers of Wacker Neuson Linz GmbH. Furthermore, all instructions in this Operator's Manual must be observed.

Have the maintenance, delivery inspection and the entries in the service booklet performed by a Wacker Neuson service center, otherwise warranty claims will not be acknowledged.

Exemption from liability

- Modifying Wacker Neuson products and fitting them with additional equipment and attachments that are not included in our delivery program requires Wacker Neuson's written authorization, otherwise warranty and product liability for possible damage caused by these modifications shall not be applicable.
- 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. Warranty and product liability for possible damage caused by these modifications shall not be applicable.
- Wacker Neuson Linz GmbH shall not be liable for injury and/or damage to property caused by failure to observe the safety instructions, warnings and the Operator's Manual, and by the negligence of the duty to exercise due care when:
 - Handling
 - Operating
 - Servicing and performing maintenance
 - Repairing the vehicle. 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 as well as in the Operator's and maintenance manuals.
 - Read and understand the Operator's Manual before starting up, servicing or repairing the vehicle. Observe all safety instructions and warnings.

2 Safety

2.1 Safety symbols and signal words

Explanation

The following symbol identifies safety instructions. It is used for warning against potential personal risk or danger.

 **DANGER**

DANGER identifies a situation causing death or serious injury if it is not avoided.

Consequences in case of nonobservance.

- ▶ Avoidance of injury or death.

 **WARNING**

WARNING identifies a situation that can cause death or serious injury if it is not avoided.

Consequences in case of nonobservance.

- ▶ Avoidance of injury or death.

 **CAUTION**

CAUTION identifies a situation that can cause injury if it is not avoided.

Consequences in case of nonobservance.

- ▶ Avoidance of injury.

NOTICE

NOTICE identifies a situation that causes damage to the vehicle if it is not observed.

- ▶ Avoidance of damage to property.
-

2.2 Qualification of operating personnel

Owner's duties

- Only allow specifically authorized, trained and experienced persons to operate, drive and perform maintenance on the vehicle.
- Do not allow persons to be trained or instructed by anyone other than an authorized and experienced person.
- Have persons to be trained or instructed practice under supervision until they are familiar with the machine and its behavior (for example with the steering and braking behavior).
- Access to the vehicle or vehicle operation is prohibited for children and persons under the influence of alcohol, drugs or medicine.
- Clearly and unequivocally define the responsibilities of the operating and maintenance personnel.
- Clearly and unequivocally define the responsibilities on the job site, also in view of traffic regulations.
- Give the operator the authority to refuse safety instructions from third parties.
- Have the vehicle serviced and repaired only by an authorized service center.

Required knowledge of the operator

- The operator is responsible for third parties.
- Avoid any operational mode that might be prejudicial to safety.
- The specific national driving license is required.
- The vehicle may only be operated by authorized and safety-conscious persons who are fully aware of the risks involved in operating the vehicle.
- The operator and owner are obligated to operate the vehicle only in a safe and working condition.
- All persons working on or with the vehicle must have read and understood the safety instructions in this Operator's Manual before starting work.
- Follow, and instruct the operator in, legal and other mandatory regulations relevant to accident prevention.
- Observe and instruct the operator in regulations regarding road traffic and environmental protection.
- Use only the defined accesses for getting on and off the vehicle.
- Be familiar with the emergency exit of the vehicle.

Preparatory measures for the operator

- Before starting, check the vehicle whether it can be driven and operated safely.
- Tie back long hair and remove all jewelry.
- Wear close-fitting work clothes that do not hinder movement.

2.3 Conduct

Prerequisites for operation

- The vehicle has been designed and built in accordance with state-of-the-art standards and the recognized safety regulations. Nevertheless its use can cause danger to the operator or third parties, or damage to the vehicle.
- Store this Operator's Manual in the place provided for this in or on the vehicle. Immediately replace a damaged or illegible Operator's Manual and any supplements to it.
- The vehicle must only be operated in accordance with its designated use and the instructions set forth in this Operator's Manual.
- The operator and owner are obligated not to put a damaged or malfunctioning vehicle into operation or operate it.
 - If a damage or malfunction occurs during operation, put the vehicle out of operation immediately and secure it against restart.
 - Have all malfunctions jeopardizing the safety of the operator or third parties immediately repaired by an authorized service center.
- Do not put the vehicle into operation or operate it after an accident; have it inspected for damage by an authorized service center.
 - Have the seat belt replaced by an authorized service center after an accident, even if there is no visible damage.
 - Cabin and protective structures
- Remove all dirt, snow and ice from climbing aids (for example from the handholds, footholds, handrails).
- The owner is responsible for requiring the operating and maintenance personnel to wear protective clothing and equipment as required by the circumstances.

2.4 Operation

Preparatory measures

- Operation is only allowed with correctly installed and intact protective structures.
- Keep the vehicle clean. This reduces injury, accident and fire hazards.
- Safely store objects you carry with you in the places provided for this (for example in the storage compartment, drinks holder).
- Do not carry objects with you that protrude into the user's work space. They can create another danger in case of an accident.
- Observe all safety, warning and information labels.
- Start and operate the vehicle only with the seat belt fastened and only from the place provided for this.
- Check the condition and the fastening of the seat belt. Have malfunctioning seat belts and mounting hardware replaced by an authorized service center.
- Before starting work, adjust the seating position so that all control elements can be reached and fully operated.
- Only make personal settings when the vehicle is at a standstill (e.g. seat, steering column).
- Ensure that all safety devices are properly installed and functional before starting work.
- Before starting work or after interrupting work, ensure that the brake, steering, signaling and light systems are functional.
- Before putting the vehicle into operation, ensure that nobody is in the danger zone.

Job site

- The operator is responsible for third parties.
- Before starting work, familiarize yourself with the job site. This applies to, for example:
 - Obstacles in the job site and vehicle travel area
 - Any barriers separating the job site from public roads
 - Soil weight-bearing capacity
 - Existing overhead and underground lines
 - Special operating conditions (for example dust, steam, smoke, asbestos)
- The operator must know the maximum dimensions of the vehicle and the attachment – see “Technical data”.
- Maintain a safe distance (for example from buildings, edges of building pits).
- During work in buildings or in enclosed areas, look out for:
 - Height of the ceiling/clearances
 - Width of entries/passages
 - Maximum load of ceilings and floors
 - Sufficient room ventilation (for example risk of carbon monoxide poisoning)
- Use existing visual aids to stay aware of the danger zone.
- In conditions of darkness and poor visibility, switch on existing work lights and ensure that motorists are not blinded by these lights.
- If the existing lights of the vehicle are not sufficient for performing work safely, ensure additional lighting of the job site.
- Due to hot vehicle parts, maintain a safe distance from easily flammable material (for example from hay, dry leaves).

Danger zone

- The danger zone is the area in which persons are in danger due to the movements of the vehicle, attachment and/or load.
- The danger zone also includes the area that can be affected by falling material, equipment or by parts that are thrown out.
- Extend the danger zone sufficiently in the immediate vicinity of buildings, scaffolds or other elements of construction.
- Seal off the danger zone should it not be possible to keep a sufficient safety distance.
- Stop vehicle operation immediately if persons do not stay clear of the danger zone.



Carrying passengers

- Carrying passengers with the vehicle is PROHIBITED.
- Carrying passengers on/in attachments/tools is PROHIBITED.
- Carrying passengers on/in trailers is PROHIBITED.

Mechanical integrity

- The operator and owner are obligated to operate the vehicle only in a safe and working condition.
- Operate the machine only if all protective and safety-oriented equipment (for example protective structures such as a cabin or rollbar, removable safety devices) is installed and functional.
- Check the vehicle for visible damage and defects.
- In case of damage and/or unusual behavior, put the vehicle out of operation immediately and secure it against restart.
- Have all malfunctions jeopardizing the safety of the operator or third parties immediately repaired by an authorized service center.

Starting the engine of the vehicle

- Start the engine only according to the Operator's Manual.
- Observe all warning and indicator lights.
- Do not use any liquid or gaseous starting aids (for example ether or starting fuel).

Machine operation

- Start and operate the vehicle only with the seat belt fastened and only from the place provided for this.
- Put the vehicle into operation only if visibility is sufficient (have another person guide you if necessary).
- Operation on slopes:
 - Travel/work only uphill or downhill.
 - Avoid vehicle travel across a slope, observe the vehicle's permissible inclination (and of the trailer if necessary).
 - Keep loads on the uphill side of the vehicle and as close as possible to it.
 - Keep attachments/work equipment close to the ground.
- Adapt the travel speed to the circumstances (for example the ground conditions, weather conditions).
- There is increased danger during backward vehicle travel. Persons in the blind spot of the vehicle cannot be seen by the operator.
 - Ensure that nobody is in the danger zone when you change the travel direction.
- Never get on a moving vehicle and never jump off the vehicle.

Machine travel on public roads/sites

- The specific national driving license is required.
- Observe the national regulations (for example the road traffic regulations) during machine travel on public roads/sites.
- Ensure that the vehicle is in compliance with the national regulations.
- In order not to blind other motorists, using the existing work lights during vehicle travel on public roads/site is prohibited.
- When crossing underpasses, bridges, tunnels, for example, ensure that the clearance height and width is sufficient.
- The attachment fitted onto the machine must be certified for travel on public roads/sites (see for example the registration documents).
- The attachment fitted onto the vehicle must be empty and in transport position.
- The attachment fitted onto the vehicle must be equipped with the mandatory lights and protective equipment.
- Take measures against unintentional operation of the operating hydraulics.
- If the vehicle has different steering modes, ensure that the mandatory steering mode is selected.

Stopping the engine of the vehicle

- Stop the engine only according to the Operator's Manual.
- Before stopping the engine, lower the work equipment/attachment to the ground.

Stopping and securing the vehicle

- Unbuckle the seat belt only after stopping the engine.
- Before leaving the machine, secure it to prevent it from rolling away (for example with the parking brake, suitable wheel chocks).
- Remove the starting key and secure the vehicle against unauthorized operation.

2.5 Lifting gear applications

Requirements

- Have loads fastened and the operator guided by a qualified person who has specific knowledge of lifting gear applications and the usual hand signals.
- The person giving instructions to the operator must stay in visual contact with the operator when fastening, guiding or removing the load (maintain visual contact).
- If this not be possible, ask one more person with the same qualifications to guide.
- The operator may not leave his seat as long as the load is raised.

Fastening, guiding and removing loads

- Follow the applicable specific regulations for fastening, guiding and removing a load.
- Wear protective clothing and equipment when fastening, guiding and removing loads (for example a hard hat, safety glasses, protective gloves, safety boots).
- Do not place lifting and fastening gear over sharp edges or rotating parts. Loads must be fastened so as to prevent them from slipping or falling.
- Move loads only on horizontal, level and firm ground.
- Move loads close to the ground.
- In order to avoid oscillating movements of loads:
 - Perform smooth, slow movements with the vehicle.
 - Use cables to guide the load (do not use hands to guide).
 - Bear in mind the weather conditions (for example the wind force).
 - Keep a minimum safety distance from objects.
- The operator may allow the load to be fastened and removed only if the vehicle and its work equipment are not being moved.
- Danger zones must not overlap with the work zones of other vehicles.

Lifting gear applications

- The vehicle must be certified for lifting gear applications.
- Observe the national regulations for lifting gear applications.
- Lifting gear applications are procedures involving raising, transporting and lowering loads with the help of lifting and fastening gear.
- The help of an accompanying person is necessary for fastening, guiding and removing the load.
- There must be nobody under the load.
- Stop the vehicle immediately and stop the engine if persons enter the danger zone.
- Use the machine for lifting gear applications ONLY if the mandatory lifting gear (for example a joint rod and load hook) and safety equipment (for example optical and acoustic warning devices, hose burst valve, stability table) is installed and functional.
- Use only lifting and fastening gear certified by a test/certification body, observe the inspection intervals (use only chains and shackles. No belts, slings or cables).
- Do not use any lifting and fastening gear that is dirty, damaged or not of sufficient size.
- Do not interrupt the work process with a load attached.

2.6 Trailer operation

Trailer operation

- The vehicle must be certified for trailer operation.
- Observe the national regulations for trailer operation.
- The specific national driving license is required.
- Carrying passengers on/in trailers is PROHIBITED.
- Observe the maximum permissible vertical and trailer load.
- Do not exceed the permissible trailer speed.
- Trailer operation with the towing gear of the vehicle is prohibited.
- Trailer operation changes the vehicle's operating behavior; the operator must be familiar with this and act accordingly.
- Bear in mind the vehicle's steering mode and the trailer's turning circle.
- Before hitching/unhitching the trailer, secure it to prevent it from rolling away (for example with the parking brake, suitable wheel chocks).
- There must be nobody between the vehicle and the trailer when hitching a trailer.
- Hitch the trailer onto the vehicle correctly.
- Ensure that all equipment works correctly (for example the brakes, lights).
- Before starting vehicle travel, ensure that nobody is between the vehicle and the trailer.

2.7 Attachment operation

Attachments

- Use only attachments that are certified for the machine or its protective equipment (for example a shatter protection).
- All other attachments require the vehicle manufacturer's release.
- The danger zone and the work zone depend on the attachment used – see the Operator's Manual of the attachment.
- Secure the load.
- Do not overload attachments.
- Check the correct position of the lock.



Operating

- Carrying persons on/in an attachment is prohibited.
- Installing a work platform is prohibited.
 - Exception: The vehicle is certified and equipped with the necessary safety equipment.
- Attachments and counterweights modify handling, as well as the steering and brake capability of the vehicle.
- The operator must be familiar with these modifications and act accordingly.
- Before starting work, operate the attachment to check that it works correctly.
- Before putting the attachment into operation, ensure that nobody is in danger.
- Lower the attachment to the ground before leaving the seat.

Removing and fitting attachments

- Before uncoupling or coupling hydraulic connections:
 - Stop the engine.
 - Release the pressure in the operating hydraulics
- Picking up and lowering attachments to the ground requires special care:
 - Pick up and safely lock the attachment in accordance with the Operator's Manual.
 - Lower the attachment only to firm, level ground and secure it to prevent it from tipping over or rolling away.
- Put the vehicle and the attachment into operation only if:
 - The protective equipment has been installed and is functional.
 - The connections for the lights and the hydraulic system have been established and are functional.
- Perform a visual check of the lock after locking the attachment.
- There must be nobody between the vehicle and the equipment when picking up or lowering an attachment to the ground.

2.8 Towing, loading and transporting

Towing

- Seal off the danger zone.
- Ensure that no one is near the towing bar or cable. The safety distance is equal to 1.5 times the length of the towing equipment.
Use a towing cable for vehicles with a total weight of up to 4.0 tons.
Use a towing bar for vehicles with a total weight of over 4.0 tons.
- Observe the mandatory transport position, permissible speed and itinerary.
- A tractor vehicle of the same weight category must be used as a minimum. Furthermore, the tractor vehicle must be equipped with a safe braking system and sufficient tractive power.
- Use only towing bars or cables certified by a test/certification body, observe the inspection intervals.
- Do not use any towing bars or cables that are dirty, damaged or not of sufficient size.
- Fasten towing bars or cables only at the defined points.
- Tow away only in accordance with this Operator's Manual to avoid damage to the vehicle.
- Observe the national regulations (for example the light regulations) when towing on public roads/sites.

Crane-lifting

- Seal off the danger zone.
- The crane and the lifting gear must have suitable dimensions.
- Observe the vehicle's overall weight – see "Technical data".
- Wear protective clothing and equipment when fastening, guiding and removing the machine (for example a hard hat, safety glasses, safety boots).
- Use only lifting and fastening gear certified by a test/certification body (for example cables, belts, hooks, shackles), observe the inspection intervals.
- Do not use any lifting and fastening gear that is dirty, damaged or not of sufficient size.
- Perform a visual check to ensure that all slinging points are neither damaged nor worn (no widening, no sharp edges, no cracks).
- Have loads fastened and crane operators only guided by experienced persons.
- The person guiding the crane operator must be within sight or sound of him.
- Observe all movements of the vehicle and lifting gear.
- Secure the vehicle against unintentional movement.
- Raise the vehicle only after it is safely attached and the person attaching the vehicle has given his approval.
- Use only the slinging points provided for fastening the lifting gear (for example cables, belts).
- Do not attach the machine by twining the lifting gear (for example cables, belts) around it.
- Ensure an even load distribution (center of gravity!) when fastening the lifting gear.
- Ensure that no one is in, on or under the vehicle when loading the vehicle.
- Observe the national regulations (for example "Merkheft Erdbau-maschinen", leaflet on earth moving machines of the German employers' liability insurance association for construction engineering).
- Load the vehicle only in accordance with this Operator's Manual to avoid damage to the vehicle.
- Do not raise a machine that is stuck or frozen onto the ground, for example.
- Bear in mind the weather conditions (for example the wind force, visibility conditions).

Transportation

- For the safe transportation of the vehicle:
 - The transport vehicle must have a sufficient load capacity and platform – see “Technical data”
 - The maximum weight rating of the transport vehicle must not be exceeded.
- Use only lifting and fastening gear certified by a test/certification body, observe the inspection intervals.
- Do not use any lifting and fastening gear that is dirty, damaged or not of sufficient size.
- In order to secure the vehicle on the platform, use only the fastening points provided for this purpose.
- Ensure that nobody is in or on the vehicle during transportation.
- Observe the national regulations (for example “Merkheft Erdbau-maschinen”, leaflet on earth moving machines of the German employers’ liability insurance association for construction engineering).
- Bear in mind the weather conditions (for example ice, snow).
- Ensure the minimum load on the steering axle(s) of the transport vehicle, and ensure an even load distribution.

2.9 Maintenance

Maintenance

- Observe the intervals prescribed by law and those specified in this Operator’s Manual for routine checks/inspections and maintenance.
- For inspection and maintenance, ensure that all tools and service center equipment are adapted to the performance of the task described in this Operator’s Manual.
- Do not use any damaged or malfunctioning tools.
- Have hydraulic hoses replaced within stipulated intervals even if no visual defects can be detected.
- The vehicle and the engine must be stopped during maintenance.
- Once maintenance is over, correctly install safety equipment again that has been removed.
- Wait for the vehicle to cool down before touching components.

Personal safety measures

- Avoid any operational mode that might be prejudicial to safety.
- Wear protective clothing and equipment (for example a hard hat, protective gloves, safety boots).
- Tie back long hair and remove all jewelry.
- If maintenance on a running engine cannot be avoided:
 - Only work in groups of two.
 - Both persons must be authorized and trained for the operation of the vehicle.
 - One person must be seated on the seat and stay in contact with the second person.
 - Keep a safe distance from rotating parts (for example from fan blades, belts).
 - Keep a safe distance from hot parts (for example from the exhaust system).
 - Perform maintenance only in well-ventilated rooms or rooms with an exhaust-gas suction system.
- Safely lock/support vehicle components before starting work.
- Apply special care when working on the fuel system due to the increased fire hazard.

Preparatory measures

- Attach a warning label to the control elements (for example “Machine being serviced, do not start”).
- Before performing assembly work on the vehicle, support the areas to be serviced and use suitable lifting and supporting equipment for the replacement of parts over 9 kg (20 lbs).
- Perform maintenance only if:
 - the vehicle is positioned on firm and level ground
 - the machine is secured to prevent it from rolling away (for example with the parking brake, wheel chocks), and if all attachments/the work equipment is lowered to the ground
 - the engine is stopped
 - the starting key has been removed
 - the pressure in the operating hydraulics has been released
- If maintenance has to be performed under a raised machine/attachment, support the machine/attachment (for example with a lift platform, trestles) ensuring safety and stability.
- Hydraulic cylinders or jacks alone do not sufficiently secure a raised vehicle/attachment.

Measures for performing maintenance

- Perform only the maintenance described in this Operator’s Manual.
- All work that is not described in this Operator’s Manual must be performed by qualified and authorized technical personnel.
- Follow the maintenance plan – see “Maintenance plan”.
- Always use specially designed or otherwise safety-oriented ladders and working platforms to perform overhead maintenance. Do not use vehicle parts or attachments as a climbing aid.
- Do not use attachments/work equipment as a lift platform for persons.
- Remove all dirt, snow and ice from climbing aids (for example from the handholds, footholds, handrails).
- Disconnect the negative terminal of the battery before working on the electrical system.

Modifications and spare parts

- Do not modify the machine and the work equipment/attachment (for example the safety equipment, lights, tires, straightening and welding work).
- Modifications must be approved by the manufacturer and performed by an authorized service center.
- Use only original spare parts.

Protective structures

- The cab, rollbar and protective grate are tested protective structures and may not be changed (e.g. no drilling, bending, welding).
- Perform a visual check according to the maintenance plan (for example check fastenings for damage).
- If damage or defects are detected, have them immediately checked and repaired by an authorized service center.
- Have retrofitting work only performed by an authorized service center.
- Replace self-locking fasteners (for example self-locking nuts) by new ones after removing them.

2.10 Measures for avoiding risks

Tires

- Have repair work on the tires only performed by trained technical personnel.
- Check the tires for correct pressure and visible damage (for example cracks, cuts).
- Tighten the wheel nuts to the specified tightening torque. (See chapter 7.18 Tires/tracks).
- Use only approved tires.
- The machine must have identical tires (for example profile, revolutions per mile).

Tracks

- Repair work on tracks may be performed only by trained technicians.
- Check the tracks for correct tension and visible damage (for example cracks, cuts).
- Proceed with extreme care on slippery ground (for example on steel plates, ice), increased slipping hazard.
- Use only approved tracks.

Hydraulic and compressed-air system

- Check all lines, hoses and screw connections regularly for leaks and visible damage.
- Splashed oil can cause injury and fire.
- Leaking hydraulic and compressed-air lines can cause the full loss of the brake effect.
- Have damage and leaks immediately repaired by an authorized service center.
- Have hydraulic hoses replaced by an authorized service center within stipulated intervals even if no visual defects can be detected.

Electrical system

- Use only fuses with the specified current rating.
- In case of damage or malfunction in the electrical system:
 - Put the vehicle out of operation immediately and secure it against restart
 - Disconnect the battery or operate the battery master switch
 - Have the malfunction repaired
- Ensure that work on the electrical system is only performed by trained technical personnel.
- Have the electrical system checked regularly and malfunctions repaired immediately (for example loose connections, scorched cables).
- The operating voltage of machine, the attachment and the trailer must be the same (for example 12 V).

Battery

California proposal 65

WARNING

Batteries, battery poles, terminals and corresponding accessory parts contain lead and its compounds and other chemicals that, according to the state of knowledge of the state of California, cause cancer, birth defects or reproductive harm. Wash your hands after use.

WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

- Batteries contain caustic substances (for example sulfuric acid). When handling the battery observe the specific safety instructions and regulations relevant to accident prevention.
- A volatile oxyhydrogen mixture forms in batteries during normal operation and especially during charging. Always wear gloves and eye protection when working with batteries.
- Do not perform battery maintenance near open flames.
- Perform battery maintenance only in well-ventilated areas (for example due to vapors harmful to health, explosion hazard).
- Starting the vehicle with battery jumper cables is dangerous if performed improperly. Observe the safety instructions regarding the battery.

Safety instructions regarding internal combustion engines

California proposal 65

WARNING

The engine exhaust fumes of this product contain chemicals that, according to the state of knowledge of the state of California, cause cancer, birth defects or reproductive harm.

WARNING

Diesel engine exhaust fumes and some of its components cause, according to the state of knowledge of the state of California, cancer, birth defects or reproductive harm.

WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

- Internal combustion engines present special hazards during operation and fueling.
- Failure to follow the warnings and safety instructions can cause serious injury or death.
- Keep the area around the exhaust system free of flammable materials.
- Check the engine and fuel system for leaks (for example loose fuel lines). Don't start or let the engine run in case of leaks.
- Breathing the exhaust fumes causes death very quickly.
- Engine exhaust contains gases you cannot see or smell (for example carbon monoxide and dioxide).
 - Never operate the machine in enclosed premises or areas (for example in pits), if there is no suitable ventilation (for example exhaust-gas filters, suction systems).
- Do not operate the vehicle in potentially explosive areas.
- Do not touch the engine, exhaust system and cooling system as long as the engine is still running or has not cooled down yet.
- Do not remove the radiator cap when the engine is running or hot.
- The coolant is hot, under pressure and can cause serious burns.

Bleeding the fuel system and refueling

- Do not bleed the fuel system or refuel near open flames.
- Bleed the fuel system and refuel only in well-ventilated areas (for example due to vapors harmful to health, explosion hazard).
- Wipe away fuel spills immediately (for example due to fire hazard, slipping hazard).
- Firmly close the fuel tank cap; replace a malfunctioning fuel tank cap.

Handling oil, grease and other substances

- When handling oil, grease and other chemical substances (for example the battery acid, coolant), observe the safety data sheets.
- Wear appropriate protective equipment (for example protective gloves, safety glasses).
- Be careful when handling hot consumables – burn hazard.
- In polluted environment (dust, vapors, smoke, asbestos), work only with appropriate personal protective equipment (for example with a breathing mask).
- Do not operate the vehicle in radioactively, biologically or chemically contaminated areas.

Fire hazard

- Fuel, lubricants and coolants are flammable.
- Do not put the vehicle into operation if there is a fire hazard.
- Do not use flammable detergents.
- Keep the area around the exhaust system free of flammable materials.
- Due to hot vehicle parts, maintain a safe distance from easily flammable material (for example from hay, dry leaves).
 - Stop and park the vehicle only in fire-protected areas.
- If the vehicle is equipped with a fire extinguisher, have it installed in its specific location.
- Keep the vehicle clean to reduce the fire hazard.

Working near electric supply lines

- Before performing any work, the operator must check whether there are any electrical supply lines in the designated working area.
- If there are electrical supply lines, only a vehicle with cab may be used (Faraday cage).
- Keep a safe distance from existing electric supply lines.
- If this is not possible, the operator must initiate other safety measures in agreement with the owner or operator of the supply lines (e.g. shutdown the power).
- If supply lines are exposed, they must be fastened, supported and secured accordingly.
- If live supply lines are touched nevertheless:
 - Do not leave/touch the cab (Faraday cage)
 - If possible, drive the vehicle out of the danger zone
 - Warn others against approaching and touching the vehicle
 - Have the live wire de-energized
 - Do not leave the vehicle until the supply lines that have been touched or damaged have been safely de-energized.

Working near non-electric supply lines

- Before performing any work, the operator must check whether there are any non-electrical supply lines in the designated working area.
- If non-electrical supply lines exist, the operator must initiate safety measures in agreement with the owner or operator of the supply lines (e.g. shutdown the supply line).
- If supply lines are exposed, they must be fastened, supported and secured accordingly.

Behavior during thunderstorm

- Stop machine operation if a thunderstorm is gathering, stop the machine, secure and leave it, and avoid being near it.

Noise

- Observe the noise regulations (for example, during applications in enclosed premises).
- Bear in mind external sources of noise (compressed-air hammer, concrete saw).
- Do not remove the sound baffles of the machine/attachment.
- Have damaged sound baffles immediately replaced (for example, an insulating mat, muffler).
- Before starting work, get informed on the noise level of the machine/attachment (for example on the adhesive label) – wear ear protectors.
- Do not wear ear protectors during machine travel on public roads/sites.

Cleaning

- Risk of injury from compressed air and high-pressure cleaners.
 - Wear appropriate protective clothes.
- Do not use any dangerous and aggressive detergents.
 - Wear appropriate protective clothes.
- Operate the machine only in a clean condition.
 - Remove all dirt, snow and ice from climbing aids (for example from the handholds, footholds, handrails).
 - Keep the cabin glazing and visual aids clean.
 - Keep the light system and reflectors clean.
 - Keep the control elements and indicators clean.
 - Keep the safety, warning and information labels clean, and replace damaged and missing labels by new ones.
- Perform cleaning work only if the engine is stopped and cooled down.
- Bear in mind sensitive components and protect them accordingly (for example electronic control units, relays).

3 Introduction

3.1 Machine overview

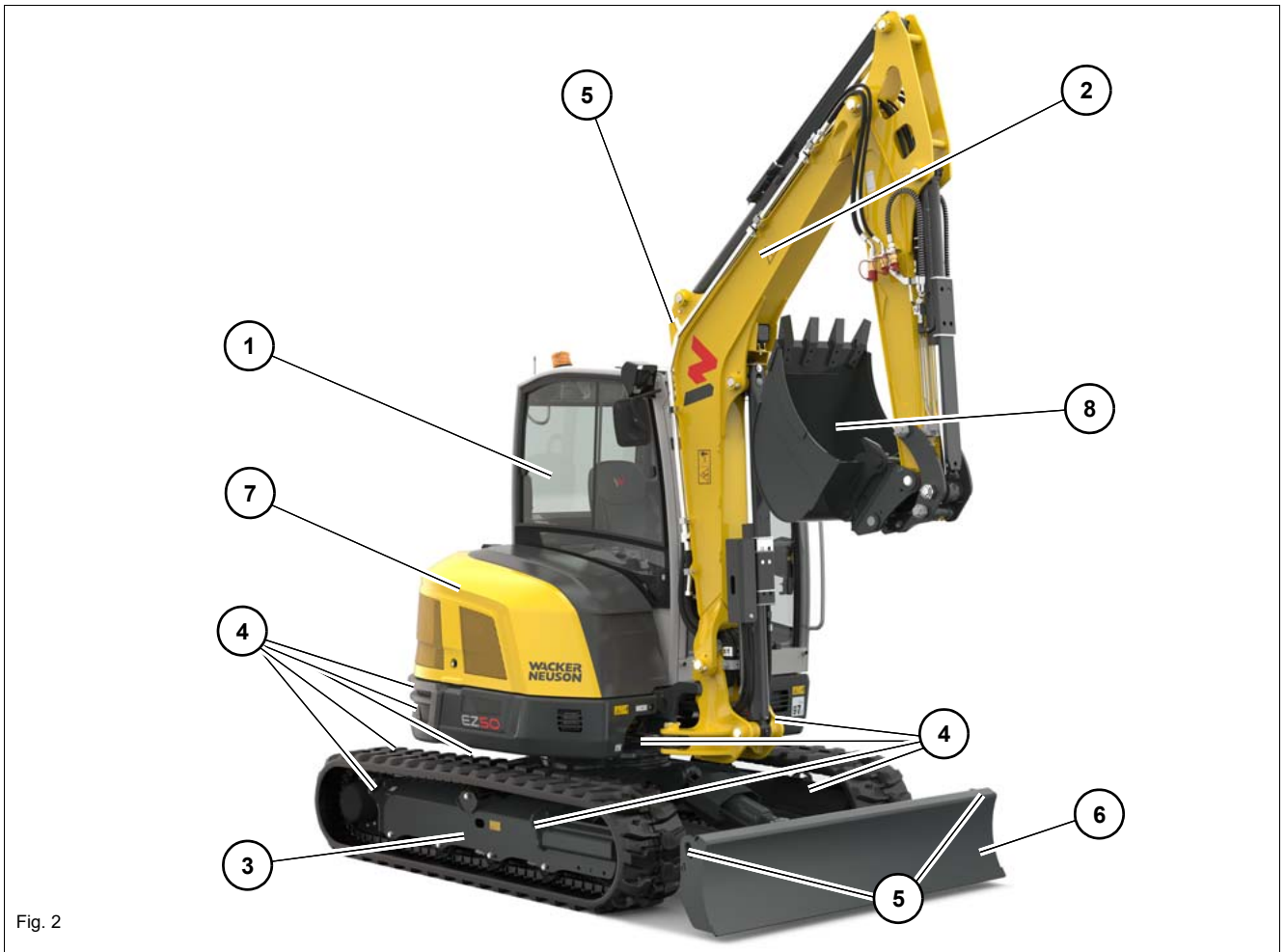


Fig. 2

Pos.	Description	Page
1	Cab	4-3
2	Boom	--
3	Chassis	--
4	Tie-down points	6-3
5	Lifting eyes	6-7
6	Stabilizer blade	5-24
7	Right maintenance cover	7-19
8	Attachments	9-11

3.2 Brief description of the vehicle

The Wacker Neuson Track excavators model E19 are self-propelled work machines.

These vehicles are powerful, highly flexible and efficient construction vehicles with minimum environmental impact. They are mainly used for loosening and moving earth, for example for digging and filling up construction pits. A wide range of attachments offers a large number of applications, for example hammer operation or bulk-material handling with a grab.

Other possible applications can be found in chapter [Technical data of the attachments on page 9-11](#).

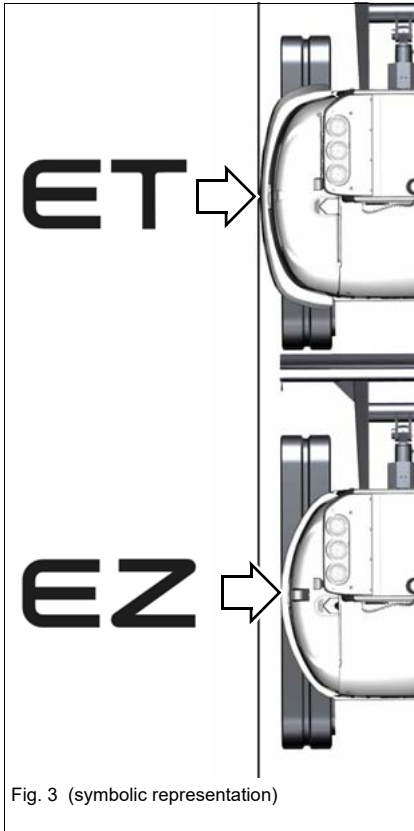
Model designations and trade names

Machine model	Trade name	Engine
E19-01	ET42	Perkins 403J-E17T
E19-02	EZ50	



Information

The machine can be equipped with the **Telematic** option (for transmitting operating data, location, etc. via satellite).



Superstructure Versions

ET: conventional superstructure

EZ: Zero tail revolving superstructure; the upper carriage does not project over the width of the vehicle **without additional weight** when rotating.

Fig. 3 (symbolic representation)

3.3 Information and regulations on use

Designated use

The vehicle is intended for:

- Moving earth, gravel or rubble, for hammer and grab operation as well as for
- Working only with the attachments indicated in chapter *Technical data of the attachments on page 9-11*.
- Every other use is regarded as not designated for the use of the vehicle. Wacker Neuson will not be liable for damage resulting from use other than mentioned above. The user/operating company alone will bear the risk.

Designated use also includes observing the instructions set forth in the Operator's Manual and observing the maintenance and service conditions.

- The vehicle may not be used on public roads.
- In applications with lifting gear, the vehicle is used according to its designated use only if the mandatory devices are installed and functional.
- Use the quickhitch only with the corresponding attachments.
- A restricted work range applies to work with attachments (for example hammer) that can cause fragments to fly around.

3.4 Labels

 **WARNING****Injury hazard due to missing or damaged labels!**

An insufficient warning of dangers can cause serious injury or death.

- ▶ Do not remove warning and information labels.
 - ▶ Immediately replace damaged warning and information labels.
-

 **Information**

Type, quantity, and position of the labels depend on options, country and vehicle.

Type plates

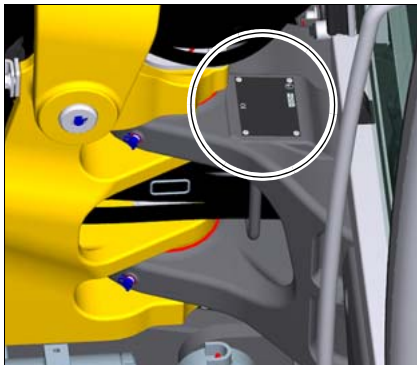


Fig. 4

The vehicle type label is located on the swiveling console.



Fig. 5 (symbolic representation)

Serial number

The serial number is stamped on the vehicle chassis. It is also located on the type label.

The machine type label contains the following information:

Description of attachment	HYDRAULIC EXCAVATOR
Vehicle serial no. /serial no.	Machine serial number
Fahrzeug Modell/model/modèle:	Machine designation
Leistung/performance:	Engine power
Typ/version:	Machine type
Betriebsgewicht/operating weight/poids en charge:	Operating weight
Transportgewicht/transport weight/poids en transport:	Transport weight
G. weight/GWR/PTAC:	Gross weight rating (permissible)
Max. Nutzlast/max. payload/max. charge utile:	Maximum payload
Zul. Achslast vorne/front GAWR/PNBE AV:	Front gross axle weight rating
Zul. Achslast hinten/rear GAWR/PNBE AR:	Rear gross axle weight rating
EWG Nr./CEE no.:	EEC check number
Baujahr/model year/année fabr.:	Year of construction



17-digit serial number

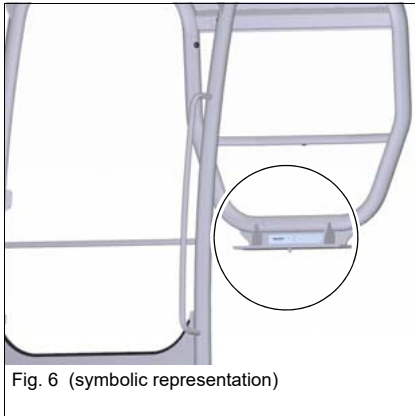
The 17-digit serial number has additional information, in order to make vehicle identification easier.

Manufacturer code	Machine model	Internal model designation	Check letter	Serial number
WNC (Austria) WNP (China)	E (Excavator)	1901	K	00012345
	D (Dumper)			
	A (Unit)			



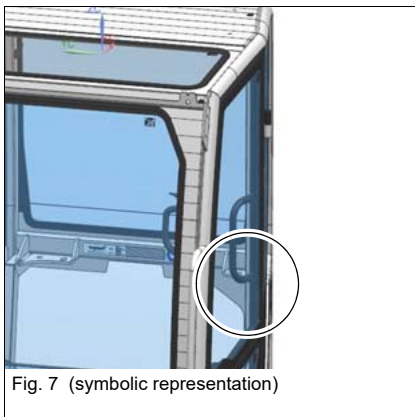
Information

Wacker Neuson components (for example Easy Lock, tilt bucket, rollbar) have numeric serial numbers only.

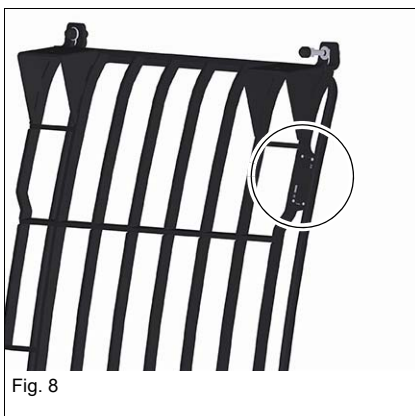


Cabin number

The type label (Canopy) is located at the rear on the frame.



The type label (Cab) is located on the left B-column.



Front Guard type label

The type label is located at the upper left of the chassis.

Warning label

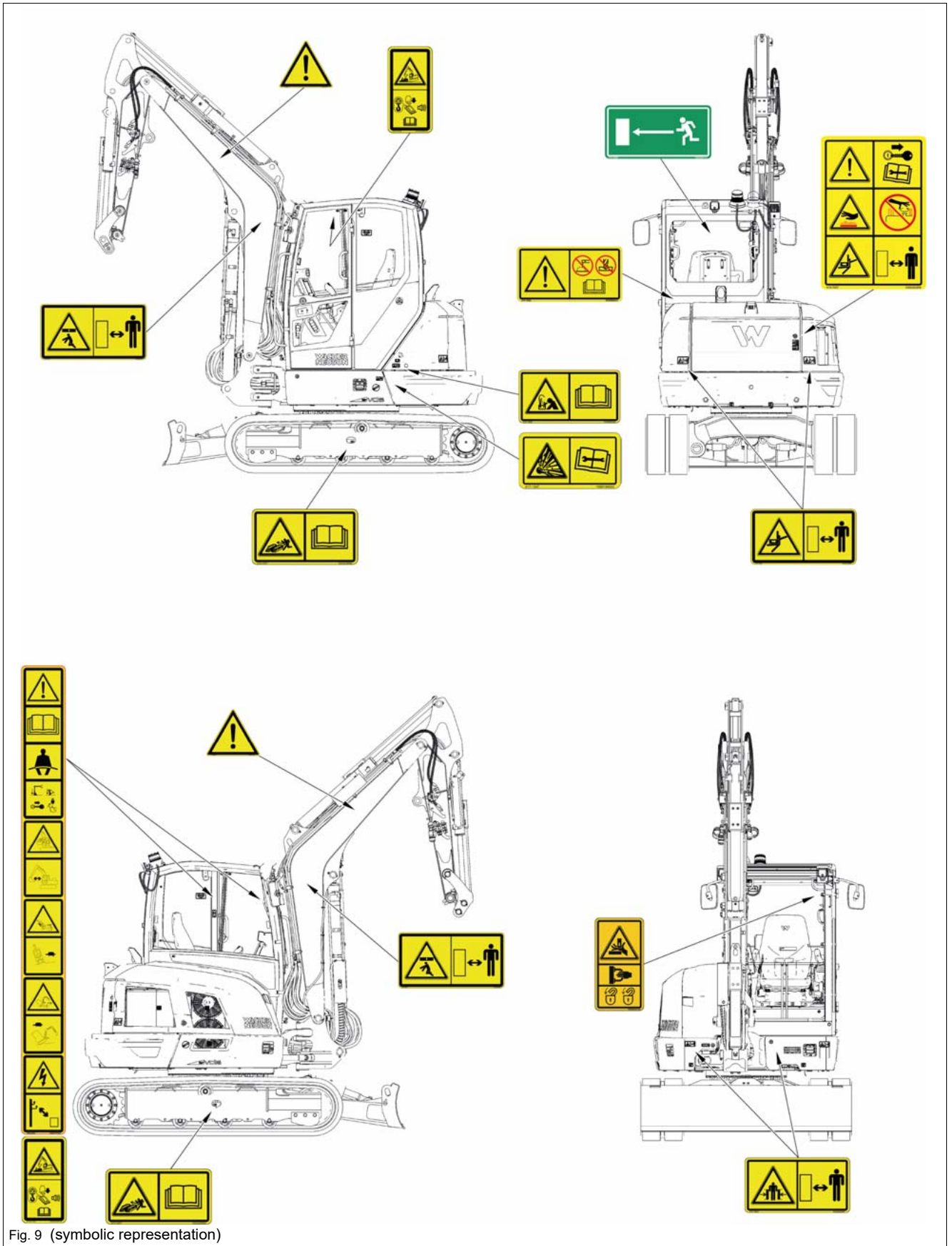


Fig. 9 (symbolic representation)



Fig. 10

Meaning

Crush Hazard

All persons must stay clear of a raised load or of the danger zone.

Position

On the left and right side on the lifting arm



Fig. 11

Meaning

Crush Hazard

Do not allow anyone to stay in the danger zone of the vehicle.

Position

At the rear left and right of the vehicle

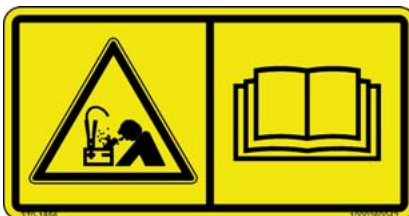


Fig. 12

Meaning

Explosion hazard due to wrong connection of battery jump cables

Position

On the left maintenance cover



Fig. 13

Meaning

Crush Hazard

Do not allow anyone to stay in the swiveling range of the vehicle.

Position

At the front left and right of the chassis



Fig. 14

Meaning

Modifications to the structure (for example welding, drilling), retrofitting, and incorrect repairs affect the protective effect of the cabin and can cause serious injury and even death.

Position

Canopy: on the left cross strut

Cab: on the rear left cab



Fig. 15

Meaning

Accumulator is under high pressure. Maintenance or repair work may be performed only by a Wacker Neuson service center.

Position

On the left side of the chassis



Fig. 16

Meaning (option)

Emergency exit if equipped with **Front Guard** option

Position

Inside the cabin on the rear window



Fig. 17

Meaning (option)

Injury hazard due to grease escaping under pressure

Read the operator's manual before working with the track tensioner.

Position

On left and right-hand undercarriage

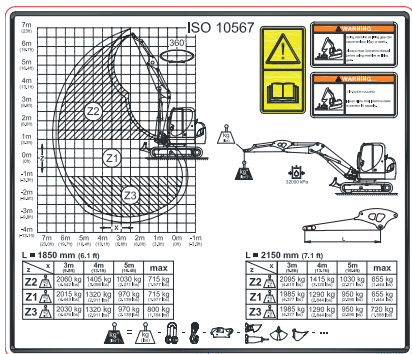


Fig. 18 (symbolic representation)

Meaning (option)

Load diagram

Position

On the headliner



Fig. 19

Meaning

Crush Hazard

1. Use the handholds for opening and closing the front window.
2. Lock the window into place.

Position

On the front window



Fig. 20

Meaning

Read the Operator's Manual before starting the vehicle.

Fasten your seat belt.

Lower the boom and the stabilizer blade to the ground.

Remove the starting key and carry it with you.

Raise the control lever base.

Crush Hazard

Possible serious vehicle damage.

Keep a safe distance from the cabin.

Crush Hazard

Possible serious vehicle damage.

During vehicle operation on slopes, pay attention to the maximum gradient angle and maximum lateral angle of inclination.

Do not drive in speed range 2.

Risk of fatal injuries due to electric shock

During vehicle operation, maintain a safe distance from overhead electric lines.

Position

Canopy: on the right A-column

Cabin: on the left B pillar



Fig. 21

Meaning (option)

Switch on the safe load indicator during lifting gear applications.

A vehicle can cause serious injury or death if it tips over.

Possible serious vehicle damage

Read and understand the Operator's Manual.

Position

Canopy: on the headliner

Cabin: on the left B pillar



Fig. 22

Meaning

Read the Operator's Manual before starting the vehicle.

Remove the starting key and carry it with you.

Injury hazard due to rotating parts.

- Open the engine cover only at engine standstill.

Burn hazard due to hot surfaces

- Let the engine cool down.

Burn hazard due to hot fluid

Injury hazard due to fluid escaping under pressure

- Let the engine cool down.
- Release the pressure in the hydraulic system, then open the locks carefully.

Position

On the bottom right engine cover



Fig. 23

Meaning

Burn hazard due to hot surfaces (lines, plug connections, hardware, hydraulic cylinders, couplings, etc.)

Position

On the boom on the left and right

Information label

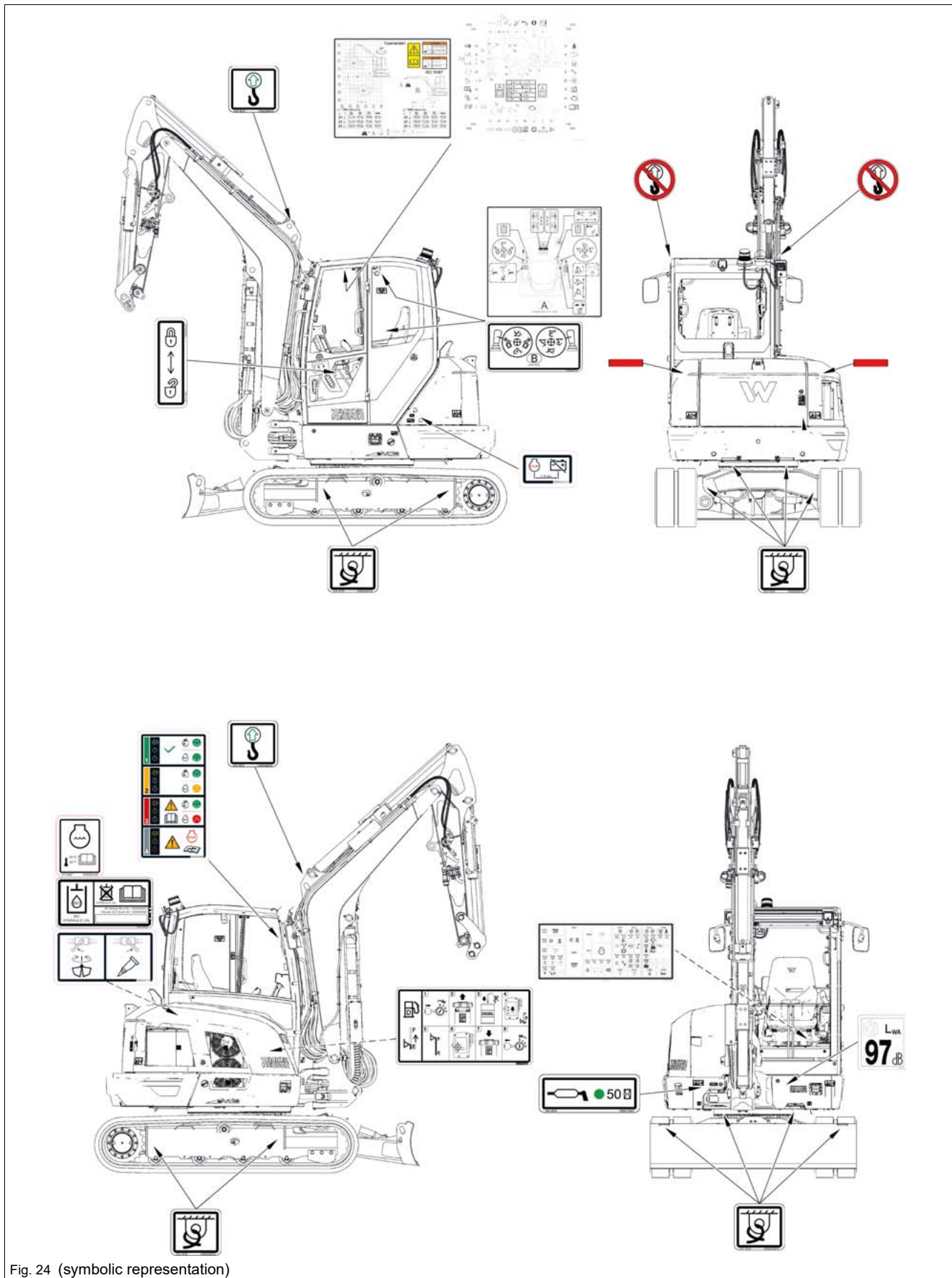


Fig. 24 (symbolic representation)

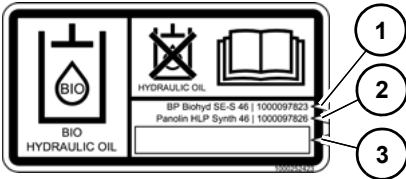


Fig. 26

Meaning (option)

The reservoir contains biodegradable hydraulic oil.

This label is notched on the side depending on the biodegradable hydraulic oil used.

1. BP Biohyd SE-S 46
2. Panolin HLP Synth 46
3. Other biodegradable hydraulic oil

Position

Next to the filler neck of the hydraulic oil tank

Meaning

Lifting eye

Position

On the left and right side on the lifting arm

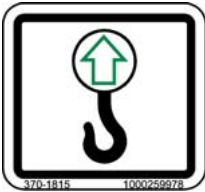


Fig. 27

Meaning

No lifting lug

The vehicle should not be lifted at this eyelet.

Position

At the top left and right canopy



Fig. 28

Meaning

Tie-down point for tying down the machine

Position

Per two labels:

- Front of travel gear
- Rear of travel gear
- Inside of travel gear
- Chassis front
- Chassis rear
- Fixed dozer blade



Fig. 29

Meaning

Indication of sound power level produced by the vehicle.

L_{WA} = sound power level

Position

At the front left of the chassis

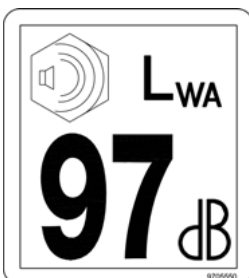


Fig. 30 (symbolic representation)

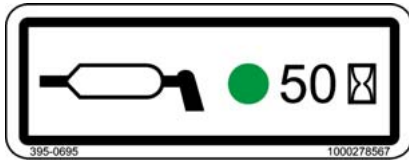


Fig. 31

Meaning
Lubrication interval

Position
At the front right chassis

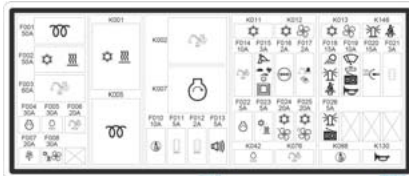


Fig. 32 (symbolic representation)

Meaning
Fuses

Position
On the fuse box

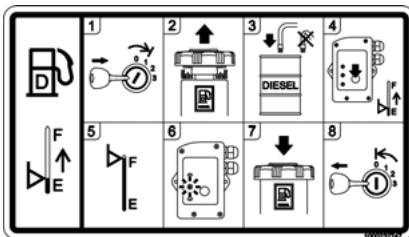


Fig. 33 (symbolic representation)

Meaning
Fuel-filling pump

Position
Canopy: on the partition wall
Cab: on the air-conditioning box

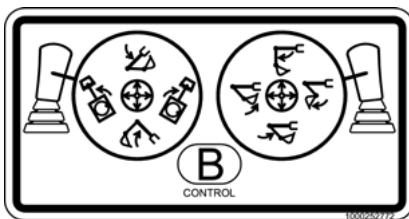


Fig. 34

Meaning (option)
Operating procedures differing from the ISO controls if the SAE controls are set.

Position
Canopy: on the headliner
Cab: on the left side window

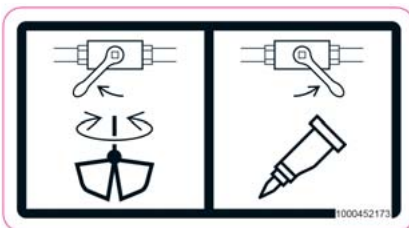


Fig. 35

Meaning (option)
Choose excavator operation or hammer operation

Position
At the changeover valve

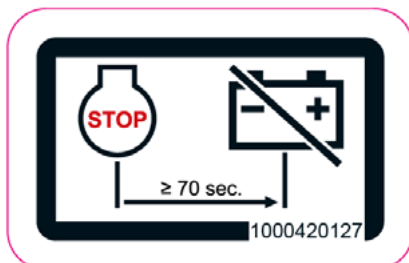


Fig. 36

Meaning
Battery master switch

Position
On the left maintenance cover

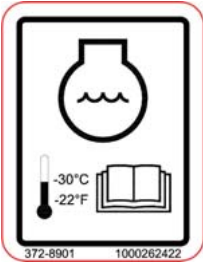


Fig. 37

Meaning

Coolant

Position

Next to the radiator

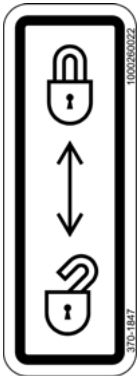


Fig. 38

Meaning

Hydraulic functions active or locked

Position

On control lever base

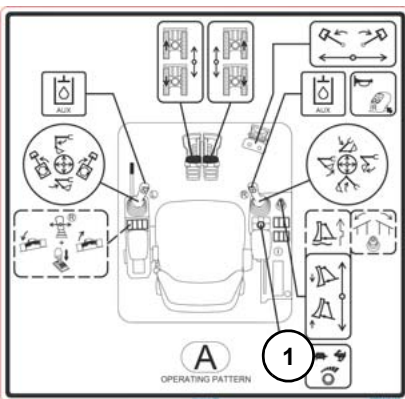


Fig. 39

Meaning

Functional overview (ISO controls).

Check the selected control mode before starting the vehicle.

Position

Canopy: on the headliner

Cab: on the left side window

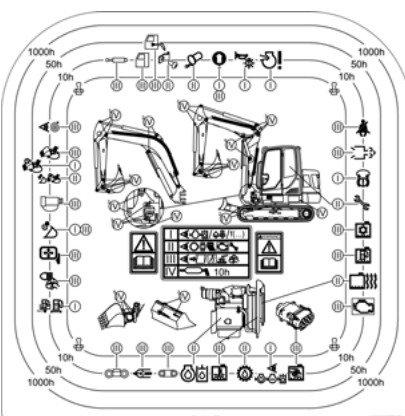


Fig. 40 (symbolic representation)

Meaning

Maintenance intervals

Position

On the roof window

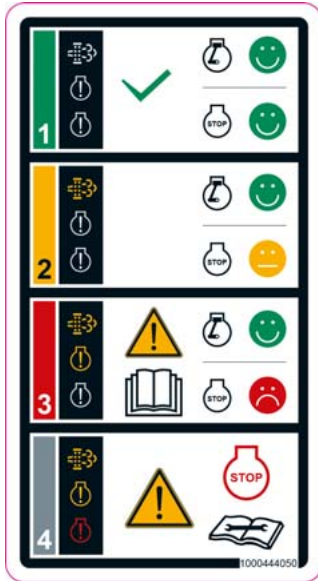


Fig. 41

Meaning

Diesel particulate filter

Position

Canopy: on the right A-column

Cab: on the right side window



Fig. 42 (symbolic representation)

Meaning

Reflectors

Position

At the rear left and right of the vehicle



Information

Type, quantity, and position of the labels depend on options, country and vehicle.

ANSI label (option)

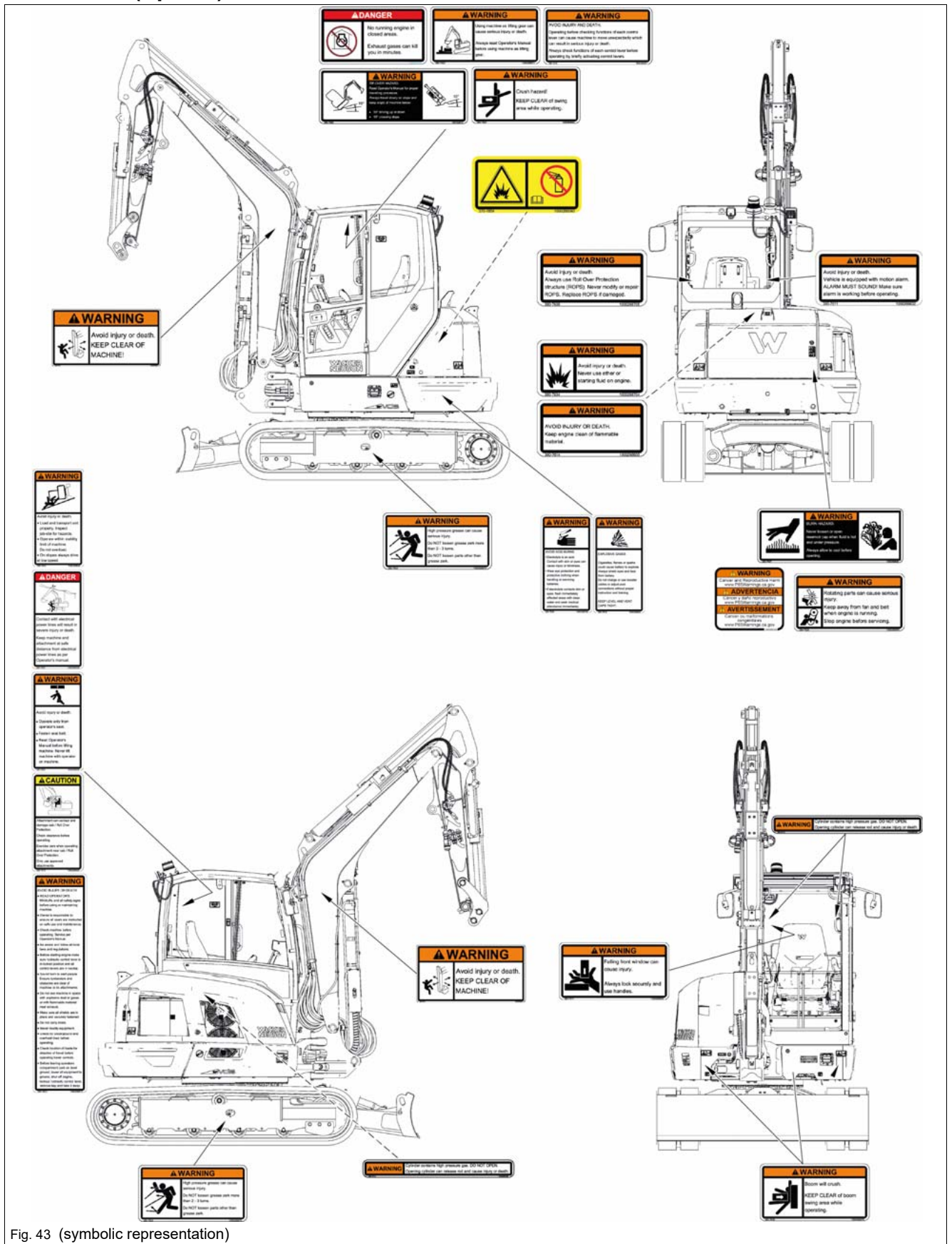


Fig. 43 (symbolic representation)

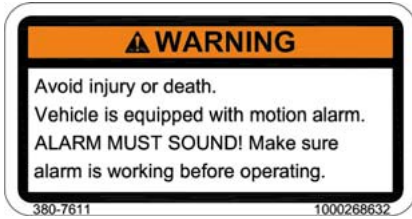


Fig. 44

Position

Canopy: on the right cross strut
Cab: on the bottom right rear window



Fig. 45

Position

On the headliner

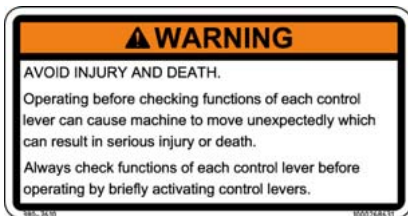


Fig. 46

Position

On the headliner



Fig. 47

Position

On the headliner



Fig. 48

Position

Canopy: on the right C-column
Cab: on the left C-column



Fig. 49

Position

Canopy: on the right C-column
Cab: on the left C-column

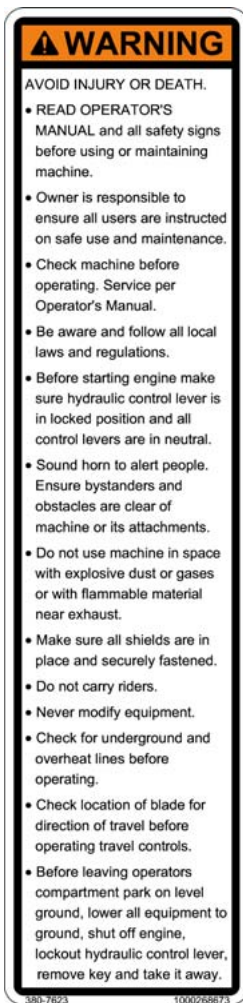


Fig. 50

Position

On the left C pillar

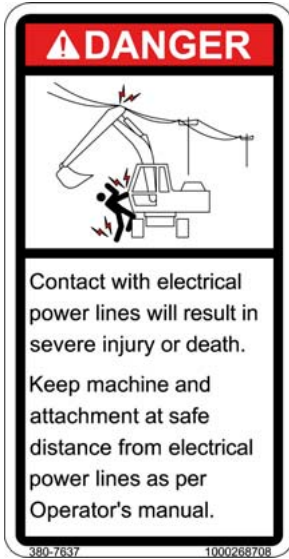


Fig. 51

Position

On the left C pillar

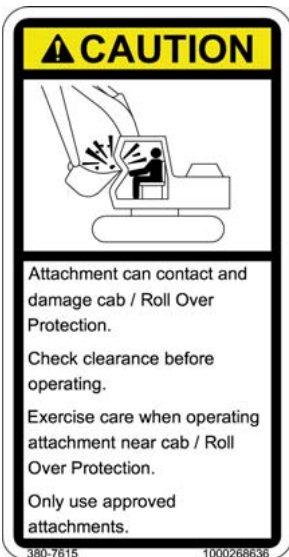


Fig. 52

Position

Canopy: on the right C-column

Cab: on the left C-column

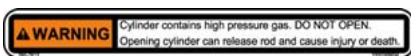


Fig. 53

Position

On the gas-filled spring devices of the front window and the right maintenance cover



A

Position

A: in the engine compartment at the air filter
 B: in the engine compartment to the left at the air intake



B

Fig. 54



Fig. 55

Position

For the air filter

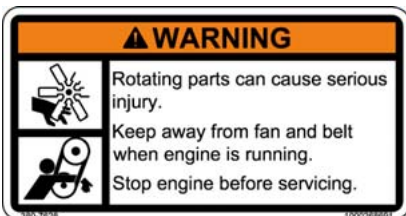


Fig. 56

Position

On the bottom right engine cover



Fig. 57

Position

On the bottom right engine cover

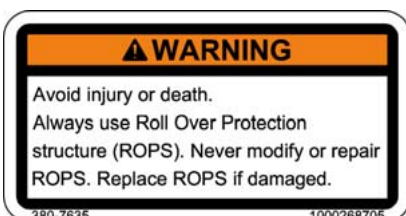


Fig. 58

Position

Canopy: on the inside left cross strut
 Cab: under the inside left rear window

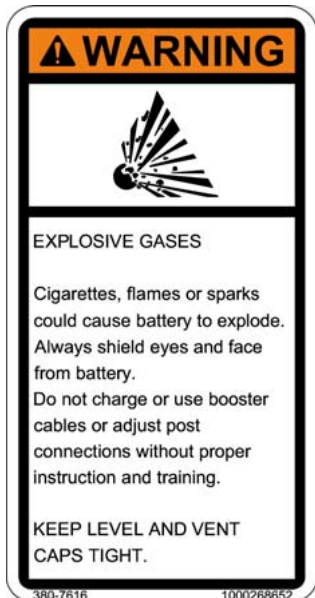


Fig. 59

Position

On the left maintenance cover

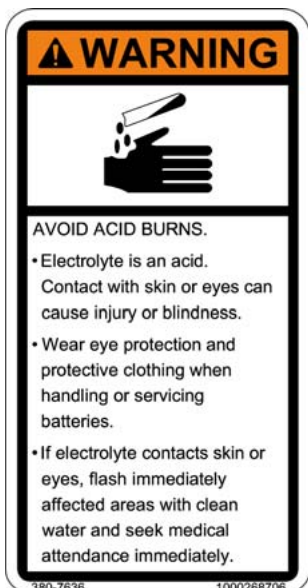


Fig. 60

Position

On the left maintenance cover



Fig. 61

Position

On the headliner



Fig. 62

Position

At the front left and right of the chassis



Fig. 63

Position

On left and right-hand undercarriage



Fig. 64

Position

On the front window

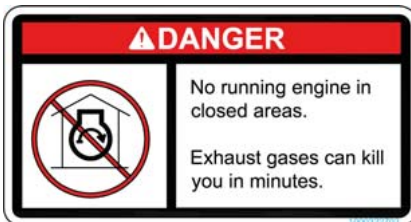


Fig. 65

Position

On the headliner



Fig. 66

Position

On the boom on the left and right



Fig. 67

Position

On the bottom right engine cover



Notes:

4 Putting into operation

4.1 Cab

 **CAUTION****Risk of injury when getting on and off!**

Entering or exiting incorrectly can cause injury.

- ▶ Keep the mandatory stages and handhold clean and only use them for entering and exiting.
 - ▶ Two hands and one foot must be always in contact with the vehicle when getting on and off
 - ▶ Face the vehicle as you enter and leave it.
 - ▶ Have damaged stages and handles replaced. Do not operate the vehicle.
-

 **CAUTION****Crushing hazard due to incorrectly locked door!**

Unlocked cabin doors can cause crushing.

- ▶ When entering or leaving the cabin, the door must be locked in the arrester.
 - ▶ Use the handholds for closing.
-

 **CAUTION****Injury hazard when opening or closing the front window!**

Opening or closing the front window can cause injury.

- ▶ Use both handles.
 - ▶ Duck your head.
 - ▶ Let both locks lock into place.
 - ▶ Keep the window channel clear.
-

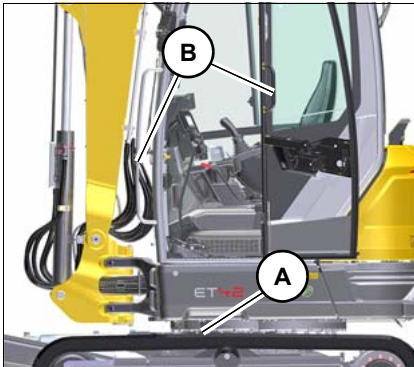


Fig. 68

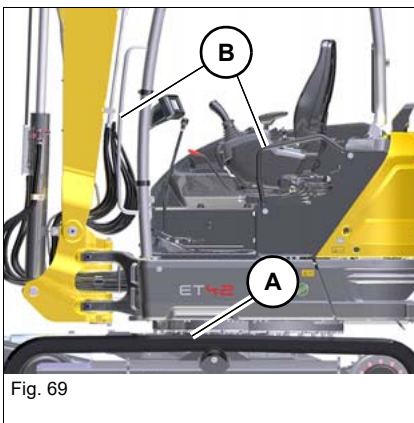


Fig. 69

Getting on and off

Use footholds **A** and handles **B**. Do support yourself on the control elements.

Two hands and one foot must be always in contact with the vehicle when getting on and off.



Information

When entering or leaving the cabin, the door must be locked in the arrester.

Unlocking and locking the door

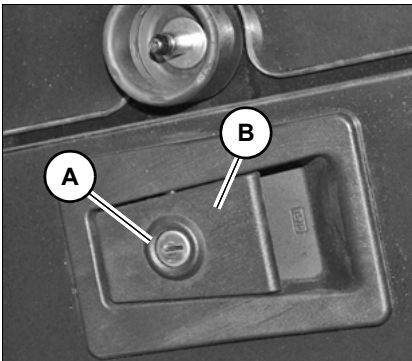


Fig. 70

Unlocking:

Turn the key in door lock **A** anticlockwise.

Locking:

Turn the key in door lock **A** clockwise.

Opening and closing the door

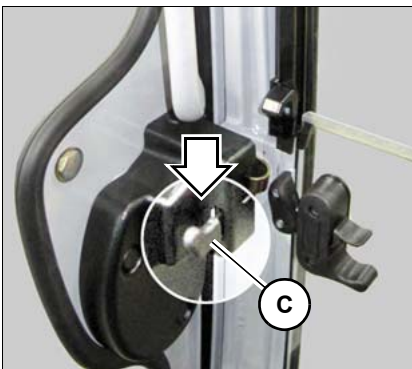


Fig. 71 (symbolic representation)

Opening:

Pull at the door handle **B**.

Closing:

Close the door applying firm pressure.

Opening the door from the inside:

Press lever **C** on the door lock downward.

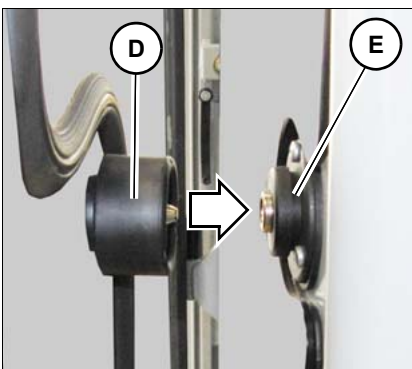


Fig. 72 (symbolic representation)

Securing an open door

Press bracket **D** firmly against arrester **E**.

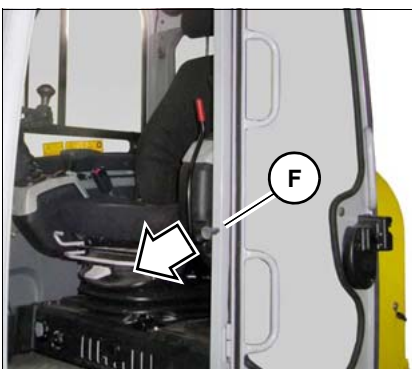


Fig. 73 (symbolic representation)

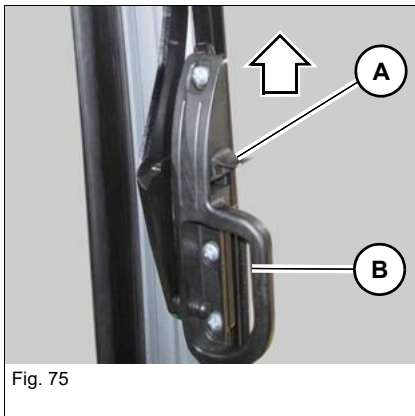
Releasing the door arrester

Pull button **F**.

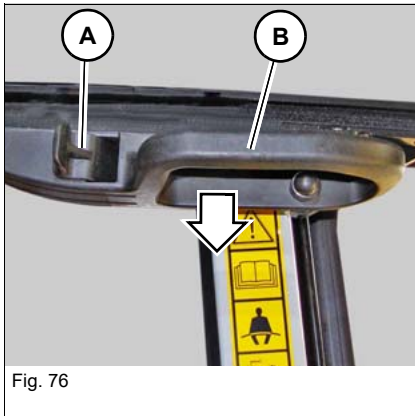
Opening/closing the front window



Opening the upper front window



1. Press and hold levers **A** on the left and right, and pull the front window forward with handles **B** on the left and right.
2. Release levers **A** and press the window upward until it engages.



Closing the upper front window

1. Press levers **A** on the left and right, and pull the front window downward with handles **B** on the left and right.
2. Press the front window fully forward and release levers **A**.



Fig. 77

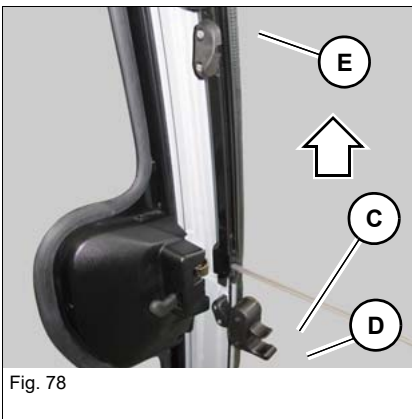
Opening the lower front window

Fig. 78

Press levers **C** on the left and right, and pull the front window upward with handles **D** on the left and right until the front window engages with guide **E**.

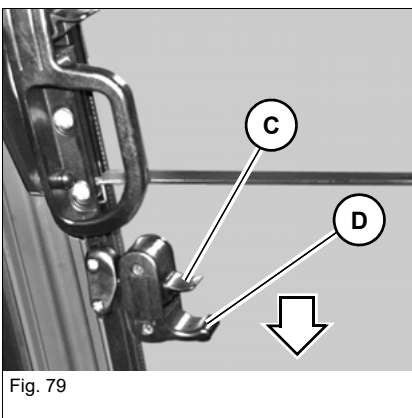


Fig. 79

Closing the lower front window

Keep levers **C** pressed on the left and right, and pull the lower front window downward with handles **D** until the front window engages.



Fig. 80

Opening the whole front window

1. Open the lower front window as described on page 4-5.
2. Open both windows together as described on page 4-4.

Closing the whole front window

1. Close both windows together as described on page 4-4.
2. Close the lower front window as described on page 4-5.

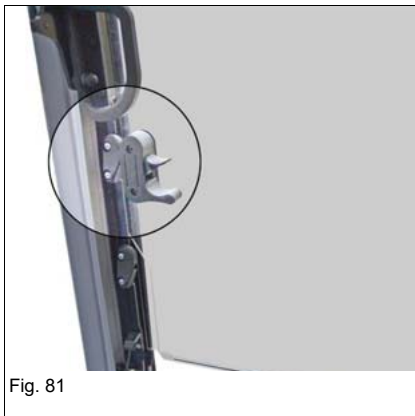


Fig. 81

NOTICE

If the protective Front Guard structure is installed, the front windows can be damaged.

- ▶ The lower front window must be fully open when the entire front window is opened or closed (*Fig. 81*).
-



Fig. 82

Opening the front window to a gap (ventilation position)

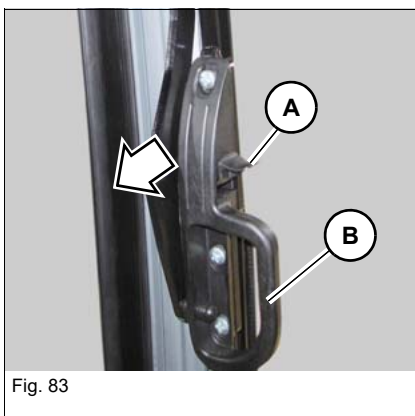


Fig. 83

1. Press levers **A** on the left and right, and slightly pull handles **B** on the left and right.
 - The front window is unlocked.
2. Release levers **A** and pull handles **B** on the left and right until the front window engages.

Opening/closing the side windows

Both side windows on the right can be opened.

Open

Press handle **A**, open side window and fix with screw **B**.

Close

Loosen screw **B**, press handle **A** and close side window.

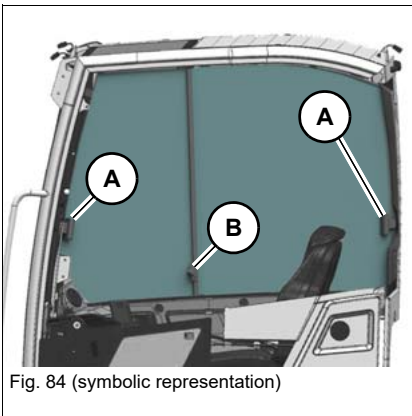


Fig. 84 (symbolic representation)

Emergency exit

There are several possibilities for an emergency exit:

- Front Guard not installed: front or right window
- Front Guard installed: rear window or right window

WARNING

Injury hazard when leaving the cabin in an emergency!

An emergency exit can cause serious injury or death.

- ▶ The front and the right of the vehicle have neither footholds nor handles for safely exiting the cabin.

Emergency exit on vehicles equipped with protective Front Guard structures (option)

WARNING

Injury hazard when leaving the cabin in an emergency!

An emergency exit can cause serious injury or death.

- ▶ There are no footholds nor handles for safely exiting the cabin at the rear and the right side of the vehicle.
- ▶ Protect your face and eyes from the glass splinters flying around when you smash a window.
- ▶ Pay attention to glass splinters during an emergency exit.

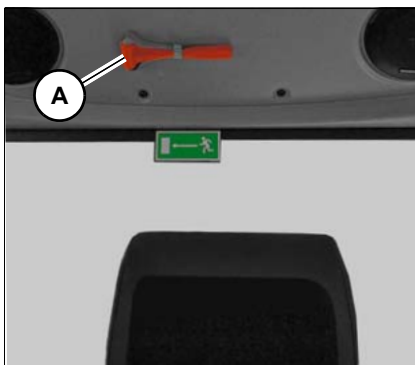


Fig. 85 (symbolic representation)

The rear or right windows can be used as an emergency exit if the cabin door or front windows are blocked.

Using the emergency hammer **A**, smash the rear window.

Comfort seat

WARNING

Danger of accident due to seat adjustment during vehicle operation!

Adjusting the seat during vehicle operation can cause serious injury or death.

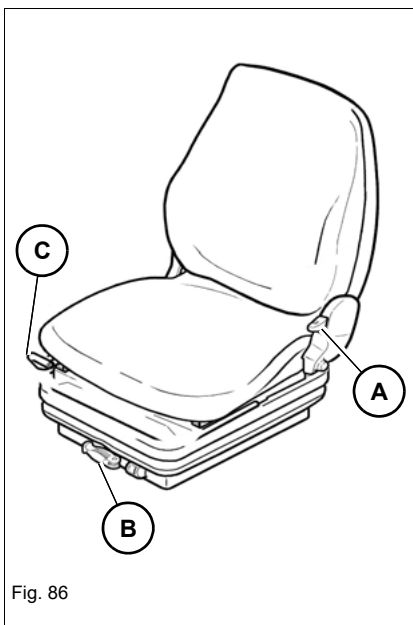
- ▶ Adjust the seat before putting the machine into operation.
- ▶ Ensure that the levers are locked into place.

CAUTION

Spinal cord injury due to incorrect seat adjustment!

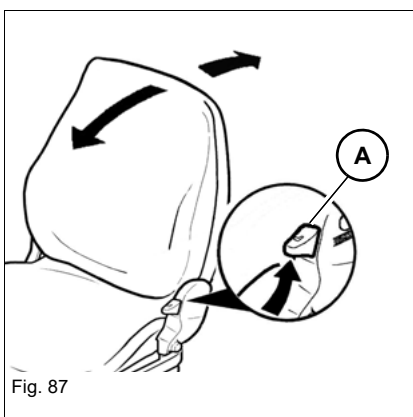
An incorrect weight adjustment can cause injury to the spinal cord.

- ▶ Ensure that the seat is correctly adjusted to the operator's weight before vehicle travel or operation.



The comfort seat can be adjusted as follows:

- A** Backrest
- B** Weight
- C** Horizontal adjustment



Adjusting the backrest

1. Sit down on the operator seat.
2. Actuate lever **B** in the direction of the arrow.
3. Lean back to push the backrest to the required position.
4. Engage the lever in the required position.

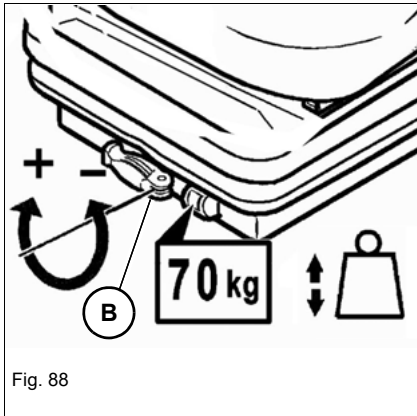


Fig. 88

Adjusting the weight

Sit down on the operator seat.

Position	Operation
Higher operator weight	Turn lever B anticlockwise.
Lower operator weight	Turn lever B clockwise

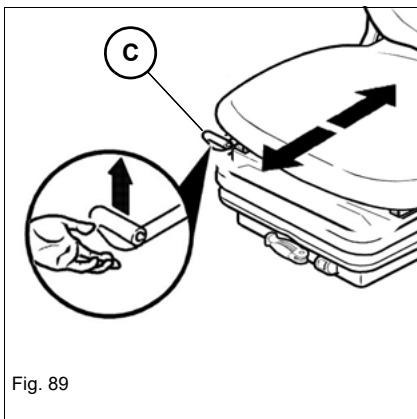


Fig. 89

Adjusting the length

1. Sit down on the operator seat.
2. Pull lever **C** upwards and at the same time push operator seat forwards or backwards.
3. Engage the lever in the required position.

Seat belt

WARNING

Injury hazard if the seat belt is not fastened correctly or not at all!

Fastening the seat belt incorrectly, or not at all, can cause serious injury or death.

- ▶ Firmly fasten your seat belt over your hips before starting the engine.
- ▶ Do not loosen the seat belt while the engine is running. This also applies to the work interruptions.
- ▶ Do not fasten a twisted seat belt, and do not place it over hard, edged or fragile items in your clothes.
- ▶ Ensure that the buckle is inserted.

CAUTION

Injury hazard due to damaged or dirty seat belt!

A damaged or dirty seat belt can cause serious injury or death.

- ▶ Keep the seat belt and buckle clean, and check them for damage.
- ▶ Have a damaged seat belt and buckle immediately replaced by an authorized service center.
- ▶ After every accident, have the seat belt replaced immediately by a Wacker Neuson service center and have the anchor points and the seat attachment checked for additional strength.

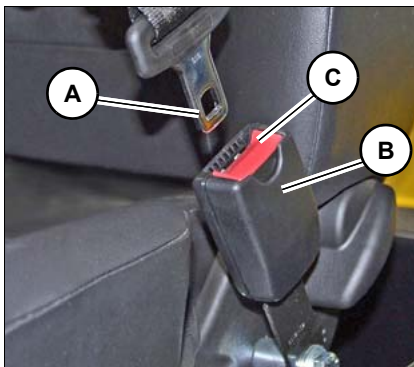


Fig. 90 (symbolic representation)

Fastening the seat belt

Insert buckle latch **A** into seat belt buckle **B** until it locks into place.

Unfastening the seat belt

Press the push button switch **C** on buckle **B** until the buckle latch comes out.

The seat belt is automatically retracted.

Visual aids

 **WARNING**

Risk of injury to persons in the danger zone!

Persons in the danger area are possibly not seen when reversing the vehicle and this can cause accidents with serious injuries or death.

- ▶ Adjust the existing visual aids (for example the rearview mirrors) correctly.
 - ▶ Interrupt work immediately if persons enter the danger zone.
 - ▶ Pay attention to the movements and changing positions of attachments and persons.
-

 **WARNING**

Accident hazard due to restricted field of vision on the job site!

Accidents resulting in serious injury or death can be caused by a restricted field of vision.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Use suitable visual aids if necessary (for example a camera, mirrors, guide).
 - ▶ Additional equipment or attachments must not be installed if they impair visibility.
-

 **WARNING**

Accident hazard due to incorrect adjustment of visual aids!

Incorrectly adjusted visual aids can cause serious injury or death.

- ▶ Before starting work, ensure that all visual aids are clean, functional and adjusted in accordance with the instructions in this Operator's Manual.
 - ▶ If no image appears on the camera monitor, stop vehicle operation. Only put the vehicle back into operation once the damage has been repaired.
 - ▶ Immediately replace damaged or broken visual aids.
 - ▶ Convex mirrors enlarge, reduce or distort the field of view.
 - ▶ The operator must follow the national and regional regulations.
-

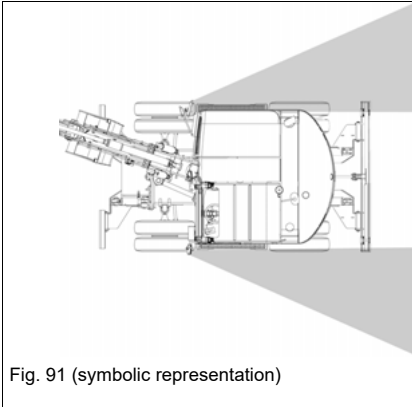


Fig. 91 (symbolic representation)

Outside rearview mirrors on left and right

- Ensure sufficient visibility from the seat of the work areasite.
- Ensure maximum visibility to the rear.
- Ensure visibility of the rear left edge of the vehicle in the mirror on the left.
- Ensure visibility of the rear right edge of the vehicle in the mirror on the right.

i Information

Wacker Neuson recommends adjusting the mirrors with two persons.

i Information

Do not make any modifications that impair visibility. Otherwise the vehicle does not meet the requirements for conformity and registration.

- Use safety-oriented ladders and work platforms for adjustment work on the vehicle.
- Do not use vehicle parts or attachments as a climbing aid.
- Set the boom to travel position before adjusting the mirrors.

Reversing camera

The reversing camera is located on top of the engine cover. It allows the operator to see the area behind the vehicle.

Toggleing between camera view (1) and status display (2):

1. Press control button **A**.
2. Turn control button **A** to select menu item **camera view** or **status display**.
3. Press control button **A**.

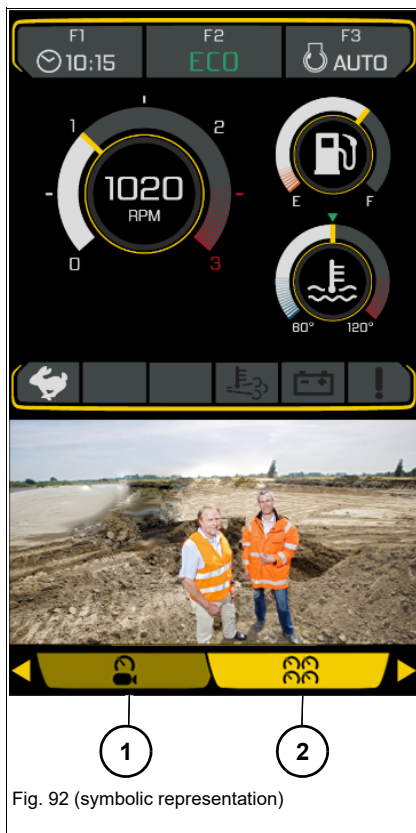


Fig. 92 (symbolic representation)

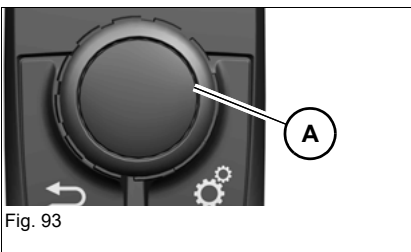


Fig. 93

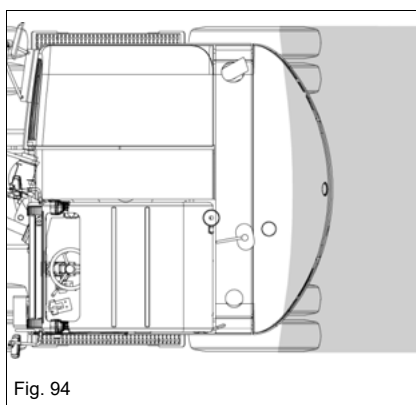


Fig. 94

Adjusting the camera – rear visual range

- Ensure sufficient visibility from the operator seat onto the job site.
- The vicinity of the rear of the vehicle must be visible.

Armrest

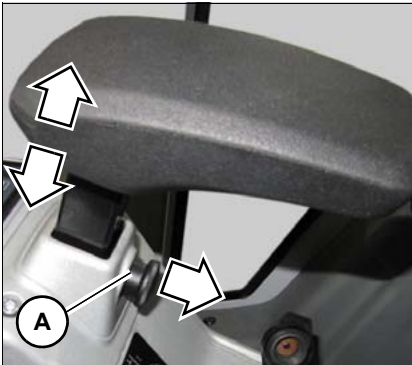


Fig. 95 (symbolic representation)

1. Hold the armrest and pull out button **A**.
2. Adjust the armrest height.
3. Release button **A** and turn to right.

Fire extinguisher

A fire extinguisher is not available from Wacker Neuson.

Contact an authorized Wacker Neuson service center for the installation of a fire extinguisher.

Wacker Neuson recommends a fire extinguisher of the class ABC, e.g. in accordance with DIN-EN 3, NFPA. Comply with national provisions.



CAUTION

Risk of injury from non-secured fire extinguisher!

Can cause injury.

- ▶ Check the mounting and fire extinguisher daily.
- ▶ Comply with manufacturer's specifications and test intervals.

Protective structures

Protective structures are additional elements that protect the operator against dangers. These elements can be installed later on or as standard equipment.

DANGER

Accident hazard due to modified cabin or protective structures!

Modifications (for example drilling) weaken the structure and causes serious injury or death.

- ▶ No drilling, cutting or grinding.
- ▶ Do not install any brackets.
- ▶ No welding, straightening or bending.
- ▶ Replace the complete protective structure if it is damaged, deformed or cracked.
- ▶ Contact a Wacker Neuson service center in case of doubt.
- ▶ Retrofit and repair work may only be performed by a Wacker Neuson service center.
- ▶ Replace self-locking fasteners.

Information

Machine operation is only allowed with a correctly attached and intact cabin.

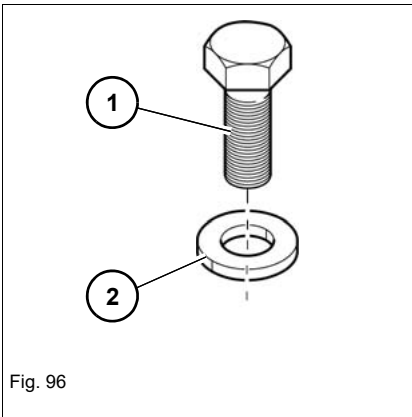
For additional protection, only use correctly installed and intact Wacker Neuson protective structures that have been released for the vehicle.

Responsibility for vehicle equipped with protective structures

The decision regarding the necessary protective structures (type and level I or II) must be made by the machine owner and depends on the specific work situation.

The vehicle owner must observe the national regulations and he must inform the operator on the protective structure to be used in a specific work situation.

Assembly



The term **screw** is used for fastening equipment used in the following sequence:

1. Screw
2. Washer

 **Information**

Only install protective structures with the help of a crane.

Protective Front Guard structure category I (cab option)

 **DANGER****Danger of piercing/penetration by objects from the front!**

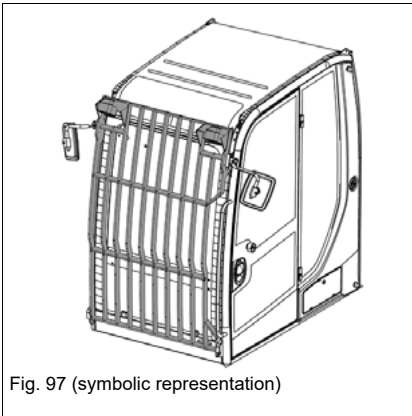
Causes serious injury or death.

- ▶ Install a protective Front Guard structure in areas with danger from the front (for example pipes, tree trunks).
-

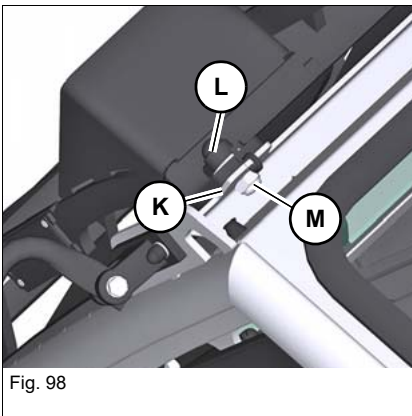
 **Information**

The protective Front Guard structure corresponds to category II according to ISO 10262:1998.

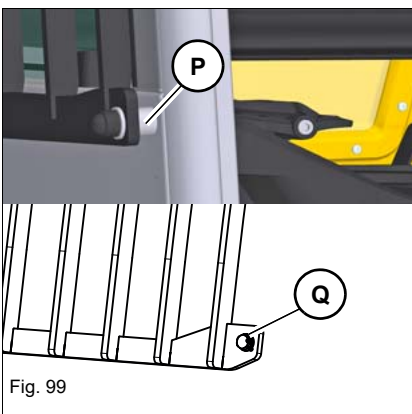
- ▶ The vehicle owner must ensure that the hazard situation is evaluated and that the national regulations are observed.
 - ▶ The vehicle owner must ensure that only work is performed that does not require any higher protection.
 - ▶ Accidents cannot be fully avoided despite equipping a vehicle with protective structures.
-



1. Stop and park the vehicle. Stop the engine. See “Preparing lubrication”.



- K:** mounting points top left and right.
2. Attach screws **L** and nuts **M** and tighten with 110 Nm (81 ft. lbs.).



- P:** mounting points bottom left and right.
3. Install screws **Q** and tighten to 110 Nm (81 ft.lbs.).
Put caps on all screws and nuts.

Shatter protection

WARNING

Danger of piercing/penetration by objects from the front!

Work involving risk of piercing/penetrating by objects from the front can cause accidents with serious injury or death.

- ▶ To operate the vehicle, shatter protection must be installed if an attachment (a breaker, for example) causes fragments to fly around. This shatter protection takes over the function of a front window. If the machine is equipped with a cab, the front window must be closed during hammer operation.
 - ▶ Observe the prescribed work area - see [Job site](#).
-

WARNING

Danger of accident with restricted visibility!

Restricted visibility (e.g. weather influences, dust, improper cleaning) can cause serious injury or death.

- ▶ Stop machine operation immediately.
 - ▶ Do not use brushes, steel wool or other abrasive cleaners for cleaning the polycarbonate disk. Do not wipe dust in a dry state.
-

NOTICE

Possible damage to the vehicle structure from improper assembly.

- ▶ Only an authorized service center may install the shatter protection for the first time.
-

Information

The shatter protection protects the user against penetrating fragments from the front.

- ▶ The vehicle owner must ensure that the hazard situation is evaluated and that the national regulations are observed.
 - ▶ The vehicle owner must ensure that only work is performed that does not require any higher protection.
 - ▶ Accidents cannot be fully avoided despite equipping a vehicle with protective structures.
-

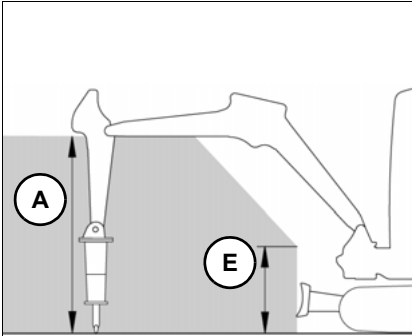


Fig. 100 (Symbol representation)

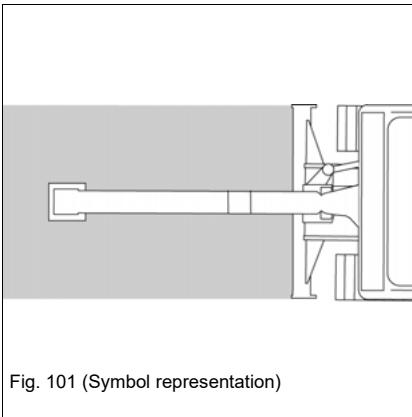


Fig. 101 (Symbol representation)

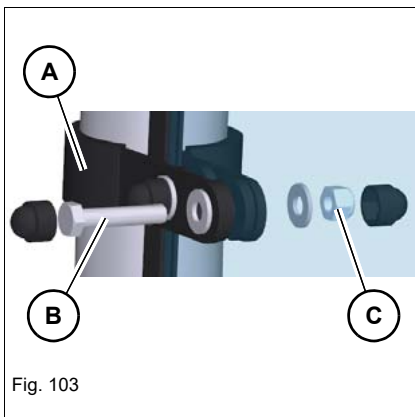
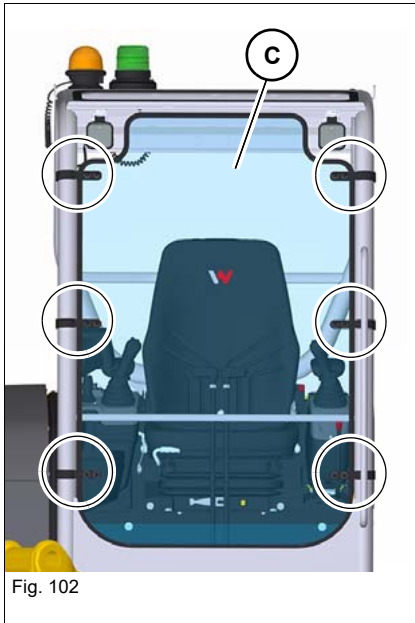
Job site

Work range height **A**: 120 cm (47 in), **E**: 50 cm (20 in).

Figures 100 and 101 refer to work with a Wacker Neuson hydraulic hammer.

**Information**

Working with another attachment can modify the height of the job site.



Installing the shatter protection

At least two people are required for the assembly or disassembly.
Preparations – see chapter “Parking the machine” on page 5-11.

1. Mount shatter protection with mounting bracket **A**, screws **B** and nuts **C** on the frame.
2. Put caps on all screws and nuts.



Information

Torque for screws and nuts: 25 Nm (18 ft.lbs)

Removing the shatter protection

1. Loosen screws **B** and nuts **C**.
2. Remove shatter protection.
3. Securely store the shatter protection.

Document box

A document box behind the seat is available as an option.

12V plug receptacles



Fig. 104

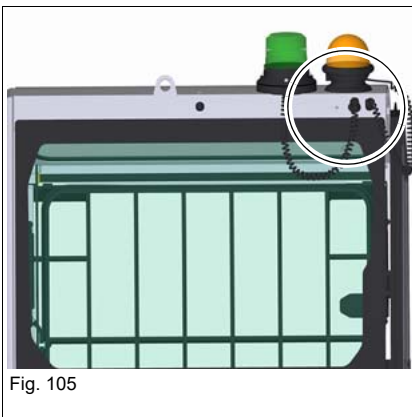


Fig. 105

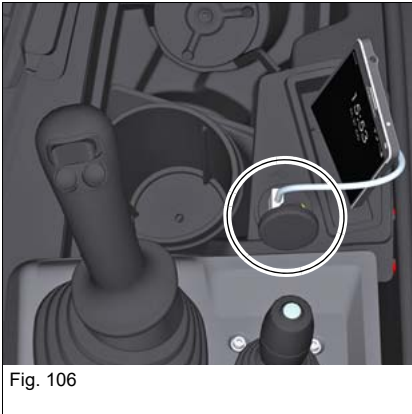


Fig. 106

12V plug receptacles are located rear right in the cab and at the rear on the cab roof.

USB connection

A USB connection is located at the front right of the cabin.



Information

The USB functionality is now available with Option Radio. Gather information on the functional scope of the USB connection of the Radio operator's manual

4.2 Overview of control elements

Cabin

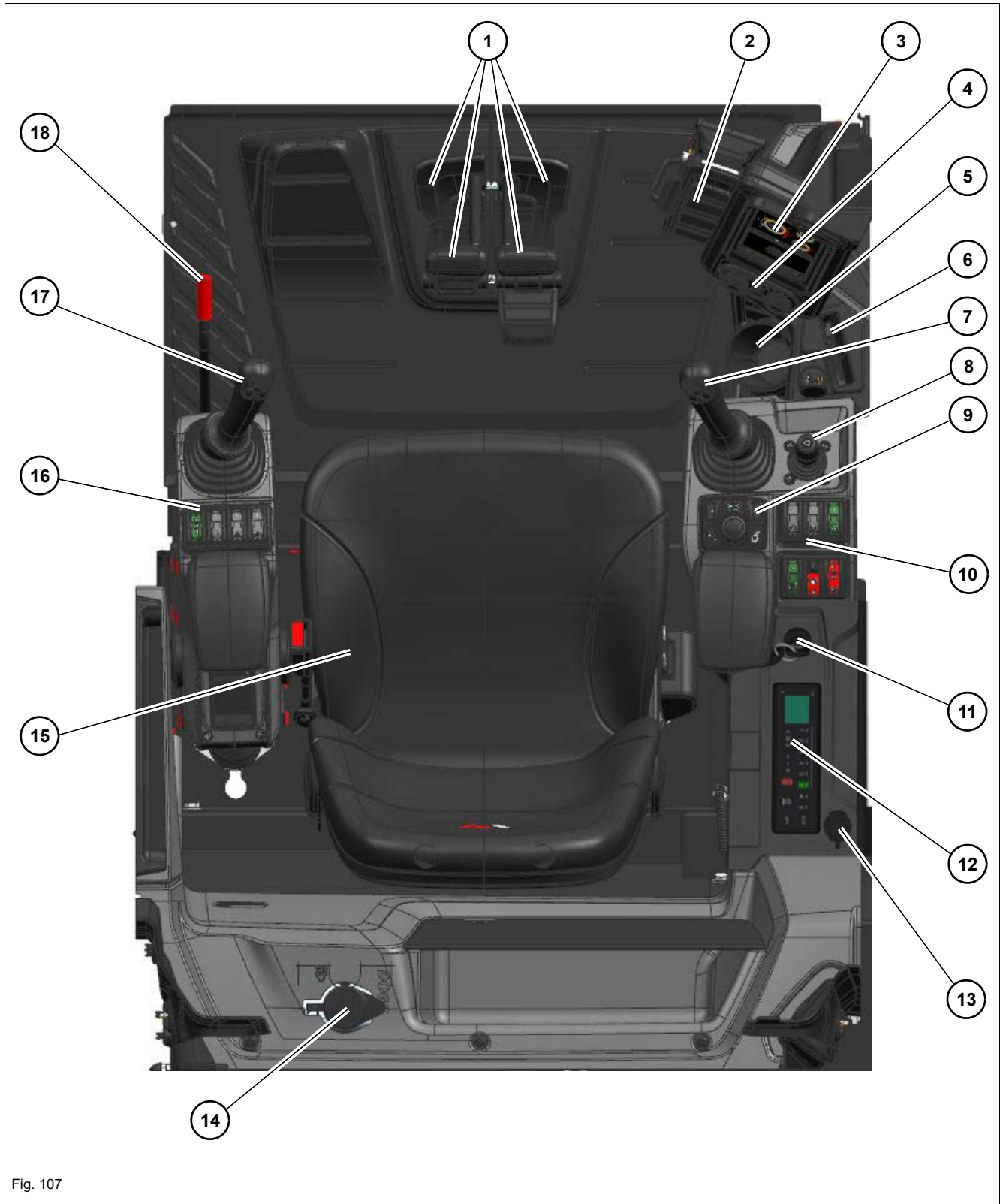


Fig. 107

Description	See page
1. Accelerator pedals/drive levers	5-1
2. Boom swivel pedal	5-25
3. Display element	4-28
4. Temperature controller	5-17
5. Drinks holder	--
6. Cell phone compartment	--
7. Control lever on the right	5-19
8. Stabilizer-blade lever	5-24
9. Jog dial	4-27
10. Switch panel on the right	4-26
11. Ignition lock	4-39
12. Radio	--
13. 12 V power outlet	4-23
14. Washer fluid reservoir	7-48
15. Seat	4-9
16. Left-hand switch panel	4-26
17. Control lever on the left	5-19
18. Control lever base	4-39

Display element and switches

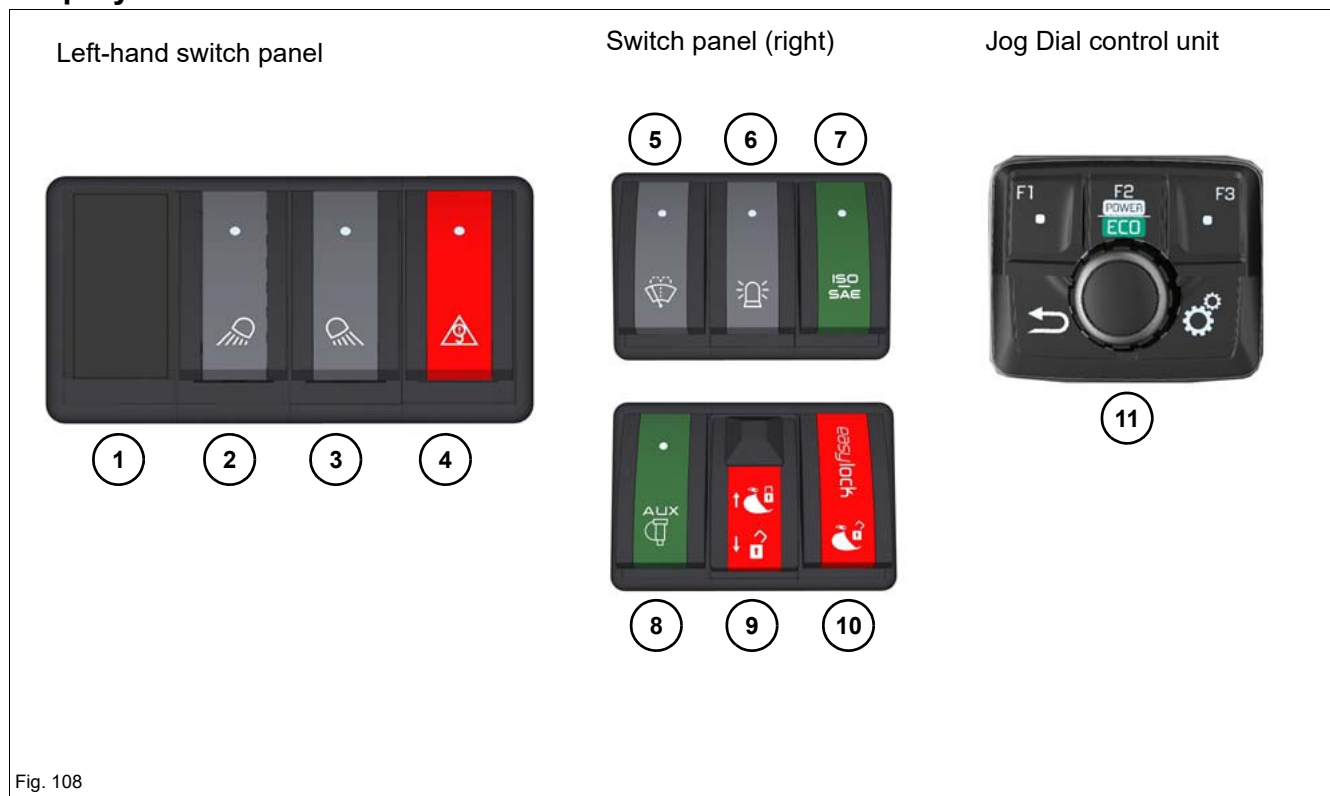


Fig. 108

Description	See page
1 Not assigned	--
2 Working lights	5-12
3 Working light (boom)	5-12
4 Safe load indicator	5-34
5 Washer system	5-16
6 Rotating beacon	5-15
7 ISO/SAE	5-20
8 Pressure release AUX I/AUX II	5-59
9 Hydraulic quickhitch system (lock/unlock system)	5-41
10 Hydraulic quickhitch system (open)	5-41
11 Jog Dial control unit	4-27

Jog dial



Fig. 109





Control button

Menu levels are selected (turn) and confirmed (press) using control button **A**.

After starting the engine, the control knob fulfills the function of a gas regulator.

Press the control knob to adjust the flow rate of the auxiliary hydraulics.

Switch between the **throttle** and **oil flow**: press the control knob.

Control element		Function	See page
F1		Displaying operating states	4-29
F2		Changing the engine operating mode directly	4-29
F3	Press briefly	Automatic engine speed setting	4-29
	Press and hold	Auto stop function	4-42
Menu button	Press briefly	• Selecting control circuits	5-31
		• Changing the engine operating mode	5-2
	Press and hold	• Selecting and configuring attachments	5-31
		• Stabilizer blade	5-31
		• Service menu/error messages	8-5
• Adjusting the multi-functional display	4-35		
• Setting date and time	4-35		
Return button		Returning to previous menu	--
Control button		Selecting menu items (turn) Confirming menu items (press)	--

Daily and total operating hours

Function	Push button
Change view	Press F1 briefly
Reset the daily operating hours	Press F1 longer

4.3 Control and warning lights overview

Display element

The display element informs the operator about operating states, required maintenance procedures and possible vehicle malfunctions.

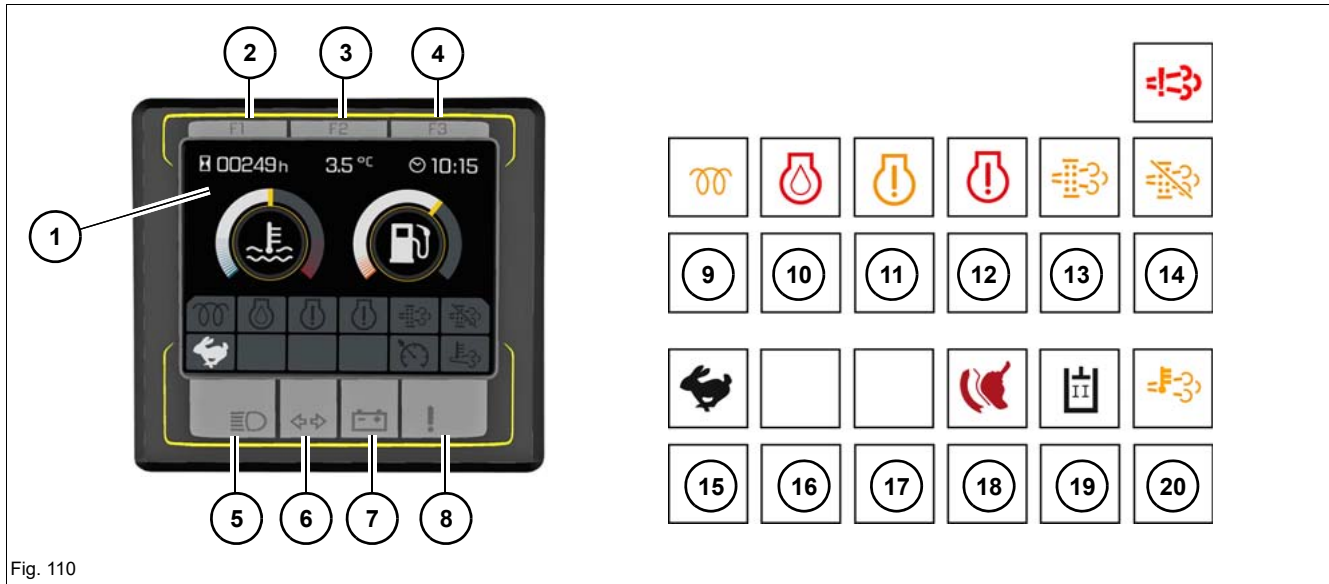



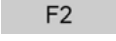
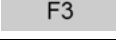









Fig. 110










i **Information**

It may take a few seconds before a selected function is displayed.

i **Information**

The indicator lights are tested when the starter is engaged and are illuminated for a few seconds.

nr.	Symbol	Color	Description	
1	--	--	Display element/multifunctional display	4-28
2		--	F1 (operating state indicator)	4-27
3		--	F2 (maintenance meter, engine operation mode indicator)	4-27
4		--	F3 (Display of Time, Automatic speed control, Auto stop)	4-27
5		Blue	Not assigned	--
6		Green	Not assigned	--
7		Red	Charge indicator light	4-39
8		Red	General vehicle malfunction	8-2
9		Yellow	Preheating	4-39
10		Red	Engine oil pressure	8-2
11		Yellow	Engine warning	7-53 8-2
12		Red	Engine stop	7-53 8-2
13		--	Regeneration required	7-53

nr.	Symbol	Color	Description	
14		Yellow	Not assigned	--
		Red	Exhaust gas recirculation error Stop the vehicle and contact a Wacker Neuson service center.	--
15		--	Speed range 1	5-3
		--	Speed range 2	5-3
16	--	--	Not assigned	--
17	--	--	Not assigned	--
18		Red	Hydraulic functions locked	4-39
		Red	Hydraulic functions active	4-39
19		--	Additional control circuit AUX II (option)	5-29 5-31
		--	Additional control circuit AUX III (option)	5-30
20		Yellow	Not assigned	--













Information

The graphic symbols shown may deviate.


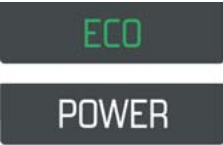

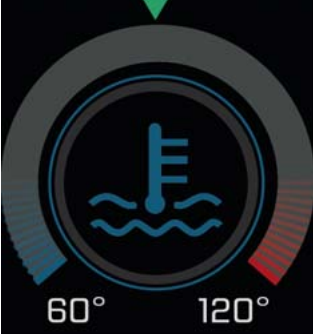

Error symbols

If an error occurs, the following symbols are displayed for a few seconds in the multi-functional display. Can also sound a buzzer.

Error symbols are listed according to priority.

Symbol	Description	Symbol	Description
	01 Engine stop (short indication)		05 Charge indicator light (short indication)
	02 General malfunction (short indication)		06 Hydraulic oil temperature (permanent indication)
	03 Engine oil pressure (short indication)		07 Hydraulic oil filter (Brief display, appears again upon engine start, engine oil cold)
	04 Engine malfunction/Auto Stop (short indication)		08 Air filter (short indication)
	Hydraulic functions active		Hydraulic functions locked

Status indicators

Symbol	
	<p>Starter/engine start</p> <ul style="list-style-type: none"> • A: starting key in position 1 • B: engine starts
	<p>Engine operating mode</p>
	<p>Coolant temperature If the coolant temperature is too high the symbol shown on the left appears and the buzzer sounds.</p> <p>Measures to be taken</p> <ul style="list-style-type: none"> • Let the engine run at high idling speed without any load. • Wait until the temperature drops and the indicator light goes out. • Stop the engine. • Check the coolant level.
	<p>Coolant temperature The temperature symbol illuminates in blue at too low coolant temperature.</p>
	<p>Fuel tank capacity</p> <p>Refuel if the symbol shown on the left appears.</p>

Symbol	
	<p>Operating states</p> <p>Press F1 to toggle between the operating state displays:</p> <ul style="list-style-type: none"> • Operating hours • Daily hours of operation • Engine speed • Outside temperature • Time
	<p>Maintenance meter</p> <p>Counts the remaining engine operating hours down to the next maintenance work due.</p> <p>If less than 10 hours are displayed, the wrench symbol flashes.</p>
	<p>Engine speed</p> <p>This display appears when the manual throttle is used.</p>
	<p>No function</p> <p>This symbol appears when a control element without function is operated.</p>
	<p>Overload</p> <p>The symbol shown on the left appears and the buzzer sounds.</p> <p>The permissible load diagram values are exceeded.</p> <ul style="list-style-type: none"> • Reduce the load until both the buzzer and the warning light go out – see chapter “Lifting gear applications” on page 5-33. <p>When the safe load indicator is switched on, the symbol is illuminated and the buzzer sounds as a functional check.</p>

Symbol

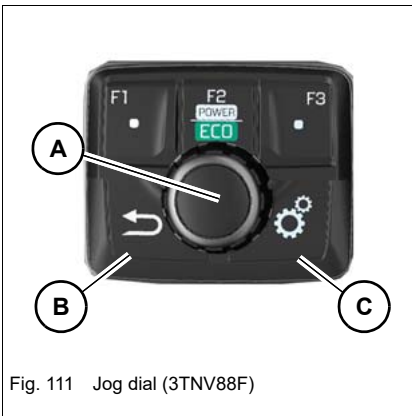
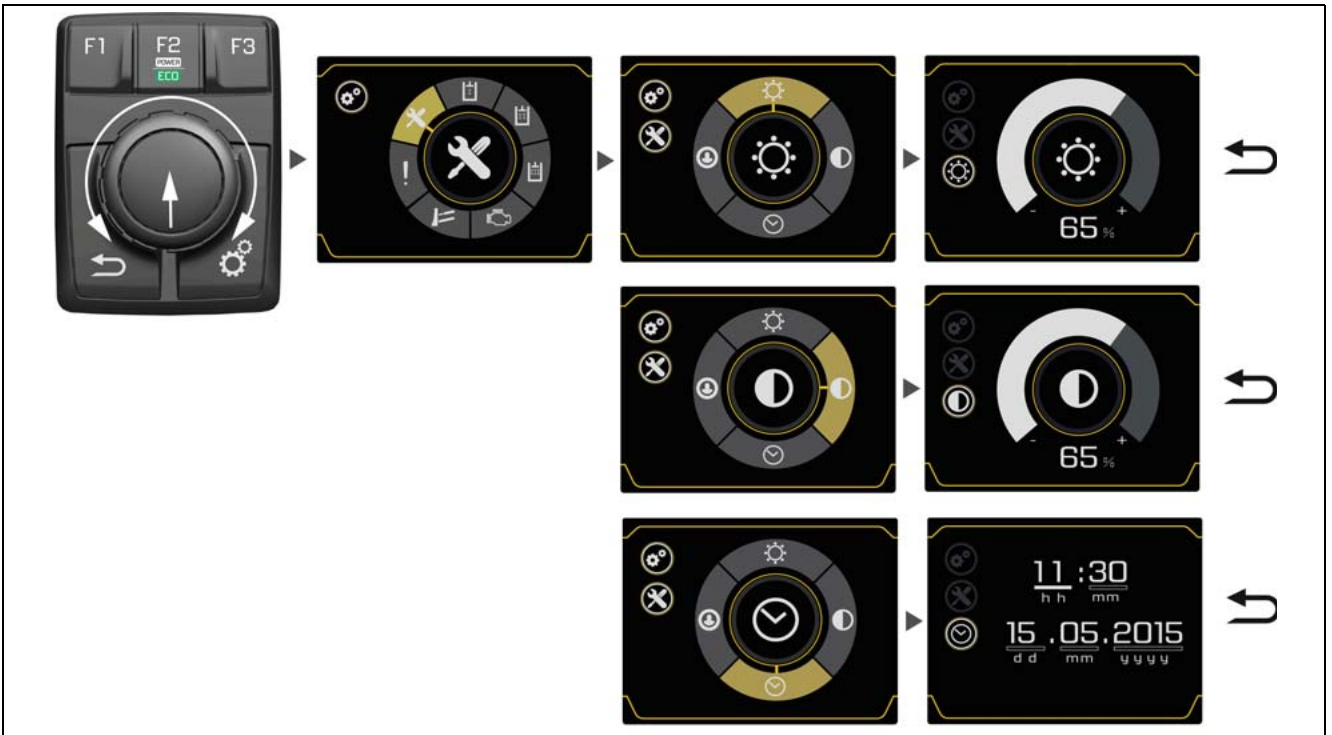
**Status indicator for 7" multi-functional display (option)**

Additional status indicators are displayed:

- Battery voltage
- Engine oil pressure
- Preset maximum flow rate of the additional control circuits AUX I through AUX III

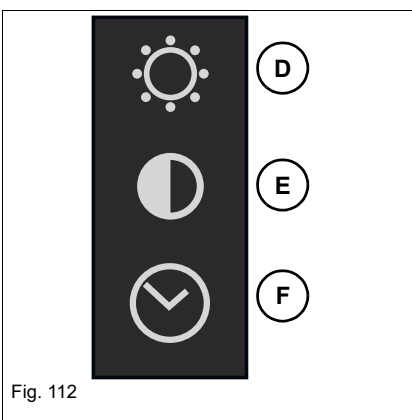
Use the rotary switch of the jog dial control unit to toggle between camera view and status display.

Adjusting the multi-functional display



Performing the adjustments

- Push button **C**: call the settings.
- Control knob **A**: select settings (turn) and confirm (press).
- Push button **B** (return): back to previous menu level.



Symbols

- D**: Brightness
- E**: Contrast
- F**: Time/Date

4.4 Preparatory work

Important information before putting the vehicle into operation

Perform a visual check before starting work:

- There must be no leaks.
- There must be no damaged or loose parts.
- Do not allow anyone to stay in the danger zone.

Before putting the machine into operation, the operator must familiarize himself with the position of the controls and instruments.

Only operate the vehicle from the seat with the seat belt fastened.

Before using the vehicle in work operation for the first time, Wacker Neuson recommends trying out the vehicle on open ground without any obstacles.

When using the vehicle, check the surroundings constantly in order to identify potential hazards in time.

Before starting work, ensure that all visual aids are clean, functional and adjusted in accordance with the instructions in this Operator's Manual.

The operator must follow the national and regional regulations.

Perform a **functional check of the control lever base**.

Perform a **functional check of the safe load indicator**.

Do not make any modifications that impair visibility. The vehicle does not meet the requirements for conformity and registration.

Observe the safety instructions – [see chapter "2.4 Operation" on page 2-4](#).

Requirements and information for the operating personnel

The vehicle may only be put into operation by authorized personnel that has been instructed – [see chapter “2.3 Conduct” on page 2-3](#).

The operator must know and bear in mind the requirements and risks at the work place.

Perform daily maintenance according to the lubrication and maintenance plan

– [see chapter “7.2 Maintenance overview” on page 7-2](#)

Do not operate the vehicle if the standard protective equipment (for example the cabin) has been removed.

No clothes or parts of the body may protrude outside the vehicle during operation.

Putting into operation for the first time and running-in period

Before putting the vehicle into operation for the first time, check whether the equipment supplied with the vehicle is complete.

- Check the fluid levels according to chapter **“Maintenance”**.

Each vehicle is correctly adjusted and checked before it is delivered.

Handle the machine carefully during its first 50 operating hours.

- Do not load a cold engine.
- Warm up the vehicle at low engine speed and little load, do not warm it up at a standstill.
- Do not change engine speed abruptly.
- Avoid using the vehicle under heavy loads or at high speeds.
- Avoid abrupt acceleration, braking and changing travel direction.
- Do not run the engine at high speed for extended periods.
- Observe the maintenance plans – [see chapter “7.2 Maintenance overview” on page 7-2](#).

4.5 Starting and stopping the engine

Preparatory work



WARNING

Accident hazard due to unintentional operation of the vehicle!

Unintentional operation can cause serious injury or death.

- ▶ Only operate the vehicle from the seat with the seat belt fastened.

The starter cannot be actuated if the engine is already running (start repeat interlock).

Do not run the starter for more than 20 seconds.

Wait two minutes so the battery can recover and the starter does not overheat before trying again.



Information

Provide for sufficient ventilation when operating in enclosed areas.



Information

All controls must be within easy reach. You must be able to move the drive levers to their limit positions.

Ignition

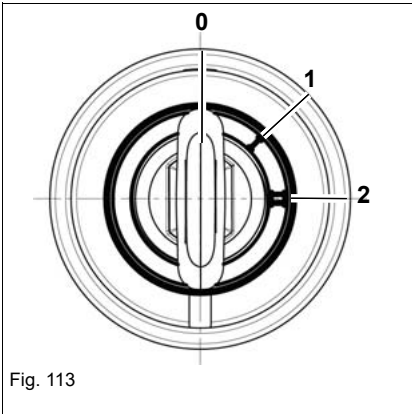


Fig. 113

Position	Function
0	Ignition off, Engine off
1	Ignition on, automatic pre-heat
2	Starts the engine

Starting and stopping the engine

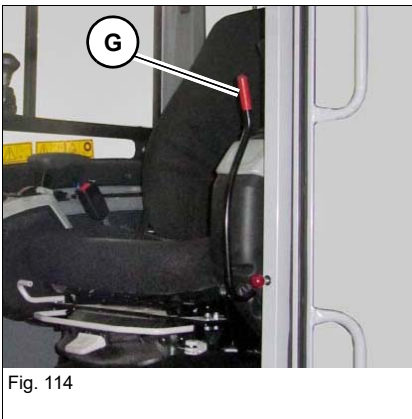


Fig. 114

Fold up the joystick base after shutting off **G** the engine.

Control lever base	Indication	Effect
Raised		The engine can be started
Lowered		The engine cannot be started

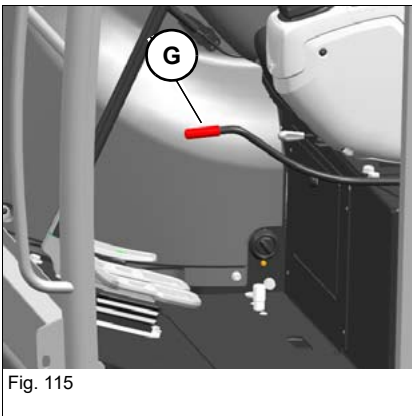


Fig. 115

All hydraulic functions are locked if the control lever is raised with a running engine.

Functional check of the joystick base

Before starting work, perform a functional check of the control lever base.

1. Start the vehicle.
2. Fold the control lever base **G** down.
3. Perform vehicle travel on open terrain.
4. Secure the danger zone.
5. Stop the vehicle.
6. Raise the control lever base **G**.
7. Move all control levers and pedals in all directions.
 - ➔ The selected elements do not move:
 - ➔ Work may be performed with the vehicle.
 - ➔ The selected elements move:
 - ➔ Stop operation immediately.

Contact a Wacker Neuson service center and have the malfunction rectified.

NOTICE

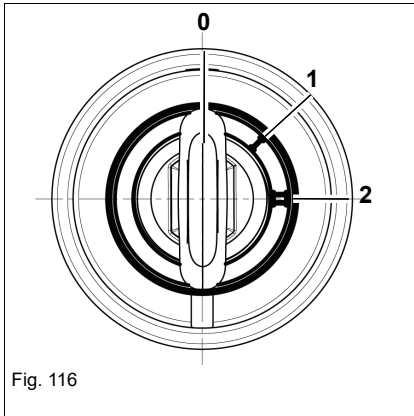
Possible damage if the engine is started again immediately after stopping it.

- ▶ Wait at least two minutes before starting the engine again.

NOTICE

Possible damage to preheater if the preheating system is operated too long.

- ▶ Do not preheat the engine for more than 20 seconds.
-



1. Sit down on the seat.
 2. Switch off all electric consumers.
 3. Turn the starting key to position **1**.
 4. All indicator lights illuminate for two seconds.
 5. If the indicator lights **A** (pre-heat) goes out, turn the starting key in position **2** and hold in this position until the engine starts.
 - ➔ Release the starting key.
- All indicator lights go out.

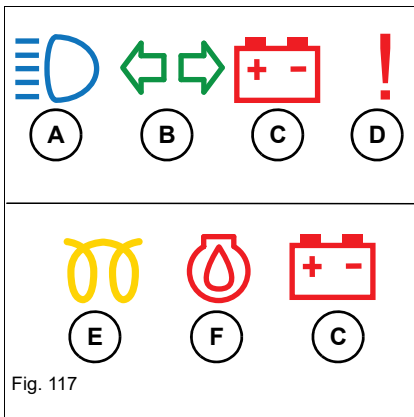
 **Information**

The engine will not start unless the control lever base is raised.

If the engine does not start after 30 seconds:

Interrupt the start procedure and repeat it after two minutes.

If the engine still does not start after a few tries, contact a Wacker Neuson service center.



Warm-up phase of vehicle

After the engine has started, allow it to warm up at slightly increased idling speed until it reaches its operating temperature of about 80°C (176°F) (coolant).

However, do not let the machine warm up at standstill.

During the warm-up phase, check for unusual noise, exhaust color, leaks, malfunctions or damage.

In case of malfunctions, damage, or leaks:

Secure the vehicle, park it and find out the cause for the damage and have it repaired.

Secure the vehicle, park it and find out the cause for the damage and have it repaired.



Information

Fold up the control lever base after shutting off **G** the engine.

Auto stop



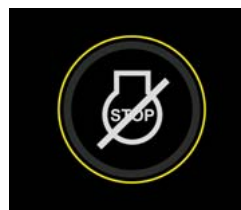
The Auto Stop function shuts the engine down in certain conditions to reduce emissions and to save fuel.

Press and hold **F3** button on the Jog Dial until the corresponding screen display appears.



Information

The Auto Stop function cannot be executed under certain operating conditions. A strike-through symbol then appears in the display.

Auto stop		Indication
Function on	The Auto Stop function is controlled automatically. ¹	
	The Auto Stop function cannot be executed.	
Function off	The Auto Stop function is turned off.	

1. The Auto Stop function is activated only when the joystick base is raised.

Starting aid

 **WARNING****Explosion hazard in case of incorrect handling of battery!**

Incorrect battery handling can cause serious injury or death.

- ▶ Wear protective equipment.
 - ▶ Fire, open flames and smoking is prohibited
 - ▶ Do not jump start the engine if the battery is malfunctioning or frozen, or if the acid level is too low.
-

 **WARNING****Injury hazard due to rotating parts!**

Rotating parts can cause serious injury or death.

- ▶ Open the engine cover only at engine standstill.
-

 **CAUTION****Burn hazard due to hot surfaces!**

Can cause serious burns or death.

- ▶ Stop the engine and let it cool down.
 - ▶ Wear protective equipment.
-

NOTICE

Possible damage due to electrical short circuit or over-voltage.

- ▶ The positive terminal of the starting battery must not be brought into contact with electrically conductive vehicle components.
 - ▶ The vehicles must not touch each other during the starting aid.
 - ▶ If the engine still does not start despite a starting aid, contact a Wacker Neuson service center.
-

NOTICE

Possible damage due to wrong battery voltage.

- ▶ Only use batteries with the same voltage (12 V).

NOTICE

Possible damage to vehicle with empty battery due to voltage peaks.

NOTICE

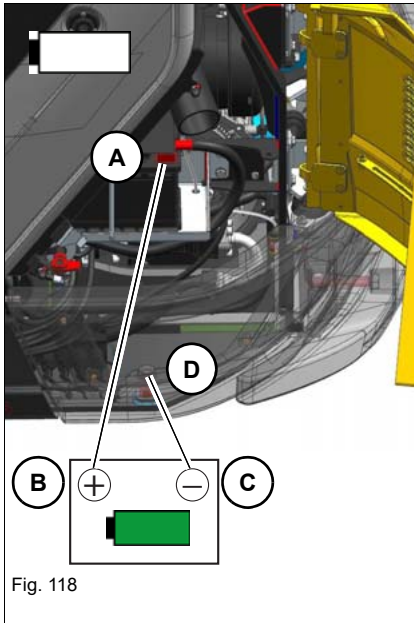
Possible damage to battery jumper cables when placing them near rotating parts.



- ▶ Do not place the battery jumper cables near rotating parts.



Information

Use only authorized battery jumper cables which conform to national and regional safety requirements.



Designations/symbols	Meaning
X	Machine with empty battery
Y	Vehicle with full battery
A	Positive/vehicle X
B	Positive/vehicle Y
C	Negative/vehicle Y
D	Negative/vehicle X
	Full battery
	Dead battery

1. Move vehicle **Y** close to machine **X** so that the length of the battery jumper cables is sufficient.
2. Stop the engine of vehicle **Y**.
3. Engine covers of both vehicles are open.
4. Connect the battery jumper cables in the following order: **A-B/C-D**.
5. Start the engine of vehicle **Y**.
6. Wait five minutes for the empty battery to be charged a little.
7. Start the engine of machine **X**.
8. Switch on the boom light of vehicle **X** in order to avoid voltage peaks and to protect the electronic system.
9. Disconnect the battery jumper cables in the following sequence: **D-C/B-A**.

Low-load operation

NOTICE

Possible damage to the engine due to low-load operation.

- ▶ Run the engine at idling speed or at high engine speed at over 20% engine load.

Possible consequences of low-load operation are:

- Increased engine oil consumption.
- Dirt in engine due to engine oil in exhaust system.
- Blue smoke in exhaust gas.

Stopping the engine

NOTICE

Possible damage to the engine when it is stopped after running under high load.

- ▶ Operate the engine at idling. This avoids engine damage and increases the service life.

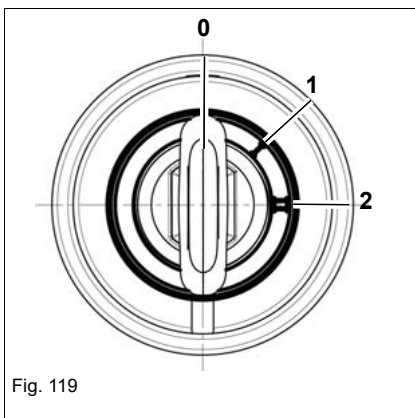


Fig. 119

1. Let the engine run at idling speed for five minutes without any load.
2. Turn the starting key to "0" and remove it.

Battery master switch

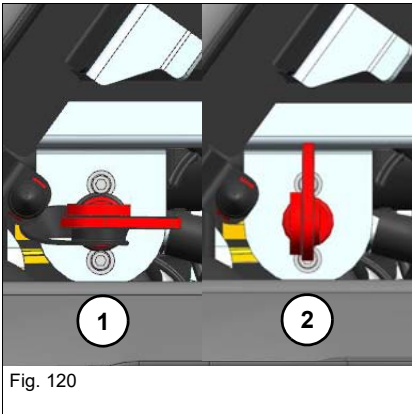
NOTICE

Possible damage to the electronics due to improper actuation of the battery master switch.

- ▶ Do not operate the battery master switch with a running engine.
- ▶ After stopping the engine, press the battery master switch after 70 seconds at the earliest.

Actuate the battery isolator switch:

- If the vehicle is parked for longer periods of time (e.g. over the weekend).
- If the vehicle is to be protected against unintentional taking into service.
- If required by national and regional provisions.



The battery master switch is located under the left maintenance cover.





Power supply	Key position
Connection	1
Interrupt	2 (Remove key)



Notes:

5 Operation

5.1 Steering system

Movement	Drive levers/accelerator pedals
Steering to the left	
Steering to the right	
Rotation to the left	
Rotation to the right	

5.2 Accelerator actuation

Manual throttle



Fig. 121

Speed can be set easily using the control button **A** – see chapter “Jog dial” on page 4-27.

Engine speed	Position
Increase	Clockwise
Reduce	Anticlockwise

Engine operating mode

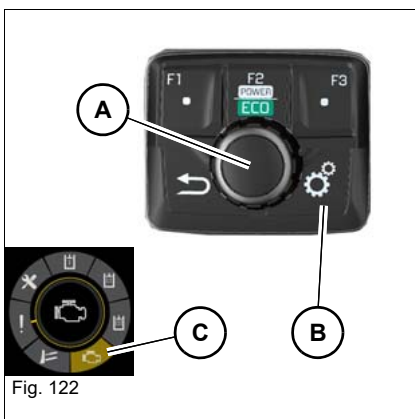


Fig. 122

Engine operating mode	Application
ECO	For powerful and fuel-efficient operation
POWER	Maximum power

Changing the engine operating mode directly

Press touch button **F2**.

Presetting the engine operating mode

1. Press menu button **B**.
2. Press control button **A** to select menu item **Engine Operating Mode C**.
3. Press control button **A**.
4. Turn control button **A** to select the required operating mode (ECO/PWR).
5. Press control button **A**.

The engine starts up in the selected operating mode.







Fig. 123

Speed range selection



Fig. 124

The vehicle has two speed ranges that can be selected with push button **A** on the dozer blade lever.

Speed range selection	Push button	Indication
Speed range 1		
Speed range 2		

If speed range 2 is selected, the vehicle shifts to **Auto 2-Speed** mode.

The vehicle moves at higher speed.

Higher vehicle travel resistance (for example in curves): vehicle automatically shifts down to speed range 1.

Normal vehicle travel resistance: vehicle automatically shifts up to speed range 2.

Automatic engine speed setting

If the hydraulic system is not operated for a few seconds, the diesel engine goes into idling speed

If the hydraulic system is operated, the diesel engine runs at the engine speed set with the manual throttle.

The automatic engine speed setting can be switched on and off using the touch button **F3** on the jog dial.

Automatic engine speed setting	Push button	Indication
On		
Off		--

Changing engine speed manually

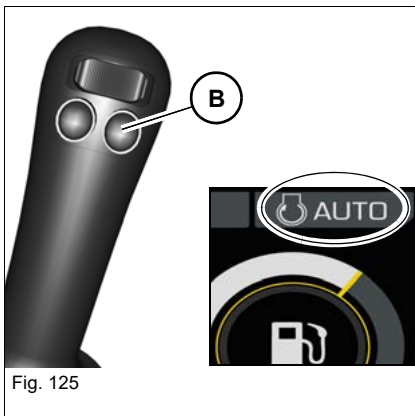


Fig. 125

Push button **B** on the left control lever makes it possible to toggle between the idling speed and the engine speed set with the manual throttle at any time.

The selected symbol flashes while the engine is in idling speed.

5.3 Brake

Hydraulic brake

The vehicle will slow down when the drive levers or accelerator pedals are released.



Information

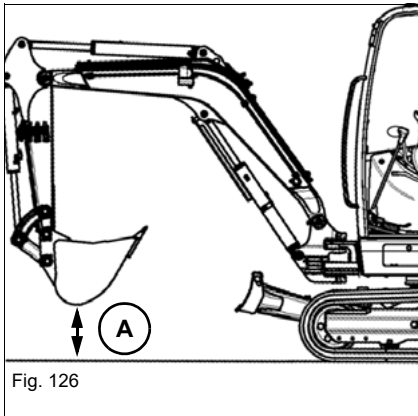
Reduce the speed with the drive levers or accelerator pedals, and not with the throttle.

Mechanical brake

The stabilizer blade is used as a parking brake. Press the stabilizer blade against the ground.

5.4 Machine travel

Machine travel position



Position the vehicle as shown.

Position the boom at the center and raise it off the ground.

- A = 20-30 cm (8-12 in)

Starting vehicle travel and stopping

WARNING

Accident hazard due to incorrect vehicle operation!

The vehicle moves in the opposite direction if the upper carriage is rotated by 180° and the drive levers are actuated.

Incorrect operation can cause serious injury and death.

- ▶ Slowly and carefully actuate the control levers.

WARNING

Accident hazard due to incorrectly rotated upper carriage!

If rotated incorrectly, the upper carriage blocks the visibility of the travel path. This may cause serious injury or death.

- ▶ Before starting vehicle travel on a construction site, align the superstructure so that the operator has an unrestricted view of the travel path.

Starting vehicle travel

Operate the drive levers or accelerator pedals.

- The vehicle starts moving.

Stopping

Release the drive levers or accelerator pedals.

- The vehicle stops.

Information

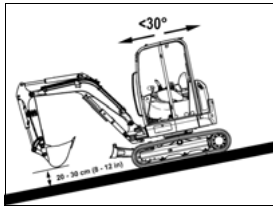
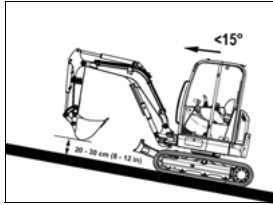
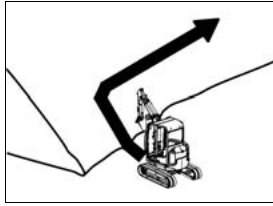
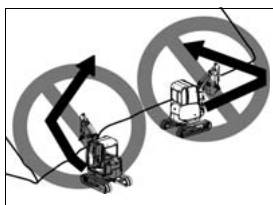
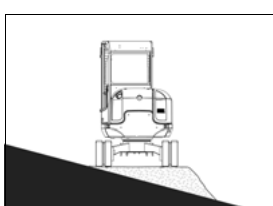
The control lever base must be folded down in order to start vehicle travel.

Operating temperature range

Operate the vehicle only in the following ambient temperatures.

Temperature °C (°F)	
-15 (5)	45 (113)

Application limits of the vehicle

Application	Description
	Uphill and downhill (Boom downhill side) Allows up to a slope of 30°
	Uphill traveling (Boom uphill side) Allows up to a slope of 15°
	Lateral slope travel Allows up to a slope of 15°
	Diagonal drive Prohibited
	Operating with lateral slopes Only allowed on a horizontal, stable and level floor area

 **WARNING****Crushing hazard due to tipping over of vehicle!**

A tipping vehicle can cause serious injury or death.

- ▶ Raise the boom 20 – 30 cm (8 – 12 in) off the ground and position it straight ahead at the center of the machine.
- ▶ In an emergency, lower the boom immediately to increase stability.
- ▶ Travel on slopes only on firm and level ground.
- ▶ Adapt the travel speed to the prevailing conditions.
- ▶ Pay attention to persons and obstacles.
- ▶ Adhere to the application limits of the vehicle.
- ▶ Perform uphill and downhill machine travel only in speed range 1.
- ▶ Never reverse downhill.
- ▶ Ensure that no parts of the body protrude outside the vehicle.
- ▶ Do not exceed the permissible payloads.
- ▶ Do not turn or swivel the upper carriage and the boom during downhill or uphill vehicle operation with a full attachment.
- ▶ Diagonal machine travel is prohibited.

Stones and the humidity in the upper layer of the ground can affect vehicle traction and stability.

The vehicle can slip sideways on gravel or loose, rocky soil. The stability of the vehicle can be reduced on rough terrain.

On soft ground, the vehicle sinks into it or the tracks dig into it. This increases the vehicle angle (maximum gradient angle and maximum lateral angle of inclination), and the vehicle can tip over.

If the engine dies as you perform uphill or downhill vehicle travel, immediately put the control levers to neutral position and restart the engine.

Observe under all circumstances during uphill or downhill travel:

- Keep the drive levers near the neutral position.
- Perform slow and smooth travel movements.
- Avoid sudden travel movements.
- Reduce the engine speed.

The vehicle can slip even on gentle slopes if it travels across grass, leaves, humid metal surfaces, frozen ground or ice.

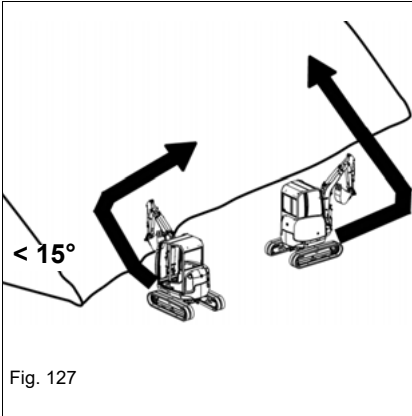


Fig. 127

Preparations for performing vehicle travel on slopes
Always perform uphill or downhill vehicle travel in a straight line.
In case of position change, do not exceed the application limits.

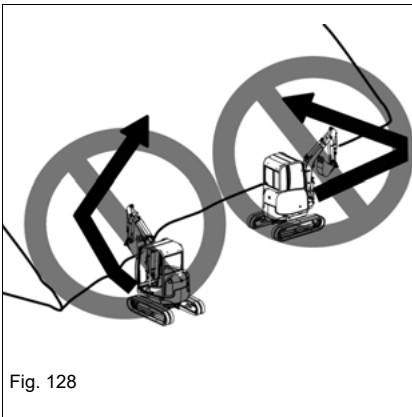


Fig. 128

Change position on flat terrain and after that retract straight in the slope.

Machine travel on slopes

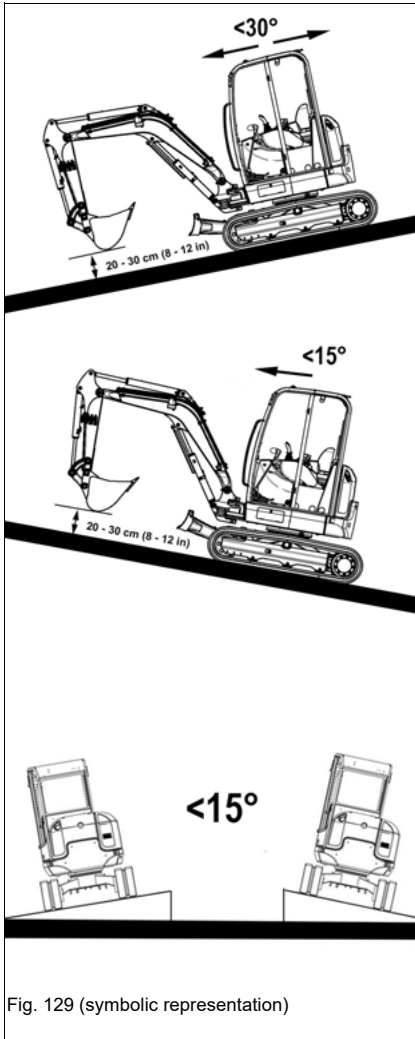


Fig. 129 (symbolic representation)

Uphill and downhill (Boom downhill side)

- Raise the boom 20-30 cm (8-12 in) off the ground and align it at the center.
- Do not exceed the maximum angle of inclination of 30° .

Uphill traveling (Boom uphill side)

- Raise the boom 20-30 cm (8-12 in) off the ground and align it at the center.
- Do not exceed the maximum angle of inclination of 15° .

Lateral slope travel

- Raise the boom 20-30 cm (8-12 in) off the ground and align it at the center.
- Do not perform machine travel on slopes with a lateral angle of inclination over 15° .

Operating with lateral slope

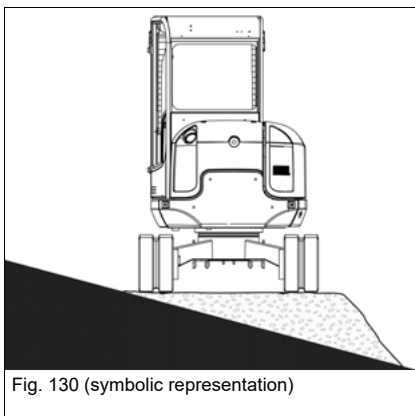


Fig. 130 (symbolic representation)

In case of a lateral slope, pile up the material to create a horizontal, firm and level floor area.

Parking the machine

WARNING

Crushing hazard due to vehicle rolling away under its own weight after parking it!

Serious injury or death can be caused by not securing the vehicle.

- ▶ Lower the boom and the stabilizer blade to the ground.
- ▶ Secure the machine accordingly (for example with chocks).

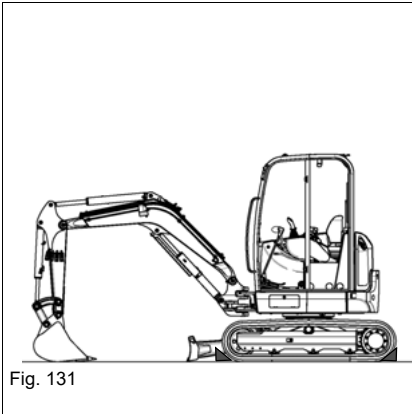


Fig. 131

1. Park the vehicle on firm, level, and horizontal ground.
2. Position the boom straight ahead at the center of the vehicle.
3. Lower the boom and the stabilizer blade to the ground.
4. Stop the engine.
5. Operate the control lever repeatedly to release the pressure in the hydraulic system.
6. Remove the starting key and carry it with you.
7. Raise the control lever base.
8. Close the windows and doors.
9. Close and lock all covers and doors.
10. Secure the vehicle with wheel chocks (see [Fig. 131](#)).

Information

In order to prevent the formation of condensation water, fill up the fuel tank nearly completely at the end of each working day.

Parking the vehicle on slopes

If parking the vehicle on a slope cannot be avoided, observe the following in addition:

- Position the boom on the downhill side of the vehicle and firmly press the attachment into the ground.
- Place stabilizer blade on the downhill side.
- Press the stabilizer blade against the ground.
- Secure the vehicle with wheel chocks (see [Fig. 132](#)).

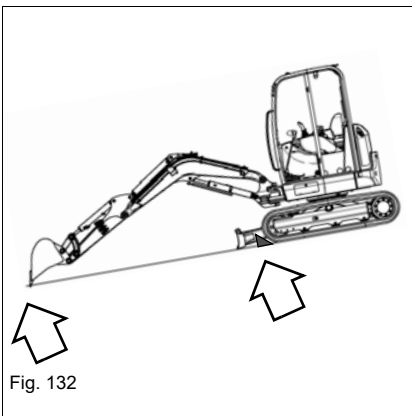


Fig. 132

5.5 Lights/signaling system

WARNING

Motorists can be blinded by bright lights on the job site!

Working lights can blind motorists. This can cause serious injury or death.

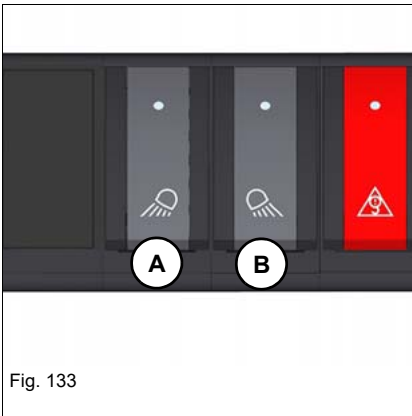
- ▶ Stop vehicle operation if motorists are blinded.
 - ▶ Take up operation again only when sufficient illumination of the working area is ensured without blinding motorists.
-

Information

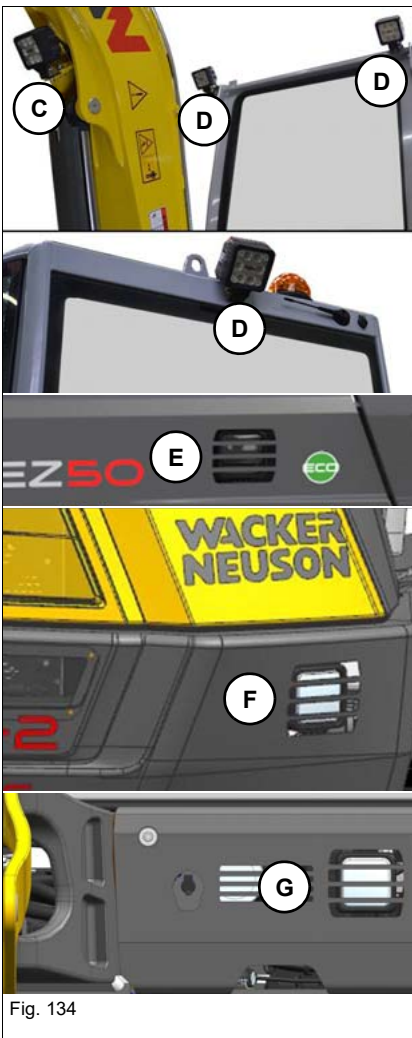
Switch on the working lights in conditions of poor visibility. If illumination still is not sufficient, use external lights. If this is yet not enough to illuminate the job site sufficiently, stop vehicle operation and only start it again when sufficient illumination can be ensured.

Working lights

The switch is located on the left switch panel.



Working lights	Operation
Cab on	Press switch A in position 1 downwards
Cab + Chassis on	Press switch A in position 2 downwards
Cab + Chassis off	Press switch A upward
Boom on	Press switch B down
Boom off	Press switch B upward



Position	Description
C	Boom light
D	Front/rear roof lights
E	Chassis lights to left
F	Chassis lights on right
G	Front chassis lights

Interior light



Fig. 135

Interior light	Operation
On	Press light to the left or right
Off	Press the light to the center position

Horn

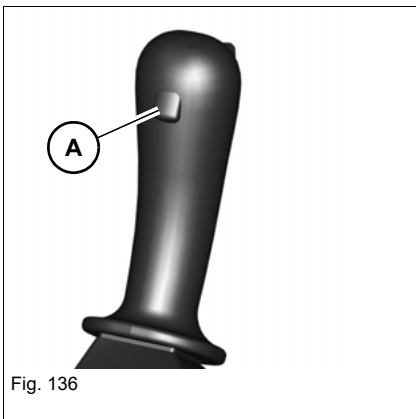
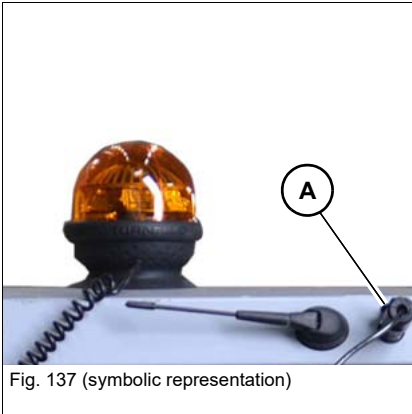


Fig. 136

Press button **A** on the right-hand control lever.

Rotating beacon



The rotating beacon has a magnetic base and is fastened to the cab roof. Power supply is via the 12V plug receptacle **A**.



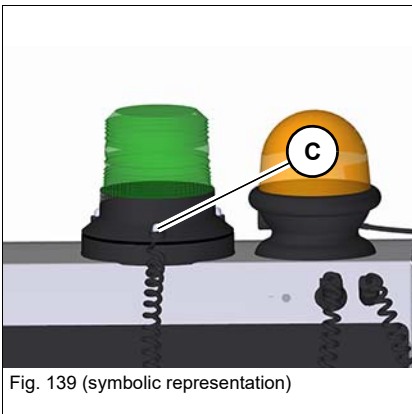
The switch is located on the switch panel on the right.

Position	Function
On	Press switch B down
Off	Press switch B upward

i Information

Observe the national and regional regulations.

Green rotating beacon



The green rotating beacon **C** illuminates when the operator is buckled.

LED strip

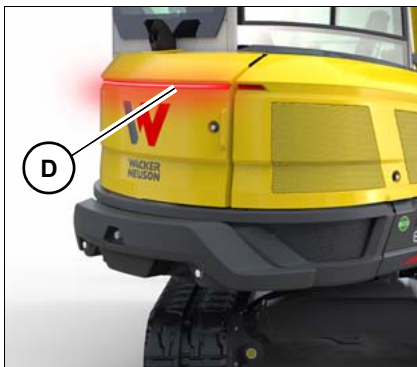


Fig. 140

The red LED strip **D** shows that the vehicle is in operating mode and that could result in a danger situation in the work area.

5.6 Washer system

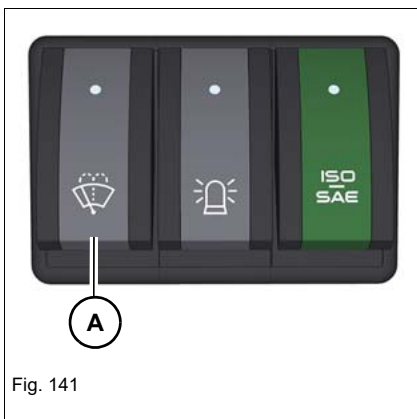


Fig. 141

The switch is located on the switch panel on the right.

Washer system	Operation
Wipers on	Press switch A into position 1
Wipers off	Press switch A into position 0
Spraying on	Press switch A into position 2 and hold
Spraying off	Release switch A

NOTICE

Damage to pump if the reservoir is empty.

- ▶ Do not actuate the washer system if the reservoir is empty.
- ▶ Check the level in the reservoir and add a cleaning solution (glass cleaner) if necessary.

NOTICE

Damage to wiper if the front window is raised.

- ▶ Do not actuate the wipers if the front window is raised.

5.7 Heating, ventilation and air conditioning

CAUTION

Damage to health due to incorrect operation of air conditioning system.

Can cause health hazards.

- ▶ Do not direct the air vents directly at the face when the air conditioning system is switched on.

Operation

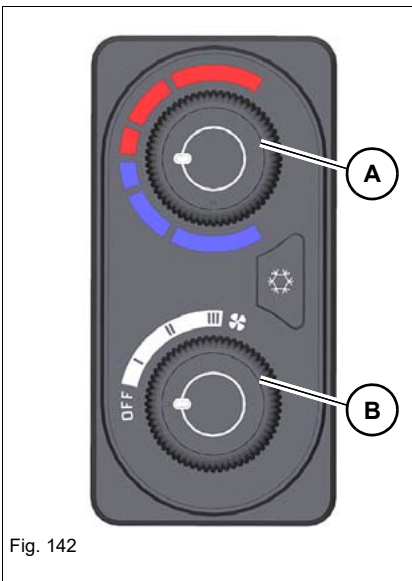






Fig. 142

Set the required temperature (regulator **A**) and ventilation (regulator **B**). In the **OFF** position the entire system including the fan and heating is switched off.

Air-conditioning system

The air conditioning system cools and dehumidifies the air inside the cabin.

Cooling function	Push button	Indication
On		
Off		

Information

Cool down the inside of the cabin quickly:

1. Open the windows and the door.
2. Set the fan to maximum speed so that the hot air can escape.
3. Close the windows and the door.
4. Set the air conditioning system to maximum cooling.

Information

Let the air conditioning system run a few minutes several times a month to avoid damage to the air-conditioning compressor.

Travel signal

A travel signal sounds as soon as at least one of the tracks moves.

WARNING





























Accident hazard during forward/backward vehicle operation!

Danger of crushing that may lead to serious injuries or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Despite the traveling signal the danger zone must also be monitored visually.
 - ▶ If the travel signal does not sound, stop vehicle operation immediately and contact a Wacker Neuson service center. Follow the relevant national and regional regulations.
-

5.8 Operating hydraulics

Basic control lever functions (ISO and SAE controls)

Control mode	Required function	ISO controls		SAE controls	
		Joysticks ¹		Joystick ¹	
		Left	Right	Left	Right
					
	Rotating the upper carriage to the left		--		--
	Rotating the upper carriage to the right		--		--
	Extend stick		--	--	
	Retract the stick		--	--	
	Lower the boom	--			--
	Raise the boom	--			--
	Tilt in the bucket	--		--	
	Tilt out the bucket	--		--	

1. The control levers shown are symbolic representations.

ISO-/SAE-controls

The standard equipment of the vehicle includes ISO controls. SAE controls are available as an option. This results in a different control lever operation.

WARNING

Accident hazard due to modified control mode!

Modified controls can cause incorrect operation, and serious injury or death.

► Before starting work, check the selected control type.

The switch is located on the switch panel on the right.

Function	Push button	Pop-up window
ISO controls		
SAE controls		

Switching from ISO to SAE controls and vice versa:

Switching is only possible when the engine is running.

1. Raise the control lever base.
2. Press and hold ISO-/SAE button until the corresponding screen display appears.

Rotating the upper carriage

⚠ WARNING

Crushing hazard due to rotating range of vehicle!

Persons in the rotation range of the vehicle can be seriously injured or killed.

- ▶ Do not allow anyone to stay in the danger zone.

NOTICE

Possible damage to vehicle when working in the immediate vicinity of walls, parts of buildings or other obstacles.

- ▶ Ensure that there are no obstacles in the danger zone.

i Information

As long as the hydraulic fluid has not reached its operating temperature, the upper carriage can continue moving after releasing the control lever. Operate the control lever carefully in a cold operating state.

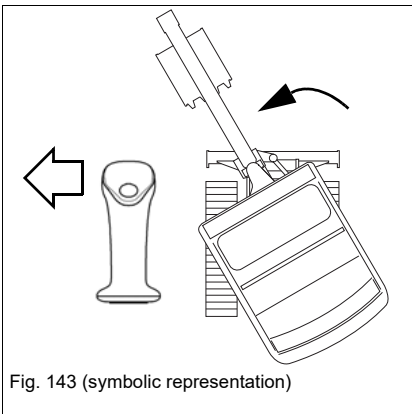


Fig. 143 (symbolic representation)

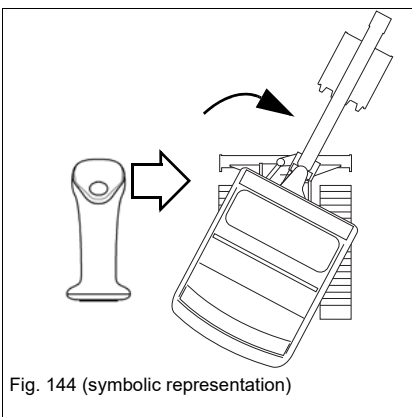


Fig. 144 (symbolic representation)

Rotating the upper carriage	Position
To the left	Push the control lever on the left to the left
To the right	Push the control lever on the left to the right

Swivel unit brake

Automatic swivel unit brake (joystick base raised)

When the upper carriage is rotated, the swivel unit brake is enabled with a time delay to hold the upper carriage.

The swivel unit brake is disabled again if the upper carriage is rotated again.

Hydraulic swivel unit brake

Normal braking: release the control lever.

Maximum braking: press the control lever in the opposite direction until the upper carriage is at a standstill.

Functional check of swivel unit brake

Perform the functional check on a warm vehicle after work once a day.

If the vehicle is put into operation again after a standstill of more than two weeks, perform a functional check once **before starting work**.

1. Park the vehicle on firm, level, and horizontal ground.
2. Raise the vehicle with the stabilizer blade as far as it will go.

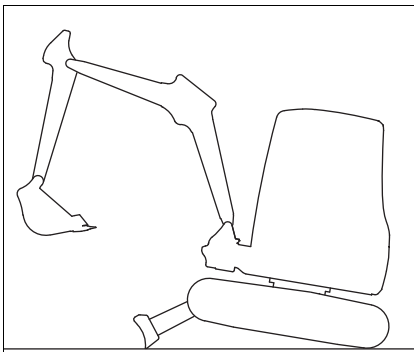


Fig. 145 (symbolic representation)

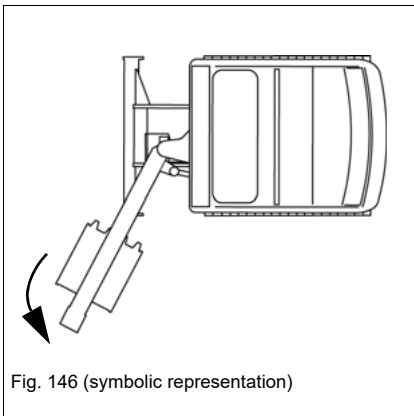
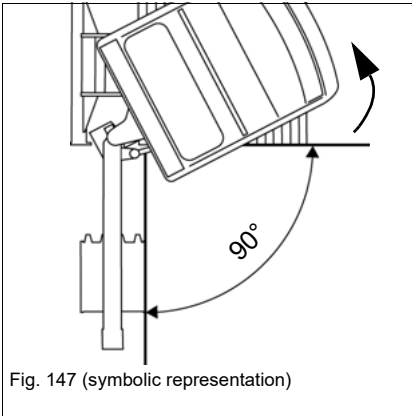
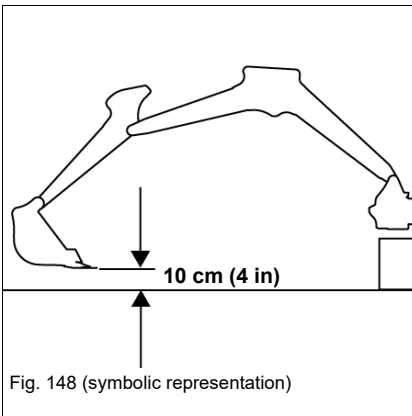


Fig. 146 (symbolic representation)

3. Swivel the boom to the left as far as it will go.



4. Turn the upper carriage so that the boom is 90° to the travel gear.

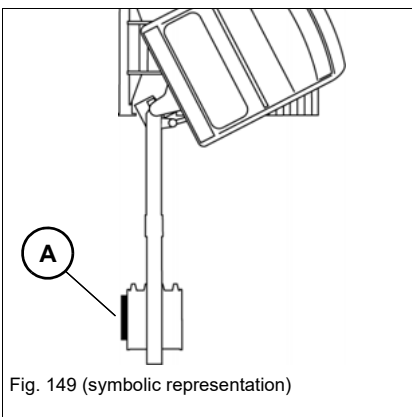


5. Position the boom as shown in [Fig. 148](#).

6. Stop the engine, remove the starting key and carry it with you.

7. Raise the control lever base.

8. Wait one minute.



9. Put a measuring rod **A** against the attachment.

10. Wait one minute.

➤ If the attachment does not move from the measuring rod:

➤ Machine is ready for operation.

➤ If the attachment moves from the measuring rod:

➤ Stop operation immediately.

➤ Contact a Wacker Neuson service center and have the malfunction rectified.

Dozer blade

WARNING

Crushing hazard due to unintentional actuation!

Unintentional actuation can cause serious injury or death.

- ▶ Raise the control lever base.
- ▶ Lower the stabilizer blade to the ground after the work shift.
- ▶ Do not allow anyone to stay in the danger zone.

NOTICE

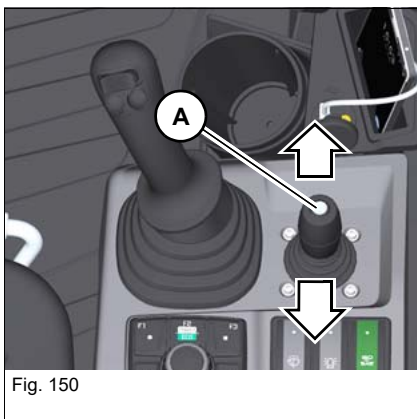
Lowering the stabilizer blade too deeply into the ground can create increased resistance.

- ▶ Slightly raise the stabilizer blade. The clearance between the stabilizer blade and the ground should be about 1 cm (0.4 in).
- ▶ Check the stabilizer-blade position before performing vehicle travel.

Information

In order to achieve the best possible stability, lower the stabilizer blade.

The stabilizer blade is also used as a parking brake. Press the stabilizer blade against the ground.



Stabilizer blade	Position
Raise	Pull lever A backward
Lower	Push lever A forward

Swiveling dozer blade

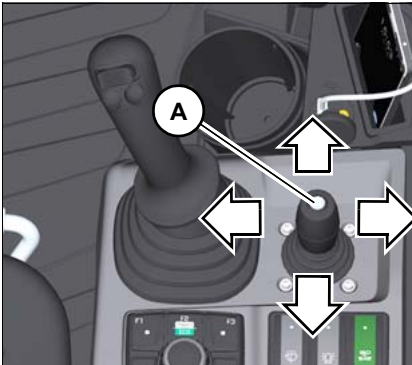


Fig. 151

! WARNING

Danger of accident by an activated floating position.

The dozer blade cannot support the vehicle if the floating position is activated. This can cause serious injury or death.

- ▶ Deactivate floating position before operating the boom.

Precise grading work can be carried out in the floating position.

Stabilizer blade	Position
Raise	Pull lever A backward
Lower	Push lever A forward
Swivel left	Push lever A to the left
Swivel right	Push lever A to the right
Enable the floating position	Push lever A all the way forward through the resistance. The lever must lock into place
Disable the floating position	Push lever A into the neutral position through the resistance

Swiveling the boom

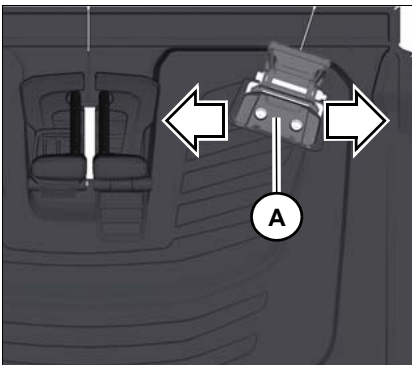


Fig. 152 Swiveling the boom

Fold the pedal cover forward.

Boom	Operation
Swivel to the left	Actuate pedal A to the left
Swivel to the right	Actuate pedal A to the right

Hammer operationb

Only hammer in the allocated work area and only with splinter protection (canopy) or closed front window (cab) – *see chapter “Shatter protection” on page 4-20.*

The vehicle with canopy is not approved for demolition work according to EN 474-5. A front guard cannot be attached.

WARNING

Danger of piercing/penetration by objects from the front!

Work involving risk of piercing/penetrating by objects from the front can cause accidents with serious injury or death.

- ▶ Observe the mandatory limits of the work area.
- ▶ Do not hammer horizontally or upward.
- ▶ Only hammer with attached shatter protection or closed front window.

WARNING

Accident hazard due to tipping over of vehicle!

A tipping vehicle can cause serious injury or death.

- ▶ Never turn, lower or set down the attachment abruptly.
- ▶ Do not extend or retract the boom abruptly.
- ▶ Use a hammer only at vehicle standstill.

Information

In combination with Powertilt, only use the smallest possible released hydraulic hammer.

Working with a hydraulic hammer

NOTICE

In order to avoid damage to the vehicle or hydraulic hammer, observe the following points:

- ▶ Observe the Operator's Manual of the hydraulic hammer.
- ▶ Do not hammer horizontally or upward.
- ▶ Do not use the hammer to raise loads.
- ▶ Do not hit the hammer against rocks, concrete, etc.
- ▶ Do not hammer in the same spot uninterruptedly for more than 15 seconds.
- ▶ Do not raise the vehicle with the boom.
- ▶ Do not work with fully extended cylinders or arm system. Do not pivot the Powertilt unit beyond 30° during hammer operation, otherwise the load on the boom increases tremendously.
- ▶ Stop vehicle operation immediately if a hydraulic hose moves back and forth in an unusual manner. The pressure accumulator could be malfunctioning. Contact a Wacker Neuson service center and have the malfunction rectified immediately.

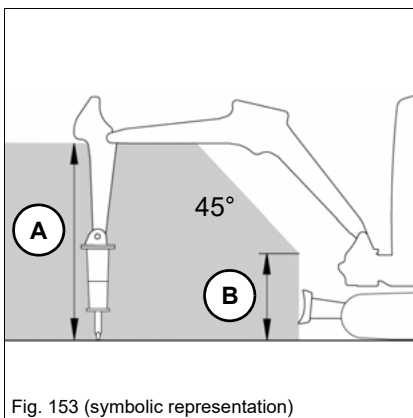


Fig. 153 (symbolic representation)

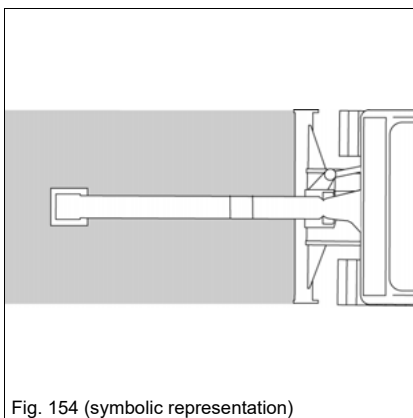


Fig. 154 (symbolic representation)

Job site

Work range height **A**: 120 cm (47 in), **B**: 50 cm (20 in)

Figures 153 and 154 refer to work with a Wacker Neuson hydraulic hammer.

Working with another tool can result in a different work area.

Hammer return line

The valve for switching between excavator- and hammer operation is located under the right maintenance cover.

NOTICE

Possible machine damage from incorrect lever position.

- ▶ The hammer operation is only possible via the auxiliary hydraulics (AUX I).

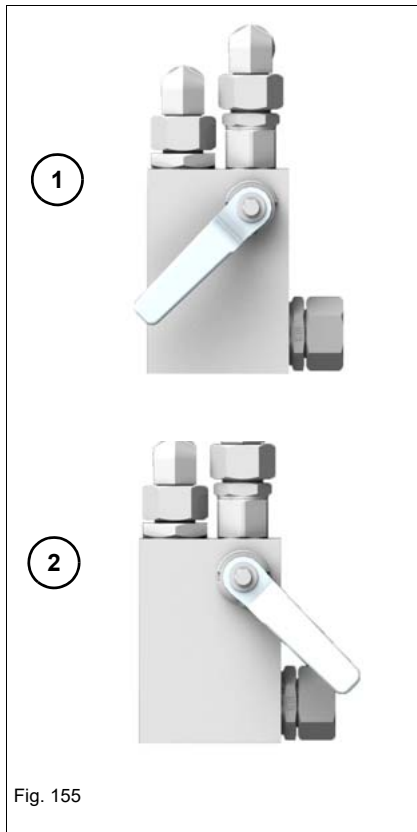


Fig. 155

Lever position	Function
1	Excavator operation
2	Hammer operation

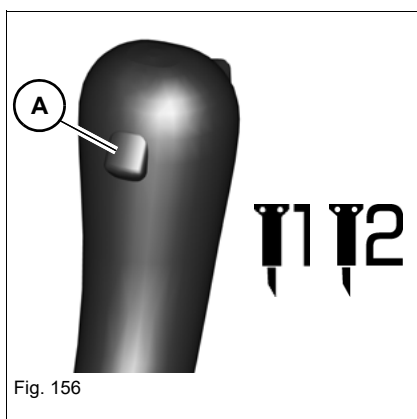
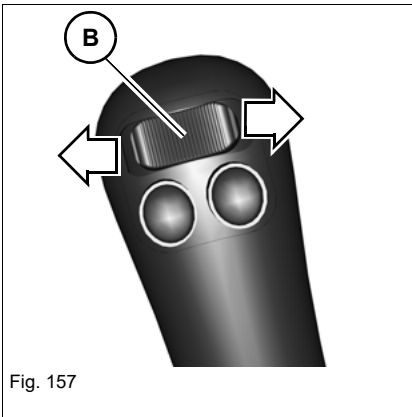


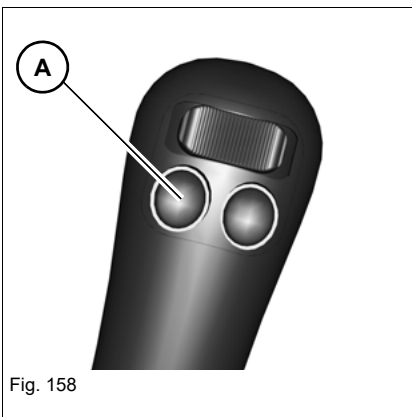
Fig. 156

Hammer operation	Position
On	Pressbutton A at the rear on the right joystick and hold
Off	Release push button A

Additional control circuits

AUX I

The auxiliary hydraulics system is operated with the right control lever.

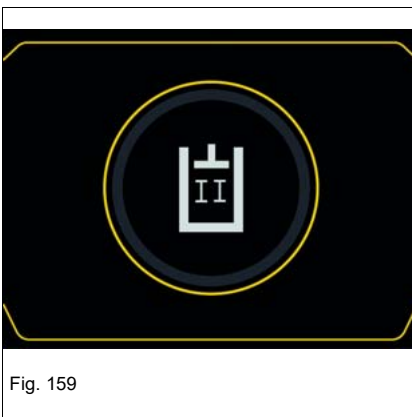
Oil flow	Position
To the line on the left	Press switch B to the left
To the line on the right	Press switch B to the right


AUX II

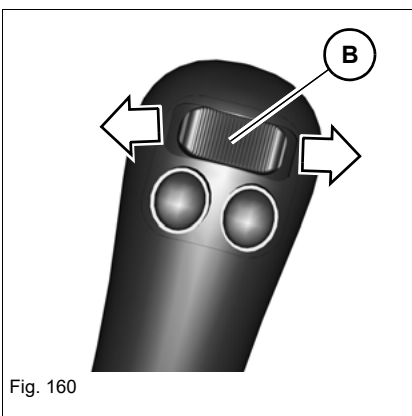
Toggle between **AUX II** and **AUX III** with touch button **A** on the left joystick.

The auxiliary hydraulics system is operated with the left control lever.

Oil flow	Position
To the line on the left	Press switch B to the left
To the line on the right	Press switch B to the right



If the function **AUX II** is selected, the adjacent symbol for a few seconds in the center of the display.



The auxiliary hydraulics system is operated with the left control lever.

Oil flow	Position
To the line on the left	Press switch B to the left
To the line on the right	Press switch B to the right

AUX III

! WARNING

Crushing hazard due to rotating movements of the Powertilt unit!

Rotating the Powertilt unit can cause serious injury or death.

► Do not allow anyone to stay in the danger zone.

i Information

The Powertilt unit may only be installed and removed by a Wacker Neuson service center!

For more information, see **Easy Lock/Powertilt with Easy Lock Operator's Manual**.

Toggle between **AUX III** and **AUX II** with touch button **A** on the left joystick.

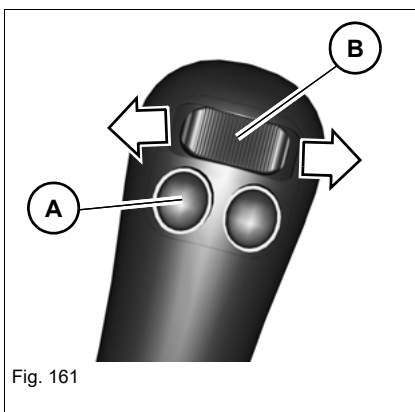


Fig. 161



Fig. 162

If the **AUX III** function is selected, the symbol appears in the center of the display for a few seconds.

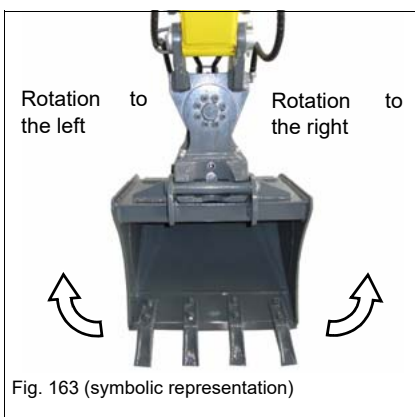
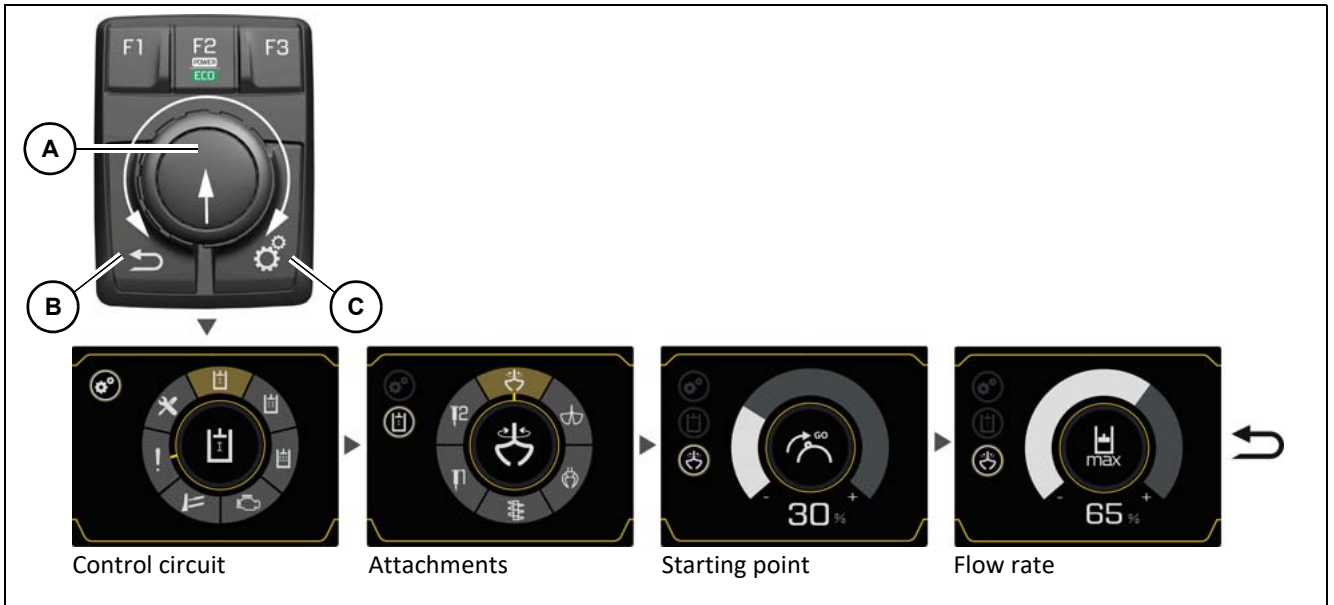


Fig. 163 (symbolic representation)

Function ¹	Operation
Rotation to the left	Press switch B to the left
Rotation to the right	Press switch B to the right

1. Depending on the system used or the valid norm, the rotation of direction may differ.

Proportional control



i Information

Example for AUX I. The operation for AUX II, AUX III and the dozer blade are identical.

Performing the adjustments

- Press push button **C** to call the settings.
- The settings are selected (turn) and confirmed (press) with adjustment button **A**.

Push button **B** (return) takes you back to the previous menu level.

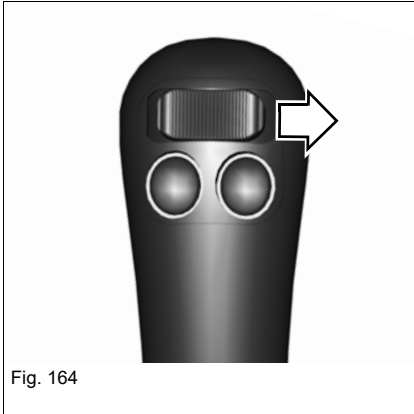


Fig. 164

Adjusting the starting point and maximum required flow rate

The starting point of the control lever switch and the maximum required flow rate can be configured according to the attachment and the work to be performed.

1. Press the switch to the position at which the attachment is supposed to start moving.

2. Hold the switch and turn adjustment button **A** at the same time to select the starting point.

3. Press adjustment button **A** to confirm.

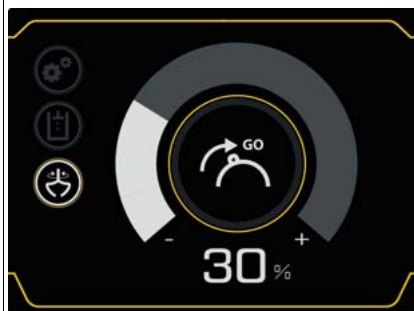


Fig. 165

4. Press the switch as far as it will go and hold it there.

5. Turn adjustment button **A** to select the maximum required flow rate.

6. Press adjustment button **A** to confirm.

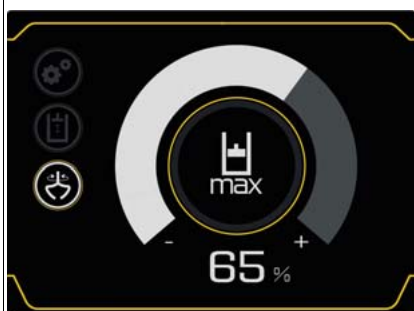


Fig. 166

Lifting gear applications

Lifting gear applications are procedures involving raising, transporting and lowering loads with the help of lifting and fastening gear.

DANGER

Crushing hazard due to tipping over of vehicle!

The vehicle causes serious injury or death when it tips over.

- ▶ Do not exceed the weights indicated in the load diagrams.
 - ▶ Subtract the weight of the attachment from the weight specified in the relevant load diagram.
 - ▶ Use the vehicle for lifting gear applications only if the mandatory lifting gear and safety equipment is installed, functional and enabled.
 - ▶ The subgrade must be horizontal, even, and have a high load-bearing capacity.
 - ▶ Do not tilt the upper carriage.
-

WARNING

Risk of vehicle tipping over due to failure to pay attention to the safe load indicator!

Serious injury or death can be caused by a vehicle tipping over.

- ▶ Reduce the load until both the buzzer and the indicator light on the display element go out.
 - ▶ Observe the load diagrams.
-

WARNING

Accident hazard due to switched-off or malfunctioning safe load indicator!

Serious injury or death can be caused by a vehicle tipping over.

- ▶ Switch on the safe load indicator during lifting gear applications.
 - ▶ Operate the vehicle only with an intact safe load indicator.
-

NOTICE

Machine damage due to a vehicle tipping over if the weight in the load diagram is exceeded.

- ▶ Do not exceed the weights indicated in the load diagrams.

Safe load indicator

The safe load indicator alerts the operator visually and acoustically if the load on the boom is too high.

Position	Safeguard
Boom	Hose burst valve
Shovel arm	Hose burst valve
Stabilizer blade	Counterbalance valve

The switch for activating and deactivating the safe load indicator is located on the switch panel on the left.

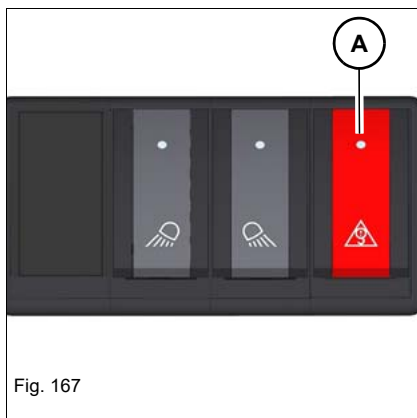



Fig. 167

Safe load indicator	Indication
On	
Off	--

Functional check of safe load indicator

Always perform a functional check of the safe load indicator before performing lifting gear applications.

1. Start the vehicle.
2. Perform vehicle travel on open terrain.
3. Secure the danger zone.
4. Stop the vehicle.
5. Switch on the safe load indicator.
6. Raise the boom as far as it will go and hold the control lever in this position.

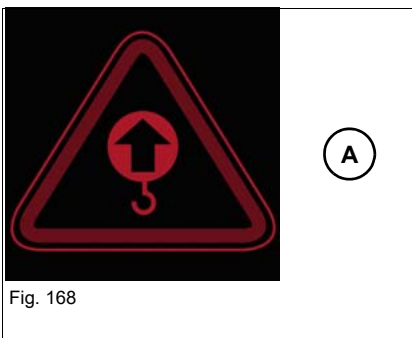


Fig. 168

Warning devices	Result
The buzzer sounds and symbol A is displayed	The vehicle may be used for lifting gear applications.
Buzzer does not sound or symbol A is not displayed	The vehicle may not be used for lifting gear applications. Contact a Wacker Neuson service center.

Perform a functional check of the joystick base.

– see chapter “*Functional check of the joystick base*” on page 4-40

Only the following lifting gear may be used for lifting gear applications:

- Powertilt/quickhitch with load hook
- Joint rod with lifting eye

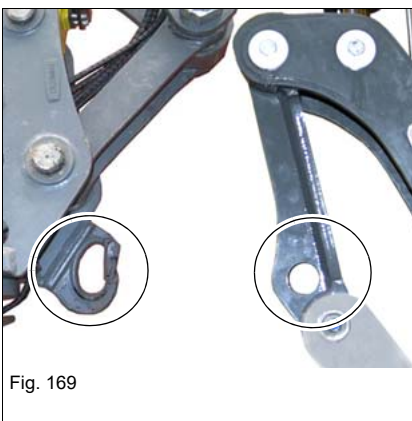


Fig. 169

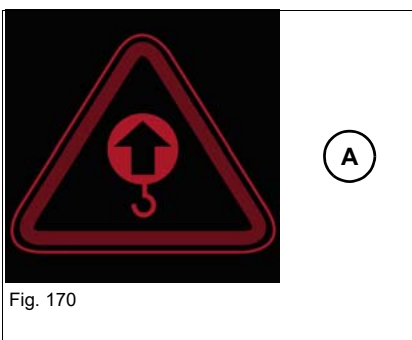


Fig. 170

When symbol **A** is displayed and the buzzer sounds:

- Reduce the load until the buzzer goes out and the symbol disappears. Suitable equipment for fastening and securing loads must be available.

Lehnhoff mechanical quickhitch system (optional)

- The quick coupler system and the attachment support must be undamaged and clean.
- Store the Operator's Manual of the mechanical quick coupler system together with the Operator's Manual of the vehicle.
- The described operation does not apply to the face shovel. Contact an authorized workshop for face shovel operation.

WARNING

Crushing hazard when picking up attachments!

If an attachment is not locked correctly, it can come off and cause serious injury or death.

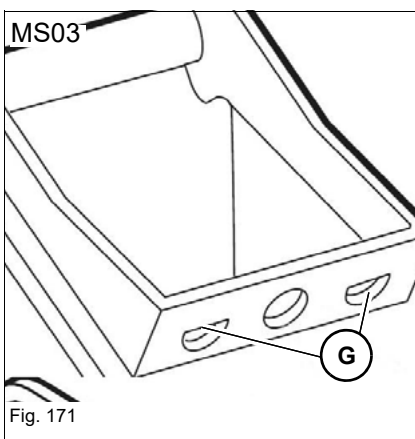
- ▶ Do not allow anyone to stay in the danger zone.
- ▶ During locking and unlocking procedures, make sure that hands and feet are not crushed.
- ▶ Only use undamaged attachments and quick coupler systems.
- ▶ Before starting any work and after every locking process, press the attachment to the ground and quickly move it back and forth over just over the ground a few times to check the secure locking.
- ▶ Only operate the vehicle with a safely locked attachment.

WARNING

Crushing hazard when attachments are removed!

If an attachment is not removed correctly, it can tip over and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
- ▶ Lower the attachment to level and firm ground ensuring stability.



Acceptance variants

ET42/EZ50: acceptance of MS03

G: Openings for quick coupler system bolts

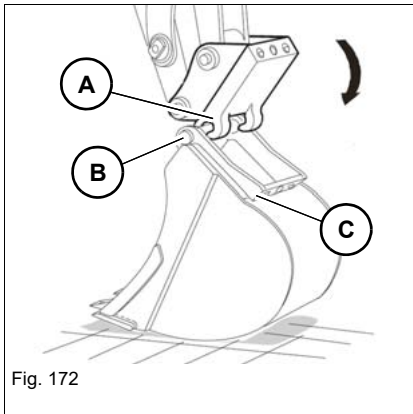
Picking up an attachment


Fig. 172

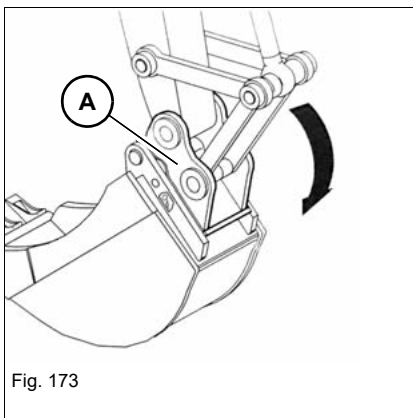


Fig. 173

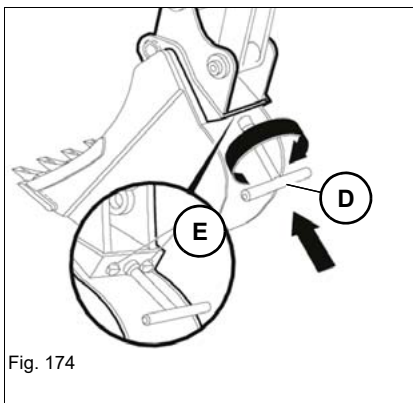


Fig. 174

1. Hook up the quick coupler system **A** in the attachment bolt **B**.
2. Slightly screw in the quick coupler system **A**, lift the shovel arm until the attachment is suspended about 30 cm (12 in) above the ground.
3. Extend the bucket cylinder so that the edge **C** of the attachment touches the quick coupler system.

4. Screw in the quick coupler system **A** until the attachment lies completely on the quick coupler system **A** due to its weight.
5. Shut off the engine and store the ignition switch key safely.

6. Screw socket wrench **D** clockwise until the bolts **E** completely engage in the openings **G** of the quick coupler system **A**.
 - ➔ The quick coupler system is locked.
7. Remove the socket wrench and perform a visual inspection.
8. Start the engine.

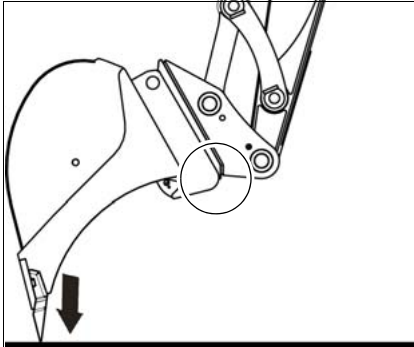


Fig. 175

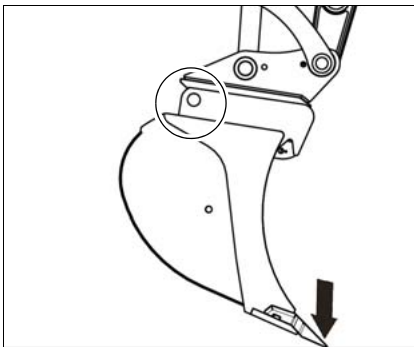


Fig. 176

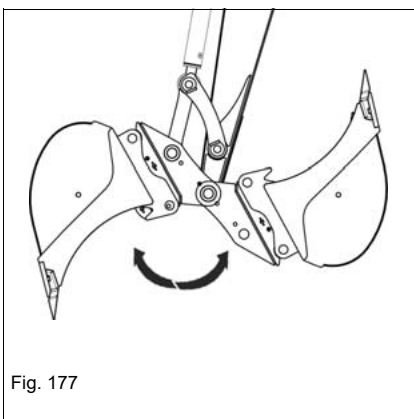


Fig. 177

9. Before starting any work and after every locking process, press the attachment to the ground and quickly move it back and forth over just over the ground a few times.

- The attachment may not detach from the quick coupler system in the process.

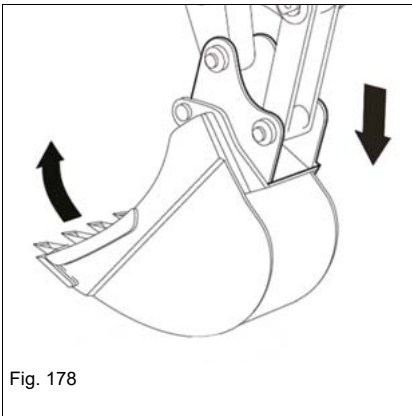
Setting down an attachment


Fig. 178

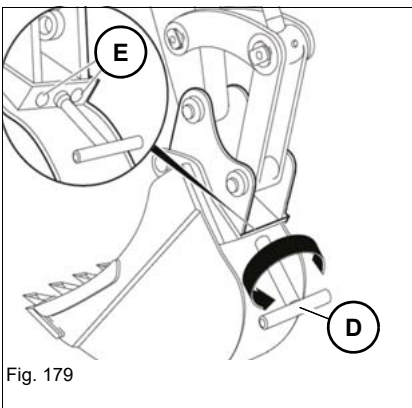


Fig. 179

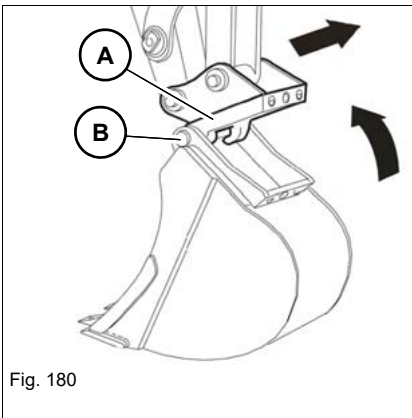


Fig. 180

1. Screw in the attachment and position it at 5–10 cm (2–4 in) above the ground.
2. Shut off the engine and store the ignition switch key safely.

3. Turn the socket wrench **D** counter-clockwise until the bolts **E** are completely retracted.
 - The quick coupler system is unlocked.
4. Remove the socket wrench.
5. Start the engine.
6. Lower the attachment to level and firm ground ensuring stability.

7. Retract the bucket cylinder and quick coupler system **A** from the attachment bolt **B**.

Quickhitch-ready

The HSWS preparation is a hydraulic auxiliary control circuit attached to the vehicle boom that was designed, developed and released for the hydraulic quick coupler systems described in this operator's manual.

Wacker Neuson is not liable for injuries or damage if at least one of the following items is not complied with:

- Follow the operator's manual for the hydraulic quickhitch.
- Store the Operator's Manual of the hydraulic quickhitch together with the Operator's Manual of the vehicle.
- For non-released quickhitch systems, there may be differences in the operating functions or the operation of the vehicle. Observe the operator's manual of the quickhitch system or the attachment.

Nevertheless, should a non-released HSWS be used, the following points must also be observed:

- If required, modifications on the vehicle (for example additional adhesive labels) or the Operator's Manual of the vehicle (if operation is different) must be made.
- The intended purpose of the vehicle may be restricted.
- Assembling a hydraulic quick coupler system that does not fit with the vehicle or its interface (e.g. pressure settings) may void the declaration of conformity of the vehicle. Contact a Wacker Neuson service center.
- Assembling a hydraulic quick coupler system to a vehicle that does not fit with the vehicle or its interface (e.g. pressure settings) may void the declaration of conformity of the hydraulic quick coupler. Contact a Wacker Neuson service center.

AUX IV - Hydraulic quickhitch system Easy Lock

- Attend specific training before putting into operation. Training must be given by authorized technical personnel and must be understood by the operator.
 - For safety reasons, the quickhitch must be operated with two control elements. This avoids opening the quickhitch unintentionally during work operation.
 - The quick coupler system and the attachment support must be undamaged and clean.
 - For more information, see **Easy Lock/Powerlift with Easy Lock** Operator's Manual.
 - Store the **Easy Lock/Powerlift with Easy Lock** operator's manual together with the vehicle's operator's manual.
-



WARNING

Crushing hazard when picking up attachments!

If an attachment is not locked correctly, it can come off and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Do not use damaged attachments.
 - ▶ Check pin **F** must be fully retracted. Otherwise repeat the lock cycle until check pin **F** is retracted.
 - ▶ Ensure safe locking with a rapid succession of stick and bucket movements as close as possible to the ground.
 - ▶ Operate the vehicle only with a safely locked attachment.
-



WARNING

Danger of crushing when attachments are removed!

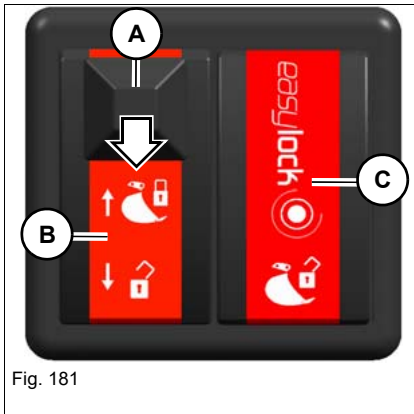
If an attachment is not locked correctly, it can tip over and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Lower the attachment to level and firm ground ensuring stability.
-

i Information

Between pressing switch **B** and button **C**, if more than 80 seconds pass, the symbols **HSWS activated** and **HSWS deactivated** appear alternately. The buzzer sounds in shorter intervals.

▶ Press switch **B** again and press push button **C** within 80 seconds.



Picking up an attachment

1. Pull lock **A** down.
2. Press switch **B** down.



➔ The symbol **Hydraulic quickhitch enabled** appears and the buzzer sounds.



3. Press touch button **C** within 10 seconds.
- ➔ The quickhitch opens.

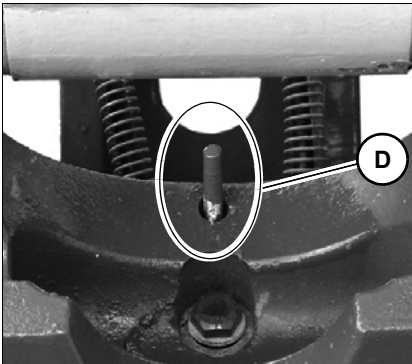


Fig. 184

➤ Check pin **D** must be fully extended.

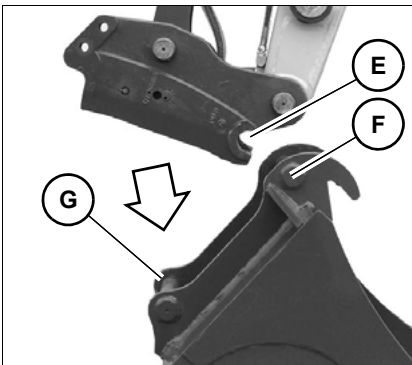


Fig. 185

4. Hook up the quick coupler system **E** in bolt **F** of the attachment receptacle.
5. Extend the bucket cylinder so that pin **G** of the attachment touches the quickhitch.
6. Check whether the attachment touches the quick coupler system with bolt **G**.
7. Move the attachment inward completely.



Fig. 186

8. Press switch **B** upward.
 - The quickhitch closes.
 - The symbol **Hydraulic quickhitch disabled** appears for a few seconds and the buzzer does not sound any more.

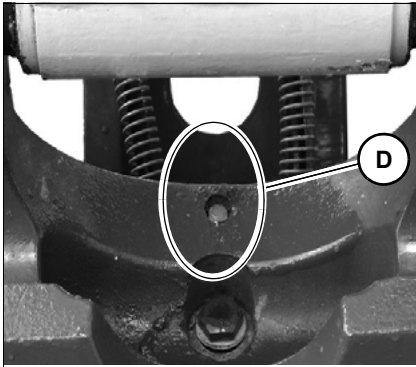


Fig. 187

9. Check pin **D** must be fully retracted.

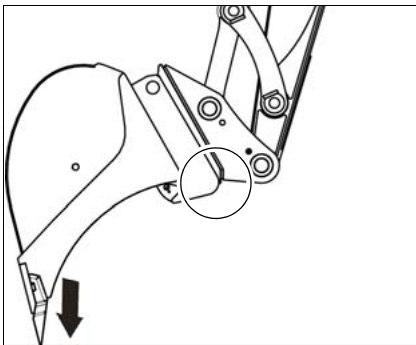


Fig. 188

10. Before starting any work and after every locking process, press the attachment to the ground and quickly move it back and forth over just over the ground a few times to check the secure locking.

➔ The attachment may not detach from the quick coupler system in the process.

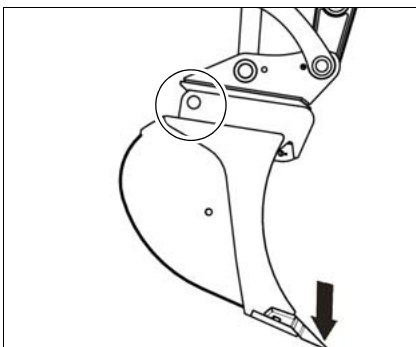


Fig. 189

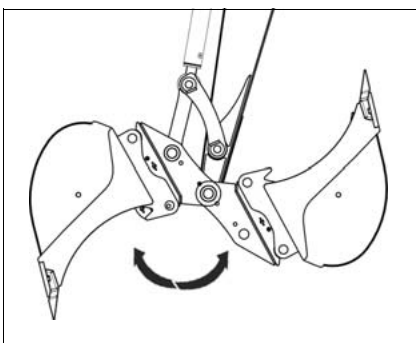
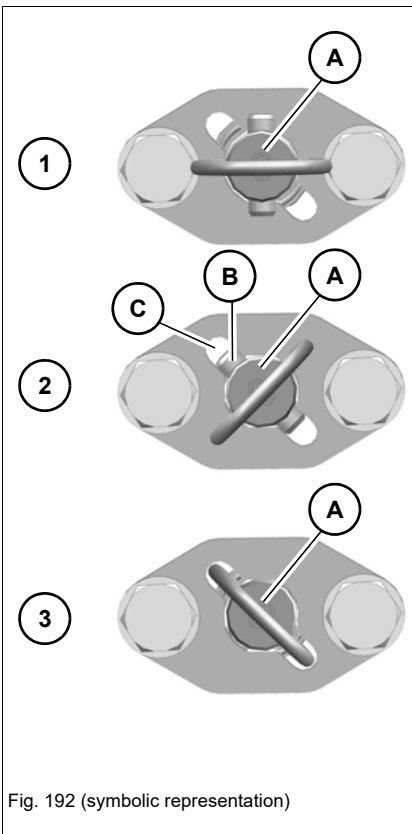
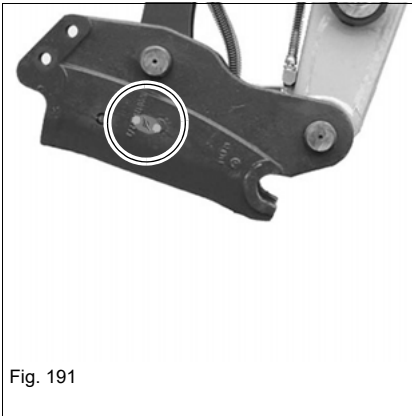


Fig. 190

Manual HSWS bolt lock

Depending on national provisions, the HSWS must also be manually locked according to the hydraulic locking process.

The locking or unlocking is located to the left on the quick coupler system.



- Stop the engine and remove the starting key.
- Raise the control lever base.
- Rotate bolt **A** so that the pin **B** fits in the recess **C** (2).
- Press in bolt **A** and turn until it is held in its position by spring (3).
 - ➔ The HSWS is also manually locked.

i Information
Comply with national provisions.

i Information
The bolt positions may deviate in their final position from the figures.

Setting down an attachment

Manual HSWS bolt unlocking

Depending on national provisions, the HSWS must also be manually unlocked according to the hydraulic unlocking process.

The locking or unlocking is located to the left on the quick coupler system.

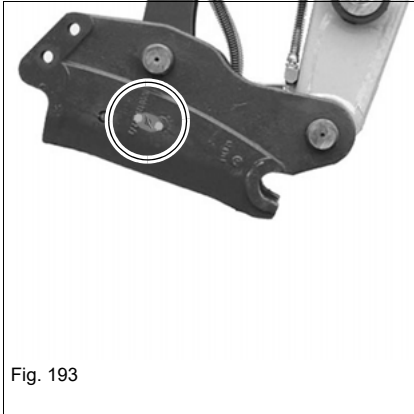


Fig. 193

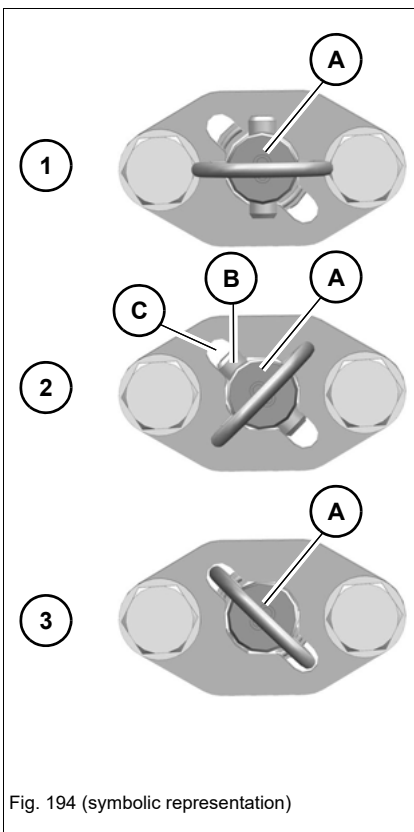


Fig. 194 (symbolic representation)

- Stop the engine and remove the starting key.
- Raise the control lever base.
- Rotate bolt **A** so that the pin **B** fits in the recess **C** (2).
- Pull out the bolt **A** (1).
 - ➔ The HSWS is manually unlocked. The attachment is still hydraulically locked.

i Information

Comply with national provisions.

i Information

The bolt positions may deviate in their final position from the figures.

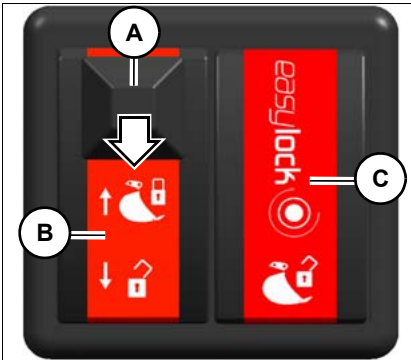


Fig. 195

1. Start engine and lower the control lever base.
2. Move the attachment inward completely and lower it about 5–10 cm (2–4 in) above the ground.
3. Pull lock **A** down.
4. Press switch **B** down.

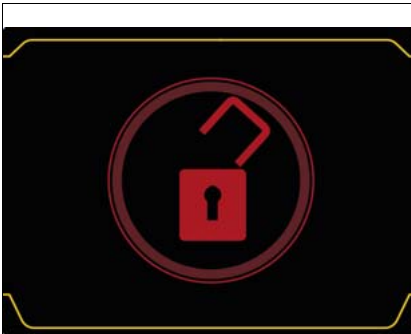


Fig. 196

- The symbol **Hydraulic quickhitch enabled** appears and the buzzer sounds.



Fig. 197

5. Press touch button **C** within 10 seconds.
- The quickhitch opens.

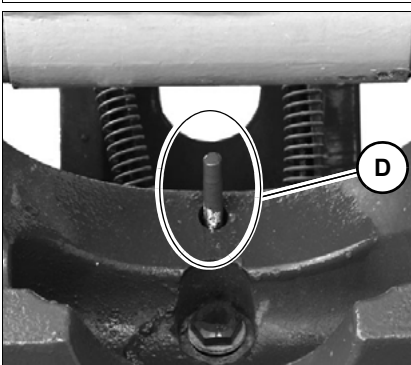
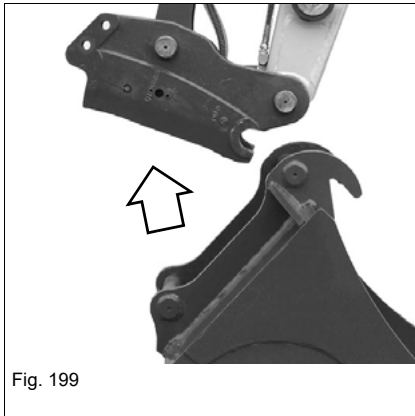


Fig. 198

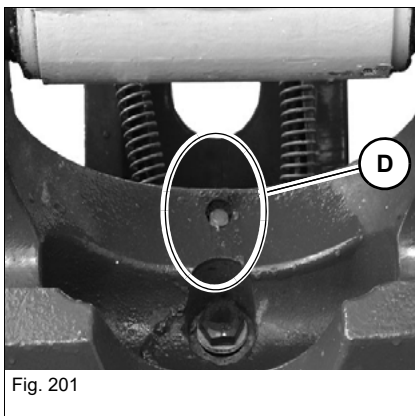
- Check pin **D** must be fully extended.



6. Retract the bucket cylinder.
7. Set down the attachment.
8. Raise the boom.



9. Press switch **B** upward.
 - ➔ The quickhitch closes.
 - ➔ The symbol **Hydraulic quickhitch disabled** appears for a few seconds and the buzzer does not sound any more.



10. Check pin **D** must be fully retracted.

Changing attachments

i Information

Observe manual locking and unlocking.

- see chapter “Manual HSWS bolt lock” on page 5-45;
- see chapter “Manual HSWS bolt unlocking” on page 5-46

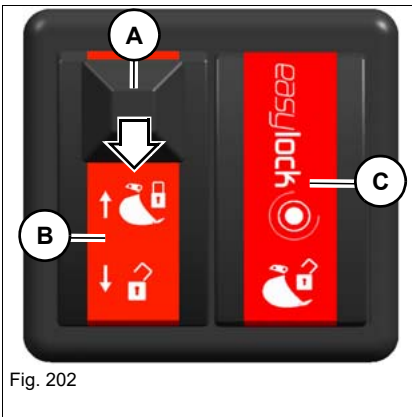


Fig. 202

1. Lower the attachment to about 5–10 cm (2–4 in) above the ground.
2. Pull lock **A** down.
3. Press switch **B** down.

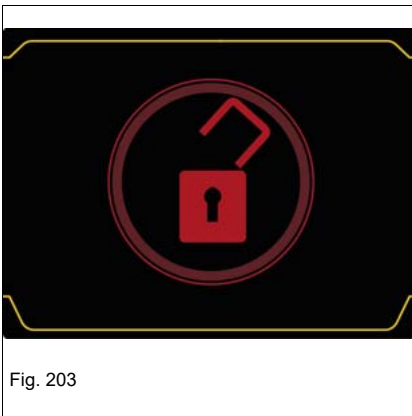


Fig. 203

- The symbol **Hydraulic quickhitch enabled** appears and the buzzer sounds.



Fig. 204

4. Press touch button **C** within 10 seconds.
- The quickhitch opens.

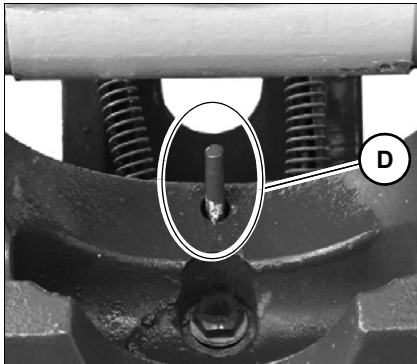


Fig. 205

➔ Check pin **D** must be fully extended.



Fig. 206

5. Retract the bucket cylinder.
6. Set down the attachment.
7. Raise the boom.

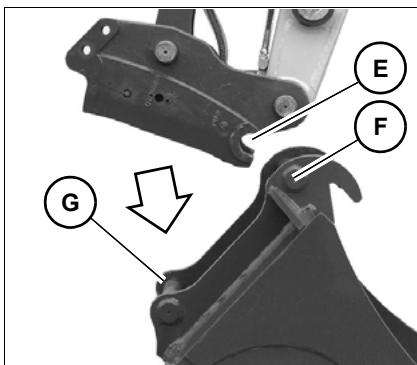


Fig. 207

8. Hook up the quick coupler system **E** in bolt **F** of the attachment receptacle.
9. Extend the bucket cylinder so that pin **G** of the attachment touches the quickhitch.
10. Check whether the attachment touches the quickhitch with the second pin **G**.

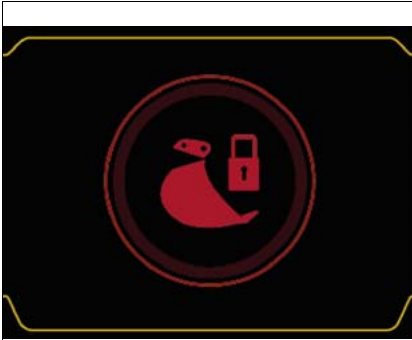


Fig. 208

11. Press switch **B** upward.

- The quickhitch closes.
- The symbol **Hydraulic quickhitch disabled** appears for a few seconds and the buzzer does not sound any more.

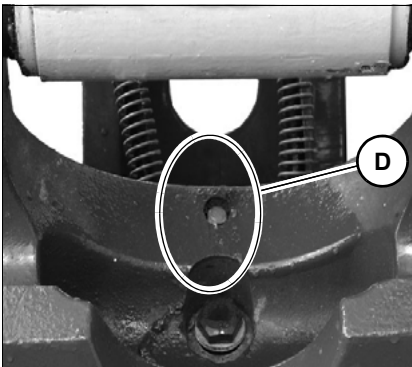


Fig. 209

12. Check pin **D** must be fully retracted.

AUX V

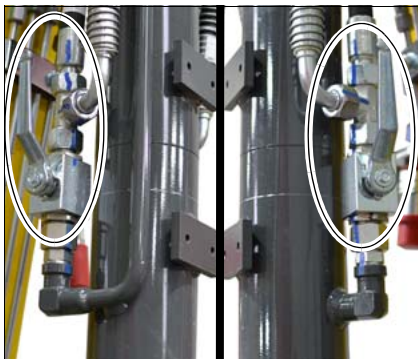


Fig. 210

The change-over takes place on the left and right of the stick.

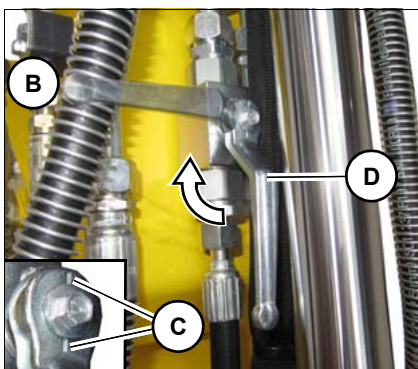


Fig. 211

Stopping grab operation:

1. Move both levers **D** on the ball-type cock to position **B**.
 - Notch **C** indicates the flow direction.

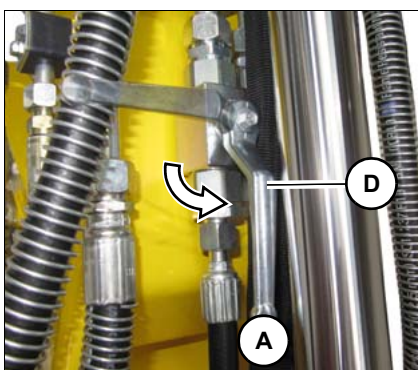


Fig. 212

Stopping bucket operation:

1. Move both levers **D** on the ball-type cock to position **A**.

Hydraulic connections

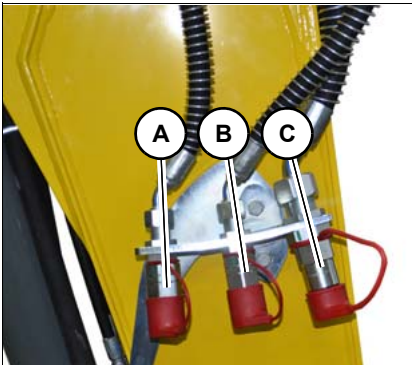


Fig. 213

Connection	Stick (left/right)
A	AUX V
B	AUX II
C	AUX I

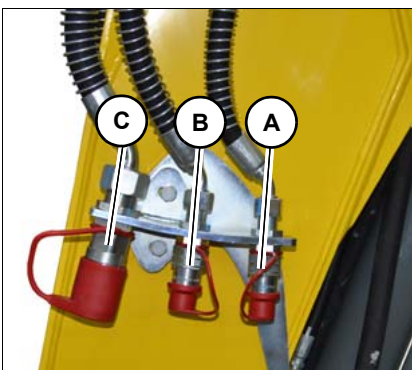


Fig. 214

i Information

Follow the instructions in the Operator's Manual of the attachment manufacturer for connecting the hydraulics to the attachment.

Control circuit of hydraulic thumb

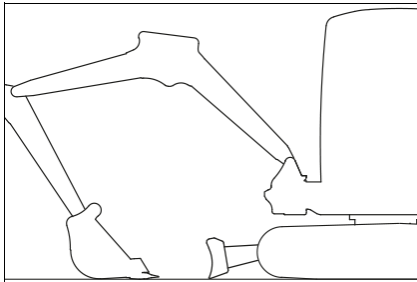


Fig. 215 (Symbol representation)

The change-over takes place on the left and right at the end of the stick. Position the arm system straight ahead at the center of the vehicle (Fig. 215).

Lower the boom and the stabilizer blade to the ground.

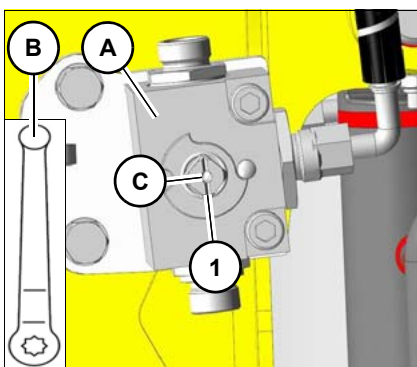


Fig. 216

Setting the hydraulic thumb:

Bring the ball-type cock **A** with lever **B** into the desired position to the left and right on the stick.

Position of the slot C	Operating
1	AUX I
2	Hydraulic thumb

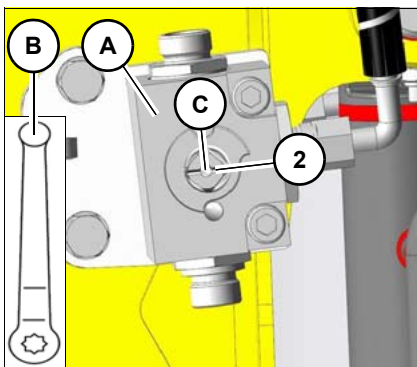


Fig. 217

i Information

The lever must be removed before operation.

The operation is executed using the right joystick – see chapter “AUX I” on page 5-29

Load-retaining function

 **WARNING****Injury hazard due to fluid escaping under pressure!**

Hydraulic oil escaping under pressure can penetrate the skin and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ If a hose bursts, move the control elements to neutral position so that as little hydraulic oil as possible escapes.
-

 **WARNING****Burn hazard due to hot hydraulic oil!**

Hot hydraulic oil can cause burns to the skin.

- ▶ If a hose bursts, move the control elements to neutral position so that as little hydraulic oil as possible escapes.
 - ▶ Wear protective equipment.
-

 **Information**

Hose burst valves are set at the factory and secured with seals. The correct functioning is no longer ensured and warranty is void if a seal is removed or if the hose burst valve is tampered with.

If a hose bursts, move the control lever or stabilizer blade lever to neutral.

Safe load indicator

Position	Safeguard
Boom	Hose burst valve
Shovel arm	Hose burst valve
Stabilizer blade	Counterbalance valve

Proceed as follows after a damage:

1. Stop the vehicle immediately.
2. Stop the engine.
3. Move the control lever or stabilizer blade lever to neutral.
4. Perform emergency lowering if possible – [see chapter “5.11 Emergency lowering” on page 5-70](#)
5. Raise the control lever base.
6. Remove the starting key and lock the cabin.
7. Secure the vehicle and the attachment.
8. Contact a Wacker Neuson service center and have the malfunction rectified.



Environment

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

5.9 Attachments

Picking up

 **WARNING**

Injury hazard due to fluid escaping under pressure!

Hydraulic oil escaping under pressure can penetrate the skin and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Release the pressure in the hydraulic system before connecting or disconnecting the attachment – *see chapter “Release the pressure AUX I/II” on page 5-59.*
 - ▶ Wear protective clothes.
 - ▶ Always consult a doctor immediately, even if the wound seems insignificant. Hydraulic oil causes blood poisoning.
-

 **WARNING**

Accident hazard when picking up attachments!

Picking up attachments incorrectly can cause serious injury or death.

- ▶ Wear protective equipment during installation of the connecting pins.
 - ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Only use attachments that are in perfect condition.
 - ▶ Set and adjust the boom to the correct position with the control levers.
 - ▶ Align the fastening bores in the attachment with a mandrel to make it easier to insert the pin in the bores.
 - ▶ Ensure correct locking with a rapid succession of stick and bucket movements as close as possible to the ground.
 - ▶ Operate the vehicle only with a safely locked attachment
-

Setting down

WARNING

Crushing hazard when attachments are removed!

If an attachment is not removed correctly, it can tip over and cause serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Lower the attachment to level and firm ground ensuring stability.
 - ▶ Only remove the pins from the attachment if it is in a stable position.
 - ▶ Lower the attachment to the ground without too much pressure, otherwise the resistance when removing the pins is too high.
-

The procedure of changing attachments is described below for a backhoe bucket.

Follow the special information when fitting or removing attachments with their own hydraulic functions (for example an offset bucket). Observe the Operator's Manual of the attachment.

Information

The hydraulic system of the vehicle is still pressurized even when the engine is not running. Due to the residual pressure, the hydraulic quick couplers can be removed but not installed back on again.

- ▶ Release the pressure.
-

Release the pressure AUX I/II

1. Stop the vehicle on firm, level, and horizontal ground.
2. Lower the attachment completely to the ground.
3. Lower the stabilizer blade to the ground.
4. Press switch **A** in the right switch panel.



Fig. 218

Pressure relief	Indication
On	
Off	

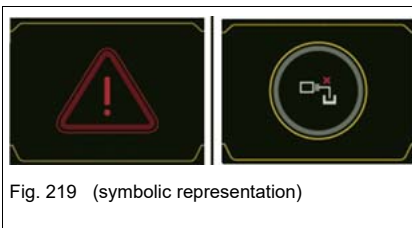


Fig. 219 (symbolic representation)

During the pressure release, if an additional control circuit is actuated, the display appear alternately and a buzzer sounds.

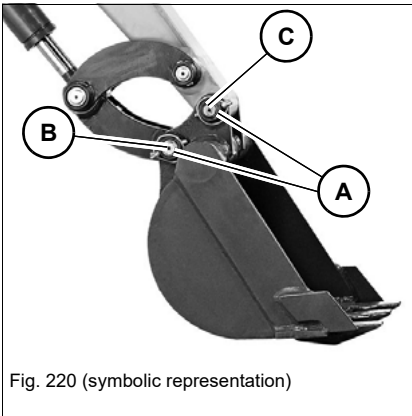
Removed attachments with hydraulic connections must not be stored in sunlight to ensure pressure does not build in the lines.

Clean the hydraulic quick couplers before connecting to ensure dirt does not penetrate the hydraulic system.



Release the pressure of the work hydraulics

1. Stop the vehicle on firm, level, and horizontal ground.
2. Lower the attachment completely to the ground.
3. Lower the stabilizer blade to the ground.
4. Stop the engine.
5. Turn the starting key to position 1.
6. Lower the control lever base.
7. Release the pressure:
 - ➔ **Work hydraulics:** Move the control elements of the respective hydraulic circuit several times in all directions and hold each time as far as it will go for three seconds.

Re-equipping

Removing

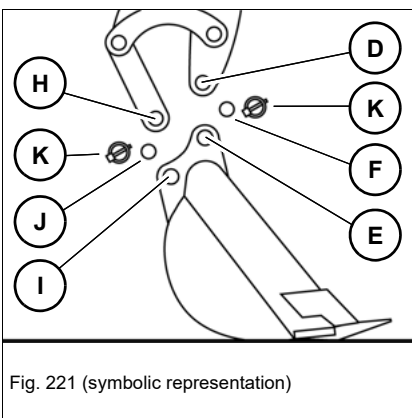
1. Lower the bucket to level ground with the flat side facing downward.
2. Stop and park the vehicle. Stop the engine. See "Preparing lubrication".
3. Remove lynch pins **A**.
4. First remove pin **B**, and then pin **C**. Carefully expel pins that are stuck with a hammer and a brass punch.

If pin **C** is stuck:

1. Start the engine.
2. Slightly raise and lower the boom to take the load off the pin.
3. Stop and park the vehicle. Stop the engine. See "Preparing lubrication".
4. Raise the control lever base.
5. Remove the starting key and carry it with you.


Information

Place the bucket only with minimum pressure on the ground as you remove the pins. The higher the pressure on the ground, the higher the resistance and the more difficult it is to remove the pins.

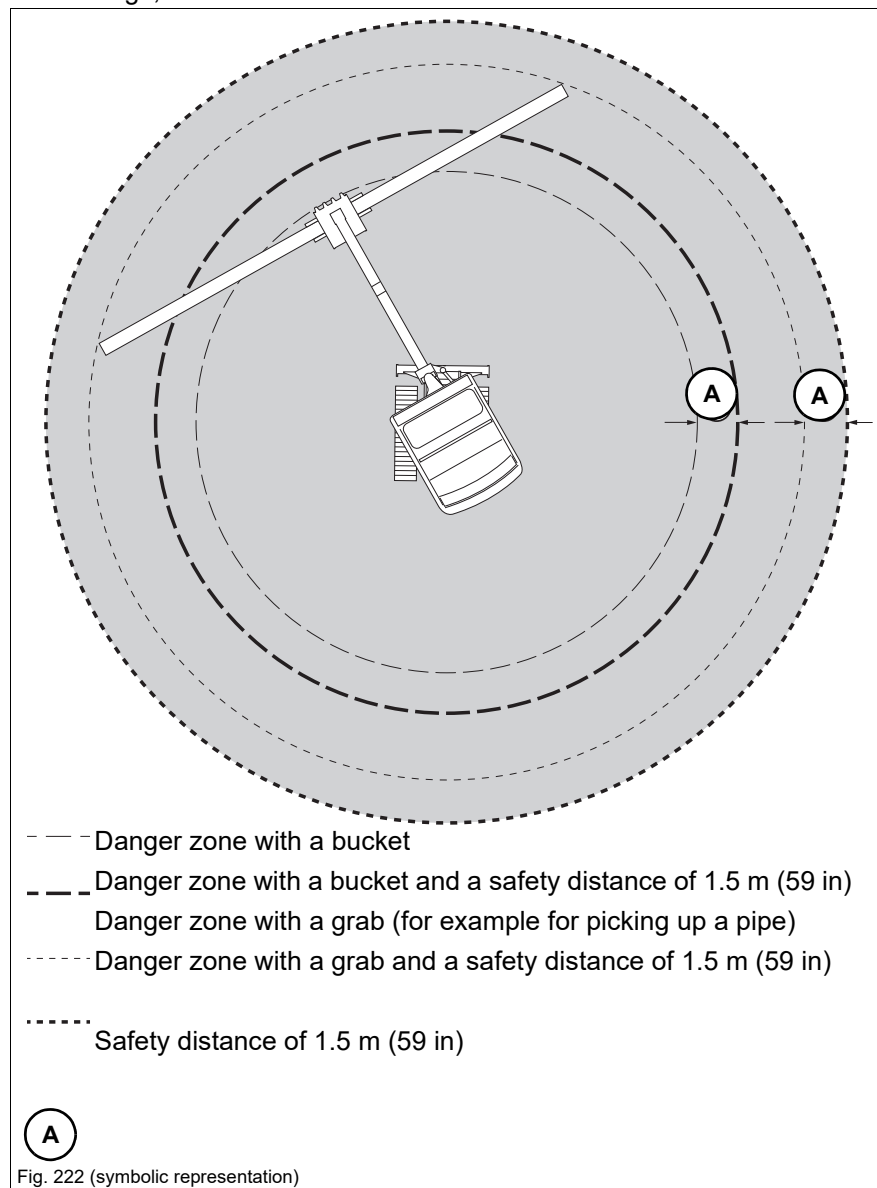

Mount

1. Install a bucket only if it is positioned on level ground with the flat side facing downward.
2. Stop and park the vehicle. Stop the engine. See "Preparing lubrication".
3. Apply grease to the pins and articulations before inserting them.
4. Start the engine.
5. Straighten the shovel arm so that bores **D** and **E** are flush.
6. Stop the engine. Raise the control lever base.
7. Insert pin **F**.
8. Actuate the bucket cylinder until bores **H** and **I** are flush.
9. Stop the engine. Raise the control lever base.
10. Insert pin **J**.
11. Install lynch pins **K**.

5.10 Work operation

Danger zone

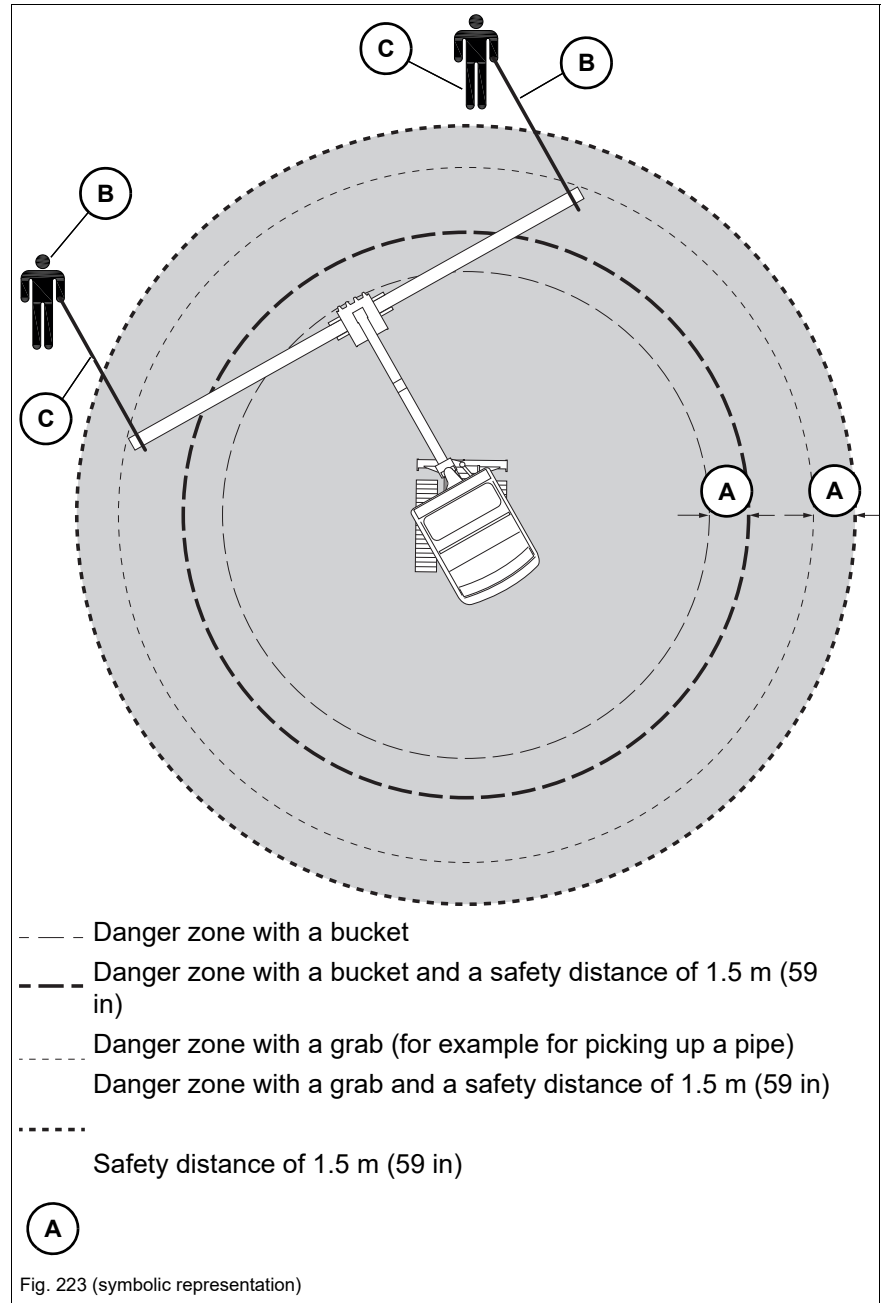
- The danger zone is the area in which persons are in danger due to the movements of the vehicle, attachment or load.
- The danger zone also includes the area that can be affected by falling material, equipment or by parts that are thrown out.
- The danger zone on a slope is different from the one on a level surface (secure the load) See chapter “**Operation, driving on slopes**”.
- Stop vehicle operation immediately if persons do not stay clear of the danger zone.
- Seal off the danger zone should it not be possible to keep a sufficient safety distance.
- Extend the danger zone sufficiently in the immediate vicinity of buildings, scaffolds or other elements of construction.



Danger zone during lifting-gear applications

In lifting gear applications the load must be stabilized by slingers (B) with the help of ropes (C).

Slingers must remain out of the danger zone.



Inadmissible work procedures

NOTICE

Inadmissible operation can damage the vehicle or the attachment.

Working with the swivel force

Do not use the swivel force of the upper carriage to tear down walls or to create level surfaces.

Do not ram the attachment into the ground when swiveling the upper carriage.

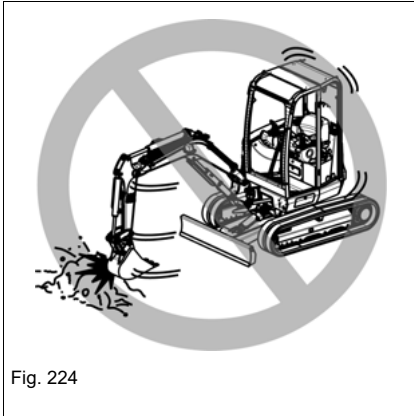


Fig. 224

Working with the drive force

Do not ram the attachment into ground or lower the boom during vehicle travel.

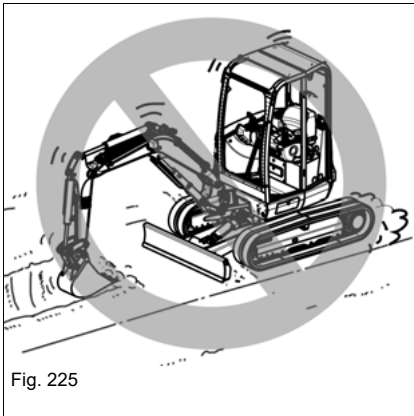


Fig. 225

Retracting the attachment

When retracting the attachment, ensure that it does not touch the stabilizer blade.

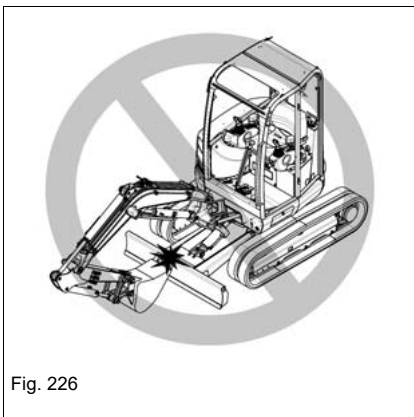


Fig. 226

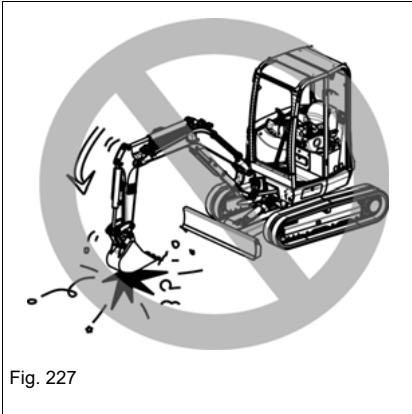


Fig. 227

Working with the falling force by lowering the attachment

Do not use the falling force of the attachment as a hoe, hammer or pile-driver.

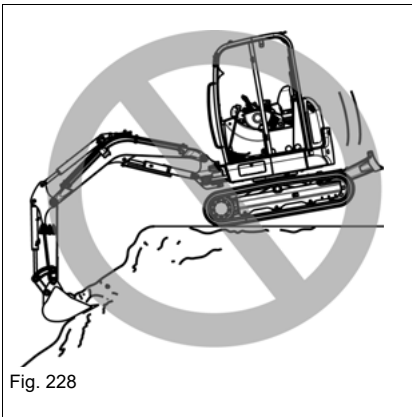


Fig. 228

Working with the falling force by lowering the vehicle

Do not use the dead weight of the vehicle for work.
Use the force of the hydraulic cylinders exclusively.

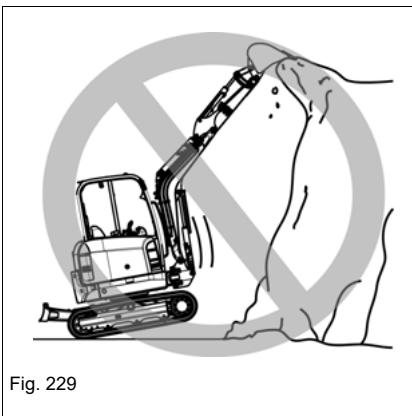


Fig. 229

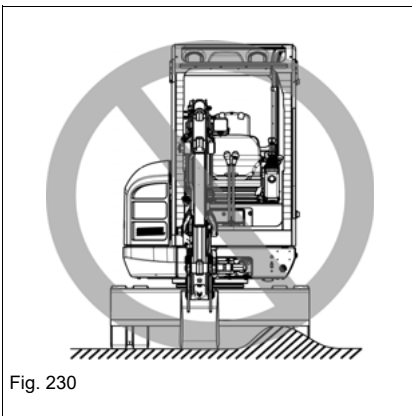


Fig. 230

Fully lowering the stabilizer blade

Apply the full weight of the vehicle over the entire width of the stabilizer blade when using it for stabilization.

Protecting the stabilizer legs/blade against shocks

The stabilizer blade or stabilizer blade cylinder can be damaged when the stabilizer blade hits against obstacles.

General information regarding work operation

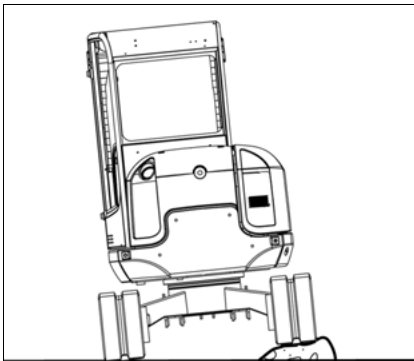


Fig. 231 (symbolic representation)

Machine travel

Performing vehicle travel over obstacles can put a heavy load on the undercarriage and cause damage. Avoid performing vehicle travel over obstacles if possible.

If it cannot be avoided, lower the boom to ground level and travel over the obstacle at low speed.

Traveling in speed range 2

Avoid starting vehicle travel and stopping abruptly as well as changing direction suddenly on rough terrain.

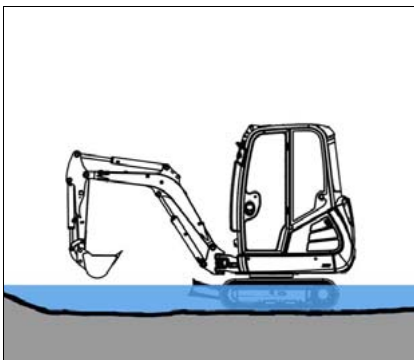


Fig. 232 (symbolic representation)

Operation in water

Water must not reach any further than the upper edge of the tensioning wheel.

Lubricate lubrication points again that were immersed in water for a longer time in order to expel the old grease.

Do not immerse the live ring and upper carriage in the water.

Operation in salt water is prohibited.

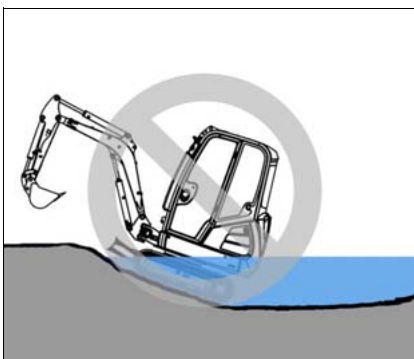


Fig. 233 (symbolic representation)

Do not immerse the live ring and upper carriage in the water.

Operation near the sea

Clean the vehicle regularly when using it in a saline environment.

See chapter **Cleaning and maintenance**.

Working with the bucket

The following section describes work operations with the vehicle equipped with a backhoe bucket. The backhoe bucket is mainly used for earth-moving applications (digging, loosening, picking up and loading loose or solid material).

Place the stabilizer blade on the side you want to dig.

Bucket position when digging

Perform long, level excavation movements with the stick and the bucket. The maximum excavation force is achieved at an angle of 80 to 120° between the boom and the stick.

1. Penetrate into the ground with the bucket.
2. Lower the stick and at the same time, position the bucket so that the flat lower side of the bucket is parallel with the ground.
3. Move the stick toward the vehicle and tilt in the bucket at the same time.

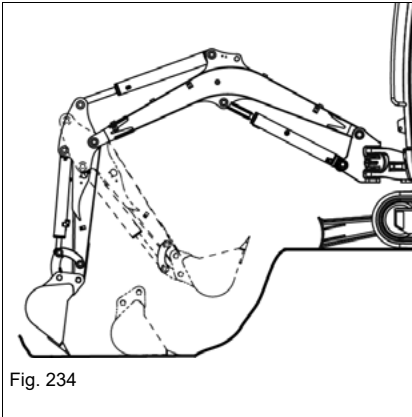


Fig. 234

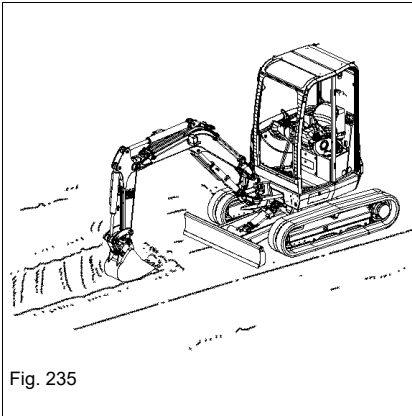


Fig. 235

Working alongside trenches

For a more efficient working method, install a suitable bucket and set the tracks parallel to the trench.

When digging wide trenches, dig the side sections first and then the middle section.

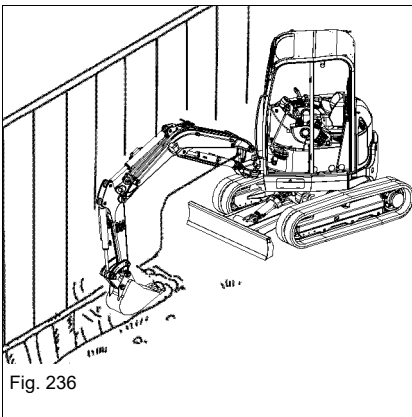


Fig. 236

For excavating laterally in tight spaces, turn the upper carriage and swivel the boom.

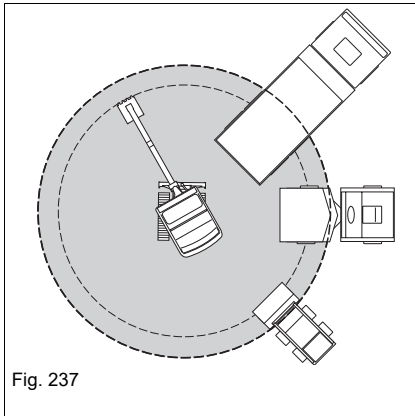


Fig. 237

Loading material

Notes on loading site dumpers:

- Position the site dumper so that its cabin is outside the danger zone of the excavator.
- The loading platform of the truck is loaded by starting at the rear end.
- Keep the swivel angle as small as possible.
- Raise the full bucket to dump height only as you rotate toward the site dumper.
- Tilt out dusty material with the wind behind you to keep the dust away from your eyes, air filters and fans.
- If possible, the site dumper and the working direction of the bucket should form an angle of 45°.

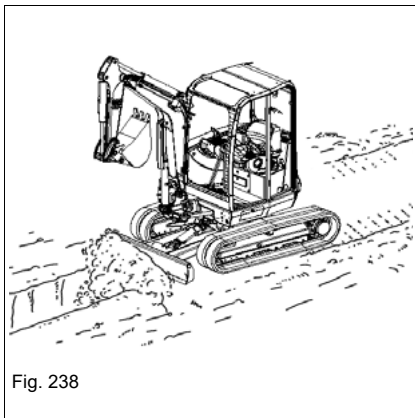


Fig. 238

Grading

The stabilizer blade is used for filling up trenches or grading the ground. Lower the stabilizer blade to the ground for grading work.

Set the depth of the layer you want to remove with the stabilizer-blade lever.

- The vehicle must not be raised by lowering the stabilizer blade.
- Do not dig in the vehicle or let it sink in.

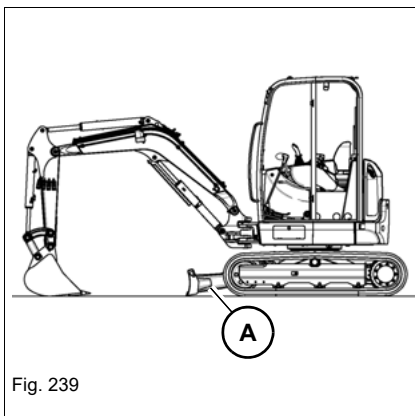


Fig. 239

Digging position

Place dozer blade **A** on the side you want to dig.

Shovel bucket operation

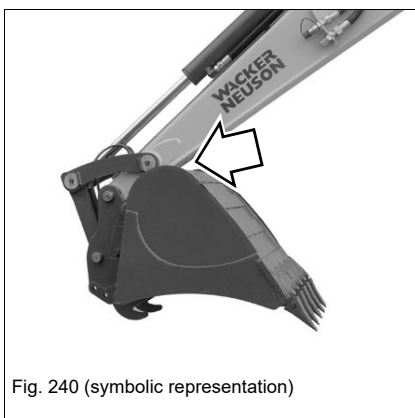


Fig. 240 (symbolic representation)

NOTICE

The stick can be damaged if it is hit by the bucket base.

- ▶ Do not tilt out the bucket completely if it is used as a shovel bucket.

Working on slopes

! WARNING**Vehicle tipping hazard on slopes!**

A tipping vehicle can cause serious injury or death.

- ▶ Secure slopes before beginning work. Pay attention to ground conditions, vehicle weight, etc.
 - ▶ Stabilize the vehicle with the stabilizer blade during excavation work.
-

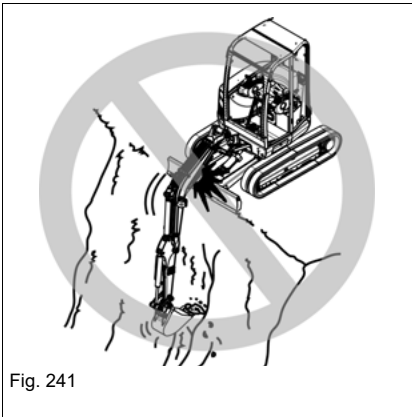


Fig. 241

NOTICE

Lifting arm cylinders can be damaged by improper operation.

- ▶ The piston rod must not touch the stabilizer blade.
-

Further recommendations for digging

When planning and performing digging work, Wacker Neuson recommends that you observe the following points:

- Exits from pits must be outside the digging line and as level as possible.
- Dig by removing adjacent strips if possible.
- Ensure that you can drive forward when driving out of the digging area with a fully loaded bucket.
- Perform transport trips downhill with loaded bucket in reverse operation.

Freeing the vehicle

If the vehicle gets stuck in the ground:

- Tilt out the bucket until the blade is vertical above the ground.
- Lower the boom all the way.
- Slowly tilt out the bucket.
 - ➔ The vehicle is pushed backward.
- Reverse slowly.
- Repeat this procedure until the tracks reach firm ground.
- Reverse the vehicle away.



5.11 Emergency lowering



WARNING

Crushing hazard during boom lowering!

Causes serious crushing or injury resulting in death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Stop vehicle operation immediately as soon as someone enters the danger zone.
-

Observe the following during emergency lowering:

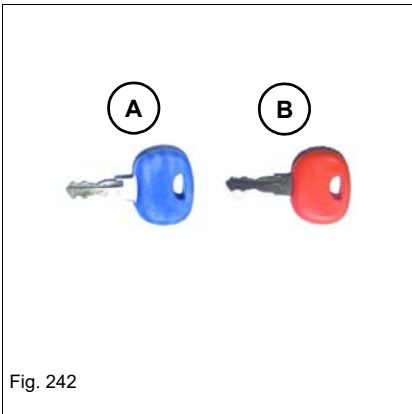
1. Turn the starting key to position **1**.
 2. Lower the control lever base.
 3. Lower the boom completely.
 4. Return the joystick to neutral.
-



Information

Lower the boom immediately after stopping the engine.

5.12 Drive interlock



A = starting key (blue)

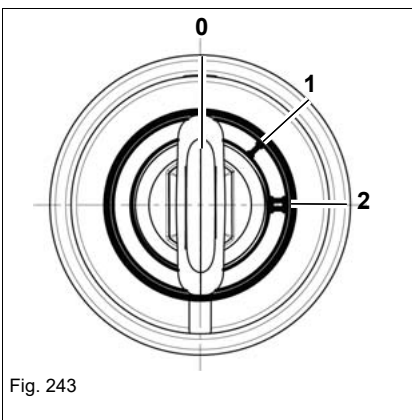
For starting the vehicle. Scope of delivery includes 2 keys.

B = master key (red)

Information

Store the master key in a safe place. It can only be used for coding new starting keys.

A new immobilizer must be installed if the master key is lost.



Coding new starting keys

1. Insert master key **B** in the starter and turn it to position **1** for a maximum five seconds.
2. Remove master key **B**.
3. Keep master key **B** at least 50 cm (20 in) away from the starter.
4. Within 15 seconds, turn starting keys requiring coding to position **1** for at least one second.
5. Repeat step 4 if more starting keys require coding.

➔ With this the coding of the starting keys is completed.

Coding can be performed for a maximum of 10 starting keys.

Information

The procedure is automatically canceled if no key requiring coding is detected by the system within 15 seconds.

Deleting coded keys

Deleting all coded keys is necessary whenever a coded key is lost.

The master key code is not deleted during deletion.

1. Insert master key **B** in the starter and turn it to position **1** for at least 20 seconds.
2. Code the starting keys.

Trailer operation

The vehicle is not certified for trailer operation!

5.13 Immobilization/putting back into operation

The specified measures refer to putting the vehicle out of operation and back into operation after more than 30 days.

Putting out of operation temporarily

Store the vehicle indoors if possible.

If the machine has to be stored outdoors, place it on firm ground if possible (for example on concrete), and cover it with a watertight tarp to protect it against humidity.

1. Park the machine – *see "Parking the machine" on page 5-11.*
2. Clean the engine with a high-pressure cleaner in a suitable place – *see chapter "7.5 Cleaning and maintenance" on page 7-22.*
3. Check the vehicle for leaks and loose nuts, screws and connections.
4. Carefully clean and dry the entire vehicle.
5. Spray an anticorrosion agent onto bare metal parts of the machine (piston rods of hydraulic cylinders, for example).
6. Apply grease to all lubrication points.
7. Fill the fuel tank completely.
8. Check the hydraulic oil and coolant levels, and add hydraulic oil and coolant if necessary.
9. Remove the battery and store it in a safe place. Charge the battery and perform battery maintenance at regular intervals.
10. Close the air-intake openings of the air filter system and exhaust pipe.

Putting back into operation

 **Information**

If the vehicle was out of operation over a longer period of time without performing the specified steps, contact a Wacker Neuson service center before putting back into operation.

1. Perform a general visual check for damage on the electric cables, connectors, fuel lines, corrosion, etc. on the engine.
2. Start the engine once a month to ensure optimal lubrication.
3. Remove anti-corrosion agents from bare metal parts.
4. Charge, install and connect the battery.
5. Open the air-intake openings of the air filter system and exhaust pipe.
6. Check the condition of the air filter elements and have them replaced by a Wacker Neuson service center if necessary.
7. Check the dust valve.
8. Bleed the fuel system. – see *"Fuel filter" on page 7-31*
9. Check the vehicle for leaks.
10. Lubricate the vehicle according to the lubrication plan.
11. Check all engine/vehicle fluids in the units or reservoirs, and add fluids if necessary.
12. Switch on the starter and check whether there are any malfunctions.
– see *"Malfunctions" on page 8-1*
Contact an authorized service center and have the malfunction rectified.
13. Start the engine.
14. Let the engine run at idling speed at least 15 minutes without load.
15. Stop the engine.
16. Check the oil levels in all units and add oil if necessary.
17. Check the vehicle for leaks.
18. Start the engine and ensure that all functions and warning systems work correctly.

Avoid operation at maximum engine speed or load for more than an hour.

5.14 Permanently putting out of operation

Disposal

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

Disposal may only be performed by a Wacker Neuson service center. Observe the national and regional regulations for disposal.



Environment

Do not allow environmentally damaging wastes to get into the ground or stretches of water and dispose of them in an environmentally friendly manner.

If the vehicle is no longer used according to its designated use, ensure that it is put out of operation and disposed of according to national and regional regulations.

- Machine disposal must be performed in accordance with state-of-the-art standards that apply at the time of disposal.

6 Transportation

6.1 Towing the vehicle

 **WARNING****Accident hazard due to incorrect towing!**

Incorrect towing can cause accidents and serious injury or death.

- ▶ Tow the vehicle away only from the immediate danger zone until it can be loaded.
- ▶ Only tow the vehicle using suitable towing equipment in connection with suitable towing facilities, such as towing hooks, eyes, etc.
- ▶ There must be nobody between the vehicles during towing. The lateral safety distance is equal to 1.5 times the length of the towing equipment.
- ▶ Do not tow the vehicle if it is stuck or on a slope. Load the vehicle.
- ▶ Wear protective equipment.
- ▶ Start vehicle travel and tow away slowly.

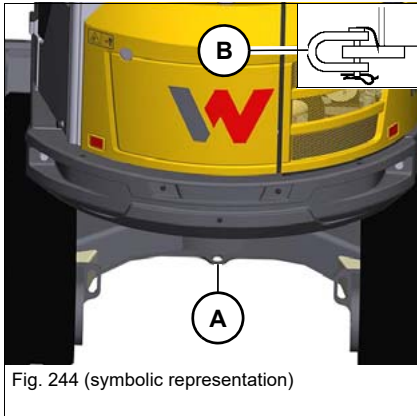
NOTICE

The vehicle can be damaged during towing.

- ▶ Tow the vehicle away only from the immediate danger zone until it can be loaded.
- ▶ Tow away the vehicle only if the engine is running and if the drive is functional.
- ▶ Do not tow the vehicle if it is stuck or on a slope. Load the vehicle.
- ▶ Only tow the vehicle using suitable towing equipment in connection with suitable towing facilities, such as towing hooks, eyes, etc.
- ▶ A tractor vehicle of the same weight category must be used as a minimum.
In addition, the tractor vehicle must be equipped with a safe braking system and sufficient tractive power.

 **Information**

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



1. – see chapter “Towing” on page 2-13
2. Ensure that the vehicle can be towed safely.
3. Only use towing eye **A**.
4. Start vehicle travel and tow away slowly.
5. Secure shackle **B** with the shackle pin and a lock pin.
6. Install slings of appropriate size on the shackle.
7. Tow the vehicle only until it reaches a position from where it can be loaded.

Information

The manufacturer’s warranty shall not apply to accidents or damage caused by towing.

Using the towing eye **A** to pull another vehicle or to tow other equipment is prohibited.

6.2 Loading the vehicle

WARNING

Accident hazard due to incorrect loading!

Incorrect loading can cause accidents and serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
- ▶ Bear in mind the transport weight on the vehicle’s type label.
- ▶ Tie down the vehicle only at the indicated tie-down points.
- ▶ Observe the loading weight. Add the weight of subsequently installed accessories to the weight of the vehicle.

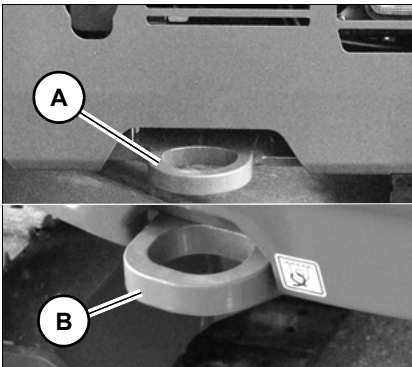
Tie-down points


Fig. 245

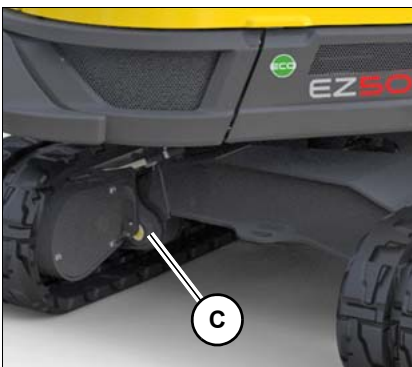


Fig. 246

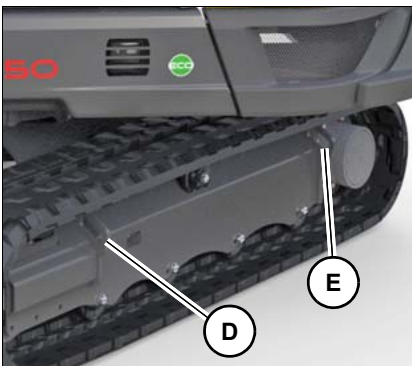


Fig. 247

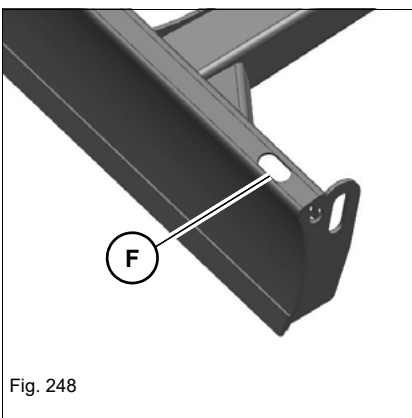
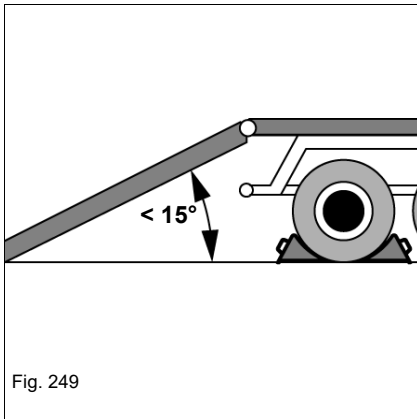


Fig. 248

Position		Quantity
A	Chassis front	2
B	Chassis rear	2
C	Inside of travel gear	2
D	Travel gear front (also from A to C)	2
E	Travel gear rear (also from A to C)	2
F	Fixed dozer blade	2

Drive onto a transport vehicle



1. – see chapter “Transportation” on page 2-15
2. Secure the transport vehicle with chocks to prevent it from rolling.
3. Install access ramps at the smallest possible angle. Ensure that the grade does not exceed 15° (27%).
4. Use access ramps and transport surfaces with an anti-skid surface only.
5. Ensure that the loading area is clear and access to it is not obstructed, for example by superstructures.
6. Start the engine.
7. Raise the boom and the stabilizer blade to avoid touching the access ramps.
8. Carefully drive the vehicle onto the middle of the transport vehicle.
9. Move the vehicle to transport position:
 - Position the boom straight ahead at the center of the vehicle.
 - Lower the boom and the stabilizer blade.
10. Stop the engine.
11. Raise the control lever base.
12. Remove the starting key and carry it with you.
13. Leave the cab, close and lock all doors, windows and covers.
14. Secure the vehicle firmly at the tie-down points with adequately dimensioned slings on the loading platform. Follow statutory provisions.

Specifications for lashing

The two lashing units **S** at the rear and the two lashing units **T** at the front of the vehicle must cross each other. The length dimensions of the lashing units **S** and **T** resulting from the angle β are listed in the following table.

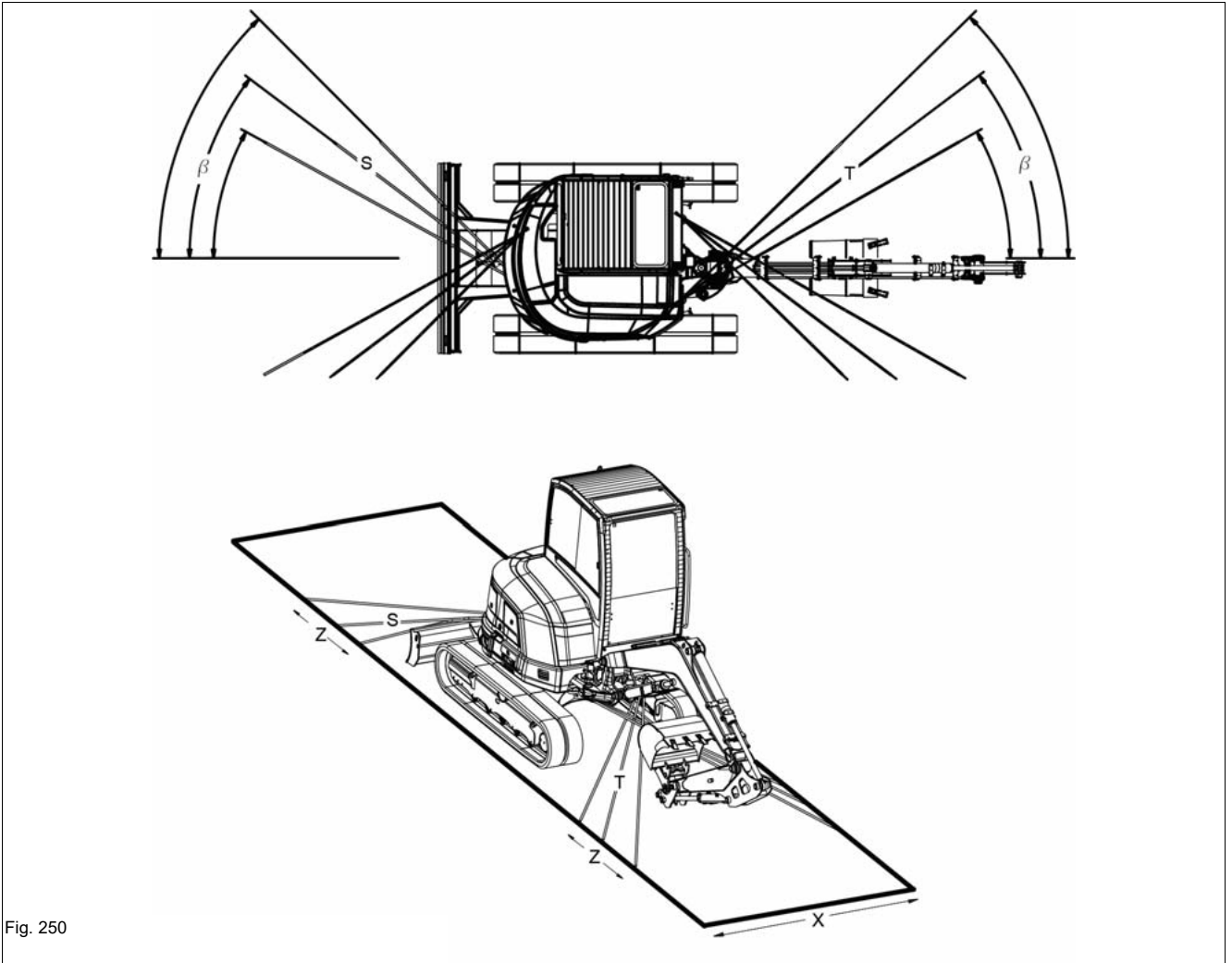


Fig. 250

vehicle	Angle β^1		X^2	Z^3	S		T	
	min.	max.			min.	max.	min.	max.
ET42	29°	45°	2400 mm (95 in)	1200 mm (47 in)	2147 mm (85 in)	3090 mm (10'-2")	2395 mm (94 in)	3340 mm (10'-12")
EZ50					2183 mm (86 in)	3106 mm (10'-2")	2414 mm (95 in)	3354 mm (11'-0")

1. Angle between the lashing unit and travel direction
2. Maximum lateral distance between the tie-down points on the loading area
3. Distance between the tie-down points on the loading area

Crane-lifting

 **WARNING****Accident hazard due to incorrect loading!**

Incorrect loading can cause accidents and serious injury or death.

- ▶ Do not allow anyone to stay in the danger zone.
 - ▶ Bear in mind the transport weight on the vehicle's type label.
 - ▶ Observe the loading weight. Add the weight of subsequently installed accessories to the weight of the vehicle.
 - ▶ The vehicle may only be raised with suitable lifting gear.
-

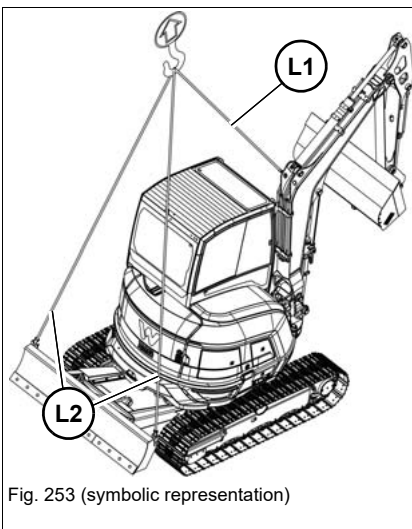
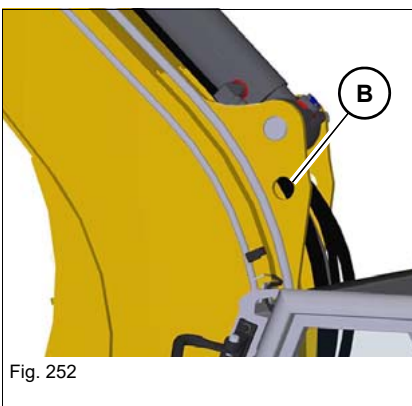
NOTICE

Possible damage to the vehicle due to incorrect loading.

- ▶ Bear in mind the transport weight on the vehicle's type label.
 - ▶ Observe the loading weight. Add the weight of subsequently installed accessories to the weight of the vehicle.
 - ▶ The vehicle may only be raised with suitable lifting gear.
-

Lifting eyes

The vehicle must only be raised using the lifting eyes indicated below.



Position		Quantity
A	Dozer blade left and right	2
B	Boom	2

Ensure that the lifting gear has the required lengths **L1** and **L2**

Length	Dimensions
L1	3100 mm (10'-2")
L2	4434 mm (14'-7")

Loading process

1. Fit an empty bucket and lock it safely.
2. Remove all dirt from the vehicle.
3. Park the vehicle on firm, level, and horizontal ground.
4. Tilt in bucket.
5. Raise the loader unit completely.
6. Pull the stick toward the vehicle.
7. Raise the stabilizer blade completely.
8. Position the boom straight ahead at the center of the vehicle.
9. Rotate the upper carriage by 180° so that the stabilizer blade points to the rear.
10. Stop the engine.
11. Operate the control lever repeatedly to release the pressure in the hydraulic system.
12. Raise the control lever base.
13. Remove the starting key and carry it with you.
14. Safely store all loose objects.
15. Leave the cab, and close and lock the vehicle doors, windows and covers.
16. Attach slings on the lifting eyes.
17. Slowly raise the vehicle until there is no more contact with the ground.
18. Let the vehicle swing until it comes to rest.
19. If the vehicle balance, and the condition and position of the slings is correct, slowly raise the vehicle to the required height and load it.

6.3 Transporting the vehicle

1. The driver of the transport vehicle must observe the following before departure:
 - Permitted overall height, width and weight of the transport vehicle including the excavator.
 - The legal regulations of the countries where transport is to take place.
2. Close the exhaust pipe before transporting the vehicle through wet weather.



Information

The automatic swivel unit brake secures the upper carriage against rotation.

7 Maintenance

7.1 Information on maintenance

- Maintenance and care significantly affect the functionality and service life of the vehicle.
- Daily and weekly maintenance work is to be performed by the driver in accordance with the maintenance plan.
- Maintenance with the note **authorized service center** must be performed only by the trained and qualified personnel of an authorized service center.
- Defective components must be repaired or replaced before putting the vehicle into operation. Safety-relevant components may only be repaired/replaced by an authorized service center.
- Observe all risk indications and safety instructions given in this Operator's Manual.
- Follow the maintenance and safety instructions given in the Operator's Manuals of the attachments.
- Wear protective equipment (for example hard hat, safety glasses, protective gloves, safety boots).
- Attach a warning label to the control elements (for example "**Machine being serviced, do not start**").
- Stop the vehicle (see **Preparing lubrication**).
- In order to avoid damage to electronic components, do not perform welding work on the vehicle, add-on parts or tools.
- Contact a Wacker Neuson service center.

7.2 Maintenance overview

Maintenance label

Maintenance that has to be performed by the operator is indicated on the maintenance label.

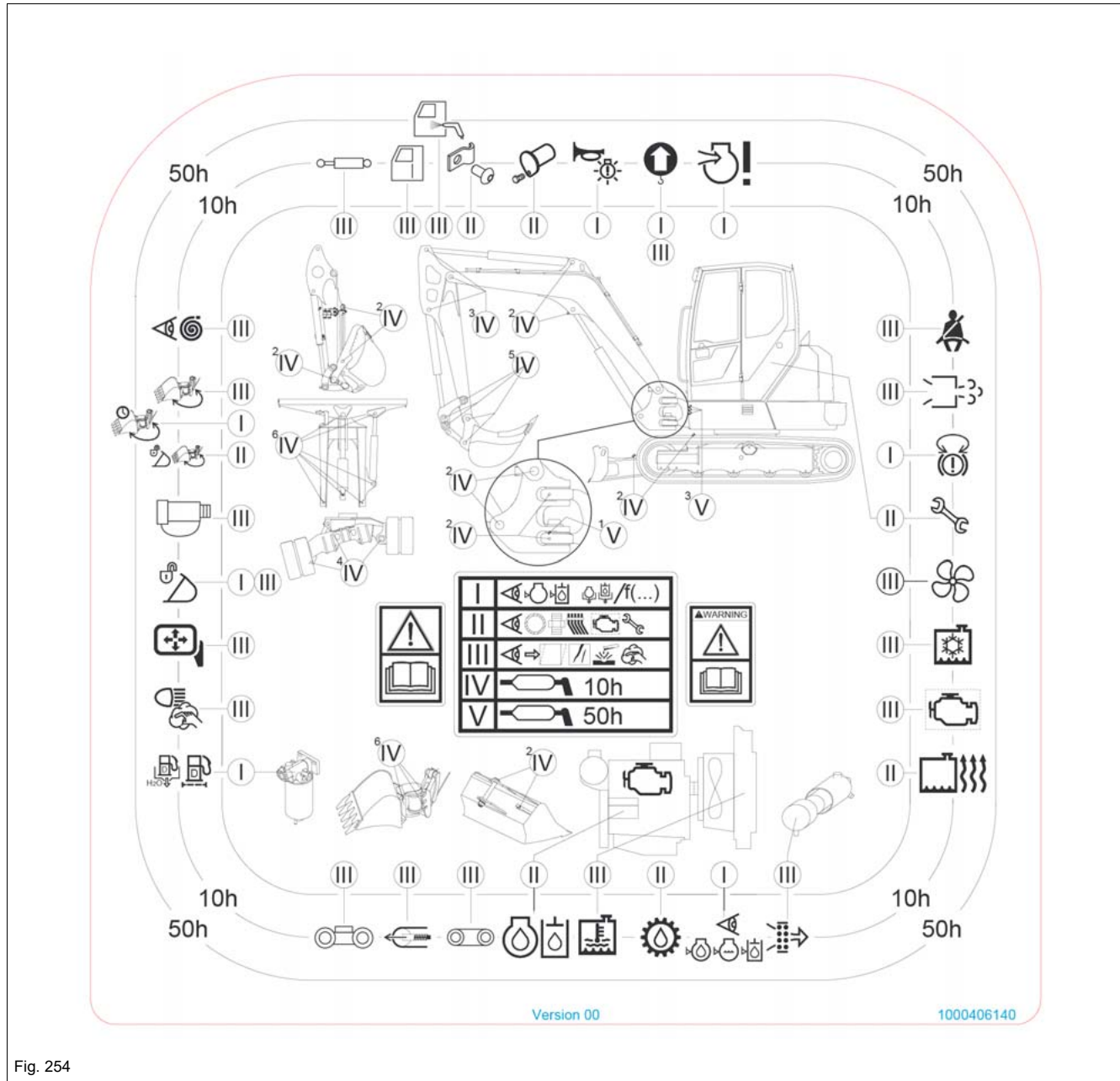


Fig. 254

I = Top off and drain fluids, lubricants; Check vehicle functions.

















II = Check wear parts, seals, hoses, and screw connections.





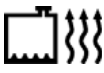










III = Check for damage, corrosion, and dirt.






IV = Lubricate daily after the work shift.

Superscript numbers, for example ²: number of lubrication points

Maintenance plan

Daily maintenance (operator)		
Symbol	Inspection work (Check the following fluids and lubricants, check the oil levels after a test run and add oil if necessary)	Page
	Check the fluids and lubricants (engine oil, engine coolant, hydraulic oil)	7-36; 7-39; 7-44
	Check the radiator and hydraulic oil cooler for dirt, clean them if necessary	7-40
	Lubricate the vehicle according to the lubrication schedule	7-7
	Check water separator and fuel filter at the oil sight glass; drain water if necessary	7-31
	Check the track tension and retension the tracks if necessary	7-49
	Check the engine air intake	7-41
	Check the pin locks	--
	Check line fixtures	--
	Check the indicator lights and acoustic warning devices	4-28; 5-18
	Check the swivel unit brake for correct function	5-22
	Check the hydraulic couplings for dirt	--
	Check the threaded fittings of the protective structures (cabin, for example) for tightness ¹	--
	Clean the lights/light system, signaling systems	--
	Safe load indicator: check the acoustic warning system	5-16
	Hydraulic quickhitch (Easy Lock): check the acoustic warning system	5-41
	Lubricate the Powerlift according to the lubrication schedule	7-8

Daily maintenance (operator)		
	Adjust the mirrors correctly, clean them and check them for damage, check the fastening screws and tighten them if necessary	--
	Check the condenser for dirt, clean it if necessary	7-41
--	Clean fresh-air and recirculated-air coarse filters with compressed air (heating, air conditioning)	
Leakage check		
	Check for tightness, leaks and chafing: pipes, flexible lines and screw connections of the following assemblies and components. Repair if necessary	Page
	Engine and hydraulic system	--
	Travel drive	--
	Cooling systems, heating, and hoses (visual check)	--
	Hydraulic quickhitch (Easy Lock) and Powertilt (hoses, valve)	--
Visual check		
	Correct function; deformations, damage, surface cracks, wear and corrosion	Page
	Check the exhaust system for damage	--
	Check the insulating mats in the engine compartment for damage	--
	Check the cab and protective structures for damage (for example the Front Guard, FOPS)	--
	Check the tracks for damage	--
	Check the travel gear for damage (for example the track rollers, insert rolling bearings)	
	Check the piston rods of the cylinders for damage	--
	Check the seat belt for damage	--
	Check the hydraulic hoses for damage	--
	Check the load hook, joint rod and lifting eyes	--

Daily maintenance (operator)		
	Check the hydraulic quickhitch (Easy Lock) for damage	--
	Check the Powertilt for damage	--
Weekly maintenance (every 50 operating hours) (operator)		Page
	Lubricate the vehicle according to the lubrication schedule	7-7
	Check accesses and exits for dirt	--
	Actuate the Powertilt swivel device in the limit positions in both flow directions for one minute each to rinse the system	--
All steps for maintenance intervals once a day		--

1. Check the threaded fittings and corresponding components/assemblies visually or manually (without using tools) for tightness. Replace the threaded fitting in case of irregularities. Pay attention to adhesive connections as you do so.

Only once after the first 50 operating hours (Wacker Neuson service center)		
Replace the hydraulic oil filter		--
Replace the gearbox oil (traveling drive) ¹		--
Check V-belt condition and tension		--
Check the threaded fittings for tightness ²		--
Check labels and Operator's Manual for completeness and condition		--
Check the pressure of the primary pressure limiting valves (operating hydraulics)		--
All steps for maintenance once a day and once a week		--

1. For the first time at 50 operating hours, then annually or latest after 1000 operating hours.
2. Check the threaded fittings and corresponding components/assemblies visually or manually (without using tools) for tightness. Replace the threaded fitting in case of irregularities. Pay attention to adhesive connections as you do so.

Other maintenance intervals (Wacker Neuson service center):

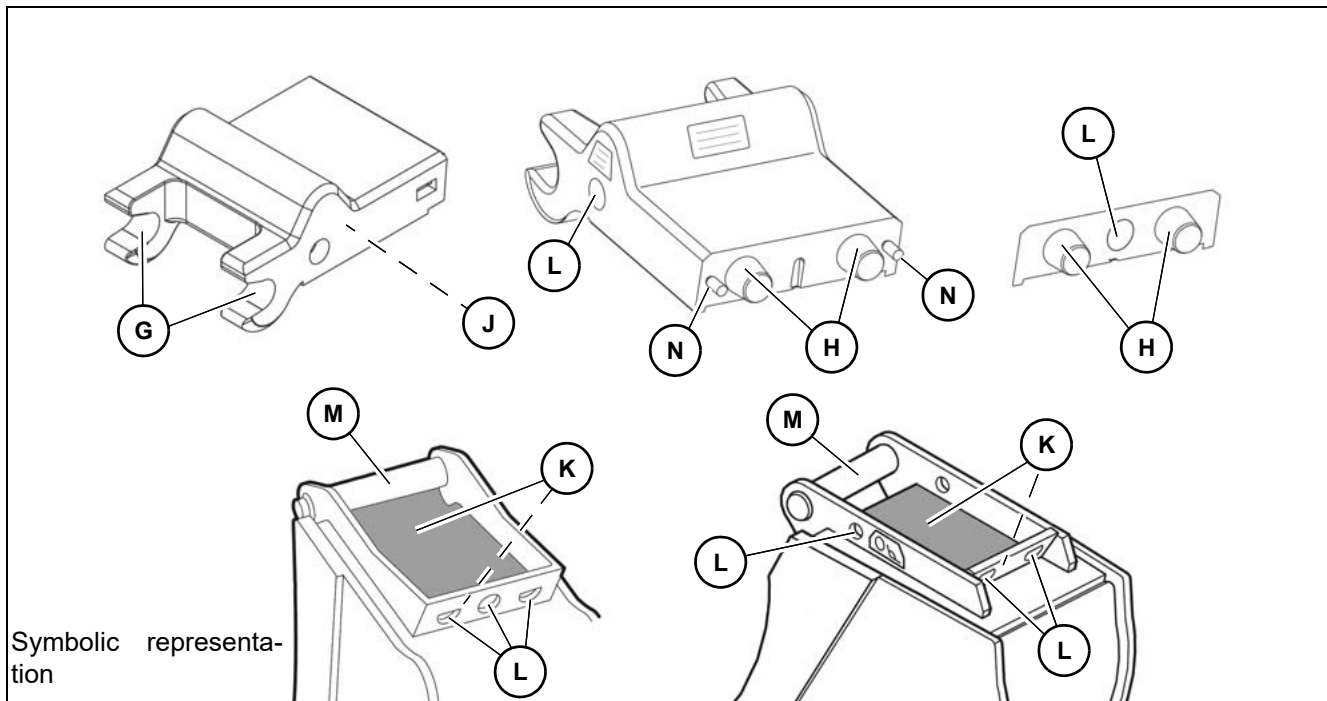
- Every 500 operating hours or annually
- Every 1000 operating hours
- Every 1500 operating hours
- Every 2000 hours of operation or every two years
- Every 3000 operating hours or every 3 years

For additional details contact a Wacker Neuson service center.

Information

Maintenance with the note **authorized service center** must be performed only by the trained and qualified personnel of an authorized service center.

Maintenance schedule of Lehnhoff mechanical quickhitch system



Quickhitch maintenance MS03/MS08/MS10 (operator)		Interval ¹
Perform visual inspection of the quickhitch system	--	10 hours of operation/ daily
Clean bolt guide	G	50 hours of operation/ weekly
Clean the bolt contact surface	H	50 hours of operation/ weekly
Clean bottom side of the quick coupler system	J	50 hours of operation/ weekly
Clean contact surfaces of the attachment	K	50 hours of operation/ weekly
Clean the opening for the socket wrench and bores of the attachment support	L	50 hours of operation/ weekly
Clean bolt attachment support	M	50 hours of operation/ weekly
Clean centering pins (only MS10)	N	50 hours of operation/ weekly

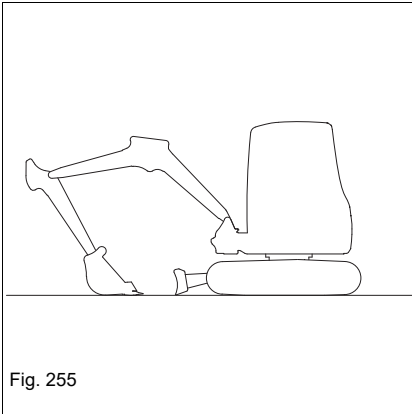
1. For time specifications: the first achieved time specification is decisive. If the situation requires it, perform maintenance if necessary, even if the maintenance interval has not yet been reached.

Other maintenance intervals (Wacker Neuson service center):

- Every 250 operating hours or semi-annually (MS03)
- Every 500 operating hours or annually (MS03)
- Every 500 operating hours or semi-annually (MS08/MS10)
- Every 1000 operating hours or annually (MS08/MS10)

For additional details contact a Wacker Neuson service center.

Preparing lubrication



1. Stop the vehicle on firm, level, and horizontal ground.
2. Position the boom straight ahead at the center of the vehicle.
3. Lower the boom and the stabilizer legs to the ground.
4. Stop the engine.
5. Operate the control lever repeatedly to release the pressure in the hydraulic system.
6. Raise the control lever base.
7. Remove the starting key and carry it with you.
8. Safely store all loose objects.
9. Close the windows and doors.
10. Close and lock all covers.
11. Attach a warning label to the control elements (for example “**Machine being serviced, do not start**”).

Wait at least 10 minutes after stopping the engine.



Information

Keep all lubrication points clean and remove any escaping grease.

Boom/dozer blade

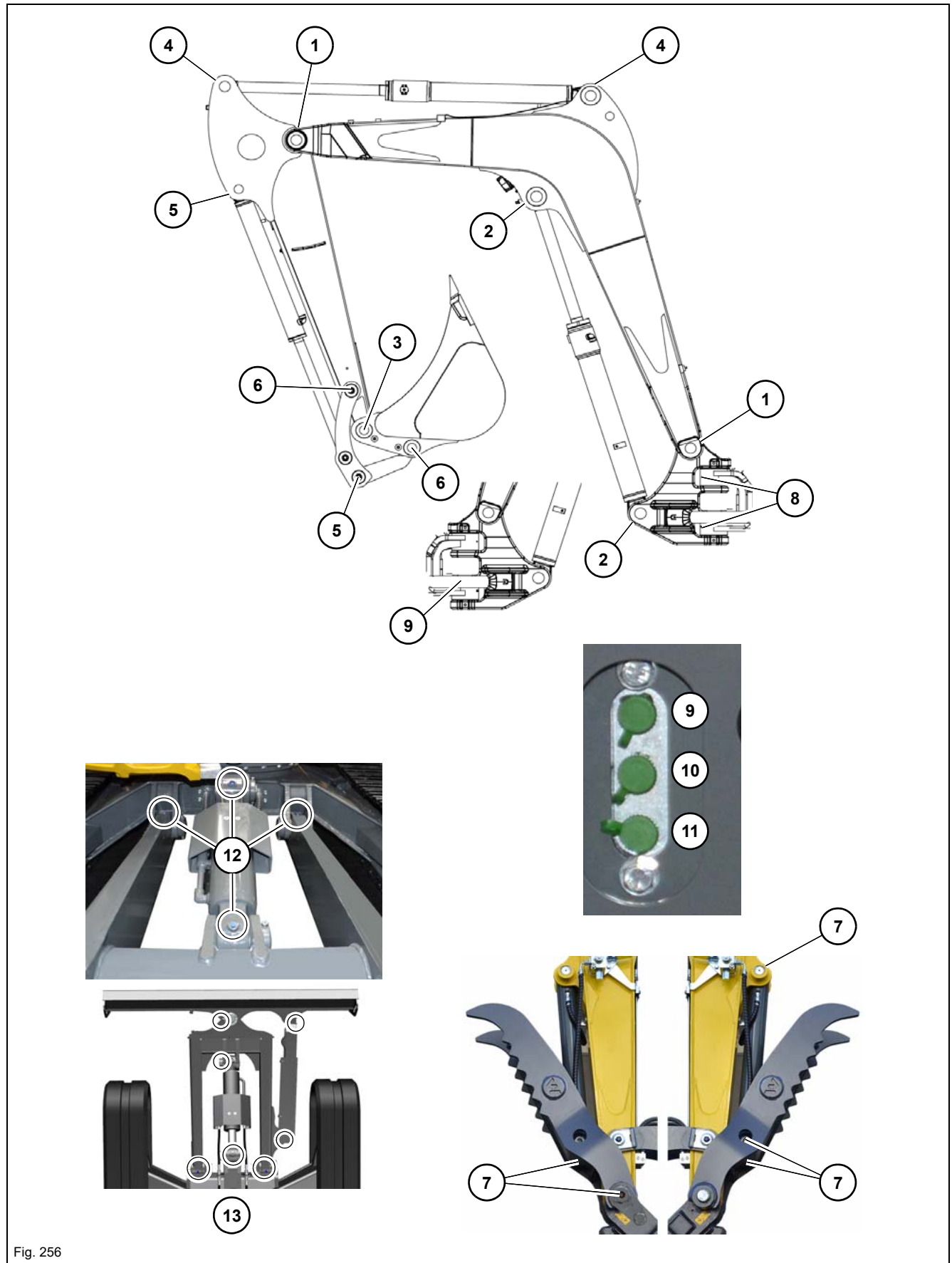


Fig. 256



Position	Lubrication point ¹	Interval	Quantity
1	Boom	Daily	2
2	Boom cylinder	Daily	2
3	Shovel arm	Daily	2
4	Stick cylinder	Daily	2
5	Bucket cylinder	Daily	2
6	Joint plate	Daily	2
7	Hydraulic thumb	Daily	5
8	Swiveling console	Daily	2
9	Swiveling cylinder	50 o/h	2
10	Live ring (ball bearing) – <i>see chapter “Live ring (ball bearing)” on page 7-12</i>	50 o/h	1
11	Teeth of live ring – <i>see chapter “Teeth of live ring” on page 7-13</i>	50 o/h	1
12	Stabilizer blade	Daily	4
13	Swiveling dozer blade	Daily	7

1. Lubrication on the pins or directly on the cylinders

Easy Lock, Powertilt

Powertilt with hydraulic Easy Lock quickhitch

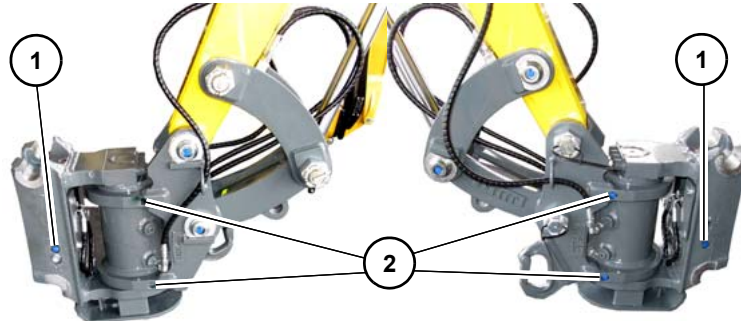


Fig. 257 (symbolic representation)

Position	Lubrication point	Interval	Quantity
1	Easy Lock	Every week	2 ¹
	Easy Lock quickhitch	Every week	--
2	Powertilt	Daily	4 ¹

1. Apply grease to grease zerks twice daily after operation in water to remove all traces of water.

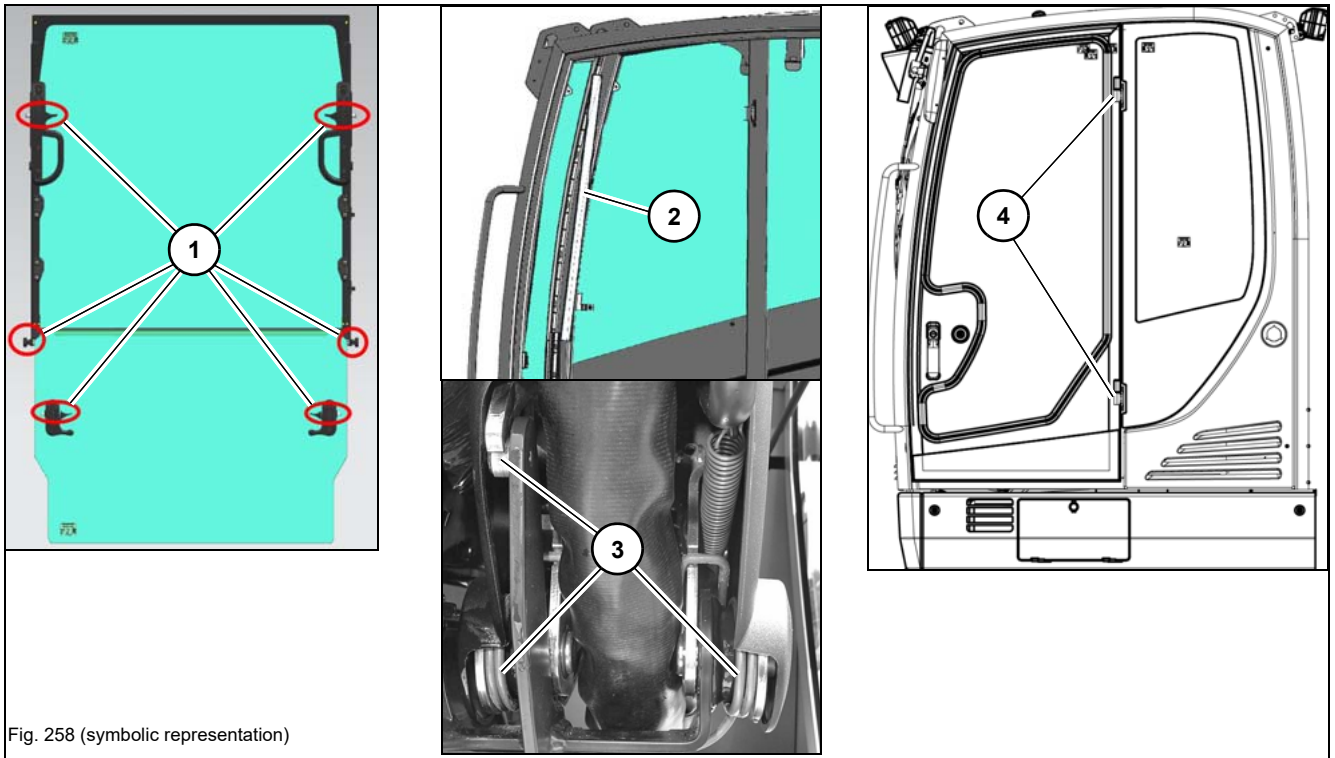
Cabin/attachment mounts


Fig. 258 (symbolic representation)

Position	Lubrication point	Interval	Quantity
1	Front window: pin, lock notches and locks	Every week	6
2	Windshield: guide rails	Every week	2
3	Control lever base – see chapter “Control lever base” on page 7-14	Every week	3
4	Door hinges	Every week	2

Live ring (ball bearing)

DANGER

Crushing hazard during lubrication!

Serious crushing hazard causing death or serious injury.

- ▶ No one must be in the danger zone during upper carriage rotation.
- ▶ Do not tilt the superstructure with the **VDS** option.

The lubrication points are located to the right on the chassis.

1. Park the vehicle on firm, level, and horizontal ground.
2. Lower the boom and the stabilizer blade to the ground.
3. Stop the engine, remove the starting key and carry it with you.
4. Apply grease to lubrication point **A** with two strokes of the grease gun.

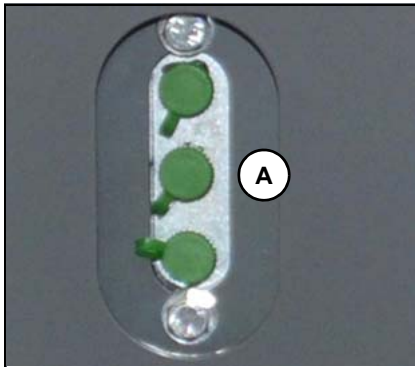


Fig. 259

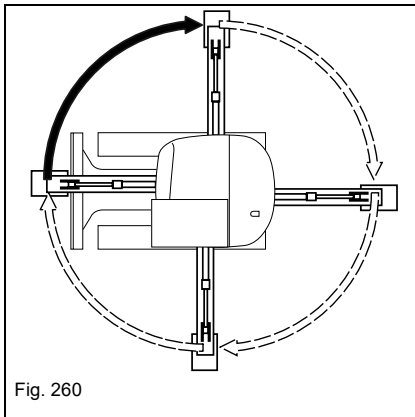


Fig. 260

5. Start the engine, raise the boom and the stabilizer blade.
6. Rotate the upper carriage by 90°.
7. Repeat steps 2–6 three times until the revolving upper carriage is back in its initial position.
8. Rotate the upper carriage several times by 360°.

Teeth of live ring

DANGER
Crushing hazard during lubrication!

Serious crushing hazard causing death or serious injury.

- ▶ No one must be in the danger zone during upper carriage rotation.

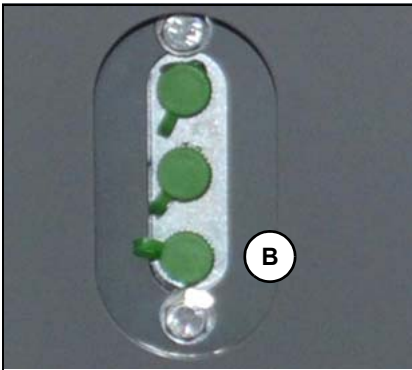


Fig. 261

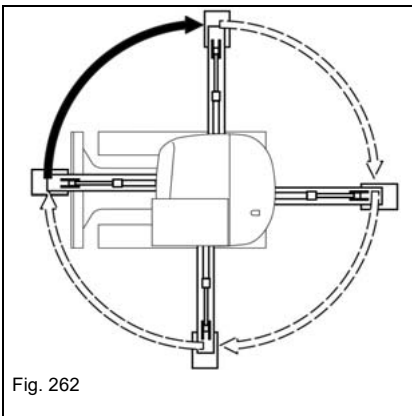


Fig. 262

The lubrication points are located to the right on the chassis.

1. Lower the stabilizer blade to the ground.
2. Stop the engine, remove the starting key and carry it with you.
3. Apply grease to lubrication point **B** with five strokes of the grease gun.
4. Start the engine, raise the boom and the stabilizer blade.
5. Rotate the upper carriage by 90°.
6. Repeat steps 1 – 5 three times until the upper carriage is back in its initial position.

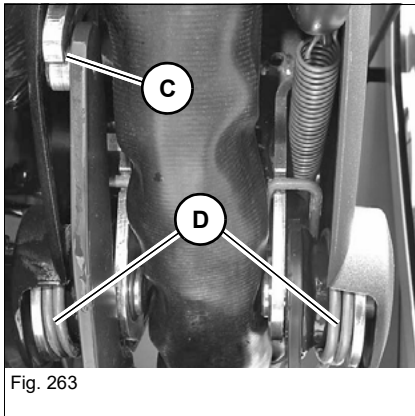
Control lever base

! **CAUTION**

Crushing hazard in the area of the moving parts of the control lever base!

Injury hazard due to crushing of parts of body.

► Stay clear (extremities, clothing) of the moving parts.



1. Raise the control lever base.
2. Spray fluid grease onto the guide lever in the area of **C**.
3. Spray fluid grease on both sides **D** of the double spring.

Powertilt with Easy Lock – operation in water

- Apply grease to the lubrication points before using in water.
- After using in water, apply grease to the lubrication points to remove all water.

7.3 Consumables

Application	Fluid/lubricant	Specification	Season/temperature	Capacities ¹
Engine	Diesel fuel ²	EN 590 (EU) ³	Summer or winter diesel depending on outside temperatures	80.1 liters (21.6 gal)
		American Society for Testing & Materials (ASTM) D975 grade 1D S15 (USA) ³		
		ASTM D975 grade 2D S15 (USA) ⁴		
		JIS K2204 grade		
		BS 2869 class A2 (GB) ³		
	Coolant ⁵	Distilled water and anti-freeze ASTM D6210	Year-round	9.3 liters (2.46 gal) ⁶
	Engine oil ⁷	API: CK-4 ACEA: E9 ECF-3	-15°C to +45°C (5°F to +113°F)	6 liters (1.6 gal)
Hydraulic oil reservoir	Hydraulic oil	Eurolub HVLP 46 ⁸	Year-round ⁹	ET42: 70 Liter (18.5 gal) EZ50: 75 Liter (19.8 gal)
	Biodegradable oil ¹⁰	Panolin HLP Synth 46		
		BP BIOHYD SE-S 46		
Washer system	Cleaning agent	Glass cleaner and anti-freeze	Year-round	1 Liter (0.3 gal)
Grease nipples	Grease	KPF 2 K-20 ¹¹ ISO-L-X-BCEB 2 ¹²	Year-round	As required
Battery terminals	Acid-proof grease ¹³	FINA Marson L2	Year-round	As required
Control lever base	Adhesive fluid grease	Förch S401	Year-round	As required

1. The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level. Capacities indicated are not system fills.
2. Using biodegradable diesel fuel is prohibited.
3. Sulfur content up to 10 ppm (0.001%).
4. Sulfur content up to 15 ppm (0.0015%).
5. Factory filling; Do not mix coolant - observe the coolant compound table; Contact a Wacker Neuson service center.
6. System fills including hoses and diesel engine.
7. according to DIN 51511 (API CJ-4, ACEA E9, ECF-3) – see "Engine oil types" on page 7-17.
8. According to DIN 51524 section 3, ISO-VG 46.
9. Depending on local conditions – see "Hydraulic oil types" on page 7-16.
10. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of <10, according to DIN 51524, section 3, HVLP, HEES.
11. KPF 2 K-20 according to DIN 51502 lithium-saponified grease.
12. ISO-L-X-BCEB 2 according to DIN ISO 6743-9, lithium-saponified grease.
13. Standard acid-proof grease NGLI category 2.

Hydraulic oil types

Viscosity class	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
ISO VG32	-20	-4	30	86
ISO VG46	-5	23	40	104
ISO VG68	5	41	50	122

Replacement intervals

Replace the hydraulic oil and hydraulic oil filter depending on the percentage of hammer operation.

Percentage of hammer work	Hydraulic oil	Hydraulic oil filter
20%	800 o/h	300 o/h
40%	400 o/h	
60%	300 o/h	100 o/h
Over 80%	200 o/h	

Important information regarding operation with biodegradable hydraulic oil

- Use only the biodegradable oils that have been tested and released by Wacker Neuson.
- Add only biodegradable oil of the same type. In order to avoid misunderstandings, attach a clear label to the hydraulic oil filler neck providing clear information regarding the type of oil currently used. The joint use of two different biodegradable oils can affect the quality of one of the oil types. Therefore ensure that the remaining amount of biodegradable oil complies with the national and regional regulations as you replace it. Observe the manufacturer's indications.
- Do not add mineral oil – the content of mineral oil should not exceed 2% of the system fill 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.
- Always have the condensation water in the hydraulic oil reservoir drained by a Wacker Neuson service center before the cold season. The water content may 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.
- Subsequent change from mineral oil to biodegradable oil may only be performed by a Wacker Neuson service center.

Engine oil**Engine oil types**

Viscosity grade (SAE)	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
0W30	-30	-22	30	86
0W40	-30	-22	40	104
5W30	-25	-13	30	86
5W40	-25	-13	50	122
10W30	-18	0	40	104
10W40	-18	0	50	122
15W40	-10	14	50	122



7.4 Maintenance accesses

 **WARNING**

Injury hazard due to rotating parts!

Rotating parts can cause serious injury or death.

- ▶ Open the engine cover only at engine standstill.
-

 **CAUTION**

Burn hazard due to hot surfaces!

Can cause serious burns or death.

- ▶ Stop the engine and let hot surfaces cool down.
 - ▶ Wear protective equipment.
-

 **CAUTION**

Injury hazard due to open maintenance access!

Can cause injury.

- ▶ Take care to avoid injuries when the maintenance access door is open.
-

Maintenance accesses


Pos.	Description	Activity
1	Engine cover	<ul style="list-style-type: none"> • Checking the engine-oil level • Adding engine oil
2	Right maintenance cover	<ul style="list-style-type: none"> • Check the coolant level • Adding coolant • Check the hydraulic oil level • Adding hydraulic oil • Refueling • Cleaning the fresh air filter
3	Left maintenance cover	<ul style="list-style-type: none"> • Starting aid • Actuate the battery master switch
4	Fuse box	<ul style="list-style-type: none"> • Check fuses
5	Cabin air filter	<ul style="list-style-type: none"> • Clean the cabin air filter

Opening the engine cover

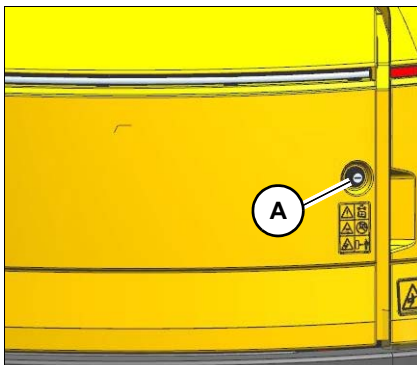


Fig. 265

1. Stop and park the vehicle. Stop the engine.
- See "**Preparing lubrication**".
2. Turn the starting key in lock **A** anticlockwise.
3. Press lock **A** and open the engine hood.

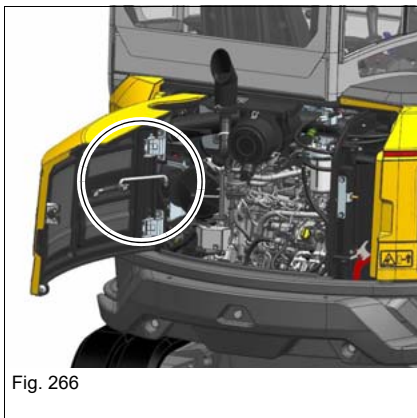


Fig. 266

The engine cover is locked mechanically.

Fuse boxes

– see chapter "9.8 Electrical system" on page 9-3

Toolbox

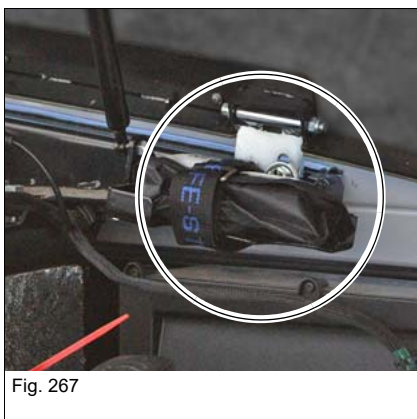


Fig. 267

The vehicle toolkit is located in the toolbox under the right side maintenance cover.

Cabin air filter

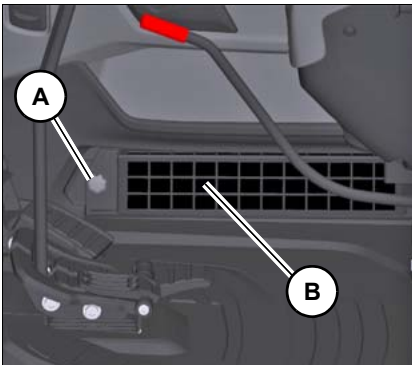


Fig. 268

The cabin air filter is located to the bottom right in the cab.

1. Loosen screw **A** and remove cabin air filter **B**.
2. Clean the cabin air filter **B**.
3. Reattach the cabin air filter **B** and install with screw **A**.

Fresh air filter

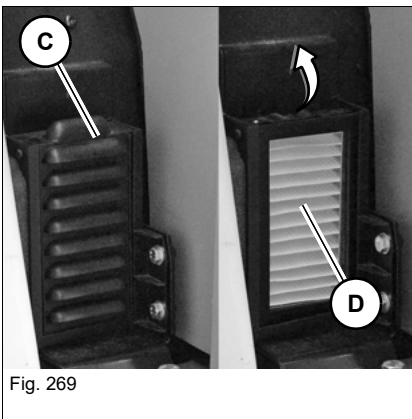


Fig. 269

The fresh air filter is located at the front under the right side maintenance cover.

1. Remove cover **C**.
2. Pull out, clean and reattach the fresh air filter **D**.
3. Reattach the cover **C**.



7.5 Cleaning and maintenance

 **WARNING**

Injury hazard due to rotating parts!

Rotating parts can cause serious injury or death.

- ▶ Open the engine cover only at engine standstill.
-

 **WARNING**

Burn hazard due to hot surfaces!

Hot surfaces can cause serious burns or death.

- ▶ Stop the engine and let it cool down.
 - ▶ Wear protective equipment.
-

 **CAUTION**

Health hazard due to cleaning agents!

Cleaning agents can be harmful to health.

- ▶ Use only suitable cleaning agents.
 - ▶ Ensure sufficient ventilation.
-

NOTICE

Damage to rubber and electrical parts when cleaning with solvents.

Do not use solvents, benzine, or other aggressive chemicals.

NOTICE

Damage to electrical and electronic components from water jet.

- ▶ Electronic components (e.g. relays, displays) should not be cleaned with a high-pressure cleaner.
 - ▶ Electric components (e.g. headlight, rotating beacons) must be at a distance of at least 50cm (20 in) from the jet of the high-pressure cleaner.
 - ▶ If water contacts electrical components, dry them with compressed air and apply contact spray to them.
-

**Environment**

In order to avoid damage to the environment, clean the vehicle only in wash bays and places authorized by the authorities.

Cleaning the vehicle is divided into three separate areas:

- Inside the cabin
- Exterior of the vehicle
- Engine compartment

Washing solvents

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

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.

High-pressure cleaner

- Cover electric parts.
- Do not point the water jet directly at electric parts and damping material.
- Cover the vent filter on the hydraulic oil reservoir and the filler caps for fuel, hydraulic oil, etc.
- Protect the following components from moisture:
 - Electrical components (for example alternator, control valves, connector plug at the wiring harness).
 - Control devices and seals.
 - Air intake filter, exhaust etc.
- Maintain sufficient distance from labels.

Volatile and easily flammable anti-corrosion agents and sprays:

- Ensure sufficient room ventilation.
- Fire, open flames and smoking is prohibited.

Inside the cabin

Recommended aids:

- Vacuum cleaner
- Moist cloths
- Brush
- Water with mild soap solution

On the outside of the vehicle

Recommended aids:

- High-pressure cleaner
- Steam jet

Engine compartment

1. Park the vehicle in a wash bay or place suitable for washing.
2. Stop the engine. See **"Preparing lubrication"**.
3. Clean the vehicle.

Seat belt

Always keep the seat belt clean, as coarse dirt can impair the proper functioning of the seat belt buckle.

Clean the seat belt (while it remains fitted in the vehicle) with a mild soap solution only. Do not use chemical agents as they can destroy the fabric.

Cleaning in a saline environment

1. Park the vehicle in a wash bay or place.
2. See **"Preparing lubrication"**.
3. Check the vehicle for salt deposits or corrosion. Have corrosion removed by a Wacker Neuson service center.
4. Clean the vehicle with a high-pressure cleaner. Clean the vehicle ensuring that there are no salt deposits in places that are difficult to access.
Bear in mind the information on cleaning and maintenance.
5. Lubricate the vehicle according to the lubrication plan.
6. Allow the vehicle to dry and check it again for salt deposits.

Loose threaded fittings and attachments

Contact a Wacker Neuson service center.

7.6 Lubrication work

– see chapter “Preparing lubrication” on page 7-7

7.7 Fuel system

Important information regarding the fuel system

i **Information**

In order to prevent the formation of condensation water, fill up the fuel tank nearly completely at the end of each working day.

i **Information**

Do not run the fuel tank completely dry. Otherwise, air is drawn into the fuel system. This requires bleeding the fuel system.

Diesel fuel specification

NOTICE

Engine damage due to incorrect or dirty diesel fuel.

- ▶ Only use clean diesel fuel according to the **fluids and lubricants** list.
 - ▶ Do not use any diesel fuel with additives.
-

– see “Consumables” on page 7-15

Refueling

 **WARNING****Explosion hazard due to flammable fuel/air mixtures!**

Fuels develop explosive and flammable mixtures with air that can cause serious burns or death.

- ▶ Fire, open flames and smoking is prohibited.
 - ▶ Open tank lock carefully to release the pressure in the fuel tank.
 - ▶ Keep the maintenance area clean.
 - ▶ Do not refuel in closed rooms.
 - ▶ Do not add gasoline to diesel fuel.
 - ▶ Let the engine cool down.
-

 **CAUTION****Health hazard due to diesel fuel!**

Diesel fuel and fuel vapors are harmful to health.

- ▶ Avoid contact with the skin, eyes and mouth.
 - ▶ Seek medical attention immediately in case of accidents with diesel fuel.
 - ▶ Wear protective equipment.
-

 **CAUTION****Fire hazard due to diesel fuel!**

Diesel fuel gives off flammable vapors. This can cause injury.

- ▶ Fire, open flames and smoking is prohibited.
 - ▶ Do not add gasoline to diesel fuel.
-

 **CAUTION****Slipping/tripping hazard when refueling the vehicle!**

Can cause injury.

- ▶ Use safety-oriented ladders for refueling the vehicle.
 - ▶ Do not use vehicle parts or attachments as a climbing aid.
-

NOTICE

Do not refuel with cans in order to avoid dirt in the fuel.

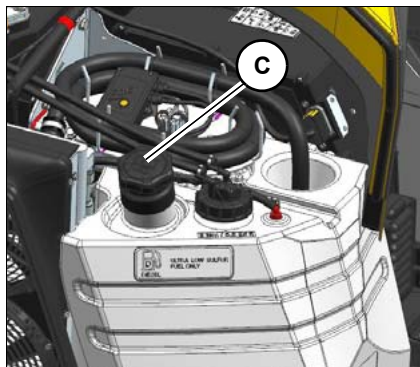
Refueling with a stationary fuel pump

Fig. 270

The fuel tank is located under the right side maintenance cover.

1. Stop the vehicle on firm, level, and horizontal ground.
 2. Position the boom straight ahead at the center of the vehicle.
 3. Lower the boom.
 4. Stop the engine.
 5. Raise the control lever base.
 6. Open tank lock **C** carefully to release the pressure in the fuel tank.
 7. Refuel the vehicle.
 8. Close the tank lock **C**.
-

NOTICE

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 cannot be avoided, note the following points:
- Barrels must neither be rolled nor tilted before refueling.
- Protect the suction pipe opening of the barrel pump with a fine-mesh screen.
- Immerse the suction pipe opening down to a max. 15 cm (6 in) above the bottom of the barrel.
- Only fill the tank using refueling aids (funnels or filler pipes) with an integral microfilter.
- Keep all refueling containers clean.

Refueling with the fuel-filling pump

CAUTION

Injury hazard in case of incorrect handling of fuel-filling pump!

Can cause injury.

- ▶ Keep body parts away from tank hoses.

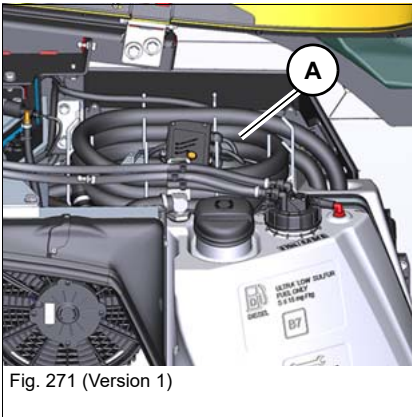


Fig. 271 (Version 1)

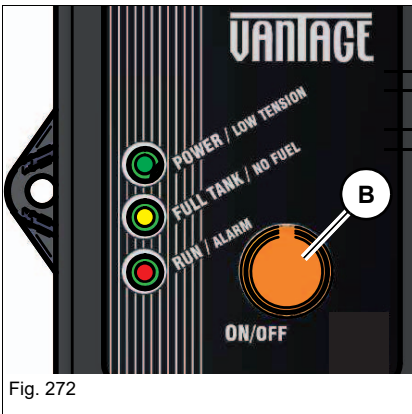


Fig. 272

Refueling procedure

1. Stop the vehicle on firm, level, and horizontal ground.
2. Position the boom straight ahead at the center of the vehicle.
3. Lower the boom.
4. Stop the engine.
5. Raise the control lever base.
6. Open tank lock **C** carefully to release the pressure in the fuel tank.
7. Turn the starting key to position **1**.

8. Put hose **A** in the fuel tank.
9. Switch on the fuel-filling pump with push button **B**.
 - The green LED illuminates. The red LED illuminates, too, as soon as fuel is pumped by the pump.
 - Refueling stops automatically when the tank is full.
 - The green and yellow LEDs illuminate once refueling is over.
10. Switch off the fuel-filling pump with push button **B**.
11. Stow away hose **A**.
12. Close the tank lock **C**.

Information

After one minute without actuation the pump automatically enters standby mode.

Fuel-filling pump status indicators

LED			Status
Green	Yellow	Red	
POWER	FULL TANK	RUN	
On	On	On	Standby
Flashes	Off	Off	Voltage too low
On	Off	Off	Pump switched on
On	Off	On	Pump conveys fuel
On	Off	Flashes quickly	Contact a Wacker Neuson service center
On	Off	Flashes slowly	Contact a Wacker Neuson service center
On	On	Off	Refueling completed
On	Flashes	Off	Not enough fuel in the fuel hose (at the beginning of refueling)
			Not enough fuel in the barrel (at the end of refueling)
Flashes	Flashes	Off	Contact a Wacker Neuson service center
Off	Flashes	Flashes	Contact a Wacker Neuson service center

Information

Refueling stops in the following cases:

- ▶ Push button **B** is pressed and held for a longer period.
- ▶ The maximum refueling time of 10 minutes was exceeded.
- ▶ Due to an error message or a full fuel tank.

Fuel filter

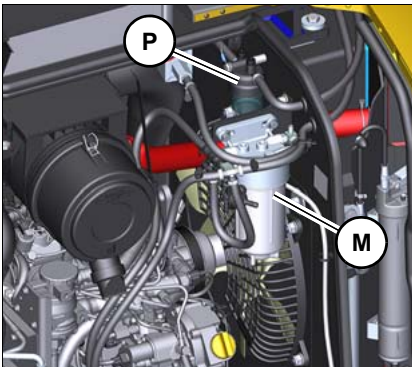


Fig. 273 (symbolic representation)

The fuel prefilter **P** and the fuel main filter **M** is located under the engine cover.

All filters are equipped with a water separator.

Empty the water separator (prefilter)

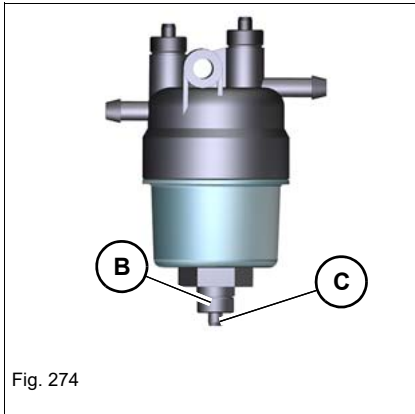


Fig. 274

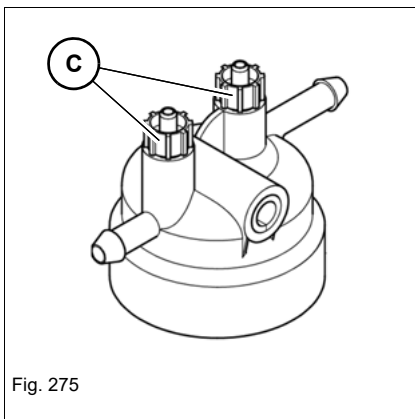


Fig. 275

1. Preparations – see chapter “*Parking the machine*” on page 5-11.
 2. Prepare a suitable container for collecting the fuel/water mixture.
 3. Open the engine cover.
 4. Connect a suitable hose to connection **A**.
 5. Open screw **B**.
-
6. Loosen bleed screws **C**.
 7. Drain the fuel-water-mixture in the container.
 8. Tighten bleed screws **C**.
 9. Tighten the screw **B** if nothing but fuel is flowing into the receptacle.
 10. Remove the hose.
 11. Close and lock the engine cover.



Environment

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Empty the water separator (main filter)

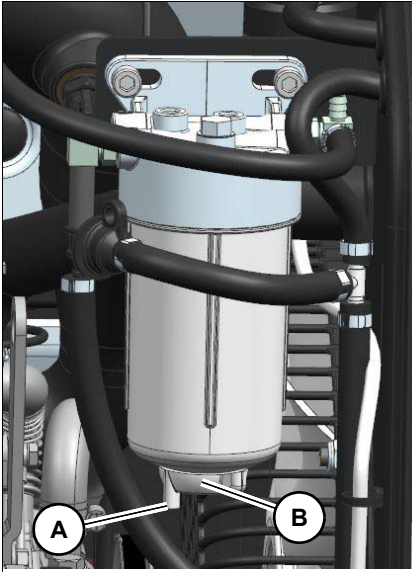


Fig. 276

1. Preparations – see chapter “Parking the machine” on page 5-11.
2. Prepare a suitable container for collecting the fuel/water mixture.
3. Open the engine cover.
4. Connect a drain hose to connection **A**. Place the hose into a container on the ground.
5. Open screw **B**.
6. Drain the fuel-water-mixture in the container.
7. Tighten the screw **B** if nothing but fuel is flowing into the receptacle.
8. Remove the hose.
9. Close and lock the engine cover.



Environment

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

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.
- If the vehicle is put into operation after having been out of operation for more than 30 days.

Bleed:

1. Raise the control lever base.
2. Remove the starting key and carry it with you.
3. Fill up and close the fuel tank.
4. Turn the starting key to the first position.
5. Wait about 5 minutes while the fuel system bleeds itself automatically.
6. Start the engine.

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

1. Stop the engine.
2. Raise the control lever base.
3. Remove the starting key and carry it with you.
4. Bleed the fuel system again as described above.
5. Check for leaks after starting the engine.
6. Have a Wacker Neuson service center perform a check if necessary.

7.8 Engine lubrication system

Important information regarding the engine lubrication system

NOTICE

Possible engine damage due to incorrect engine oil level.

- ▶ The oil level must be between the MIN and MAX marks.
-

NOTICE

Damage due to wrong engine oil.

- ▶ Use engine oil according to **Fluids and lubricants** list.
 - ▶ Have the oil changed only by a Wacker Neuson service center.
-

NOTICE

Possible engine damage due to adding engine oil too quickly.

- ▶ Add the engine oil slowly so it can go down without entering the intake system.
-

**Information**

Check the oil level once a day. Wacker Neuson recommends checking before starting the engine. Check the oil level not less than five minutes after stopping the engine.

Checking the engine oil level

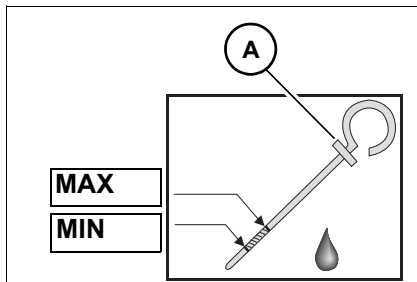


Fig. 277

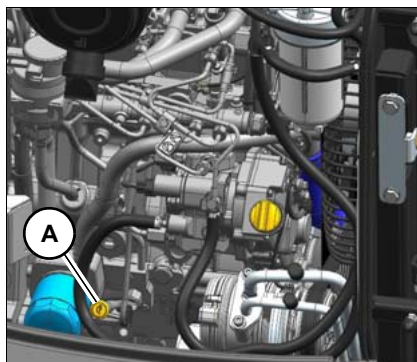


Fig. 278

1. Stop and park the vehicle. Stop the engine. – see chapter “*Parking the machine*” on page 5-11.
2. Open the engine cover.
3. Wipe the area around oil dipstick **A** with a lint-free cloth.
4. Pull out oil dipstick **A** and wipe it with a lint-free cloth.
5. Slide in oil dipstick **A** completely.
6. Withdraw it and read off the oil level.
 - The oil level must be between the MIN and MAX marks.
 - Add engine oil if necessary.
7. Slide in oil dipstick **A** completely.
8. Close and lock the engine cover.

Adding engine oil

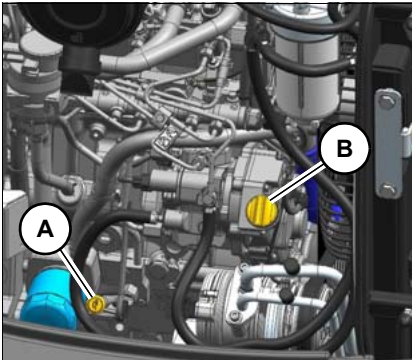


Fig. 279

1. Stop and park the vehicle. Stop the engine. See “Preparing lubrication”.
2. Open the engine cover.
3. Wipe the area around the sealing push-in cap with a lint-free cloth.
4. Open filler cap **B**.
5. Raise oil dipstick **A** slightly to allow any trapped air to escape.
6. Add engine oil.
7. Wait at least five minutes until all the oil has run into the oil sump.
8. Check the oil level.
9. Add oil if necessary and check the oil level again.
10. Close filler cap **B**.
11. Slide in oil dipstick **A** completely.
12. Close and lock the engine cover.



Environment

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

7.9 Cooling system

Important information regarding the cooling system

The radiators are located on the right in the engine compartment.

 **WARNING**

Poisoning hazard due to hazardous substances!

Contact with hazardous substances can cause serious injury or death.

- ▶ Wear protective equipment.
 - ▶ Do not inhale or swallow coolant.
 - ▶ Avoid contact of the coolant or antifreeze with the skin and eyes.
-

 **WARNING**

Burn hazard due to coolant or antifreeze!

The coolant and antifreeze are easily flammable fluids that can cause serious burns or death if they are brought into contact with fire or open flames.

- ▶ Wear protective equipment.
 - ▶ Only perform maintenance on an engine that has cooled down.
 - ▶ Fire, open flames and smoking is prohibited.
-

 **WARNING**

Burn hazard due to hot coolant!

At high temperatures, the cooling system is under pressure and can cause burning of the skin.

- ▶ Wear protective equipment.
 - ▶ Let the engine cool down.
 - ▶ Carefully open the radiator cap.
-

NOTICE

Possible engine damage due to wrong coolant.

- ▶ Observe the engine/vehicle fluid table or coolant compound table.
-

NOTICE

Possible engine damage due to low coolant level.

- ▶ Check the coolant level once a day.
-

i **Information**

Check the coolant level once a day before starting the engine.
Observe the coolant compound table

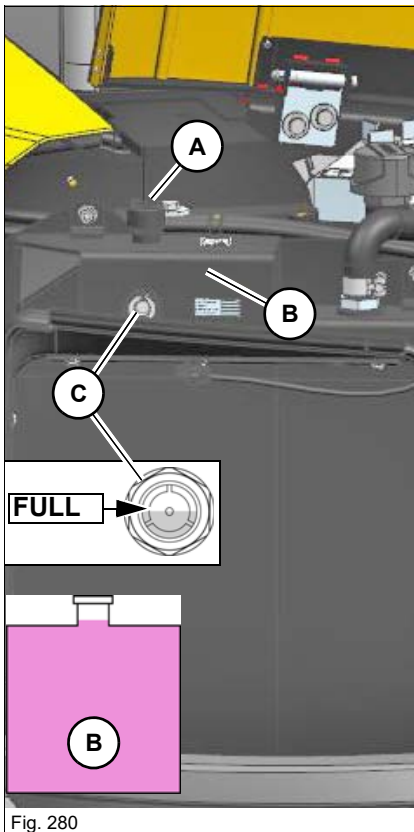
Check and refill the coolant


Fig. 280

1. Preparations – see chapter “*Parking the machine*” on page 5-11.
 2. Carefully unscrew the filler cap **A** and release the pressure.
 3. Check the coolant in the radiator **B**.
 4. Refill the coolant until the coolant reaches the filler inlet of radiator **B**.
 5. Tighten filler cap **A**.
 6. Check the coolant level in the expansion tank **C**.
 7. Refill the coolant until the coolant reaches the mark **FULL** in the expansion tank **C**.
 8. Start the engine and let it warm up for about 5 – 10 minutes.
 9. Stop the engine.
 10. Remove the starting key and carry it with you.
 11. Let the engine cool down.
 12. Check the coolant level again.
 13. If necessary, add coolant and repeat the procedure until the coolant level remains constant.
 14. Close and lock the engine cover.
-

i **Information**

Check the coolant level once a day before starting the engine.
Observe the coolant compound table.

Cleaning the radiator

CAUTION

Burn hazard due to hot surfaces!

Hot radiators can cause burns.

- ▶ Stop the engine and let it cool down.
 - ▶ Wear protective equipment.
-

NOTICE

Possible engine damage or damage to the hydraulic system from dirty radiator fins.

- ▶ Check and if necessary clean the radiator once a day.
 - ▶ In dusty or dirty work conditions, clean more frequently than indicated in the maintenance plans.
-

NOTICE

Possible damage to radiator fins during cleaning.

- ▶ Keep a safe distance from the radiator.
 - ▶ Only use oil-free compressed air 2 bar (29 psi max.).
-

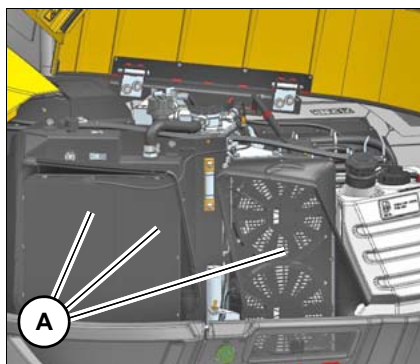


Fig. 281

Radiators **A** are located on the right in the engine compartment.

1. Stop and park the vehicle. Stop the engine. See “Preparing lubrication”.
2. Open the engine cover.
3. Remove dust and other foreign bodies from the fins with compressed air.
4. Close and lock the engine cover.

7.10 Air filter

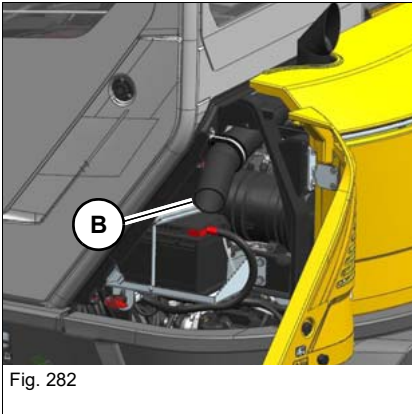
Have maintenance performed only by a Wacker Neuson service center.

NOTICE

Possible engine damage due to intake of dirty air.

► Check air intake daily before commissioning.

Checking the air intake



1. Stop and park the vehicle. Stop the engine. See “Preparing lubrication”.
2. Remove the starting key and carry it with you.
3. Open left maintenance cover.
4. Check the air intake **B** and clean it if necessary.

7.11 V-belt

V-belt tension may be checked and the V-belt re-tensioned only by a Wacker Neuson service center.

7.12 Hydraulic system

Important information on the hydraulic system



WARNING

Burn hazard due to hot hydraulic oil!

Hot hydraulic oil can cause burning to the skin, serious injury or death.

- ▶ Release the pressure in the hydraulic system.
 - ▶ Let the engine cool down.
 - ▶ Wear protective equipment.
-



WARNING

Injury hazard due to fluid escaping under pressure!

Hydraulic oil escaping under pressure can penetrate the skin and cause serious injury or death.

- ▶ Do not operate the vehicle with leaking or damaged hydraulic system components.
 - ▶ Open the breather filter carefully to slowly release the pressure inside the reservoir.
 - ▶ Wear protective equipment. If hydraulic oil contacts the eye, flush immediately with clean water and seek medical treatment.
 - ▶ Malfunctioning or leaking screw connections, hose connections and pressure lines must be immediately repaired by a Wacker Neuson service center. Search for hydraulic leaks with a piece of cardboard.
 - ▶ Always consult a doctor immediately, even if the wound seems insignificant. Hydraulic oil causes blood poisoning.
-



NOTICE

Damage due to wrong hydraulic oil.

- ▶ Only use hydraulic oil according to the **fluids and lubricants** list.
 - ▶ Have the hydraulic oil only changed by an authorized service center.
-

NOTICE

Damage to hydraulic system due to incorrect hydraulic oil level.

- ▶ If the engine is warm, the hydraulic oil must be visible approximately at the middle of oil sight glass.
 - ▶ Check the hydraulic oil level once a day.
-

NOTICE

Possible damage to hydraulic system due to dirty hydraulic oil.

- ▶ Always add hydraulic oil using the filling screen.
 - ▶ Cloudy hydraulic oil in the oil sight glass indicates that water or air has penetrated the hydraulic system. Contact a Wacker Neuson service center.
 - ▶ Contact an authorized service center if the filter of the hydraulic system is dirty.
-

Checking the hydraulic oil level

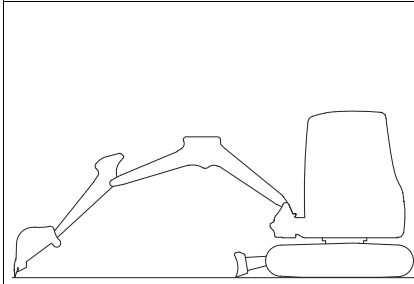


Fig. 283 (symbolic representation)

1. Park the vehicle on firm, level, and horizontal ground.
2. Position the boom straight ahead at the center of the vehicle (see figure).
3. Lower the boom and the stabilizer blade to the ground.
4. Stop the engine.
5. Operate the control lever repeatedly to release the pressure in the hydraulic system.
6. Remove the starting key and carry it with you.

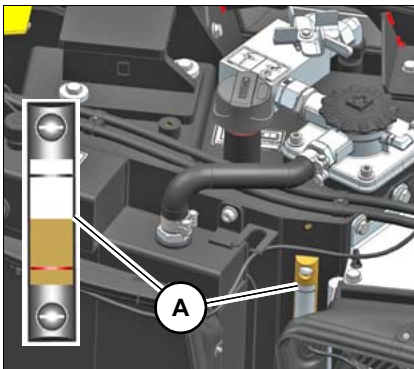


Fig. 284

7. The oil sight glass **A** is located under the right side cover.
8. Check the oil level on oil sight glass **A**.
 - If the engine is warm, the oil level must be approximately at the middle of oil sight glass **A**.
9. Add hydraulic oil if the oil level is below this mark.

Adding hydraulic oil

 **CAUTION****Slipping/tripping hazard when adding hydraulic oil!**

Can cause injury.

- ▶ Use a safety-oriented ladder to add hydraulic oil.
- ▶ Do not use vehicle parts or attachments as a climbing aid.

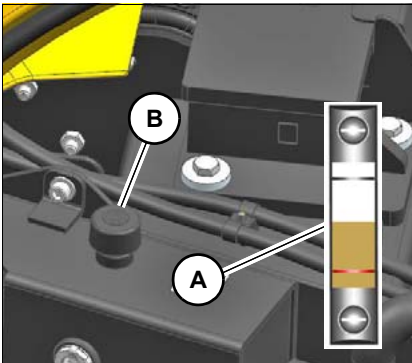


Fig. 285

1. Open the reservoir ventilation **B** to release the pressure inside the hydraulic oil reservoir.
2. Add hydraulic oil up to the corresponding mark.
3. Check the hydraulic oil level at the oil sight glass **A**.
4. Add if necessary and check again.
5. Screw down the reservoir ventilation **B**.
6. Close and lock the engine cover.

**Environment**

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Checking the hydraulic system and hoses

Check the hydraulic system and hoses daily for leaks and general condition.

NOTICE

Leaks and damaged pressure lines must immediately be repaired or replaced by a Wacker Neuson service center. This not only increases the operating safety of the vehicle but also helps to protect the environment.

- ▶ Have damaged or leaky pressure lines immediately repaired or replaced by a Wacker Neuson service center.
 - ▶ Have hydraulic hoses replaced every 6 years from the date of manufacture, even if they do not seem to be damaged.
-

- Do not operate the vehicle with leaking or damaged hydraulic system components.
- Re-tighten leaking screw connections and hose connections only when the system is not under pressure. Release the pressure before working on pressure lines.
- Do not weld or solder damaged or leaking pressure lines and screw connections, but have them replaced.
- Wear protective equipment.

In this respect, Wacker Neuson recommends that you observe all the relevant safety regulations for hydraulic lines, as well as the safety regulations regarding accident prevention and occupational medicine in your country. Also observe DIN 20 066, TI. 5.

The article number is on the clamping section of each hose connection.

The date of manufacture is indicated on each flexible line.

Have a line immediately replaced if one of the following problems 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.

7.13 Electrical system

Important information regarding the electrical system

Maintenance and repair work on the electrical system may be performed only by a Wacker Neuson service center!

- Malfunctioning parts of the electrical system must be replaced by an authorized service center.
- Light bulbs and fuses may be replaced by the operator.

Alternator

- Contact a Wacker Neuson service center if the alternator charge indicator light is malfunctioning.



WARNING

Injury hazard due to malfunctioning batteries!

Batteries give off explosive gases that can cause deflagrations if ignited.

- ▶ Wear protective equipment.
 - ▶ Fire, open flames and smoking is prohibited.
 - ▶ Do not jump start the engine if the battery is malfunctioning or frozen, or if the acid level is too low.
 - ▶ Do not place conductive articles on the battery – risk of short circuit.
-

NOTICE

Possible damage to electrical components or engine electronics.

- ▶ Do not place conductive articles on the battery – risk of short circuit.
 - ▶ Do not interrupt voltage-carrying circuits at the battery terminals because of the sparking hazard.
 - ▶ Do not disconnect the battery while the engine is running.
-



Environment

Dispose of old batteries in an environmentally friendly manner.

Fuses and relays

– see chapter “Fuses/relays” on page 9-4

Battery

The battery may be checked, disconnected, charged and replaced only by a Wacker Neuson service center.

7.14 Heating, ventilation and air conditioning system

Checking/changing the cabin air filter

Have maintenance performed only by a Wacker Neuson service center.

7.15 Washer system

Only use glass cleaner (with antifreeze if necessary) for refilling.

Checking the fluid level and adding fluid



CAUTION

Burn hazard due to hot surfaces!

Can cause serious burns or death.

- ▶ Stop the engine and let it cool down.
- ▶ Wear protective equipment.

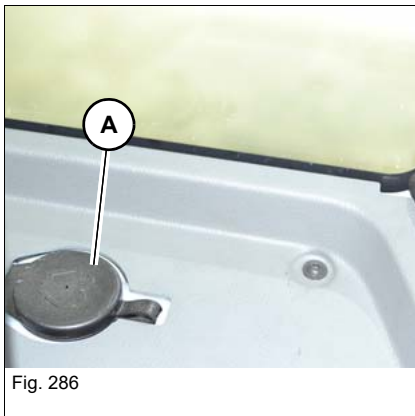


Fig. 286

The reservoir **A** is located to the rear left in the cab.

1. Stop and park the vehicle. Stop the engine. See “**Preparing lubrication**”.
2. Open the engine cover.
3. Check the fluid level in container **A** and add fluid if necessary.

7.16 Travel drive

Have maintenance performed only by a Wacker Neuson service center.

7.17 Braking system

Have maintenance performed only by a Wacker Neuson service center.

7.18 Tracks

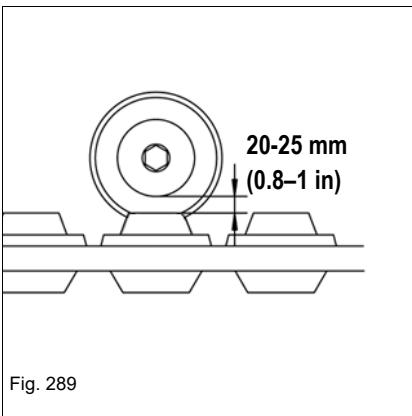
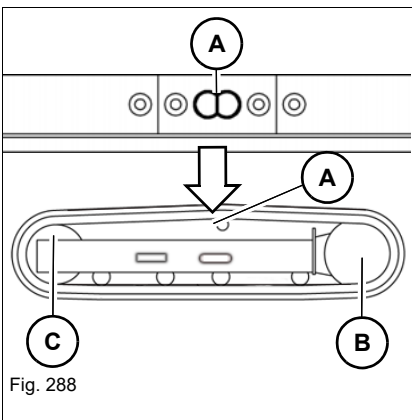
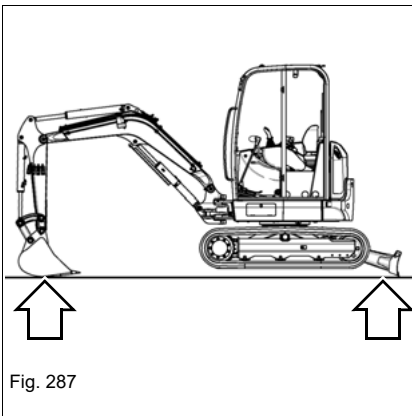
WARNING

Crushing hazard during work under the vehicle!

Working under the tracks can cause serious injury or death.

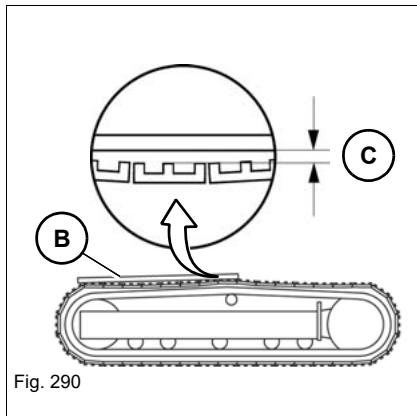
- ▶ Do not allow anyone to stay in the danger zone.

Checking track tension



Rubber tracks

1. Park the vehicle on firm, level, and horizontal ground.
2. Raise the vehicle evenly and horizontally by means of the boom and stabilizer blade.
3. Place the tracks so that mark **A** is in the middle between drive pinion **B** and track tension roller **C**.
4. Stop the engine.
5. Operate the control lever repeatedly to release the pressure in the hydraulic system.
6. Raise the control lever base.
7. Remove the starting key and carry it with you.
8. Adjust the track tension if the play between the track roller and the track is not 20 – 25 mm (0.8 – 1 in).



Correcting track tension

Steel track (option)

Place a measuring rod **B** across the highest points of the track.

- Adjust the track tension if play **C** between the track roller and the track is not 20 - 25 mm (0.8 - 1 in).



WARNING

Injury hazard due to grease escaping under pressure!

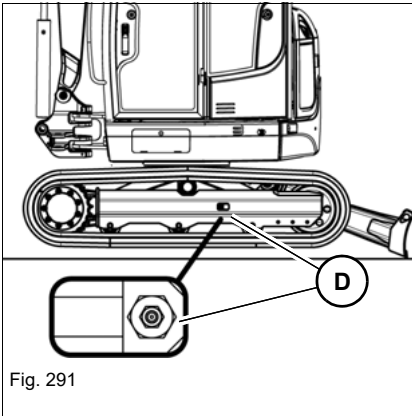
Grease escaping under pressure can penetrate the skin and cause serious injury or death.

- ▶ Open the lubricating valve only very carefully and do not unscrew it more than one revolution.
- ▶ Wear protective equipment.
- ▶ Contact a Wacker Neuson service center if you are unable to reduce the track tension.

NOTICE

Possible damage to cylinders and tracks due to over-tightening.

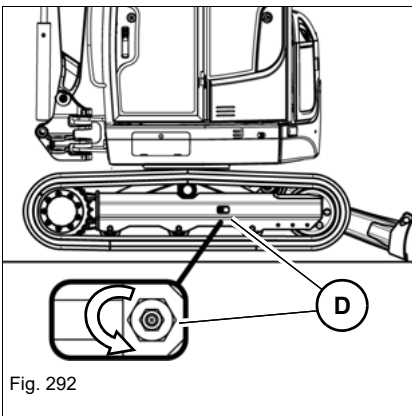
- ▶ Tighten the tracks only up to the mandatory measuring distance.



Tightening the tracks

1. Park the vehicle on firm, level, and horizontal ground.
2. Raise the vehicle evenly and horizontally by means of the boom and stabilizer blade.
3. Stop the engine.
4. Operate the control lever repeatedly to release the pressure in the hydraulic system.
5. Pump grease with a grease gun through lubricating valve **D**.
6. Start the engine.
7. Lower the vehicle to the ground.
8. In order to check that the tension is correct:
 - Let it run at idling speed without any load
 - Slowly move the vehicle forward and reverse and switch it off again.
9. Check the track tension again.
 - ➔ If it is not correct:
10. Repeat steps 2–9. Contact a Wacker Neuson service center if track tension still is too low after pumping in more grease.

Reducing tension



1. Place a suitable container underneath to collect the grease.
2. Slowly turn lubricating valve **D** a maximum of one revolution anticlockwise to release the grease.
 - ➔ The grease flows out of the groove of the lubricating valve.
3. Re-tighten lubricating valve **D**.
4. In order to check that the tension is correct:
 - Lower the vehicle to the ground.
 - Start the engine.
 - Let it run at idling speed without any load, then slowly move the vehicle forward and reverse, then turn it off again. Raise the vehicle again by means of the boom and stabilizer blade.
5. Check the track tension again.
 - ➔ If it is not correct:
6. Adjust again.



Environment

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

7.19 Maintenance of attachments

Important information regarding maintenance of attachments

Correct maintenance and service is absolutely necessary for smooth and continuous operation, and for an increased service life of the attachments. Please observe the lubrication and maintenance instructions in the Operator's Manuals of the attachments.

7.20 Maintenance of options

Have a Wacker Neuson service center check all eyes regularly:

- Machine lifting eyes
- Attachment lifting eyes
- Attachment load hooks
- Tie-down points
- Towing eyes

Have eyes or load hooks with inadmissible wear, a defective spring mechanism, etc. immediately replaced by a Wacker Neuson service center.

7.21 Exhaust gas treatment

The 403J-E17T engine is fitted with a diesel particulate filter.

The soot produced by burning diesel fuel is collected and burned in the diesel particulate filter at regular intervals. This process is called regeneration.

Regeneration takes about 40 minutes.

If the dirt in the diesel particulate filter reaches a critical value, engine power is reduced and vehicle operation has to be stopped.

Regeneration is performed only if the engine is at operating temperature.



WARNING

Health hazard due to exhaust gases!

Can cause serious health hazards or death.

- ▶ Do not inhale exhaust gases.
 - ▶ Under pressure, the exhaust temperature can be up to 600°C (1112°F). Only use suitable exhaust-gas suction systems.
 - ▶ Provide for sufficient ventilation when operating in enclosed areas.
-



WARNING

Burn hazard at the exhaust system!

During regeneration, the exhaust system can develop exhaust temperatures of up to 350°C (662°F), even if the engine is running at idling speed, which can cause serious burns or death.

- ▶ Keep a safe distance from the exhaust system.
-



WARNING

Fire hazard during regeneration!

Hot exhaust gases in easily flammable surroundings can cause serious injury or death.

- ▶ Under pressure, the exhaust temperature can be up to 600°C (1112°F). Only use suitable exhaust-gas suction systems.
 - ▶ Provide for sufficient ventilation when operating in enclosed areas.
-

NOTICE

Potential damage to engine and irreparable damage to diesel particulate filter.

- ▶ Only use clean diesel fuel according to the **fluids and lubricants** list. Do not use biodiesel.
 - ▶ Avoid regular operation when the engine is cold.
 - ▶ Do not ignore indicator lights.
-

NOTICE

Fire hazard at the exhaust system.

- ▶ There must be no easily flammable material in the direct vicinity of the exhaust system, in particular near the end pipe.
-



Information

The load is the contamination level of the diesel particulate filter. Among other things, this level depends on the load on the diesel engine:



Information

Wacker Neuson recommends not to influence the automatic regeneration system if possible. This avoids unscheduled visits to the service center.



Information

Interrupting a regeneration increases the contamination level in the particulate filter. It may result in the vehicle stopping and requiring service regeneration by an authorized service center.




Measures for increasing intervals between regeneration

- Bring engine up to operating temperature.
- Avoid operation under low-load conditions.
- As soon as the indicator light for **regeneration required** lights up, the system is not in the normal state anymore. The operator has to support regeneration actively.
- Only use clean diesel fuel according to the **fluids and lubricants** list.

Types of regeneration

Type	Description
Automatic regeneration	There is no fault in the system The system carries out automatic regeneration in the background.
	There is a fault in the system The operator has to facilitate regeneration: <ul style="list-style-type: none"> • Work with the vehicle. When that is not possible, fold up the joystick base and run the engine.
Service regeneration	May be performed only by an authorized service center.

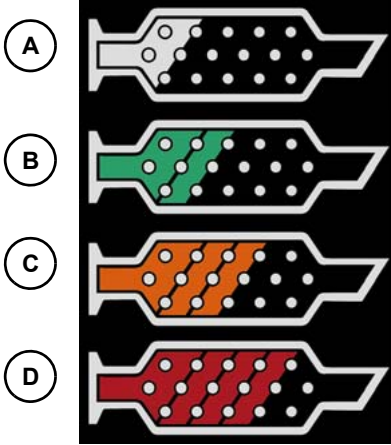
Indicator lights

Letter	Indication	Description
D		Regeneration required <ul style="list-style-type: none"> • Lights up immediately, when there is a fault in the system
G		Engine warning <ul style="list-style-type: none"> • Lights up immediately, when there is a serious fault in the system
H		Engine stop <ul style="list-style-type: none"> • Lights up immediately, when there is an irreversible error in the system

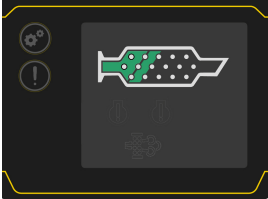
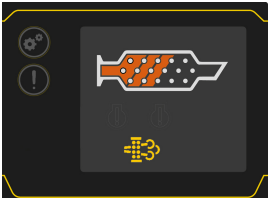
Indication of the load condition

Information

The load condition is shown only in the menu – **DPF-data**.
Indicator lights illuminate automatically.

Menu display	Description
 <p>The image shows four icons labeled A, B, C, and D, each representing a different DPF load condition. Each icon is a stylized representation of a DPF filter with a grid of dots. Icon A shows a white filter with no dots illuminated. Icon B shows a green filter with the left side illuminated. Icon C shows a yellow filter with the left side illuminated. Icon D shows a red filter with the left side illuminated.</p>	<p>DPF loads</p> <ul style="list-style-type: none">A (white): no load conditionB (green): low load conditionC (yellow): medium load conditionD (red): high load condition

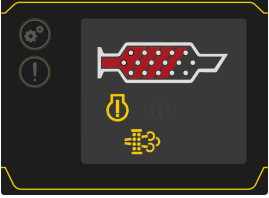
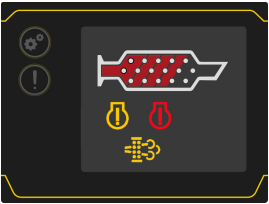
Escalation level

Level	Indication	Description/Measures
<p>1</p>		<p>The system is working smoothly If required, automatic regeneration is carried out by the system in the background. No indicator lights are displayed during that.</p> <p>Measures for the operator: none</p>
<p>2</p>		<p>There is a fault in the system If the vehicle has to be driven through a danger area, turn off ignition and then turn it on again.</p> <p>Measures for the operator: Work with the vehicle. When that is not possible, fold up the joystick base and run the engine.</p>



Information

The indicator lights can be positioned differently depending on the vehicle equipment and display element.
 The indicator lights can illuminate or blink at different speeds.

Level	Menu display	Description/Measures
<div style="text-align: center; font-size: 2em; font-weight: bold; background-color: red; color: white; padding: 5px; width: 40px; margin: 0 auto;">3</div>		<p>There is a serious fault in the system Level 3 is the last chance, to prevent service regeneration. After the engine is started, rpm falls down to the idling speed step by step. The rpm can be increased again, only after carrying out a regeneration. If the vehicle has to be driven through a danger area, turn off ignition and then turn it on again. However, that should only be done in case of an emergency, since that could lead to a need of service regeneration.</p> <p>Measures for the operator: Fold up the joystick base and run the engine.</p>
<div style="text-align: center; font-size: 2em; font-weight: bold; background-color: gray; color: white; padding: 5px; width: 40px; margin: 0 auto;">4</div>		<p>There is an irreversible fault in the system A service regeneration must be carried out or the diesel particulate filter must be replaced. It is not possible to have a higher rpm anymore. The vehicle can only be driven with a lot of limitations.</p> <p>Measures for the operator: Contact a Wacker Neuson service center.</p>



Information

The indicator lights can be positioned differently depending on the vehicle equipment and display element.

The indicator lights can illuminate or blink at different speeds.

The engine warning **and** engine stop **indicator lights** may also illuminate if another fault occurs. This does not depend on the current load.



7.22 Machine preservation

Each vehicle is partly preserved at the plant (for example in the engine compartment). Operation in an aggressive environment (for example salt deposits) is prohibited.



Notes:

8 Malfunctions




8.1 Diesel engine











Information

Troubleshooting may be performed only by a Wacker Neuson service center.

Engine and engine oil indicator lights

Engine warning	Engine stop	Oil pressure	Description
Yellow	Red	Red	Indicator light color
			
On	On	On	All warning and indicator lights illuminate for a few seconds if the starting key is turned to position 1. If the engine stop or oil pressure light does not illuminate, stop vehicle operation immediately and contact a Wacker Neuson service center.
Off	Off	Off	No malfunction.
On	Off	On	Low oil pressure (if the oil pressure indicator light illuminates during operation). Check the oil level and add oil if necessary – see chapter “Adding engine oil” on page 7-37. If the malfunction is still indicated, stop the engine and contact a Wacker Neuson service center.

8.2 Malfunctions (display element/multi-functional display)

Symbol	Description	See
	Engine stop Stop the engine immediately. Contact a Wacker Neuson service center.	--
	General malfunction Stop the engine immediately. Contact a Wacker Neuson service center.	--
	Low Engine Oil Pressure <ul style="list-style-type: none"> Possible electric error. Stop the engine immediately. Contact a Wacker Neuson service center.	--
	Engine malfunction Stop the engine immediately. Contact a Wacker Neuson service center.	--
	Charge indicator light <ul style="list-style-type: none"> Possible defects: battery, alternator or V-belt Note: Increase the engine speed. The electrical system is in working order if the charge indicator light goes out after about one minute. If the malfunction is still indicated, stop the engine immediately and contact a Wacker Neuson service center.	--
	Hydraulic oil temperature too high Check the hydraulic oil level and add oil if necessary. Hydraulic oil cooler dirty; clean hydraulic oil cooler if necessary Note: If the malfunction is still indicated despite having cleaned hydraulic-oil radiator and added oil, stop the engine and contact a Wacker Neuson service center.	7-44, 7-45 7-40
	Replace the hydraulic oil filter Hydraulic oil is cold. If the display persists even when the hydraulic oil is warm, contact the Wacker Neuson service center.	--
	Dirty air filter Stop the engine immediately. Contact a Wacker Neuson service center.	--

- Symbols are listed according to priority.
- Additionally an exclamation mark can appear in the display element or the multifunctional display and a buzzer can sound.

Contact a Wacker Neuson service center in case of malfunctions or signs that are not listed in the following tables or that persist after maintenance has been performed correctly.

Malfunction/sign	Possible cause	Remedy	See
Engine does not start or is not easy to start	Empty fuel tank	Refueling	7-27
	Malfunctioning or empty battery	Replace the battery. Contact a service center.	--
	Malfunctioning fuse	Check the fuse	9-4
Engine starts, but does not run smoothly or faultless	Air in fuel system	Let the engine run	--
	Water in fuel system	Empty the water separator.	7-32
	Wrong diesel fuel	Observe the fuel, lubricants, and coolants list	7-15
Engine overheats	Engine oil level too low	Adding engine oil	7-17
	Dirty radiator fins	Cleaning the radiator	7-40
	Coolant level too low	Adding coolant	7-39
	Malfunctioning or insufficiently tightened V-belt	Contact a service center	--
Insufficient or no engine oil pressure	Engine oil level too low	Adding engine oil	7-17
Black engine smoke	Dirty air filter	Contact a Wacker Neuson service center	--
Blue engine smoke	Engine oil level too high	Contact a Wacker Neuson service center	--
The rpm does not increase for a particular amount of time after starting the engine	The diesel particulate filter is in escalation level 2 or 3.	Observe Chapter Exhaust Gas Treatment	7-53
The torque has reduced	The diesel particulate filter is in escalation level 3 or 4.		
Rpm is reduced gradually			
Rpm cannot be increased			
Shortened DPF regenerations intervals	Avoid regular operation when the engine is cold.	Avoid operation when the engine is cold	7-53
	Regeneration discontinued	Enable regeneration	
	Polluted air filter	Observe Chapter Exhaust Gas Treatment	7-15
	Vehicle is being operated at great heights		
	Incorrect engine oil	Observe the fuel, lubricants, and coolants list	7-15
	Wrong diesel fuel		
Machine pulls to the right or left	Wrong track tension	Tighten tracks correctly	7-50
	Foreign bodies stuck in track	Remove foreign bodies	--
	Uneven wear of the tracks	Contact a Wacker Neuson service center	--
None of the hydraulic functions can be operated	Control lever base raised	Fold down the control lever base	4-39
The working light or horn does not work	Malfunctioning fuse	Check the fuse, check the fuse at the work light	9-4

Malfunction/sign	Possible cause	Remedy	See
Fan does not run	Malfunctioning fuse	Check the fuse	9-4
	Electrical fault	Contact a Wacker Neuson service center	--
Reduced or no cooling capacity	Not enough refrigerant in the system	Contact a Wacker Neuson service center	--
	Malfunctioning V-belt	Contact a Wacker Neuson service center	--
	Dirty condenser	Contact a Wacker Neuson service center	--
	Temperature controller set to heating	Set the temperature controller to cooling	5-17
	Dirty cabin air filter	Clean or replace the cabin air filter	7-48
Reduced heating output or none at all	Malfunctioning thermostat	Contact a Wacker Neuson service center	--
	Temperature controller set to cooling	Set temperature controller to heating	5-17
	Dirty cabin air filter	Clean or replace the cabin air filter	7-48
Loss of refrigerant	Loose hose connection	Contact a Wacker Neuson service center	--
	Leak in system		
Very loud system	Malfunctioning V-belt	Contact a Wacker Neuson service center	--
	Damaged air conditioning compressor		
	Damaged fan motor		
Hydraulic system overheats	Dirty hydraulic oil radiator	Clean the hydraulic oil radiator	7-40
	Hydraulic oil level too low	Adding hydraulic oil	7-45
	Malfunctioning or insufficiently tightened V-belt	Contact a Wacker Neuson service center	--
The display element emits a continuous acoustic warning	The pressure switch of the safe load indicator is defective	Stop the engine. Contact a Wacker Neuson service center	--

Service menu/error messages

Observe the following if an error is displayed in the multi-functional display:

In case of serious errors, stop the vehicle immediately.

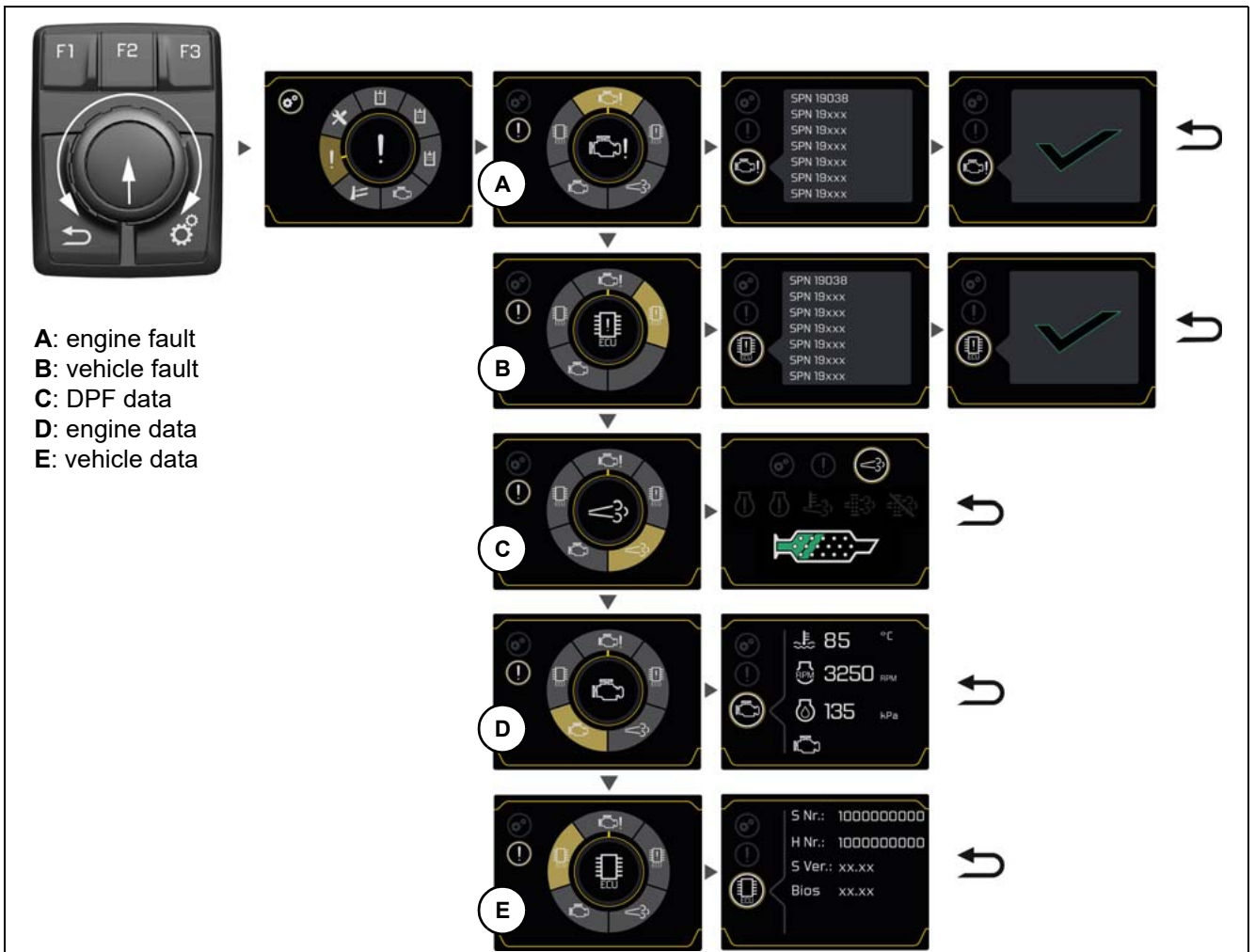
- Engine power is reduced.
- Stop and park the vehicle.
- Contact a Wacker Neuson service center and have the malfunction rectified.

Machine travel and operation is possible in case of minor errors.

- Engine power is not reduced.
- Contact a Wacker Neuson service center and have the malfunction rectified.

i Information

Any faults present appear in the multi-functional display for a few seconds after starting the engine.



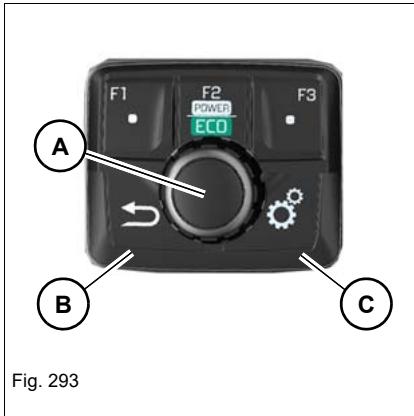


Fig. 293

Performing the adjustments

- Press push button **C** to call the settings.
- The settings are selected (turn) and confirmed (press) with adjustment button **A**.

Push button **B** (return) takes you back to the previous menu level.

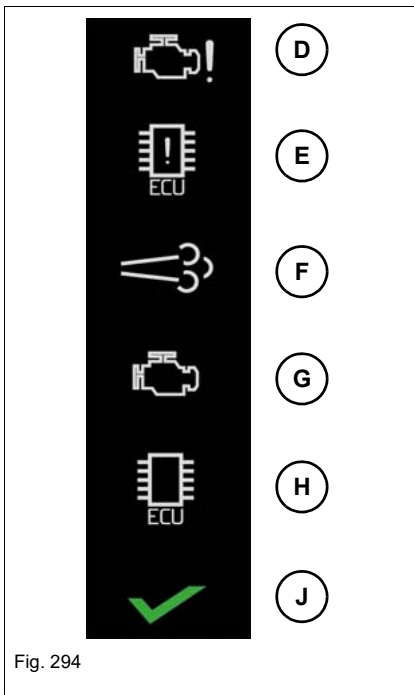


Fig. 294

Symbols

D: Engine fault

E: Vehicle fault

F: DPF data

G: Engine data

H: Machine data

J: No faults

Push button **B** (return): back to previous menu.

9 Technical data

9.1 Models and trade names

– see chapter “Model designations and trade names” on page 3-2

9.2 Engine

Engine ¹	ET42	EZ50
Manufacturer	Perkins	
Type	403J-E17T	
Design	Water-cooled 3-cylinder diesel engine	
Intake system	Turbo-charging	
fuel injection system	Direct	
Engine management	Electronic	
Displacement	1662 cm ³ (101 in ³)	
Nominal bore and stroke	84 x 100 mm (3.3 x 3.9 in)	
Rated output at rated speed	36 kW at 2800 min ⁻¹ 48.3 hp at 2800 rpm	
Engine power at preset maximum engine speed		
ECO	30.3 kW at 1800 min ⁻¹ 40.6 hp at 1800 rpm	
PWR	32.5 kW at 2000 min ⁻¹ 43.6 hp at 2000 rpm	
Max. torque	166.5 Nm at 1600 min ⁻¹ (122 ft.lbs. at 1600 rpm)	
Max. engine speed without load	2800 min ⁻¹ (2800 rpm)	
Max. engine speed without load (ECO)	1800 min ⁻¹ (rpm)	
Max. engine speed without load (PWR)	2000 min ⁻¹ (rpm)	
Lower idling speed	1200 min ⁻¹ (rpm)	
Preheating system	Glow plugs	
Exhaust Aftertreatment	Diesel particulate filter	
Exhaust values according to	EU Stage V, EPA Tier 4 final	

1. Output values can vary by +/- 5%.

9.3 Traveling drive

Travel drive	ET42/EZ50
Version	Axial piston motor

9.4 Brake

See "Drive levers/accelerator pedals"

9.5 Tracks

ET42

Type	Width mm (in)	Ground pressure kg/cm ² (lbs/in ²)	Ground clearance mm (in)
Rubber	350 (13)	0,38 (5.4)	290 (11.4)
Steel	350 (13)	0,39 (5.5)	300 (11.8)

EZ50

Type	Width mm (in)	Ground pressure kg/cm ² (lbs/in ²)	Ground clearance mm (in)
Rubber	400 (15)	0,31 (4.4)	330 (13)
Steel	400 (15)	0,32 (4.5)	330 (13)

9.6 Steering system

See "Drive levers/accelerator pedals"

9.7 Operating hydraulics

Operating hydraulics	ET42	EZ50
Max. operating pressure	245 bar (3553 psi)	245 bar (3553 psi)
Oil flow	90 l/min (23.78 gal/min)	126 l/min (33.3 gal/min)

Maximum speed

Maximum speed	
Speed range 1	2.5 km/h (1.6 mph)
Speed range 2	4.9 km/h (3.0 mph)

9.8 Electrical system

 **WARNING**

Fire hazard in case of incorrect handling of electric components!

Can cause serious injury or death.

- ▶ Use only specified fuses.
 - ▶ Do not repair or bypass fuses.
 - ▶ If a replaced fuse is blown again directly, do not put the vehicle into operation and contact a Wacker Neuson service center.
-

NOTICE

Explosion hazard in case of incorrect handling of fuses.

- ▶ Use only specified fuses.
 - ▶ Do not repair or bypass fuses.
 - ▶ If a replaced fuse is blown again directly, do not put the vehicle into operation and contact a Wacker Neuson service center.
-

Electrical components

Electrical components	
Alternator	12 V/85 A
Starter	12 V/2 kW (2.7 hp)
Battery	12 V/77 Ah

Fuse	Relays	Protected circuits
F001	K005	Preheating
F002	K001	Heating, air conditioning
F003	K002	Vehicle electrical system, lighting, travel signal, horn, radio, window wiper
F004	K007	Starter
F005	--	Engine Controller
F006	--	Machine control unit
F007	--	Fuel-filling pump
F008	--	Blower, heating, air conditioning system
F010	--	Fuel pump
F011	--	Control unit CPU
F012	--	Control unit for ignition
F013	--	Travel signal
F014	--	Electronics
F015	--	Dozer blade, Jog dial, display element
F016	--	Pressure sensors
F017	--	Cab rocker switch
F018	--	Headlight, green rotating beacon
F019	--	Window wiper, interior light, horn, radio
F020	--	12 V power outlet
F021	--	Electronics
F022	--	Ignition, theft protection
F023	--	Actuator for heating, air conditioning system, air conditioning compressor
F024	K012	Air conditioning system blower 1
F025	K013	Air conditioning system blower 2
F026	--	Radio, rotating beacon
--	K011	Air conditioning compressor
--	K042	Engine ECU
--	K076	Ignition electronics
--	K088	Fuel pump
--	K130	Horn
--	K146	Green rotating beacon

Illuminants

Boom light	LED lamp	12V/30W
Front/rear roof lights	LED lamp	12V/30W
Interior light	Festoon lamp	12V/5W
Rotating beacon	LED lamp	12V/9W

Power tilt

	ET42/EZ50
Swiveling range	about 180°

9.9 Tightening torques

General tightening torques

Property class	8.8	10.9	12.9	8.8	10.9
Screw dimensions	Screws according to DIN 912, DIN 931, DIN 933, etc.			Screws according to DIN 7984	
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)
M5	5,5 (4)	8 (6)	10 (7)	5 (4)	7 (5)
M6	10 (7)	14 (10)	17 (13)	8,5 (6)	12 (9)
M8	25 (18)	35 (26)	42 (31)	20 (15)	30 (22)
M10	45 (33)	65 (48)	80 (59)	40 (30)	59 (44)
M12	87 (64)	110 (81)	147 (108)	69 (51)	100 (74)
M14	135 (100)	180 (133)	230 (170)	110 (81)	160 (118)
M16	210 (155)	275 (203)	350 (258)	170 (125)	250 (184)
M18	280 (207)	410 (302)	480 (354)	245 (181)	345 (254)
M20	410 (302)	570 (420)	690 (509)	340 (251)	490 (361)
M22	550 (406)	780 (575)	930 (686)	460 (339)	660 (487)
M24	710 (524)	1000 (738)	1190 (878)	590 (435)	840 (620)
M27	1040 (767)	1480 (1092)	1770 (1305)	870 (642)	1250 (922)
M30	1420 (1047)	2010 (1482)	2400 (1770)	1200 (885)	1700 (1254)

Tightening torques/fine-pitch thread					
Property class	8.8	10.9	12.9	8.8	10.9
Screw dimensions	Screws according to DIN 912, DIN 931, DIN 933, etc.			Screws according to DIN 7984	
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)
M8X1.0	25 (18)	37 (28)	43 (32)	22 (16)	32 (24)
M10X1.0	50 (37)	75 (55)	88 (65)	43 (32)	65 (48)
M10X1.25	49 (36)	71 (52)	83 (61)	42 (31)	62 (46)
M12X1,25	87 (64)	130 (96)	150 (111)	75 (55)	110 (81)
M12X1.5	83 (61)	125 (92)	145 (107)	72 (53)	105 (77)
M14X1.5	135 (100)	200 (148)	235 (173)	120 (89)	175 (129)
M16X1.5	210 (155)	310 (229)	360 (266)	180 (133)	265 (195)
M18X1.5	315 (232)	450 (332)	530 (391)	270 (199)	385 (284)
M20X1.5	440 (325)	630 (465)	730 (538)	375 (277)	530 (391)
M22X1.5	590 (435)	840 (620)	980 (723)	500 (369)	710 (524)
M24X2.0	740 (546)	1070 (789)	1250 (922)	630 (465)	900 (664)
M27X2.0	1100 (811)	1550 (1143)	1800 (1328)	920 (679)	1300 (959)
M30X2.0	1500 (1106)	2150 (1586)	2500 (1844)	1300 (959)	1850 (1364)

9.10 Coolant Compound table

Outside temperature ¹	Distilled water	Coolant ²
Up to °C (°F)	% by volume	% by volume
-30 (-22)	50	50

1. Use the 1:1 concentration for warm outside temperatures, too, to ensure protection against corrosion, cavitation, and deposits.
2. Do not mix the coolant with other coolants.

9.11 Noise emissions

Noise emissions	
Measured sound power level L _{WA} ¹	97 dB(A)
Guaranteed sound power level L _{WA} ¹	97 dB(A)

1. According to ISO 6395 (EC Directives 2000/14/EC and 2005/88/EC)



Information

Measurements performed on asphalted surface.

9.12 Vibrations

Vibrations ¹	
Effective acceleration value for the upper extremities of the body (hand-arm vibration)	< Trigger value < 2.5 m/s ²
Effective acceleration value for the body (whole-body vibration)	< 0.5 m/s ²

1. Uncertainty of measurement as per DIN EN 474-1:2014-03

9.13 Weights

Base vehicle (short stick, canopy, mono boom, rubber track)	ET42 kg (lbs)	EZ50 kg (lbs)
Transport weight ¹	3817 (8415)	4617 (10,179)
Operating weight ²	4032 (8889)	4847 (10,686)

1. Base vehicle + 25% fuel tank capacity

2. Base vehicle + full fuel tank capacity + bucket 600 mm (24 in) + operator (75 kg/165 lbs)



Information

Weight indications can vary by +/- 2%.

Determining the loading weight

The basis for calculating the loading weight is the shipping weight indicated on the vehicle nameplate. Add subsequently installed options and attachments (e.g. bucket, Easy Lock, breaker console) to the shipping weight. Add fuel depending on the tank capacity.

Option ¹	kg (lbs)
Swiveling dozer blade EZ50	216 (476)
Extra weight	200 (441)
Swiveling dozer blade ET42	111 (245)
Cab	100 (220)
Steel track ET42	100 (220)
Steel track EZ50	54 (119)
Front Guard	33 (73)
Air-conditioning system	25 (55)
Long stick	14 (31)
Safe load indicator	14 (31)
Fuel-filling pump	11 (24)
3rd control circuit with proportional controls	11 (24)
Heating	10 (22)
Powertilt preparation	10 (22)
Quickhitch-ready	13 (29)
Shatter protection	8 (18)
Full fuel tank	66 (146)

Attachment – see ["Technical data of the attachments" on page 9-11](#)

1. The weight indications for options exclusively refer to Wacker Neuson original accessories.



Information

The given weights are exemplary. In order to determine the actual weight, the vehicle must be weighed before transportation.



Application areas and application of attachments

WARNING

Accident hazard due to unauthorized attachments!

If unauthorized attachments are used, the vehicle can tip over, which can lead to serious injury or death.

- ▶ Only use attachments released by Wacker Neuson.
-

NOTICE

Machine can be damaged due to unreleased attachments.

- ▶ Only use the attachments specified in the table.
-

Compare the weight of the attachment and its maximum payload with the indications in the relevant lift capacity table or load diagram. Never exceed the maximum payload stated in the lift capacity table or load diagram.

Information

Please refer to the Operator's Manual and maintenance manual of the attachment manufacturer for operating and maintenance instructions for attachments such as hammers, grabs, hydraulic quickhitches, etc.

Technical data of the attachments

The specified weights are exemplary and only serve as a guide. The actual weight may be lower or higher. In order to determine the actual weight, the attachment must be weighed.

Not all attachments are available for every vehicle.

There may be additional bucket widths that are not specified in this operator's manual.

Only use attachments released by Wacker Neuson. For more information, contact a Wacker Neuson sales partner.

Observe the national and regional regulations.

Vehicle class 3-5 tonnes		
Bucket	Width mm (in)	Weight kg (lbs)
Bucket	300 (12)	60-80 (135-180)
	400 (16)	65-110 (145-245)
	500 (20)	75-125 (170-280)
	600 (24)	85-160 (190-355)
	700 (28)	95-190 (210-420)
	800 (31)	105-190 (235-420)
Ditch cleaning bucket	1000 (39)	95-120 (210-235)
	1200 (47)	110-135 (245-300)
	1400 (55)	120-150 (235-335)
Offset bucket	850 (33)	145-170 (320-375)
	1000 (39)	150-180 (335-400)
	1200 (47)	155-190 (345-420)

Accessories of the vehicle class 3-5 tonnes	Weight kg (lbs)
Consoles (Easy Lock, Lehnhoff system, etc.)	30-60 (70-135)
Hydraulic hammer	150-260 (335-575)
Powertilt (consoles; with Easy Lock etc.)	70-150 (155-335)

Excavation power

ET42	kN (lbf)
Max. tearout force (short stick)	21 (4721)
Max. tearout force (long stick)	19,3 (4339)
Max. breakout force (at bucket tooth) ¹	28,2 (6340)
Max. breakout force (at bucket tooth) ²	29,9 (6722)

EZ50	kN (lbf)
Max. tearout force (short stick)	24,8 (5576)
Max. tearout force (long stick)	22,6 (5081)
Max. breakout force (at bucket tooth) ¹	29,3 (6587)
Max. breakout force (at bucket tooth) ²	31,2 (7014)

1. According to DIN 24086
2. According to ISO 6015

9.14 Lift capacity/load

Safety instructions lift capacity tables

Observe the values of the lift capacity tables in normal operation (for example excavating).

Observe the values of the load diagrams in lifting gear applications.

 **DANGER**

Crushing hazard due to tipping over of vehicle!

The vehicle causes serious injury or death when it tips over.

- ▶ The weight of the attachment and load must be subtracted from the weight specified in the corresponding column in the table.
- ▶ Pay attention to the density of the load.
- ▶ Do not exceed the weights indicated in the lift capacity tables.

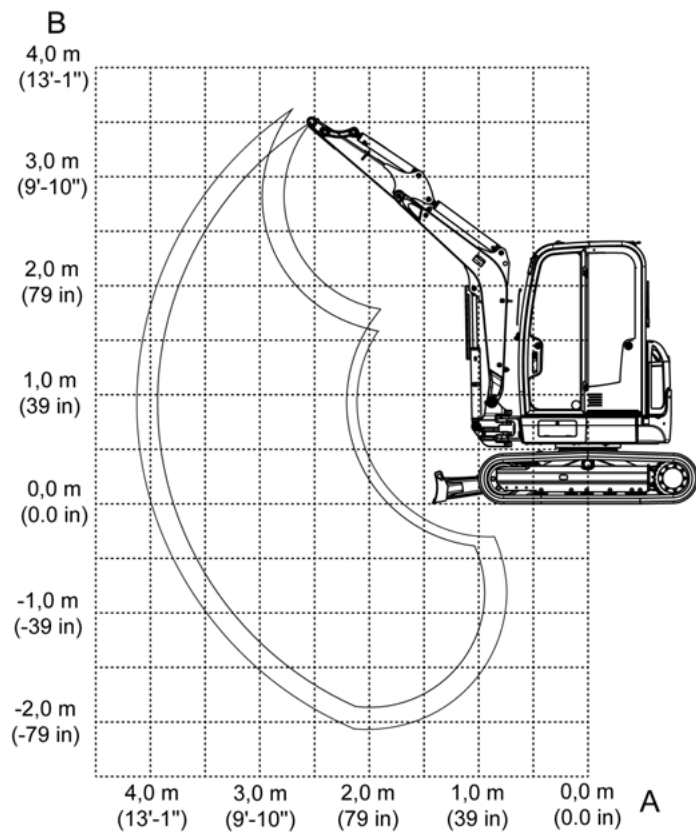
NOTICE

If the weight is exceeded, there is a risk of damage to property if the vehicle tips over.

- ▶ Do not exceed the weights indicated in the load diagrams.

 **Information**

The indications are only approximate values. Uneven ground or poor ground conditions affect vehicle stability. The operator must take these influences into account.



Description	Explanation
A	Reach from live ring center
B	Load hook height
max	Authorized lift capacity with horizontal boom
I	Vehicle in travel direction, front dozer blade, dozer blade down, loss of dozer blade contact with ground
II	Vehicle 90° to travel direction, dozer blade up
III	Vehicle in travel direction, front dozer blade, dozer blade up, loss of front axle contact with ground
IV	Vehicle in travel direction, rear dozer blade, dozer blade up, loss of front axle contact with ground

All table values are specified in kg (lbs), in horizontal position on firm and level ground without bucket or attachment (for example a hammer).

The vehicle's lift capacity is restricted by the settings of the pressure limiting valves, the hydraulic output and the hydraulic system's stabilizing features.

Neither 75% of the static tilt load nor 87% of the hydraulic lift capacity is exceeded.

Calculation basis according to ISO 10567

Setting pressure on boom cylinder: 24,500 kPa (3553 psi)

The lift capacity applies to vehicles under the following conditions:

- Lubricants and engine/vehicle fluids at the mandatory levels
- Full fuel tank
- Cab
- Machine at operating temperature
- Operator weight 75 kg (165 lbs)

Lift capacity tables ET42

01 Rubber track/short stick

A B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	962	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,120)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	710	775	885	930	672	734	839
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,566)	(1,710)	(1,951)	(2,051)	(1,481)	(1,617)	(1,849)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1076	1155	1155	971	696	761	870	935	570	622	716
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,373)	(2,547)	(2,547)	(2,141)	(1,534)	(1,677)	(1,918)	(2,062)	(1,257)	(1,372)	(1,578)
1 m	-	-	-	-	-	-	-	-	1508	1007	1117	1276	1091	669	733	843	957	536	586	676
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,221)	(2,462)	(2,814)	(2,407)	(1,476)	(1,617)	(1,858)	(2,111)	(1,182)	(1,291)	(1,491)
0 m	-	-	-	-	3025	1779	2052	2347	1696	964	1072	1231	1165	649	713	822	987	550	602	696
(0' - 0")	-	-	-	-	(6,669)	(3,923)	(4,524)	(5,175)	(3,740)	(2,126)	(2,363)	(2,715)	(2,568)	(1,431)	(1,571)	(1,813)	(2,177)	(1,213)	(1,328)	(1,535)
-1 m	-	-	-	-	2666	1792	2065	2360	1620	956	1063	1223	1067	648	711	821	1013	629	690	797
-(3' - 3")	-	-	-	-	(5,878)	(3,950)	(4,553)	(5,204)	(3,573)	(2,108)	(2,345)	(2,697)	(2,352)	(1,428)	(1,568)	(1,810)	(2,233)	(1,388)	(1,522)	(1,757)
-2 m	-	-	-	-	-	-	-	-	1151	983	1092	1151	-	-	-	-	980	890	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,168)	(2,407)	(2,537)	-	-	-	-	(2,160)	(1,962)	(2,160)	(2,160)

02 Rubber track/long stick

A B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	844	889	889
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,862)	(1,960)	(1,960)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	711	777	836	864	616	673	771
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,569)	(1,714)	(1,844)	(1,904)	(1,358)	(1,483)	(1,701)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	693	758	868	873	529	577	666
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,528)	(1,672)	(1,914)	(1,924)	(1,166)	(1,273)	(1,469)
1 m	-	-	-	-	-	-	-	-	1427	1008	1118	1277	1046	664	729	838	896	498	545	631
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,222)	(2,465)	(2,817)	(2,307)	(1,464)	(1,607)	(1,848)	(1,976)	(1,099)	(1,202)	(1,392)
0 m	-	-	-	-	3065	1763	2035	2330	1663	956	1064	1224	1145	640	704	813	927	510	558	647
(0' - 0")	-	-	-	-	(6,759)	(3,886)	(4,486)	(5,138)	(3,667)	(2,109)	(2,347)	(2,699)	(2,524)	(1,412)	(1,552)	(1,794)	(2,044)	(1,124)	(1,231)	(1,427)
-1 m	-	-	-	-	2788	1766	2039	2334	1643	942	1049	1209	1102	633	697	806	957	575	631	730
-(3' - 3")	-	-	-	-	(6,149)	(3,895)	(4,495)	(5,146)	(3,623)	(2,076)	(2,313)	(2,665)	(2,431)	(1,397)	(1,537)	(1,778)	(2,110)	(1,267)	(1,391)	(1,610)
-2 m	-	-	-	-	2104	1806	2082	2104	1288	961	1069	1228	-	-	-	-	952	774	854	952
-(6' - 7")	-	-	-	-	(4,640)	(3,982)	(4,591)	(4,640)	(2,840)	(2,118)	(2,356)	(2,709)	-	-	-	-	(2,100)	(1,706)	(1,882)	(2,100)

03 Rubber track/additional weight/short stick

A B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,145)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	806	880	917	930	765	833	930
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,778)	(1,940)	(2,023)	(2,051)	(1,686)	(1,838)	(2,051)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1155	1155	1155	971	792	865	971	935	653	711	804
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,547)	(2,547)	(2,547)	(2,141)	(1,746)	(1,907)	(2,141)	(2,062)	(1,439)	(1,568)	(1,773)
1 m	-	-	-	-	-	-	-	-	1508	1147	1270	1428	1091	766	838	947	957	616	672	762
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,529)	(2,800)	(3,150)	(2,407)	(1,688)	(1,847)	(2,087)	(2,111)	(1,359)	(1,481)	(1,680)
0 m	-	-	-	-	3025	2032	2339	2633	1696	1104	1225	1384	1165	745	817	926	987	633	691	785
(0' - 0")	-	-	-	-	(6,669)	(4,481)	(5,158)	(5,805)	(3,740)	(2,434)	(2,700)	(3,051)	(2,568)	(1,644)	(1,801)	(2,041)	(2,177)	(1,396)	(1,524)	(1,731)
-1 m	-	-	-	-	2666	2045	2353	2646	1620	1096	1216	1375	1067	744	815	924	1013	723	791	897
-(3' - 3")	-	-	-	-	(5,878)	(4,508)	(5,188)	(5,834)	(3,573)	(2,416)	(2,682)	(3,032)	(2,352)	(1,641)	(1,798)	(2,038)	(2,233)	(1,594)	(1,745)	(1,979)
-2 m	-	-	-	-	-	-	-	-	1151	1123	1151	1151	-	-	-	-	980	980	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,476)	(2,537)	(2,537)	-	-	-	-	(2,160)	(2,160)	(2,160)	(2,160)

04 Rubber track/additional weight/long stick

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	889	889	889	
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,960)	(1,960)	(1,960)	
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	808	836	836	864	703	766	864
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,781)	(1,844)	(1,844)	(1,904)	(1,550)	(1,690)	(1,904)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	790	863	910	873	607	662	750
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,741)	(1,902)	(2,007)	(1,924)	(1,339)	(1,459)	(1,655)
1 m	-	-	-	-	-	-	-	-	1427	1147	1271	1427	1046	761	833	942	896	575	627	713
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,530)	(2,802)	(3,148)	(2,307)	(1,677)	(1,836)	(2,076)	(1,976)	(1,267)	(1,382)	(1,572)
0 m	-	-	-	-	3065	2016	2322	2616	1663	1096	1217	1376	1145	737	808	917	927	588	643	732
(0' - 0")	-	-	-	-	(6,759)	(4,444)	(5,121)	(5,767)	(3,667)	(2,417)	(2,684)	(3,034)	(2,524)	(1,624)	(1,782)	(2,022)	(2,044)	(1,298)	(1,417)	(1,613)
-1 m	-	-	-	-	2788	2019	2326	2620	1643	1081	1202	1361	1102	730	801	910	957	663	725	825
-(3' - 3")	-	-	-	-	(6,149)	(4,453)	(5,129)	(5,776)	(3,623)	(2,384)	(2,650)	(3,001)	(2,431)	(1,609)	(1,766)	(2,007)	(2,110)	(1,461)	(1,600)	(1,818)
-2 m	-	-	-	-	2104	2059	2104	2104	1288	1100	1222	1288	-	-	-	-	952	887	952	952
-(6' - 7")	-	-	-	-	(4,640)	(4,540)	(4,640)	(4,640)	(2,840)	(2,426)	(2,694)	(2,840)	-	-	-	-	(2,100)	(1,956)	(2,100)	(2,100)

05 Steel track/short stick

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	949	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,092)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	702	791	912	930	664	749	865
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,548)	(1,745)	(2,011)	(2,051)	(1,465)	(1,651)	(1,906)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1061	1155	1155	971	688	776	897	935	564	636	739
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,339)	(2,547)	(2,547)	(2,141)	(1,516)	(1,712)	(1,978)	(2,062)	(1,244)	(1,402)	(1,629)
1 m	-	-	-	-	-	-	-	-	1508	992	1139	1316	1091	661	749	870	957	530	599	699
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,187)	(2,511)	(2,902)	(2,407)	(1,459)	(1,652)	(1,918)	(2,111)	(1,170)	(1,321)	(1,540)
0 m	-	-	-	-	3025	1736	2087	2422	1696	949	1094	1271	1165	641	729	849	987	544	616	719
(0' - 0")	-	-	-	-	(6,669)	(3,829)	(4,602)	(5,340)	(3,740)	(2,094)	(2,412)	(2,803)	(2,568)	(1,414)	(1,607)	(1,872)	(2,177)	(1,200)	(1,359)	(1,586)
-1 m	-	-	-	-	2666	1748	2100	2435	1620	942	1086	1263	1067	640	727	848	1013	622	706	823
-(3' - 3")	-	-	-	-	(5,878)	(3,855)	(4,631)	(5,369)	(3,573)	(2,076)	(2,394)	(2,784)	(2,352)	(1,412)	(1,604)	(1,869)	(2,233)	(1,372)	(1,557)	(1,815)
-2 m	-	-	-	-	-	-	-	-	1151	968	1114	1151	-	-	-	-	980	877	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,135)	(2,456)	(2,537)	-	-	-	-	(2,160)	(1,934)	(2,160)	(2,160)

06 Steel track/long stick

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	834	889	889	
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,839)	(1,960)	(1,960)	
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	703	793	836	864	609	687	796
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,551)	(1,749)	(1,844)	(1,904)	(1,344)	(1,515)	(1,754)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	685	774	895	873	523	591	688
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,511)	(1,708)	(1,973)	(1,924)	(1,154)	(1,302)	(1,518)
1 m	-	-	-	-	-	-	-	-	1427	992	1140	1317	1046	656	745	865	896	493	558	653
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,188)	(2,513)	(2,904)	(2,307)	(1,447)	(1,642)	(1,907)	(1,976)	(1,088)	(1,230)	(1,439)
0 m	-	-	-	-	3065	1720	2070	2404	1663	942	1086	1264	1145	633	720	840	927	504	571	669
(0' - 0")	-	-	-	-	(6,759)	(3,792)	(4,564)	(5,302)	(3,667)	(2,076)	(2,396)	(2,786)	(2,524)	(1,395)	(1,588)	(1,853)	(2,044)	(1,112)	(1,260)	(1,476)
-1 m	-	-	-	-	2788	1723	2074	2408	1643	927	1071	1248	1102	626	713	833	957	568	646	755
-(3' - 3")	-	-	-	-	(6,149)	(3,800)	(4,573)	(5,311)	(3,623)	(2,045)	(2,362)	(2,753)	(2,431)	(1,380)	(1,572)	(1,838)	(2,110)	(1,253)	(1,423)	(1,665)
-2 m	-	-	-	-	2104	1762	2104	2104	1288	946	1091	1268	-	-	-	-	952	764	872	952
-(6' - 7")	-	-	-	-	(4,640)	(3,886)	(4,640)	(4,640)	(2,840)	(2,086)	(2,405)	(2,796)	-	-	-	-	(2,100)	(1,684)	(1,923)	(2,100)

07 Steel track/additional weight/short stick

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m (13' - 1")	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
3 m (9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	917	796	895	917	930	755	848	930
2 m (6' - 7")	-	-	-	-	1736	1736	1736	1736	1155	1155	1155	1155	971	782	880	971	935	645	724	827
1 m (3' - 3")	-	-	-	-	(3.827)	(3.827)	(3.827)	(3.827)	(2.547)	(2.547)	(2.547)	(2.547)	(2.141)	(1.724)	(1.940)	(2.141)	(2.062)	(1.422)	(1.597)	(1.824)
0 m (0' - 0")	-	-	-	-	-	-	-	-	1508	1128	1291	1468	1091	756	853	974	957	609	685	784
-1 m (-3' - 3")	-	-	-	-	-	-	-	-	(3.324)	(2.488)	(2.846)	(3.237)	(2.407)	(1.667)	(1.881)	(2.147)	(2.111)	(1.343)	(1.510)	(1.729)
-2 m (-6' - 7")	-	-	-	-	(5.878)	(4.395)	(5.259)	(5.878)	(3.573)	(2.377)	(2.729)	(3.120)	(2.352)	(1.620)	(1.832)	(2.098)	(2.233)	(1.574)	(1.778)	(2.036)
	-	-	-	-	-	-	-	-	1151	1105	1151	1151	-	-	-	-	980	980	980	980
	-	-	-	-	-	-	-	-	(2.537)	(2.436)	(2.537)	(2.537)	-	-	-	-	(2.160)	(2.160)	(2.160)	(2.160)

08 Steel track/additional weight/long stick

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m (13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	889	889	889
3 m (9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	836	798	836	836	864	695	780	864
2 m (6' - 7")	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	780	878	910	873	600	675	772
1 m (3' - 3")	-	-	-	-	-	-	-	-	(2.324)	(2.324)	(2.324)	(2.324)	(2.007)	(1.719)	(1.936)	(2.007)	(1.924)	(1.324)	(1.487)	(1.703)
0 m (0' - 0")	-	-	-	-	-	-	-	-	1427	1129	1292	1427	1046	751	848	969	896	568	639	734
-1 m (-3' - 3")	-	-	-	-	-	-	-	-	(3.148)	(2.489)	(2.848)	(3.148)	(2.307)	(1.656)	(1.870)	(2.136)	(1.976)	(1.253)	(1.410)	(1.619)
-2 m (-6' - 7")	-	-	-	-	3065	1964	2355	2690	1663	1078	1238	1416	1145	727	823	944	927	582	656	754
	-	-	-	-	(6.759)	(4.331)	(5.192)	(5.932)	(3.667)	(2.377)	(2.730)	(3.122)	(2.524)	(1.603)	(1.816)	(2.082)	(2.044)	(1.282)	(1.446)	(1.662)
	-	-	-	-	2788	1968	2359	2694	1643	1064	1223	1401	1102	720	816	937	957	654	740	849
	-	-	-	-	(6.149)	(4.339)	(5.201)	(5.941)	(3.623)	(2.345)	(2.697)	(3.088)	(2.431)	(1.588)	(1.800)	(2.066)	(2.110)	(1.443)	(1.631)	(1.872)
	-	-	-	-	2104	2007	2104	2104	1288	1082	1243	1288	-	-	-	-	952	874	952	952
	-	-	-	-	(4.640)	(4.425)	(4.640)	(4.640)	(2.840)	(2.386)	(2.740)	(2.840)	-	-	-	-	(2.100)	(1.928)	(2.100)	(2.100)

09 Rubber track/short stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m (13' - 1")	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
3 m (9' - 10")	-	-	-	-	-	-	-	-	(2.029)	(2.029)	(2.029)	(2.029)	-	-	-	-	(2.145)	(2.145)	(2.145)	(2.145)
2 m (6' - 7")	-	-	-	-	-	-	-	-	-	-	-	-	917	731	763	917	930	692	722	896
1 m (3' - 3")	-	-	-	-	-	-	-	-	-	-	-	-	(2.023)	(1.611)	(1.684)	(2.023)	(2.051)	(1.525)	(1.592)	(1.975)
0 m (0' - 0")	-	-	-	-	1736	1736	1736	1736	1155	1106	1155	1155	971	716	749	929	935	588	612	766
-1 m (-3' - 3")	-	-	-	-	(3.827)	(3.827)	(3.827)	(3.827)	(2.547)	(2.439)	(2.547)	(2.547)	(2.141)	(1.579)	(1.651)	(2.049)	(2.062)	(1.296)	(1.349)	(1.690)
-2 m (-6' - 7")	-	-	-	-	-	-	-	-	1508	1037	1099	1364	1091	690	721	902	957	553	576	725
	-	-	-	-	-	-	-	-	(3.324)	(2.286)	(2.423)	(3.007)	(2.407)	(1.521)	(1.591)	(1.990)	(2.111)	(1.220)	(1.269)	(1.600)
	-	-	-	-	3025	1833	2019	2511	1696	994	1054	1319	1165	670	701	882	987	568	592	747
	-	-	-	-	(6.669)	(4.042)	(4.451)	(5.537)	(3.740)	(2.191)	(2.324)	(2.908)	(2.568)	(1.476)	(1.545)	(1.944)	(2.177)	(1.252)	(1.305)	(1.647)
	-	-	-	-	2666	1845	2032	2524	1620	986	1046	1310	1067	668	699	880	1013	649	679	854
	-	-	-	-	(5.878)	(4.069)	(4.480)	(5.566)	(3.573)	(2.174)	(2.306)	(2.889)	(2.352)	(1.474)	(1.542)	(1.941)	(2.233)	(1.432)	(1.497)	(1.884)
	-	-	-	-	-	-	-	-	1151	1013	1074	1151	-	-	-	-	980	917	968	980
	-	-	-	-	-	-	-	-	(2.537)	(2.234)	(2.368)	(2.537)	-	-	-	-	(2.160)	(2.021)	(2.134)	(2.160)

10 Rubber track/long stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	868	889	889
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,914)	(1,960)	(1,960)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	732	765	836	864	635	662	825
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,614)	(1,687)	(1,844)	(1,904)	(1,399)	(1,459)	(1,819)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	714	746	910	873	545	568	715
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,574)	(1,646)	(2,007)	(1,924)	(1,203)	(1,252)	(1,576)
1 m	-	-	-	-	-	-	-	-	1427	1037	1100	1365	1046	685	717	897	896	515	536	678
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,287)	(2,426)	(3,009)	(2,307)	(1,510)	(1,580)	(1,979)	(1,976)	(1,135)	(1,181)	(1,495)
0 m	-	-	-	-	3065	1816	2001	2494	1663	986	1047	1311	1145	661	692	873	927	526	548	696
(0' - 0")	-	-	-	-	(6,759)	(4,005)	(4,413)	(5,499)	(3,667)	(2,174)	(2,308)	(2,891)	(2,524)	(1,457)	(1,526)	(1,925)	(2,044)	(1,161)	(1,209)	(1,534)
-1 m	-	-	-	-	2788	1820	2005	2498	1643	971	1031	1296	1102	654	685	866	957	593	620	784
-(3' - 3")	-	-	-	-	(6,149)	(4,013)	(4,422)	(5,508)	(3,623)	(2,142)	(2,274)	(2,858)	(2,431)	(1,442)	(1,510)	(1,909)	(2,110)	(1,309)	(1,367)	(1,730)
-2 m	-	-	-	-	2104	1860	2049	2104	1288	990	1051	1288	-	-	-	-	952	798	840	952
-(6' - 7")	-	-	-	-	(4,640)	(4,101)	(4,517)	(4,640)	(2,840)	(2,184)	(2,318)	(2,840)	-	-	-	-	(2,100)	(1,759)	(1,851)	(2,100)

11 Rubber track/additional weight/short stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,145)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	827	868	917	930	784	822	930
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,824)	(1,913)	(2,023)	(2,051)	(1,729)	(1,812)	(2,051)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1155	1155	1155	971	813	853	971	935	670	701	855
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,547)	(2,547)	(2,547)	(2,141)	(1,792)	(1,880)	(2,141)	(2,062)	(1,478)	(1,545)	(1,885)
1 m	-	-	-	-	-	-	-	-	1508	1176	1252	1508	1091	786	826	1006	957	633	662	811
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,594)	(2,761)	(3,324)	(2,407)	(1,734)	(1,820)	(2,218)	(2,111)	(1,396)	(1,459)	(1,789)
0 m	-	-	-	-	3025	2086	2306	2797	1696	1133	1207	1471	1165	766	805	985	987	651	681	836
(0' - 0")	-	-	-	-	(6,669)	(4,600)	(5,085)	(6,166)	(3,740)	(2,499)	(2,661)	(3,243)	(2,568)	(1,689)	(1,774)	(2,172)	(2,177)	(1,435)	(1,502)	(1,843)
-1 m	-	-	-	-	2666	2098	2319	2666	1620	1125	1199	1463	1067	765	803	984	1013	743	780	955
-(3' - 3")	-	-	-	-	(5,878)	(4,627)	(5,114)	(5,878)	(3,573)	(2,482)	(2,643)	(3,225)	(2,352)	(1,686)	(1,771)	(2,169)	(2,233)	(1,638)	(1,719)	(2,106)
-2 m	-	-	-	-	-	-	-	-	1151	1151	1151	1151	-	-	-	-	980	980	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,537)	(2,537)	(2,537)	-	-	-	-	(2,160)	(2,160)	(2,160)	(2,160)

12 Rubber track/additional weight/long stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	889	889	889
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,960)	(1,960)	(1,960)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	828	836	836	864	722	756	864
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,827)	(1,844)	(1,844)	(1,904)	(1,591)	(1,666)	(1,904)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	810	851	910	873	624	652	799
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,786)	(1,876)	(2,007)	(1,924)	(1,376)	(1,438)	(1,761)
1 m	-	-	-	-	-	-	-	-	1427	1177	1253	1427	1046	781	821	1001	896	591	617	760
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,595)	(2,763)	(3,148)	(2,307)	(1,722)	(1,810)	(2,208)	(1,976)	(1,303)	(1,362)	(1,675)
0 m	-	-	-	-	3065	2069	2289	2780	1663	1126	1199	1463	1145	757	796	977	927	605	633	780
(0' - 0")	-	-	-	-	(6,759)	(4,563)	(5,047)	(6,129)	(3,667)	(2,482)	(2,645)	(3,227)	(2,524)	(1,670)	(1,755)	(2,153)	(2,044)	(1,335)	(1,396)	(1,720)
-1 m	-	-	-	-	2788	2073	2293	2784	1643	1111	1184	1448	1102	750	789	970	957	681	714	879
-(3' - 3")	-	-	-	-	(6,149)	(4,571)	(5,056)	(6,138)	(3,623)	(2,450)	(2,611)	(3,193)	(2,431)	(1,655)	(1,740)	(2,138)	(2,110)	(1,502)	(1,575)	(1,937)
-2 m	-	-	-	-	2104	2104	2104	2104	1288	1130	1204	1288	-	-	-	-	952	911	952	952
-(6' - 7")	-	-	-	-	(4,640)	(4,640)	(4,640)	(4,640)	(2,840)	(2,492)	(2,655)	(2,840)	-	-	-	-	(2,100)	(2,009)	(2,100)	(2,100)

13 Steel track/short stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,145)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	722	779	917	930	683	737	922
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,591)	(1,718)	(2,023)	(2,051)	(1,507)	(1,625)	(2,032)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1089	1155	1155	971	707	764	956	935	581	626	790
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,401)	(2,547)	(2,547)	(2,141)	(1,560)	(1,685)	(2,109)	(2,062)	(1,281)	(1,379)	(1,741)
1 m	-	-	-	-	-	-	-	-	1508	1020	1121	1403	1091	681	737	929	957	547	589	748
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,250)	(2,472)	(3,094)	(2,407)	(1,502)	(1,626)	(2,049)	(2,111)	(1,206)	(1,299)	(1,649)
0 m	-	-	-	-	3025	1787	2053	2585	1696	978	1076	1358	1165	661	716	909	987	561	606	770
(0' - 0")	-	-	-	-	(6,669)	(3,941)	(4,528)	(5,701)	(3,740)	(2,156)	(2,373)	(2,995)	(2,568)	(1,458)	(1,580)	(2,003)	(2,177)	(1,238)	(1,335)	(1,699)
-1 m	-	-	-	-	2666	1799	2067	2599	1620	970	1068	1350	1067	660	715	907	1013	641	694	881
-(3' - 3")	-	-	-	-	(5,878)	(3,968)	(4,557)	(5,730)	(3,573)	(2,139)	(2,354)	(2,977)	(2,352)	(1,455)	(1,577)	(2,000)	(2,233)	(1,414)	(1,531)	(1,942)
-2 m	-	-	-	-	-	-	-	-	1151	997	1096	1151	-	-	-	-	980	903	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,198)	(2,417)	(2,537)	-	-	-	-	(2,160)	(1,991)	(2,160)	(2,160)

14 Steel track/long stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	856	889	889
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,888)	(1,960)	(1,960)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	723	781	836	864	627	676	849
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,594)	(1,722)	(1,844)	(1,904)	(1,383)	(1,491)	(1,872)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	705	762	910	873	539	581	736
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,554)	(1,681)	(2,007)	(1,924)	(1,189)	(1,281)	(1,624)
1 m	-	-	-	-	-	-	-	-	1427	1021	1122	1404	1046	676	732	925	896	509	548	699
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,251)	(2,474)	(3,097)	(2,307)	(1,491)	(1,615)	(2,039)	(1,976)	(1,122)	(1,209)	(1,542)
0 m	-	-	-	-	3065	1771	2036	2568	1663	970	1069	1351	1145	652	708	900	927	520	561	718
(0' - 0")	-	-	-	-	(6,759)	(3,904)	(4,490)	(5,663)	(3,667)	(2,139)	(2,356)	(2,979)	(2,524)	(1,438)	(1,561)	(1,984)	(2,044)	(1,147)	(1,238)	(1,583)
-1 m	-	-	-	-	2788	1774	2040	2572	1643	956	1053	1336	1102	646	701	893	957	586	634	809
-(3' - 3")	-	-	-	-	(6,149)	(3,912)	(4,499)	(5,672)	(3,623)	(2,107)	(2,323)	(2,945)	(2,431)	(1,423)	(1,545)	(1,969)	(2,110)	(1,293)	(1,399)	(1,784)
-2 m	-	-	-	-	2104	1813	2083	2104	1288	974	1073	1288	-	-	-	-	952	787	858	952
-(6' - 7")	-	-	-	-	(4,640)	(3,998)	(4,594)	(4,640)	(2,840)	(2,148)	(2,366)	(2,840)	-	-	-	-	(2,100)	(1,734)	(1,891)	(2,100)

15 Steel track/additional weight/short stick/swiveling dozer blade

A \ B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	920	920	920	920	-	-	-	-	973	973	973	973
(13' - 1")	-	-	-	-	-	-	-	-	(2,029)	(2,029)	(2,029)	(2,029)	-	-	-	-	(2,145)	(2,145)	(2,145)	(2,145)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	917	794	857	917	930	753	812	930
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(2,023)	(1,751)	(1,891)	(2,023)	(2,051)	(1,660)	(1,791)	(2,051)
2 m	-	-	-	-	1736	1736	1736	1736	1155	1155	1155	1155	971	780	843	971	935	643	692	850
(6' - 7")	-	-	-	-	(3,827)	(3,827)	(3,827)	(3,827)	(2,547)	(2,547)	(2,547)	(2,547)	(2,141)	(1,720)	(1,858)	(2,141)	(2,062)	(1,418)	(1,527)	(1,875)
1 m	-	-	-	-	-	-	-	-	1508	1125	1236	1508	1091	754	815	1001	957	607	654	807
(3' - 3")	-	-	-	-	-	-	-	-	(3,324)	(2,481)	(2,725)	(3,324)	(2,407)	(1,662)	(1,798)	(2,207)	(2,111)	(1,339)	(1,442)	(1,779)
0 m	-	-	-	-	3025	1975	2269	2782	1696	1083	1191	1463	1165	734	795	980	987	624	673	831
(0' - 0")	-	-	-	-	(6,669)	(4,355)	(5,003)	(6,134)	(3,740)	(2,387)	(2,626)	(3,226)	(2,568)	(1,618)	(1,752)	(2,161)	(2,177)	(1,376)	(1,483)	(1,833)
-1 m	-	-	-	-	2666	1987	2282	2666	1620	1075	1183	1455	1067	732	793	979	1013	712	770	950
-(3' - 3")	-	-	-	-	(5,878)	(4,382)	(5,032)	(5,878)	(3,573)	(2,370)	(2,608)	(3,208)	(2,352)	(1,615)	(1,749)	(2,158)	(2,233)	(1,569)	(1,698)	(2,095)
-2 m	-	-	-	-	-	-	-	-	1151	1102	1151	1151	-	-	-	-	980	980	980	980
-(6' - 7")	-	-	-	-	-	-	-	-	(2,537)	(2,429)	(2,537)	(2,537)	-	-	-	-	(2,160)	(2,160)	(2,160)	(2,160)



16 Steel track/additional weight/long stick/swiveling dozer blade

A B	1 m (3' - 3")				2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	889	889	889
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,960)	(1,960)	(1,960)	(1,960)
3 m	-	-	-	-	-	-	-	-	-	-	-	-	836	795	836	836	864	693	747	864
(9' - 10")	-	-	-	-	-	-	-	-	-	-	-	-	(1,844)	(1,754)	(1,844)	(1,844)	(1,904)	(1,527)	(1,646)	(1,904)
2 m	-	-	-	-	-	-	-	-	1054	1054	1054	1054	910	777	840	910	873	598	644	794
(6' - 7")	-	-	-	-	-	-	-	-	(2,324)	(2,324)	(2,324)	(2,324)	(2,007)	(1,714)	(1,853)	(2,007)	(1,924)	(1,320)	(1,421)	(1,751)
1 m	-	-	-	-	-	-	-	-	1427	1125	1237	1427	1046	749	811	996	896	566	610	756
(3' - 3")	-	-	-	-	-	-	-	-	(3,148)	(2,482)	(2,727)	(3,148)	(2,307)	(1,651)	(1,788)	(2,196)	(1,976)	(1,249)	(1,345)	(1,666)
0 m	-	-	-	-	3065	1959	2252	2765	1663	1075	1183	1456	1145	725	786	971	927	580	625	776
(0' - 0")	-	-	-	-	(6,759)	(4,319)	(4,965)	(6,097)	(3,667)	(2,370)	(2,609)	(3,210)	(2,524)	(1,598)	(1,733)	(2,142)	(2,044)	(1,278)	(1,379)	(1,711)
-1 m	-	-	-	-	2788	1962	2256	2769	1643	1060	1168	1440	1102	718	779	964	957	652	706	874
-(3' - 3")	-	-	-	-	(6,149)	(4,327)	(4,974)	(6,105)	(3,623)	(2,338)	(2,576)	(3,176)	(2,431)	(1,583)	(1,718)	(2,126)	(2,110)	(1,439)	(1,556)	(1,927)
-2 m	-	-	-	-	2104	2001	2104	2104	1288	1079	1188	1288	-	-	-	-	952	872	950	952
-(6' - 7")	-	-	-	-	(4,640)	(4,413)	(4,640)	(4,640)	(2,840)	(2,379)	(2,619)	(2,840)	-	-	-	-	(2,100)	(1,922)	(2,095)	(2,100)

Lift capacity tables EZ50

17 Rubber track/short stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max						
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV			
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	891	984	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(1,964)	(2,170)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	833	919	1008	-	-	-	-	-	-	-	1024	663	731	853
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(1,837)	(2,027)	(2,222)	-	-	-	-	-	-	-	(2,257)	(1,463)	(1,611)	(1,881)
2 m	-	-	-	-	1492	1247	1399	1492	1149	805	891	1038	-	-	-	-	-	-	-	1031	576	635	745
(6' - 7")	-	-	-	-	(3,291)	(2,749)	(3,084)	(3,291)	(2,533)	(1,776)	(1,964)	(2,289)	-	-	-	-	-	-	-	(2,273)	(1,271)	(1,399)	(1,643)
1 m	-	-	-	-	2029	1157	1304	1529	1341	770	854	1001	1068	558	615	725	-	-	-	1055	548	604	711
(3' - 3")	-	-	-	-	(4,474)	(2,550)	(2,874)	(3,372)	(2,958)	(1,697)	(1,882)	(2,207)	(2,354)	(1,230)	(1,357)	(1,598)	-	-	-	(2,326)	(1,207)	(1,331)	(1,568)
0 m	-	-	-	-	2218	1115	1260	1485	1450	745	828	975	-	-	-	-	-	-	-	1086	563	622	734
(0' - 0")	-	-	-	-	(4,890)	(2,459)	(2,778)	(3,275)	(3,198)	(1,642)	(1,826)	(2,150)	-	-	-	-	-	-	-	(2,395)	(1,242)	(1,372)	(1,618)
-1 m	3475	2185	2587	3066	2063	1113	1258	1483	1372	741	824	971	-	-	-	-	-	-	-	1111	639	708	834
-(3' - 3")	(7,663)	(4,819)	(5,705)	(6,761)	(4,548)	(2,455)	(2,773)	(3,270)	(3,025)	(1,633)	(1,816)	(2,140)	-	-	-	-	-	-	-	(2,450)	(1,410)	(1,561)	(1,838)
-2 m	2425	2234	2425	2425	1520	1141	1287	1512	-	-	-	-	-	-	-	-	-	-	-	1074	874	975	1074
-(6' - 7")	(5,347)	(4,927)	(5,347)	(5,347)	(3,351)	(2,515)	(2,837)	(3,335)	-	-	-	-	-	-	-	-	-	-	-	(2,369)	(1,928)	(2,149)	(2,369)

18 Rubber track/long stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max						
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV			
4 m	-	-	-	-	-	-	-	-	959	839	926	959	-	-	-	-	980	803	886	980			
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(1,849)	(2,041)	(2,115)	-	-	-	-	(2,160)	(1,770)	(1,953)	(2,160)			
3 m	-	-	-	-	-	-	-	-	931	838	925	931	-	-	-	-	960	617	680	795			
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(1,848)	(2,040)	(2,053)	-	-	-	-	(2,116)	(1,361)	(1,499)	(1,753)			
2 m	-	-	-	-	1359	1261	1359	1359	1084	808	894	1042	976	570	628	737	971	542	597	702			
(6' - 7")	-	-	-	-	(2,996)	(2,780)	(2,996)	(2,996)	(2,389)	(1,783)	(1,972)	(2,298)	(2,151)	(1,257)	(1,385)	(1,626)	(2,140)	(1,194)	(1,316)	(1,547)			
1 m	-	-	-	-	1930	1163	1311	1537	1293	769	854	1001	1039	555	613	722	996	516	569	671			
(3' - 3")	-	-	-	-	(4,255)	(2,564)	(2,890)	(3,388)	(2,851)	(1,696)	(1,883)	(2,208)	(2,290)	(1,225)	(1,352)	(1,592)	(2,196)	(1,137)	(1,254)	(1,480)			
0 m	-	-	-	-	2197	1110	1255	1480	1431	740	824	971	1065	544	601	710	1028	528	583	690			
(0' - 0")	-	-	-	-	(4,845)	(2,447)	(2,767)	(3,263)	(3,155)	(1,632)	(1,816)	(2,141)	(2,348)	(1,200)	(1,326)	(1,566)	(2,267)	(1,165)	(1,287)	(1,520)			
-1 m	3747	2154	2554	3032	2116	1101	1245	1470	1400	731	814	961	-	-	-	-	1058	591	655	773			
-(3' - 3")	(8,263)	(4,750)	(5,632)	(6,686)	(4,666)	(2,427)	(2,746)	(3,242)	(3,087)	(1,613)	(1,796)	(2,120)	-	-	-	-	(2,333)	(1,304)	(1,444)	(1,704)			
-2 m	2775	2201	2606	2775	1669	1122	1268	1493	-	-	-	-	-	-	-	-	-	-	-	1051	775	862	1014
-(6' - 7")	(6,118)	(4,853)	(5,746)	(6,118)	(3,681)	(2,475)	(2,796)	(3,293)	-	-	-	-	-	-	-	-	-	-	-	(2,317)	(1,708)	(1,900)	(2,235)

19 Rubber track/additional weight/short stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max						
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV			
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	986	1058	1058			
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,174)	(2,333)	(2,333)			
3 m	-	-	-	-	-	-	-	-	1008	923	1008	1008	-	-	-	-	1024	739	814	937			
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(2,036)	(2,222)	(2,222)	-	-	-	-	(2,257)	(1,630)	(1,794)	(2,067)			
2 m	-	-	-	-	1492	1380	1492	1492	1149	896	990	1139	-	-	-	-	1031	645	710	821			
(6' - 7")	-	-	-	-	(3,291)	(3,042)	(3,291)	(3,291)	(2,533)	(1,975)	(2,183)	(2,512)	-	-	-	-	(2,273)	(1,423)	(1,565)	(1,811)			
1 m	-	-	-	-	2029	1289	1452	1681	1341	860	953	1102	1068	627	690	800	1055	615	677	786			
(3' - 3")	-	-	-	-	(4,474)	(2,843)	(3,201)	(3,706)	(2,958)	(1,896)	(2,101)	(2,430)	(2,354)	(1,381)	(1,521)	(1,765)	(2,326)	(1,356)	(1,493)	(1,733)			
0 m	-	-	-	-	2218	1248	1408	1637	1450	835	927	1076	-	-	-	-	1086	633	698	811			
(0' - 0")	-	-	-	-	(4,890)	(2,752)	(3,105)	(3,609)	(3,198)	(1,842)	(2,045)	(2,373)	-	-	-	-	(2,395)	(1,396)	(1,540)	(1,788)			
-1 m	3475	2435	2881	3369	2063	1246	1406	1634	1372	831	923	1072	-	-	-	-	1111	718	793	921			
-(3' - 3")	(7,663)	(5,370)	(6,352)	(7,429)	(4,548)	(2,747)	(3,100)	(3,604)	(3,025)	(1,832)	(2,035)	(2,363)	-	-	-	-	(2,450)	(1,582)	(1,749)	(2,030)			
-2 m	2425	2425	2425	2425	1520	1274	1435	1520	-	-	-	-	-	-	-	-	-	-	-	1074	977	1074	1074
-(6' - 7")	(5,347)	(5,347)	(5,347)	(5,347)	(3,351)	(2,808)	(3,164)	(3,351)	-	-	-	-	-	-	-	-	-	-	-	(2,369)	(2,154)	(2,369)	(2,369)

20 Rubber track/additional weight/long stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	929	959	959	-	-	-	-	980	890	980	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(2,048)	(2,115)	(2,115)	-	-	-	-	(2,160)	(1,963)	(2,160)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	929	931	931	-	-	-	-	960	689	758	875
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(2,047)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,520)	(1,672)	(1,929)
2 m	-	-	-	-	1359	1359	1359	1359	1084	899	994	1084	976	639	703	813	971	608	668	774
(6' - 7")	-	-	-	-	(2,996)	(2,996)	(2,996)	(2,996)	(2,389)	(1,982)	(2,191)	(2,389)	(2,151)	(1,408)	(1,549)	(1,793)	(2,140)	(1,340)	(1,474)	(1,708)
1 m	-	-	-	-	1930	1296	1459	1688	1293	860	953	1102	1039	624	688	798	996	580	639	742
(3' - 3")	-	-	-	-	(4,255)	(2,857)	(3,217)	(3,722)	(2,851)	(1,896)	(2,102)	(2,430)	(2,290)	(1,376)	(1,516)	(1,759)	(2,196)	(1,279)	(1,409)	(1,637)
0 m	-	-	-	-	2197	1243	1403	1631	1431	831	923	1072	1065	613	676	786	1028	595	656	763
(0' - 0")	-	-	-	-	(4,845)	(2,740)	(3,094)	(3,597)	(3,155)	(1,832)	(2,035)	(2,363)	(2,348)	(1,351)	(1,490)	(1,733)	(2,267)	(1,312)	(1,447)	(1,683)
-1 m	3747	2404	2847	3335	2116	1234	1393	1622	1400	822	914	1062	-	-	-	1058	665	735	855	
-(3' - 3")	(8,263)	(5,302)	(6,279)	(7,355)	(4,666)	(2,720)	(3,073)	(3,576)	(3,087)	(1,812)	(2,015)	(2,343)	-	-	-	(2,333)	(1,467)	(1,621)	(1,885)	
-2 m	2775	2451	2775	2775	1669	1255	1416	1645	-	-	-	-	-	-	-	1051	868	964	1051	
-(6' - 7")	(6,118)	(5,405)	(6,118)	(6,118)	(3,681)	(2,767)	(3,123)	(3,627)	-	-	-	-	-	-	-	(2,317)	(1,913)	(2,126)	(2,317)	

21 Steel track/short stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	863	1039	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(1,903)	(2,290)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	808	970	1008	-	-	-	-	1024	643	773	872
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(1,781)	(2,140)	(2,222)	-	-	-	-	(2,257)	(1,419)	(1,704)	(1,923)
2 m	-	-	-	-	1492	1203	1478	1492	1149	780	942	1061	-	-	-	-	1031	559	672	762
(6' - 7")	-	-	-	-	(3,291)	(2,653)	(3,259)	(3,291)	(2,533)	(1,720)	(2,076)	(2,340)	-	-	-	-	(2,273)	(1,232)	(1,483)	(1,681)
1 m	-	-	-	-	2029	1114	1382	1563	1341	745	904	1024	1068	541	653	742	1055	531	641	728
(3' - 3")	-	-	-	-	(4,474)	(2,457)	(3,048)	(3,448)	(2,958)	(1,642)	(1,994)	(2,257)	(2,354)	(1,193)	(1,439)	(1,635)	(2,326)	(1,171)	(1,412)	(1,605)
0 m	-	-	-	-	2218	1074	1338	1519	1450	720	879	998	-	-	-	-	1086	546	660	751
(0' - 0")	-	-	-	-	(4,890)	(2,368)	(2,951)	(3,350)	(3,198)	(1,589)	(1,938)	(2,201)	-	-	-	-	(2,395)	(1,204)	(1,456)	(1,656)
-1 m	3475	2077	2759	3135	2063	1072	1336	1517	1372	716	874	994	-	-	-	-	1111	619	751	853
-(3' - 3")	(7,663)	(4,580)	(6,083)	(6,913)	(4,548)	(2,363)	(2,946)	(3,345)	(3,025)	(1,579)	(1,928)	(2,191)	-	-	-	-	(2,450)	(1,365)	(1,656)	(1,882)
-2 m	2425	2124	2425	2425	1520	1099	1365	1520	-	-	-	-	-	-	-	-	1074	845	1033	1074
-(6' - 7")	(5,347)	(4,684)	(5,347)	(5,347)	(3,351)	(2,423)	(3,011)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(1,864)	(2,278)	(2,369)

22 Steel track/long stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	813	959	959	-	-	-	-	980	778	935	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(1,793)	(2,115)	(2,115)	-	-	-	-	(2,160)	(1,716)	(2,061)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	813	931	931	-	-	-	-	960	599	719	813
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(1,792)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,321)	(1,586)	(1,793)
2 m	-	-	-	-	1359	1217	1359	1359	1084	783	945	1065	976	553	666	755	971	525	633	718
(6' - 7")	-	-	-	-	(2,996)	(2,683)	(2,996)	(2,996)	(2,389)	(1,727)	(2,084)	(2,348)	(2,151)	(1,219)	(1,468)	(1,664)	(2,140)	(1,158)	(1,395)	(1,583)
1 m	-	-	-	-	1930	1121	1389	1571	1293	745	905	1024	1039	538	650	739	996	500	604	687
(3' - 3")	-	-	-	-	(4,255)	(2,471)	(3,064)	(3,464)	(2,851)	(1,642)	(1,995)	(2,258)	(2,290)	(1,187)	(1,434)	(1,630)	(2,196)	(1,102)	(1,331)	(1,515)
0 m	-	-	-	-	2197	1068	1333	1514	1431	716	874	994	1065	527	639	728	1028	512	620	706
(0' - 0")	-	-	-	-	(4,845)	(2,355)	(2,940)	(3,339)	(3,155)	(1,578)	(1,928)	(2,191)	(2,348)	(1,162)	(1,408)	(1,604)	(2,267)	(1,128)	(1,367)	(1,557)
-1 m	3747	2046	2725	3101	2116	1059	1324	1505	1400	707	865	984	-	-	-	-	1058	573	695	791
-(3' - 3")	(8,263)	(4,512)	(6,009)	(6,838)	(4,666)	(2,336)	(2,918)	(3,318)	(3,087)	(1,559)	(1,907)	(2,170)	-	-	-	-	(2,333)	(1,263)	(1,533)	(1,745)
-2 m	2775	2092	2775	2775	1669	1080	1346	1528	-	-	-	-	-	-	-	-	1051	749	914	1037
-(6' - 7")	(6,118)	(4,612)	(6,118)	(6,118)	(3,681)	(2,382)	(2,969)	(3,368)	-	-	-	-	-	-	-	-	(2,317)	(1,652)	(2,016)	(2,287)

23 Steel track/additional weight/short stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	956	1058	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,108)	(2,333)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	895	1008	1008	-	-	-	-	1024	718	856	956
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(1,974)	(2,222)	(2,222)	-	-	-	-	(2,257)	(1,582)	(1,888)	(2,109)
2 m	-	-	-	-	1492	1332	1492	1492	1149	868	1042	1149	-	-	-	-	1031	626	748	839
(6' - 7")	-	-	-	-	(3,291)	(2,936)	(3,291)	(3,291)	(2,533)	(1,914)	(2,297)	(2,533)	-	-	-	-	(2,273)	(1,381)	(1,650)	(1,849)
1 m	-	-	-	-	2029	1243	1532	1715	1341	833	1005	1125	1068	608	728	817	1055	597	715	803
(3' - 3")	-	-	-	-	(4,474)	(2,740)	(3,378)	(3,782)	(2,958)	(1,836)	(2,215)	(2,480)	(2,354)	(1,340)	(1,605)	(1,802)	(2,326)	(1,316)	(1,576)	(1,770)
0 m	-	-	-	-	2218	1202	1488	1671	1450	808	979	1099	-	-	-	-	1086	614	737	829
(0' - 0")	-	-	-	-	(4,890)	(2,651)	(3,282)	(3,684)	(3,198)	(1,782)	(2,159)	(2,423)	-	-	-	-	(2,395)	(1,354)	(1,625)	(1,827)
-1 m	3475	2315	3058	3438	2063	1200	1486	1669	1372	804	975	1095	-	-	-	-	1111	695	837	940
(3' - 3")	(7,663)	(5,105)	(6,742)	(7,581)	(4,548)	(2,646)	(3,277)	(3,679)	(3,025)	(1,773)	(2,149)	(2,414)	-	-	-	-	(2,450)	(1,533)	(1,846)	(2,074)
-2 m	2425	2363	2425	2425	1520	1227	1515	1520	-	-	-	-	-	-	-	-	1074	945	1074	1074
(6' - 7")	(5,347)	(5,210)	(5,347)	(5,347)	(3,351)	(2,706)	(3,341)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(2,083)	(2,369)	(2,369)

24 Steel track/additional weight/long stick

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	901	959	959	-	-	-	-	980	863	980	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(1,986)	(2,115)	(2,115)	-	-	-	-	(2,160)	(1,904)	(2,160)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	900	931	931	-	-	-	-	960	669	798	893
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(1,985)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,475)	(1,761)	(1,969)
2 m	-	-	-	-	1359	1345	1359	1359	1084	871	1046	1084	976	620	741	830	971	589	705	791
(6' - 7")	-	-	-	-	(2,996)	(2,966)	(2,996)	(2,996)	(2,389)	(1,921)	(2,305)	(2,389)	(2,151)	(1,366)	(1,633)	(1,831)	(2,140)	(1,300)	(1,554)	(1,744)
1 m	-	-	-	-	1930	1249	1539	1722	1293	832	1005	1125	1039	605	726	815	996	563	675	759
(3' - 3")	-	-	-	-	(4,255)	(2,754)	(3,395)	(3,798)	(2,851)	(1,835)	(2,216)	(2,481)	(2,290)	(1,334)	(1,600)	(1,797)	(2,196)	(1,241)	(1,487)	(1,673)
0 m	-	-	-	-	2197	1197	1483	1666	1431	804	975	1095	1065	594	714	803	1028	577	693	780
(0' - 0")	-	-	-	-	(4,845)	(2,638)	(3,270)	(3,673)	(3,155)	(1,772)	(2,149)	(2,414)	(2,348)	(1,309)	(1,574)	(1,771)	(2,267)	(1,272)	(1,528)	(1,720)
-1 m	3747	2285	3024	3404	2116	1188	1474	1656	1400	795	965	1085	-	-	-	-	1058	645	777	873
(3' - 3")	(8,263)	(5,038)	(6,668)	(7,506)	(4,666)	(2,619)	(3,249)	(3,652)	(3,087)	(1,752)	(2,128)	(2,393)	-	-	-	-	(2,333)	(1,421)	(1,712)	(1,926)
-2 m	2775	2330	2775	2775	1669	1209	1496	1669	-	-	-	-	-	-	-	-	1051	839	1017	1051
(6' - 7")	(6,118)	(5,138)	(6,118)	(6,118)	(3,681)	(2,665)	(3,299)	(3,681)	-	-	-	-	-	-	-	-	(2,317)	(1,851)	(2,243)	(2,317)

25 Rubber track/short stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	941	948	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,075)	(2,090)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	881	885	1008	-	-	-	-	1024	704	702	977
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(1,942)	(1,951)	(2,222)	-	-	-	-	(2,257)	(1,551)	(1,547)	(2,154)
2 m	-	-	-	-	1492	1317	1347	1492	1149	853	856	1149	-	-	-	-	1031	613	609	857
(6' - 7")	-	-	-	-	(3,291)	(2,904)	(2,971)	(3,291)	(2,533)	(1,881)	(1,888)	(2,533)	-	-	-	-	(2,273)	(1,351)	(1,342)	(1,890)
1 m	-	-	-	-	2029	1227	1252	1752	1341	817	819	1149	1068	594	590	836	1055	583	578	821
(3' - 3")	-	-	-	-	(4,474)	(2,705)	(2,761)	(3,863)	(2,958)	(1,802)	(1,806)	(2,534)	(2,354)	(1,310)	(1,300)	(1,843)	(2,326)	(1,286)	(1,275)	(1,810)
0 m	-	-	-	-	2218	1186	1209	1708	1450	793	794	1124	-	-	-	-	1086	600	596	847
(0' - 0")	-	-	-	-	(4,890)	(2,614)	(2,665)	(3,766)	(3,198)	(1,748)	(1,750)	(2,478)	-	-	-	-	(2,395)	(1,324)	(1,314)	(1,869)
-1 m	3475	2318	2486	3475	2063	1183	1206	1706	1372	788	789	1119	-	-	-	-	1111	681	678	962
(3' - 3")	(7,663)	(5,111)	(5,481)	(7,663)	(4,548)	(2,610)	(2,660)	(3,761)	(3,025)	(1,739)	(1,740)	(2,468)	-	-	-	-	(2,450)	(1,501)	(1,495)	(2,120)
-2 m	2425	2367	2425	2425	1520	1211	1235	1520	-	-	-	-	-	-	-	-	1074	929	935	1074
(6' - 7")	(5,347)	(5,218)	(5,347)	(5,347)	(3,351)	(2,670)	(2,724)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(2,048)	(2,063)	(2,369)

26 Rubber track/long stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	886	891	959	-	-	-	-	980	849	852	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(1,954)	(1,965)	(2,115)	-	-	-	-	(2,160)	(1,872)	(1,879)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	886	891	931	-	-	-	-	960	655	653	912
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(1,954)	(1,964)	(2,053)	-	-	-	-	(2,116)	(1,445)	(1,439)	(2,011)
2 m	-	-	-	-	1359	1331	1359	1359	1084	856	860	1084	976	606	602	849	971	576	572	809
(6' - 7")	-	-	-	-	(2,996)	(2,935)	(2,996)	(2,996)	(2,389)	(1,888)	(1,896)	(2,389)	(2,151)	(1,337)	(1,328)	(1,871)	(2,140)	(1,271)	(1,261)	(1,783)
1 m	-	-	-	-	1930	1233	1259	1759	1293	817	819	1150	1039	592	587	834	996	550	544	776
(3' - 3")	-	-	-	-	(4,255)	(2,719)	(2,777)	(3,879)	(2,851)	(1,802)	(1,807)	(2,535)	(2,290)	(1,305)	(1,295)	(1,838)	(2,196)	(1,212)	(1,200)	(1,711)
0 m	-	-	-	-	2197	1180	1203	1703	1431	788	789	1119	1065	580	575	822	1028	563	558	798
(0' - 0")	-	-	-	-	(4,845)	(2,602)	(2,653)	(3,754)	(3,155)	(1,738)	(1,740)	(2,468)	(2,348)	(1,280)	(1,269)	(1,812)	(2,267)	(1,242)	(1,231)	(1,759)
-1 m	3747	2287	2452	3478	2116	1171	1194	1693	1400	779	780	1110	-	-	-	-	1058	631	627	893
-(3' - 3")	(8,263)	(5,042)	(5,407)	(7,669)	(4,666)	(2,582)	(2,632)	(3,733)	(3,087)	(1,718)	(1,720)	(2,447)	-	-	-	-	(2,333)	(1,390)	(1,382)	(1,970)
-2 m	2775	2333	2504	2775	1669	1193	1216	1669	-	-	-	-	-	-	-	-	1051	824	826	1051
-(6' - 7")	(6,118)	(5,145)	(5,521)	(6,118)	(3,681)	(2,629)	(2,682)	(3,681)	-	-	-	-	-	-	-	-	(2,317)	(1,816)	(1,822)	(2,317)

27 Rubber track/additional weight/short stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	1037	1053	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,286)	(2,322)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	971	984	1008	-	-	-	-	1024	780	785	1024
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(2,141)	(2,170)	(2,222)	-	-	-	-	(2,257)	(1,719)	(1,730)	(2,257)
2 m	-	-	-	-	1492	1450	1492	1492	1149	943	956	1149	-	-	-	-	1031	682	684	934
(6' - 7")	-	-	-	-	(3,291)	(3,197)	(3,291)	(3,291)	(2,533)	(2,080)	(2,107)	(2,533)	-	-	-	-	(2,273)	(1,504)	(1,508)	(2,059)
1 m	-	-	-	-	2029	1360	1400	1903	1341	908	918	1250	1068	663	664	912	1055	651	652	895
(3' - 3")	-	-	-	-	(4,474)	(2,998)	(3,088)	(4,197)	(2,958)	(2,002)	(2,025)	(2,757)	(2,354)	(1,461)	(1,464)	(2,010)	(2,326)	(1,435)	(1,437)	(1,974)
0 m	-	-	-	-	2218	1318	1357	1859	1450	883	893	1225	-	-	-	-	1086	670	672	925
(0' - 0")	-	-	-	-	(4,890)	(2,907)	(2,992)	(4,100)	(3,198)	(1,947)	(1,969)	(2,700)	-	-	-	-	(2,395)	(1,478)	(1,481)	(2,039)
-1 m	3475	2568	2779	3475	2063	1316	1355	1857	1372	879	889	1220	-	-	-	-	1111	759	764	1049
-(3' - 3")	(7,663)	(5,662)	(6,128)	(7,663)	(4,548)	(2,902)	(2,987)	(4,095)	(3,025)	(1,938)	(1,959)	(2,691)	-	-	-	-	(2,450)	(1,674)	(1,684)	(2,312)
-2 m	2425	2425	2425	2425	1520	1344	1384	1520	-	-	-	-	-	-	-	-	1074	1031	1049	1074
-(6' - 7")	(5,347)	(5,347)	(5,347)	(5,347)	(3,351)	(2,963)	(3,051)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(2,274)	(2,312)	(2,369)

28 Rubber track/additional weight/long stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	959	959	959	-	-	-	-	980	937	948	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(2,115)	(2,115)	(2,115)	-	-	-	-	(2,160)	(2,065)	(2,091)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	931	931	931	-	-	-	-	960	727	731	960
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(2,053)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,604)	(1,612)	(2,116)
2 m	-	-	-	-	1359	1359	1359	1359	1084	947	959	1084	976	675	677	924	971	642	643	882
(6' - 7")	-	-	-	-	(2,996)	(2,996)	(2,996)	(2,996)	(2,389)	(2,087)	(2,115)	(2,389)	(2,151)	(1,488)	(1,492)	(2,038)	(2,140)	(1,417)	(1,419)	(1,944)
1 m	-	-	-	-	1930	1366	1408	1911	1293	908	919	1251	1039	660	662	909	996	614	615	847
(3' - 3")	-	-	-	-	(4,255)	(3,012)	(3,104)	(4,213)	(2,851)	(2,001)	(2,026)	(2,758)	(2,290)	(1,456)	(1,459)	(2,005)	(2,196)	(1,354)	(1,355)	(1,868)
0 m	-	-	-	-	2197	1313	1352	1854	1431	878	889	1220	1065	649	650	898	1028	630	631	872
(0' - 0")	-	-	-	-	(4,845)	(2,895)	(2,980)	(4,088)	(3,155)	(1,937)	(1,959)	(2,691)	(2,348)	(1,431)	(1,433)	(1,979)	(2,267)	(1,390)	(1,391)	(1,922)
-1 m	3747	2537	2746	3747	2116	1304	1342	1845	1400	870	879	1211	-	-	-	-	1058	704	707	975
-(3' - 3")	(8,263)	(5,593)	(6,054)	(8,263)	(4,666)	(2,875)	(2,959)	(4,067)	(3,087)	(1,917)	(1,939)	(2,670)	-	-	-	-	(2,333)	(1,553)	(1,560)	(2,150)
-2 m	2775	2583	2775	2775	1669	1325	1365	1669	-	-	-	-	-	-	-	-	1051	917	929	1051
-(6' - 7")	(6,118)	(5,696)	(6,118)	(6,118)	(3,681)	(2,922)	(3,009)	(3,681)	-	-	-	-	-	-	-	-	(2,317)	(2,021)	(2,047)	(2,317)

29 Steel track/short stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	911	1003	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,009)	(2,211)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	853	936	1008	-	-	-	-	1024	682	744	996
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(1,881)	(2,065)	(2,222)	-	-	-	-	(2,257)	(1,503)	(1,641)	(2,197)
2 m	-	-	-	-	1492	1270	1427	1492	1149	826	908	1149	-	-	-	-	1031	594	647	875
(6' - 7")	-	-	-	-	(3,291)	(2,800)	(3,147)	(3,291)	(2,533)	(1,821)	(2,002)	(2,533)	-	-	-	-	(2,273)	(1,309)	(1,426)	(1,929)
1 m	-	-	-	-	2029	1181	1331	1786	1341	790	870	1172	1068	576	627	853	1055	565	616	838
(3' - 3")	-	-	-	-	(4,474)	(2,604)	(2,936)	(3,939)	(2,958)	(1,743)	(1,919)	(2,585)	(2,354)	(1,269)	(1,383)	(1,881)	(2,326)	(1,246)	(1,357)	(1,847)
0 m	-	-	-	-	2218	1140	1288	1742	1450	766	845	1147	-	-	-	-	1086	581	634	865
(0' - 0")	-	-	-	-	(4,890)	(2,514)	(2,839)	(3,842)	(3,198)	(1,689)	(1,863)	(2,528)	-	-	-	-	(2,395)	(1,282)	(1,399)	(1,907)
-1 m	3475	2200	2658	3475	2063	1138	1285	1740	1372	762	840	1142	-	-	-	-	1111	659	722	981
-(3' - 3")	(7,663)	(4,852)	(5,861)	(7,663)	(4,548)	(2,510)	(2,834)	(3,837)	(3,025)	(1,680)	(1,853)	(2,518)	-	-	-	-	(2,450)	(1,452)	(1,591)	(2,164)
-2 m	2425	2248	2425	2425	1520	1165	1315	1520	-	-	-	-	-	-	-	-	1074	897	994	1074
-(6' - 7")	(5,347)	(4,956)	(5,347)	(5,347)	(3,351)	(2,570)	(2,899)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(1,977)	(2,193)	(2,369)

30 Steel track/long stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	858	943	959	-	-	-	-	980	822	902	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(1,893)	(2,079)	(2,115)	-	-	-	-	(2,160)	(1,813)	(1,989)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	858	931	931	-	-	-	-	960	635	693	930
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(1,892)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,401)	(1,527)	(2,051)
2 m	-	-	-	-	1359	1283	1359	1359	1084	829	911	1084	976	587	640	866	971	558	608	825
(6' - 7")	-	-	-	-	(2,996)	(2,829)	(2,996)	(2,996)	(2,389)	(1,827)	(2,010)	(2,389)	(2,151)	(1,295)	(1,411)	(1,909)	(2,140)	(1,231)	(1,341)	(1,820)
1 m	-	-	-	-	1930	1187	1339	1794	1293	790	871	1173	1039	573	625	851	996	532	580	792
(3' - 3")	-	-	-	-	(4,255)	(2,617)	(2,952)	(3,955)	(2,851)	(1,742)	(1,920)	(2,585)	(2,290)	(1,263)	(1,378)	(1,876)	(2,196)	(1,174)	(1,279)	(1,746)
0 m	-	-	-	-	2197	1135	1282	1737	1431	761	841	1142	1065	562	613	839	1028	545	595	815
(0' - 0")	-	-	-	-	(4,845)	(2,502)	(2,828)	(3,830)	(3,155)	(1,679)	(1,853)	(2,518)	(2,348)	(1,238)	(1,352)	(1,850)	(2,267)	(1,203)	(1,312)	(1,796)
-1 m	3747	2170	2624	3547	2116	1126	1273	1727	1400	752	831	1133	-	-	-	-	1058	610	668	912
-(3' - 3")	(8,263)	(4,784)	(5,787)	(7,820)	(4,666)	(2,482)	(2,806)	(3,809)	(3,087)	(1,659)	(1,833)	(2,498)	-	-	-	-	(2,333)	(1,345)	(1,472)	(2,011)
-2 m	2775	2215	2677	2775	1669	1147	1296	1669	-	-	-	-	-	-	-	-	1051	796	879	1051
-(6' - 7")	(6,118)	(4,884)	(5,902)	(6,118)	(3,681)	(2,529)	(2,857)	(3,681)	-	-	-	-	-	-	-	-	(2,317)	(1,755)	(1,939)	(2,317)

31 Steel track/additional weight/short stick/swiveling dozer blade

A \ B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1058	1004	1058	1058
(13' - 1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,333)	(2,213)	(2,333)	(2,333)
3 m	-	-	-	-	-	-	-	-	1008	941	1008	1008	-	-	-	-	1024	756	828	1024
(9' - 10")	-	-	-	-	-	-	-	-	(2,222)	(2,074)	(2,222)	(2,222)	-	-	-	-	(2,257)	(1,667)	(1,826)	(2,257)
2 m	-	-	-	-	1492	1398	1492	1492	1149	913	1008	1149	-	-	-	-	1031	661	723	951
(6' - 7")	-	-	-	-	(3,291)	(3,082)	(3,291)	(3,291)	(2,533)	(2,014)	(2,222)	(2,533)	-	-	-	-	(2,273)	(1,458)	(1,594)	(2,097)
1 m	-	-	-	-	2029	1309	1481	1938	1341	878	971	1273	1068	642	703	929	1055	631	690	912
(3' - 3")	-	-	-	-	(4,474)	(2,887)	(3,267)	(4,273)	(2,958)	(1,936)	(2,140)	(2,807)	(2,354)	(1,416)	(1,549)	(2,048)	(2,326)	(1,391)	(1,521)	(2,011)
0 m	-	-	-	-	2218	1269	1438	1894	1450	854	945	1247	-	-	-	-	1086	649	711	942
(0' - 0")	-	-	-	-	(4,890)	(2,797)	(3,170)	(4,176)	(3,198)	(1,882)	(2,084)	(2,751)	-	-	-	-	(2,395)	(1,432)	(1,568)	(2,078)
-1 m	3475	2439	2957	3475	2063	1266	1435	1891	1372	850	941	1243	-	-	-	-	1111	735	808	1068
-(3' - 3")	(7,663)	(5,377)	(6,519)	(7,663)	(4,548)	(2,792)	(3,165)	(4,171)	(3,025)	(1,873)	(2,074)	(2,741)	-	-	-	-	(2,450)	(1,620)	(1,782)	(2,356)
-2 m	2425	2425	2425	2425	1520	1294	1465	1520	-	-	-	-	-	-	-	-	1074	996	1074	1074
-(6' - 7")	(5,347)	(5,347)	(5,347)	(5,347)	(3,351)	(2,852)	(3,230)	(3,351)	-	-	-	-	-	-	-	-	(2,369)	(2,196)	(2,369)	(2,369)



32 Steel track/additional weight/long stick/swiveling dozer blade

A B	2 m (6' - 7")				3 m (9' - 10")				4 m (13' - 1")				5 m (16' - 5")				max			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4 m	-	-	-	-	-	-	-	-	959	946	959	959	-	-	-	-	980	907	980	980
(13' - 1")	-	-	-	-	-	-	-	-	(2,115)	(2,086)	(2,115)	(2,115)	-	-	-	-	(2,160)	(2,001)	(2,160)	(2,160)
3 m	-	-	-	-	-	-	-	-	931	931	931	931	-	-	-	-	960	705	772	960
(9' - 10")	-	-	-	-	-	-	-	-	(2,053)	(2,053)	(2,053)	(2,053)	-	-	-	-	(2,116)	(1,555)	(1,702)	(2,116)
2 m	-	-	-	-	1359	1359	1359	1359	1084	916	1012	1084	976	654	715	942	971	623	680	898
(6' - 7")	-	-	-	-	(2,996)	(2,996)	(2,996)	(2,996)	(2,389)	(2,021)	(2,231)	(2,389)	(2,151)	(1,442)	(1,577)	(2,076)	(2,140)	(1,373)	(1,500)	(1,980)
1 m	-	-	-	-	1930	1315	1489	1930	1293	878	971	1274	1039	640	700	926	996	595	651	863
(3' - 3")	-	-	-	-	(4,255)	(2,900)	(3,283)	(4,255)	(2,851)	(1,936)	(2,141)	(2,808)	(2,290)	(1,410)	(1,544)	(2,043)	(2,196)	(1,312)	(1,435)	(1,903)
0 m	-	-	-	-	2197	1263	1432	1888	1431	849	941	1243	1065	628	688	915	1028	610	668	888
(0' - 0")	-	-	-	-	(4,845)	(2,785)	(3,158)	(4,164)	(3,155)	(1,872)	(2,074)	(2,741)	(2,348)	(1,385)	(1,518)	(2,017)	(2,267)	(1,346)	(1,473)	(1,959)
-1 m	3747	2408	2923	3747	2116	1254	1423	1879	1400	840	931	1234	-	-	-	-	1058	682	749	994
-(3' - 3")	(8,263)	(5,310)	(6,445)	(8,263)	(4,666)	(2,765)	(3,137)	(4,143)	(3,087)	(1,853)	(2,054)	(2,720)	-	-	-	-	(2,333)	(1,503)	(1,652)	(2,191)
-2 m	2775	2453	2775	2775	1669	1275	1446	1669	-	-	-	-	-	-	-	-	1051	886	982	1051
-(6' - 7")	(6,118)	(5,410)	(6,118)	(6,118)	(3,681)	(2,812)	(3,188)	(3,681)	-	-	-	-	-	-	-	-	(2,317)	(1,954)	(2,166)	(2,317)

Safety instructions load diagrams

Observe the values of the load diagrams in lifting gear applications.

DANGER

Crushing hazard due to tipping over of vehicle!

The vehicle causes serious injury or death when it tips over.

- ▶ Do not exceed the weights indicated in the load diagrams.
- ▶ Subtract the weight of the attachment from the weight specified in the relevant load diagram.
- ▶ Use the vehicle for lifting gear applications only if the mandatory lifting gear and safety equipment is installed, functional and enabled.
- ▶ The boom must be straight towards the cab - see [Fig. 297](#)

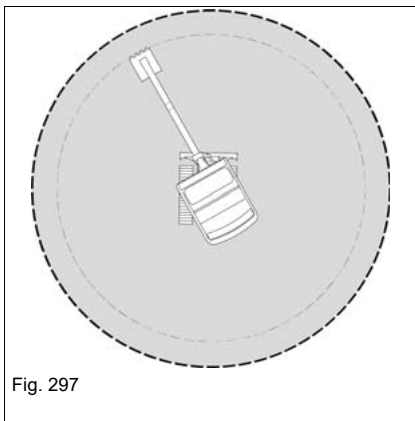


Fig. 297

NOTICE

If the weight is exceeded, there is a risk of damage to property if the vehicle tips over.

- ▶ Do not exceed the weights indicated in the load diagrams.

Information

The indications are only approximate values. Attachments, uneven ground and soft or bad ground conditions affect the vehicle's stability, and thus the weight and mass it can handle. The operator must take these influences into account.

Legend

Description	Explanation
X	Reach from live ring center
Z	Load hook height in the respective range
max	Authorized lift capacity with horizontal boom
L	Stick short/long

Authorized lift capacity applies to entire swiveling range of 360°.

All table indications in kg (lbs.) and horizontal position on firm and level ground without bucket or exchangeable attachment.

The vehicle's lift capacity is restricted by the settings of the pressure limiting valves, the hydraulic output and the hydraulic system's stabilizing features.

Neither 75% of the static tilt load nor 87% of the hydraulic lift capacity is exceeded.

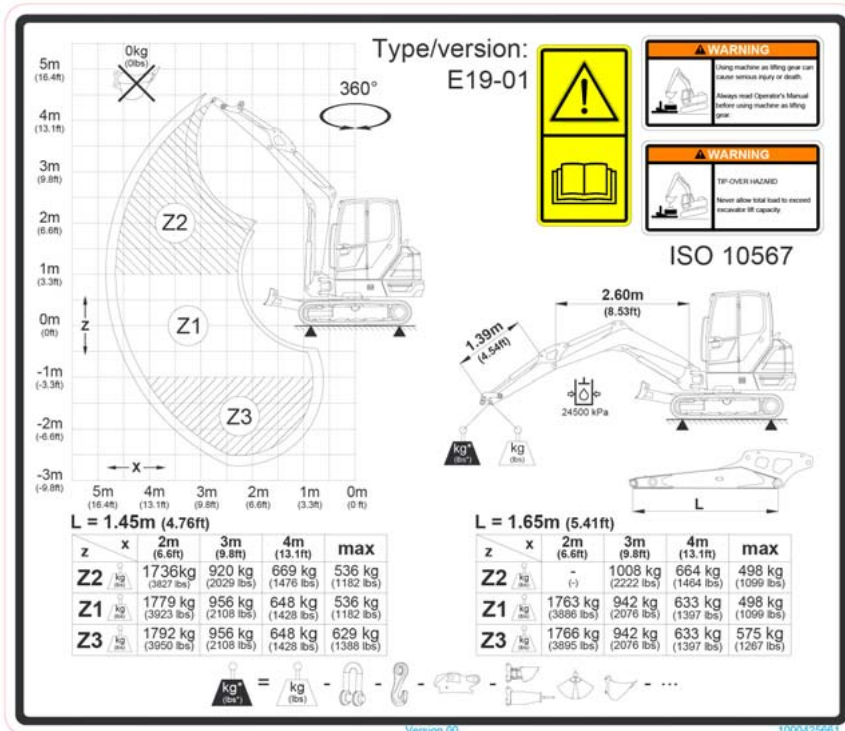
Calculation basis: according to ISO 10567

Setting pressure on boom cylinder: 24,500 kPa (3553 psi)

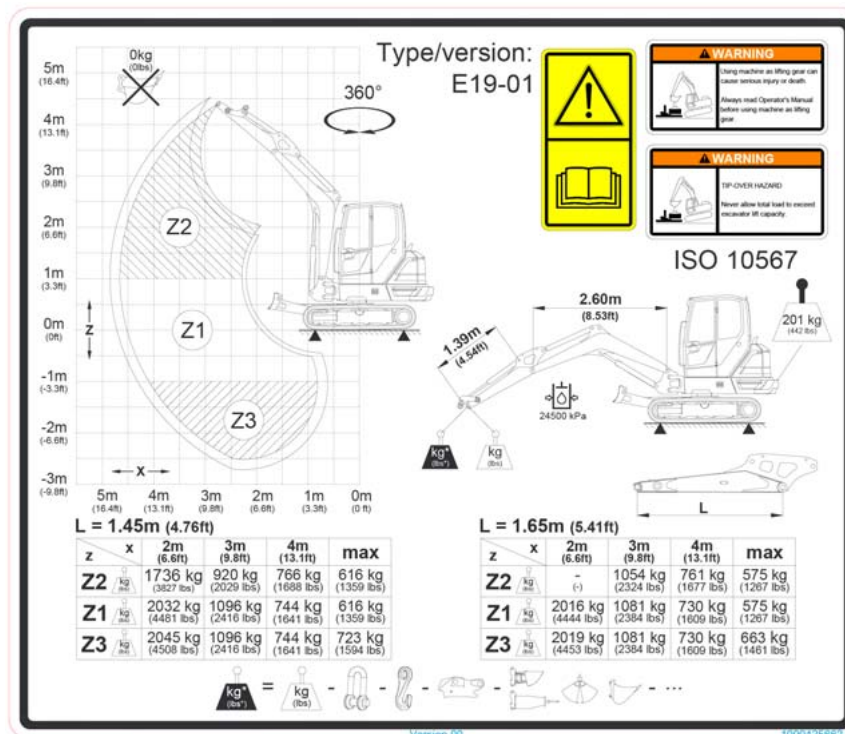
Lift capacities apply to vehicles under the following conditions:

- Lubricants and engine/vehicle fluids at the mandatory levels
- Full fuel tank
- Cab
- Machine at operating temperature
- Operator weight 75 kg (165 lbs.)

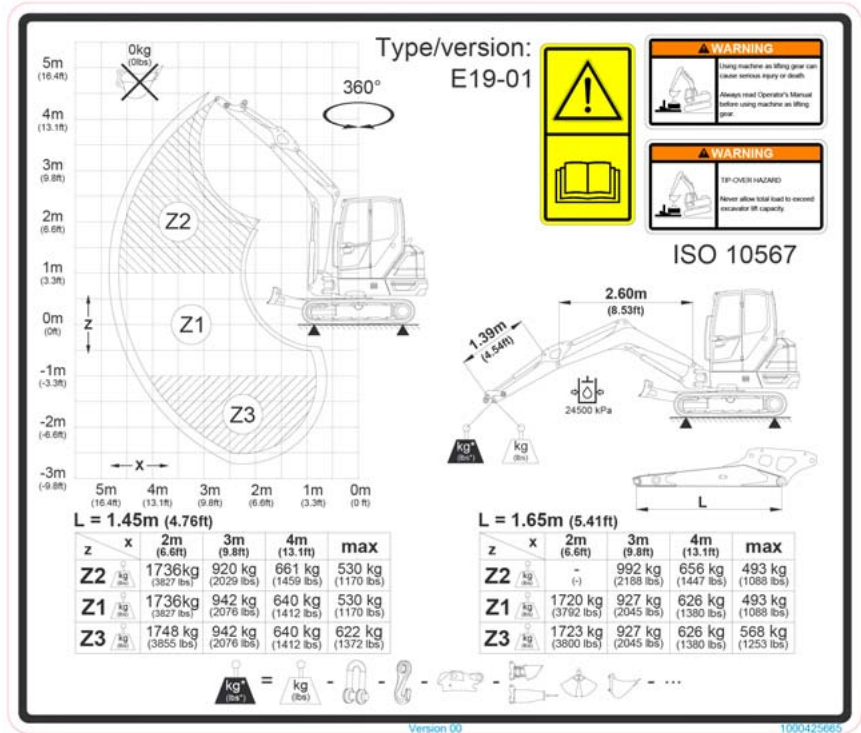
ET42: Rubber track



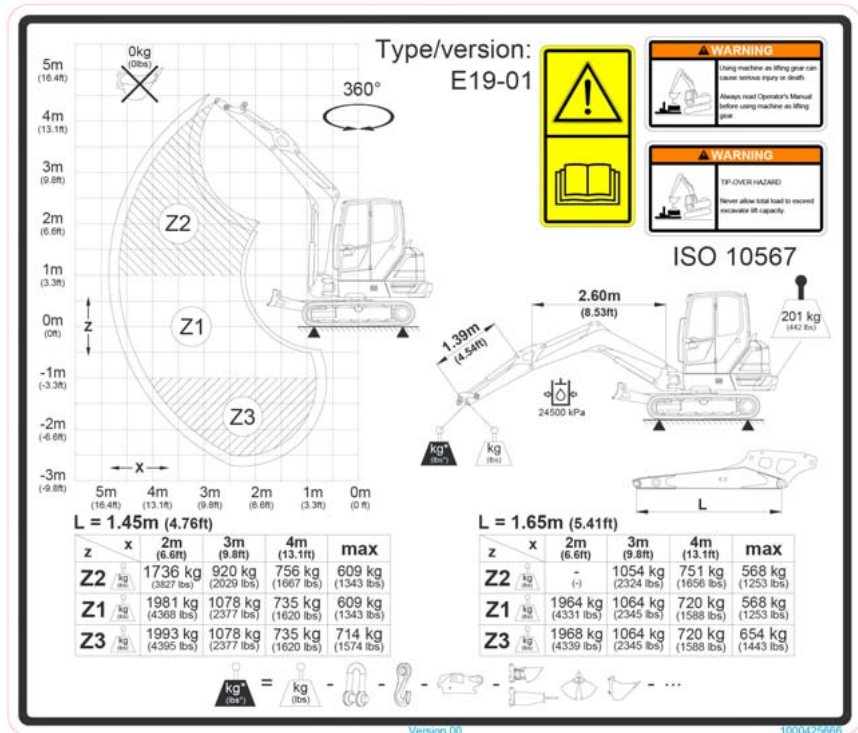
ET42: Rubber track/additional weight



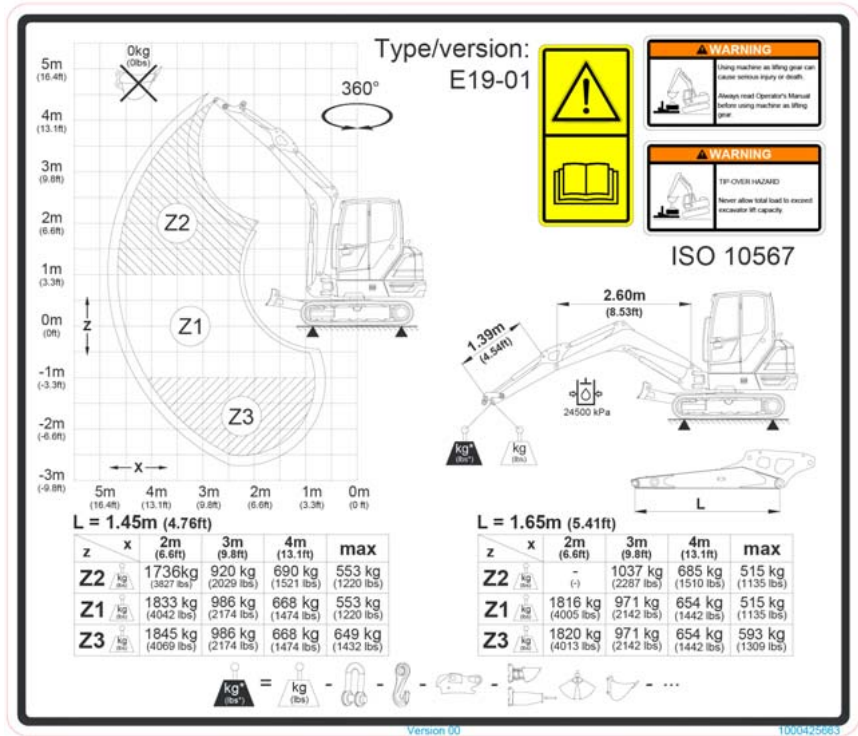
ET42: Steel track



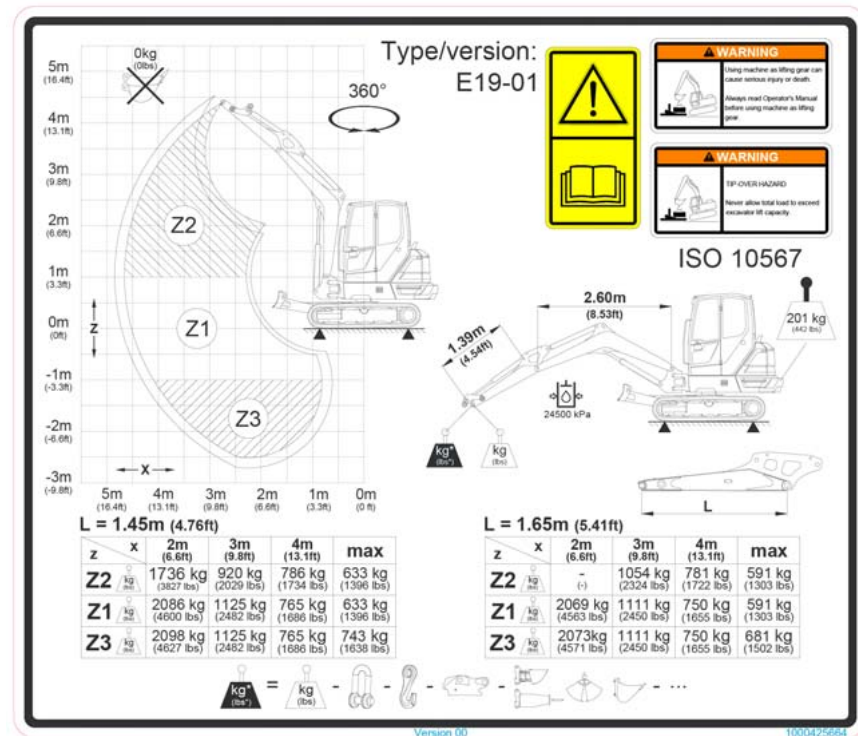
ET42: Steel track/additional weight



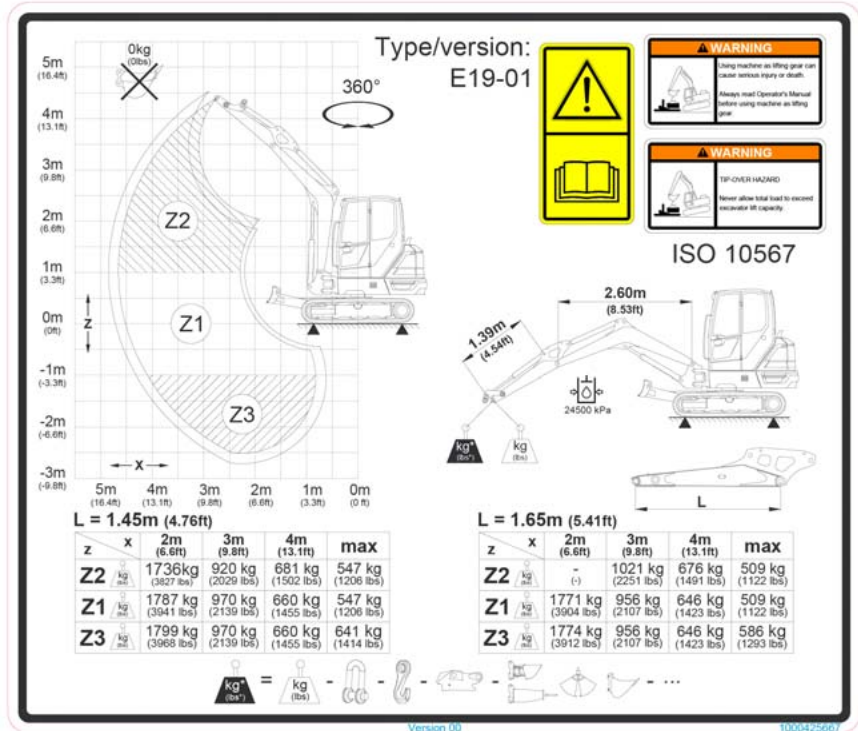
ET42: Rubber track/swiveling dozer blade



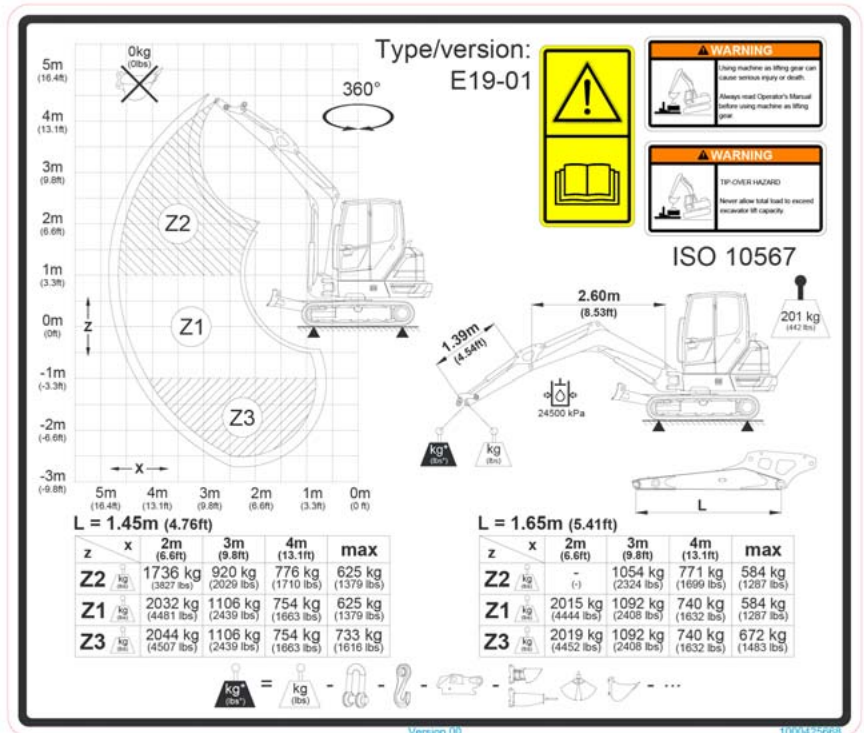
ET42: Rubber track/additional weight/swiveling dozer blade



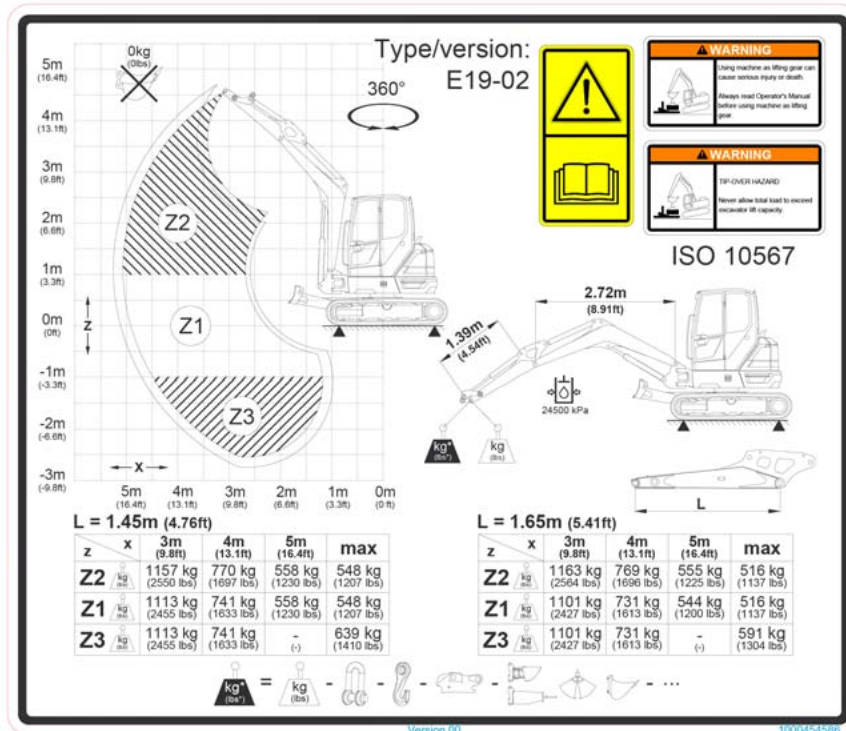
ET42: Steel track/swiveling dozer blade



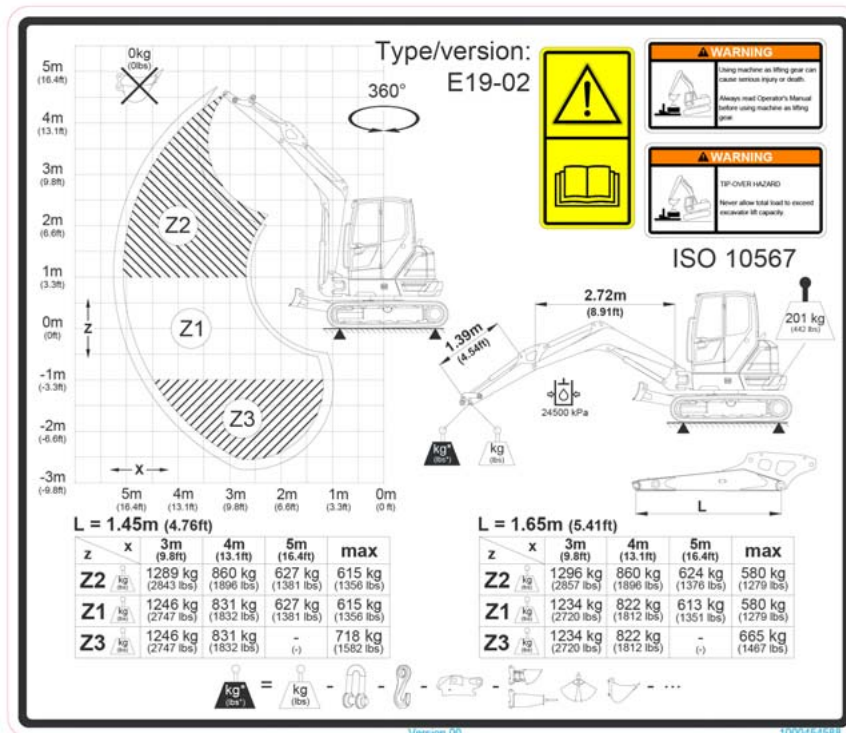
ET42: Steel track/additional weight/swiveling dozer blade



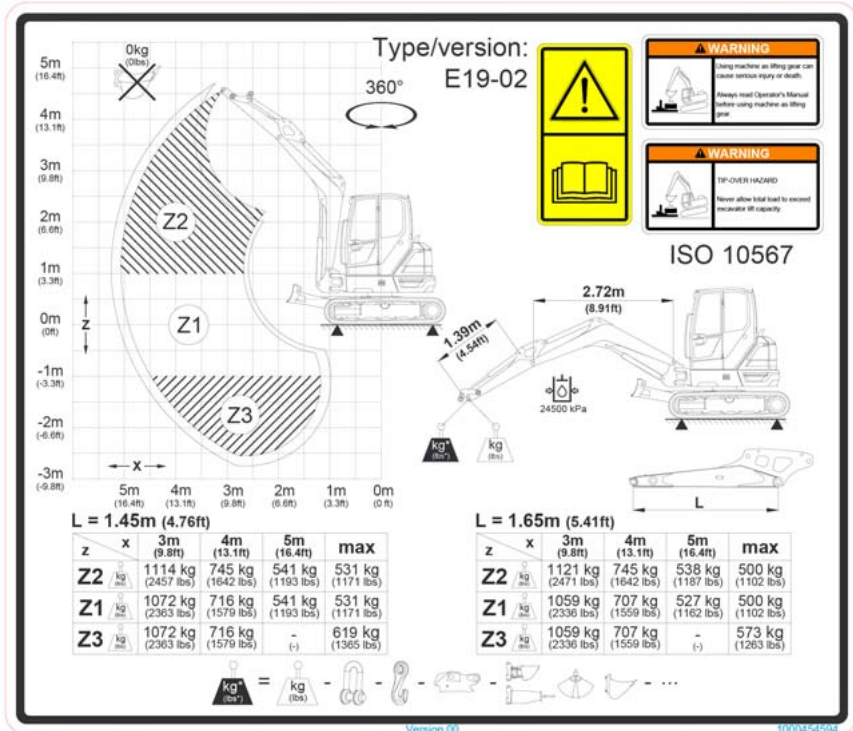
EZ50: Rubber track



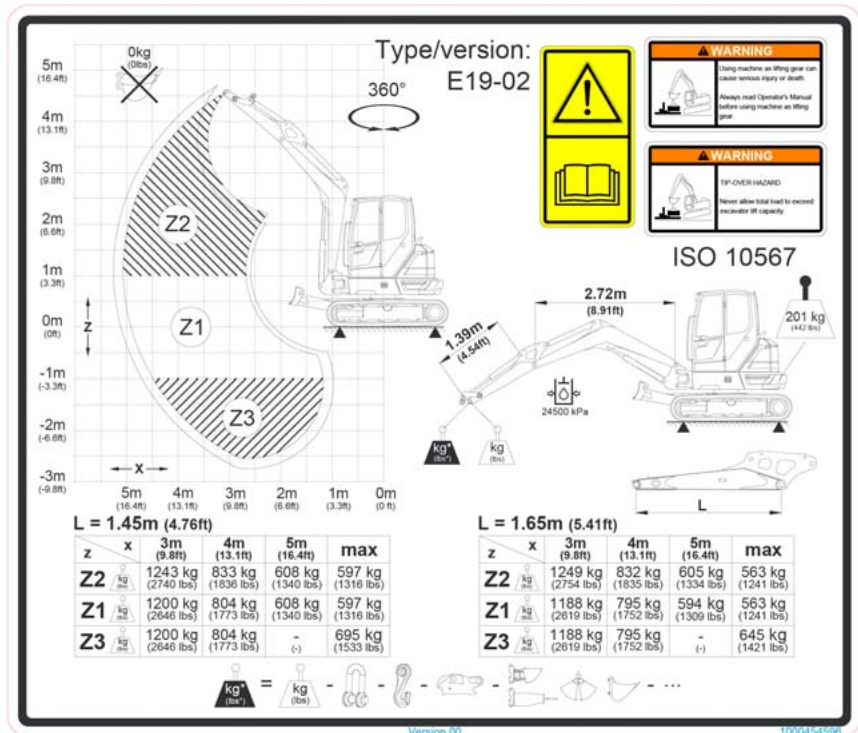
EZ50: Rubber track/additional weight



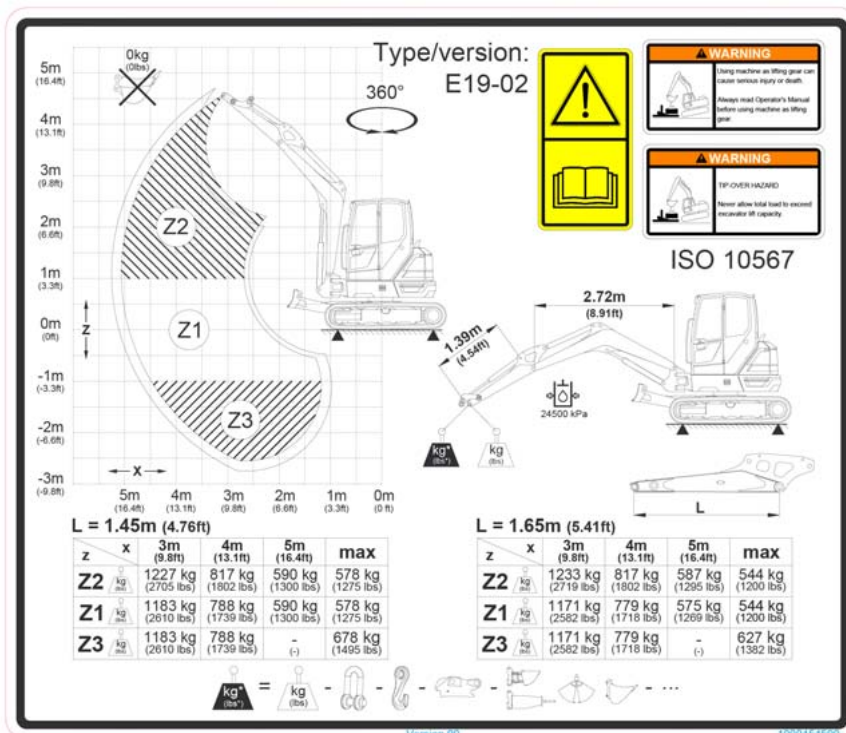
EZ50: Steel track



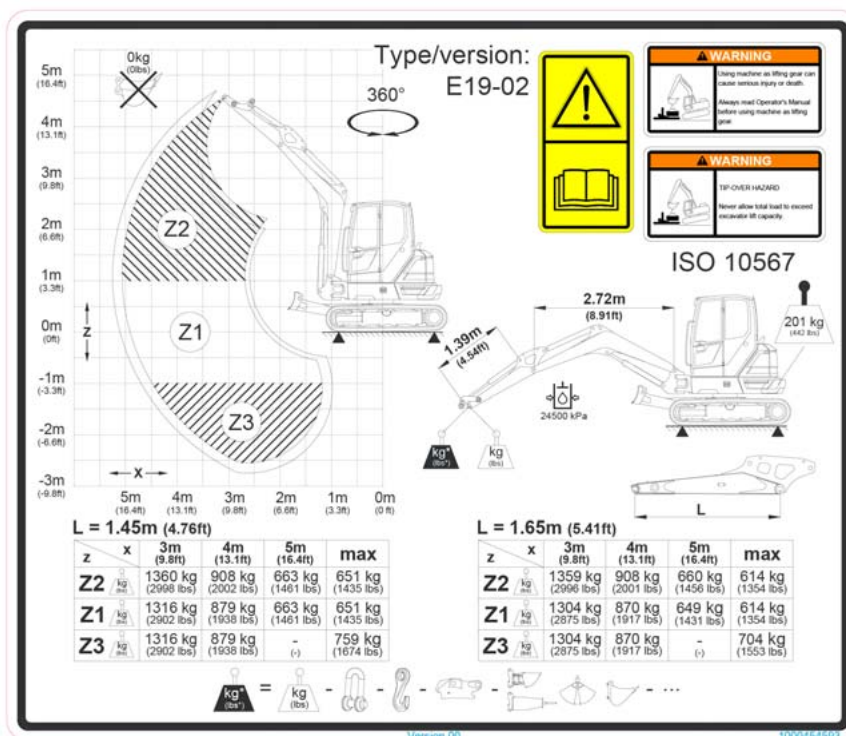
EZ50: Steel track/additional weight



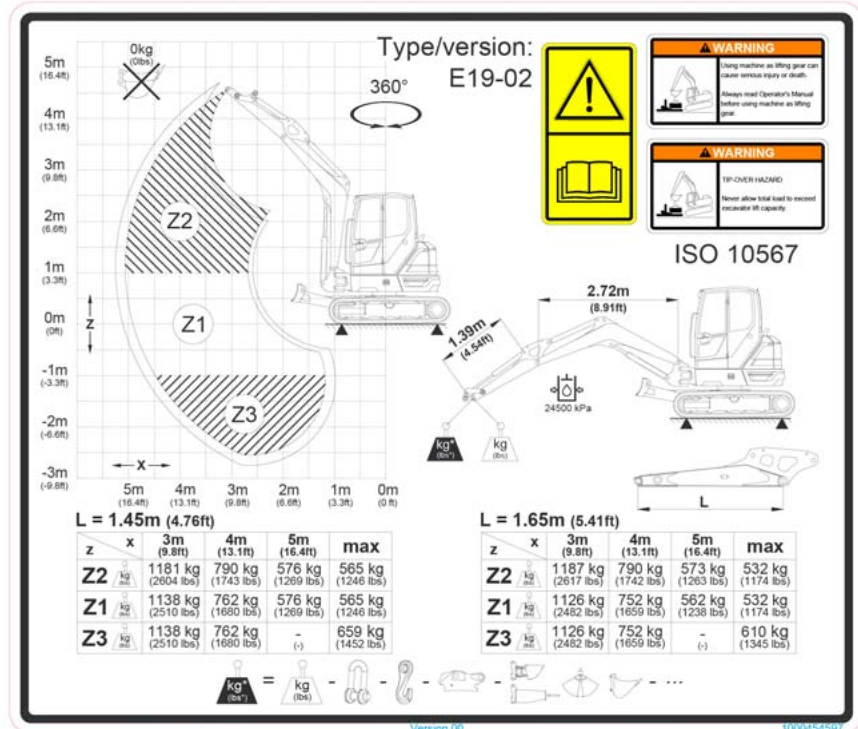
EZ50: Rubber track/swiveling dozer blade



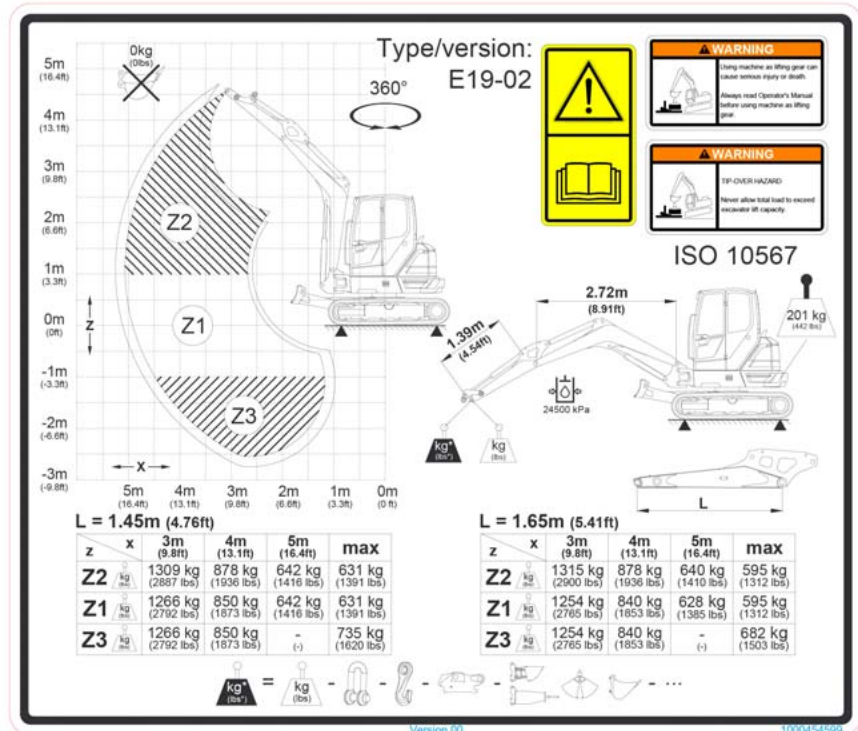
EZ50: Rubber track/additional weight/swiveling dozer blade



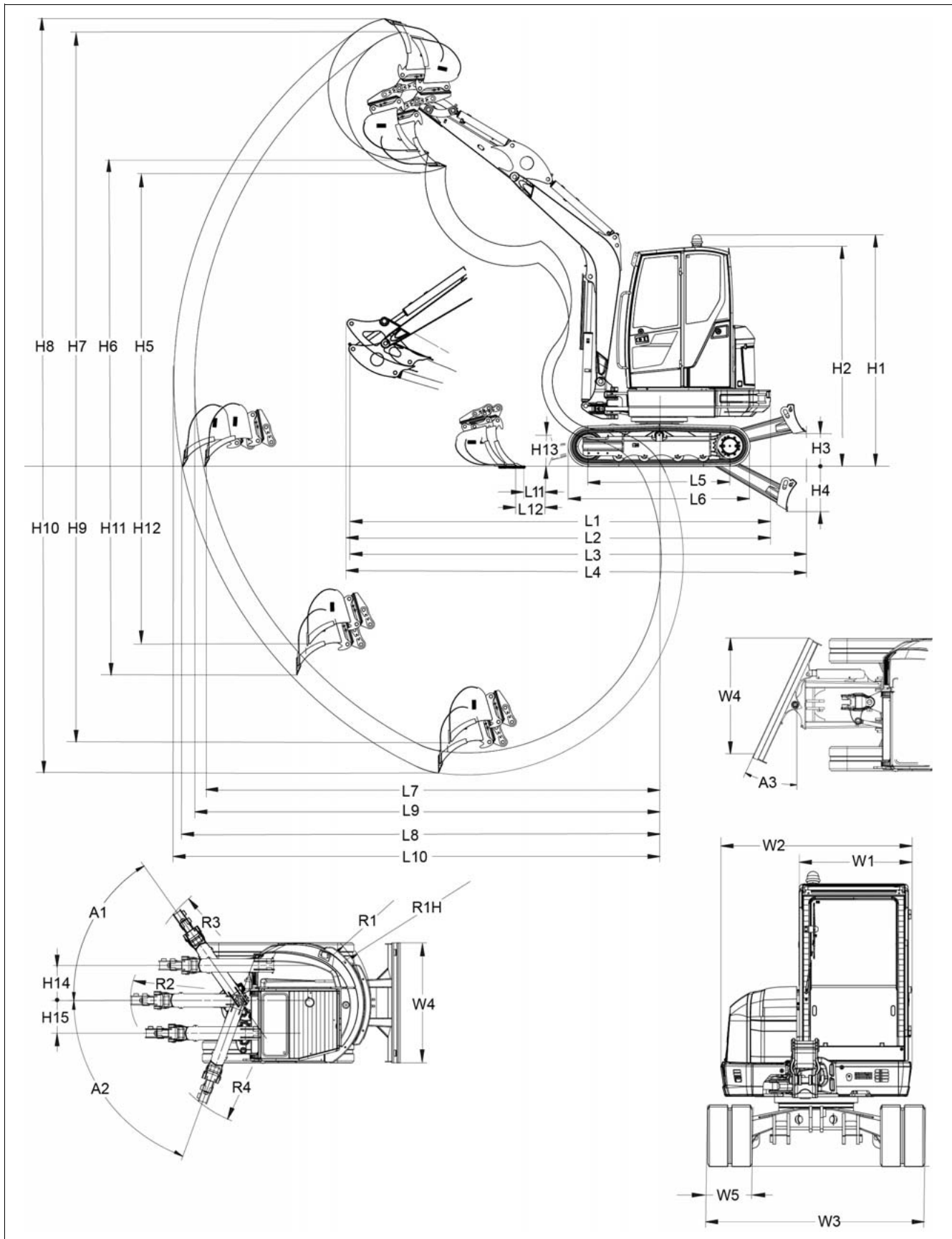
EZ50: Steel track/swiveling dozer blade



EZ50: Steel track/additional weight/swiveling dozer blade



9.15 Dimensions





	ET42		EZ50	
	mm (in/ft-in)		mm (in/ft-in)	
	Fixed dozer blade	Swiveling dozer blade	Fixed dozer blade	Swiveling dozer blade
H1	2608 (8'-7")	2608 (8'-7")	2667 (8'-9")	2667 (8'-9")
H2	2494 (98)	2494 (98)	2555 (100)	2555 (100)
H3	418 (16)	426 (17)	410 (16)	462 (18)
H4	563 (22)	560 (22)	443 (17)	485 (19)
H5	3344 (10'-12")	3344 (10'-12")	3467 (11'-4")	3467 (11'-4")
H6	3544 (11'-8")	3544 (11'-8")	3667 (12'-0")	3667 (12'-0")
H7	2114 (83)	2114 (83)	2085 (82)	2085 (82)
H8	2293 (90)	2293 (90)	2262 (89)	2262 (89)
H9	5210 (17'-1")	5210 (17'-1")	5470 (17'-11")	5470 (17'-11")
H10	5340 (17'-6")	5340 (17'-6")	5599 (18'-4")	5599 (18'-4")
H11	3573 (11'-9")	3573 (11'-9")	3655 (11'-12")	3655 (11'-12")
H12	3703 (12'-2")	3703 (12'-2")	3784 (12'-5")	3784 (12'-5")
H13	360 (14)	360 (14)	428 (17)	428 (17)
H14	493 (19)	493 (19)	764 (30)	764 (30)
H15	532 (21)	532 (21)	770 (30)	770 (30)
L1	5146 (16'-11")	5146 (16'-11")	5467 (17'-11")	5467 (17'-11")
L2	5152 (16'-11")	5152 (16'-11")	5482 (17'-12")	5482 (17'-12")
L3	5588 (18'-4")	5588 (18'-4")	6035 (19'-10")	6035 (19'-10")
L4	5594 (18'-4")	5594 (18'-4")	6050 (19'-10")	6050 (19'-10")
L5	1725 (68)	1725 (68)	1980 (78)	1980 (78)
L6	2198 (87)	2198 (87)	2508 (99)	2508 (99)
L7	5376 (17'-8")	5376 (17'-8")	4723 (15'-6")	4723 (15'-6")
L8	5570 (18'-3")	5570 (18'-3")	5794 (19'-0")	5794 (19'-0")
L9	5489 (18'-0")	5489 (18'-0")	4816 (15'-10")	4816 (15'-10")
L10	5678 (18'-8")	5678 (18'-8")	5916 (19'-5")	5916 (19'-5")
Q1	109 (4)	109 (4)	429 (17)	429 (17)
Q2	20 (1)	20 (1)	333 (13)	333 (13)
R1	1335 (53)	1335 (53)	1047 (41)	1047 (41)
R1H	1440 (57)	1440 (57)	1152 (45)	1152 (45)
R2	2175 (86)	2175 (86)	2505 (99)	2505 (99)
R3	2061 (81)	2061 (81)	2329 (92)	2329 (92)
R4	1820 (72)	1820 (72)	2064 (81)	2064 (81)

	ET42		EZ50	
	mm (in/ft-in)		mm (in/ft-in)	
	Fixed dozer blade	Swiveling dozer blade	Fixed dozer blade	Swiveling dozer blade
W1	980 (39)	980 (39)	980 (39)	980 (39)
W2	1720 (68)	1720 (68)	1724 (68)	1724 (68)
W3	1750 (69)	1750 (69)	1960 (77)	1960 (77)
W4	1750 (69)	1581 (62)	1960 (77)	1776 (70)
W5	350 (14)	350 (14)	400 (16)	400 (16)
	ET42		EZ50	
	Degrees (°)		Degrees (°)	
	Fixed dozer blade	Swiveling dozer blade	Fixed dozer blade	Swiveling dozer blade
A1/A2	55/70	55/70	55/70	55/70
A3	--	25	--	25

Index

Numerisch

12V plug receptacles 4-23

A

Abbreviations 1-3

Adding engine oil 7-37

Adding hydraulic oil 7-45

Additional control circuits

AUX I (Hammer operation) 5-26

AUX IV (hydraulic quickhitch system) 5-41

AUX V 5-52

Air filter 7-41

Air intake 7-41

Air-conditioning system 7-48

Application areas of attachments 9-10

Application of attachments 9-10

Arm rest 4-15

Attachments

Changing with Easy Lock 5-49

Picking up 5-57

Setting down 5-58

Technical data 9-11

Auto stop 4-42

Automatic engine speed setting 5-4

B

Battery 7-48

Battery master switch 4-47

Bleeding the fuel system 7-34

Brake 5-5, 9-2

Hydraulic brake 5-5

Mechanical brake 5-5

Brief description of the vehicle 3-2

Bucket operation 5-52

Bucket position when digging 5-67

C

Cab 4-1

Cabin overview 4-24

Changing 5-49

Check and refill the coolant 7-39

Check belt tension 7-42

Check the hydraulic oil level 7-44

Checking the engine-oil level 7-36

Checking the fluid level 7-48

Cleaning and maintenance 7-22

Cleaning the radiator 7-40

Control lever base 4-39

Conversion table 1-7

Coolant compound table 9-8

Cooling system 7-38

Crane-lifting 6-6

D

Danger zone 5-62

Danger zone during lifting-gear applications 5-63

Designated use 3-4

Diesel fuel specification 7-26

Diesel particulate filter

Escalation level 7-57

Extend regeneration intervals 7-55

Indication of load 7-56

Indicator lights 7-55

Types of regeneration 7-55

Dimensions 9-38

Discs

Opening/closing the front window 4-4

Opening/closing the side window 4-7

Display element 4-28

Displaying coolant temperature 4-32

Displaying fuel level indicator 4-32

Displaying operating states 4-33

Document box 4-22

Downhill vehicle operation 5-10

Drive interlock 5-71

E

EC Compliance Statement EG-1, EG-2

Electrical components 9-3

Electrical system 7-47

Emergency exit 4-8

Emergency lowering 5-70

Engine lubrication system 7-35

Explanation of symbols 1-2

F

Fire extinguisher 4-15

Fluids and lubricants 7-15

FOPS type label 3-8

Foreword 1-1

Front Guard emergency exit 4-8

Fuel filter 7-31

Empty the water separator (main filter) 7-33

Empty the water separator (prefilter) 7-33

Fuel system 7-26

Functional checks

Control lever base 4-40

Safe load indicator 5-35

Swivel unit brake 5-22

Fuses 9-5

G

Getting on and off 4-2

Glossary 1-4

Right/left/front/rear 1-5

Grab operation 5-52

Grading 5-68

Ground clearance 9-13

H

Hammer 5-26

Hammer operation	5-26	M	
Job site	5-27	Machine overview	3-1
Heating	5-17, 7-48	Machine travel	5-6
Horn	5-14	Machine travel and stopping	5-6
Hose burst valve "Advanced"	5-56	Machine travel on slopes	5-10
Hydraulic connections	5-53	Machine travel position	5-6
Hydraulic oil changing intervals for hammer operation 7-16		Maintenance	
Hydraulic oil types	7-16	Electrical system	7-47
Hydraulic quickhitch		Maintenance label	7-2
Picking up an attachment	5-42	Maintenance meter	4-33
Set down attachment with Easy Lock	5-46	Maintenance of attachments	7-52
Hydraulic swivel unit brake	5-22	Maintenance plan of mechanical quickhitch system	
Hydraulic system	7-42		
I			
Ignition lock	4-39		
Inadmissible work procedures	5-64		
Indicator lights and warning lights (overview)	4-28		
Information and regulations on use	3-4		
Information before putting into operation	4-36		
Information on this Operator's Manual	1-1		
Information regarding operation with bio-hydraulic oil .. 7-16			
Introduction	3-1		
ISO/SAE controls (option)	5-20		
L			
Labels	3-5		
ANSI label	3-19		
Cabin number	3-8		
Front Guard type label	3-8		
Information label	3-14		
Machine type label	3-6		
Warning label	3-9		
Letting the engine warm up	4-41		
Lift capacity tables	9-13		
Lifting eyes	6-7		
Lifting gear applications			
Safe load indicator	5-34		
Lights	5-12		
Boom light	5-13		
Bulbs	9-6		
Interior light	5-14		
Working lights	5-12		
Loading	6-2		
Loading material	5-68		
Loading the vehicle	6-2		
Loading vehicles	5-68		
Locking/unlocking the door on the left	4-36		
Low-load operation	4-46		
Lubrication	7-26		
Attachment mounts	7-11		
Control lever base	7-14		
Live ring (ball bearing)	7-12		
Lubrication plan	7-8		
Machine operation in water	7-14		
Powertilt/Hydraulic thumb	7-10		

7-6		Stabilizer blade	5-24
Maintenance accesses	7-18	Starting aid	4-43
Maintenance plan	7-3	Starting and stopping the engine	4-38
Manual throttle	5-2	Starts the engine	4-39
Mechanical quickhitch		Steering system	5-1, 9-2
Picking up an attachment	5-37	Stop the engine	4-46
Setting down an attachment	5-39	Switches	4-26
Mechanical quickhitch (option)	5-36	Swivel unit brake	5-22
Model designations and trade names	3-2	T	
Multi-functional display		Technical data	
Display settings	4-35	Attachments	9-11
O		Coolant compound table	9-8
Opening/closing the engine hood	7-20	Engine	9-1
Operating hydraulics	5-19	Excavator forces	9-12
Operating temperature range	5-7	Lift capacity tables ET42	9-16
Operation	5-1	Lift capacity tables EZ50	9-22
Operation in water	5-66	Lift capacity/load	9-13
Operation near the sea	5-66	Load diagrams	9-28
Overview of control elements	4-24	Maximum speed	9-2
P		Noise emissions	9-8
Parking the vehicle	5-11	Operating hydraulics	9-2
Parking the vehicle on slopes	5-11	Travel drive	9-2
Powertilt	9-6	Tie-down points	6-3
Preheating	4-39	Tightening torques	9-7
Preparations for starting the engine	4-38	Tilt the superstructure with VDS	5-71
Preparatory work for putting into operation	4-36	Towing	6-1
Preparing lubrication	7-7	Transportation	6-1
Protective structures	4-16	Transporting the vehicle	6-8
Putting back into operation	5-73	Travel drive	7-48
Putting into operation for the first time and running-in period	4-37	Type plates	3-5
Putting out of operation		U	
Disposal	5-74	Unlocking and locking the door	4-3
Permanently putting out of operation	5-74	Uphill vehicle operation	5-10
Putting out of operation temporarily	5-72	V	
R		V-belt	7-42
Reducing track tension	7-51	Ventilation	7-48
Re-equipping	5-61	Vibration	9-8
Refueling	7-27	Visual aids	4-12
Refueling with a stationary fuel pump	7-28	W	
Release the pressure of the work hydraulics	5-59	Warranty and liability	1-8
Replacing the cabin air filter	7-48	Washer system	5-16, 7-48
Requirements for the operating personnel	4-37	Weights	9-9
Rotating beacon	5-15	Work operation	5-62
Rotating the upper carriage	5-21	Work position of vehicle	5-67
S		Working alongside trenches	5-67
Seat adjustment		Working on slopes	5-69
Backrest adjustment	4-9	Working with a hydraulic hammer	5-27
Horizontal adjustment	4-10		
Weight adjustment	4-10		
Seat belt	4-11		
Serial number	3-6		
Service menu/error messages	8-5		
Shovel bucket operation	5-71		
Signaling system	5-12		



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.

No reproduction or translation of this publication, in whole or in part, without the written consent from Wacker Neuson Linz GmbH.

All rights under the provision of the Copyright Act are reserved.

Wacker Neuson Linz GmbH

Flughafenstraße 7

A-4063 Hörsching

Austria



**WACKER
NEUSON**
all it takes!

 WARNING
Cancer and Reproductive Harm www.P65Warnings.ca.gov
 ADVERTENCIA
Cáncer y daño reproductivo www.P65Warnings.ca.gov
 AVERTISSEMENT
Cancer ou malformations congénitales www.P65Warnings.ca.gov

Wacker Neuson Linz GmbH

Flughafenstraße 7
A-4063 Hörsching

Phone: +43 (0) 7221 63000
Fax: +43 (0) 7221 63000-2200
E-mail: office.linz@wackerneuson.com
www.wackerneuson.com

Order no.1000453263
Language en