Kubota

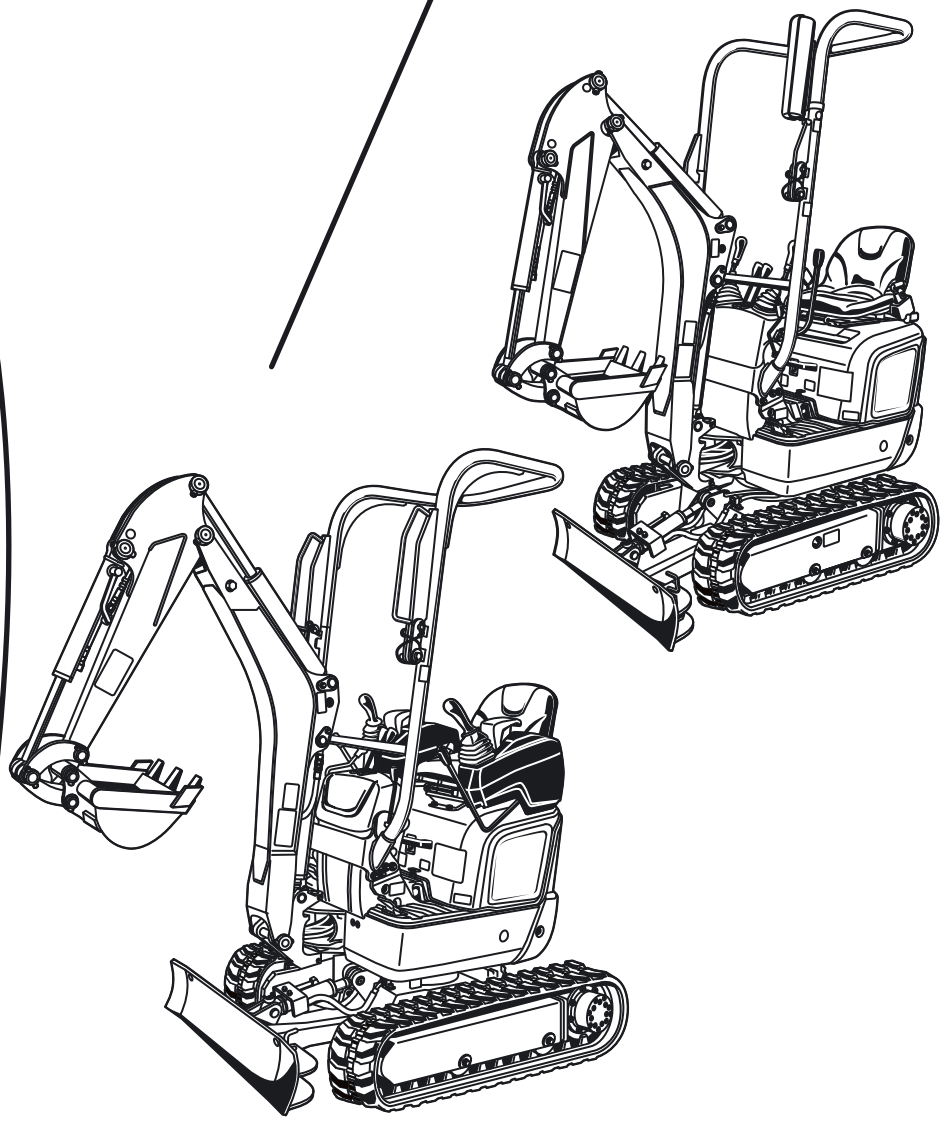
COMPACT EXCAVATOR

GB

MODELS

K008-5

U10-5



CE

OPERATING INSTRUCTIONS

W9215-8135-1 - Original - 06/2021

Dear valued customer,

please fill in the form below. Your information will help us to help you.

Type:
Year of construction:
Product identification number:
Shipment date:

These operating instructions only apply to KUBOTA excavators K008-5 and U10-5, which comply with the following EC declaration of conformity (page 7).
In addition, the machine's product identification number must correspond to the following scope of application.

K008-5 - Valid from serial number 10001
U10-5 - Valid from serial number 10001

The serial number is part of the product identification number (page 46).

Please contact your KUBOTA dealer for any additional information or troubleshooting procedures not mentioned in these operating instructions.

We would also like to point out that the contents of these operating instructions are not part of any previously existing agreement, commitment or legal relationship nor do they constitute an amendment this. All responsibilities are taken from the respective sales contract, which contains the complete and exclusively valid contractual warranty, refer to the "Duties, liability and warranty" section (page 13). This documentation neither extends nor restricts the contractual warranty.

KUBOTA Baumaschinen GmbH reserves the right to change the information contained in this document with respect to future technical development without altering the basic characteristics of the excavators described herein and without amending this document.

CONTENTS

Abbreviations

1/min	revolutions per minute
%	percent
°	degrees
°C	Degrees Celsius
A	Ampere
acc.	according
API	American Petroleum Institute
approx.	approximately
ASTM	American Society for Testing and Materials
bar	Bar
CECE	Committee for European Construction Equipment
CO_2	carbon dioxide
dB	decibel
DIN	Deutsches Institut für Normung (German Institute for Standards)
e.g.	for example
EMC	electromagnetic compatibility
EN	Europäische Norm (European standard)
GL	Ground level
h	Hour
incl.	including
ISO	International Organisation for Standardisation
kg	kilogramme
km/h	kilometre per hour
kN	kilonewton
kV	kilovolt
kW	kilowatt
l	litre
l/min	litres per minute
LpA	noise level operator's place
LwA	Sound power level
m	metre
m/s²	metre per square second
m³	cubic metre
max.	maximum
MIL	Military Standards
mm	millimetre
MPa	Megapascal
N	Newton
OPG	Operator Protective Guard
resp.	respectively
RMS	Root Mean Square
ROPS	Roll-Over Protective Structure
s	second
SAE	Society of Automotive Engineers
t	ton
TOPS	Tipping-Over Protective Structure
V	Volt

General symbols


Warning light


Fuel indicator


Engine oil indicator


Charge indicator


Glow indicator


Hydraulic oil


Travel speed


Low speed


Forward travel


Backward travel


Raise boom


Lower boom


Arm dump


Arm crowd


Bucket crowd


Bucket dump


Indicator coolant temperature


Service interval indicator


Set clock indicator


Swivel boom (left)


Swivel boom (right)


Dozer up


Dozer down


Lever direction


Control lever direction


Rotary beacon


Display selector switch

Auxiliary port indicator


Working lights


Horn


Bolted


Released


Fan


Menu button


Insert key


Pull out Key


Indirect return flow


Direct return flow

GENERAL INFORMATION

Foreword

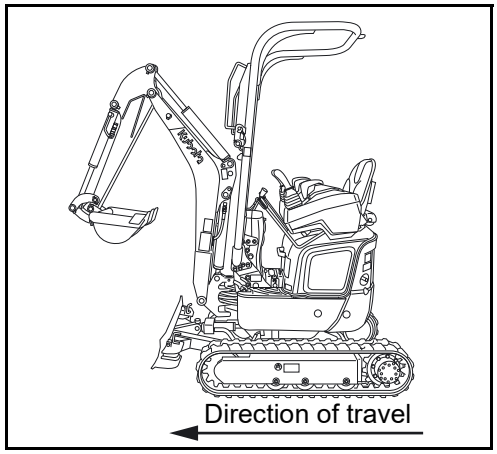
The safety instructions and the rules and regulations for the use of excavators given in these operating instructions apply to the excavators mentioned in this documentation.

It is the responsibility of the owner(s):

- To ensure that local, regional and national regulations are observed,
- To observe the bodies of rules (laws, regulations, guidelines, etc.) stated in the operating instructions to ensure safe handling of the equipment,
- To ensure that the operating instructions are available to the operating personnel at all times and that the information, such as notes, warnings and safety rules and regulations, are followed in all points.

The data in the operating instructions apply for all models. Differences are highlighted (e.g. K008-5 or U10-5).

The terms "front" and "direction of travel" refer to the view of the operator when seated on the operator's seat. Forward direction of travel means that the dozer is at the front when driving forwards as shown in the figure.



The symbols for operating and safety instructions are listed under "Safety symbols" (page 15).

EC Declaration of Conformity

Your copy of the EC declaration of conformity is delivered with the machine. Keep the EC declaration of conformity in a safe place and show it, if requested, to the responsible authorities. Should the EC declaration of conformity be lost, contact your local KUBOTA Dealer.

The CE marking is located on the type plate. If the machine is modified or retrofitted without the approval of the manufacturer, the safety of the machine may be affected, thus rendering the EC declaration of conformity invalid.

Content of the EC DECLARATION OF CONFORMITY:

ORIGINAL EC DECLARATION OF CONFORMITY

Manufacturer:	**KUBOTA CORPORATION**
Trade name:	**KUBOTA**
Type:	**Compact excavator**
Model:	**K008-5**
Product identification number:	>XXXXXXXXXXXXXXXXX<

This machine fulfills all the relevant provisions of the Machinery Directive 2006/42/EC

This machine fulfills all the relevant provisions of the directives and regulations: 2000/14/EC, 2014/30/EU, (EU) 2016/1628

Conformity assessment according to the directive 2000/14/EC, annex VI.

Model	Rated speed	Nominal output (ISO 14396)	Measured sound power level	Guaranteed sound power level
K008-5	2050 1/min	7.6 kW	87.9 dB (A)	90 dB (A)

Referred standards:	EN 474-1:2006+A5:2018 except Annex G, EN 474-5:2006+A3:2013
Notified body:	TÜV SÜD Industrie Service GmbH (Notified Body 0036 for EC Directive 2000/14/EC) Westendstrasse 199, D-80686 Munich, Germany
Name and address of the manufacturer:	KUBOTA CORPORATION 1-1-1, NAKAMIYA OIKE HIRAKATA OSAKA, 573-8573, JAPAN
Name and address of the authorized representative	KUBOTA Baumaschinen GmbH Steinhauser Str. 100 D-66482 Zweibrücken, Germany
Name and address of the person responsible for the technical documentation:	Mikio Taguchi, President, KUBOTA Baumaschinen GmbH Steinhauser Str. 100, D-66482 Zweibrücken, Germany

Economic operator of the product (based on the Regulation (EU) 2019/1020)
Name: Kubota Holdings Europe B.V.
Contact details: Hoofdweg 1264, 2153 LR Nieuw-Vennep, the Netherlands
Email: kbt_g.eu_market_surveillance@kubota.com

ORIGINAL EC DECLARATION OF CONFORMITY

Manufacturer:	**KUBOTA CORPORATION**
Trade name:	**KUBOTA**
Type:	**Compact excavator**
Model:	**U10-5**
Product identification number:	>XXXXXXXXXXXXXXXXX<

This machine fulfills all the relevant provisions of the Machinery Directive 2006/42/EC

This machine fulfills all the relevant provisions of the directives and regulations: 2000/14/EC, 2014/30/EU, (EU) 2016/1628

Conformity assessment according to the directive 2000/14/EC, annex VI.

Model	Rated speed	Nominal output (ISO 14396)	Measured sound power level	Guaranteed sound power level
U10-5	2050 1/min	7.6 kW	87.3 dB (A)	89 dB (A)

Referred standards:	EN 474-1:2006+A5:2018 except Annex G, EN 474-5:2006+A3:2013
Notified body:	TÜV SÜD Industrie Service GmbH (Notified Body 0036 for EC Directive 2000/14/EC) Westendstrasse 199, D-80686 Munich, Germany
Name and address of the manufacturer:	KUBOTA CORPORATION 1-1-1, NAKAMIYA OIKE HIRAKATA OSAKA, 573-8573, JAPAN
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EU declaration of conformity radio equipment-manufacturer

Hereby, ASAHI DENSO CO., LTD. declares that the radio equipment type [CZ106] is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: http://en.ad-asahidenso.co.jp/euro-compliance/

Date of issue of the operating instructions

The date of issue of the operating instructions is printed on the bottom right of the front page of the book.

Operating personnel

The duties of personnel with respect to operation, servicing, repairs and safety inspections must be clearly defined by the owner.

Personnel in training are only allowed to work on or with the excavator under the supervision of an experienced operator.

Operator

According to industrial safety regulations, only persons who have completed 18 years of age, were instructed in the operation of the excavator, who have proven their qualification to the owner (employer) and who can be expected to perform their duties in a reliable way are allowed to operate the excavator independently.

Only instructed personnel are allowed to start the excavator and operate the controls.

Trained personnel

Trained personnel are skilled persons with a technical qualification who are able to determine damage to the excavator and perform repairs in their area of qualification (e.g. hydraulic or electrical engineering).

Only trained and instructed personnel are allowed to work on the machine.

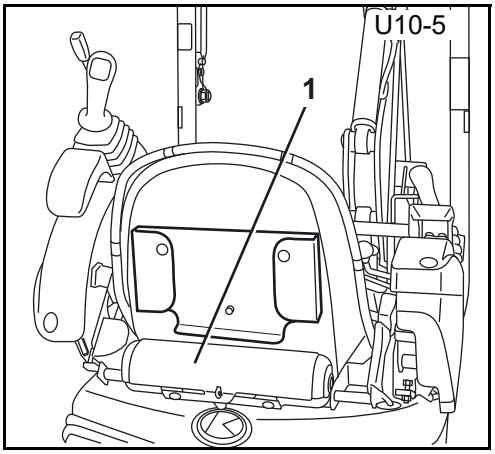
Qualified personnel

Based on their technical training and experience in their field, qualified personnel should have sufficient knowledge about the technology used in this machine and be familiar with the applicable national work safety regulations, accident prevention regulations and the generally accepted technical rules so that they can assess the sound operating condition of the machine.

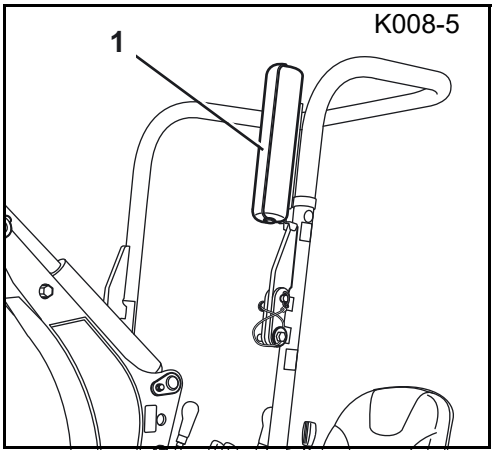
Location of the operating instructions

The operating instructions must always be kept on the excavator. If the operating instructions have become illegible due to continuous use, the owner (operator) must order a replacement from the manufacturer.

A compartment (1) for the operating instructions is located at the rear side of the operator seat.



A compartment (1) for the operating instructions is located at the roll-over safety bar.



Spare parts

When ordering spare parts, please always provide the following information:

- Machine's product identification number and year of construction (see type plate)
- Designation/type of spare part (see original KUBOTA spare parts catalogue)
- Part number of the spare part (see original KUBOTA spare parts catalogue)
- Quantity
- Customer number

For written orders, please provide this information exactly, or for telephone orders, please have this information ready before calling. This makes the process easier for us and for you, and prevents errors and incorrect orders or deliveries.

Please place your order with your KUBOTA dealer.

SAFETY RULES

Basic safety instructions

- The EC Use of Work Equipment Directive (2009/104/EC) from 16/09/2009 applies to the operation of the aforementioned excavator.
- The information in these operating instructions applies for maintenance and repairs.
- National rules and regulations apply where applicable.

Duties, liability and warranty

A basic prerequisite for the safe handling and problem-free operation of the excavator is the knowledge of the safety instructions and safety regulations.

These operating instructions, in particular the safety instructions, must be followed by all persons working near or with the excavator. Above and beyond this, the safety rules and regulations applicable for the site must also be observed.

Hazards occurring during the handling of the excavator:

- The excavators are manufactured according to the state of technology and the recognised safety rules. Nevertheless, danger to life and limb of the operator or a third party, or damage to the excavator or other property, can occur. The excavator(s) may only be used

  → for its approved use and

  → in a completely safe operating condition.

Malfunctions that can impair safety must be repaired immediately.

Warranty and liability

The scope, period and form of the warranty are set forth in the sales and delivery conditions of the manufacturer. The operating instructions valid at the time of delivery shall be the basis for any warranty claims arising from errors in the documentation, see the date of issue of the operating instructions (page 10). The following applies above and beyond the sales and delivery conditions: No warranty or liability shall be assumed for personnel and property damages resulting from one or more of the following reasons:

- improper use of the machine,
- improper starting, operation and maintenance of the machine,
- operation of the machine with malfunctioning safety devices or improperly installed or non-operational safety and protective devices,
- ignorance or non-observance of these operating instructions,
- insufficiently qualified or insufficiently instructed operating personnel,
- improperly performed repairs,
- unauthorised engineering changes to the machine,
- poor surveillance of machine parts subject to wear,
- catastrophes caused by the effect of foreign objects or an act of God.

It is the responsibility of the owner to ensure that

- the safety rules are observed (page 13),
- unapproved use (page 16) and unauthorised operation are prevented,
- the approved use (page 16) is ensured and the machine is operated in accordance with the contractual conditions of use.

Safety symbols

The following terms and hazard symbols are used in these operating instructions:

Identifies important operating procedure information that may not be immediately evident to the operator.

Identifies operating procedures that must be followed exactly to prevent damage to the excavator or other property.

Identifies operating procedures that must be followed exactly to prevent danger to persons.

Identifies possible hazards in the handling of batteries.

Identifies possible hazards from caustic materials (battery acid).

Identifies possible hazards from explosive materials.

Prohibits the use of fire, ignition sources, and smoking.

Prohibits the spraying of water.

Identifies operating procedures for the proper disposal and storage of ensuing waste materials.

Approved use

The excavators specified in these operating instructions may only be used for loosening, excavating, picking up, transporting and dumping soils, rocks and other materials, as well as for work with the dozer or with a breaker. The load may be transported largely without driving the excavator. Do not exceed the maximum lifting capacity.

Approved use also includes:

- Observation of all notes in these operating instructions
- Regular servicing
- Regular safety inspections

Unapproved use

Any improper use – i.e. any deviation from the information in the “Approved use” section (page 16) of the machine documented in these operating instructions – is considered unapproved use. This also applies to the non-observance of the standards and guidelines listed in these operating instructions.

Hazards can occur as a result of improper use. Such improper uses include:

- using the machine with defective or improperly installed safety and protective devices,
- using the machine with safety and protective devices that have been tampered with,
- starting the machine by bypassing the battery terminals,
- starting the machine when the operator is not in the operator’s place and the controls are not in neutral position,
- using the machine when the operator is not in the operator’s place,
- use of the machine by persons other than the operator, who is sitting in the operator’s place,
- using the machine without wearing a seat belt,
- using the machine under the influence of alcohol, medication, drugs or when tired,
- use of the machine by insufficiently qualified or insufficiently trained operating personnel,
- using the machine in contaminated environments,
- using the machine in potentially explosive areas,
- using the machine in closed rooms without sufficient ventilation,
- using the machine under conditions of extreme temperatures (extreme heat or cold),
- using the machine during a thunderstorm or when there is a possibility of lightning,
- using the machine for underground work,
- using the machine without suitable equipment,
- using the machine with a log grab,
- using the bucket as a hammer to drive posts into the ground,

- crushing concrete or rocks by swinging the boom with the bucket,
- using the machine with the bucket teeth rammed into the ground,
- using the machine for demolition work, with the danger of falling objects (e.g. tearing down walls),
- using the machine to lift or transport people or animals. (Only the operator may remain in the operator's place, work and move with the machine in accordance with the intended purpose),
- using the machine to lift loads without proper equipment for lifting operations,
- exceeding the maximum load-bearing capacity (the maximum lifting capacity is given in the lifting capacity tables at the operator's place or in the operating instructions),
- swinging the boom to the left or right during the lifting process,
- exceeding the max. climbing performance or max. lateral sway,
- driving fast on muddy or uneven terrain,
- driving fast on sloping terrain,
- driving fast and operating another control at the same time,
- using the machine after improperly performed repairs,
- unauthorised, technical changes to the machine,
- non-observance of the time intervals for the safety check,
- non-observance of the operating and maintenance instructions in these operating instructions.

Quick coupler and attachments limitations

The KUBOTA excavator has been thoroughly tested for proper performance with quick coupler and attachments sold or approved by KUBOTA.

Use with quick coupler and attachments which are not sold or approved by KUBOTA and which are otherwise unfit for use with the KUBOTA excavator may result in malfunctions or failures of the excavator, damage to other property and injury to the operator or others.

[Any malfunctions or failures of the excavator resulting from use with improper quick coupler and attachments are not covered by the warranty.]

Special duties of the owner

The owner of the excavator in the context of these operating instructions is any person or company that uses the excavator itself or on whose order it is used. In special cases (e.g. leasing, rental), the owner is the person who must perform the duties arising from operation according to the conditions of the contract between owner and user of the excavator.

The owner must ensure that the excavator is only used properly and that any danger to the life and health of the user or others who are in the proximity of the user are eliminated. Furthermore, observance of the safety rules and regulations as well as the operating, maintenance and repair regulations must be ensured. The owner must make sure that all operators and users have read and understood these operating instructions. Furthermore, the operator must provide a battery-powered floodlight or a torch in order to illuminate the work area during maintenance work in the event of an emergency, as well as a padlock in order to lock the engine compartment cover.

The operator must provide persons who work with or on the excavator with suitable personal protective equipment (PPE) and those persons must use that equipment where applicable, for example: suitable working clothes, safety shoes, safety helmets, eye protection, ear protection and breathing masks. The owner/employer bears the main responsibility for the PPE, which is specified by the safety rules for particular types of activity.

Waste such as old oil, fuel, hydraulic fluid, coolant and batteries comes under the category of toxic waste and can be a hazard to the environment, people and animals.

Disposal must be undertaken in an appropriate way, according to legally prescribed pollution control and safety regulations.

If you have questions about the proper disposal or storage of refuse and toxic waste, contact your KUBOTA dealer or a local waste management contractor.

Noise emission and vibration

The values specified in these operating instructions were identified during the test cycle on an identical machine and are valid for a machine with the standard equipment. The determined values are specified in the Technical Data (page 44).

Noise emission

The noise levels were determined using the method for determining the guaranteed sound pressure level of ISO 4871 based on directive 2000/14/EC, Appendix VI.

The noise levels indicated are not applicable for the determination of additional workplace noise emissions. The actual noise levels may need to be determined directly at the workplaces, subject to actually existing conditions (other noise sources, special operating conditions, sound reflections).

Depending on the actual noise emissions, the owner must provide the operator with the necessary personal protective equipment (ear protection).

Noises at a noise level of more than 85 dB (A) can cause hearing damage.
At a noise level of 80 dB (A) and up, the use of ear protection is recommended.
At a noise level of 85 dB (A) and up, the operator must wear ear protection.

Vibrations

The vibrations on the machine have been determined using an identical machine.

The vibration stress on the operator over a longer period of time must be determined by the owner at the operating site, in compliance with directive 2002/44/EC in order to consider individual magnitudes of influence.

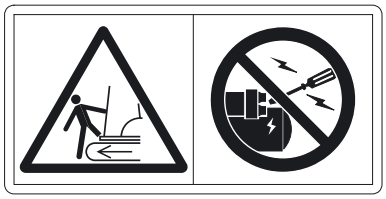
Safety labels on the machine

Care of safety labels

- Keep safety labels clean and free from interfering objects.
- Clean safety labels with soap and water and dry with a soft, clean cloth.
- Replace damaged or missing safety labels with new ones from your KUBOTA dealer.
- If a component with glued-on safety labels is replaced with a new part, make sure that the new labels are affixed to the same location as the replaced component.
- Safety labels should be stuck only on clean and dry surfaces. Press any air bubbles into the outer edge of the sticker.

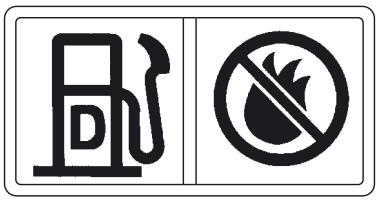
The positioning of the safety labels is illustrated in the following figures.

1) Code #: RB456-5739-0



Mortal danger from moving excavator!
When staying in the danger zone and in the case of a suddenly starting excavator, there is the danger of being run over by the excavator.
- Only start the machine from the operator's seat.
- Do not start the machine by bypassing the starter poles.

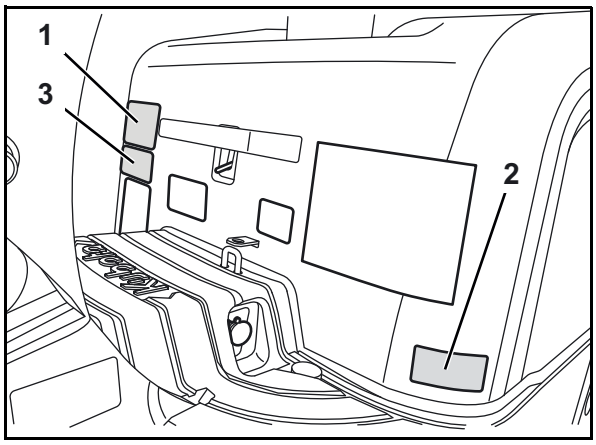
2) Code #: RD579-5736-0



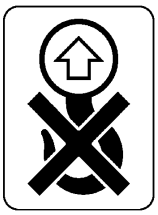
Risk of fire from inflammable diesel fuel!
Inflammatory vapours can occur in the fuel tank, which may go up in flames as a result of an ignition source.
- Do not use open flames in the vicinity of the fuel tank.

3) Code #: RD548-5738-0

Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- Switch off the engine before working in the engine room.
- Ensure that the engine and all the engine parts have come to a complete standstill.
- Do not reach into rotating components.



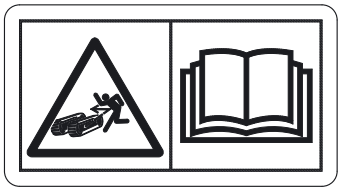
1) Code #: RB419-5796-0
Not a lifting point

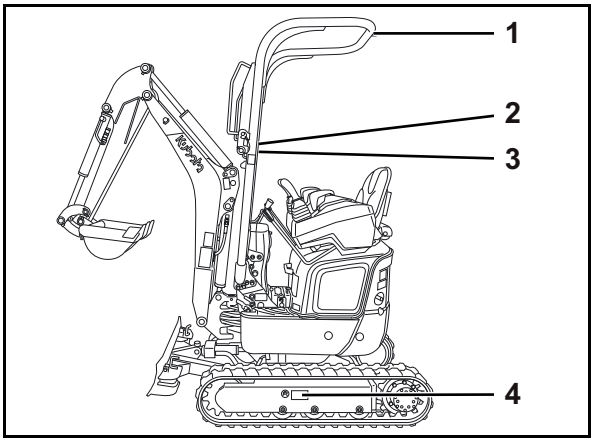


2) Code #: RA058-5723-0
Risk of death when working with the roll-over safety bar folded down!
If the machine tips over while the roll-over safety bar is folded down, the operator is not protected on the operator's seat. Because of the fastened seat belt, the operator cannot jump off of the machine. The machine can fall onto the operator and roll over him.
- As a rule, always work with the roll-over safety bar folded up and with the seat belt fastened.
- Only operate the machine with the roll-over safety bar folded down and without the seat belt fastened when passing through a low point on level ground.

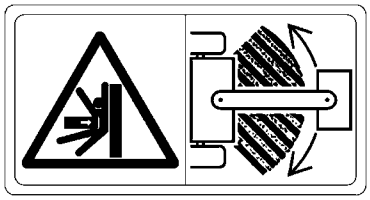
3) Code #: RD579-5755-0
Danger of being crushed by swinging roll-over safety bar!
Shear forces can cause serious injuries if any limbs are crushed.
- Keep hands away from the swivel joints when swinging the roll-over safety bar.

4) Code #: RB456-5795-0
Danger of injury from components under pressure!
In the case of improper operating of the crawler tensioner, grease or the pressure valve can splash out under high pressure and lead to injury.
- Before working on the crawler tensioner, please read the operating instructions!

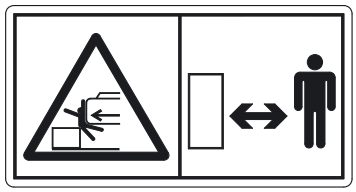




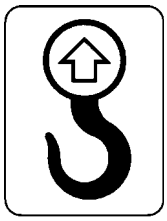
1) Code #: RB456-5722-0
Mortal danger from moving excavator!
A low safe distance to the boom can impede an emergency exit from the danger zone. Being crushed by the boom can result in severe injury or death.
- Do not remain within the swinging range of the boom.
- Ensure safe distance to obstacles and sufficient freedom of movement.

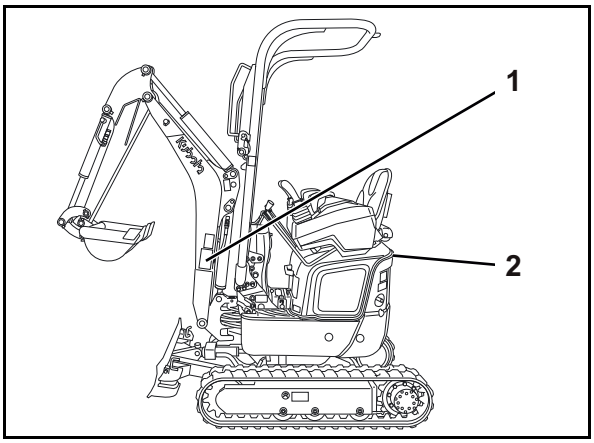


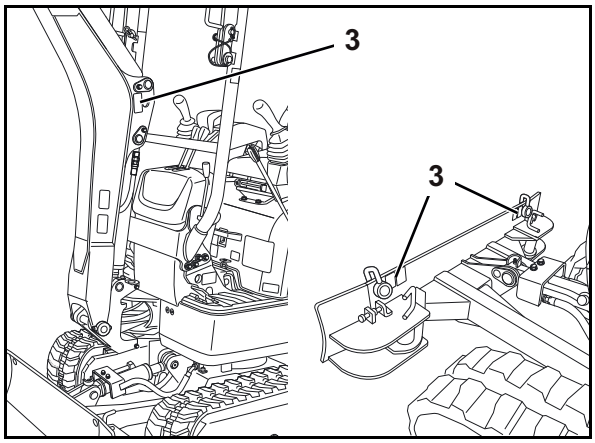
2) Code #: RA028-5728-0
Mortal danger by crushing!
Low safe distance to the excavator and to obstacles can prevent an emergency exit from the danger zone. Crushing by excavator results in severe injury or death.
- Do not enter the manoeuvring area.
- Ensure safe distance to obstacles and sufficient freedom of movement.



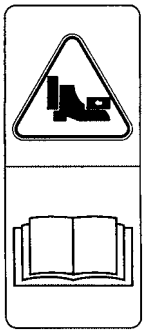
3) Code #: R2491-5796-0
Lifting point



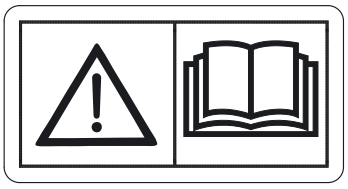


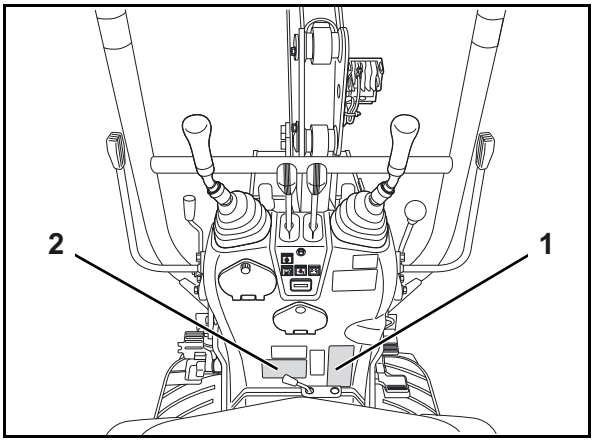


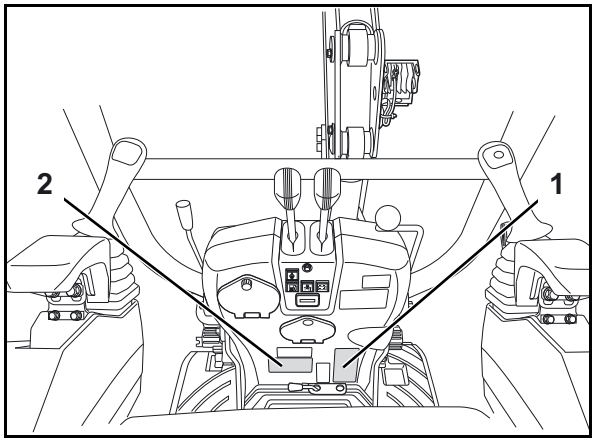
1) Code #: RA118-5776-0
Risk of being crushed by the boom!
When lifting and swinging the boom, there is a danger of getting caught between the boom and the protective structure or swivel frame.
- Do not step beyond the front part of the boom swing pedal.
- Please read the operating instructions before commissioning.



2) Code #: 69198-5784-0
Risk of accidents due to incorrect operation!
Improper operating can lead to damage to the excavator, to serious accidents with a high risk of injury and death as a result.
- Please read the operating instructions before commissioning.

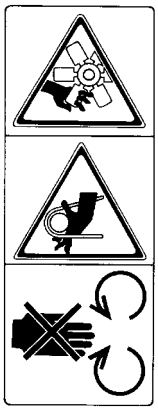




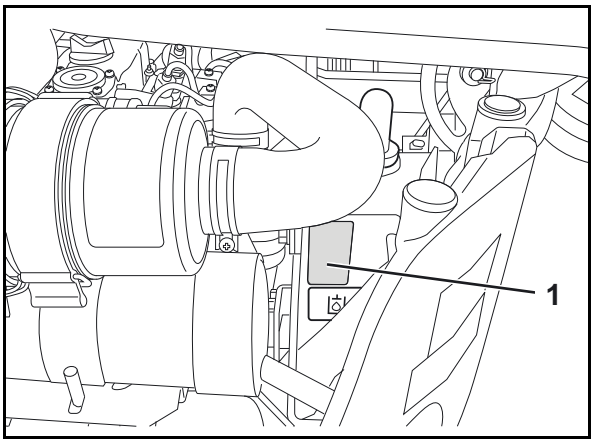


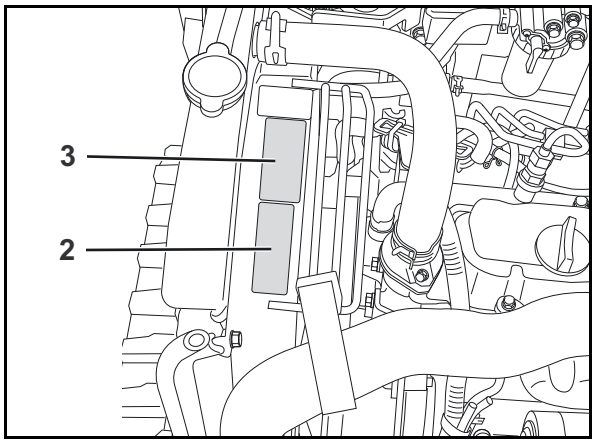
1) Code #: RD579-5738-0
Risk of burns from hot components!
Surfaces can be hot and lead to burns.
- Do not touch hot parts, such as exhaust muffler, etc.

2) Code #: 6C090-4958-0
Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- Switch off the engine before working in the engine room.
- Ensure that the engine and all the engine parts have come to a complete standstill.
- Do not reach into rotating components.

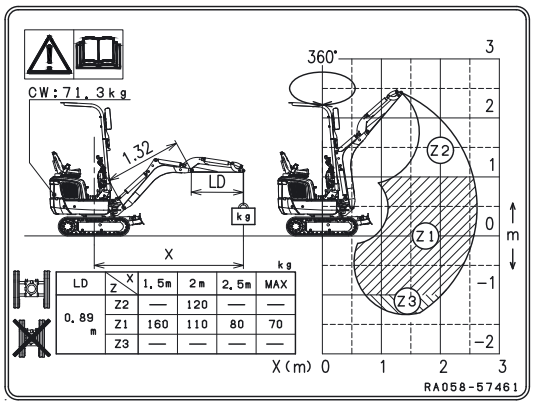


3) Code #: RA058-5722-0
Danger of injury from liquids under pressure!
Escaping hydraulic oil under pressure can penetrate into the skin.
Risk of burns from hot components!
Surfaces can be hot and lead to burns.
- Apertures, e.g., ventilation systems, and hot components, must not be covered with hands.



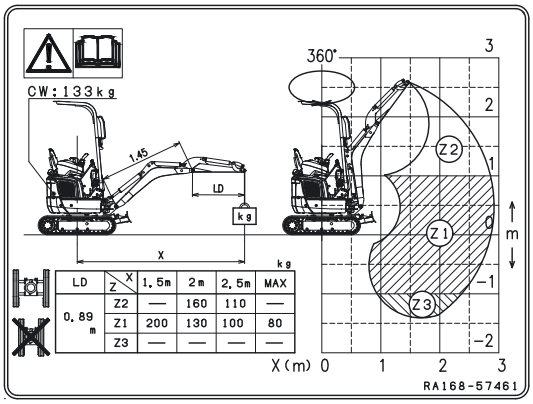


1) Code #: RA058-5746-0
Max. lifting capacity when rotating up to 360°
K008-5

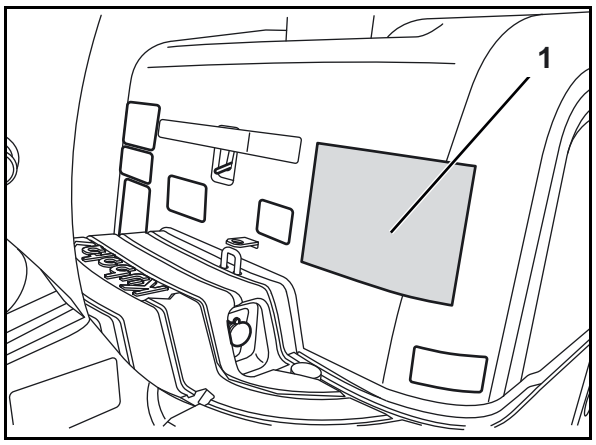


LD	Z \ X	1.5m	2m	2.5m	MAX
0.89 m	Z2	—	120	—	—
	Z1	160	110	80	70
	Z3	—	—	—	—

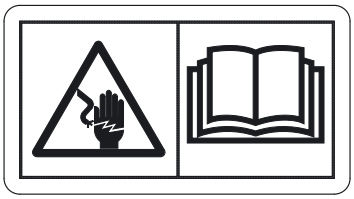
Code #: RA168-5746-0
Max. lifting capacity when rotating up to 360°
U10-5



LD	Z \ X	1.5m	2m	2.5m	MAX
0.89 m	Z2	—	160	110	—
	Z1	200	130	100	80
	Z3	—	—	—	—

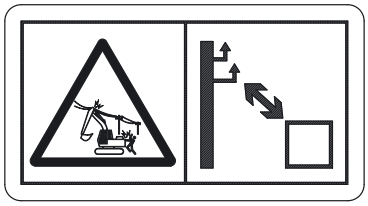


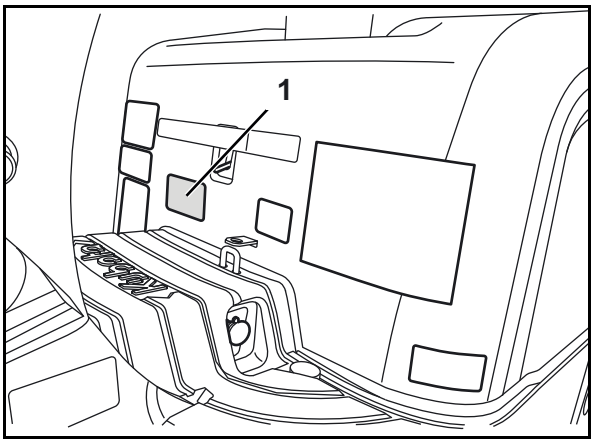
1) Code #: RB456-5786-0
Danger due to electric current!
Excess voltage can cause injuries while working on the electrical system.
- Before working on the electrical system, disconnect it from the power supply.
- Wear personal protective equipment.
- Before working on the electrical system, please read the operating instructions!

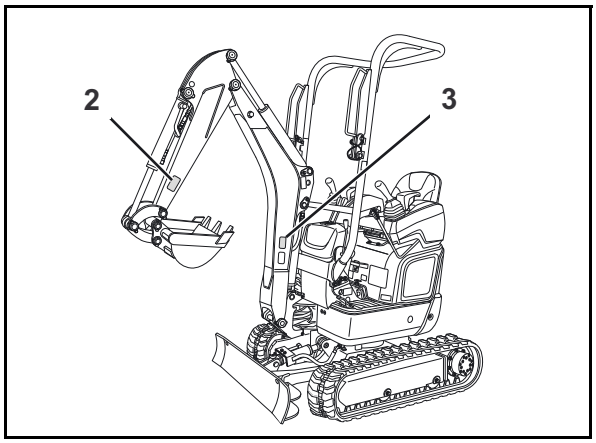


2) Code #: RB456-5789-0
Danger in the danger zone of the front attachments!
Standing in the danger zone while the front attachments are moving suddenly can lead to severe injury or even death.
Surfaces can be hot and lead to burns.
- Do not stand in the danger zone of the front attachments.
- Ensure safe distance to obstacles and sufficient freedom of movement.

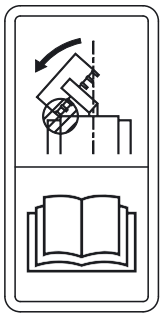
3) Code #: RB456-5788-0
Risk of death due to electric current!
hen working in the vicinity of overhead power lines without a sufficient safe distance between them and the machine, the electricity can jump onto the machine.
- Maintain a safe distance from overhead power lines.







1) Code #: RD839-5739-0

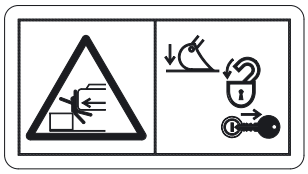


Caution! Risk of component damage!

When using a wider or deeper bucket, take good care when swinging or retracting the front attachments to make sure that the bucket does not hit the swivel frame.

- Read the Operating Instructions for the attachment.

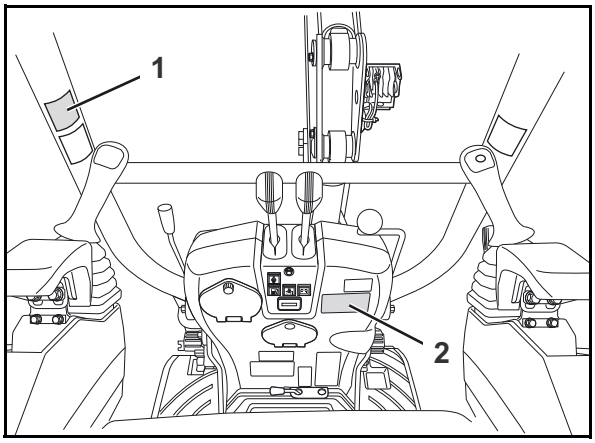
2) Code #: RB456-5783-0



Mortal danger by crushing!

Low safe distance to the excavator and to obstacles can prevent an emergency exit from the danger zone. Crushing by excavator results in severe injury or death.

- Before leaving the machine, lower bucket to the ground.
- Lift the control lever lock, turn the starter switch to the STOP position and remove the key.



Safety devices

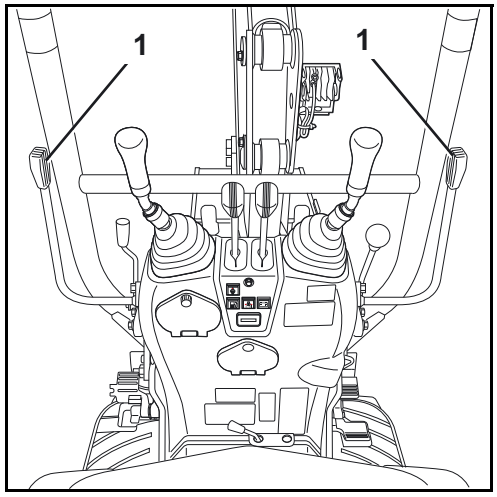
Before starting the machine, all safety devices must be installed properly and operational. Manipulating the safety devices is prohibited.

Protective devices may only be removed once

- the excavator is standing still and the engine is stopped
- and secured against restarting (starter switch in STOP position and key removed).

Locking the controls

Locking the control lever K008-5



If the control lever lock (1) is located in the upper position, then the hydraulic functions of the following controls will be locked:

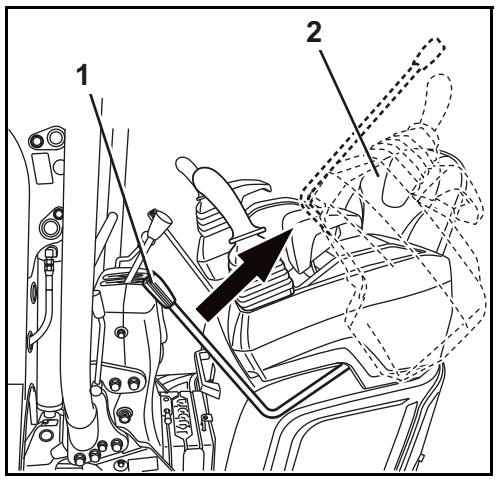
Function	K008-5
Drive lever	●
Right control lever	●
Left control lever	●

Make sure that all controls are in the neutral position and that the control levers and the drive levers are locked.

The hydraulic functions for setting the track width, operating the dozer, swinging the boom and operating the auxiliary port are not locked by the control lever lock and can be activated.

- To release the control lever, place the control lever lock into the lower position.

Locking the control lever U10-5



If the left or the right control console (2) is raised completely with the control lever lock (1), then the hydraulic functions of the following controls will be locked:

Function	U10-5
Auxiliary port pedal	●
Boom swing pedal	●
Drive lever	●
Dozer control lever	●
Right control lever	●
Left control lever	●

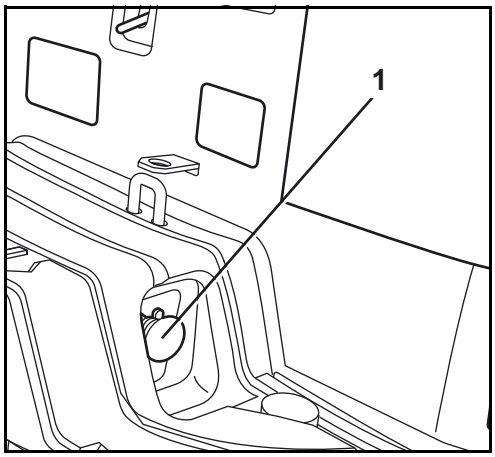
- To unlock the hydraulic functions, lower the control console completely using the control lever lock.

Locking the swivel frame

The swivel frame lock (1) serves to secure the swivel frame against unintentional rotations, e.g. during transport.

If the swivel frame lock (1) is in the lower position, the swivel frame and track frame are locked together.

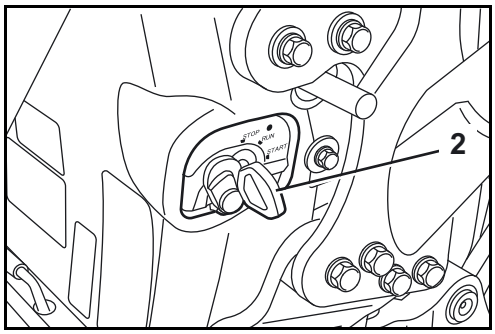
Before locking the swivel frame, the swivel frame and track frame must be aligned parallel to one another.



Engine emergency stop

The engine turns off when the starter switch (2) is switched to the STOP position.

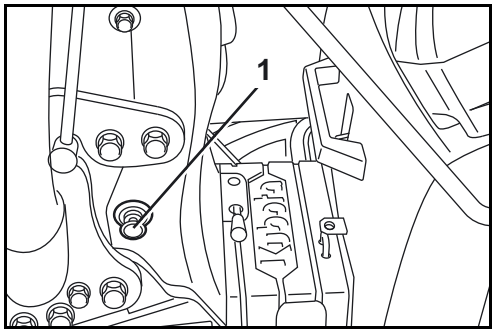
If the engine cannot be turned off, please operate the engine emergency stop knob in order to turn off the engine.



To stop the engine:

- Pull the knob (1) until the engine stops.

After the engine has stopped, push in the knob.



Protective structure of roll-over safety bar

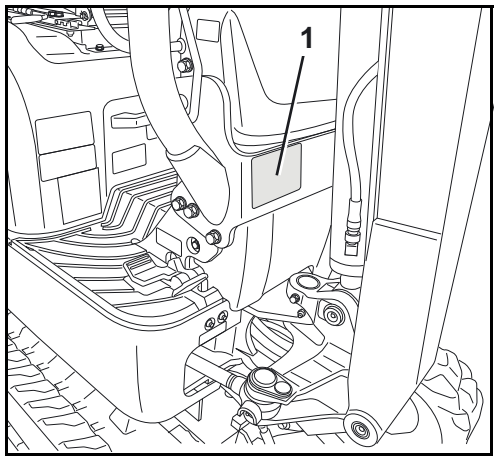
The excavator is equipped with a protective structure that protects the operator from severe injury or death if the machine crashes or overturns.

The roll-over safety bar was designed in accordance with current safety standards and tested for verification as:

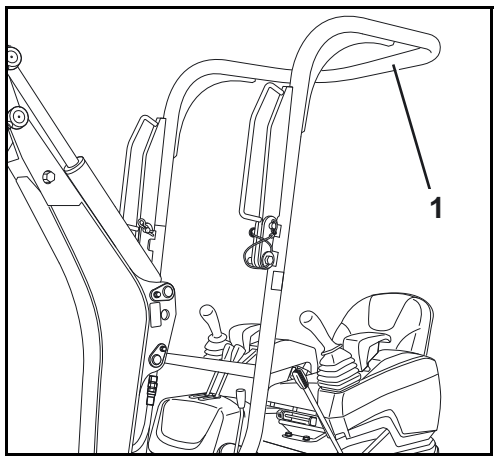
Roll-over protection ROPS (Roll-Over Protective Structure)

To ensure greatest protection by means of this protective structure, the following applies:

- The seat belt must be fastened while the excavator is being operated.
- Do not make any structural changes to the protective structure.
- In the event of damage, please contact your KUBOTA dealer. (Do not repair!)
- Never operate the excavator without the protective structure.
- Never operate the machine with a higher operating weight than the maximum permissible total weight indicated on the ROPS identification plate (1).

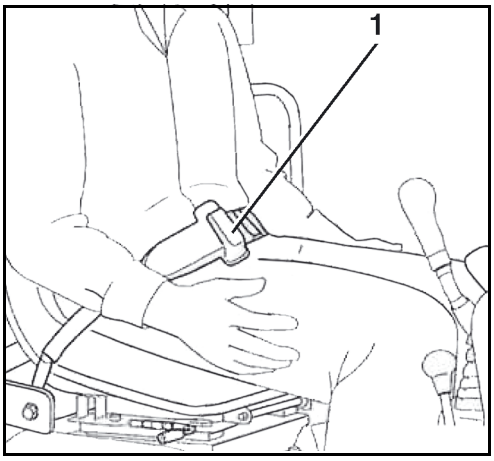


- If the roll-over safety bar (1) is elevated and locked in that position, the operator is protected from being crushed in the event of the machine tipping over if the seat belt is tightly fastened.



Seat belt

If the operator with tightly fastened seat belt (1) is on the operator's seat, then he is protected against falling off and therefore against crushing or bruising in the event of a collision or tipping over of the excavator.



STOP

When operating the excavator with the roll-over safety bar swivelled upward and locked, wear the seat belt (page 76). When driving with the roll-over safety bar swivelled downward (e. g. driving through a low passageway), do not wear the seat belt.

Hazards coming from the hydraulic system

If hydraulic oil gets into the eyes, rinse them immediately with clear water and subsequently seek medical aid.

Do not allow hydraulic oil to come into contact with skin or clothing. Skin parts that may have come into contact with hydraulic oil must be washed with water and soap immediately, if possible. Do this thoroughly and repeatedly, otherwise there is a risk of damage to the skin.

Immediately take off any clothes dirtied or soaked with hydraulic oil.

Persons who have inhaled hydraulic oil vapours (mist) should be taken to a doctor immediately.

If leaks have occurred in the hydraulic system, the excavator may not be placed into operation or, if in operation, operation must cease at once.

Do not use the naked hand to search for leaks; always use a piece of wood or cardboard. Protective clothing (eye protection and gloves) must be worn when seeking leaks.

Leaking hydraulic oil must be bound immediately with an oil binding agent. The contaminated oil binding agent must be stored in suitable containers and in accordance with the valid regulations.

STOP

Mortal danger by crushing!
Risk of the boom, arm, dozer or other attachments falling down if a hydraulic pipe breaks off.
- *Do not stand in the danger zone of the front attachments.*

Fire protection

The excavator components and attachments (in particular the engine and the exhaust system) reach high temperatures even under normal working conditions. An electric installation that is damaged or not properly serviced may lead to flashovers and/or electric arcs. The following fire protection guidelines may help you ensure the maintenance and efficiency of your equipment and minimise fire hazards.

- Remove any accumulated dirt adjacent to hot components, e.g. engine, muffler, exhaust manifold/tubes, etc. If the machine is being used at full capacity, cleaning should be performed more frequently.
- Accumulated residues from plants and trees, or any other flammable materials, should be removed from the machine. This must be observed in particular in the proximity of the engine and the exhaust system, but also in the swivel frame, the track frame, and the boom.
- Check the condition and wear of all fuel lines and hydraulic hoses. To avoid leakage, replace any worn parts immediately.
- Electric cables and connections must be checked regularly for signs of damage. Damaged components and lines must be replaced or repaired before starting up the machine. All electric connections must be kept clean and tight.
- Exhaust pipes and mufflers must be checked daily for leaks, damage and any loose or missing joints. Leaking or damaged exhaust system components must be replaced or repaired before starting up the machine.
- Always keep a multi-purpose fire extinguisher on or close to the machine. Familiarise yourself with the operation of the fire extinguisher. In the event of a fire in the electrical or hydraulic system, use a CO_2 fire extinguisher to put it out.
- If you park on a ground with flammable material (e.g. straw waste, withered weeds, etc.), a fire may break out. Park on a ground without flammable material.

A fire extinguisher is not included in the standard equipment of the machine.

RECOVERY, LOADING AND TRANSPORT

Safety rules for recovery

- For recovery of the excavator, a towing vehicle of at least the same weight class as the excavator must be used.
- A tow bar must be used for the recovery. If a tow rope is used, an additional vehicle must also be attached to brake the excavator. The tow bar or tow rope must be suitable for the recovery of the excavator with regard to the towed load. Do not use damaged recovery aids.
- Do not step into the danger zone between the vehicles during the recovery procedure. If a tow rope is used, keep a distance of at least 1.5 times the length of the rope.
- Use the towing eye on the track frame for the recovery.
- The above safety rules also apply if the excavator is used as the towing or recovery vehicle.
- Observe the admissible values for the towed load and the vertical load during recovery, see "Specifications" (page 44).

Safety rules while loading with a crane

- Crane and lifting gear must be suited for the absorption of the load to be lifted and be approved.
- Before using the crane and the lifting gear, make sure that the specified safety inspections have been carried out regularly and that the crane and lifting gear are in good working order and sound condition.
- The machine may only be lifted at the points provided. Lifting the machine at the roll-over safety bar is prohibited as this can cause severe damage.
- Never attach a crane hook to the lower edge of the dozer! The crane hook can slip off sideways while lifting and the excavator may fall off.
- Always adhere to the valid safety regulations for the lifting of loads.
- The excavator must be secured with a holding rope when it is being lifted.
- The crane operator is responsible for the observance of these safety rules.

Safety rules for transport

Risk of accidents if the load is not secured properly!
The following safety rules must be observed.

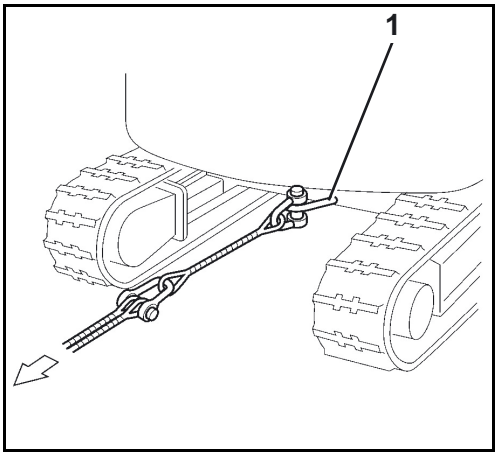
Risk of accidents due to unapproved use of the machine!
Driving the machine onto the transport vehicle without using ramps and with the help of the boom is prohibited!

- Check whether the transport vehicle is designed for carrying the machine. Only transport the machine on a transport vehicle with sufficient load-bearing capacity.
- Engage the hand brake on the transport vehicle and secure the front and rear wheels using chocks to prevent the vehicle from rolling away.
- Make sure the ramps to be used have sufficient load-bearing capacity to carry the operating weight of the machine.
- Only use ramps with sufficient load-bearing capacity. They must be wider than the machine's chains and have footboards on the sides.
- Position the ramps on the transport vehicle so that the centre line of the transport vehicle is aligned with the centre line of the machine to be loaded.
- Securely fasten the ramps to prevent them from sliding.
- In order to prevent the transport vehicle from tilting when driving the machine onto it, brace the rear of the transport vehicle with adequately dimensioned supports.
- Before driving the machine onto the transport vehicle, clean the loading area and chains of the machine in order to ensure as much friction as possible between the chains and the loading area.
- Assign a guide for driving the machine up and down the ramp. The guide is responsible for ensuring safe loading.
- Only move the machine when instructed to do so by the guide. The operator and guide must maintain constant eye contact. If the operator cannot see the guide, stop the machine immediately.
- Secure the machine on the transport surface to prevent it from sliding, e.g. using anti-slip materials, wooden beams, wedges or wooden structures. This auxiliary equipment must be secured to prevent it from coming loose and becoming lost, e.g. by using tacks on a wooden transport surface.
- In order to ensure the machine's stability during transport, lash down the machine appropriately using the determined preload force on the transport vehicle.
- Only use approved and labelled lashing material, such as lashing straps or sling chains that are suited for the machine's weight.
- The driver of the transport vehicle is responsible for securely fastening the machine onto the vehicle.
- When transporting the machine, always maintain a distance of 1.0 m from overhead power lines. The permitted dimensions for the transport vehicle including the loaded machine must be observed in accordance with the applicable traffic rules and regulations.

Recovery

Adhere to the “Safety rules” chapter (page 13) and the “Safety rules for recovery” section (page 35).

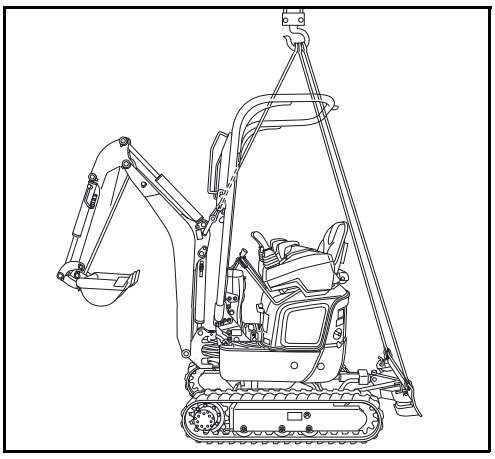
A recovery is only allowed over a short distance and at walking speed (0.5 m/s ~ 1.0 m/s).



- Attach the tow bar or tow rope to the attachment point (1) on the machine and to the towing vehicle.
- If the towing eye of the excavator is not accessible, a tow rope can also be fastened around the centre of the dozer.
- If the attachment point of the excavator is not accessible, a tow rope can also be fastened around the centre of the dozer.
- During the recovery procedure, the operator must be seated on the operator's place.
- Drive slowly with the towing vehicle to avoid abrupt impacts.

Hoisting the excavator with a crane

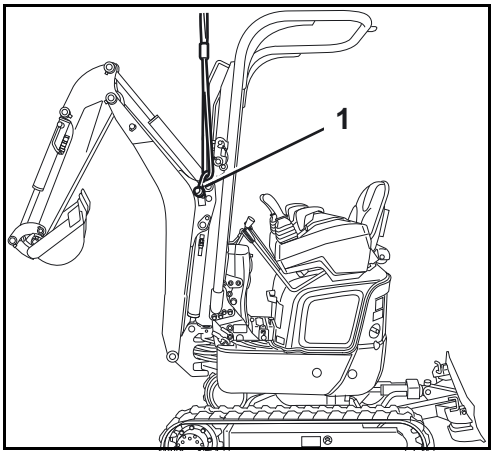
Adhere to the “Safety rules” chapter (page 13) and the “Safety rules for hoisting the excavator with a crane” section (page 35).



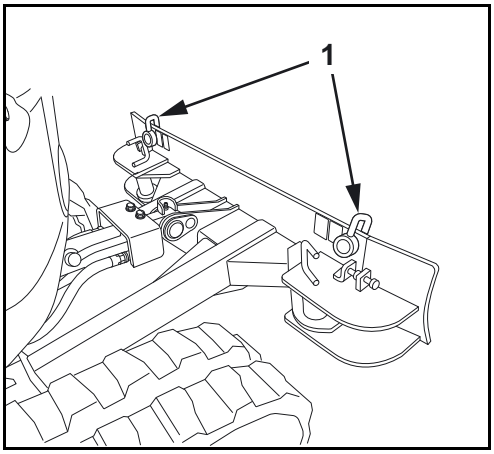
- Bring the excavator to the lifting position (see figure) on level ground.
- Lift the dozer until the dozer cylinders are fully retracted. Also see the “Operating the controls during excavation work” section (page 91).
- Bring the boom in line with the longitudinal axis of the swivel frame.
- Bucket cylinders and arm cylinders, respectively, must be extended to the stop position.
- Boom cylinders must be extended to the stop position.
- Rotate the swivel frame so that the dozer is located at the rear.
- Close and lock the door and covers.

The excavator may only be lifted at the provided attachment points. Do not attach the lifting gear to any other eyes or areas as this can lead to substantial damage.

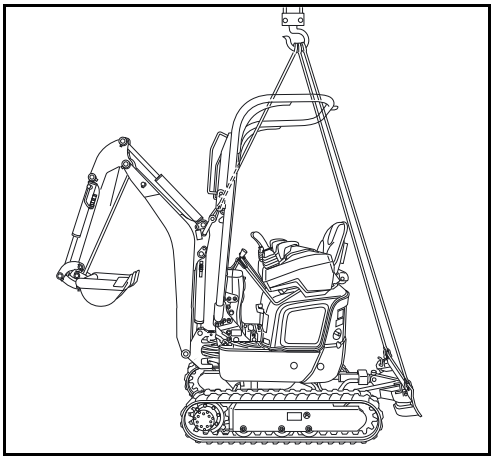
- Attach the lifting gear with a shackle to the lifting eye (1) on the left side of the boom.



- Attach the lifting gear with shackles to the lifting eyes (1) on each side of the dozer.



- As soon as the lifting gear is attached to the machine, press cloths between lifting gear and machine to protect the machine.
- Slightly tension the lifting gear with the crane (see figure).
- Always keep the machine level. Be sure that the centre line of the crane hook is aligned as closely as possible with the centre line of the excavator and that the lifting angle complies with the specifications. Lift the excavator.



Risk of accidents!

Lifting the machine from unapproved lifting points can cause the machine to fall.

- *Only lift the machine from the intended lifting points.*
- *Lifting the machine at the roll-over safety bar is prohibited!*

Transport on a flat bed trailer

Adhere to the “Safety rules” chapter (page 13) and the “Safety rules for transport” section (page 36).

Mortal danger by crushing!
Nobody is allowed in the loading area or in close proximity to that area while operating the machine on the ramp and in the loading area, e.g. when driving onto the ramp or when rotating the swivel frame.

- *Guides must maintain a safe distance from the machine.*

Risk of accidents due to machine falling down!
When changing the direction of travel or when manoeuvring the machine, it can slip and fall off the ramp or loading area.

- *Do not turn or steer when driving up the ramps.*
- *If the machine cannot be driven safely and in straight line onto the loading area, drive the machine back down, realign it and drive straight ahead onto the area.*
- *Only work with a guide.*

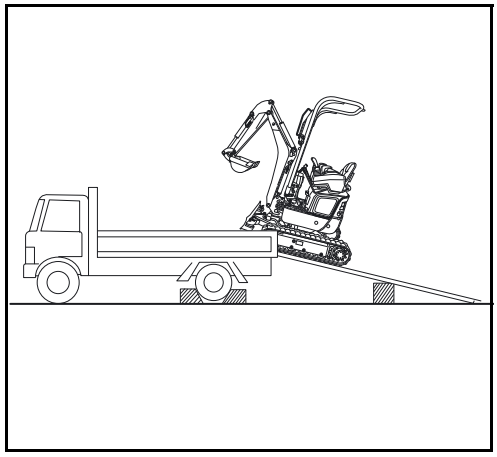
Caution when rotating the swivel frame!
The front attachments can hit the transport vehicle. This can damage the transport vehicle and the machine.

- *Only work with a guide.*

Risk of accidents due to malfunction in transport safety device!
The machine’s lashing points are designed and constructed to secure the machine safely. If fastening points other than the lashing points described here are used, the transport safety device could malfunction and the machine could slip or fall from the transport vehicle while being transported.

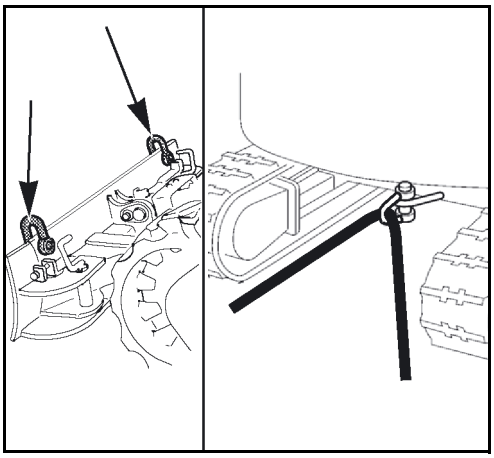
- *Only used the indicated lashing points for the transport safety device.*

- Provide approved and labelled lashing material, such as lashing straps or sling chains, that are appropriate for the machine’s weight (page 44).
- Place the loading ramps on the transport vehicle at an angle of 10° to 15°. When doing so, take into account the track width of the machine.
- Fasten the ramps to the transport vehicle in such a way that they do not slide when driving the machine onto it.
- Align the machine with the centre of the ramps and drive it straight onto the loading area until it has reached the parking space.
- Lower the dozer onto the loading area.
- Rotate the swivel frame 180° until the front attachments face the rear of the transport vehicle.

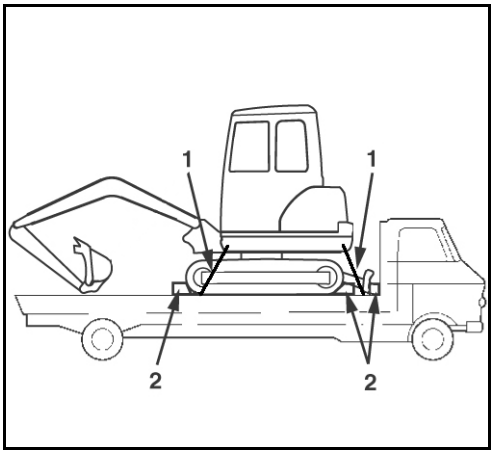


- Completely retract the arm and bucket. Lower the boom until the bucket linkages touch the loading area.
- Lock the swivel frame with the lock knob at the bottom position (page 30).

- To secure the vehicle, use the lashing points shown in the figure.



- Secure the machine in front of and behind the chains and the dozer to prevent it from slipping, e.g. using wooden beams (2).
- Secure the machine using appropriate and labelled lashing material (1).
- After loading and securing the machine, tightly close all of its covers.
- Swing the roll-over safety bar down (page 86).

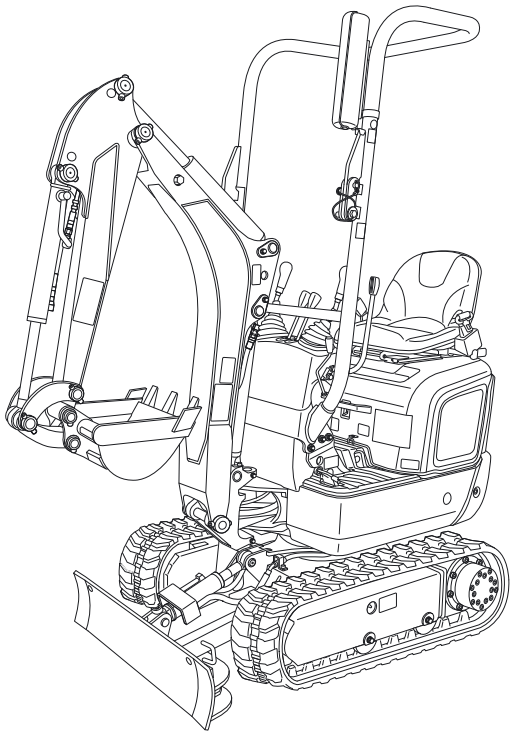


DESCRIPTION OF THE EXCAVATOR

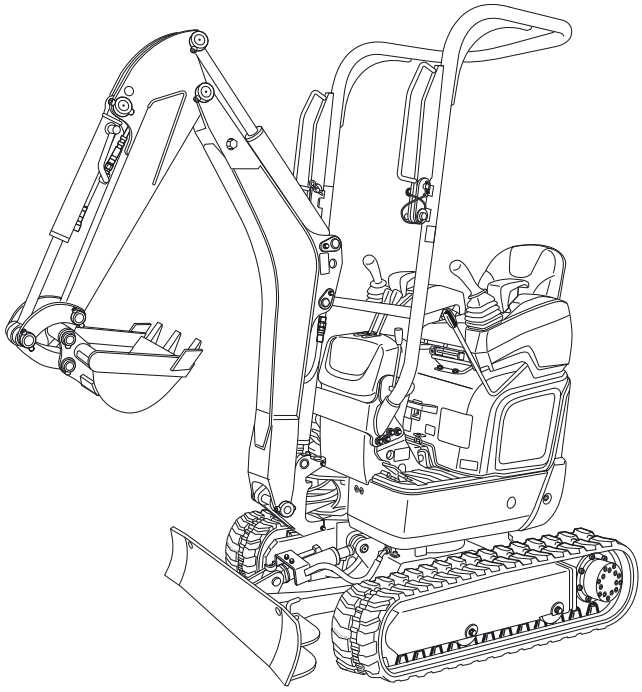
Model overview

The excavator is available in two different models K008-5 and U10-5.

Model K008-5



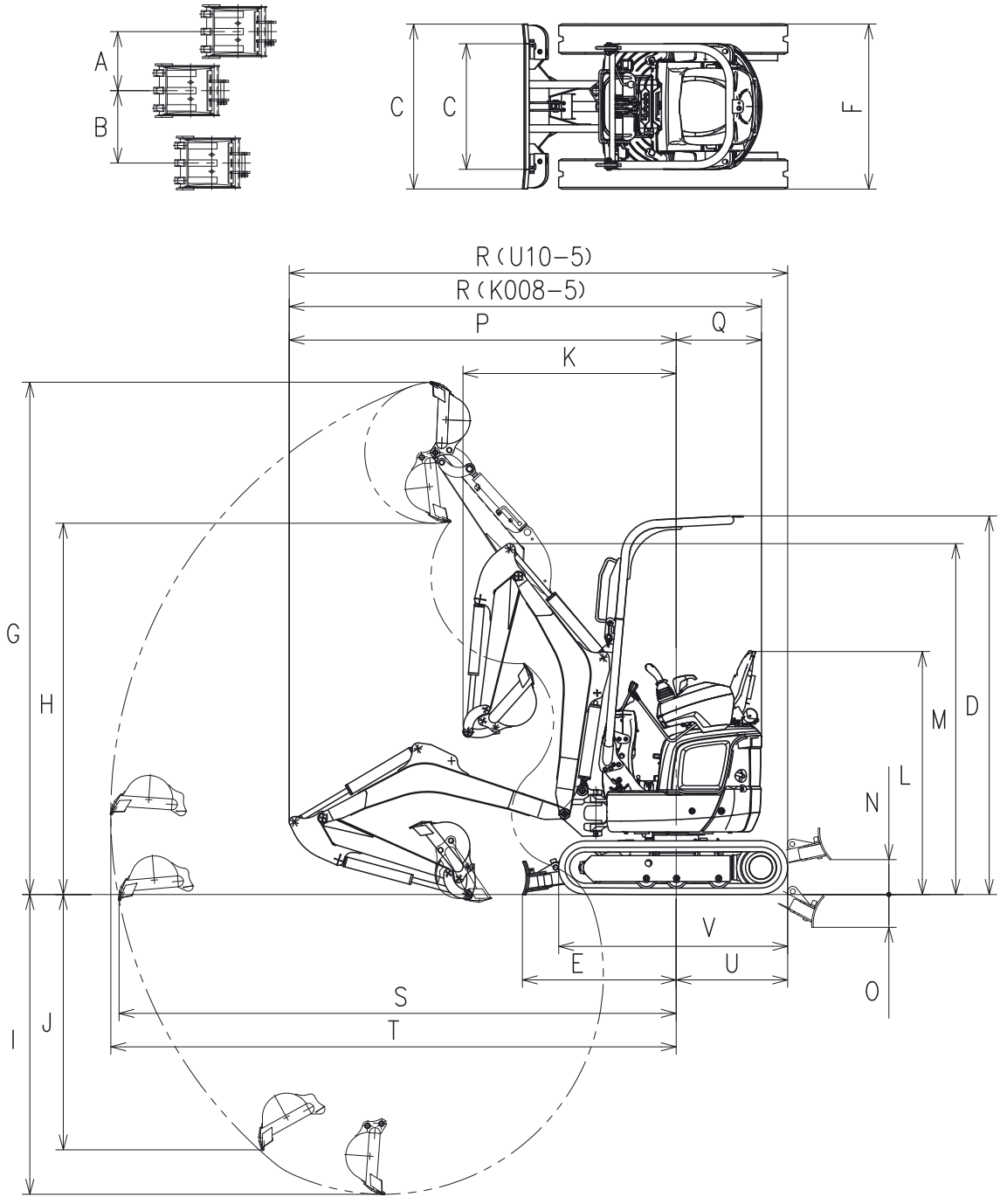
Model U10-5



Dimensions

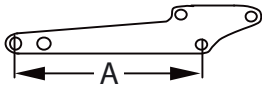
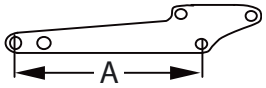
The dimensions of the models K008-5 and U10-5 can be found in the following figures and tables.

Dimensions of the K008-5/U10-5



	A	B	C	D	E	F	G	H	I	J	K
K008-5	245	300	700/ 860	2260	840	700/ 860	2870	2030	1720	1380	1120
U10-5	355	435	750/ 990	2260	920	750/ 990	3050	2210	1800	1550	1260
	L	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**V**
K008-5	1420	1950	200	180	2000	750	2750	3020	3070	615	1230
U10-5	1450	2100	215	190	2310	510	2980	3330	3380	670	1340

Arm version

Name		Type	
K008-5	Arm 890 mm		A = 890 mm
U10-5	Arm 890 mm		A = 890 mm

All dimensions in mm with original KUBOTA bucket and rubber crawlers.
Subject to technical changes.

Specifications

			KUBOTA Excavator	
Model name			K008-5	U10-5
Type			Rubber crawler	Rubber crawler
Machine weight*		kg	975	1125
Operating weight**		kg	1050	1200
Bucket	Capacity (CECE)	m^3	0.022	0.024
	Width	mm	350	380
Engine	Type		Water-cooled three-cylinder diesel engine	
	Model name		D722-E4-BH-4EU	D722-E4-BH-5EU
	Displacement	cm^3	719	719
	Engine performance (ISO 14396)	kW	7.6	7.6
	Rated speed	1/min	2050	2050
	CO_2 emission*** (Engine family HKBXL.778KCB)	g/kWh	1019.8	1019.8
Performance	Swivel speed Swivel frame	1/min	8.3	8.3
	Vehicle speed	Travel speed km/h	–	4.0
		Low speed km/h	2.0	2.0
	Ground pressure (without operator)	kPa (kgf/cm^2)	28.1 (0.29)	29.0 (0.30)
	Climbing performance	% (degrees)	27 (15)	27 (15)
	Max. lateral sway	% (degrees)	18 (10)	18 (10)
Dozer	width x height	mm	700 x 200 860 x 200	750 x 200 990 x 200
Swing angle of the boom	Left	rad (degrees)	0.96 (55)	0.96 (55)
	Right	rad (degrees)	0.96 (55)	0.96 (55)
Auxiliary port connector 1	Max. flow rate (theoretical)	l/min	21	21
	Max. pressure	MPa (bar)	16.2 (165)	17.2 (175)
Fuel tank capacity		l	12	12
Pulling capacity at the towing eyes		N	35300	35300
Vertical load at the towing eyes		N	4100	4100
Noise level	LpA	dB (A)	76	77
	LwA (2000/14/EC)	dB (A)	90	90

Vibration****	Hand arm system (ISO 5349-2:2001)	Digging	m/s² RMS	< 2.5	< 2.5
		Levelling	m/s² RMS	< 2.5	< 2.5
		Driving	m/s² RMS	< 2.5	< 5.94
		Idling	m/s² RMS	< 2.5	< 2.5
	Whole body (ISO 2631-1:1997)	Digging	m/s² RMS	< 0.5	< 0.5
		Levelling	m/s² RMS	< 0.5	< 0.5
		Driving	m/s² RMS	< 1.16	<2.32
		Idling	m/s² RMS	< 0.5	< 0.5

* Prepared for operation with original 17.5 kg KUBOTA bucket.

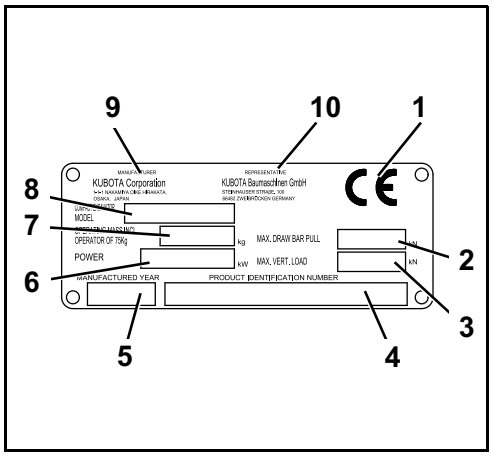
** Machine weight, incl. operator 75 kg.

*** The CO_2 measurement is based on the check carried out for an engine representative of the engine family, using a designated check cycle under laboratory conditions. The specifications do not implicate or guarantee the performance of a given engine.

**** These values are measured under specific conditions at maximum engine speed and can deviate, depending on the operating situation.

Identification of the excavator

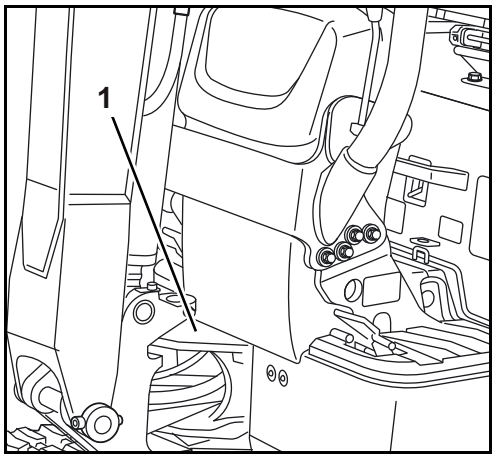
The type plate of the excavator is located at the front of the swivel frame. The owner should enter the stamped data in the field on the back of the front cover.



1. CE label
2. Max. pulling capacity at the towing eyes
3. Max. vertical load at the towing eyes
4. Product identification number
5. Year of construction
6. Engine performance
7. Operating weight
8. Model name
9. Manufacturer
10. Representative

Product identification number

The machine's product identification number (1) is stamped on the swivel frame near the swing bracket.



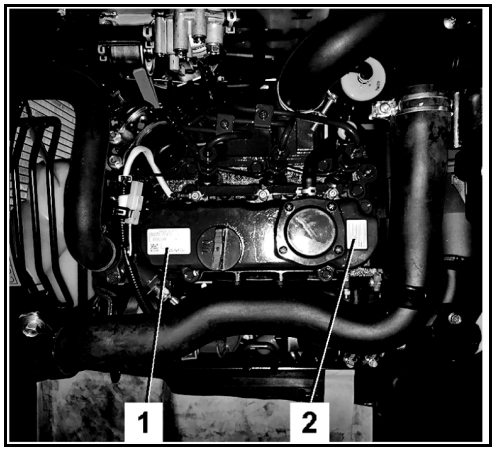
The serial number can be determined based on the product identification number.

The last 5 digits of the product identification number make up the serial number.

K	B	C	_	_	_	_	_	_	_	_	_	X	X	X	X	X

Identification of the engine

The engine can be identified based on the engine number and the numbers for the engine family and engine type.
The numbers are affixed to the engine's valve cover:



1. Engine number
2. Engine family and engine type

Standard equipment

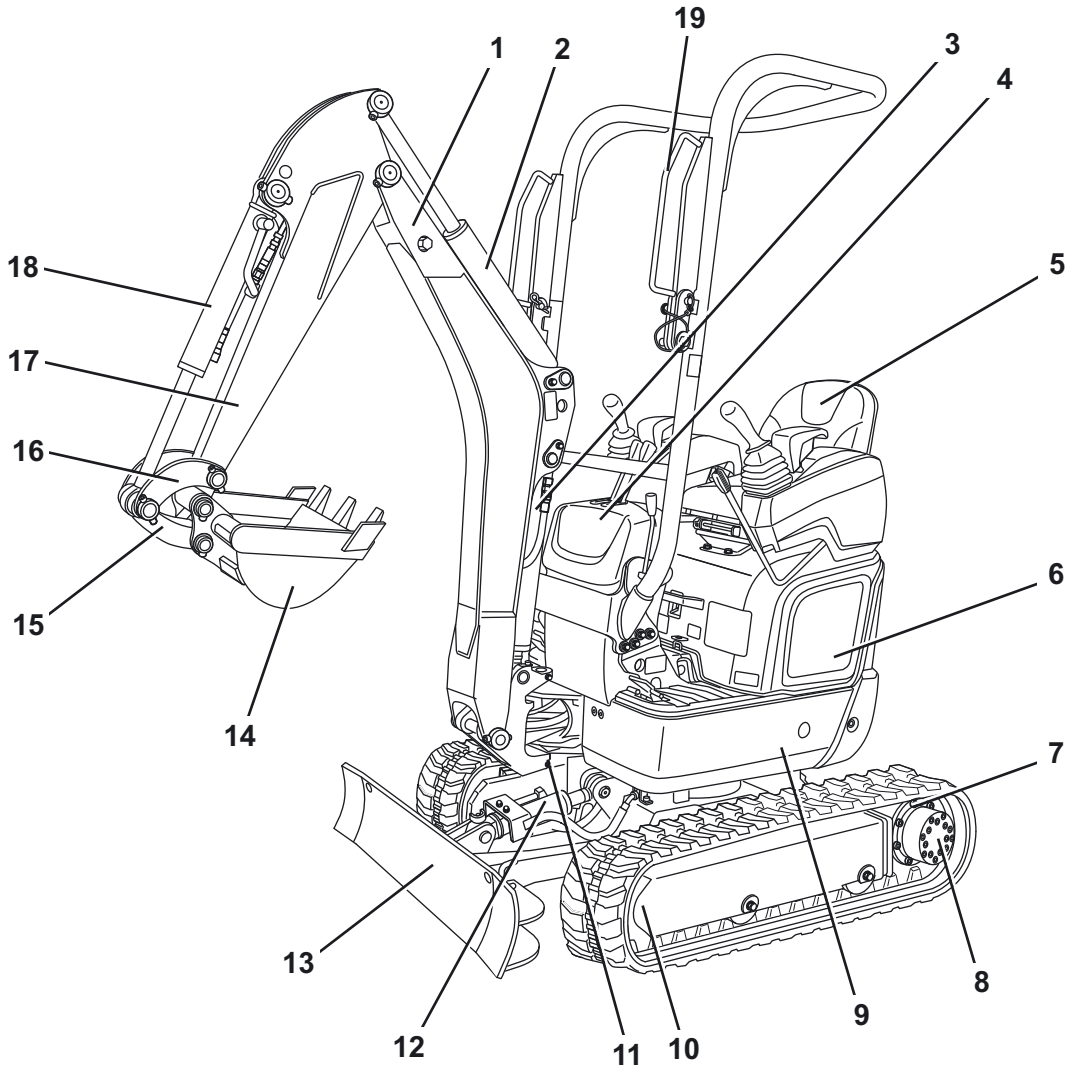
The different models have the following standard equipment:

- Spare parts list

- Protective cover for the operating instructions
- Operating instructions
- Grease gun
- Filter wrench
- Two ignition keys
- Screw for setting the auxiliary port pedal
- Spare fuses (5, 10, 15 A)

ASSEMBLY AND FUNCTIONS

Component overview

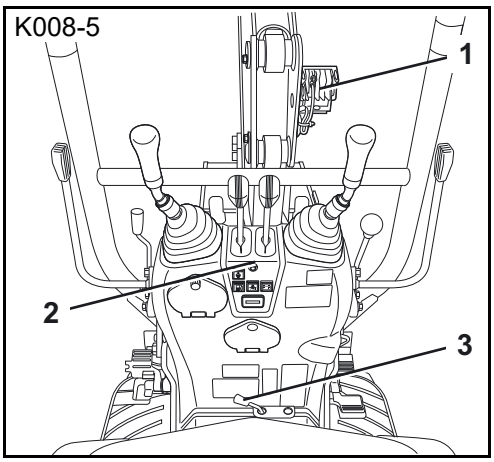


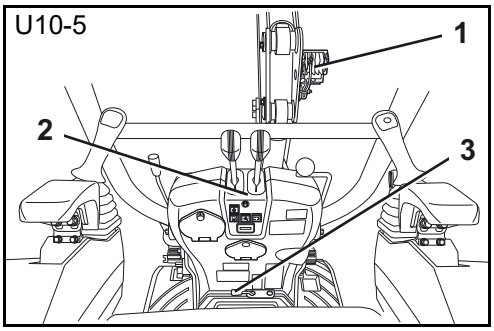
1. Boom
2. Arm cylinder
3. Boom cylinder
4. Control console
5. Operator's seat
6. Engine hood
7. Drive sprocket
8. Drive unit
9. Swivel frame
10. Idler
11. Swing block
12. Dozer cylinder
13. Dozer blade
14. Bucket
15. Bucket linkage 1
16. Bucket linkage 2 and 3
17. Arm
18. Bucket cylinder
19. Handrail

Operator's place

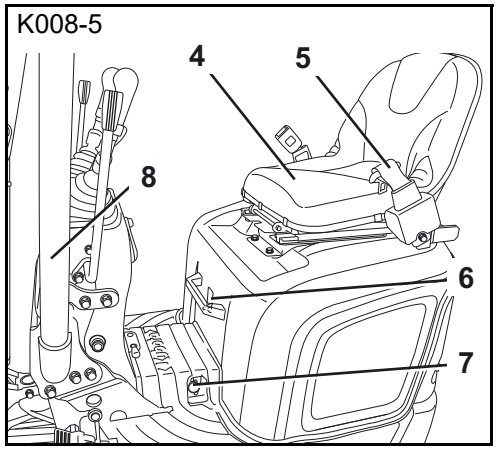
The operator's place is located in the middle of the machine. It includes the following control elements:

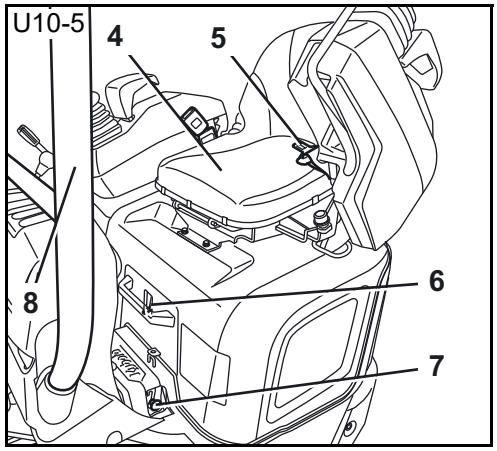
1. Working light
2. Control console
3. Selector lever for the dozer/extendable track width





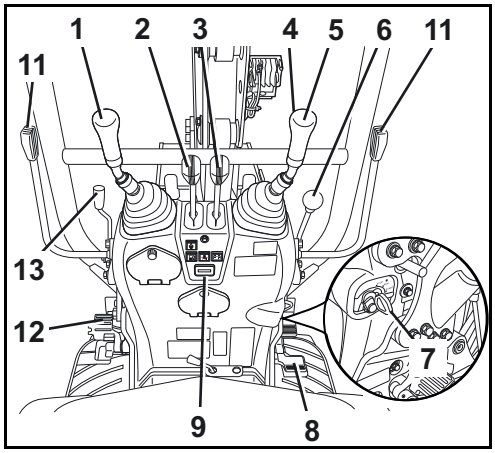
4. Operator‘s seat
5. Seat belt
6. Lever for the engine hood
7. Swivel frame lock
8. Roll-over safety bar





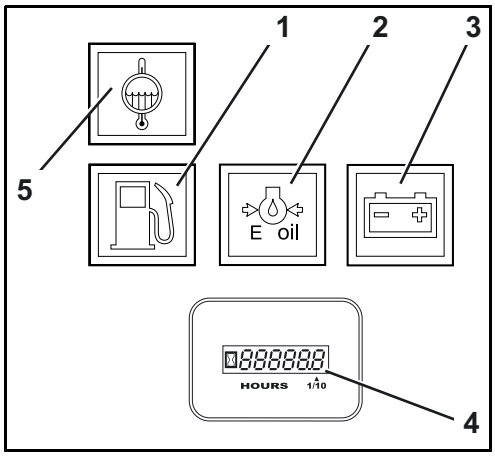
Control console K008-5

The control console (see figure) includes the following components:



1. Left control lever
2. Left drive lever
3. Right drive lever
4. Right control lever
5. Horn switch
6. Dozer control lever
7. Starter Switch
8. Boom swing pedal
9. Displays and indicators
11. Control lever lock
12. Auxiliary port pedal
13. Throttle lever

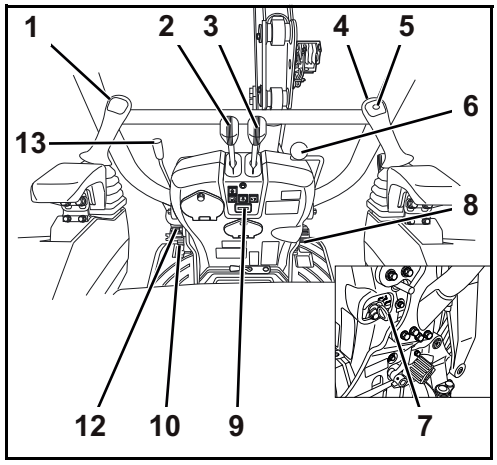
The control console contains the following displays and indicators:



1. Fuel level indicator
2. Engine oil pressure indicator
3. Charge lamp
4. Time meter
5. Coolant temperature indicator

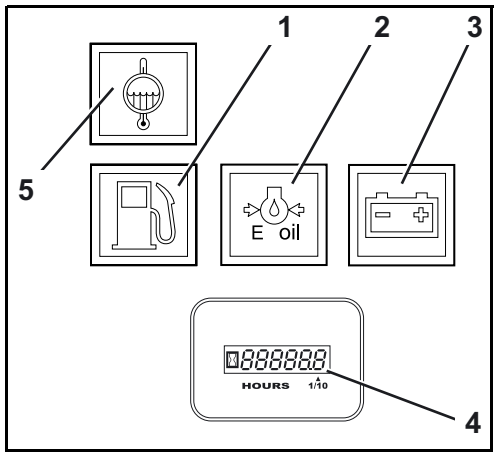
Control console U10-5

The control console (see figure) includes the following components:



1. Left control lever
2. Left drive lever
3. Right drive lever
4. Right control lever
5. Horn switch
6. Dozer control lever
7. Starter Switch
8. Boom swing pedal
9. Displays and indicators
10. Fast drive position pedal
11. Control lever lock (not shown)
12. Auxiliary port pedal
13. Throttle lever

The control console contains the following displays and indicators:



1. Fuel level indicator
2. Engine oil pressure indicator
3. Charge lamp
4. Time meter
5. Coolant temperature indicator

Description of the components of the control console

1. **Left control lever**
   The functions of the left control lever are described in the "Controls" section (page 55, page 56).

2. **Left drive lever**
   The functions of the left drive lever are described in the "Controls" section (page 55, page 56).

3. **Right drive lever**
   The functions of the right drive lever are described in the "Controls" section (page 55, page 56).

4. **Right control lever**
   The functions of the right drive lever are described in the "Controls" section (page 55, page 56).

5. **Horn switch**
   Depressing the horn switch activates the horn.

6. **Dozer control lever**
   The rocker switch for auxiliary port 2 controls the oil flow to auxiliary port 2. Auxiliary port 2 can be controlled proportionally (infinitely variable)

7. **Starter Switch**
   The starter switch serves as the master switch for the entire machine and as switch for pre-glowing and starting the engine.

8. **Boom swing pedal**
   This pedal is used to swing the boom right and left.

9. **Displays and indicators**
   The functions of the displays and indicators are described in the "Displays and indicators" section (page 55).

10. **Fast drive position pedal**
    Pressing the pedal activates the fast drive position.

11. **Control lever lock (not shown)**
    The operation of the control lever lock is described in the "Controls" section (page 55, page 56).

12. **Auxiliary port pedal**
    The auxiliary port pedal is used to operate an implement.

13. **Throttle lever**
    The engine speed can be infinitely adjusted from idle to maximum engine speed using the throttle lever. To increase engine speed, pull back the throttle lever. To decrease engine speed, push forth the throttle lever.

Displays and indicators - description

1. **Fuel level indicator**
   The fuel level indicator lights up when there are only 2 l of fuel left in the fuel tank.
   The machine can keep working for about 1 hour after it lights up. However, if you continue to use it, the machine may suddenly stop and cause danger. It's recommended to refuel immediately.

2. **Engine oil pressure indicator**
   The indicator lights up when the starter switch is switched to the RUN position. It also lights up when the engine oil pressure drops considerably and upon stopping the engine.

3. **Charge lamp**
   The indicator lights up when the starter switch is switched to the RUN position. The charge lamp goes off as soon as the engine has started.

4. **Time meter**
   The time meter indicates in intervals of 0.1 hours (i.e. 6 minutes) the hours of operation of the machine.

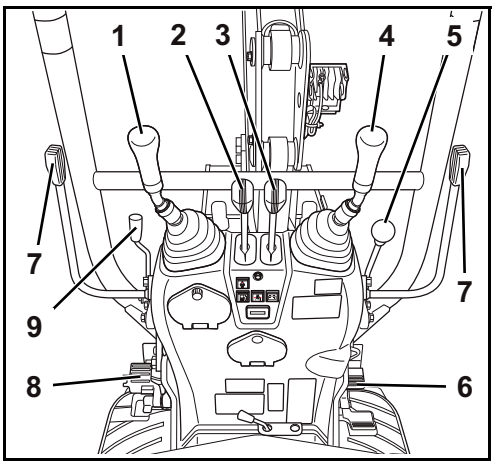
The time meter even continues when the engine has stopped but the starter switch is still in the RUN position

5. **Coolant temperature indicator**
   The warning lamp lights up when the temperature of the coolant lies outside of the normal range.

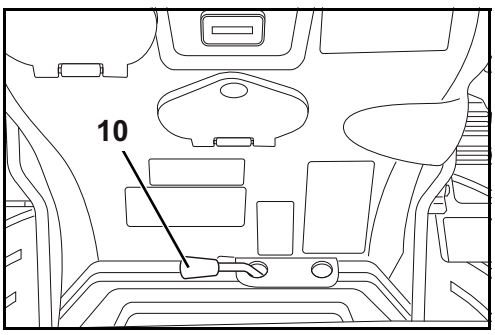
Controls K008-5

The controls includes the following components:

1. Left control lever
2. Left drive lever
3. Right drive lever
4. Right control lever
5. Dozer control lever
6. Boom swing pedal
7. Control lever lock
8. Auxiliary port pedal
9. Throttle lever



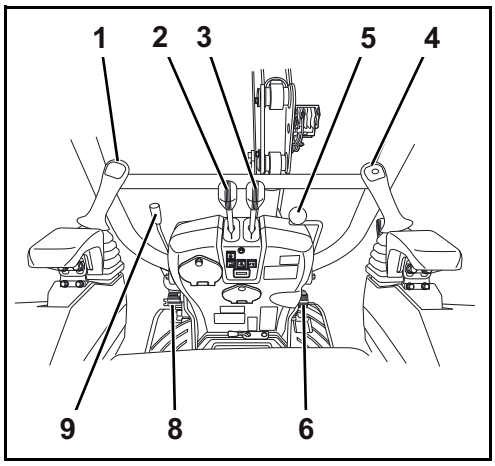
10. Selector lever for the dozer/extendable track width



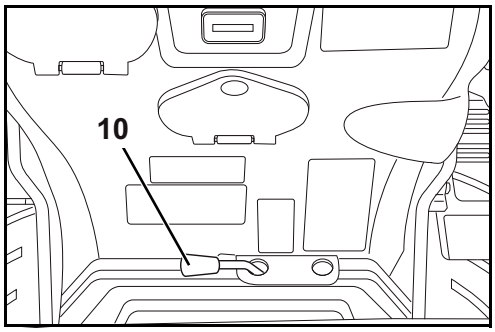
Controls U10-5

The controls includes the following components:

1. Left control lever
2. Left drive lever
3. Right drive lever
4. Right control lever
5. Dozer control lever
6. Boom swing pedal
7. Control lever lock (not shown)
8. Auxiliary port pedal
9. Throttle lever



10. Selector lever for the dozer/extendable track width

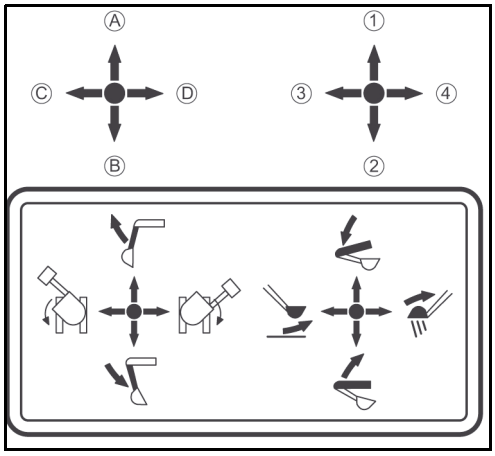


Description of the controls

1. Left control lever

The left control lever is used to swivel the swivel frame and move the arm. See the table below for details.

The figure shows, in connection with the following table, the functions of the left and right control levers.



Control levers		Movement
Right control lever	1	Lower boom
	2	Raise boom
	3	Bucket crowd
	4	Bucket dump
Left control lever	A	Arm dump
	B	Arm crowd
	C	Swivel frame to the left
	D	Swivel frame to the right

2. Left drive lever

With the drive levers the excavator can be driven forwards and backwards and also turned. The left drive lever controls the left track.

3. Right drive lever

With the drive levers the excavator can be driven forwards and backwards and also turned. The right drive lever controls the right track.

4. **Right control lever**
   The right control lever is used to move the boom and the bucket. See the figure above illustrating the right control lever

5. **Dozer control lever**
   The dozer control lever is used to raise or lower the dozer blade. Pushing the lever forward lowers the dozer blade and pulling it back raises it.

6. **Boom swing pedal**
   This pedal is used to swing the boom right and left.

7. **Control lever lock**
   The control lever lock prevents the operator from inadvertently activating the control levers.

8. **Auxiliary port pedal**
   The auxiliary port pedal is used to operate an implement.

9. **Throttle lever**
   The engine speed can be infinitely adjusted from idle to maximum engine speed using the throttle lever. To increase engine speed, pull back the throttle lever. To decrease engine speed, push forth the throttle lever.

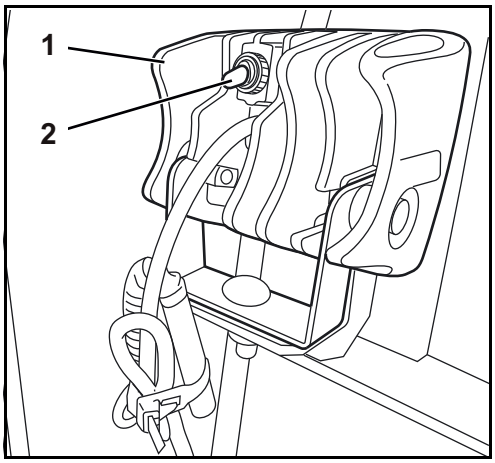
10. **Selector lever for the dozer/extendable track width**
    With the selector lever in the extendable track width position, the dozer control lever can be used to adjust the track width. To reduce the track width, push the lever forward, to increase, pull the lever backward.

Other machine components

The following details the other machine components.

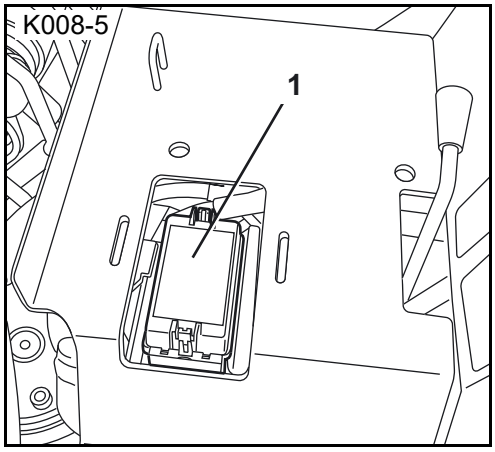
Working light

For illuminating the working area a working light (1) is installed to the right of the boom. This light can be switched on and off using the switch (2).

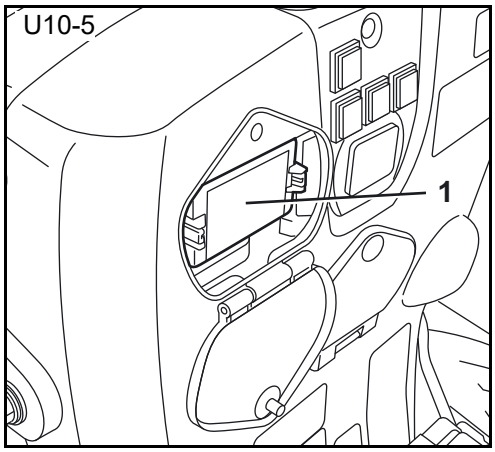


Fuse box

The fuse box (1) is positioned under the step (K008-5).

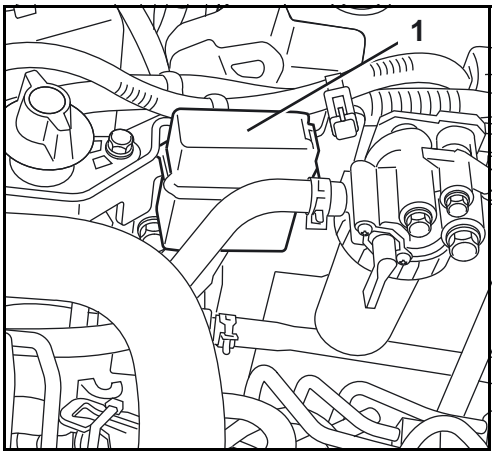


The fuse box (1) is positioned in the front control box (U10-5).



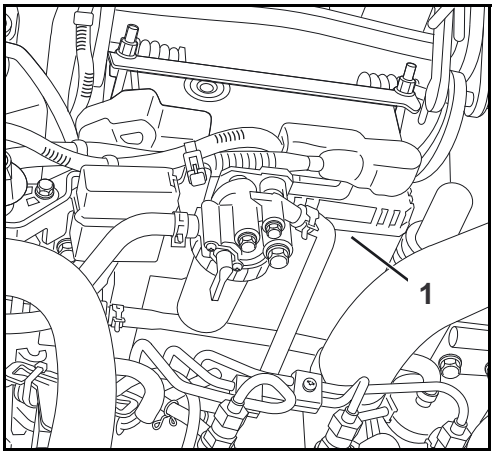
Main fuse

The main fuse (1) is positioned near the fuel filter with the water separator.



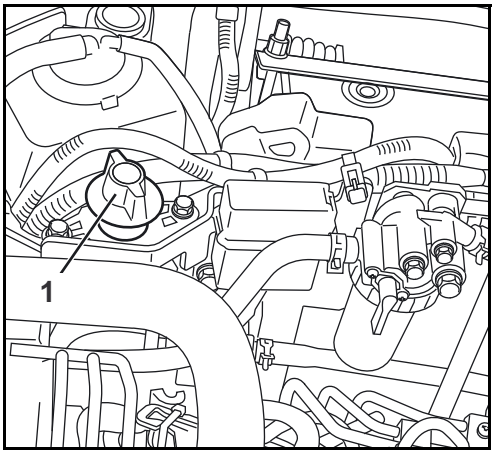
Battery

The main battery (1) is located on the rear center of the vehicle under the engine hood.



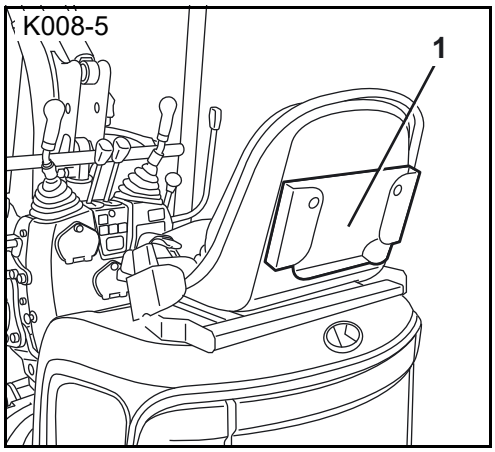
Battery isolator

The battery isolator (1) can be used to cut off the main power circuit. The battery isolator is on the right vehicle side under the engine hood.

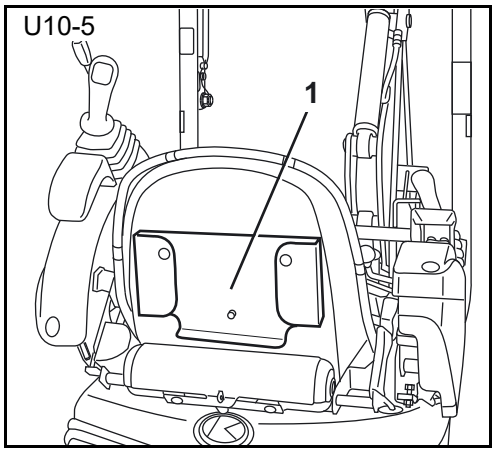


Tray

The tray (1) is positioned at the rear of the operator's seat.

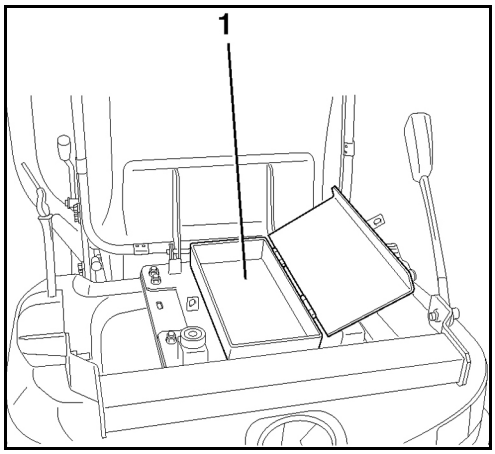


The tray (1) is positioned at the rear of the operator's seat.



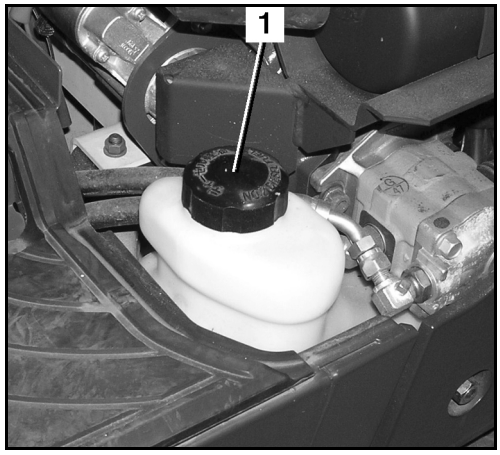
Tool compartment

The tool compartment (1) is located below the operator's seat.



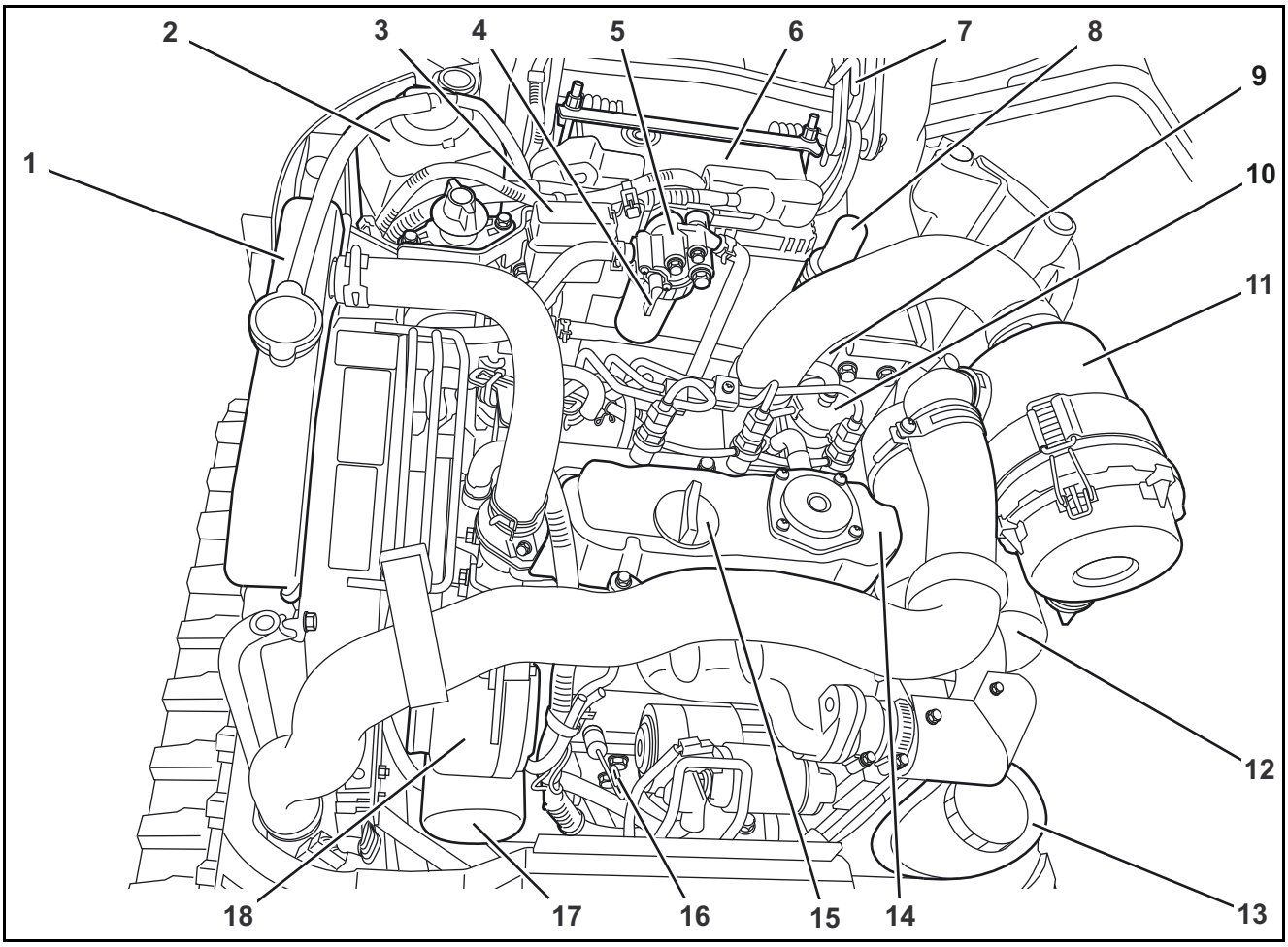
Fuel tank filler opening

The fuel tank filler opening (1) is positioned to the left in front of the engine under the engine hood.



Engine compartment

The engine compartment (see figure below) is located at the rear of the swivel frame below the operator's seat. It is covered by a lockable engine hood.

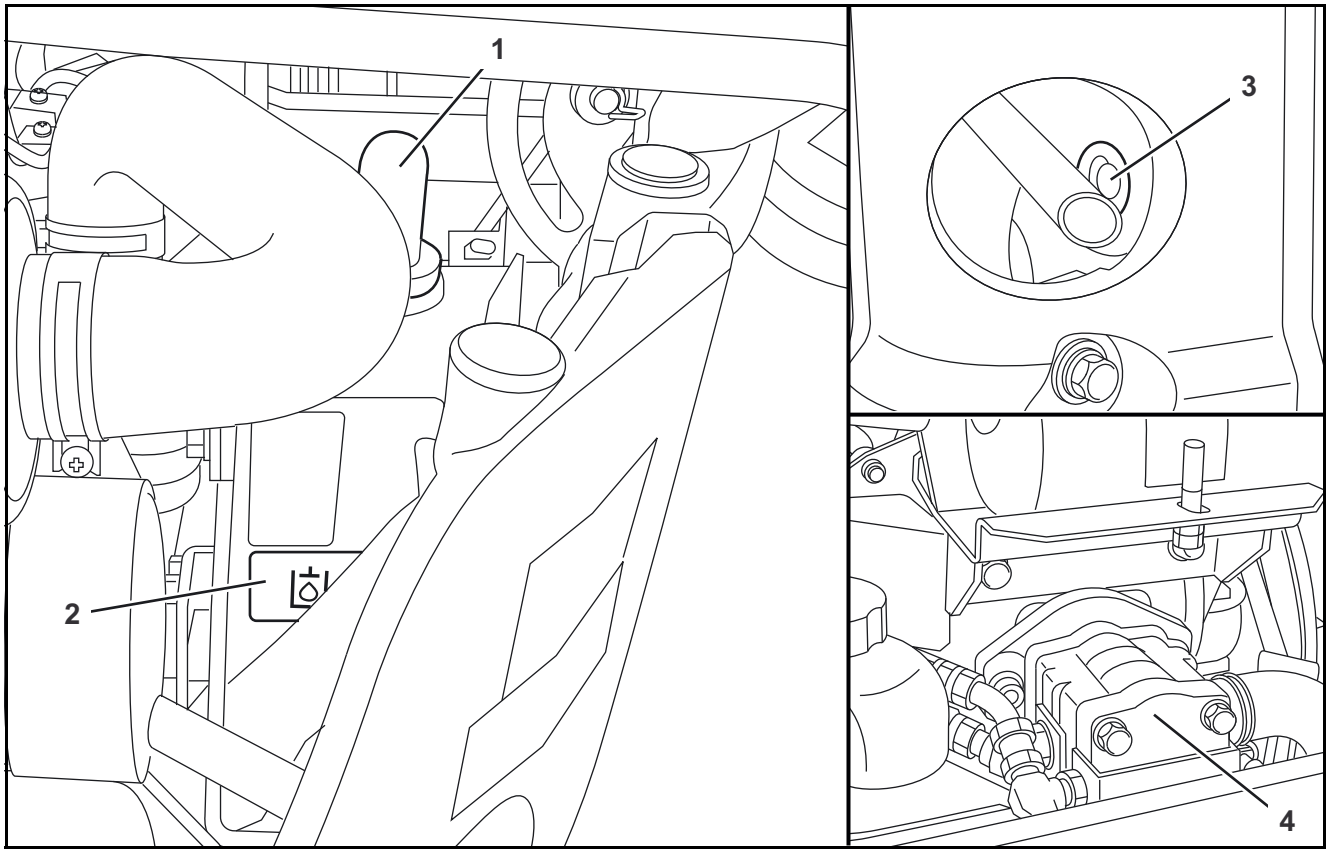


1. Radiator
2. Coolant expansion reservoir
3. Fuse box
4. Cock
5. Fuel filter with water separator
6. Battery
7. Engine hood lock
8. Hydraulic oil tank cap
9. Hydraulic oil tank
10. Preliminary fuel filter
11. Air filter
12. Exhaust silencer
13. Fuel reservoir
14. Engine
15. Oil filter cap
16. Oil dip stick
17. Oil filter
18. Alternator

Hydraulic system K008-5

The drive levers and control levers, the boom swing pedal and the auxiliary port pedal activate the valve for the corresponding cylinders, drive unit or the implement itself.

The hydraulic oil tank contains the suction filter and the return filter.



1. Cap
2. Hydraulic oil tank
3. Sight glass for hydraulic oil level
4. Hydraulic oil pump

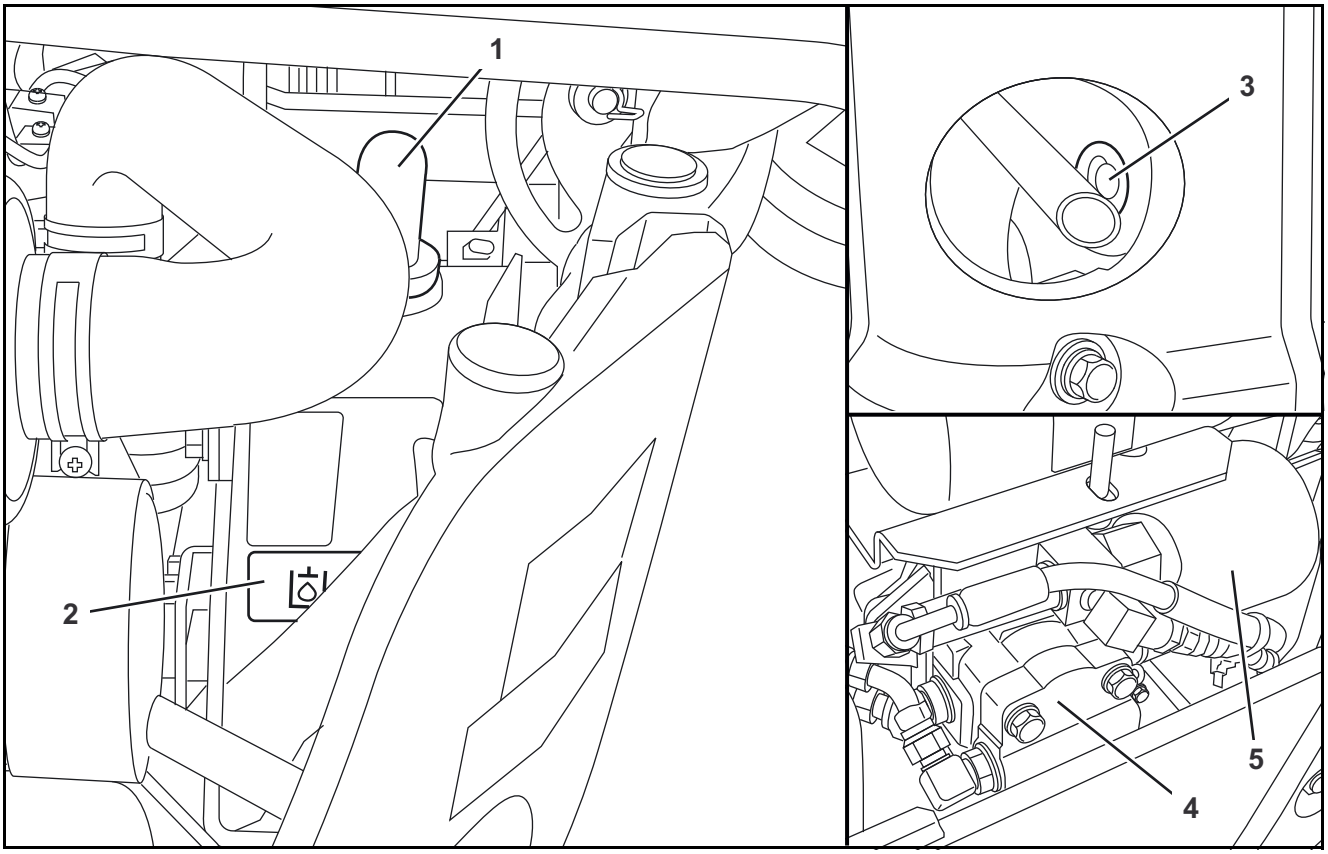
Hydraulic system U10-5

The left and right control levers activate the hydraulic oil pilot control circuits that will address the corresponding valve for the cylinder or swivelling motor.

The accumulator allows the boom and the arm to be lowered in case of an engine failure.

The drive levers, the boom swing pedal and the auxiliary port pedal activate the valve for the corresponding cylinders, drive unit or the implement itself.

The hydraulic oil tank contains the suction filters and the return filter.



1. Cap
2. Hydraulic oil tank
3. Sight glass for hydraulic oil level
4. Hydraulic oil pump
5. Accumulator

OPERATION

Safety rules for operation

- The safety instructions (page 13) must be followed.
- The machine may only be operated in accordance with the “Approved use” section (page 16).
- The machine may only be operated in the permissible lifting capacity ranges (page 155).
- The machine may only be operated by instructed or trained personnel (page 10).
- Do not operate the machine when under the influence of drugs, medication or alcohol. Stop operation when getting tired. The operator must be physically capable of operating the excavator safely.
- Do not operate the machine when there is a possibility of lightning. Even if the machine is equipped with a canopy or ROPS-protection, the operator is not protected from lightning.
- The machine should only be operated if all protective devices are fully operational.
- The machine may only be operated from the operator’s place while seated. Operating the machine from another position, e.g. standing next to the machine, is prohibited.
- The machine may only be operated when the engine compartment cover is locked and secured with a padlock.
- Before starting or working with the machine, make sure that there is no danger for any person nearby.
- The machine may only be operated if there is nobody in the danger zone.
- Before starting the machine, it must be checked for external damage and operability, and the pre-start checks must be carried out. If damage is detected, the machine should only be taken into operation after the damage has been repaired.
- Wear tight-fitting working clothes in accordance with the trade association regulations.
- While operating the excavator, nobody except the operator is allowed to be on the machine or get on the excavator.
- For getting on and off, the swivel frame should be positioned in an angle that allows the operator to use the crawler or the step (if applicable).
- When getting on and off the machine, do not hold on to the control levers.
- Always turn off the engine when leaving the machine. In exceptional cases, e.g. for troubleshooting, the machine can also be left while the engine is running. The operator must make sure that the control levers are locked during such an operation. The controls may only be used while the operator is sitting on the operator's seat.
- During operation, the operator must sit on the operator's seat with a tightly fastened seat belt and must not reach his arms, legs or head above the swivel frame.
- If the operator leaves the machine (e.g. for breaks or at the end of work), the engine must be stopped, the dozer, boom, arm and attachments must be lowered to the ground and the machine must be secured against restarting by removing the key. The control levers must be locked. Before leaving the machine, it must be parked in such a way that it cannot roll away and the engine compartment cover must be locked and secured with a padlock.

- Whenever work is interrupted, the bucket must always be lowered to the ground.
- Do not allow the engine to run indoors, unless the room is equipped with an exhaust gas extraction system or otherwise well ventilated. The exhaust gas contains carbon monoxide, a colourless, odourless, and lethal gas.
- Never crawl under the excavator before the engine is stopped, the key is removed and the excavator is secured against moving.
- Never crawl under the excavator if it is only raised with the bucket or the dozer. Always use suitable supports.
- To increase the machine's stability, we recommend lowering the dozer blade onto the ground. The dozer may only be used if the dozer cylinder is equipped with a pipe safety valve.

Risk of accidents due to incorrect operation!
Improper operation can lead to damage to the machine, to serious accidents with a high risk of injury and death as a result.
- *Please read the operating instructions before commissioning.*

Safety for children

Children are normally attracted to machines and their operation. If children are in the vicinity of the machine and are not at a suitable distance and in the field of vision of the operator, this can lead to serious accidents or even death of the children.

Always observe the following rules of conduct:

- Never assume that children will remain where you last saw them.
- Keep children far away from the working area and always under the supervision of other responsible adults.
- Be vigilant and switch the machine off when children enter the working area.
- Never let children drive with you on your machine, there is no safe place for passengers. Children could fall off the machine and be run over or affect the control of the machine.
- Children must never operate the machine, even under the supervision of an adult.
- Never let children play on the machine or attachments.
- Be particularly careful when manoeuvring. Look behind and down below on the machine and ensure that there are no children in the manoeuvring area.
- Prior to leaving the machine (e.g. for breaks or at the end of work) if at all possible park the machine on a firm, flat and level ground, lower the attachment to the ground, place all control levers into neutral, switch off the engine and prevent the machine from being restarted by taking the key.

Guiding the operator

- If the operator's working and driving area is obscured, the operator must be supported by a guide.
- The guide must be capable of performing this kind of work.
- Before starting work, the guide and the operator must agree on the necessary signals.
- The guide's position must be clearly visible to the operator.
- The operator must stop the excavator immediately if eye contact with the guide is interrupted.
  → As a rule, either the excavator or the guide may move, never both at once!

Working in the vicinity of overhead power lines

Risk of death due to electric current!
When working in the vicinity of overhead power lines without a sufficient safe distance between them and the machine, the electricity can jump onto the machine.
- *Maintain a safe distance from overhead power lines.*

When working with the machine in the vicinity of overhead power lines and tram lines, a minimum distance as specified in the following table must be maintained between the excavator and its attachments and the power line. The owner of the machine or the person responsible for the work must ensure local, regional and national regulations are observed.

Rated voltage		Safe distance
	up to 1 kV	1.0 m
over 1 kV	up to 110 kV	3.0 m
over 110 kV	up to 220 kV	4.0 m
over 220 kV	up to 380 kV or when rated voltage is unknown	5.0 m

If safe distances cannot be maintained, the power lines must be switched off in coordination with their owner or provider and secured against turning on again.

When approaching overhead power lines, any possible movements of the excavator must be taken into consideration.

Unevenness of the ground or sloping the excavator can reduce the safe distance.

Wind can cause the overhead power lines to sway, thus reducing the safe distance.

In case of a power cross-over, leave the danger zone with the excavator, if possible, by taking suitable measures. If this is not possible, do not leave the operator's place, warn any approaching persons of the danger, and have the power switched off.

Working in the vicinity of underground power lines

Before starting with excavation work, the owner of the excavator or the person responsible for the work must check if there are any underground power lines in the proposed working area. The owner of the machine or the person responsible for the work must ensure local, regional and national regulations are observed.

If there are underground power lines present, the position and routing of the power lines must be determined together with the owners or operators and the required safety measures must be determined.

If power lines are encountered or accidentally damaged, the operator must stop working immediately and inform the responsible person.

Initial operation

Before initial operation, the excavator must first be checked visually for external transit damages and checked if the shipped equipment is complete as ordered.

- Check fluid levels as described in the "Maintenance" section (page 123).
- For a description of all operating features, refer to the "Operating the excavator" section (page 77) as well as the following sections.

If malfunctions are detected, please inform your KUBOTA dealer immediately.

Running in the excavator

During the first 50 hours of operation, the following points should be adhered to in all cases:

- Warm up the excavator at an average engine speed and with a low load; do not let it warm up at idling position.
- Do not overload the excavator.

Pre-operational services

For the performance of the services, the excavator must be parked on level ground and the key must be removed. Also, the control levers and the swivel frame have to be locked (page 29, page 30).

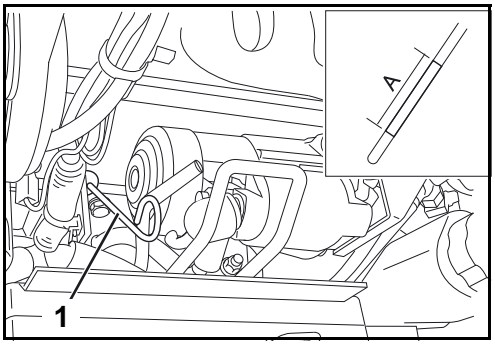
- Open the engine hood (page 112). After completing the work, close the engine compartment cover and secure it with a padlock.

Walk-around inspection

- Check the excavator for visible damage, loose nuts and screws, and leaks.
- Check for any accumulated dirt adjacent to hot components, e.g. engine, muffler, exhaust manifold/tubes and remove if necessary.
- Check for accumulated residues from leaves, straw, pine needles, twigs, bark and other flammable materials and remove if necessary.
- Check the safety labels on the machine. They must be complete and legible (page 20).

Engine oil level - check

- Pull out the oil dipstick (1) and wipe it with a clean cloth.
- Insert the oil dipstick completely and pull it out again. The oil level should be in the "A" area. If the oil level is too low, add engine oil (page 136).

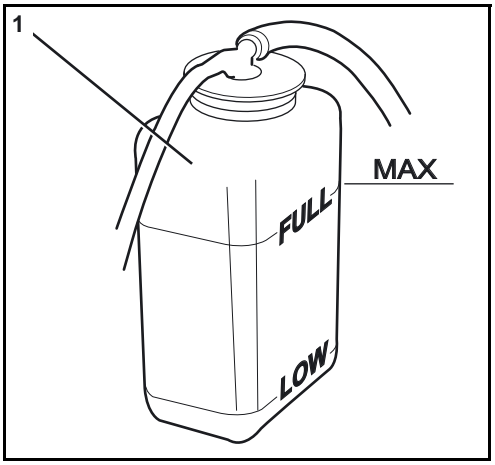


If the oil level is too high or too low, the engine might become damaged during operation.

Coolant level - check

- Check the level of the coolant in the expansion tank (1).

The fluid level must be between FULL and LOW.



Do not open the radiator cap.

If the coolant level is below the LOW mark, refill coolant (page 133).

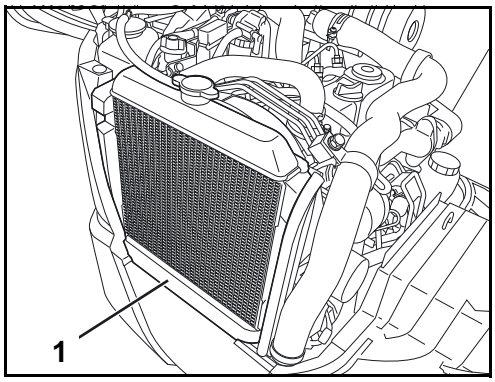
If the coolant level is below the LOW mark a short time after adding coolant, then the cooling system is leaky. The machine may only be started again after the leak is repaired.

Radiator - check

STOP

Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- *Switch off the engine before working in the engine room.*
- *Ensure that the engine and all the engine parts have come to a complete standstill.*
- *Do not reach into rotating components.*

- Check the radiator (1) for leaks and debris (e.g. leaves).



If there is any dirt etc. on the radiators:

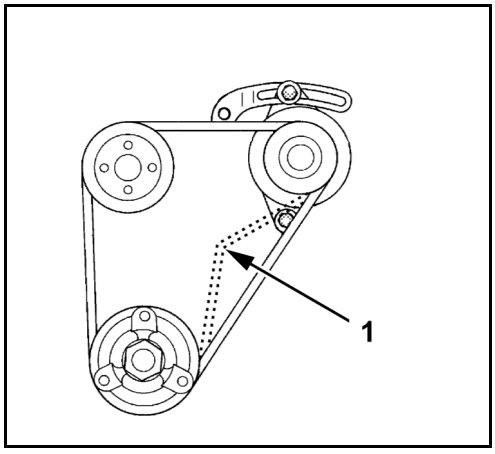
- Open the engine hood (page 112).
- Clean the radiator (1) from the engine side with a water jet or with compressed air. Do not use high-pressure cleaners.
- Close the engine hood and secure it with a padlock.

V-belt - check

STOP

The engine must be switched off and the key removed!
Do not attempt to grasp rotating or moving parts.

- Check the V-belt (1) for cracks and proper tension. It should be possible to depress the V-belt for about 10 mm. Tighten the V-belt (page 134).



Exhaust system leakage - check

STOP

Risk of poisoning by inhaling engine exhaust gases!
When the engine is operated in non-ventilated and closed rooms, toxic engine exhaust gases accumulate. The engine exhaust gas contains carbon monoxide – a colourless, odourless, and lethal gas.
- *Only carry out the check in rooms if an exhaust gas extraction system is connected or the room is well ventilated.*

- Check the exhaust system for leaks and tightness (formation of cracks).

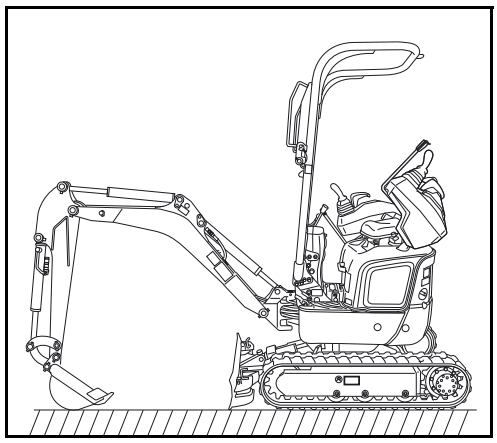
STOP

If the inspection is carried out when the engine is warm, there is a risk of burns in the exhaust system.

- If the exhaust system is leaky or loose, the machine may only be taken into operation after repair.

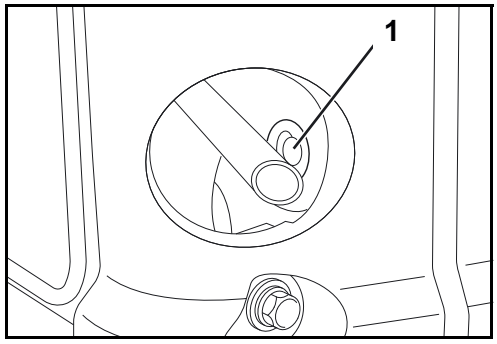
Hydraulic oil level - check

The following conditions must be met in order to determine the exact hydraulic oil level.



– The temperature of the hydraulic oil is between 10 °C and 30 °C.
– The hydraulic cylinders for the boom, arm and bucket are extended halfway.
– Boom swing mechanism is in the centre position.
– Dozer is lowered to the ground.

- Check the oil level in the sight glass (1).

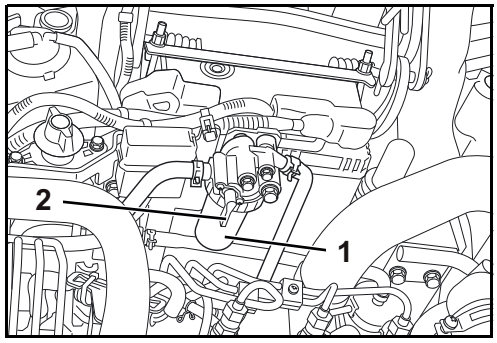


The oil level should be 1/2 to 3/4 of the way up the sight glass. Carefully check the position of the hydraulic cylinders again before topping up the oil (page 140).

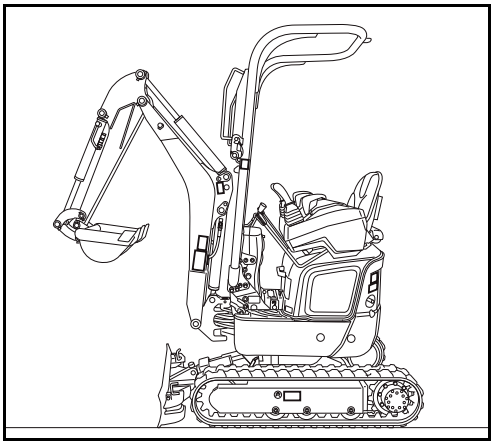
Water separator - check

Check the water separator (1) for water content and contamination, clean if necessary (page 138).

The cock (2) should be vertical in the "O" position.



Lubrication

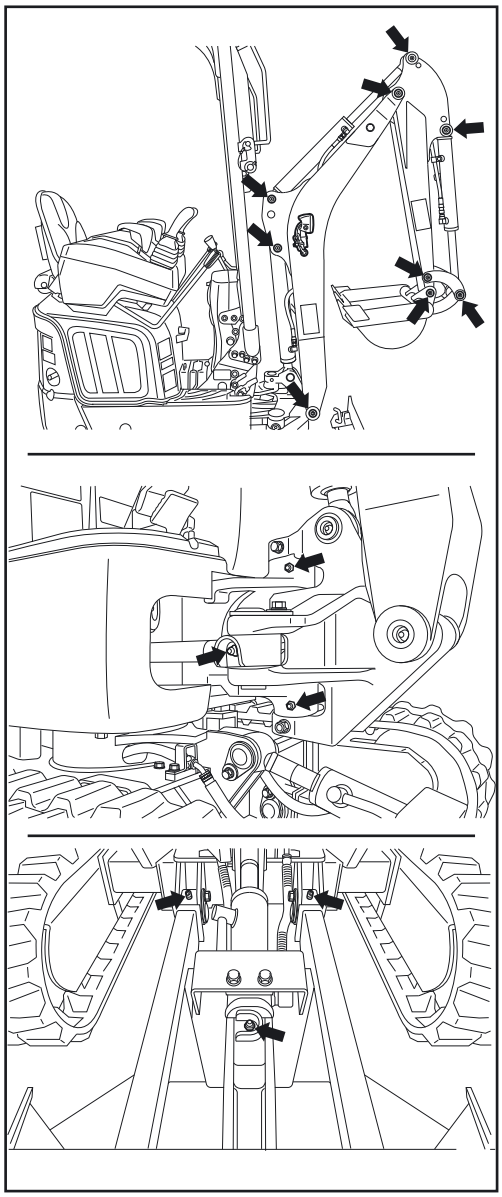


- Start the engine (page 78).
- Position arm and bucket as shown in the figure.
- Lock the control lever.
- Stop the engine (page 81)
- Remove the ignition key.

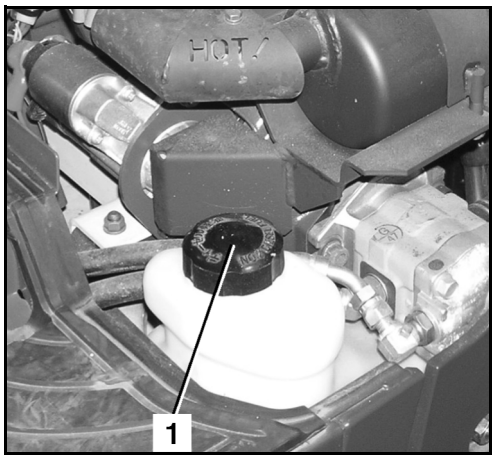
See "Operating the controls during excavation work" (page 91).

- Lubricate all greasing points (see figure below) – see the "Recommended lubricants" section (page 130) – by applying grease until fresh grease emerges

Wipe emerged grease off immediately and store dirty cleaning cloths in the containers provided for disposal.



Fuel level - check



- Open the engine hood (page 112).
- Open the filler cap (1).
- Check the fuel level.
- If the fuel level is too low, refuel the excavator (page 109).
- Close the filler cap.

Ensure that the fuel tank is not running on empty. Otherwise, air will get into the fuel system. The fuel system must then be bled.

- Close the engine hood and secure it with a padlock.

Setting up the workplace

When getting on and off, always ensure that the control levers, drive levers and swivel frame are locked (page 29, page 30).

Getting on the machine

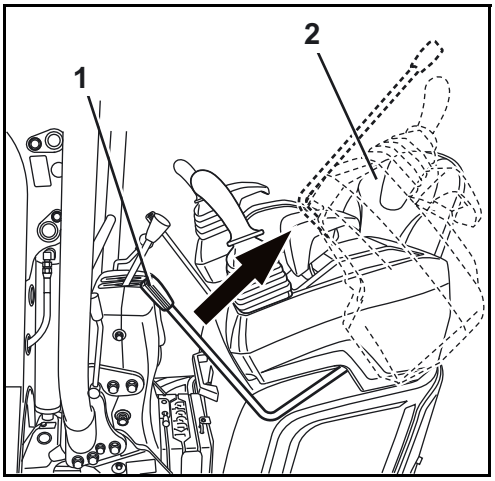
Risk of slipping when getting on and off!
When getting on and off the machine without a secure halt, you can slip and fall down., e.g. on dirty treads.
- *Do not jump up or down on the machine.*
- *Always hold the hand rail or roll-over safety bar tightly with one hand.*
- *Make sure that you have a secure footing.*

K008-5

- Raise the control lever lock completely (page 29).
- Hold the hand rail tightly and get on to the machine.
- Sit down on the operator’s seat.

U10-5

- Move the left or right control console (2) up as far as possible by pulling the control lever lock (1) up.
- Hold the hand rail tightly and get on to the machine.
- Sit down on the operator’s seat.
- When lowering the control lever lock, make sure no hands are trapped.



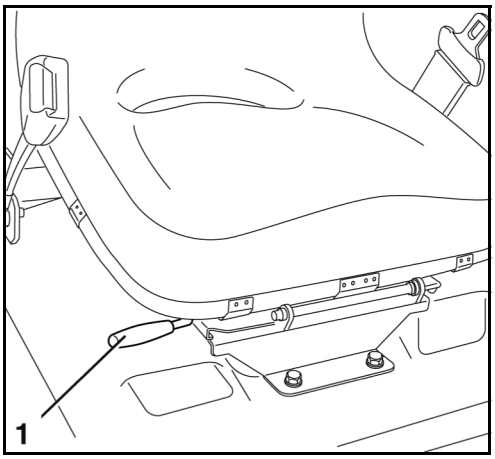
The control console must remain in the raised position until the engine is started, as the engine can only be started in this position.

Adjusting the operator's seat

Adjust the operator's seat so that fatigue-free and comfortable working is possible. It should be possible to operate all controls safely.

Horizontal seat adjustment (seat stand-off)

- Pull the horizontal seat adjustment lever (1) up and move the seat to the desired position by moving it forward or back, then release the lever.



STOP

Check that the seat is locked in place.

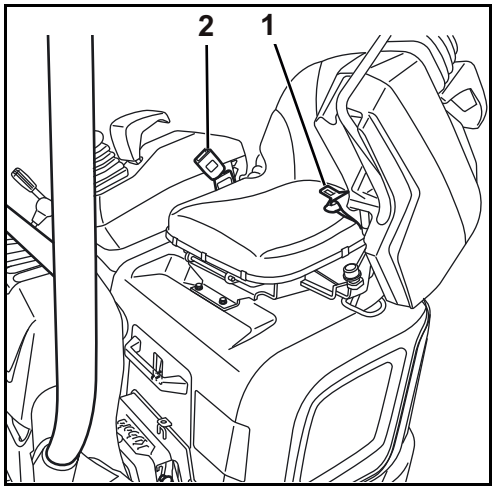
Seat belt

If the engine compartment cover is not locked, the operator's seat can tilt backwards. Before buckling up the seat belt, check that the engine compartment cover is locked and secured with a padlock.

Risk of accidents!
Operating the machine without wearing the seat belt is prohibited!
The belt buckle is equipped with a sensor. This sensor detects whether the seat belt is fastened and whether the tongue is inserted and latched in the buckle.
If the engine starts and the seat belt is not latched inside the buckle, warning beep sounds every 2 seconds.

- *Only operate the machine with the seat belt fastened.*

- Pull the seat belt (1) out of the belt retractor, wrap it around your waist and latch it in the buckle (2).
- Make sure that the seat belt fits tightly and the buckle is latched in place.
- To release the seat belt, press the red button on the buckle and slowly guide the belt back into the belt retractor.



Do not operate the excavator without the seat belt fastened.

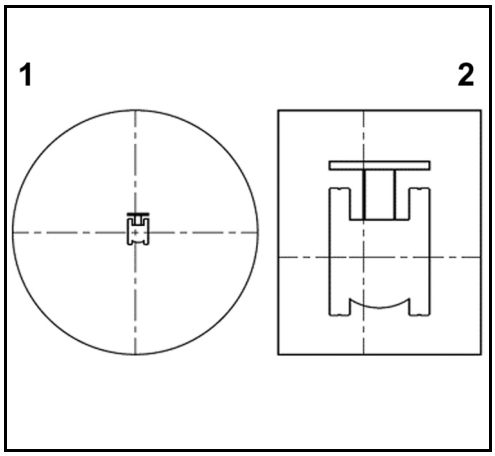
When removing the seat belt, store the belt straight. If you store the belt without straightening it, the belt lock in the belt reactor may not work properly.
This machine is equipped with an orange seat belt which is highly visible when the operator fastens it.

Field of view

When the operator is sitting in the driver's seat, the field of view is partially impaired by the machine as some areas are obscured. It is important to be familiar with and understand the visibility conditions when operating the machine. Within the machine's immediate radius of action, this helps to detect hazards that may cause accidents early on and thus prevent them.

The illustration shows the field of view and the areas that are not visible. The field of view varies from operator to operator and depending on the position of the seat.

1. Field of view within a radius of 12 m
2. Field of view in the immediate area



- Take a seat in the operator's seat and adjust the seat (page 75).

- In order to familiarise yourself with the field of view, check the field of view (1 and 2) for a clear line of sight from your own seated position.

The obscured areas in the previous figure were determined using a field of view test method based on the performance criteria from ISO 5006:2017.
If structural modifications to the machine restrict the defined visibility conditions, then the machine operator must carry out a new risk assessment for the changed visibility conditions. The operator can use the “Field of view” section in these operating instructions as a reference for the new risk assessment.

Starting and stopping the engine

Make sure that there are no persons within the machine's danger area. It is essential to warn persons in the vicinity of the machine by briefly honking the horn.

Make sure that all operational controls are in neutral position. Also make sure the control levers are locked.

Starting and stopping the machine is only allowed when the operator is sitting on the operator's seat.

Starting the engine

The machine is equipped with an anti-theft system (page 113).

The machine is equipped with a neutral start system. The engine can be started when either the left or right control lever lock is raised.

When starting the machine for the first time on a work day, carry out the pre-operational services (page 68).

The safety rules for operation (page 65) are to be observed by all means!

Make sure that there are no persons within the machine's danger area. It is essential to warn persons in the vicinity of the excavator by briefly honking the horn.

Make sure that the engine compartment cover is locked and secured with a padlock.

Make sure that all operational controls are in the neutral position.

Starting the machine is only allowed when the operator is sitting on the operator's seat.

Before starting the engine, make the necessary operators seat adjustments (page 75).

If the engine does not start immediately, cease the starting procedure. Wait a short time before reat-tempting a start. If the engine does not start after several attempts, contact skilled personnel. If the battery is uncharged, jump-start the machine (page 107).

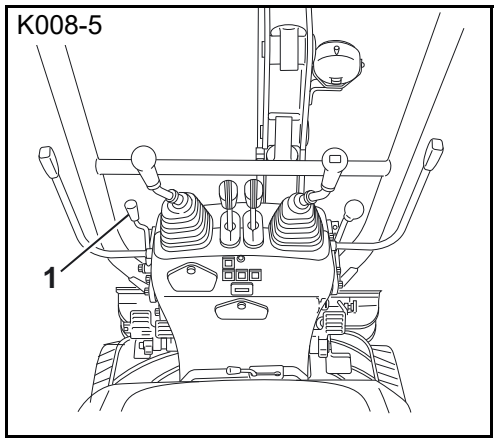
Do not use start pilot or similar substances as a starting aid.

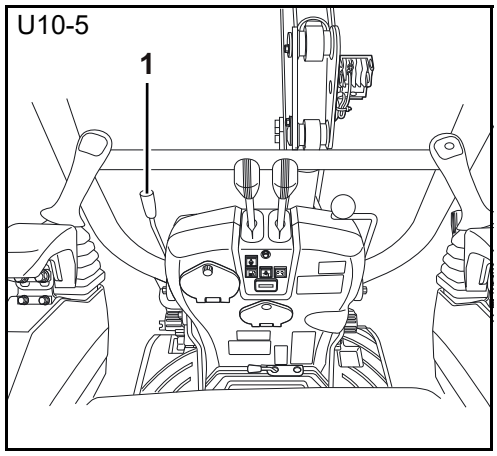
Under cold engine conditions:

- Set the throttle lever (1) between medium and maximum engine speed.

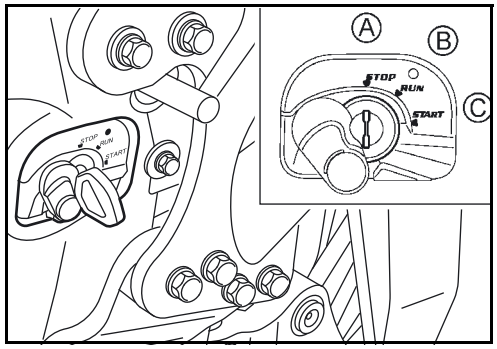
At engine operating temperature:

- Set the throttle lever (1) to idle speed.

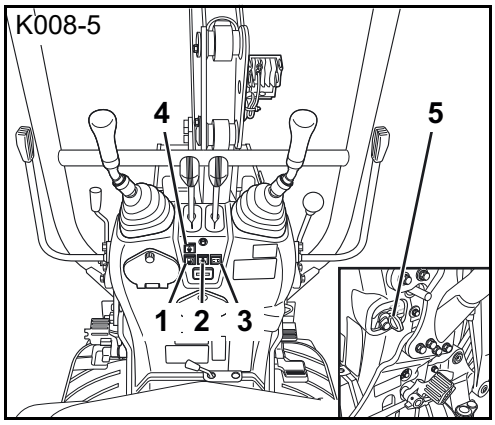




The excavator is equipped with an anti-theft system. If the excavator is started with the wrong key, the alarm beep sounds and the engine does not start.



- Insert the key into the starter switch (5) and turn it to the RUN position.

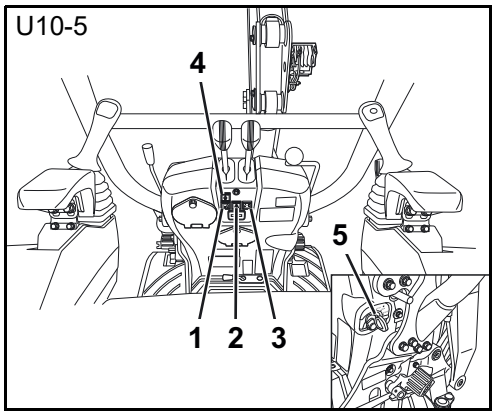


When switching the starter switch to the RUN position, the fuel level indicator (1) and the coolant temperature indicator (4) are tested for functionality. Both indicators will light up for three seconds.

If the fuel level indicator (1) lights up, there are only 2.0 l of fuel left. Refuel the excavator (page 109).

The engine oil pressure indicator (2) lights up and goes off after the engine has started.

The charge lamp (3) lights up and goes off after the engine has started.



The coolant temperature indicator (4) lights up and goes off after the engine has started.

Under cold engine conditions:

- Turn the starter switch to the RUN position for 10 to 15 seconds, depending on the outside temperature.
- Turn the starter switch to the START position and release it as soon as the engine has started.

The switch will return automatically to the RUN position.

Some smoke is normal after starting the engine, even if it lasts a few seconds.

Set the throttle lever to idle speed and warm up the engine for approx. 5 minutes.

Operate the engine at low speed until operating temperature is reached.

At engine operating temperature:

- Turn the starter switch to RUN for approx. 5 seconds.
- Turn the starter switch to the START position and release it as soon as the engine has started.

The switch will return automatically to the RUN position.

- Set the throttle lever to the desired speed.
- Check the displays and indicators during operation (page 81).

Stopping the engine

If the engine is to be stopped to take the excavator out of operation, the services for placing the excavator out of operation (page 105) must be carried out.

- Set the throttle lever to idle speed.
- Turn the starter switch to the STOP position and remove the key.

Observation of the displays after starting and during operation

The operator must observe the indicators and displays after starting and during operation.

If the engine oil pressure indicator lights up during operation, immediately stop the engine and contact skilled personnel. See Troubleshooting (page 121).

If the charge lamp lights up during operation, immediately stop the engine and contact skilled personnel. See Troubleshooting (page 121).

If the fuel level indicator lights up, there are only 2 l of fuel left. Refuel the excavator (page 109). See Troubleshooting (page 121).

If the coolant temperature indicator lights up during operation, park the machine at a safe location and allow the engine to idle. Turn off the engine after it has idled for about 5 min. and check the level of the coolant (page 69). See Troubleshooting (page 121).

Also stop the engine immediately if

- the engine speed rises or drops suddenly,
- abnormal noises are heard,
- the excavating devices do not respond to the control lever as expected or
- the exhaust fumes are black or white. When the engine is still cold, white smoke for a short time is normal.

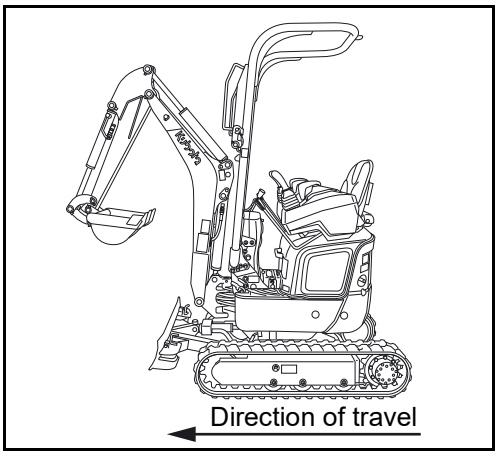
Driving with the machine

Mortal danger by crushing!
When staying in the danger zone and in the case of a suddenly starting machine, there is the danger of being run over by the machine.

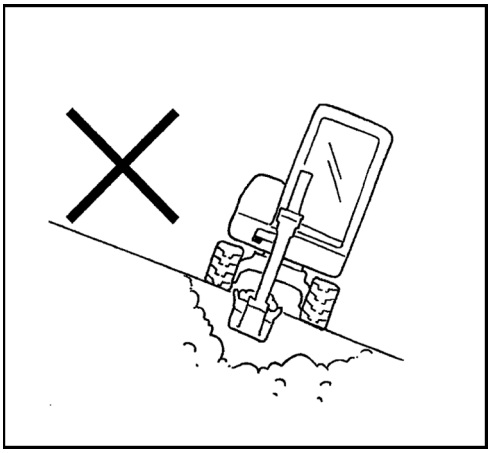
- *Only start the machine from the operator's seat.*
- *Do not start the machine by bypassing the starter poles.*
- *Do not enter the manoeuvring area.*
- *Make sure that there are no persons within the machine's danger area.*
- *Ensure safe distance to obstacles and sufficient freedom of movement.*

- Adhere to the general safety rules (page 13) and the safety rules for operation (page 65).
- Carry out the pre-operational services (page 68).
- Start the engine (page 78).
- Observe the displays and indicators (page 81).

Ensure that the boom and the dozer are in the direction of travel as shown in the figure.



When driving with the excavator, always observe the following safety instructions.



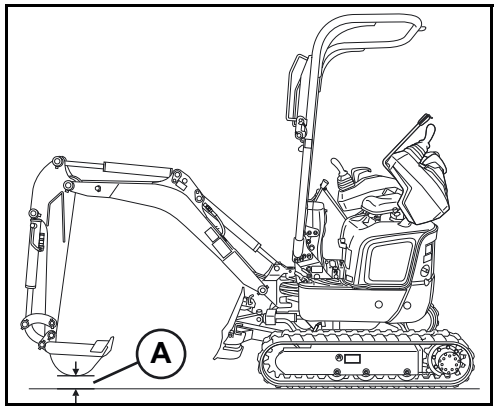
- Lock the swivel frame (page 30).
- Release control lever (page 29).

When working on slopes, observe the tilt of the excavator (see figure).

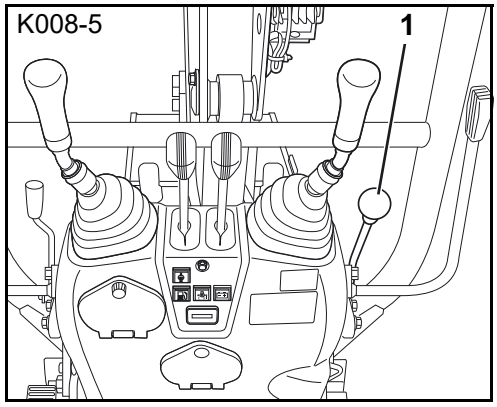
Climbing performance	→ 27% or 15°
Max. lateral sway	→ 18% or 10°

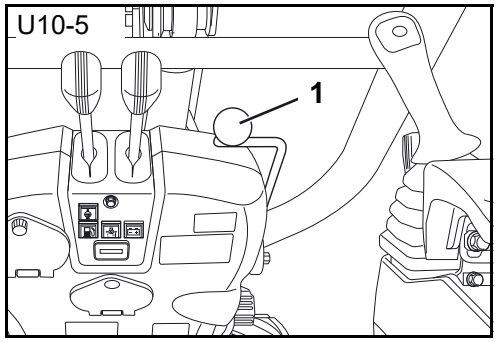
- Keep the bucket as low as possible when driving.
- Check the ground for stability, and verify whether there are holes or other potential obstacles.

- Approach overhangs and edges of ditches carefully as they could cave in.
- Drive slowly downhill, do not allow the vehicle speed to increase uncontrollably.
- When driving, the bucket should be approx. 200 to 400 mm (A) above the ground (see figure).



- Raise the dozer blade to the top position by pulling the dozer control lever (1) back.
- Select an appropriate engine speed.



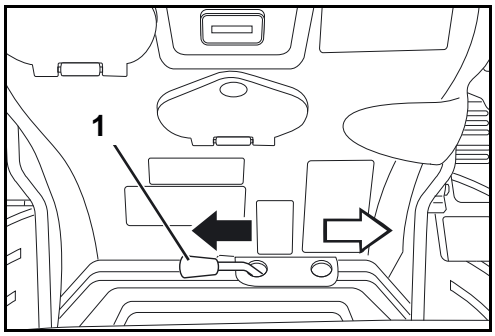


Adjusting the track width of the K008-5

Mortal danger by crushing!
Risk of being crushed between chains and the swivel frame of the machine when adjusting the track width.
- *Lower the dozer, boom, arm and attachments to the ground.*
- *Turn off the engine and secure it against restarting by removing the ignition key.*
- *Do not work under the machine.*

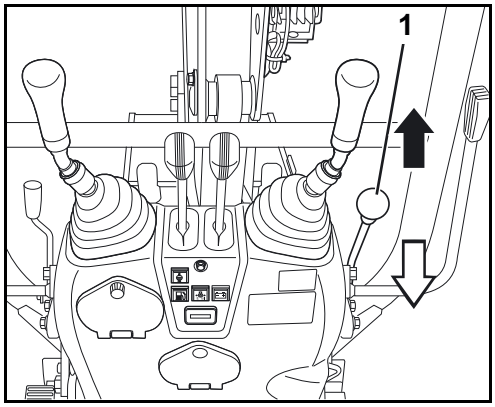
The hydraulic functions for setting the track width, operating the dozer, swinging the boom and operating the auxiliary port are not locked by the control lever lock and can be activated.

For models with extendable track width, adjust the desired track width prior to operation. To do this:



- Move the selector lever for the dozer/extendable track width (1) fully to the right (figure/⇨).

To change the track width, both track width cylinders need to be either fully extended (standard track width) or retracted (narrow track width).

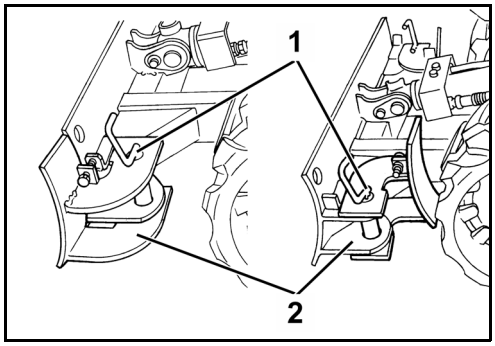


- Using the dozer control lever (1), adjust the desired track width.
- To decrease the track width from 860 to 700 mm, move the dozer control lever forward (figure/🡅).
- To increase the track width from 700 to 860 mm, move the dozer control lever backward (figure/🡇).
- After adjusting the track width, immediately move the selector lever for the dozer/extendable track width fully to the left (figure above, position ⇦).

Risk of unexpected movement of the dozer!
If the selector lever is positioned incorrectly, this may lead to an unexpected adjustment of the dozer.
- *Make sure that the dozer/extendable track width selector lever (1) is set all the way to the left.*

Do not operate the machine with the narrow track width (700 mm), there is a risk of tipping. Except when driving on narrow flat areas, always use the standard track width (860 mm).

Set blade width to narrow track width:



- Pull out locking bolt (1).
- Fold away dozer enlargement (2) behind dozer.
- Reinsert locking bolt (1).

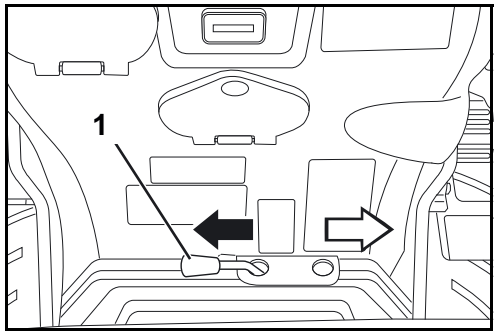
Carry out these tasks on both sides of the dozer.

Adjusting the track width of the U10-5

Mortal danger by crushing!
Risk of being crushed between chains and the swivel frame of the machine when adjusting the track width.

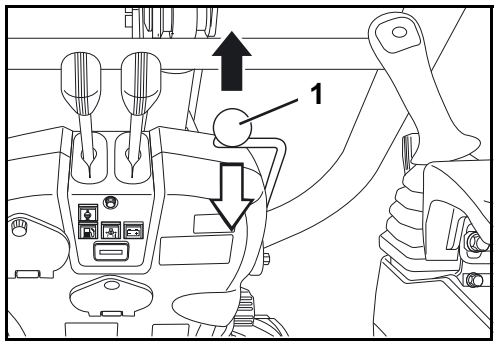
- *Lower the dozer, boom, arm and attachments to the ground.*
- *Turn off the engine and secure it against restarting by removing the ignition key.*
- *Do not work under the machine.*
- *Do not remain within the swinging range of the boom.*
- *Do not enter the manoeuvring area.*

For models with extendable track width, adjust the desired track width prior to operation. To do this:



- Move the selector lever for the dozer/extendable track width (1) fully to the right (figure/⇨).

To change the track width, both track width cylinders need to be either fully extended (standard track width) or retracted (narrow track width).



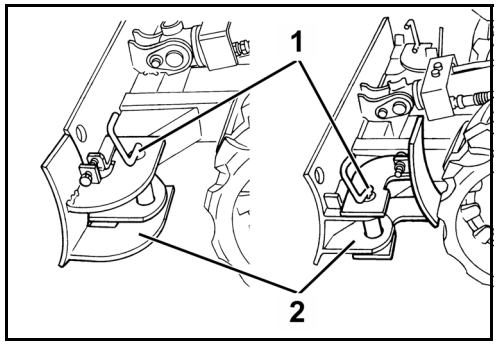
- Using the dozer control lever (1), adjust the desired track width.
- To decrease the track width from 990 to 750 mm, move the dozer control lever forward (figure/↑).
- To increase the track width from 750 to 990 mm, move the dozer control lever backward (figure/⇩).
- After adjusting the track width, immediately move the selec-tor lever for the dozer/extendable track width fully to the left (figure above, position ←).

Risk of unexpected movement of the dozer!
If the selector lever is positioned incorrectly, this may lead to an unexpected adjustment of the dozer.

- *Make sure that the dozer/extendable track width selector lever (1) is set all the way to the left.*

The machine may not be operated with the narrow track width (750 mm) because this increases the tipping risk. Except when driving on narrow flat areas, always use the standard track width (990 mm).

Set blade width to narrow track width:

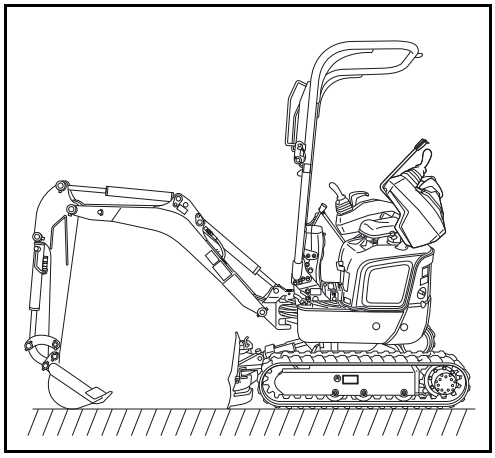


- Pull out locking bolt (1).
- Fold away dozer enlargement (2) behind dozer.
- Reinsert locking bolt (1).

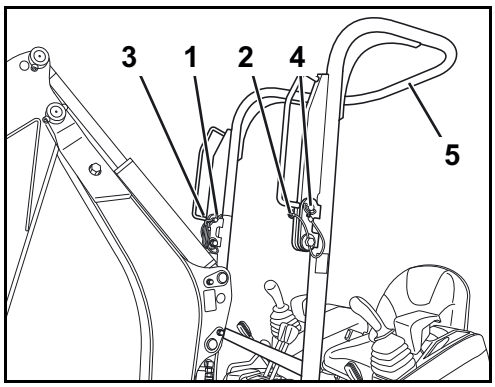
Carry out these tasks on both sides of the dozer.

Swivelling the roll-over safety bar upward and downward and locking it

- Position the front attachments as illustrated.
- Turn off the engine (page 81).



- Pull out the safety bolts (1 and 2).
- Pull out the locking bolts (3 and 4).
- Grasp the upper part (5) of the safety bar firmly with both hands at the highest point possible above the swivel joints.
- Slowly swivel the upper part of the safety bar downward.



STOP *Take care to assure that your hands are not crushed during the downward movement.*

STOP *The excavator must not be operated when the safety bar has been swivelled downward. Always carry out work with the safety bar swivelled upward, unless you drive through a low passageway on a flat surface*

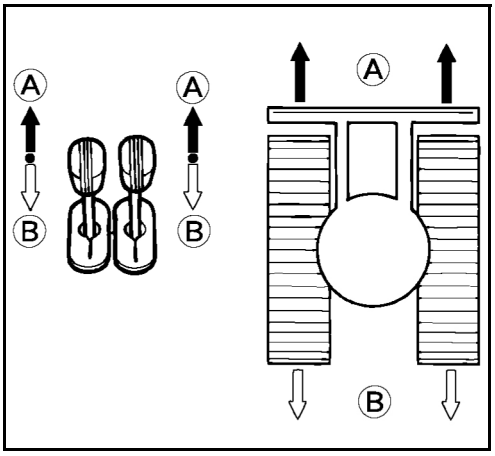
- Swivelling the roll-over safety bar upward is effected in reverse order.

STOP *Make sure that the roll-over safety bar in the swivelled upward position is locked by the locking bolts (previous figure/3 and 4) and secured by the safety bolts (previous figure/1 and 2).*

Driving

- Push both drive levers forward simultaneously to drive the excavator straight ahead. Releasing the drive levers stops the excavator immediately.
  To reverse the excavator, pull both drive levers back simultaneously.

(A) Forward
(B) Reverse

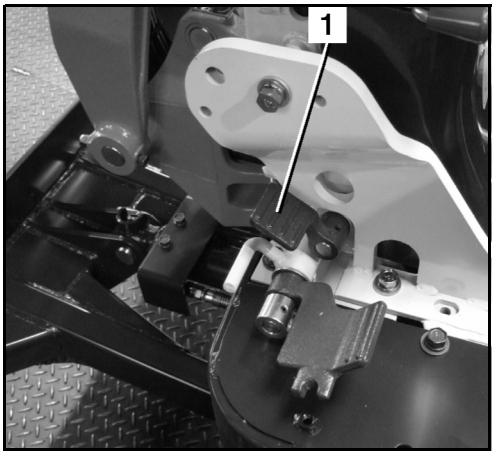


STOP

If the dozer is not in the front, as shown in the figure, but in the rear, the operation of the drive levers is exactly opposite. Drive lever forward → The excavator reverses.

Fast drive position U10-5

- To drive faster, press the fast drive position pedal (1) while driving. When the fast drive position pedal is no longer activated, the machine automatically returns to the normal drive position.



STOP

Do not drive fast on muddy or uneven terrain, also if another control is operated (e.g. turning the swivel frame).

Turning

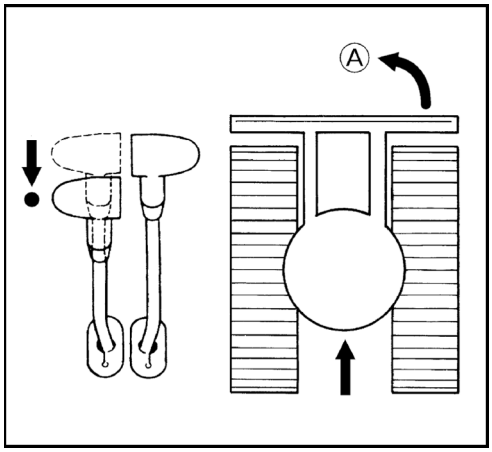
Turns are described for the forward direction of travel with the dozer at the front. If the dozer is positioned at the rear, the steering movements should be in the opposite direction.

When making turns, be sure nobody is standing within the swing area of the excavator.

During driving

- Pull the left drive lever to neutral, leave the right drive lever pushed forward.

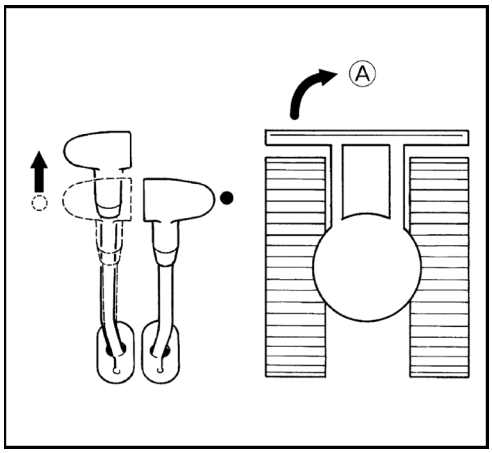
(A) The excavator makes a left turn.



From a standing position

- Leave the right drive lever in neutral, push the left drive lever forward. In this case, the turning radius is determined by the right track.

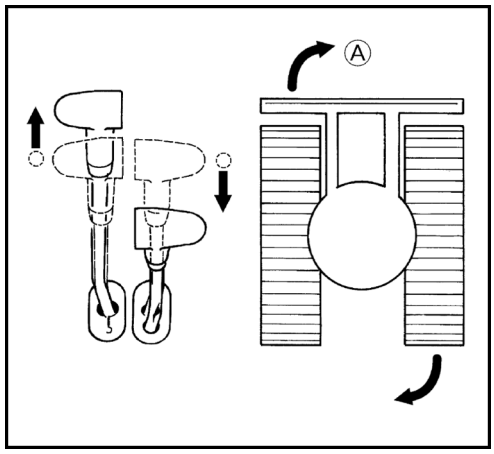
(A) The excavator makes a right turn.



Turning on the spot

- Move the drive levers in opposite directions. The tracks will turn in opposite directions. The centre of the vehicle is its vertical axis.

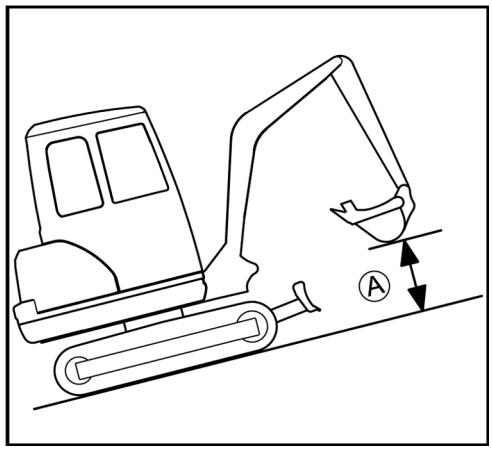
(A) Turning on the spot to the right.



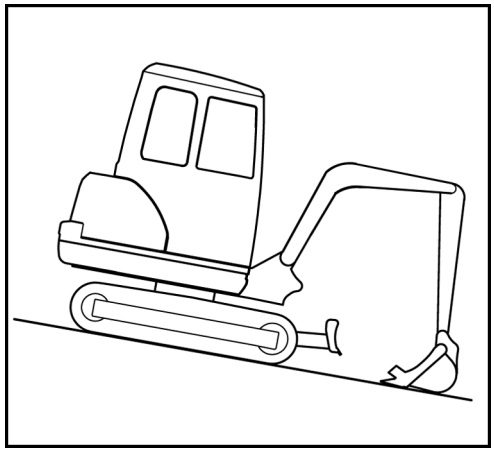
Driving uphill and downhill

Exercise extreme caution when driving up and down a slope.

- When driving on gradients, raise the bucket approx. 200 to 400 mm (A) above the ground (see figure).

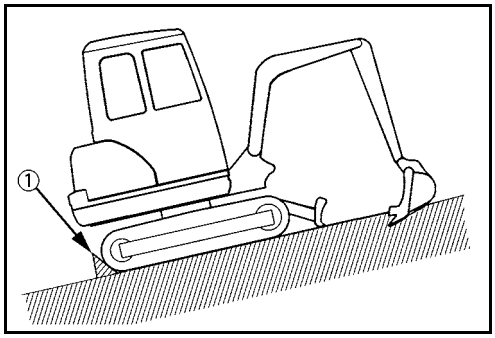


- When driving on gradients, let the bucket slide over the ground if the terrain allows it.



Stopping on gradients

Danger due to moving excavator!
If the excavator is stopped on a slope, park it so that it cannot move. Otherwise, there is a risk of being run over due to the moving excavator.

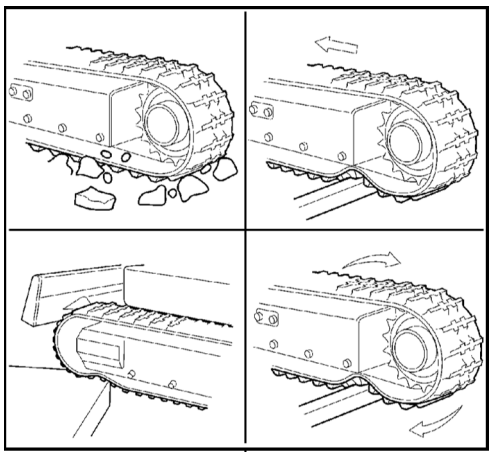


To securely park the excavator on gradients:

- Lower the dozer onto the ground.
- Dig the bucket as far as possible into the ground, or lower it onto the ground.
- Put the controls into neutral position.
- Secure the excavator from moving using wedges (1).

Notes for rubber crawler operation

- Driving or turning on sharp objects or over steps causes excessive wear on the rubber crawlers and will lead to breaking of the rubber crawler or cause the crawler running surface and the steel inserts to be cut.
- Make sure that no foreign objects get stuck in the rubber crawler. Foreign objects lead to excessive crawler wear and can cause it to break.



- The crawler can become blocked due to too much dirt and sand. In this case, reverse the machine a short distance in order to loosen dirt and sand.
- Keep oil products away from the rubber crawlers.
- Remove any fuel or hydraulic oil spilled on the rubber crawlers.

Making sharp turns

- Do not make sharp turns on streets with a high-friction tarmac, e.g. concrete.

Protecting the crawler against salt

- Do not work with the machine on the seashore. (The salt will cause the steel insert to corrode).

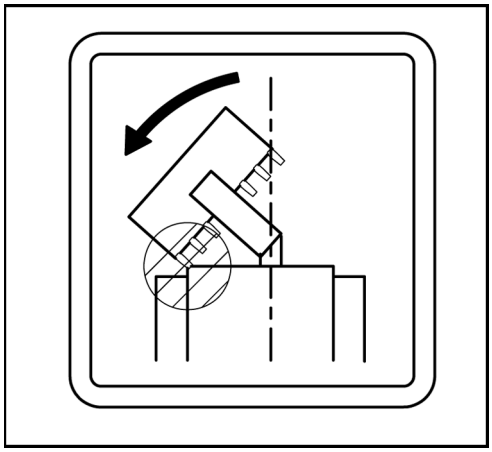
Operating the controls during excavation work

Always observe the following safety instructions when working with the excavator.

- The maximum track width (standard track width) should also be set before excavation work in order to ensure maximum stability while working with the machine.
- The suitability of the machine for attachments depends on the size, weight and arm attachment (interface). These factors should be observed by the operator. Various attachments (e.g. light cargo buckets) can only be used on a restricted basis.
- Using a light cargo bucket can, depending on the nature of the bulk material, exceed the tipping load of the machine.
- Breaking concrete or rocks with the bucket is prohibited.
- Do not use the dropping action of the bucket for excavation.
- Never fully extend the cylinders. Always keep a certain safety margin, especially when operating with a breaker (accessory).
- Never use the bucket as a hammer to drive posts into the ground.
- Do not drive or dig with the bucket teeth rammed into the ground.
- When digging, do not dig the bucket deeply into the ground. Instead, make relatively shallow slices with the bucket at a large distance from the machine. This technique reduces the stress on the bucket.
- When working in water, the water should only reach up to the lower edge of the swivel frame.
- After using the machine in water, always grease the pins on the bucket and arm with grease until the old lubricating grease emerges.
- When digging with the boom above the dozer, make sure that the boom cylinder does not come into contact with the dozer.
- It is not allowed to use the excavator for crane work.
- Adhering soil can be shaken off when the bucket is being emptied by moving the cylinder to the end of the stroke. Should this not suffice, dump the arm as far as possible and swing the bucket back and forth.

Note on using wider and deeper buckets

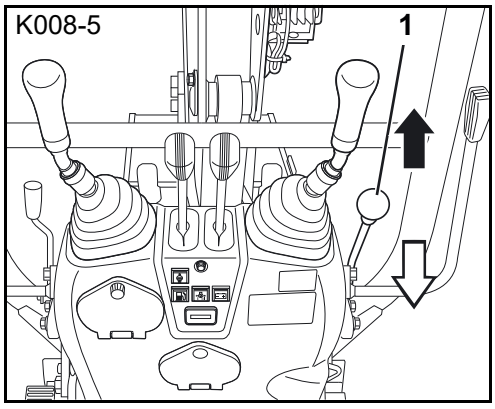
When using a wider or deeper bucket, take good care when swinging or retracting the front attachments to make sure that the bucket does not hit the swivel frame.

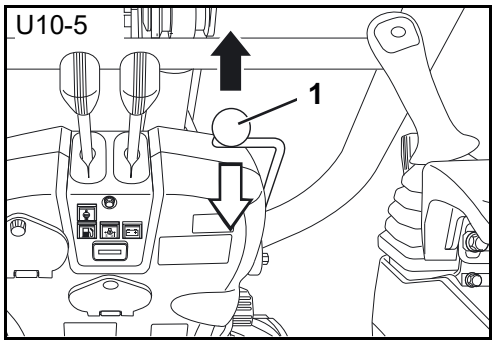


Operating the dozer

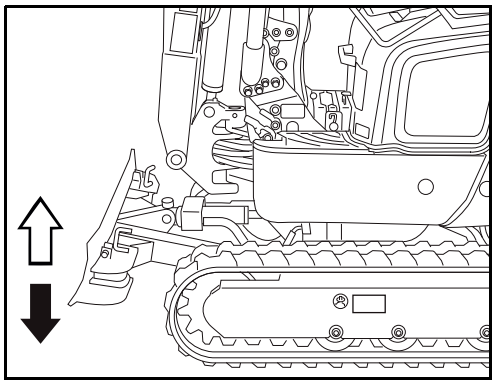
When working with the dozer, operate both drive levers with the left hand and the dozer control lever with the right hand.

- To lift the dozer, pull the dozer control lever (1) back (figure/⇩).
- To lower the dozer, push the dozer control lever (1) forward (figure/⇧).



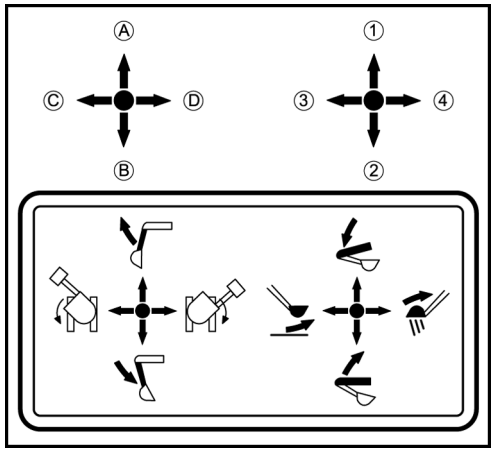


The dozer moves as shown in the figure.



Overview of control lever functions

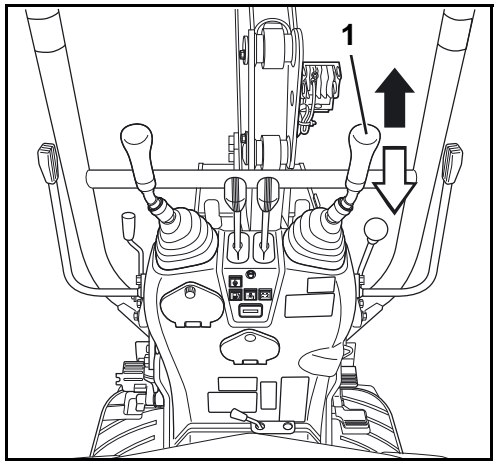
The figure shows, in connection with the following table, the functions of the left and right control levers.



Control lever		Movement
Right control lever	1	Lower boom
	2	Raise boom
	3	Bucket crowd
	4	Bucket dump
Left control lever	A	Arm dump
	B	Arm crowd
	C	Swivel frame to the left
	D	Swivel frame to the right

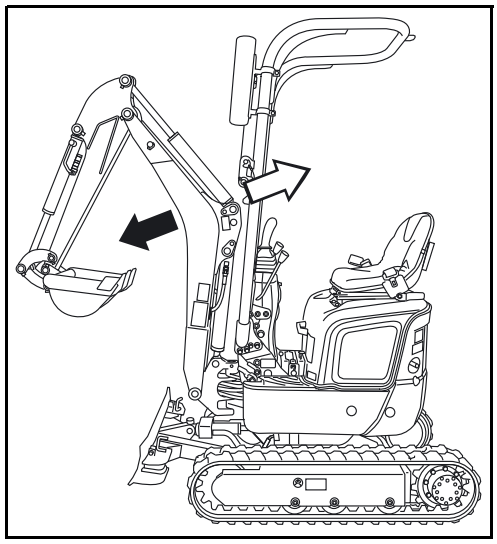
Operating the boom K008-5

- To raise the boom, pull the right control lever back (figure/⇩).
- To lower the boom, push the right control lever forward (figure/⇧).



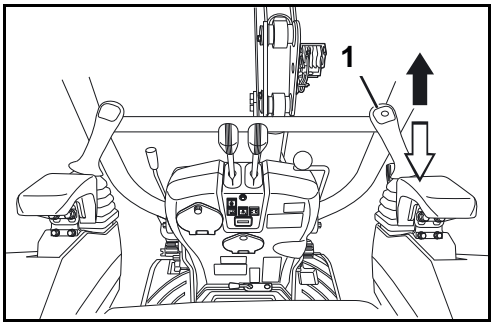
Watch the boom during lowering, so that the boom or the bucket teeth do not hit the dozer.

The boom moves as shown in the figure.



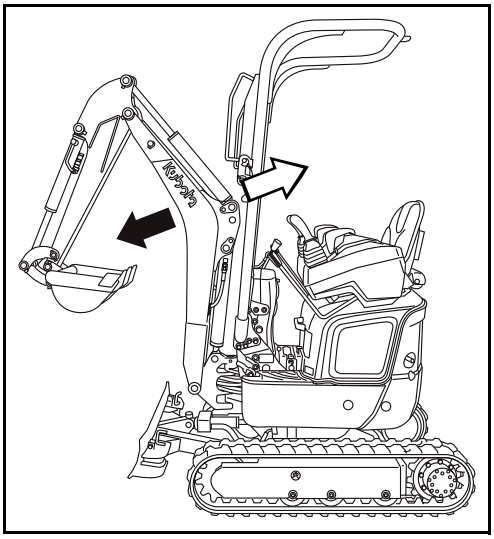
Operating the boom U10-5

- To raise the boom, pull the right control lever back (figure/⇩).
- To lower the boom, push the right control lever forward (figure/⇧).



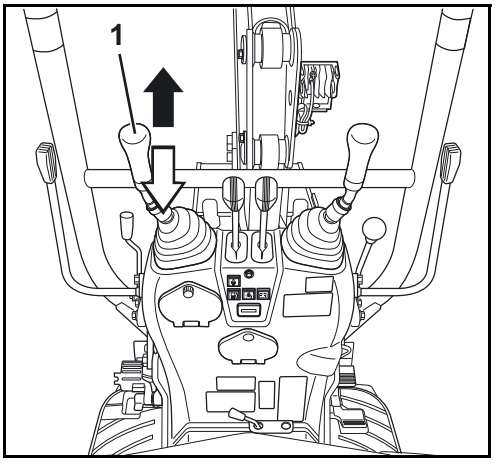
Watch the boom during lowering, so that the boom or the bucket teeth do not hit the dozer.

The boom moves as shown in the figure.

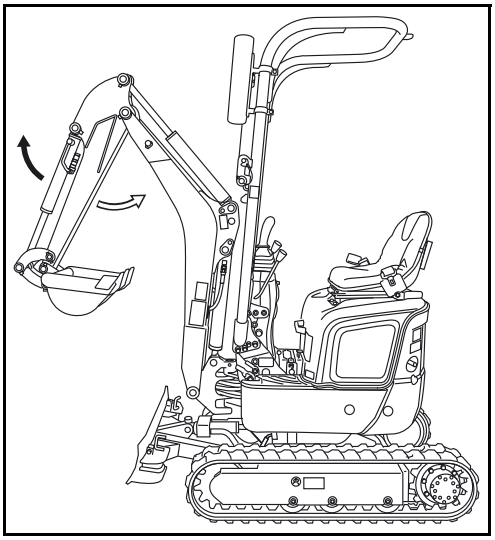


Operating the arm K008-5

- To dump the arm, push the left control (1) lever forward (figure/↑).
- To crowd the arm, pull the left control lever back (figure/↓).

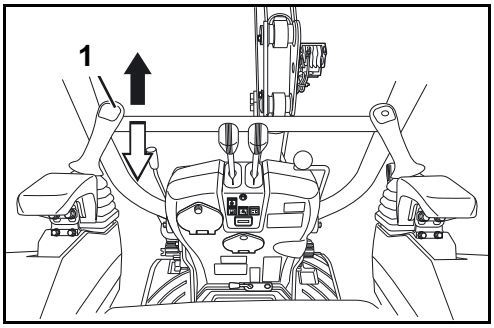


The arm moves as shown in the figure.

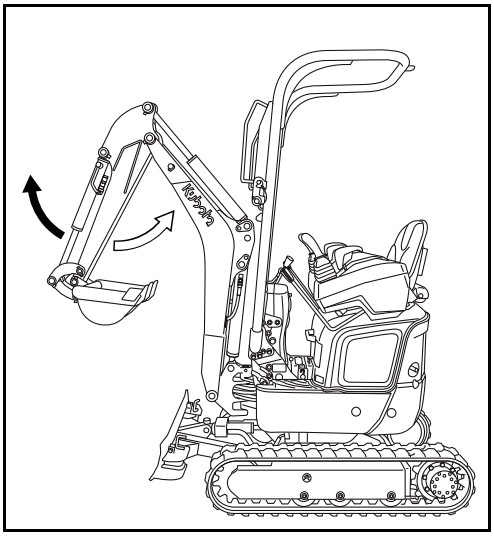


Operating the arm U10-5

- To dump the arm, push the left control (1) lever forward (figure/↑).
- To crowd the arm, pull the left control lever back (figure/↓).

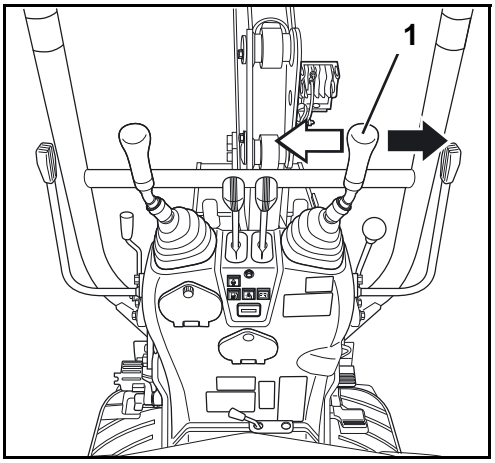


The arm moves as shown in the figure.



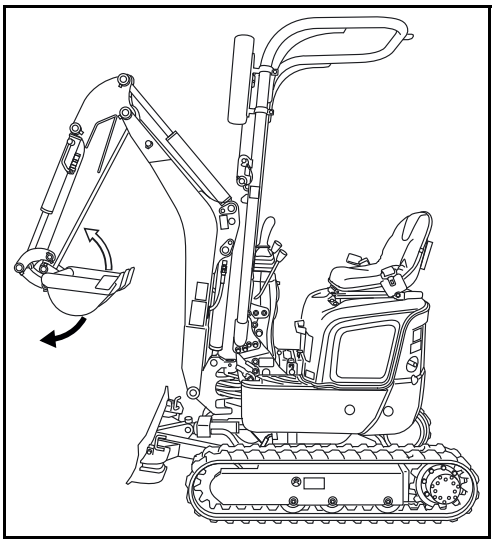
Operating the bucket K008-5

- To crowd (digging) the bucket, move the right control lever (1) to the left (figure/⇦).
- To dump (empty) the bucket, move the right control lever to the right (figure/➔).



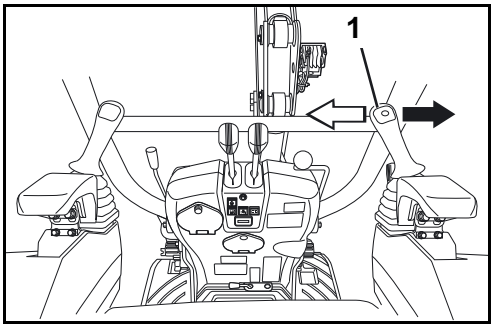
When crowding the bucket, take care that the teeth do not hit the dozer.

The bucket moves as shown in the figure.



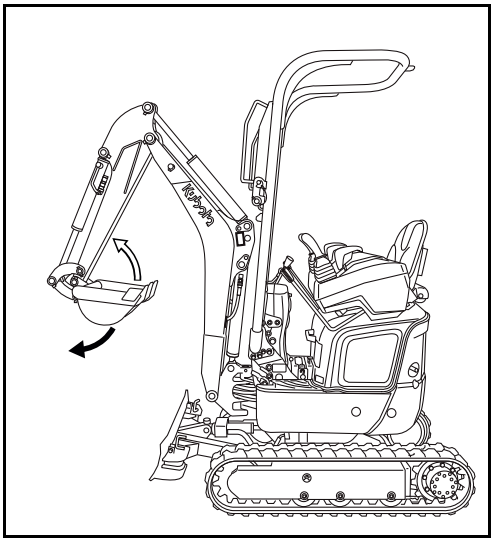
Operating the bucket U10-5

- To crowd (digging) the bucket, move the right control lever (1) to the left (figure/⇦).
- To dump (empty) the bucket, move the right control lever to the right (figure/➔).



When crowding the bucket, take care that the teeth do not hit the dozer.

The bucket moves as shown in the figure.

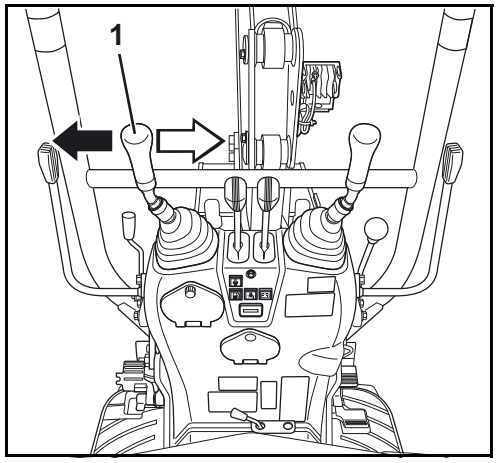


Swivelling the swivel frame K008-5

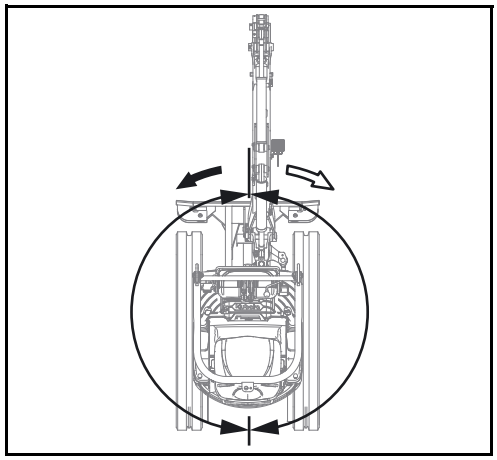
No person is allowed to stand in the swivel area during the movement.

Swivel carefully to avoid any contact of the front attachments with adjacent objects.

- To turn anticlockwise, move the left control lever (1) to the left (figure/🡐).
- To turn clockwise, move the left control lever to the right (figure/⇨).



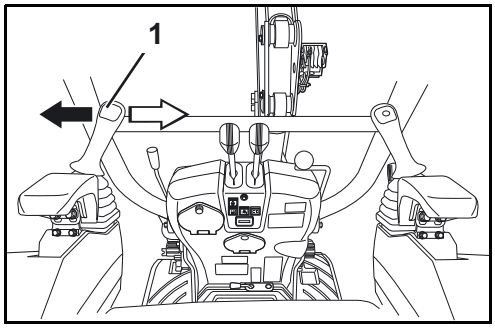
The turning operation takes place as shown in the figure.



Swivelling the swivel frame U10-5

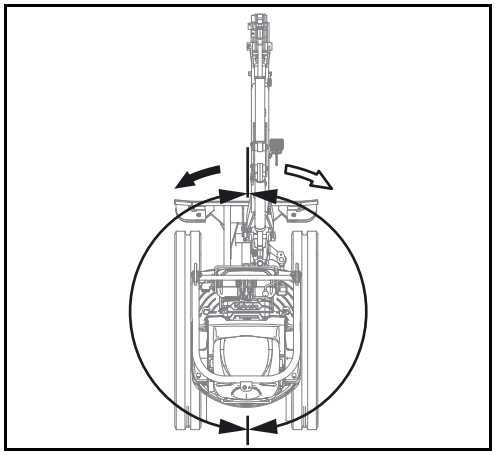
No person is allowed to stand in the swivel area during the movement.

Swivel carefully to avoid any contact of the front attachments with adjacent objects.



- To turn anticlockwise, move the left control lever (1) to the left (figure/🡐).
- To turn clockwise, move the left control lever to the right (figure/⇨).

The turning operation takes place as shown in the figure.

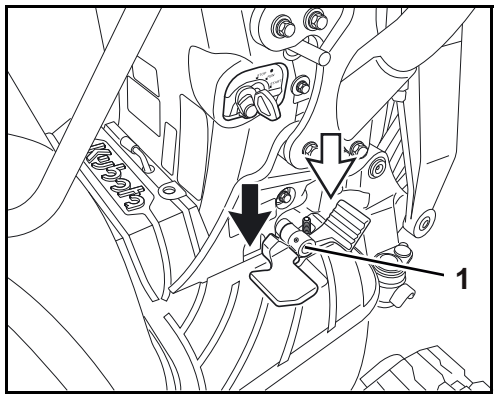


Swinging the boom

No person is allowed to stand in the swing area during the movement. Do not move the foot outside the front part of the boom swing pedal → risk of bruising.

Swing carefully to avoid any contact of the front attachments with adjacent objects.

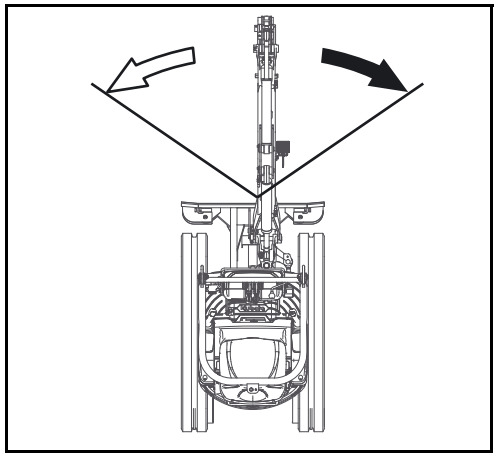
- Tilt the boom swing pedal (1).



The auxiliary port pedal (1) can be secured against inadvertent operation by lowering its rear part. When the boom swing pedal is not in use tilt the rear part of the boom swing pedal forward.

- To swing the boom to the right, press the boom swing pedal downward onto the rear part (figure/⬇).
- To swing the boom to the left, press the boom swing pedal downward onto the front part (figure/⇩).

The figure details the swing movement.



Operating the auxiliary port

The auxiliary port serves for operating attachments.

Only attachments approved by KUBOTA may be used. The attachments must be operated in accordance with the operating instructions supplied with them.

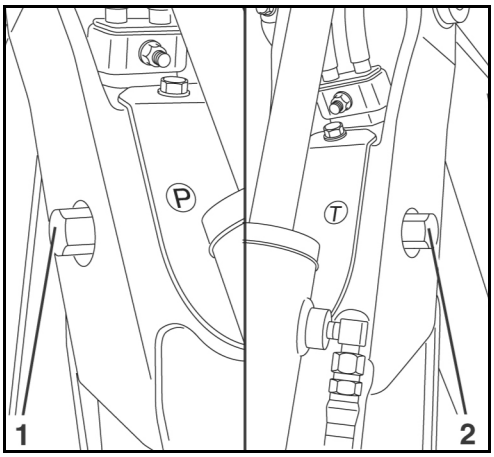
When using a breaker or other attachment for demolition work where material (e.g. asphalt) is removed and can uncontrollably sputter away, personal protective equipment is to be worn at all times (safety shoes, safety helmet, eye protection, ear protection and, if necessary, a breathing mask).

Malfunction of the attachment!
Do not operate the machine with attachments such as a folding shovel. Due to the direct return, the folding shovel can open by itself as a result of the force of gravity.

Risk of injury due to leaking hydraulic oil!
Hydraulic oil can leak at the supply connections if no attachment is attached.
- *Seal the supply connections with plugs after removing the attachments.*
- *The auxiliary port must not be operated without attachments or plugs.*
- *Do not enter the danger area.*

The performance data for the auxiliary port can be found in the "Specifications" section (page 44).

- Connect the implement according to the corresponding operating instructions at the supply connection "P" (1) and the return flow connection "T" (2).

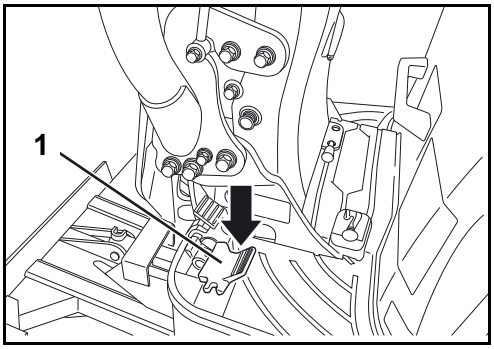


If the auxiliary port has not been in use over a long period of time, dirt may have accumulated on the pipe connections of the supply connection "P" (1). Before installing the implement, drain approx. 0.1 l of hydraulic oil at the supply connection "P".

Catch the drained hydraulic oil in a container and discard it in accordance with the valid environmental regulations.

The auxiliary port pedal (figure below, position 1) can be secured against inadvertent operation by tilting it forward. When the auxiliary port pedal is not in use tilt it forward.

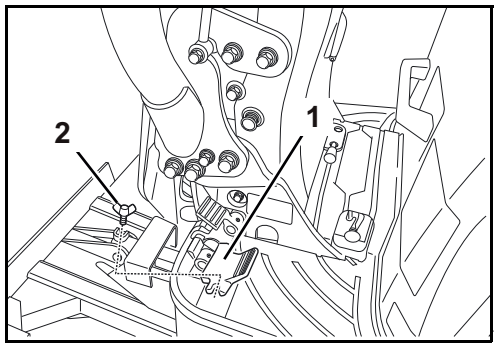
- Tilt the auxiliary port pedal (1) backward.
- To operate the implement, press the auxiliary port pedal downward (figure/↓).



Locking the auxiliary port pedal

- The auxiliary port pedal (1) may be locked with the locking screw (2) for usage with special devices, such as augers and crushers.
- You will find the locking screw, which is part of the stand-ard equipment, in the tool compartment (page 60).

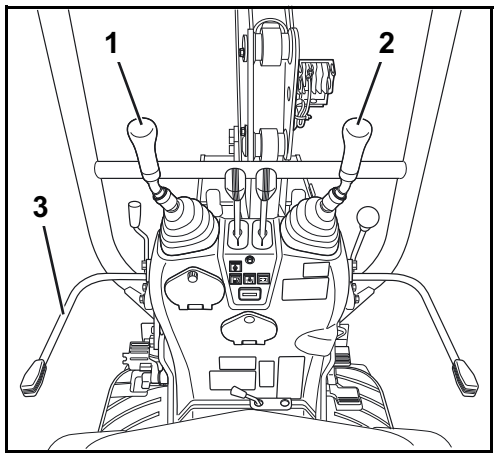
If there is no hole for the locking screw in the mat, drill a suitable hole.



Pressure relief of the hydraulic system K008-5

- Lower front attachments and dozer completely.
- Turn the starter switch to the STOP position.
- Wait until the engine has come to a standstill.
- Turn the starter switch to the RUN position.

Do not start the engine!

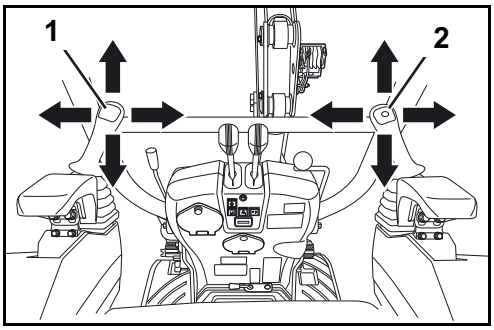


- Make sure the control lever lock (3) engages.
- Move control levers (1 and 2) several times to limit stop in all directions.

The hydraulic system is pressure relieved.

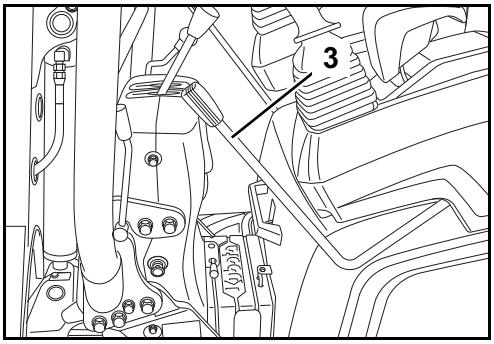
Pressure relief of the hydraulic system U10-5

- Lower front attachments and dozer completely.
- Turn the starter switch to the STOP position.
- Wait until the engine has come to a standstill.
- Turn the starter switch to the RUN position.



Do not start the engine!

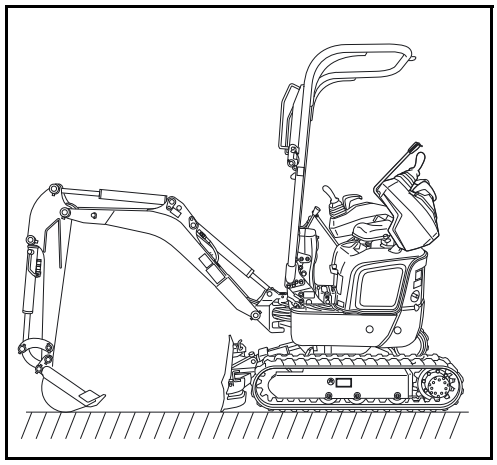
- Make sure the control lever lock (3) engages.
- Move control levers (1 and 2) several times to limit stop in all directions.



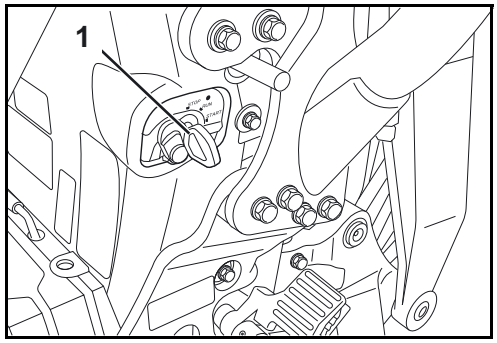
The hydraulic system is pressure relieved.

Placing out of operation

Park the excavator in such a way that it cannot move and is secured against unauthorised use.



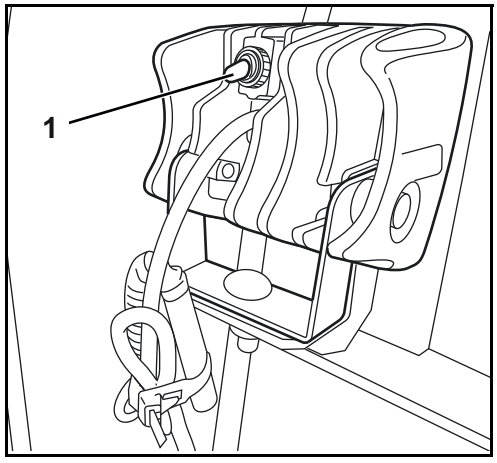
- Drive the excavator on level ground. The machine should be parked under a roof.
- All hydraulic cylinders have to be extended half way (see figure), the boom has to be in line with the excavator, the dozer has to be lowered to the ground and the extendable track width has to be set to standard track width.
- Lock the swivel frame and the control levers (page 29, page 30).
- Reduce the engine speed to idle speed and let the engine run for approx. 5 minutes to let it cool down.
- Turn the starter switch (1) to the STOP position, remove the key. The key must remain with the operator.
- Unbuckle the seat belt.
- Check the excavator for external damage and for leaks. Any damage or leak must be repaired before the next start.
- In case of a heavy accumulation of dirt in the area of the tracks and the hinges on the front attachments, clean the excavator (page 132).
- Refuel the excavator, if necessary (page 109).



Operating the working lights

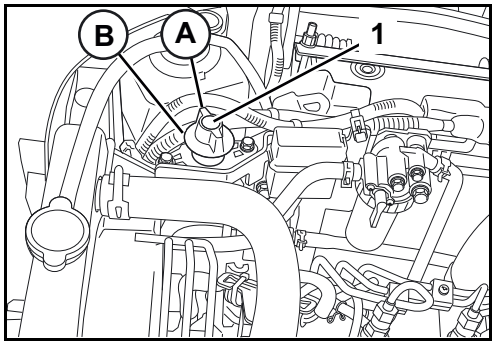
- The starter switch is in the RUN position.
- Press the working light switch (1) to the ON position (upper position).The working lights are turned on.
- Press the switch (1) to the OFF position (lower position). The working lights are turned off.

While working on public roads, other road users must not be blinded.



Operating the battery isolator

In order for the excavator to be operated, the battery isolator (1) must be in the ON position.
A → ON
B → OFF



If the battery isolator is in the OFF position, all of the electrically powered functions will be turned off (e.g. engine horn, working lights, etc.).

The control unit are saved, and the battery discharges itself only minimally.

Cold weather operation

Operating the excavator at an ambient temperature below 5 °C is considered cold weather operation.

Necessary preparations prior to the winter season

- If necessary, replace the engine oil and hydraulic oil with those of the viscosities specified for winter.
- Only use regular diesel fuel with winter additives. Do not mix petrol and diesel fuel.
- Check the battery's state of charge (page 141). In case of extremely low temperatures, it may be necessary to remove the battery after work and store it in a heated room.
- Check the fluid level and the antifreeze strength of the cooling system (page 69). The antifreeze strength should be between -25 °C and -40 °C.
- Lubricate all locks, except the starter switch, with graphite lubricant.

Operation during the winter season

- The excavator must be cleaned after work is finished (page 132); Special attention must be paid to the crawlers, the front attachments and the piston rods of the hydraulic cylinders. If the excavator is cleaned with a water jet, it must then be parked in a dry, frost-free and well-ventilated enclosed space.
- If necessary, park the excavator on boards or mats in order to prevent freezing to the ground.
- Before starting, check if the piston rods of the hydraulic cylinders are free of ice to avoid damage. Also check if the crawlers are frozen to the ground. If so, do not take the excavator into operation.

STOP

Be careful when getting on and off, the crawler could be slippery.

- Start the engine (page 77).
- Switch the starter switch for approx. 10 seconds (rather than 5 seconds) to the PREHEAT position.
- Let the engine warm up for approx. 10 minutes (rather than 5 minutes) at idle speed.

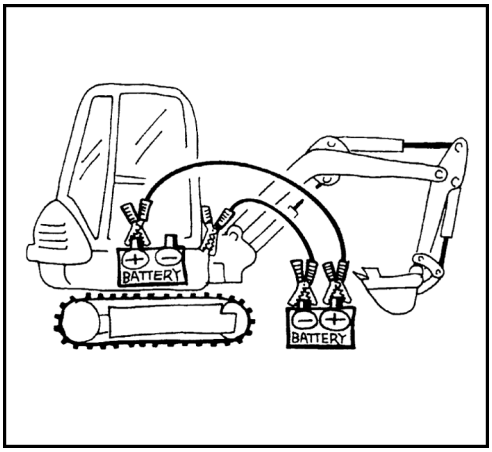
Jump-starting the excavator

Only a vehicle or starting device with a 12 V power supply may be used. A voltage > 12 Volts leads to serious damage to the excavator electronic system.

When servicing a battery, always wear suitable protective gloves and eye protection.

- Make the battery accessible, and remove the positive terminal cover.
- Position the other vehicle or starting machine beside the excavator.

Only use cables with an appropriate cross section as jumper cables.



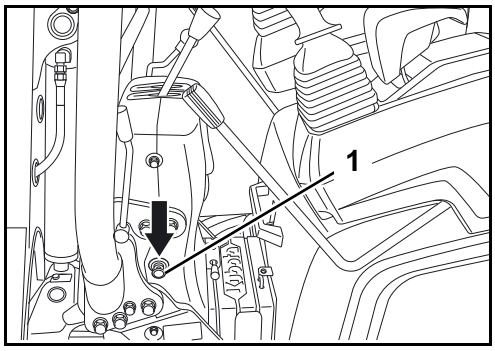
- Connect the positive terminal of the excavator battery to the positive terminal of the helping vehicle (see figure).
- Connect the negative terminal of the helping vehicle to the frame of the excavator. Do not use the negative terminal of the excavator battery. The connecting point on the frame must be blank and clean.
- Start the helping vehicle and let it run at a higher idle speed.
- Start the engine (page 78) and let it idle. Check if the charge lamp turns off after starting.
- Disconnect the jumper cable on the frame of the excavator first, and then on the negative terminal of the helping vehicle.
- Disconnect the second jumper cable from the positive terminal of the excavator battery first, and then from the positive terminal of the helping vehicle.
- Place the positive terminal cover onto the excavator battery.
- If the jumper cables will be required for the next start of the excavator, check the battery and the alternator's charging circuit, contact skilled personnel, if necessary.

Operating in emergency situations

In case of emergency, you can switch off the engine manually.

Engine emergency stop

If the engine cannot be stopped with the key, it can be stopped manually.



- To stop the engine, pull the knob (1) until the engine stops.
- After the engine has stopped, push in the knob.

The excavator may only be taken back into operation after the malfunction has been eliminated.

Maintenance

Refuelling the excavator

When refuelling the excavator, smoking, an open flame, or other sources of ignition are not allowed. The danger zone has to be clearly marked with signs. A fire extinguisher must be kept at hand in the danger zone.

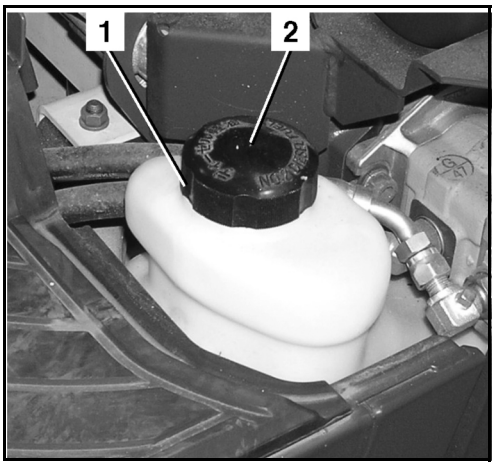
Spilled fuel must be bound immediately with an oil binding agent. The contaminated oil binding agent must be disposed of in accordance with the applicable environmental regulations.

If no pumping station is available, the diesel fuel may only be stored in approved canisters.

Refuel the machine in time so that the fuel tank is not running empty. Air in the fuel system can damage the fuel injection pump.

- Stop the engine.
- Open the engine hood (page 112).
- Remove the filler cap (1) by turning it anticlockwise.
- Fill diesel fuel up to the base of the filler tube.
- Clean the air filter (2) inside the filler cap.

Mud at the air filter causes a depression inside the fuel reservoir.



- Screw on the filler cap.
- Close the engine compartment cover and secure it with a padlock.

Bleeding the fuel system

If the fuel tank was run empty or if work was performed on the fuel system, then the fuel system has to be bled.

- Ensure that there is sufficient diesel fuel in the fuel tank. Otherwise, refuel the excavator.
- To bleed the fuel system, move the starter switch to the RUN position.

The electrical fuel pump will bleed the fuel system automatically within approx. 60 s.

- If the bleeding was insufficient, the engine will stop again. In this case repeat the procedure.

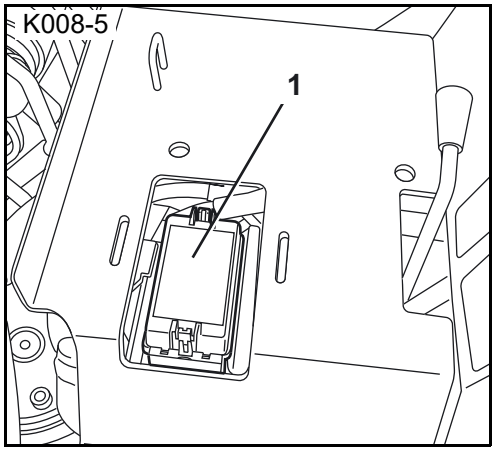
Replacing the fuses

Blown fuses may only be replaced with fuses of the same type and same rating.

The bypassing of fuses, for example with a wire, is not allowed.

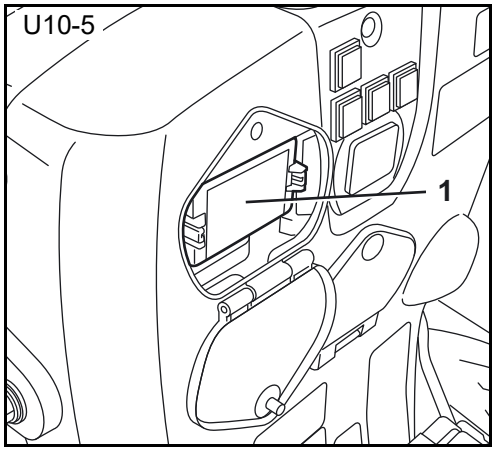
If the malfunction cannot be remedied by replacing the fuse, or if the fuse blows again when starting, contact skilled personnel.

- Open the cover of the step (K008-5).



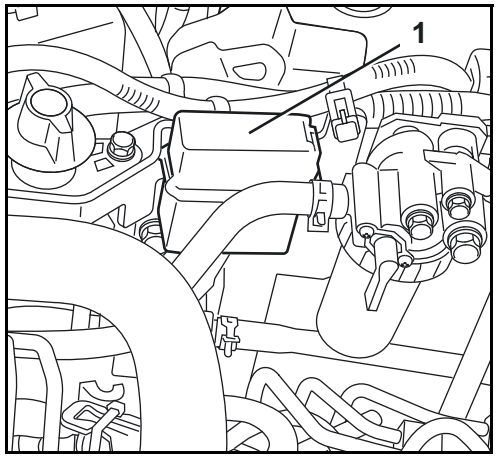
- Open the door of the front control box rear cover (U10-5).
- Open the fuse box (1) and replace the blown fuse.

The spare fuses are positioned in the fuse box (1).



The fuse layout is shown in the next section.

- Replace the blown main fuse (1) in the same way. It is located near to the fuel filter with water separator.

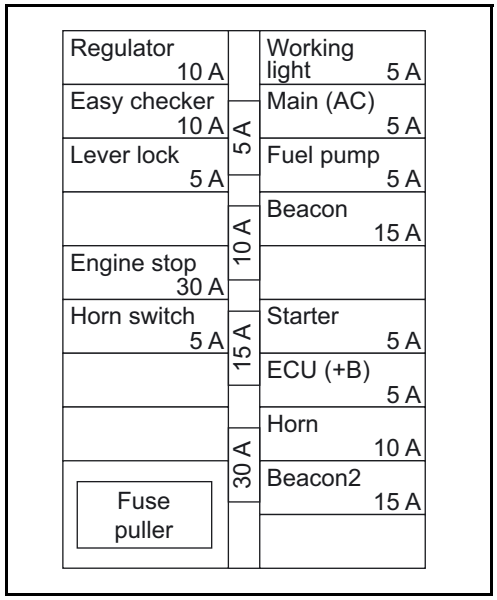


Main fuse: 30 A

Alternator fuse: 30 A

- Close the cover of the step (K008-5).
- Close the door of the front control box rear cover (U10-5).

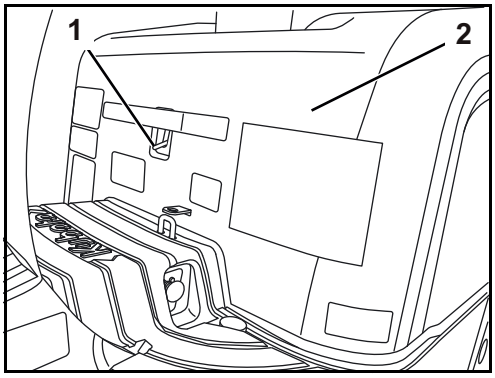
Fuse layout of the fuse box



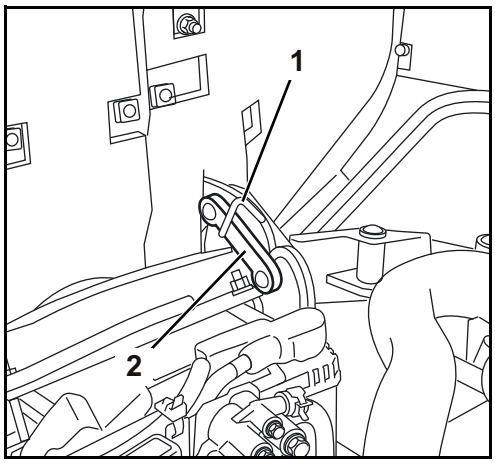
Opening and closing the engine hood

Risk of burns on hot components!
Surfaces can be hot and lead to burns.
Before opening the engine compartment cover:
- *Stop the engine and remove the key.*
- *Do not touch hot parts, such as exhaust muffler, etc.*
- *Wait until the components have cooled down in order for it to be safe to work.*

- Open the padlock and stow it safely.
- Pull lever (1) up and tilt the engine hood (2) backward. The engine hood will stay in the open position because of the mounting.



- To close, pull up the lever (1) at the mounting (2), then flip the engine hood forward until it snaps in.
- Secure the engine compartment cover with a padlock.



Replacing the bucket

When replacing the bucket, make sure to wear eye protection, a helmet and protective gloves.

During attaching and detaching, chippings and burrs may appear on the bolts or bushings. These may cause severe injuries.

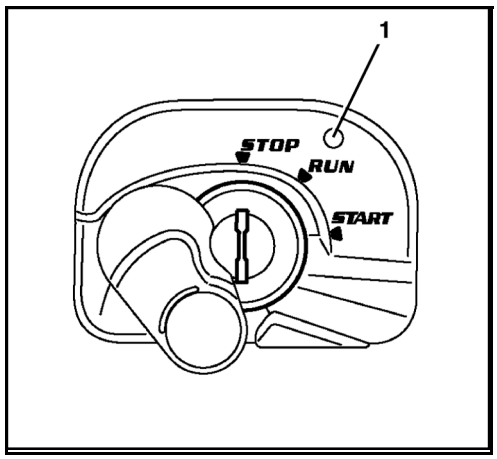
Never use your fingers for the alignment of the components (linkage, bucket, arm). The components may sever your fingers by uncontrolled movements.

Anti-theft system

The excavator is equipped with an anti-theft system that restricts the engine to only being started using a registered key. If a registered key gets lost or stolen, you can invalidate it. This will prevent the engine from being started with this key, thus protecting the vehicle against theft. The anti-theft system makes it difficult to steal the machine. However, it cannot prevent theft completely.

If the starter switch is set to STOP, the indicator light (1) is illuminated, indicating the activation of the anti-theft system.

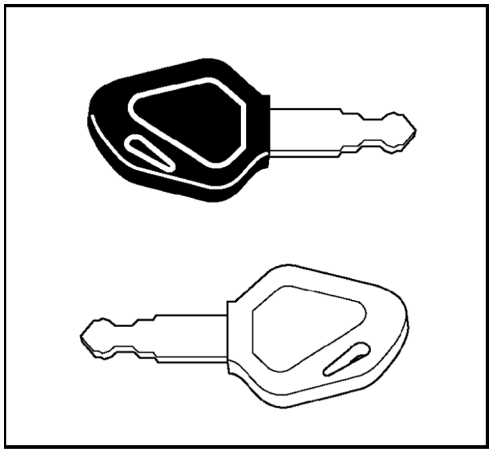
Make sure that the indicator light is illuminated when leaving the machine.



The vehicle comes with two different types of keys:

Black (individual) key

- This key is used to start the engine.
- The engine can be started by inserting the key and turning it to the START position.
- To be able to start the engine with a black key, it must be registered using the red key.



The engine can be started only with a key that was registered for that particular vehicle.
The scope of delivery includes two black keys, among them a spare key. The two black keys have already been registered. Up to four keys can be registered.

Red key (for registering)

- If one of the black keys is lost, another black key can be registered using the red key (page 115).
- The engine cannot be started with the red key.

The key system

- If a registered key is lost, the second and new black key must be re-registered. This procedure locks the lost or stolen black key, which can no longer be used to start the engine.
- If the red key is lost, the black keys can no longer be re-registered. Be sure to keep the red key in a secure location (such as a safe in the office). Never leave the key inside the machine. If it should get lost nevertheless, please contact your KUBOTA dealer immediately.
- If six attempts are made within one minute to turn the starter switch to the START position with an incorrect or unregistered key, an acoustic signal will sound for 30 seconds. The signal will continue to sound even if the starter switch is turned to the STOP position again or the key is removed within this time period. When a key registered for this machine is inserted into the starter switch, the acoustic signal will be turned off.
- Do not use several of these keys in a bunch. This could lead to electrical interfering frequencies which might prevent the motor from starting.
- Only use the special KUBOTA key ring. Other key rings can lead to signal failures between the key and starter switch, and the engine can possibly not start or a key registration cannot be performed.
- After receiving the set of keys, separate them from each other. Always make sure the keys are not part of a bunch. If one of the black keys, for example, is inserted into the starter switch, the red key might be detected by the electronic system. This might lead to a failure of the electronic system.
- If any machine malfunctions occur, please contact your KUBOTA dealer immediately in order to have the malfunction localised and fixed.

Registering a black key for the machine

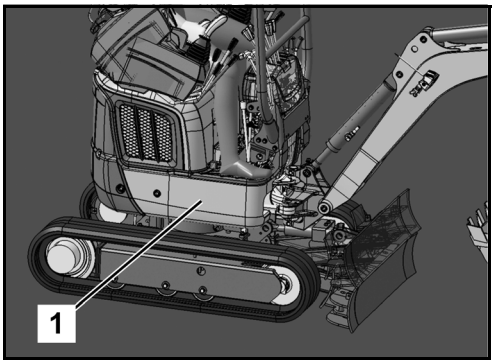
Register a black key only under the following conditions:
Make sure that there are no persons within the machine's danger area. It is essential to warn persons in the vicinity of the machine by briefly honking the horn.

Make sure that all operational controls are in the neutral position.

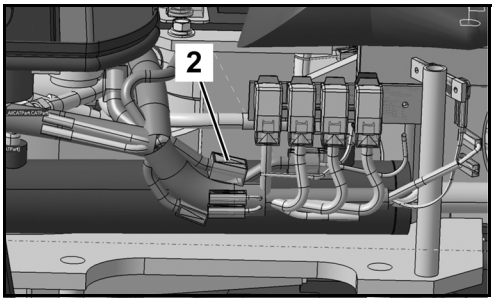
Starting the excavator is only allowed when the operator is sitting on the operator's seat.

Do not allow the engine to run indoors, unless the room is equipped with an exhaust gas extraction system or otherwise well ventilated. The exhaust gas contains carbon monoxide, a colourless, odourless, and lethal gas.

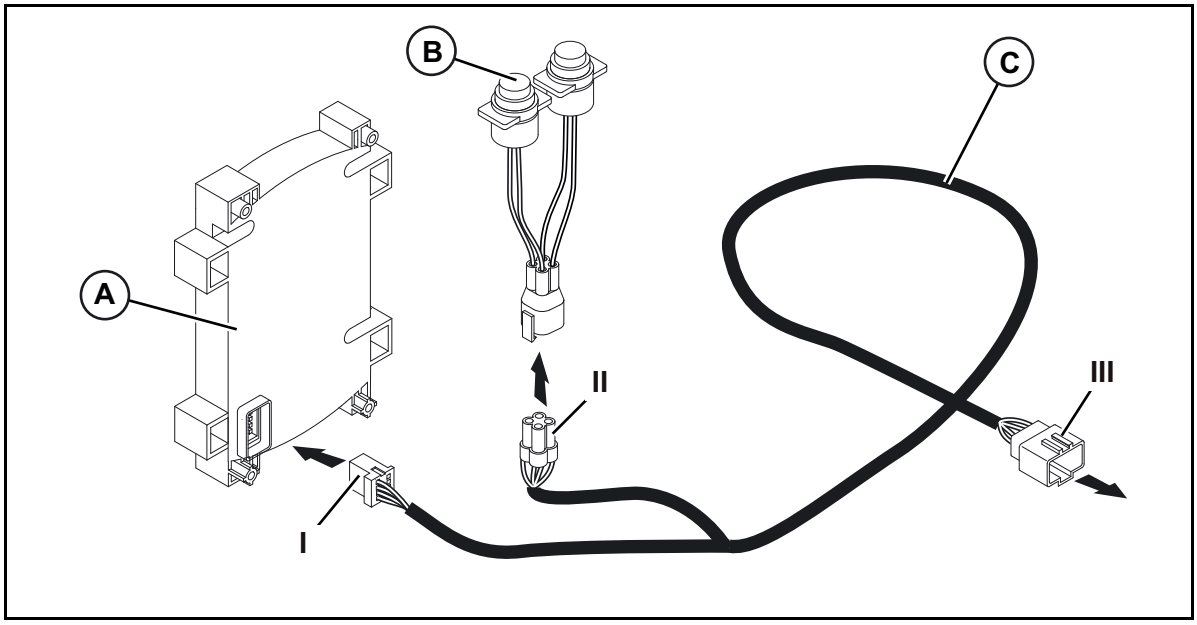
1. Remove the RH swing cover (1).



2. Remove the coupler cap (2) for key register.
3. Connect the coupler for key register and the wire harness (optional: P/N: RA058-9661-0).



4. Connect the digital meter (A) (optional: P/N RB257-5311-0) and the switches (B) (optional: P/N: RB257-5322-0) with the wire harness (C) (optional: P/N: RA058-9661-0).



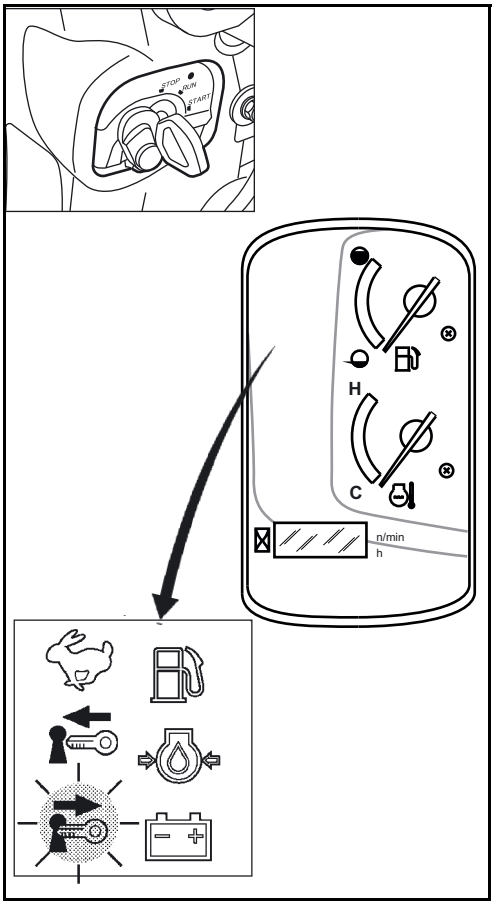
A	Digital meter	I	12-pin connector to connect with the digital meter
B	Switches	II	4-pin connector to connect with the switches
C	Wire harness	III	8-pin connector to connect with the coupler for the key register

5. Insert red key into the starter switch.

Do not turn the key at this point. If the key is in the RUN position, turn it back to the STOP position.

6. Press the selector switch connected with the red and blue colour wire harness.

7. The pull out key indicator blinks.

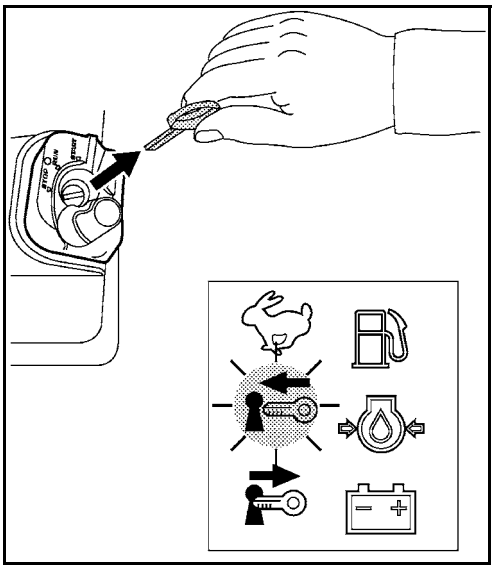


8. Pull out the red key.

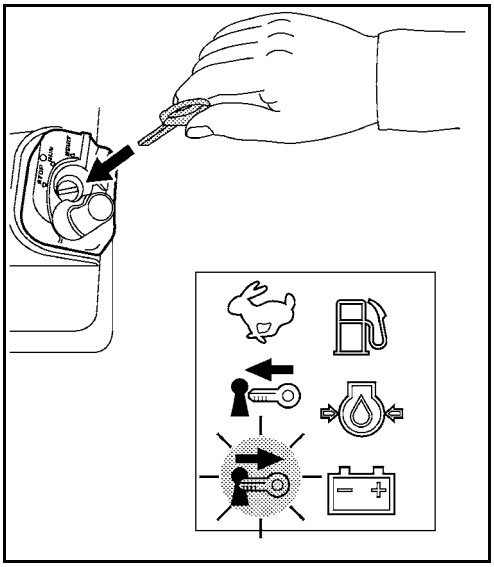
9. The insert key indicator blinks.

10. Insert black key into the starter switch.

Do not turn the key at this point. If the key is in the RUN position, turn it back to the STOP position.



11. After a short moment, the pull out key indicator blinks. This points out the fact that the black key has been registered for this vehicle.



12. Turn key into RUN position to complete the registration process.

13. One after the other, insert all registered black keys into the starter switch and check whether the engine can be started using these keys.

If a registered black key is lost, the other black keys must be re-registered. This procedure locks the lost or stolen black key, which can no longer be used to start the engine.

TROUBLESHOOTING

The troubleshooting section includes malfunctions and incorrect operations, which according to the maintenance chart must either be remedied by the operator or by skilled personnel. Any other malfunctions may only be resolved by trained personnel. The troubleshooting must be performed with the aid of the troubleshooting table. In order to locate a malfunction, first look in the MALFUNCTION column for the corresponding excavator malfunction. In the POSSIBLE CAUSE column you will find the possible causes for the malfunction. The REPAIR column indicates the required remedial measure. If the malfunction cannot be fixed by the measure indicated in the REPAIR column, please consult your KUBOTA dealer.

In order to resolve malfunctions related to the operation, use or maintenance of the exhaust purification system, implement the measures immediately in accordance with the troubleshooting table.

Safety rules for troubleshooting

Adhere to the general safety rules (page 13) and the safety rules for operation (page 65).

The operator is not allowed to open the electrical and hydraulic system. These services are reserved for trained personnel.

During troubleshooting, the safety on and around the excavator must always be ensured.

If troubleshooting of the excavator calls for the bucket to be raised, the operator may not stand in the area of the front attachments unless the front attachments are secured against inadvertent lowering by suitable measures.

Troubleshooting: Before operation

MALFUNCTION	POSSIBLE CAUSE	REPAIR
No function available when the starter switch is turned to the RUN position.	Main fuse at battery blown	Replace the main fuse (page 110).
Indicator lights do not come on as expected when the starter switch is turned to the RUN position.	Fuse blown	Replace the fuses (page 110).
Starter does not turn when the starter switch is turned to the START position.	Drain battery	Charge the battery (page 142). Jump-starting the excavator (page 107).
	Pulled engine emergency stop knob	Push engine emergency stop knob (page 30).
Engine does not start when the starter switch is turned to the START position, but starter turns.	Air in the fuel system	Check the fuel system for leaks and bleed it (page 109).
	Water in the fuel system	Check the water separator for water content, drain if necessary (page 71).

Troubleshooting: Operation

MALFUNCTION	POSSIBLE CAUSE	REPAIR
Exhaust gas colour very black	Air filter restricted	Check and clean the air filter (page 137).
Insufficient engine power	Air filter restricted	Check, clean and replace the air filter (page 137).
	Fuel filter restricted or water in fuel system	Check the water separator for water content. Drain it (page 71) and renew the fuel filter (page 138), if necessary.
Coolant temperature is too high.	Dirty radiator	Clean radiator (page 70).
	Low coolant level	Check the coolant level, add coolant, if necessary (page 133).
	Cooling system components leaking	Check the cooling system for leaks. Please contact your KUBOTA dealer.
	V-belt too loose	Check and adjust the V-belt tension (page 134).
Charge lamp lights up	V-belt is damaged or very loose	Replace and/or tension it (page 134).
	Fuse in fuse box blown	Replace the fuse (page 110).
Deviation in driving direction of excavator	Crawler tension adjusted incorrectly	Check and adjust the crawler tension, if necessary (page 146).
Power of hydraulic functions is too low or disruptive	Hydraulic oil level too low	Check hydraulic oil level and top up, if necessary (page 140).
	Suction filter restricted	Change the hydraulic oil tank suction filter. Please contact your KUBOTA dealer.
Horn and working light do not work	Fuse in fuse box blown	Replace the fuse (page 110).

Troubleshooting: Displays and indicators

Display	Colour	Problem/Malfunction	Preliminary measure	Solution
	Red	No fuel.	–	Refill
	Red	Oil pressure too low.	Stop the engine immediately.	Engine may be faulty. Immediatey contact skilled personnel.
	Red	Faulty battery charger circuit. Charging error.	Check the V-belt. When the V-belt is OK, let the engine run until indicator goes out.	If the indicator does not go out, contact skilled personnel.
	Red	Coolant temperature too high.	Park the machine at a safe location and allow the engine to continue idling. Turn off the engine only after it has idled about 5 min.	Check the cooling system for leaks. Check coolant level. Check the V-belt tension. Check the radiator for dirt.

Troubleshooting: Buzzer sounds

No.	Item	Possible cause	Sounds	Problem / Malfunction	Preliminary measure	Solution
1.	Anti-theft	Wrong key, unable to start.	PiPiPi	The machine cannot be started because the wrong key has been inserted.	Use the correct key.	–
2.	Anti-theft	Red registration key, unable to start.	PiPiPi	Try starting the engine with the red key (for registration).	Use the correct key.	–
3.	Control lever lock	Lower the control lever lock to start the engine.	PiPiPi	The machine cannot be started with lowering the control lever lock.	Raise the control lever lock.	–
4.	Anti-theft	Forgot to remove the key.	PiPiPi	Key must be pulled out.	Pull out the key.	–
5.	Control lever lock	Control lever lock solenoid shorts.	PiPiPiPiPiPi ... (Continuous sounds)	There is a failure in the control lever lock.	Engine may be started but the machine cannot move.	Inform your KUBOTA dealer immediately.
6.	Power supply	Overvoltage	PiPiPiPiPiPi ... (Continuous sounds)	–	The engine was started by connecting a booster cable from a 24V battery or machine. Or the alternator is out of order.	Please stop starting the engine in the 24 V system immediately.
7.	Anti-theft	Antenna abnormality	PiPiPiPiPiPi ... (Continuous sounds)	The anti-theft system has failed. The engine cannot start.	–	Inform your KUBOTA dealer immediately.
8.	Power supply	External 12V short	PiPiPiPiPiPi ... (Continuous sounds)	–	–	–
9.	Seat belt	Engine starts and the seat belt is not latched inside the buckle.	PiPiPi ... PiPiPi (Every 2 seconds continuous sounds)	Seat belt must be latched inside the buckle.	Securely insert the seat belt inside the buckle.	–

MAINTENANCE

The maintenance section includes all care and maintenance tasks to be performed on the excavator.

Careful maintenance of the excavator will guarantee functional safety and a longer service life.

Failure to perform the servicing will void the warranty and any liability on the part of KUBOTA.

Only use spare parts that are recommended by the manufacturer. Non-approved spare parts of inferior quality or wrong classification result in an increased risk of accidents. Operators using non-approved spare parts are fully responsible for any damage arising as a consequence.

The machine’s engine features an exhaust purification system. In order to maintain the emission performance, operate, use and service the engine according to the following provisions:

- Use the fuel recommended in these operating instructions.
- Use the engine oil recommended in these operating instructions.
- Service the engine according to the service intervals defined in these operating instructions.
- Replace the components associated with the engine in accordance with the intervals defined in these operating instructions.

Safety rules for maintenance

- The operator must provide persons who work with or on the excavator with suitable personal protective equipment (PPE) and those persons must use that equipment where applicable, for example: suitable working clothes, safety shoes, safety helmets, eye protection, ear protection and breathing masks. The owner/employer bears the main responsibility for the PPE, which is specified by the safety rules for particular types of activity.
- Maintenance, cleaning and care activities may only be carried out if the excavator is fully shut down. The excavator must be secured against restarting by removing the ignition key.
- The bucket must always be lowered to the ground for servicing.
- When malfunctions are detected during servicing or maintenance, the machine may only be operated after the malfunctions have been remedied. Repairs may only be carried out by trained personnel.
- When carrying out maintenance and care activities, always make sure that the excavator is secured and stable.
- This model does not have a power socket, so use a battery-powered flashlight with the light on for maintenance in the dark.
- When working on the fuel system, smoking, open flames and the operation of other ignition sources are not allowed. The danger zone has to be clearly marked with signs. A fire extinguisher must be kept at hand in the danger zone.
- All waste materials must be discarded in accordance with environmental protection regulations.
- Use the maintenance and care materials listed in the "Recommended lubricants" (page 130) section.
- When working on the electrical system, disconnect it from the voltage source before starting the work. The work may only be carried out by technicians with electrical training.
- Always use a ladder or a scaffold if the work cannot be reached by the operator.
- The controls may only be used while the operator is sitting on the operator's seat.

Personnel requirements

- The operator may only carry out cleaning and care activities.
- The servicing may only be performed by trained personnel.

Repair work on the machine

Repairs on the machine may only be carried out by trained personnel.

If repairs are carried out on load-bearing parts, for example welding on frame parts, the work has to be checked by a qualified person.

After repairs, the machine should be operated only if it is functioning properly. For this check, particular attention must be paid to the repaired parts and the safety devices.

Operator maintenance chart

Check item	Tasks	Hours of operation indicator										Maintenance intervals	Page
		50	100	150	200	250	300	350	400	450	500		
Engine hood cover lock	Check											Daily	–
Walk-around inspection	Check											Daily	69
Engine oil level	Check											Daily	69
Coolant level	Check											Daily	69
V-belt	Check											Daily	70
Radiator	Check											Daily	70
Hydraulic oil level	Check											Daily	71
Water separator	Check											Daily	71
Fuel level	Check											Daily	74
Front-end attachments	Grease											Daily	145
Electric cables and connectors	Check											Daily	147
Fuel tank	Drain	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	139
Battery	Check	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	141
Swivel gear	Grease	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	144
Crawler tension	Check	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	146
	Adjust	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	146
Pitch bearing	Grease				❍				❍			200 h	144
Air filter 1.)	Check				❍				❍			200 h	137
	Clean				❍				❍			200 h	137
Fuel lines and hoses	Check				❍				❍			200 h	147

1.) If there is a lot of dust, the air filter must be cleaned and/or replaced more often.

Check item	Tasks	Hours of operation indicator										Maintenance intervals	Page
		550	600	650	700	750	800	850	900	950	1000		
Engine hood cover lock	Check											Daily	–
Walk-around inspection	Check											Daily	69
Engine oil level	Check											Daily	69
Coolant level	Check											Daily	69
V-belt	Check											Daily	70
Radiator	Check											Daily	70
Hydraulic oil level	Check											Daily	71
Water separator	Check											Daily	71
Fuel level	Check											Daily	74
Front-end attachments	Grease											Daily	145
Electric cables and connectors	Check											Daily	147
Fuel tank	Drain	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	139
Battery	Check	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	141
Swivel gear	Grease	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	144
Crawler tension	Check	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	146
	Adjust	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	50 h	146
Pitch bearing	Grease		❍				❍				❍	200 h	144
Air filter 1.)	Check		❍				❍				❍	200 h	137
	Clean		❍				❍				❍	200 h	137
Fuel lines and hoses	Check		❍				❍				❍	200 h	147

1.) f there is a lot of dust, the air filter must be cleaned and/or replaced more often.

Skilled personnel maintenance chart

Carry out for each maintenance of the "Pre-operational services" (page 68).

Servicing	Tasks	Hours of operation indicator *										Maintenance intervals	Page
		50	100	150	200	250	300	350	400	450	500		
Nuts and bolts	Check		❍		❍		❍		❍		❍	100 h	148
Coolant hoses and hose clamps	Check					❍					❍	250 h	134
V-belt	Adjust					❍					❍	250 h	134
Engine oil and oil filter	Change										❍	500 h	135
Fuel filter 4.)	Change										❍	500 h	138
Return filter 3.)	Change	Please contact your KUBOTA dealer.										1000h	--
Hydraulic oil and suction filter 2.)	Change	Please contact your KUBOTA dealer.										1000 h	--
Air filter 1.)	Change											1000 h	137
Running gear and track roller oil	Change	Please contact your KUBOTA dealer.										2000 h	--
Alternator and starter motor	Check	Please contact your KUBOTA dealer.										2000 h	--
Electric cables and connections	Check	Please contact your KUBOTA dealer.										Annually	--
Safety inspection	Check											Annually	151
Fuel lines and hoses	Change	Please contact your KUBOTA dealer.										Every 2 years	--
Coolant	Change											Every 2 years	133
Hydraulic hoses	Change	Please contact your KUBOTA dealer.										Every 6 years	--

1.) If there is a lot of dust, the air filter must be cleaned and/or replaced more often.
2.) When using a breaker over 20% → every 800 h.
When using a breaker over 40% → every 400 h.
When using a breaker over 60% → every 300 h.
When using a breaker over 80% → every 200 h.
3.) When using a breaker up to 50% → every 200 h.
When using a breaker over 50% → every 100 h.
4.) Earlier if necessary.

Servicing	Tasks	Hours of operation indicator										Maintenance intervals	Page
		550	600	650	700	750	800	850	900	950	1000		
Nuts and bolts	Check		❍		❍		❍		❍		❍	100 h	148
Coolant hoses and hose clamps	Check					❍					❍	250 h	134
V-belt	Adjust					❍					❍	250 h	134
Engine oil and oil filter	Change										❍	500 h	135
Fuel filter 4.)	Change										❍	500 h	138
Return filter 3.)	Change	Please contact your KUBOTA dealer.										1000 h	--
Hydraulic oil and suction filter 2.)	Change	Please contact your KUBOTA dealer.										1000 h	--
Air filter 1.)	Change										❍	1000 h	137
Running gear and track roller oil	Change	Please contact your KUBOTA dealer.										2000 h	--
Alternator and starter motor	Check	Please contact your KUBOTA dealer.										2000 h	--
Electric cables and connections	Check	Please contact your KUBOTA dealer.										Annually	--
Safety inspection	Check											Annually	151
Fuel lines and hoses	Change	Please contact your KUBOTA dealer.										Every 2 years	--
Coolant	Change											Every 2 years	133
Hydraulic hoses	Change	Please contact your KUBOTA dealer.										Every 6 years	--

1.) If there is a lot of dust, the air filter must be cleaned and/or replaced more often.
2.) When using a breaker over 20% → every 800 h.
When using a breaker over 40% → every 400 h.
When using a breaker over 60% → every 300 h.
When using a breaker over 80% → every 200 h.
3.) When using a breaker up to 50% → every 200 h.
When using a breaker over 50% → every 100 h.
4.) Earlier if necessary.

Recommended lubricants

	Recommendation			Filled at the factory		Note
	Ambient temperature conditions	Viscosity	Quality standard	Brand	Type	
Engine oil	In winter and/or at low temperatures	SAE 10W SAE 20W	API CF API CI-4 API CJ-4			When diesel fuel with a high sulfur content (between 0.50% and 1.00%) is used, the engine oil and engine oil filter must be replaced at shorter intervals. Never use diesel fuel with a sulphur content exceeding 1.00%.
	In summer and/or at high ambient temperatures	SAE 30 SAE 40 SAE 50				
	All-weather	15W-40				
		15W-30		JOMO	DH-1 (API CF)	
Coolant			G048 SAE J1034 MB 325.0 ASTM D3306 D4985	KUBOTA	LLC-N-50F mixing ratio 50%	Always use distilled water to mix with anti-freeze. Always follow the recommendations of the coolant manufacturer for the mixing ratio. Do not mix with other coolants.
Grease	Bolts, bushings, gear bearings	NLGI-2	DIN 51825 KP2K-30	Cosmo	Dynamax EP2*	
				IDEMITSU	Daphne Grease MP No. 2	JCMAS GK verified NLGI-2 grease can also be used.**
Hydraulic oil	In winter and/or at low temperatures	ISO 32 ISO 46		Shell	Tellus S2 46*	
	In summer and/or at high ambient temperatures	ISO 46 ISO 68				
Biodegradable Hydraulic oil (Option)			ISO 15380	Panolin	HLP SYNTH 46	Less than 2% mineral oil remains in the system as per ISO 15380.
Gear oil	In winter and/or at low temperatures	SAE 75 SAE 80	MIL-L-2105C			
	In summer and/or at high ambient temperatures	SAE 90 SAE 140				
	All-weather	80W-90		Nippon Oil Corporation	Hypoid gear oil	

	Recommendation			Filled at the factory		Note
	Ambient temperature conditions	Viscosity	Quality standard	Brand	Type	
Fuel***			EN 590 ASTM D975			For preparing the excavator for use in winter, fill the fuel tank with winter diesel and allow the engine to run for a few minutes. Never use diesel fuel with a sulphur content exceeding 1.00%.

* These lubricants are used by the manufacturer for the initial filling.
** Further information can be found on Japan Lubricating Oil Society's website (JALOS).
*** Only use fuels with a maximum sulphur content of 10 mg/kg (20 mg/kg at the last distribution point to the end user), a minimum cetane rating of 45, and a maximum share of 7% fatty acid methyl ester (FAME).

Cleaning the excavator

Before cleaning, shut down the engine and secure it against starting.

If a steam cleaner is used for cleaning the excavator, do not direct the steam jet at electric components.

Do not direct a water jet into the intake opening of the air filter.

Do not clean the excavator with inflammable liquids.

The excavator may only be washed at suitable places (using oil and grease separators).

The excavator can be cleaned with water and a commercial cleaning agent. Make sure no water gets into the electrical system.

Use a plastic cleaner for plastic parts.

Maintenance

Adhere to the instructions for regular servicing to keep the excavator in good condition.

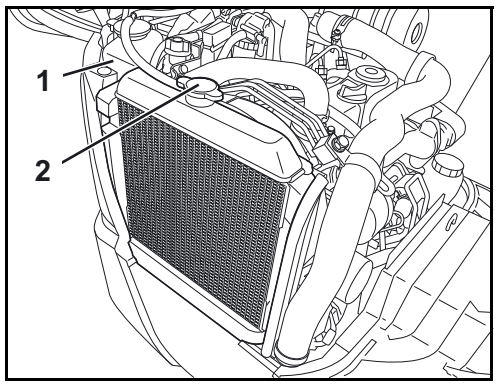
Refilling the coolant

Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- *Switch off the engine before working in the engine room.*
- *Ensure that the engine and all the engine parts have come to a complete standstill.*
- *Do not reach into rotating components.*

- Check the antifreeze content with an antifreeze tester that is qualified for -25 °C.

The antifreeze portion of the coolant should not exceed 50%.

- Open the engine hood (page 112).
- Open the coolant expansion reservoir cap while the engine is cold and fill pre-mixed coolant up to the FULL mark (1).
- If the coolant expansion reservoir was completely empty, check the coolant level in the radiator.



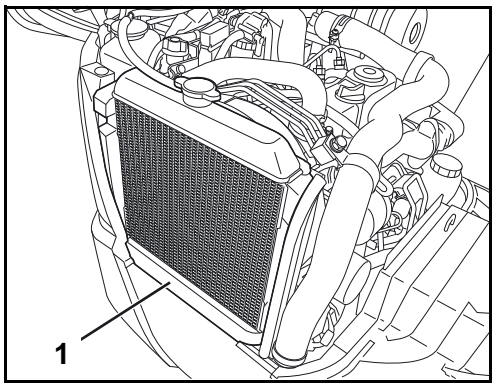
Do not open the radiator cap while the engine is still hot, risk of scalding.

- Remove the radiator cap (2) by turning it anticlockwise.
- The coolant level should be at the lower mark of the filler plug; if not, add coolant.
- Refit the radiator cap and close the expansion reservoir.
- Close the engine hood and secure it with a padlock.

Cleaning the radiator

Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- *Switch off the engine before working in the engine room.*
- *Ensure that the engine and all the engine parts have come to a complete standstill.*
- *Do not reach into rotating components.*

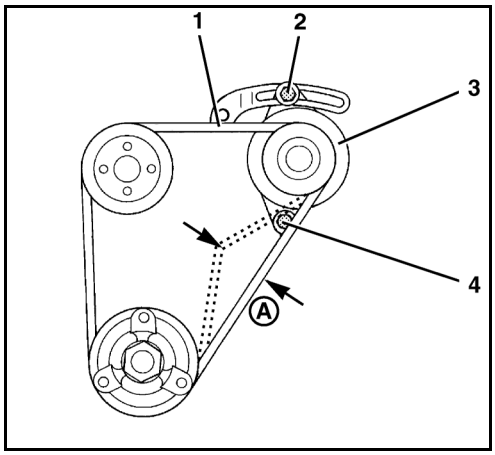
- Open the engine hood (page 112).
- Clean the radiator (1) from the engine side with a water jet or with compressed air. Do not use high-pressure cleaners.
- Check the radiator for damage after cleaning it.
- Close the engine hood and secure it with a padlock.



V-belt - adjust

Danger of cutting and crushing through rotating parts!
The rotating fans can cut into limbs and the rotating belt drive can pull in and crush limbs.
- *Switch off the engine before working in the engine room.*
- *Ensure that the engine and all the engine parts have come to a complete standstill.*
- *Do not reach into rotating components.*

- Open the engine hood (page 112).
- Press in the V-belt (1) at position "A". The V-belt deflection should be approx. 10 mm.
- Check the V-belt for proper condition and cracks.
- Tighten the fastening screw (2).
- To tighten the V-belt, loosen the mounting screws (2 and 4), swing the alternator (3). Tighten the fastening screws and check the tension of the V-belt.
- Close the engine hood and secure it with a padlock.



Checking the coolant hoses

Carry out the inspection while the engine is cold.

- Open the engine hood (page 112).

Check all hose connections to the engine, coolant expansion reservoir and the radiator for condition (cracks, bulges, hard spots) and firm seating of the clamps. If necessary, have the hoses replaced by trained personnel.

- Close the engine hood and secure it with a padlock.

Replacing the engine oil and oil filter

The engine oil change must be carried out while the engine is warm.

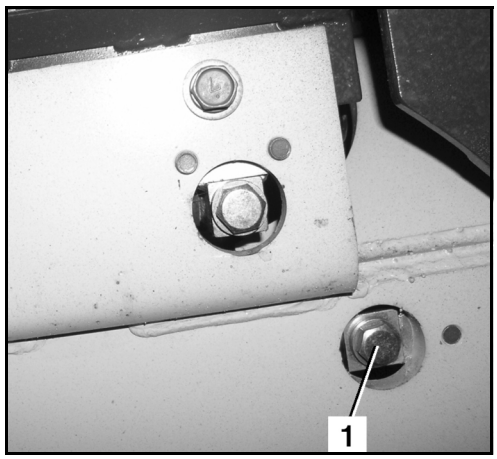
Caution: the engine oil and the oil filter are very hot → risk of scalding!

Place an oil pan with a capacity of about 5 l under the engine oil drain. The engine oil should not be allowed to seep into the earth and it must be discarded like the oil filter in accordance with the applicable environment protection regulations.

- Open the engine hood (page 112).

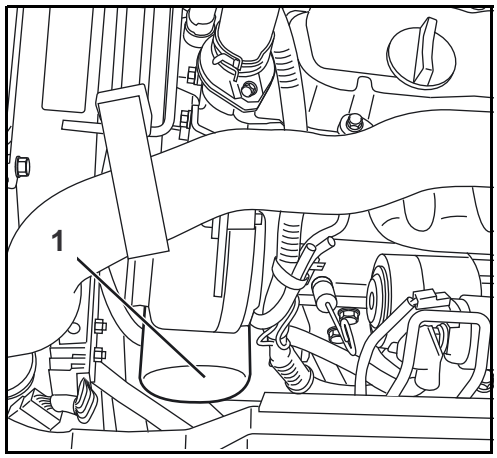
Draining the engine oil

- Remove the oil drain plug (1) and let the engine oil drain into the oil drain pan. Install the oil drain plug using a new seal.



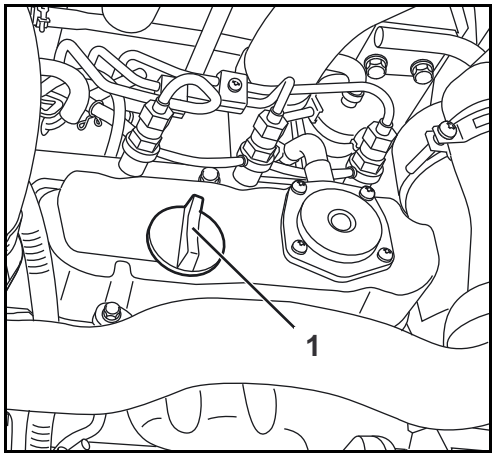
Replacing the oil filter

- Place an oil drain pan under the oil filter and remove the oil filter (1) with a filter wrench by turning it anticlockwise.
- Coat the sealing ring of the new oil filter with engine oil.
- Install and tighten the oil filter by hand. Do not use the filter wrench.



Filling the engine oil

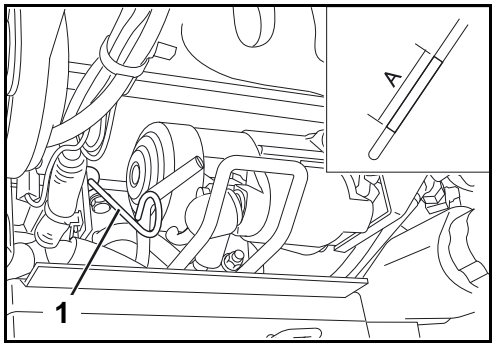
- Open the engine hood (page 112).
- Unscrew the oil filler cap (1) and fill engine oil. See the "Recommended lubricants" section (page 130).



Filling capacity: 2.2 l

- Screw in the oil filler cap.

- Start the engine. The engine oil pressure indicator should disappear immediately after the engine has started; if not, stop the engine immediately and contact trained personnel.
- Let the engine run for approx. 4 minutes and then stop it. Check the oil level after 5 minutes.
- Pull out the oil dipstick (1) and wipe it with a clean cloth.
- Insert the oil dipstick completely and pull it out again. The oil level should be in the "A" area. If the oil level is too low, add engine oil.

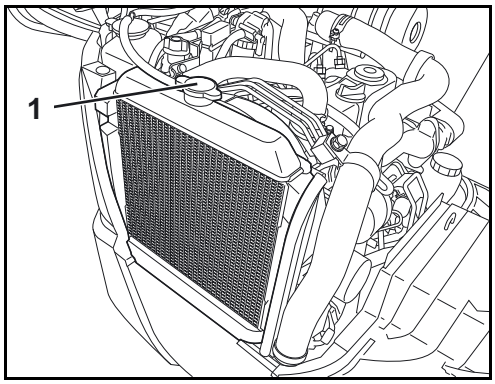


When the oil level is too high or too low, the engine might get damaged during operation.

- When changing the engine oil, fill engine oil up to the maximum of the "A" area.
- Close the engine hood and secure it with a padlock.

Replacing the coolant

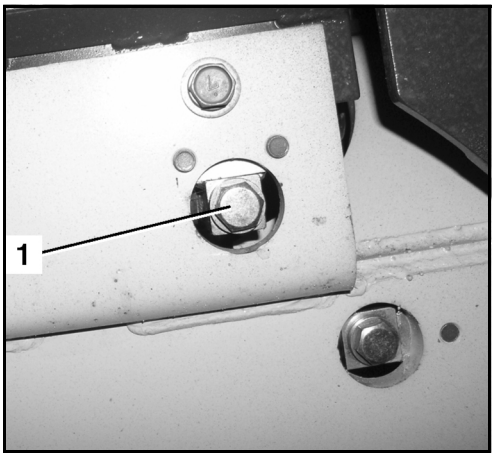
Drain the coolant only when the engine is cold.



Total cooling system capacity: 3.5 l

- Open the engine hood (page 112).
- Open the radiator cap (1).

- Open the central coolant drain plug (1) and drain the coolant completely.

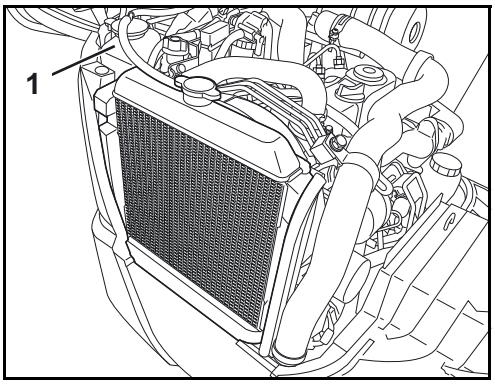


Fill the coolant in a container and dispose of it in accordance with the prevailing environmental protection regulations.

Purge the cooling system if the coolant is very dirty. To do this, spray water without additives into the cooling system with a hose through the filler opening until clear water emerges at the outlet.

- Close the central drain plug.

- Remove the coolant expansion reservoir (1) and drain it, cleaning it if necessary. Refit the reservoir.



- Fill the premixed coolant into the radiator and expansion reservoir.

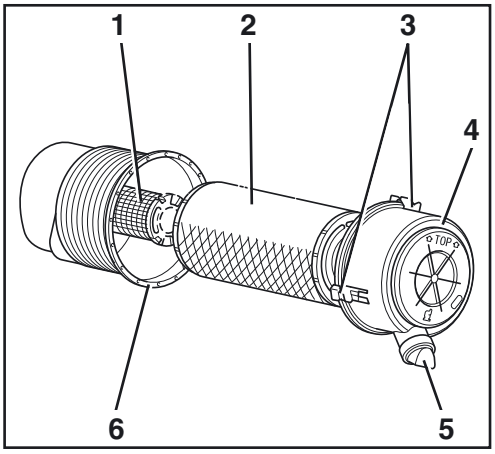
Do not operate the cooling system with pure water (even in summer). The antifreeze also contains a corrosion inhibitor.

- Let the engine idle for about 5 min, shut it off and check the coolant level in the radiator. The coolant should reach the FULL mark; if not, add coolant.

- Close the engine hood and secure it with a padlock.

Air filter element - check/clean

Risk of engine damage!
The interior filter element (1) must remain installed while cleaning the air filter case (6). Other-wise, particles of dirt could enter the air intake duct while cleaning and damage parts of the injection system and engine.



- Open the engine hood (page 112).

- Open the clips (3) and remove the cover (4).

- Pull the outer filter element (2) out of the air filter case (6) and check it for dirt.

- Clean the air filter case and cover without removing the inner filter element (1). Remove the inner filter element only when replacing it.

- Clean the dust valve (5).

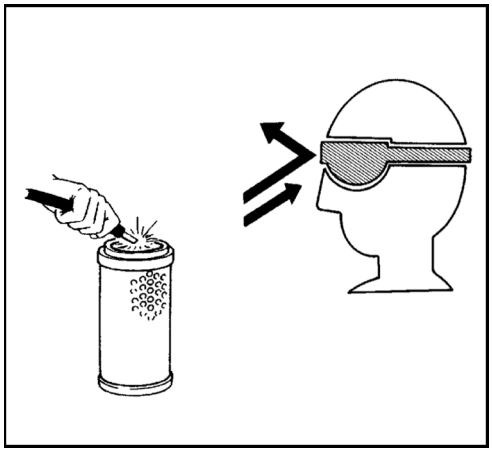
- Replace the filter elements if they are damaged or very dirty.

The internal filter element must only be replaced by skilled personnel in the framework of the corresponding service period.

Do not clean the filter element with fluids. Never operate the engine without the air filter elements.

Always wear eye protection when working with compressed air.

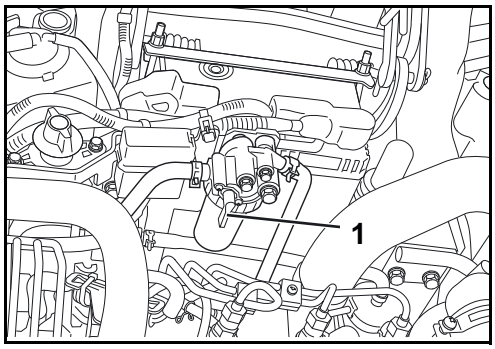
- Clean the outer filter element with compressed air (max. 5 bar) from the inside out without damaging the filter element. Wear eye protection for this service.
- Insert an outer filter element.
- Install the cover with the TOP mark so that the mark is turned 5° (K008-5) or 35° (U10-5) to the left.
- Then lock the braces.
- Close the engine compartment cover and secure it with a padlock.



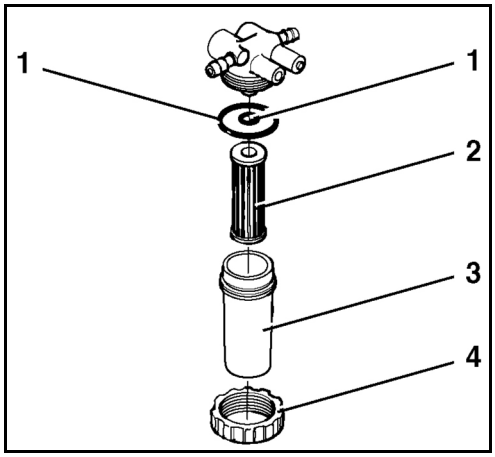
Replacing the fuel filter

- Open the engine hood (page 112).
- Set the cock (1) horizontal to the "C" position.

Place a cleaning cloth under the fuel filter to prevent fuel from spilling on the ground.

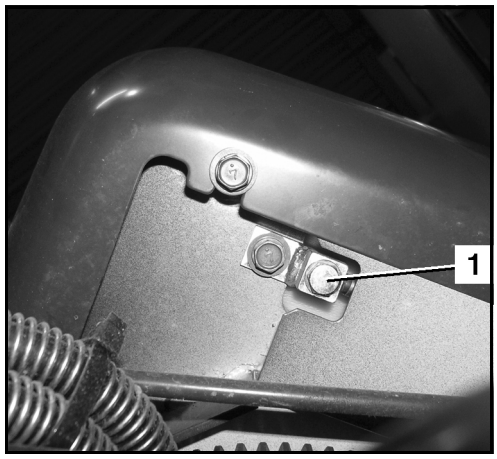


- Remove the filter cup retainer (4) while holding the filter cup (3).
- Remove the filter cup and filter.
- Clean the filter cup with clean diesel fuel.
- Replace the fuel filter (2) and the sealing rings (1).
- Apply a light coat of diesel fuel onto the sealing rings.
- Assemble the components in the order shown in the figure above. Tighten the filter cup retainer (4) by hand. Do not use a tool.
- Set the cock vertical to the "O" position.
- Bleed the fuel system (page 109). Check the water separator for leaks at the same time.
- Close the engine hood and secure it with a padlock.



Draining water from the fuel tank

- Place a container with a minimum capacity of 20 l under the fuel drain plug.
- Remove the drain plug (1) and drain the water.
- Install the drain plug with a new o-ring on it.



Topping up hydraulic oil

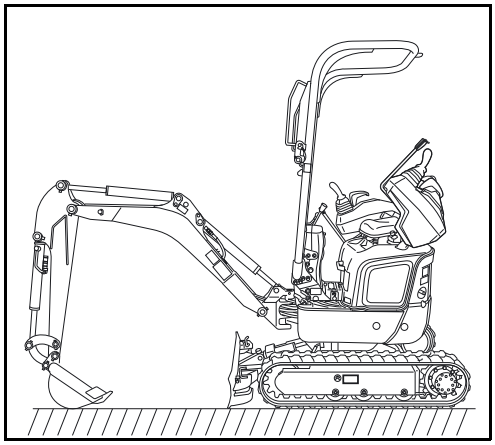
Pay attention to utmost cleanliness when servicing the hydraulic system.

Danger of injury from liquids under pressure!
Escaping hydraulic oil under pressure can penetrate into the skin.
- *Do not cover apertures, e.g. ventilation systems, and hot components.*

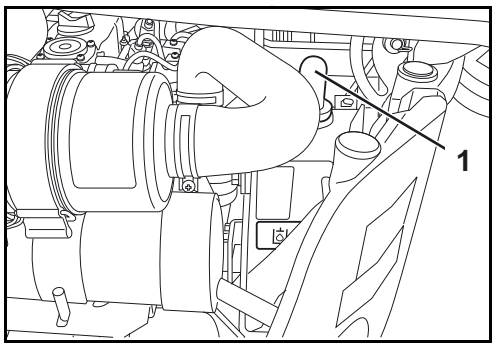
Risk of burns from hot components!
Surfaces can be hot and lead to burns.
- *Do not touch hot parts, such as exhaust muffler, etc.*

This service may only be carried out after the hydraulic oil has cooled down.

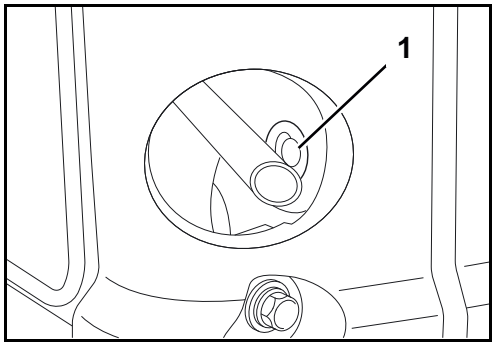
- All hydraulic cylinders have to be extended half way (see figure), the boom has to be in line with the excavator, the dozer blade has to be lowered to the ground and the extendable track width has to be set to standard track width.
- Open the engine hood (page 112).



- Remove the oil filler cap (1).
- Insert a clean funnel into the filler port.



- Fill hydraulic oil to half way up the sight glass (1).
- Screw in the oil filler cap.
- Start the excavator and operate all control functions.
- Check again the oil level of the hydraulic system.
- Close the engine hood and secure it with a padlock.



Battery service

The battery can become damaged or may explode if the following instructions are not observed. Regular maintenance can extend the life cycle of the battery considerably.

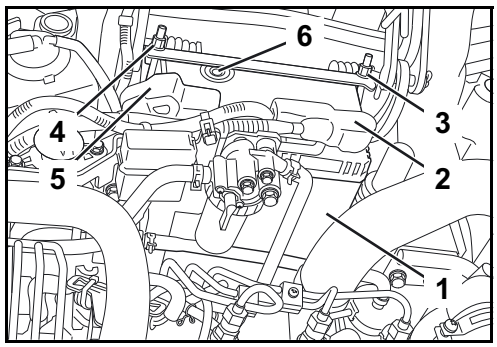
- *Never charge or use the battery when the battery electrolyte level is below the minimum mark.*
- *Check the battery regularly.*

When servicing a battery, always wear suitable protective gloves and eye protection.

Regular maintenance can extend the life cycle of the battery considerably.

Battery - check

- Open the engine hood (page 112).
- Check the battery (1) for tightness, tighten with nuts (3 and 4), if necessary.
- Check the battery terminal (2 and 5) for cleanliness, cleaning it if necessary and covering it with petroleum jelly.



Be careful when cleaning the positive terminal (2) - risk of short circuit! Do not use metal tools.

- The battery charge must be checked on the charge indicator (6) according to the operating instructions of the battery manufacturer.

How to read the indicator	
State of indicator display	
Green	Specific gravity of electrolyte and quality of electrolyte are both in good condition.
Black	Needs charging battery.
White	Needs replacing battery.

Do not open maintenance-free batteries!

- Close the engine hood and secure it with a padlock.

Battery - load

Battery acid is very caustic. Avoid contact with battery acid under all circumstances. If clothing, skin or eyes have come into contact with battery acid, rinse the affected parts immediately with water. If the eyes are affected, immediately seek medical attention! Neutralise spilled battery acid immediately.

When servicing a battery, always wear suitable protective gloves and eye protection.

Charge batteries only in sufficiently ventilated rooms. Smoking, uncovered lights or fire are not allowed in these rooms.

Explosive gas is created when charging batteries. Open flames can cause an explosion.

Remove the plugs when charging batteries that are virtually empty. If the batteries are merely being recharged, the plugs can be left in the batteries.

The battery can only be charged if the starter switch is in the STOP position and the key removed.

If the battery is charged when installed in the vehicle, the engine hood must be left open during the charging procedure. After the charging procedure is completed, the engine hood must be left open for ventilation for about 1 hour prior to start-up. → Risk of explosion.

- Open the engine hood (page 112).
- Check the electrolyte level in the battery (page 141).

When disconnecting and connecting the battery, always observe the specified order → Risk of short circuit.

- Remove the negative terminal cover and take off the cable clamp. Move the clamp to the side so as to avoid contact with the negative terminal.
- Remove the positive terminal cover.
- Connect the battery charger to the battery according to the instructions of the charger manufacturer. Choose the normal (gentle) charging method.
- Clean the battery after charging and replenish the electrolyte, if necessary.
- Check the acid density with a hydrometer. The acid density should be between 1.24 and 1.28 kg/l. If the acid density differs considerably among the individual cells of a battery, the battery probably has a damage. Check the affected battery with a battery tester and contact trained personnel.
- Close the engine hood and secure it with a padlock.

Battery - change

When disconnecting and connecting the battery, always observe the specified order → Risk of short circuit.

- Open the engine hood (page 112).
- Remove the negative terminal cover and take off the cable clamp. Move the clamp to the side so as to avoid contact with the negative terminal.
- Remove the positive terminal cover and take off the cable clamp. Move the clamp to the side so as to avoid contact with the positive terminal.
- Remove the battery retainer and lift the battery out of the swivel frame.

When replacing the battery, always install a battery of the same type with the same power rating and the same dimensions.

- Before installation, cover the battery terminals and cable clamps with petroleum jelly.
- Install the battery in the swivel frame and fasten it with the battery retainer. Make sure that the battery is installed tightly → Do not operate the excavator with a loose battery.
- Connect the positive cable clamp to the positive terminal (+) of the battery, install the positive terminal cover.
- Connect the negative terminal (-) of the battery, install the negative terminal cover.
- Close the engine hood and secure it with a padlock.

Lubrication

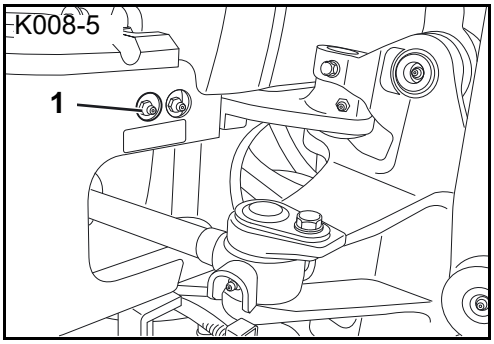
The following describes all non-daily lubricating tasks at the attachments.

Swivel gear - grease

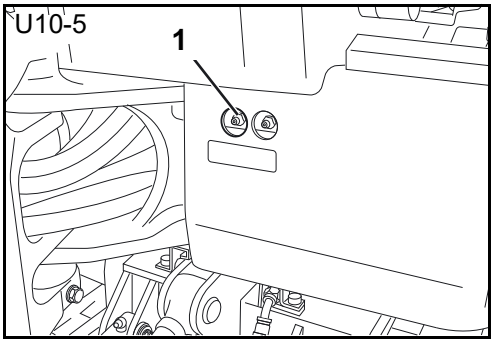
- Fill grease through the grease nipple (1) with a grease gun.

Grease at each 90° position of the swivel gear. Fill a total of approx. 50 g of grease (approx. 20 shots with the grease gun). Refer to the "Recommended lubricants" section (page 130).

When moving the swivel frame, make sure no person or material is in the swivel area. Turn the starter switch to the STOP position and remove the key before the next greasing procedure.



- Operate the excavator and swivel the swivel frame 360° several times in succession to distribute the grease evenly.

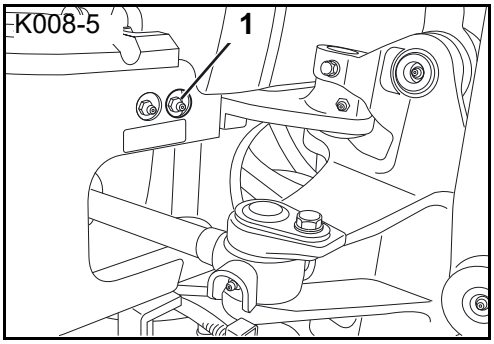


Pitch bearing - grease

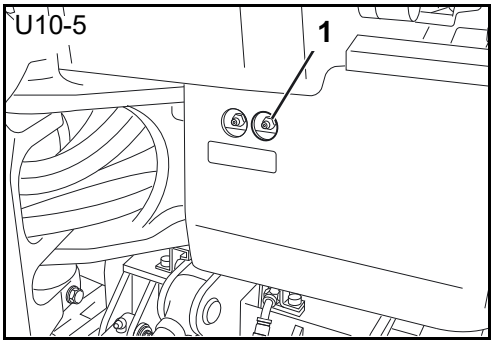
- Fill grease through the grease nipple (1) with a grease gun.

Grease at each 90° position of the swivel gear. Fill a total of approx. 50 g of grease (approx. 20 shots with the grease gun). Refer to the "Recommended lubricants" section (page 130).

When moving the swivel frame, make sure no person or material is in the swivel area. Turn the starter switch to the STOP position and remove the key before the next greasing procedure.

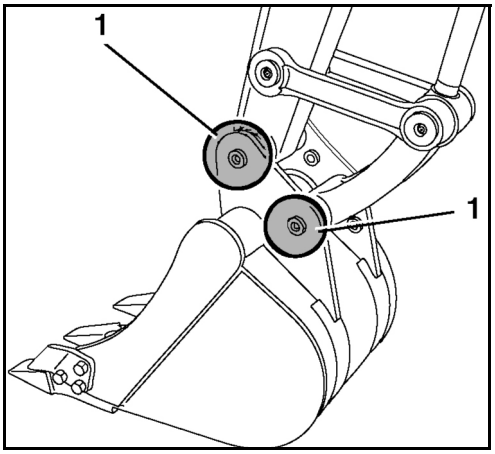


- Operate the excavator and swivel the swivel frame 360° several times in succession to distribute the grease evenly.



Bucket bolts - grease

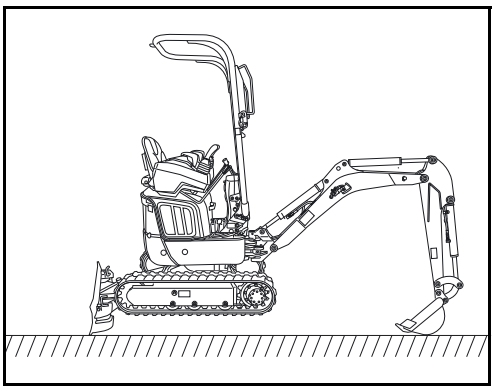
- Start the engine (page 78).
- Position the bucket as illustrated. Lock the control lever, stop the engine and remove the key. See the "Operating the controls during excavation work" section (page 91).
- Lubricate all grease points (1) with grease until fresh grease emerges. See the "Recommended lubricants" section (page 130).



Wipe emerged grease off immediately and store dirty cleaning cloths in the containers provided for disposal.

Crawler tension - check/adjust

When parking an excavator with rubber crawlers, ensure that the seam (∞) is on top, half way between the two sliders (see figure/1, "Crawler tension - check", page 146).



- Clean all parts of the running gear, paying particular attention to stones between the crawler and sprocket or idler. Clean the area of the crawler tensioning cylinder.
- Swivel the swivel frame 90° to the direction of travel as shown in the figure.
- Lower the front attachments on the ground and raise the excavator approx. 200 mm off the ground on one side.

Working under the lifted excavator poses a danger!
For your own safety, do not use any hydraulic supports. They can lower due to loss of pressure, tip over or be lowered by mistake.

- *Never work under the lifted excavator.*
- *Do not work with hydraulic supports.*
- *Have a guide supervise the procedure.*

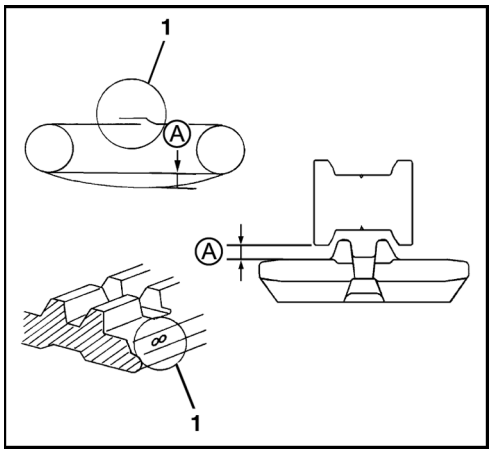
- Support the excavator with appropriate backing material, observing the vehicle weight.

Crawler tension - check

If the crawlers are too tight, wear is increased.

If the crawlers are too loose, wear is increased and the crawlers may come off.

- The crawler seam (1) is half way between the idler and sprocket.
- Check the crawler sag as shown in the figure.



Crawler sag "A" 10-15 mm

- If the crawler sag is more than 15 mm, adjust the crawler.
- If necessary, tighten or loosen the crawler.
- Start the engine and rotate the lifted crawler briefly.

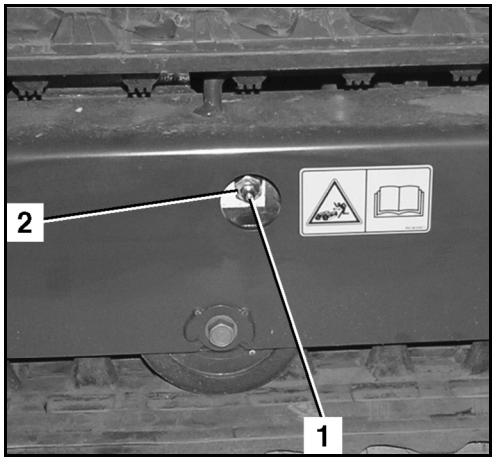
Caution: The area around the rotating crawler must be free of persons. Turn the starter switch to the STOP position after turning and remove the key.

- Recheck the crawler tension, readjusting it if necessary.
- Perform the procedures on the second crawler.

Crawler tension - adjust

Tightening the crawlers

- Position the grease gun on the grease nipple (1).
- Pump the grease gun until the specified crawler tension is obtained.



Loosening the crawlers

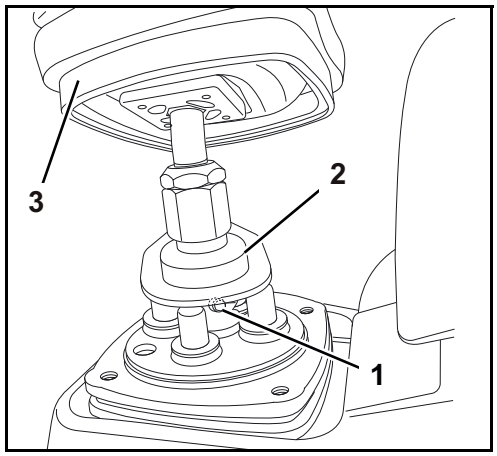
- Cautiously unscrew the pressure valve (2) and loosen the crawler.

Do not unscrew the pressure valve too quickly or completely. Otherwise grease can squirt out at high pressure from the opening of the clamping cylinder.

- Screw in the pressure valve and torque to 98-108 Nm.
- Check and adjust the crawler tension, if necessary.
- Tighten the crawler.

Pilot valve - grease U10-5

- Pull up the rubber boot (3) on the control lever.
- Lubricate the hinge (1) underneath the disc (2) with grease. See "Recommended lubricants" section (page 130).
- Insert the bellows into the console.
- Perform the same service on the second control lever.



Checking the electric cables and connections

Check all accessible electric cables, connectors and connections for condition and security.

Repair or replace damaged parts.

Check the fuse box and fuse holders for oxidation and dirt, clean if necessary.

Checking and replacing the fuel lines

Carry out the inspection while the engine is cold.

- Open the engine hood (page 112).
- Check all fuel lines and hoses at the engine, fuel reservoir and fuel filter for condition (cracks, bulges, hard spots) and firm seating of the connections. If necessary, have the lines and hoses replaced by trained personnel.
- Close the engine hood and secure it with a padlock.

Bolted joints - check

The table below contains the torques for nuts and bolts. These may only be tightened with a torque wrench. Missing values can be requested from KUBOTA.

Tightening torque for screws

Nm (kgf•m)

	4 T (4.6)	7 T (8.8)	9 T (9.8-10.9)
M 6	7.8~9.3 (0.8~0.95)	9.8~11.3 (1.0~1.15)	12.3~14.2 (1.25~1.45)
M 8	17.7~20.6 (1.8~2.1)	23.5~27.5 (2.4~2.8)	29.4~34.3 (3.0~3.5)
M 10	39.2~45.1 (4.0~4.6)	48.1~55.9 (4.9~5.7)	60.8~70.6 (6.2~7.2)
M 12	62.8~72.6 (6.4~7.4)	77.5~90.2 (7.9~9.2)	103.0~117.7 (10.5~12.0)
M 14	107.9~125.5 (11.0~12.8)	123.6~147.1 (12.6~15.0)	166.7~196.1 (17.0~20.0)
M 16	166.7~191.2 (17.0~19.5)	196.1~225.6 (20.0~23.0)	259.9~304.0 (26.5~31.0)
M 20	333.4~392.3 (34.0~40.0)	367.7~431.5 (37.5~44.0)	519.8~568.8 (53.0~58.0)

Tightening torque for hose clamps

Size [mm]	Torque [Nm]
13-20	3.5
15-24	3.5
22-32	3.5 - 5
26-38	3.5 - 5
40-60	3.5 - 5
38-50	3.5 - 5
50-65	3.5 - 6
68-85	3.5 - 6

Tightening torque for hydraulic hoses

Wrench size [mm]	Torque [Nm]	Hose size	Thread
14	20-25	DN 4-1/8"	M12x1.5
17	25-30	DN 6-1/4"	M14x1.5
19	30-35	DN 8-5/16"	M16x1.5
22	40-45	DN 10-3/8"	M18x1.5
27	50-55	DN 13-1/2"	M22x1.5

Are also valid for adaptor with pre-mounted nut.

Tightening torque for hydraulic pipes

Wrench size [mm]	Torque [Nm]	Pipe size [mm]	Thread
17	30-35	6x1	M12x1.5
17	30-35	8x1	M14x1.5
19	40-45	10x1.5	M16x1.5
22	60-65	12x1.5	M18x1.5
27	75-80	15x1.5	M22x1.5
30	90-100	16x2	M24x1.5
32	110-120	18x2	M26x1.5
36	130-140	22x2	M30x2
41	140-160	25x2.5	M36x2
27	60-65	15x1.5	M22x1.5 for ED-2 only

Tightening torque for hydraulic adapters

Thread	Wrench size [mm]	Torque [Nm]	Pipe size [mm]	Thread
1/8"	14	15-20	4x1	M10x1.0
1/8"	17	25-35	6x1	M12x1.5
1/4"	19	34-45	8x1	M14x1.5
1/4"	19-22	40-55	10x1.5	M16x1.5
3/8"	22-24	45-65	12x1.5	M18x1.5
1/2"	27	70-80	15x1.5	M22x1.5
1/2"	27-30	80-90	16x2	M24x1.5
3/4"	32	100-120	18x2	M26x1.5
1"	36	120-140	22x2	M30x2.0

SAFETY INSPECTION

All safety inspections are based on the national worker's protection regulations, safety regulations and technical specifications applicable to the country in which the machine is operated.

The owner (operator) (page 13) should arrange for the safety inspections to be performed at specified intervals according to national rules and regulations.

Based on their technical training and experience, the qualified personnel should have sufficient knowledge in the domain of the machine described here and be familiar with the applicable national work safety regulations, accident prevention regulations and the generally accepted technical rules so that they can assess the sound operating condition of the machine.

The qualified person must keep his appraisal and evaluation neutral and must not be influenced by personal, economic or operational interests. The inspection is a visual and functional check of all components for condition and completeness and of the effectiveness of the safety devices.

The performance of the inspection must be documented in the form of an inspection report containing at least the following information:

- Date and scope of the inspection indicating all pending checks,
- Result of the inspection with a report of the determined faults,
- Assessment with respect to commencing or continuing operation,
- Information on necessary follow-up inspections and
- Name, address and signature of the inspector.

The owner/employer (company) is responsible for the observance of the inspection intervals. The acknowledgement and the elimination of the determined faults must be confirmed by the owner/employer in writing, along with the date, in the inspection report.

The inspection report must be kept on file at least until the next inspection.

TAKING OUT OF SERVICE AND STORAGE

If the excavator is taken out of service for up to six months, the measures before, during and after taking it out of service must be carried out as described below. If the vehicle is to be taken out of service for a period of over six months, contact the manufacturer for additional measures.

Safety rules for taking out of service and storage

The general safety rules (page 13), the safety rules for operation (page 65) and the safety rules for maintenance (page 123) apply.

When taking the excavator out of service, secure it against unauthorised use.

Storage conditions

The storage place must have a sufficient load-bearing capacity for the weight of the excavator.

The storage place must be frost-free, dry and well ventilated.

Measures before taking out of service

- Clean and dry the excavator thoroughly (page 132).
- Check the hydraulic oil level, top up if necessary (page 71).
- Change the engine oil and oil filter (page 135).
- Drive the excavator to the storage place.
- Remove the battery (page 143) and store it in a dry and frost-protected room. If necessary, connect it to a trickle charger.
- Grease the front attachments (page 145).
- Grease the pitch bearing (page 144).
- Grease the swivel gear (page 144).
- Check the antifreeze strength of the coolant, add coolant if necessary (page 133).
- Grease the hydraulic cylinder piston rods.

Measures during taking out of service

- Charge the battery regularly (page 142).

Start-up after taking out of service

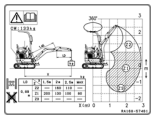
- If necessary, clean the excavator thoroughly (page 132).
- Check the hydraulic oil for condensate water. Replace the oil if necessary.
- Install the battery (page 143).
- Check the safety devices for proper operation.
- Carry out the pre-operational services (page 68). If damage is detected during start-up, repair the damage before proceeding.
- If the safety inspection is due while the vehicle has been taken out of service, the inspection must be performed before start-up.
- Start the engine (page 78). Run the excavator at idle and check all functions.

LIFTING CAPACITY OF THE EXCAVATOR

Constructive calculation of lifting capacity

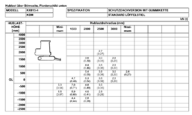
- The lifting capacity of the excavator is based on ISO 10567 and does not exceed 75% of the static tipping load or 87% of the hydraulic lifting capacity of the machine.
- The lifting capacity is measured at the front bolt of the arm with the arm fully extended. The arm is fully in the dump position. The boom cylinder is the operating cylinder.
- The lifting conditions are:

1. Swivel up to 360°

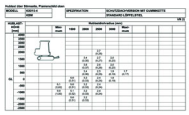


The position of the dozer is not relevant to the maximum lifting capacity when swivelling up to 360°.
The illustration on the label is representative of both states: Dozer up and down.

2. Over front end, dozer down



3. Over front end, dozer up



- As well as the lifting conditions, the length of the arm also affects the permitted lifting capacities and the stability of the machine. Compare the dimensions of the machine arm with the details given in the lifting capacity tables, in order to use the correct lifting capacity table for your machine.

Dimensions for the arm, see "Arm version" table in the "Dimensions" section (page 42).

STOP *Do not lift loads which exceed the values indicated in the lifting capacity tables.*

STOP *The values given in the tables apply only to level and hard grounds. When working on soft ground, the machine can tip over easily, as the load is concentrated on one side only and the track or the dozer can dig into the ground.*

STOP *The values given in the tables apply only for loads without bucket. If a bucket is used, the weight of the bucket must be subtracted from the values in the tables. The weight of mounted accessories (e.g. breaker) must be subtracted from the lifting capacity.*

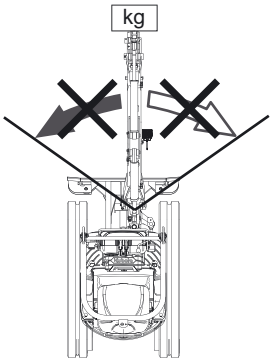
STOP *Always observe the maximum permissible lifting capacity of the hoisting gear (e.g. load hooks). The lifting of loads over the maximum permissible lifting capacity is not allowed.*

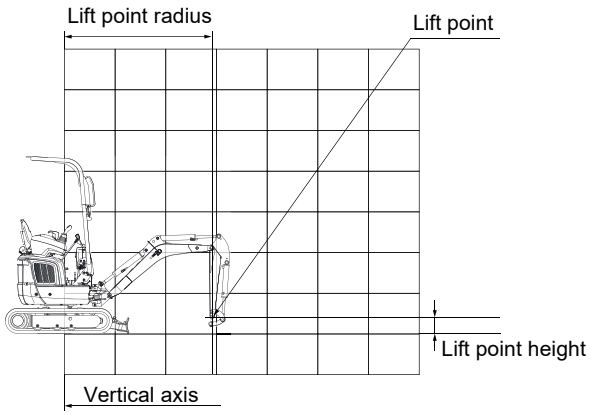
STOP *During lifting operations, the boom may not be swivelled to the left or right. The machine could tilt! To avoid accidental operation, fold down the rear part of the boom swing pedal.*

STOP *During lifting operations, driving/moving the crawler chassis is not permitted.*

Use utmost care to avoid any risk of tipping, slipping, or other potential risks implied when lifting loads.
The operator must

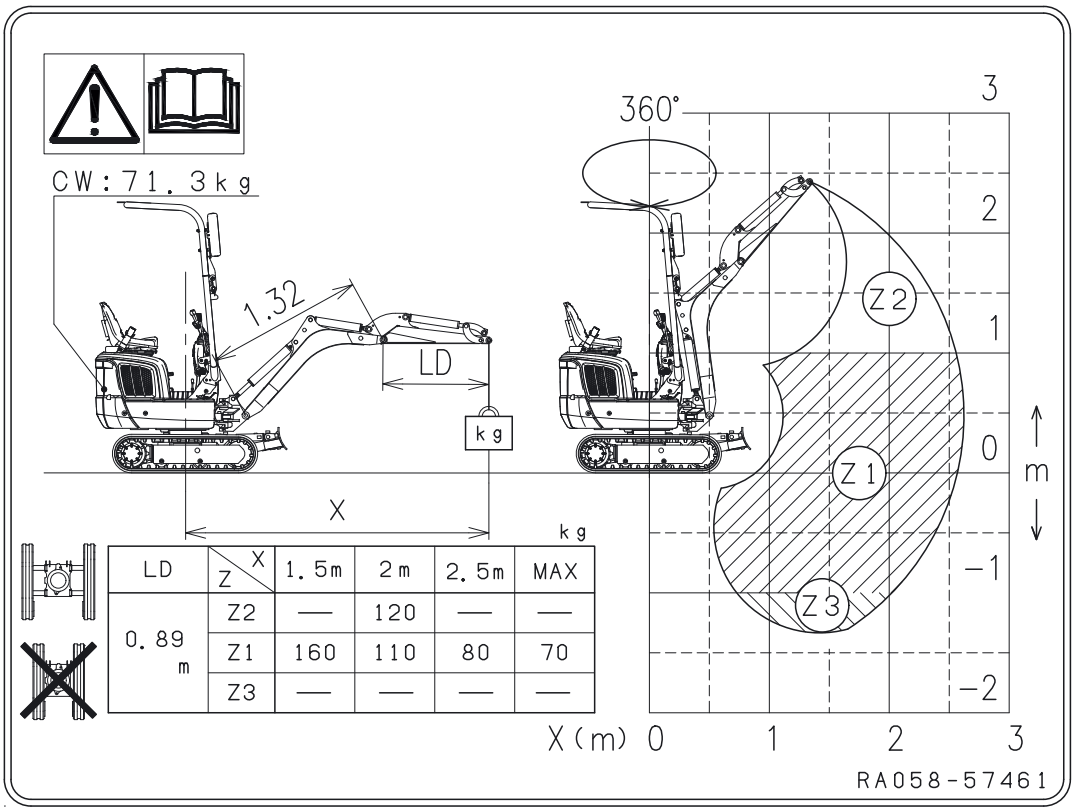
- Pick up the load at the centre
- Avoid moving the machine abruptly
- Make sure the load does not swing





Max. lifting capacity when rotating up to 360°

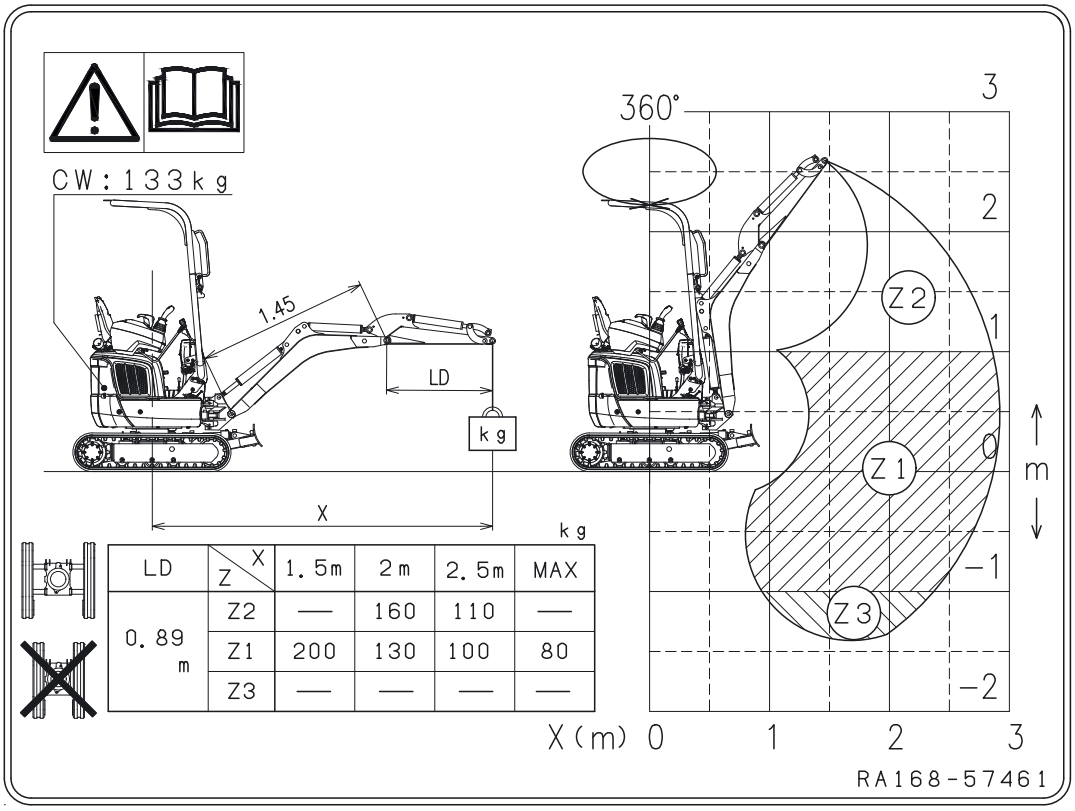
K008-5 / Arm 890 mm



LD	Z \ X	1.5m	2m	2.5m	MAX
0.89 m	Z2	—	120	—	—
	Z1	160	110	80	70
	Z3	—	—	—	—

kg

U10-5 / Arm 890 mm



LD	Z \ X	1.5m	2m	2.5m	MAX
0.89 m	Z2	—	160	110	—
	Z1	200	130	100	80
	Z3	—	—	—	—

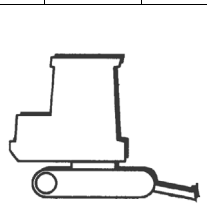
kg

Lifting capacity over front end, dozer down

MODEL	K008-5

SPECIFICATION	RUBBER CRAWLER
	ARM 890 mm

kN (t)

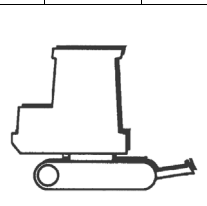
LIFT POINT HEIGHT [mm]		LIFT POINT RADIUS (mm)												
				Mini-mum	1500	2000	2500	Maxi-mum						
	4500													
	4000													
	3500													
	3000													
	2500													
	2000					1.9 (0.20)								
	1500					1.8 (0.18)								
	1000				2.4 (0.24)	2.0 (0.21)	1.7 (0.17)							
	500				3.4 (0.34)	2.3 (0.23)	1.7 (0.17)	1.5 (0.15)						
GL	0			6.0 (0.61)	3.4 (0.35)	2.2 (0.23)	1.5 (0.16)							
	-500			4.9 (0.50)	2.9 (0.30)	1.9 (0.20)								
	-1000			3.6 (0.37)	2.1 (0.22)	1.3 (0.13)								
	-1500													
	-2000													
	-2500													

Lifting capacity over front end, dozer up

MODEL	K008-5

SPECIFICATION	RUBBER CRAWLER
	ARM 890 mm

kN (t)

LIFT POINT HEIGHT [mm]		LIFT POINT RADIUS (mm)												
				Mini-mum	1500	2000	2500	Maxi-mum						
	4500													
	4000													
	3500													
	3000													
	2500													
	2000					1.5 (0.15)								
	1500					1.5 (0.15)								
	1000				2.3 (0.24)	1.5 (0.14)	1.0 (0.10)							
	500				2.1 (0.22)	1.4 (0.14)	1.0 (0.10)	0.9 (0.09)						
GL	0			3.8 (0.39)	2.0 (0.20)	1.3 (0.14)	1.0 (0.10)							
	-500			3.8 (0.39)	1.9 (0.20)	1.3 (0.13)								
	-1000			3.6 (0.37)	2.0 (0.20)	1.3 (0.13)								
	-1500													
	-2000													
	-2500													

Please note the model name and operating weight on the type plate (page 46).

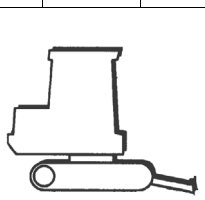
Lifting capacity of the excavator

Lifting capacity over front end, dozer down

MODEL	U10-5

SPECIFICATION	RUBBER CRAWLER
	ARM 890 mm

kN (t)

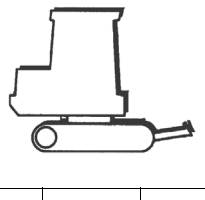
LIFT POINT HEIGHT [mm]		LIFT POINT RADIUS (mm)											
				Mini-mum	1500	2000	2500	Maxi-mum					
	4500												
	4000												
	3500												
	3000												
	2500												
	2000					1,8 (0,18)							
	1500					1,9 (0,19)	1,8 (0,19)						
	1000				3,1 (0,31)	2,3 (0,24)	1,9 (0,19)						
	500				4,4 (0,45)	2,7 (0,27)	2,0 (0,20)	1,5 (0,15)					
GL	0				4,1 (0,42)	2,6 (0,27)	1,9 (0,19)						
	-500			6,0 (0,61)	3,4 (0,35)	2,3 (0,23)	1,6 (0,16)						
	-1000				2,6 (0,26)	1,7 (0,18)							
	-1500												
	-2000												
	-2500												

Lifting capacity over front end, dozer up

MODEL	U10-5

SPECIFICATION	RUBBER CRAWLER
	ARM 890 mm

kN (t)

LIFT POINT HEIGHT [mm]		LIFT POINT RADIUS (mm)											
				Mini-mum	1500	2000	2500	Maxi-mum					
	4500												
	4000												
	3500												
	3000												
	2500												
	2000					1,8 (0,18)							
	1500					1,8 (0,19)	1,3 (0,13)						
	1000				2,8 (0,28)	1,8 (0,18)	1,2 (0,13)						
	500				2,5 (0,26)	1,7 (0,17)	1,2 (0,12)	0,9 (0,10)					
GL	0				2,4 (0,24)	1,6 (0,16)	1,2 (0,12)						
	-500			4,9 (0,50)	2,4 (0,24)	1,5 (0,16)	1,1 (0,12)						
	-1000				2,4 (0,24)	1,6 (0,16)							
	-1500												
	-2000												
	-2500												

Please note the model name and operating weight on the type plate (page 46).

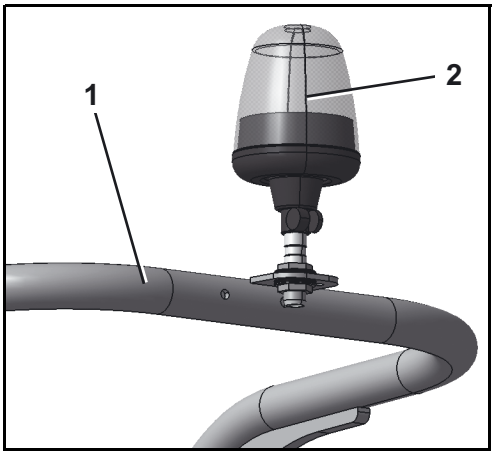
ACCESSORIES

The accessories approved for this excavator by the respective countries are described in the following segments. For further accessories, please contact your KUBOTA dealer.

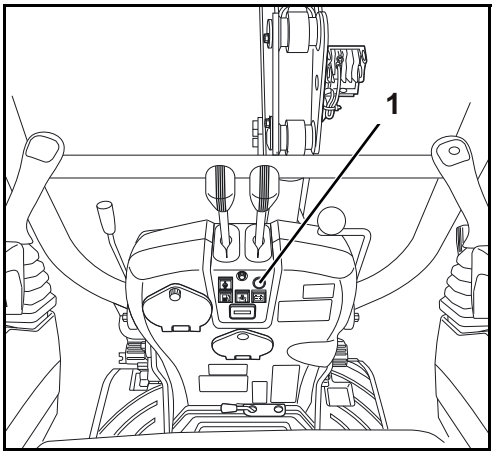
Accessories from other manufacturers may only be fitted after prior written approval from KUBOTA. Also see the "Approved use" section (page 16).

KUBOTA rotary beacon

An optional rotary beacon (2) is available as an accessory. The beacon is mounted at the roll-over safety bar (1).



The rotary beacon is switched on and off with the rotary beacon switch. The switch (1) is located at the control console beside the display indicators.



Always switch off the rotary beacon before opening and closing the protective frame.

Only move the machine when the protective frame is closed and secured.

- Actuate the button switch (1) to switch the rotary beacon on and off.
- When the button switch is "on", the surrounding edge of the round and top flat shaped switch lights up thin in orange color.

KUBOTA bucket accessories

For further bucket accessories, please contact your KUBOTA dealer.

The size, weight and arm bracket of the excavator are important factors in the selection of attachments. These factors must be made known to the attachment manufacturer when ordering attachments, and be observed by the operator when operating the excavator. Various attachments are nevertheless of limited use only.

Replacing the bucket

When replacing the bucket, make sure to wear eye protection, a helmet and protective gloves.

During attaching and detaching, chippings and burrs may appear on the bolts or bushings. These may cause severe injuries.

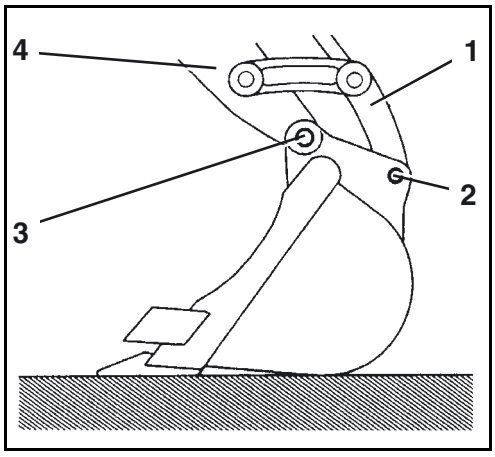
Never use your fingers for the alignment of the components (linkage, bucket, arm). The components may sever your fingers by uncontrolled movements.

When attaching the bucket or other attachments, O-rings and spacers are required. They are supplied with the machine.
Please contact your KUBOTA dealer if spacers with different dimensions are required.

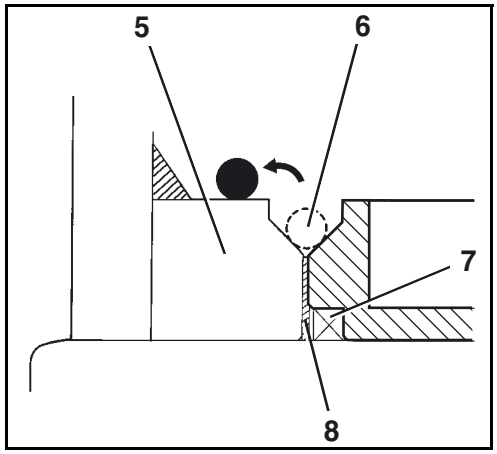
Removing the bucket

- Lower the bucket onto a flat, even surface.
- Stop the engine.
- Ensure that the components indicated below remain free of dirt and dust.
- Unscrew the safety pins on bolts (2) and (3).

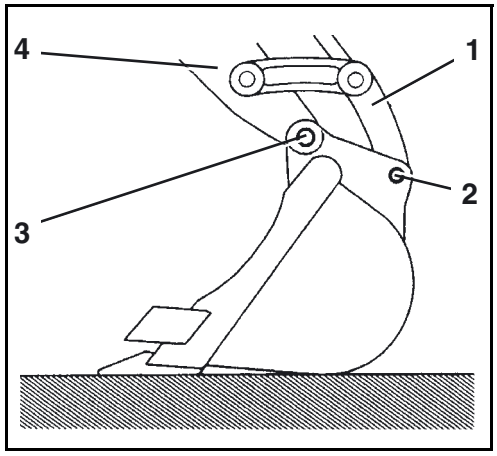
The bucket is stored with bolts (2) and (3) in a total of four bearing eyes. An O-ring is positioned at each bearing eye.



- Pull O-ring (6) from the nut to bearing eye (5).

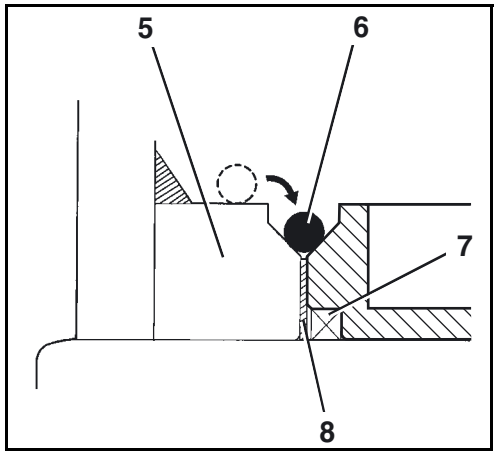


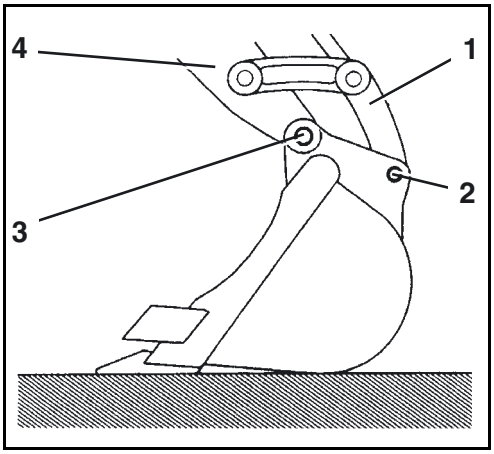
- Remove bolts (2) and (3) from the bearing boreholes.
- Make sure not to lose the spacers (figure above/8).
- Start the engine and raise the arm and/or the boom slightly until the bucket is exposed.
- If a new bucket is not to be attached right away, insert the O-rings, bolts and spacers into the bearing boreholes and secure them from being lost with the safety pins.



Attaching the bucket

- Ensure that the components indicated below are free of dirt and dust.
- Ensure that an O-ring (6) is attached to each bearing eye (5).
- Check the O-rings and dust protection seals (7) for damage, replace them if necessary.





- Align the bearing borehole of the arm (4) with the bearing borehole (3) on the bucket.
- Insert a spacer (figure above/8) on each side of the arm bearing (3).

The axial clearance must be within 0.6 mm. If the clearance is larger, then insert appropriate spacers.

- Drive the bolts (3) into the bearing borehole.
- Align the bearing borehole of the bucket linkage (1) with the bearing borehole (2) on the bucket.
- Drive the bolts into the bearing borehole.
- Screw on the safety pins in order to hold the bolts in position.
- Insert the O-rings from the bearing eyes down into the nut. Ensure that the O-ring is completely inside the nut.
- Lubricate the bolts with grease.

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