

**LASKI**

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# OPERATING INSTRUCTIONS



**SUSPENSION STUMP CUTTER**

**FZ 500/27**

**FZ 500/38**

**FZ 500 H**

Version 08.2022



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## Foreword

Thank you very much that you have just purchased our product, the suspension stump cutter FZ 500. Our company has been engaged in production of equipment for stump cutting, wood residue crushing and disposal for many years and has gained considerable experiences in this field. Quality of our small and also powerful machines is proven in 40 countries of Europe and Asia we export to.

Permanent innovations of the Laski manufacturing assortment have been crowned by the most important awards in the company's history, the golden medals Grand Prix, gained for its complete family of products at the international shows Techagro und Silva Regina in Brno:



Grand Prix Techagro 1998  
Grand Prix Silva Regina 2002  
Grand Prix Silva Regina 2008

This manual brings important instructions for users, i.e. instructions for putting the machine into operation, work safety and operating experiences. You will learn how to carry out maintenance, repairs and servicing and who is authorised for doing checks and other actions on the machine.

Your local dealer will give you this manual with instructions for operation and maintenance while taking this new machine over. Make sure if you understand everything. If not, do not hesitate and contact your dealer and ask him for further explanation. It is very important for you and your work safety to understand all instructions given in this manual.

The firm Laski, s.r.o. does not bear any responsibility for any claims resulting from disobedience to the instructions given in this manual.

This operation manual includes also work safety instructions in various parts of its text. If there is any work safety rule or instruction in general description, then this instruction is indicated with the following symbol:



# EC CONFORMITY DECLARATION

**EC CONFORMITY DECLARATION**

issued in compliance with applicable EC Directives

We, as the manufacturer, **LASKI, s.r.o.**  
**Blišťka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- type: **FZ 500/27**  
- serial number: .....

complies with the given EC Directives:  
**2006/42/EC – machinery**  
**2002/88/EC, 97/68/EC**


List of technical standards, EN ISO 12100, EN ISO 13732-1, EN ISO  
specifications and harmonised 14120, EN ISO 4254-1, EN ISO 11 201, ISO  
norms used for assessment of its 11 684  
conformity:

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1260
Cutting head diameter	mm	510
Weight	kg	244
Engine - type	-	Kohler COMMAND CH 742
Power output	kW	18,6

Completion of technical documentation: **Ing. Jiří Kvasnička**  
**Petra Bezručova 205**  
**CZ-664 43 Želešice**

In Smržice, on 31.7.2016

  
.....  
Ing. Jiří Kvasnička

## EC CONFORMITY DECLARATION

issued in compliance with applicable EC Directives

We, as the manufacturer,

**LASKI, s.r.o.**  
**Blišťka 263/16**  
**Smržice**  
**CZ-796 17**  
**CRN: 45479593**

declare hereby that our product

- designation: **Suspension Stump Cutter**

- type: **FZ 500/38**

- serial number: .....

complies with the given EC Directives:

**2006/42/EC – machinery**

**Regulation No. 2016/1628/EU of the European Parliament and of the Council  
of 14 September 2016 on emission requirements**

List of technical standards,  
specifications and harmonised  
norms used for assessment of its  
conformity:

**EN ISO 12100, EN ISO 13732-1, EN ISO  
14120, EN ISO 4254-1, EN ISO 11 201, ISO  
11 684**

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1260
Cutting head diameter	mm	510
Weight	kg	264
Engine - type	-	KOHLER ECH 980-3000
Power output	kW	28,3

The entity participating in this conformity assessment : **NB 1017,  
TÚV SÚD Czech s.r.o., Novodvorská 994/138, 142 21 Praha 4**

Measured sound power level of this equipment:

**L<sub>WA</sub> = 104,3 dB**

Guaranteed sound power level:

**L<sub>WA</sub> = 105,0 dB**

Completion of technical  
documentation:

**Ing. Jiří Kvasnička**  
**Petra Bezručů 205**  
**CZ-664 43 Želešice**

In Smržice, on 13.10.2020

.....  
Ing. Jiří Kvasnička

## EC CONFORMITY DECLARATION

issued in compliance with applicable EC Directives

We, as the manufacturer, **LASKI, s.r.o.**  
**Blišt'ka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- type: **FZ 500**  
- model: **FZ 500 RATO**  
- serial number: .....

complies with the given EC Directives:  
**2006/42/EC – machinery**  
**Regulation No. 2016/1628/EU of the European Parliament and of the Council**  
**of 14 September 2016 on emission requirements**

List of technical standards, EN ISO 12100, EN ISO 13732-1, EN ISO  
specifications and harmonised 14120, EN ISO 4254-1, EN ISO 11 201, ISO  
norms used for assessment of its 11 684  
conformity:

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1400
Cutting head diameter	mm	510
Weight	kg	252
Engine - type	-	RATO R999D
Power output	kW	24,5

The entity participating in this conformity assessment : **NB 1017,**  
**TUV SUD Czech s.r.o., Novodvorská 994/138, 142 21 Praha 4**

Measured sound power level of this equipment: **L<sub>WA</sub> = 108,3 dB**  
Guaranteed sound power level: **L<sub>WA</sub> = 109,0 dB**

Completion of technical **Ing. Jiří Kvasnička**  
documentation: **Petra Bezruč 205**  
**CZ-664 43 Želešice**

In Smržice, on 22.08.2022

.....  
Ing. Jiří Kvasnička

## EC CONFORMITY DECLARATION

issued in compliance with applicable EC Directives

We, as the manufacturer, **LASKI, s.r.o.**  
**Blišťka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- type: **FZ 500 H**  
- serial number: .....

complies with the given EC Directives:  
**2006/42/EC – machinery**

List of technical standards, specifications and harmonised norms used for assessment of its conformity: **EN ISO 12100, EN ISO 13732-1, EN ISO 14120, EN ISO 4254-1, EN ISO 11 201, EN ISO 4413+A1, ISO 11 684**

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1000
Cutting head diameter	mm	510
Weight	kg	188
Engine - type	-	HYDROMOTOR
Power output	kW	20,8

Completion of technical documentation: **Ing. Jiří Kvasnička**  
**Petra Bezručů 205**  
**CZ-664 43 Želešice**

In Smržice, on 31.7.2016



.....  
Ing. Jiří Kvasnička

## EC CONFORMITY DECLARATION

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We, as the manufacturer, **LASKI, s.r.o.**  
**Blištka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- typ : **FZ 500/27**

serial number:

complies with the given EC Directives:

**Directive No. 2014/30/EC - EMC**

List of technical standards,  
specifications and  
harmonised norms used for  
assessment of its conformity

**ČSN EN ISO 14982**

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1260
Cutting head diameter	mm	510
Weight	kg	234
Engine - type	-	Kohler COMMAND CH 742
Power output	kW	18,6

In Smržice, on 31.7.2016



Ing. Jiří Kvasnička

## **EC CONFORMITY DECLARATION**

issued in compliance with applicable EC Directives

We, as the manufacturer, **LASKI, s.r.o.**  
**Blišťka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- typ : **FZ 500/38**

serial number:

complies with the given EC Directives:

**Directive No. 2014/30/EC - EMC**

List of technical standards,  
specifications and  
harmonised norms used for  
assessment of its conformity  
Basic technical parameters:

**ČSN EN ISO 14982**

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1260
Cutting head diameter	mm	510
Weight	kg	264
Engine - type	-	KOHLER ECH 980-3000
Power output	kW	26,1

In Smržice, on 13.10.2020



Ing. Jiří Kvasnička

## EC CONFORMITY DECLARATION

issued in compliance with applicable EC Directives

We, as the manufacturer, **LASKI, s.r.o.**  
**Blištka 263/16**  
**Smržice**  
**CZ-798 17**  
**CRN: 45479593**

declare hereby that our product  
- designation: **Suspension Stump Cutter**  
- typ : **FZ 500**  
- model: **FZ 500 RATO**  
serial number:

complies with the given EC Directives:

**Directive No. 2014/30/EC - EMC**

List of technical standards,  
specifications and  
harmonised norms used for  
assessment of its conformity

**ČSN EN ISO 14982**

Basic technical parameters:

Parameter	Unit	Value
Length	mm	880
Width	mm	765
Height	mm	1400
Cutting head diameter	mm	510
Weight	kg	252
Engine - type	-	RATO R999D
Power output	kW	24.5

In Smržice, on 22.08.2022



Ing. Jiří Kvasnička

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# Product Identification

Our product is identified with its serial number stamped both on the type plate and on the chassis. Further on the combustion engine installed on our machine is identified with its separate type plate.

Upon take-over of the product we recommend you to fill required data in the following form concerning the given product and your dealer.

Type of product: .....

Serial number of product: .....

Engine type: .....

Serial number of engine: .....

Dealer's address: .....

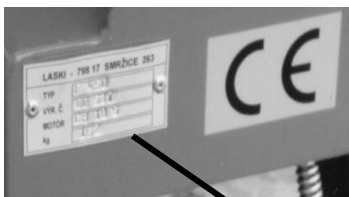
Address of authorised service: .....

Date of delivery: .....

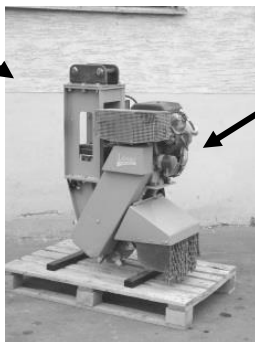
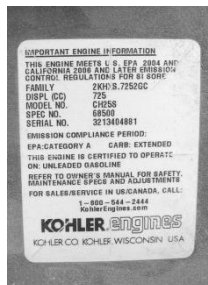
Warranty expiration date: .....

Interruption of warranty period: .....

The product type plate is located on the chassis edge and includes:



- manufacturer's address
- type
- serial number
- engine type
- weight of machine
- CE identification symbol



The engine type plate is situated aside on the engine fan cover.

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# Work Safety Instructions

## Utilisation

This suspension cutter is designed for suspension on a hydraulic jib of building machines with relevant fixing devices and for cutting a stump with its above-ground part and its under-ground part in a max. depth of 20 cm under the ground level. While working the cutter must be in a vertical position or in an angle of +/-30° to its vertical axle.

## Not Allowed Use

This machine cannot be used for cutting of dozy stumps which could be released and pulled out by the blades. Avoid any cutting if there can be stones, metallic and glass objects etc. hidden in the stump.

It is not allowed to use the cutter for cross-cutting, felling, cutting branch wood off etc.

It is also not allowed to use the cutter if the operator of a building machine have no view to the cutting blades.

## Generally

- This machine can be operated only by an operator that is over 18 yrs old, physically and mentally capable and demonstrably instructed with its operation.
- Keep this machine beyond children's and unauthorised person's reach. Avoid their attendance while cutting.
- The operator of this machine is fully responsible for any injury or damage caused to the third persons within the operating reach of the machine.
- Before working learn all functions of individual controls. If necessary, contact your dealer and ask him for operator's training.
- Operation of the hydraulic jib, especially its motional continuousness and co-ordination, requires considerable experiences.
- At work in residential zones use the machine in accordance with regulations of the local authorities to avoid disturbing of local inhabitants.
- The operator is obliged:
  - to use only a such building machine which is in optimal operating condition, without excessive jib clearances
  - to use only a such building machine which is provided with a cab with undamaged windows for his protection against operating noise
  - to use only an original fixing device, designed for such purpose and supplied by the manufacturer. This fixing device must be properly bolted to the jib. It is necessary to check bolted joints regularly after longer operation.
- for remote control of the cutter to use only a such equipment which is provided with ON/OFF and CENTRAL STOP controls
- to install functional controls on the jib so that their damage may be excluded

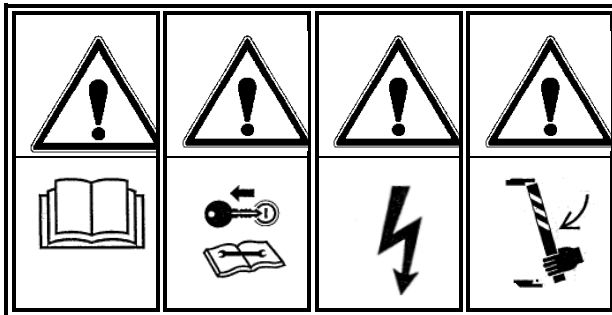
- 
- (especially squeezing hazards at jib motion)
- having started the cutter the operator is not allowed to leave his cab of a building machine and he should be permanently watching the cutting operation
  - the operator should avoid any activity which could bring hazards for himself and other persons
  - while handling the cutter, especially after its start, avoid its contact with the building machine. The jib radius with the cutter is extended!!!
  - having finished the cutting work put the cutter in its supporting frame to ensure its stability and to avoid contact of blades with base
  - to fix the cutter in its supporting frame properly
  - to respect all work safety instructions for the given building machine
  - It is not allowed to use the cutter, attached to the hydraulic jib, in any other way than to purposes given by the manufacturer.
  - This manual describes also some common troubles and failures which could occur and which are easy to be remedied by an instructed person. Other problems and faults should be announced directly to the manufacturer who is always ready to help you.
  - It is not allowed to do any technical changes or any actions which are neither given in this manual nor allowed by the manufacturer. The machine, not correctly installed or adjusted, may run without problems now but in the future it could bring damage any of important parts.
  - Do not put any objects or tools on the machine.
  - The manufacturer does not bear responsibility for any damages or injures to the third persons or to other equipment resulted from disobedience to instructions given in this manual.
  - When turning off the machine keep its remote control box separately to avoid starting by no unauthorised persons.
  - When handing the machine over to another person make sure if all controls, guards and other safety elements are complete.
  - Do not remove guards and other safety elements. They serve for your safety.
  - Keep the given intervals for checks of bolted joints.
  - Always after work clean all parts of the machine with pressure water.
  - Any servicing can be done only if the machine was put out of operation, the remote control was off and its battery was disconnected.
  - Avoid any random start - disconnect the plus pole of the battery.
  - Keep all parts clean, especially cooling ducts of the engine and parts related to the fuel tank.
  - Fill up the fuel tank before working and only if the machine is turned off.
  - Do not fill the fuel tank while the engine is hot or still running.
  - Do not start if some fuel has been spilled.
  - Do not use petrol as a cleaning agent.
  - Keep open fire away while filling the tank.
  - Keep the machine beyond reach of open fire.
  - Any transport of persons or of any load on the machine is not allowed.

- Some parts of the machine can be extremely hot while in operation. To avoid any burn risks do not touch these parts when the engine is still running or when having just stopped the engine.
- Do not touch live wires while the machine is still in use.
- Do not let the engine running in high speed unreasonably.
- Do not change the engine adjustment, especially its regulator.
- Be careful at battery handling.
- Warning! The battery contains sulphuric acid that could cause burns.
- Do not use the machine under conditions of low visibility.
- Do not use the machine without prior reading this manual. If you have no experiences with such type of machines and if you are not sure with its operation, ask your dealer and he will show you its practical use.
- Do not carry out any repairs that are specified for authorised services only.
- Do not carry out any repair where its solution exceeds your experiences.

## Work Safety Symbols

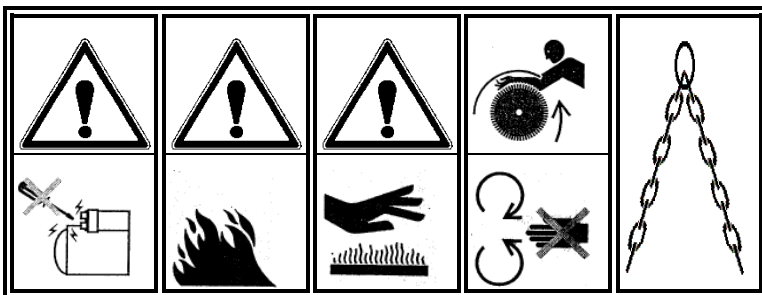
This article introduces work safety symbols (pictographs) used on the machine. Under a figure there is its position on the machine. These work safety symbols warn the operator against risks connected with the machine use. Your respect to the symbol meaning is a precondition for your work safety.

The user is obliged to keep all the work safety symbols legible, clear and undamaged. In case of any damage or illegibility ask your local dealer or an authorised service for a new relevant pictograph.

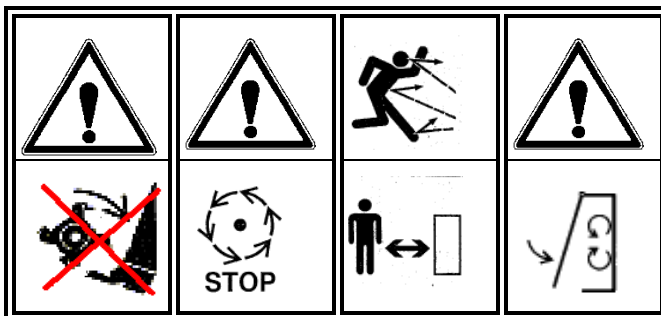


1	2	3	4
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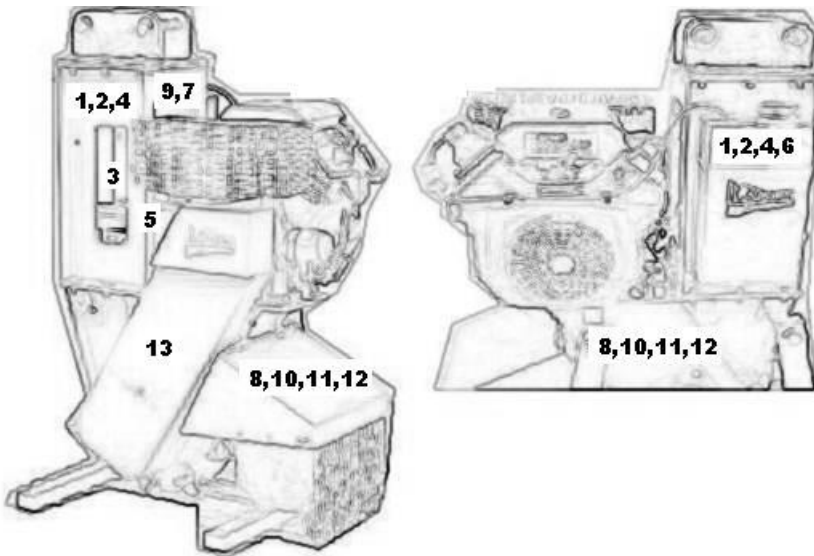
Read this operating manual before use.	Always follow the manual while maintaining, servicing or repairing the machine and take the switch key out of ignition.	Warning! Electric current is present on the machine.	Before putting out of operation fix the cutter in the supporting frame.
--	---	--	---



5	6	7	8	9
Start the machine with the switch key only. Do not short circuit the contacts.	Warning! Fuel is flammable! Keep open fire away!	Warning! Hot parts of the exhaust manifold.	Warning! Rotating part. Hit and pull-in hazard.	Lashing points.

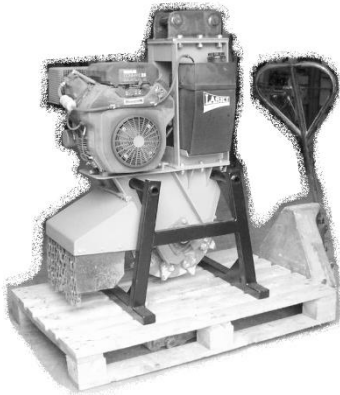


10	11	12	13
Warning! Lower extremities injury hazard.	Warning! The cutting head is running out.	Warning! Rejected objects hazard. Keep away.	Warning! Close all guards before starting the machine.



### Transport of Product

- This product is delivered completely mounted, fixed in a supporting frame and attached to a wooden pallet. The supporting frame is usually bolted or fixed with a binding band to the pallet. While handling you may use a lift truck or a crane (suspension in the given lashing points only).



- The manufacturer delivers the machine shrink-wrapped. The protective foil protects the machine against weather effects but in no case against mechanical damage, fall etc. The protective foil is recyclable, dispose it according to valid local regulations.
- While putting the machine aside (e.g. at reloading) we recommend to place it under a shelter.
- While unloading put the product always on a flat and firm bottom.
- It is not allowed to put it on a labile base.
- It is not allowed to put any objects or tools on the machine.



Upon delivery unload the cutter from the pallet together with its supporting frame. This supporting frame is an integral part of the machine during its whole service live. While putting the cutter aside the supporting frame provides its stability. Having put the machine in the frame lock it with bolts and nuts.



## Product Handling upon Delivery

Upon delivery unload the machine from the transport pallet as follows:

- Put the pallet aside on a flat and firm surface.
- Remove transport protective wrapping.
- Cut the binding band carefully or loosen the fixing bolts. Be careful, the band is tightened up and after cutting its both ends may shot out. While cutting use protective gloves.
- Lift up the cutter with lifting means. If a building machine is ready attach the cutter and lock the joints. Before installation check its clamping head tightening.
- Lift up the cutter in order to remove the transport pallet.
- Leave the cutter being fixed in the supporting frame.

## Precautions

This machine is provided with safety guards protecting against any contact with rotating parts (hit and pull-in hazard) and against hot parts (exhaust manifold). The guards are fixed, bolted down and solid, only the guard over the exhaust manifold is perforated.

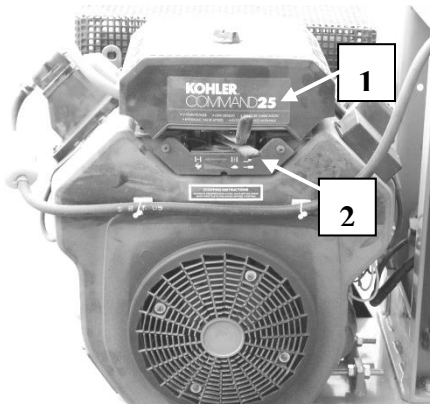
This machine can be operated by means of a remote control box only, i.e. START/STOP and EMERGENCY STOP controls.

---

**CAUTION!!!** Having turned the engine off the cutting head is freely running out. Any head braking is strictly forbidden.

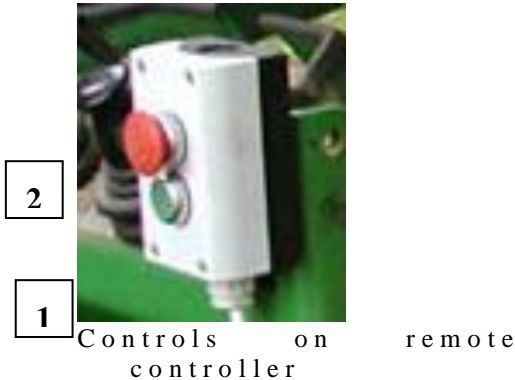
## Controls

The stump cutter can be operated by means of controls on the remote control box and aside on the engine.



Kohler engine controls RATO engine controls

- 1 - choke
- 2 - engine speed regulator
- 3 - Switchbox



1 – START button

2 – STOP button

## Use

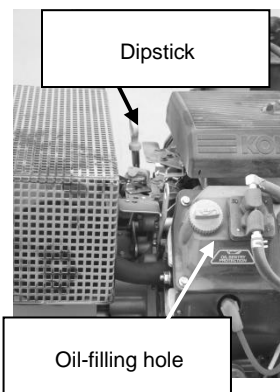
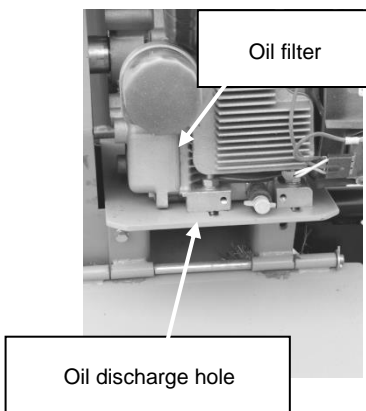
### Transport, Handling and Storage

Any activity introduced in this part means transport, handling and storage of the cutter together with its supporting frame.

#### Lifting and lowering

- For lifting or lowering use only the given lashing points (marked with chain symbols). Suspension in other points may bring damage of parts and instability at lifting.
- Fix the wire line thimbles on suspension pins.
- If no suspension is available, screw lash eyes into tapped holes.
- At lifting keep away from the place under the crane load.
- For loading or unloading use lifting means with min. carrying capacity of 300 kg. The cutter can be attached to a building machine directly from transportation means, if it is possible thanks to technical parameters of a building machine. In this case the supporting frame may remain fixed on the pallet.
- The cutter must be transported always being fixed in the supporting frame.
- After loading fix the supporting frame properly on the loading surface. For fixing use lash eyes for such purpose welded on the frame. Its fixed position must be sufficiently stable against any unwilling motion.
- It is strictly forbidden to handle the cutter with its engine and cutting head running.
- **Store the machine only in spaces protected against water**

- 
- During storage keep the remote control box separately.
  - Before storage clean all parts of the machine. Use pressure water for cleaning.
  - Clean especially oily spots.
  - Exchange all damaged or worn parts. Use always original spare parts. For spare parts contact your dealer or authorised services.
  - Before putting machine aside for a longer time change the engine oil and the filter element. The filter body is located aside of the engine. Under the filter body there is the oil discharge hole. For easy oil discharge use a hose about 15 cm long.
  - Discharge the used oil into a special bin. Dispose the used filter element always in accordance with relevant valid laws and local regulations.
  - Remove any spilled oil and clean all oily spots.
  - Always put the machine aside on a flat and solid floor.
  - For easy further handling put the cutter on a wooden pallet (use of a fork lift truck).
  - In case of a wooden pallet do not forget to fix the supporting frame properly with bolts or binding bands.
  - Do not put any objects or tools on the machine.
  - Store the fuel canisters separately. Keep them away from the machine.



### **Before Operation**

- Before the first putting into operation check up the machine for contingent damages and completeness after transport and storage.
- Check wrapping for contingent oily spots. In such case check oil charges.
- Check the engine oil level with a dipstick and refill if necessary. The oil level must be between both marks (MIN and MAX).
- In case of any damage contact your dealer or authorised service.

- 
- For replacement use always original spare parts only.
  - While refilling avoid spilling oil or fuel. If spilled, wipe all oily spots immediately. After petrol spilling wait for its evaporation.
  - Check tightening of bolted joints, especially rotating parts and completeness of other parts.
  - Fill the given fuel into the tank, min. volume of 4 litres. The tank has its max. capacity of 18 litres.
  - The fuel to be used is unleaded petrol NATURAL 95.
  - Put and fix the battery.
  - Connect its minus pole. Connect the plus pole just before starting.



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## Coupling/uncoupling



- The cutter should be coupled to a building machine with min. carrying capacity of 300 kg in the whole range of its hydraulic jib.
- The cutter should be equipped with a bolted suspension joint. Its bolts must be tightened properly. For attachment use steel fixing bolts with self-locking nuts.
- Couple the cutter to the building machine.
- If the cutter is to be used immediately, lift it up slightly, loosen the locking bolt and remove the supporting frame.
- Put the supporting frame aside for further use after the work.
- The cutter is not allowed to be lent on the ground or any other object. For putting the cutter aside always use its supporting frame to avoid any contact with hard objects (concrete, stones etc.).
- For uncoupling proceed in reverse order.

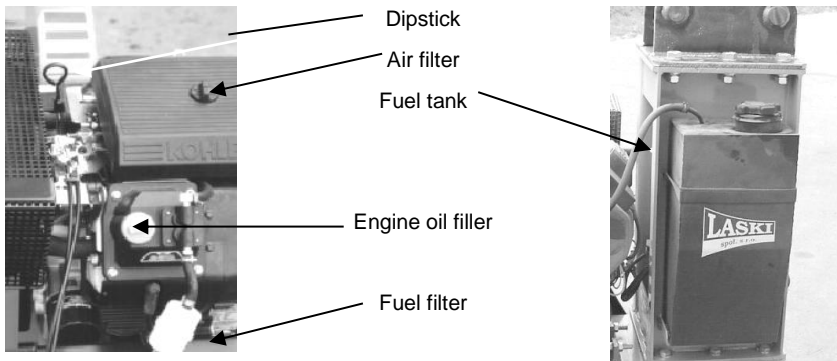
**WARNING!!! The cutter should be always in vertical position or with its slightly oblique axis. It is not allowed to put the cutter aside in its horizontal position.**



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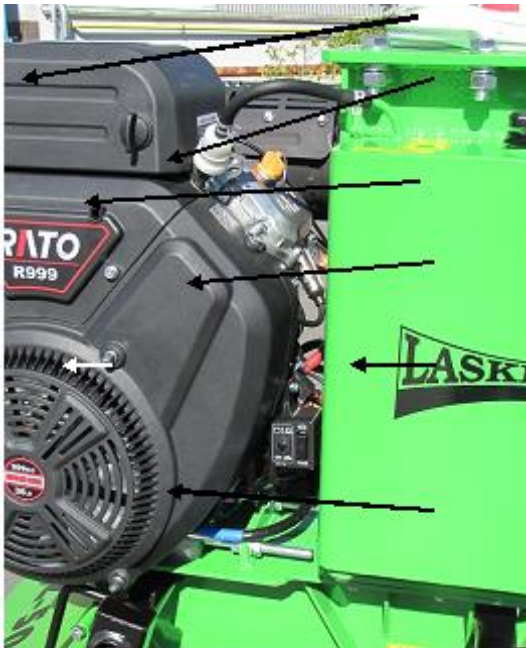
## Checks before Start

- Before putting into operation check up the machine for completeness.
- Check up all bolted joints, especially on the cutting head.
- Check up all cutting blades for completeness. If one of them is damaged change it immediately. It is not allowed to operate the cutter with damaged guards or cutting head.



Engine Kohler

- If some abrasion occurs change all the blades on account of balance of the cutting head.
- Be aware that the blades are of the left and right type. Proceed carefully.
- 
- Check up optimal V-belts slacks.
- Never start the machine with removed guards.
- It is not allowed to carry out any modifications and technical changes on the machine.
- It is not allowed to start machine with spilled oil on its parts.
- Before any adjustment put the machine out of operation, i.e. idle state of the cutting head and of the engine. The building machine must be blocked against unwilling motion.
- Keep all unauthorised persons or animals out of range of the machine while working (min. distance of 15 m).
- Before work make sure if there are no stones or other objects within the operating range.



Air filter

Oil filler

Fuel filter

Dipstick

Fuel tank

Overvoltage protec

RATO engine

- 
- 
- Wear always personal protective aids.
- Direct rejected wood chips out of possible motion of other persons.
- Make sure that nobody is standing within reach of flying particles.
- Do not lean the cutter against the ground or against any other object.
- Check the engine oil level with a dipstick and refill if necessary. The oil level must be between both marks (MIN and MAX).
- Check tightening of bolted joints, especially rotating parts and completeness of other parts.
- Fill the given fuel into the tank, min. volume of 4 litres. The tank has its max. capacity of 18 litres.
- The fuel to be used is unleaded petrol NATURAL 95.

- 
- Make sure that nobody is standing within reach in front of the cutter. Avoid any collision of the cutting head while handling.
  - Do not lean the cutter against the ground or against any other object. For leaning set the front and the rear supporting arm in the bottom position.
  - Block the machine in both directions with brakes.

At the first start there is more air in the intake manifold and on this account the engine may not roar to life immediately when turning the switch key for the first time. Do not crank the engine for a longer time than 10 sec. We recommend to use the choke before cold starting. Be aware that the engine is equipped with a fuel pump which delivers the fuel at every starting. Never fill the filter and the relevant manifold with the fuel.

After a short crank make sure if the fuel filter is filled with the fuel. You should see a darker fuel level in the filter body. If the fuel level is under 3/4 filter volume crank the engine with its switch key once more.

Keep an interval between two starts 30 sec. at least.

Before starting the battery should be fully charged.

Remove the battery and let have it recharged by an authorised person.

While handling, take care of work safety regulations since the battery contains caustic agent (battery acid). Do not tilt resp. overturn the battery. Do not remove its plugs unreasonably.

Recharge the battery always after a longer operational break exceeding 50 days.

Be aware that any start failed and restarting brings loss of battery voltage. Such a drop of potential might be insufficient for the next start.

## **Putting into Operation**



Start the cutter only after its proper coupling to the hydraulic jib, the cutting head should not be in contact with any object and there are no persons or animals within reach.

- Connect the remote control.
- Install the remote control leads properly on the hydraulic jib so that the wires are protected against any damage. Pay special attention to places with hinged joints and with bending hazards or contingent contact with other elements.

- 
- We recommend to lead wires along hydraulic hoses with respect to sufficient clearance for bending etc.
  - Install the remote control box in the cab within the operator's reach so that he can react immediately for any emergency situation.
  - Set the choke ON (first or cold start).
  - While starting with the choke set the accelerator lever in the MIN position.
  - Start the engine.
  - **CAUTION !!! As soon as the engine is ON the cutting head starts turning.**
  - Increase the engine idling speed and set the choke slowly in the OFF position.
  - Increase the speed continuously up to its maximum
  - If you heard any strange noises or vibrations during its initial run turn off the cutter immediately and contact the authorised service.
  - **Do not leave the machine unattended.**

At the first start there is more air in the intake manifold and on this account the engine may not roar to life immediately when turning the switch key for the first time. Do not crank the engine for a longer time than 10 sec. We recommend to use the choke before cold starting.

Be aware that the engine is equipped with a fuel pump which delivers the fuel at every starting. Never fill the filter and the relevant manifold with the fuel. After a short crank make sure if the fuel filter is filled with the fuel. You should see a darker fuel level in the filter body. If the fuel is under 3/4 filter volume crank the engine with its switch key once more.

Keep an interval between two starts 30 sec. at least.

## **Putting out of Operation**

- reduce the engine speed
  - push the STOP button
- Be aware, the cutting head runs out, keep away until it stops.

## **Emergency Situations**

The red STOP button for emergency cases is located on the remote control box. If any such situation occurs, push the button immediately. Having pushed this button the cutting head runs out.



### **Emergency cases**



- If any person or animal approaches under 15 m while cutting, then stop working immediately.
- If you heard any strange noise or vibrations or felt a strange smell while cutting, then turn off the machine immediately and contact your dealer or directly the manufacturer.
- If any breakage, damage or fire occur, stop cutting immediately.
- In case of fire use foam extinguishers only.
- If you cannot damp the fire down yourself, call for a fire brigade.



### **Cutting Operation**

- Do not start the machine in closed or ill-ventilated spaces and under conditions of low visibility.
- Transport the machine onto the working site where it should be coupled to a building machine.
- Refill the fuel.
- Remove the supporting frame.
- The stump cutter is designed for cutting in the field adequate for motion of the building machine.
- Set the building machine in a stable position within reach of the given stump. Be aware of rejected objects when cutting and avoid any hazards for other persons, animals and property.
- It is also not allowed to use the cutter if the operator of a building machine has no view to the cutting blades.
- Set the cutter to the stump to be able to cut it in a swinging way and to take individual stump layers off.
- Put the cutter into operation, see chap. "Putting into Operation".

- 
- Do not use the choke while working.
  - The cutting operation should be done at swinging motion, from outer parts towards the operator.
  - Run slowly up and start cutting with smaller wood chips and go on faster if possible according to the actual conditions. The size of cut layers depends on speed and cutting depth.
  - Try to keep the same engine speed while cutting.
  - If the cutting resistance increases the engine speed falls. The engine speed may fall up to 20% and its further fall brings engine-power loss and overloading.
  - If any strange noises or vibrations occur stop cutting and turn off the switch key. Contact your dealer or directly the manufacturer.
  - The cutter enables cutting of stumps in a max. depth of 200 mm under the ground level.
  - If the fuel tank refilling is required then put the machine out of operation and let the engine cool down.
  - For filling the tank use always a proper funnel and canisters.
  - If any petrol is spilled or overflowed then wipe off the spots and let them fully evaporate before the next start.
  - **If you need to override to the next working site, then the engine must be OFF and the cutting head must not be turning.**

## Noise and Vibrations

Operation of this suspension stump cutter brings following emissions:

	FZ 500/27	FZ 500/38	FZ 500 RATO
Sound power - measured $L_{WA}$	104,7	104,3	108,3
Sound power - guaranteed $L_{WA}$	106,0	105,0	109,0

- Measurements taken in accordance to ČSN EN ISO 11201 and ČSN ISO 3744.
- Measurements of vibrations: Extended combined uncertainty of measurements  $U = \pm 1,2$  dB. The given uncertainty means total uncertainty based on standard deviation multiplied by the coefficient  $k=2$  with a confidence interval approximately of 95%.

- Measurements of noise emissions: Extended combined uncertainty of measurements  $U = \pm 0,6$  dB. The given uncertainty means total uncertainty based on standard deviation multiplied by the coefficient  $k=2$  with a confidence interval approximately of 95%.
- The given measurements were taken at max. adjustable engine speed of  $3600 \pm 50$  min-1.

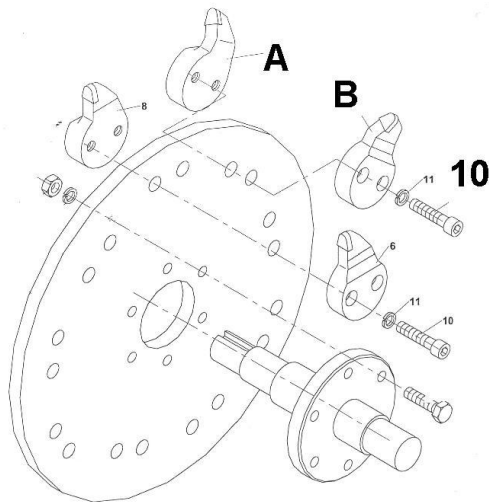
## Technical Description

The suspension stump cutter is built in the split bolted chassis consisting of its carrying frame used for coupling to a hydraulic jib. Holes for a suspension fixing device are on a plate on the upper part of the frame. This suspension device is bolted with six bolts.

The fuel tank with the battery are built also in the upper part of the frame. The lower part of the frame is bolted to the upper part. The driving engine is hinged in the lower part where there is also the cutting head driven by V-belts.

The cutting head is provided with tilting guards; the guard, in direction of rejected wood chips, is provided with two chains for trapping of wood chips, loam and other objects.

The cutting head consists of blades (A,B) fixed by pairs with two bolts (10). One blade in a pair is always the straight tool (A) and the other one (B) is bent outwards. In adjoining pairs the straight blades (A) are always fixed in opposite sides of the cutting head.



## Technical Parameters

		FZ 500/27	FZ 500 /38	FZ 500H	FZ 500 RATO
Overall length:	mm	880			
Overall width:	mm	765			
Overall height:	mm	1260		1000	1400
Cutting performance:	m <sup>3</sup> .hod <sup>1</sup>	cca 0,6			
Cutting bite	mm	70			
Cutting head diameter:	mm	510			
Under ground	mm	300			
Above ground	mm	according to vehicle			
Number of blades:	-	18			
Drive belts blades - 3x	-	XPB 1600L <sub>w</sub>		B 17x1500L i	XPB 1600L <sub>w</sub>
Overall weight:	kg	244	264	188	252
<b>ENGINE</b>					
Type:		KOHLER		hydromot or	RATO R999D
		CH 740	ECH 980- 3000		
Power output:	kW	18,6	28,3	20,8	24,5
Operating speed:	rpm	3600		-	<b>3600</b>
Lubrication:	-	forced		-	forced
Max. gradient	°	25		-	25
Engine oil:	-	SAE 10W-40		-	SAE 10W- 40
Oil charge:	l	1,9	2,85	-	2,4
Fuel:	-	unleaded petrol (NATURAL 95)		-	unleaded petrol

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				(NATURA L 95)
Fuel tank capacity:	l	18	-	18
Electric installation	V	12	-	12
Battery	Ah	45	-	45
Ignition:	-	magnetolectric		magnetolectric
Displacement hydraulic	cm <sup>3</sup>	-	-	34
Pressure	MPa	-	-	25
Flow	l.min <sup>-1</sup>	-	-	50

## Modification with hydromotor

### Technical parameters of the hydromotor:

Rated operating pressure for outputs A,B.....210 bar

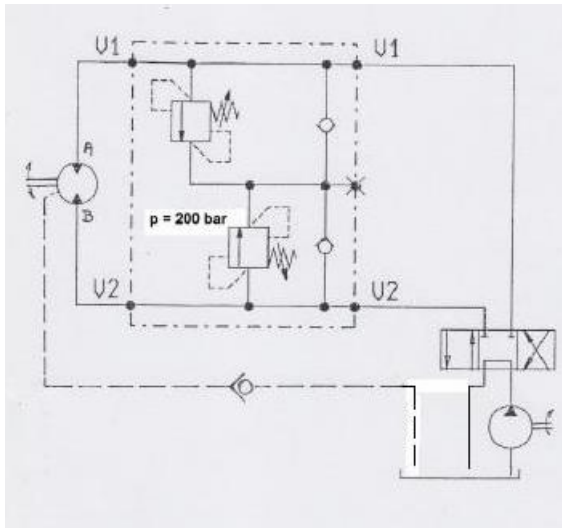
Maximum pressure for outputs A,B.....315 bar

Overpressure in the hydromotor casing.....1,5 bar (max. 2,5 bar at cold start)

**Caution!!** The hydromotor manufacturer recommends withdrawing the drips from the hydromotor casing directly into the digger hydraulic tank.

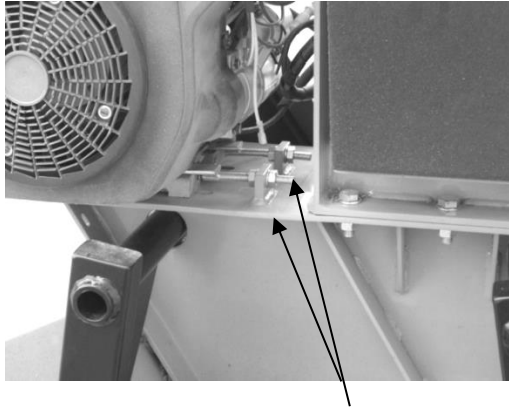
### Diagram of the hydraulic circuit FZ 500H

Layout diagram for the machines equipped with a separate dripping line going directly into the digger hydraulic tank.



## Maintenance

- Any servicing of the cutter can be carried out by authorised persons only.
- Check up the machine for completeness and its general condition.
- Check up the V-belts for tightness and wear.
- Keep regular intervals for lubrication of cutting head bearings.



Tension bolts of belt gearing

- Pay special attention to routine maintenance of the battery. It requires special tools, measuring appliances and skilled attendants. If necessary, ask for help by an authorised service in order to inspect or to recharge the battery, particularly after a longer operational break exceeding 50 days. A longer storage time might also cause a drop of battery potential needed for the next start before new season.

Recharge the battery to full capacity also before longer break or storage, particularly in winter.

Service life of the battery installed in the machine is rather limited. It is usually 3-4 years and after this period the battery should be replaced by a new one.

Item/interval		Use	First month or after 20 hrs	Every season or after 50 hrs	Every months or 250 hrs	Every year or 300 hrs
Engine oil	Oil level check	<b>x</b>				
	Exchange		<b>x</b>		<b>x</b>	
Air filter	Check	<b>x</b>				
	Cleaning /exchange			<b>x</b>		
Spark plug	Cleaning/check				<b>x</b>	
	Exchange				<b>x</b>	
Oil filter	Exchange				<b>x</b>	
Valve play	Check / readjustment					<b>X *</b>
Cylinder head	Cleaning					<b>X *</b>

These items should be done by an authorised dealer or service point where necessary tools are always available

## Maintenance intervals for KOHLER engines

### Oil change

The first oil change after 100 working hours and next changes every 100 hrs. Change the oil always when the engine is turned off and still warm. Discharge the used oil into a bin through the drain valve on the right side of

the machine. Having discharged the whole volume close the valve and fill new oil of proper viscosity through the filler neck and then screw up the filler plug. In case of any failure in the lubrication system the engine stops.

### Oil filter element

Exchange every 200 working hours.

### Air filter

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The air filter with two filter elements provides maximum protection against mechanic impurities and keeps continuous air flow into the fuel system. Remove the filter cap and unscrew the locking nut and remove the filter element.

Check the air pre-cleaner every 25 working hrs as follows:

- a) Remove the pre-cleaner carefully from the paper element and clean it in the warm water with a non-foamy detergent.
- b) Rinse the element with the water, press the water out and dry it up. Put the cleaned element into the body, tighten up the nut and fit the cap again. In case of heavy fouling check up the element more frequently.

Check up the paper element every 10 working hours. If fouled, change the element immediately. Never oil the element and never clean it with paraffin or similar detergents.

### **Valves**

The structure of valves and especially of hydraulic tappets minimises operating noises and removes any further valves adjustment.

### **Ignition**

The electromagnetic ignition system requires no adjustment. The spark plugs should be checked every 100 hrs. This check consists in cleaning electrodes and setting the spark plug gap to 1,02 mm. The spark plugs should be changed every 300 hrs.

### **Cleaning of engine**

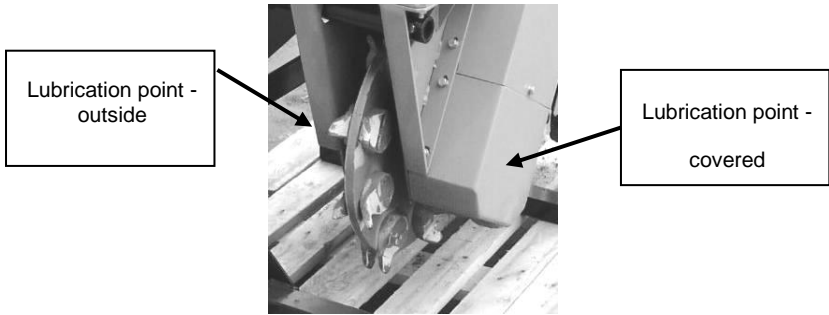
Clean the engine according to its actual impurity grade by means of the pressure air. Clean the engine also after every change of oil or air filter element. At the same time check up the bolts fixing the engine to the chassis.

**CAUTION!** Any repairs of the engine should be done by an authorised Kohler service only.

### **Electric installation**

Protect all wires against contact with oil products. Keep all elements clean and avoid any damage of wires - short circuit risk. All connections must have clean and proper contact surfaces to avoid intermediate resistance at a wrong contact point.

Check the electrolyte level and density in individual cells of the battery. Before charging keep all instructions of the battery manufacturer.



### Blades Change

When changing the blades proceed as follows:

- Loosen the bolts (10)
- Remove the used blades and fit new ones
- Tighten up the bolts
- Use torque wrench - torque value of 105 Nm
- Use always original spare parts and LASKI bolts (10) only
- At this change proceed carefully and avoid any accident
- Secure the machine against possible rollover

### Troubleshooting

Failure	Cause	Remedy	
Engine does not start	Discharged battery	Recharge battery	
	Broken lead	Check up wiring	SERVICE
	No plug sparking	Clean spark plug Change spark plug	
	Fouled filter	Change element	
	Lack of fuel	Refill fuel	



	Low engine oil level	Refill oil	
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Note: The note "SERVICE" in the "Remedy" column means that this operation should be done by an authorised service only.

### **Waste Disposal**

Any waste materials resulting from the machine operation should be disposed in accordance with laws and regulations valid in the given country.

Protect nature and water resources against used oil and filter elements.

Any parts of the machine should be disposed in accordance with laws and regulations valid in the given country.

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## Warranty

The manufacturer provides warranty on this product for a period as stated in the enclosed Letter of Indemnity. This warranty period begins upon delivery to the customer.

The manufacturer provides warranty on this product for a period as stated in the enclosed Letter of Indemnity. This warranty period begins upon delivery to the customer.

This warranty covers all failures resulted from faulty assembly, manufacture and materials.

The manufacturer bears no responsibility for damages resulted from user's wrong usage, such as:

- Usage by an unauthorised person.
- Unauthorised changes, repairs and actions on the machine.
- Usage of unoriginal spare parts or parts intended for other models.
- Disobedience to instructions for use.
- Damage of the machine caused by faulty handling, maintenance or overloading.
- This warranty does not cover faults resulted from damages caused by the user.
- This warranty does not cover parts being subject to ordinary wear and tear.
- This warranty does not cover any damage of machine caused by usage of unoriginal spare parts.
- This warranty does not cover consequences resulted from weather effects

Any warranty claims must be submitted in writing with papers concerning acceptance for warranty or post-warranty repair

# Service Report

Type of machine:	Serial number:
Day of inspection:	Working hours:

**Operations done:**

- |  |     |    |
|--|-----|----|
| <input type="checkbox"/> Engine oil - change                   | Yes | No |
| Sort / viscosity .....   |     |    |
| <input type="checkbox"/> Oil filter – change                   | Yes | No |
| <input type="checkbox"/> Air filter – change                   | Yes | No |
| <input type="checkbox"/> Fuel filter – change                  | Yes | No |
| <input type="checkbox"/> Solidification point of coolant ..... |     | °C |
| <input type="checkbox"/> Hydraulic oil – change                | Yes | No |
| Sort / viscosity .....   |     |    |
| <input type="checkbox"/> Oil filter element – change           | Yes | No |

Stamp of service station, technician's signature

**Additional data:**

Date: ..... Working hours: .....

.....

Date: ..... Working hours: .....

.....

**Next service inspection (whichever occurs first)**

Date: ..... Working hours: .....

# Service Report

Type of machine:	Serial number:
Day of inspection:	Working hours:

**Operations done:**

- |  |     |    |
|--|-----|----|
| <input type="checkbox"/> Engine oil - change                   | Yes | No |
| Sort / viscosity .....   |     |    |
| <input type="checkbox"/> Oil filter – change                   | Yes | No |
| <input type="checkbox"/> Air filter – change                   | Yes | No |
| <input type="checkbox"/> Fuel filter – change                  | Yes | No |
| <input type="checkbox"/> Solidification point of coolant ..... |     | °C |
| <input type="checkbox"/> Hydraulic oil – change                | Yes | No |
| Sort / viscosity .....   |     |    |
| <input type="checkbox"/> Oil filter element – change           | Yes | No |

Stamp of service station; technician's signature
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**Additional data:**

Date:..... Working hours: .....

.....

.....

Date:..... Working hours: .....

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**Next service inspection (whichever occurs first)**

Date:..... Working hours:.....