

## OPERATION AND MAINTENANCE MANUAL



# HONDA

The Power of Dreams

UPDATED EDITION: **260223**

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## OPERATION AND MAINTENANCE MANUAL

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Thank you for choosing to purchase this machine.

The Kapsen 2R is a specialized machine designed for forestry work. Its primary function is to gather timber. This manual contains information on the operation and maintenance of the Kapsen machine and is intended for its users. Please read this manual thoroughly, including its appendices, before operating this machine or performing any initial maintenance on it. Proper maintenance and use of the machine ensure safety, work efficiency, and cost-effective operation.

Please keep in mind that errors that compromise safety, work efficiency, and cost-effective operation of the machine are primarily caused by human error. REPAROSERVIS spol. s r. o. is constantly striving to improve its products. It therefore reserves the right to change specifications and equipment, as well as maintenance instructions and other service procedures.

During the warranty period, do not use any spare parts other than original ones, and follow the correct repair and maintenance procedures.

This manual serves as a guide for the safe and proper operation of the machine during startup, operation, and servicing. If you have any questions, please contact your Kapsen machine supplier. We will be happy to assist you.

We wish you the best of luck in working with the KAPSEN machine.

Your team,

REPAROSERVIS spol. s r.o.

Updated operating and maintenance manuals for the Kapsen machine and its accessories can be found at:

[www.lesni-technika.cz](http://www.lesni-technika.cz)

# 1 SAFETY INSTRUCTIONS

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## 1.1 MACHINE CATEGORY AND INTENDED USE

This machine falls into the category of specialized forestry equipment. It is primarily designed for ground-based timber gathering as a partially mechanized process. Additional functions are provided by the attached original adapters.

This machine is not intended for use on public roads.

## 1.2 MACHINE OPERATION

Before operating the machine, read this manual and make sure you understand its contents. First and foremost, before handling the machine in any way, verify that it is in a safe operating condition that will not endanger the health or life of the operator or those nearby. Always verify this condition before beginning work with the machine.

Never operate the machine if you are under the influence of alcohol, medication, or other intoxicating substances. Never allow anyone other than a trained operator to work with the machine.

**The operator is responsible for the proper and safe use of the machine in accordance with the instructions and applicable laws.**

## 1.3 MOVEMENT OF THE MACHINE AND OPERATOR IN THE WORK AREA

When operating the machine, follow work organization and procedures that comply with applicable laws and regulations. The danger zone designated by the manufacturer extends 25 meters in all directions. If anyone enters the machine's work area, stop work immediately and secure the area.

When winding the cable or operating the machine, the operator must always stand in a safe location to avoid risk to their health or life. A safe location is one that complies with safety guidelines for timber skidding.

Never walk under a taut cable or step over a taut cable. Never move on a slope beneath the machine or the towed load. When gathering timber, do not stand in the inner angles of the winch rope. When gathering timber, do not stand in the direction of the taut ropes. Do not guide the load or towed load with your hands while the rope is in motion. Never unhook the towed load while it is being pulled, and always ensure that the machine is secured against unintended movement while handling the towed load.

Never walk on slopes beneath a towed load where there is a risk that the load could start moving on its own. Likewise, do not walk on slopes beneath a moving machine where there is a risk of it losing stability, and avoid such areas.

Ensure the machine is stable before towing a load. Before starting work, familiarize yourself with the nature of the work site and the work procedure. Use the machine only at work sites for which its design and equipment, or its adapters, are suitable. The end of the rope is only loosely stored in the drum. After the entire length has been unwound, it will come loose from the drum. During normal operation, never unwind the rope all the way—always leave at least 3–5 turns on the drum.

## 1.4 OCCUPATIONAL RISKS

Always familiarize yourself with the potential risks that may arise before starting work or while working. If there is no other option, do not begin operating the machine or stop work and eliminate the risks. Always have a first-aid kit that is fully stocked and in working order. Under no circumstances use this machine as a means of transporting people. In the event of an accident, act in accordance with applicable laws.

## 1.5 CLOTHING AND PROTECTIVE EQUIPMENT

When working with or operating the machine, wear work clothes and protective equipment in accordance with applicable safety and legal regulations. The same applies when repairing or maintaining the machine.

## 1.6 CHEMICALS

Do not inhale exhaust fumes. Carbon monoxide from the exhaust is extremely dangerous and difficult to detect because it is odorless. Ensure adequate ventilation before starting the engine in an enclosed space. Avoid skin contact with oils and other chemicals. When handling chemicals, follow the safety data sheets provided by the manufacturer. If chemicals come into contact with your eyes or are ingested, seek medical attention immediately. Avoid skin contact with chemicals.

Prevent chemical spills into the environment. Store chemicals in their original, undamaged containers. When replacing chemicals, ensure they are disposed of in an environmentally responsible manner.

Do not eat, drink, or smoke while handling chemicals. The machine operator or owner is responsible for any environmental damage caused during machine operation. The machine manufacturer and seller are hereby released from this liability.

In the event of a threat to or damage to the environment, proceed in accordance with applicable laws and regulations. Prevent the occurrence of threats to the environment.

## 1.7 FIRE HAZARD

To ensure fire safety, you must comply with applicable fire and safety regulations. There is always a risk of fire. A fire extinguisher is supplied as standard equipment with the machine. The expiration date is marked on the fire extinguisher. Once the fire extinguisher has expired, it must be replaced. Regularly check the fire extinguisher to ensure it is in working order. Have it inspected regularly. If the seal is damaged, have the extinguisher inspected by a qualified person.

When handling flammable materials, do not handle open flames or heat sources. Do not refuel while the engine is running. Do not work with or handle the machine near open flames. Do not smoke while performing these activities. Do not move around in areas containing flammable materials.

Handle the battery (disconnecting, recharging) with the main switch turned off and away from open flames. Do not fill the fuel tank to the brim. Do not use diesel fuel to clean the machine.





## 1.8 SERVICE AND MAINTENANCE

Before performing any maintenance on the machine, read all the tables and instructions in the operator's manual; each one contains important information regarding maintenance and handling. Machine maintenance may only be performed by trained operators, and in cases beyond routine maintenance, by an authorized service center. Fault diagnosis and repairs may only be performed by a trained person who is aware of the potential risks and will perform all work correctly.

- When the engine guard is raised, it is forbidden to work with, drive or otherwise manipulate the machine, as there is a risk of the guard falling back and injuring the operator. If the guard is folded down, secure it against unintentional tipping back.
- Before starting repairs, the machine must be secured against unintentional movement.
- Do not use the folding shield to lift the machine during adjustments and maintenance.
- Unless otherwise stated in the operating instructions, the engine must be switched off during service work.
- Unless otherwise stated in the operating instructions, the power supply must be switched off during service work.
- Make sure that no tools or objects have been left in the machine that could cause damage or injury to the operator.
- Use the correct original tools for the intended repair. Repair or replace damaged parts of the machine and its accessories, or call a specialist service. Repair of the machine is subject to the warranty conditions that are part of the purchase contract.
- When servicing, performing maintenance and repairs yourself, observe fire and safety regulations.
- The battery is maintenance-free. When removing the battery, always disconnect the grounding cable first to prevent sparks. Keep the battery clean. Protect the positive terminal of the battery from unprotected contact with metal parts and other objects. Short circuits and sparks can cause the battery to explode.
- Carry out all work on the electrical installation with the battery disconnected or removed (except for replacing fuses).
- Maintenance of the remote control is described in detail in the appendix.
- Maintenance of the engine is described in detail in the appendix.
- Keep the controls and the machine clean and do not leave any objects around the controls that could hit the control levers.

## 1.9 PICTOGRAMS

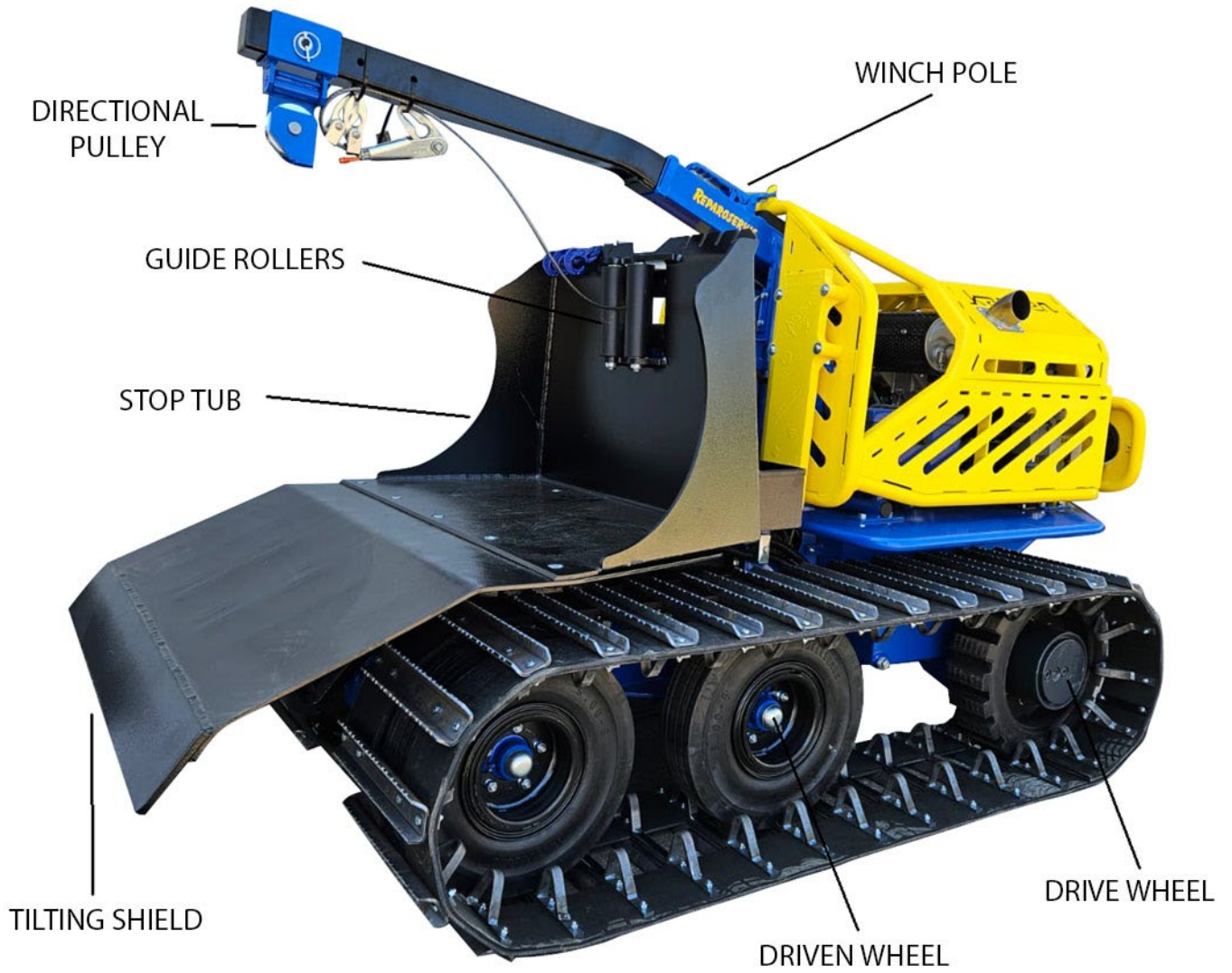
The pictograms listed come from the international IEC database (International Electrotechnical Commission 2007).

PICTOGRAMS		
1	Battery	
2	Fire extinguisher	
3	Risk of injury	
4	First aid kit	

Note: The colors of the pictograms in the manual may differ from the colors of the actual pictograms.

## 2 DESCRIPTION OF MACHINE PARTS

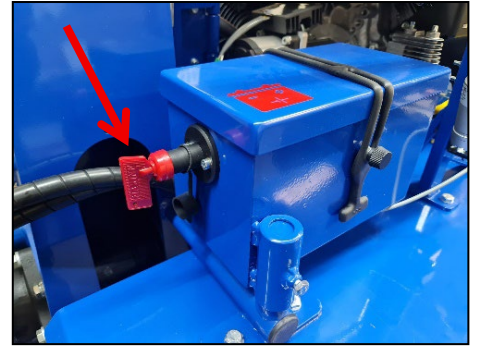




## 2.1 CONTROLS

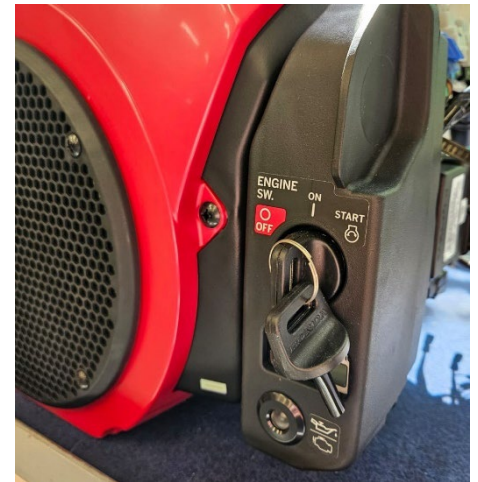
### 2.1.1 Battery switch

The battery switch is located on the battery box.



### 2.1.2 Switch box

The ignition switch is located on the right front of the engine.



### 2.1.3 Operating the winch latch

The winch latch control is located on the rear of the mast above the winch hydraulic motor. This is used to lock the winch drum.



### 2.1.4 Remote control

The remote control is used to:

- start and stop the engine
- wind and unwind the rope
- control the free unwind valve
- turn the lights on and off
- change the travel speed
- control the travel
- fold and tilt the folding shield
- increase and decrease the engine speed
- control the lights



## 3 MACHINE OPERATION AND CONTROL

### 3.1 PREPARATION BEFORE STARTING MACHINE OPERATION

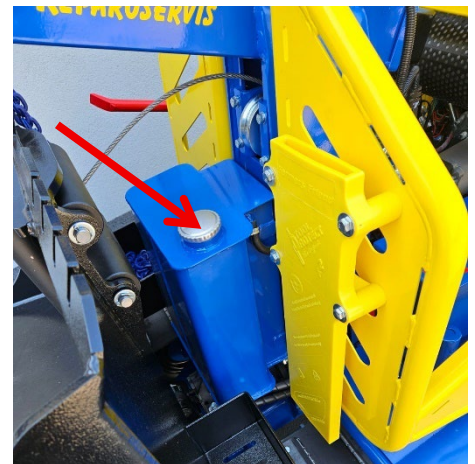
#### 3.1.1 Checking the condition of operating fluids

When checking the condition of all fillings, make sure to level the machine to a horizontal position, otherwise the check result may be distorted!

Before starting the engine, do the following:

##### *Checking fuel levels:*

- fill the tank with unleaded petrol with an octane rating of 95 (Natural 95/E5)
- **CAUTION!!!** When checking or adding fuel, do not place the tank cap on the exhaust cover



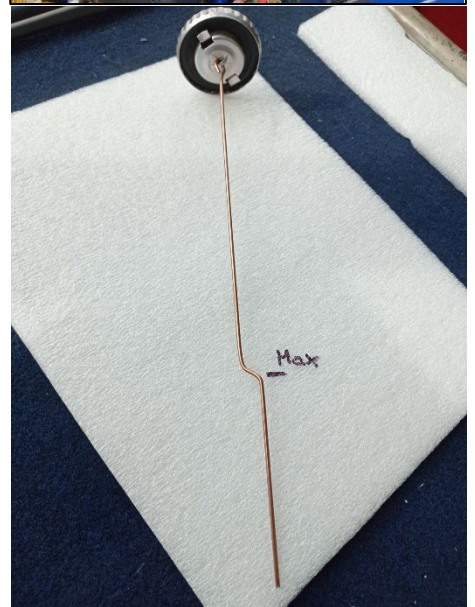
##### *Checking the engine oil level*

- engine oil – quantity according to the dipstick and visual inspection of cleanliness. If the quantity is insufficient, top up with the prescribed 10W-30 engine oil and check the engine for leaks.



##### *Checking the condition and level of the hydraulic oil*

- check the oil level in the hydraulic tank using the dipstick on the filler neck cover, the bend indicates the maximum oil level
- check and eliminate possible oil leaks from the system, in case of insufficient quantity, add the prescribed amount of hydraulic oil 10W-40 through the filler neck
- **Make sure to maintain the correct oil level so that there are no malfunctions of the hydraulic system!!!**



### 3.1.2 Check the air filter!

Check the cleanliness of the air filter - if the filter is damaged or dirty, it must be replaced.



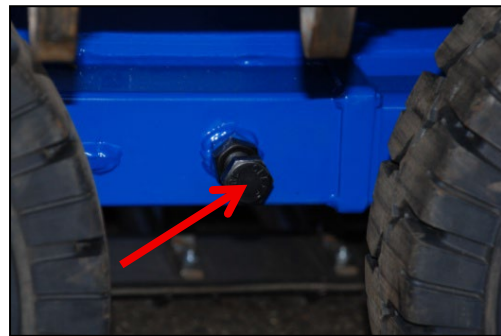
### 3.1.3 Checking the running tracks

#### *Checking the tension of the running belts*

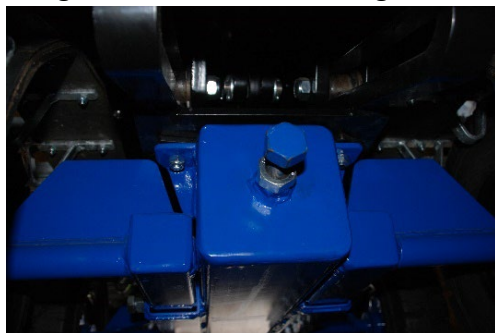
Checking the belt tension (the belt must not jump out of the guide grooves on the drive wheels, if the belts are loose, tighten them using the central tensioning screw or tighten the tensioning screws on each side separately). Then it is necessary to secure the chassis by tightening the locking screw.



Right or left side tensioning screw



Right or left side locking screw



Main center tension bolt

### 3.2 OPERATING AND DRIVING THE MACHINE

#### 3.2.1 Controlling the machine with the remote control



#	Element	Function	Note
[1]	<b>START (green button)</b>	Turning on the remote control; <b>pairing</b> with the receiver (short press after turning on); lights <b>ON/OFF</b> (short press); <b>engine start</b> (hold ~1.5s)	When starting via the remote control, the throttle output is reset to <b>0.1V</b> after ~1s → the engine starts at idle.
[2]	<b>REVERSE</b>	Toggles forward/reverse logic	<b>Green LED "REVERSE" is lit = REVERSE ON.</b>
[3]	<b>TORTOISE/HARE</b>	Travel gear switching	When switched on, it is always <b>TORTOISE</b> . When <b>HARE</b> , the indicator light is on.
[4]	<b>RPM + / -</b>	Changing engine speed	Single press ≈ ±10%; hold = continuous min↔max (~2s).
[5]	<b>FREE UNWINDING</b>	Free reel unwinding	<b>Always deactivate</b> after use, otherwise the winch will not work.
[6]	<b>Left joystick – horizontal</b>	Winch	← <b>winding</b> , → <b>unwinding (proportional)</b> .
[7]	<b>Left joystick – vertical</b>	Folding shield	<b>MODE1: ↑ / ↓ (proportional)</b> .

[8]	<b>Right joystick – vertical</b>	Forward/reverse travel	<b>MODE1:</b> combined travel; <b>MODE2:</b> right track.
[9]	<b>Right joystick – horizontal</b>	Rotation/shield	<b>MODE1:</b> rotation/direction correction; <b>MODE2:</b> shield (←/→).
[10]	<b>KEY (security key)</b>	Enables the controller to be turned on	The remote control cannot be turned on without the key.
[11]	<b>MODE mode</b>	Switchable control modes	

### 3.2.2 Travel modes and REVERSE logic

#### 3.2.2.1 2.1 MODE 1 – REVERSE OFF (basic)

- Right joystick – vertical: forward = forward travel, backward = reverse (proportional).
- Right joystick – horizontal: turn/correct direction (tracks facing each other).
- Left joystick – horizontal: winch (← reels in, → unwinds).
- Left joystick – vertical: tilting shield (↑/↓).

#### 3.2.2.2 2.2 MODE 1 – REVERSE ON

- The forward/reverse logic on the right joystick is reversed (forward on the joystick = machine movement backwards).
- The rotation (horizontal direction of the right joystick) remains the same.
- Indication: LED „REVERSE“ is on.

#### 3.2.2.3 2.3 MODE 2 – REVERSE OFF

- Right joystick – vertical: right track forward/backward (proportional).
- Left joystick – vertical: left track forward/backward (proportional).
- Right joystick – horizontal: folding shield (←/→).
- Left joystick – horizontal: winch (← reels in, → reels out).

#### 3.2.2.4 2.4 MODE 2 – REVERSE ON

- Forward/reverse logic is reversed for both tracks (forward on joysticks = reverse).
- Indication: LED „REVERSE“ is on.

**TIP: Always check the REVERSE (LED) status before driving. This will prevent the machine from reacting in reverse.**

### 3.2.3 Travel speed and engine speed

#### 3.2.3.1 TORTOISE / HARE

- After switching on, **TORTOISE** is always active.
- Press the **TORTOISE/HARE** button to switch between slow and fast gear.
- You can also switch while driving; the indicator light is active when in **HARE**.

#### 3.2.3.2 RPM + / -

- + / - changes engine speed: single press ≈ ±10 %, **holding** → smooth change min↔max (~2 s).

### 3.2.4 Winch

#### 3.2.4.1 Proportional control

- Left joystick - horizontal: ← winding / → unwinding; speed corresponds to joystick deflection.

#### 3.2.4.2 Free unwinding

- The **FREE UNWIND** button activates free rotation of the drum.
- **Turn off the function after finishing work** by pressing again; otherwise the reel will not respond.

#### 3.2.4.3 Reel unwinding – service function

- Activation: hold FREE REWIND ~1 s → unwinding as when the joystick is fully tilted to the right.
- Deactivation: by moving the joystick or pressing FREE REWIND again.
- **Do not use during work, this is a service function when replacing the winch rope.**

### 3.2.5 START, pairing and lights (START button logic).

- **Switch on the controller:** press **START**.
- **Pairing with the receiver:** after switching on, **briefly press START** (activates the start enable relay and turns on the lights).
- **Starting the engine via the controller:** hold **START** for ~1,5 s. After ~1 s the throttle output is reset to **0,1 V** → the engine starts at idle.
- **Lights: short press START = lights ON/OFF.**
- **KEY (security key):** the controller cannot be switched on without the key inserted.

**In the event of a malfunction in the remote control of the machine, the travel and winch can be controlled in an emergency using the levers on the control panel.**

## 3.3 BEFORE STARTING THE MACHINE

Before starting the machine, make sure that the machine is stable. Check that all its functions are switched off or in neutral. Check the condition of the operating fluids and top them up if necessary. Check the fuel and hydraulic system for leaks. Check the tension of the running tracks. The machine must not have any damaged parts before starting work. Check the completeness of the machine and the strength of detachable and non-detachable connections. Check the cleanliness of the contact and the integrity of the cables and insulation. Keep the machine and all its parts clean, remove any dirt.

Remove mechanical obstacles in front of the machine. Before starting work, make sure that there are no unauthorized persons in the safety zone.

In the case of work on a slope, the machine must be positioned with the folding shield facing down the slope (with the front of the machine facing up the slope).

Check that all safety features on the machine are functional (functionality of the folding shield, safety button "STOP", first aid kit, fire extinguisher).

## 3.4 STARTING THE MACHINE

### 3.4.1 Starting the machine using the remote control

- 1) Turn the battery switch to the first position.
- 2) Turn the ignition key on the engine to the first position.
- 3) To start the machine, press and hold the machine start button on the remote control (see chapter 3.2.1 Operating the machine with the remote control).
- 4) After starting the engine, let the engine and the entire system
- 5) warm up to operating temperature at idle speed for approximately 5 minutes.



If the engine stalls, e.g. while driving or towing, restart it as in point 3.

**Always check before work whether all machine functions are in order and if this is not the case, secure the machine so that no further faults arise at that moment and repair them. In the process, prevent the risk of injury to the operator or the surroundings.**

**Always stay far enough away from the machine when performing any work so that you can manipulate it if necessary.**

### 3.4.2 Starting the machine using the ignition on the engine

All steps are the same as starting the machine using the remote control. Instead of pressing the engine start button on the remote control, you turn the ignition key on the engine clockwise to the second position.

**The machine cannot be started without pairing the machine with the remote control!**

## 3.5 DRIVING ON SLOPES

During these operations, do not move under the machine in a direction where the machine could fall or slide. When driving down a slope, maintain sufficient engine speed so that the engine has enough energy for engine braking. Avoid driving on a contour line with a large transverse slope, especially on slippery or rocky terrain. There is a risk of the machine tipping over or sliding. The machine without a load has its center of gravity at the front, so when driving down a slope, the machine must be driven backwards to prevent it from tipping over.

## 3.6 WINCH CONTROL

### 3.6.1 Unwinding/rewinding the rope using the remote control

By moving the left joystick on the remote control, you start unwinding or winding the rope (see chapter 3.2.1 Controlling the machine with the remote control).

By pressing the free unwinding button (see chapter 3.2.1 Operating the machine with the remote control) on the remote control, you activate the free unwinding function. At that moment, the machine can be driven away from the attached load and the rope can be unwound with the resistance of the winch's hydraulic motor. To deactivate the function, you must press the same button on the remote control again, otherwise it is not possible to wind and unwind using the remote control.

### 3.6.2 Operating the winch latch

To lock the unwinding, the latch lever must be in the "ON" position, in the "OFF" position it is not active. To deactivate the latch, it is recommended to wind a part of the rope so that the latch bounces back.

**The rope is loosely inserted into the mounting hole in the drum. After unwinding the entire length, it is not firmly connected to the drum and may come loose from the drum. Therefore, during normal operation, do not unwind the rope all the way - leave a reserve of several turns on the drum.**

## 3.7 PUTTING THE MACHINE TO REST AND SWITCHING IT OFF

### 3.7.1 Bringing the machine to a standstill

Stop working with the machine and wind the rope back onto the winch drum so that it is not damaged or does not endanger safety. Drive the machine to a safe place. If possible, avoid parking the machine on a slope. After stopping and switching off the engine, the machine is braked by automatic parking brakes in the travel hydraulic motors.

In the event of a fault, the machine cannot be towed without pressure in the hydraulic system. The hydraulic motors remain braked until pressure is released from the hydraulic distributor..

### 3.7.2 Turning off the machine

- 1) Set the engine idle speed using the appropriate button on the remote control.
- 2) Turn off the engine using the remote control by pressing the STOP button.
- 3) Turn off the key in the engine switch box by turning it back to the zero position.
- 4) Turn off the battery switch by turning it to the zero position.

If you put the remote control away after turning off the machine so that it cannot be manipulated if necessary, remove the chip from the right side of the remote control if it is in the zero position.

**Prevent anyone unauthorized from operating the machine or causing any damage.**

**Whenever you finish work or stop manipulating the machine, or leave the machine unattended, make sure that the machine is secured so that it does not endanger health or life in its vicinity.**

**Also so that it does not damage the environment.**

**Never leave the machine out of sight when you are working with it!**

## 3.8 TRANSPORTING THE MACHINE

The machine is not intended for transport on public roads and is not equipped for this purpose. For transport, use a means of transport with a minimum load capacity of 1,250 kg, for transporting the machine in its basic version. The weight may increase depending on the adapter used on the machine and accessories.

Secure the machine and its accessories so that the safety of people and property is not endangered during transport. Transport is governed by applicable relevant legal regulations and laws (e.g. Road Transport Act, Road Traffic Act, etc.)

## 4 ADDITIONAL INFORMATION ON MACHINE OPERATION

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### 4.1.1 Signal receiver

The signal receiver is located in the protected area of the machine's protective frame above the battery. The protected area in which the antenna is located does not guarantee its protection against falling objects or when the machine overturns. The antenna is not resistant to impacts and bending, so take care to protect it.

The coded signal spreads from the receiver in a circular horizontal direction. Depending on the distance from the receiver, the signal strength increases (radio waves spread). For these reasons, the controllability of the machine with the transmitter within 2 m of the receiver is not guaranteed. AUTEK guarantees that the safe controllability of the machine with the controller is up to 200 m in an open area without obstacles. In a forest environment, it states a reduction in safe controllability to 100 m, with the condition that the spread signal may be shortened depending on the variety of terrain in the forest environment. Live parts of trees, undulating terrain and other obstacles (trunks, branches, stones, soil) absorb the transmitted signal, while metal and similar materials reflect the signal. Do not try to secure the antenna with objects other than those specified by the manufacturer or distributor of the machine, so as not to prevent signal propagation (Faraday cage principle).

If you notice a signal dropout, try to change the position of the transmitter from the receiver in a different direction and distance. If the engine does not turn off, first pair the transmitter with the receiver again. Pair the engine using the start or pairing button, by pressing it once briefly. If the engine turns off, follow the same procedure described in chapter 3.4 Starting the machine.

If you weld on or near the machine as part of post-warranty repairs, disconnect this equipment / electronics and remove it in such a way that it is not damaged and store it so that it is not within the range of the welding machine current, otherwise it may be damaged.

For more detailed information about the receiver, see the appendix, AUTEK General Operating Instructions..

**The machine operator must anticipate the imminent danger of signal failure.**

### 4.1.2 Signal transmitter

The remote control (chapter 3.2.1 Controlling the machine with the remote control) has a control light in the middle between the joysticks (travel and winch control). After starting, this control light briefly signals green, which means that the device is activated. If the device is in normal operational condition, the control light signals intermittently green. When the machine operator presses the "STOP" button, the control light starts to indicate this status with an accelerated signaling frequency. The signal transmitter is powered by a battery. The same control light, as in the previous case, signals its discharge. This signal is intermittently red (only for newer types or other transmitters). If this happens, charge the transmitter battery according to the battery manufacturer's instructions.

**For more detailed information about the transmitter, see the appendix, General AUTEK Operating.**

## 4.2 MOTOR HOUR METER

### 4.2.1 Measuring engine hours



The waterproof device is able to measure engine hours worked and engine speed with great accuracy. Control, setting functions and resetting measured values are solved with one button. The current engine hours worked can be reset and the same applies to the total engine hours worked.

The hours are easily converted, as the device is programmed in a mode where one real hour of time represents one hour of operation. The total hours measured are hidden under the abbreviation “TOT”, the currently measured hours are then “JOB”. To reset the hours record, press and hold the button for at least 5 seconds, then wait until the counter automatically resets to zero. The hours on the display are shown as regular time.

## 4.3 POSSIBLE RISKS WHEN WORKING WITH THE MACHINE

### 4.3.1 Overturning

Always handle the machine in such a way that it does not tip over and remember that if this happens, it will be entirely your fault. The machine is not designed for such handling. Nevertheless, if this situation occurs, first secure the machine to prevent any danger to the health or life of the operator and the surroundings. Use the “STOP” button to stop the machine. Immediately prevent the risk of environmental contamination and, if this happens, proceed in accordance with applicable legislation.

In the first step, check that no petrol has been spilled on the machine and its surroundings and take all measures to prevent it from igniting. Then place the overturned machine safely and gently back into its normal stable position on the tracks. Check the battery to ensure that its packaging is not damaged and that the electrical installation is in order. If the battery is damaged, prevent the leakage of substances from the battery into the environment and act in such a way as to prevent an explosion. To dispose of a damaged battery, proceed in accordance with applicable legislation.

Check the air filter for oil contamination and replace it if necessary. After placing the machine on tracks, engine oil may flow into the combustion chambers, which can cause the engine valves to bend. Therefore, check the cleanliness of the combustion chamber, including the spark plugs. After unscrewing the spark plugs, crank the engine by starting it. Check and go through the entire machine completely to ensure that it is not damaged. If any part of the machine is damaged, repair or replace it according to the operating and maintenance manual. Check the levels of all operating fluids and top up if necessary. If you have completed all the steps described, you can try to start the machine.

If damage or environmental damage occurs, proceed in accordance with applicable legislation.

**If necessary, do not hesitate to contact a professional service.**

#### 4.3.2 Procedure for overturning the Kapsen machine in the field

- 1) Securing the engine:
  - a) If the engine is running, switch it off immediately using the STOP button.
- 2) Returning the machine to its original position:
  - a) Carefully turn the machine back onto the tracks using the manual winding device (straps) and fastening straps (kurten).
  - b) Always fasten it to fixed parts of the machine, ideally to the frame or column.
- 3) Visual inspection:
  - a) Carry out a thorough visual inspection of the entire machine.
  - b) Repair minor mechanical damage on site if possible.
- 4) Check the hydraulic system:
  - a) Check the hydraulic oil level for leaks.
  - b) Top up oil if necessary.
- 5) Check the engine:
  - a) Remove the spark plugs.
  - b) Use the starter to crank the engine to safely remove any oil that may have penetrated above the pistons.
  - c) Then refit the spark plugs.
- 6) Checking the engine oil level:
  - a) Check the level using the dipstick (ideally it should be at the upper line).
  - b) Top up oil if necessary.
- 7) Checking the air filter:
  - a) Remove the air filter cover.
  - b) Check the filter – replace it if dirty and close the cover again properly.
- 8) Test start:
  - a) Test start the engine.
  - b) If the machine operates without any problems, you can continue working.

#### 4.3.3 Lack of signal

The Kapsen 2R has a metal safety frame for protection, strength, resistance and durability. The metal prevents the receiver signal from spreading, which is why the connection between the receiver and the transmitter may be interrupted. This can especially happen on the opposite side of the transmitter if the transmitter is behind the crane mast within 2 m. Therefore, move the machine in terrain where there is no risk that the machine will start moving down the slope on its own and the signal will be interrupted. Otherwise, you may endanger your safety and the safety of the surroundings, or damage the machine. Due to the safety frame, the metal construction of the machine and the spread of the receiver signal, outages may occur more often in certain places. Therefore, change the position of the transmitter.

#### 4.3.4 Working in the dark

The machine is not intended for work in the dark. The lights equipped with the machine are only used for moving or for driving the machine into transport vehicles that do not have illuminated transport spaces.

## 5 RECOMMENDED PROCEDURES FOR WORKING WITH THE MACHINE YOURSELF

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### 5.1 SKIDDING

The machine's design corresponds to small gathering devices intended primarily for ground gathering of wood in thinning stands after cultivation. The machine can be used for any gathering method, such as trunk, tree, or assortment.

Gathering wood can be done at any distance, if terrain conditions allow. The machine is primarily used for clearing wood (from location P to location VM), but it can also be used to bring wood closer (from location VM to location OM) or a combination of both. When gathering, remember that the machine is capable of pulling a load weighing 1,000 kg, which is partly carried on the rear shield and an appropriate weight of the load by dragging it on the ground. Overloading the machine increases its wear and thus shortens its service life. The operator is responsible for damage to the machine when overloaded.

During gathering, pay attention to the angles that the rope makes with the longitudinal axis of the machine. The recommended angles are 30° on both sides of the longitudinal axis of the machine. The elevation angles of the rope are given by the folding shield. The best position for pulling the wood with the winch rope is in the straight direction of the rope in the longitudinal axis of the machine. If the recommended angles are not observed, there is a risk that the steel rope will come out of the rollers and be damaged. The angles are given only to prevent damage to the rope, not to prevent it from tipping over.

It is recommended to have the towed load partially supported in the stop tub. This will increase the load on the approaching machine and, as a result, increase its traction. If the load stops due to uneven terrain or roots, etc., we recommend changing the towing angle or avoiding the load with the supplied crowbar. For easier handling and driving in the field, we recommend using rope methods.

### 5.2 IMPROVING OCCUPATIONAL SAFETY AND HEALTH

The machine has a remote control, which in itself increases safety thanks to contactless control. Although safety has increased in this way, remember the aforementioned prescribed procedures, which are in accordance with applicable legislation.

A common method of work is a combination of focusing with an approaching machine and a motor-manual method in the form of working with a chainsaw. In the case of working with a chainsaw, a dangerous area is reserved according to applicable legislation.

In this combination, the Kapsen 2R is suitable for pulling down hanging trees. It is recommended to use directional felling to facilitate the work of the approaching machine operator. It is also recommended to prevent damage to surrounding standing trees and soil in the stand. This will, among other things, achieve thorough technological preparation of the stand. You can prevent damage to standing trees using the assortment method alone.

Working in neglected stands, which may even be too thin, and therefore have a high density of individuals per area, is problematic when carrying out educational interventions. The canopy of trees in such stands is often too dense and the formation of hanging trees is practically inevitable. In these

cases, use a tree-trimmer to remove hanging trees. This will save you time, effort and, above all, increase work safety. To increase safety, use suitable directional pulleys.

### 5.3 WORKING IN ADVERSE WEATHER CONDITIONS

In the forest environment, working conditions are made more difficult by weather conditions. Therefore, anticipate their deterioration and always abandon work if the machine is at risk of any damage or if the operator's health or life is at risk.

In reduced visibility (dense fog, twilight, heavy snowfall, etc.), we recommend, if the situation allows, abandoning logging work and moving the machine only to the place where it is stopped and secured.

Heavy frost can be beneficial for ground concentration. The resistance of the load on the frozen surface is reduced. Frozen soil is less resistant to damage than fresh soil, therefore, under these conditions, we recommend ground concentration in locations affected by water. In severe frost on slopes, on the other hand, difficulties may arise with moving the machine against the slope, and concentration is especially dangerous in places where there is a risk that the wood will start moving spontaneously.

In the spring, trees wake up from dormancy and begin to draw sap even before the leaves appear. Please keep in mind that the strength of the bark in tension and pressure is significantly reduced, which increases damage to standing trees. If the situation allows, it is advisable not to neglect protective measures for standing trees or to limit cultivation interventions during this period.

The advantage of the approach machine is low pressure on the soil and it can be used on unsustainable soils. However, this does not mean that its effect on the soil is without damage. On waterlogged soils, try to limit the number of passes on the clearing lines and at the same time try to limit the movement of the machine in the stand.

Trunks, dragged along the surface of the ground by one end, create grooves in the soil that can be the basis for surface erosion. Therefore, try to always concentrate on slopes at risk of erosion, always uphill. On the contrary, on slopes where there is no risk of erosion, use the energy of the towed load and concentrate from the slope down.

Damaged trees should be repaired immediately after the damage occurs with a fungicide intended for this purpose.

In all weather conditions, remember that the machine operator is always exposed to the risk of slipping and subsequent falling.

## 6 MAINTENANCE

Remember to bring the machine to a safe stop and turn it off. Remember to turn the battery switch to the zero position and remove the key from the ignition switch to prevent the machine from being started accidentally.

### 6.1 TENSIONING THE TRAVEL BELTS

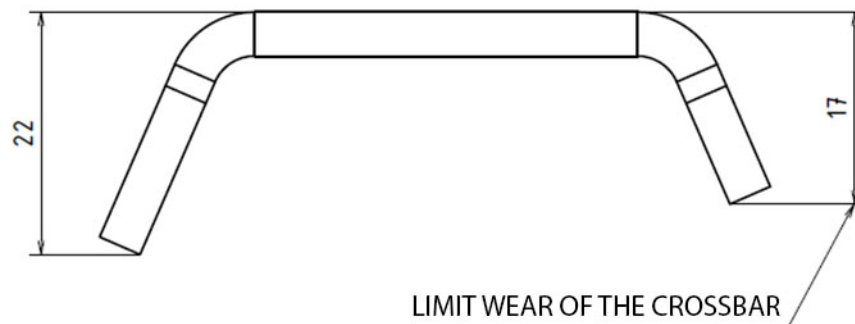
First tension the belts with the main tensioning screw.

- 1) Loosen the lock nut.
- 2) Turn the tensioning screw to the desired belt tension.
- 3) Tighten the lock nut.

If one belt is tighter and the other is looser, tighten the tensioning screw on the side where the belt is looser until you achieve equal tension on both belts (see chapter 3.1.3 Checking the running belts). **A properly tensioned belt must not touch the fender when moving upwards!**

### 6.2 CHECKING THE WEAR OF THE BELT CROSS BARS

The steel cross member has a nominal height of 22 mm. Reducing the height below 17 mm will result in a significant decrease in stiffness and excessive deflection. Further operation is not recommended and replacement is appropriate.



### 6.3 REPLACING THE BELTS

Follow these steps to replace the belts:

- 1) Loosen the main spline bolt and the side spline bolts:
  - a) The main spline bolt is at the back under the flap and the side ones from the side.
- 2) Pull the back and front of the horse together:
  - a) Using a chain puller (hupcuc).
- 3) Dismantling the first belt (still leave the second belt on!):
  - a) Dismantling the joint.
- 4) Fitting the new belt:
  - a) Use a small chain puller to pull the new belt.
- 5) Repeat steps 3 and 4 for the second belt
- 6) Splinting the belts

- a) Secure the main spline bolt and the side spline bolt.

**!!! NOTICE !!!**

**Be careful not to remove both belts at once. Use a large gola when flaring the belt. There is a risk of stripping the thread when flaring with an impact wrench.**

**TOOLS: Large gola set, small gola set, large and small chain puller, impact wrench, wrench set, jack, connection bolts.**

**Side flaring bolts have a locking screw.**

## **6.4 CHECKING THE FUEL FILTER**

The filter is located on the fuel line between the fuel tank and the engine. Visually check that there is no water or other contaminants in the filter. If the filter is dirty, replace the filter. Add a small amount of gasoline and check the connections for leaks. If gasoline is spilled on the machine during filter replacement, do not start the machine. Wipe off the gasoline with a dry cloth and wait a sufficient amount of time for the gasoline to evaporate completely from the machine. Remember that gasoline is a volatile substance, so be careful not to accidentally ignite its vapors. For more detailed information, see the appendices in the HONDA engine maintenance manual.

**If you replace the filter, ensure that the old filter is disposed of in an environmentally friendly manner.**

## **6.5 CHECKING THE HYDRAULIC OIL LEVEL**

- 1) Secure the machine so that it is in a horizontal position.
- 2) Unscrew and remove the filler cap.
- 3) Check the hydraulic oil level using the dipstick - see the illustration in chapter 3.1.1  
Checking the condition of the operating fluids.
- 4) Screw the cap back on.

If there is insufficient hydraulic oil, check the hydraulic system for leaks and repair it if necessary, or call a professional service center.

## **6.6 CHANGING HYDRAULIC OIL**

Before changing the oil, start the engine and let it run for at least 5 minutes to warm up the oil in the hydraulic system.

- 1) Unscrew the hydraulic filter cover.
- 2) Remove the filter insert.
- 3) Loosen the two screws on both sides of the hydraulic tanks, which are in the lower part of the frame, and drain the oil.
- 4) Check that the magnetic screws are clean.
- 5) Screw the magnetic drain screws back in.

- 6) On the side of the neck where the filter is inserted, there is a cap for the breather filter; unscrew it.
- 7) Remove the breather filter and check that it is clean.
- 8) Add a sufficient amount of new prescribed oil. Before the new oil reaches all parts of the hydraulic system, its prescribed level may drop (see chapter 3.1.1 Checking the condition of the operating fluids). Therefore, check the amount of hydraulic oil more often and top it up if necessary.
- 9) Insert a new oil filter and breather filter.
- 10) Screw the caps back onto the necks and check the system for leaks.

**Ensure environmentally friendly disposal of old clogged filters and old oil.**

## 6.7 CHECKING THE HYDRAULIC OIL PRESSURE FILTER

The hydraulic oil pressure filter is located in the front under the engine. The filter is equipped with a mechanical-optical contamination indicator. The contamination indicator is located on the top of the filter (red indicator). If the filter is clogged with dirt, the red indicator pops up and the filter must be replaced at the end of the shift.



When starting from cold, the red indicator of the optical clogging indicator may pop out. Do not push the red indicator back in until the operating temperature has been reached. If it pops out again immediately and does not disappear when the operating temperature has been reached, the filter element must be replaced or cleaned at the end of the work shift.

## 6.8 REPLACING THE FILTER ELEMENT OF THE HYDRAULIC OIL PRESSURE FILTER

- 1) Remove the cover
- 2) Check the pressure filter clogging indicator (green x red – clogged filter)
- 3) Disconnect the hydraulic hoses
- 4) Remove the two M10 screws and remove the filter body
- 5) Loosen and disassemble the filter body
- 6) Replace the filter element with the seal
- 7) Reassemble the pressure filter and cover

**Ensure environmentally friendly disposal of old oil and old clogged filter.**

## 6.9 CHECKING ENGINE OIL

Perform the check when the engine is cold..

- 1) Remove the oil dipstick.
- 2) Wipe the dipstick with a clean, dry cloth.

- 3) Reinsert the dipstick.
- 4) Remove the dipstick again and check that the oil level is between the minimum and maximum marks.
- 5) If the engine does not have the required amount of oil, add the specified engine oil to the upper mark.



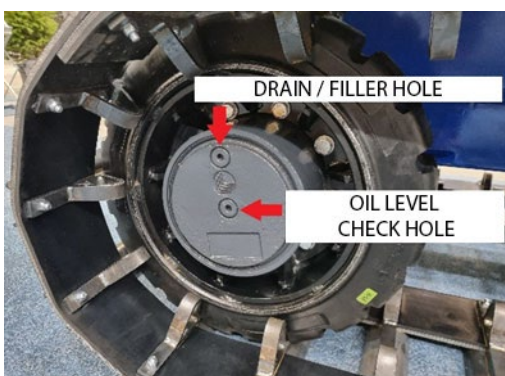
The engine lubrication can be checked using the indicator light on the front of the engine under the tank. If the engine is low on oil or the charging is not working, the indicator light will turn red. If this happens, stop the engine immediately, check the oil level using the dipstick as described above, and add the specified oil if necessary. If the engine lubrication pressure is lost, the engine will stop automatically.

Never start or operate the engine if the machine is low on engine oil or if it is not lubricating, to avoid damaging the engine. For more detailed information on checking the oil, see the appendices in the HONDA Engine Operation and Maintenance Manual.

**If the engine is not lubricating or there is insufficient engine oil, check the engine and its components for leaks and eliminate the problem, or call a professional service center.**

## 6.10 OIL CHANGE IN HYDROMOTORS OF THE TRAVEL

- 1) Stop the engine with the filler hole facing down, unscrew the inspection hole and then the filler hole. Let the oil drain out.
- 2) Turn the engine so that the filler hole is facing up.
- 3) Fill the oil up to the inspection hole. Screw both holes back on.



**Ensure environmentally friendly disposal of old oil.**

## 6.11 CHANGING ENGINE OIL

When checking, the machine must be in a horizontal position, the engine must be turned off.

- 1) Turn off the engine and unscrew the drain plug at the end of the drain hose.
- 2) Drain the oil.

- 3) Replace the oil filter with a new one.
- 4) Pour in the oil specified in the HONDA engine operation and maintenance manual.



**Ensure that the old oil and old clogged filter are disposed of in an environmentally friendly manner.**

The inspection is described in more detail in the HONDA internal combustion engine operation and maintenance manual. For information about the oil, please contact the engine oil manufacturer.

## 6.12 ROPE INSPECTION AND MAINTENANCE

Check the rope for wear daily. Replace the rope if mechanical damage to the rope strands or other serious damage is detected.

- 1) Unwind the rope to its end.
- 2) Turn off the engine and disconnect the battery switch.
- 3) Pull the rope out of the winch drum. The end of the rope is loosely inserted into the hole in the winch drum.
- 4) Install the new rope used by the manufacturer into the winch drum and reinstall the mounting hole cover. Maintain the same dimensions of the new rope as on the worn rope. If you need to find out the dimensions, contact your dealer.
- 5) Start the machine and wind the rope onto the winch drum. When winding, keep the rope under slight tension to prevent irregular winding and the formation of loops on the winch drum.

For more information about the rope, contact the rope manufacturer or dealer.

## 6.13 AIR FILTER INSPECTION AND MAINTENANCE

- 1) Loosen the clips of the protective cover.
- 2) Lift the cover and unscrew the wing nut that holds the filter.
- 3) Remove the filter and clean the foam part every 25 working hours.
- 4) Replace the paper insert once a year, in case of heavy clogging or more often as needed.

The inspection is described in more detail in the HONDA internal combustion engine operation and maintenance manual.

For more information about the air filter, contact the machine manufacturer or air filter dealer.

## 6.14 MACHINE LUBRICATION

Lubrication should be carried out at regular intervals. Use grease according to the performance characteristics: NLGI-2; DIN 515202; KP 2 N-30.

- Every 50 MTH, lubricate the grease nipples of the non-driven wheel bearings with petroleum jelly.
- Every 100 MTH, lubricate the pins of the hydraulic cylinder of the tilting shield.

- Every 100 MTH, lubricate the rope pulleys and guide rollers with liquid grease.
- Every 400 MTH, lubricate all moving mechanisms on the machine except those already mentioned in the maintenance manual.

For more information about lubricants, contact the lubricant manufacturer or retailer.

## 6.15 REGULAR CHECK OF THE REMOTE CONTROL

To ensure a long service life and trouble-free operation of the remote control, we recommend performing regular visual inspections:

- **Check the mechanical condition** – focus on mechanical damage or loose parts.
- Pay special attention to the joystick dust caps – their integrity is crucial for protecting the internal components.

If you find any discrepancies, please contact us immediately. Early intervention can prevent much higher repair costs in the future.

## 6.16 MAINTANCE SCHEDULE

### 6.16.1 Maintenance schedule I

SHORT-TERM MAINTENANCE PLAN									
Action/number of MTH	10	20	30	40	50	60	70	80	90
<b>Interval 8 MTH/daily maintenance</b>									
Cleaning and visual inspection of the machine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning the area around the muffler, rods and springs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking the engine oil level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking all controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking the system for leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking the hydraulic oil level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rope inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning the air filter - external	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Engine oil change	<input type="checkbox"/>								
<b>Interval 50 MTH/weekly maintenance</b>									
Spark plug cleaning					<input type="checkbox"/>				
Cleaning the air filter - internal					<input type="checkbox"/>				
Belt check					<input type="checkbox"/>				
Checking the wheel bolts					<input type="checkbox"/>				
Oil change during heavy load operation or at high temperatures					<input type="checkbox"/>				

**Keep all moving joints lubricated and clean!**

**WARRANTY INSPECTION:** after the first 100 MTH of the machine, a warranty inspection must be performed by an authorized service center!

### 6.16.2 Maintenance schedule II

LONG-TERM MAINTENANCE PLAN										
Action/number of MTH	100	200	300	400	500	600	700	800	900	1000
<b>Interval 8 MTH</b>										
Cleaning and visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking/refilling engine oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking all controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking the system for leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking/refilling hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rope inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning the air filter - external	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Interval 50 MTH (weekly maintenance)</b>										
Spark plug cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning the air filter - internal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Belt check	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking the wheel bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Interval 100 MTH</b>										
Engine oil change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Replacing the motor filter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Replacing the hydraulic filter	<input type="checkbox"/>				<input type="checkbox"/>					<input type="checkbox"/>
Changing the hydraulic oil	<input type="checkbox"/>				<input type="checkbox"/>					<input type="checkbox"/>
<b>Interval 200 MTH (monthly maintenance)</b>										
Setting the spark plug gap		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Cleaning the fuel filter		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<b>Interval 500 MTH (quarterly maintenance)</b>										
Cleaning and adjusting the carburetor					<input type="checkbox"/>					<input type="checkbox"/>
Cleaning the engine head					<input type="checkbox"/>					<input type="checkbox"/>
Valve adjustment *					<input type="checkbox"/>					<input type="checkbox"/>
Replacing spark plugs										<input type="checkbox"/>

Keep all moving joints lubricated and clean!

\* as needed

## 7 TECHNICAL DATA

TECHNICAL DATA OF THE KAPSEN 2R MACHINE			
Basic description	Self-supporting towing machine on a tracked chassis with a folding shield and a winch. It is equipped with an internal combustion engine and two-speed hydraulic motors with negative brakes.		
Power transmission	Hydrostatic		
Chassis	Tracked, polyurethane drive wheels and solid rubber driven wheels		
Belts	Two-piece rubber tracks connected by steel crossbars		
Travel	Powered by two independent two-speed hydraulic motors with negative brakes		
Engine	HONDA IGX 800, two-cylinder four-stroke petrol air-cooled, power 18.6 kW (25 hp)		
Engine oil	Engine oil 5W - 30		
Fuel	Unleaded petrol 95		
Fuel tank capacity	18 l		
Hydrostatic pump	Gear pump		
Max. Pressure	180 bar		
Mains voltage	12 V		
Hydraulic tank volume	37 l	Dimensions	
Hydrostatic oil	VALVOLINE STOU 10W-40	Length	241 cm
Winch pulling force	23 kN	Width	120 cm
Rope length	35 m	Headroom	21 cm
Rope diameter	Rolled steel 6 mm	Belt width	40 cm
Slope accessibility	Cca 35° (according to subsoil conditions)	Height	138 cm
Weight	1202 kg	Height (with arm)	151 cm
Winch	Hydraulic independent drive with one hydraulic motor with a pulling force of 23 kN. The winch drum has a capacity of 35 m of rolled steel rope with a thickness of 6 mm. The winch is controlled by a remote control. The winch can be secured with a latch.		

## **8 LIST OF ANNEXES**

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**8.1 AUTC Remote Control – General Instructions**

**8.2 Honda Engine – Operating and Maintenance Manual**

**8.3 Steel Rope Certificate – EN Certificate 10204-2.1**



## 10 CONTACT DETAILS

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### SALES DEPARTMENT AND COMPANY HEADQUARTERS

REPAROSERVIS spol. s r. o.

Lnářská 907/12

104 00 PRAHA 10 – Uhříněves

Commercial Register at the Municipal Court in Prague, Section C, File 39328

ID No.: 63 99 44 45

VAT No.: CZ63994445

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Website: [www.lesni-technika.cz](http://www.lesni-technika.cz)

Your dealer:

Service:

A large, empty rounded rectangle with a dashed border, intended for the dealer's name and address.A large, empty rounded rectangle with a dashed border, intended for the service location and contact details.A second large, empty rounded rectangle with a dashed border, identical to the one above.A second large, empty rounded rectangle with a dashed border, identical to the one above.