ENGLISH

Hakki Pilke 38 Pro

FIREWOOD PROCESSOR

– Instructions for assembly, operation and maintenance
– EC Declaration of Conformity
– Safety instructions
– Guarantee terms

The operator must read and understand these instructions before operating the machine!

MAASELÄN KONE OY
Valimotie 1, FI-85800 Haapajärvi, Finland
Tel. +358 (0)8 772 7300
info@hakkipilke.fi
www.hakkipilke.fi

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1. General information

1.1. Introduction

The purpose of this manual is to ensure that the machine is used in the manner intended by the manufacturer, taking safety into consideration. Everyone operating the machine or working in close proximity to it must study this manual carefully.

Operators of the machine are expected to have basic skills in tractor handling, such as utilising the cardan shaft drive and the tractor's lifting equipment. Before commencing work, operators must also familiarise themselves with the machine's control and safety equipment, and ensure their proper operation.

Additional information on Maaselän Kone Oy's products is available on our website at www.hakkipilke.fi.
Keep this manual in the immediate vicinity of the machine.

1.2. Purpose of use

The Hakki Pilke 38 Pro firewood processor is designed for preparing firewood from pruned wood or logs. The firewood processor must not be used to process any treated wood, such as is found in construction waste. Sand, nails or other impurities in the wood may damage the machine.

The maximum diameter of the logs to be processed is 38 cm. This limit must not be exceeded. When estimating the diameter of the log you are about to cut, note that the shape of the log and other factors, such as branches and burrs, make the actual diameter larger, and may prevent the log from being fed into the machine. The splitting channel is designed for logs up to 60 cm in length, which should never be exceeded.

1.3. Machine models and basic information

Model	PTO	Combi	
Driving power	Tractor's cardan shaft (PTO)	PTO	Electrical
Weight	990 kg	1060 kg	
TR/Electrical drive	min. 25 hp/max 500 r/min	10 kW (min 25 A fuse)	
Height/width/length	in the transport position 2,500/2,460/1,300 (mm)		
Infeed/outfeed conveyor	2,200/4,000 (mm)		
Saw bar/chain	bar: 16” groove 1.5 mm, chain: 68 loops, pitch 0.325”		
Max log diameter	38 cm		
Max/min length	Firewood max 60 cm; min 22 cm		

The machine’s serial number, date of manufacture, weight, operating voltage (electrically operated machines) and model are indicated on the grey type plate located on the machine frame below the locking latch of the output conveyor, on the right side of the operator.

1.4. Operating conditions

- The temperature range within which the machine can be operated is -20 to +30 °C. In the winter, the operator must ensure that there is no risk of slipping in the working area.
- The working area must be level and clear of unnecessary items. No unauthorised persons are allowed to enter the working area. The machine may only be used in sufficient lighting conditions.
- The machine may not be used indoors.

1.5. Safety instructions

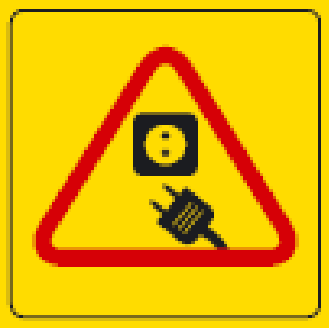
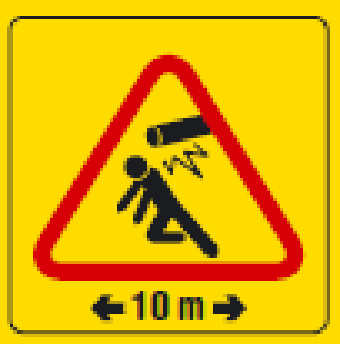
- This device is intended to be operated by only one operator. The danger zone is 10 m from the machine.
- Persons under 18 years of age may not operate the machine.
- The operator must ensure that the use of the device does not cause danger to others and that there are no unauthorised persons in the danger zone.
- The machine must not be operated while under the influence of alcohol or other drugs, or when tired.
- The machine must not be operated unless the operator has familiarised themselves with this instruction manual.
- The machine has been designed solely for making firewood.
- The machine must be placed in the transport position whenever it is moved. When transporting the machine on a public road, it must be equipped with additional lights.
- The operator is not permitted to modify the structure or operation of the machine or remove protective equipment.
- The operator must wear ear protectors, sufficiently tight-fitting work clothing and gloves, protective goggles and safety footwear.
- The operator must ensure sufficient ventilation around the machine. If necessary, respiratory protection must be worn.
- Before starting up the machine, the operator must ensure that the machine and its guards are intact.
- When powering the machine with a tractor, the operator must ensure that the cardan shaft is undamaged and that the selected rpm range is correct. The machine must be attached to the tractor's lifting equipment during operation.
- Before starting up the firewood processor, the operator must ensure that all the control and safety devices are functional.
- When cleaning the machine or carrying out any maintenance, it must be disconnected from its power source.

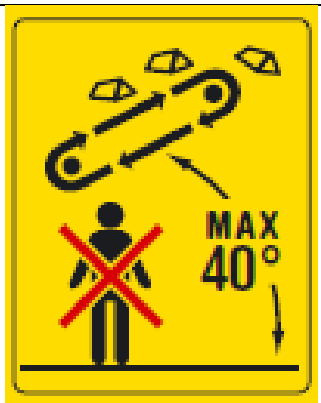
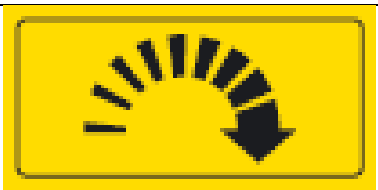
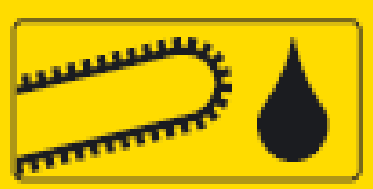
1.6. Noise and vibration

The A-weighted sound pressure level at the working location is 87.0 dB (A), and the sound power level is 98.0 dB (A). The vibration values do not exceed 2.5 m/s2.

1.7. Warning symbols

 *Read the machine's manual before operating the machine.*	 *Wear eye and ear protection.*	 *Wear safety footwear and work gloves.*

 *Do not wear any loose items of clothing.*	 *Always grab the piece of wood or log from the side.*	 *Lifting point for a forklift.*
 *Beware of moving parts.*	 *Beware of the cardan shaft.*	 *Beware of the saw chain.*
 *Beware of the splitting blade.*	 *Only one person may operate the machine.*	 *Disconnect the power supply before any maintenance procedures.*
 *The danger zone around the machine is 10 metres.*	 Risk of crushing	

 *The maximum permitted angle of the conveyor is 40°.* *Do not walk under the conveyor.*	 *The maximum speed for the cardan shaft is 500 rpm.*	 *The rotation direction is in the direction of the arrow.*
	 *Hydraulic oil*	 *Saw chain oil*
 *Danger zone*	 *Lubrication point*	

2. Receipt and assembly

2.1. Delivery inspection

Dispose of the machine's packaging materials in an environmentally friendly manner.
Check that the machine has not sustained any damage during transport, and ensure that all necessary parts are included in the package. In the event of any defects or damage, contact the retailer immediately.

2.2. Lifting and moving the machine

When moving the machine, make sure that the moving and lifting capacity of your tractor or forklift is sufficient for the weight of the machine. Only lift the machine by the indicated lifting points or with the lifting equipment of the tractor.

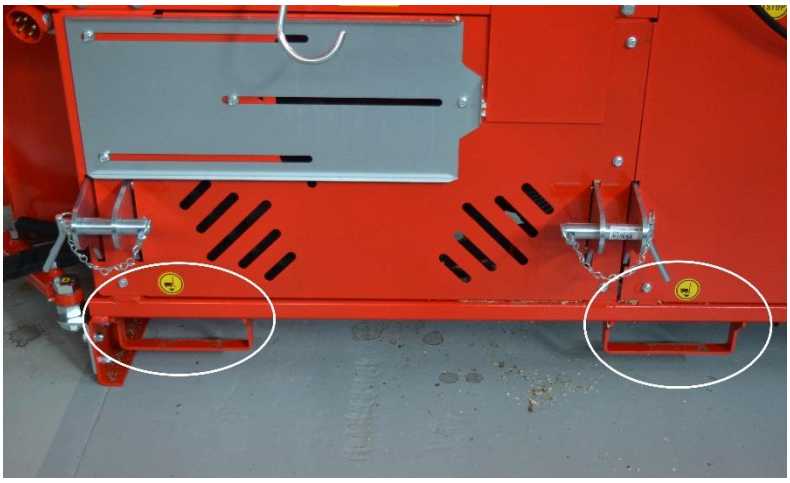


Figure 1. Lifting points of the machine

When connecting the machine to the tractor's lifting equipment, the tractor cabin must be free of people, in order to prevent any accidental contact with the controls. Check all the connecting devices of the tractor and the firewood processor before connecting them. Never use faulty equipment. The pins that are used to connect the pushbars and drawbars to the machine must be of the correct size, and the appropriate locking pins must be used to secure them.

The machine must be placed in the transport position if it is to be moved more than 5 metres. Exercise extreme caution when moving the machine in the operating position. Always lower the machine to the ground when you stop.

Note! Incorrect lifting may cause a hazardous situation or damage the machine.

2.3. Main components of the machine

The Hakki Pilke 38 Pro is a firewood processor with fully hydraulic controls. In other words, all of the machine's functions are controlled hydraulically with operating levers on the machine's control panel. The guard of the cutting and splitting section is interlocked with the machine's operation: opening the guard stops all functions.

A. In-feed conveyor
B. Control unit
C. Cutting and splitting unit
D. Out-feed conveyor

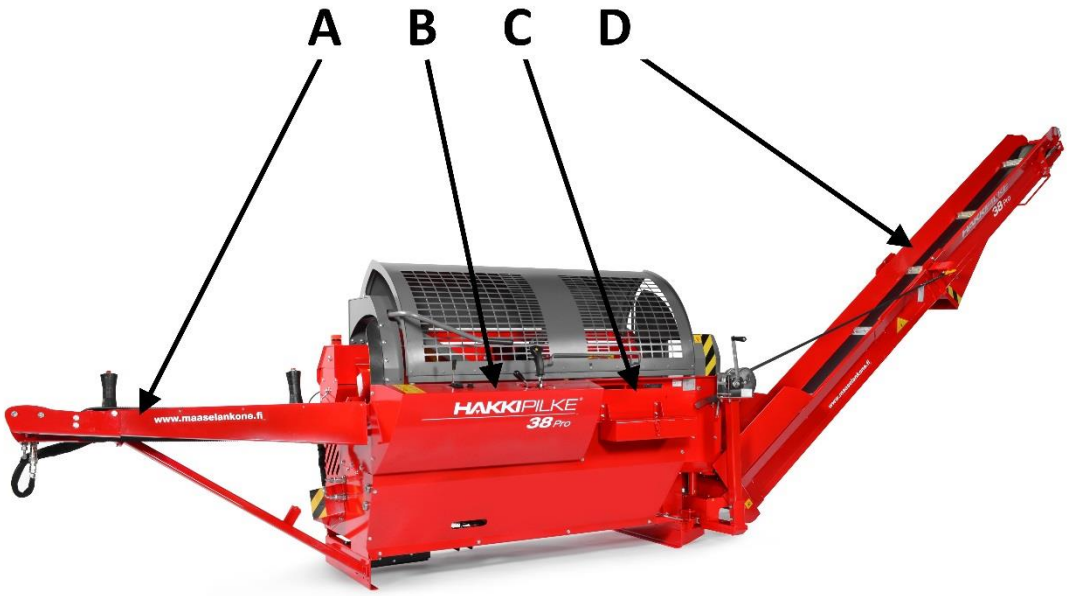


Figure 2. Main components of the machine

3. Control functions and setting up the machine

3.1. Arranging the machine for operation and transport

Before arranging the machine for operation and using it, ensure that the operating conditions, detailed in Section 1.4, are met and review the safety instructions in Section 1.5.

Note! Inspect and clean the machine before rearranging the machine.

3.1.1. Placing the in-feed conveyor in the operating or transport position

Place the in-feed conveyor in the operating position as follows:

1. Ensure that sufficient room is available to lower the input conveyor (approx. 2 m).

2. Release the lock by lifting handle A upward with your left hand. **Note! At the same time, hold the end of the input conveyor with your right hand!**

3. Lower the input conveyor down with your right hand and, at the same time, use your left hand to guide support leg C into slots B, as instructed in Figure 4.

When placing the input conveyor in the transport position, lift the conveyor to the upper position and ensure that locking latch A locks the conveyor, i.e. that lock A is inserted in the slot circled in Figure 3.

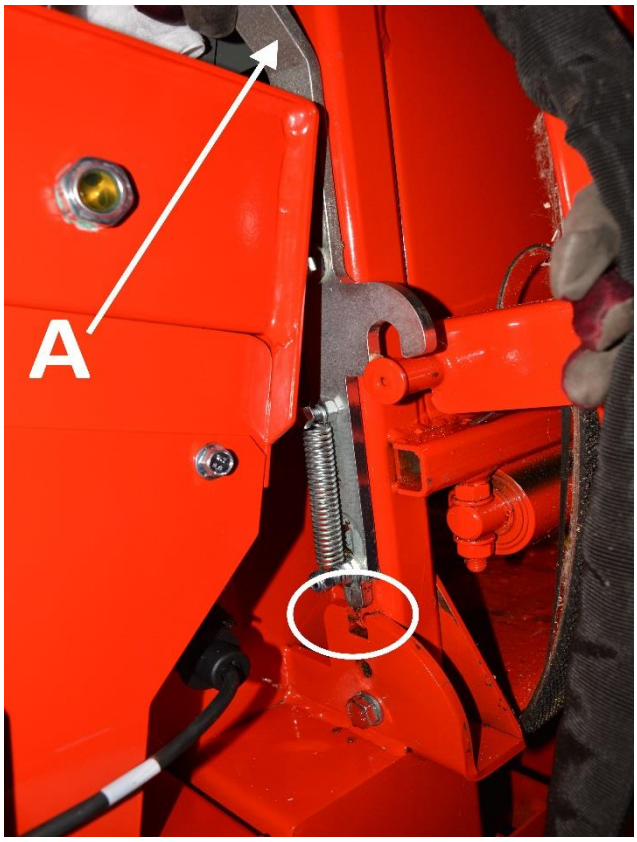


Figure 3.

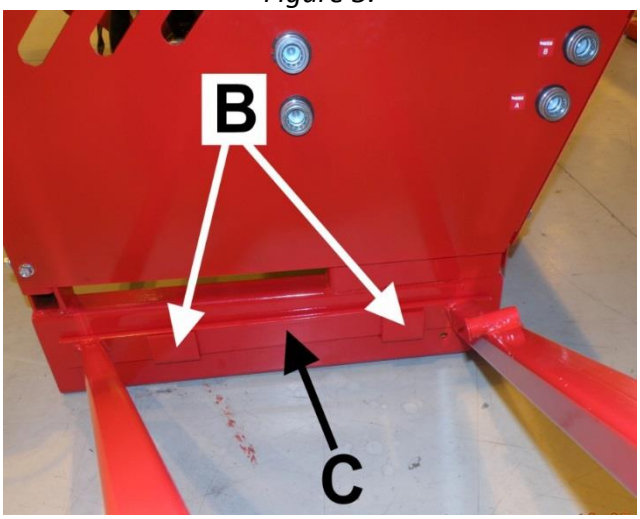


Figure 4.

3.1.2. Placing the out-feed conveyor in the operating or transport position

Place the out-feed conveyor in the operating position as follows:

1. Ensure that there is sufficient room for opening the out-feed conveyor.

2. Turn off the machine.

3. Keep lock A open and lower the out-feed conveyor down with a winch to its lowest position.

   Note! Leave sufficient clearance (approx. 30 cm) for the discharge opening of the conveyor.

4. Turn the upper section of the conveyor to the operating position with handle C at the upper end.

5. Turn the out-feed conveyor's support bar B to the side.

6. Straighten splitting groove guard E into the operating position.

7. Use a winch to lift the conveyor to the desired angle (max 40°), and use lock D on the bottom of the conveyor to lock the upper section of the output conveyor in the operating position.

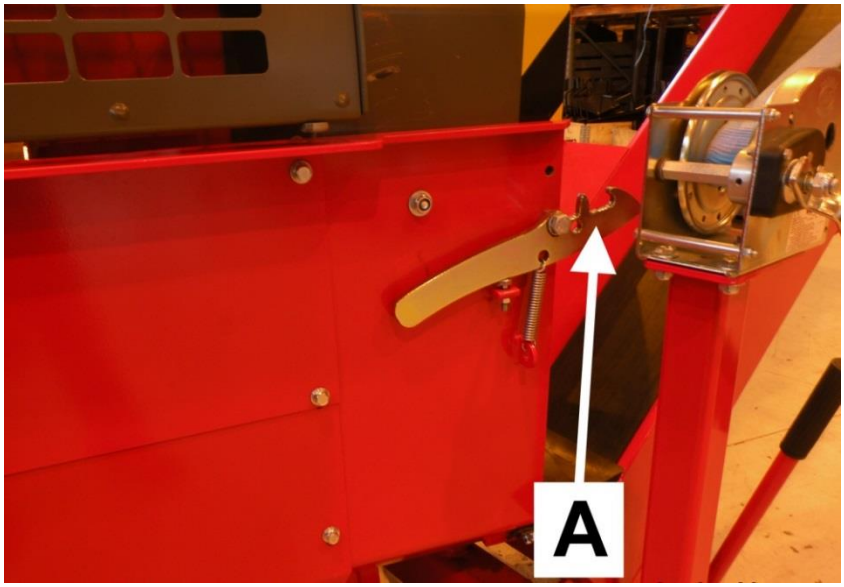


Figure 5.

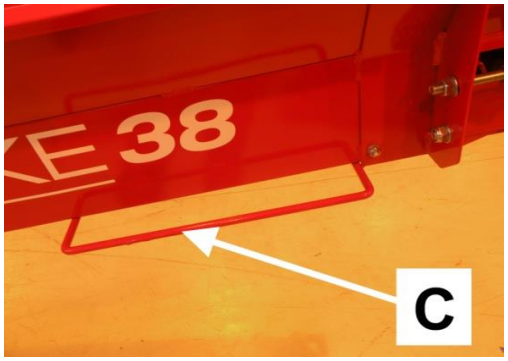


Figure 6.

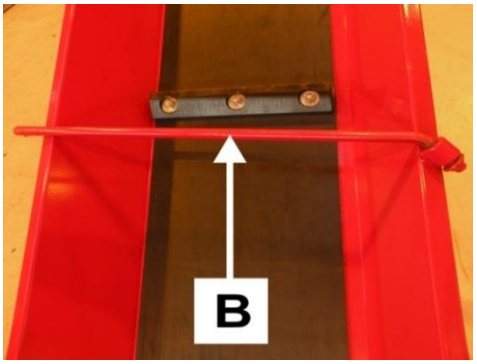


Figure 7.

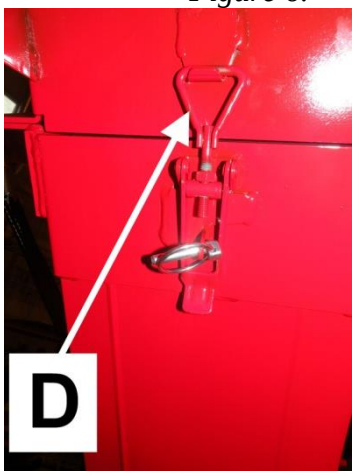


Figure 8.

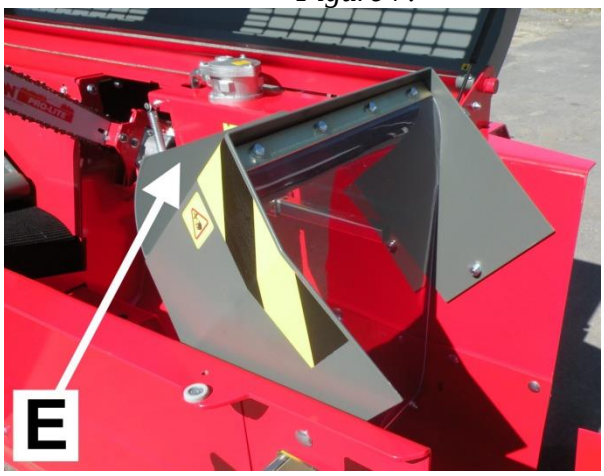


Figure 9.

Place the out-feed conveyor in the transport position as follows:

1. Turn off the machine.
2. Release lock D, which holds the upper section of the conveyor in place, and lower the conveyor to the lowest **possible** position with the winch.
3. Position support bar B over the belt, and fold the upper section of the conveyor onto the lower section with handle C.
4. Turn the conveyor to the middle position. See Section 3.2.4.
5. Turn splitting groove guard E into transport position, as shown in Figure 9.
6. Lift the conveyor with the winch until it locks into the raised position. Ensure that lock A connects firmly.

Note! Do not stand on the out-feed conveyor! Do not use the winch if the rope is worn!

3.2. Controls

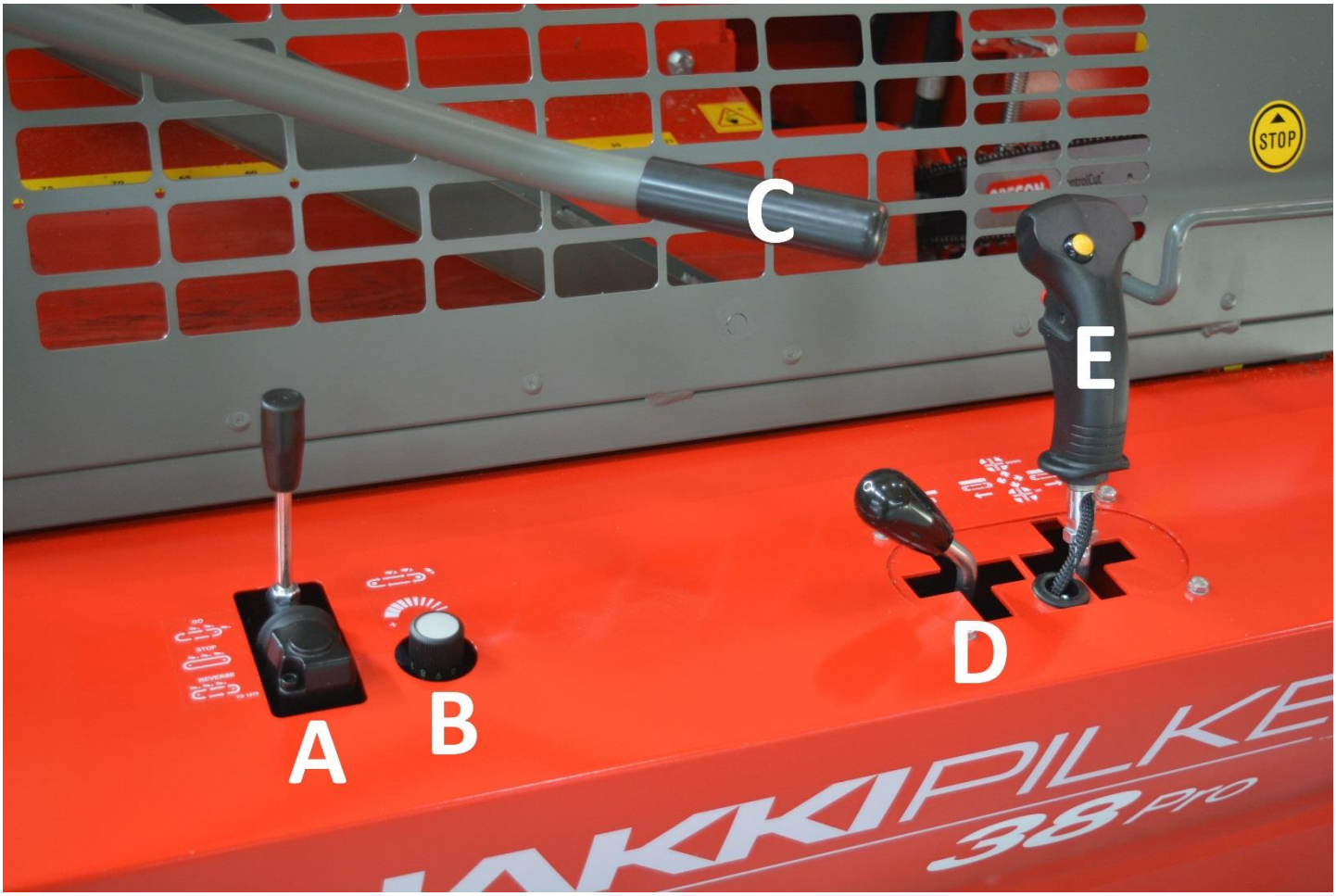


Figure 10. Controls

Operation of the controls in Figure 10

A. Out-feed conveyor belt control valve.
   - Front position causes the belt to move forward.
   - Middle position causes the belt to stop.
   - Back position causes the belt to move backward.

B. Adjustment for the running speed of the out-feed conveyor.
- Turning the knob anti-clockwise increases the speed, and vice versa.

C. Wood gripper handle. With the handle, wood can be pressed against the table during sawing in order to make cutting the wood as safe and stable as possible.

D. Accessory and out-feed conveyer swivel (optional) control valve.

- Lever forwards/backwards: Out-feed conveyor turns
  left/right (optional)
- Lever right/left: Accessory control

E. Joystick for the sawing and splitting functions, splitting blade and in-feed conveyor.

Operation of the controls in Figure 11
- Right/left: In-feed conveyor control
- Button A: Activation for splitting.
- Button B: HakkiCut™ control button for the cutting function.
- Forwards/backwards: Splitting blade is lowered/raised

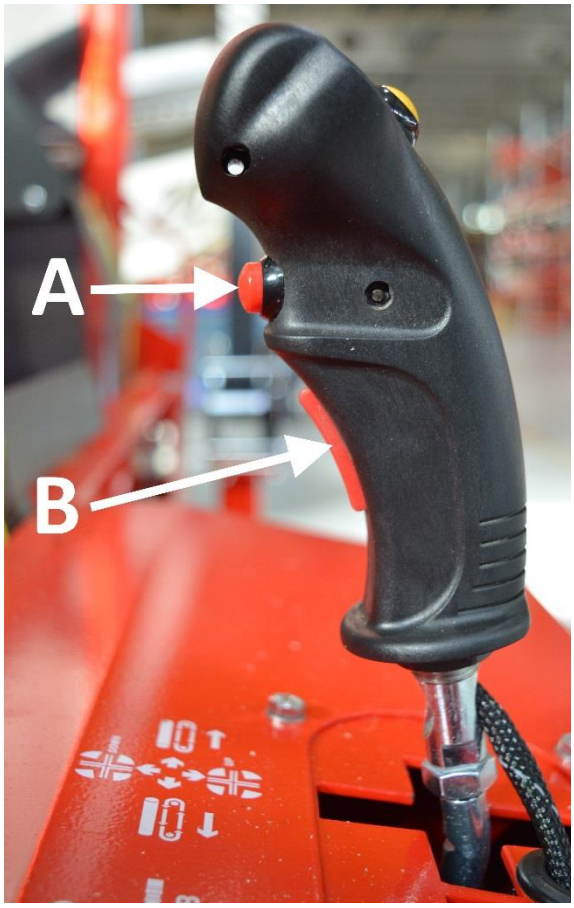
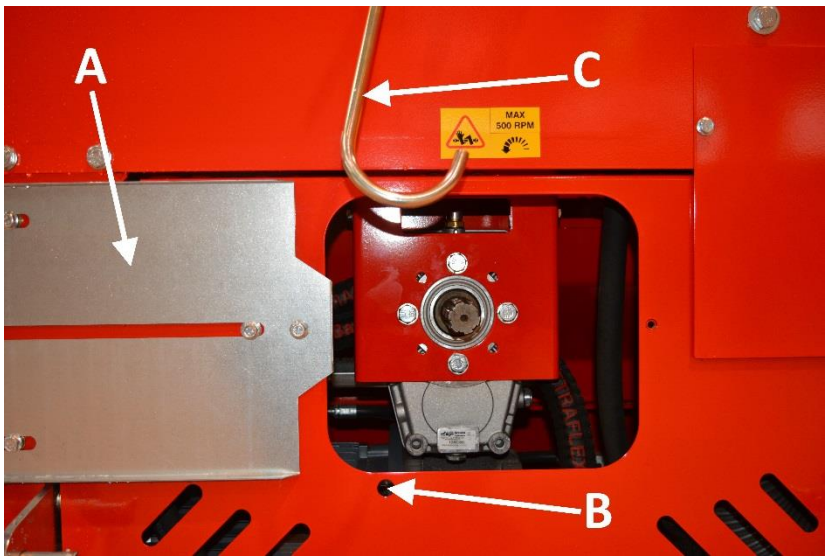


Figure 11. Joystick

3.2.1. Tractor drive

A tractor-powered firewood processor is connected to the tractor's three-point lifting devices and cardan shaft. To connect the combi machine to the cardan shaft, you have to move protective cover A of the socket and multiplier gear into a position where it covers the socket.



Connecting the cardan shaft is a task for only one person. When connecting the machine to the tractor, there must be no one in the tractor cabin, so as to prevent any accidental contact with the controls. Check all the connecting devices of the tractor and the firewood processor before connecting them. Never use

faulty equipment.

Figure 12.

Connect the power cable for the electric controls (in Figure 14) to the 12 V, 3-pin socket for a work machine.

When using the cardan shaft, observe any instructions provided by the manufacturer of the shaft. The machine requires 25 hp of power, which must be taken into account with regard to the capacity of the cardan shaft. A suitable cardan shaft is of power class four. Check that the shaft is properly locked to the splined shaft of the angle transmission. Connect the chain that prevents the turning motion of the guard to hole B. Hang the cardan shaft from hook C when the machine is not being operated and when it is disconnected from the tractor. Finally, ensure that all connections are safe and secure. Never use a damaged or unprotected cardan shaft.

Note! Tractor-powered machines must be attached to the lifting equipment of the tractor.
Note! The starter (Figure 15) only functions when the machine is powered by electricity.

3.2.2. Electrical drive

An electric-powered machine is powered by a 10 kW electric motor. The IP value of the electric motor is 55. The fuse must be at least 25 A. The electrical cable must be at least 5 x 4 mm², recommended maximum length is 30 m. In order to connect the cable at the combi machine, move protective cover B of socket A and the angle gear and secure it into a position where it covers the multiplier gear, as in Figure 13.

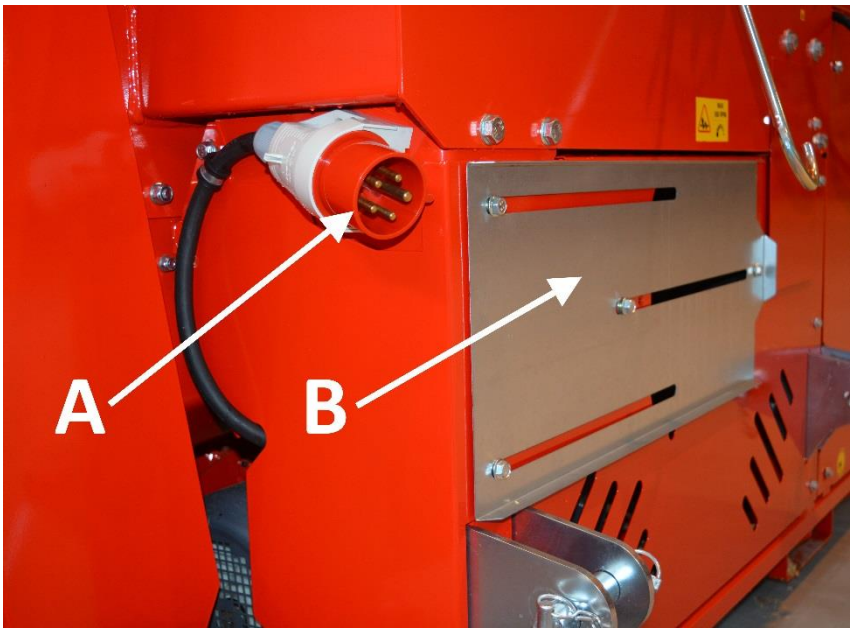


Figure 13. The machine's electrical drive

In an electrically-powered machine, the power cable of the electric control is connected to the socket on the side of the machine.

The machine is activated using the green button of the remote starter on the control panel on the front panel of the machine. If the electric motor rotates in the wrong direction (i.e. the machine makes an abnormal noise and the hydraulic functions are inoperable), the current phase is incorrect. We recommend using an extension cord that allows you to switch the current phase using a phase switch or an adapter.

Note! If the extension cord does not have a phase switch, the electrical work related to changing the phase must only be performed by an electrician.

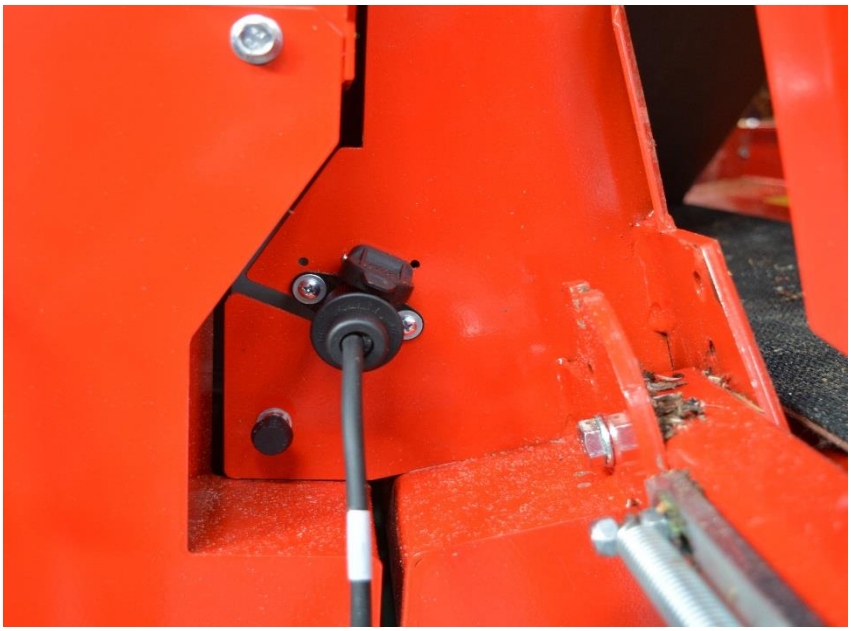


Figure 14. Electrical connector of the electric control device

Figure 15. Starter

3.2.3. Adjusting the log length

The Hakki Pilke 38 Pro is equipped with a mechanical log measurement device with an incremented adjustment value of 22–60 cm.

1. Turn the machine off and open the machine's guard.
2. When the wood limiter is in the splitting position, set it to the desired length by removing cotter pin B in the limiter's locking pin and by pulling out locking pin A. Lock limiter plate C in the desired position. Re-insert locking pin A and cotter pin B.

Note! Turn the limiter plate to the correct position according to the thickness of the log. (See Figures 17 and 18). The wrong position may cause damage to the machine!

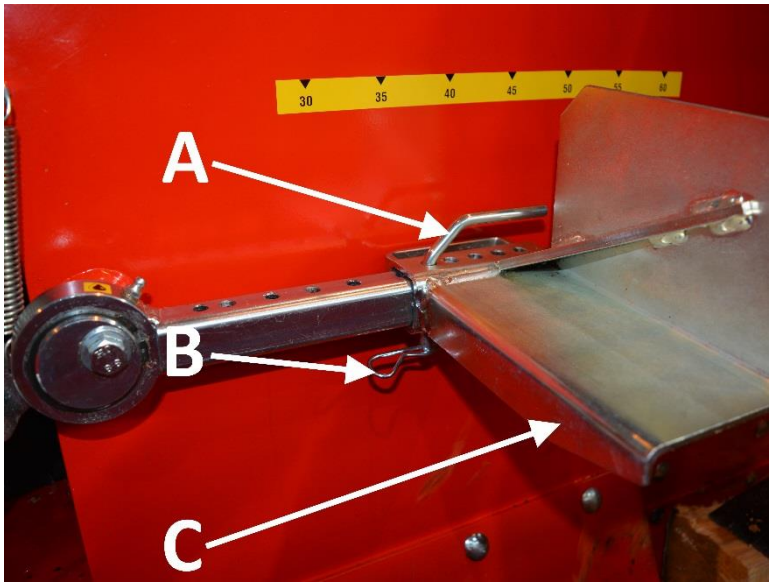


Figure 16. Log length adjustment

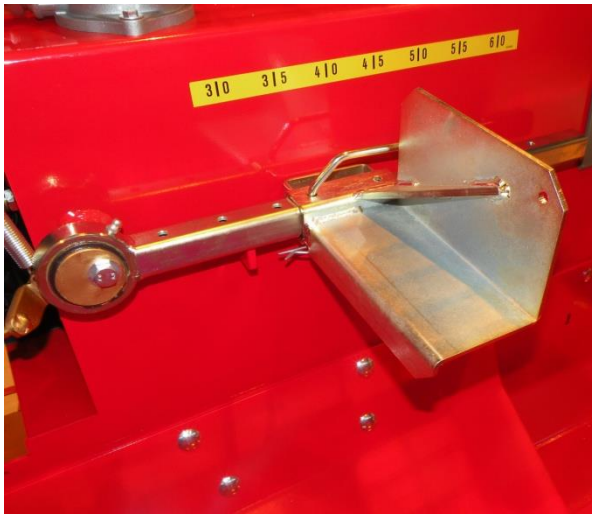


Figure 17. Limiter plate position for large logs of more than 25 cm in diameter


Figure 18. The limiter plate position for small logs

3.2.4. Using the out-feed conveyor

The Hakki Pilke 38 Pro firewood processor's out-feed conveyor belt is driven by a hydraulic motor. To change the speed of the belt, use adjuster B (Figure 10). The following describes how the conveyor can be turned laterally by using turning lever A and handle B:

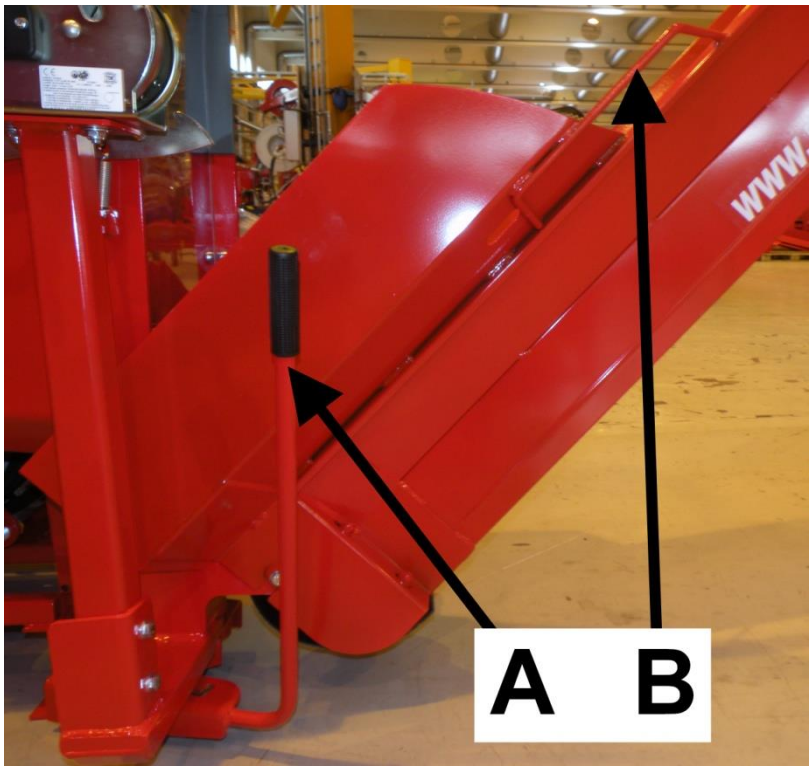
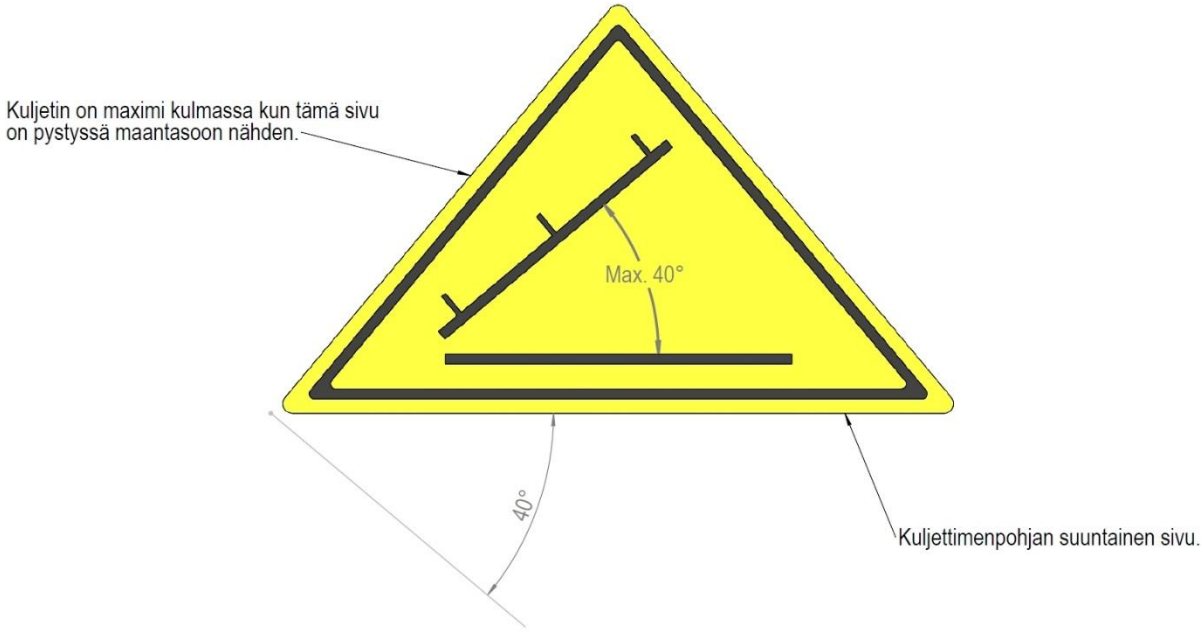


Figure 19.

Release the lock of the conveyor by pushing lever A towards the conveyor, and turn the conveyor to the desired position with handle B.

If hydraulic turning of the conveyor (optional) is available, you can use control lever D (Figure 10) to swivel the conveyer laterally. In other words, **turning the lever forwards swivels the conveyer to the left, and turning the lever backwards swivels the conveyer to the right**.
The maximum operating angle for the out-feed conveyor is 40°. The maximum angle is indicated on the label below and in the instructions attached to the out-feed conveyor.



3.2.5. Splitting blade adjustment

The machine's splitting blade is controlled hydraulically with joystick E (Figure 10) (**forwards => blade is lowered, backwards => blade is raised**). Logs should always be as centred as possible when passing the blade in order to keep the size of the firewood consistent.
The blade can be lowered to the lowest position in one go by raising the blade to the upper position and clearing the space under the blade. The machine must be shut down and disconnected from its power source for the duration of the cleaning.

3.2.6. Using a sawdust removal device

A hydraulic dust collector is available as an accessory for the splitter. It allows you to collect sawdust for other purposes. The sawdust removal device is on when the control valve is open, as in Figure 19b.

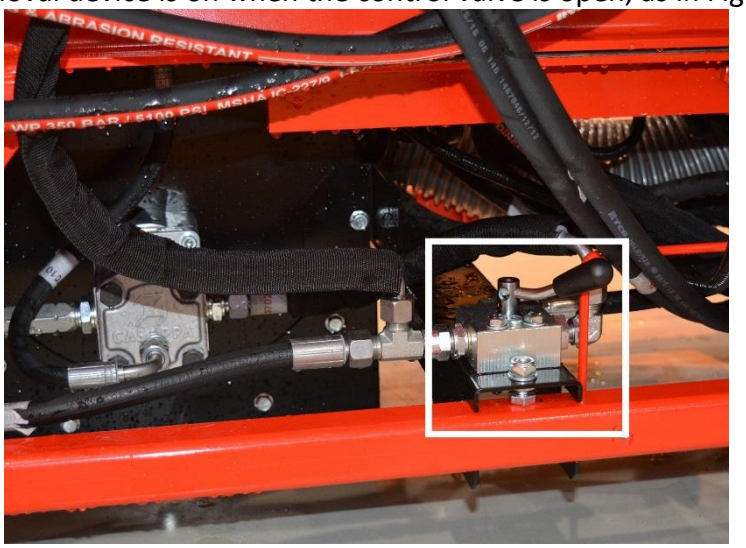


Figure 19b

4. Operating the machine

4.1. Performing a test run on the machine

The machine may not be used before a test run has been performed and all the functions of the machine have been tested. Both the test run and testing can only be performed by a person who has studied the machine's manual.

Before the test run, all of the components of the firewood processor must be checked. If any faults or wear and tear that may affect the safe use of the machine are discovered, the processor must not be used until the faulty or worn component is replaced and safe use can be ensured.

1. Check that the guard for the firewood processor's cutting and splitting section is down.
2. Check that the in-feed and out-feed conveyors are in the operating position.
3. Ensure that the splitting groove is empty.
4. Make sure that you are familiar with the functions of the machine's controls. If necessary, see Section 3.2.
5. Activation.
6. Tractor drive: Insert the connector for the electric control device into the tractor's electrical socket. Start the tractor and connect the power take-off, starting with a slow speed and increasing the speed to a maximum of 500 rpm.

7. Electrical drive: Connect the cable to the socket of the firewood processor, start the machine by pressing the start button and wait until the electric motor operates at full speed.
8. Start the splitting motion by pressing joystick button A (Figure 11). The splitting motion must be normal.
9. Do the following to ensure that the saw chain lubrication functions automatically: (If necessary, see Section 7.0.)
    a. Perform a few sawing cycles without wood by pressing joystick button B (Figure 11).
    b. Turn off the machine and disconnect it from the power source.
    c. Open the guard and see if the saw chain has been supplied with oil.
10. Start the splitting cycle and stop it by opening the cradle guard of the cutting and splitting section.
11. Conduct a test run for the in-feed conveyor's feed and reverse motion with joystick E (Figure 10).
12. Activate the out-feed conveyor using lever A (Figure 10) and adjust the conveyor speed to an appropriate level using control B (Figure 10). Also ensure that lever A stops and reverses the conveyor.

If a fault occurs during the test run, determine the cause of the fault and take remedial action as deemed necessary. The machine must be shut down and disconnected from the power source for the duration of both the diagnostics and repairs.

4.2. Placing logs on the in-feed conveyor

We recommend the use of auxiliary devices, such as the HakkiFeed 422 timber deck. If a timber deck is not attached to the machine, the maximum allowed log length is 4.5 m. Always lift and place wood on the in-feed conveyor in a safe manner that does not put the operator in danger.

Note! Placing logs directly on the in-feed conveyor with a loader is strictly prohibited.
Note! Ensure that the log's centre of gravity stays on the conveyor.

4.3. Feeding and sawing wood

The in-feed conveyor feeds the wood into the firewood processor. Turn joystick E (Figure 10) to the right to feed wood into the machine. The feed can be reversed by turning the joystick to the left.

When feeding wood into the machine, make sure that it does not present a risk of your clothes, hands or other parts getting caught in the machine, due to the shape of the log, for example. Do not use your hand to guide the log into the cutting section. Adjust the wood measuring device to the desired length and make sure that the speed of the out-feed conveyor belt is suitable by adjusting it.

1. Choose the log to process. Note that the maximum log diameter is 38 cm. The knottiness and shape of the log can increase the diameter.
2. Use joystick E to feed the log into the machine with the in-feed conveyor. Turn the lever to the right to activate the feed.
3. When the log stops at the mechanic measuring device for cutting, hold the log in place by placing more pressure on wood gripper lever C (Figure 10).
4. Cut the log by pressing joystick push button B (Figure 11). This activates the HakkiCut™ function: the saw chain starts rotating, the saw chain oil pump performs a pumping cycle and the saw bar moves down at optimal power.
5. Return the saw bar to the upper position by releasing button B (Figure 11). This also stops the saw chain.

4.3.1. Jamming of the cutting blade

If the cutting blade gets jammed in the log, stop sawing and try again on another section of the log. If the cut is misaligned because the bar drags to one side, the degree of sharpness of the saw chain must be checked. A chain that is not evenly sharp will always drag towards the blunter side, which will make cutting a thick log impossible. Also check that the bar is not worn or crooked. On the other hand, sawing with an evenly dull chain is inefficient, and the sawing chain must be sharpened or replaced (see Sections 5.1.1 and 5.1.2).

4.3.2. Sawing the last log

When sawing wood, the second to last piece should be sawn in such a way that the remaining piece is of a sufficient length. This ensures that the log will stay firmly under the wood gripper and that the sawing will be steady and safe. Drive the last log directly into the splitting section, and start the splitting process using joystick button A (Figure 11).

4.3.3. Using the quick couplings of the additional hydraulics

Connect the additional hydraulics (e.g. when using the HakkiFeed 381 log lifter) by pushing the auxiliary device's hydraulic hoses into quick couplings A and B in Figure 20 (in Section 4.3.4). The hose with red marking goes to higher quick coupling (also marked with red colour).

4.3.4. Using the quick couplings of the auxiliary feed rollers

The auxiliary feed rollers can be connected in series with the in-feed conveyor. This way, the rollers are automatically synchronised to operate with the input conveyor when feeding logs using joystick E (Figure 10).

1. Connect the auxiliary feed roller hoses to quick couplings C and D, hose with red marking to higher quick coupling

2. Remove the guard as instructed in the instructions of point 2 of Section 4.4.4.

3. Open cock E (Figure 21) to allow oil to flow to the quick couplings (Figure 20) C and D.

4. Make sure that the rotation direction of the rollers is the same as the conveyor's direction. If necessary, change the connections.

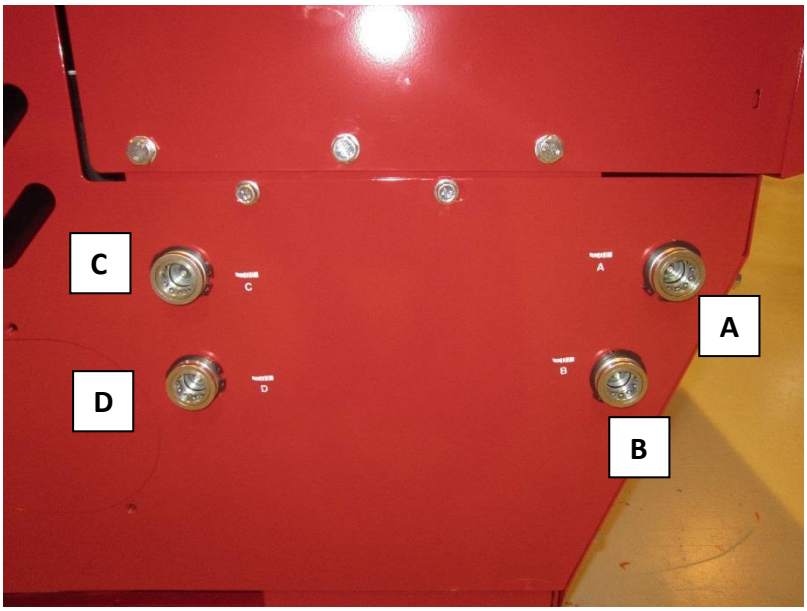


Figure 20.

Note! Cock E must always be turned off (as in Figure 21) whenever quick couplings C and D (Figure 20) are not in use!

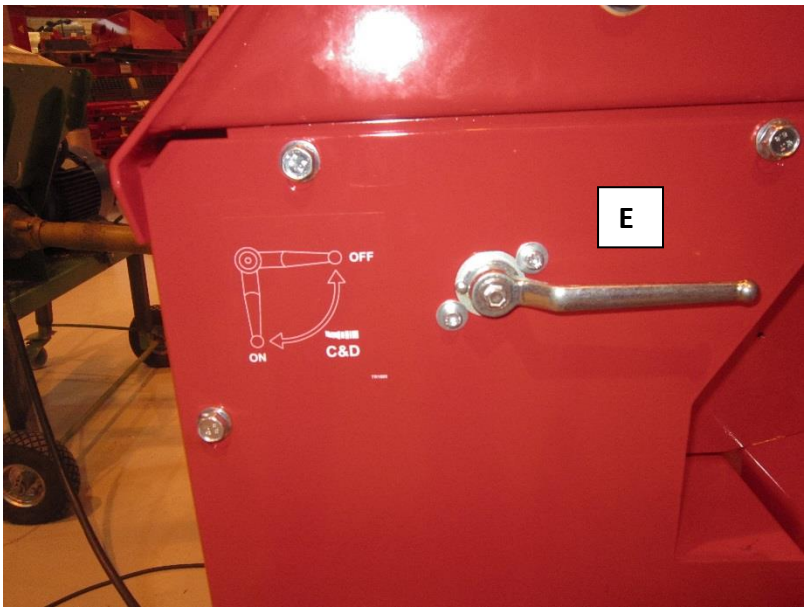


Figure 21.

4.4. Log splitting

The splitting slide of the machine performs a splitting cycle every time button A on the control lever E (Figure 11) is pressed. The splitting function is not available when the machine's cover is open. The splitting cycle can be stopped and reversed by opening and closing the machine's cover.

4.4.1. Jamming of wood on the splitting blade

If a piece of wood gets jammed on the splitting blade in a situation where the splitting force is insufficient to push the piece past the blade despite several attempts to do so, do the following:

1. Return the splitting beam to the initial position by opening and closing the machine's protective cover.
2. Lift the splitting blade to the highest possible position with lever E (in Figure 10) and activate the splitting.
3. If necessary, cut a sufficiently thick piece of wood (approx. 20–25 cm) into the splitting channel and activate the splitting cycle. The new piece will then push the jammed piece past the blade.
4. Lower the blade by approx. 10 cm and repeat step 3. Repeat step 4 until the jammed log has passed the blade, piece by piece.

4.4.2. Resplitting or splitting without cutting

1. Raise the protective cover of the cutting and splitting channel.
2. Place the log you want to split in the splitting channel.
3. Close the protective cover of the cutting and splitting channel.
4. Activate the splitting cycle with button A (Figure 11).

The above procedure can be used to split wood without cutting it, as necessary.

4.4.3. Replacing the splitting blade

Exercise extreme caution when handling the blade, and wear protective gloves.

1. Pull out locking bar A, as shown in Figure 22. Lower the splitting blade to its low position, which releases shaft C from blade slot B.

2. Shut down the machine and disconnect it from its power source.

3. Open the guard and lift the splitting blade out of its slot.

4. Install a new splitting blade by reversing the above steps.

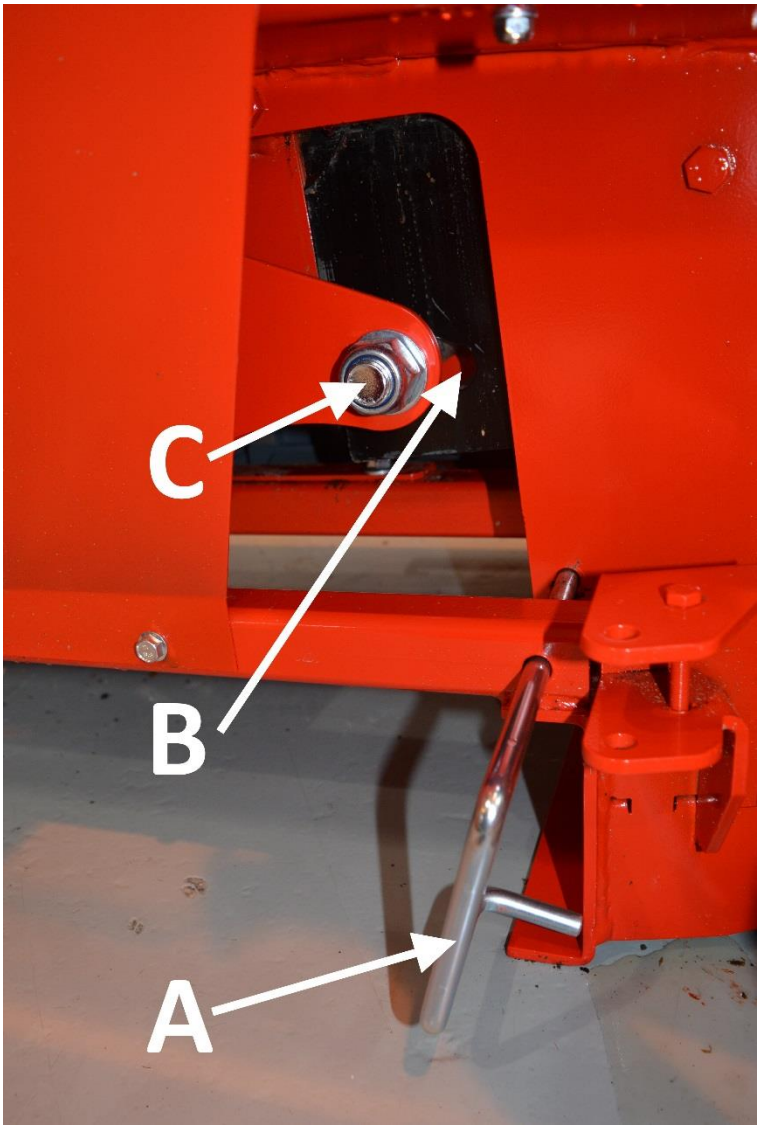


Figure 22. Replacing the splitting blade

4.4.4. Adjusting the stroke length of the splitting motion

In the Hakki Pilke 38 Pro log splitter, the splitting cylinder is controlled electrically by sensors A and C in Figures 24 and 25. The stroke length of the splitting cylinder can be adjusted as follows:

1. Shut down the machine and disconnect it from its power sources.

2. Remove the cover plate shown in Figure 23. Note! The fastening bolts (5 pcs) do not have to be removed completely. Simply loosen the bolts and slide the cover plate so that the bolt heads fit through the hole.

3. Sensor A is used to determine the point at which the splitting cylinder will stop during the reversal motion. If necessary, the position of the sensor can be changed with tightening nut B.

4. Sensor C is used to determine the point at which the splitting cylinder changes direction during the splitting motion, in other words, how close to the splitting beam will the splitting blade go. If necessary, the position of the sensor can be changed with tightening nut D.

Note! The covers and guards must be reattached after maintenance.

Figure 23.

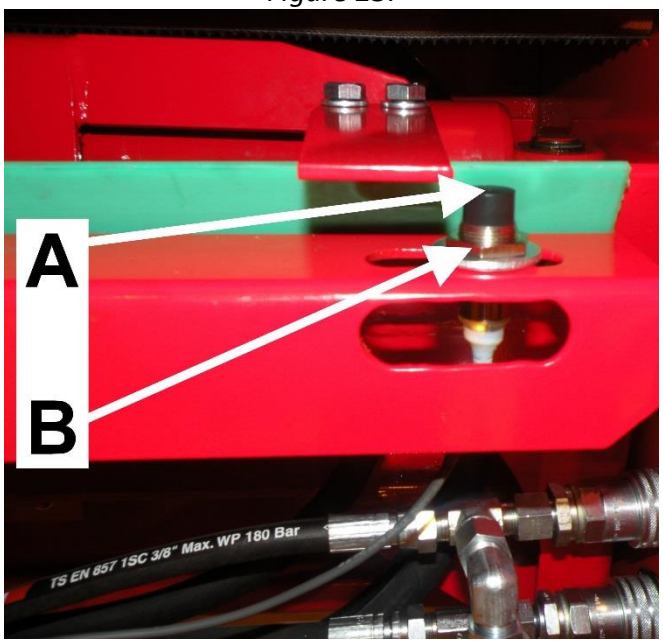


Figure 24.

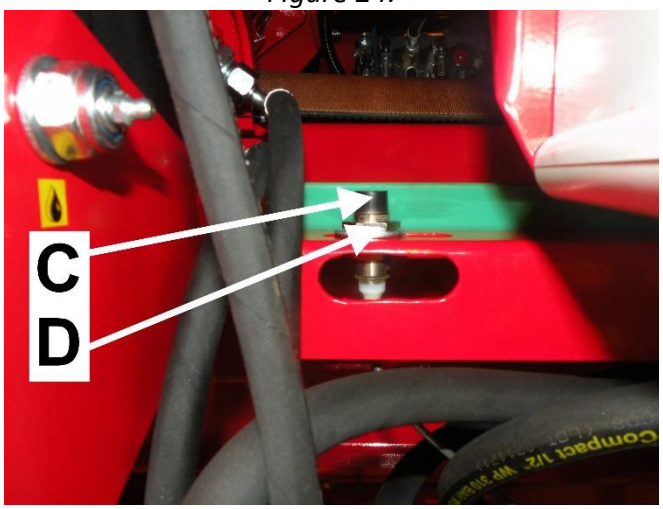


Figure 25.

4.5. Using the out-feed conveyor

The out-feed conveyor can be controlled horizontally and vertically. The safety zone for the out-feed conveyor is 10 metres. When operating the machine, the maximum permitted angle of the out-feed conveyor is 40°. The running speed of the out-feed conveyor can be freely adjusted with adjustment screw B (Figure 10). The standard equipment of the splitter includes an out-feed conveyor reverse valve that allows a jammed log to be easily removed from between the conveyor belt and separation plate C, by reversing the conveyor belt a short distance. You can also stop the belt completely by setting the conveyor control valve A (in Figure 10) to its middle position.

The tension (and alignment) of the output conveyor's belt is adjusted with nuts A (2 pcs) by loosening the adjustment nut on the side to which you wish the belt to run.

The out-feed conveyor is equipped with an automatic debris removal device. It separates debris and sawdust from the processed firewood.

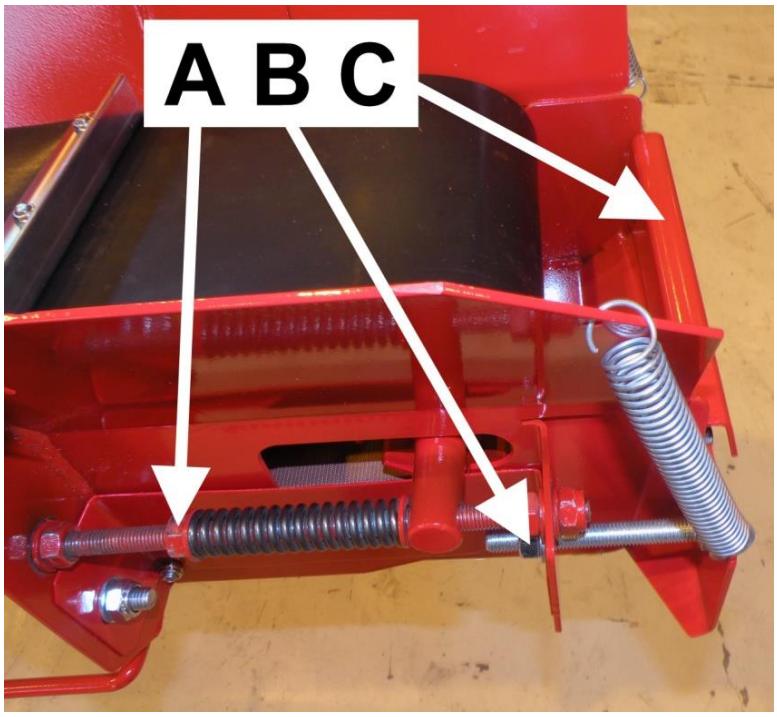


Figure 26.

The following factors significantly affect the operation of the debris removal device: the angle of the out-feed conveyor, the speed of the belt and the distance and height of separation plate C from the upper roller of the conveyor. In other words, the debris separation result is better the steeper the angle (however, no more than 40 degrees), the lower the speed and the longer the distance between separation plate C and the upper roller. The distance of separation plate C is optimised at the factory in conjunction with the testing of the machine. However, the adjustment can be changed, if necessary.

The optimal speed for the belt can be determined by trying different settings. The split logs should only just pass over the plate. The separation plate can be adjusted in the longitudinal direction using adjustment screws B (in Figure 26), and in vertical direction using the bolts at the end of the separation plate.

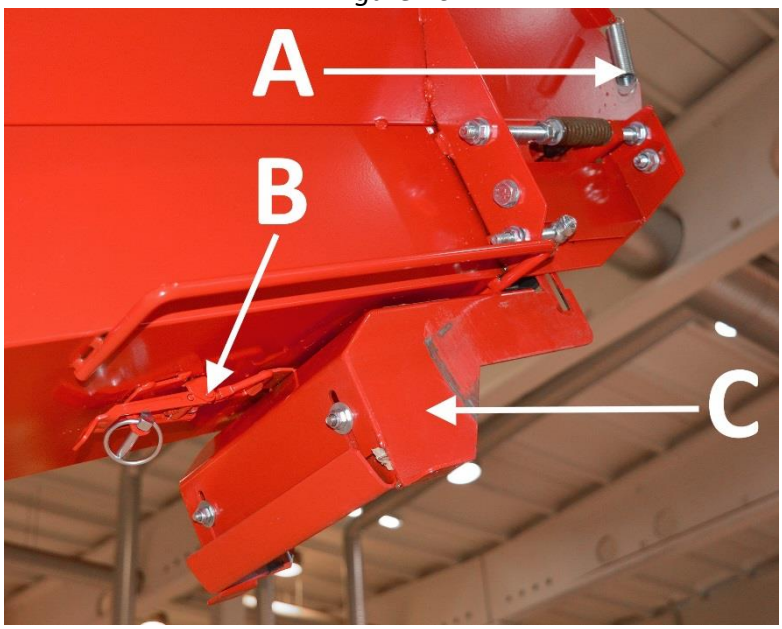


Figure 26a

If necessary, separation plate C can also be disabled (when using the Hakki Pilke Cleaner cleaning drum, for example) as follows:

1. Detach one end of spring A (in Figure 26a, 2 pcs) from separation plate C.
2. Turn plate C to the lower position, as shown in Figure 26a.
3. Lock it in the lower position using latch

B (in Figure 26a).

Note! The operator must ensure that the distance between the debris discharge opening and the pile of debris that accumulates under it is at least 20 cm.

4.6. After use

1. After you have finished making firewood, stop the out-feed conveyor, shut down the machine and remove the firewood from the splitting channel and conveyor.
2. Check that the machine has not been damaged.
3. Place the out-feed conveyor into a position that allows the conveyor and firewood processor to be moved safely off the processed firewood.
4. Clean the machine.

If you will not be using the firewood processor for a while, do the following:

5. As necessary, use your tractor's hydraulics or a forklift to hoist the firewood processor and carefully move it to a location where you can place the in-feed and out-feed conveyors as well as the working platform into their transport and storage positions.
6. Place the conveyors into the transport and storage position.
7. Clean the machine and carry out any maintenance.
8. Store the machine according to the instructions in Section 6.

5. Machine maintenance

The machine must be disconnected from its power source before any maintenance, adjustment, replacement or cleaning measures. Only use spare parts that are supplied by the manufacturer or your retailer. If any guards of the machine have to be removed for maintenance, they must always be reattached before the machine is activated. After maintenance and adjustment measures, a test run must be carried out on the machine, according to the instructions in Section 4.1.

5.1. Cutting blade and drive end

If the cutting blade of the machine does not penetrate the wood properly, cuts it too slowly or the cut is skewed, the saw chain is most likely blunt. It is a good idea to keep a replacement chain on hand, so that you do not need to interrupt your work to sharpen the chain.

5.1.1. Replacing and tensioning the saw chain

The standard equipment of the Hakki Pilke 38 Pro firewood processor includes an AC10 automatic chain tensioner. Using a pressure spring, the AC10 maintains optimal saw chain tension at all times (the spring load pushes the saw motor backwards at an optimal power).

Replace the saw chain as follows:

1. Turn off the machine and disconnect it from its power source.
2. Open the guard.
3. Lower the saw bar about halfway down, as in Figure 27. Note! Use gloves!
4. Using a 17 mm wrench, turn locking part A (in Figure 27) about 90 degrees in the open direction to release the saw chain locking mechanism.
5. Pull the saw chain down to move the saw motor forwards and to loosen the chain, as shown in Figure 27a.
6. First release the saw chain from the drive pulley, then from the bar, then remove the chain.
7. Install the new cutting chain (first on the drive pulley, then on the bar) and ensure that the cutting teeth face the rotating direction.
8. Also ensure that the chain is properly placed on the groove of the bar, and then tighten the chain by turning locking part A (in Figure 27) about 90 degrees to the close direction using a 17 mm wrench.
9. Finally, ensure that the chain is at the correct tension and properly in place.

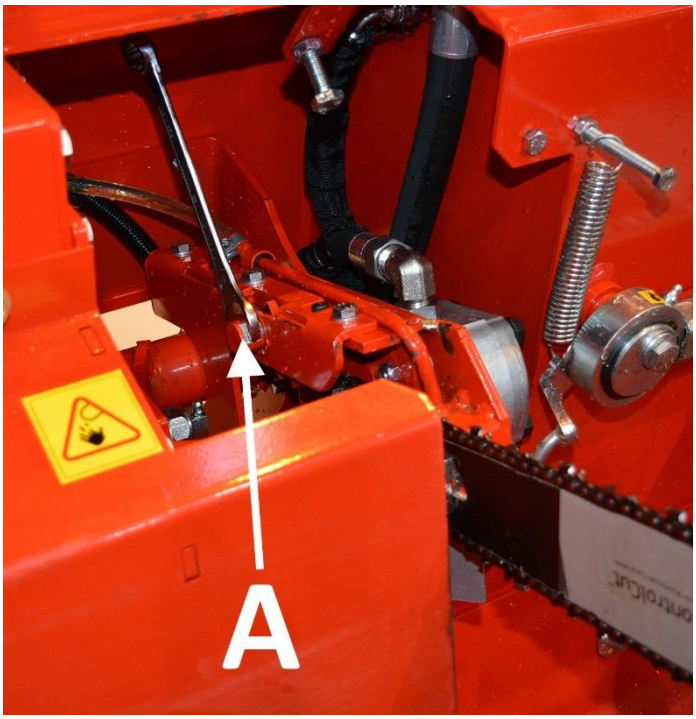


Figure 27.

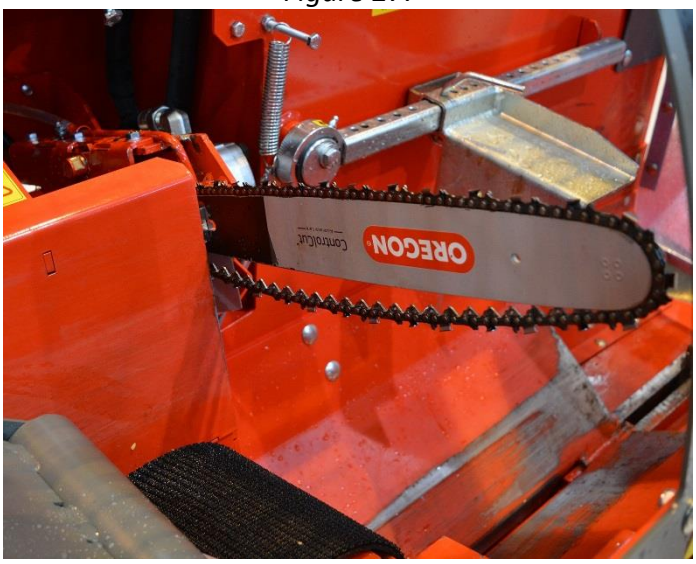


Figure 27a.

10. Fine-tune the tension of the saw chain by loosening bolts A (Figure 27b) and turning adjustment screw B in the open or close direction to loosen or tension the chain. A new chain might stretch considerably during first hours of use.. In this case, you may have to tension the chain manually.

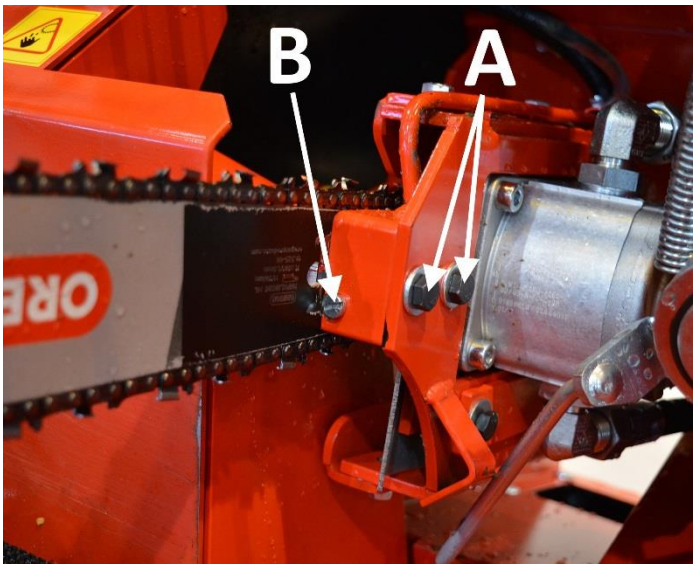


Figure 27b.

5.1.2. **Replacing the saw bar**

Replace the saw bar as follows:

1. Remove the saw chain according to steps 1–6 in Section 5.1.1.

2. Remove the bar bolts (2 pcs) and remove bar fastening plate A.

3. Remove the saw bar from the groove.

4. Place the new flange against gear wheel B, twist it into the groove and loosely attach the flange bolts and fastening plate A.

5. Install and tighten the blade chain according to steps 7–9 in Section 5.1.1.

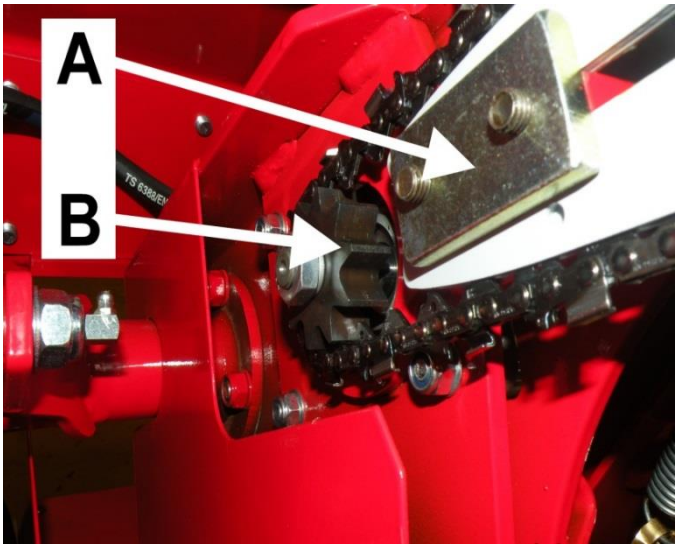


Figure 28.

5.2. Changing the multiplier gear's oil

1. Remove the rear cover of the machine in accordance with the instructions in steps 1–5 in Section 5.3.

2. Open filler cap A (this will allow the oil to drain more easily) and drain cap C and the drain the oil into a suitable container.

3. Close drain cap C and open inspection cap B.

4. Add appropriate oil into the multiplier gear through filling hole A, until the oil surface is level with inspection hole B. Approx. 0,5 liters.

5. Finally, also close caps A and B, and re-install the rear cover of the machine in the reverse order of steps 1–5 in Section 5.3.

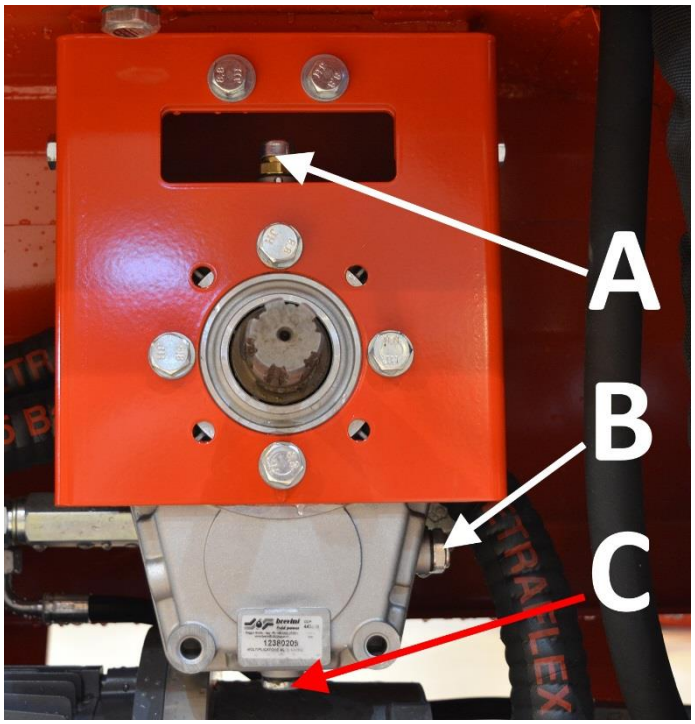


Figure 29.

5.3. Changing the oil

Change the hydraulic oil of the firewood processor as follows:

Note! Select the appropriate oil type according to the type of operation and outdoor temperature. If the electric motor is started at sub-zero temperatures, we recommend using an oil with ISO VG 32 viscosity, maximum oil temperature of 60 °C. In warmer environments, we recommend a viscosity of ISO VG 46, maximum oil temperature of 75 °C.

1. Shut the machine down and disconnect it from its power sources.
2. Remove the rear cover of the machine in accordance with the instructions in steps 1–5 in Section 5.2.

3. Open filler cap A of the hydraulic oil tank (this will allow the oil to drain more easily).

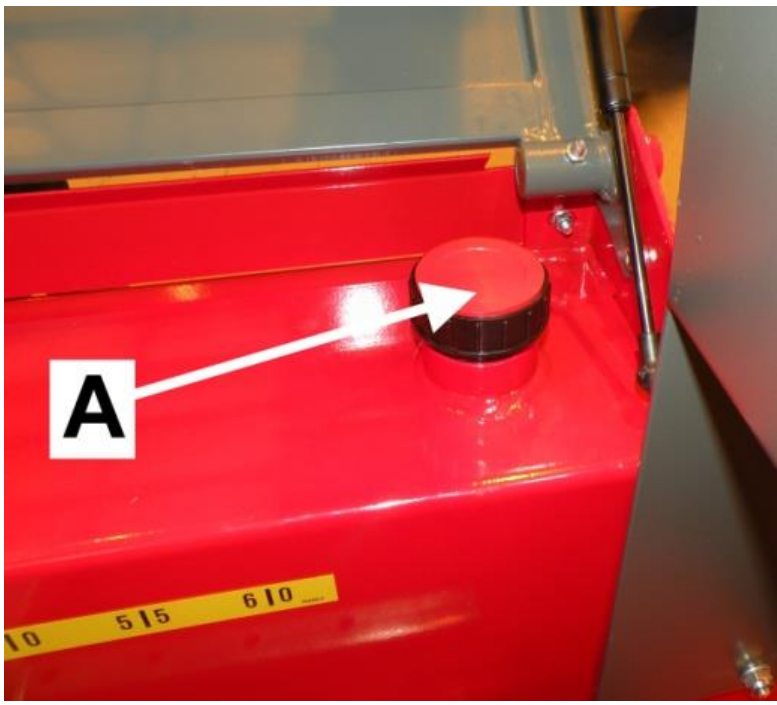


Figure 30.

4. Open drain plug B and drain the oil into a suitable container.

5. Open the cover of hydraulic filter C and replace the filter.

6. Tighten plug B firmly, and fill the tank with fresh oil (approx. 65 litres).

7. Finally, ensure that the oil level settles between the maximum and minimum limits indicated in Figure 33.

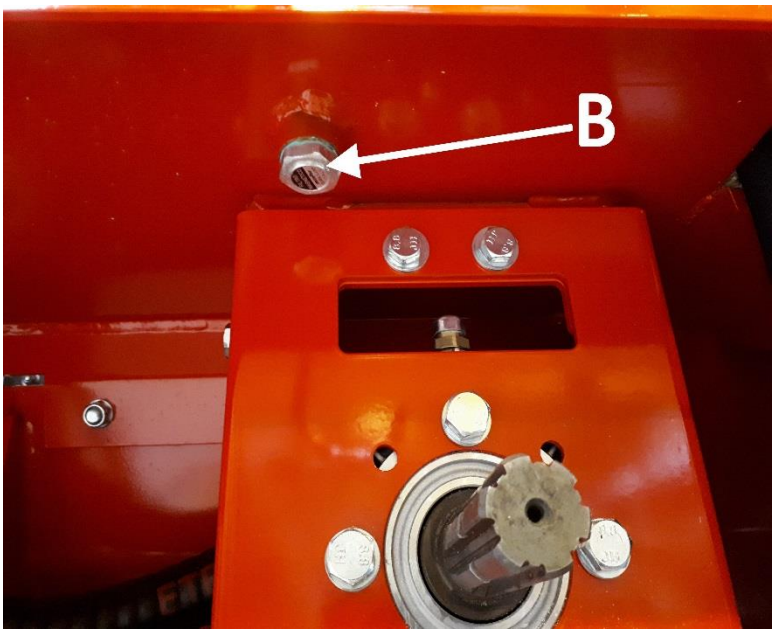


Figure 31.

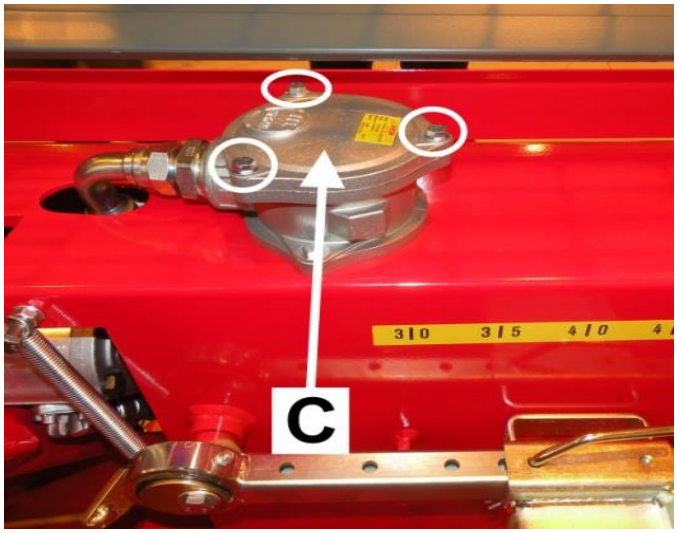


Figure 32.

Figure 33.

5.4. Conveyor maintenance

5.4.1. Replacing and tensioning the in-feed conveyor belt

Replace the in-feed conveyor belt as follows:

1. Shut the machine down and disconnect it from its power sources.
2. Raise and lock the in-feed conveyor into the transport position. (See Section 3.1.1.)
3. Move the belt joint to a suitable height.
4. Disconnect the joint by using, for example, pliers to pull out pin A, which holds the joint together.
5. Remove the old belt.
6. Slide the new belt under the table from the side of the in-feed conveyor's drive roller B until you can pull the belt out from the other end C.
7. Lead the rest of the belt under the wood gripper, around the rear roller and, finally, behind the conveyor.
8. Connect the joint by inserting pin A into the joint.
9. Turn the conveyor back to the operating position and tension the belt.
10. Finally, adjust the belt to the correct tension and to run straight with the help of the adjustment nuts D.

The belt is at the correct tension when its middle section is raised approx. 5 cm when the conveyor is in the operating position. An excessively tight belt may be damaged more easily, and it places unnecessary strain on the conveyor bearings.

Figure 34.

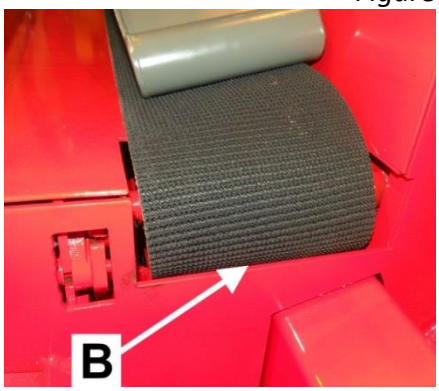


Figure 35.

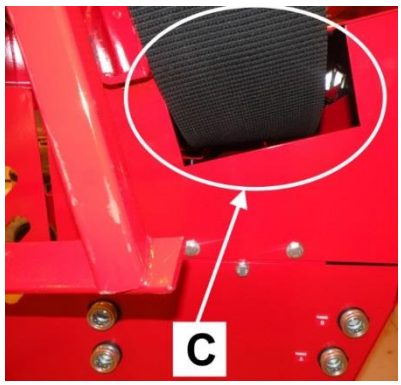


Figure 36.

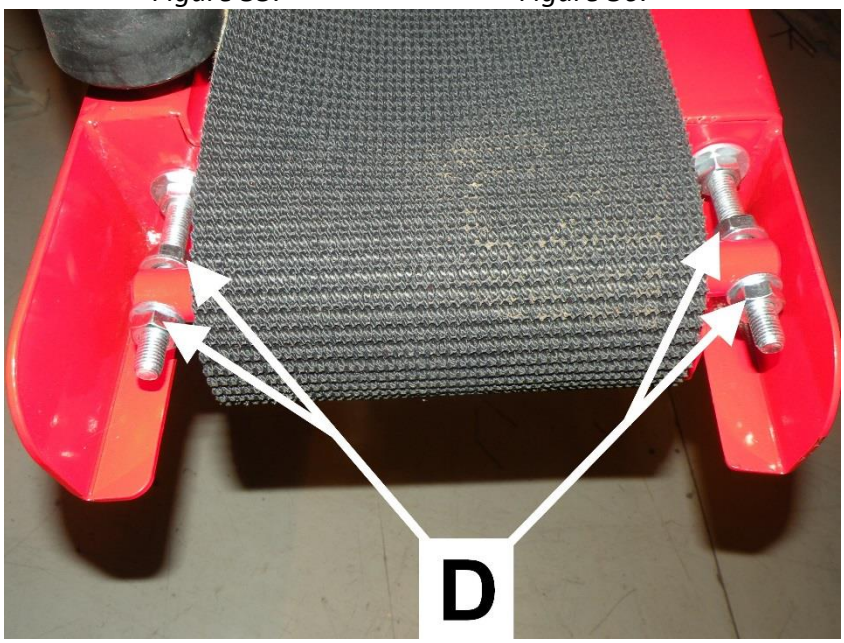


Figure 37.

5.4.2. Replacing and tensioning the out-feed conveyor belt

The instructions for tensioning and aligning the out-feed conveyor are presented in Section 4.5.

Replace the out-feed conveyor belt as follows:

1. Pull out the pin locking the conveyor in place and lower the conveyor to the ground.
2. Shut the machine down and disconnect it from its power sources.
3. Move the belt joint to the start of the conveyor.
4. Fold the conveyor, but do not place the belt support in the transport position. This will allow the belt to hang loose.
5. Disconnect the joint by opening the bolts.
6. Remove the old belt.
7. First, insert the new belt under the folded conveyor (bottom opening) from the end of the conveyor with the plates facing downwards. Feed the belt in until you can pull it out from the other end of the conveyor. Pull out a length of approx. 60 cm.
8. Push the other end of the belt into the upper section of the folded conveyor (top opening) from the end of the conveyor. Feed it in until you can connect the joint.
9. Pull the excess belt to the start of the conveyor.
10. Lower the conveyor back to the operating position and tension the belt.

The belt is at the correct tension when its middle section is raised approx. 15 cm when the conveyor is in the operating position. An excessively tight belt may be damaged more easily, and it places unnecessary strain on the conveyor bearings.

5.4.3. Replacing the out-feed conveyor plates

The out-feed conveyor plates can be replaced by disconnecting the bolt joints (3 x M8) fastening the plates and replacing the plates with new ones. It is recommended that you move the belt into a position that puts the plate to be replaced above the conveyor. Turn off the machine and disconnect it from the power source for the duration of the procedure.

5.5. Lubrication

All of the firewood processor's lubrication points, which require Vaseline, have been labelled. There are 13 lubrication points, presented in the figures below.

1. Grease nipples of the height adjustment device of the splitting blade (2 pcs) in Figure 38. Every 100 hrs
2. Grease nipple of the out-feed conveyor's turning joint (1 pc) in Figure 39. Every 50 hrs
3. Hinged nipples of the guard (2 pcs) in Figure 40. Every 50 hrs
4. Cylinder nipples of the cutting unit (2 pcs) in Figures 41 and 43. Every 50 hrs
5. Grease nipples of the joint of the cutting unit (2 pcs) in Figure 42. Every 50 hrs
6. Grease nipple for the wood measuring device in Figure 44. Every 50 hrs
7. Grease nipple of the infeed conveyor bearing in Figure 45. Every 50 hrs
8. Grease nipples of the outfeed conveyor bearing in Figure 46. Every 20 hrs

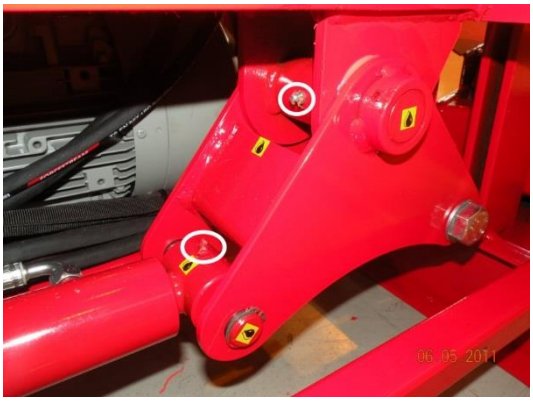


Figure 38.

Figure 39.

Figure 40.

Figure 41.

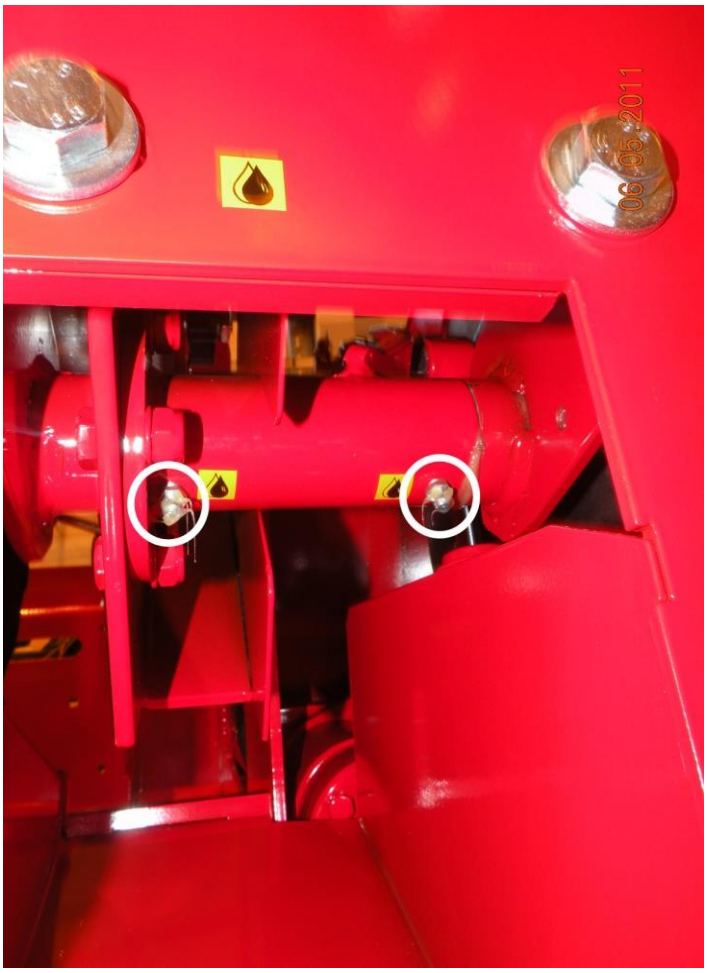


Figure 42.

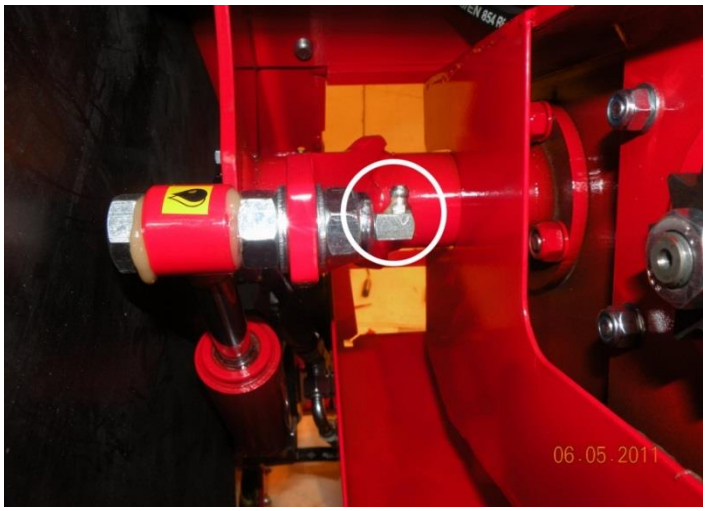


Figure 43.

Figure 44.

Figure 45

Figure 46

5.6. Saw chain lubrication

The saw chain is automatically lubricated whenever it starts to rotate. The pump pressure feeds oil from the tank to the saw chain. Use a hexagonal key and the hole in the frame on the left side of the saw bar to adjust the amount of oil (see Figure 47a).

Add saw chain oil through filler cap A. Oil level gauge B indicates the proper time to add oil. When gauge B is light brown, the oil level is sufficient, but when the gauge is clear, oil must be added (see Figure 47).

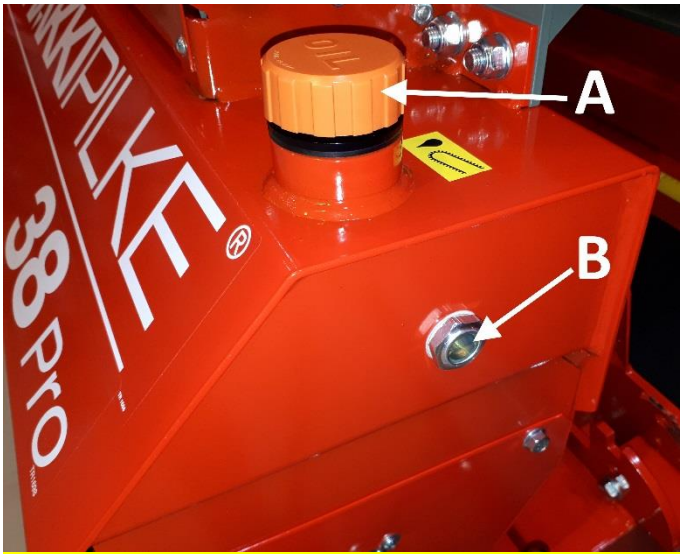


Figure 47.

Figure 47a.

5.7. Solenoid and pressure regulating valves

The machine's cartridges have been adjusted to the correct settings at the factory. The firewood processor's guarantee is void if the factory settings are changed. If you need to change the settings for any reason, first contact the manufacturer or retailer and follow their instructions carefully. Changing the cartridge settings incorrectly may damage the machine or render it hazardous to operate. If the relief valve settings should be changed, do it as follows: loosen the locking nut and tighten or loosen the hex socket screw as needed (when the screw is tightened, the pressure increases and vice versa). Finally, tighten the locking nut. The locations of the relief valves are indicated in the following figures.

The Hakki Pilke 38 Pro machine is equipped with six separate solenoid valves/relief valves that are presented in Figures 48–49 below.

1. Relief valve of the saw bar pressure (ca. 28 bar).
2. Solenoid valve of the saw.
3. Solenoid valve of the splitting function.
4. Speed valve (160 bar).
5. Main relief valve of the small hydraulic pump (250 bar).
6. Main relief valve of the large hydraulic pump (240 bar).

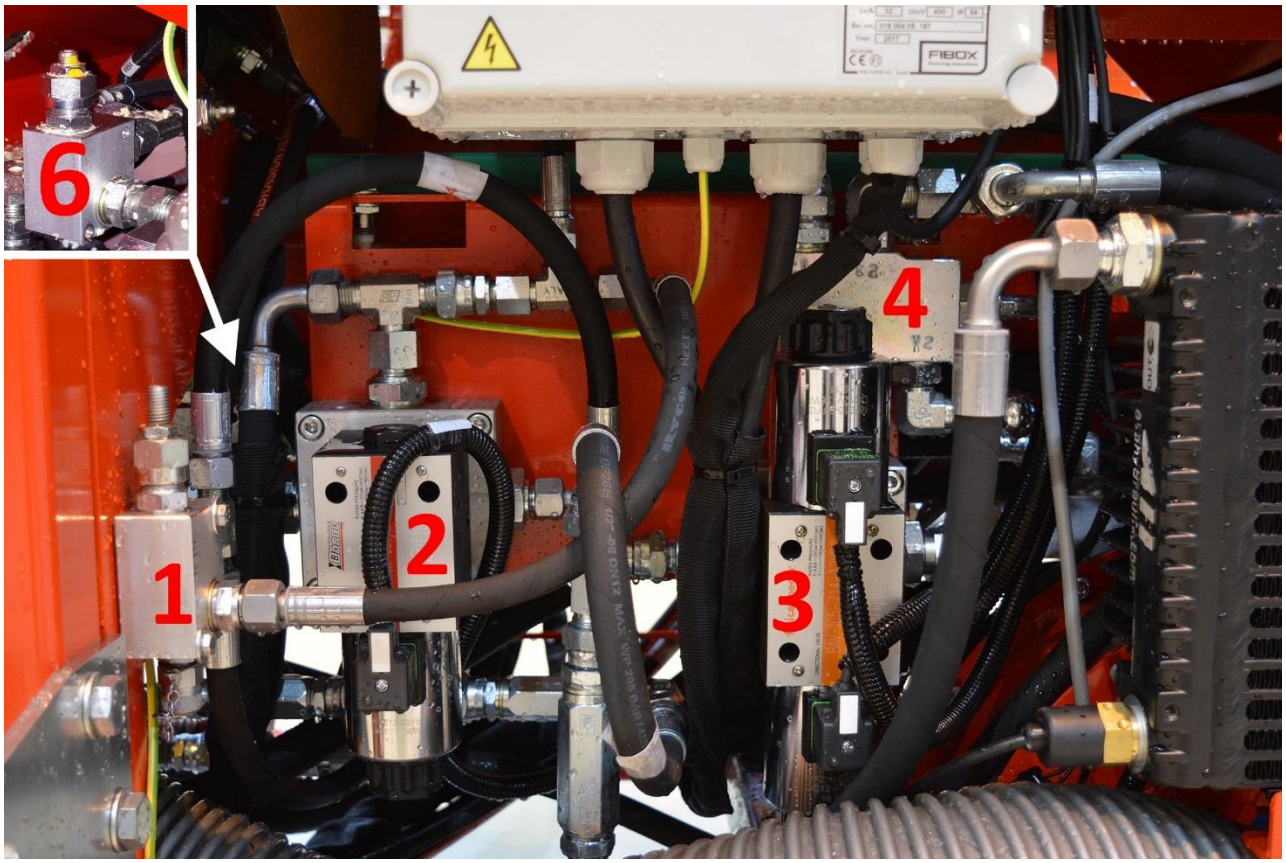


Figure 48.

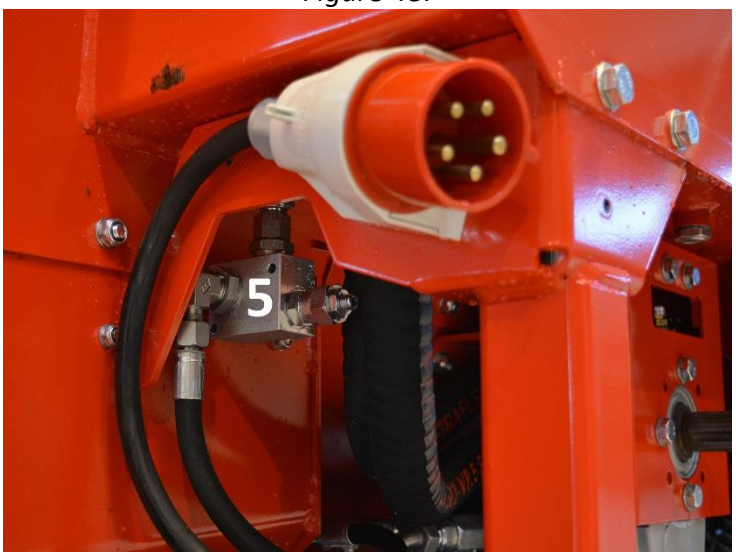


Figure 49.

5.8. Washing and cleaning

Loose debris and sawdust can be cleaned from the machine with pressurised air, for example. The machine can also be washed with a pressure washer, as long as the water jet is not aimed directly at the bearings or electrical equipment.

Always ensure that the machine and the working area are sufficiently clean during operation. The machine must always be cleaned after use. Clean the machine at suitable intervals and always before storing the machine for a prolonged time. After washing, the machine must be lubricated according to the instructions in Section 5.5.

6. Storage

Although the machine is intended for outdoor use, it should be covered and stored in a sheltered location or indoors. Before prolonged storage, the machine must first be cleaned, then washed according to Section 5.8 and lubricated according to Section 5.5.

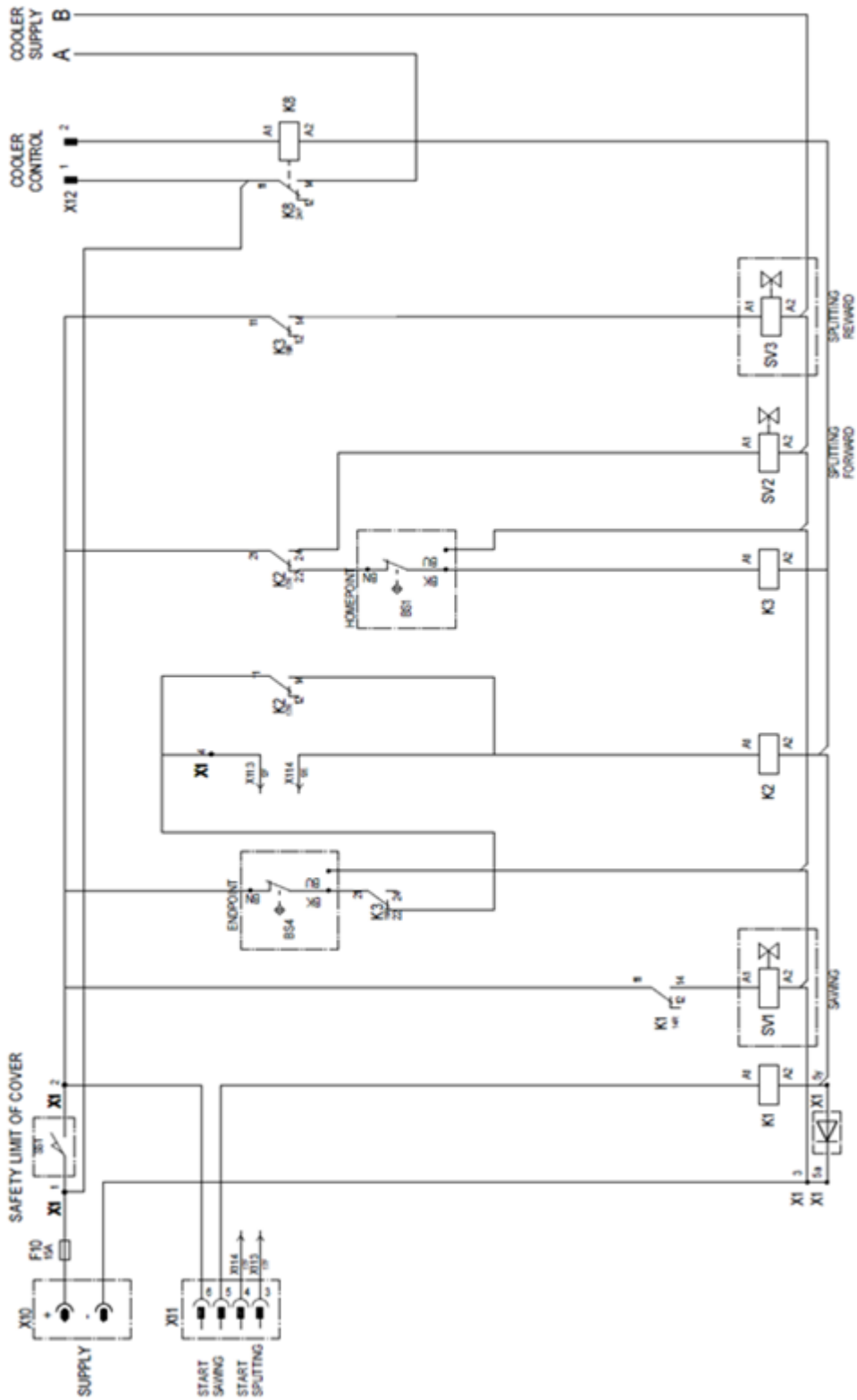
7. Maintenance table

Item	Task	Daily	Interval 100 h	Interval 500 h	Substance/accessory item
Multiplier gear oil	Check 1st change Subsequent		X X	 X	SAE 80/90. 0.34 l
Hydraulic oil Normal conditions	Check 1st change Subsequent	X	 X	 X	Amount approx. 65 l Standard option: ISO VG 32 In hot conditions: ISO VG 46, for example
Oil filter	Always when changing oil				13921107005357 spare part: 97348
All levers	Lubrication		X		Lubrication oil
Saw blade	Sharpen as necessary				0.325” 68/1.5 mm spare part: 95668
Saw bar	Maintenance as necessary				16” 1.5 mm spare part: 95147
Machine	Clean Wash	X			
Electric motor	Clean	X			
Electrical equipment	Clean	X			
Winch and strap	Check	X			

8. Failures and remedial measures

Failure	Cause	Remedial measure
The splitting force is insufficient to split the log.	1. Log sideways 2. Machine overheated 3. Adjustment of the speed valve faulty	1. Remove and replace 2. Check the hydraulic oil temperature in the machine and the filter condition (see Section 5.3). 3. Contact the retailer.
The in-feed conveyor belt does not move.	1. The belt is too loose or is not properly aligned.	1. Tension or adjust the belt according to the instructions in Section 5.4.1.
The output conveyor does not move.	1. The belt is too loose.	1. Tighten the belt according to the instructions in Section 5.4.2. .
The cutting motion does not fully cut the log.	The path of the saw bar is incorrectly adjusted.	Lower the path of the saw bar.
The saw chain does not properly sink into the wood.	1. The saw chain is dull. 2. The saw bar is crooked.	1. Sharpen or replace the saw chain. 2. File the bar to make it straight.
The machine starts but none of the functions work. The machine makes an abnormal noise.	The electric motor runs in the wrong direction.	See Section 3.2.2.
The electric motor does not start.	1. The machine makes a loud noise but does not start. 2. The input cable is faulty. 3. The thermal relay has tripped.	1. The gear fuse has blown. Replace it. 2. Replace the cable. 3. Acknowledge the thermal relay by pressing the red Stop button of the starter behind the machine.
The motor tends to stop, and the thermal relay is easily tripped.	The thermal relay is broken or incorrectly adjusted.	Contact the retailer.
Cutting blade will not start rotating	1. The machine guard is open. 2. 12 V power cable is not connected.	1. Close the guard. 2. Connect the power cable.

9. Electrical diagrams



10. Guarantee terms

“Guarantee terms come into force when registered as a customer on the extranet service on our website.”

The guarantee is valid for the original buyer for 12 months, starting from the date of purchase, but for no more than 1,000 operating hours. In guarantee matters, always contact the machine’s seller before undertaking any procedures.

A guarantee claim must be issued to the seller in writing **immediately** upon discovery of a defect. If the defect concerns a damaged part or component, please send a photograph of the damaged part or component to the seller, if possible, so the fault can be identified. When submitting a guarantee claim, the buyer must always include the type and serial number of the machine in the claim and present a receipt that includes the date of purchase. Guarantee claims must be submitted to an authorised retailer.

The guarantee covers

- Parts damaged in normal use due to faults in the material or workmanship.
- Reasonable repair expenses in accordance with the agreement between the seller or buyer and the manufacturer. Faulty parts will be replaced with new ones. A faulty part or parts replaced due to a material fault must be returned to the manufacturer via the retailer.

The guarantee does not cover

- Damage caused by normal wear and tear (such as blades and belts), improper use or use contrary to the instruction manual.
- Damage caused by negligence of maintenance or storage procedures detailed in the instruction manual.
- Damage caused during transport.
- Cutting blades, V-belts and oil as well as normal adjustment, care, maintenance or cleaning procedures.
- Defects in a machine to which the buyer has carried out or commissioned structural or functional changes, to the degree that the machine can no longer be considered equivalent to the original machine.
- Other potential costs or financial obligations resulting from the procedures mentioned
- above.
- Indirect costs.
- Travel costs resulting from guarantee repairs.
- The guarantee for parts replaced during the guarantee period of the machine expires at the same time as the machine’s guarantee.
- The guarantee is void if the ownership of the machine is transferred to a third party during the guarantee period.
- The guarantee is void if any of the machine’s seals have been broken.

If a fault or defect reported by the customer is found not to be covered by the guarantee, the manufacturer has the right to charge the customer for the troubleshooting and possible repair of the fault or defect in accordance with the manufacturer's current price list. This guarantee certificate indicates our responsibilities and obligations in full and it excludes all other responsibilities.

EC Declaration of Conformity for the machine

(Machinery Directive 2006/42/EC, Appendix II A)

Manufacturer: Maaselän Kone Oy
Address: Valimotie 1, FI-85800 Haapajärvi, Finland

Name and address of the person who is authorised to compile the technical file:

Name: Timo Jussila Address: Valimotie 1, FI-85800 Haapajärvi, Finland

The aforementioned person assures that

Hakki Pilke 38 Pro firewood processor Serial number: ……

- is compliant with the applicable regulations of the Machinery Directive (2006/42/EC).

Location and date: HAAPAJÄRVI 7.11.2017

Signature:

Anssi Westerlund
Managing Director