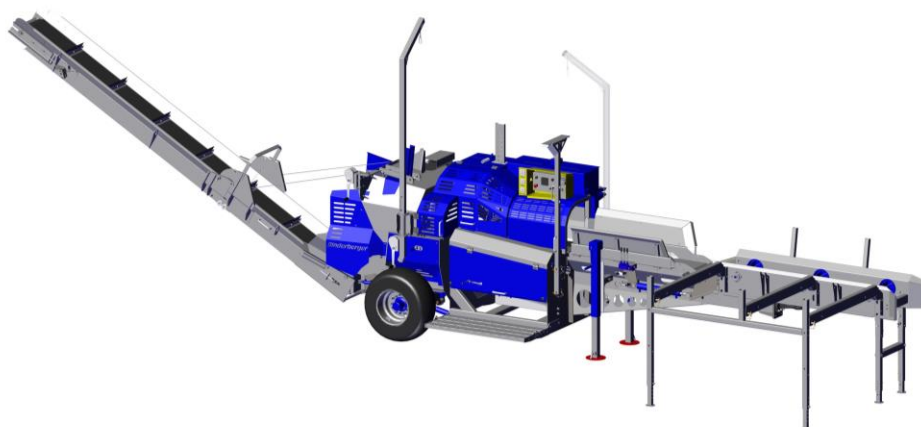


Firewood-Processor SSP450-Pro



Original Operator's Manual Copyright by Binderberger GmbH



Read the operating instructions carefully before
commissioning the machine!

This manual is valid for:

Model	Article number
SSP450-Pro D	SSP-M45-2
SSP450-Pro E	SSP-M45-3

Version of this manual: 1.0

Creation date: 2021-02

Table of Content

1	EC Declaration of Conformity	6
2	Safety instructions	7
2.1	Explanation of symbols	7
2.2	Pictograms and their meaning:.....	8
2.3	Keep information available	9
2.4	General safety instructions	9
2.5	Intended use	9
2.6	Operator's duty of care.....	10
2.7	Operator requirements.....	11
2.8	Maintenance and servicing personnel.....	11
2.9	Modifications to the machine.....	12
2.10	Environmental Protection.....	12
2.11	Misuse and residual risks	12
3	Overview	13
3.1	How it works	13
3.2	Overview	14
3.3	Part description.....	15
3.4	Technical data	16
3.5	Equipment.....	17
4	Transport of the machine	18
4.1	Safety instructions during transport.....	18
4.2	Transport	18
4.3	Transport journeys and journeys on public roads	19
5	Set up of the machine	20

5.1	Safety instructions for set up.....	20
5.2	Duties before starting work.....	21
5.3	Electrical supply line	21
5.4	Check direction of rotation of the motor	22
5.5	Switch on Battery main switch	22
5.6	Bringing the machine into working position.....	23
5.7	Unfold the feeder	24
5.8	Unfold the footboard.....	25
5.9	Support frame.....	26
5.10	Attachment cross conveyor	26
5.11	Bringing the outfeed conveyor into working position.....	27
6	Operation	28
6.1	Safety instructions during operation	28
6.2	Important notes during operation.....	30
6.3	Reverse the direction of the log feeder.....	31
6.4	Safety circuit	31
6.5	Reading the pressures of the hydraulic system.....	32
6.6	Height adjustment of the splitting wedge	33
6.7	Setting the log length using the fixed stop.....	34
6.8	Changing the splitting wedge	35
6.9	Half splitting function	36
6.10	Harvester head	36
6.11	Adjusting the chain tension pressure	37
6.12	Adjust the pressure limiting valve	38
6.13	Changing the chain	38

6.14	Replacing the guide bar	39
6.15	Chip ejection	40
6.16	50cm Extension	40
7	Shutdown	41
7.1	Safety instructions for the shutdown procedure	41
7.2	Switch off the drive.....	42
7.2.1	Diesel-engine	42
7.2.2	Electric drive	42
8	Servicing.....	43
8.1	Safety instructions during servicing.....	43
8.2	Important instructions during servicing	45
8.3	Notes when working on electric equipment	46
8.4	Notes when working on hydraulic equipment	46
8.5	Duties before finishing maintenance.....	47
9	Maintenance	48
9.1	Safety instructions during maintenance.....	48
9.2	Cleaning	49
9.3	Daily maintenance work	49
9.4	Check chain-oil level	50
9.5	Maintenance work every 250 hours.....	50
9.6	Lubrication points	51
9.7	Sharpening the saw chain.....	52
9.8	Oil change	54
9.9	Changing the oil filter.....	55
9.10	Changing the hydraulic hoses	55

9.11 Adjusting the pusher-sensors 56

10 Help in case of malfunctions 57

 10.1 Safety instructions 57

 10.2 Troubleshooting 58

11 Guarantee and Warranty 60

12 Conduct when dealing with accidents 60

13 Notes 61

1 EC Declaration of Conformity

We hereby declare that the various technical versions of the machine:

Designation: _____
Type: SSP450 Pro
Serial number: _____

comply with the provisions of the Machinery Directive 2006/42 / EC and the other related standards.

The machine mentioned meets the requirements of the EMC Directive 2004/108 / EC and the Low Voltage Directive 2006/95 / EC.

The accompanying safety regulations and operating instructions apply to these machines.

The machines must not be modified. If changes are made to the machine that have not been agreed with us, this declaration becomes invalid.

The following named place

- has carried out the type examination. The product has received the EC type examination under the number _____.
- has carried out the EC type-examination procedure specified in Annex IX of 2006/42 / EC.

Notified checkplace for type examination according to Annex IX

The following is the name and address of the person authorized to compile the technical documentation.

CEO Karl Binderberger
Binderberger Maschinebau GmbH
Fillmannsbach 9
AT-5144 St. Georgen am Fillmannsbach


2 Safety instructions


2.1 Explanation of symbols

Please pay attention to the meaning of the following symbolic explanations and instructions description. They are divided into levels of risk and classified in accordance with ISO 3864- 2









DANGER	
	<p><i>Indicates an immediate threat of danger. If the information is not followed, death or serious bodily injury (invalidity) is the result.</i></p>

WARNING	
	<p><i>Indicates a potentially dangerous situation. If the information is not followed, death or serious bodily injury (disability) are the result</i></p>

CAUTION	
	<p><i>Indicates a potentially dangerous situation. If the information is not followed, material damage as well as minor or moderate physical injuries are the result.</i></p>

NOTICE	
	<p><i>Indicates general instructions, useful operator instructions and working recommendations that have no influence on the safety and health of personnel.</i></p>

2.2 Pictograms and their meaning:

	<p><i>Read the operating instructions carefully before commissioning!</i></p>
	<p><i>During operation, ear protectors and protective glasses must be worn!</i></p>
	<p><i>During operation, safety shoes (with steel cap) are to wear!</i></p>
	<p>Note that the machine may only be operated by one person!</p>
	<p><i>Warning of hazardous electrical voltage</i></p>
	<p><i>Warning against hot media</i></p>
	<p><i>Set up straight</i></p>
	<p><i>Lubrication point</i></p>

2.3 Keep information available

These operating instructions must be kept with the machine. It must be ensured that all persons who have to carry out activities on the machine can read the operating instructions at any time.

All safety instruction signs and operating instruction signs on the machine must always be kept in a clearly legible condition. Damaged or illegible signs must be replaced immediately.

2.4 General safety instructions

The machine may only be operated by people who are trained, instructed and authorised for its use. These people must know the operating instructions and act in accordance with them. The respective competences of the operating personnel are clearly defined.

Operating personnel undergoing training may only initially work with the machine under the supervision of an experienced person. The completed and successful instruction is to be confirmed in writing.

2.5 Intended use

The firewood processor is designed exclusively for sawing and splitting logs up to 45cm in diameter. All other forms of usage do not comply with the intended use. The manufacturer is not responsible for any personal injury or material damage that originates from non-compliant usage, but rather the operator of the machine is!

The reading of this manual as well as the observance of all instructions contained within it, particularly the safety instructions, also comply with the intended use. Also included is the fact that all inspection and servicing work is to be conducted in the prescribed time intervals.

2.6 Operator's duty of care

The machine was designed and built taking into account a hazard analysis and after careful selection of the harmonised standards to be complied with, as well as other technical specifications. It therefore corresponds to the current state of the art and ensures the highest level of safety.

Furthermore, for safe operation, the operator must ensure that:

- the machine is only used for its intended purpose (cf. chapter "Intended use")
- the machine is only operated when it is in perfect working order and, in particular, that the safety devices are regularly checked to ensure that they are in good working order.
- the necessary personal protective equipment is available and used by the operating, maintenance and repair personnel.
- the operating manual is always available at the place of use of the machine in a legible condition and complete.
- only sufficiently qualified and authorised personnel operate, maintain and repair the machine.
- this personnel is regularly instructed in all applicable questions of occupational safety and environmental protection, and is familiar with the operating instructions and in particular the safety instructions contained therein.
- all safety and warning notices attached to the machine are not removed and remain legible.

2.7 Operator requirements

No special knowledge of mechanical or electrical engineering is required to operate the machine. However, the operator must be at least **18 years** old. The operator must be trained and instructed accordingly by the operator of the machine before starting work for the first time (see General safety regulations). Protective shoes and close-fitting clothing must be worn when operating the machine.

If the operator carries out maintenance and servicing work, he must have the necessary specialist knowledge.

After training, the operator must be able to carry out the following activities independently:

- Checking the safety equipment before starting work and during operation.
- Eliminating faults for which no professional training in mechanical or electrical engineering is required.

2.8 Maintenance and servicing personnel

This manual contains all the information necessary for maintenance and set-up and is intended for instructed personnel with the following tasks:

- Inspection, maintenance and repair of the machine.
- Setting up and adjusting the machine.
- Checking the safety devices.
- Carrying out test runs.
- Eliminating faults for which vocational training in mechanical or electrical engineering is required.

2.9 Modifications to the machine

For safety reasons, no unauthorised modifications may be made to the machine; this applies in particular to welding work on load-bearing parts.

Only use original spare parts / original wear parts / original accessories - these parts are specially designed for the machine. In the case of externally sourced parts, there is no guarantee that they are designed and manufactured to withstand stress and safety.

Parts and special equipment not supplied by us are also not approved by us for use on the machine.

2.10 Environmental Protection

For all work on and with the machine, the regulations on waste avoidance and proper waste recycling and disposal must be observed.

Particularly during installation and maintenance work as well as during shut down, care must be taken to ensure that substances hazardous to groundwater - such as grease, oil, cleaning fluids containing solvents, etc. - do not contaminate the soil or enter the sewage system. These substances must be collected in suitable containers and disposed of.

2.11 Misuse and residual risks

Despite correct application of all safety instructions for the machine, residual risks can still occur. These usually result from misuse of the machine.

- Touching rotating or moving components
- Injury from falling wooden or machine parts.
- Fire hazard due to inadequate ventilation of the engine
- Hearing damage from working without hearing protection
- Human error:
 - Mental overload
 - Entering a danger zone
 - Distractions
 - Neglected control activities

3 Overview

3.1 How it works

The firewood automat is hydraulically driven. The hydraulic circuit is driven by PTO pump, diesel or electric motor.

The machine is set up as described in the chapter "Set up of the machine" and made ready for operation. The desired log length must be set and the splitting wedge adjusted according to the log diameter. The logs are placed on the feeder.

The working process can then be triggered. The firewood automat can be started either in semi-automatic or in fully automatic mode. In semi-automatic mode, the infeed, sawing and splitting functions are operated manually via a joystick. In fully automatic mode, these functions run automatically.

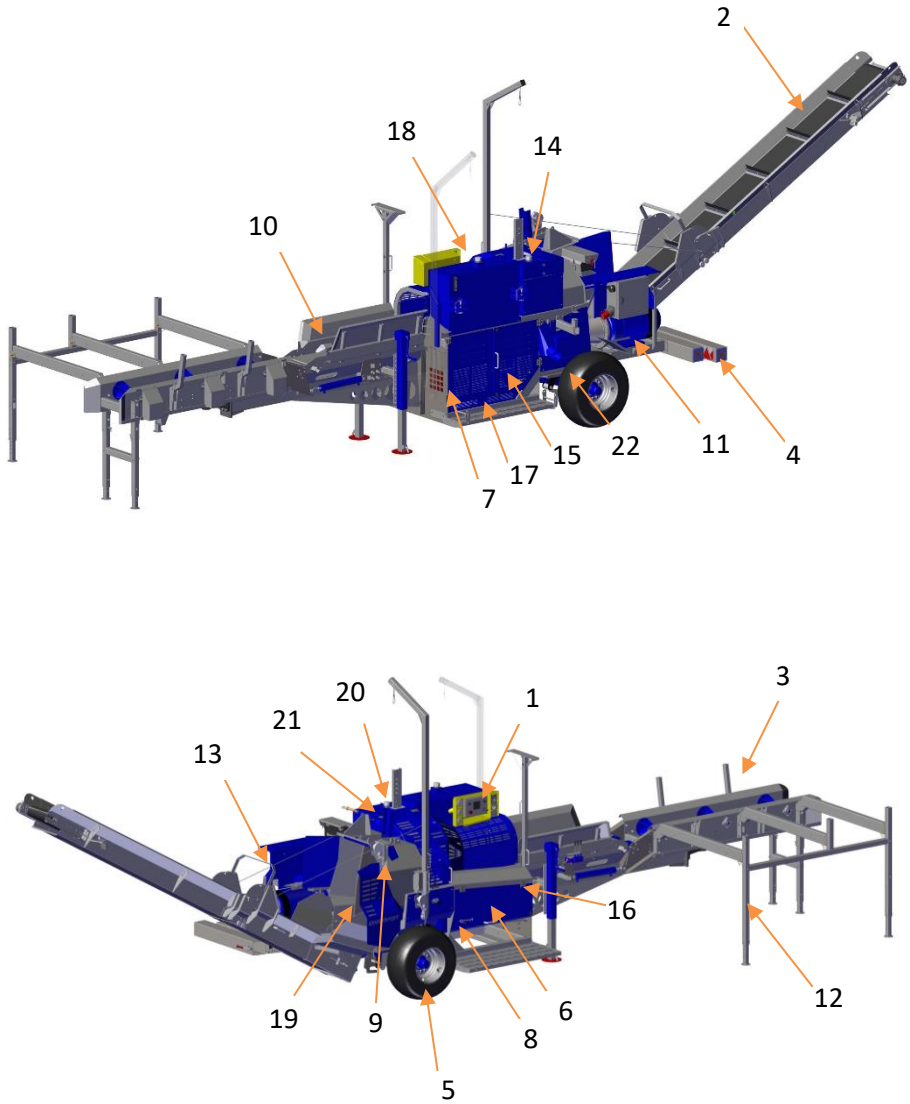
The log is moved into the sawing area until the timber starts to move at the fixed stop, thus giving the signal for further processing. The sawing process is initiated. In this step, the log is first clamped and then the log is cut by the hydraulic chain saw.

When the wood is cut, it is transported by the cross pusher to the splitting area, where it is subsequently split. During the splitting process, the log is already moved into the sawing area for the next cutting process.

Finally, the split wood is transported away via the conveyor belt.

The automatic firewood processor may only be used, serviced or maintained by persons who are familiar with it and have been informed about the dangers.

3.2 Overview



3.3 Part description

Number	Component
1	Control unit
2	Outfeed conveyor belt
3	Feeder
4	Bumper (with or without lighting; 40km/h)
5	Axle (trailing axle, hydr., - air braked)
6	Pusher
7	Oil cooler
8	Pusher sensor
9	Cable winch for height adjustment of the conveyor belt
10	Infeed belt
11	Diesel engine (or electric motor)
12	Support for feeder
13	Adjustable fixed stop (with length measurement)
14	Chain oil tank
15	Oil filter
16	Diesel tank
17	Hydraulic control block
18	Hydraulic oil tank
19	Splitting wedge
20	Timber clamp
21	Harvester
22	Chip ejector (or chip suction flange)

3.4 Technical data

Type	SSP450 E	SSP450 D
Weight*	2100 kg	3300 kg
Drawbar load*	850 kg	950 kg
Working height	1,1m	
Chain saw	Supercut 100	
Chain bar	Oregon 54cm	
Power	30 kW	43,7 kW
Speed rpm	1450	1450
Fuse	63 A	---
Splitting force	16 t	
Wood length	25-50cm	
Max. Wood diameter	45 cm	
Hydraulic oil	200 Litres HVI 46	
Diesel tank capacity	---	65 l
Splitting speed	10 cm/sec	
Return speed	12 cm/sec	
Chain tensioning pressure	30 bar	
Working dimensions L x W x H*	11000 x 2250 x 3100 mm	
Transport size L x W x H*	6000 x 2150 x 3400 mm	


*...the dimensions and weights given are approximate values

3.5 Equipment

Article-Nr.	Equipment
	Feeder
SSZ-ZAL-01	Feeder frame 2m foldable in connection with extended drawbar
SSZ-ZAL-03	Feeder frame 2m stationary
SS-ZAL-05	Feeder frame 3m (4 hydraulically driven star rollers) stationary
SSZP-ZAL-07	Hyd. Preparation for cross conveyor assembly
	Splitting wedge
SSZ-ZAL-11	Splitting wedge 12 - divider
SSZ-ZAL-12	Splitting wedge 2-4-6 divide
SSZ-ZAL-13	Splitting wedge 2-4-8 divide
	Conveyor with options
SSZ-ZAL-20	Outfeed conveyor belt 4.6m, hydr. Swivelling
SSZ-ZAL-25	Hydr. Preparation for external cleaning machine with hydr. Flap
SSZ-ZAL-26	Hydr. Preparation for external packing machine
	Running gear
SSZ-ZAL-34	Lighting for chassis 25 km/h
SSZ-ZAL-37	TÜV 25 km/h
SSZ-ZAL-56	Hydr. Support foot with tractor hydraulics
SSZ-ZAL-59	Running axle without brakes
SSZ-ZAL-62	Suspended axle 25/40 km/h
SSZ-ZAL-63	40 km/h Equipment (axle, brakes, suspended axle)
	General equipment & accessories
SSZ-ZAL-31	Hydr. Chip extraction (splitter hydraulics)
SSZ-ZAL-39	Electric Throttle adjustment (diesel engine)
SSZ-ZAL-40	Oil cooler
SSZ-ZAL-42	Saw chain, 66 driving links (for 2,0mm bar)
SSZ-ZAL-46	Chainsaw bar 54cm, 2,0mm
SSZ-ZAL-49	Starter package 1x guide bar, 3x chains, 1x limit switch each, 1x filter set
SSZ-ZAL-52	Service set for Hatz engine 3 cylinders (2 oil filters, 2 fuel filters)
SSZ-ZAL-56	Hydraulic support foot with tractor hydraulics

4 Transport of the machine

4.1 Safety instructions during transport

WARNING	
	<p><u>Risk of injury during transport!</u></p> <ul style="list-style-type: none">• <i>Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained.</i>• <i>Suspended loads can fall down, then there is danger to life - do not stay under suspended loads!</i>• <i>Always use suitable lifting equipment to load the machine.</i>• <i>The machine may only be lifted at the intended holding points</i>

4.2 Transport

Before transporting the machine, all points relating to “**shut down**” must be carried out.

When driving on public roads, the legal regulations must be observed!

4.3 Transport journeys and journeys on public roads

For the time being, follow the instructions for decommissioning.

If you want to transport the professional firewood processor, make sure that it is properly fastened and secured to your vehicle.


Make sure that your vehicle is designed for the total weight of the firewood processor.


When driving on public roads, the legal regulations must be observed!

- Only transport the SSP450-Pro in a folded state in order to achieve the legally prescribed dimensions.
- Make sure that all locks are properly attached. Check the pin on the discharge conveyor, the spring latch on the intake stand and the attachment of the support stand to the side of the machine.
- Reflectors and lamps must be kept clean.
- When driving the vehicle, the driving speed must be adapted to the ground conditions. In this way, the SSP is protected from strong vibrations, which can have an unfavourable effect on the connections.
- Be aware of reduced steerability due to the heavy weight.
- Pay attention to the total height when passing under bridges.


5 Set up of the machine

5.1 Safety instructions for set up

<h1>DANGER</h1>	
	<p style="text-align: center;"><u><i>Danger to life from electric shock!</i></u></p> <ul style="list-style-type: none">• <i>Machines with electric drives must be operated on a mains supply that is protected by a 30-mA residual current circuit breaker.</i>• <i>Before each start-up, check the supply line for damage!</i>

<h1>WARNING</h1>	
	<p style="text-align: center;"><u><i>Risk of injury if the machine is not set up correctly.</i></u></p> <ul style="list-style-type: none">• <i>Always check the machine for transport damage before setting it up.</i>• <i>Set up the machine on a level and firm surface!</i>• <i>Use the support feet of the machine!</i>• <i>Ensure that no persons are endangered by the installation and that there are no persons or foreign objects in the danger zone.</i>• <i>Machine connections Lay cables and hoses so that there are no tripping hazards!</i>• <i>The machine may only be operated when in perfect condition!</i>

5.2 Duties before starting work

NOTICE	
	<p><u>Carry out the following activities before starting work:</u></p> <ul style="list-style-type: none">• <i>Check electrical connections before starting</i>• <i>Check safety devices for proper functioning</i>• <i>Check all bolts and screw connections for tightness before starting work!</i>• <i>Before starting work, check the direction of rotation of the electric motor. If the direction of rotation is incorrect, the pump will be destroyed.</i>• <i>Check oil cooler for cleanliness</i>• <i>Check electrical and hydraulic connections, as well as lubricant supply and hydraulic oil level (Attention: Never work without chain lubricating oil).</i>• <i>At outside temperatures below 0°C, let the machine run for approx. 5 minutes at idle speed without load.</i>

5.3 Electrical supply line

The fuse protection and dimensioning of the electrical supply line must be selected from the line length! This should be done by an electrician according to national standards.

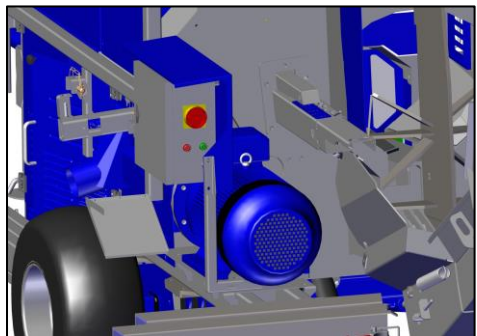
The supply line must be 400V / 63A.

Never carry out work on electrical systems if you do not have the necessary expertise!

5.4 Check direction of rotation of the motor

(only for electric machines)

Switch on the motor only briefly and check the direction of rotation on the fan blades of the motor. The correct direction of rotation is indicated by the sticker on the fan cover of the motor. If the direction of rotation is not correct, disconnect the supply line to the firewood processor. To change the direction of rotation, please contact an electrical specialist.



5.5 Switch on Battery main switch

(only for diesel machines)

There is a main switch for the battery on the SSP. This must be switched on before each operation to enable the engine to start and to supply the control unit with power.

To avoid discharging the battery, the main switch must be switched off again after each operation.

However, the main switch must not be switched off as long as the oil cooler is running.

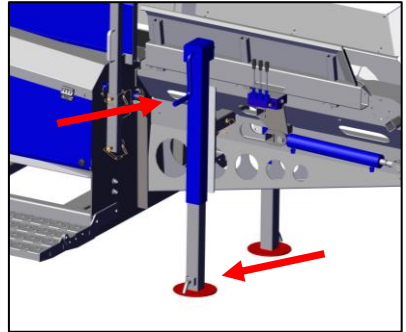


5.6 Bringing the machine into working position

To prevent serious personal injury and machine damage, always place the machine on a level and firm floor and follow the instructions below carefully.

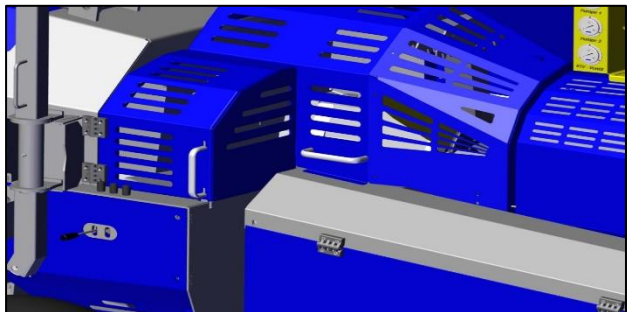
Move the support foot into position:

1. remove the locking bolt
2. turn the support leg downwards
3. secure the support leg with the safety bolt



Now the SSP can be disconnected from the towing vehicle.

The machine can be brought into a horizontal position with the aid of a support leg with a hand crank or, in the case of the hydraulic support leg, with the control unit.

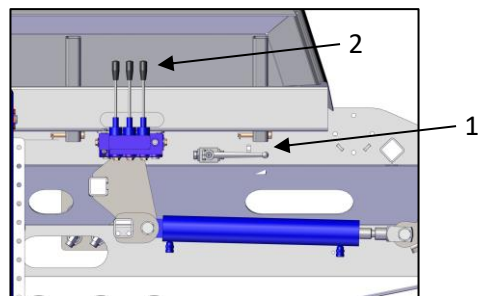
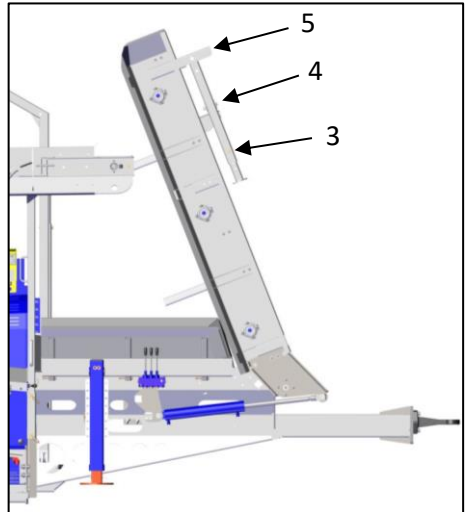


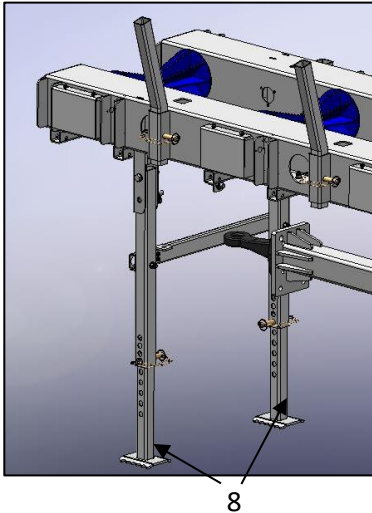
5.7 Unfold the feeder

Turn the stopcock (1) 90° anticlockwise (direction of passage).

Now you can tilt the feeder by operating the right lever (2).

However, do not tilt the feeder completely into its horizontal position yet, because the support legs (3) must be folded out first. To do this, turn the spring latch (4) half a turn until it is pulled out completely. Swivel the legs by 90° and secure them with the two spring locks (5) on the inside of the supports.





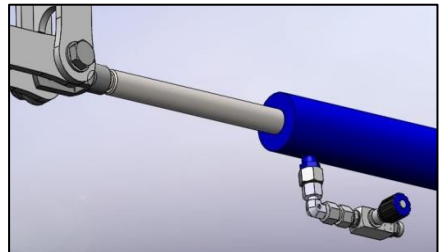
After that, the feeder can be brought into the horizontal position.

With the two adjustable feet (8) the feeder can be adapted to the ground. Always make sure that both legs are in contact with the ground.

Finally, the stopcock (1) must be closed again to prevent unintentional operation.

When folding, make sure to turn the wooden holder (9) downwards (transport height).

The lifting and lowering speed can be adjusted with the handwheel on the throttle.



5.8 Unfold the footboard

Always unfold the footboard before starting work.

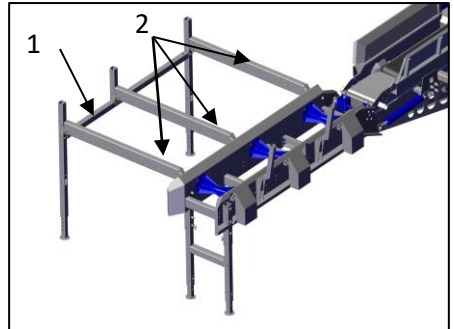
Using the platform when it is folded in gives you no foothold and creates a high risk of accident.



5.9 Support frame

The support trestle consists of the support H (1) and the 3 transverse form tubes (2). To set up, insert the bevelled side of the cross-shaped tube into the feeder. Now add the support H and insert the transverse moulded tube into the provided support here as well. A bolt with a cotter pin is necessary to secure it.

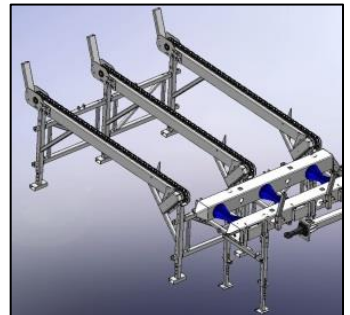
Finally, adjust the feet of the support H so that the transverse mould tubes are horizontal.



5.10 Attachment cross conveyor

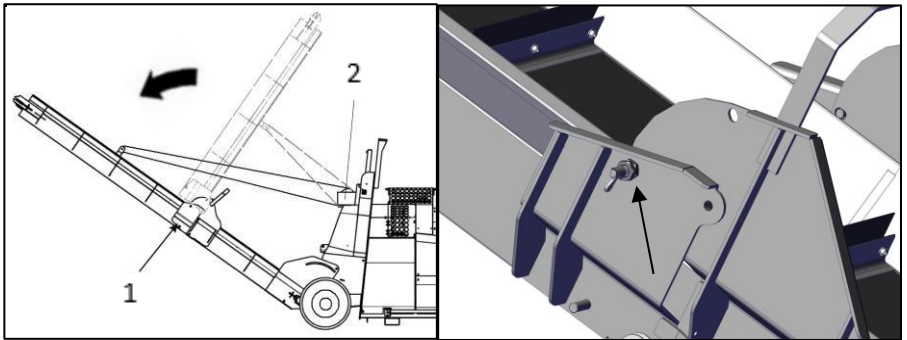
A cross conveyor can optionally be added to the feeder.

The connections for this are located on the opposite side of the cross conveyor.

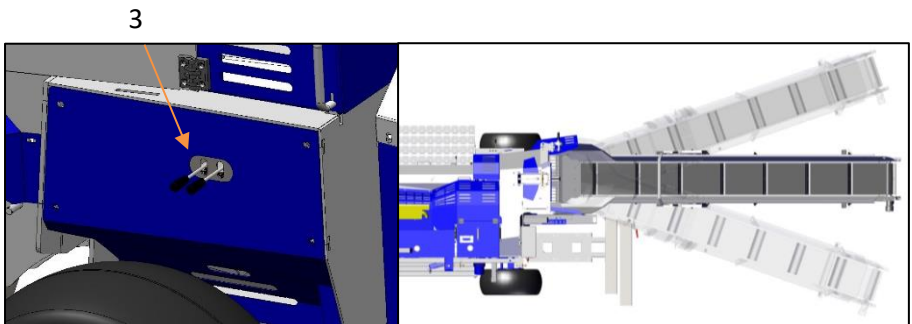


5.11 Bringing the outfeed conveyor into working position

To position the conveyor belt, the cable winch (2) must be slackened until both parts of the conveyor belt are in line. The spring bolt (1) must then be engaged. Afterwards, the conveyor belt can be adjusted to the desired height.





If the conveyor belt has been folded out, it can now be swivelled with the hydraulics. The control lever (3) for this is located next to the lever for height adjustment of the splitting wedge. The right-hand lever is used to control the conveyor belt. The standard swivelling range is 38°.




6 Operation

6.1 Safety instructions during operation

DANGER	
	<p><u>Risk of injury from being caught or pulled in on moving machine parts!</u></p> <ul style="list-style-type: none">• <i>Keep a sufficient safety distance from moving machine parts!</i>• <i>Illuminate the workplace sufficiently</i>

WARNING	
	<p><u>Risk of injury during operation!</u></p> <ul style="list-style-type: none">• <i>Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained.</i>• <i>Before removing jammed pieces of wood, the drive must be switched off.</i>• <i>Keep away from suspended loads</i>

CAUTION	
	<p><u>Stumbling over parts lying around!</u></p> <ul style="list-style-type: none">• <i>All parts that do not belong to the machine must be removed from its vicinity!</i>

CAUTION



Risk of injury due to negligent use of personal protective equipment!

- *Wear protective goggles, ear protection, protective gloves and safety shoes with steel toecaps!*


CAUTION



Risk of injury during operation

- *Only one person may work on the machine at a time!*
- *Make sure that no other persons are in the area of the machine.*

6.2 Important notes during operation

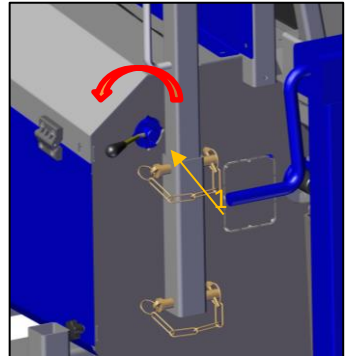
<h1>NOTICE</h1>	
	<ul style="list-style-type: none">• <i>The firewood processor with electric drive must not be operated in the rain.</i>• <i>The operating personnel must ensure that no unauthorised persons are in the working area of the machine.</i>• <i>Before switching on the machine, inform yourself about the correct behaviour in the event of a malfunction.</i>• <i>Before switching on the machine, carry out the points listed in the chapter "Duties before starting work".</i>• <i>After switching off the machine, always carry out the work steps in the following chapter "Decommissioning".</i>• <i>If the operator leaves the machine unattended, it must be shut down and secured against unauthorised restarting.</i>• <i>A minimum distance of 1.5m should be kept around the operator's position.</i>• <i>No persons are allowed within a radius of at least 4m in the area of the conveyor belt ejection.</i>• <i>Pay strict attention to the safety distance when working under power lines. No part of the unit may come closer than the specified safety distances:</i><ul style="list-style-type: none">➤ <i>For low-voltage lines: min. 2 metres</i>➤ <i>For high-voltage lines: min. 6 metres</i>

6.3 Reverse the direction of the log feeder

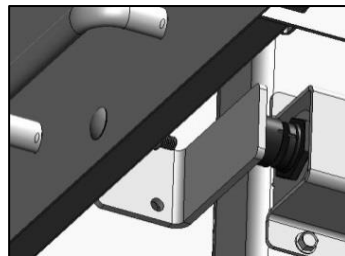
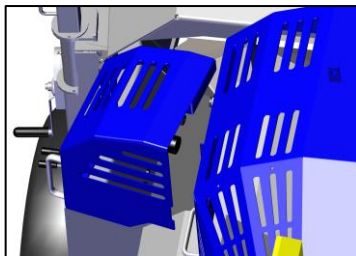
If there are problems with the wood intake:

It is possible to reverse the direction of rotation of the feeder. This is necessary if the wood gets stuck when being fed in.

The lever for reversing the direction of rotation (1) is located underneath the control unit on the right-hand side of the operator position.



6.4 Safety circuit



The SSP is equipped with a safety circuit on the safety doors. These are monitored by means of a sensor on the frame and its counterpart on the door or the protective cover. If one of the two safety doors is opened, the machine stops.

If the safety doors are closed, work can continue.

Important! If a safety door is opened and closed too quickly, the machine may not be able to be switched on. If this happens, proceed as follows:

1. Open the safety door.
2. Wait a few seconds and then close the door.
3. Switch the control unit off and on again at the main switch.

If the machine still does not work, check the sensors!

There is a crosshair on the sensors and on the counterpart, which must always be exactly aligned!

To ensure consistency and reliability, the distance between the sensor and the counterpart must always be between 1 and 3mm parallel.



6.5 Reading the pressures of the hydraulic system

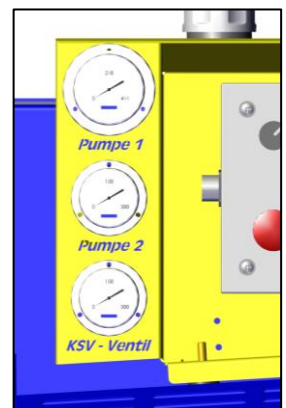
To read the pressures of the hydraulic system there are three pressure gauges on the SSP to the left control unit.

Explanation:

Pump1 - High pressure pump: When the machine is idling, the pressure gauge must show approx. 25 bar. This is the stand-by pressure for the hydraulic system. Under load, this pressure gauge shows the actual pressure.

Pump2 - Load-sensing pressure: sectoral pressure of the discharge conveyor, infeed conveyor, log holder, pusher, saw feed cylinder and hydraulic fixed stop.

KSV valve - chain tensioning pressure: approx. 20 bar, indicates the pressure of the saw chain tension.

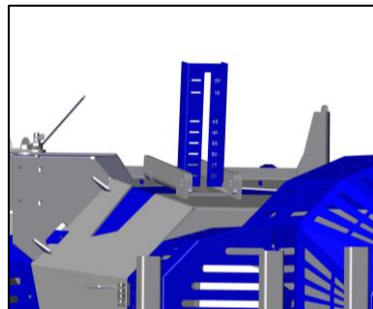
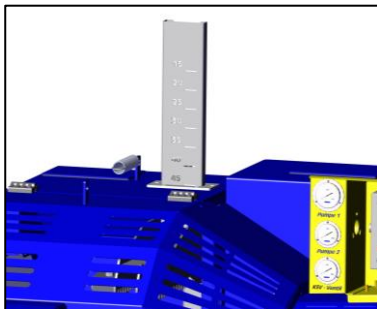
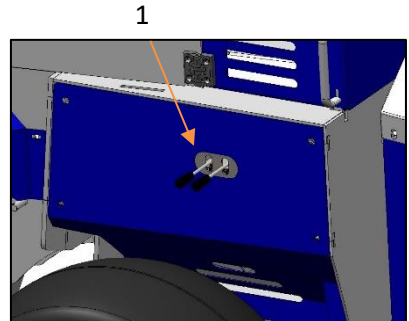


6.6 Height adjustment of the splitting wedge

The splitting wedge is hydraulically height-adjustable as standard. The control lever (1) for this is located next to the lever for the discharge conveyor belt. The left lever is used to control the splitting wedge.

Always set the splitting wedge to the centre height of the wood.

If the splitting wedge is moved downwards during the splitting process, the machine **MUST** be switched off at the control panel in order to be able to remove the split and jammed wood from under the splitting wedge.



The measuring scale can be used to set the ideal knife position. It serves as a rough guide for the correct adjustment of the splitting wedge.

The exact position is set according to the diagram "Splitting diameter".

The wood diameter can be read off the feed plate.

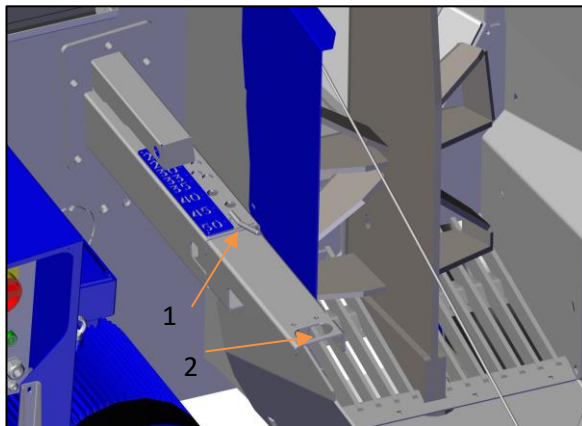
6.7 Setting the log length using the fixed stop

The fixed stop is secured against overload by a shear bolt (1). In case of overload, this breaks off and allows the fixed stop to be pushed backwards. The splitting length can be adjusted via steps in a range of 25-50cm. The splitting length is adjusted to the left of the splitting wedge.

To adjust, first remove the safety cotter pin from the bolt.

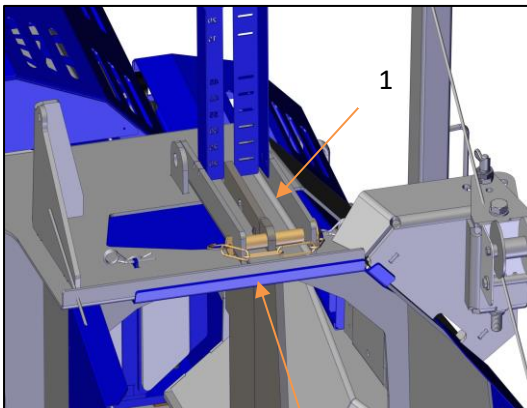
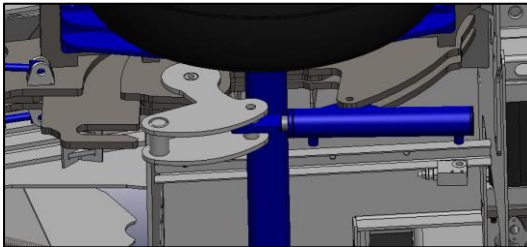
Now the bolt (1) can be pulled out and the log stop can be moved to the desired position on the handle (2).

Then fix the stopper with the bolt again and secure it with the safety cotter pin.



6.8 Changing the splitting wedge

To change the splitting wedge, fully retract the cylinder for height adjustment so that the lifting joint unhooks from the guide. Then remove the bolt and both cotter pins on the wedge from the top of the machine. This allows the cover plates (1) and (2) to be removed and the splitting wedge to be pulled upwards. For lifting, there is a hole for a hook on the top of the splitting wedge. Please be careful and keep your distance from the floating splitting wedge.



CAUTION !

When lifting out the splitting wedge, act carefully and keep away from suspended loads.

6.9 Half splitting function

With the automatic sawing and splitting machine, it is possible to switch to half splitting travel for timber lengths of 25-33 cm, i.e., the pusher only travels to the splitting wedge up to the set length, so that the next timber can be conveyed into the splitting channel straight away, thus increasing speed and also efficiency.



To switch the half splitting travel on and off, simply turn the selector switch to the left position.

For precise positioning of the pusher with half splitting travel, it is necessary to adjust the lever (at the bottom left of the operator position) to the desired length.

6.10 Harvester head

- Always wear protective gloves when working on the chain. Remove the chain when servicing or adjusting it.
- Never adjust the pressure of the hydraulic system without a pressure gauge.
- Always close all connections to avoid unnecessary oil loss.
- The chain saw has sharp edges and corners. Therefore, always use suitable protective gloves when working on the machine.



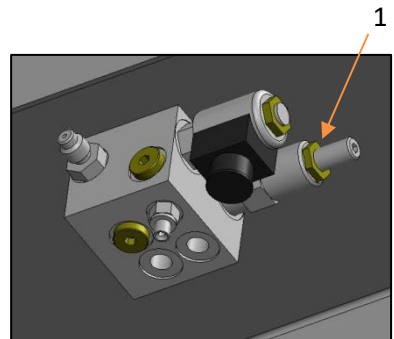
6.11 Adjusting the chain tension pressure

If the chain jumps off the guidebar during sawing, the tensioning pressure may be too low.

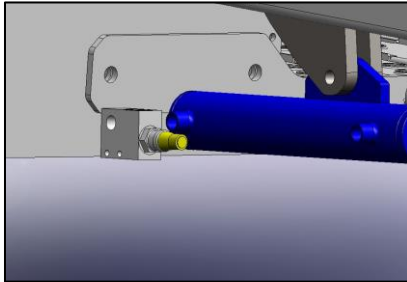
The chain tensioning pressure must be readjusted. The tensioning pressure is measured at the pressure measuring point, which is located in front of the pressure control valve. The pressure control valve is located near the oil filter. (See point **3.2 Overview** point 15 Oil filter).

If adjustment is necessary, follow the steps below.

1. Remove the saw chain (see **6.14 Changing the chain**).
2. Start the machine and leave it idle. If no chain is inserted, the guidebar moves to the outer position and stays there.
3. Check the back pressure at the control panel at the front of the machine.
4. Set the back pressure of 30-35 bar at the pressure control valve (1).
5. **Important!** Never set a pressure without a pressure gauge.
6. When the back pressure is within tolerance, counter the adjusting screw again.
7. Replace the chain.



6.12 Adjust the pressure limiting valve



The pressure relief valve is for extending the saw cylinder. (lowering of the harvester). It must be set to 30bar

6.13 Changing the chain

The first signs of a dull chain are very long sawing times and blue smoke coming from the cut. If you want to change the chain, follow the instructions below.

- New chains must be placed in clean chain lubricating oil overnight before fitting. This allows the chain oil to penetrate all the chain links.

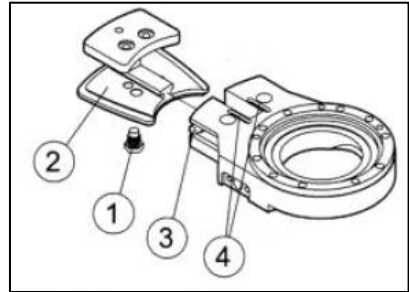
Before changing the chain, the machine must be stopped and disconnected from the tractor or the mains.

1. The chain tensioner will release itself as soon as the hydraulics are depressurised.
2. Remove the chain.
3. Remove any dirt from the bar.
4. Fit the new chain (pay attention to the cutting direction).
5. Problems when changing the chain can come from a dirty chain or from dirt particles in the lubrication channels. The mobility of the guidebar may be restricted by dirt particles. If this is the case, the guidebar holder must be disassembled and cleaned.
6. Important Always wear gloves and suitable work clothes when changing the chain.

6.14 Replacing the guide bar

1. Remove the saw-chain (see 6.13 Changing the chain).
2. Remove the saw-bar by loosening the guide screws (1).
3. Insert the new saw-bar and tighten the guide screws.
4. Refit the saw chain.

1. **Guide screws, 2 pcs.**
2. **Rail holder**
3. **Locking device**
4. **Grooves**



6.15 Chip ejection

Chip ejection (1):



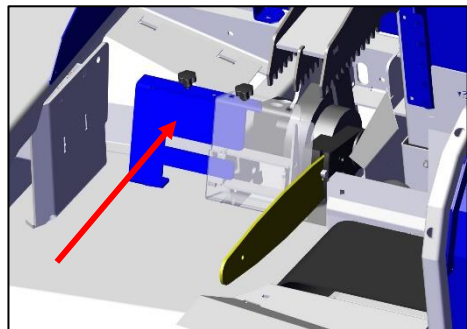
Chip suction flange (2):



The chip suction flange (2) is only permitted in combination with a chip suction device. Otherwise, the hopper may become clogged.


6.16 50cm Extension


For log lengths of 50cm, an extension of the cross slide is required. This attached extension prevents the log from turning/warping and thus ensures a smooth workflow. The extendable plate attachment is fixed with star grip screws and can be moved by hand. If the machine is changed back to shorter lengths, the extension of the cross slide must also be retracted or removed again.




7 Shutdown

7.1 Safety instructions for the shutdown procedure

<h1>DANGER</h1>	
	<p><u>Risk of injury from being caught or pulled in by moving machine parts!</u></p> <ul style="list-style-type: none">• <i>After parking, wait until all moving machine parts have come to a standstill!</i>• <i>Keep a sufficient safety distance from moving machine parts!</i>

<h1>WARNING</h1>	
	<p><u>Risk of injury when taking out of operation!</u></p> <ul style="list-style-type: none">• <i>Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained.</i>• <i>Read the chapter "General safety instructions".</i>

<h1>WARNING</h1>	
	<p><u>Risk of injury when the machine is switched on by unauthorised persons!</u></p> <ul style="list-style-type: none">• <i>Secure the machine against unauthorised switching on after operation.</i>

7.2 Switch off the drive

7.2.1 Diesel-engine

If the machine has been used under full load for a longer period of time, you should let the automatic firewood processor run for a few minutes without load before shutting it down. This allows the machine to return to operating temperature and can be shut down without any problems.

If an electric motor adjustment is used, it should be adjusted back so that the motor still runs smoothly.

After shutting down the machine, disconnect the main battery switch.





7.2.2 Electric drive


1. Switch off the drive by pressing the switch!
2. Disconnect the 400V/63A supply cable from the plug and secure the drive against being switched on again!


8 Servicing


8.1 Safety instructions during servicing

DANGER	
	<p><u>Danger to life from switching on the drive during maintenance work</u></p> <ul style="list-style-type: none">• <i>Switch off the machine</i>• <i>Secure against being switched on again</i>


DANGER	
	<p><u>Danger to life due to electric shock</u></p> <ul style="list-style-type: none">• <i>Work on electrical systems may only be carried out by qualified personnel!</i>• <i>Secure the machine against being switched on or the power line being plugged in.</i>

CAUTION	
	<p><u>Slipping on oil residues during maintenance work (oil change)!</u></p> <ul style="list-style-type: none">• <i>Use suitable collection containers.</i>• <i>Remove spilled oil immediately</i>

CAUTION	
	<p><u>Risk of injury! Scalding from hot machine components!</u></p> <ul style="list-style-type: none">• <i>Allow the machine to cool down before carrying out any maintenance work</i>

CAUTION	
	<p><u>Risk of chemical burns from contact with lubricants!</u></p> <ul style="list-style-type: none">• <i>Avoid contact with skin and eyes</i>• <i>Use suitable protective equipment (gloves, safety goggles).</i>

8.2 Important instructions during servicing

<h1>NOTICE</h1>	
	<ul style="list-style-type: none">• <i>Immediately replace all machine parts that are not in perfect working order.</i>• <i>Use only original spare parts</i>• <i>Ensure that suitable collection containers are available for all substances hazardous to groundwater (oils, coolants, etc.)</i>• <i>Use only the specified operating materials.</i>• <i>Self-locking bolts and nuts must always be renewed.</i>• <i>All operating materials and lubricants that are not used again must be disposed of in an environmentally friendly manner.</i>• <i>Installing the wrong spare parts or wearing parts can cause serious damage to the machine.</i>• <i>There is a risk of fire during welding work. Keep fire extinguishers ready.</i>• <i>Improperly routed cables can cause braising and cable fires.</i>• <i>Check the running direction of the motor. Incorrect direction of rotation will destroy the pump.</i>• <i>Never release the machine for operation without the factory-provided safety devices.</i>• <i>It is strictly forbidden to remove safety notices attached to the machine.</i>• <i>Always observe the warning notices located on the machine. They help to avoid hazards.</i>• <i>Do not carry out any repairs if you do not have the required qualifications.</i>

8.3 Notes when working on electric equipment

All work on the electrical equipment of the machine may only be carried out by trained electricians. Check electrical equipment regularly:

- Reattach loose connections.
- Replace damaged lines or cables immediately.

Whenever work is carried out on live machine parts or cables, a second person must always be present to disconnect the power supply in an emergency. Never clean electrical equipment with water or similar liquids.

8.4 Notes when working on hydraulic equipment

All work on the hydraulic equipment of the machine may only be carried out by trained specialists.

Depressurise all hydraulic systems and parts before starting work.

Before starting work, ensure that suitable collection containers are available for all substances hazardous to groundwater (oils, coolants, etc.).

8.5 Duties before finishing maintenance


After completing the maintenance work and before starting the machine, observe the following points:


- Check all previously loosened bolted connections for tightness.
- Check that all previously removed guards, covers, container lids, are properly reinstalled.
- Ensure that all tools, materials and other equipment used have been removed from the work area.
- Clean the work area and remove any spilled liquids and similar substances.
- Ensure that all safety devices of the machine are working properly again.
- Check the function of the safety devices. Do not release the machine for use if the safety devices are not functioning properly.
- Assemble and secure dismantled safety devices.
- Remove any tools, foreign parts and operating materials that have been left lying around.
- Carry out a test run with a function check of the repaired components.
- Secure the machine against unauthorised switching on if you have not completed the work.
- Do not handle open flames or smoke.


9 Maintenance


During the first month every week all screws and connections should be checked for tightness.


9.1 Safety instructions during maintenance

DANGER	
	<p><u>Risk of severe injury by switching on the driving mechanism during maintenance work!</u></p> <ul style="list-style-type: none">• <i>Switch off machine!</i>• <i>Secure against unintentional restart!</i>

DANGER	
	<p><u>Danger to life due to electric shock</u></p> <ul style="list-style-type: none">• <i>Work on electrical systems may only be carried out by qualified personnel!</i>• <i>Secure the machine against being switched on or the power line being plugged in.</i>

CAUTION	
	<p><u>Slipping on oil residues during maintenance work (oil change)!</u></p> <ul style="list-style-type: none">• <i>Use suitable collection containers.</i>• <i>Remove spilled oil immediately</i>

CAUTION	
	<p><u>Risk of injury! Scalding by hot machine components!</u></p> <ul style="list-style-type: none">• <i>Allow the machine to cool down to ambient temperature before carrying out any maintenance work.</i>

CAUTION	
	<p><u>Risk of chemical burns from contact with lubricants!</u></p> <ul style="list-style-type: none">• <i>Avoid contact with skin and eyes</i>• <i>Use suitable protective equipment (gloves, safety goggles).</i>

9.2 Cleaning

After each operation and before each maintenance, the machine must be cleaned of dirt!

9.3 Daily maintenance work

Check that:

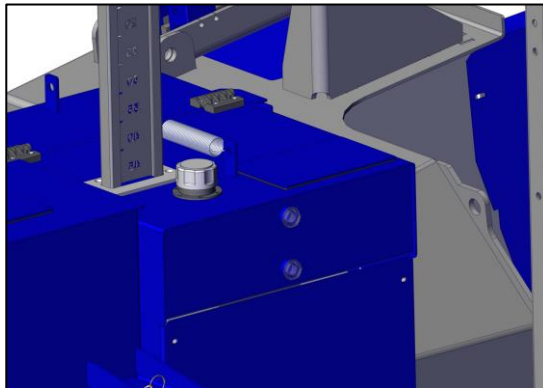
- nothing abnormal has occurred on the attachments and hydraulic hoses of the saw unit.
- there is no damage or breakage of the saw unit.
- there are no leaks.
- you start working with a sharp saw chain.

9.4 Check chain-oil level

Check the chain oil level before each operation and top up the tank if necessary.

Attention! Only use chain oils with a viscosity number of 140!

To check the oil level in the chain oil tank, there are two sight glasses on the front side, making sure that the upper sight glass is half full and the machine is standing straight.



9.5 Maintenance work every 250 hours

Check that:

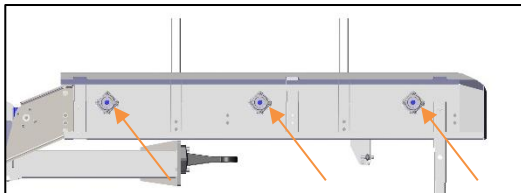
- no brackets or fasteners are missing.
- the hydraulic hoses are not damaged.
- there is no damage or breakage to the saw unit.
- there are no leaks.

All damaged or worn parts must be repaired or replaced.

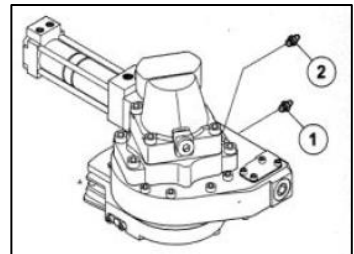
9.6 Lubrication points

The lubrication points must be lubricated according to the specified lubrication intervals.

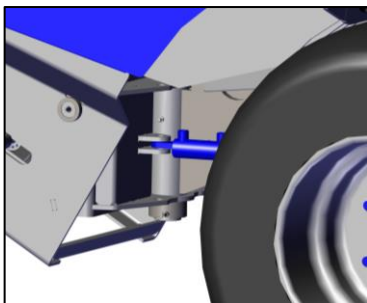
Lubrication point	Number of lubrication points	SSP450D	SSP450E
Harvester head	2	x	x
Electric motor	1		x
Feeder	5	x	x
Pivot axle – outfeed conveyor belt	1	x	x



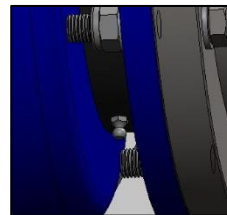
Feeder



Harvester



Pivot axle – outfeed conveyor belt

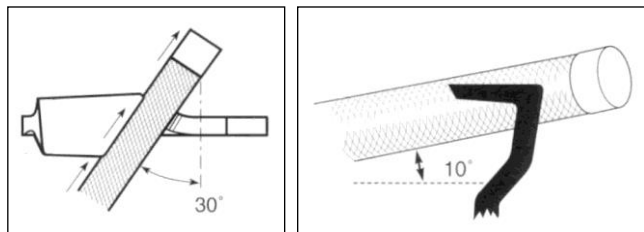


Electric motor

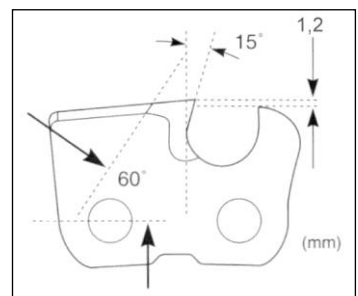
9.7 Sharpening the saw chain

When sharpening the chain, the following steps must be followed in order to achieve perfect chain sharpness.

The following steps refer to the original Oregon 18H chain used on the machine.



- The sharpening angle must be the same for all chain teeth, otherwise the chain will run unevenly and roughly. This leads to increased wear.
- When sharpening, the file must have an angle of 10 degrees to the ground.
- It is advantageous to use a file holder when sharpening.
- When sharpening accurately, the angles shown on the right are self-evident.
- The depth gauge determines the depth of the cut. This should be 1.2mm for an optimal cut.
- The depth gauge distance must be checked using a filing gauge. If the depth gauge overlaps the file gauge, it must be filed flush with the gauge using a flat or triangular file.
- Use a special chain file with a diameter of 5.5 mm to sharpen the chain teeth.



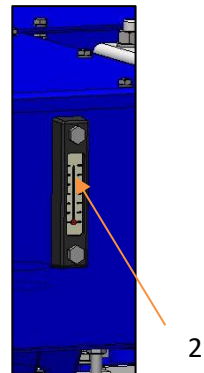
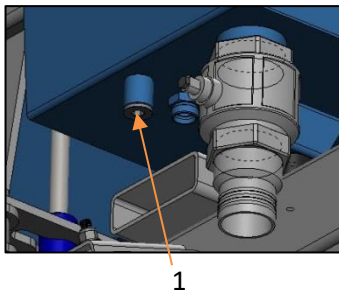
- The cutting edges must always be filed from the inside to the outside.
- File quickly. Note that the file only removes material in the forward movement. During the backward movement, the file must be lifted off.
- The file should be turned again and again, otherwise one-sided wear will result.
- **Caution:** The connecting and driving links must not be filed.
- The saw teeth must all have the same length. Different lengths also result in different tooth heights. If they are not the same height, this will cause the chain to run unevenly and may even cause chain cracks.
- First determine the shortest tooth. This is now sharpened and then the other teeth are filed back to this length.
- First sharpen all the cutting teeth on one side and then those on the other side.
- Check the chain often for cracks and damaged rivets.
- Damaged chain parts must be replaced.
- The new chain parts must be filed to the same size as the other chain links.
- It is better to sharpen more often but file away less. Usually, 2-3 file strokes are enough.
- After sharpening, the chain must be cleaned of all chips with petrol or other solvents.
- Then it must be lubricated again in an oil bath.
- For longer breaks, the chain should be removed and placed in an oil bath.

9.8 Oil change

The first oil change is carried out after 250 operating hours. Thereafter, the oil must be changed every 1000 operating hours or once a year. HVI 46 or equivalent oil must be used as hydraulic oil. Make sure that an appropriately large collection container (at least 200l) is available.

To drain the hydraulic oil, open the drain plug on the tank (1). When the oil has been drained from the tank, close the tank tightly again. Fill the tank with oil again.

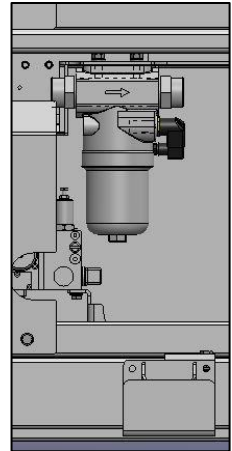
After filling, start up the firewood processor and run it through a few cycles without wood. Check the oil level again and top up with hydraulic oil if necessary (2). You may also need to bleed the chain tensioning system.



9.9 Changing the oil filter

The oil filter should be changed regularly every 250 hours of operation.

1. Open the rear protective cover.
2. Unscrew the outer filter sleeve.
3. Replace the filter cartridge.
4. Screw the filter sleeve back in place.
5. check for leaks



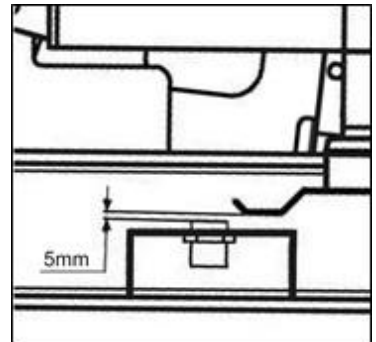
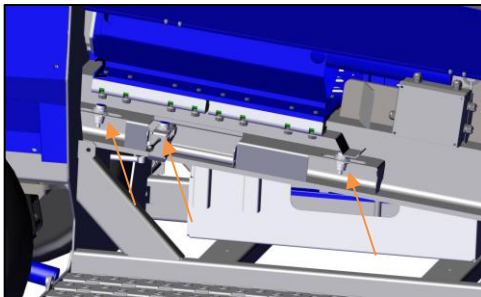
9.10 Changing the hydraulic hoses

All hydraulic hoses must be replaced after 5 years.

Otherwise, damage to the hoses can cause serious injuries.

9.11 Adjusting the pusher-sensors

Open the protective covers. There are three sensors on the I-beam. The outermost sensors determine the retracted/extended position of the pusher. The middle sensor is important for the "halfway splitting" function and can be moved according to the length of the wood. The counterpart for the sensors is located on the pusher, a sheet metal bent downwards. This must pass 5mm above the sensors.





If the hydraulic unit is to go to overpressure when extending or retracting, the sensors must be reset. To do this, the sensors must be loosened and moved to a position on the slotted hole where the trigger no longer moves to overload. Then tighten them properly again to prevent them from moving independently.


The third sensor can be moved at any time via a lever and should be adjusted according to the desired splitting behaviour. If the sensor is moved in the direction of the splitting wedge, the splitting path is extended.


10 Help in case of malfunctions

10.1 Safety instructions

DANGER	
	<p><u>Danger to life from switching on the drive in the event of a malfunction</u></p> <ul style="list-style-type: none">• <i>Switch off the machine</i>• <i>Secure against being switched on again</i>

DANGER	
	<p><u>Danger to life due to electric shock</u></p> <ul style="list-style-type: none">• <i>Work on electrical systems may only be carried out by qualified personnel!</i>• <i>Secure the machine against being switched on or the power line being plugged in.</i>

CAUTION	
	<p><u>Risk of injury! Scalding from hot machine components!</u></p> <ul style="list-style-type: none">• <i>Allow the machine to cool down to ambient temperature before carrying out any maintenance work.</i>

CAUTION	
	<p><u>Risk of chemical burns from contact with lubricants!</u></p> <ul style="list-style-type: none">• <i>Avoid contact with skin and eyes</i>• <i>Use suitable protective equipment (gloves, safety goggles).</i>

10.2 Troubleshooting

Error	Cause	Error correction	Look up
Saw chain comes off guide bar	Chain tensioning pressure is too low	Adjust the chain pressure	6.12
	Leaky non-return valve	Check the non-return valve, clean or replace it.	Contact a specialist
Saw chain is not lubricated	Lubrication tank is empty	Fill the tank with chainsaw oil	9.4
	Air in lubrication system	Bleed the system	Contact a specialist
	Hydraulic hoses of the lubrication system defective	Replace hydraulic hose	9.10
	Leakage in the chain lubrication pump	Check chain lubrication pump, clean or replace it	Contact a specialist
	Machine tilted at an angle	Move machine into horizontal position	5.6
Hydraulic oil gets very hot	Oil cooler not cooling properly	If the fan blade does not turn, check power supply; check cleanliness	5.4
	Oil filter clogged or heavily contaminated	Check oil filter and change if necessary	9.9
	Not enough hydraulic oil in the system	Check oil level	9.8
	Machine is tilted	Bring machine into horizontal position	5.6
Hydraulic cylinder leaking	Sealing sleeve worn out	Change sealing sleeve	Contact a specialist
Long sawing times	Chain is blunt	Sharpen chain	9.7

Conveyor belt doesn't run or jerks	Not enough hydraulic oil in the system	Check oil level	9.8
Splitting cylinder does not retract	Limit switch does not switch or incorrectly positioned	Check limit switch	9.11
Splitting cylinder does not advance			
Splitting cylinder advances and does not switch off			
Splitting cylinder retracts and does not switch off			
Infeed belt does not run	Limit switch triggered	Check limit switch	Contact a specialist
	Flow divider incorrectly set	Adjust flow divider	
Infeed belt does not switch off	Limit switch doesn't turn off	Check limit switch	
Chainsaw does not go down	Speed regulator of the chain saw adjusted	Adjust speed	6.12
	Limit switch of the chain saw has tripped	Check limit switch	Contact a specialist
Chainsaw does not move upwards	Speed regulator of the chain saw adjusted	Adjust speed	6.12
	Chain saw limit switch has triggered	Check limit switch	Contact a specialist
	Solenoid valve does not switch	Diagnosis menu/ manual switching	
Saw motor does not run	Solenoid valve does not switch	Diagnosis menu/ manual switching	Contact a specialist
Outfeed conveyor belt does not run			
Timber clamp does not extend			
Timber clamp does not retract			
<p>If the malfunctions cannot be eliminated according to the above instructions. Please contact your dealer! He will be happy to help you.</p>			

11 Guarantee and Warranty

A guarantee period of 12 months and a warranty period of 24 months from the date of invoice is granted for the firewood processor (please keep the invoice!).

The warranty claim covers all material and / or manufacturing defects. Defective parts will be replaced free of charge - they may only be replaced by a specialist. Please request and replace damaged stickers.

No warranty is given for:

- Damage caused by improper handling or use.
- Transport damage - this must be reported to the delivery company immediately after receipt of the goods delivery.
- Modifications or changes to the machine or if no original spare parts or standard parts were used for repair work.

12 Conduct when dealing with accidents

As a matter of routine, ensure you have up-to-date information about available first aid options.

After the initial care of injured people, immediately inform your supervisor of any personal injuries, damage to the machine or material damages.

In the event of the specific use of emergency vehicles, state the severity of the injury and damage.

In a disaster situation, immediately leave the machine (fire).

Note

In the pursuit of technical advancement, Binderberger Maschinenbau GmbH continually works to improve its products. We reserve the right to make changes from the illustrations and descriptions in this operating manual/replacement parts list. This cannot give rise to any claim to changes on machines that have been already delivered. The technical data, dimensions and weights are not binding.

Errors excepted.

Dealer's stamp:

Name plate:



Maschinenbau GmbH
Fillmannsbach 9
A-5144 St. Georgen am Fillmannsbach
Phone: +43 / 7748 / 8620
Fax: +43 / 7748 / 8620 – 20
office@binderberger.com
www.binderberger.com