



Circular Saws

**Original Operating Manual Copyright by Binderberger
GmbH**



Read the instruction manual carefully
before starting up the machine!



This instruction manual applies to:

Type	Item number
RT Z	H0000RTZ
RT E	H0000RTE
RT E-Z	H0000TEZ
WS600 E	H000WS6E
WS600 EL	H00WS6EL
WS700 Z	H000WS7Z
WS700 E	H000WS7E
WS700 EZ	H00WS7EZ
WSK700 E	H00WSK7E
TWS600 E	H00TWS6E
TWS600 EL	H0TWS6EL
TWS700 Z	H00TWS7Z
TWS700 E	H00TWS7E
TWS700 EZ	H0TWS7EZ
TWSK700 E	H0TWSK7E
WS 700 Z FB Eco	H00WSZFB
WS 700 E FB Eco	H00WSEFB
WS 700 EZ FB Eco	H0WSEZFB
WS 700 Z FB Pro	HWSZFBPR
WS 700 E FB Pro	HWSEFBPR
WS 700 EZ FB Pro	HWSEZFBP
Tilter extension (accessory)	
Hydraulic tilter (accessory)	
Cycle control (accessory)	

Version of this instruction manual: Circular Saws 4.0

Date of preparation: 2015-10



Content

- 1 EC Declaration of Conformity 6
- 2 Safety instructions 7
 - 2.1 Notes on symbols and instructions 7
 - 2.2 Pictograms and their meaning 8
 - 2.3 General safety instructions 10
 - 2.4 Intended use 10
 - 2.5 Operator requirements 10
 - 2.6 Machine modification 11
- 3 Description of the machine..... 12
 - 3.1 Mode of operation 12
 - 3.2 Overview 12
 - 3.3 Parts explanation..... 18
 - 3.4 Technical details..... 19
- 4 Transporting the machine..... 20
 - 4.1 Safety instructions during transport 20
 - 4.2 Transportation and travelling on public roads 20
 - 4.3 Manual transportation or transport trolley 21
- 5 Installing the machine..... 22
 - 5.1 Safety instructions for installing the machine..... 22
 - 5.2 Obligations before starting work 23
 - 5.3 Hydraulic supply line 23
 - 5.4 Electrical supply line..... 24
 - 5.5 Controlling rotational direction of motors (E and E-Z machines) 24
 - 5.6 Modifying circular saws for power take-off drive..... 24



- 5.7 Converting from table to tilting mode (TWS600 and TWS700) 25
- 5.8 Converting from tilting to table mode (TWS600 and TWS700) 26
- 5.9 Trimming wedge setting 27
- 5.10 Unfolding the feeder belt 28
- 6 Operation 29
 - 6.1 Safety instructions during operation 29
 - 6.2 Important information during operation 31
 - 6.3 Cutting firewood with a tilting and table-tilting saw 31
 - 6.4 Cutting firewood with a rolling table saw 32
 - 6.5 Trimming wood 32
 - 6.6 The operation of EZ circular saws with electromagnetic connector 33
 - 6.6.1 Power take-off mode 33
 - 6.6.2 Emergency stop in power take-off mode 34
 - 6.6.3 Electric mode 34
 - 6.7 Starting the feeder belt 34
 - 6.8 Emergency stop 35
 - 6.9 Releasing the brake 36
 - 6.10 Hydraulic tilter (optional) 36
 - 6.11 Hydraulic tilter with cycle control 37
 - 6.12 Daily inspection 37
- 7 Decommissioning 38
 - 7.1 Safety instructions during decommissioning 38
 - 7.2 Switching off drive 39
 - 7.3 Refolding the feeder belt 39
- 8 Upkeep 41



8.1	Safety instructions during upkeep	41
8.2	Important information during upkeep	42
8.3	Instructions for working on electrical equipment	43
8.4	Instructions for working on hydraulic equipment	43
8.5	Obligations before the end of work	43
9	Maintenance	44
9.1	Safety instructions during maintenance	44
9.2	Cleaning	45
9.3	Oil and tank	45
9.4	Changing the hydraulic tubes	45
9.5	Changing the gear oil in angular gears	46
9.6	Checking the saw blade	46
9.7	Changing the saw blade	47
9.7.1	Changing the blade on table tilting and tilting circular saws	47
9.7.2	Changing the blade on a rolling table circular saw	48
9.8	Checking electrical feed cables	48
9.9	Lubricating bearings	49
9.10	Servicing or setting the motor brake	49
9.10.1	Calculating the margin/lever play	49
9.10.2	Opening of the motor frame in the brake and fan	50
9.10.3	Setting the margin (between brake and brake shoe)	51
9.11	Tensioning and adjusting the feeder belt	53
9.12	Changing the hydraulic tubes	53
10	Dealing with faults	54
10.1	Safety instructions in case of faults	54



11	Guarantee and warranty.....	56
12	How to act in emergencies	57
13	Notes.....	58



1. EC Declaration of

1 EC Declaration of Conformity

We hereby declare that, in all its different versions, the machine is in compliance with the standards for machinery as set out in Directive 2006/42/EC as well as with other associated standards.

The respective safety instructions and operating manuals are valid for these machines.

The machines may not be modified. This declaration shall lose its validity if any unauthorised modification is made to the machine.

Operation without the appropriate protective devices is not permitted, since they no longer comply with the CE policy and there is also an increased risk of injury.

Please find below the name and address of the person authorised to compile the technical documentation.

St. Georgen am Fillmannsbach, 2014








Karl Binderberger
General Manager

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

2 Safety instructions

2.1 Notes on symbols and instructions

Please note the meaning of the following symbols and instructions. They are subdivided into hazard levels and classified pursuant to ISO 3864-2.


 <p><i>Designates an immediately imminent danger. If the information is not followed, death or the most severe physical injury (disability) is the result.</i></p>

 <p><i>Designates a possibly dangerous situation. If the information is not followed, death or the most severe physical injury (disability) is the result.</i></p>

<p><i>Designates a potentially dangerous situation if the information is not followed, property damage as well as slight or moderate physical injury is the consequence.</i></p>

 <p><i>Designates general instructions, useful user tips and work recommendations but which do not have an effect on the safety and health of personnel.</i></p>

Kommentar [SR1]: DANGER






Kommentar [SR2]: WARNING

Kommentar [SR3]: CAUTION

2.2 Pictograms and their meaning

	<p>Read through this operating manual carefully prior to commissioning.</p> <p>Wear ear muffs and safety glasses during operation.</p> <p>Wear safety boots (steel toe-capped) during operation!</p> <p>Wear gloves during operation</p> <p>Warning against hot media</p>
	<p>Switch off machine before doing maintenance work and secure against restart</p> <p>Only one person may service the machine</p> <p>Let the machine cool off before doing maintenance work</p>
<p>Drehrichtung beachten! Rotating direction!</p>	<p>Indicates the rotational direction of the motor or the rotational direction of the power take-off!</p>
<p>Schmierstelle lubrication point</p>	<p>Indicates a lubricating point</p>

2. Safety instructions

	<p>Indicates the intersection line!</p>
	<p>Indicates in which position the motor brake is tightened or loosened!</p>
	<p>Indicates the saw blade diameter and the maximum speed!</p>
	<p>Indicates the speed setting of the (hydraulic tilter!)</p>
	<p>Indicates the tilter control! (hydraulic tilter)</p>

2.3 General safety instructions

The machine may only be operated by persons who are trained, instructed and authorised for this. These people have to be familiar with the operating instructions and act accordingly. The authorisation of each operator must be clearly specified. Apprentice personnel may only operate the machine under the supervision of experienced personnel. Successful completion of training should be confirmed in writing.

2.4 Intended use

The circular saws are only designed to cut firewood. Any other use is considered improper. The operator – and not the manufacturer – shall be held responsible for all personal injury and material damage arising from improper use.

Proper use also includes reading this operating manual and adherence to all instructions contained – in particular the safety instructions – are considered requirements for compliance with intended use. In addition, all inspection and maintenance work must be performed within the designated time intervals.

2.5 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. Prior to initial operation, the operator must be properly trained and instructed by the machine operator. Wear safety boots and tight clothing when operating the machine. The operator must possess the necessary technical knowledge before performing any repairs or maintenance work on the machine.

2.6 Machine modification

For safety reasons, no unauthorised modifications may be made to the machine. This includes removing cover plates (= fenders). All planned modifications require prior written consent from Binderberger.

Only use original replacement parts / original wear parts / and original accessories - these parts are specifically designed for the machine. Parts supplied by third companies provide no guarantee that they have been designed and manufactured in a manner that meets the required degree of safety and performance.

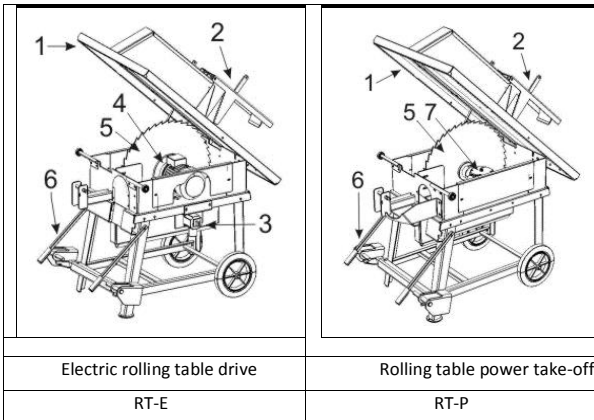
The use of parts and special equipment on the machine that are not delivered by our company is prohibited.

3 Description of the machine

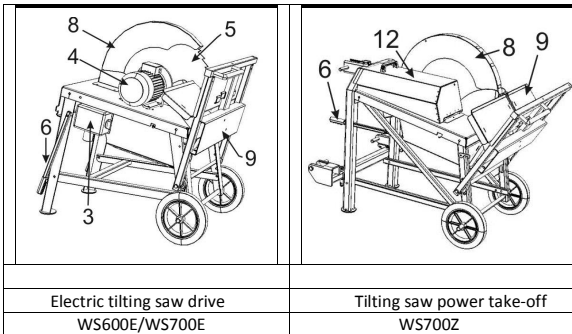
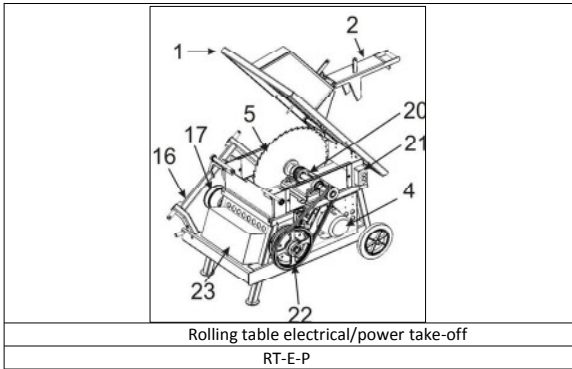
3.1 Function

The circular saw is a machine which through the triple-point linkage of a tractor is connected to the tractor's rear and can thus be moved or transported. The device is partly operated mechanically (power take-off/steering shaft) or electrically (AC motor) and partly by hydraulics. The hydraulic supply which is limited to the drive and the fold-out mechanism of the feeder belt goes through either through an independent supply or through a tractor's hydraulics (TH). Whether the hydraulics is designed as an independent supply or an external supply has no effect on whether the saw blade drive operates via an electrical (E), power take-off (Z) or a combination of electrical and power take-off drive (EZ).

3.2 Overview



3. Description of the machine

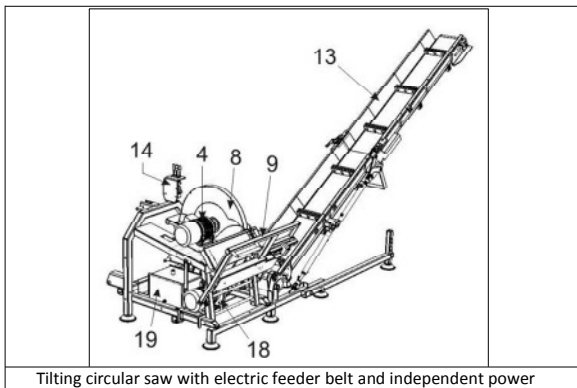
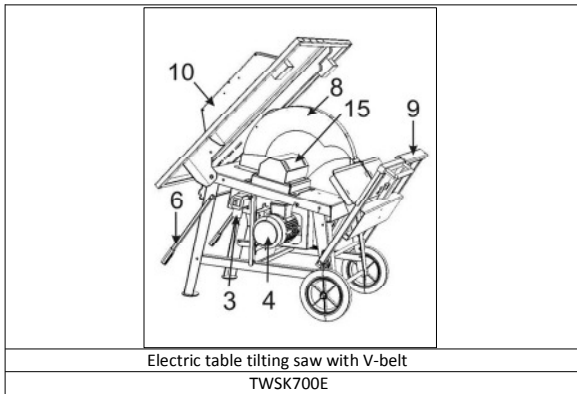


3. Description of the machine

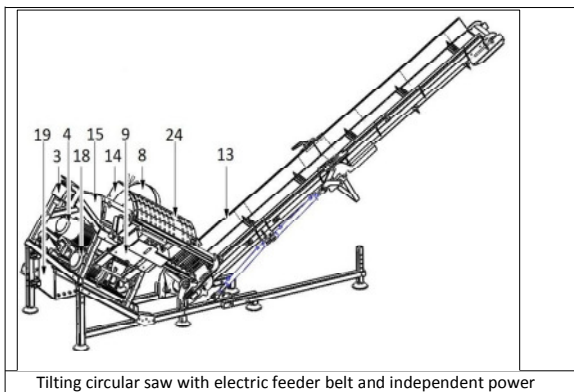
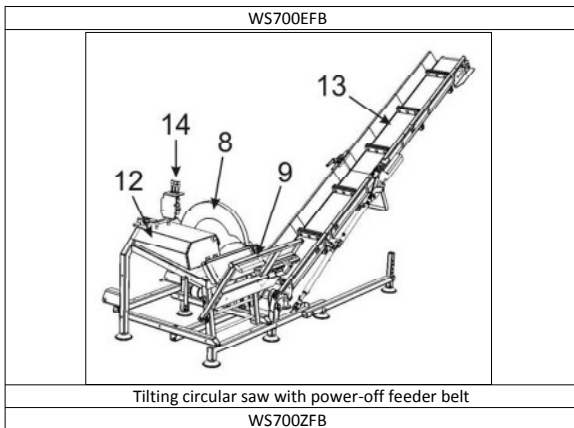
<p>Electric table tilting saw TWS600E/TWS700E</p>	<p>Electric table tilting saw/power take- TWS700EZ</p>

<p>Table tilting saw power take-off TWS700Z</p>		

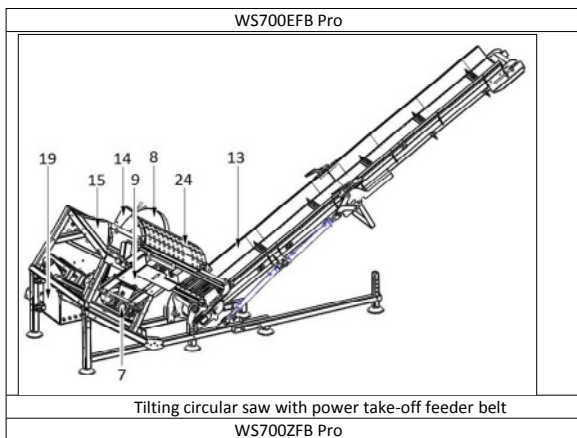
3. Description of the machine



3. Description of the machine



3. Description of the machine



3.3 Parts Explanation



Number:	Name:
1	Rolling Table
2	Wood Clamp
3	Plug
4	E-Motor with 1 Shaft Extension
5	Saw Blade
6	Hand Lever
7	Angular Gears for Power Take-Off
8	Rotation Guard for Tilting Saws
9	Tilter
10	Folding Table for Table Tilting Saws
11	E-Motor with 2 Shaft Extensions
12	Angular Gear Cover
13	Removal Belt
14	Removal Belt Control Unit
15	Shaft Cover
16	Three Point Extension Sheet
17	PTO journal
18	E-Motor with Hydraulic Pump
19	Hydraulic Tank
20	V-Belt Pulley E-Mode in EZ
21	On/Off Switch including Emergency Stop
22	V-Belt Pulley Z-Mode in EZ
23	EZ Switch Cabinet
24	Cover Tilter

3.4 Technical Data

Type	WS 600 / TWS 600	WS 700 TWS 700	RT	WS 700 FB WS 700 FB
Weight Electrical [kg]	120 / 180	140 / 200	180	370
Weight Power take-off [kg]	-	160 / 260	180	370
Weight EZ [kg]	-	240 / 280	180	-
Working level mm]	850/890	850/890	890	890
Cutting diameter and cutting height [mm]	200/200	240/230	215	240
Minimum cutting diameter and [mm]	30 / 30	30 / 30	70	30
Saw blade diameter mm]	600	700	700	700
Drilling diameter	30	30	30	30
Connecting cable [V]/[A]	400/16	400/16	400/16	400/32
Motor output	5.5 kW at 60% ED	5.5 kW at 60% ED	5.5 kW at 60% ED	5.5 kW at 60 % ED
Motor speed [rpm]	1450	1450	1450	1450
Power take-off rotational speed	-	540	540	540
Table size LxW in [mm]	1050 x 750	1250 x 840	1380 x 840	-
Running noise [db (A)]	87	87	80	87
Working noise [db (A)]	98	98	99	98
Maximum hydraulic	-	-	-	180

4 Transporting the machine

4.1 Safety instructions for Transport

 WARNING	
	<p style="text-align: center;"><u>Risk of injury during transit!</u></p> <ul style="list-style-type: none">• Make sure that there is no one in the danger zone and adequate safety clearance is maintained!• Sloping positions during transport could lead to leakage of lubricant which, upon direct contact with the skin, could cause chemical burns!• Do not stand under unsecured loads as they can fall!• The machine may only be lifted at the specified hold points!• Strict adherence to the prescribed position for transporting the machine is mandatory

Kommentar [SR4]: WARNING

4.2 Transportation and travelling on public roads

First please take note of the instructions for shutting down.

If you wish to transport the circular saw with a tractor take care that it is secured according to the instructions to the 3-point of the tractor. With circular saws WS 700 EZ, TWS 700 Z and TWS 700 EZ, first the circular saw must be unhitched from the tractor and the lower link sheet (16) folded up. Secure this with the catch (21) next to the upper link. Attach the circular saw to the lower link pin near the circular saw and to the upper link. Check whether the upper and lower link pins are secured with a splint after each suspension operation. Moreover, the tractor must be designed for the total weight of the circular saw.

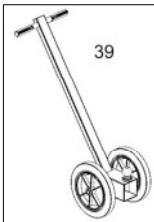
4. Transporting the

Follow statutory regulations when travelling on public roads!

- Keep reflectors and lamps clean.
- If you are travelling with a vehicle, adjust the travelling speed to ground conditions. In this way, you prevent damage being caused to the circular saw by strong shocks which have an adverse effect on connections.
- Pay attention to the reduced steering control because of the heavy load.
- Take note of the total height when passing under bridges.

4.3 Manual transportation or transport trolley

If you want to transport the circular saw manually, there are two hand levers (6) on the back of the saw. These should be swung upwards. Now the circular saw can be taken to the desired site. To swing the hand levers back down, push them away from each other. Consequently,





this will cause them to unblock and they can be moved downwards.

For circular saws TWS 700 Z and TWS 700 EZ there is a transport cart (39) available. Due to the heavy weight of the saw this has been added to the machine instead of the hand levers (6) It only needs to be inserted into the port on the back. Then the circular saw can be lifted and transported without great difficulty.


5 Installing the machine

5.1 Safety instructions for installing the machine

 WARNING	
	<p><u>Risk of injury in case of improper machine installation!</u></p> <ul style="list-style-type: none">• Check the machine for damage in transit before each installation!• Install the machine on level and solid ground!• If available, use the machine's support feet!• Make sure no one is endangered by the installation!• Lay down machine connections, cables and hoses so that no slippery areas are produced!• The machine may only be operated in perfect working condition!• Do not assemble or disassemble pressurised hoses!• Do not lay down pressurised hoses in the work area! If this is impossible, make sure that the operator cannot be injured if the hose ruptures!

Kommentar [SR5]: WARNING

5.2 Obligations before starting work

NOTICE	
	<p><u>Perform the following tasks prior to operation:</u></p> <ul style="list-style-type: none">• Assembly and connection must be carried out according to instructions.• Before starting work make sure all hoses, couplings, pins and screw connections are firmly in place.• At outdoor temperatures under 0°C let the machine run for approx. 10 minutes at idle without load.

5.3 Hydraulic feed cable

Please note that the return pipe of the control block (in machines without its own oil supply) should be connected to a **depressurised return motion**.

Take note that the return motion must first be connected and then the pressure hose!

The connection to a double-action controller is never without pressure and can damage the control block.

Please see to it as well that functions on the control block are never (even inadvertently) actuated if at least the return line to the tractor is not connected. This too can lead to significant damage to the control block.

Use only the hoses provided with the circular saw.

Plug a line to a single-acting controller and the second line to a depressurised return motion on the tractor.

5.4 Electrical feed cable

An electrician shall provide a fuse protection for and size the electrical feed cable pursuant to the national standard and select the cable depending on the line length! Connect the 5-pole CEE 400 V/16 A or 32 A feed cable to the connector.
Never work on electrical system if you do not have the required expertise!

5.5 Checking the rotational direction of motors (E and E-P machines)

Briefly activate the motor and check the rotational direction on the motor's fan vane.
The correct rotational direction can be seen by looking at the sticker on the motor's fan cover. If the rotational direction is not correct, disconnect the supply line to the circular saw.



The connector has a phase-changing switch with which you can change the rotational direction of the motor (depress the disk in the connector with a screwdriver and turn 180°).

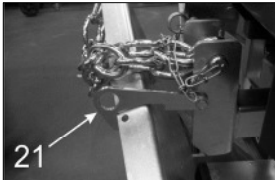
5.6 Modifying circular saw for power take-off drive

(for circular saws RT EZ, WS700 EZ, TWS700 EZ and TWS 700 Z)

There is a catch next to the upper link (21) Raise this catch. The lower link sheet (16) can now be swung down. Swing the support bracket up and secure it with the upper link pin.

5. Installing the machine

Now the circular saw can be attached to the 3-point of the tractor.



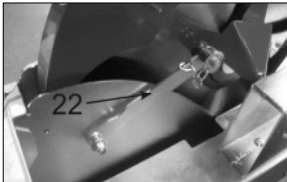
Under no circumstances should the circular saw be transported like this. Return the circular saw to its original state for transport.

5.7 Converting from table to tilting mode (TWS600 and TWS700)

When working on the machine, disconnect the machine from the tractor or mains supply, depending on drive type. This is to prevent accidental activation.

It is essential to wait until the saw blade (5) has come to a complete stop. Lift the table (10) and fold it back.

At the same time check that the saw blade is correctly positioned. Now take the rotation guard (8) which has swung down by the saw blade and turn it upwards. There is a catch (22) on the right side of the tilter.



This catch must be connected to the rotation guard during tilt mode. For this purpose, stick the catch to the rotation guard using the pins. Now secure the catch (22), as shown in the image, with the locking screws attached to the chain.

Before activating the circular saw, test the tilter (9) to check that everything can be operated freely and easily. Take particular care that there is enough space between the saw blade and the tilter.

5.8 Converting from tilting to table mode (TWS600 and TWS700)

When working on the machine, disconnect it from the tractor or mains supply, depending on drive type. This is to prevent accidental activation.

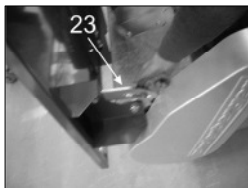
It is essential to wait until the saw blade (5) has come to a complete stop. Remove the nut on the rotation guard. This is on the right side where the catch (22) on the tilter is connected to the rotation guard (8).

Once the nut has been removed, take the catch (22) from the pin on the rotation guard.

Now the rotation guard (8) can be folded down.

If you wish to use the table for trimming, it

is better to remove the entire rotation guard since this fills easily with chippings when it is folded down. To remove the rotation guard, remove the 2 screws (41) under the mounting.



Check the saw blade is correctly positioned. The table (10) can now be folded down. Power take off saws have an additional clip (23) which ensures the table does not fold forward. This clip can be found on the right side at the table's pivot. Pull the fastening clip forwards and at the same time move the table downwards.

Before starting work, check the alignment of the trimming wedge. Please take note of the steps outlined in the relevant chapter.

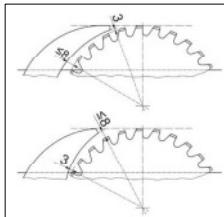
Set the trimming guard (24) in such a way that there is a distance of 5 mm between the guard and the work piece. Loosen the knurled screw (25), adjust the guard (24) and tighten the knurled screw again. If the wood to be cut is very narrow, use a feeder stick.

5. Installing the machine



5.9 Trimming wedge setting

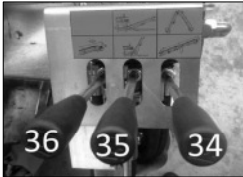
Before you begin cutting with the circular saw, set the splitting wedge properly. Make sure that its tip reaches at least the highest point of the saw blade. Moreover, heed the distances to the saw blade according to the drawing below. That means the distance must be at least 3 mm and must not exceed 8 mm.



5. Installing the machine

5.10 Unfolding the feeder belt

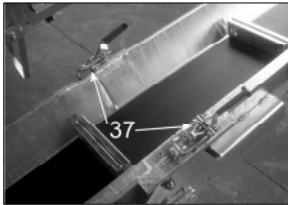
(only circular saw with feeder belt)



Always operate the circular saw with feeder belt from the left side, as seen from the tilter, to prevent being injured by the conveyor belt.



To change the feeder belt from the transport position to the working position, proceed as follows. First, using the 2nd lever (35), pull the entire feeder belt towards the saw.

Then, using the 1st lever (34), swing the upper half of the feeder belt upwards. At the same time, using the 2nd lever (35) it is possible to lower the feeder belt and adjust it to the correct conveyor height. Now the clamp fastenings (37) must be closed in order to support the feeder belt correctly.




6 Operation



6.1 Safety instructions for Operation



 GEFAHR	
	<p><u>Risk of injury when caught or pulled in by movable machine parts!</u></p> <ul style="list-style-type: none">• Maintain sufficient safety clearance to moving machine parts!• Do not linger under the feeder belt as it can fall!



Kommentar [SR6]: DANGER

 WARNUNG	
	<p><u>Risk of injury during operation!</u></p> <ul style="list-style-type: none">• Make sure that there is no one in the danger zone and adequate safety clearance is maintained!• Familiarize yourself with the operating controls of the circular saw!• Make sure the machine is standing securely!

Kommentar [SR7]: WARNING


 VORSICHT	
	<p><u>Stumbling over parts lying around!</u></p> <ul style="list-style-type: none">• Remove all parts not belonging to the machine from the machine's environment.

 VORSICHT	
	<p><u>Risk of injury due to negligent use of personal protective equipment!</u></p> <ul style="list-style-type: none">• Wear protective gloves and safety boots with steel caps.• Wear safety goggles and hearing protection.

 VORSICHT	
	<p><u>Risk of injury during operation</u></p> <ul style="list-style-type: none">• Only one person may work on the machine at all times.• See to it that no other persons are within the range of the machine.

Kommentar [SR8]: CAUTION

6.2 Important information during operation

NOTICE	
	<ul style="list-style-type: none">• Operating personnel must make sure that no unauthorised persons are present in the work area.• Prior to activating the machine, make sure you are well informed regarding the correct response to faults.• Prior to activating the machine, be sure to perform all the tasks listed in "Pre-operation obligations."• The work steps listed in the following chapter on "Shut-down" must always be performed prior to shutting down the machine.• If operating personnel step away from the machine so that it is unsupervised, stop the machine and secure it against unauthorised restarting.

Operation under power supply lines:

When working under power supply lines, pay strict attention to the safety distances. No part of the device should be closer to power supply lines than the following safety distances:

In case of low-voltage lines: min. 2 meters
In case of high-voltage lines: min. 6 meters

6.3 Cutting firewood with a tilting and table-tilting saw

Set up the circular saw. When doing so, follow all directions in the chapter "Installing the machine".

Cutting firewood is only allowed in tilting mode but not in table mode.

Before making the first cut, test whether the tilter (8) returns to its original position independently after being pushed forward. If this is not the case, correct the fault before starting work.

Place a log in the tilter. Make sure that the longer part of the lumber on the left side of the saw blade is on the longer part of the tilter.

Now move the tilter forward using the bar with both hands and saw through the log. Do not force the tilter into the saw blade (5). It is possible that the saw blade gets caught in the wood.

This can destroy the saw blade and can tear the motor from its mounting. This presents a high risk of injury. **We accept no responsibility for injury or damage caused by improper use.**

6.4 Cutting firewood with a rolling table saw

Set up the circular saw. When doing so, follow all directions in the chapter "Installing the machine".

Before making the first cut test whether the table (1) returns to its original position independently after being pushed forwards. If this is not the case, check the returning spring under the table and the bearings before starting work.

Lay the wood on the rolling table (1) Hold the wood with the wood clamp (2).

Do not force the table into the saw blade (5). It is possible that the saw blade gets caught in the wood. This can destroy the saw blade and tear the motor from its mounting. This presents a high risk of injury. **We accept no responsibility for injury or damage caused by improper use.**

6.5 Trimming wood

Set up the circular saw. When doing so, follow all directions in the chapter "Installing the machine".

Adjust the length block and the trimming guard as shown in the chapter **Converting from tilting mode to table mode (TWS600 and TWS700)**.

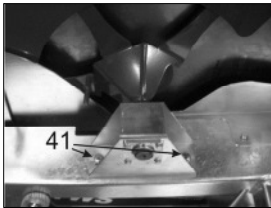
Lay the wood on the table (1) and push it gently against the length block. Take particular care to use a feeder stick (26) when cutting narrow pieces of wood.

Carefully push the wood against the saw blade (5). Carefully push the wood against the saw blade (5). Take care that the wood does not tilt whilst being cut and remove it immediately from the table.

If you should have a lot of longitudinal cutting work to do, take regular breaks so that the motor can cool.

If you want to trim wood using table tilting saws, it is better to remove the rotation guard for the tilting saw as this fills quickly with wood shavings. In order to do this, fold the table up and swing up the rotation guard.

Then unscrew both screws (41) and lift away the guard.



6.6 The operation of EZ circular saws with electromagnetic connector

Circular saws RT EZ, WS 700 EZ FB Eco and WS 700 EZ Pro are equipped with an electromagnetic coupling which in the power take-off mode transmits the power supply from the power take-off to the saw blade!

6.6.1 Power take-off mode



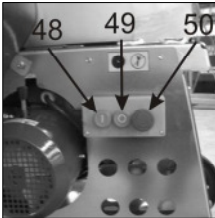
Install the circular saw in accordance with the chapter "Modifying circular saw for power take-off".

In power take-off mode the 3-pole connector must be connected to the 12 Volt system of the tractor.

Do not start the power take-off if the emergency stop is pressed!

The power take-off can now be switched on and you can start working.

6.6.2 Emergency stop in power take-off mode



Is the emergency switch (50) in power take-off mode is pressed, the electromagnetic coupling opens and the power flow to the saw blade is interrupted. The saw blade is then braked through the electric motor brake. To continue working, stop the power take-off first. Once the power take-off is stationary, you can release the emergency stop switch and close the electromagnetic coupling with the acknowledged key.

You can now start the power take-off and continue working!

Release the emergency stop switch (50) only when the power take-off is at a standstill since otherwise the coupling can sustain serious damage.

6.6.3 Electric mode

Connect the 16 A feed cable to the switch cabinet using the connector provided for this purpose.

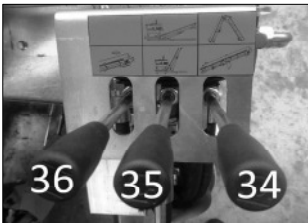
Check the direction of rotation of the motor as described in the chapter "**Inspecting the motor's rotational direction**".

Now switch on the motor through the green On key (48).

The motor can be switched off through the red Off switch.

6.7 Starting the feeder belt

(only for circular saws with feeder belt)

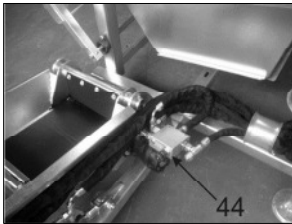


Always operate the circular saw with feeder belt from the left side as seen from the tilter.

To start the feeder belt use the 3rd operating lever (36). This will click into its switching position.

When starting the feeder belt (13) check that there is no damage to the rubber.

If there is any damage, change the rubber parts immediately.
The speed can be regulated using the amount regulator (44) on the right next to the feeder belt. Adjust this so that the logs are removed at an ideal pace.

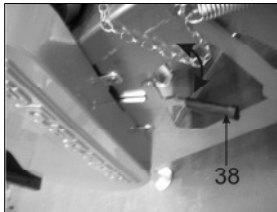


In addition, check that the feeder belt is running centrally. If this is not the case, proceed as outlined in the chapter **Tensioning and adjusting the feeder belt**

6.8 Emergency stop (for PTO machines)

With machines TWS-Z, TWS-EZ and WS-EZ there is the option of interrupting the power supply from the power take off shaft to the saw blade. In this way the saw can be stopped quickly without switching off the power take off shaft on the tractor.

This emergency stop is activated using the operating lever (38) on the left side of the circular saw. To do this, pull the lever upwards until it clicks into position.



Work must be undertaken on or near the saw blade! Switch off the power take-off completely for this purpose.

To release the emergency stop again, pull the lever (38) away from the machine at an angle of 90° until it can be moved downwards again.

6.9 Releasing the brake
(at electric circular saws)



Electric circular saws have the option of releasing the motor brake whilst switched off.

For this there is a lever (47) on the electric motor. In practice however this function is not needed.

6.10 hydraulic tilter (optional)
(in WS700FB Eco/WS700FB Pro)

If you keep the control lever (51) pressed upwards, the tilter will then move forward. Letting go of the control lever (51) will cause the tilter to move to its original position.

You can adjust the speed of the tilter by turning the control lever (right/left).



6.11 Hydraulic tilter with cycle control (in WS700FB Pro)



Set the desired cutting length using the selector switch on the control box. Check whether the mechanical limit stop in the tilter is set to the same cutting length as in the selector switch. Now insert a piece of wood in the tilter and let it slide down until the mechanical limit stop. If you now press the button switch, the tilter will execute the cutting cycle and the cut wood lands on the removal conveyor belt.






6.12 Daily inspection

Inspect the device visually. Be aware of faults and defects that may have an impact on safety. Any faults and defects should be resolved.

- Make sure that there is no leak in the hydraulic system
- Make sure that there are no defective hoses.

7 Decommissioning

7.1 Safety instructions for Decommissioning

 GEFAHR	
	<p><u>Risk of injury when caught or pulled in by movable machine parts!</u></p> <ul style="list-style-type: none"> • After shutoff wait until all moving machine parts have come to a standstill! • Maintain sufficient safety clearance to moving machine parts!
 WARNUNG	
	<p><u>Risk of injury during decommissioning!</u></p> <ul style="list-style-type: none"> • Make sure that there is no one in the danger zone and adequate safety clearance is maintained! • Do not stand under unsecured loads as these can fall! • Make sure there is no one between machine and tractor!
 WARNUNG	
	<p><u>Risk of injury if unauthorized persons switch on the machine!</u></p> <ul style="list-style-type: none"> • Secure the machine against unauthorized restarting after operation!

Kommentar [SR9]: DANGER

Kommentar [SR10]: WARNING

7.2 Switching off drive

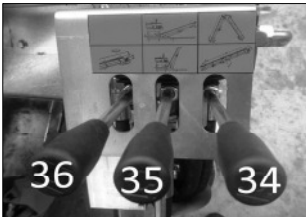
If you have been cutting with a table tilting saw, switch the machine from table mode to trimming mode before transporting it. Take note of the instructions in the chapter "**Installing the machine**". There you will find the sub-section "**Converting from tilting to table mode**".

Switch off the circular saw drive and wait until the saw blade (5) has come to a complete standstill. Remove the cardan shaft or the cable from the circular saw.

Store the steering shaft in such a way that it is not contaminated:

- In rolling table saws on the rack to the right beside the recess for the steering shaft.
- In circular saws with a triple-point mounting plate, place the steering shaft on this plate.
- In WSZ and WSZFB, fasten the steering shaft to a chain on the upper link.

7.3 Refolding the feeder belt



To change the feeder belt from the working position to the transport position, proceed as follows. First use the 1st lever (34) to lift the upper part of the feeder belt so that the tension on the fastening clamps (37) is removed. Then the clamps are simple to release.

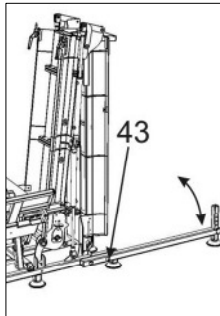
If you release the fastening clamps without exerting pressure on the offset cylinder, serious injury may occur.

8. Upkeep

Now lift the complete feeder belt using the 2nd lever (35) and at the same time using the 1st lever (34) to fold down the upper part of the feeder belt.

For transport the feeder belt must be folded as illustrated and clicked into position in the lower belt brackets.

Next the pin (43) should be removed from the brace support and this should be folded upwards. This is then secured using the clip provided in the middle of the upper part of the feeder belt.



8 Maintenance


8.1 Safety instructions for Maintenance

 GEFAHR	
	<p><u>Serious risk of injury when switching on the drive during maintenance work!</u></p> <ul style="list-style-type: none"> • Stop the machine! • Provide a safeguard to prevent unintentional reclosing!
 VORSICHT	
	<p><u>Slipping on oil residues during maintenance work (oil change)!</u></p> <ul style="list-style-type: none"> • Use suitable collecting tanks. • Remove leaked out oil immediately.
 VORSICHT	
	<p><u>Risk of injury! Scalding through contact with hot machine components and media!</u></p> <ul style="list-style-type: none"> • Let the machine cool off to the ambient temperature before doing any maintenance work.
 VORSICHT	
	<p><u>Risk of acid burns through contact with lubricants!</u></p> <ul style="list-style-type: none"> • Avoid skin and eye contact. • Do not swallow or inhale. • Use suitable protective equipment (gloves, safety goggles).

Kommentar [SR11]: DANGER

Kommentar [SR12]: CAUTION

8.2 Important information during upkeep

NOTICE	
	<ul style="list-style-type: none">• Replace all defective machine parts immediately.• Only use original replacement parts.• Make sure that appropriate containers are available for the disposal of all groundwater-polluting agents (oils, coolants, etc.).• Only use the prescribed operating fluids.• Self-locking screws and nuts must always be replaced.• Dispose of all operating fluids, lubricants and auxiliary substances in an environmentally friendly manner.• Serious damage can result to the machine through the use of incorrect replacement parts or consumables.• There is risk of fire when doing welding work. Keep a fire extinguisher available.• Improperly placed lines can cause smouldering and cable fires.• Never allow the machine to be used without providing the prescribed on-site safety equipment.• Removing the safety warnings attached to the machine is strictly forbidden.• Replace the sticker on the machine if it is no longer legible.• Always adhere to the warning signs displayed on the machine. They help avoid hazards.• Do not perform any repair work unless you possess the necessary qualifications to do so.

8.3 Instructions for working on electrical equipment

As a matter of principle, only qualified electricians may work on the machine's electrical equipment.

- Inspect electrical equipment regularly.
- Reconnect loose connections.
- Replace damaged lines or cables immediately.
- Never clean electrical equipment with water or any other similar liquid.

8.4 Instructions for working on hydraulic equipment

As a matter of principle, only qualified technicians may work on the machine's hydraulic equipment.

- Depressurise all hydraulic systems and system parts before working on the equipment.
- Before starting, make sure that appropriate containers are available for the disposal of all groundwater polluting agents (oils, coolants, etc.).


8.5 Obligations upon end of work

The following points must be observed after the termination of maintenance work and prior to starting the machine:



- Check whether all previously detached bolted connections are firm mounted.
- Make sure that all previously removed protective equipment, covers, container lids, etc. are properly installed.
- Make sure that all tools, materials and other equipment used have been removed from the work area.
- Clean the work area and remove liquids and similar substances that might have leaked.
- Make sure that all safety devices of the machine are working again properly.
- Check the operation of safety equipment. If the safety equipment is not fully functional, do not allow the machine to be used.
- Do a test run with the operational control of repaired components.
- Secure the machine from unauthorised restarting if you have not finished work.
- Open flames and smoking are strictly forbidden.

9 Maintenance



9.1 Safety instructions during maintenance



 GEFAHR	
	<p><u>Serious risk of injury when switching on the drive during maintenance work!</u></p> <ul style="list-style-type: none">• Stop the machine!• Provide a safeguard to prevent unintentional reclosing!



Kommentar [SR13]: DANGER

 VORSICHT	
	<p><u>Slipping on oil residues during maintenance work (oil change)!</u></p> <ul style="list-style-type: none">• Use suitable collecting tanks.• Remove leaked out oil immediately.

Kommentar [SR14]: CAUTION

 VORSICHT	
	<p><u>Risk of injury! Scalding through contact with hot machine components and media!</u></p> <ul style="list-style-type: none">• Let the machine cool off to the ambient temperature before doing any maintenance work.• Keep easily flammable material away from hot surfaces.

 VORSICHT	
	<p><u>Risk of acid burns through contact with lubricants!</u></p> <ul style="list-style-type: none">• Avoid skin and eye contact.• Do not swallow or inhale.• Use suitable protective equipment (gloves, safety goggles).

 VORSICHT	
	<p><u>Environmental hazard!</u></p> <ul style="list-style-type: none">• Make sure that no oil ends up in the environment.• Leaked out oil contaminates bodies of water and groundwater.

9.2 Cleaning

Remove dirt from the machine after each operational deployment and before doing maintenance!

Lubricate the circular saw after cleaning it with water!

9.3 Oil and tank

Do the first oil change after 50 operating hours.

Afterwards change the oil every 250 operating hours or at least once a year.

Use HVI 46 or an equivalent hydraulic oil.

Ensure that a sufficiently large collecting vessel is available.

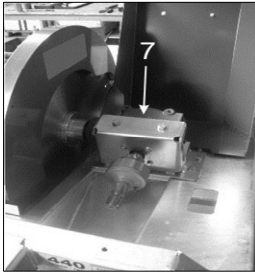
9.4 Changing the hydraulic tubes

Replace all hydraulic tubes every 5 years.

Serious injuries can result from damaged tubes!

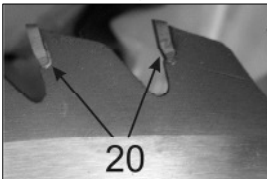
9.5 Changing oil in angular gears

Change the gear oil for the first time after 100 operating hours. It should be changed every 500 operating hours or once a year thereafter. Use gear oil of viscosity class SAE 90.



9.6 Checking the saw blade

Check the saw blade (5) carefully at regular intervals. Check whether it is sharp and that the tooth setting is sufficient.



Check whether hardened metal saw blades have all the cemented carbide tips (20) in place.

Check whether your saw blades do not have fractures or signs of overheating. Should your saw blade not meet these requirements take it to a specialist. Replace it should there be signs of severe damage.

No work should be undertaken with a damaged or inappropriate saw blade.

9.7 Saw Blade he Saw Blade

When you want to change the saw blade (5) first switch the machine off. It is essential to wait until the saw blade has come to a complete stop. Disconnect the circular saw from the power supply and secure it against accidental restarting.

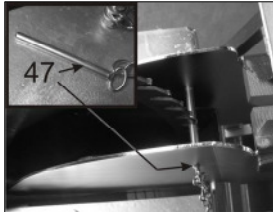
	CV	HM
Diameter [mm]	600 / 700	600 / 700
Thickness [mm]	3.2	4.2/3.2
Hole diameter	30	30
Max. rotational speed	2700	2300
Teeth number	56 Z	45 Z

See to it that you use saw blades pursuant to standard EN 847-1.

9.7.1 Changing the blade on table tilting and tilting circular saws

On table tilting circular saws fold the table (10) upwards.

On tilting circular saws remove the nut on the rotation guard (8). This is on the right side where the catch (22) on the tilter (9) is connected to the rotation guard. Once the nut has been removed, take the catch from the pin on the rotation guard. Now the rotation guard can be folded down.



Prevent the saw blade from twisting using the pin (47).

Use leather gloves to protect against injury. Undo the screw on the clamp flange with a suitable tool. The saw blade holds because of the locking mechanism.

Take out the screw and also the aluminium clamp flange. Now

You can replace the saw blade (5).

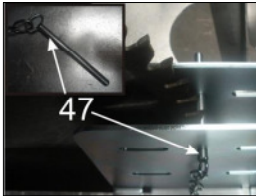
To fasten everything again, first put the aluminium clamp flange on the saw blade and tighten the screw. Make sure that the screw is properly tightened.

Now you can refasten the rotation guard on the tilting circular saw and / or fold down the table on a table tilting circular saw.

9.7.2 Changing the blade on a rolling table circular saw

Under the table (1) there are two clips on the working side. Turn the middle clip horizontally and screw. You can now push the table forward. Lift the table at the same time. Just before the table is pushed completely backwards, it swings upwards. Swing the table fully back.

Prevent the saw blade from twisting using the pin (47).



Use leather gloves to protect against injury. Undo the screw on the clamp flange with a suitable tool. The saw blade holds because of the locking mechanism. Take out the screw and also the aluminium clamp flange. Now the saw blade (5) can be replaced.

To fasten everything again, first put the aluminium clamp flange on the saw blade and tighten the screw. Take care that the screw is properly tightened.

Fold the table (1) down and let it click into the check rail. Now turn the middle clip under the table upwards and tighten the butterfly nut. This enables the table to move but it cannot be pushed back so far that it can swing upwards. Also check whether the table can only be pushed backwards when the wood clamp (2) is pushed down.

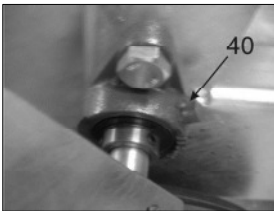
9.8 Checking electrical feed cables

Before starting work always check the feed cables for damage. They should not be cracked or show any other signs of damage. If this is the case there is a high risk of electric shock.

Also take care that the cable is of sufficient width. This should be at least 2.5 mm², with a maximum length of 25 m.

If you are unsure whether your cable is sufficient, please contact an electrical specialist.

9.9 Lubricating the Bearings



All tilting saws have 2 bearings at the pivots which must be lubricated. In addition power take off machines which are attached in a sloping position have 2-4 bearings on the shafts from the shaft supports to the sawblade.

To lubricate the bearings remove the dust cover and lubricate with a grease gun.

9.10 Repairing or adjusting the motor brake

9.10.1 Calculating the margin/lever play

You can determine relatively easily whether the brake is sufficiently adjusted and there is an adequate gap between brake and brake shoe or whether an adjustment is necessary.

Move it the to the brake lever shown by tilting it alternately in both directions (see arrow direction).

If the lever has a total gap of around 10 to 20 mm when tilted, no adjustment is needed.

virtually cannot be , it is necessary to adjust the brake.



9.10.2 Opening of the motor frame in the brake and fan

Make sure that the power supply is disconnected! Risk of electrocution!

Open the housing around the brake by loosening and removing the Phillips screws around.



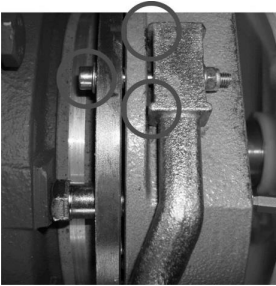
Before you pull out the housing, unscrew and remove the brake lever (counter clockwise).

After removing the cover, you will see the area on which we shall focus exclusively during the brake adjustment.



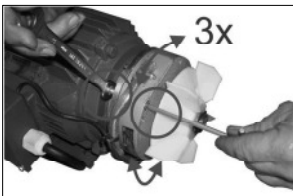
9.10.3 Setting the margin (between brake and brake shoe)

As you can see, there is no clearance space/gap on the three marked points.



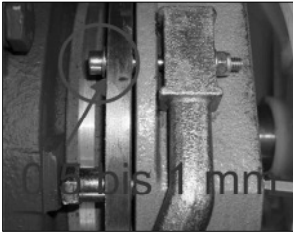
You therefore cannot tilt the brake lever sufficiently!
With open-end wrench SW 12 turn the nut (on Fig. 05 – left) counter clockwise and with hex key SW 5 turn the screw clockwise so that the clearance opens to about 0.5 to 1 mm.

These adjusting screws are available axially 3x.

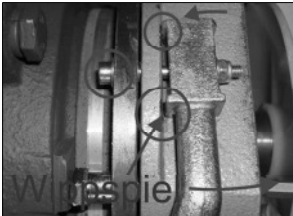


Repeat the entire process until you have adjusted all the screws around that the clearance corresponds to about 0.5-1 mm.

9.



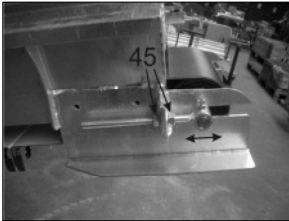
After a successful adjustment you will find sufficient clearance when tilting the brake lever.



Once everything is running to your satisfaction, mount the cover again on the motor.
Insert the cross-headed screws and screw in the brake lever.

9.11 Tensioning and adjusting the feeder belt

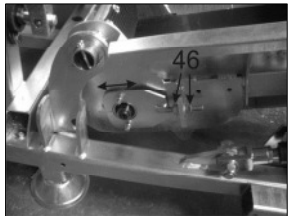
If the conveyor belt (13) is very noisy when idling, the problem can be easily solved by tightening the belt properly.



To tighten the belt there are 2 nuts (45) on the left and the right at the top of the guide pulley. However, when tightening the belt, it should be ensured that the roll is equally tightened on both sides since otherwise the belt will not run centrally.

At the bottom the belt can only be adjusted in the centre.

To do this there is a setting mechanism with 2 nuts (46) on the right side of the drive roll.








9.12 Changing the hydraulic tubes

Replace all hydraulic tubes every 5 years.
Serious injuries can result from damaged tubes!

10 Dealing with faults

10.1 Safety instructions in case of faults

 GEFAHR	
	<p><u>Serious risk of injury when switching on the drive during malfunctions!</u></p> <ul style="list-style-type: none"> • Stop the machine! • Provide a safeguard to prevent unintentional reclosing!
 VORSICHT	
	<p><u>Risk of injury! Scalding through contact with hot machine components and media!</u></p> <ul style="list-style-type: none"> • Let the machine cool off to the ambient temperature before doing any fault repair.
 VORSICHT	
	<p><u>Risk of acid burns through contact with lubricants!</u></p> <ul style="list-style-type: none"> • Avoid skin and eye contact. • Do not swallow or inhale. • Use suitable protective equipment (gloves, safety goggles).

Kommentar [SR15]: DANGER

Kommentar [SR16]: CAUTION

10. Dealing with faults

Error	Cause	Remedy
Sawing capacity too low	Incorrect motor rotational direction (for	Change the rotational direction with the phase
	Saw blade is flush	Sharpen saw blade and check setting
		In case of HM blades, check whether cutting tips are missing
Motor does not start or frequently switches off	Motor protection responds	Feed cable too weak (min. 5 x 2.5 mm ²) Only two phases
	Motor protection is responding (motor humming)	A pin has come loose on the phase changing switch
	Faulty supply	Have a specialist check the supply
	Switch contactor or motor	Have the switch checked
	Motor uncovered or very dirty	Uncover motor and clean it (Attention! Do not clean with water)
	Saw blade is flush	Sharpen saw blade and check setting
		In case of HM blades, check whether cutting tips are missing
Motor becomes hot and has no power	Only two phases	Have a specialist check the supply
Please contact your retailer if the faults cannot be resolved performing the above-mentioned remedies! They will be able to provide you with		

11 Guarantee and warranty

A guarantee time of 12 months or a warranty period of 24 months from the invoice date is given to the forest crane (please keep your invoice).

The warranty claim covers all material and/or manufacturing faults.

Defective parts will be replaced free of charge. They may only be replaced by a specialist. Please ask us for damaged stickers and replace them.

Warranty does not extend to:

- Damage arising from improper handling or use.
- Transport damage – this must be reported to the deliverer immediately upon receipt of shipment.
- Modifications or alterations on the machine, or if non-original spare parts or standard parts have been used for maintenance work.

12 How to act in emergencies

Regularly check which first aid emergency help is available.
After giving first aid to any injured parties, immediately inform your superior of accidents involving bodily injury or damage to devices or buildings.
When calling emergency services, inform them of the severity of injury or object damage.
Immediately abandon the machine in the case of an emergency (fire).

13 Notes

Comment

Binderberger Maschinenbau GmbH is constantly working to improve its products as part of further technical development. Therefore, we must reserve the right to make changes as regards the images and descriptions contained in this operating manual/list of replacement parts. This does not confer any right to claim modifications to machines which have already been supplied. Technical data, dimensions and weights are non-binding. Errors excepted.



Dealer stamp:

Identification



Maschinenbau GmbH
Fillmannsbach 9
5144 St., Austria Georgen am
Fillmannsbach Tel.: +43 (7748) 8620
Fax: +43 (7748) 862-020
office@binderberger.com
www.binderberger.com