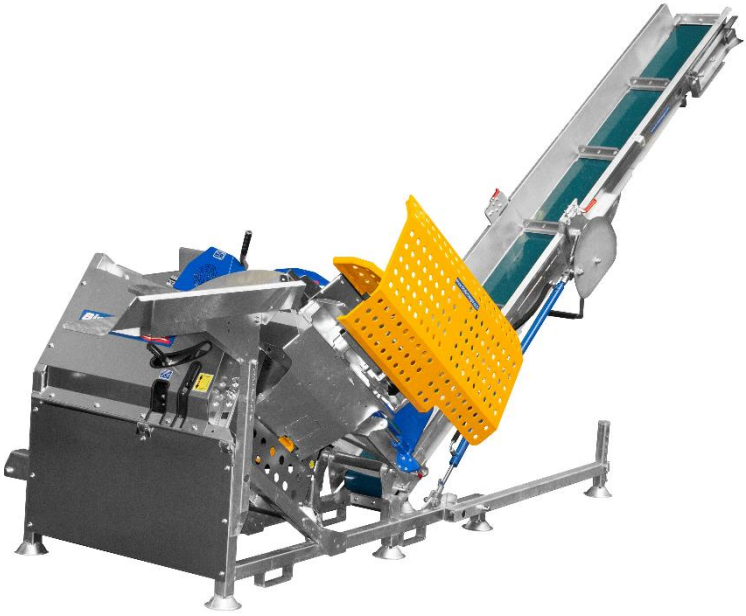
Circular saw
with
conveyor belt



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Read the operating instructions carefully before commissioning the machine!

This manual is valid for:

Model	Article number
WS 700 FB Z Eco	KS-MKE-1
WS 700 FB E Eco	KS-MKE-2
WS 700 FB EZ Eco	KS-MKE-3
WS 700 FB Z Pro	KS-MKP-1
WS 700 FB E Pro	KS-MKP-2
WS 700 FB EZ Pro	KS-MKP-3

Version of this manual: 1.1

Creation date: 2021-06

Table of Content

1 EC Declaration of Conformity

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

Designation:	Circular saw with conveyor belt
Type:	WS700 E-Z FB Pro / WS700 E FB Pro / WS700 Z FB Pro WS700 E-Z FB Eco / WS700 E FB Eco / WS700 Z FB Eco
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 Maschinenbau 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

Indicates an immediate threat of danger.
If the information is not followed, death or serious bodily injury (invalidity) is the result.

WARNING

Indicates a potentially dangerous situation.
If the information is not followed, death or serious bodily injury (disability) are the result

CAUTION

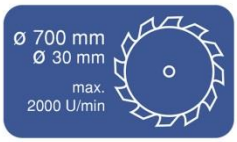
Indicates a potentially dangerous situation. If the information is not followed, material damage as well as minor or moderate physical injuries are the result.

NOTICE

Indicates general instructions, useful operator instructions and working recommendations that have no influence on the safety and health of personnel.

2.2 Pictograms and their meaning

	• Read the operating instructions carefully before commissioning! • During operation, wear ear protection class 3M and safety goggles for mechanical hazards! • During operation, safety shoes (with steel toe cap) of safety class S1 must be worn! • Wear category II gloves during operation. • WARNING! from hot media • WARNING! There is a danger of cutting and crushing. • Keep a distance from the operating personnel of the machine to avoid distractions and mistakes.
	• Switch off the machine before maintenance work and secure it against being switched on again. • Machine may only be serviced by one person • Let the machine cool down before maintenance work

	Indicates the direction of rotation of the engine or the direction of rotation of the PTO shaft!
	Marks a lubrication point
	Marks the cutting line!
	Indicates in which position the engine brake is applied or released!
	Indicates the saw blade diameter and the maximum speed!
	Indicates the speed setting of the hydraulic rocker!
	Identifies the rocker control!

	Indicates the function of the control levers and their direction.
	• Attention! Rotating parts (power take-off shaft) • Keep your distance from the power take-off shaft • The nominal speed of the power take-off shaft is 440 rpm.
	Indicates the machine stop function
	Indicates the switching position of the rocker control lever. Up" to switch to automatic mode. Down" to return the rocker to the home position. The middle position brings the rocker to a standstill.

2.3 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

2.4 Intended use

The circular saws are designed exclusively for cutting firewood to length. Any other use is not intended. Firewood with a length of one metre and diameters between 30mm and 240mm is considered as intended. The operator of the machine, not the manufacturer, is responsible for any personal injury or damage to property resulting from improper use!
Intended use also includes reading these operating instructions and complying with all the information contained therein, especially the safety instructions. It also includes carrying out all inspection and maintenance work at the prescribed 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. 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.

2.6 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.

2.7 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
  - Excessive physical exertion
  - Entering a danger zone
  - Distractions
  - Neglected control activities

3 Description of the machine

3.1 How it works

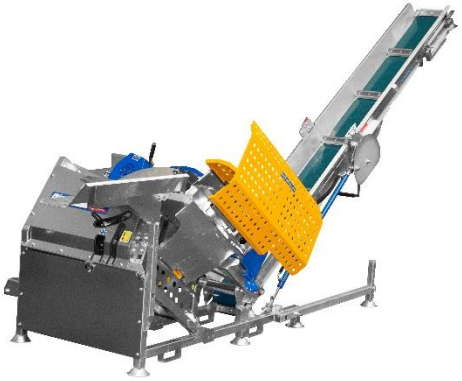
The Binderberger tilting circular saw with conveyor belt makes firewood production much easier and ensures greater efficiency and safety than conventional circular saws.

The finished cut-to-length wood is transported away on a hydraulically height-adjustable conveyor belt. The circular saw has various transport options such as a 3-point attachment for tractors and forklift attachments on the underside of the machine.

The tilting circular saw is driven by an electric motor or a power take-off drive. With the combined version, the type of drive can be changed at any time depending on the installation site and situation.

3.2 Overview

Circular saw with conveyor belt ECO



Circular saw with conveyor belt PRO

3.3 Technical data

Type	WS700 FB Eco	WS700 FB Pro
Weight electric [kg]	598 kg	623 kg
Weight PTO [kg]	551 kg	581 kg
Weight E+PTO (EZ) [kg]	700 kg	800 kg
Working height [mm]	890 mm	
max. cutting diameter and cutting height [mm]	240 mm	
min. cutting diameter [mm]	30 mm	
Diameter saw blade [mm]	700 mm	
Diameter borehole [mm]	30 mm	
Power supply [V]/[A]	400/32 [V/A]	
Motor power	5,5kW at 40 %	
Engine speed electric [rpm]	1450 [rpm]	
PTO speed [rpm]	440 [rpm]	
Running noise [dB (A)]	83,9 dB (A)	
Working noise [dB (A)]	94,8 dB (A)	
Max. hydraulic operating pressure [bar]	180 bar	
Dimensions folded (W/L/H) [mm]	1703 / 2338 / 2330 mm	
Dimensions operating (W/L/H) [mm]	1703 / 3970 / 2273 mm	

4 Transport of the machine

4.1 Safety instructions during transport

WARNING	
	**Risk of injury during transport!** • Make sure that there are no persons in the danger zone and that a sufficient safety distance is kept! • The machine may only be lifted at the designated holding points! • Do not stand under suspended loads, they can fall down! • The specified position for transporting the machine must be strictly adhered to

4.2 Transportation

Before transporting the machine, all points relating to decommissioning must be carried out.

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

4.3 Loading and load securing

To avoid machine damage or life-threatening injuries when transporting the machine on a trailer, it is essential to observe the following general points:

- The specified position for transporting the machine must be strictly adhered to.
- Use anti-slip mats and at least two lashings.
- Pay attention to the correct lashing angle
- Calculate the actual number of lashing straps for the tensioning means and ground friction value you are using.
  - ➢ Pay attention to the specified weight of the machine.

4.4 Transport journeys and journeys in public roads

If you want to transport the circular saw with the tractor, make sure that it is properly attached to the 3-point of the tractor.
After each hitching, check that the upper and lower link pins are secured with a cotter pin. Make sure that the tractor is designed for the total weight of the circular saw.
For transport with a forklift, there are special forklift mounts on the underside of the machine.
When driving on public roads, the legal regulations must be observed!

- Only transport the circular saw when it is folded up in order to achieve the legally prescribed maximum width of 3 metres.
- See chapter: **7.2 Folding the conveyor belt.**
- Keep reflectors and lamps clean.
- When driving the vehicle, the driving speed must be adapted to the ground conditions. In this way you protect the circular saw from strong vibrations that have an unfavourable effect on the joints.
- 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

WARNING	
	**Risk of injury if the machine is not set up correctly!** • Always check the machine for transport damage before setting it up! • Set up the machine on a level and firm surface! • Use the support feet of the machine! • Ensure that no persons are endangered by the installation! • Lay machine connections, cables and hoses in such a way that there are no tripping hazards! • The machine may only be operated when in perfect condition! • Do not connect or disconnect pressurised hoses! • Only work under sufficient lighting! • In the event of a thunderstorm (possible lightning strike) do not use the machine under any circumstances! • To reduce noise, it is advisable to position the machine as far away as possible from walls and sound-reflecting surfaces! • Do not work in closed rooms. Dust and exhaust fumes during PTO operation can lead to reduced respiratory air! • After positioning the conveyor belt, the ball valve on the control unit must be shut off.

5.2 Duties before starting work

NOTICE	
	**Carry out the following activities before starting work:** • Assembly and connection must be carried out according to instructions. • Check all hoses, couplings, bolts and screw connections for tightness before starting work. • At outdoor temperatures below 0°Celsius, let the machine run for approx. 10 minutes at idle speed without load.

5.3 Electrical supply line

The fuse and dimensioning of the electrical supply line must be selected by a qualified electrician in accordance with national standards and depending on the length of the line!
Connect the 5-pole CEE 400V/16A or 32A supply cable to the plug.
Never carry out work on electrical systems if you do not have the necessary expertise!

5.4 Check the direction of rotation of the motor

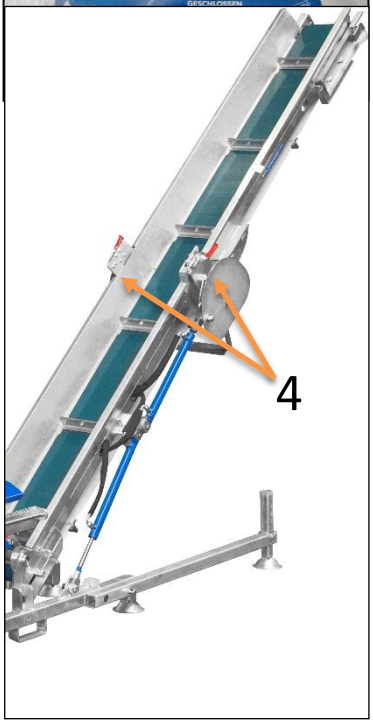
If neither the rocker nor the conveyor belt is working, it is very likely that the direction of rotation of the motor is wrong. The easiest way to recognise this problem is by the direction of rotation of the circular saw blade. If the direction of rotation does not correspond to the pictograms on the machine, disconnect the supply line to the circular saw.

There is a phase inverter in the plug with which you can change the direction of rotation of the motor (press the disc in the plug in with a screwdriver and turn it 180°).

5.5 Unfolding the conveyor belt

Always operate the conveyor belt saw from the left side, as seen from the rocker, to prevent injuries from the conveyor belt.
To move the conveyor belt from the transport position to the working position, proceed as follows.

- First fold out the support foot of the conveyor belt and bolt it.
- Open the ball valve below the 2nd lever (2).
- First pull the entire conveyor belt towards the saw with lever no. 2. Then swing up the upper half of the conveyor belt with the 3rd lever (3).
- At the same time, you can already lower the conveyor belt with the 2nd lever to adjust it to the correct conveyor height.
- Now it is essential to close the locking clamps (4) to give the conveyor belt the necessary hold.



6 Operation

6.1 Safety instructions during operation

DANGER	
	**Risk of injury from being caught or pulled in on moving machine parts!** • Keep a sufficient safety distance from moving machine parts! • Do not stand under the conveyor belt, it may fall down!

WARNING	
	**Risk of injury when operating!** • Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained! • Familiarise yourself with the controls of the circular saw! • Ensure that the machine is standing securely! • Disconnect the power supply when the machine is not in use!

CAUTION	
	**Stumbling over parts lying around!** • All parts that do not belong to the machine must be removed from its environment.

CAUTION	
	**Risk of injury due to negligent use of personal protective equipment!** • Wear protective gloves and safety shoes with steel toecaps. • Wear safety goggles and hearing protection.

NOTICE	
	• Before switching on the machine, inform yourself about the correct behaviour in case of malfunctions. • Before switching on the machine, carry out the points listed in the chapter "Duties before starting work". • After switching off the machine, always carry out the work steps in the following chapter "Decommissioning".

NOTICE	
	• If the operating personnel move away from the machine so that it is unattended, it must be switched off and secured against unauthorised restarting. • The operating personnel must ensure that no unauthorised persons are in the working area of the machine. • A minimum distance of 1.5m should be kept clear around the operator's position. • No persons are allowed within a radius of at least 4m in the area of the conveyor belt ejection. • 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: • For low-voltage lines: min. 2 metres • For high-voltage lines: min. 6 metres

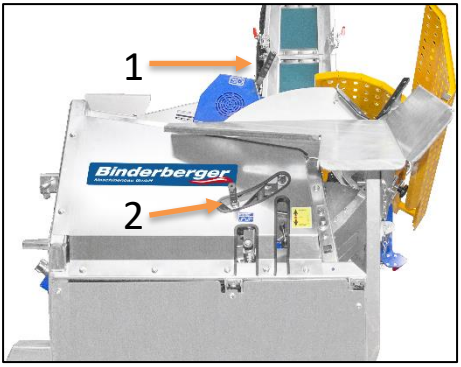
6.2 Check before operation

Visually inspect the unit. Look for faults and defects that could have an influence on safety. Any faults and defects must be rectified.

- Make sure that there are no leaks in the hydraulics.
- Make sure that there are no damaged hoses.

6.3 Stop function for PTO or electric operation

All E-Z and Z machines are equipped with a mechanical stop function (lever 1). If this function is triggered, the power flow between the PTO shaft/electric motor and the saw blade is interrupted, the automatic brake is applied and the circular saw blade comes to a standstill.
When using the PTO drive, switch it off on the tractor or switch off the tractor completely.



Do not use this lever for normal machine stop.
Use only in the event of malfunctions.

In normal operation, whether with the PTO shaft or, in the case of the E-Z machine, with the electric motor, the hand lever (2) must always be engaged at the bottom. (see figure)

To resume operation, the braking device must be reset and the V-belts inside the machine tensioned again. To do this, with the machine **switched off**, first move the stop lever (1) to the home position and then press the second lever / foot pedal (2) down to the left until it engages.
Now you can switch on the drive again and continue operation.

6.4 Stop function for Electric saws

Purely electric circular saws do not have a mechanical brake. Here it is sufficient to switch off the motor at the red switch-off button and the motor brakes by itself.

6.5 Electric operation

Connect the supply cable to the plug provided on the switch.
Check the direction of rotation of the motor as described in the chapter: **Checking the direction of rotation of the motor.**
Now switch on the motor using the green switch-on button.
The motor can be switched off with the red switch.

6.6 Power take-off operation

In PTO mode, no power supply line is required and it is therefore space-independent.
To convert the circular saw, simply remove the cover in the middle of the 3-point linkage and connect the PTO shaft stub to the tractor. It is recommended to operate the machine with a PTO speed of **440 rpm.**

Note for E-Z machines: If the PTO cover is removed, electric operation is no longer possible and the on / off button no longer has any function. The circular saw can therefore only be switched off via the tractor or via the hand lever marked in red (stop function) on the machine.

WARNING! Danger of suffocation due to exhaust fumes from the tractor in enclosed spaces. Make sure you have the right working environment and sufficient fresh air.

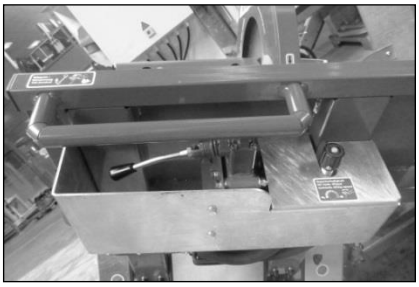
6.7 Starting the belt conveyor

First carry out the work from chapter **5.5 Unfolding the conveyor belt.**
Always operate the circular conveyor saw from the left side (as seen from the rocker).
To start the conveyor belt, operate the 1st operating lever. This engages in its switching position.
When you start the conveyor belt, look for any damage to the rubber. If there is any, replace the rubber element immediately.
The speed can be regulated via the flow divider (4) to the right of the conveyor belt. Adjust the speed so that the logs are ideally transported away.

Also check whether the conveyor belt runs centrally. If this is not the case, proceed as described in chapter 8.4.7 Tensioning and setting up the conveyor belt.

6.8 Hydraulic rocker (ECO)

(WS700FB Eco)



If you keep the lever pressed upwards, the rocker moves forward. When the control lever is released, the rocker moves to its original position.
The speed of the rocker can be adjusted by turning the control valve (clockwise / counterclockwise).

6.9 Automatic hydraulic rocker (PRO)

(WS700FB Pro)

When the lever is in the neutral position, the rocker is stationary.

When the lever is pushed up, it engages and the rocker moves back and forth automatically.

If the wood gets jammed during cutting, the rocker can be moved back by pressing the lever down. When the lever is released, it returns to the neutral position.
By turning the control valve (clockwise and counterclockwise), the speed of the rocker can be adjusted.

CAUTION! The hydraulic rocker must not be switched on under any circumstances if the conveyor belt has not been unfolded! Machine damage may occur. Carry out point **5.5 Folding out the conveyor belt** before commissioning.

7 Shut down

7.1 Safety instructions for decommissioning

DANGER	
	**Risk of injury from being caught or pulled in on moving machine parts!** • After parking, wait until all moving machine parts have come to a standstill! • Keep a sufficient safety distance from moving machine parts!

WARNING	
	**Risk of injury when taking out of operation!** • Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained! • Do not stand under suspended loads, these can fall down! • Make sure that there are no persons between the machine and the tractor!

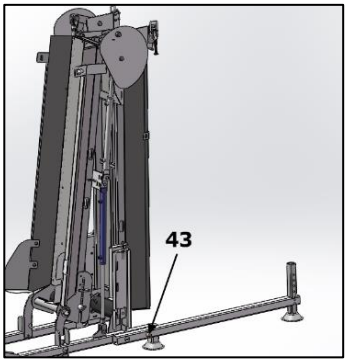
WARNING	
	**Risk of injury when switching on the machine by unauthorized persons!** • Secure the machine after operation against unauthorized switching on!

7.2 Folding the conveyor belt

To move the conveyor belt from the working position to the transport position, proceed as follows. First lift the upper part of the conveyor belt with the 1st lever (1) so that the tension is taken from the locking tensioners (see **5.5** Fig. 2). Then the tensioners can be opened easily.

If you open the locking clamps without building up pressure in the buckling cylinder, injuries may occur.

Now lift the whole belt conveyor with the 2nd lever (2), at the same time you can already fold down the upper part of the belt with the 3rd lever (3).



ATTENTION! The hydraulic rocker must be in the home position when the conveyor belt is folded, otherwise damage to the machine may occur.

For transport, the conveyor belt must be folded as shown in the picture and must engage in the belt conveyor holders at the bottom.
Then remove the bolt (43) on the support and fold it upwards. It is then secured to the lug provided for this purpose in the middle of the upper conveyor belt section.

8 Maintenance

8.1 Safety instructions during maintenance

DANGER	
	**Serious risk of injury from switching on the drive during maintenance work!** • Switch off the machine! • Secure against being switched on again! • Disconnect the power supply

CAUTION	
	**Lubricants!** • Use suitable collection containers. • Remove spilled oil immediately.

CAUTION	
	**Risk of injury! Scalding by hot machine components and media!** • Allow the machine to cool down to ambient temperature before carrying out any maintenance work. • Keep easily flammable material away from hot surfaces.

CAUTION	
	**Risk of chemical burns from contact with lubricants!** • Avoid skin and eye contact. • Do not swallow or inhale. • Use suitable protective equipment (gloves, goggles).

CAUTION	
	**Environmental hazard!** • Make sure that no oil gets into the environment. • Spilled oil contaminates bodies of water and groundwater.

8.2 Notes when working on electrical 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.
- Never clean electrical equipment with water or similar liquids.

8.3 Notes when working on hydraulic equipment

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

- Depressurise all hydraulic systems / system parts before starting work.
- Before starting work, ensure that suitable collection containers are available for all substances hazardous to groundwater (oils, coolants, etc.).

8.4 Maintenance by the operating personnel

8.4.1 Cleaning

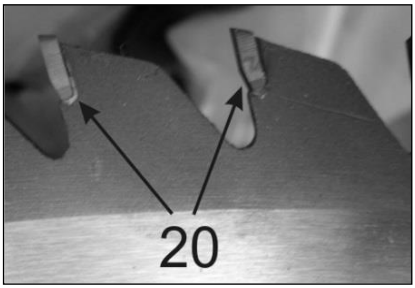
After each operation and before each maintenance, the machine must be cleaned from dirt!
After each cleaning with water, the circular saw must be lubricated!

Make sure that a sufficiently large collection container is available.

8.4.2 Checking the saw blade

Periodically, it is necessary to carefully inspect the saw blade. Inspect it to see if it is sharp and if the kerf of teeth is sufficient.
In case of carbide saw blades, check if all carbide plates (20) are present.

Also check your saw blades for cracks or signs of overheating.
If your saw blade does not meet the requirements, take it to a specialist. If it is even badly damaged, replace it with a new one.
Under no circumstances should you work with a damaged or improper saw blade.



8.4.3 Check the electrical supply line

Before each work, inspect the supply line for damage. They must not be kinked or show any other damage. Otherwise, there is a very high risk of electric shock.
Also make sure that the cable has a sufficient cross-section. This should be at least 2.5mm ², with a maximum length of 25m.
If you are not sure whether your supply line is sufficient, contact an electrical specialist.

8.4.4 The correct saw blades

If you want to change your saw blade, be sure to use a suitable replacement to avoid accidents and damage to the machine.

	Chrome steel blade	Carbide
Diameter [mm]	700	700
Thickness / kerf [mm]	3,2	4,2/3,2
Bore ø	30	30
Max. speed [rpm]	2700	2300
Teeth number	56 Z	45 Z

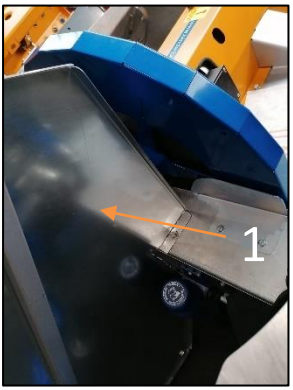
Make sure to use saw blades that comply with the EN847-1 standard.

NOTICE

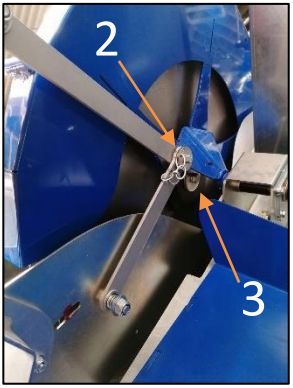
Carbide saw blades are usually quieter than normal saw blades

8.4.5 Changing the saw blade

ATTENTION! The saw blade change may only be carried out by two persons. First of all, switch off the drive of the machines. Wait until the saw blade has come to a standstill.
Disconnect the circular saw from the drive source and secure it against accidental switch-on.

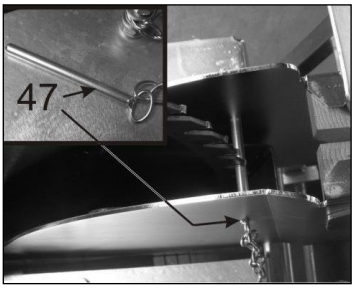


Changing the saw blade can be done in a few steps. In all circumstances, use leather gloves or similar gloves that protect against cuts, because even if the saw blade appears blunt during operation, it still has enough sharpness to injure someone.



To dismantle the saw blade, some covers must first be removed. To gain a little more space, it is advantageous to remove the large separating plate (1) between the belt conveyor and the belt conveyor console. Then the linkage between the rocker cover and the rotation protection must be loosened. To do this, remove the screw (2). Now both covers can be folded away.
In order to be able to loosen the screw connection on the saw blade (3), it must be secured against rotation using the enclosed bolt (47) on the teeth.

ATTENTION! Danger of cutting



Open the screw on the clamping flange with a suitable tool.
To protect the saw blade from falling and to prevent injuries, we recommend inserting wooden wedges between the housing and the saw blade. Remove the screw and also the aluminum clamping flange. Now you can replace the saw blade.
To fix everything again, first put the aluminum clamping flange back on the saw blade and fix the screw. Make sure that the screw is properly tightened. Now you can reattach the rotation guard on the rocker saw.

8.4.6 Oil control

The sight glass of the hydraulic tank is always visible through an opening in the guard plate. If the oil sight glass is filled to above the center, this corresponds to the oil level maximum. If the oil level is at the bottom of the oil sight glass, this corresponds to the oil level minimum.

8.4.7 Tensioning and setting up the belt conveyor

If the belt conveyor makes very loud noises when idling, this can normally be remedied by proper tensioning of the belt conveyor.

For tensioning, there are 2 nuts each on the left and right at the top of the deflection roller. When tensioning, however, always make sure that the roller is pretensioned equally on both sides, otherwise the belt will no longer run in the center.

At the bottom, the belt conveyor can only be adjusted centrally. For this purpose, there is an adjustment device with 2 nuts on the right side of the drive roller.
For tensioning, there are 2 nuts each on the left and right at the top of the deflection roller. When tensioning, however, always make sure that the roller is pretensioned equally on both sides, otherwise the belt will no longer run in the center.

8.4.8 Maintenance of the motor brake

It is relatively easy to determine whether the brake is sufficiently adjusted or whether an adjustment is required.
Move the brake lever shown by rocking it alternately in both directions (see direction of arrow). This allows you to check whether there is sufficient gap between the brake and the brake shoe. If the lever has a total play of approx. 10 to 20 mm when rocking, no adjustment is necessary.
If the lever can hardly be moved, it is necessary to adjust the brake.

Opening the motor casing

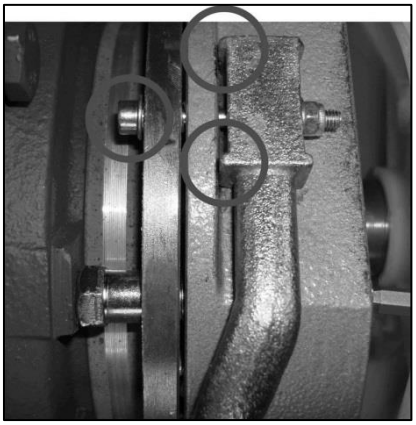
Make sure that the power supply is disconnected! Danger of electric shock!

Open the housing around the brake by loosening and removing the cross-slotted screws.

Before removing the cover, you must unscrew the brake lever (anticlockwise).
After removing the cover, you will see the area where we will focus exclusively on brake adjustment.

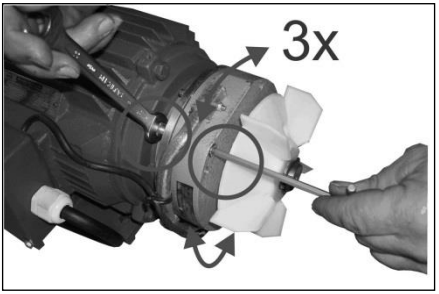
Adjusting the clearance

As you can see, there is no space / play at the three marked points.



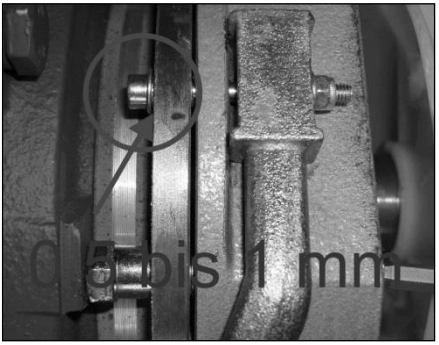
Therefore, you cannot sufficiently rock the brake lever!
With the SW 12 open-end spanner, turn the nut (see Figure) anticlockwise and with the SW 5 Allen key, turn the screw clockwise so that the gap opens to approx. 0.5 to 1 mm.

These set screws are present 3 times axially.

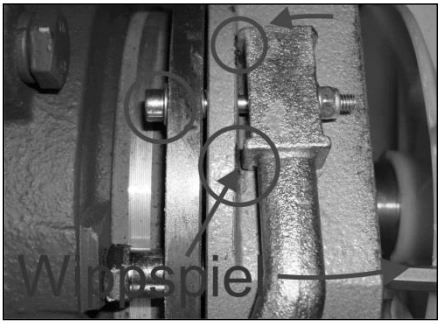


Repeat the whole process until you have adjusted all screws all around so that the gap corresponds to approximately 0.5-1 mm.

After successful adjustment, you will find sufficient clearance when rocking the brake lever.



When everything is satisfactory, refit the cover on the motor.
Insert the cross screws and screw the brake lever back in.



8.5 Maintenance by a specialist

ATTENTION! Maintenance work mentioned in this chapter may only be carried out by two persons.

8.5.1 Changing the hydraulic hoses

All hydraulic hoses must be replaced after 5 years.

Otherwise, damage to the hoses can cause serious injuries.

8.5.2 Oil change

The first oil change must be performed after 50 operating hours.
Thereafter, the oil should be changed every 250 operating hours or at least once a year.
Use HVI 46, or equivalent hydraulic oil.
In order to change the oil, it is necessary to lift the machine. This can be done either by using the 3-point linkage or the forklift lugs. Secure the circular saw against falling down or the hydraulic system of the tractor or the fork-lift truck slackening.
Use a suitable collection container and dispose of the used oil in an environmentally friendly manner at a collection point of your choice.

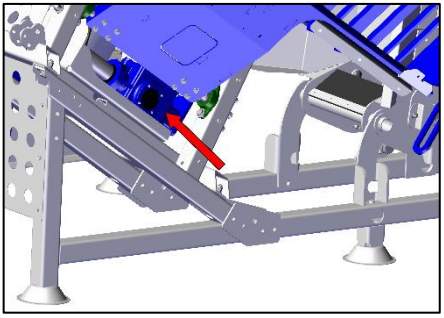
8.5.3 Changing the oil filter

The oil filter is located inside the machine. To reach it, the front cover must be unscrewed. It should be changed regularly every 250 hours of operation. To do this:

- Unscrew the outer filter sleeve
- Replace filter cartridge
- Screw on filter sleeve again.

8.5.4 Oil change of the gearbox

The gear oil should be changed for the first time after 100 operating hours. Thereafter, every 500 operating hours or once a year. The gear oil used should be of viscosity class SAE 90.



8.5.5 Lubricate bearing

Lubrication points are marked on all machines with a yellow sticker.

All rocker saws have 2 bearings on the rocker which must be lubricated.
To lubricate the bearings, remove the dust cap and lubricate with the grease gun.

On power take-off machines there are still two bearings for the shaft of the circular saw blade.

8.6 Duties before finishing maintenance

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

- Check all previously loosened screw connections for tightness.
- Check that all previously removed guards, covers, container lids, ... are properly reinstalled.
- Make sure 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 operation of the safety devices. Do not release the machine for use if the safety devices are not functioning properly.
- 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 naked flames or smoke

9 Help in case of malfunctions

9.1 Safety instructions

DANGER	
	**Serious risk of injury from switching on the drive in the event of a malfunction!** • Switch off the machine! • Secure against being switched on again!

CAUTION	
	**Risk of injury! Scalding by hot machine components and media!** • Allow the machine to cool down to ambient temperature before carrying out any troubleshooting.

CAUTION	
	**Danger of burns due to contact with lubricants!** • Avoid skin and eye contact. • Do not swallow or inhale. • Use suitable protective equipment (gloves, goggles).

Error	Cause	Error correction	Look up
Too little cutting power	Wrong direction of motor direction (Electric drive)	Change direction of rotation	5.4
	Too little PTO speed (PTO drive)	Adjust speed to 440 rpm	6.6
	Saw blade is blunt	Sharpen saw blade and check setting	8.4.2
		With carbide blades check if cutting plates are missing	8.4.2
Engine does not run or switches off often	Motor protection responds	Supply line too weak	5.3
	Motor protection responds (motor hums)	Only two phases	Contact a specialist
		A plug has become loose on the phase inverter	Contact a specialist
	Faulty supply line	Have the supply line checked by a specialist	Contact a specialist
	Fuse or motor protection of the switch defective	Have switch checked	Contact a specialist
	Motor covered or heavily soiled	Clean motor (**ATTENTION!** Do not clean with water	8.4.1
	Saw is blunt	Sharpen the saw blade	8.4.2
		For carbide blades check if cutting blades are missing	8.4.2

Motor gets hot and has no power	Only two phases connected	Have supply line checked by a specialist	8.4.1
Circular saw blocked	Feed too fast in relation to the sharpness of the blade	Press „Stop“ and remove wood carefully. Adjust speed	6.9
Rocker or belt conveyor is not running	Wrong direction of motor rotation	Check direction of rotation and proceed as described in 5.4	5.4
Saw blade does not run	V-belt not tensioned	Reset stop function	6.3
Belt conveyor does not retract completely	Rocker in retracted position blocks the belt conveyor	Move the rocker to the home position	6.9
If the malfunctions cannot be eliminated according to the above instructions. Please contact your dealer! He will be happy to help you.			

10 Guarantee and Warranty

The circular saws are guaranteed for a period of 12 or 24 months from the date of invoice (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 renew damaged stickers.

No warranty is given for:

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

11 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.

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Name plate:

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