

# Chip separator Eco



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Read the operating instructions carefully before putting the machine into operation!

**These operating instructions are valid for:**

<b>Model</b>	<b>Article number</b>
Chip separator Eco	RA-MRE-1
Chip separator Eco + Power-unit	RA-MRE-2
<b>Both versions are available with a mechanical or a hydraulic discharge flap.</b>	

**Version:**

Chip separator 3.0

**Creation date:**

2021-02

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## **1 EC Declaration of Conformity**

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

Designation: \_\_\_\_\_  
Type: Chip separator 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:**

	<p>Read the operating instructions carefully before commissioning!</p> <p>Earmuffs and safety goggles must be worn during operation!</p> <p>Wear safety shoes (with steel toecap) during operation!</p> <p>Gloves must be worn during operation.</p> <p>The machine may only be operated by one person</p> <p>Warning of hot media</p> <p>Warning against rotating parts</p> <p>Warning against drawing in</p> <p>Warning against danger of crushing</p>
	<p>Switch off the machine before maintenance work and secure it against being switched on again.</p> <p>Machine may only be serviced by one person</p> <p>Let the machine cool down before maintenance work</p>

## 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 Chip separator is designed exclusively for sorting out chips and splinters or pulpwood.

All other forms of usage do not comply with the intended use. The manufacturer is not responsible for any personal injury or material damage that originates from non-compliant usage, but rather the operator of the machine is!

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

## 2.5 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
  - Entering a danger zone
  - Distractions
  - Neglected control activities

## **3 Overview**

### **3.1 How it works**

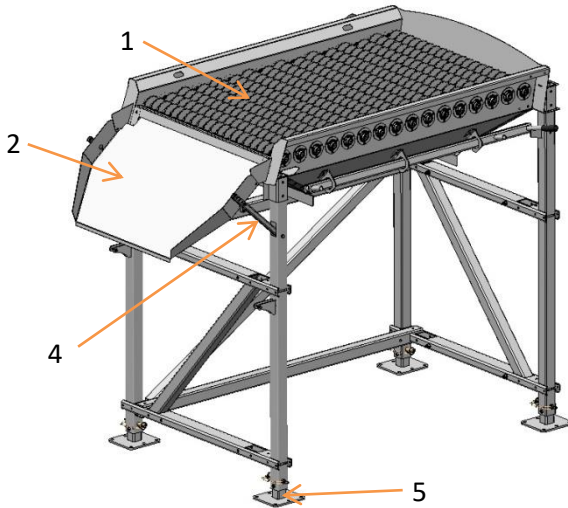
The Chip separator is hydraulically driven. The hydraulic circuit can be driven directly hydraulically (e.g. tractor hydraulics) or by an electrically driven hydraulic unit.

The pieces of wood are conveyed towards the discharge chute by rotating the star rollers. During the conveying process, pieces of wood that are too small and chip wood can fall through the rollers and be collected separately.

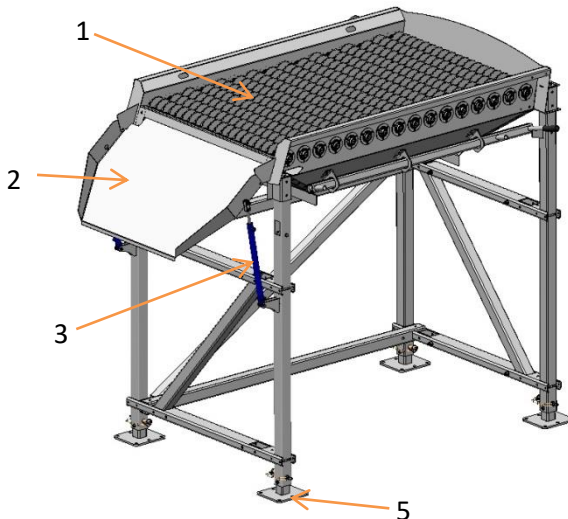
The Chip separator may only be used, serviced or maintained by persons who are familiar with it and have been informed about the dangers. The requirements for the operator or the maintenance and repair person(s) are listed in the respective chapters.

### 3.2 Overview

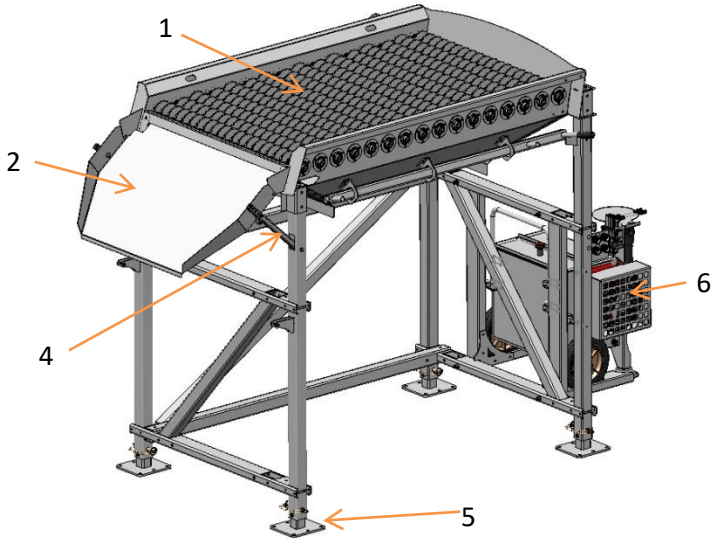
#### Chip separator: Sliding plate mechanical:



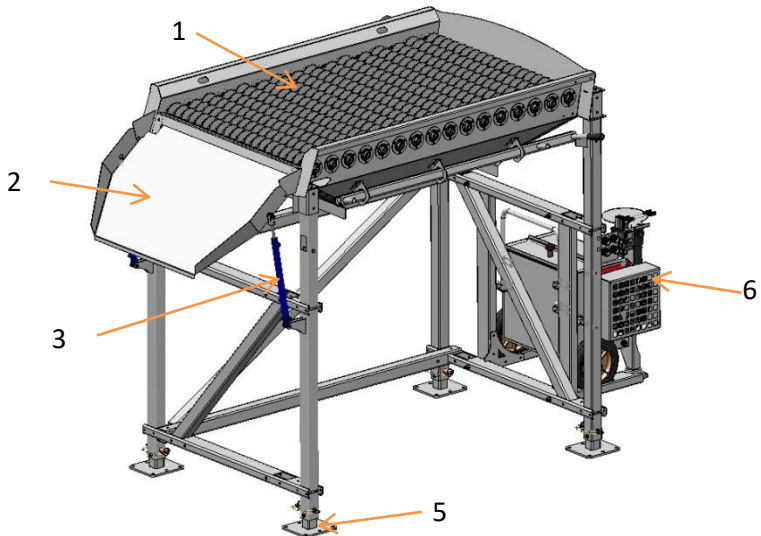
#### Chip separator: Sliding plate hydraulic:



**Chip separator E: Mechanical chute plate**



**Chip separator E: Sliding plate hydraulic**



### 3.3 Part description


Number	Description
1	Star rollers
2	Sliding plate
3	Sliding cylinder
4	Sliding plate holder
5	Telescopic feet
6	Hydraulic unit

### 3.4 Technical data

	Chip separator	Chip separator E
<b>Weight [kg]</b>	714	845
<b>Work height [mm]</b>	2000 - 3000	
<b>Operating pressure [bar]</b>	180	
<b>Connected load [V]/[A]</b>	-	400/6
<b>E-motor power [kW]</b>	-	5,5
<b>E-motor speed [U/min]</b>	-	1450
<b>Optimum Oil capacity [l/min]</b>	26	
<b>Hydraulic tank capacity [l]</b>	-	65
<b>Dimensions L x W x H [m]</b>	2,615x1,62x2,13	3,33x1,62x2,13

## 4 Transport of the machine

### 4.1 Safety instructions during transport

<h1>WARNING</h1>	
	<p style="text-align: center;"><u>Risk of injury during transport!</u></p> <ul style="list-style-type: none"><li>• Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained.</li><li>• Suspended loads can fall down, then there is danger to life - do not stay under suspended loads!</li><li>• The machine may only be lifted at the intended holding points</li></ul>

### 4.2 Transport journeys on public roads

This machine has been designed for stationary operation and should only be transported if absolutely necessary.


If the Chip separator needs to be transported, first carry out all the steps described in the chapter on decommissioning.


Load the Chip separator onto a trailer suitable for transport and secure the load appropriately.

- .

## 5 Set up of the machine

### 5.1 Safety instructions for set up

<b>WARNING</b>	
	<p><b><u>Risk of injury if the machine is not set up properly!</u></b></p> <ul style="list-style-type: none"><li>• Always check the machine for transport damage before setting it up!</li><li>• Set up the machine on a level and firm surface!</li><li>• Ensure that no persons are endangered by the installation!</li><li>• Lay cables and hoses in such a way that there are no tripping hazards!</li><li>• Do not connect or disconnect pressurised hoses!</li><li>• Make sure that there are no persons in the danger zone!</li></ul>

<b>NOTICE</b>	
	<p><b><u>Carry out the following activities before starting work:</u></b></p> <ul style="list-style-type: none"><li>• Assembly and connection must be carried out according to instructions.</li><li>• Check all hoses, couplings, bolts and screw connections for tightness before starting work.</li><li>• If the outside temperature is below 0° Celsius, allow the machine to idle for approx. 10 minutes without material.</li></ul>

## 5.2 Set up

Due to its size and weight, the Chip separator can be set up and moved in height almost exclusively using a forklift.

This is also necessary for the initial set-up. The heavy unit must be lifted and the support legs pushed out. Make sure that the safety devices of the supports have been properly attached.

**WARNING! Never stand under suspended loads, they may fall down.**

## 5.3 Electrical supply line

(E-Version only)

The fuse and the dimensioning of the electrical supply line must be selected by an electrician in accordance with national standards and depending on the line length!

Connect the 5-pole CEE 400V/32A supply cable to the plug.

The machine (E version) must be operated on a mains supply that is protected by a 30mA residual current circuit breaker.

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

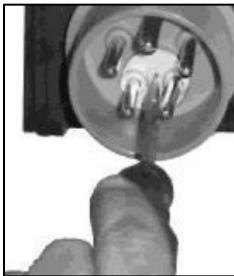


## 5.4 Check the direction of rotation of the motor The (E-Version)

Switch on the motor only briefly and check the direction of rotation on the fan blade of the motor. You can recognise the correct direction of rotation by the sticker on the fan cover of the motor. If the direction of rotation is not correct, disconnect the supply line to the conveyor belt.



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 Hydraulic supply line


Connect the hoses of the Chip separator to the tractor, SSP450, SSP520 or a hydraulic power pack.

## 6 Operation


### 6.1 Safety instructions during operation

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

<b>WARNING</b>	
	<p><b><u>Risk of injury during operation!</u></b></p> <ul style="list-style-type: none"><li>• Make sure that only the operator is at the control panel.</li><li>• That no other persons are in the danger zone and that a sufficient safety distance is maintained! (min. 5 metres)</li><li>• Familiarise yourself with the operating elements of the Chip separator!</li><li>• Ensure that the machine is in a safe position!</li></ul>

<h2 style="text-align: center;">CAUTION</h2>	
	<p style="text-align: center;"><u><b>Risk of injury during operation</b></u></p> <ul style="list-style-type: none"><li>• Wear protective gloves and safety shoes with steel toecaps.</li><li>• Remove all parts that do not belong to the machine from its surroundings. (risk of tripping)</li></ul>

### 6.2 Important notes during operation

<h2 style="text-align: center;">NOTICE</h2>	
	<ul style="list-style-type: none"><li>• Before switching on the machine, inform yourself about the correct behaviour in case of malfunctions.</li><li>• Before switching on the machine, carry out the points listed in the chapter "Duties before starting work".</li><li>• After switching off the machine, always carry out the work steps in the following chapter "Decommissioning".</li><li>• If the operator leaves the machine unattended, it must be shut down and secured against unauthorised restarting.</li></ul>

### 6.3 Switching on the machine in E-mode

1	Connect the 5-pin CEE 32A plug to the power supply.
2	Turn the motor switch to the star position. Wait a few seconds.
3	Now turn the switch to the delta position.
4	The machine is now ready for use.

### 6.4 Switching on the machine in hydraulic mode

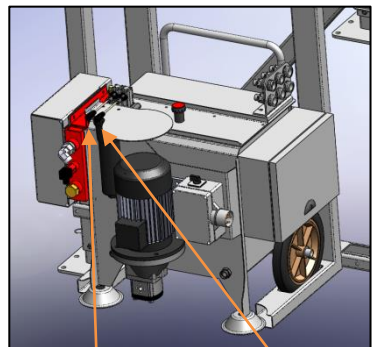
1	Connect hydraulic lines to the supply (e.g.: if in use with the SSP450, SSP520, tractor and etc.).
2	Switch on hydraulic supply
3	The machine is now ready for use

### 6.5 Functions on the control unit

The control unit is the same for both versions (standard and electric).

Lever-1 is used to move the hydraulic flap up and down.

Lever-2 is responsible for the direction of rotation of the hydraulic motor.



Lever 1

Lever 2


## 6.6 Daily maintenance work


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.
- Make sure you use only good quality power cables with the Chip separator E.
- Remove jammed pieces of wood from the rollers.
- Check the condition of the rollers and the function of the drive mechanism.

## 7 Shut down

### 7.1 Safety instructions during decommissioning

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

<b>WARNING</b>	
	<p><b><u>Risk of injury when taking out of operation!</u></b></p> <ul style="list-style-type: none"><li>• Make sure that there are no persons in the danger zone and that a sufficient safety distance is maintained!</li><li>• Do not stand under suspended loads, they may fall down!</li><li>• Secure the machine after operation against unauthorised switching on!</li><li>• When leaving the workplace of the machine for a longer period of time, disconnect the power source.</li></ul>

## **7.2 Decommissioning the chip separator (E- Version)**

1. Wait until the last wood falls out of the Chip separator.
2. Turn the switch to the "0" position.
3. Disconnect the power cable from the machine.
4. Operate the control slides to depressurise the system.

## **7.3 Decommissioning the chip separator**


1. Wait until the last wood falls out of the Chip separator.
2. Switch off the tractor, SSP450, SSP520, etc....
3. Operate the control slides to depressurise the system.
4. Disconnect the hydraulic hoses from the supply.


## **7.4 Shut down**


- The machine should be cleaned and paint damage spot repaired before the machine is parked.
- All lubrication points should be lubricated.
- Apply a thin layer of lubricant to areas that cannot be spot painted or lubricated.
- Clean and dry the hydraulic couplings.
- Lower the pressure in the cylinders or lower the cylinders themselves.
- The parking place should be cool and dry

## 8 Maintenance

### 8.1 Safety instructions during maintenance

<b>DANGER</b>	
	<p><b><u>Serious risk of injury by switching on the drive during maintenance work!</u></b></p> <ul style="list-style-type: none"><li>• Switch off the machine!</li><li>• Secure against being switched on again!</li><li>• Disconnect from power source</li></ul>

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

<b>CAUTION</b>	
	<p><b><u>Risk of injury! Scalding by hot machine components and media!</u></b></p> <ul style="list-style-type: none"><li>• Allow the machine to cool down to ambient temperature before carrying out any maintenance work.</li><li>• Keep easily flammable material away from hot surfaces.</li></ul>



## CAUTION



**Risk of chemical burns from contact with lubricants!**

- Avoid contact with skin and eyes.
- 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 pollutes water bodies and groundwater.

## 8.2 Notes when working on electric equipment

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

- Check electrical equipment regularly.
- Reattach loose connections.
- Replace damaged lines or cables immediately.
- Never clean electrical equipment with water or similar liquids.

## 8.3 Notes when working on hydraulic equipment

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

- Depressurise all hydraulic systems / 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 Cleaning

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

After each cleaning with water, the Chip separator must be lubricated!

## 8.5 Changing hydraulic oil

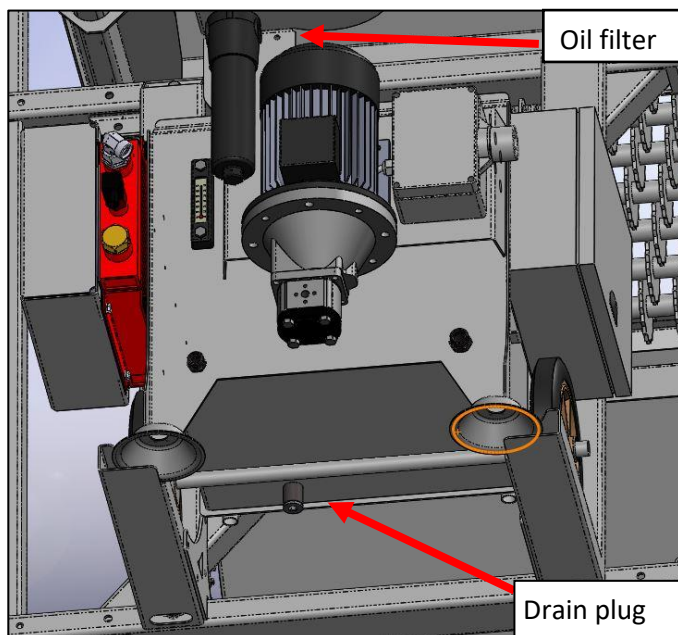
The first oil change must be carried out after 50 operating hours.

Thereafter, the oil should be changed every 250 operating hours or at least once a year.

Use HVI 46, or equivalent hydraulic oil.

Make sure that a sufficiently large collection container is available.

To drain the hydraulic oil, unscrew the drain plug on the underside of the tank and drain the oil. Once the oil is drained, screw the drain plug back in using a new sealing ring. Now fill the tank with new hydraulic oil (approx. 65 litres) via the filler opening up to the upper third of the sight glass.



## 8.6 Changing the oil filter

The oil filter is located at the front of the hydraulic unit in the Chip separator. The filter must be changed for the first time after 50 operating hours. After that, the oil filter should be changed every 250 operating hours or at least once a year.

To do this:

1. Unscrew the outer filter sleeve
2. Replace the filter cartridge
3. Check seal and replace if damaged.
4. Screw the filter sleeve back on.
5. Check for leaks

**Only use original Binderberger spare parts.**

## 8.7 Changing the hydraulic hoses

All hydraulic hoses must be replaced after 5 years at the latest.

Damage to the hoses can cause serious injuries!

## 8.8 Maintenance schedule

Regular maintenance is the best guarantee for effective and economical operation of your Chip separator. The machine has already been carefully tested and adjusted at the factory.

Schedule	1.time after 50h	Thereafter every 250h or once a year
Oil change	x	x
Oil filter change	x	x

## 8.9 Duties before the end of the work

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

- Check all previously loosened bolted connections for tightness.
- Check that all previously removed guards, covers, container lids, .... are properly reinstalled.
- Ensure that all tools, materials and other equipment used have been removed from the work area.
- Clean the work area and remove any spilled liquids and similar substances.
- Ensure that all safety devices of the machine are working properly again.
- Check the 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 Guarantee and Warranty**

### **Warranty conditions 950601:**

Binderberger Maschinenbau GmbH provides a warranty for a period of two years on parts that fail to fulfil their function as a result of material or manufacturing defects.

Goods purchased from us, such as motors, chains and gears, are covered by our suppliers' one-year warranty.

The warranty takes effect from the date of delivery.

The warranty does not cover faults due to normal wear and tear, carelessness, incorrect use and incorrect assembly from the customer. Hydraulic hoses and couplings are excluded from the warranty.

Costs incurred under the warranty procedure for disassembly, assembly and shipping will not be reimbursed. The warranty is valid under the condition that the warranty claim is reported directly to the Binderberger company. The fault is to be rectified after mutual agreement between the customer, the authorised dealer and the Binderberger company.

If the manufacturer deems it appropriate, the device or components of the device must be returned to the manufacturer for warranty measures. The type of the device, the manufacturing number, the date of delivery, the name of the owner and the address must be stated.

The guarantee is invalid if the machine deviates from the original design, e.g., due to modifications, adjustments, additional constructions or replacement of parts not supplied by us. Otherwise, the NL92 delivery conditions apply.

## **10 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 course of further technical development, Binderberger Maschinenbau GmbH is constantly working on improving its products. We therefore reserve the right to make changes to the illustrations and descriptions in this operating manual / spare parts list; a claim for changes to machines already delivered cannot be derived from this. Technical data, dimensions and weights are not binding.

Errors excepted.

Dealer's stamp:

Name plate:



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