USER'S MANUAL

Carefully read these instructions before starting and using your machine!

KINDLING WOOD PROCESSOR ZA 160/2

- Set-up & installation
- Use
- Maintenance
- Accessories

CE

TÜV International Certification
TÜV THÜRINGEN CERT
ISO 9001:2008
15 100 63645
TIC

BGU maschinen

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CONTENT

1. INTRODUCTION

Dear customer, thank you very much for your trust and preference in choosing our equipment and joining the number of our best custo-mers in the world. We are confident that our equipment will be up to all your expectations and assure you a long lasting quality and performance.

1.1 About the manual

Please take time to read this manual and learn to how operate and maintain the processor safely. For your easier reading this manual is laid out in several sections. The sections are progressively numbered and listed on the "content" page. The information, pictures and technical data in this document reflect current or planned product features, functions, and characteristics as of the publication date. Because of on-going product improvements and feature additions, information in this document is subject to change without notice. If you are experiencing a problem or a functional trouble on your machine, please read the "trouble-shooting" section to identify possible causes and remedies. If the problem or functional trouble is not listed in the trouble-shooting chart contained in this manual, ask your Authorized Service Centre for service. When you have checked all the possible causes listed and you are still experiencing the problem, ask your Authorized Service Centre for help. When you order parts maintenance or repair services, your Authorized Service Centre, your dealer or eventually the manufacturer need your machine serial number and engine serial number. These are the numbers that you have recorded on the product identification label of the manufacturer on the machine.

1.2 Delivery and transport claims

Upon delivery of the machine please check for visual machine damages such as damaged packing or scratched buckled parts. If so, make a remark on all copies of the delivery bill before signing for acceptance. Also have the truck driver sign all copies of the delivery bill.

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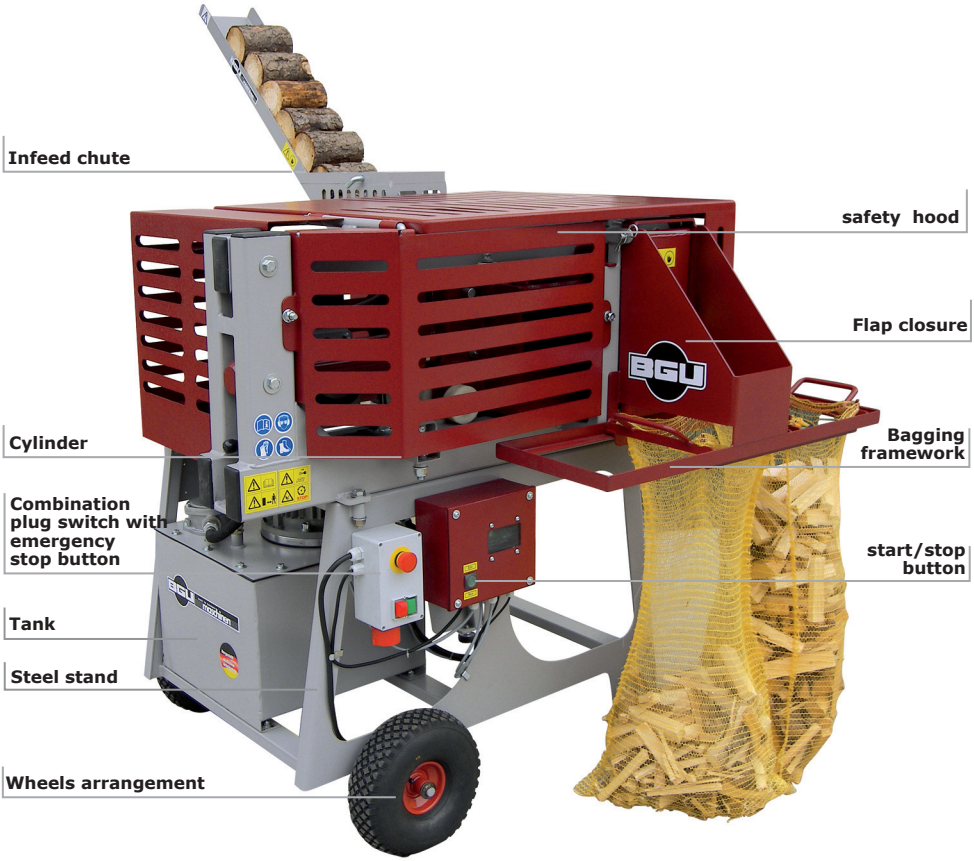
Should your shipper or the truck driver refuse to accept your claim, fully reject delivery and make sure to inform us (the manufacturer) immediately. No claims shall be taken into account by the shipper or by the insurance company, if a reservation note is not made on the delivery bill.
All transport damages must be notified within latest 2 days from delivery. Therefore delivery must be collected and inspected within this term. Later claims shall be disregarded. In case of assumed but not visually clear transport damages, make sure to mark the following sentence on the delivery bill: **„Reserved delivery due to assumed transportation damages."**
Insurance and shipping companies act with extreme caution in case of transport damages and sometimes refuse to accept responsibility. Please make sure to provide clear and exhaustive evidence (photos) of the claimed damages.
Thank you in advance for your help and attention to this matter.

2. PRODUCT OVERVIEW



3. SAFETY SIGNS AND WARNING LABELS

1. Machine safety label
„Before setting-up, servicing, maintaining and cleaning the machine, disengage power and stop the engine. Lock the tool and secure it against accidental start.“

This safety label reminds users of a pinched hands danger.

2. Machine safety label
„Read, understand, and follow all instructions in this manual and on the splitter before starting!“

Keep at safe distance from machine moving parts!

3. Operation safety label „Warning: lubrication nipple“
This label shows the location of the various nipples on the machine that need lubrication several times a day.

4. Operation safety label “Pinched hands danger!“

Keep your hands off all moving machine parts! Pinched hands danger.

8. „BGU-Maschinen” manufacturer’s logo

9. „Product Identification label“

This label shows the company details of the manufacturer and the main technical data of the machine.

10. Personal protecion sign
“Wear suitable protective gloves!”
This label shows that you must wear safety gloves when working with the saw.

11. Personal protection sign “Wear suitable protective boots!”

This label shows that you must wear safety boots when working with the saw.

12. Machine safety label

„Wear earplugs and googles "

13. Safety-alert symbol

„Danger: beware in this area!"

14. Personal protection sign

Mind these instructions for safe operation!

15. Maintenance label „Lubricate every 10 h"
This decal is used to remind the operator of the right lubrication point (every 10 operation hours) of the processor.

16. Machine safety sign

„Check direction of motor revolutions"

17. Machine safety sign
„Moving Parts Danger!"

4. SAFETY

Strictly perform installation, set-up, maintenance, cleaning and transportation with the motor switched off and the machine firmly secured against accidental operation.

The user shall strictly comply with these operation, set-up, maintenance, repair and trouble-shooting instructions in order to assure safe operation and no damages to the equipment. Moreover we recommend to let the machine be run only and strictly by trained and skilled staff who must be familiar with the applicable occupational safety and health administration rules as well as applicable transportation rules. Incorrect use of the saw can cause serious injury or death.

No person under school leaving age should operate a log splitting machine. Those who have reached school leaving age but are below the age of 18 may operate a circular saw if supervised by a competent person of 18 years or over. The machine shall be installed and kept in a suitable location selected by the customer for safest operation.

Make sure that the equipment stands on a safe stable foundation.

The working area around the machine must be kept as clear as possible from surrounding obstacles and slippery foundation floors should be duly treated (do not use saw dust or wood ash for this purpose).

- Due and proper illumination of the working site must be provided at all times.
- Ensure that a wide but confined area is available around the mach ne and assure maximum working freedom.
- A skilled licensed electrician must be asked for any repair of the electric system.
- Operators must wear steel toe safety shoes and snug-fitting tear-re sistant work cloths.
- No additional customised protections or tools should be provided on board of the machine, other than the ones designed and supplied by the manufacturer.
- NEVER leave the machine unattended with the running motor.

Operator‘s hearing protection, safety glasses, safety shoes and gloves, close fitting cloths and other adequate protection means are strongly recommended. Make sure that all access ways are properly maintained so that wood can be safely delivered, loaded and shipped.

4.1 Mandatory application field

This machine is one-man operation only. Do not ever let more than one person work on the machine at the same time.
This machine can handle firewood splitting along the wood fibres. When splitting your logs, be sure that the log is safely laid down in the special infeed chute.
The manufacturer will consider any other use or application as "misuse", in which case the manufacturer will not be responsible for customers' claims or resulting damages.

Strictly feed firewood into this machine starting from a minimum diameter of 100 up to the maximum diameter of 210 mm. This machine can handle logs in a maximum length of 160 mm.

Customers are to operate the machine in strict accordance with these installation, operation, maintenance and repair instructions. Lack of compliance with these instructions may lead to dangerous risks and situations.

5. OPERATING INSTRUCTIONS

5.1 About use of the electric version

Three-phase, 400V motor versions should be powered using a 25 m long power cord with at least 1.5 sq. mm. section.
Ensure bonding of the machine neutral wire to ground. Failure to provide proper insulation will prevent your machine to start and operate.

Power supply is performed by means of a control push-button switch combination with built-in outlet and safety electrically connected between a power source (plug) and the drive motor.
THe socket for electric drife of machine must be equipped with a Residual current circuit braker (sensitivity 30 mA).

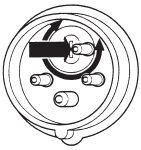


Fig. 1

Before starting to work, quickly switch the motor on and off to check that revolutions occur in the direction shown by the arrow on the motor casing. Should rotation be performed in the opposite direction, immediately stop the motor and use a phase inverter (Fig. 1) to switch the polarity in the plug of main power cord using a phase changer.

Operating the processor while the motor turns in the wrong direction may cause major, even permanent damages of the hydraulic pump!

5.2 About the hydraulic plant

This kindling wood processor has own inbuilt hydraulic system with pump and oil reservoire purposely integrated in the steel stand. The machine comes from the factory with a first oil fill. (see page 17).

Hydraulic oil in the lines may become quite viscous at very low ambient temperature. In this case, sudden start-up may damage the hydraulic system of your machine.

In order to protect the system, rather let the processor run idle (with no load and no operation) for a while (approx. 15 min) till the oil in the lines warms up.

The processor is hydraulically controlled by means a control valve whose fine default-settings are performed by the manufacturer before delivery. Do not alter these settings.

5.3 Getting started

Before starting, inspect the machine for evident, visible damages and unusual conditions. Check the state of all hydraulic hoses, fittings and connectors and seal eventual leaks, if required. Do not check for leaks with your hand. Leaks can be located by passing a piece of cardboard or wood around the suspected leak and looking for discoloration. High-pressure fluid escaping from a very small hole can be almost invisible. Escaping fluid under pressure can have sufficient force to penetrate skin, causing serious injury or even death.

Altering the equipment, or using the equipment in such a way as to circumvent its safeties, could result in serious or fatal injury. NEVER operate your processor when it's in need of repair or in poor mechanical conditions.

5.4 Operation method

Max. 16 cm long logs can be stacked on the infeed chute one after the other. A number of different indexing bits provides for smooth and even advancing of the round logs to the splitting knife, nomatter what size. The indexing unit is the heart of the machine. The size of the kindling sticks is adjustable by means of an adjustment screw to obtain thicker or thinner kindling depending on your requirements.
Make sure to perform adjustments strictly after the machine has been disconnected from power and has come to a complete stop.

The splitting blade is conceived for non-stop back-and-forth operation to process round logs in 10-21 cm diameter and split it into smaller kindling. The final performance is an homogeneous production of high-quality, uniform kindling (dry logs is a must) for quick, effortless lighting of wood fire.

The bagging system is consisting of a set of 2 sliding trays and support rails suitable for two bags so that non-stop filling can continue in one bag while the other one is being replaced.

5.5 Initial set-up

Fig. 2

Install the bagging facility on the machine before starting to operate. Insert the special bolts (1) in the respective recess on the machine before you install the bagging frame on the machine.
(see figure 2).

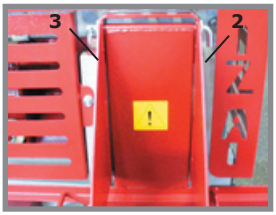


Fig. 3

After having securely installed the bagging framework, fit the upper flap closure between the two side flanks making sure that the closure hangs perfectly straight and does not hit against the front panel.
Not fit the safety pins (2) through the side flanks and through the top of the flap closure (figure 2).
Finally secure the two pins using a cotter (3) as shown on figure 3.

Fig. 4

Install the infeed chute on the processor using the two hex nuts (4) supplied with the machine by the manufacturer (see figure 4).

5.6 Switching the motor on

Close the safety grid and push the greem button of the electric motor switch to start the motor. Check the direction of motor revolutions. Motor revolutions should occur in the same direction as shown by the arrow label on motor casing.

5.6.1 Start-up procedure

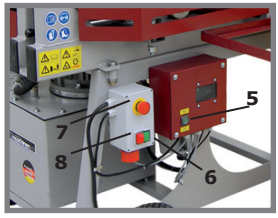


Fig. 5

- Perform power connection and wait for approximately 10 seconds before starting to operate the processor.
- Press the green Start/Stop button on the electrical box (5) to trigger the control valve assembly and start the splitting cycle (see figure 5). As the control valve is switched on, the cylinder slides outwards while the infeed chute moves back.
- As the cylinder reaches its front end position, the control valve is switched over and the cylinder starts sliding back making logs advance on the infeed chute.
- As the cylinder reaches its front end position, the control valve is switched over and a new cycle is started.

5.6.2 End of work

- Press the green Start/Stop button on the electrical board (5) to stop the actual splitting cycle.
- If you press the button (5) as the cylinder is completing its forward stroke, the splitting cycle will immediately stop and the cylinder will automatically move back to its initial position.

- If you press the button as the cylinder is completing its backward stroke, it will simply slide back to its intial position and stop as it gets there.

5.6.3 Removing the protection grid

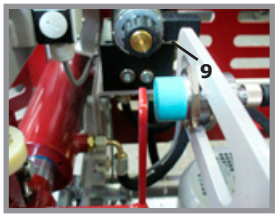


Fig. 6

The control valve (9) automatically switches over in its neutral position and the cylinder is stopped, if the protection grid is removed or opened while the machine is operated (see figure 6).
Close the grid back into place and press the green Start-Stop button (5) to make the push-block slide back to start position and then start the machine again (see figure 5).
As soon as the push block reaches again in its start-position, a new kindling cycles can be started again.

5.6.4 Emergency stopping during splitting

Both the electric motor and the control unit will be immediately disconnected, if the stop button (8) or the emergency stop (7) are engaged during a splitting cycle.
In order to restart the machine again, release the emergency stop (7), press the green start-button (6) and then the on/off switch (5) to restart.
The ram will slide 2 cm forth and back and the splitting cycle will have to be repeated, if you keep on holding the on/off switch (5) down for a little longer time. (see Fig.5)

5.6.5 Control display


Fig. 7

The control display (see figure 7) shows the following operating times:

1.splitting height

2. operation hours
3. operation minutes
4. operation seconds

5.6.6 Adjusting the forward stroke

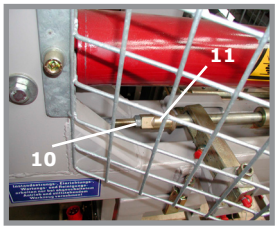


Fig. 8

To change the rate of logs advancing into the processor:

Release the locknut (10) of the adjustment rod and optimize the position of the stop bushing (11) by turning the threaded portion (see figure 8).
The forward stroke increases as closer as you move the stop bushing to the splitting knife.

After optimizing the new stroke, tighten the locknut to the stop bushing again.

6. HANDLING AND TRANSPORTATION

Before handling, moving or transporting the machine make sure to disconnect the machine from the power network.

The processor can be conveniently transported by dismounting both the infeed chute and the bagging framework so to reduce the overall transport dimensions. For size and dimensions please see the following section „Technical Data".

6.1 Short-distance handling on own wheels

This processor can be easily moved on short-distance by one person only by means of own wheel arrangement and two ergonomic, practical grip-handles. Simply grasp the grip-handles and pull the unit up and lean it back on the wheels to push it to a new placement.

7. TROUBLE-SHOOTING

If advancing of the logs suddendly and unexpectedly stops:
- Make sure you did not run out of logs in the infeed chute
- Make sure that no log was too short and got stuck across the chute
- Make sure that there are no banches on a log getting tagles and preventing further advancing
- Make sure that the logs on the chute do not exceed the maximum admissible length of 16 cm and that their diameter is between 10 and 21 cm.

If you feeding logs of different diameters into the processor, make sure to comply with the following instruction:

Logs must enter the processor by a decreasing-size sequence. This means you should first load the largest logs on the chute so that they are fed first to the knife followed by decreasingly smaller logs (smaller diameter).
Feeding smaller logs first (that is to say the opposite way around) may cause larger logs to roll over the smaller ones and jamming the machine inlet.

Never use hands to clear or push logs into the machine!

In case of jamming, be cautious and make sure to first switch the machine off, clear eventual obstructions and then start again.

If the processor comes to a sudden stop due but not limited to a jammed piece of wood, move the wedge adjustment lever in the off-position and wait for the ram to slide back in its initial position.

If the processor becomes suddenly inoperable, check the machine for the any of the following possible causes:

- Eventual jammed logs
- There may be a damaged hydraulic hose
- Poor, unsufficient operating pressure
- Faulty or badly set control valve
- Defective switch
- Power disconnection

If the processor operates too slowly, check the machine for the any of the following possible causes:

- Unsufficient oil in the hydraulic system
- Poor, insufficient operating pressure
- Defective control valve (or wrong settings)
- Jammed logs

8. REPAIRS AND MAINTENANCE

Make sure that the machine is fully disconnected and all moving parts are secured before performing any maintenance/repair work on the machine. In the event of any malfunctioning, switch the machine off before trouble-shooting.

8.1 Ordinary maintenance

The following tasks belong to ordinary maintenance works:

- Cleaning of the machine from eventual residual wood, chips or dirt
- Repeading lubrication of the knife sliding surface (use a brush) over a working day time
- Checking the level of hydraulic oil and tightness of the system (hoses and couplings)
- Grease and lubricate all moving parts when required

8.2 Hydraulic oil specifications

Periodically check the oil level inside the hydraulic oil tank. When doing so, accurately avoid contaminating the tank with dirt, wood chips, sow dust etc... Make sure that the machine never runs without oil or with a low oil level. When this happens, air is likely to reach inside the hydraulic loop. Failure to maintain due oil level may cause poor running and irregular processor operation (very rough, jerky motions) as well as major pump damages.
Please schedule your first oil change after approximately 50 operation hours and later ones after each 250 operation hours or once a year.

Recommended oil types:
DEA HD B 46, Shell Tellus 10-46, Esso Nuto H 46

When changing the oil, never let used oil drop down on the ground, rather collect whole of it in a sealedcontainer for due disposal. Oil disposal containers should be of at least 80 l capacity. If you are using smaller containers, make sure to drain the tank in more than one round to avoid spilling old oil out on the ground.
Used oil is very polluting and should be disposed in accordance with local regulations!

After refilling the tank with new oil, let the processor cycle three or four times and let the air blow out of the hydraulic loop before closing the cap. All hose connections must be always tight and sealed.

9. DISPOSING OF AN OBSOLETE MACHINE

When the processor is fully obsolete and cannot be of any longer use, it should be duly dismounted ahead of discarding. Certain components need deactivation and dismantling in order to assure that no further use is made by other parties and that no worn out parts are recycled for other applications.

During dismantle be alert for possible recyclable materials and components that belong to differentiated waste collection procedures applicable in your country.

The manufacturer is not liable and undertakes no responsibility for personal injuries or damages that may result from the recycling of worn outmachine parts and eventual re-use in other applications different than originally stated in this manual.

Dismantling procedure:
Take good note please: each and every dismantling task must beperformed by authorized service centres or trained skilled staff only!

- Pull the machine down into single components
- Lock and clamp all moving machine parts
- Deliver each single component only to authorized waste manage ment facilities
- Drain oil and fuel out of respective tanks and lines before disposal of the machine
- Remove rubber and plastic parts from the machine that must be se parately disposed of.

Deactivated, clamped moving/driving parts and components are of no further risk and danger.

Electric components must be separately disposed to avoid substantial environmental threat. In the event of fire on the electric deployment system of the machine, use of an explosion-proof extinguish system is required (for example powder fire extinguishers).

10. TECHNICAL DATA

Technical data	Unit of measure-ment	
min. logs diameter	mm	100
max. logs diameter	mm	210
admissible logs length	mm	160
max. final output	cbm/Std.	2,4
max. operating pressure	bar	90
motor power P1	KW	5,5
number of motor rev.	U/min	1435
height without infeed chute	mm	1500
height with infeed chute	mm	2000
width without infeed chute and bagging framework	mm	1000
width with infeed chute and bagging framework	mm	2200
machine length	mm	1250
weight	kg	approx. 450

* please account for ± 10% splitting power rates.

10.1 Noise level and emissions

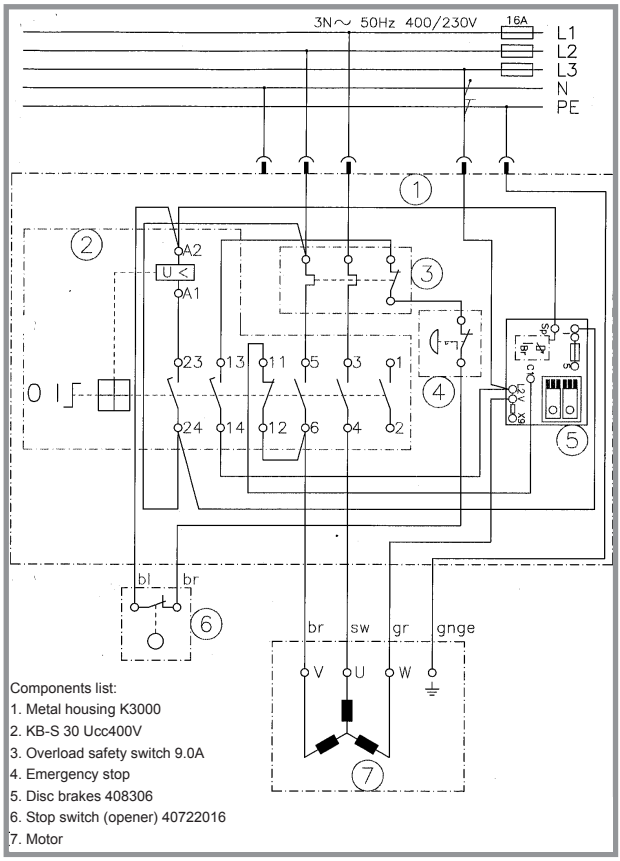
Noise emissions were measured in accordance with the European directives for the measurement of noise emissions on the workplace. The measurement was performed by external authorized certification bodies in compliance with the applicable standards based on applicable rules for agricultural and forestry equipment.
The detected noise level was:

LpA = 80 dB(A) and 90 dba at max loading conditions

11. WIRING DIAGRAM

BEWARE: only let expert skilled staff do electric repair/maintenance works!

As for all electric tools and equipment we strongly recommend use a portable residual current device (PRCD), unless you already have a residual current device (RCD) in your house assuring safety and protection up to max 0.03A nominal fault current.



12. OTHER AREAS OF POSSIBLE DANGERS

12.1 Mechanical dangers

Possible dangers related to machine moving parts (knife) are minimized by means of a two-hands control designed to prevent working with only one handle while the other one is being engaged (held down) by some mechanical tool or system.
DO NOT EVER ATTEMPT to remove or by-pass the two-hands control!
Danger: operating the splitter without the safety two-hands control will increase your risk of having your hands pinched during the splitting cycle.
Do not remove any other safety and protection device from the machine.

WARNING: splitting without due safety devices might result into serious injures to the operator or the other person around the workplace.

12.2 Electric dangers

All machine parts staying under voltage are duly insulated or sealed inside a fixed casing to avoid accidental contact. For safety reasons all fixed casings can be only removed using special tools and equipment.

WARNING: removing a fixed protection casing when the machine is running or without having priory cut the power off, may result into major danger of electrical shock!

13. LEGAL WARRANTY

All BGU machines are covered with warranty terms in accordance with the law. Customers should promptly notify the manufacturer eventual material or production claims on their detection. While asking for warranty service, customer should show copy of their purchase invoice or receipt. The warranty does not cover for faults due to natural wear, temperature or weather agents as well as defects caused by misuse, faulty installation or set-up, improper operations and lubrication or act of vandalism. No warranty will be given on parts damaged by improper handling, use and application. The manufacturer is further not responsible for warranty service on machines used for other applications as mentioned in this manual, altered or modified by the customer or other thirds, or overloaded.

No warranty applies to consumable parts (for instance: V-belts, blades, tools, and other implements) and to adjustment/calibration works.

14. EXTENDED WARRANTY

All SŰMA consumer products are covered with 24 or 12 months total warranty from the date of purchase for private/industrial users and rentals. This warranty extension does not substitute nor void the legal warranty. Customers should promptly notify eventual material, production or workmanship claims on their detection. While asking for warranty service, customers should show copy of their purchase invoice or receipt. Buyer's address and type/model of equipment must be clearly stated in the case of industrial users/contractors/dealers. All claims related to material or production failures during the total warranty time, shallbe repaired notwithstanding eventual user's faulty/ wrong operation or maintenance.

15. EC – STATEMENT OF COMPLIANCE

with the CEE Machines Directive No. 2006/42/EG, Annexure IIA and EMV 108/2004/CEE

We hereby declare that the equipment described in this manual responds in full to the actual version brought on the market. We, the manufacturer further declare that this equipment was duly designed and manufactured in accordance with the actual European Safety and Health Standards settled by the relevant EEC directives as well as the latest electromagnetic standards issued by the European Council of 3.5.89 and later enforced by all member states.
This statement of compliance does not apply to customer modifications of the equipment without manufacturer's written approval.

Machine type::	**ZA 160-2**
Models:	see model label
Applicable European Standards::	EEC Machine Directive Nr. 2006/42/EG and further modifications EEC Low Voltage Directive (93/68) 2006/95/EG EEC EMV-Directive EMV 2004/108/EG
Other applicable Standards:	EC Standard Draft prEN 609-1 - Log splitters DIN EN 55014 T1 DIN EN 55014 T2 DIN EN 50104 DIN EN 61000-3-2 DIN EN 61000-3-3

Nordhausen, 13 July 2011

Date

Jörg Kernstock (Director)

Official user language:

English (User's release)

Subject to changes without notice

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