

USER'S MANUAL

Set-up & installation
Use
Maintenance
Accessories



Carefully read these instructions
before starting and using your saw!

LOG CUTTING SAW ZWK 790 - 2



Made in
Germany



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CONTENT

1. GENERAL INFORMATION	3
1.1 About this manual	3
1.2 Delivery and transport claims	3
2. PRODUCT OVERVIEW	5
2.1 Circular log cutting saw with PTO drive	5
3. SAFETY PICTOGRAMS AND WARNING LABELS	6
4. SAFETY	8
4.1 Safety rules about saw blade	9
4.2 Mandatory application field	9
5. OPERATING INSTRUCTIONS	10
6. CONNECTION AND DISCONNECTION TO PTO DRIVE	11
6.1 Safety rules	11
7. REPAIRS AND MAINTENANCE	12
7.1 Regular maintenance	12
7.2 Cleaning after use	12
7.3 Replacing the saw blade	12
7.5 Tensioning and replacing the V-belt	13
7.6 Consumables	13
8. HANDLING AND TRANSPORTATION	14
9. DISMOUNTING AND DISCARDING AN OBSOLETE MACHINE	14
10. TECHNICAL DATA	15
10.1 Noise emissions	15
11. TROUBLESHOOTING CHART	17
12. OTHER AREAS OF POSSIBLE HAZARD	17
12.1 Mechanical dangers	17
12.2 Environmental dangers	17
13. WARRANTY	18
14. EC STATEMENT OF COMPLIANCE	19

1. GENERAL INFORMATION

Dear customer, thank you very much for your trust and preference in choosing our equipment and joining the number of our best customers 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 this manual

Please take time to read this manual and learn to how operate and maintain the saw safely.

For your easier reading this manual is laid out in several sections. The sections are progressively numbered 1 through 13 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 functional trouble on your machine, please read the "trouble-shooting" section to identify possible causes and remedies.

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.

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 understanding in this matter.

2. PRODUCT OVERVIEW

2.1 Circular log cutting saw with PTO drive



3. SAFETY PICTOGRAMS AND WARNING LABELS



- 1. Warning label**
„Do not operate the machine in-doors!“
Never run the machine inside a closed area.
Exhaust fumes are toxic!.



- 2. Safety pictogram „Wear ear plugs and goggles!“**
Loud noise can cause impairment or loss of hearing, wear a suitable protective device such as ear plugs and safety goggles.



- 3. Safety pictogram „Direction arrow“**
Motor, PTO shaft and driveline must be turning in the same direction as shown by this arrow.

Max. 540 U/min

- 4. Warning label**
max. 540 Rev./min. This label shows the max admissible number of PTO shaft revolutions.



- 5. Identification label „Product identification“**

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



- 6. „BGU-Maschinen Blue Line“ Manufacturer's Logo**



- 7. Personal protection sign**
Mind these instructions for safe operation!



8. Machine safety label „Before operating the machine read this manual and mind all safety instructions“

To avoid personal injury or death, carefully read and understand all instructions pertaining to the saw including the engine manufacturer's operating and maintenance instruction manual.



9. Personal protection sign „Wear suitable protective boots!“

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



10. Personal protection sign „Wear suitable protective gloves!“

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



11. Machine safety label

Before setting-up, servicing, maintaining and cleaning the machine, disengage power and stop the engine. Lock the tool and secure against accidental start."

Keep your hands away from all moving parts!
Pinched hands danger!!



12. Machine safety label

„Read, understand, and follow all instructions in this manual and on the splitter before starting“Keep at safety distance from the dangerous zone!



13. Safety-alert symbolmax. 540 Rev./min.

Read and recognize safety information. Be alert to the potential for personal injury when you see this safety-alert symbol.

4. SAFETY



Strictly perform installation, set-up, maintenance, cleaning and transportation with the motor switched off and the blade firmly secured against accidental operation. Immediately disconnect power off the machine in case of any eventual fault or trouble.

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 circular saw. 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.

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).

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

Do not allow within the hazardous zone any unauthorized third or persons who are not familiar with the dangers related to use and operation of the machine. Allow no bystanders, especially children and pets in the working area.

Also make sure to comply with the following provisions:

- Due and proper illumination of the working site must be provided at all times.
- The saw blade must be duly sharpened for maximum performance and no recoil danger. Flash and chips must be removed off the crown wheel.
- Damaged or buckled blades (very likely to break during operation) should not be used.
- Strictly ask a skilled licensed electrician for any repair of the electric system.
- Always wear suitable hearing (ear plugs or muffs) and eye protection (goggles or safety glasses) while operating the machine.
- Ensure that a wide but confined area is available around the machine and assure maximum working freedom.

- Operators must wear steel toe safety shoes and snug-fitting tear-resistant 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.
- Do not apply pressure (for instance by means of the wood stock) against the blade to make it come to a quicker stop.
- The machine is not designed for indoor use (dust release).
- Never leave the machine unattended with the running motor.
- Before leaving the operator's station for any reason, stop the machine motor, disconnect power and secure the machine against accidental operation.

4.1 Safety rules about saw blade

The unit is strictly designed for use with a 750mm (outer diameter) blade.

Strictly use blades as per EN Standard 847-1.

Do not ever use worn out blades in need of sharpening.

Make sure that the blade shows good conditions, no damages, no cracks, no buckling and no missing/broken teeth/bits.

Hard metal blades require special care and handling. Make sure that the blade bits do not ever hit against hard surfaces (for example concrete floors), which might cause invisible bits damage.

Hard metal blades must be suitable to operate at 1800 revolutions per minute.

4.2 Mandatory application field

These log-cutting saws are strictly designed for preparation of firewood. Sawing to be strictly performed with wood stock on the log carriage. All other applications are forbidden and considered as "misuse". The manufacturer is not liable for any damage or injury resulting from misuse!

The machine is capable to handle wood stocks in diameter of 8-30 cm. Shrubs and tiny branches bundles must be loaded on the carriage and securely hold on both sides of the blade.

The machine is strictly conceived for ONE-MAN OPERATION ONLY.

Misuse will completely void your warranty. The manufacturer accepts no liability for personal injuries and damages to other equipment caused by misusing the machine.

5. OPERATING INSTRUCTIONS

This PTO-powered version „ZWK 790-2“ is an excellent machine with inbuilt hydraulic system and PTO drive suitable both for firewood preparation directly in the forest/wood (by simply powering it off your tractor via a cardan shaft) and for stationary use in your yard.

A rugged all-steel construction assures longest machine life at any operative condition.

This machine is specially designed to work with a 750 mm blade approved and manufactured to EN 847-1.

When you switch the machine on make sure to check that the blade is mounted to rotate in the proper direction before cutting any material. The tool must rotate against the operator that is upward toward the operator. If not, immediately switch the polarity in the plug of main power cord using a phase changer. If you don't feel familiar with phase changing ask a licensed electrician to reset the saw cord. Load the log in the carriage and **smoothly** push it to the blade.



If you working with twisted or crooked logs make sure to load the log on the carriage, so that the bolted side of the log is turned to the blade in order to avoid the log from tipping over or jamming during cutting and consequent possible even major damages to the blade.

Now fasten the grip on the log carriage and push to smoothly tilt it over towards and through the blade.

NOTE: avoid excessive pressure on the carriage through the blade with cutting. Excessive hold-down pressure may slow the blade down and cause dangerous jamming!

When doing so avoid all jerky, bumpy movements that could lead to risky and dangerous situations. Timber in maximum length of 1.1 m must lay on the trough by the entire length with no projecting end. After the first log is cut off the timber, let the carriage swing down to start-position (wide opened) before advancing the remaining timber to the blade and starting a new sawing cycle. If you try to feed the stock forward and cut before the carriage reaches back to start position, you may run the risk of hitting the stock against the blade guard consequently causing severe personal injuries and machine damages for which the manufacturer carries no liability.

The ZWK790-2 model is provided with a PTO power arrangement. A PTO shaft is an efficient means of transferring mechanical power between farm tractors and implements. This makes the ZWK 790-2 model an ideal piece of equipment for those who want to process their timber in the forest producing clean logs directly on the felling site with great savings in terms of later cleaning and disposal of wood chips, bark and sawdust.

6. CONNECTION AND DISCONNECTION TO PTO DRIVE

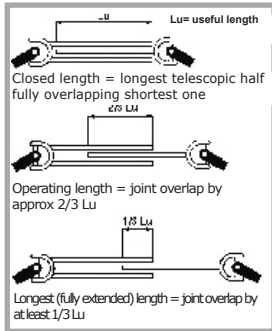


Fig. 1
„Driveshaft coupling scheme“

PTO-driven ZWK 790-2 models are equipped with a three-point linkage to fit on the one available on your tractor. The drive shaft is going to act as linkage and driving element between the tractor and the saw and should be therefore duly mounted and secured by the special pins available on the machine.

Make sure to perform accurate connection of your PTO drive shaft both on processor and power input side. A pictogram on the drive shaft showing a little tractor tells you which side must be connected to tractor power output.

Press the detent lock inwards as you slide the machine shaft onto the tractor PTO stub shaft. Slide the machine shaft forward far enough to make sure the detent lock has snapped into the lock position.

Secure the drive shaft with the special restraining chain to avoid dangerous twisting.

For increased safety make sure that a minimum wrapping of $\frac{1}{3}$ of the total useful length is achieved. (see Figure 1).

Do not perform any repair, adjustment, cleaning or maintenance work whatsoever while the machine is running (disconnect PTO-drive or switch the motor off)!

Strictly use approved drive shafts of certified construction.

Always connect and secure the driveline in compliance with shaft manufacturer instructions.



Never use a PTO driveline without safety shield or with a damaged guard and make sure that the shield is of the correct size and length for the drive shaft.

Before connecting/disconnecting the PTO-shaft make sure to switch the tractor off to avoid possible damages to the shaft of the saw blade!

PTO-versions are stationary machines to be strictly operated on ground.

6.1 Safety rules



Before connecting the drive shaft make sure that there are no bystanders in the area between the tractor and the saw.

The working area around the machine must be kept as clear as possible from surrounding obstacles. Standing in the dangerous area of the machine will void any liability of the manufacturer.

7. 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 troubleshooting.

7.1 Regular maintenance

The following tasks belong to ordinary maintenance works:

- Clean the machine from eventual residual wood, chips or dirt.
- Lubricate all moving parts.
- Grease all pivoting parts of the log carriage

Radial thrust bearings are to compensate the unavoidable production-related range of tolerance. Lubrication of radial thrust bearings is NOT required, as the thrust function is only used once at the time of assembly, which means that the existing lubricant film will remain on."

7.2 Cleaning after use

Remove wood chips and saw dust produced and left on the machine during work.

Clean the log carriage assembly removing all wood rests.

7.3 Replacing the saw blade



Safety note ! Wear safety gloves - pinched hands danger.



Before replacing the blade make sure to disconnect the machine from power (unplug the machine or turn the tractor off).

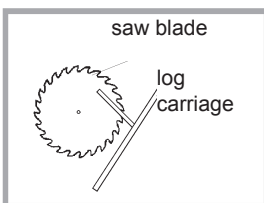


Fig. 2
„Direction of blade rotation“

Following instructions apply for safe and proper blade replacement:

- Disconnect power off the machine (unplug power cord or stop the motor of the tractor) and wait for the blade to come to a complete stop.
- Tilt the upper blade hood over by releasing the hex-nuts.
- Release and undo the fixation bolt on the blade clamping flange using a spanner and hold the blade using another spanner to secure the blade flange on the motor side as you undo the nut. (this to prevent the blade from turning as you undo the bolt.)
- Remove the clamping flange.
- Pull the old blade off the shaft (make sure to wear tear-resistant gloves. DANGER!).
- Fit the new blade on the shaft. Note direction of rotation. (see Fig. 2)

- Mount the locking flange back on the blade shaft minding the right position of the feather-key in the flange.
- Tighten the shaft nut to hold the flange securely in place! ATTENTION to assemble the new blade follow the sequence: blade, external clamping flange, washer, fixation bolt.
- Refit the blade hood in the original position duly set and clamped.

7.5 Tensioning and replacing the V-belt

If you are operating a ZWK790-2, proper maintenance requires retensioning of the belt after a certain number of operation hours.

To perform stretching of the V-belt, you need adjusting the special screw after removing the gearbox cover and releasing the motor fixation mount.

Adjust the V-belt so that you can still provoke an approx. 10 mm of deflection by applying one finger tip pressure (see figure 3 - Stretching a V-belt).

Refit the gear casing and the motor mount back in place before operating the machine again.

Running the saw with a loose V-belt will cause increased wear and shorten you belt life.

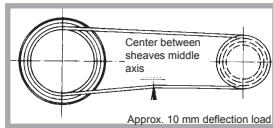


Fig. 3 "Stretching a V-belt"

To replace the belt release the clamp-screws and remove the safety guard from the V-belt drive area. Remove the old belts from the sheaves and fit the new ones on. Make sure to refit the V-belt casing back in place before operating the machine again.

7.6 Consumables

The machine is equipped with the following consumable parts for which no warranty is given!

Circular saw blade (Part no. 90076 HM)

Wood strips (left:Part no. 56534, right:Part no. 56535 and 56536)

V-belt (Part no.54591)

8. HANDLING AND TRANSPORTATION

Log & timber cutting saws are light equipment that can be easily moved on short-distance by means of two caster wheels and an ergonomic, comfortable grip handle located on the chassis on the opposite side as the log carriage. In order to avoid infringement of the clearance area around the machine, the grip handle is retractable (push/pull) on the model ZWK 790-2.

Simply fasten the grip and lift the saw for safe and rapid hauling of the machine.

For safety reasons the grip handle should remain retracted (or lifted up) during work to avoid risk of tripping or entanglement.

9. DISMOUNTING AND DISCARDING AN OBSOLETE MACHINE

When the machine is fully obsolete and cannot be of any longer use, it should be duly dismantled 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 out machine 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 be performed 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 management facilities
- Remove rubber and plastic parts from the machine that must be separately 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 measurement	ZWK 790 -2
Max. timber diameter	mm	300
Saw blade diameter	mm	750/30
Tractor power requirements	kW	15
Max. driveshaft rev. number	RPM	540
Speed Saw blade	RPM	1480
Dimensions with opened carriage		
Length	mm	1120
Width	mm	820
Height	mm	1170
Weight	kg	approx. 198



ACCESSORIES*

On request the machine may be equipped with a special jaw for efficient and safe clamping of the log after cutting.
(Code Nr.:91274)

10.1 Noise emissions

The noise level was measured in compliance with the general rules for establishment of noise and acoustic pollution of garden and agricultural equipment on work sites as well as with other national standards for noise measurement.

The applicable measuring parameters were:

Measurement on the machine front edge at 1600 mm height and 400mm away from the blade on the right hand side, while processing beech wood in the size of 80+/-5% of the admissible timber diameter as per this instruction:

Without load	86 db(A)
With full load	89 db(A)

Use of ears protectors is mandatory!

* Accessories are no basic equipment, if requested, however, available and there fore additional costs.



The above mentioned values are emission measurements and may not be therefore assumed as for a safe work environment. Although there is a relationship between noise emission and immission levels, this is not a sufficient basis to determine the extent of on-site required protection. There are a lot of other factors that can influence site work and risk of injuries and namely: the actual site/buildings configuration, the concomitant presence of other noise sources (for instance other machines performing other works in the neighbourhood) etc... The factors applied for determining safety of a workplace may also vary from one country to the other. We are reporting here the noise values detected in the facility of the manufacturer on order to allow the user performing a better evaluation of the possible risk/disturbance.

11. TROUBLESHOOTING CHART



The following section will detail procedures for checking your saw, should you encounter a malfunction.

Important! Before setting, operating, cleaning, maintaining or repairing the saw, read the manufacturer's operating and maintenance instructions.

Trouble description	Possible causes	Remedies
The saw starts but the blade doesn't operate	<ul style="list-style-type: none">- Locking flange of the blade shaft or of the motor is not tight- V-belt splits	<ul style="list-style-type: none">- Tighten the bolt/nut- Optimize V-belt tension
Blade runs but in the wrong direction	<ul style="list-style-type: none">- Inverted phases	<ul style="list-style-type: none">- Change the polarity in the phase changer or in the switch
Blade chops	<ul style="list-style-type: none">- Stump blade	<ul style="list-style-type: none">- Sharpen or replace the blade
Loud noise out of the gearbo	<ul style="list-style-type: none">- Oil in the gearbox is finished or not enough- Defective gearbox	<ul style="list-style-type: none">- Provide oil touchup- Replace with new gearbox

12. OTHER AREAS OF POSSIBLE HAZARD

12.1 Mechanical dangers

Possible dangers related to machine moving parts (for example chain-saw and v-belts) are minimized by means of suitable safeties and protections that cannot be dismantled unless special tools and equipment are used.

DANGER: removing or by-passing inbuilt machine safeties may result into serious operator's personal injuries.

12.2 Environmental dangers

The machine is strictly designed for outdoor applications.

DANGER: do not operate the machine indoors to avoid risk of inhaling wood dust.

13. 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 misuse, faulty installation or set-up, improper operation and lubrication or acts 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 than mentioned in this manual, altered or modified by the customer or other thirds, or overloaded. Never attempt to use an incomplete machine or one fitted with unauthorized modification.

Any modifications to your machine can cause personal injuries, and will void your warranty. Consumable parts with a prescribed life (i.e. pulleys, tools and various auxiliary materials) are excluded from the warranty as well as adjustment, optimization and fine-setting or retrofitting works.

14. EC STATEMENT OF COMPLIANCE

In accordance with the EC Machine Directive No. 42/2006 and EMV (Low Voltage) Directive 108/2004

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 by all member states.

This statement of compliance does not apply to customer modifications of the equipment without without manufacturer's written approval.

Machine type: **Log cutting saw**

Models: **ZWK 790-2**

Production Nr: see model label

Applicable European Standards: EC Machine Directive No. 42/2006
EMV (Low Voltage) Directive 95/2006
EC-EMV (ElectroMagnetic Compatibility) Directive 108/2004

Other applicable Standards: Full compliance to the European safety rules was assured by enforcement of the following harmonised Standards:
EN ISO 12100-1:2009, EN ISO 12100-2:2009, EN ISO 13857:2008, EN 60204-1:2007, EN 1870-6:2010;
EN 847-1:2007; EN 55014-1:2006; EN 55014-2:1997+A1:2001;
EN 61000-3-2:2006;

Type-certification tests have been carried out by the following Official Certification Body, number 2157, in accordance with Annex IX of the EC Directive no. 42/2006. The product specimens were found fully conformant to the applicable technical Standards and to the related control type which is described in the technical documents and for which a type-approval certificated was already released.

Prüf- und Zertifizierungsstelle des
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Official user language: English (User's release)



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