Original Instruction Manual

Carefully read these instructions
before starting and using your machine!

Firewood Chainsaw-Processor
KSA 380 Z / KSA 380 E

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

Südharzer Maschinenbau GmbH
99734 Nordhausen, Helmestraße 94
Service Tel. 0 36 31 / 62 97 104 • Fax 0 36 31 / 62 97 111
Internet: www.bgu-maschinen.de
e-mail: info@bgu-maschinen.de

Südharzer Maschinenbau GmbH
Helmestr. 94
99734 Nordhausen
Tel. 0 36 31 / 62 97-0 Fax 0 36 31 / 62 97 111
E-Mail info@bgu-maschinen.de
Internet www.bgu-maschinen.de

EC – Statement of Compliance

with the EC Machine Directive No. 42/2006

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 EC directives as well as by 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 machines that have been modified by the customer without manufacturer's written approval. The manufacturer will not be responsible for such modified equipment and machines.

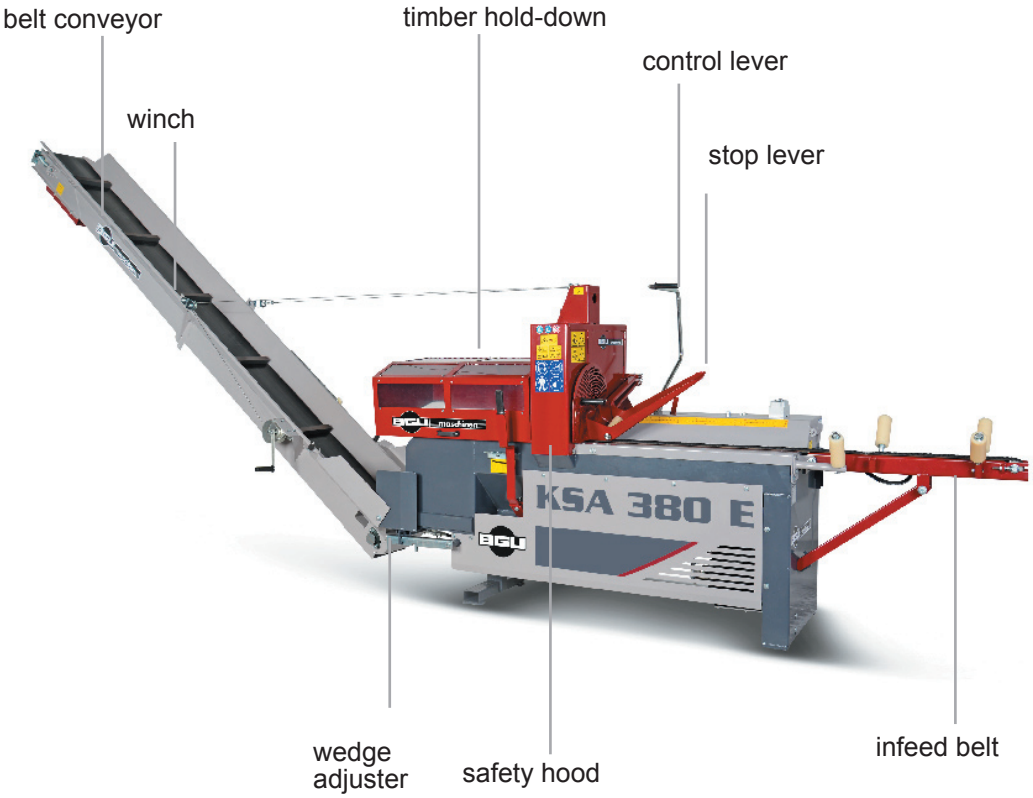
Machine type:	**Firewood chainsaw-processor**
Model:	**KSA 380 Z / KSA 380 E**
Serial Number:	See manufacturer's label
Applicable European Standards:	EC Machine Directive 42/2006 EC EMV Directive 108/2004 EC Low Voltage Directive 68/1993 and 95/2006
Other applicable Standards and technical specifications:	EN 609 Safety of log splitters (wedge machines) EN 55014-1:2006 EN 55014-2:1997+A1:2001 EN 61000-3-2:2006
Person responsible for the technical report:	René Pareis (Management)

Venue: Nordhausen
.....
Date: 15.03.2017

.....
René Pareis
(Director)

CONTENTS

1. Machine overview



2. Safety pictograms and warning labels

1. Operation safety label

“Max pressure: 200 bars”

Maximum operating pressure is 200 bars.

2. Machine safety label

max. 420 Rev./min.

This label shows the max admissible number of PTO shaft revolutions.

3. Operation safety label

“DANGER! Pinched hands danger!”

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

4. Machine safety label

CAUTION: “check motor revolutions!”

Avoid dangers and check motor revolutions upon starting.

5. Machine safety label

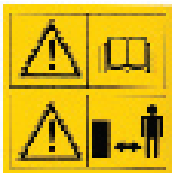
“Before setting -up, servicing, maintaining and cleaning the machine, disengage power and stop the engine. Lock the tool and secure against accidental start. Let engine cool.”

This safety label reminds user of the general safety rules.

6. Machine safety label

„Read, understand, and follow all instructions in this manual and on the processor before starting!”

This safety label reminds the user about the importance of reading and understanding the instructions of the manufacurer and getting familiar with the machine before your first use it.



7. Operation safety label

“WARNING! Wear earplugs and googles”

Loud noise can cause impairment or loss of hearing, wear a suitable protective device such as earplugs and safety goggles.

8. Personal protection pictogram

“Wear suitable protective gloves!”

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

9. Personal protection pictogram

“Wear suitable protective boots!”
This label shows that you must wear safety boots when working with the splitter.

10. Operation safety pictogram

One-man operation only!

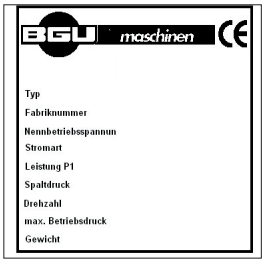
Possible dangers can arise from moving parts on the machine.
The machine is to be strictly operated by one man at a time only.

11. Operation safety pictogram

„Do not operate the machine in-doors!“

Never run the machine inside a closed area.
Exhaust fumes are toxic.

12. Production label



„Product identification“

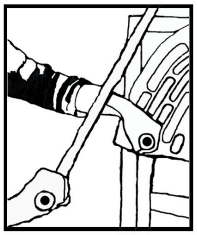
This label shows the company details of the manufacturer and the main machine technical data.

13. Manufacturer Logo

„BGU-Maschinen“ Logo

14. Operation safety label

“Short instructions”



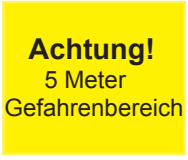
This label reminds the user about the correct timber cutting procedure:

• Right hand operates the multifunctional control lever and
• Left hand keeps the hold-down firmly on the timber

15. Operation safety label

„Dagerous zone: 5 m free clearance all around the processor“

Make sure to keep clear of the dagerous zone around the machine.



3. General information

Dear customer,
thank you very much for your trust and preference in buying this chainsaw processor! You have now joined the BGU worldwide family. We are confident that our equipment will be up to all your expectations and assure you a long lasting quality and performance.

Our chainsaw firewood processor is available in the following two versions:

KSA 380 Z - PTO powered
KSA 380 E - E-motor powered

3.1 Delivery and transport claims

Upon receiving the processor at your place, 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. Should your shipper or the truck driver refuse to accept your claim, fully reject delivery of the machine and make sure to inform us (the manufacturer) immediately. No claims will 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.

4. Safety

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

The user shall strictly comply with these operation, set-up, mainte-nance, repair and trouble-shooting instructions in order to assure safe operation and no damages to the equipment. The owner must understand these instructions and must allow only persons who understand these instructions to operate the processor. 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 splitter can cause serious injury or death.
No person under 18 years should operate this log processor. 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).

4.1 General safety rules

- Never reach with your hands inside the dangerous chainsaw and push-block area while they are moving!
- NEVER leave the machine unattended with the running motor.
- Before leaving the operator‘s station for any reason, stop the machine motor or the tractor engine, disconnect power (or PTO drive), make sure to remove the ignition key of the tractor and secure the machine against accidental operation
- The operator is responsible for the safety of other thirds on the workplace.
- Set up the machine on a firm surface which is free from stumps, boulders and other obstructions.
- Work with your processor only in daylight or good artificial light.
- Ensure that a wide but confined area is available around the machine and assure maximum working freedom.
- A skilled licensed electrician must be asked for any repair of the electric system.
- ne and assure maximum working freedom.
- Operator‘s hearing protection, safety glasses, safety shoes and gloves, close fitting cloths and other adequate protection means are mandatory.
- Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operating the processor.
- No additional customised protections or tools are provided on board of the machine, other than the ones designed and supplied by the manufacturer.
- Make sure to process only logs and timber that are free from foreign inclusions such as nails, screws or other hard material.
- Only use original BGU spare parts!

4.2 Mandatory application field

Chainsaw fi rewood processors are one-man operation machines only. Never allow more than one person approach and work on the machine at the same time.

This machine is conceived for cutting and splitting logs for firewood preparation only. Any other use or splitting method is considered by the manufacturer as “misuse”. In case of misuse the manufacturer will not be liable for any injuries or damages and the operator will be held entirely responsible.

Please make sure to comply with these set-up, operation and maintenance/repair instructions in order to avoid happening of any injury or dangerous condition.

IMPORTANT: this unit has a log capacity of min 20 mm and max 370 mm diameter.
DO NOT PROCESS FIREWOOD OUTSIDE THIS RANGE.

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. Operation

Locate your processor only on firm, level ground. Site must be free of slippery surfaces and tripping obstacles.

Danger!
NEVER operate your chainsaw fi rewood processor on slippery, wet, muddy, or icy surfaces. The location you choose should be flat, dry, and free from any interference.

Secure the conveyor stand against possible slipping by means of the special limit chain located at the base of the conveyor.

Now swing down the infeed conveyor on the right hand side of the machine and let the stay rod underneath it snap into the special holder on the chassis (see figure 1).

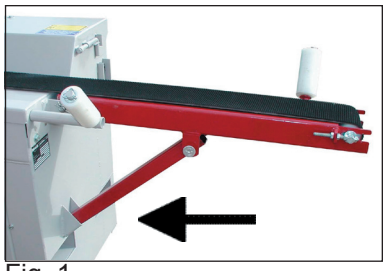


Fig. 1

Close the protection grid over the log splitter section and make sure that all safeties and protections are well in place and properly working.

Load timber on the infeed belt (Figure 2). Feed the timber all the way against the special length-gauge (stop plate) located on the other side of the chainsaw. (See figure 3), operating the multifunctional control lever down with your right hand whilst advancing the timber with the hold-down using your left hand.(see figure 3) and adjust to the desired position.

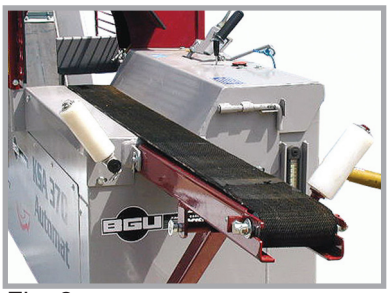


Fig. 2

PLEASE NOTE: this machine is conceived for cutting one single timber piece at a time. DO NOT EVER CUT BUNDLED FIREWOOD!!


Fig. 3

To engage the chiansaw and start the cycle, push the multifunctional control lever down with your right hand whilst keeping the hold-down firmly clamped on your timber with your left hand. Keep the multifunctional lever down to the first step until the chainsaw has completely cut the timber through. Logs that are cut off the saw automatically roll down into the splitter trough. Now, pull the multifunctional control lever a further step down to operate the push-block of the log splitter section and start splitting.
When splitting is completed, shift the multifunctional control lever back into the original start-position. The push-block slides inside the splitter trough pushing the log towards the 4-way wedge that splits into 2, 4 or 6 pieces depending on the number of wings. The push-block is operated by an hydraulic ram that automatically slides back to start-position as soon as it reaches against stroke-end (maximum stroke is completed and pressure is released).
While the push-block slides back, the machine is ready for feeding the remaining timber against length gauge and start a new cycle again.

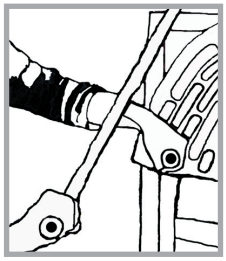


Fig. 4

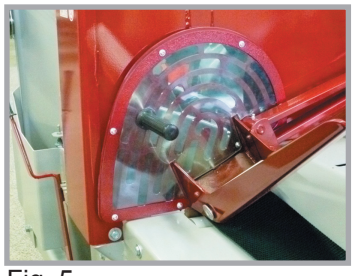
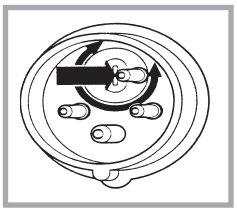


Fig. 5

5.1 About the electric system

Connect the machine to your house power network. Make sure to connect the neutral return wire of the conductor cord or the machine won‘t start!
Power supply is controlled by means of a simple switch/plug combination. An emergency shut-off control is also provided on board to stop the processor at once in case of danger.

In case of processors powered by a 400V motor, first check that the motor rotates in the direction shown by the arrow on the housing.
To do this, quickly switch the motor on and off. Should rotation be performed in the opposite direction than shown by the arrow-label, immediately stop the motor and use a phase inverter to change the plugging polarity of the conductor cable.
Operating the processor while the motor turns in the wrong direction may cause major, even permanent damages of the hydraulic pump!



Phase inverter

5.2 About the hydraulic system

The processor features an independant hydraulic plant with tank and pump. The hydraulic tank is located on the chassis of the machine that is always supplied by the manufacturer with a first hydraulic oil fill.

At cold temperatures the oil viscosity in the tank is relatively high. For this reason you should refrain from cold start-up at low ambient temperature in order to avoid damaging the hydraulic circuit and ancillary lines on the machine. In order to assure top hydraulic performance of your processor even at cold winter temperatures, make sure to first run the machine idle for a few minutes so that it is fully cycled before start-up. So, the hydraulic oil in the tank and in the various lines will warm up and assure most efficient performance.

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

Cooling of the hydraulic oil in your processor is achieved by a special oil cooler (12V connection is required).

For KSA 370/1 Z: connect the cooler to your tractor 12V plug,

For KSA 370/1 E - connect to the switch box.

Do not, under any circumstances, alter or by-pass the safety devices and protections of your processor that must be in good operating-conditions at all times.

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 Adjusting the ram stroke length

Timber can be cut into logs of variable length by changing the position of the length gauge on the other side of the chainsaw. To do this, first release the fixation screw and then slide the plate into the new desired position. Tighten the clamp back in place before starting to work again.

Figure 4

5.5 4-way wedge

The machine is supplied with a standard 4-ways wedge (see Figure 4) that allows you to split your logs into 2 or 4 pieces in one stroke. Adjust the height of the wedge in its lowest position to split the log into two pieces and lift it up till the crossing matches the core of your log to split into four sections.
The log length is manually adjusted by means of the special control lever located on the control deck (see Figure 5).

On request, the machine can be additionally delivered with a 6-wings (star-shape) wedge (see Figure 7).
Use of this wedge allows splitting of the log in 6 pieces in one single stroke.

Wedge lift is manually adjusted by means of the special control lever (see Figure 5).

Figure 5

The installed stopper for the length allows the ridgeless adjustment of the log between 200 an 600 mm, The splitting wedge can be put in the 6 different positions using the hand lever. (see Figure 6).

Figure 6

To remove the wedge and replace it of the processor:
- Remove cotter pin and take out the heavy pin that secures the wedge to the lift bracket (see Figure 8)
- Pull the wedge out from the top
- Repeat the same operation in the opposite sequence to assemble a new wedge in.

In order to assure troublefree smooth wedge lift make sure to provide for timely and proper lubrication of all pivots and carriage bolts.


Fig. 7

5.6 Tensioning the saw chain

Before any maintenance or adjustment work on your processor make sure to switch the machine off and disconnect power (unplug the main power cord or disconnect drive shaft).

To stretch the saw chain:

- Lift up the safety grid over the log splitter.
- Release the fixation screw (SW 17) on the chainsaw guard (see Fig. 9) and tilt the guard over to disclose the chain saw bar entirely.

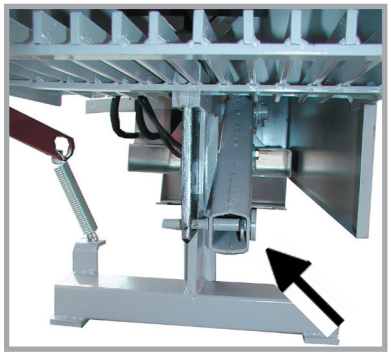


Fig. 8

- Release both fixations screws (see Fig. 10) on the right hand-side of the chain saw bar but DO NOT PULL THEM OUT!

- Release the locknut on the left hand side of the chainsaw bar (see Fig. 11).

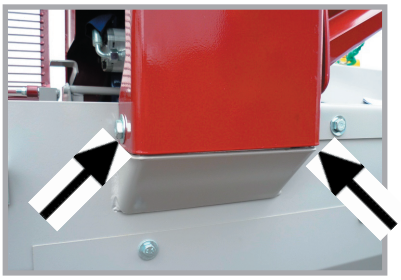


Fig. 9

- To stretch the chain keep tightening the clamping bolt until the chain is properly tensioned.
- Tighten the nuts securely.

- Tighten both fixation screws on the right hand side of the chainsaw bar.
- Swing the guard back down over the chainsaw and tighten both fixation screws.
- Close the safety grid back into operating position.

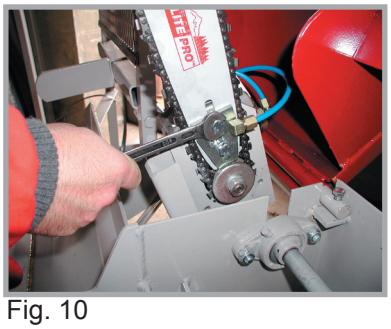


Fig. 10

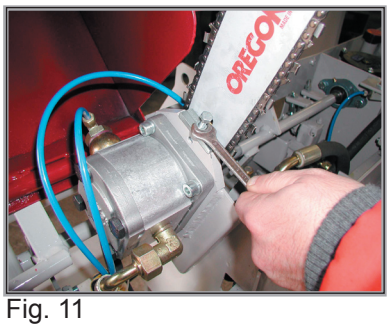


Fig. 11

5.7 Replacing the saw chain

- Lift up the safety grid.
- Release fixation screws (SW 17) on the chainsaw guard (see Fig. 12 and swing it opened.

- Release both fixation screws on the right hand-side of the chainsaw bar (see Fig. 13) and remove the guide bar.

- Release the locknut on the left hand-side of the chainsaw bar (see Fig. 14) and release the clamping bolt.
- Take the chain off the rear pinion and fit a new one in place (when choosing a new chain make sure to account for same chain length!).
- Tighten both fixation screws on the right hand-side of the chainsaw.
- Fit the new guide bar on the carriage bolt and turn both fixation screws on the right hand-side of the chainsaw until the chain is properly stretched (avoid excessive stretching. Some degree of stretching must be still possible).
- Stretching of the chain is performed by adjusting the clamp bolt located on the left hand-side of the chainsaw. When the „racking“ process is complete tighten the locknut to secure the chain in its position.

- Flap the chainsaw guard down and tighten both fixation screws.
- Close the protection grid down over the splitter trough.

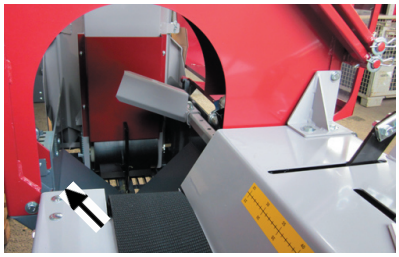


Fig. 12

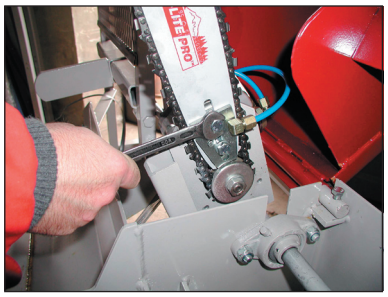


Fig. 13

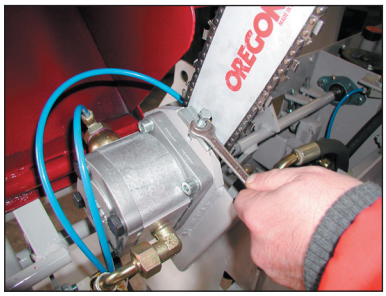


Fig. 14

5.8 Operating tips

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

All machine settings are done by the manufacturer in his workshop before delivery. Under normal working circumstances NO FURTHER setting or adjustment of the machine is required.

Should it become necessary to perform any adjustment of the hydraulic system, dismount the multifunctional control lever, the stop lever and the wedge lift lever on control deck on the right hand-side of your processor, then open the cover plate (hood).
Remove both fixation screws on the cover plate and then simply lift the hood up. To avoid the hood slamming down unexpectedly make sure to secure it by simply slipping the rod into the special eye provided in the hood to keep it open (see Figure 15).

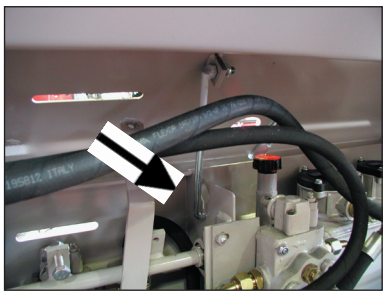


Fig. 15

5.8.1 Adjusting the push-block (ram)

After the first break-in period of 10 working hours, make sure to check and adjust the guides of the push-block in the splitter trough. Please read following point 9.1 „Ordinary general maintenance“ for detailed procedure. (see Figure „Push-block“)

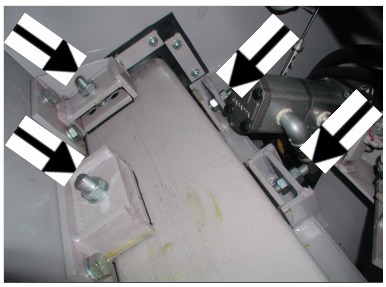


Fig. „Ram (push-block)

During the entire return stroke, the ram must remain on the right hand-side of the chainsaw and logs that are sawed off from the timber must not hit on the push-block when falling down after cutting.
Failure of the machine to fulfil this condition, will require some adjustment of the ram stroke. To do this, release both screws (see Fig. 16) and shift the stop to the right-hand side (more towards the wedge).

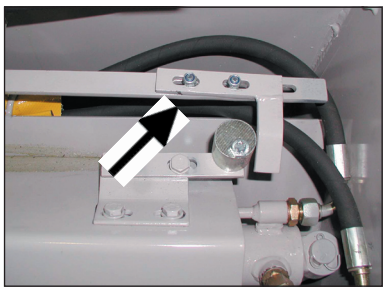


Fig. 16

Adjust the ram stroke (by changing of its stop position) also in the event of the ram starting back and retracting beyond the neutral position.
In this event, release both retainer screws (see Fig. 16) and again move the angle steel stop more to the wedge side.

Should the ram fail to sufficiently extend to advance the log across the wedge (short stroke) adjust the angle steel stop to the right hand-side (towards the wedge). See Figure 17.

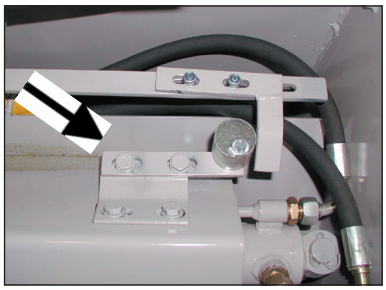


Fig. 17

When the ram kicks back (against pressure) upon start and fails to activate the auto-cycle, the steel angle stop needs adjustment towards the wedge (see Figure 17).

When the ram control-valve hits against its end stops, both adjustment screws on the switch lever need a reset (see Figure 18).

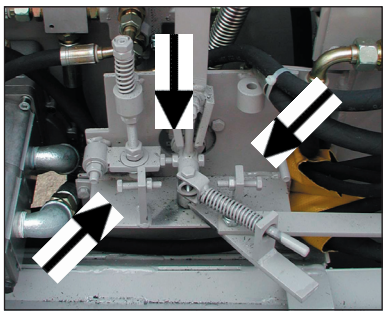


Fig. 18

Adjustment of the neutral position of the control valve can be done by means of the special adjustment screw located in the rear part of the valve. (see Figure 18).

5.8.2 Adjusting the chainsaw controls

The chainsaw is powered by an hydraulic valve located right below the fulcrum of the multifunctional control lever.
The chain must stop turning when the control lever is in the neutral (start) position.
Saw only runs when you operate and while you hold the multifunctional control lever in position (see Figure 19).
Should the chainsaw start too early or too late after control lever operation perform a slight adjustment of the screw located on the control valve beneath the control lever. (see Figure 20).

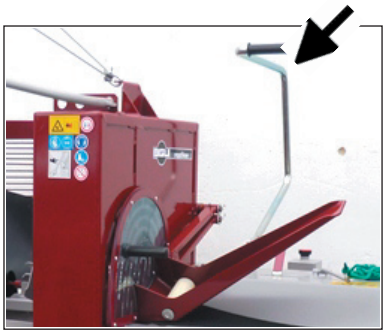


Fig. 19

5.9 Infeed belt

This chainsaw firewood processor is equipped with an infeed conveyor to allow easy and effortless advancing of timber to the length-gauge.
The conveyor starts up and advances timber when you operate (push forward) the control lever (Figure 21).
As soon as timber reaches the length gauge, pull the control lever one more step down to engage the chainsaw and start cutting.

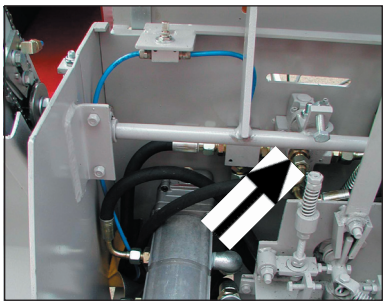


Fig. 20

5.10 Chainsaw lubrication

The machine is equipped with an oiler pump that assures bar lubrication while the saw is engaged. The saw only runs while you hold the lever in its position. Running the chain also runs the bar oiler that pumps a little oil on the bar at each new cut. Make sure that enough bar oil is filled in the tank to assure troubleless mechanism.
The bar oil tank is located on the rear side of the main chassis. (see Figure 22). An oil level gauge is provided on the tank to check for minimum oil level. Do not ever fill more than 2 l bar oil in the tank. Two litre oil will assure non-stop operation of approx. 4 hours.
To perform due pre-lubrication of the chainsaw make sure to operate the control lever and engage the chain saw for at least two times before
starting to work. Running the saw with a well-oiled chain bar will increase life of the chainsaw and reduces down-time for maintenance and repairs.
When filling new oil in, make sure to keep operating the multifunctional control lever until oil flows out of the oiler and starts oiling the chain guide bar.

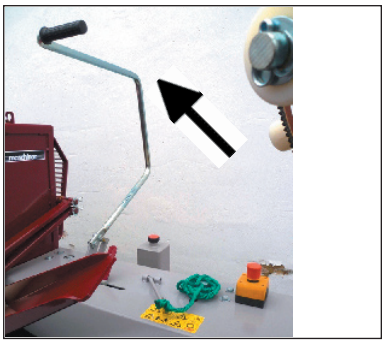


Fig. 21

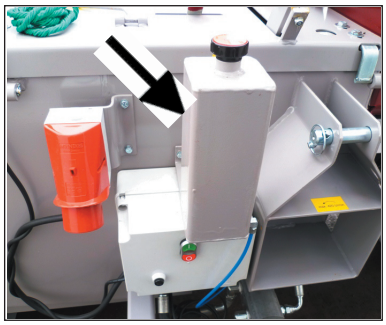


Fig. 22

5.11 Stop lever

If, for some reason, you want to stop the auto-splitting cycle and therefore, prevent the push-block from further extending towards wedge, you need shifting the stop lever all the way to the left hand side while the push-block is still sliding. (see Figure 23)
As soon as you do this, the auto-splitting cycle will immediately stop making the push block start back and stop in the initial position.

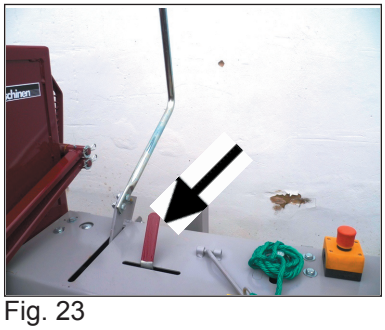


Fig. 23

6. Connection/disconnection to PTO drive

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

PTO-driven versions are equipped with a three-point linkage to fi t on the one available on your tractor. The drive shaft is going to act as linkage and driving element between the tractor and the processor and should be therefore, duly mounted and secured by the special pins available on the machine. (follow coupling instructions for the drive shaft telescopic halves)

Make sure to perform accurate connection of your PTO drive shaft both on the processor and power input side. A pictogram on the drive shaft and showing a little tractor tells you which side must be connected to tractor power output.
Press the detent lock inward 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 1/3 of the total useful length is achieved. (see Figure 24“).

When buying a PTO drive shaft, make sure it has the CE mark on it and has a Declaration of Conformity which shows it complies with the (Safety) Regulations.

Connect and secure the PTO drive shaft in compliance with shaft manufacturer instructions.

Never use a PTO shaft without safety guard and make sure that the guard is the correct size and length for the drive shaft.

Before uncoupling the processor, make sure to stop the tractor engine in order to avoid damaging the tractor power drive.

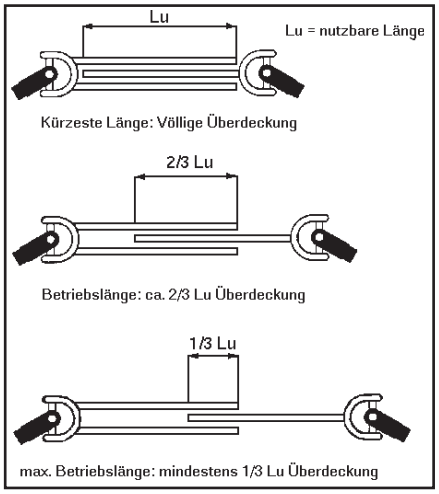


Bild 24

7. Transporting the machine

The belt conveyor of the processor can be folded up to reduce the overall dimensions and fit the processor within transport profi le (see Figure 25).
Lift the safety grid up and fold the conveyor straight up perpendicular to the processor axis.
Full transport asset is obtained after lifting up the infeed belt on the right hand side (see Figure 25). To do this first remove the safety axle bolts then lift the belt upright and lock it in place.

Fig. 25

7.1 Handling the processor on a fork-lift

Two steel tubes (see Figure 26) are provided below the chassis of each chainsaw firewood processor to permit handling by means of a fork lift.
Let your fork lift approach the machine from the side, insert forks into the steel tubes (Figure 26) and slide down against stop.
CAUTION: handle the processor on a fork lift moving at walking speed!

7.2 Attaching the processor to a three-point hitch

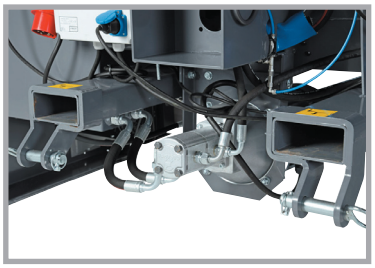


Fig. 26

Like all PTO-powered machines, your chainsaw firewood processor is equipped with a 3-point hitch.
Back the tractor (or other equivalent self-propelled vehicle) to the machine making sure to provide alignment with the 3-point hitch and perform hitching with proper pins and clips.
Make sure that the machine does not infringe the tractor profile nor blinds tractor lights and signal lights (stop lights, tail lamps, etc...). If so, you must provide for suitable additional travel lights on the processor.
The same is applicable to all other tools or equipment infringing the tractor profile by 1m in the back and 40cm on the side. In this latter case, suitable clearance lamps must be provided in the front. Make sure to apply suitable warning sings (white/red) as per DIN Standards 11300 to warn about protruding obstacles likely to endanger the nearby traffic.
More details are obtainable from the StVO.

8. About the belt conveyor


Fig. 27

Each chainsaw firewood processor is equipped with a standard belt conveyor included in price. The belt conveyor comes „hinged“ to the main chassis for easy folding into transport asset. (see Figure 28).
Swinging down into working asset is conveniently done after the processor has been delivered to site.
When folding/unfolding, it is recommendable to seek help of a second person for increased safety and rapidity.

To flip the conveyor :

- Make sure that the hook at the end of cable is firmly secured to the special shackle on the chainsaw guard.
- Check for winch-out efficiency (no rebound) of the winch. Unspooling of the cable must not be possible when the catch is in place.
- Remove catch from the holder on the winch and unspool by approx 2 rotations.
- The steel cable shall restrain the conveyor as it swings past 90° (centre of gravity).
- Make sure to adjust the supporting leg under the carriage so that when the conveyor is folded down into operating position, the cable is fully stretched.
- Adjust the chain depending on the rake angle of the conveyor.

- Make sure that the steel cable is properly winded around the pulley.

To fold the conveyor up repeat the same procedure in the opposite sequence. However, remember that before folding up you need opening the safety grid that will serve for lodging the folded conveyor. Lodge the folded conveyor right in between the two plates welded on the safety grid. To secure the conveyor in its folded position, firmly winch the steel cable on the pulley. A loose hanging cable may swing loose during transportation, get entangled and cause even permanent damages to the machine.

The conveyor might be swung around 25° to each side within seconds.

8.1 Operating the belt conveyor

The belt conveyor is powered by and a hydraulic motor.

9. Repairs and maintenance

Caution!
Strictly perform installation, set-up, maintenance, cleaning and transportation with the motor switched off (or power disconnected) and the tool firmly secured against accidental operation**.**

9.1 Ordinary general maintenance

Following maintenance operations must be performed as they become occurrent:
- Cleaning of the machine to remove residual wood debris, chips or dirt.
- Check for eventual wear of the saw chain and if required replace with a new chain or regrind.
- Check the oil level in the gearbox.
- Check the hydraulic oil level to assure that the system is tight. In the event of a low level make sure that there are no leaks out of the lines (hoses and connections).
- Replace the oil filter after approx. each 100 operation hours.
- Oil and lubricate all moving parts (and controls).
- Make sure that the conveyor belt slides properly and trouble-less.
- Check the V-belt and make sure it is not worn.
- Try the emergency push-button (only electric versions) to check for trouble free function and efficiency.
- Check the guides of the push-block in the splitter section and adjust, if necessary.

9.2 Chainsaw maintenance

Make sure that the saw chain is sharp, oiled and free of damages and defects in order to assure a safe and clean cut and to improve productivity.
Regularly clean the chain and check that there are no cracks or other damages.

Chain pitch t = 3/8“.

To check pitch measure the distance between three rivets and divide by two.

t = a/2 (Pitch = distance between three rivets divided by two).

Do not regrind the chain by yourself. Let a skilled service centre do it for you! Take note that all cutter teeth of your chain must be sharpened by the same fi ling angle (30°) and must show the same height.

Regularly inspect and clean the chain using a brush. Plunge the chain in an oil bath in order to perform fine cleaning. If the machine will not be used for a long period of time, dismount the chain and store it in oil bath.

9.3 Hydraulic oil specifi cations

Regularly check the oil level in the hydraulic oil tank making sure to avoid foreign particles, dirt and debris from entering and contaminating the tank.

Never operate the log splitter without or with low oil in the tank because in this case, air is likely to enter the oil line and cause operating troubles, reduced splitting accuracy and awkward back and forth movements. Moreover, air in the hydraulic line may cause even major damages to the hydraulic pump.
Do the first oil change after every 50 operation hours and then again, after each 200 operation hours or once a year.

Recommended hydraulic oils: DEA HD B 46, Shell Tellus 10 - 46, Esso Nuto H 46

Due to the environmental polluting impact of used oil, it is recommended to use a basket or a container to collect oil when changing. Also make sure that this container is perfectly tight and at least of the same capacity as the hydraulic tank (see technical specs).
If you're using a smaller container than the actual tank capacity make sure to drain oil in more than one stage so that no oil gets spilled on the ground. Waste oil is a pollutant agent and must be disposed in accordance to the applicable regulations in the country of use!

After each new oil fill run the machine 3 or 4 cycles without tightening the cap on the tank. Extending the cylinder piston draws the hydraulic fluid through the system and expels any trapped air in the system.

Provide at least one complete oil change of the angular gearbox once a year.

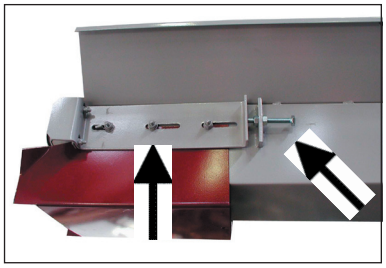


Fig. 29

9.4 Stretching the infeed belt

Check the tension and sliding efficiency of the conveyor belt at periodical intervals.

In order to stretch or change tensioning of the conveyor belt, first provide adjustment of the clamping bolts located on each side of the conveyor (see Figure 29).
Release the locknut on each bolt and then unscrew the clamping bolts (3 bolts on each side). Turn the clamping bolts to adjust belt tension and concurrently adjust the pulley so that the belt always slide in the middle of the conveyor carriage.

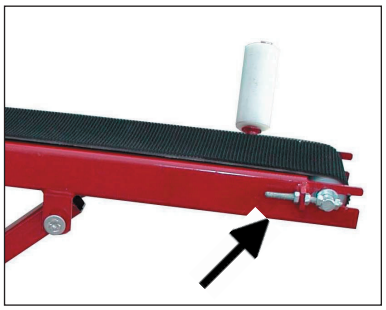


Fig. 30

As soon as proper stretching is obtained tighten all bolts to the original torque.

9.5 Adjusting the infeed belt
Tension of the infeed belt can be adjusted by means of the special side bolts.
Turn the bolts counter clockwise to stretch the belt. (see Figure 30).

10. Disabling and scrapping

When the processor is fully obsolete and cannot be of any longer use, it should be duly dismounted ahead of disposal. 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 for 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,
· Deliver each single component only to authorized waste management 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 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 the fi re on the electric deployment system of the machine, use of an explosion-proof extinguish system is required (for example powder fi re extinguishers).

11. Technical features

		KSA 380 Z	KSA 380 E
Tractor power requirement	kW/PS	approx.20/27	-
PTO shaft revolutions	[U/min]	420-450	
Motor power P1 S6 40%ED	[kW]	-	7,5 P2/9,5 P1
Rated voltage	[V]		400 3N/PE/AC3
Max timber diameter	[mm]	ca. 370	ca. 370
Max log length	[mm]	200-600	200-600
Length of the chainsaw sword	[mm]	380 (15“)	380 (15“)
Sword / chain		$^{3}/_{8}$“ 1,5 - 57 Trgl.	$^{3}/_{8}$“ 1.5 - 57 links
Hydraulic oil tank (capacity)	[l]	50	50
Chainsaw oil (capacity)	[l]	1	1
Productivity (depending on the type of wood to be split)	[cords/h]	4-6	4-6
Max chainsaw cutting speed	[m/s]	21	21
Max operating pressure	[bar]	200	200
Domestic overload safety	[A]		16 träge
Transport dimensions (WxHxD)	[mm]	2780x2550x1110	2780x2550x1110
Belt conveyor (length)	[mm]	4200	4200
Loading height	[mm]	2700	2700
Processor weight w. conveyor	[kg]	825	875

11.1 Noise emissions

Acoustic pressure: 94 db(A)
Noise level: 100,5 db(A)

Hearing protection is mandatory!

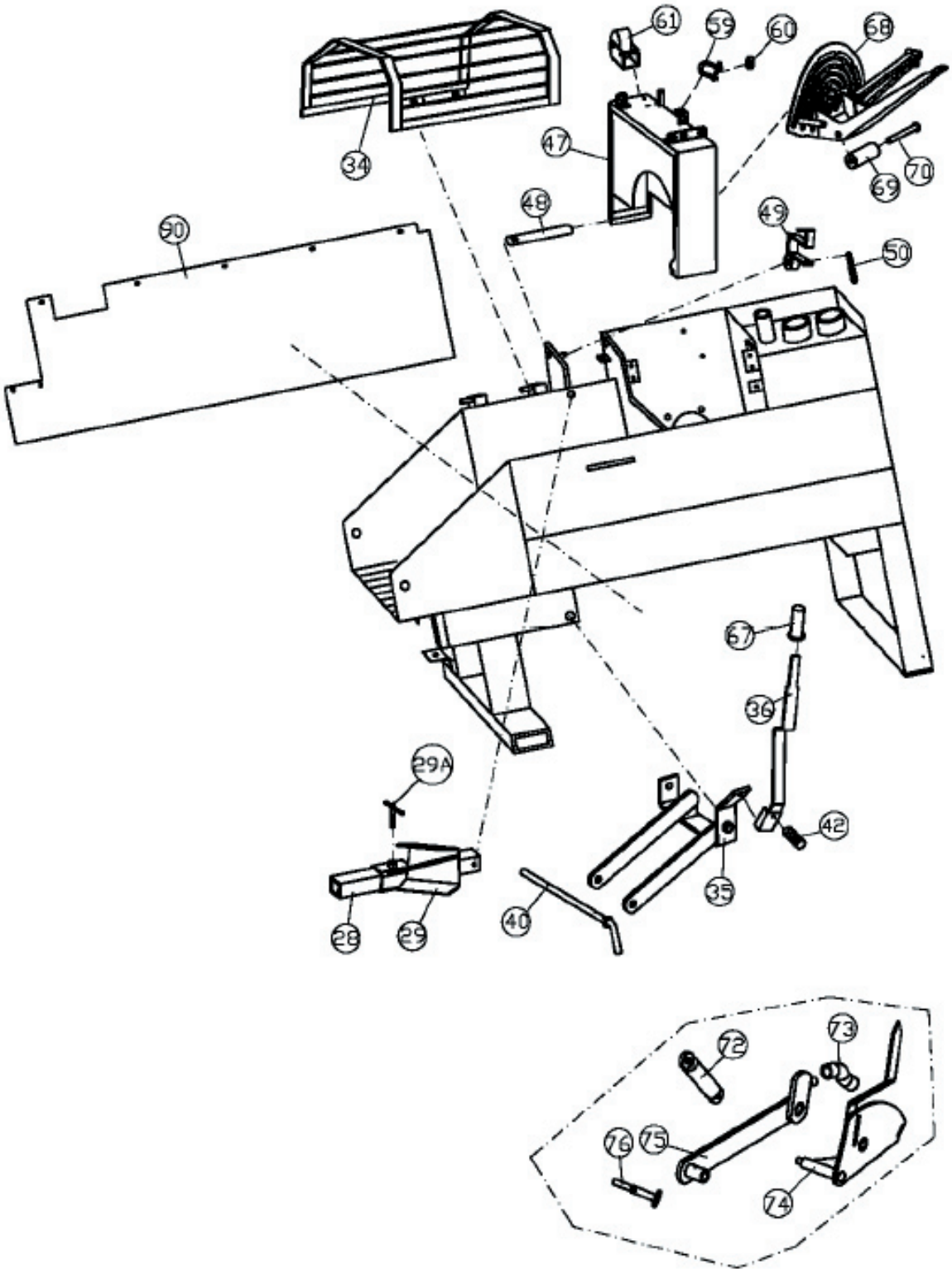
12. Trouble-shooting chart

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

Important!
Before setting, operating, cleaning, maintaining or repairing the processor, read the manufacturer's operating and maintenance instruction manual.

Trouble description	Possible causes	Remedies
Processor fails to split	- no or low oil	- Check the oil and fill up, if required
	- Multifunctional control lever is not properly shift down to last step	- Reset lever trigging mechanism
	- Control valve out of setting	- Provide new adjustment
	- There is dirt of the trigging system	- Clean
	- Oil is too cold	- Let the processor run a few minutes till oil has warmed up
Splitter push-block slides too slowly or powerless	- Oil is too cold till oil has warmed up	- Let the processor run a few minutes
	- No or low oil	- Check the oil level and eventually fill-up
Splitter cannot complete splitting of	- Wrong setting of the wedge	- Make sure the wedge is set properly
	-Crooked, very branchy unpruned log	- Switch the machine off and turn the log around to find optimal position inside the splitter trough
	- Log diameter is too big	- Switch the machine off and remove log
	- Operating pressure is too low	- Check and set the hydraulic system
Oil warms up	- Not enough oil in the line	- Check oil and eventually fill-up
	- Ram does not slides back	- Check and reset ram stroke-end
Log pops up during splitting	- Very branchy unpruned log	- Stop the machine, disconnect power
The electric motor does not start	- Faulty power cable	- Check cable status
	- Faulty protection fuse	- Replace fuse
	- Faulty switch	- Replace switch
	- Broken motor	- Replace motor
	- Emergency stop push-button pressed down	- Press to release
The electric motor turns but in the wrong direction	- Inverted wires in power cable	- Change plug polarity (using a phase changer)
Conveyor belt slips to the side	- Check stretching	- Eventually re-tension (adjust upper the side pulley)
Log sticks to the wedge after splitting	- Wedge knives are dull	- Re-grind
Logs don't get caught by belt conveyor	- Belt conveyor position is excessively upright	- Adjust rake angle (reduce conveyor upright slope)

13. KSA 380, Spare part list



KSA 380 SAFETIES

Figure	Item Code nr.	Description
28	20005501	Stop tube for log length adjustment
29	20005500C	Stop plate for log length adjustment
29A	93071	Screw plug M12x40
34	20002100d	Safety grid over log splitter trough
	21005400a	Wedge lift mechanism
36	20005450	2nd control of two-hand control
42	96010	Spring 3.5x16x35
	21001000D	Hood
48	20001009	Rotary shaft of the blade hood
49	200002300	Saw arbor lock
50	96005	Spring 1.5x15x100
59	93111	Clevis M10 S
60	20001020	Pulley for PT 40-17 winch
61	96021	Manual winch >06
	96181	Manual winch 06>
67	97056	Hand grip 124/25
68	20301200a	Timber hold-down
69	20104704	Bushing
70	20301500	Bushing insert

KSA 380 SAW UNIT

Figure	Item Code nr.	Description
	96041	Saw flange 15" 3/8" (1.5 mm)
	96039	Chainsaw 15" 3/8 64 länkar (1.5 mm)
8	96095	Saw motor PLM 20.4 S (Casappa)
	94137	Casappa saw-motor, fork
	94138	Set of gaskets (variseal)
	94140	Saw motor/pump, set of seals
8.1	94113	Saw motor, stepper tooth
8a	94139	Saw motor, PLM 20/5 sealing ring
8b	94136	Sealing ring, backup plate
8c	94115	Retainer 30x1.2
9	200081111-3/8	Chain sprocket 3/8"
10	94125	Drive wheel, guide disc
11	94114	Drive wheel, locking wheel
12	20008100c	Saw arbor
13	20008050	Hand grip for saw arbor
14	96146	Bearing for steel plate casing SPB 204
16	96015	Extension spring 4x30-180
*	93083	Eye-bolt M8x40
17	20008140	Spring extension rod
21	96106	Saw valve SD4/1 (180)
21a	94101	Joint capsule SD5/SD4
21b	94091	Shaft SD4
21c	94100	Capsule SD5/SD4
21d	94102	O-ring for shaft seal SD5/SD4
21e	94093	Rubber bushing SD4/SD5
42	96010	Spring 3.5x16x35
58	20008110f	Saw blade, lube ring
*	20008301	Chain locking pin
62	95042	Chainsaw lube nipple M8
63	95047	Regulation cock for chain lubrication 1/8
64	95046	Chainsaw lube hose 6/4
65	95048	Throttling nipple RA141218
67	97056	Hand grip 124/25
71	20008302	Shim for the saw motor
	20000057	Lube pump assembly w. hose
	20000058	Oil tank assembly w. pump for saw lubrication

KSA 380 SPLITTER UNIT

Figure	Item Code nr.	Description
	21005160B	8 t. Ram (push-block)
	96070	Hydraulic cylinder (8 t)
4b	94204	Piston Q70mm (8 t)
4c	94070	Set of gaskets Q70mm (8t)
4d	94205	Box (8t)
15	21005165	Cylinder pin (t)
22	96107	Control valve SD4/1 (200)
21a	94101	Joint capsule SD5/SD4
21b	94091	Shaft SD4
21c	94100	Capsule SD5/SD4
21d	94102	O-ring for the shaft seal D5/SD4
21e	94093	Rubber bushing SD4/SD5
25	6008111	Joint sleeve
26	6008202	Joint fork
27	6008300	Rocker arm
30	21007200	Stop/back hand grip
31a	20007102V	Left limit switch
32	20007103	Triggering rod for limit switch
33	96008	Spring 2x14x100
37	20005105	Gusset plate f. offset cam
37a	21005107	Adjustment bracket
38	6005121	Offset cam
44	6008306	Extension plate for rotation unit
45	6008307	Adjuster for extension plate on rotation unit
46	20007300	Valve fixation plate

KSA 380 DRIVE SYSTEM AND OIL TANK

	Item Code nr.	Description
18	96085	Hydraulic pump gear MP2/M
18A	94161	Gear shaft seal 50x65x8
19	96105	2-stage pump PLP 25/20
	96104	3-stage pump PLP 25/20/5D
	94140	Set of seals for saw motor/pump assembly
19A	94131	Gear bushing MP2/M
20	96080	Hydraulic measuring/temperature gage
20A	94110	Inspection glass o-ring 16x2.5
23	94134	Filter cartridge 10/20 MF 100-2
23A	96086	Filter housing HF502 including fiter cartridge MPF 100-2
	94133	et of o-rings for filter housing MPF(100-2)
24	95141	Filling plug 36-54230

KSA 380 ELECTRICS

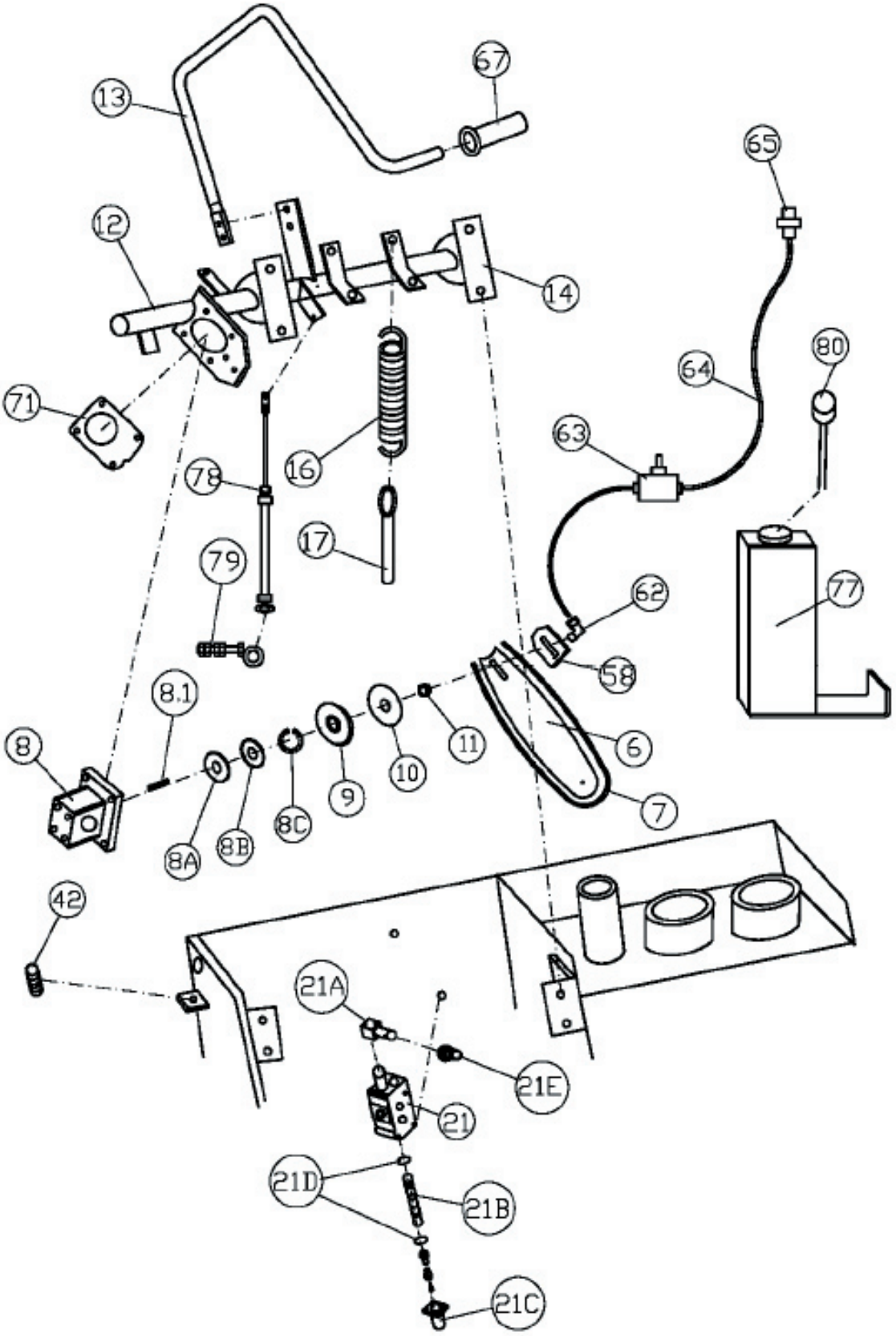
	Item Code nr.	Description
68	96029	Electric motor 7.5 kW / 1500 rpm
69	96084	Mounting flange (motor to the pump)
70	94117	Coupler Q86 mm
70A	94118	Coupling (f. rubber star) Q86mm
*	98521	Motor starter 7.5 kW (380V)
*	98536	Emergency pushbutton
*	98539	Socket with 32A, 5-pole male plug
*	98578	Safety DILM9-10/230 (K1)
*	98579	Safety DILM9-01/230 (K2&K3)
*	98527	Overload relay ZB12-10 (6-10A)
*	98528	Timed relay DAC51CM24

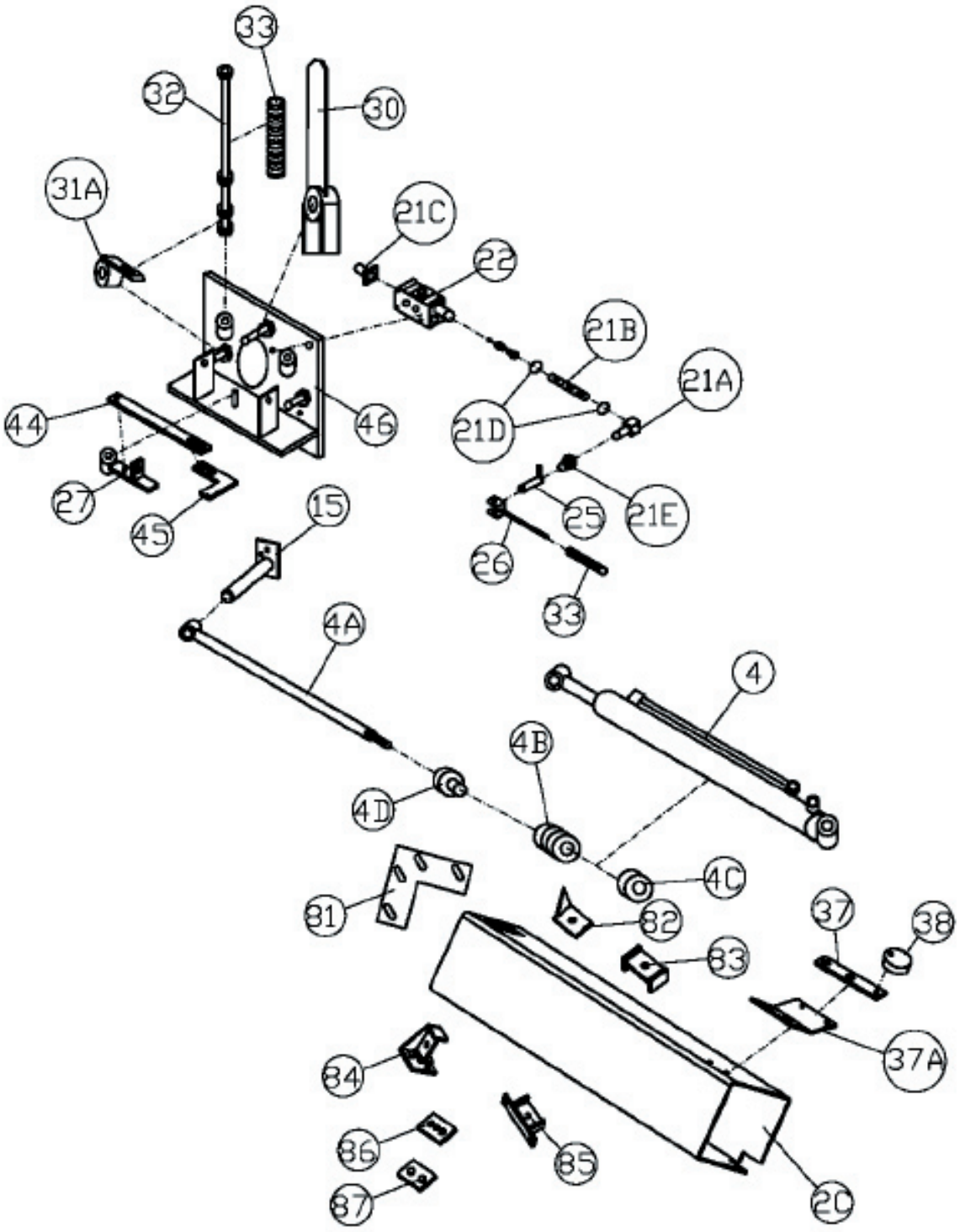
KSA 380 BELT CONVEYOR

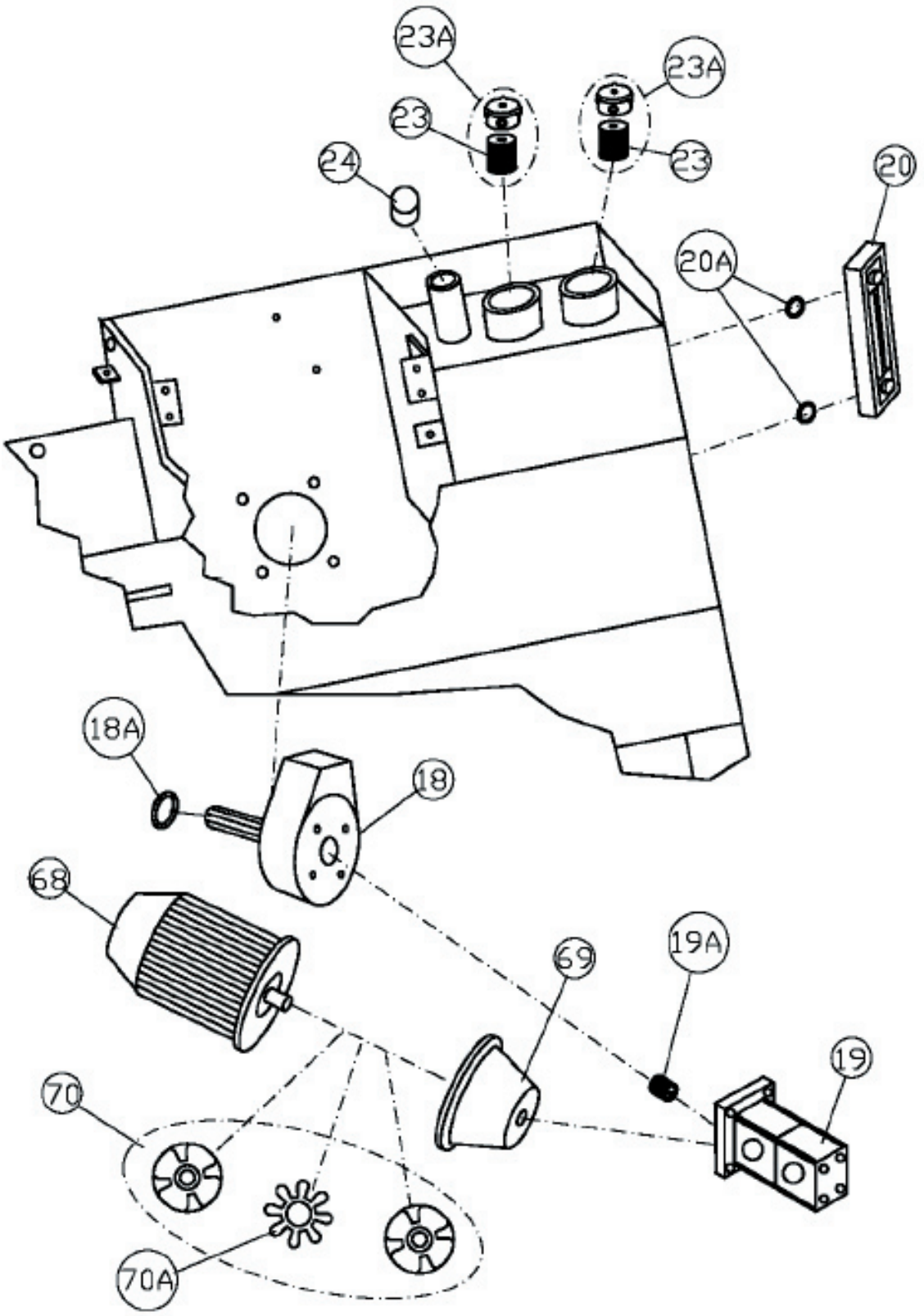
Figure	Item Code nr.	Description
1A	**2020950035**	3.5 m bottom-end U-frame for belt conveyor
1B	**2020960035**	3.5 m bottom-end U-frame for belt conveyor
2	**20009310**	Upper-end roller
3	**20209250**	Scraper
4	**96136**	Bearing 6205 2rs per piece
6	20209009-8T	Upper-end guard
7	20009012	Wire-rope pulley
8	20001020	Steel cable sheave
9	200090008A35	3.5 m belt w. lags
10	20009902	Lag (per pc.)
11	20009901	Connection plates
12	96151	UC-207 bearing (per pc)
13	20009300C	Bottom roller (mechanical conveyors)
	20009111	Bottom roller (hydraulic conveyors)
14	96131	Belt wheel, 200x1, SPA Q35
15	20009009	Bottom rubber mat
16	96015	Extension spring 4x30x180
17	20009500	Belt guard
19	200094001	V-belt, lower roller guard
	200094002	Hydraulic motor, lower roller guard
20	20009006	ixed plate for bottom rubber mat
21	20209020	Belt guard
23	20209110	Bottom belt scraper
24		including part no.20009310
25	20209203	Threaded rod
26	96016	Spring 6x22x120
27	96180	Coupling for shaft diam. 35/25 mm
28	20009110B	Fixation plate for hydraulic motor
38	96072	Hydraulic motor OMP-200
	96071	Hydraulic motor OMP-100
	96074	Hydraulic motor OMP-50
51	20009650	V-belt tensionsioner
52	94027	Belt sheave w. bearing 85x1 SPA + 6204 2rs
53	96135	Bearing 6204 2rs (per piece)
54A	20000606	Short plate for belt sheave
54B	20009605	Long plate for belt sheave
55	20009620	Stretching rod for conveyor belt
56	97107	Belt A132
66	96140	Belt sheave 75x1 SPA 3/8"
68	20009600C	Belt tensioner, complete set

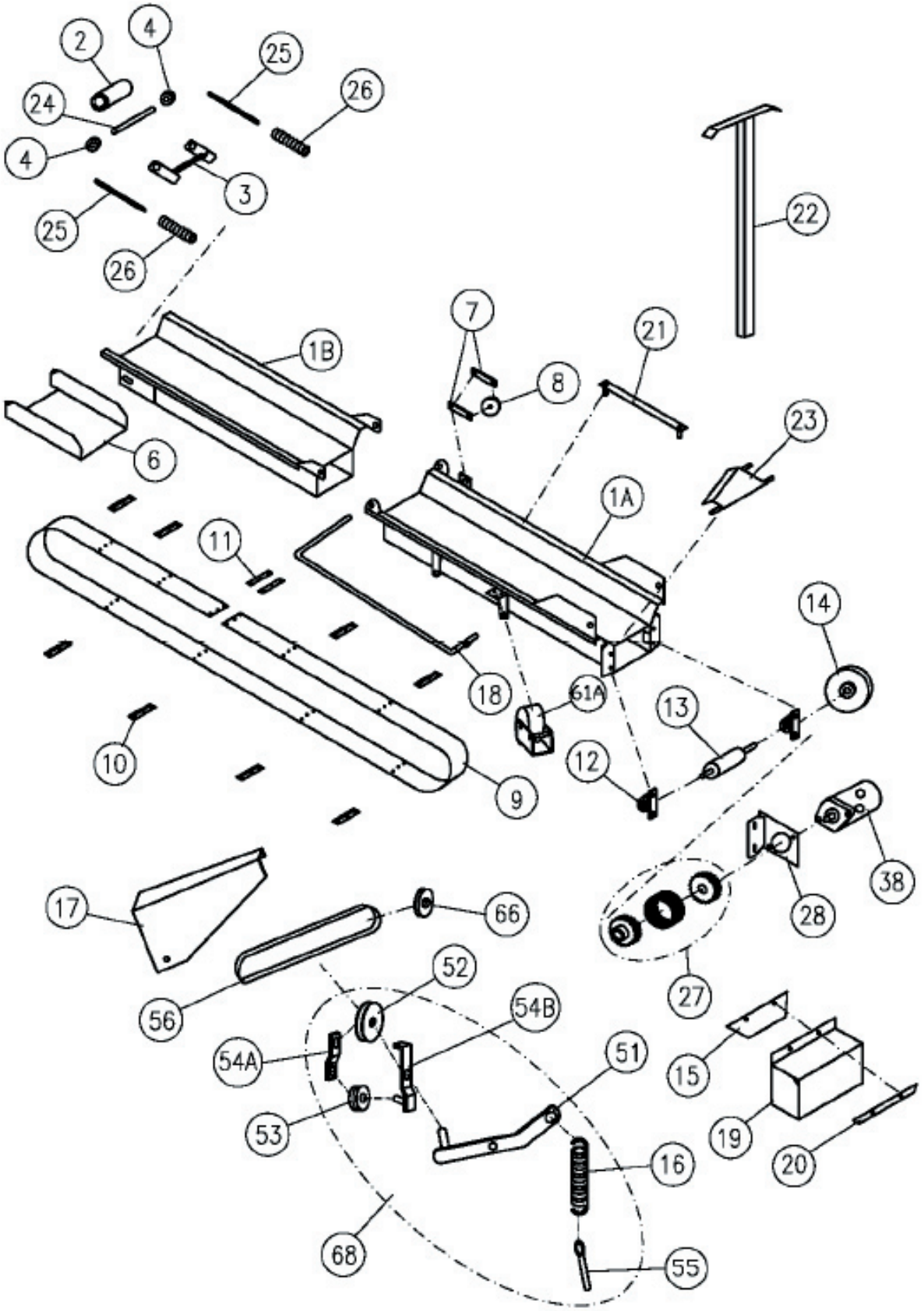
KSA 380 INFEED BELT

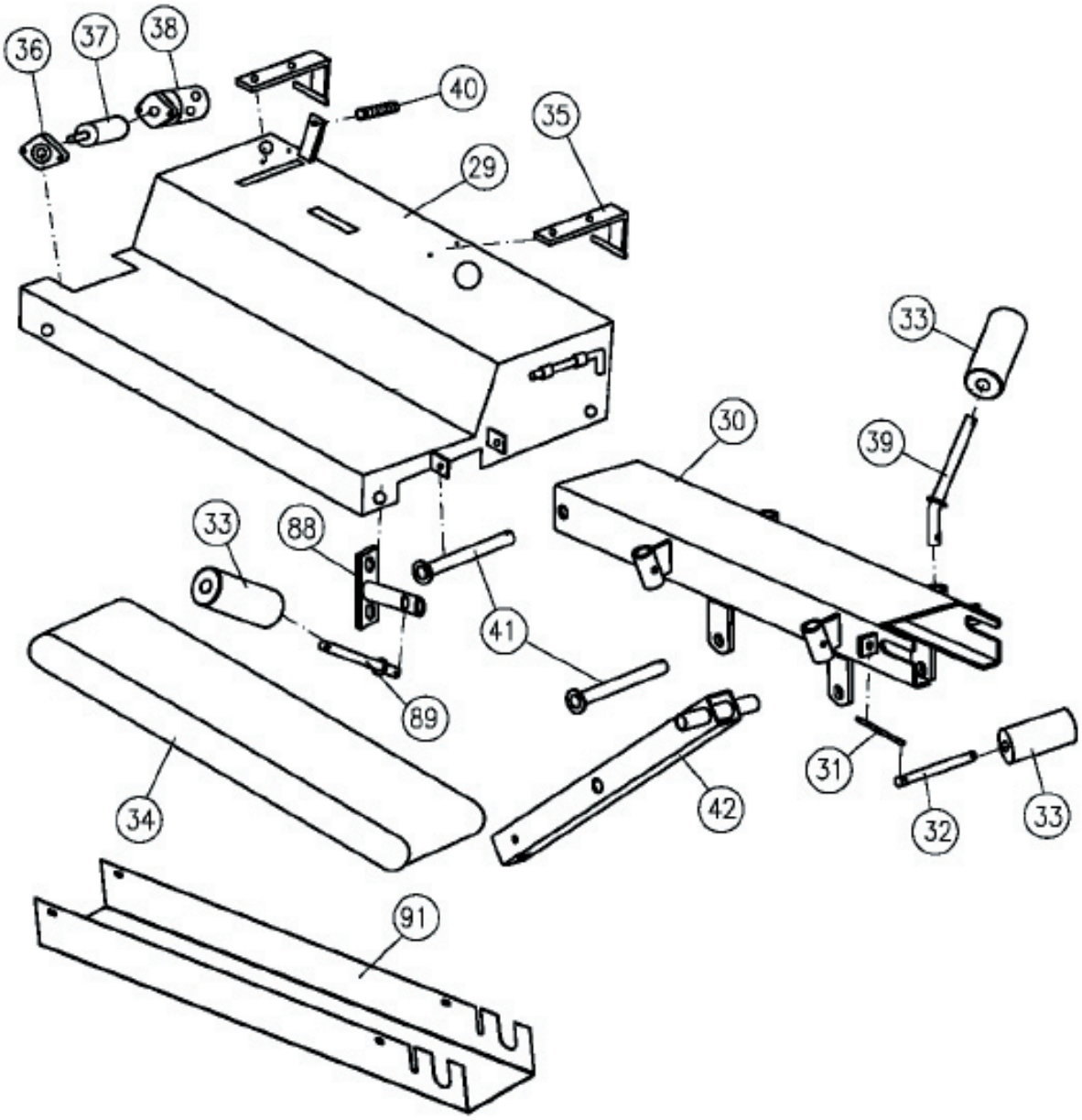
Figure	Item Code nr.	Description
29	**20104005**	Feed table
30	**20104700B**	Extension for feed table
31	**20104705**	Adjustment screw
32	**20104703**	Roller shaft
33	20104704	Roller Q60 - 150 mm
34	97119	Infeed belt 150x4035 mm
35	20104300	Angle plate
36	96144	Flange bearing BPFL-205
37	20104900	Drive roller
38	96072	Hydraulic motor OMé-200
39	20104706A	Roller shaft
40	96004	Spring 1.25x10x32.3
41	20104707	Tension bolts
42	20104600	Hold-down for infeed belt
	20000061	Set of valves for Hydraulic infeed roller


67
13
65
12
14
64
80
71
63
16
78
17
79
62
77
58
8.1
8
11
6
10
9
8C
7
8A
8B
42
21A
21E
21
21D
21B
21C


33
32
30
31A
21C
22
21B
21A
21D
44
46
27
45
15
25
21E
26
33
4A
4
4B
4D
4C
81
82
83
37
38
37A
84
86
87
85
20


23A
23A
23
23
24
20
20A
18A
18
68
19A
69
19
70
70A


2
4
25
26
24
4
3
25
26
22
7
21
1B
8
6
23
1A
11
14
18
61A
13
10
12
9
17
66
38
28
52
27
56
54B
54A
51
15
53
19
16
20
68
55


36
37
38
40
35
29
33
30
39
33
88
41
89
34
42
31
32
33
91

14. Other areas of possible danger

14.1 Mechanical dangers

Possible dangers related to machine moving parts (for example chainsaw and v-belts) are minimized by means of suitable safeties and protections that cannot be dismounted unless special tools and equipment are used.
DANGER: removing or by-passing inbuilt machine safeties may result into serious operator's personal injuries.

14.2 Electric dangers

All live electrical parts are duly grounded and isolated to prevent accidental contact and danger of electric shock. Do not ever attempt to remove or by-pass any of the inbuilt electric safeties, linings and protections.
DANGER: removing an electrical safety or protection lining may result into serous injuries caused by electric shock.

13.3 Environmental dangers

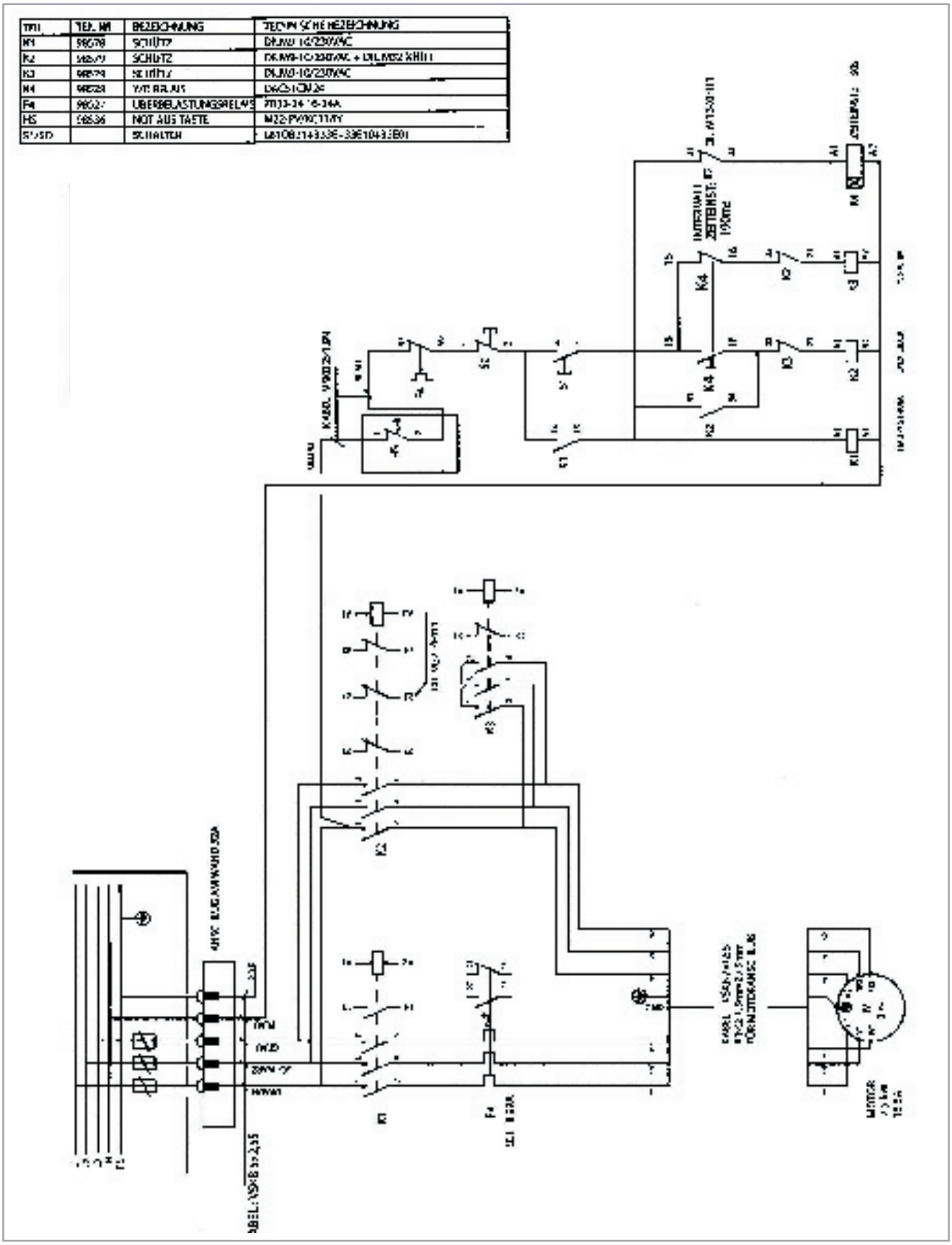
The machine is strictly designed for outdoor applications.
DANGER: do not operate the machine indoors to avoid risk of inhaling wood dust.

15. 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 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 modifi ed by the customer or other thirds, or overloaded.
No warranty applies to consumable parts (for instance: V-belts, blades, hammers and other fi tting) and to adjustment/calibration works.

16. WIRING DIAGRAM

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



Südharzer Maschinenbau GmbH
99734 Nordhausen, Helmestraße 94
Service Tel. 0 36 31 / 62 97 104
Fax 0 36 31 / 62 97 111
Internet: www.bgu-maschinen.de
e-mail: info@bgu-maschinen.de

Subject to changes

Form: 2064.15.03.2017 - Rev. A
Form: 2065.15.03.2017 - Rev. A