

## USER MANUAL OF THE VICTAR PROFESSIONAL ELECTRIC SAW

This user manual contains the main information and the requirements necessary for the proper operation of the Victar electric saw (hereinafter “the saw”). A strict observation of the instructions contained herein is required for the proper operation of the saw.

To extend the service life of the saw, it is necessary to operate the saw without any modifications and to strictly adhere to the operation instructions.

Your saw must be used with Victar frequency converter sold separately. The converter allows for the simultaneous use up to 6 saws.

The flexible cable with rubber insulation consisting of 5 wires 2,5 mm each and an outer diameter of 13-16 mm should be used to connect your saw and the converter. The saw should be operated with the voltage of 220V and the frequency of 400 Hz.

**IT IS NOT RECOMMENDED TO OPERATE THE SAW IF THE CUTTING ATTACHMENT IS NOT LUBRICATED** due to the fast cutting chain.

The manufacturer is constantly improving his saws, so some design changes may not be described in this manual.

The manufacturer of the saw supplies the frequency converter and the cable (sold separately).

### 1. APPLICATION

The saw is designed for cutting wood and is intended to be operates outdoors under the conditions of a moderate climate. The saw also may be used in the cold climate at ambient temperatures of over minus 40 C.

### 2. SPECIFICATIONS

Capacity of the saw, cm <sup>2</sup> 0.1 sec	95
Rate of the cutting chain, m 0.1 sec	15
Active length of the cutting attachment, mm	460
Weight of the saw (without the socket, the cable clip, the bumper and oil in the tank), kg	9.65

#### Electric motor

Type:	three-phased, asynchronous, with short-circuited rotor, special
Power (shaft), kW	3.0
Supply voltage, V	220
Current frequency, Hz	400

Current, A	12.5
Rotor speed (synchronous), 0.1 min	12,000
Winding insulation resistance of stator in relation to the saw housing, MOhm	100

## Gear

Type:	parallel-shaft, single stage
Lubrication of the gear wheel and the bearings:	by spraying

## Cutting attachment

Type:	console
Cutting chain:	404-64-1.6
Lubrication system	automatic
Pump:	plunger
Lubricant for driven sprocket bearing:	Litol 24
Oil tank volume, cm <sup>3</sup> :	200
Oil consumption, g / hour	200-350

<b>Switch</b>	Microswitch MP 2102 LUHL3 ver. 32A TU16-526.322-78
<b>Protective (duplicate) switch:</b>	Toggle switch KN3-3
<b>Electric connector</b> Number of contact pairs: including: power control ground	small-sized, special 5 3 1 1
<b>Cable clamp:</b>	special, with rubber bumper

## 3. SUPPLY PACKAGE

3.1. The supply package includes:

- saw EPCH-3.0-2
- guide bar (with the driven sprocket)
- cutting chain
- electric connector

## 4. SAFETY PRECAUTIONS

4.1. Only the persons with the appropriate certificate and trained on safety precautions may operate the saw.

4.2. Before operating the saw it is necessary:

- to perform the visual examination of the saw and the cable;
- to check the ground circuit between the right handle stand and the ground plug pin;
- to check the tightening of the retaining nut and if necessary to tighten it;
- to connect the cable and to check the operation of the saw at idle within 2-3 minutes (checking the electric motor, the switch, the toggle and the movement direction of the cutting chain);
- to perform a test cutting and to check the chain teeth pointing;

The detected defects must be eliminated before starting operation.

### **IT IS PROHIBITED TO OPERATE A DEFECTIVE SAW**

4.3. If minor repair of the saw, replacement of the cutting chain or adjustment of its tension is required, the electric motor should be switched off and the electric connector should be disconnected.

4.4. Before cutting, switch on the toggle and the electric motor and then bring the cutting chain to the wood smoothly.

The start and completion of cutting and release of the cutting attachment out of the cut must be smooth, without jumps to avoid dropping and breaking of the cutting chain.

If a break of the cutting chain occurs, it is necessary to switch off the electric motor.

4.5. If the cutting chain gets jammed in the log, it is required to switch off the electric motor and then release the guide bar.

4.6. When transporting the saw, the electric motor must be off and when holding the saw on the shoulder, the cable must be disconnected.

4.7. If there is no power supply from the converter, it is necessary to switch off the toggle and the switch and then to disconnect the electric converter.

4.8. It is prohibited:

- to buck up the trunks in a bundle, it is required to level the trunks;
- to release the guide bar clamped down in the cut by periodically switching on the electric motor;
- to touch the cutting attachment if the electric connector is not disconnected. Switching off the electric motor with the switch and the toggle does not prevent against the accidental automatic switching of the saw that may be caused by any failure of the electric circuits of the saw, cable or the converter.
- to step over the moving cutting chain;
- to leave the saw unattended if the toggle is switched on and the electric connector is connected;
- to wind the cable on yourself while operating the saw;
- to tie the switch lever to the handle;

- to use the toggle as the switch except when the saw may not be switched by the switch lever on the right handle.

4.9. It is prohibited to operate the saw if at least one of the following troubles occurs during the operation:

- any damage to the electric connector or the cable;
- improper operation of the switch;
- any smoke or smell indicating that the insulation of the cable is burning;
- breakage or cracking in the inner parts or the handles;
- if there is any increased noise, knock or vibration;
- any leakage of lubricants of the gear or of the oil tank;
- no supply (consumption) of oil out of the oil tank to the cutting attachment;
- if the cheek or the tooth of the driven sprocket are broken;
- if the slot side of the guide bar is broken;
- if the tooth or the connection link of the cutting chain is broken.

4.10. Avoid water and snow entry on the contacts and inside the electric converter.

4.11. While repairing the saw, pay attention to the proper connection of the wires to the microswitch: the wire should be connected from the inside of the saw to the upper output contact of the microswitch (opposite the pusher).

4.12. In addition to the above mentioned rules, it is necessary to observe the general safety measures recommended for timber bucking.

4.13. The allowable temperature rise of the external surfaces of the electric motor over the ambient temperature must not exceed 60 °C.

## **5. PREPARATION TO THE SAW OPERATION**

5.1. Remove the preservation lubricant from the parts by using a piece of cloth moistened with low-viscosity oil or solvents. Then the parts should be dried by blowing warm air on them or wiping them dry.

5.2. Check the tightening of all the assembly parts and if necessary tighten them.

5.3. Check the insulation resistance of the starter and of the inner part of the saw; it must be over 100 Mega Ohm. If the resistance value is less, the saw (the electric motor) must be dried for 3-5 days in a dry warm premise.

5.4. Fill the gear and the oil tank with the lubricant. The level of the lubricant in the gearbox must be in the range of the length of the thin part of the oil gauge stick.

5.5. Mount the cutting attachment and tighten the chain. The chain is normally tightened when the lower part has no whipping and the chain is smoothly moved by the blade slot by manual effort.

5.6. The driven sprocket must be mounted symmetrically to the bar blade slot.

5.7. The first time you use the new saw, you should switch on the saw and operate it with the cutting chain at idle for one hour. You should turn off the saw to let it cool

down every 20 min. After one hour has passed, you can then make 5-10 cuts on timber of a diameter 15-20 cm.

## 6. ASSEMBLY AND DISASSEMBLY OF THE SAW

The saw should be disassembled in a closed premise on a clean table or a work bench. Disassembly procedure:

1. remove the cutting chain and the guide bar;
2. drain the lubricant of the gear and oil tank;
3. pull the plug out of the nozzle of the gear cover and then disconnect the starter wire from the contact parts of the plug of the electric connector,
4. remove the nuts from the dowel bolt;
5. remove the flange of the oil pump and pull the pump out of the socket on the gear cover;
6. loosen the bolts fixing the left handle and remove it;
7. loosen the nuts of the fixing pins of the gear case and remove the cover from the gear;
8. remove the fan cover, loosen the fan nut and the fan by rotating them clockwise (left thread);
9. loosen the nuts of the tension pin of the electric motor and remove the motor cover;
10. first remove the adapter sleeve from the output wires, then remove the starter;
11. remove the rotor.

For the assembly follow the reverse procedure. Make sure that the rotor shaft in the bearings is not out of balance and in relation to the gear driven sprocket. The saw, once assembled and filled with the lubricant, must be operated at idle for 20-30 min.

### Notes.

1. Remove the bearings and the driven sprocket only with the puller.
2. Strictly observe the disassembly procedure to avoid the failure of the oil pump.
3. Use the cone to prevent damaging the seal while assembling.

## 7. TROUBLESHOOTING

Failure	Possible cause	Elimination method
<i>Electric part</i>		
The toggle is on, the switch lever is pressed but the electric motor does not operate.	No output voltage on the converter.	Check the output voltage in the three-phased current circuits and the control circuits on the converter
	Defective electric circuit of “converter-saw” control	Detect the point of breaking or absence of contact in the control circuit
		Check the fuse on the converter

	The microswitch does not work	Check the pusher movement and correct the microswitch contact parts
The electric motor buzzes and the rotor does not rotate	Starting with a too large load by pushing too much on the saw	Switch off the saw, release it out of the cut and switch it on again
	Out of order and the bearing is jammed	Disassembly the saw and replace the bearing
	No output voltage in one of the phases on the converter	Check the output voltage on the converter
	No voltage in one of the phases on the electric motor of the saw due to the failure of the electric “converter-electric motor” circuit	Detect the point of breaking or absence of contact in the control circuit
	Breaking of one starter swathe	Detect the breaking point and eliminate it If necessary replace the stator
The electric motor in operation stops (stalls)	Large feed when cutting	Reduce the feed
	The cutting chain is clamped down in the cut	Eliminate the jaw
	The output voltage on the converter is below the minimum value	Adjust the voltage on the converter
	Automatic switching on of the microswitch	Check the pusher movement and fix the contact parts
The electric motor runs hot	The electric motor operates continuously for a long time	Cool the electric motor at idle
	Excessive tension of the chain, no lubrication of the cutting attachment, large feed while cutting	Set to the maximum voltage, lubricate and reduce the feed
	The cutting chain is blunted or sharpened incorrectly	Resharpen or replace the cutting chain
	Insufficient cooling of the fan	Switch off the saw, clean the surface of the cooling fins of the starter and slots in the fan cover
	The lubricant from the gear penetrates the electric motor	Replace the rotor shaft, check the seal cover gasket and the tightening of the fixing screws
	The output voltage on the converter is below the minimum value	Adjust the voltage on the converter
	There is the interturn fault in the starter swathe	Replace the starter
While touching the metal parts of the saw during the operation the electric current passes through the body	Short-circuit of the starter winding of the electric motor	Replace the starter
	No electric contact between the saw housing and the neutral wire or between the socket of the neutral wire of the plug on the converter and the protective ground	Check and provide the reliable contact
	The protective ground resistance on the converter is over 10 Ohm	Provide the protective ground resistance up to 10 Ohm
When the saw touches directly the ground, or electroconductive constructions, or objects not insulated from the ground, the saw switches on	Incorrect connection of the ground wires and the control wires on the saw or the plug connected to the socket of the converter	Check the wire connection
	Damage of the insulation of the control wire in the saw or the cable. Incorrect connection of the control wires on the output of the frequency converter	Eliminate the damage to the insulation and replace the control wire or the cable. Check the connection of the wires on the output of the frequency converter

### *Mechanical part*

The gear case runs hot	No lubricant in the gear	Fill the lubricant in the gear to the mark on the oil gauge
	Damage of gear teeth	Replace the gear wheel
Any leakage of lubricants of the gear	Damage of the gasket between the gear case and the gear cover	Replace the gasket
	The gear shaft seal is worn out	Replace the seal
The lubricant is not supplied to the cutting attachment	No lubricant in the oil tank	Fill the lubricant in the oil tank
	Dirty inlets	Clean the inlets
	The pump is not adjusted or is damaged	Adjust the pump, check the parts and the assembly of the pump, eliminate the failures
	The lubrication hole in the cover of the gear or on the guide bar is dirty with sawdust	Clean the hole of the sawdust
The guide bar and the chain run hot	The lubricant is not supplied to the cutting attachment	Check the lubricant in the oil tank, clean the supply opening, adjust the pump
	The chain is overtensioned	Reduce the chain tension
During the operation of the saw, the chain drops off the guide bar and the sprocket	The chain is too blunt	Sharpen the chain
	The chain is undertensioned	Tighten the chain
	The guide bar is shifted in relation to the driven sprocket	Eliminate the shift
While cutting there is a bias cut	The cutting links of the cutting chain are blunt from one side	Sharpen the chain
	The left and the right links are of different height	Eliminate the difference in height of the links by grinding the links until they are equal
	The guide bar is worn out on one side	Grind the bar protector
	The chain has one large one-sided lateral deflection and the guide bar slot is worn out by width	Replace the chain and the guide bar
The driven sprocket rotates tightly or does not rotate	The sprocket bearing is dirty	Wash with kerosene and lubricate
	The sprocket bearing is destroyed	Replace the driven sprocket

## 9. STORAGE AND TRANSPORTATION

The packed saws must be stored under the cover or inside with moderate variation of temperature and humidity are moderate. The air temperature must be in the range of - 50° C to 50° C. The monthly relative humidity in the most warm and humid period in the macroclimatic area must not exceed 80% at 20° C, for a duration not exceeding 6 months.

When operated the saw must be stored in a closed heated premise.

The packed saw must be transported by any type of covered vehicle.

The transportation conditions regarding the impact of the climatic factors must conform to the storage conditions of the packed saw.

## 10. MANUFACTURER'S WARRANTIES

10.1. The guaranteed service life of the saw (without the cutting chain) is 1 year.