USER MANUAL
PALAX 55T
powered by tractor
powered by electricity
powered by combustion engine

SERIAL NUMBER

YEAR OF MANUFACTURE

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1. BASIC SPECIFICATIONS AND RESPONSIBILITIES

1.1 Foreword

This Instruction Manual is intended for a professional operator of the machine. The operator must have usual general knowledge and skills. For example, the buyer of a tractor-powered machine is expected to master the use of power take-off shaft transmission.

Before the installation and operation, the operator of the machine must become thoroughly familiar with the contents of the manual. The operator is also obliged to gain familiarity with the operating controls of the machine and the emergency stop mechanism.

NOTE! Keep this manual with the machine at all times.
1.2 EU Declaration of Conformity

Directive 2006/42/EC

Manufacturer: Ylistaron Terästakomo
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The person in charge of Technical Construction File: Kai Koskela, kai.koskela@palax.fi
Product: Palax 55T firewood processor
Model: Palax 55T
Powered by: tractor PTO, electric motor or combustion engine
Models: TR Powered by tractor
PM Powered by combustion engine
SM 3-phase electric motor of 380V

Serial number of the machine: ____________________

We hereby certify that the machine meets the requirements of the Government Decree 12.6.2008/400 on safety of machinery through which the Machine Directive 2006/42/EC has been put into effect, and that during the manufacturing process the following harmonized standards have been applied.


Notified body No. 0504 MTT Vakola
Vakolantie 55
FI-03400 Vihti

Ylistaron Terästakomo Oy
18.8.2015

Pekka Himanka
Managing Director

Translation
1.3 Intended use of the machine

This firewood processor is intended for the purpose of producing firewood of round timber or logs. Use of the machine for any other purposes is prohibited.

Note! Max. capacity of the machine
- For cutting, the maximum diameter of the tree is about 20 cm.
- The maximum length of the log to be processed is 3 metres. If the logs are longer than this, they must be pre-cut to at most 3 metres.
- Splitting capacity, max. diameter 25 cm and max. length 25-50 cm

1.4 Warning signs

Read the instruction manual
Beware of the crosscut saw-bar
Use eye guards and hearing protectors

Wear safety shoes
Wear clothes, which do not hang loosely
Use protective gloves

Stopper
Direction of rotation of the blade
Revolutions range of the PTO-shaft
Min. length of the log to be split:  
Stay away from moving parts of the machines  
Beware of splitting screw  
Splitting screw does not stop immediately  
Beware of the PTO-shaft (TR)  
Disconnect the machine from the electric supply before taking to any service measures (SM)  
The machine may only be operated by one person  
Emergency stop, which disconnects the power supply from the moving parts  
Always release the locking of the crosscut deck before starting the machine  
Lifting point
1.5 Type markings

Nameplate on the machine
- Name and address of the manufacturer.
- Mark showing type of machine.
- Serial number and year of manufacture
- Total weight of the machine.
- Diameter of the crosscut saw-blade 550 mm
- Diameter of the saw-blade hole 30 mm
- Max. 2500 r.p.m.
- Nameplate at the rear of the crosscut saw housing
- Always mention the serial number and year of manufacture when ordering spare parts.

Nameplate on the electric drive
3-phase motor
- Voltage 380 V.
- Output 3.0 kW.
- Nameplate at the rear of the crosscut saw housing.

1.6 Main dimensions of the machine

<table>
<thead>
<tr>
<th>Item</th>
<th>Powered by tractor</th>
<th>Powered by electricity</th>
<th>Powered by combustion engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>-</td>
<td>3.0 kW</td>
<td>5.5 hp</td>
</tr>
<tr>
<td>Fuse size</td>
<td>-</td>
<td>10 A</td>
<td>-</td>
</tr>
<tr>
<td>Weight</td>
<td>150 kg</td>
<td>162 kg</td>
<td>155 kg</td>
</tr>
<tr>
<td>Height/width/length</td>
<td>1100 mm x 800 mm x 1500 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crosscut deck</td>
<td>Length 650mm, with extension table 1,500mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height of crosscut deck</td>
<td>700 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diameter of blade/hole</td>
<td>550/ 30 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. rotation speed of blade</td>
<td>2500 r.p.m.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Splitting cone, diameter</td>
<td>60 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. diameter of tree, cutting/splitting</td>
<td>200 mm/ 250 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. length of tree, splitting</td>
<td>500 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.7 Safety instructions

General regulations and restrictions
- The maximum length of the log to be cut is 3 metres. Danger of turning over!
- The machine is exclusively intended for the purpose of cutting and splitting firewood.
- The machine may only be operated by one person.
- The three-point linkage of the tractor is of size-category one. If using a tractor larger in size, check that there is sufficiently space for the PTO-shaft and its protective guard.
- Never use the machine indoors – risk of dust generation. The use of a machine powered by combustion engine involves danger of exhaust gases.
Never remove any safety-related devices from the machine.

The operator
- Every person operating the machine, must thoroughly study the entire user manual.
- Always use eye guards and hearing protectors.
- Always wear protective shoes.
- Always wear work gloves.
- Do not wear loosely-fitting clothing.

Before use
- Make sure that all other people stay outside the operating range.
- Always hitch the tractor-driven machine to the three-point linkage. Ensure that sufficient space is provided for the PTO-shaft and its guard.
- Release the crosscut chute from its transport position before launching the crosscut operation.
- Only use a fault-free power take-off drive shaft and attach the chain for the shaft-guard. Max. 540 r.p.m.
- Only operate the machine on a sufficiently firm and level surface.
- Only operate the machine in an adequately lit space.
- Keep the exhaust pipe of the combustion-engine-driven machine at a safe distance (i.e. at least 1 metre) from anything which could catch fire: danger of fire! Palovaara.
- Always check that the operating controls of the machine are operational.
- Always check that all the covers are intact and properly fastened.
- Always check that the crosscut saw-bar is intact.
- Always ensure that the electric conductors are intact.
- Release the crosscut chute from its transport position before starting the machine.
- Before starting the work, make sure that the machine is firmly in position.
- Ensure that the PTO-shaft of the tractor does not clash with the machine during the movement.

During operation
- Carelessness during the cut-off operation constitutes a major hazard!
- During the cut-off operation, make sure that the tree is always supported at the support rollers of the crosscut deck. Danger of rolling over!
- Always use the feeder for splitting.
- Exercise particular caution when using the splitting screw.
- Exercise particular caution when cutting knotty or crooked logs, because, as a result of faulty cutting, the log might roll over or twist the saw-bar with enough force to break it.
- Keep the working space clean and clear of foreign objects.
- Always stop the engine for refuelling.
- Always stop the machine before servicing.
- Only cut one log at a time.
- Danger! The splitting screw does not stop immediately.
- Danger! Stay away from moving parts.
- Beware of the hot exhaust pipe on the combustion-engine-driven unit!
1.8 Noise emission and vibration
- The A-weighted sound-pressure level at the workstation is 90.5 dB (A) and the sound power level is 105.0 dB (A).
- The measured vibration emission value of the machine is 0.44 ±0.15m/s². The vibration emission values do not exceed the limit 2.5m/s².

1.9 Responsibilities of the operator
- All the safety-related devices are necessary to ensure a sufficient level of safety.
- The machine operator is responsible for the flawless operation of the safety-related devices and for ensuring that the machine is serviced in a due manner.
- Modifying the construction of the machine is prohibited.
- The machine may only be used to produce firewood.
- The operator is responsible for ensuring that no one else is subjected to any danger.
- As the operator, remember that you are fully responsible for any injuries caused by the removal of any safety-related devices from the machine, or by any modification to its operation.
- The Palax 55T is a very safe machine provided that it is operated carefully following the instructions and that it is serviced regularly.

1.10 Operating conditions
- Always place the machine on as level a surface as possible.
- Prevent risks, such as slipping in winter, by organising the work site in a due manner.
- Only operate the machine in an adequately lit space.
- Make sure that no other people, especially children, are present inside the operating range.
- Never use the machine indoors – risk of dust generation. Use of the combustion engine-powered machine may involve danger of exhaust gases.

1.11 Terms of warranty
The warranty period runs for 12 months from the date of purchase.
Refer to the user manual of the combustion engine for warranty of the engine.

The warranty covers
- Parts, damaged during normal operation of the machine due to defects in material or workmanship.
- The reasonable repair cost as set forth in the agreement between the dealer and the buyer and the manufacturer.
- A new part delivered as a replacement for the defective one.

The warranty does not cover
- Defects due to normal wear, faulty operation or negligent maintenance.
- The crosscut saw-blade, V-belts or oil.
Defects in the machine due to any modifications which the buyer has made or ordered from a third party and which have affected the machine in such a way that it can no longer be considered to correspond to its original configuration.

Other possible expenses or financial demands due to the above-mentioned measures.

Any indirect costs and/or travel expenses incurred from making repairs under the guarantee.

The combustion engine, whose obligations under warranty lie with the manufacturer of the engine.

For parts changed during the warranty period, the warranty expires at the same time as the warranty period of the machine.

Consult your dealer about matters related to the warranty.

1.12 Operating instructions for the combustion engine
Refer to the engine’s instruction manual for detailed operating and servicing instructions.

2 TAKING DELIVERY AND ASSEMBLING THE MACHINE

2.1 Taking delivery of the machine and commissioning control

- Check the delivered goods without delay.
- The machine is delivered on a forklift pallet packed in an upright position.
- In order to save on freight expenses and to avoid damage during transportation, the machine is delivered partly dismantled, with all protruding parts such as the extension table and log box removed and packed separately.
- If the product shows transport damage, contact the transport company and your dealer immediately.
- Read and follow the unpacking instructions.
- Remove the plastic shroud covering the machine.
- Unpack all loose parts.
- WARNING! The machine weighs over 100kg. Two people are required to turn the machine.
- Turn the machine into the work position.
- The machine is fixed to the pallet at three points.
- After turning the machine into the work position, remove the transport pallet.
- The combustion-engine-driven machine is always delivered without engine oil. The oil is in a separate package.
- The machine has been test run and all the initial settings have been completed.
- Check the direction of rotation of the model powered by electricity and, as required, switch the phase using the switch in the plug.

2.2 Main parts of the machine

1. Splitting slide
2. Operating controls
3. Blade cover
4. Crosscut chute
5. In-feed deck
6. Log box
7. Transport wheels (only in PM/SM)

**Fig 1. Main parts of the machine**

### 2.3 Setting up the machine for operation
- Fixing the log box (Fig. 2, stage A)
- Fixing the in-feed deck (Fig. 2, stage B)
- Fixing the blade cover (Fig. 2, stage C)
- Fixing the lock lever (thread M8) (Fig. 2, stage D)
- Fixing the emergency stop lever (thread M10) (Fig. 2, stage E)
Fig. 2. Setting up the machine for operation

- Topping up oil in a machine powered by combustion engine (see user manual for the combustion engine)
- Fixing the lifting triangle (Fig. 3)

Fig. 3. Fixing the lifting triangle
3 DRIVING POWER

3.1 Operating controls

- The machine features an emergency stop A and a friction brake. (Fig. 4)
- The emergency stop is reset using the lever B.
- The V-belts between the blade shaft and the power source are slackened by pushing the emergency stop lever A (Fig. 4) in the direction indicated by the arrow. At the same time, the lever presses the friction brake against the side of the crosscut blade, making the blade stop.

3.2 Powered by a tractor

- Always connect the machine to the three-point linkage and ensure that sufficient space is reserved for the PTO-shaft and its guard.
- A suitable size for the power-take-off shaft is, for example, a BONDIOLI A3 or equivalent.
- Only use a fault-free PTO-shaft and attach the chain for the shaft-guard to the machine. The min. rotational speed is 450 r.p.m., the max. rotational speed is 540 r.p.m.
- When disconnecting the PTO-shaft from the tractor, support it using the hook C (Fig. 4) on the machine.
Use the high-speed range of the tractor, if available. Ensure however, that the rotational speed of the PTO-shaft does not exceed 540 r.p.m.

When using the PTO-drive, make sure that starting up the machine does not cause any hazard.

EMERGENCY STOPPING OF A TRACTOR-POWERED MACHINE

- Stop the machine by stopping the PTO-shaft of the tractor.
- Starting the machine after an emergency stop:
  1. Start the PTO-shaft if you have switched it off.
  2. Release the movement of the emergency stop lever using the lever B and return the emergency stop lever A to the front position (Fig. 4), which tighten the V-belts and make the blade and the splitting screw rotate.

3.3 3-phase motor, output 3,0 kW

- The machine is equipped with a 5-m-long conductor with five leads and a 16-A plug.
- The machine may only be connected to a power supply equipped with a fault current switch of 30mA.
- At start-up, ensure that the motor is running in the right direction in accordance with the arrow. If the blade is rotating in a wrong direction, change the phase switch in the plug.
- To turn off the machine, switch off the electric motor. The blade can also be stopped by disconnecting the V-belts using the emergency stop lever.
- Starting the machine after an emergency stop:
  1. Switch on the electric motor if you have switched it off.
  2. Release the movement of the emergency stop lever using the lever B and return the emergency stop lever A to the front position (Fig. 4), which tighten the V-belts and make the blade and the splitting screw rotate.

3.4 Machine powered by combustion engine

Honda, output 5.5 HP

- NOTE! Check the engine oil level.
- Use 95-octane unleaded petrol in the combustion engine. Always stop the machine for refuelling.
- Take care not to spill petrol on the hot engine (danger of fire).
- Read the Instruction Manual for the engine carefully.
- The max. engine speed has been adjusted to that suitable for the circular saw.

Staring the combustion engine (Figs. 5 and 6)

1. Pull out the stop button A (Fig. 5) for the engine.
2. Open the fuel cock.
3. Turn on the choke.
4. To slacken the V-belts, turn the tightening switch for the belts A into the rear position (Fig. 4).
5. Turn the gas lever to about half-way and start the engine. (Kuva 6 vaihe A)
6. As soon as the engine starts up, turn the throttle lever through about 2/3 of its way. (Fig. 6 stage B)
7. When the engine is running smoothly, turn the tightening switch for the V-belts A (Fig. 4) to the front position to tighten the belts and to make the blade rotate.
8. After this, turn off the choke and raise the revolutions to the maximum (Fig. 6 stage C).

Fig. 5. Stop button for the combustion engine
Stopping

1. Turn the tightening switch for the V-belts A (Fig. 4) into the rear position or use the emergency stop lever.
2. Shift the gas lever to idling.
3. Switch off the engine and shut the fuel cock.

- **NOTE!** Slacken the V-belts only for starting or stopping.
- In connection with repair and maintenance work on the combustion engine, take care not to increase the engine revolutions and thus make the speed of the saw-blade exceed 2500 r.p.m.
- Starting the machine after an emergency stop:
  1. If you have switched off the combustion engine, start it again in the normal manner.
  2. If the engine has been running all the time, turn the tightening switch for the V-belts A (Fig. 4) to the front position to tighten the belts and to make the splitting screw rotate.
4 USING THE MACHINE

4.1 Measures before crosscut operation

- Make sure that the work area is tidy and that there are no unauthorized personnel in the area.
- Check that the crosscut blade is intact.
- Check that all the covers are intact and properly fastened.
- Clean any protective grease off the new saw-blade.
- **Note!** A greasy blade accumulates resin easily, causing it to heat up, lose its tension and start to wobble.
- Lift the transport wheels into the upper position.
- Release the crosscut chute from its transport position before starting the machine.
- **Make sure that the machine is standing firmly in position.**
- Never cut logs over 3 metres in length, the machine may roll over!

4.2 Measures during cutting

- Always position the log on the deck so it is supported by the grooved rollers A next to the crosscut blade (Fig. 7).
- Always cut the logs into the log box.
- Start splitting as soon as the log box fills up.
- Exercise caution; always keep your hands away from the saw-bar.
- Set the length for the firewood by adjusting the guide B (Fig. 7).
- Never stop the rotation of the blade by pressing wood against its side or its teeth.
- During sawing:
  1. Hold the log with your right hand.
  2. Release the crosscut chute by pulling the lever C (Fig. 7).
  3. Press the log against the blade by means of the crosscut chute (Fig 7 on the right).

![Fig. 7. Crosscut operation](Translation)
4.3 Splitting the log

- Place the log to be split in an upright position into the splitting slide.
- The minimum length of the log to be split is 25 cm.

.Splitting:
1. Hold the upper end of the log by one hand.
2. Release the splitting slide by pulling the lever A (Fig. 8) with your other hand and, by simultaneously pushing the log against the splitting screw by the splitting slide handle.
3. Keep pushing the slide until the log splits.
- If the log is tough and does not split, you can release it by pulling back the slide. **After this, you can try to split the log at some other place.** Always exercise particular caution when near the splitting screw!

![Fig. 8. Splitting the log](image)

5 MAINTENANCE OF THE MACHINE

Only genuine spare parts may be used on the machine.
Note! Always switch off the machine before any maintenance or cleaning operations.

5.1 Hard-metal blade

- The machine is equipped with a hard-metal blade that does not require setting, as the hard-metal bit is slightly wider than the blade-flange.
- Sharpen the blade using a sharpening machine with a grinding disk intended for hard-metal.
- The sharpening interval is long. The sharpening is required, when the sound of sawing gets louder.
5.2 Changing the crosscut blade

1. Make sure that the new blade meets the requirements of the standard SFS EN 847-1+A1.
2. Carefully remove the grease from the new blade.
3. Remove the protective housing A for the crosscut blade (Fig. 9).
4. Remove the side plate B of the housing by slackening the screws (Fig. 9).
5. Twist a bolt (M16) into the thread hole in the counter-flange to prevent the shaft from rotating.
6. Twist open the blade nut (right-hand thread M24x2, 36-mm wrench).
7. Carefully clean the counterfaces of the blades.
8. Fix the new blade and put the covers in place.

Fig. 9. Changing the crosscut blade

5.3 Changing the V-belt

1. Start by acting as instructed in paragraph 5.2, points 3-6.
2. Slacken the V-belts using the tightening switch for the belts B (Fig. 4).
3. Remove the worn V-belts and put the new ones in place.
4. The belt type on the SM and PM models A 13 x 1100 mm, SPA 1250 on the TR model.
5. Fix the blade and return the covers in their places.

5.4 Servicing the splitting cone

- The tip of the splitting cone is replaceable (left-handed thread M24).
- The tip has a double-headed thread that can be sharpened using a round saw-chain file.
5.5 Lubrication and service of the machine

- Lubricate the shaft bearings with roller bearing grease at the end of each operating season. The bearings will then remain filled with new grease, which prevents the bearing surfaces from coming into contact with moisture.
- The roller bearings on the splitting slide are lubed-for-life. They do not need further lubrication.
- Clean the machine carefully once you have stopped using it.

5.6 Transportation and storage of the machine

- Transferring the machine is really easy using the 25-cm-diameter wheels, which are a standard feature in machines powered by electricity or combustion engine.
- To set the machine into the work or transportation position, grip the turning lever 7 (Fig. 1) for the wheels firmly and turn down the wheels.
- Always tie down the machine firmly for transporting it – for example, on the trailer of a passenger car – and lift up the transport wheels (into the work position).
- You can lock the crosscut chute in the upper position to save space during storing.
- Storing the machine out of doors is not recommended.
- For transportation of a tractor-powered machine, lock the extension table in the place illustrated in Fig. 10.

Fig. 10. Place for transporting the extension table of PALAX 55 T TR
# 6 MALFUNCTIONS AND THEIR REMEDY

<table>
<thead>
<tr>
<th>Disturbance</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The crosscut saw-blade is heavy on power and gets hot.</td>
<td>1. The blade is dull. 2. Too much resin in the blade.</td>
<td>1. Service the blade. 2. Clean the blade.</td>
</tr>
<tr>
<td>Blade starts wobbling after a short period of operation.</td>
<td>1. Impurities between the flanges. 2. Pre-stressing faults.</td>
<td>1. Clean the flanges and the blade. 2. Take the blade to service.</td>
</tr>
<tr>
<td>The blade whines.</td>
<td>1. Speed too high. 2. Root-crack at the tooth</td>
<td>1. Lower the blade speed PTO shaft max 540 rpm. 2. Do not use. Replace blade.</td>
</tr>
<tr>
<td>The saw-blade rotates in the wrong direction.</td>
<td>1. The phases of a machine powered by electricity are in the wrong order.</td>
<td>Switch the order of the phases in the plug.</td>
</tr>
<tr>
<td>The electric motor does not start.</td>
<td>1. Makes a loud noise. but does not start. 2. The earth conductor is missing.</td>
<td>1. The fuse has blown. Replace fuse. 2. Check that the extension cable has five cords.</td>
</tr>
<tr>
<td>Motor stops several times and thermo-relay trips.</td>
<td>1. Blunt blade, heavy on power. 2. Incorrect setting of the thermo-relay. 3. The diameter of the extension cables is not sufficient.</td>
<td>1. Service the blade. 2. Re-adjust the thermo-relay. 3. Use extension cables with larger diameter.</td>
</tr>
<tr>
<td>The splitting cone does not &quot;pull&quot; the log.</td>
<td>1. The tip is blunt. 2. The splitting cone is rotating in the wrong direction (electric model only).</td>
<td>1. Sharpen the tip. 2. Switch the order of the phases in the plug (electric model only).</td>
</tr>
<tr>
<td>The motor stops easily.</td>
<td>1. The fuses are too small</td>
<td>1. Check the size of the fuses.</td>
</tr>
</tbody>
</table>
Fig. 11. Spare parts of the machine part 1/6
Fig. 12. Spare parts of the machine part 2/6
<table>
<thead>
<tr>
<th></th>
<th></th>
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<td>11</td>
<td>1</td>
<td>Plastic pipe</td>
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Fig. 13. Spare parts of the machine part 3/6

Fig. 14. Spare parts of the machine part 4/6
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NOTE! Always mention the serial number and year of manufacture of the machine while ordering spare parts.

Translation
TeSys enclosed starters

D.O.L. starters for motor control
0.25 to 7.5 kW with 3-phase thermal overload relay with 3 protected phases

Dimensions

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Knock-outs or blanking plugs for cable glands

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<td>ISO 2 x 30 x 2 x 35</td>
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(1) Can be mounted on machine panel or frame. Knockouts for 4 x 13 F cable glands.

Schemes

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<td>Control by spring return push buttons</td>
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Connection

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<td>L3</td>
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<tr>
<td>380 V, 400 V, 415 V, 440 V</td>
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