

# instructions for use

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Compiled by SM

Responsible manufacturer: Tree Tech A/S -Part of Bredsgaard A/S

Machine: Tree Tech Milling machine



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## **1. About this user guide**

### **1.1. Purpose**

The purpose of this manual is to ensure correct installation, use, handling and maintenance of the machine. The machine is designed to function as a milling machine for the stump end of Christmas trees

### **1.2. Reading guide**

This manual is prepared in accordance with EN ISO 20607:2019 *Instructions for use of machines* and is a translated manual for the machine.

#### Familiarity

It is the employer's (machine owner's) obligation to ensure that everyone who will operate, service, maintain or repair the machine has read the instruction manual, at least those parts of it that are relevant to their work.

In addition, anyone who is going to operate, service, maintain or repair the machine has a duty to seek information in the user manual themselves.

#### Accessibility

The instructions for use can be accessed at any time at [www.treetech.dk](http://www.treetech.dk). If the employer would like a printed version, please contact Tree Tech A/S

### **1.3. Version**

Version 1

### **1.4. Manufacturer**

Name: Tree Tech A/S

Address: parallelvej 19, 8620 Kjellerup, Denmark

Phone: +45 89707089

Email: [kontakt@treetech.dk](mailto:kontakt@treetech.dk)

Website: [www.Treetech.dk](http://www.Treetech.dk)

### **1.5. Machine designation**

Tree Tech milling machine

### **1.6. Document type**

Instructions for use for the user

### **1.7. Relationship between this document and the machine**

This manual covers the use and maintenance of the Tree Tech milling machine (identical information is provided on the machine's rating plate):

Company name  
Full address  
Ce labelling  
Specification of type designation  
Year of manufacture



### 1.8. Symbol explanations



Eye protection mandatory  
Located at the front of the machine



Safety footwear mandatory  
Not placed on the machine



Protective gloves mandatory  
Not placed on the machine



Keep distance 3m (not operators)  
Located at the front of the machine

## 2. Safety and security

### 2.1. Intended use, hazard warnings

The machine is used to mill the stump end of the Christmas tree.

The machine is made to be hung under a Tree Tech front frame.

The machine may only be operated by 1 person at a time.

The machine is made for milling the stumb end of Christmas trees up to Ø175mm with an 80mm milling machine head.

### 2.2. Substances that can cause danger to people

Hydraulic oil and lubricating oil can cause allergic reactions. When in contact with hydraulic oil or lubricating oil, use oil-resistant gloves.



### 2.3. Special conditions for different user groups, such as children

Person groups	Expected education level and physical characteristics of users
Operators	<p>Trained or trained personnel who have obtained sufficient qualifications to use the machine. The operator must be familiar with all the machine's controls, including protective measures and their functions, through training and review of the operating instructions.</p> <p>General physical well-being.</p> <p>Operational staff must have normal physical and cognitive functioning.</p>
Tractor driver (if mounted on tractor)	<p>Tractor trained with knowledge of the machine and its prerequisites for use</p> <p>Tractor driver must be familiar with the protective measures and functions of the machine</p> <p>General physical well-being.</p> <p>The tractor driver must have normal physical and cognitive functioning.</p>
Maintenance staff	<p>Trained personnel with knowledge of the machine's functions, operating modes and safety measures.</p> <p>The qualifications must be obtained through vocational training or through adequate and equivalent training.</p> <p>Maintenance personnel must have read and understood all relevant documents such as user manuals, instructions and maintenance manuals (if available).</p> <p>Maintenance personnel must have normal physical and cognitive functioning.</p>

Trainees and apprentices	<p>Trainees or apprentices must be accompanied and supervised by experienced and trained personnel.</p> <p>When working with the machine, trainees and apprentices must be supervised during the entire period of use.</p> <p>Trainees and apprentices must have normal physical and cognitive functioning.</p>
People in general	<p>Visitors etc. must always be supervised by professional staff. In connection with display, this must be done after receiving safety instructions and only with a safety responsible employee.</p>

## 2.4. Residual risks

**Eye hazard:** When the Christmas trees are being milled, shavings, chips and splinters can fly out of the machine, therefore the operator must always wear eye protection during operation.



**Cutting hazard:** The milling of the milling head is only partially shielded during operation and can therefore cause serious injury if touched

**Cutting hazard:** The milling machine has an overtravel that makes the machine still dangerous some time after the stop and emergency stop have been pressed.

**Cutting hazard:** When working with the milling heads and the blades on the milling heads, there is a high risk of cutting injuries and therefore cut-resistant gloves must always be worn when working with the milling heads



## 2.5. General warnings and precautions

Vigilance must be exercised when using the machine

The operator must be able to see the entire machine at all times to ensure that people do not enter hazardous areas of the machine

There is a safety distance of 3m around the machine for non-operators when in operation

Tractor and machine must not be operated at the same time

When the machine is not in use, the protective cover must be down in front of the milling machine.





## 2.6. Use of personal protective equipment

During operation:

Eye protection



During maintenance, repair and disassembly:

Safety gloves

Safety shoes



## 2.7. Safety symbols and pictograms

If symbols, signs and pictograms are missing, illegible or unclear, they must be replaced with new ones as soon as possible.

### 2.7.1. Safety symbols and pictograms

There are 2 safety symbols



### 2.7.2. Renewal of safety symbols and pictograms

As soon as safety symbols and pictograms are illegible or unclear, new ones can be purchased from Tree Tech A/S

## 2.8. Safety features

There is an emergency stop that runs over its own safety relay

### **2.8.1. Safety function 1**

Name: Emergency Stop.

How it works: Stops the machine quickly by interrupting the power circuit that closes the hydraulic valves. There is an after-run on the machine to prevent it from breaking when it stops.

PL level: C

Applied standard: EN ISO 13849-1:2015 and DS/EN ISO 1985-1:2021

## **2.9. Emergency situations**

In emergency situations, stop the machine, provide first aid and call the proper authorities

### **2.9.1. How to operate in the event of an accident or breakdown**

#### Accidents:

1. Activate emergency stop
2. Switch off the tractor
3. Provide first aid and contact relevant authorities

#### Crashes:

1. Turn the knob to OFF
2. Turn the knob to ON
3. Press the reset button
4. Continue to operate

### **2.9.2. Emergency stop**

Emergency stop is activated as soon as possible in case of an emergency and the machine can only be restarted by de-activating emergency stop and resetting the machine.

**Emergency stops must not be used as regular stops or service stops, as this compromises the quality of the emergency stop and there is a greater chance of the emergency stop failing.**

### **2.9.3. Recommended firefighting equipment**

CO2 extinguisher

### **2.9.4. Emission and/or leakage of hazardous substances**

In case of emission and/or leakage, follow the authorities' instructions for the substance in question.

### 3. Overview of the machine

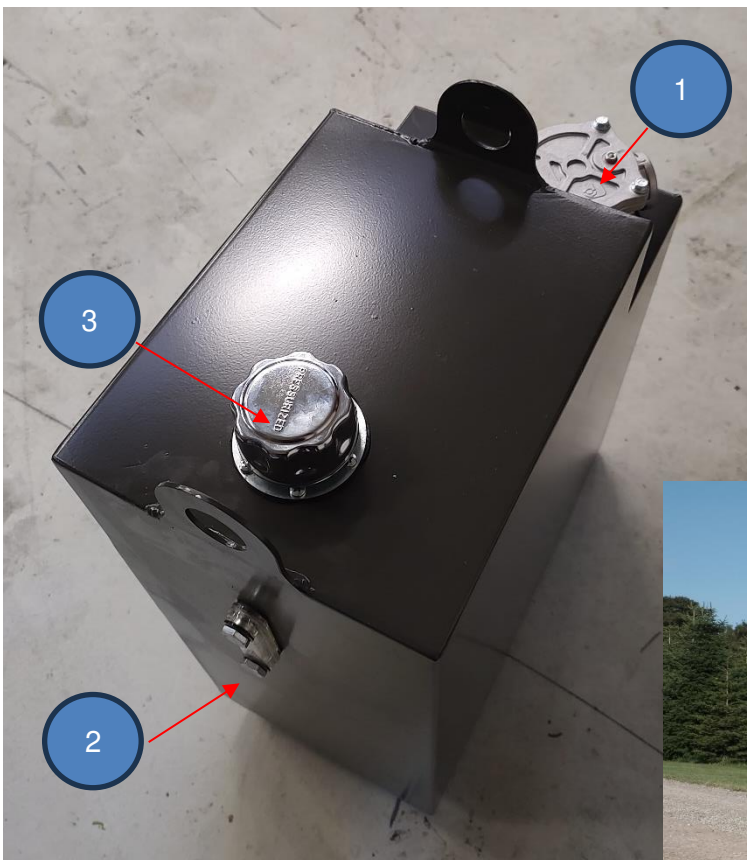
#### 3.1. Description of the machine

The Tree Tech milling machine is a machine that mills the stump of Christmas trees of different sizes. It is mounted on a front frame and has its own oil tank and oil pump.

Main components:

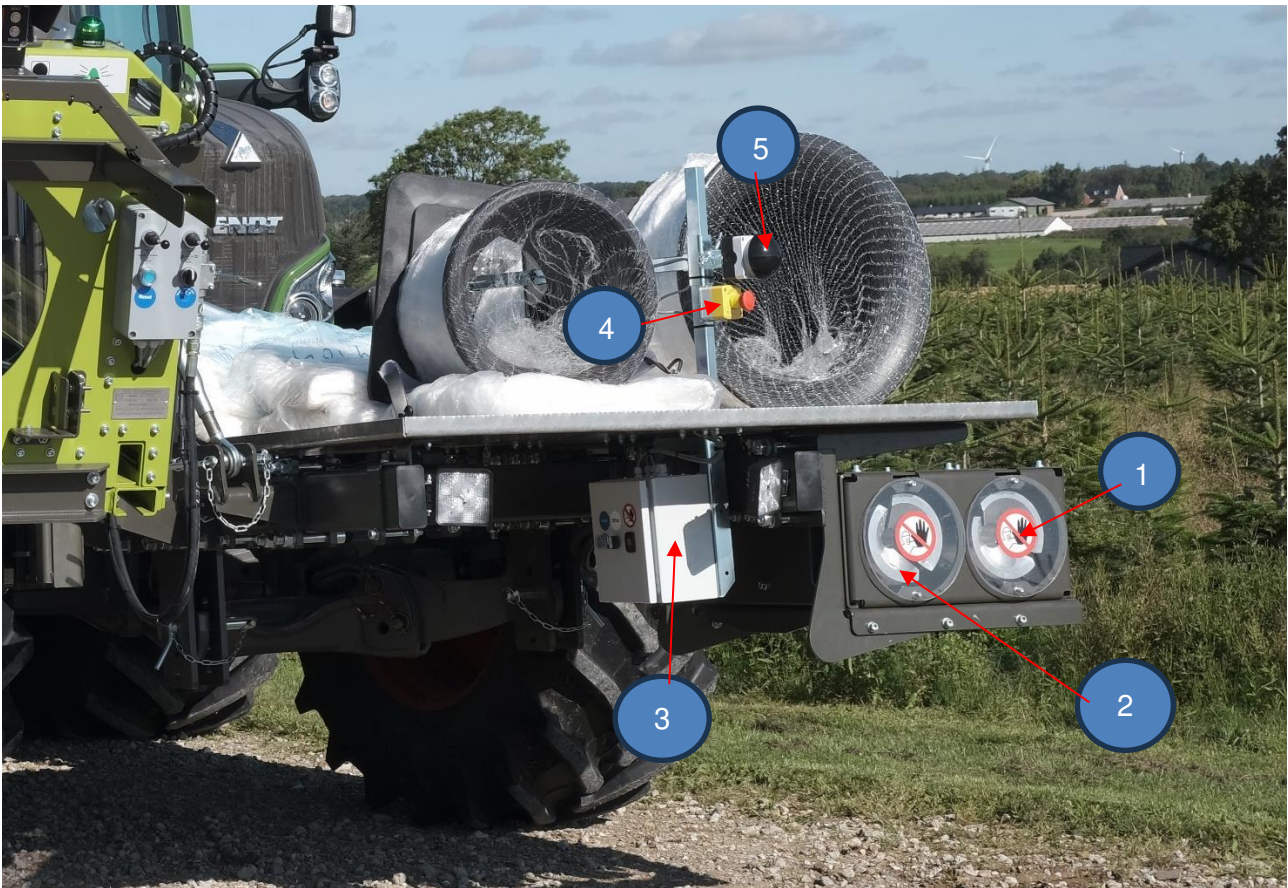
- Frame
- Oil tank
- Oil pump
- Milling heads
- Electrical box

#### 3.2. Overview drawings etc.



1. Oil filter
2. Sight glass hydraulic oil quantity
3. Lid for hydraulic oil with coarse filter

Oil tank for milling machine



1. Milling head protection
2. Pointer head
3. Electrical cabinet
4. Emergency stop
5. Shoulder switch

### **3.3. Intended use**

The machine is used to mill the stump end of the Christmas tree.

The machine is made to be hung under a Tree Tech front frame.

The machine may only be operated by one person at a time.

The machine is made for milling Christmas trees up to Ø175mm with an 80mm milling machine head.

### **3.4. Permitted substances and materials**

The hydraulic oil must be filtered to a purity class of ISO 4406 19/17/14 or better. And have a viscosity of 10 - 60 cSt

### **3.5. Specifications**

#### **3.5.1. Length, width and height**

Milling machine:

**L:**70cm **W:**55cm **H:**32cm

Oil tank:

**L:** 50cm **W:** 28cm **H:** 70cm

#### **3.5.2. Weight**

85kg in total. (oil tank empty)

#### **3.5.3. Oil tank capacity**

60 L

#### **3.5.4. cycle speed**

Can mill 1 tree every 4 seconds.

#### **3.5.5. Power supply**

12V from tractor.

#### **3.5.6. Operating limits**

The machine is made for milling Christmas trees up to Ø175mm with an 80mm milling machine head.

#### **3.5.7. Tractor requirements**

##### **3.5.7.1. Engine power**

Min 25 hp on the rear PTO shaft.

##### **3.5.8. Lifetime, machine**

The lifetime of the machine is set at 20 years. If the machine is to be used for a longer period, the owner/user of the machine must assess whether the structural and functional parts of the machine still have their original strength, stability, etc. If this is not the case, the parts must be replaced with parts with identical properties.

### **3.5.9. Lifetime, safety components**

Emergency stop 300000 circuits.

### **3.6. Controls and interfaces**

The machine is operated from the front and receives oil pressure from the rear PTO of the tractor.

## **4. Transport, handling and storage**

### **4.1. Machine (part) dimensions during transport**

See dimensions section 3.5.1.

### **4.2. Lifting and docking points**

There are 2 lifting eyes in the oil tank.

### **4.3. Transport and handling methods**

The machine is made to be transported by tractors on a Tree Tech front frame at a maximum speed of 40 km/h.

#### **4.3.1. Training and equipment**

Parts over 15kg must be handled with approved lifting equipment.

### **4.4. Environmental requirements during storage**

It is recommended that the machine is stored dry and mounted on the front frame.

## **5. Assembly, installation and commissioning**

### **5.1. Assembling the machine**

The milling machine and oil tank are delivered assembled.  
Oil pump and hydraulic hoses must be fitted yourself.

### **5.2. Location of the machine**

The milling machine is mounted under the front frame.  
The oil tank can be mounted on a Tree Tech packer, otherwise this is individual.  
The oil pump is located on the tractor's rear PTO shaft.

### **5.3. Safety systems, control and testing**

There is an emergency stop switch that operates via its own safety relay. The emergency stop must be tested every day during operation.

For inspection and testing, see section 9.9.

### **5.4. Commissioning**

Before operation, the following must be checked:

- There is hydraulic oil in the oil tank
- Emergency stop is checked according to point 9.9.

### **5.5. Training**

When the machine is delivered to the customer, they will receive training on the machine. After this, training takes place as one-on-one training.

#### **5.5.1. Operators**

The operator must have read the user manual and the buyer has received training on the machine, which must be passed on to the operator.

Subsequent training can be done as one-on-one training after reading the user manual.

#### **5.5.2. Service staff**

The qualifications must be obtained through vocational training or through adequate and equivalent training.

#### **5.5.3. Cleaning staff**

Operator level can clean the machine.

## 6. Factory settings

### 6.1. Hydraulic equipment

Pressure relief valve is set to 200 bar **(do not adjust)**

### 6.2. Electrical equipment

Time setting is 5 seconds



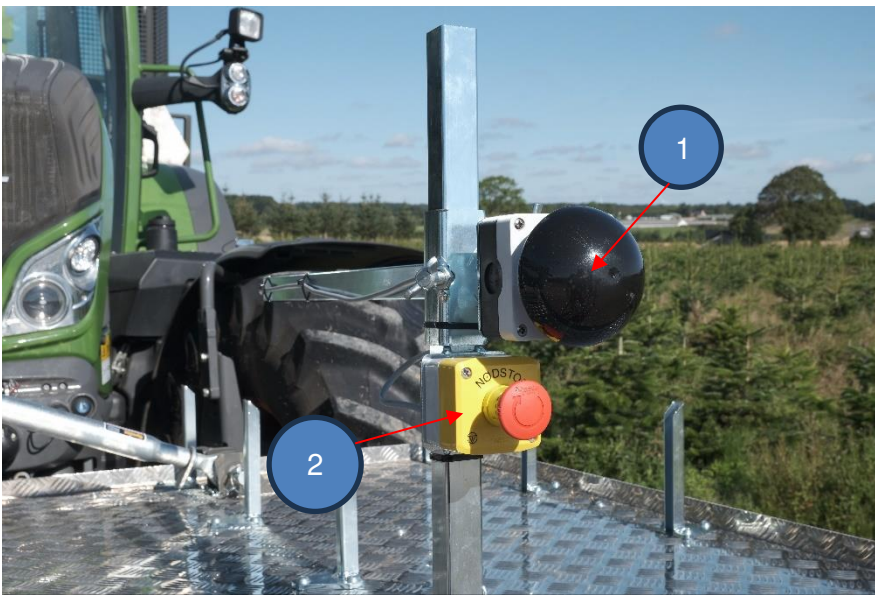
## 7. Drift

### 7.1. Risks and sources of danger

#### 7.1.1. Training

All users (operators) must have undergone training (see above) before operating the machine for the first time. The training must ensure that the operators are aware of the risks and hazards present on the machine.

### 7.2. Manual controls



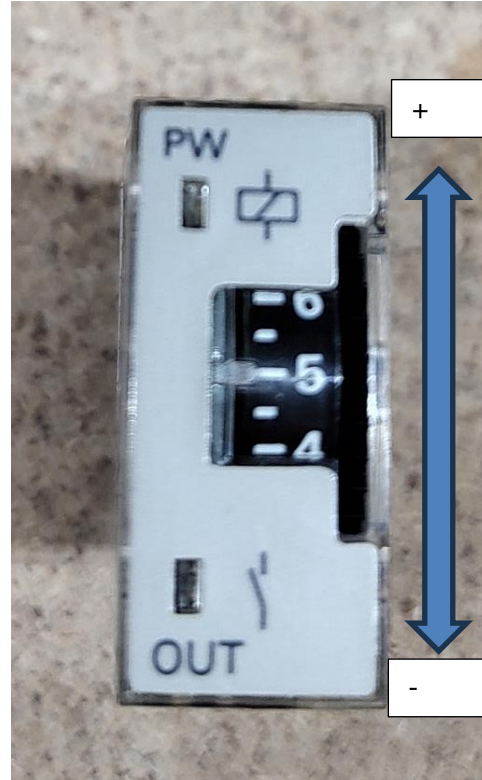
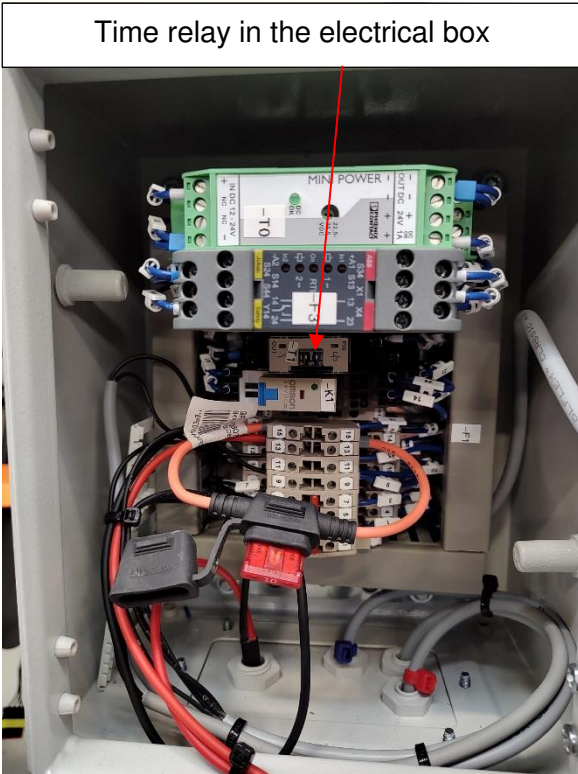
1. Shoulder switch to start the cycle
2. Emergency stop

### 7.3. Setting and adjusting

#### 7.3.1. Setting the cycle time

1. Switch the machine to OFF
2. Adjust the time on the time relay (0-10 seconds)
3. Switch the machine to On

Time relay in the electrical box



### 7.3.2. Adjusting and mounting blades on the milling head

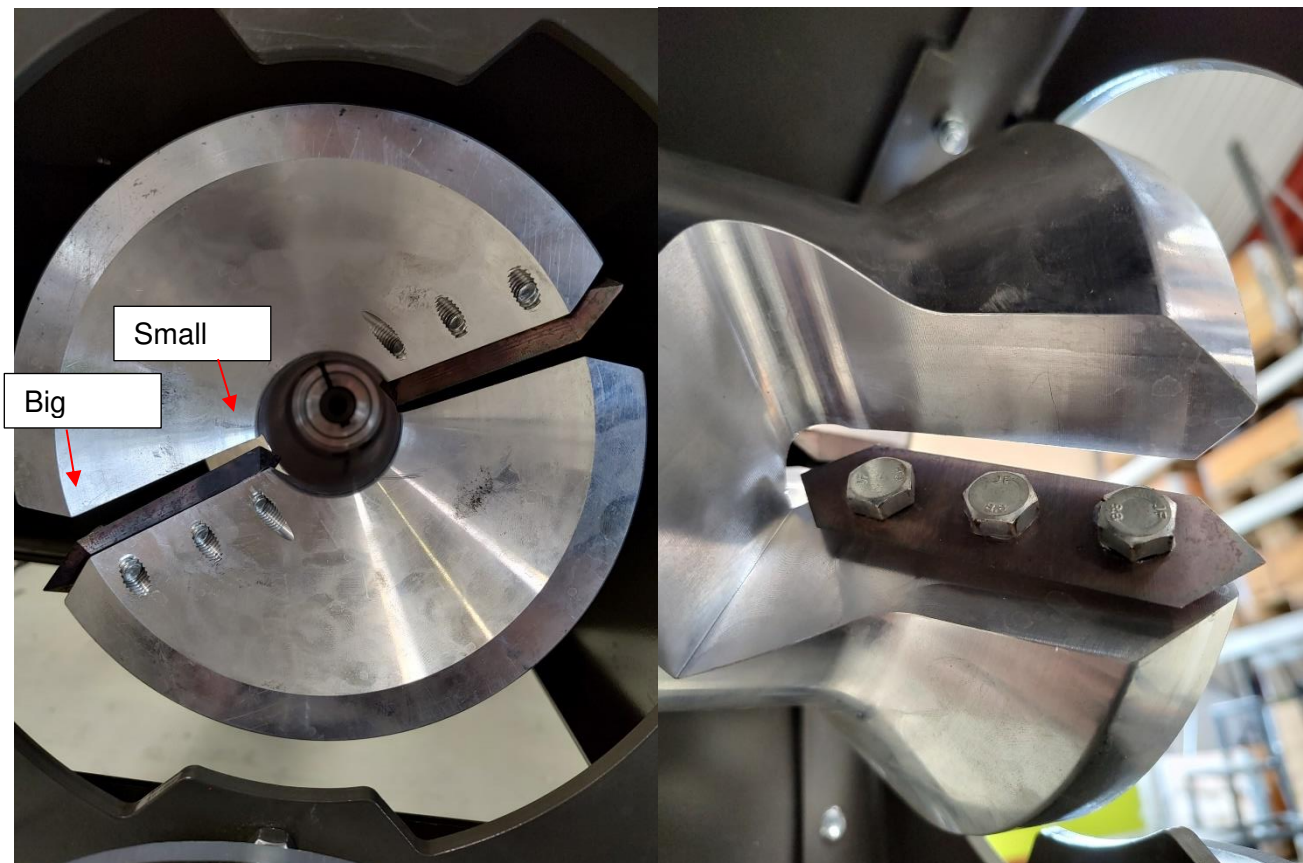
Assembly:

1. Mount blades as shown in the picture
2. Adjust according to the next points

Adjustment:

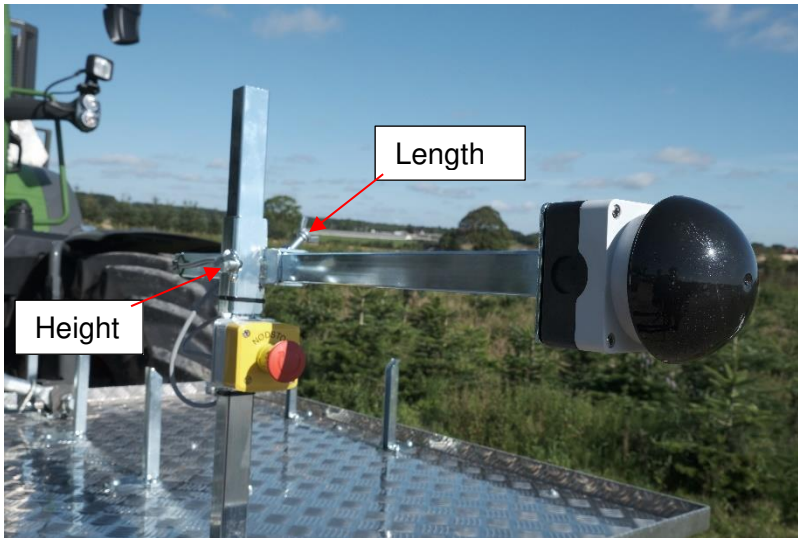
1. Loosen bolts
2. Hand tighten bolts very loosely so blades can be adjusted slightly
3. Adjust the knife as shown in the image. The knife should stick out more the further in the knife goes. This can be seen in the gap between the blade and the milling head
4. Tighten the blade with 16 Nm

**Warning** cut-resistant gloves must be worn when changing blades as they are very sharp  
**Note that** the more the knives stick out, the more they take. If the wood bounces when milling, the outer part of the knife (large gap) should have a slightly larger gap.



### 7.3.3. Setting shoulder pressure

1. Loosen the wing bolt
2. Adjust height and length
3. Tighten wing bolt



### 7.4. Location of operator workstations

The operator station is located directly in front of the machine

### 7.5. Special risks

The tractor driver must take extra care when handling the tractor when the machine is in operation. The tractor driver must not adjust or drive the tractor until he has agreed this with the operator of the machine.

### 7.6. Risks that are not eliminated through design

**Eye hazard:** When the Christmas trees are milled, shavings, chips and splinters can fly out of the machine, therefore the operator must always wear glasses during operation.



**Cutting hazard:** The milling head is only partially shielded during operation and can therefore cause serious injury if touched.

**Cutting hazard:** The milling machine has an after-run of about 5 seconds, which makes the machine still dangerous for some time after the stop and emergency stop are pressed.

### 7.7. Personal protective equipment

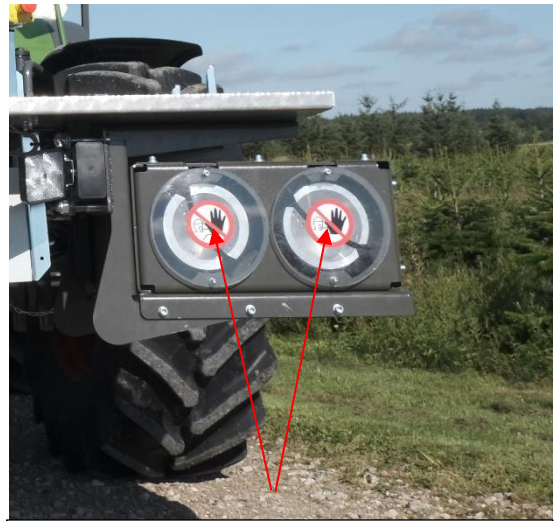


Eye protection must be used at all times

## 7.8. Procedures

### 7.8.1. Start/stump end

1. Move protective covers out of the way so the Christmas trees can be milled
2. Activate shoulder switch
3. With the tree in a horizontal position, push the stump end into the milling head with firm pressure until it can go no further in.
4. Move the protective cover back into place



Protective cover (protected mode)

### 7.8.2. Stop

The machine can be stopped by pressing OFF on the ON/OFF button

When the tractor is switched off, the machine is also switched off

### 7.8.3. Changing the milling head

The machine must be switched OFF and the tractor must be switched off

1. Loosen the 2 bolts holding the milling head
2. Remove the milling head. Often a wedge or something is needed in the crack of the milling head to widen it a little
3. Install new milling head and tighten torque, 45 Nm

Bolts for milling head replacement



Crack that can be fitted with a wedge

### 7.8.4. Emergency situations

1. Activate emergency stop
2. Switch off the tractor
3. Provide first aid if necessary
4. Call the relevant authorities

When restarting the machine, deactivate the emergency stop and reset the machine (hold the reset button for at least 2 seconds).

#### 7.8.5. Restart

If the machine needs to be restarted, switch the tractor off at the main switch, wait 10 minutes and then restart the machine.

#### 7.9. Place of use

Christmas tree culture and stalls

#### 7.10. Unblocking the blocking

When unblocking

1. Press stop on the machine
2. Switch off the tractor
3. Take the tree out and make sure there is nothing in the way.

#### 7.11. User environment

Christmas tree culture

**Please note that** the Christmas tree culture can be very uneven, so the operator must focus on the ground to avoid falling or tripping.

Allowable temperature range: -15°C to 30°C

Lighting in the work areas around the machine must comply with the recommendations in EN 12464 - Light and lighting - Workplace lighting - Part 2: Outdoor workplaces.

#### 7.12. Starting up and shutting down the machine

Startup:

1. Start tractor
2. Active PTO
3. Switch the machine to ON

Lockdown:

- Switch off the tractor and set the machine to OFF

## **8. Product or capacity changes**

### **8.1. Changes the size of the product or workpiece**

When changing the size of wood to be sharpened, adapt the size of the milling machine heads accordingly.

## 9. Inspection, testing and maintenance

### 9.1. Planned lifetime

20 years with maintenance and service performed

### 9.2. Spare parts, specification

For spare parts contact Tree Tech A/S

### 9.3. Substances used, properties

For hydraulic oil, see section 3.4

Copper grease

### 9.4. Safe execution of maintenance operations

#### 9.4.1. Maintenance operations that require technical knowledge or skills

During maintenance, the machine must be switched OFF and the tractor must be switched off

- Repairs to the machine, including hydraulics, electrics, and frames.

#### 9.4.2. Maintenance operations that do not require technical knowledge or skills

During maintenance, the machine must be switched OFF and the tractor must be switched off

- Maintenance described in section 9.8.

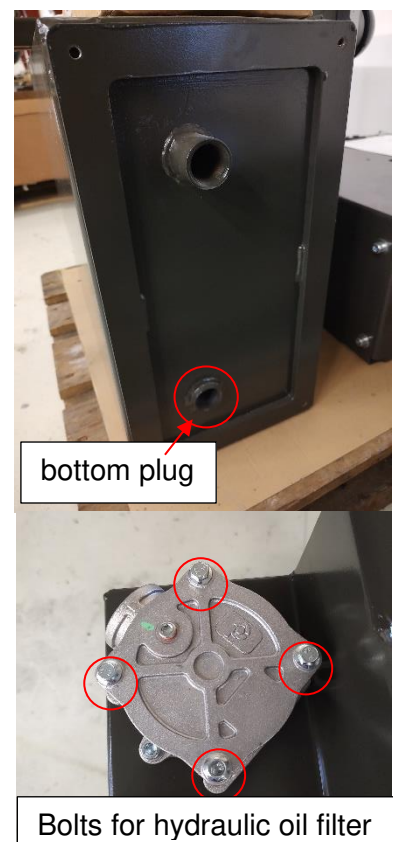
##### 9.4.2.1. Hydraulic oil change

1. Open lid for hydraulic oil
2. Remove the bung plug
3. When the oil has drained out, insert the drain plug.
4. Fill with new oil
5. Close hydraulic lid

60L: HD46 hydraulic oil

##### 9.4.2.2. Hydraulic oil filter change

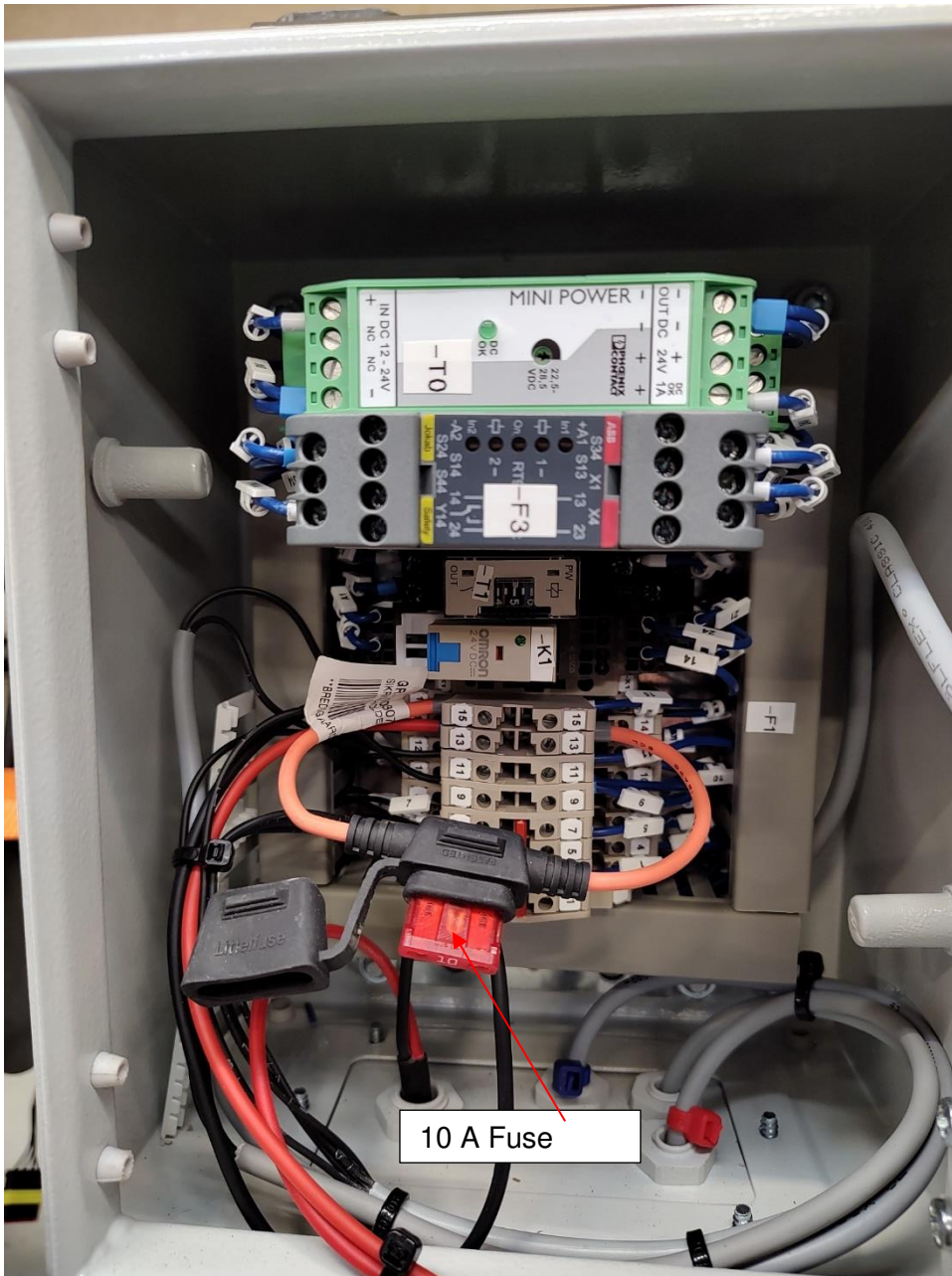
1. Remove the 4 bolts
2. Change hydraulic filter
3. Mount the 4 bolts





### 9.4.2.3. Changing the fuse

1. Set the machine to OFF and switch off the tractor
2. Open the electrical box and remove the old fuse
3. Insert new 10A fuse
4. The machine can now be used again



## 9.5. Equipment needed for maintenance

### 9.5.1. Tools and tools

Socket wrench set with allen keys and sockets

## 9.6. Energy management .

### 9.6.1. Disconnection and locking

Disconnecting energy is done by switching off the tractor

### 9.6.2. Field of action

Switches off mechanical/hydraulic and electrical energy to the machine

## 9.7. Spare parts list

Contact Tree Tech A/S for spare parts

## 9.8. Maintenance plan

### Daily/ongoing

Frequency	Maintenance	Commentary
On a daily basis	Check the emergency stop and open emergency stop if necessary and spray contact spray to avoid condensation.	See section 9.9 Use contact spray if emergency stop freezes
On a daily basis	Check the amount of hydraulic oil in the hydraulic oil tank	
On a daily basis	Inspection of blades on the milling head	See section 9.9.
Ongoing	Clean the machine	Do not use high pressure on electrical components <i>Note. Do not wash the machine if it is to be left freezing and cannot dry in time</i>

### Monthly

Frequency	Maintenance	Commentary
Monthly during operation	Check and tighten blades on the milling head	See section 9.9.

### Before the start of the season

Frequency	Maintenance	Comments and feedback
Before the start of the season at least every 12 months	Service inspection of the machine	Please contact Tree Tech for service
Before the start of the season	Check for damage	Please contact Tree Tech for repair
Before the start of the season	Control emergency stop	See section 9.9.
Before the start of the season	Check safety cover in front of the milling head are engaged and working	
Before the start of the season	Check and tighten the milling head	See section 9.9.

Before the start of the season	Check and tighten blades on the milling head	See section 9.9.
Before the start of the season	Check that the machine is still attached to the front frame	
Before the start of the season	Open emergency stop and spray contact spray to avoid condensation	

### Before storage

Frequency	Maintenance	Commentary
Before storage	Wash and clean the machine	Do not use high pressure on electrical components <i>Note. Do not wash the machine if it is going to be left Freezing and cannot dry in time</i>
Before storage	Any scratches or damage to the paint should be sprayed to prevent rust.	Contact Tree Tech for the right colour and spray cans
Before storage	Check electrical wires for breaks	
Before storage	Check and tighten hydraulic fittings if necessary	
Before storage	Control emergency stop	See section 9.9.

## 9.9. Safety-relevant inspection, testing and maintenance

### 9.9.1. Topics covered

Emergency stop

Milling head with blades

### 9.9.2. Frequency

Emergency stop: Daily when the machine is in operation, at the latest every 12 months

Milling head: Before the season starts

Knives on point head: daily inspection and monthly (during operation) torque check

### 9.9.3. Methodology

Emergency stop:

Inspection: Check for cracks and breaks.

Testing: The emergency stop is pressed very slowly, as soon as a click is heard, the emergency stop is released.

Maintenance: Before the start of the season, open the emergency stop and spray contact spray to avoid condensation

Milling head:

Inspection of knives: Check if the knife has moved, use your fingers to feel if the bolts are in place

Blade maintenance: Tighten monthly during operation.  
Milling head maintenance: Tighten before the start of the season.

#### **9.9.4. Criteria for acceptance/non-acceptance**

##### Inspection emergency stop:

Acceptance: There are **no** breaks or cracks in the emergency stop

Not accepted: There are breaks or cracks in the emergency stop

##### Milling head inspection:

Acceptance: Blades are stuck and all bolts are there.

Not accepted: Blades are loose or bolts are missing

#### **9.9.5. Required actions in case of non-acceptance**

##### Emergency stop:

A new emergency stop must be installed before the machine can be used again.

##### Pointing head:

Blades must be tightened and bolts must be installed so that the blades are securely fastened before the machine can be used again.

## 10. Cleaning & disinfection

### 10.1. Equipment and procedures needed

#### 10.1.1. Tools, equipment, cleaning products

Brush, soap

#### 10.1.2. Personal protective equipment

See instructions for used substance

#### 10.1.3. Machine operating mode during cleaning

The machine must be set to OFF

#### 10.1.4. Interrupting, diverting or isolating energy

The tractor must be switched off

#### 10.1.5. Cleaning procedures

Clean as needed and before storage

Note. Do not wash the machine if it is to be left freezing and cannot dry in time

Do not use high pressure on electrical components

## 11. Troubleshooting and repair

<b>Machine will not start</b>	<b>Reason</b>	<b>Problem solving</b>
1. Hydraulics	Not enough oil in the tank	Top up hydraulic oil in the tank
	Hydraulic system is leaking	Tighten the hydraulic system or contact Tree Tech
2. PTO	PTO not activated	Active PTO
3. Power	Plug is not plugged in	Plug the power plug into the tractor
	Fuse is blown	Replace fuse
4. Emergency stop	Emergency stop is activated	Disable emergency stop and reset the machine
5. Contact Tree Tech	Contact Tree Tech	Contact Tree Tech

<b>Machine will not mill the wood (poor milling)</b>	<b>Reason</b>	<b>Problem solving</b>
1. Pointer head	Check the correct milling head size	Replace milling head to correct size
	Blade is dull/defective	Replace the blade
	Blade is incorrectly mounted/not adjusted correctly	Adjust blade
2. Contact Tree Tech	Contact Tree Tech	Contact Tree Tech

### 11.1. Error reporting:

In case of errors or unexpected problems, please contact Tree Tech A/S

## 12. Disassembly, deactivation and scrapping

### 12.1. Interrupting, diverting or isolating energy

The tractor must be switched off

### 12.2. Specialised tools and equipment

When lifting parts weighing more than 15 kg, use approved lifting equipment

### 12.3. Personal protective equipment

When handling heavy objects

Safety footwear with toe protection must be worn



When handling hydraulic oil, lubricating oil and grease:



### 12.4. Sequence or time sequence for decommissioning

### 12.5. Disassembly

When dismantling, use approved lifting equipment for parts weighing over 15 kg

### 12.6. Disposal

When disposing of the material, the national applicable environmental requirements must be followed, according to the applicable regulations for each type of material.

### 12.7. Recycling and reutilisation

When disposing of the material, the national applicable environmental requirements must be followed, according to the applicable regulations for each type of material.

## 13. Documents and drawings

### 13.1. Information from the EC Declaration of Conformity



## EF-overensstemmelseserklæring for en maskine II A

2006/42/EF bilag II A

Fabrikant	Tree Tech A/S
Adresse	Parallelvej 19
Post no. og by	8620, Kjellerup

Erklærer hermed at maskine  
type:

- Tree Tech Spidser

Er fremstillet i overensstemmelse med følgende EF direktiver:

- 2006/42/EF Maskindirektivet
- 2014/30/EU EMC direktivet

<u>Bent Hansen</u>	<u>ADM direktør</u>	<u>Kjellerup</u>	<u>                    </u>
Underskriver	Stilling	Sted	Dato

Underskrift: