User Manual

TP 176 Track
incl. Pilot+

DESIGNED
+
MANUFACTURED
DENMARK

RELIABLE CHIPPING



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Introduction

Congratulations on your new TP wood chipper.

Linddana produces TP wood chippers of the finest quality by using the most modern production technologies, such as laser cutting, CNC - technology and robot technology in bright and open production facilities.

For safety reasons and in order to get the maximum benefit from your wood chipper, it is important you read the user manual before use.

Originally written in Danish, the user manual provides an explanation of safety, use and maintenance, to ensure working with the wood chipper will be safe and profitable.

Linddana A/S



Hans Anker Holm, CEO

Your local dealer is always available with spare parts, advice and guidance.

Dealer stamp

Applies to Denmark (for all other countries contact the local TP dealer):
Linddana provides a wet grinding of your knives: the knives are ground and returned on the same day as they are received. (for more details tel.: +45 76904045)

To keep your wood chipper in top condition and extend its service life, Linddana offers a service contract, under which the wood chipper will be serviced once a year by your local dealer in accordance with the service schedule.

EU DECLARATION OF CONFORMITY

Manufacturer:
LINDDANA A/S, Ølholm Bygade 70, Ølholm, DK-7160 Tørring, Denmark

hereby declares that

Wood chipper:

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and accompanying extra equipment is in conformity with the requirements of the Machinery Directive (Directive 06/42/EC) and with the national legislation which translates this directive;

It is also in conformity with EC Directive
2000/14/EC
Furthermore it is stated that
EN 13525 (harmonised standard), has been applied.

Title: CEO
Name: Hans Anker Holm



Ølholm, 15. August 2025

Use and safety

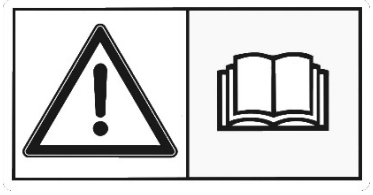
This TP wood chipper is specially designed as a stationary wood chipper, which chips wood in the form of branches, bushes and waste wood from windbreaks, parks, roadside trees, etc.

Any modification to the design of the machine is strictly prohibited. In the event that modifications are made, Linddana A/S disclaims all liability.

Mandatory Instructions and Warnings

Before use





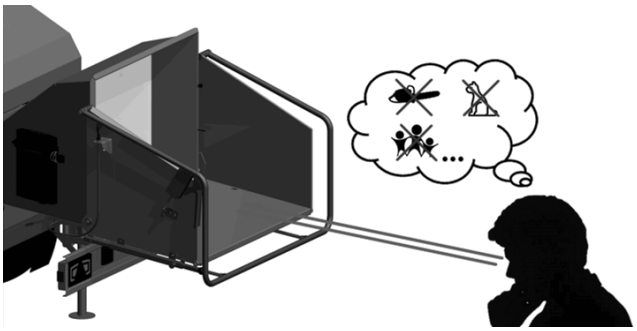
ALWAYS read the user manual before using the wood chipper.

Remember to store the user manual in the manual box.





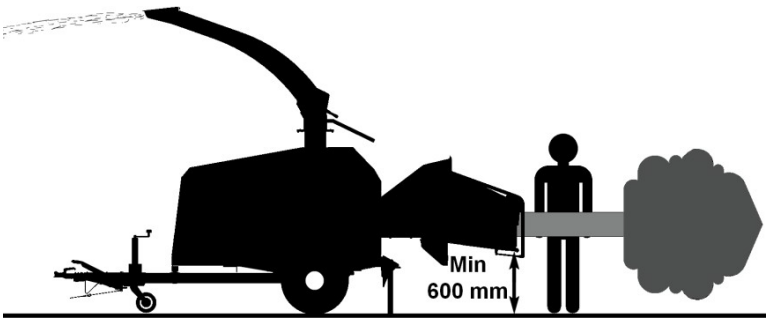
ALWAYS wear ear protectors, safety goggles, close fitting safety clothing and safety shoes.



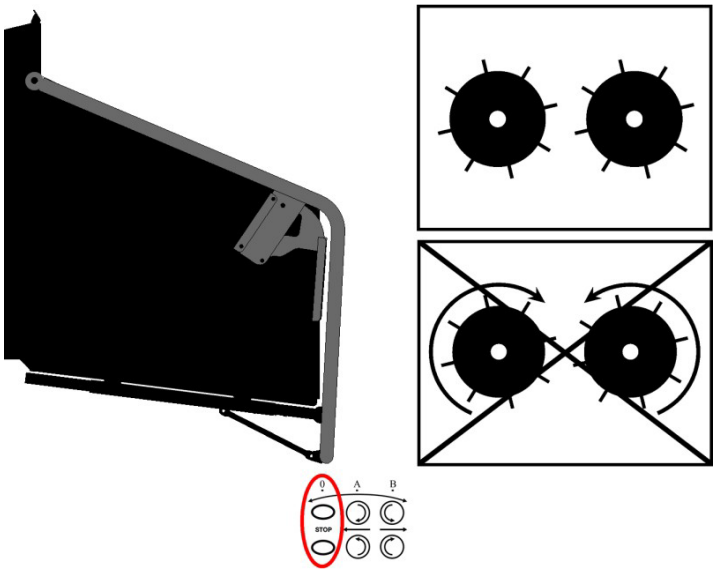
ALWAYS ensure that the funnel is free of people, animals and other foreign bodies before starting the wood chipper.

ALWAYS ensure that all of the guards are securely closed/fitted before starting the wood chipper.

ALWAYS ensure that the wood chipper is safely parked before starting the wood chipper.



ALWAYS ensure that there is more than 600 mm of clearance between the ground and the wood chipper's lowest funnel edge and that it stands on a level surface.



ALWAYS ensure that all the safety devices function correctly before starting the chipping. This applies in particular to the safety bar's STOP function.

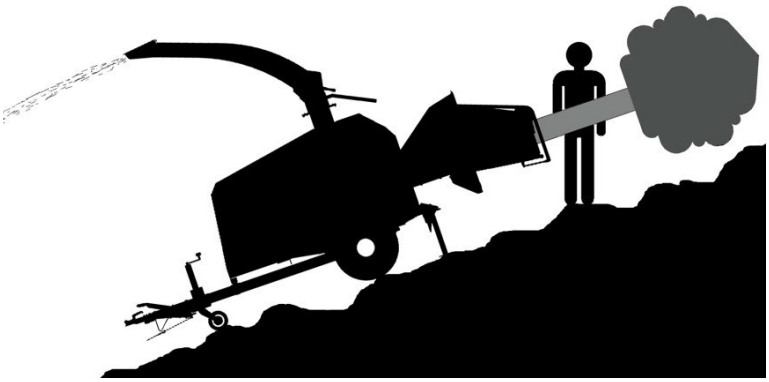
ALWAYS observe the ground conditions around the wood chipper. Falling down in the vicinity of the wood chipper can be hazardous.



NEVER allow anyone under 18 years of age to operate the wood chipper (however, anyone who is 16 years of age and over may do so under the supervision of an adult).



NEVER operate the wood chipper if under the influence of alcohol or narcotic substances.



NEVER operate the wood chipper on uneven or inclined surfaces.

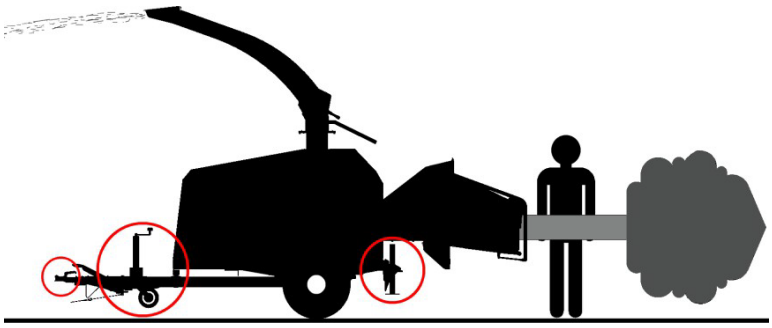
NEVER start the wood chipper without the ejector spout fitted.

NEVER use the wood chipper in enclosed or poorly ventilated spaces, because of the danger of carbon monoxide poisoning.



NEVER point the ejector spout in the direction of people or at areas where people are moving around.

A safety distance of 20 m must be maintained in the direction in which the woodchips are ejected.



NEVER operate the wood chipper without support from the jack and support leg or from the vehicle's trailer hitch.

	**NEVER** use the wood chipper for materials other than wood.
	**NEVER** use the wood chipper to push trees, stumps, etc.
	**NEVER** transport equipment, such as forest chains, axes, chainsaws, etc. in the funnel

During operation

	ALWAYS push the safety bar into the STOP position if a dangerous situation arises.
	ALWAYS keep body parts away from the funnel and the wood chipper's other moving parts.
	 **ALWAYS** stand next to the funnel when the wood chipper is chipping trees with side branches.

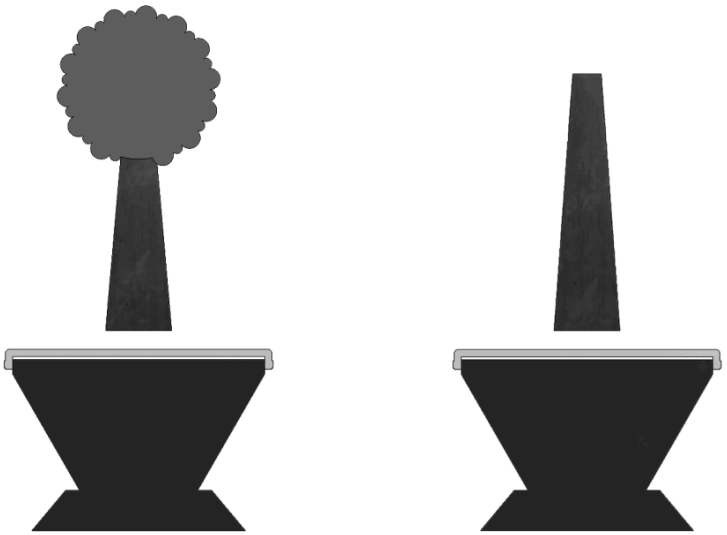


ALWAYS push logs in from the rear of the log.



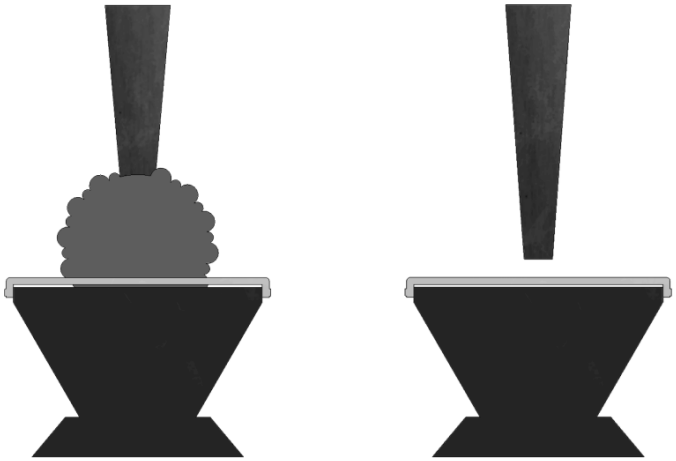
ALWAYS use a rod to push short pieces of wood into the rollers.





ALWAYS feed the wood chipper with the thick end of the log first.

ALWAYS feed the wood chipper so that the tree crown points away from the funnel.



NEVER feed the tree crown into the wood chipper first.

NEVER feed the wood chipper with the thin end of the log first.

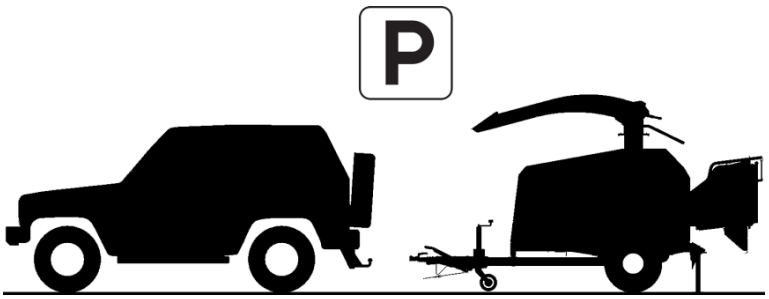
NEVER attempt to remove any trapped material from between the feed rollers before the wood chipper has stopped, the key has been removed and the revolving rollers have been opened as described in chapter 7.4.



NEVER reach into the funnel to push wood into the rollers.

NEVER open or remove the guard while the wood chipper is operating.

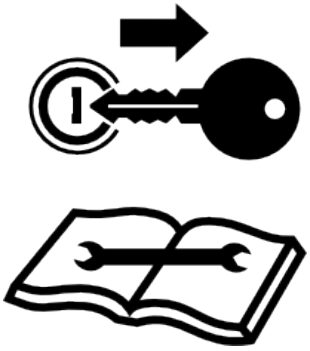
Transport and parking

	ALWAYS comply with local public authority regulations when transporting the wood chipper on public roads.
	ALWAYS keep the ejector spout completely down to the bottom during transport. Remember to ensure that the transport lock is engaged.
	ALWAYS keep the ejector spout within the width of the machine during transport. Remember to ensure that the ejector spout is securely fastened.
	ALWAYS place the foldable funnel in the transport position during transport. (the funnel must be folded up and locked with the pin)
	ALWAYS ensure that all of the wood chipper lights work correctly before operating.
	 **ALWAYS** park the wood chipper on a level surface.



NEVER park the wood chipper on inclined or uneven surfaces.

Service and repairs

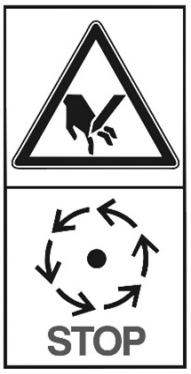


ALWAYS remove the key from the ignition and ensure that the disc has stopped moving before carrying out service or repairs.

ALWAYS ensure, after service or repair, that all of wood chipper bolts are fitted and tightened securely and that all of the safety devices are fitted and function properly.

ALWAYS ensure that the knives, counterknives and rollers are kept sharp. This results in smoother in-feed, higher woodchip quality and less fuel consumption.

NEVER carry out service or repairs on the wood chipper while the key is in the ignition lock.



NEVER remove or open the guards before the disc has stopped moving.

Pictograms used

<table>
<tr>
<td>

Warning:
Ejected objects!

Warning:
Safety distance of 20m!</td>
<td>

Warning:
Rotating knives!

Warning:
Wait for rotor disc to stop!</td>
<td>

Warning:
Crushing hazard!

Warning:
Rotating rollers!</td>
</tr>
<tr>
<td>

Warning:
Crushing hazard!

Warning:
Rotating belts!</td>
<td>

Warning: Danger of severed limbs!</td>
<td>

Warning:
Read the instruction manual before use!



Warning:
Remove the ignition key and read the user manual before service or repairs.</td>
</tr>
</table>



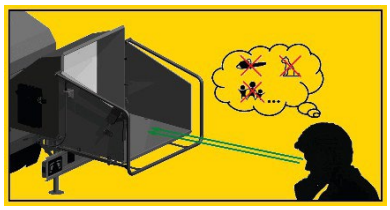
Warning:
Hot surface!

Warning:
Crushing hazard!

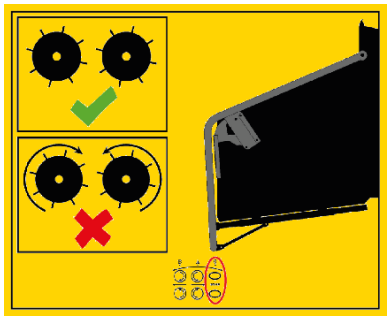
Warning:
Do not step on the funnel!

Warning:
Do not touch the funnel!

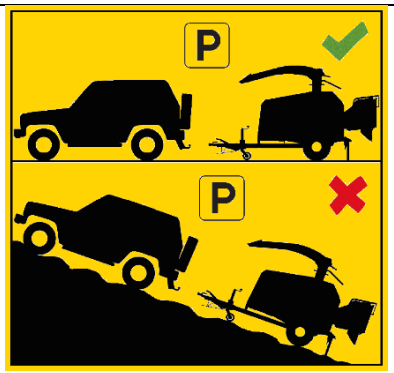
Warning:
Do not climb into the funnel!



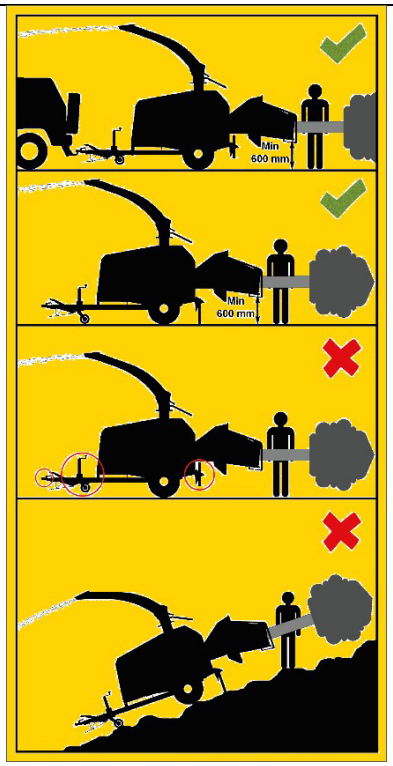
Warning:
Make sure there are no people, animals or other objects in the funnel!



Warning:
Ensure that the safety bar works.



Warning:
Do not park on uneven or inclined surfaces!

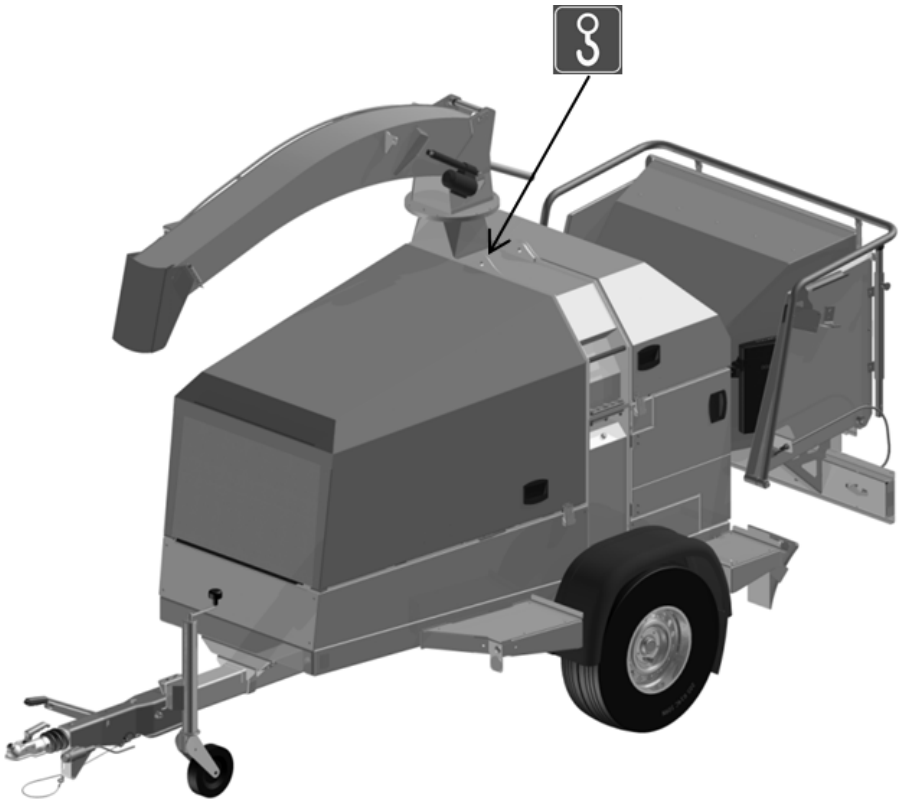


Warning:
Do not operate the wood chipper without support from the jack and support leg or from the vehicle's trailer hitch!

Warning:
Do not operate the wood

		chipper on uneven or inclined surfaces!
 **Warning:** Danger of scalding!	 Ear and eye protection mandatory!	 Lifting point for crane!

Lifting points



The wood chipper is equipped with one or two lifting points, which must be used whenever it is lifted by a crane or other lifting gear (with hooks).

Sound level

The sound output level and the sound pressure level from each wood chipper has been measured during use with the disc at nominal rpm, powered by the engine. For specific RPM and engine type (See the Disc RPM table section).

The measurements have been conducted in accordance with testing provisions

Directive 2000/14/EC, 3 July 2000

EN ISO 3744, 1995

ISO 11201, 1995

ISO 4871, 19 March 1997

EN 13525, 17 February 2005

The guaranteed sound output level which must be stated by the manufacturer in accordance with Directive 2000/14/EC is as follows:

TP 166 MOBILE:	**124 dB (A) relative to 1 pW**
TP 176 MOBILE:	**123 dB (A) relative to 1 pW**
TP 215 MOBILE:	**125 dB (A) relative to 1 pW**
TP 280 MOBILE:	**129 dB (A) relative to 1 pW**

The wood chipper's sound pressure level at the operator's position is measured in accordance with ISO 11201:

TP 166 MOBILE:	**103 dB (A)**
TP 176 MOBILE:	**102 dB (A)**
TP 215 MOBILE:	**107 dB (A)**
TP 280 MOBILE:	**110 dB (A)**

The values stated above are subject to the common uncertainty of the measuring method and the estimated variation in a product series for the type of machine. Detailed information about the measurements and results and estimation of uncertainty are found in a detailed report which can be supplied on request.

As a result of the actual sound levels, the wearing of ear protectors is mandatory when using the wood chipper.

Environmental instructions

When changing hydraulic oil or engine oil, oil and used oil filters and air filters must be disposed of at an approved waste disposal station.

Oil spillage must be avoided as far as possible. Should oil spillage occur, the spilled oil must be cleaned up and disposed of at an approved waste disposal station.

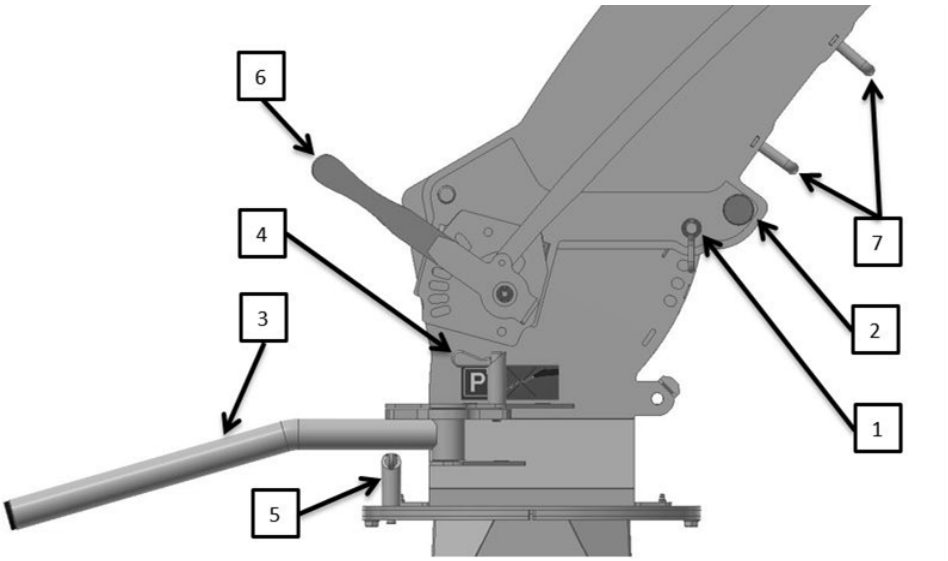
Worn out parts must be disposed of for recycling.

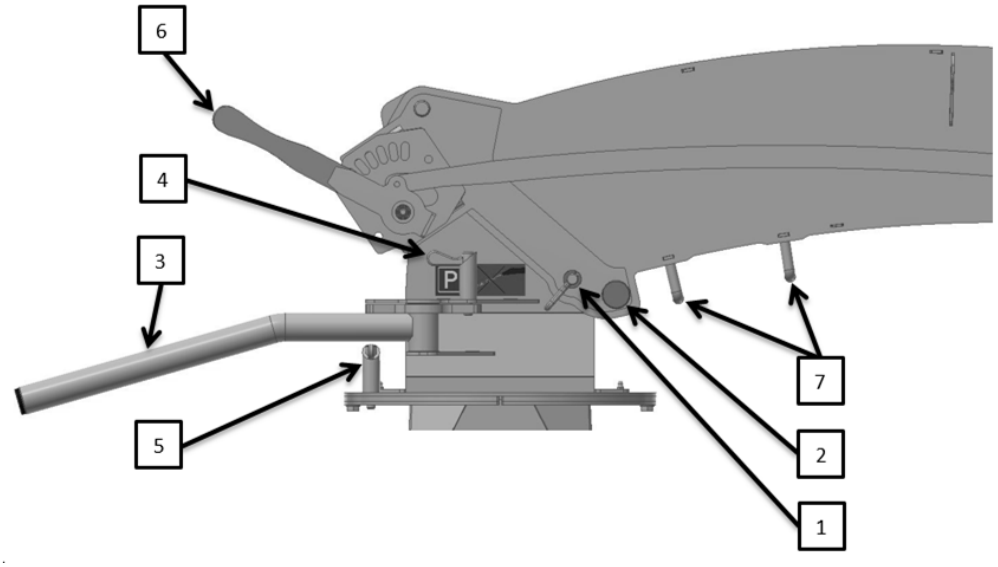
When the wood chipper is worn out it must be disposed of responsibly. Hydraulic oil and engine oil must be drained and disposed of along with oil filters and air filters at an approved waste disposal station.

The rest of the wood chipper must be disposed of at an approved recycling centre.

TP Variospout

The wood chipper can be equipped with TP VARIO SPOUT, which is a height-adjustable ejector spout, which has different operating positions (five or six, dependent on the model) and one transport position. To adjust the ejector spout height manually, use the handle (7) once the sliding bolt (1) and sliding bolt (2) are loosened. To re-secure the ejector spout in the desired position, lock the sliding bolt (1). The wood chipper may only be operated when the ejector spout is within the operating positions at the sliding bolt (1). (See illustration below).





NB: When operating the TP VARIO SPOUT, no persons must be present in the ejection area. At the same time, exercise caution when lowering the TP VARIO SPOUT into the transport position, because the end of the ejector spout reaches head height, and this is a potential hazard.

To rotate the TP VARIO SPOUT use the handle (3) once the sliding bolt (5) is loosened. To re-secure the TP VARIO SPOUT, lock the sliding bolt (5) in the desired position. The handle (3) can be turned in the opposite direction for operating from the front of the TP VARIO SPOUT. To do this, loosen the sliding bolt (4) and turn the handle 180 degrees until the sliding bolt (4) once again can lock
the handle.

The tilting spout is operated using the handle (6), which tilts away from the front position plate. Next, move the handle (4) to the desired position and again release, the handle (4) subsequently locks the tilting spout in the desired ejection position.

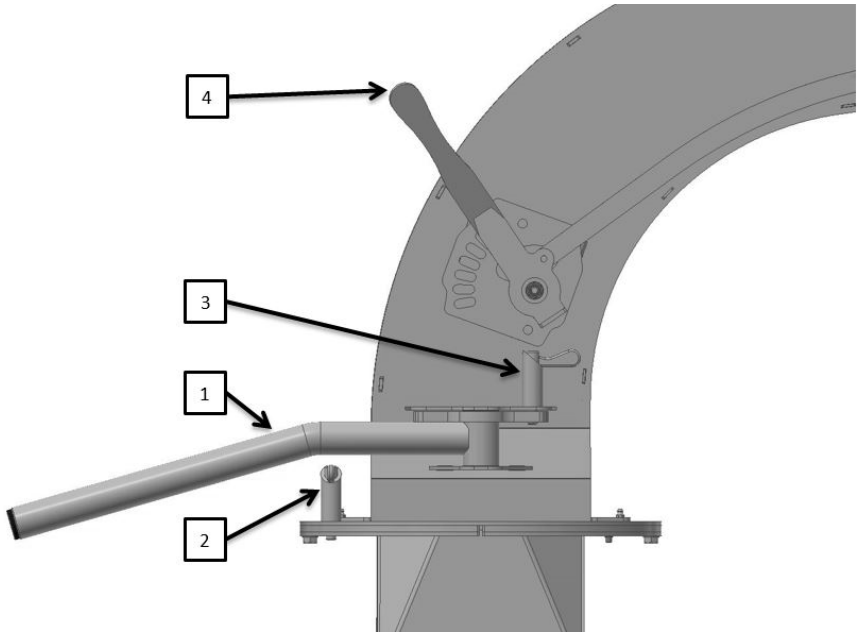
When the wood chipper is to be parked or transported, completely lower the ejector spout manually using the handle (7) when the sliding bolt (1) is loosened. Check subsequently and before transportation on public roads, that the sliding bolt (2) is locked and engaged. (see illustration above).

During transport, the TP VARIO SPOUT must always be within the machine's width and the sliding bolt (5) must be locked.

Fixed ejector spout

The wood chipper may be equipped with a fixed ejector spout. To turn the ejector spout, use the handle (1) once the sliding bolt (2) is loosened. To re-secure the ejector spout, lock the sliding bolt (2) in the desired position. The handle (1) can be turned in the opposite direction for operating from the front of the ejector spout. This is done by loosing the sliding bolt (3) and turning the handle 180 degrees until the sliding bolt (3) once again can lock the handle (see illustration below).

The tilting spout is operated using the handle (4), which tilts away from the front position plate. The handle (4) can then be moved to the desired position and released again, thereby locking the tilting spout in the desired ejection position.



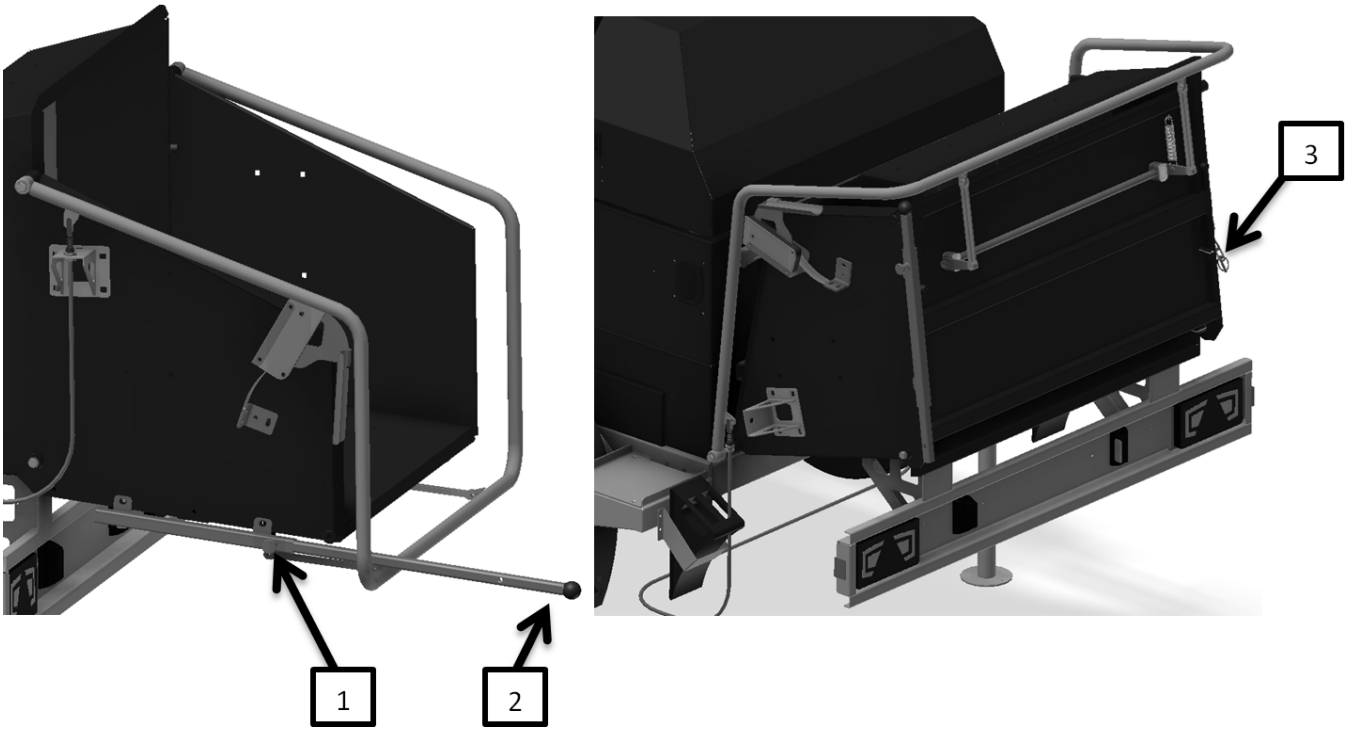
NB: When operating the ejector spout, no persons must be present in the ejection area. During transport, the ejector spout must always be within the machine's width and the sliding bolt (2) must be locked.

Foldable funnel

The purpose of the foldable funnel is to minimise the total length of the mobile wood chipper during transport and storage.

The foldable funnel must always be in the transport position during transport on public roads.

Transport position



1. Pull out the sliding bolt (1) while pulling out the lever (2).
2. Now fold up the funnel by lifting the lever (2) (use both hands).
3. Once the funnel is folded up, secure it using the ring pin (3) in the right side.
4. Pull out the sliding bolt (1) and push the lever (2) back into its starting position. The funnel is now in the transport position.

Operation position

To put the foldable funnel into the operating position, repeat the transport position procedure in reverse order.

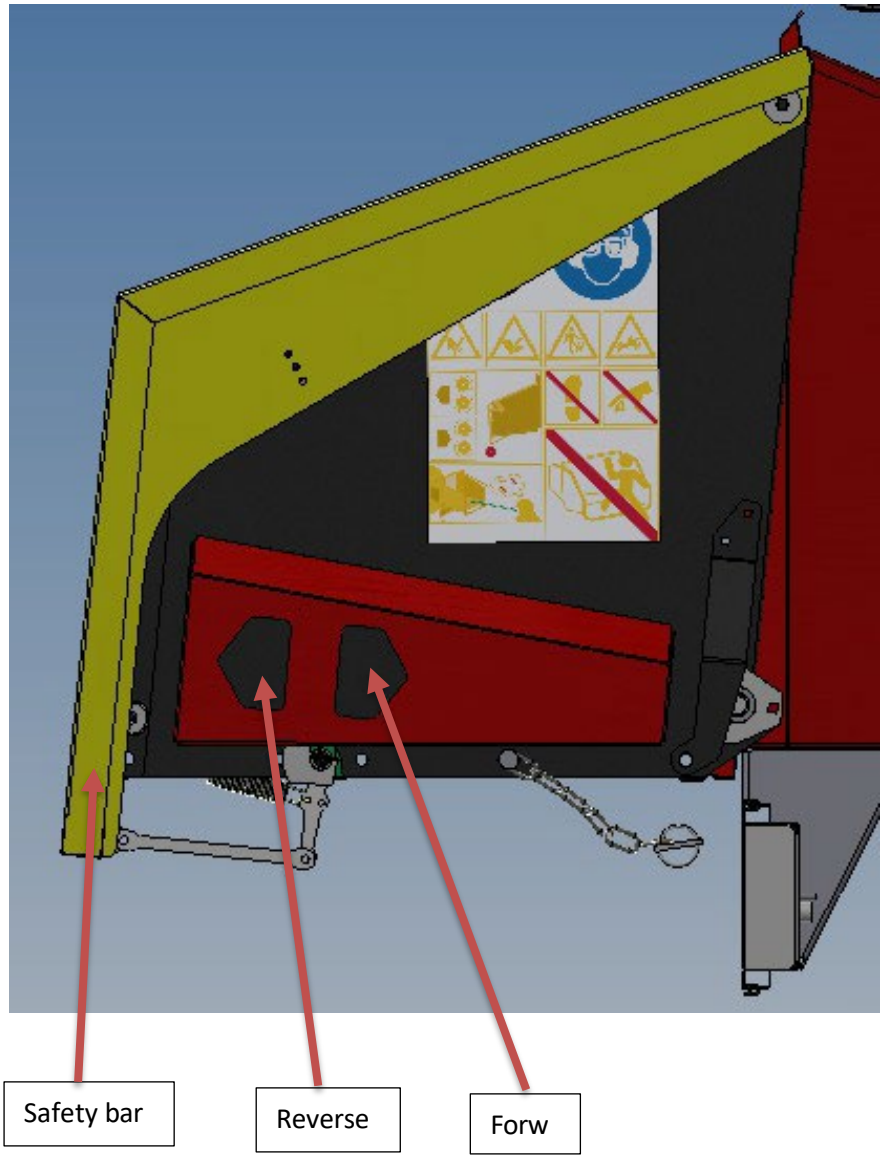
E-control

The Easy control function allows the user to control the advance, return and reset of the feed rollers.

To reset the emergency stop, press the “forward” button once. Then the machine is ready to operate and pressing the button once more will start the feed rollers.

To reverse the feed, press the “reverse” button for as long as the reverse function is required. When the button is released, the feed rollers will stop.

Feed can be stopped either by pressing the “reverse” button or by pressing the safety bar.



Starting the engine - Kubota diesel

Turn the key from position O to position I.

The lights in the key ignition will switch on. When the preheating light goes out, the key can then be turned to position II and held there until the engine engages.

The engine will now idle until the chipper is started, (see section “TP starter”).

If the engine does not start after 15 seconds, turn the key back to position I. A new attempt can be made after 30 seconds.

Initiate troubleshooting procedures if the engine does not engage after the second attempt.

The engine can be switched off by turning the key to position O.



TP Starter

A general rule for all chippers and motors that that the rotor should not be engaged while there is material in the rotor housing.

To avoid this, we recommend that you keep the rotor spinning until you are sure that the rotor housing is empty before stopping the machine.

We also recommended that the engine is warmed up by running it on idle for 1-2 minutes before engaging the rotor.

TP-starter is a patented function that engages the chipper while increasing the engine speed.

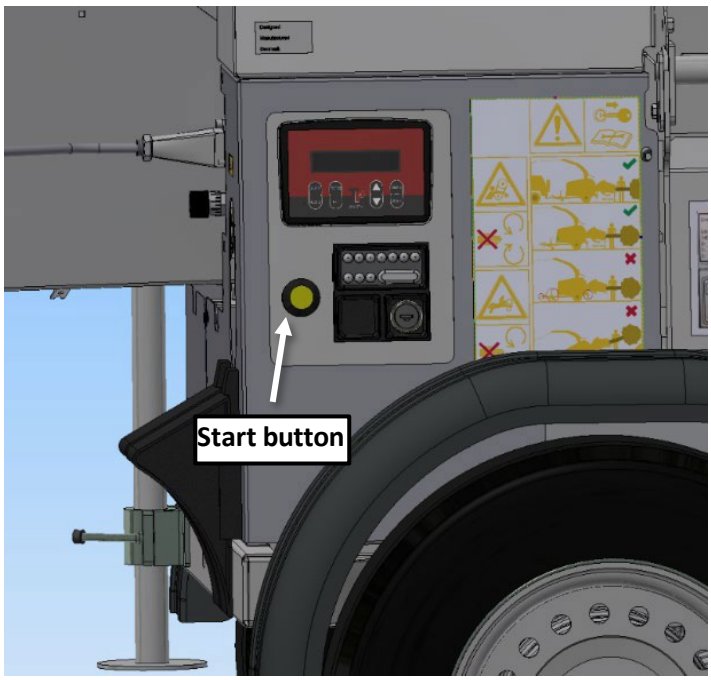
Rotor engagement on machines with electric TP starter.

An electric actuator is used to engage the rotor on machines with an electric TP starter.

When the yellow start button is pressed, the actuator moves forwards. After a few seconds this tensions the V-belts while increasing the engine speed.

The machine is fully engaged after about 15 seconds. If you hear a sound as the V-belts engaging, this is completely normal.

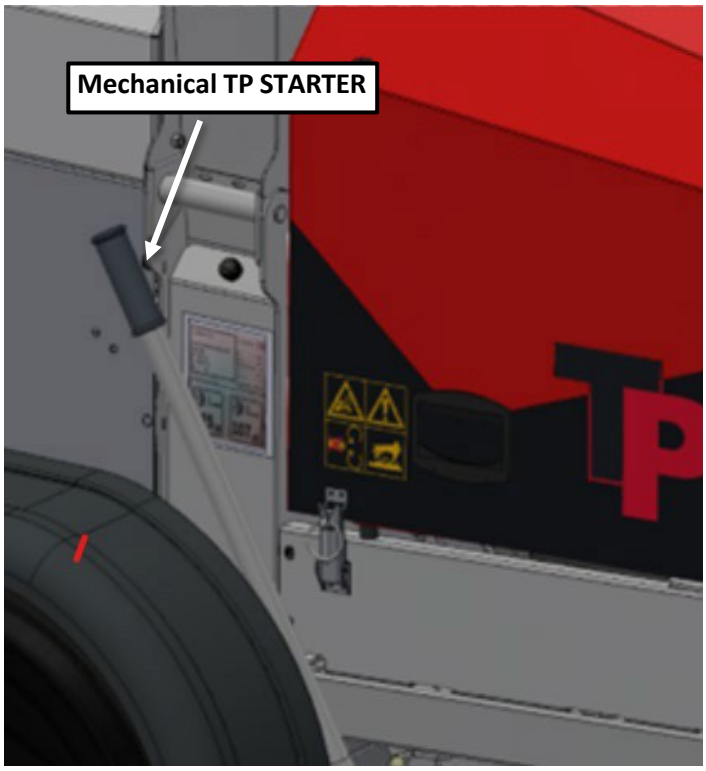
Stop the machine by pressing the TP-start button.



Switching on machines with mechanical TP starter

For machines with a mechanical TP starter, use the TP starter handle to increase engine RPM while activating the rotor. Do this by moving the lever from horizontal to vertical position (as shown).

Stop the machine by moving the handle to horizontal position.

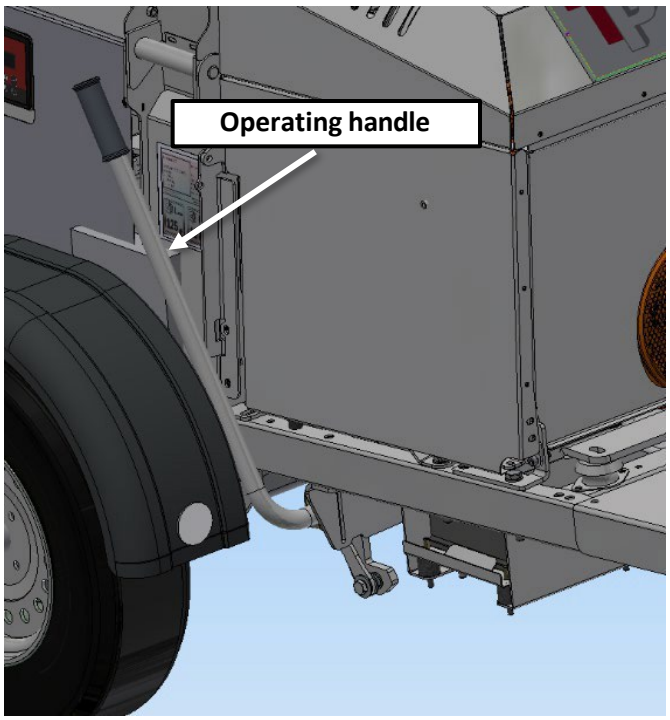


Switching on machines without TP starter

Moderately increase motor RPM using the throttle lever on the engine. Slowly drag the handle from horizontal to vertical position to engage the rotor. Use the throttle to increase motor/disc RPM to operating speed. The wood chipper is now ready for operation.

Lower the operating handle to disengage the rotor. Then use the throttle to decrease motor RPM to idle.

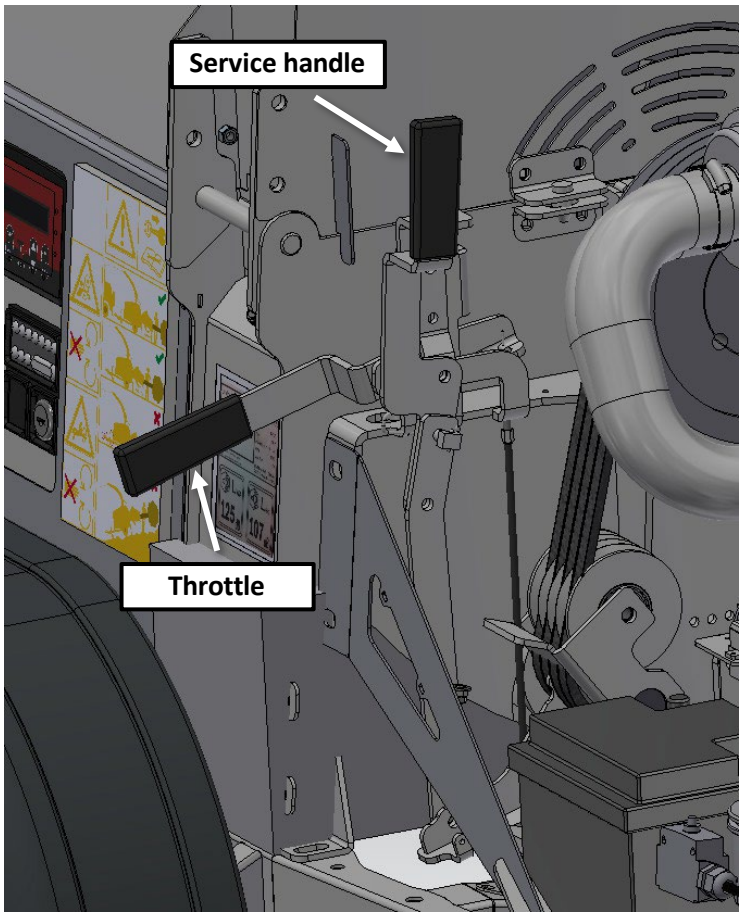
The engine must be running in idle before it is stopped. Stop the engine by turning the start key anticlockwise.



Direct drive without TP starter

The rotor is permanently engaged and is started using the ignition key. Engine speed is increased using the throttle lever. The direct drive can be disengaged using the service lever when changing belts or performing other service operations.

The engine must be running in idle before it is stopped. Stop the engine by turning the start key anticlockwise.



Track - hydraulic undercarriage

Track models are equipped with a hydraulically controlled track undercarriage supplied by the chipper's hydraulic system.

The chipper’s hydraulics are diverted to the tracks when tracked drive is engaged.

This means that tracked drive is not possible when the feed system is in use.

TP 215/280 hydraulic pumps are mounted directly on the engine. This allows the tracks to run at low speed, even when the engine is idling. Pressing F3 on the Pilot+ display increases the engine RPM to working level, allowing the tracks to be run at full speed.

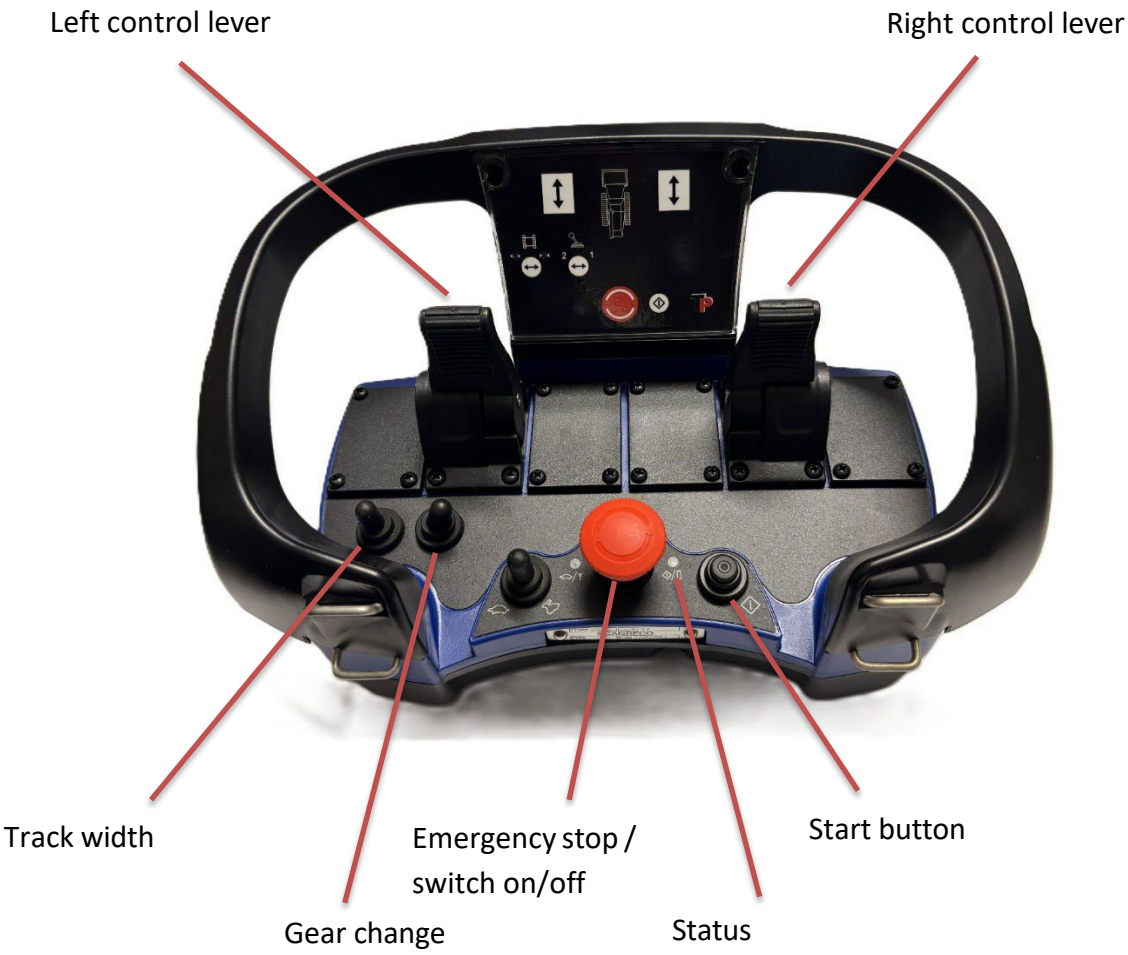
A TP 176 hydraulic pump is mounted on the rotor, which means that the chipper must be started up as for normal operation before hydraulic pressure becomes available to the tracks.

Track with remote control

On models with remote control, hydraulic power is automatically redirected to the track when the remote control is active.

Scanreco remote control for tracks

The remote control can be switched on and off using the emergency stop. The remote control is switched on when the emergency stop has been rotated and released. The start button must then be activated before the remote control is ready for operation. For further information, please refer to the enclosed Scanreco manual.



Left control lever regulates left caterpillar speed (feed funnel facing forwards).

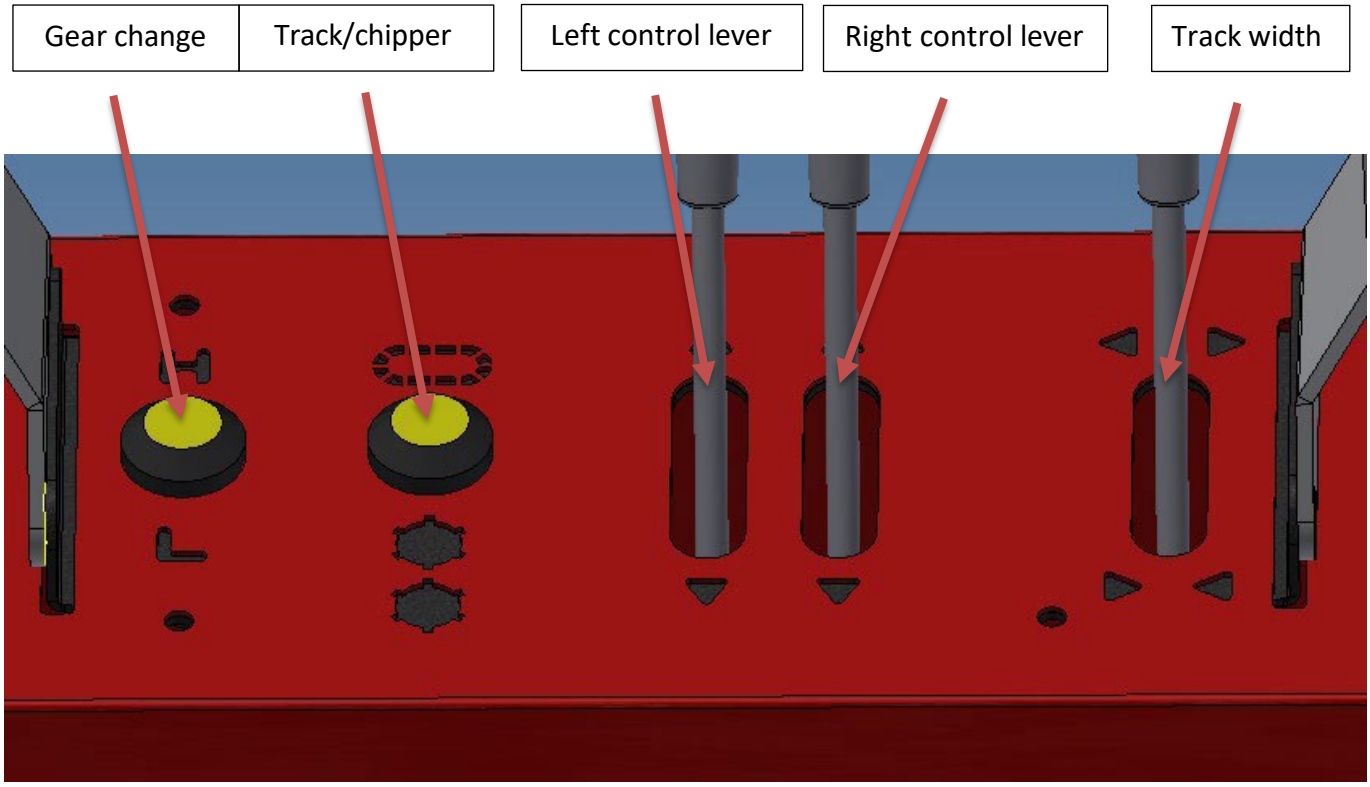
Right control lever regulates right caterpillar speed (feed funnel facing forwards).

The track width can be adjusted using the small control lever as shown above.

Switch between high and low gear using the small control lever as shown above.

Use the emergency stop as an emergency stop and as the on/off switch for the remote control.

Track mechanical valves



Left control lever regulates left caterpillar speed (feed funnel facing forwards).

Right control lever regulates right caterpillar speed (feed funnel facing forwards).

The track width can be adjusted using control lever as shown above.

Switch between high and low gear using the small control lever as shown above.

Maintenance schedule for wood chipper

Function	Interval
Check function of the safety bar	Daily
Check knives and counterknives (incl. sliver breaker - extra equipment)	50 h
Lubricate main bearings for rotor disc	50 h
Lubricate the fixed roller bearings	50 h
Lubricate the revolving roller bearings	50 h
Lubricate TP VARIO SPOUT	50 h
Check function of the safety switch and lubricate if necessary	50 h

This schedule is indicative. Lubrication and knife replacement should be be performed as and when needed.

Authorised service must be performed according to the service schedule.

Maintenance engine - user

Interval=> hours	**10** ⌛
Check oil level	X
Check coolant level	X
Check/clean filter in front of radiator and inside radiator	X
Check/clean air filter (external and internal)	X

The time period between checking the filter elements may vary depending on the conditions which the engine operates in.
The air filter must be cleaned and replaced more frequently in very dusty conditions.

Authorised service

Authorised service must be performed according to the service schedule in the service booklet.

Hydraulic and engine oil

Hydraulic oil table

Model type	Standard oil type	Bio-oil (optional)[8]	Quantity in l
TP 166	Hydraway HVXA 46	Hydraway SE 46 HP	12 L
TP 176	Hydraway HVXA 46	Hydraway SE 46 HP	12 L
TP 215	Hydraway HVXA 46	Hydraway SE 46 HP	25 L
TP 280	Hydraway HVXA 46	Hydraway SE 46 HP	28 L

Engine oil table

Model type	Engine type	Oil type:	Oil capacity (maximum level) *With oil filter*
TP 166 PETROL	Honda GX630-GX690	TITAN UNIVERSAL HD 15W-40	1.7
TP 166 PETROL	Kohler CH732	TITAN UNIVERSAL HD 15W-40	1.5
TP 176 DIESEL	KDW - 1404	TITAN UNIVERSAL HD 15W-40	5
TP 176 DIESEL	Kubota D1305	TITAN UNIVERSAL HD 15W-40	4.5
TP 176 DIESEL	Kubota D1505	TITAN UNIVERSAL HD 15W-40	4.5
TP 176 PETROL	Kohler ECH980	TITAN UNIVERSAL HD 15W-40	1.9
TP 215 DIESEL	Hatz 3H50	Cargo maxx SAE 10w 40	5.0
TP 280 DIESEL	Hatz 4H50	Cargo maxx SAE 10w 40	7.0

Rotor speed

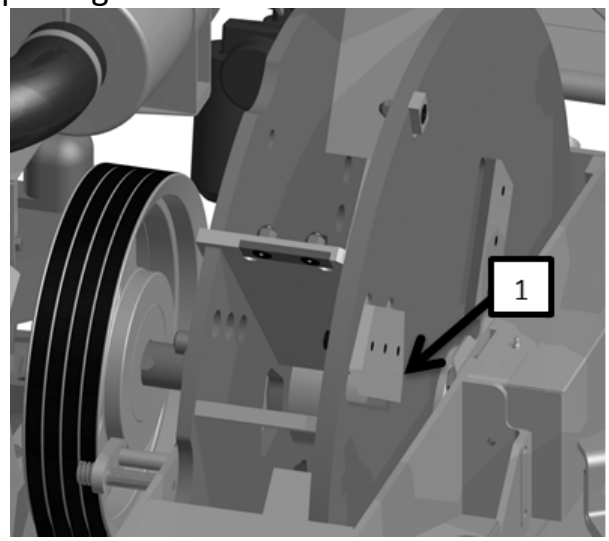
Model	Rotor Rpm (nominal)	rpm 1 L	rpm 1 h	Programme No.
TP 166 MOBILE PETROL (HONDA/KOHLER)	1482	1340	1450	166Mobil
TP 176 MOBILE DIESEL (KOHLER 1404)	1280	950	1100	TP176KL
TP 176 MOBIL/TRACK DIESEL (KUBOTA 1305)	1375	950	1100	TP176KL
TP 176 MOBIL/TRACK DIESEL (KUBOTA 1505)	1360	950	1100	TP176KL
TP 176 MOBILE PETROL (KOHLER ECH980)	1440	950	1100	TP176KL
TP 176 MOBILE ZE	1250	1250	1350	TP175ZE
TP 215 MOBILE/TRACK DIESEL (HATZ 3H50)	1340	1160	1250	TP215 MOBILE
TP 215 MOBILE ZE	1385	1160	1250	TP215ZE MOBILE
TP 280 MOBILE/TRACK DIESEL (HATZ 4H50)	1050	900	980	TP280 MOBILE

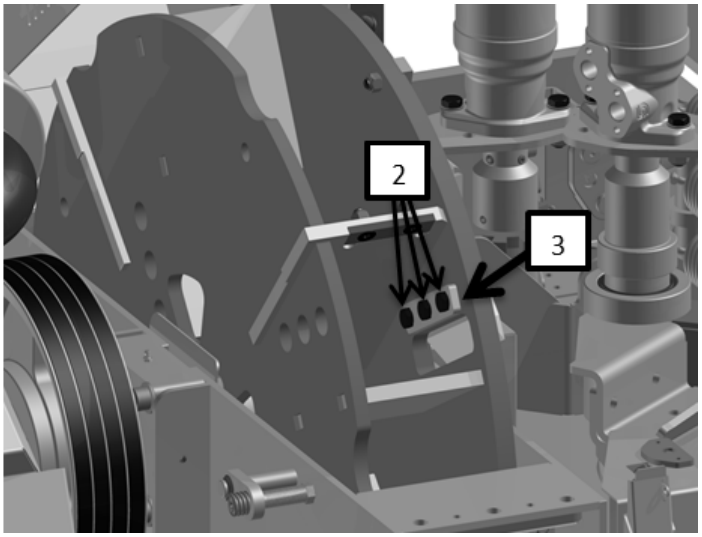
Knives

The wood chipper is fitted with two knives (TP 166, TP 176) and four knives (TP 215, TP 280).

The knives must always be changed as a set. Knives must be kept in a set, even when sharpening. This ensures they are always of uniform width. Knives that are not uniform in width will unbalance the rotor disc, causing unnecessary bearing loads, making the entire wood chipper vibrate.

Replacing knives

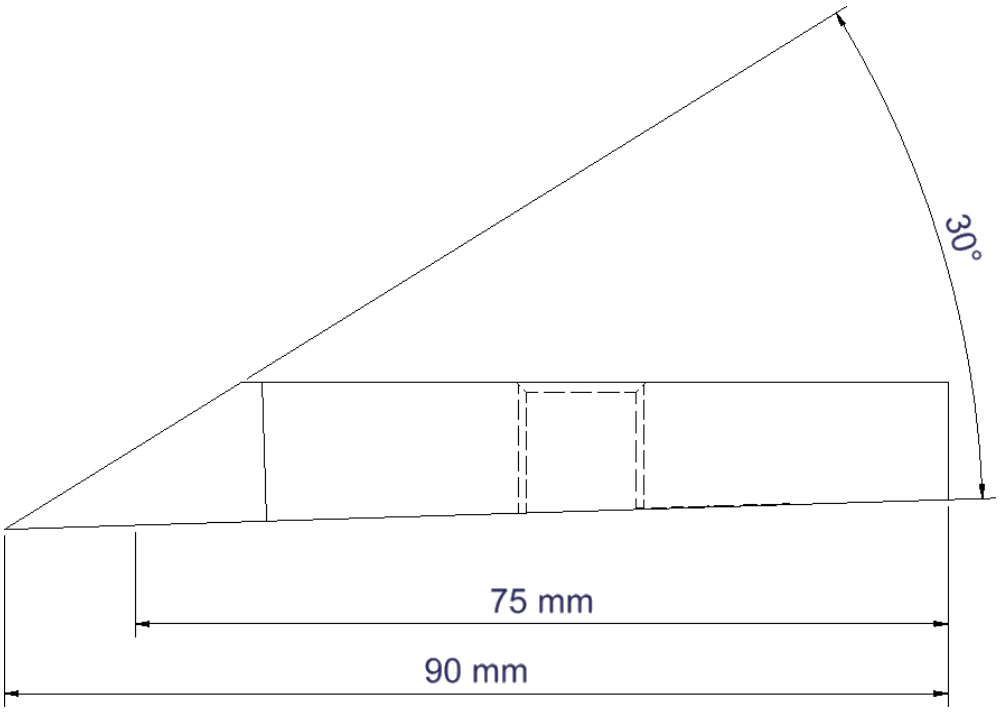




The images shown are examples. Other blade designs are available.

1. Open the rotor housing.
2. Remove the bolts (2) that secure the knives and clamping plates (3)/sliver breaker to the disc.
3. Remove the knives and sharpen/replace.
4. Carefully clean the knives (1), clamping plates (3)/sliver breaker and contact faces.
5. When fitting the knives (1), the bolts (2) must be lightly oiled (μ=0.125), i.e. light oil, WD 40 or equivalent. Do not use copper grease, MoS_2 or similar low friction grease.
6. Check that the distance between the knife edge and the counterknife is set correctly to **D** (see replacement of the counterknife). Check all of the knives.
7. Tighten the bolts (2) to **110 Nm / 11 KPm**. Use a torque spanner for this purpose (available as extra equipment).
8. Finally, close the rotor housing.

Sharpening knives



It is very important for woodchip quality that the knives are sharp. They must therefore be checked at least once a day. The grinding interval of the knives can be prolonged by grinding them regularly with a carborundum stone.

The grinding process must be wet grinding with a header. Never use an angle grinder or a similar tool to sharpen knives.

When sharpening knives, all knives in the set must be of uniform width. Uniformity of width is essential to keep the rotor disc in balance. This means that the knives must always to be ground as a full set. The knives must not be ground down to a width of less than 75 mm. Knives must be discarded when narrower than this.

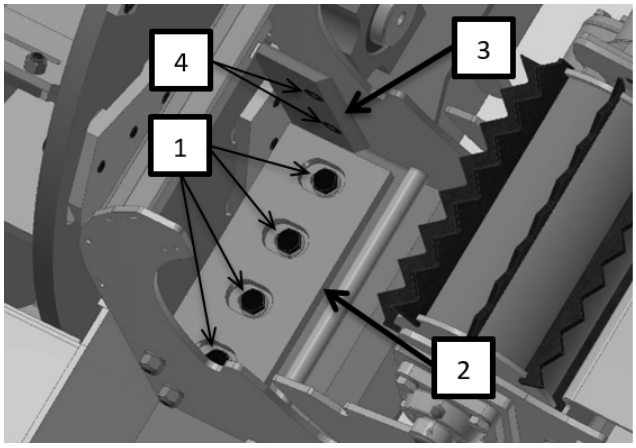
The edge of the knives must be ground at a 30° angle.

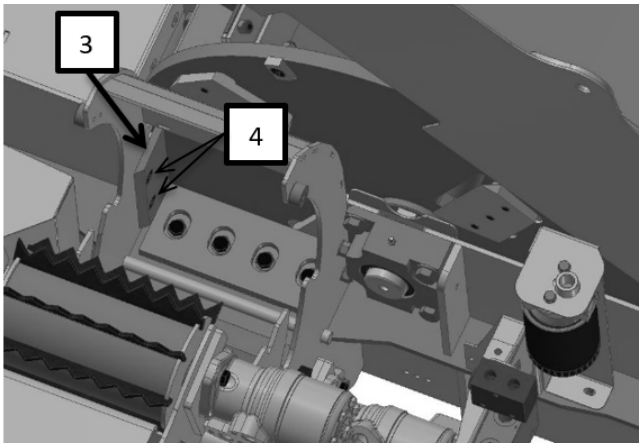
Counterknives

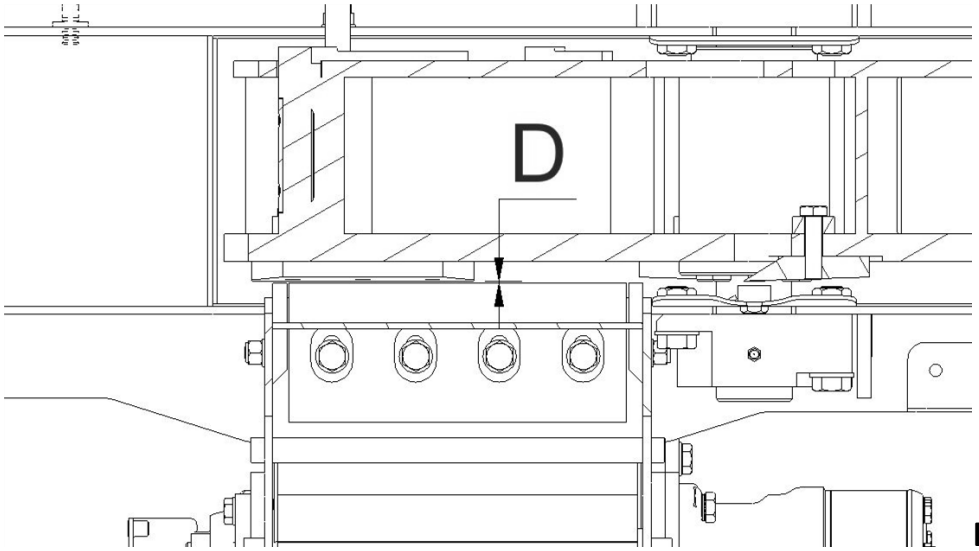
Counterknife TP 166, 176 & 215

The counterknives in the wood chipper are used as counter blade to chop the wood. The counterknife must have a sharp edge otherwise the wood will bend and the cutting face become frayed. The wood chipper is equipped with a vertical counterknife (one or two, dependent on the model) in the sides of the in-feed and a horizontal counterknife in the base. The horizontal counterknife has two cutting edges and therefore can be reversed.

Changing the counterknife







D = 1.5 mm

1. Open the rotor housing as described in “Opening and closing the rotor housing”.
2. Open the roller console as described in “Opening the roller console”.
3. Remove the M10 countersunk bolts (4), which hold the vertical counterknife in place (3) (one or two, depending on model).
4. Remove and replace the vertical counterknife (3) (one or two, depending on model).
5. Remove the M12 bolts (1) (three or four, dependent on the model), which hold the horizontal counterknife (2) in place.
6. Remove the horizontal counterknife (2) and reverse or replace.
7. Carefully clean the counterknife (2,3) and contact surface.
8. Re-fit the counterknives (2,3) and adjust the distance between the knife edge and the counterknife to distance **D** using a precision feeler gauge (see illustration above).
9. The bolts in the horizontal counterknife (2) must be tightened to:

   100 Nm / 10 KPm. (For TP 166, TP 176)

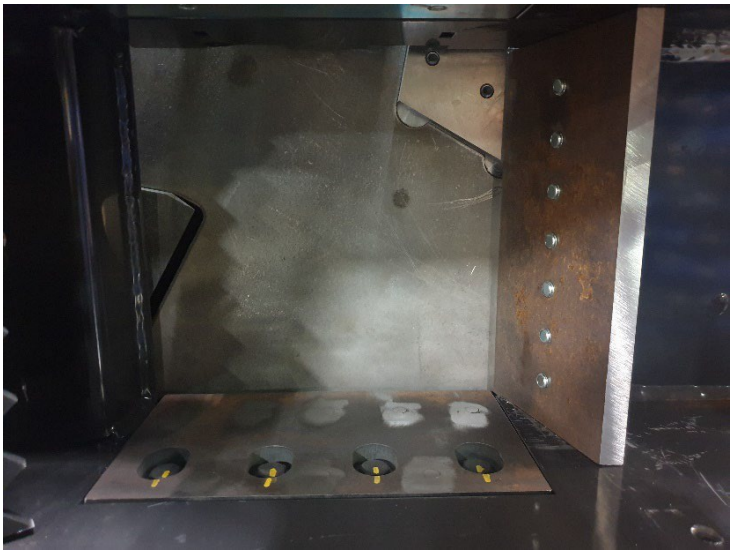
   110 Nm / 11 KPm. (For TP 215)

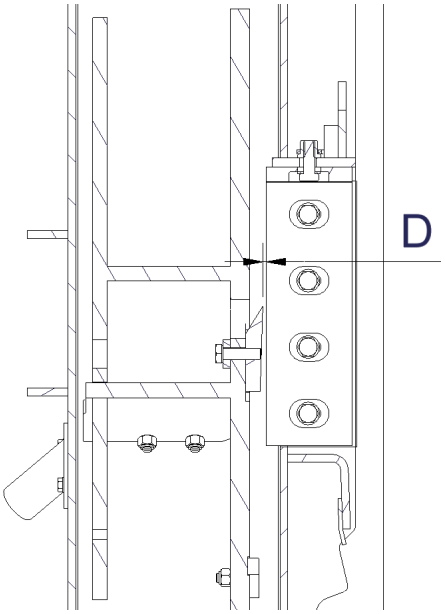
   Use a torque spanner for this purpose (available as extra equipment).
10. The bolts in the horizontal counterknife (3) must be tightened to **50 Nm / 5 KPm.** Use a torque wrench to do this. (Available as extra equipment).
11. Once the counterknives (2) have been reversed or replaced (3) and all of the bolts (1,4) have been tightened, close the roller console.
12. Finally, close the disc housing.

Counterknife TP 280

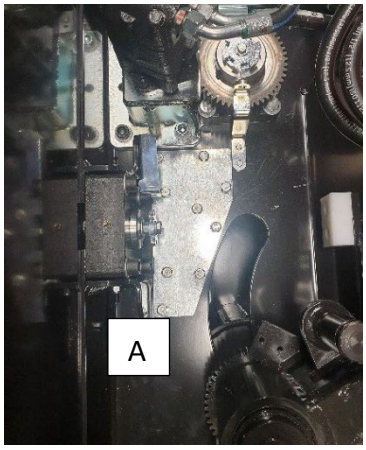
The counterknives in the wood chipper are used as counter blade to chop the wood. The counterknife must have a sharp edge otherwise the wood will bend and the cutting face become frayed. The wood chipper is equipped with a vertical counterknife in one side of the in-feed and a horizontal counterknife in the base. The horizontal counterknife has two cutting edges and therefore can be reversed.

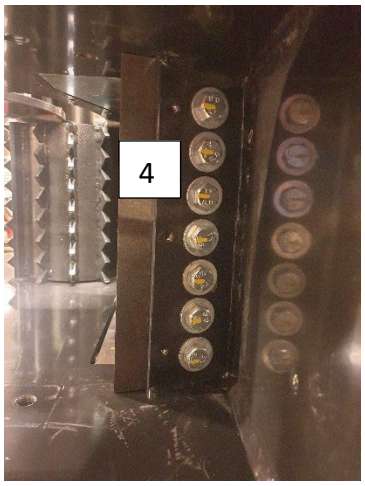
Changing the counterknife





D = 1.5 mm





- Open the rotor housing as described in the section “Opening and closing the rotor housing”.
- Open the roller console as described in the section “Opening the roller console”.
- Remove the three springs as described in “Opening the roller console”.
- Remove the top plate (A).
- Remove the seven M10 countersunk bolts (4), which hold the vertical counterknife in place. The side panel must be open. See picture
- Remove and replace the vertical counterknife.
- Remove the four M12 bolts, which hold the horizontal counterknife in place.
- Remove the horizontal counterknife (2) and reverse or replace.
- Carefully clean the counterknife and contact surface.
- Re-fit the counterknives and adjust the distance between the knife edge and the counterknife to distance **D** using a precision feeler gauge (see illustration above).
- The bolts in the horizontal counterknife (2) must be tightened to **110 Nm / 11 KPm.** Use a torque spanner for this purpose (available as extra equipment).
- Once the counterknives have been reversed or replaced and all of the bolts have been tightened, close the roller console.
- Finally, close the disc housing

Square and triangular wipers and scrapers

The wood chipper is equipped with two square wipers on the disc and a triangular scraper in the disc housing.

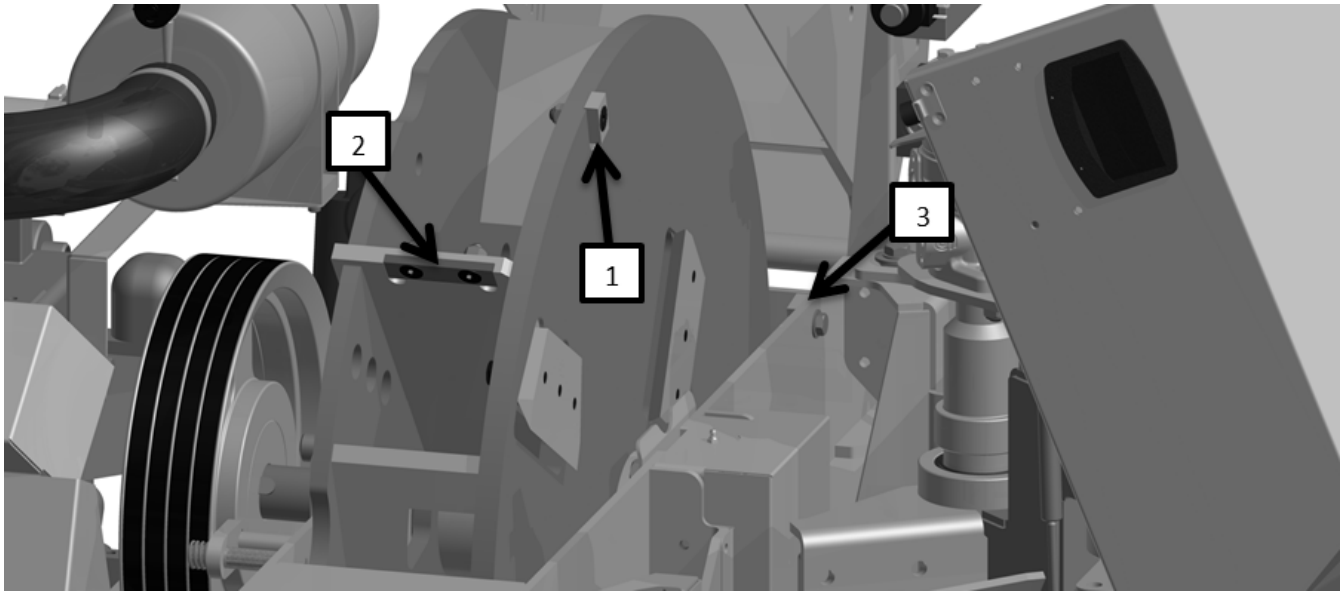
The square and triangular wipers serve to remove material that can get stuck around the knives.

The square wiper also removes any material that falls off in front of the rotor disc.

This reduces fuel consumption and casing wear.

A square wiper can be reversed once before it needs to be replaced. The triangular wiper should always be replaced when worn. The square wipers belong together as a set and must always be replaced in pairs.

Changing the square and triangular wipers



1. Open the disc housing.
2. Remove the two square wipers (1), the four scrapers (2) and the triangular scrapers (3).
3. Reverse the square wiper (1) 180 degrees around the bolt hole, so that the worn corners face in towards the disc's centre of rotation. Wipers must be replaced if both corners or sides are are worn.

   Reverse the scraper (2) 180 degrees so that the worn side faces into the disc's centre of rotation. If both sides are worn, replace the scrapers.

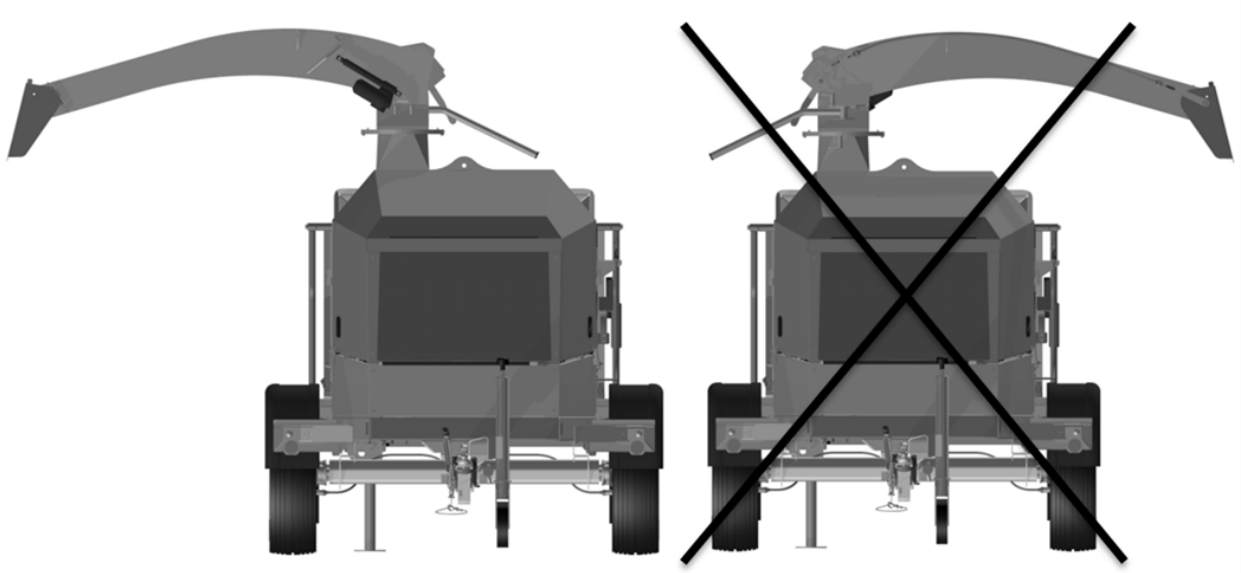
   The triangular wiper (3) is non-reversible and must always be replaced.
4. Clean the contact surfaces, wipers (1, 3)/scrapers (2) and re-fit.
5. Finally, close the disc housing

Opening and closing of disc housing

The wood chipper key must be removed from the ignition when opening the disc housing and only re-inserted after the disc housing has been closed!

Opening the disc housing

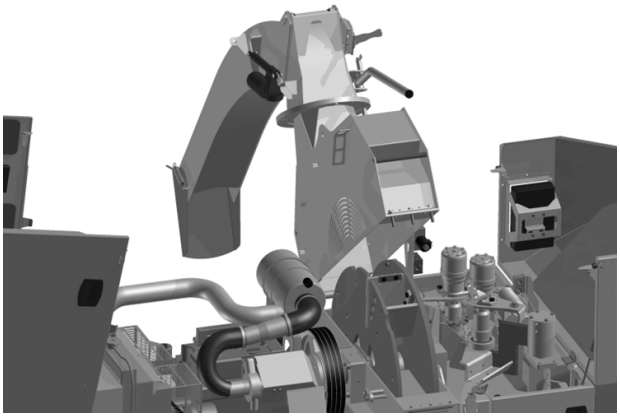
1. Check that the wood chipper key is removed from the ignition and that the disc is completely still.
2. Lower the ejector spout all the way to the bottom. (For models with TP VARIO SPOUT, please read the appropriate section).
3. Rotate the ejector spout to face in the opposite direction to the disc housing (see illustration below).
4. Open the bonnet. The bonnet is locked with an external latch on each side.



5. Loosen the three bolts that secure the disc housing top and bottom parts together (see the illustration below).

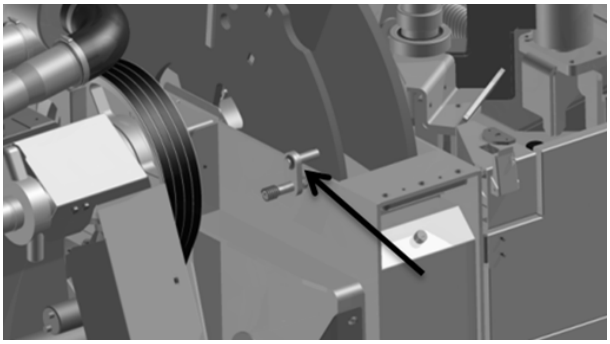


6. For easier access to the disc open the cover over the feed funnel. The cover is locked with an external catch on each side.
7. Open the top section of the disc housing until it meets the stop. (See illustration below).



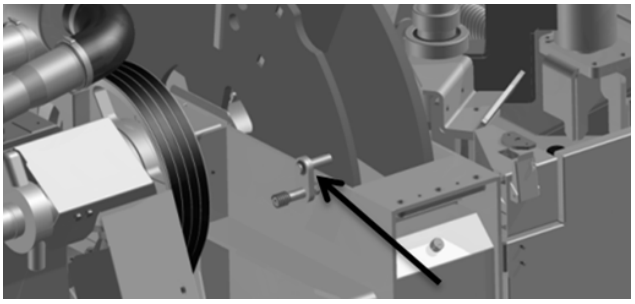
8. Turn the disc until the yellow disc lock can go into one of the holes on the disc. The disc is now locked. Keep fingers away from the knives when the disc is being turned.

   As far as possible, the disc must always be locked when the disc housing is open. (See illustration below).

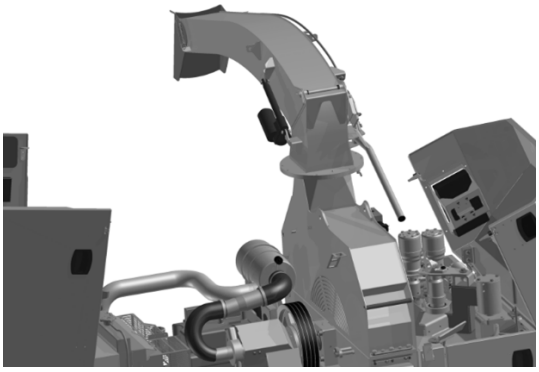


Closing the disc housing

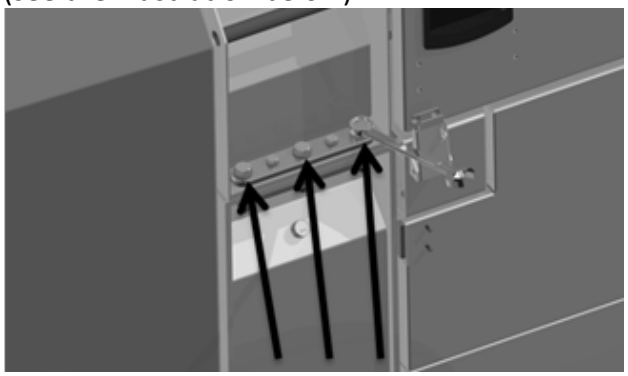
1. Free the yellow disc lock from the disc and turn the disc a few times to make sure that there are no objects in the disc housing. Exercise caution and keep fingers away from the knives when the disc turns (see illustration below).



2. Lock the top part of the disc housing (see illustration below).



3. Tighten the three bolts to secure together the top and bottom parts of the disc housing (see the illustration below).



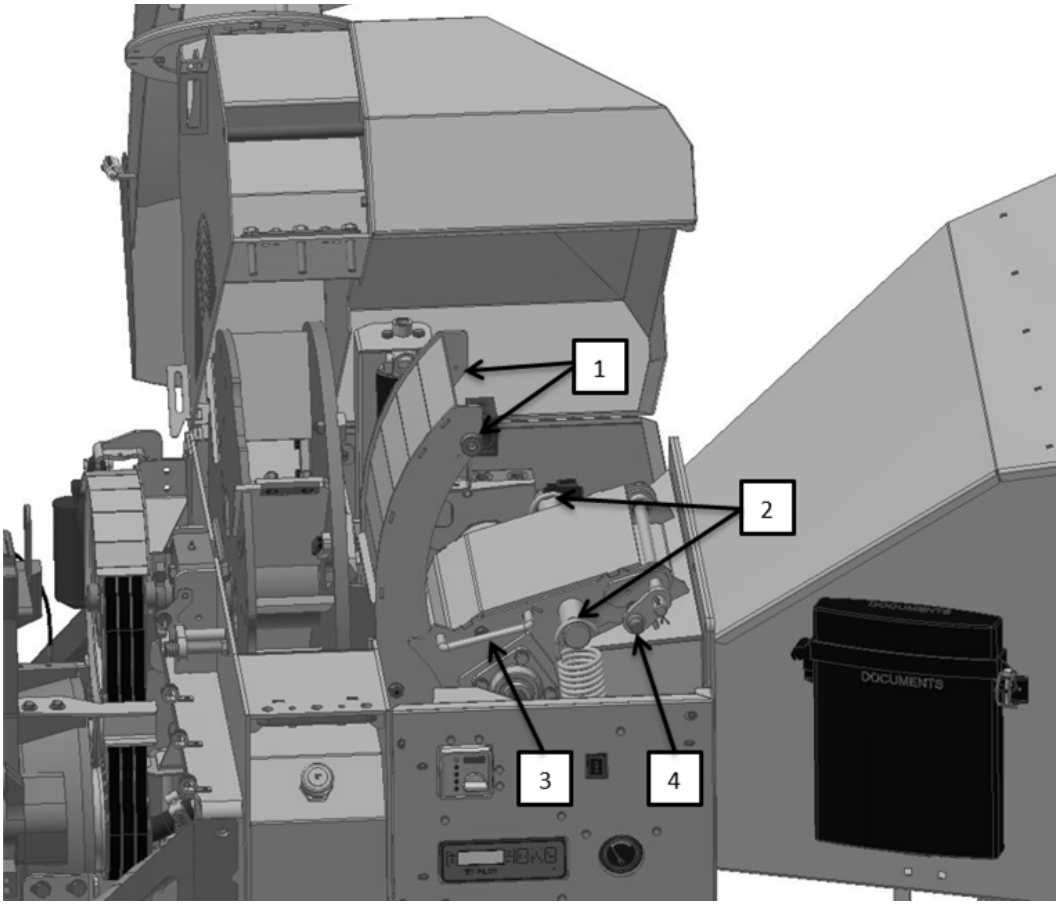
4. Close the bonnet and the cover above the in-feed section and lock them securely using the external catches. Turn the ejector spout into place and lock it. (See Operating the wood chipper in chapter 8).

Opening and closing the revolving roller.

Opening the roller console

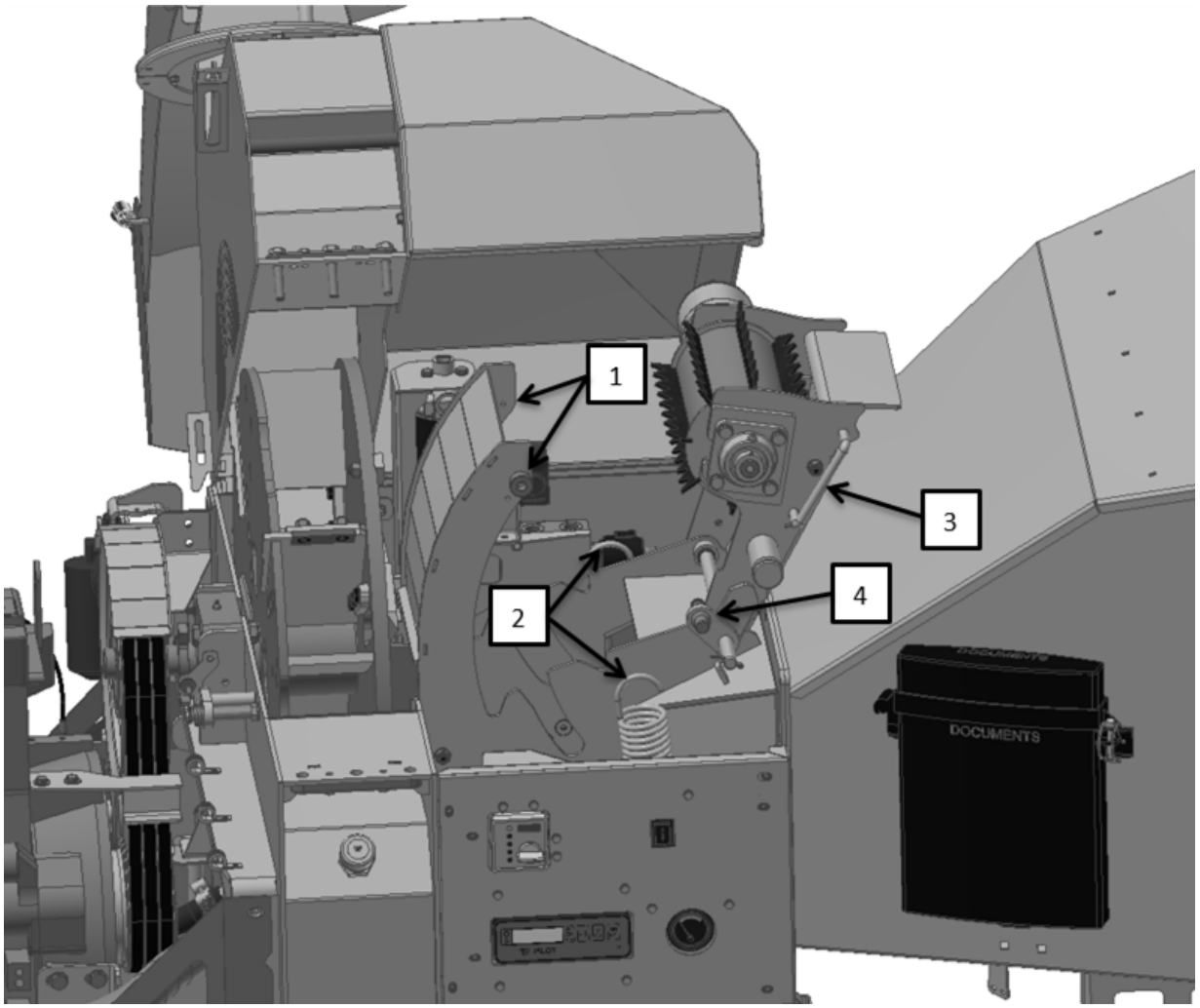
The roller console's retention force is created by springs (one or two, depending on the model).

When adjusting and replacing the counterknife, and if necessary, when opening the roller console to remove any foreign bodies in the in-feed, the springs must be removed (See illustration below).



1. Open the disc housing, as described earlier in this chapter.
2. Remove the stop bushing (1), which limits the roller console's movement range.
3. Using multigrip pliers or a flat fibre strap, lift the springs (2) from the roller console (be careful to keep your fingers away from the spring , when lifting it from the roller console).
4. Grip the handle (3) and lift the roller console up until the roller console touches the top of the opening.
5. Push the locking pawl (4) into the lock on the the roller console side panel.
   The roller console is now open and secured from falling down.

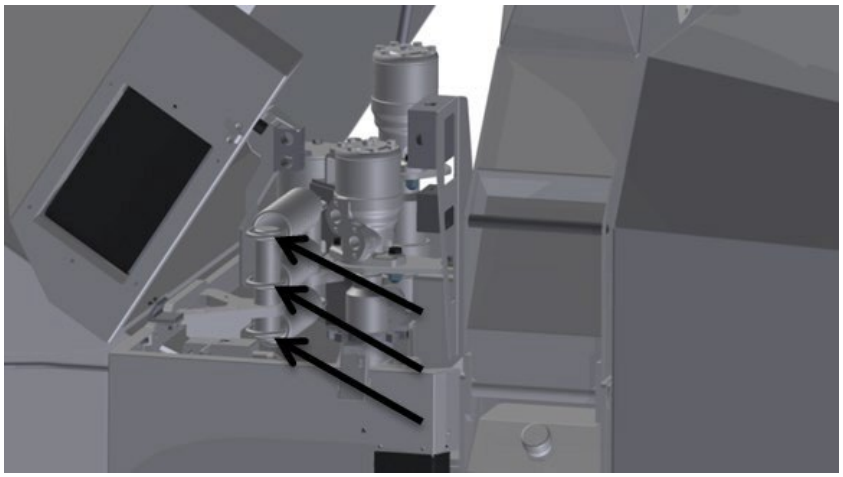
Closing the roller console



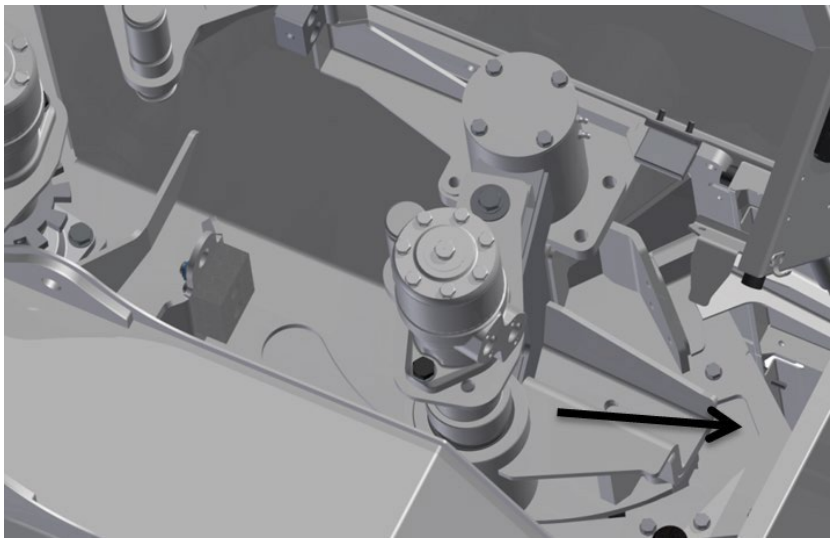
1. Hold the handle (3) and pull out the locking pawl (4).
2. Lower the roller console back into position.
3. Lift the springs (2) back onto the roller console using multigrip pliers or a flat fibre strap.
4. Mount the stop bushings (1).
5. Close the disc housing, as described earlier in this chapter.

Opening the revolving roller(TP 280)

The revolving roller's retention force comes from spring tension. You will therefore need to remove the springs if you need to open the revolving roller to remove foreign bodies from the in-feed. (See illustration below).

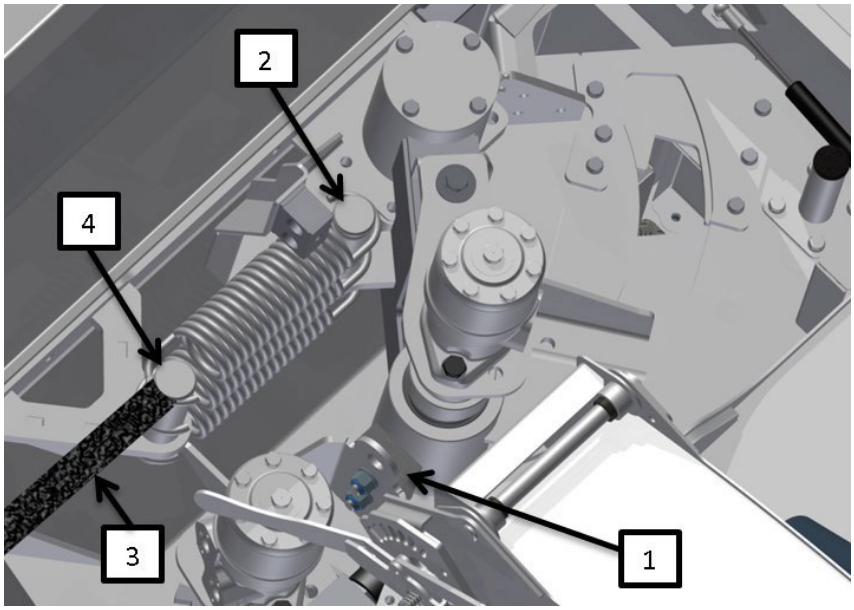


1. Open the cover over the in-feed. The cover is locked with an external catch on each side.
2. Using multigrip pliers or a flat fibre strap, lift the springs from the spring holder (exercise caution and keep fingers away from the springs when lifting from the spring holder).
3. The revolving roller is now free to open up against the secured opening stop (see illustration below).



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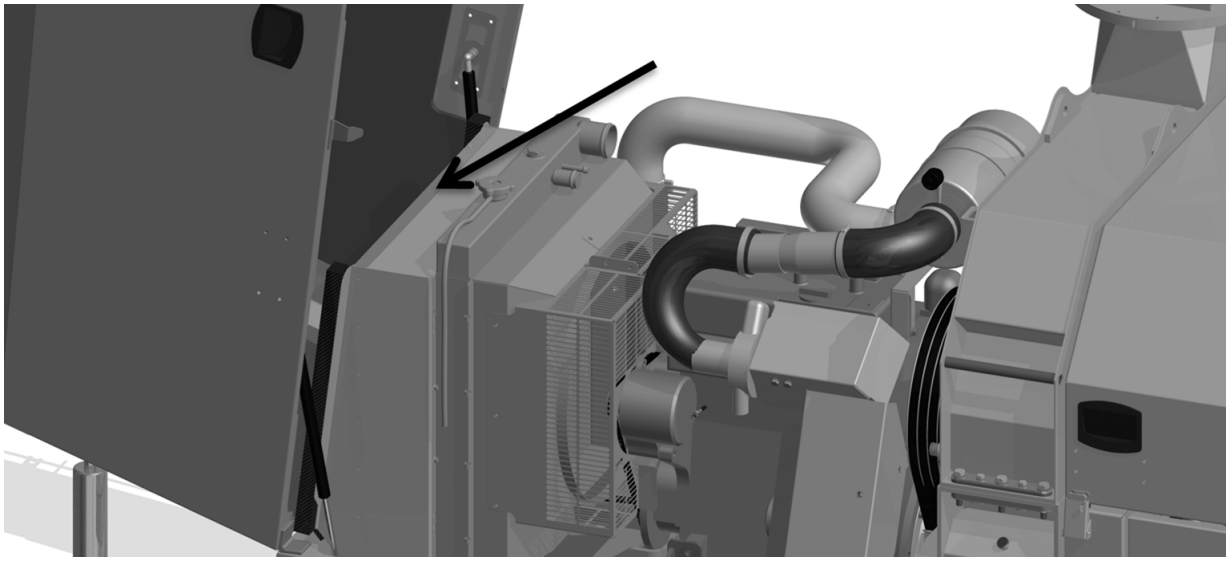
Closing the revolving roller



1. Close the revolving roller against the inside closing stop (1).
2. Fit the springs on the revolving roller's spring holder (2).
3. Using a flat fibre strap (3), pull the springs one after another by placing the strap around the spring eyes and pulling on both ends of the fibre strap (the strap comes with the TP TOOLBOX). Once the spring has been pulled in across the spring holder on the in-feed (4), release one end of the fibre strap and then pull it out of the spring eye by pulling the other end of the fibre strap. The springs can then slide into place in the spring guides.
4. Close the cover above the in-feed and lock securely using the external latches.

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1 Cleaning the radiator filter



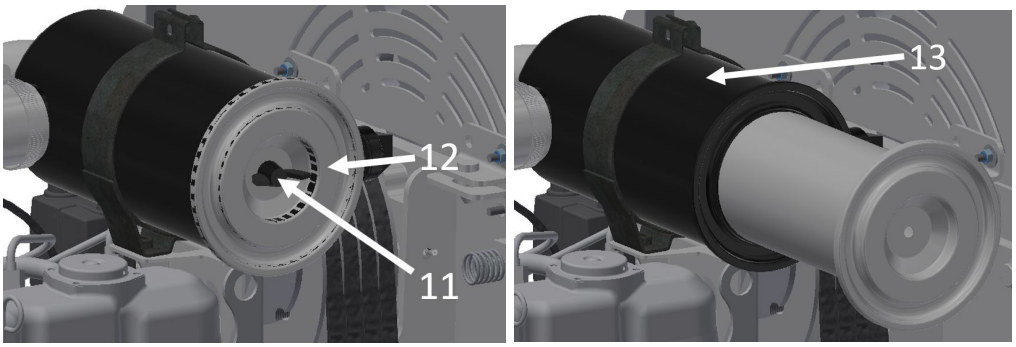
A filter is mounted in front of the radiator to capture particles that are too large to pass through the radiator core. The arrow on the illustration above indicates the location of the filter.
Clean the filter as follows:

1. Stop the wood chipper and the engine. Open the bonnet and lift the filter out of its slot.
2. The filter can now be cleaned using one of the following methods:
    - Gently tap the frame of the filter against the ground or a wooden surface to shake off dust.
    - Use compressed air, blowing from the radiator side towards the outer surface.
    - Use a a high-pressure cleaner. Only used for extreme clogging. The filter must be completely dry before restarting the chipper.

To minimise the risk of machine stoppages, avoid positioning the ejector spout so that dust is blown directly toward the radiator.

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Changing air filter - Kubota E4B 1305 and 1505



1. Stop the wood chipper and the engine. Open the bonnet, which is locked with an external latch on each side.
2. Unscrew the nut (11).
3. Pull out the air filter (12) and carefully clean with compressed air from the internal side.
4. Use compressed air to clean the inside of the filter housing (13).
5. Fit the air filter(12) and retighten the retainer nut(11).
6. Close the bonnet and lock it using the external latches.

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User guide

Software version 1.111

Pilot+

DESIGNED + MANUFACTURED DENMARK

RELIABLE CHIPPING



Overview of Pilot+

The Pilot+ consist of a display and buttons for the different functions. F1-F4, Enter, ESC, Arrow up and down.



Start-up

The Pilot+ displays the software version, type of machine and time before next service shortly after being powered on.



The display automatically changes after a few seconds to the main display that shows the rotor speed, infeed roller speed.

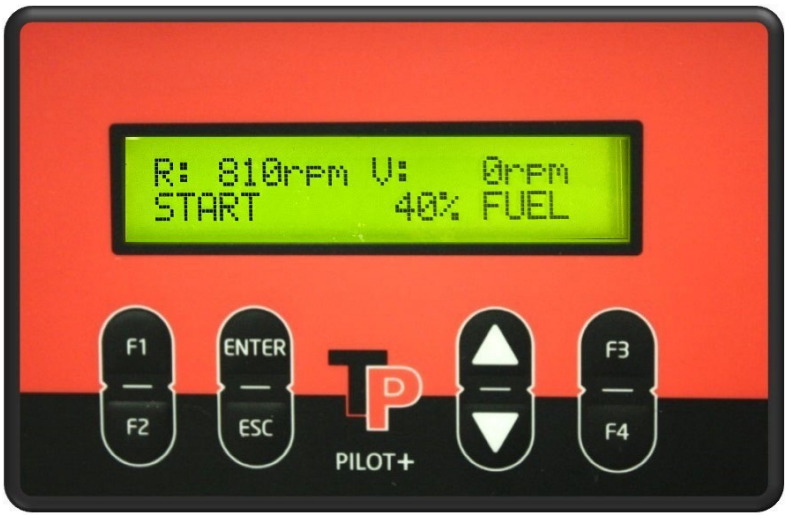


In the right bottom field, you can change between different displays by using the “arrows up” and “arrow down”. Using the “arrow down”, the field changes and different functions appear. These are described in later sections.
The percentage is shown in the main display, but if “Safety Bar” or “Emergency Stop” appears in the lower right display section, it is because one of these functions are activated, and the infeed will not run!

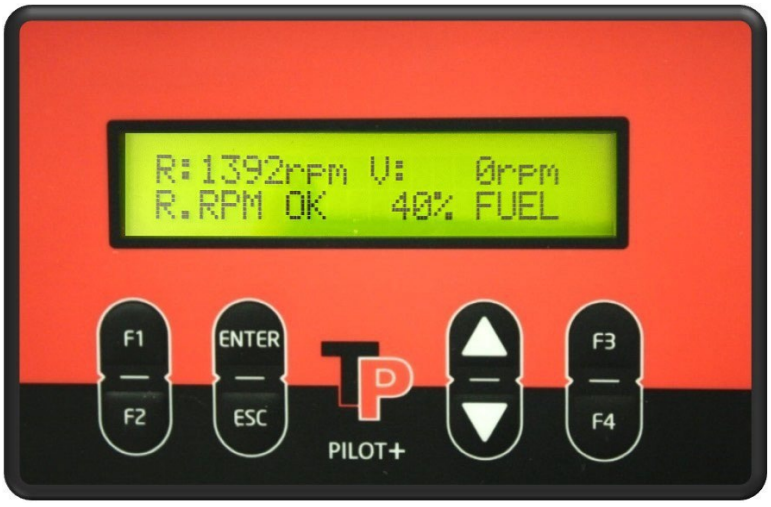
Running mode

The machine will display the different stages depending on which bottom is activated.

As descript in previous section, the machine starts by pressing the yellow start/stop button. This will be displayed in the pilot+ display by showing “START”.



The rotor, which is the rotating part where the knives are mounted, has a predetermined target for the revolutions per minute or rpm. It will display “R.RPM OK” when this target is met.



The forward button > on the e-control can now be activated and will start the infeed rollers and show the rpm of these aswell (V: 70rpm).



The moment the forward button > is being push it, it will show direct feedback of an arrow “>” in the display. This is a useful feature for troubleshooting of sensors.



The infeed rollers can be reversed by pressing reverse button < on the e-control. Useful if the wood is stuck. It will also show direct feedback for easy troubleshooting of sensors.



The rotor can be stopped by pressing on the yellow start/stop button. This will be displayed in the pilot+ display by showing “STOP”.



Service Menu

From the main display you can choose between “Menu”, “Hour timer” and “Total hour timer”.

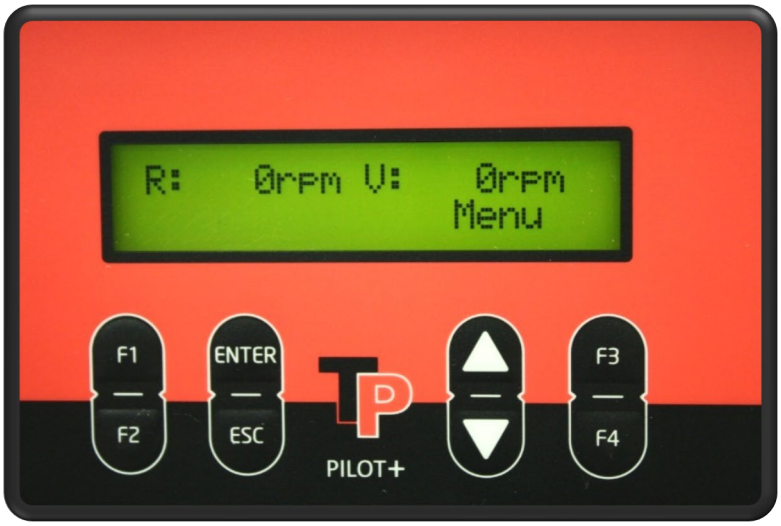


The hour timer can be reset for a specific job by holding down “enter” for more than 3 seconds.

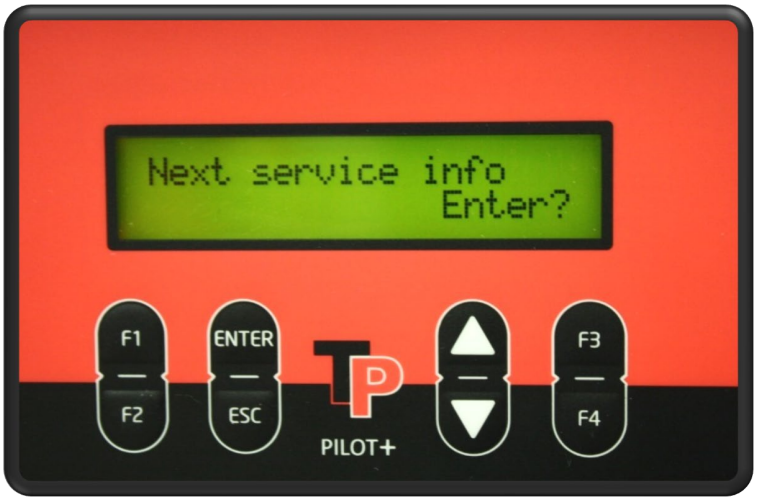


The total hour timer (+) cannot be reset.

By pressing “Enter” on “Menu” will enable a new submenu, “Next service info” and “Test Chipper”.



Next service info is information about the next two service intervals.



Test Chipper is information about the digital and analog in- and outputs, power supply, monitor keys, rpm, work states and software version in the Pilot+.



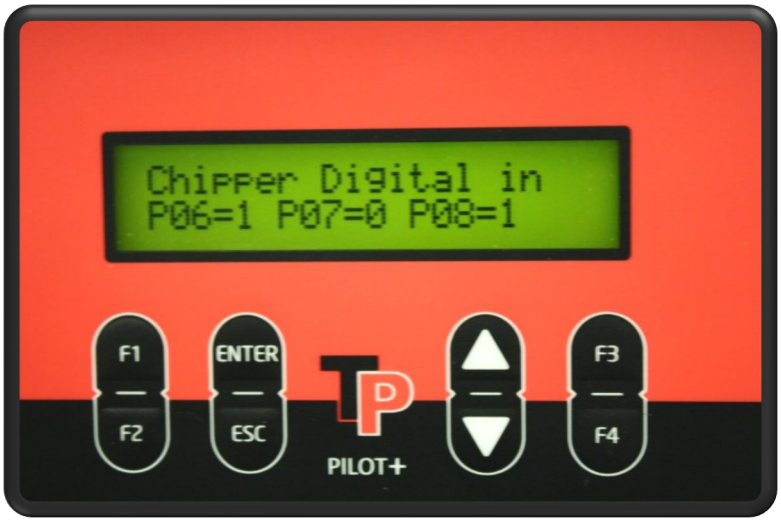
Pressing “Enter” the display shows Power Supply voltage.



Monitor Keys is a self-test function, where the keys on the display can be tested by pressing and see if a “0” turn to a “1”



Chipper digital in shows digital input as eg. Start/Stop button. Different inputs is showed pressing enter.



Same functionallity is made for analouge inputs, outputs and current outputs.

Check current software version, work state or rotor rpm.



Fault readout

In case the engine or the motor controller or the battery has a failure, the system will deliver a fault readout to the Pilot+. This readout can be accessed pressing “F1” or “F2” depending on the specific wood chipper model.

Dependant of the error, your dealer or service technician will be able to troubleshoot the fault.



Press “Enter” to see all errors.



Reset errors by pressing “enter” for more than 3 seconds.



Alarms

Below are the different alarms from the main display.

Emerg.stop
Emergency stop alarm. Reset emergency stop.

R.RPM Low / high
Rotor rpm too high or low.

V.RPM high
Feed roller rpm too high. Adjust rpm on valve handle.

FWD High P / C.H2 High P or REV High P / C.H3 High P
Forward or reverse feed roller output Ampere too high (over 6,0A). Short circuit valve, cable etc.

REV Low P /C.H3 Low P
Reverse feed roller output Ampere too low (under 0,1A). open circuit, no circuit, broken cable etc.

Safety.bar
Safety bar stop. Reset safety bar.

REGEN ON
Regeneration of the diesel particulate filter started. See section about DPF regeneration or Hatz manual for more details.

REGEN REQ
Regeneration required of the diesel particulate filter See section about DPF regeneration or Hatz manual for more details.

EXAUST HI
Warning of very hot engine exhaust gases. See Hatz manual for more details.

Pre heat
Pre glow of engine. See Hatz manual for more details.

Eng. Serv.
Maintenance interval indicator. See Hatz manual for more details.

OIL Press
Oil pressure indicator. See Hatz manual for more details.

TEMP. Lamp
Engine temperature indicator. See Hatz manual for more details.

DIAG. Lamp
Engine fault. See Hatz manual for more details.

CHARG Lamp
Charge control. See Hatz manual for more details.

Air Filter
Air filter service indicator. See Hatz manual for more details.