

GS/TIGER D / P

TECHNICAL MANUAL

saelen.fr ts-industrie.eu

SAELEN TS INDUSTRIE

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DECLARATION OF CONFORMITY

The **TS industrie** Company

Industriering Ost 42
47906 KEMPEN (Germany)
Tel.: +49 2152 / 99294545

HEREBY DECLARES THAT THE MACHINE :

Trademark: ***TS industrie***
Type : ***TIGER P***
Engine power: **18,5 kW**
Technical documentation detained by Mathieu Willerval.

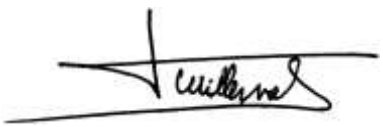
that the product is in conformity with the following European directives:

- **2006/42/EC** Directive „Machinery“
- **2014/30/EU** Directive „Electromagnetic compatibility“
- **2016/1628** Directive „Emissions“
- **2000/14/EC** Directive „Noise emissions“

Conformity appraisal process concerning directive 2000/14/CE
Appendix V.

Installed power at 3600 rpm	*Measured Noise Power Level*	*Guaranteed Noise Power Level (Lwa)*
18,5 Kw	**124 dBA**	**126 dBA**

Made in RONCHIN, on September 10th 2012



Mathieu Willerval (Production manager TS-industrie)

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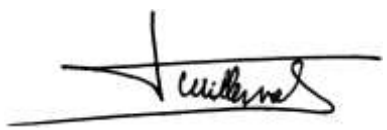
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Made in RONCHIN, on September 10th 2012



Mathieu Willerval (Production manager TS-industrie)

CAUTION!

Before delivery of our machines, they go through a strict quality control in the factory.

Because the machine is no longer under our influence when it has left the factory, another check by the retailer must be made before delivery to the end customer.
The following is to be checked:
- External damages due to transport etc.
- All screws and hose connections for tightness
- Oil, water and fuel filling level
- Complete functional control of all parts

This inspection is recorded with a stamp and signature on the machine delivery note. There is no claim to warranty without returning the fully completed and signed delivery note!

Furthermore, all screw connections must be checked for a tight fit before initial use and the hose lines checked for areas of abrasion!
Please directly arrange an appointment with your customer for this.
Regular inspections according to the operating manual are to be met!

Controlled quality - an important step towards customer satisfaction!
Please cooperate!

It is strictly forbidden to use the machine if emergency stops, cables, or any other safety device or control device are damaged or not present

Warranties

Processing warranty claims

Warranty claims according to the manufacturer's general terms of business are valid for 1 year from the date of delivery.
The handover date stated on the machine delivery note is decisive for the time of transfer of risk.
Warranty claims are generally to be reported to the contract retailer making the delivery.
The recorded parts of the delivered machine must generally be kept without any changes due to the proof reasons until final processing of the enforced warranty claim. In the event of a warranty claim, the claimed part of the machine (or old part) is to be provided free domicile to the manufacturer or the sales retailer.

A technical change to the machine and/or parts thereof leads to the loss of all warranty claims.
The same applies in the case of incorrect handling or use of lubricants or spare parts and accessories not approved or specified by the manufacturer. Transport damages and damages that are caused by normal wear and tear after initialisation of the machine are not usually valid for warranty claims.

The delivered machine is to be subjected to the specified obligatory visual checks or inspections according to the specified intervals in the maintenance plan provided. In the event of non-compliance with the obligatory visual checks and inspection plan, all warranty claims are void.
A further prerequisite for a warranty claim is the submission of full proof of the obligatory visual checks and inspections performed.

Any warranty and maintenance work may only be performed by a specialist retailer authorised by TS.

It is pointed out that the warranty work exceeding a value of 150.00 € must generally be coordinated with TS and approved by TS. The manufacturer reserves the right to perform the repair himself in this case.



A prerequisite for enforcement of a warranty claim is the return of the fully completed and signed machine delivery note.

It is not allowed to modify equipment and electronic programming in any way whatsoever. Unauthorized modification could affect the operation or safety and possibly shorten the life of the equipment.

DO NOT FORGET TO REGISTER YOUR GUARANTEE OTHERWISE IT WILL BECOME INVALID.

www.ts-industrie.eu
Section: Services / Warranty

RÉPUBLIQUE FRANÇAISE

INPI
INSTITUT NATIONAL DE LA PROPRIETE INDUSTRIELLE

BREVET D'INVENTION

Code de la propriété intellectuelle-Livres VI

DECISION DE DELIVRANCE

Le Directeur général de l'Institut national de la propriété industrielle décide que le brevet d'invention n° [illegible] dont le texte est ci-annexé est délivré à :
SAELEN S.N.S. Société anonyme - FR

La délivrance produit ses effets pour une période de vingt ans à compter de la date de dépôt de la demande, sous réserve du paiement des redevances annuelles.

Mention de la délivrance est faite au Bulletin officiel de la propriété industrielle n° [illegible] (n° de publication [illegible]).

PATENT FOR INVENTION

Intellectual property law-Books VI

GRANTING DECISION

The General Manager of the National Institute of industrial property has decided that invention patent # ##-##### the text of which is appended shall be delivered to:
SAELEN S.N.S. Company - FR

The delivery produces its effects for a period of twenty years starting on the date of deposit of the application, under reserve of payment of the annual royalties.

Mention of the delivery is made in the Official Bulletin of industrial property ###/## of ##:##:## (publication # # ### ###).

D. HANGARD

INSTITUT NATIONAL DE LA PROPRIETE INDUSTRIELLE
SIEGE
26 bis, rue de Saint Petersbourg
75800 PARIS cedex 08
Téléphone : 01 53 04 53 04
Télécopie : 01 42 93 59 30

ETABLISSEMENT PUBLIC NATIONAL CREE PAR LA LOI N° 51-444 DU 19 AVRIL 1951

Foreword

We thank you for your decision to purchase a TS Industrie wood shredder. Your TS Industrie wood shredder has been produced with great care to high quality requirements. In order to satisfy these requirements, including professional requirements, we ask you to read this operating manual conscientiously and comply with the warning and maintenance instructions.
We can only provide the full manufacturer's guarantee for the TS Industrie wood shredder with compliance of all maintenance work at the specified intervals.

This operating manual covers several models so the introduction explains how you can find your way around with the help of little pictograms.





Location of the serial number

When ordering spare parts for replacement or if you need technical information, please always have with you the serial number of your **TIGER** shredder.

TS industrie manufacturer's plate is on the front left chassis.



The serial number is located at the place indicated on the photo.

Serial number



Safety Regulations

1. The machine may only be used according to the operating manual.

2. The operating manual for the drive motor must also be taken into account for motor machines.

3. Folding up the extraction extension (if it exists) may only be performed with the hacking disc at a standstill.

4. Maintenance, cleaning and setting work, as well as removing protective devices, may only be performed with the motor switched off, ignition switched, uncoupled drive (machines PTO) and tools standing still. Remove the ignition key so that unintentional start-up is not possible.

5. Foreign matter, e.g. iron parts and stones etc, must be removed before operation.

6. After maintenance or repair, check whether all protective devices have been attached.

7. The wood shredder may not be taken into operation in rooms due to the associated risk of poisoning.

8. The hacking disc may only be removed once it has come to a standstill. This means that the drive motor is switched off and the ignition is in the 0-position.

9. The machine operator is responsible for making sure that third parties are not in the work and danger zone.

10. In the event of repairs, make sure that only original tested spare parts are used.

11. Only trained persons from 18 years may operate the wood shredder (from 16 years for the purpose of training, under supervision).

12. Safety footwear and closely fitting clothes as well as work gloves with close fitting cuffs, ear protectors and goggles must be used.

13. For transport, the wood shredders must be brought into the transport position:
A) Lift up the funnel flap and check whether the lock has clicked in.
B) Take the wood shredder into the transport position and check whether the security bolts are clicked in.
C) Turn the ejection channel so that it does not protrude beyond the side of the machine.
D) Push all parking locks up if necessary

14. When driving on public roads, the lighting must correspond with the England Traffic Road Regulations.

15. When working, the wood shredder must be positioned steadily in a horizontal position and must be secured against rolling away.

16. Single axle motor devices are attached to traction vehicles and, if available, the park brake is applied. For operation without a traction vehicle, the parking locks (front and back) must be lowered.

17. Minimum clearance of 10 m from the machine to the ejection must be maintained due to safety reasons. **The objection must always be averted by operating personnel**

18. You may only reach into the retraction opening with your hands when the motor has been shut down and the hacking disc has come to a standstill engine stopped.

19. The authorised hydraulic operating pressure set in the factory may not be changed

20. Only trunks up to 5,51 inches diameter may be processed in the wood shredder.

21. The hydraulic system must be subjected to an expert inspection every year. The hydraulic hoses are to be replaced after five years.

22. Do not reach into the supply funnel when filling the wood shredder. Blockages must be dealt with safely (stop motor, use aids). To push short pieces or branch-like hacking items through, only use sturdy wooden sticks or other aids made of wood. I will wood shredders are only suitable for manual loading. Do not move around the ejection area.

23. Perform a function test every day before initialisation, especially on the safety equipment (tightening of the wheelhouse wheel, lock covers, safety switches cowlings and access chimney). Hacking blades and counter blades are also to be tested for function and a tight fit.

24. Operating personnel must be inducted thoroughly before initialisation.

25. The hacking disc may only be released once it has come to a full standstill and the motor has been switched off.

26. Danger due to flying parts. Attention must be paid that parts such as wood chips can also fly out of the funnel in the operating area. Body protection must always be attached. The machine should be operated to the side of the funnel.

27. Information for all motor machines:
The tilted position of the motor may be a maximum of 25° during operation (driving). With too little oil, lubrication of the motor is not even guaranteed at 25°!

28. Take care on slopes. The machine driver must ensure that the machine is always safely driven and is kept steady and safe during work.

29. After coupling the machine to the tractor, lift up, or better to remove the jockey wheel.

30. The machine may only be loaded with wood. Make sure that no stones or metals enter the machine.

31. The machine may not be used to transport goods or persons.

32. The machine may not be used to push or pull anything.

33. The battery acid is very corrosive. Avoid all contact with eyes, skin and clothing. In case of contact, rinse immediately with water and ask for medical advice if necessary.

34. Before connecting the machine to the power net, the cable linked to the positive side of the battery must be removed.

35. Interventions must be handled by a **qualified technician.** All interventions for assembly, disassembly and/or specific maintenance must be handled by a recognized distributor.

Pictograms

Wear goggles!
Wear ear protectors!



Wear protective gloves with special close fitting cuffs!



Wear safety footwear!



Only touch machine parts when they have come to a complete standstill!



Maintain a sufficient distance from rotating machine parts!



Pictograms

Never open and remove protective devices with the drive running!



Read the operating manual before initialisation!



Do not remain in the ejection area when the machine is running! Danger zone!



Switch the motor off and remove the key before maintenance and repair work!



Attention! Grip wheel.



Never enter the hopper when the engine is running.

Fill fuel tank with petrol



Fill fuel tank with diesel

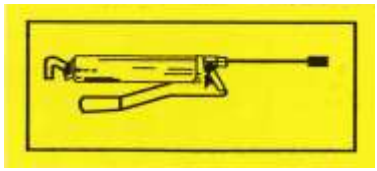


Pictograms

Hydraulic oil to use : HV46



Lubrification points



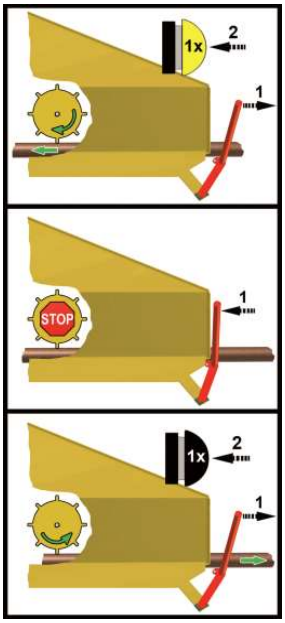
Minimum engine speed



Maximum engine speed

The noise level of the machine at work does not exceed the standard shown on the sticker on the machine





<u>Rotation commands of the conveyor belt:</u>

Chipping material (forward operation to the maximum speed)

Stop the rotation of the feed rolls

Releasing material (backward)

1) Comply with the traffic code.

2) Check if the signalisation lights of the equipment are appropriate and in working order.

3) Lower your speed on uneven roads and surfaces.

Wear of the coupling:

Check the wear indicator when coupling the machine.

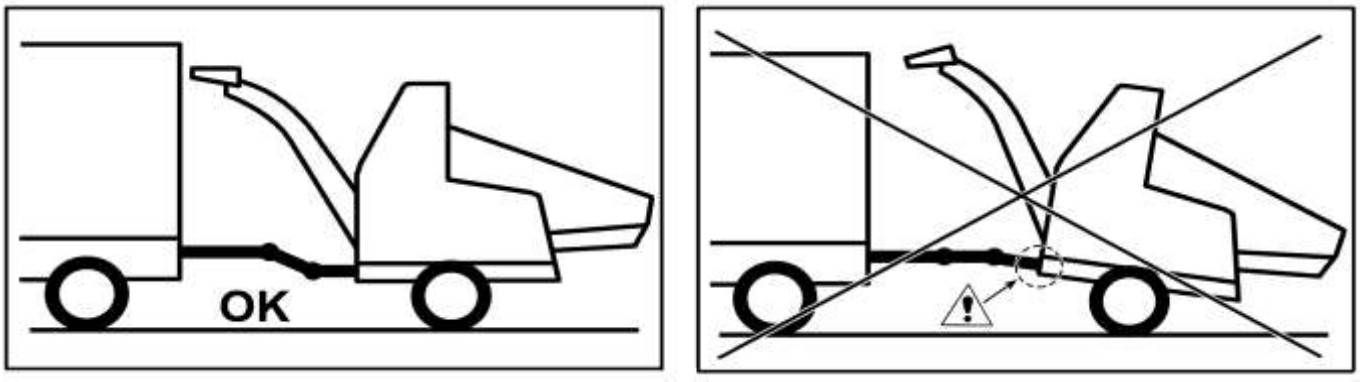
Systematically repleace the had and/or the ball of the coupling of the vehicle if the indicator is in the MINUS zone. You might loose the chipper on a bump in the road or against a border.

YOU ARE RESPONSIBLE IN CASE AN ACCIDENT HAPPENS.



Coupling to the vehicle:

Always couple the chipper horizontally to avoid the backward transfer of the mass AND check daily whether the two bolts of the coupling axis are still tight in order to prevent shocks that might affect the life span of the axis and the trailer.



DESCRIPTION MACHINE

The **TIGER TS Industrie™ multi-vegetation** chipper is suitable for chippping vegetable waste and branches of a maximum diameter of 5,51 inchs.

The chipper consists of the following main parts:

(A) : the frame
(B) : the chipping cell
(C) : the engine with its transmissions
(D) : the discharge chute
(E) : sound insulation
(F) : assembly conveyor band



A. The frame

The frame of the chipper supports the different parts of the TIGER. It allows the autonomous transportation of the machine.

B. The chipping cell

The chipping cell consists of a hopper **(1)**, a metal belt **(2)**, a feed roll **(3)** with notched rods and a rotor that crushes the material.

Feed belt and roll:

They transport material to the rotor at a constant speed. A blocking system stops them when the rotor speed is too low (blockage during chipping) and they start automatically when the rotor has reached a sufficient speed again.

They can be operated in both directions (forward and backward) using the yellow and black buttons at the back of the hopper.

The rotation speed can be set using the wheel **(4)** in the cover at the back left according to the diameter of the material.





Rotor:

The rotor is the main part of the machine that crushes the material that is fed by the feed roll. It rotates by accelerating the engine and rotates continuously .



C. Engine and transmissions



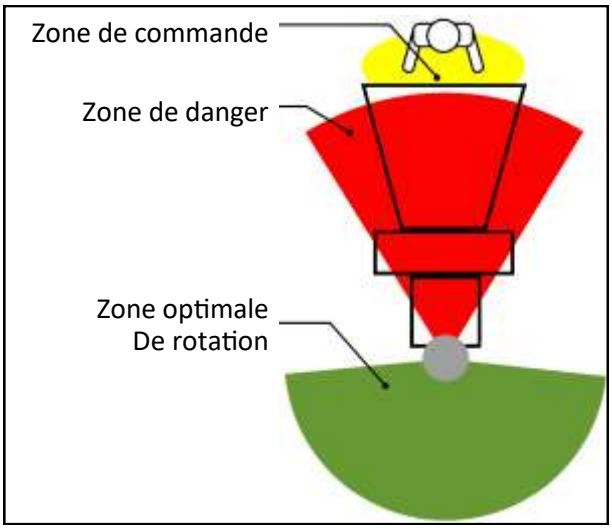
The thermal engine is located above the chipping cell. It supplies the necessary energy for driving the rotor and the oil pump **(1)** of the hydraulic circuit.
The gasoline and diesel engine is a three-cylinder diesel engine capable of 25 hp at 3600 r/min.
For more information on this engine, please refer to the manufacturer's manual.
The axis is equipped with a 2-belt pulley to drive the rotating movement of the chipping engine.
The oil pump of the hydraulic circuit activates the hydraulic engines of the feed belt/roll.

D. The discharge shaft



This discharges the shredded material. The upper part can be swivelled 160° in a horizontal position. Its cap is adjustable in a vertical position.

Note:
Residues of wood chips can be ejected at the start of the shredding.



Electrical safety stops the motor and prevents it from starting if the chimney is opened to access the cutting rotor

E. Covers Tiger ER and DR and cover motor Tiger DR.

Two hoods machine and cover motor protects the moving parts of the machine allows the user to work safely.
One electrical safety stops the engine and prevents it from starting if the hood motor is raised.

FEEDING MATERIAL

The Tiger is equipped with an electrically operated hydraulic distributor that is activated using the two buttons at the back of the hopper for forward and backward operation and the red operation handle to stop the feed belt and roll.

REM.: **the engine must run at maximum speed in order to rotate the feed belt and roll.**

FORWARD OPERATION:

1: For the forward operation of the roll, set the red handle at its must backward position.
2: Push the **yellow** button to make the roll run forward.

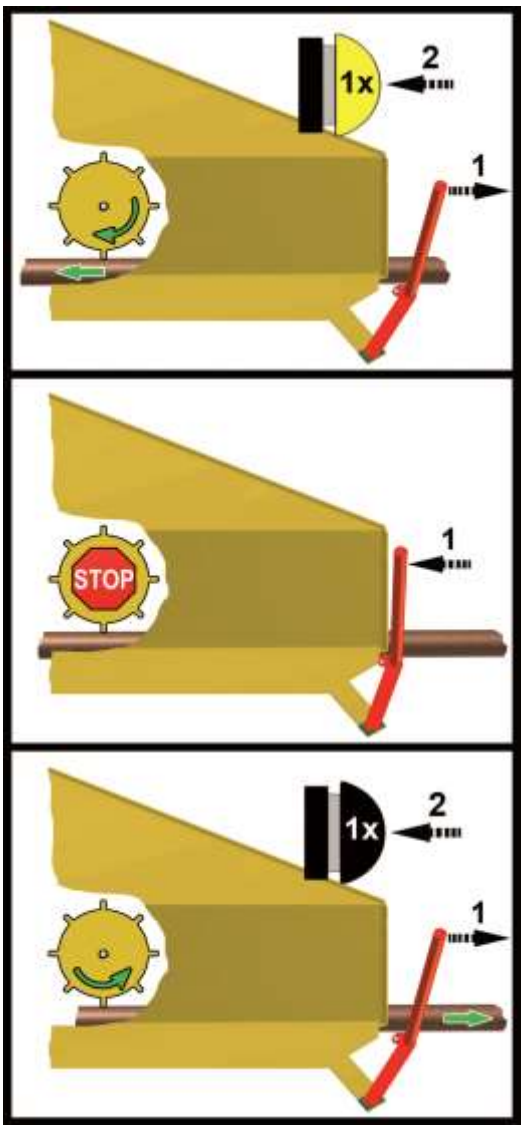
STOP FEED:

1: Push the red bar to stop the feed.

BACKWARD OPERATION:

1: Set the red handle at its back position.
2: Push the **black** button.

REM: the feeding cell can be switched directly from forward to backward operation and vice versa without using the operating handle.



Attachment to a vehicle



When attaching the wood shredder to a vehicle, you must proceed as follows. Set the support wheel at the height of the drawbar so that the trailer tow bar is over the one on the vehicle. Now turn in the support wheel and the opened ball-head coupling must click into the ball on the tow bar.
Please check that it is clicked in!
Then connect the catch line to the vehicle and plug in the plug for the lighting. Fully retract the support wheel, push the back safety support up, lock and check the lighting. The support wheel may only be unscrewed up to the marking. In the coupled status, the display must be within the green range. (see page 17).

CHECKLIST BEFORE STARTING

Each operator must read and understand the instructions and must take the safety precautions as described in this part in order to operate the chipper in a safe and efficient manner. The operator has a checklist for use. It is important to use it for safety reasons but also to maintain the machine in a good condition.

Before starting the machine, please check the following items:

1) Has the machine been lubricated sufficiently in accordance with the schedule in the user manual?

2) Check the different engine levels, and in particular:

- Engine oil
- Radiator fluid
- Fuel

3) Check the oil level of the hydraulic circuit

4) Check if the air filter is clean

5) Check of the radiator of the engine is clean and free

6) Check of the covers have been closed well

7) The wood shredder may only be used outdoors, not inside rooms, due to the danger of poisoning from the drive motor and the wood dust from the wood shredder.

8) After setting and blocking the chimney cap and eject, only the operator is authorized to change their positions.

ATTENTION !

If for any reason, the chipper has difficulties chipping the material and you need to stop it: **do not restart the engine without removing the blockage and removing the material from the rotor!!!**

Operation



A steady base is to be ensured before initialisation (place any brake wedges is in front of the wheels

1) Check whether the cover above the chute is open.

2) Set the engine to idle position.



3) Preheat 10 secondes (D), engage the starter (P), and start it by turning the ignition key

4) Carefully accelerate the engine speed and let the engine reach its working temperature.

5) Accelerate the engine to maximum speed.(see note on SLIPPAGE page 47)

6) Rotate the roll forward by pushing the yellow button left the hopper.



7) Start shredding

Material handling and insertion

INSTRUCTIONS FOR THE SHREDDING

Attention must be paid to solid base for operating personnel!

Place the hacking items onto the base of the funnel and guide the thicker end (trunk) to the retraction roller (taper off thick trunks at the end)

As soon as that have taken the material, step to one side because even as in the trunk can lead to flying particles.

The material is now automatically shredded and pushed in the direction (distance) previously adjusted for the ejection channel.

After entering the material, you should occasionally check the ejection of the chopped wood and possibly readjust the direction of ejection. The width of the ejection is controlled by the ejection flap (see page 20)

When hacking splinters, bark and branches, you can avoid the formation of splinters by guiding the material into the retraction chute next to each other lengthways.

If no more retraction takes place (blockage due to excessive material or branch forks), press the switch black "reverse" position (rollers turn backwards) and the hacked items are pushed back. Now shred the material quantity or saw off branch forks and start loading again.

The hopper can be cleaned with the aid of a wooden material.

Caution:

Do not reach into the funnel when the machine is running! Push small pieces of wood through using a wooden stick or pusher if necessary! Never push the hacked material through the funnel with a metal rod or metal pusher! It is also forbidden to remain in the danger zone! With particularly strong or hard wood, it makes sense, depending on the motor power, reduce the speed of rotation of the feed roller if the speed drops so that the motor can achieve the nominal speed again.

The cover may only be opened and stuck pieces of wood removed with a suitable tool only after stopping the cutting rotor and the drive motor

---

Noise emissions

The wood shredder produces a guaranteed sound level in accordance with directive 2000/14/EC of:

Type	Sound level LWA [dB]	Sound pressure level LAeq [dB(A)]
TIGER P	126	124
TIGER D	126	124



Putting out of service

1) **Let the chipper empty itself of all remaining materials from the feed roll and the chipping cell to avoid the rotor getting blocked with the next start.**

2) Push the operating handle forward to stop the feed roll and belt.



3) Set the gear handle to idle position.

4) Stop the engine by turning the ignition key on the operating panel.



BIO LUBRICANTS TO REDUCE THE RISK OF POLLUTION

TS INDUSTRIE™ chippers and chipper-shredders enter into the sustainable development classification for their production of compost, mulch and heating solutions.

Forests, parks, sites in proximity to lakes and rivers … **TS INDUSTRIE**™ chippers and chipper-shredders are often used in areas where other machines represent a hazard for the environment through risk of leakage and hydraulic fluid loss. For this reason, **TS INDUSTRIE**™ has adopted an eco-friendly attitude by equipping its chippers and chipper-shredders with bio-degradable lubricants: **an association of high performance with environmental impact reduction through the replacement of traditional oil and grease**.

Conform with the agricultural directive 2006/11/EC against pollution to the aquatic environment, published on the 06/01/2006.

The pros of Bio Lubricants:

- Prevents risk of environmental pollution
- Increased biodegradability
- Non toxic (rape seed and sunflower oil base)
- Renewable
- Very high viscosity
- Reinforced corrosion, wear and rust proofing
- Increased security for the user
- Increased part life
- Low volatility





SAFETY PRECAUTIONS

1) Stop the machine, remove the ignition key and wait for all moving parts to come to a stop before proceeding with maintenance interventions or repairs.
2) Do not forget to put all the safety screens back after the intervention.

All machines are test driven before they leave the factory. The hydraulic tank is filled with hydraulic oil up to the top mark of the sight glass before delivery. After 50 operating hours, the filter must be changed. Changes are made after this in accordance with the maintenance schedule. The first inspection is part of the warranty condition. Only trained personnel may be deployed for maintenance and repair work. The enclosed motor manufacturer's operating manual is to be taken into account for motor maintenance.

LUBRICANT quantity:

Gasoline engine: 1,3 l.
Diesel engine: 3,7 l.
Fuel: 18 l.
Hydraulic oil: 8,5 l.

Recommended LUBRICANT:

1) Lubricant for the hammers of the rotor:
You must use a water-resistant lubricant of type NLGI grade 2
"SAELEN BIOPLEX "

2) Lubricant for bearings, transmission belts and different organs:
Use a versatile high grade SAE lubricant that is compatible with extreme pressures
"SAELEN BIOPLEX "

3) Hydraulic oil:
Use oil AFNOR NFE 48600 Types HV iso VG 46
"MINERVA BIO HYDRO 46 "

4) Engine oil
Use SAE 15W40 which complies with the standards: API CH4-CG4-CF
"MINERVA POWER LONG WAY 15W-40 "

FREQUENCY OF MAINTENANCE ENGINE:
see the manufacturer's maintenance manual engine

MAINTENANCE INTERVALS MACHINE

Hours	Interventions
Daily	-Control-tightening two nuts serrated articulation hitch -Check operation of safety-punches and handrail red -Check oil level engine -Check fluid level radiator (D) Control-clean honeycomb radiator (D) Hitch-control vehicle / trailer (see p.17) Check tightness of wheel- Lighting-control
The first time after 4 am	-All fixing screws are to be checked for a tight fit -Check the tension of the rotor transmission belts -Check the tension of the metal belt -Control tension belt oil pump (D) (moderate tension) (voir p.38)
Every 10 hours	-Lubricate rotor hammers and verification wear rings
Every 50 hours	-Lubricate the two rotor bearings -Check if the air inlet below the rotor is clean -Check the blades and the hammers -Check the tension of the rotor transmission belts and belt oil pump (D) -Lubricate the bearing of the feed roll -Check the hydraulic oil level -Check and remove the branches winding around the bearings' axes and the hydraulic motors -Check the tension of the metal belt
Every 100 hours	-**Replace rings hammers**
Every 150 hours	-Lubricate the bearings of the F and B rolls of the metal belt -Replace the hydraulic oil filter for the first time, then every 500 h (or 2 years) -Check the counterblades for wear
Every 300 hours	-Check for wear of belt and gliding plate -Check the electrolyte level in the battery
Every 500 hours	-Replace the hydraulic oil (or every 2 years) -Replace the hydraulic filter of the return (or every 2 years) -Replace the hydraulic oil suction filter in the tank

REMOVAL CRANKCASE AND OPENING ENGINE HOOD

Maintenance, cleaning and setting work, as well as removing protective devices, may only be performed with the motor switched off, ignition switched, uncoupled drive and tools standing still. Remove the ignition key so that unintentional start-up is not possible.

The side housings are held in place by a nut and bolt. Use a 13mm (1/2”) spanner.





The engine housing has a lock to each side. These locks can only be opened using the special key delivered with the machine.
On opening the housing to access the engine, an electronic security system cuts the engine and/or disengages the starter motor (see page 41)

A support rod is used to maintain the housing open.







LUBRICATION POINTS



Lubricate and maintain the machine after the engine has been shut off and the ignition key removed

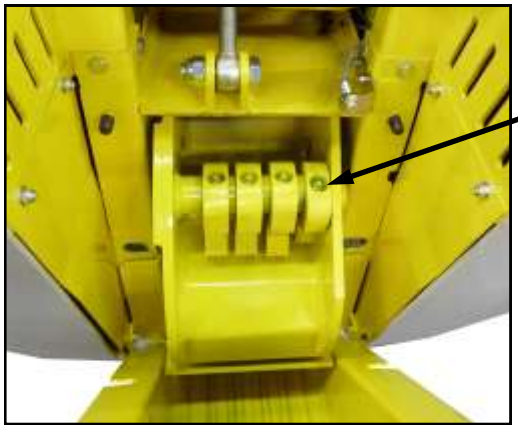


LUBRICATE THE HAMMERS:

In order to gain access to the rotor:

-Remove the two Nylstop nuts

-Open the chute by rotating it on the articulation



-Clean the lubricating areas behind the hammer with a small screwdriver or blowing device
-Lubricate the 20 hammers

Note: do not lubricate extensively, **~2 pumps per lubrication point are enough.**

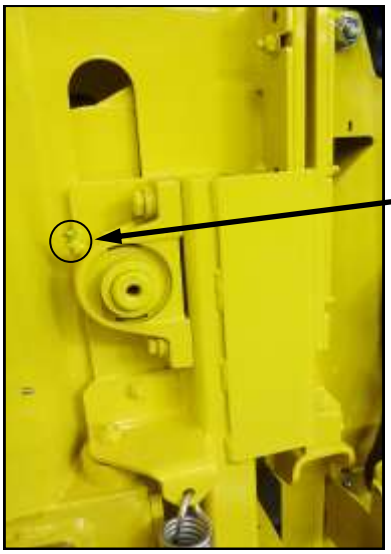
Exaggerated lubrication could project excess lubricant to the interior wall of the chute when the rotor turns resulting in problems with transporting chipped material.



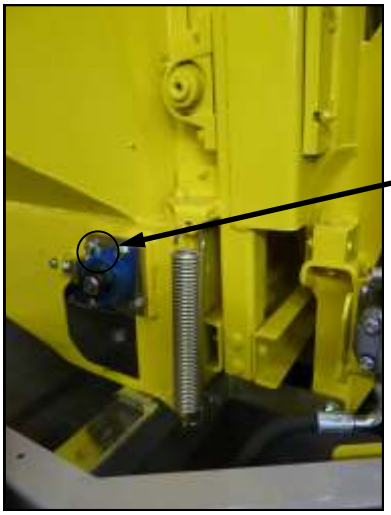
LUBRICATING THE ROTOR BEARINGS

LUBRICATION POINTS

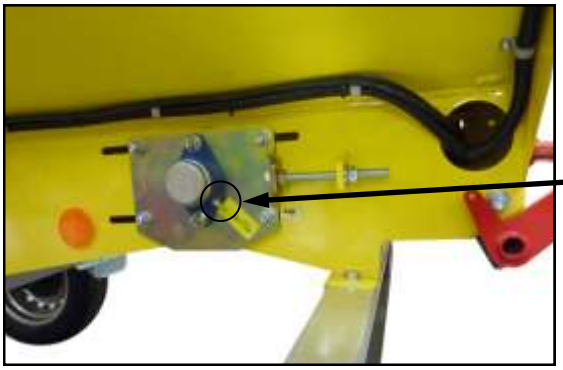




LUBRICATING THE FEED ROLL BEARING



LUBRICATING THE TWO ROLL BEARINGS IN FRONT OF THE METAL BELT



LUBRICATING THE TWO ROLL BEARINGS BEHIND THE METAL BELT

OIL LEVELS



LEVEL IN THE HYDRAULIC TANK



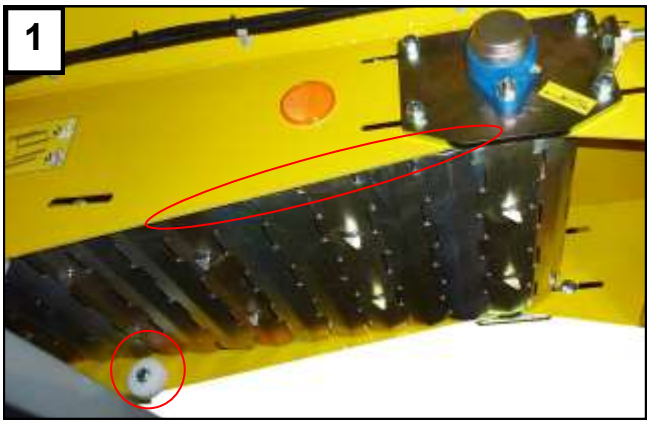
ENGINE OIL GASOLINE MOTOR



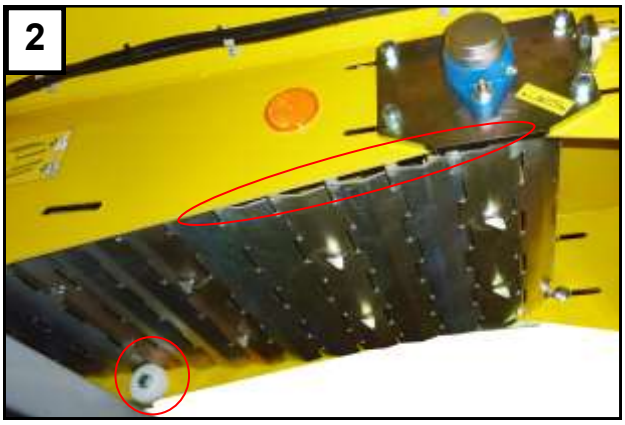
ENGINE OIL DIESEL MOTOR

ADJUSTING THE TENSION OF THE ASSEMBLY CONVEYOR RUN

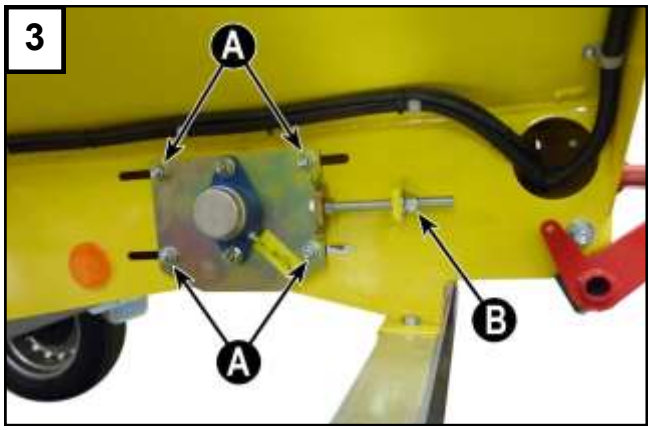
1



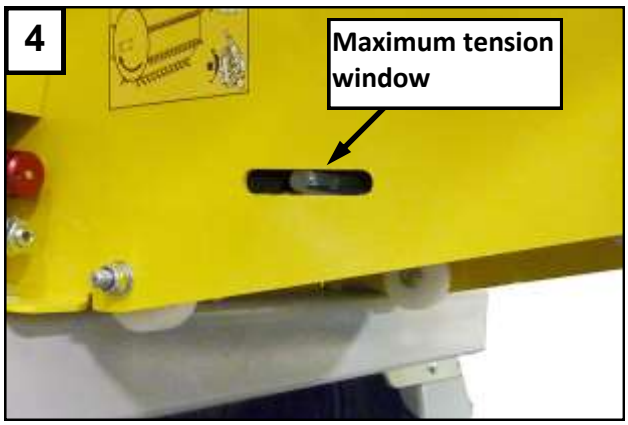
2



3



4



After preparing the belt, check the tension for the first time after 4h and then at regular intervals.

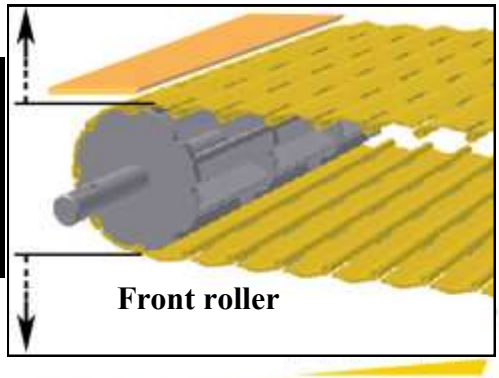
1 Right tension

2 Too loose

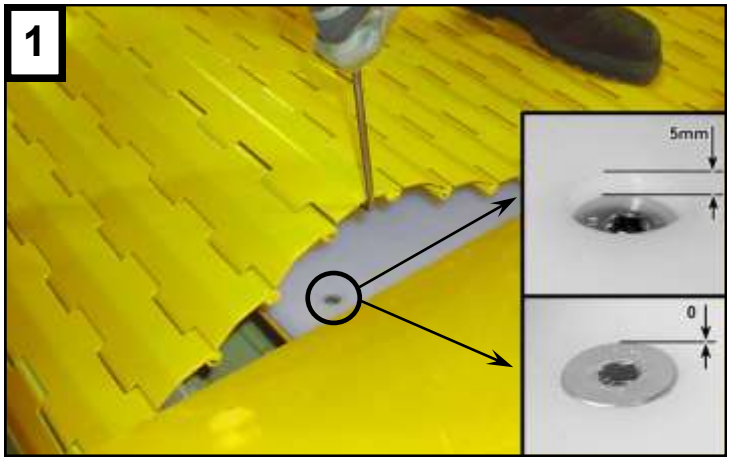
3 In order to tighten the belt, you must loosen the four nuts **(A)** at the side and tighten the tensioners **(B)** at the same time so the belt does not exceed the base of the cell (see picture **1**). Tighten the screws .**(A)**. Rotate the blet forward and backward a few times to check its correct position.

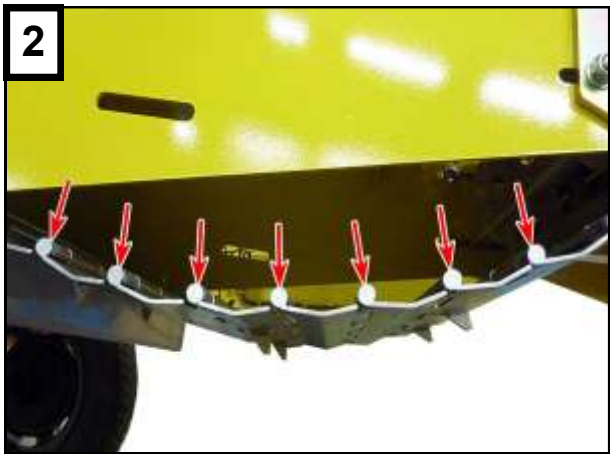
Note: do not tighten too much, a good grip of the feed roll and belt does not require excessive tension. Use the maximum tension window (photo 4)

N.B.: Avoid feeding earth sodden root matter into the machine. This may clog up the feed conveyor slats and accumulate on the feed roller; thus the feed roller diameter increases causing blockage.



CHECKING CONVEYOR RUN AND PLATE



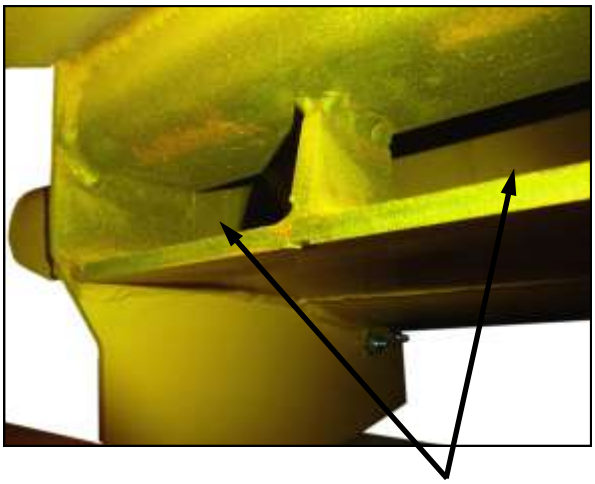


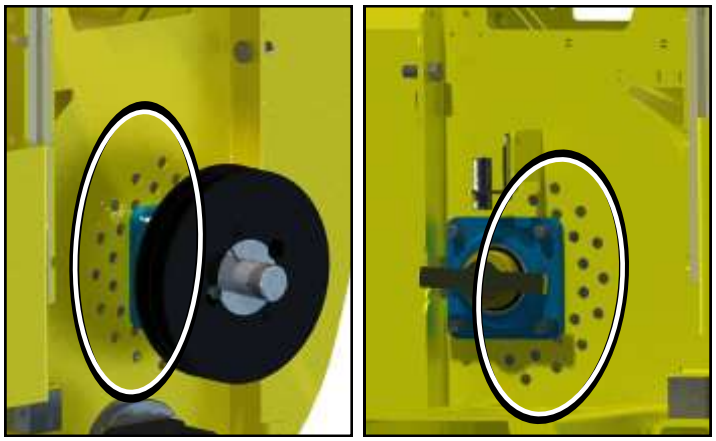
In order to check the wear of the belt and the self-lubricating polyethylene plate, loosen the belt, lift it with a hook and check:

1 The thickness of the plate above the four fixation screws

2 The wear of the bars of the belt

ROTOR VENTILATION HOLES





The TIGER has an air inlet below the rotor and two more at both sides of the cell for optimal ventilation.

Regularly check if these three air inlets are clean in order to optimize the discharge of chipped materials from the chute.

DISASSEMBLY TO REPLACE THE BLADES AND THE HAMMER INSERTS

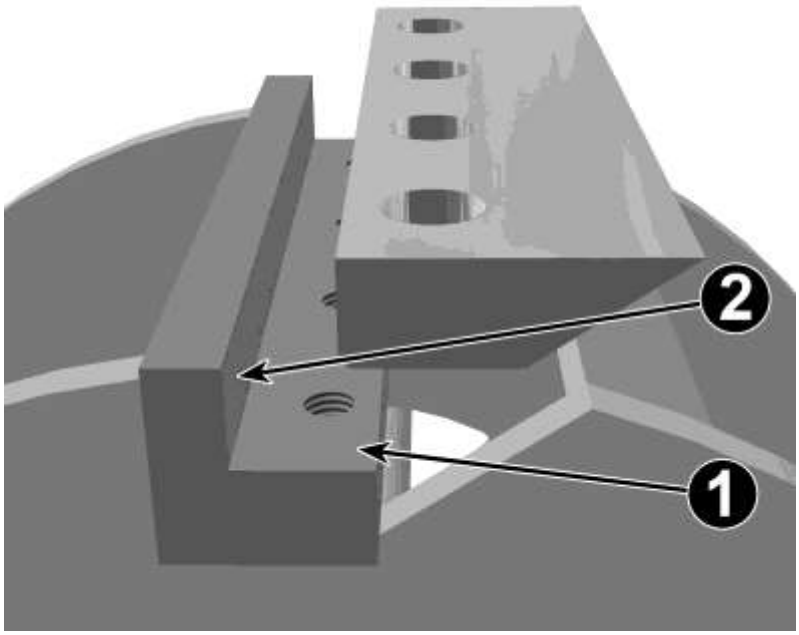
Remove the ignition key before proceeding

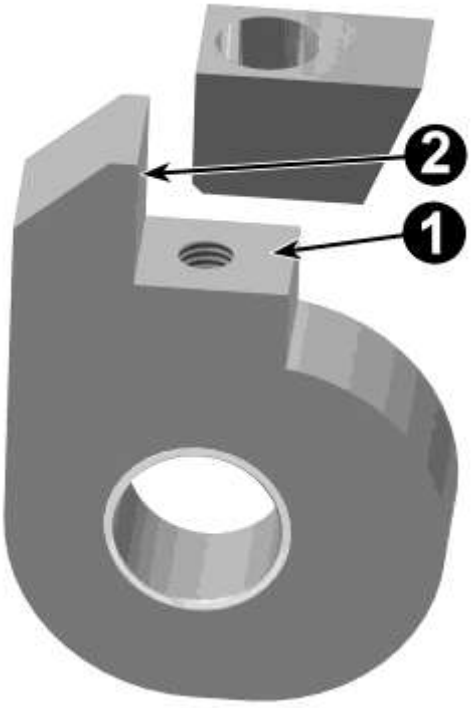
-The hollow hexagonal screws of the blades and hammer inserts are mounted in the facture using **LOCTITE normal 243**. Use the appropriate wrench that is in good condition to remove them.

-Open the chute as described on page 25.

-Remove the screws from blades and inserts. (For the assembly later on, only use new and **degreased** screws).

-Clean the contact surfaces of the blades and the inserts clean at the base **(1)** as well as the wall **(2)**.

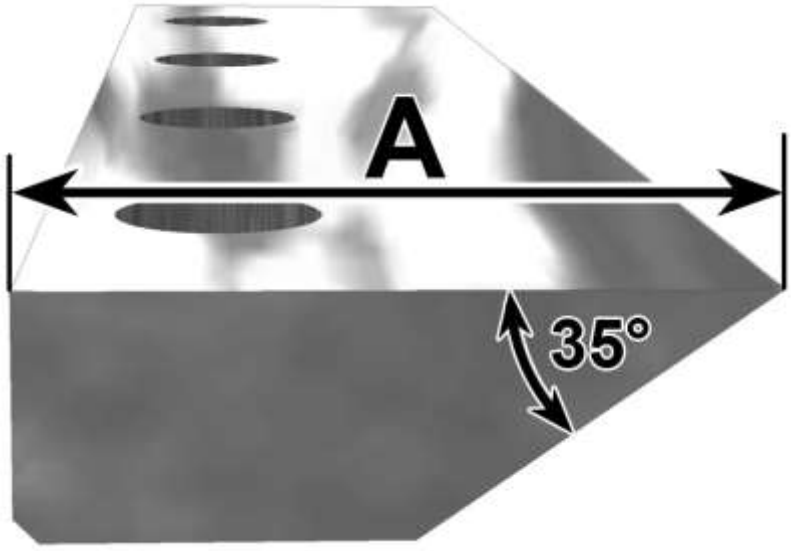




-Install identical or newly ground blades.

IMPORTANT: the blades must be ground by a professional using specific tools, and not with a grinding disc. Make sure tha 35° angle of the cutting edge is respected. The minimal lengt of **A** should not be smaller than 50 mm after grinding. (The length of a new blade is 60 mm).

(next) →



-**Tighten the screws using Loctite with a 16b M/kg tightening torque and make sure the blades and inserts lean against the wall**

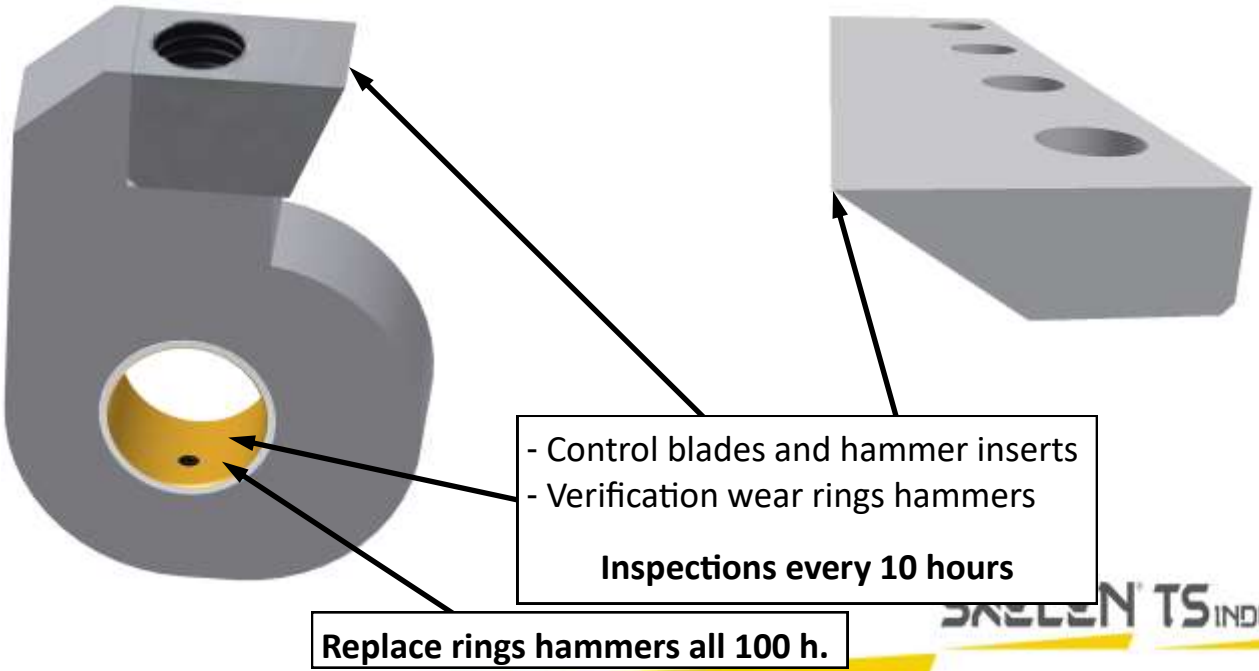
A tightening torque of the screws is essential to prevent their accidental unclamping

-Lubricate the axes of the hammers (pump ~2 x per hammer).

-Close the chute and the covers.

-Start the engine and warm it during a few minutes.

-Accelerate to maximum speed to make sure no abnormal vibrations disturb the functioning of the machine.



DISASSEMBLY TO CHECK THE COUNTERBLADE

Remove the ignition key before proceeding

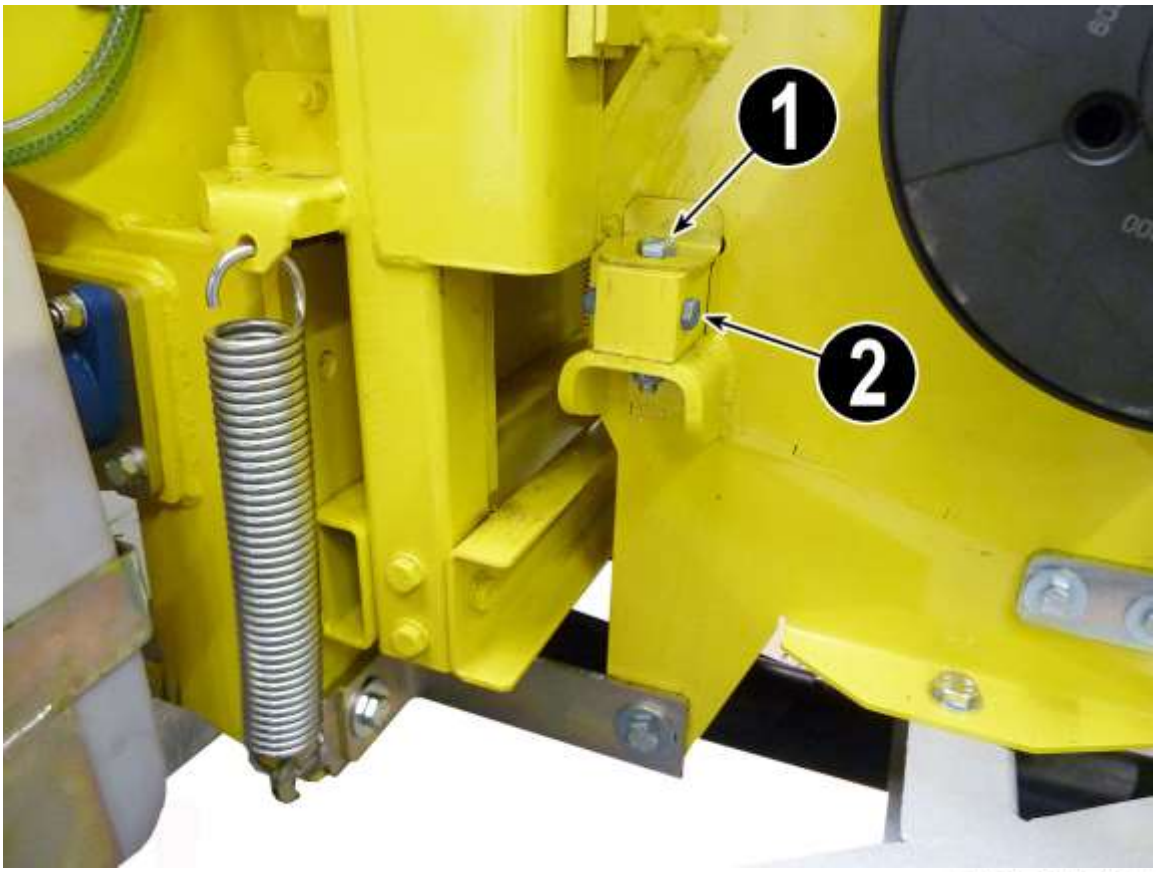
-Remove the two fixation screws **(1)** at each end of the counterblade.

-Remove the two safety bolts **(2)**

-Move the counterblade from one side of the housing to the other. If the edge shows signs of wear, remove the counterblade and position it again but turned halfway so there is a new edge facing the blades.

(The counterblade can be removed from the right as well as from the left side)

(The four sides of the counterblade can be used)



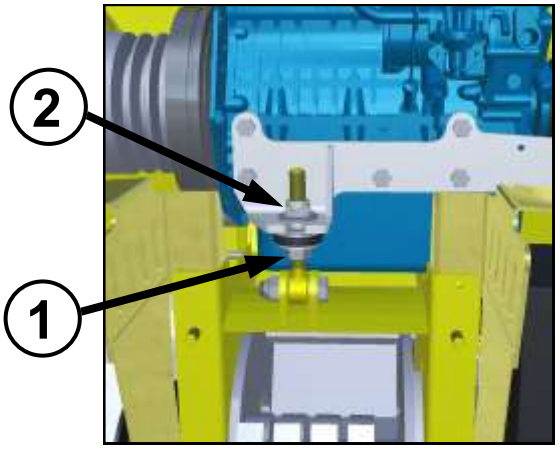
ADJUSTING THE ROTOR BELTS

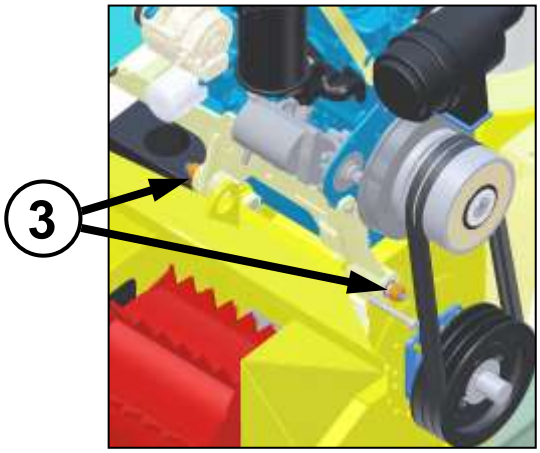
This intervention requires a skilled technician

The rotor's belts are permanently kept extended by an extender.

The adjustment of the belts' tension is done through the pivoting of the engine's support plate while acting on the extender **(1)**, after loosening the nut (2) and nuts (3) on each side.

After belt tension, tighten the nuts **(2)** and **(3).**





Nut Nylstop Ø16 **Whasher**

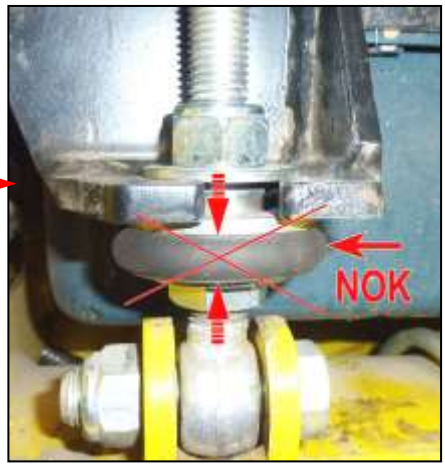


The V-belt is correctly tensioned if the rubber buffer is slightly compressed as shown in the image to left

Excessive tension generates excessive pressure on the rubber buffer, as shown in the image to right

- **After the tension is correct, screw down the locknut up to stop and tighten with one half of a turn.**

This nut must not be tightened too much, otherwise the rubber buffer becomes distorted, as shown in the image.



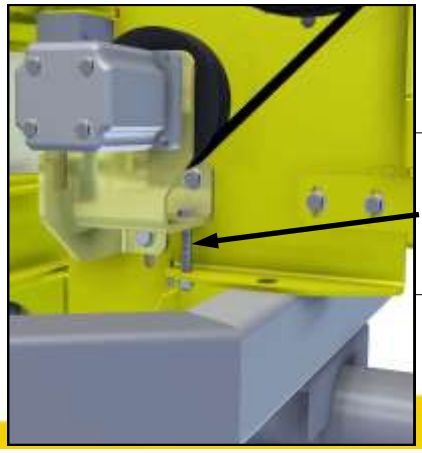
REGLAGE COURROIE DE POMPE HYDRAULIQUE TIGER DR



- Slightly loosen the 3 bolts supporting the pump.
- Use a lever to lower the support.

Do not over tension – this may cause breakage of the pump axis. The belt should remain "supple".

- Retighten the 3 support bolts.



Do not over-tighten the tensioning screw TH8x60, if your machine is so equipped.

ENGINE DASHBOARD TIGER D

A: Green warning light functioning OK (If flashing, the engine stops after 10 seconds **)**

B: Warning light battery load

C: Warning light oil pressure

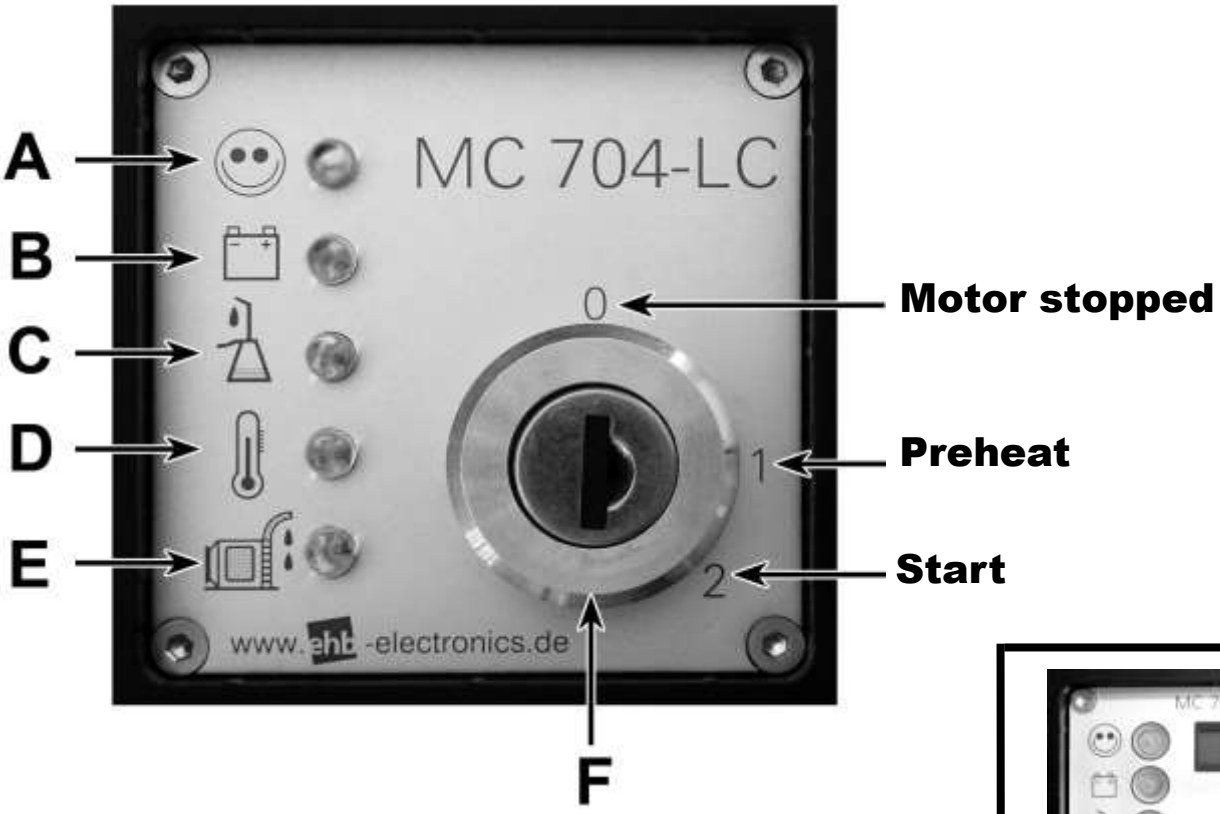
D: Warning light water temperature

E: *no utility* **or preheating 8 seconds**



F: Key switch

The engine is stopped automatically if warning light C and D indicate a problem





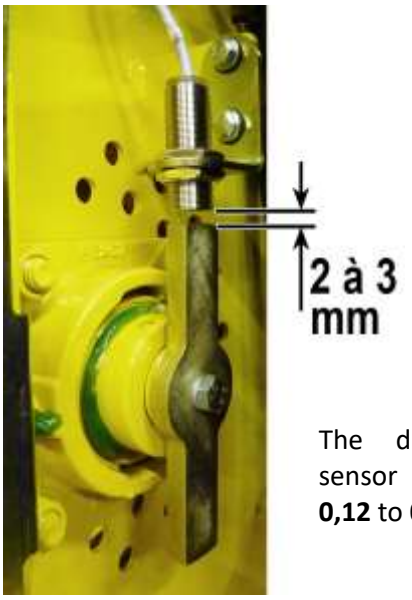
Do not add the key of the chipper to a heavy key ring; during functioning this could interrupt the contact. The functioning in F and B direction of the belt/feed can be reset and the power supply to the engine can be interrupted.

INDUCTIVE SENSOR and PROTECTION FUSE

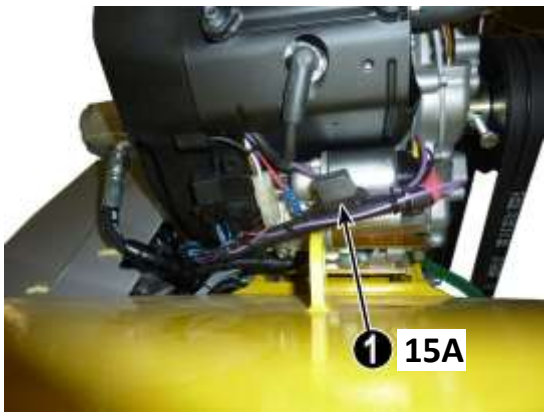
The M18 inductive sensor (Ø18) placed at the end of rotor shaft Indicates the rotation of the rotor to the box Pilot System.

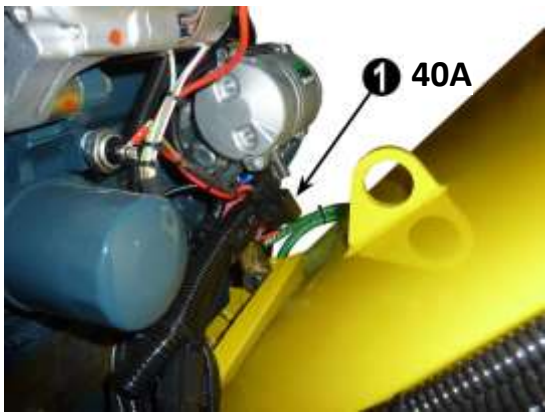
NOTE: see page 53





The distance between the sensor and the index must be **0,12** to **0,16in (3** to **4 mm)**.





The protection fuse 12 Volts permanent **15A (Tiger P)** and **40A (Tiger D)** is in the watertight fuse-holder on the starter cable.

THE SAFETY ACCESS ROTOR (ER and DR) and OPENING MOTOR COVER (D)

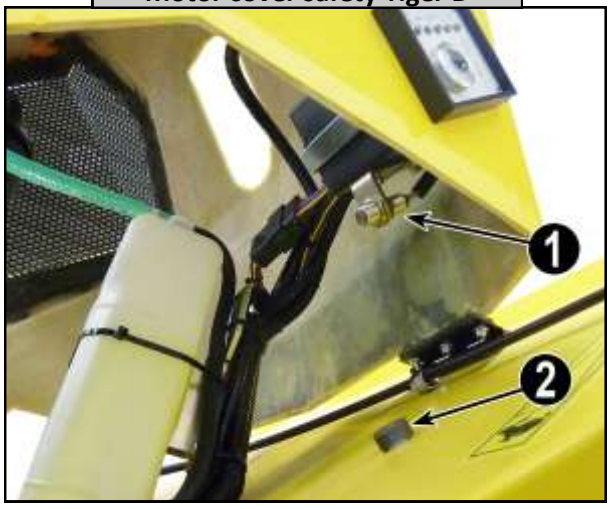
Chimney safety Tiger P and D



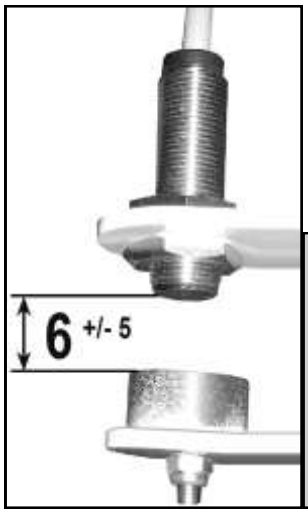
The engine security cut-off switch **(1)** is found next to the control box and the magnet **(2)** is found on the front edge of the hopper. The electrical contact is made when the magnet approaches the sensor. On opening the engine housing, the engine cuts out and /or the starter motor is deactivated.

This is indicated by a red LED on the Pilot System (see page 53).

Motor cover safety Tiger D



The engine security cut-off switch **(1)** is found next to the control box and the magnet **(2)** is found on the front edge of the hopper. The electrical contact is made when the magnet approaches the sensor. On opening the engine housing, the engine cuts out and /or the starter motor is deactivated.



There may be no physical contact between sensor and magnet. There must be 0,24 (+/- 0.20) in (6 mm+/-5) play.

EMERGENCY STOP BUTTONS

The machine also has four emergency circuit breaker buttons placed at the top of each side of the feed hopper.

When they are activated, these emergency circuit-breakers have two functions:

1) stopping the diesel engine

2) instantly stopping the forward run of the feed roller and the belt

(The 12V alimentation for the Pilot System and the control box is linked to the emergency stop buttons. When the emergency stop buttons are activated, the engine and the Pilot System cut out, instantaneously stopping both forward and reverse movement of the rotation of the conveyor feed and feed rollers.)





PILOT SYSTEM

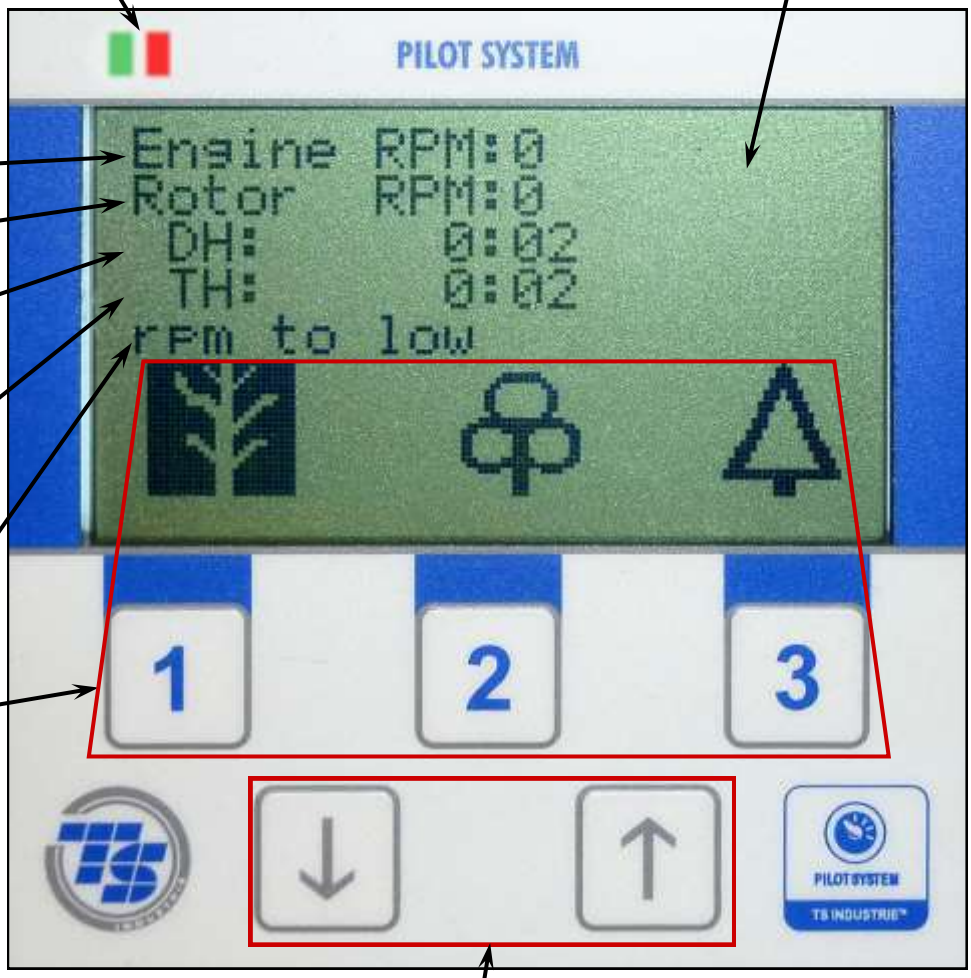
Available Functions

1. Permanent display of the engine RPM
2. Permanent display of the rotor RPM
3. Permanent display of the total daily hours
4. Permanent display of the total machine hours
5. Green LED indicates that the engine and rotor are turning
6. Red LED indicates fault
7. Hydraulic Test: a rapid forward and reverse action to test the correct function of the hydraulic circuit
8. A rapid forward action of the rotor to test intervention of the NoStress facility
9. 3 NoStress (VarioStress) choices relative to the type of material to be prcessed
10. Maintenance management : intervals for oil change
11. Belt slippage, clutch and hydraulic coupling security system
12. Engine cut-out and starter motor deactivation security system (housing sensors)
13. Default memory settings
14. 21 machine types programmed into memory
15. 4 language options available : English, French, German and Spanish

Description of box

Led :
- Green - static: on
- Green - flashing: indicates impulsions given by the rotor sensor
- Red - static: indicates that engine and/or rotor housing is open

Liquid Cristal lit screen



Engine speed

Rotor speed

Daily machine hours

Total machine hours (since first use)

Indicates different phases in use

NoStress setting buttons: **1** to **3**

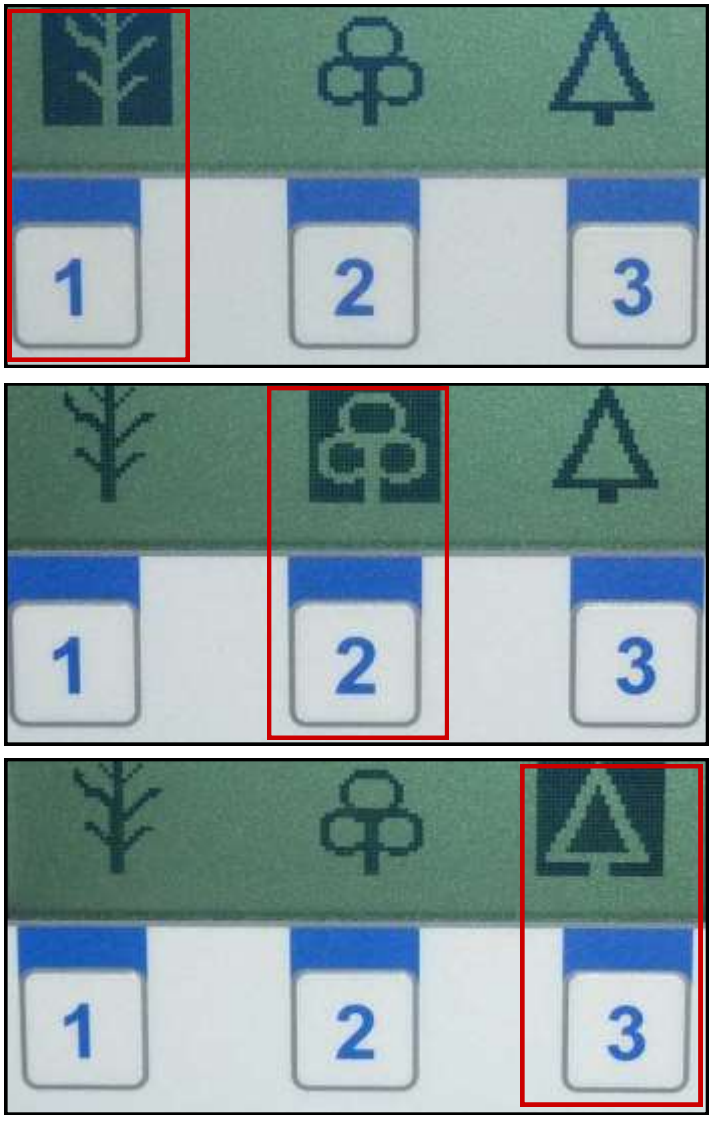
Use the Up ↑ and Down ↓ buttons to enter the access code and to navigate the menu

It is formally forbidden to modify the default factory settings of the Pilot System. Any modification to the security and program parameters made outside of our factories is the entire responsibility of the person having made these changes.

Choice of NoStress setting

As with the **VarioStress**, the **Pilot System** has 3 settings.

Above each button is a liquid crystal pictogram representing the setting.



Button 1 for branch waste:
uses a wider engine RPM.

Button 2 for leafy waste: uses an intermediate RPM. Can be used for branch waste and small amounts of conifer/ vegetation.

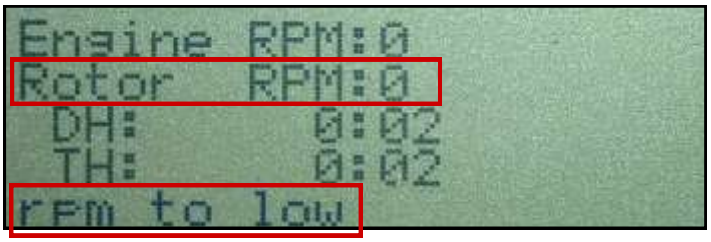
Button 3 for conifer and large quantities of vegetation (particularly wet and green wood): restricted but high regime for maximum ventilation.

If the programme settings are changed during use, the yellow forward button must be pressed to reengage the feed rollers.

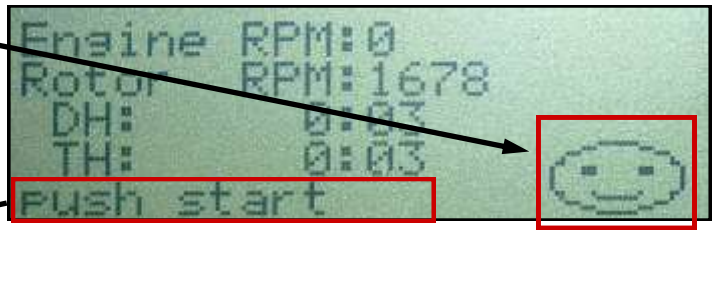
Normal and high speed function

The rotor speed is indicative of the functioning on the machine.

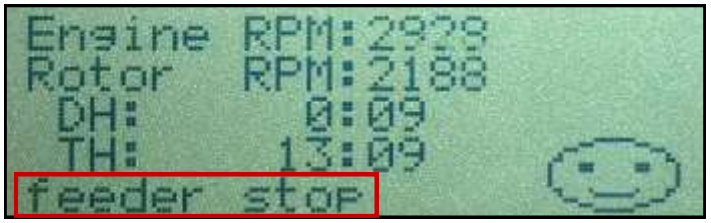
The message **RPM too low** indicates that the engine RPM, and consequentially, the rotor speed, is not sufficient to allow the forward feed action of the feed rollers.



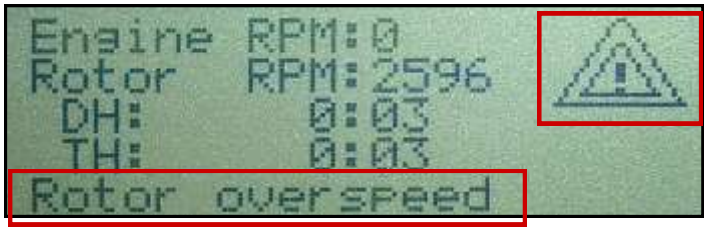
Increase the engine speed to maximum: a **smiley** indicates when the minimum rotor speed for forward feed action has been reached. The **Yellow forward button** can now be pressed.



Once the feed rollers are in action, if the red stop bar to the rear of the hopper is pushed, **feeder stop** is displayed.



If the rotor speed is too high, the feed roller is automatically stopped to prevent use of the machine and a **Danger** symbol is displayed along with the message **Rotor over speed**.



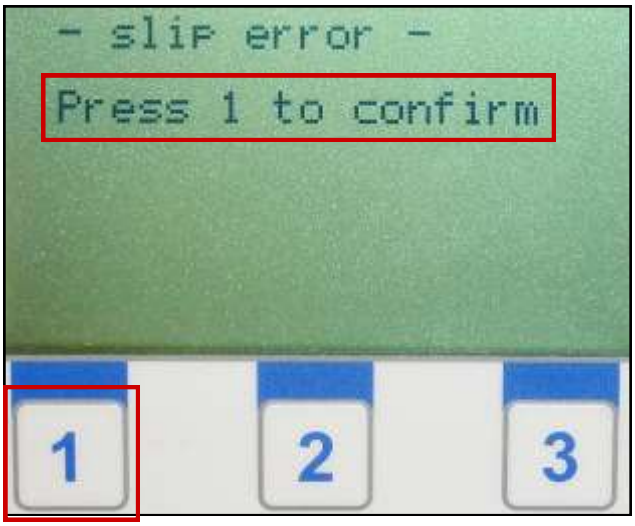
To restart the rotation of the feed rollers, the engine must be slowed. It can be returned to maximum only once the cause of the over speed has been rectified.

SLIPPAGE function

The Pilot system controls any slippage in the rotor transmission by permanently comparing the speed of the engine pulley in relation to the rotor pulley. A percentage splippage is tolerated in order to proctect the transmission (belts, centrifugal clutch or hydraulic coupler). If the slippage is greater than the allocated percentage, the engine is stopped and a message is displayed on the screen.

Different causes of slippage:

- **rotor blocked at start-up or during operation**
- **belts loose**
- **clutch worn**



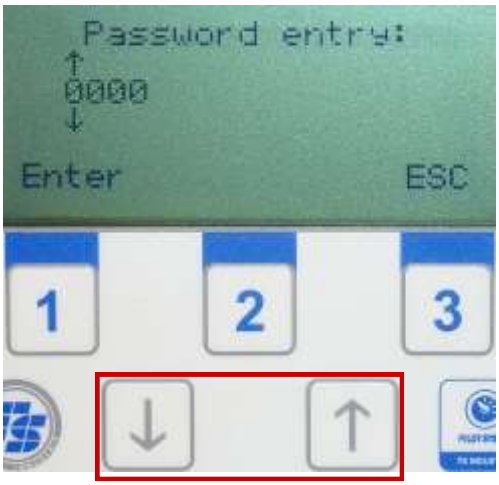
N.B.: Slippage can also occur if the machine is accelerated very slowly from standby.

To bypass the message and continue, press the button **1** after having verified and controlled the transmission.

The date and time of this message are recorded and saved in the memory of the Pilot System and can be consulted by the mechanic or dealer.

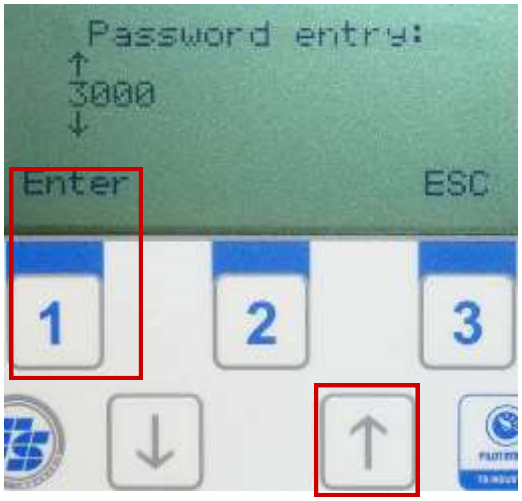
Access to CLIENT parameters

1



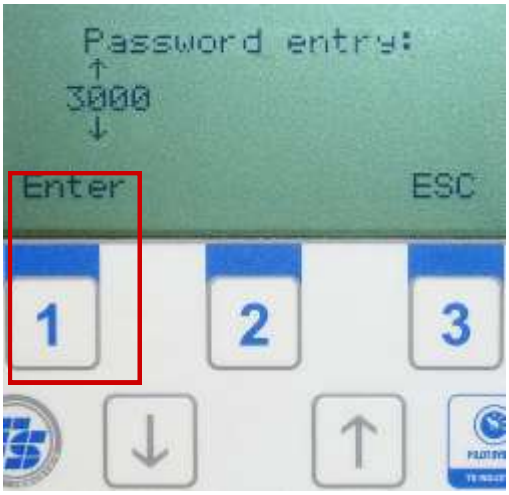
Hold down the ↓ and ↑ buttons for 4 seconds

2



Press the ↑button **3** times to enter number 3, then validate by pressing **1**

3



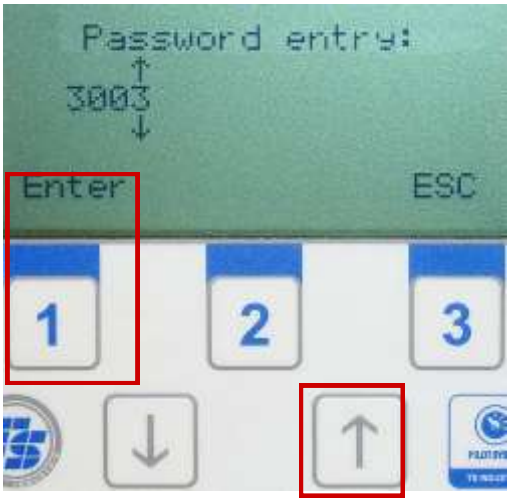
Press the button **1** to validate and bypass the number **0**

4



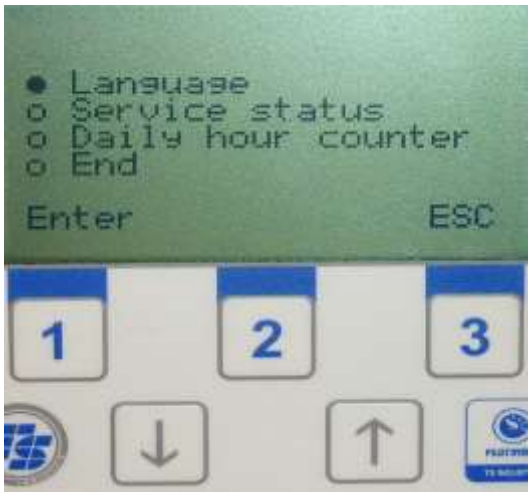
Press again on the button **1** to validate and bypass the second **0**

5



Press the ↑ button to enter number **3** et valider avec la touche **1**

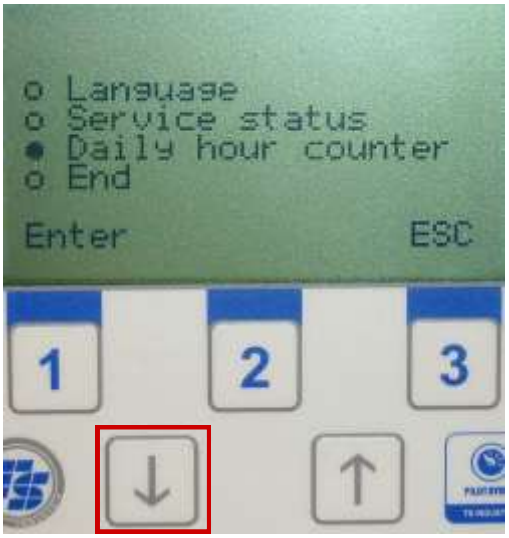
6



The user can now access the menus **Language**, **Daily Hour counter, Service Status** (services and oil change) and **END** navigation

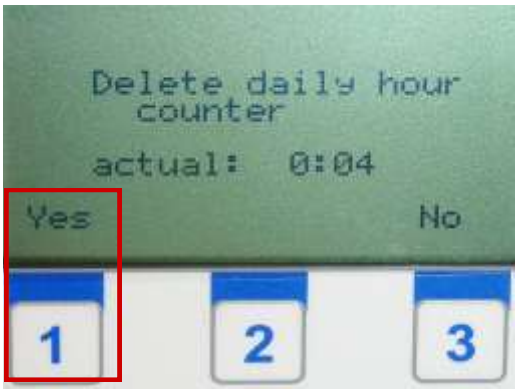
Resetting the Daily Hour counter

1



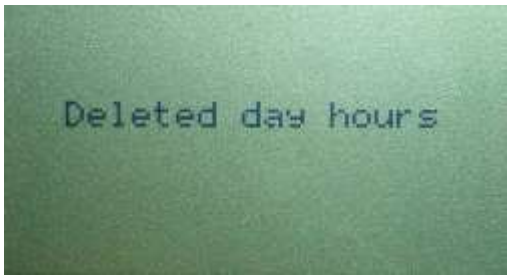
Press ↓ to scroll to the **Daily Hour Counter**

2



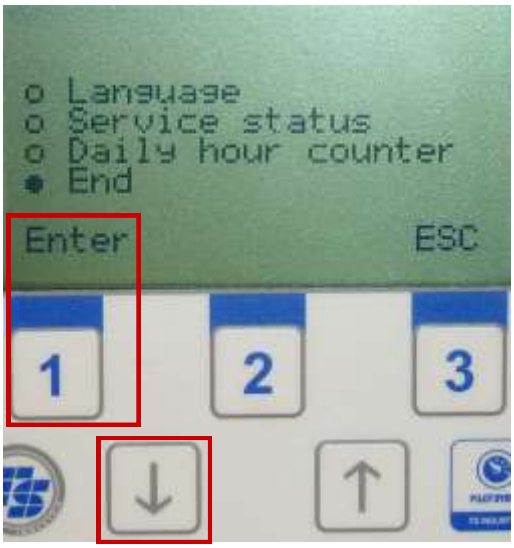
Press **1** to validate the deleting of existing hours

3



A message validates the operation

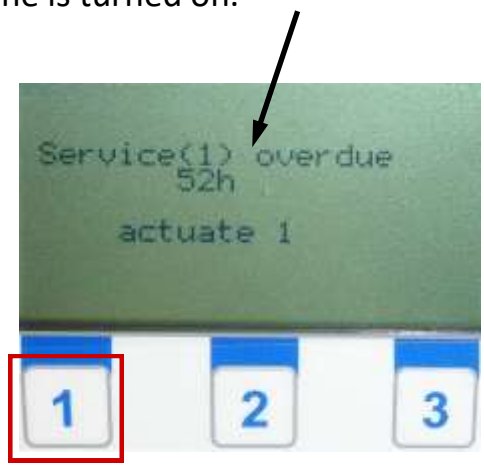
4

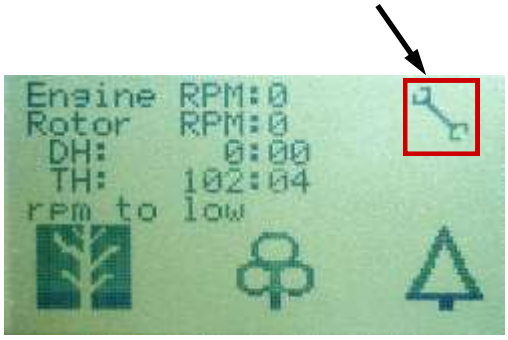


Press ↓ to scroll to **END** and press **1 Enter**

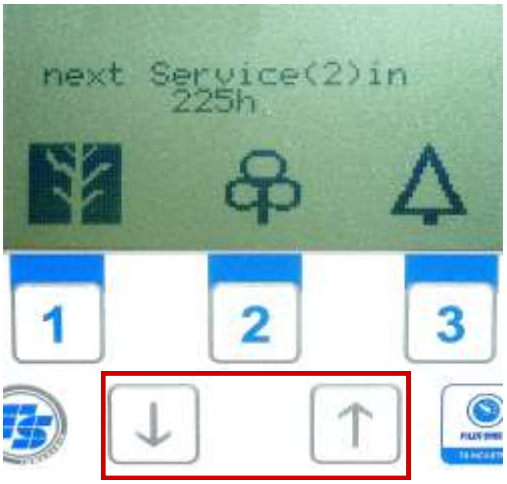
Service overdue and next service information *(engine oil change)*

When the service is due or overdue, a warning message and an icon show when the machine is turned on.



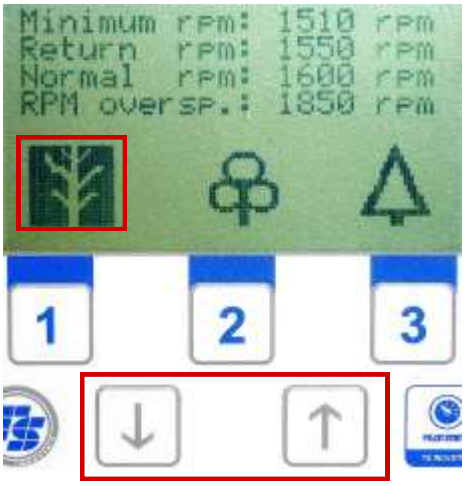


Organise a service with your dealer to carry out the oil change. The message is saved in the Pilot System. To bypass the message and continue work, press the button **1**.



Press once or twice on the ↓ or ↑ buttons at any time to visualise the next oil change or service, then contact your dealer in advance to make a reservation.

NoStress rotor settings selected



Press the ↓ or ↑ buttons once or twice at any time to visualise the rotor settings for the selected NoStress option:

Example option **1** below:

Minimum RPM: below 1875 rpm the feed roller stops.

Return RPM: from 2175 rpm, the feed roller starts to turn.

Normal RPM: after over-speed of the engine or rotor (PTO), the rotor must return to less than 2175 rpm in order that the feed roller can function again.

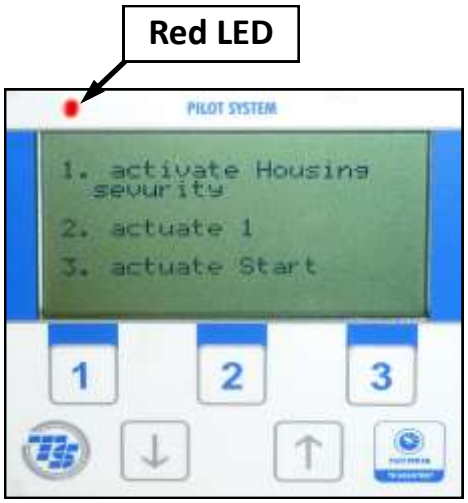
RPM overspe*ed*: feed roller stops.

REMINDER:

It is formally forbidden to modify the default factory settings of the Pilot System. Any modification to the security and program parameters made outside of our factories is the entire responsibility of the person having made these changes.

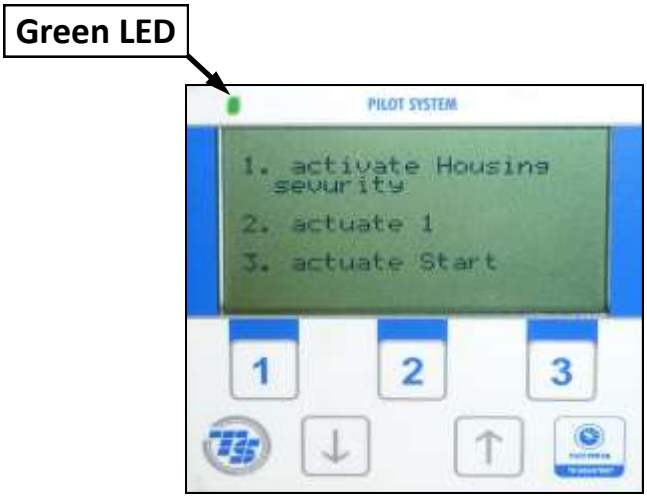
Rotor access security (ER and DR) and engine housing open (DR)

A **red LED** and a warning message indicate that the rotor access or engine housing is open or has not been correctly closed. The security system stops the engine and prevents restarting (deactivates starter motor). To delete this message, ensure that the housings are closed and press the button **1**.



Rotor rotation impulse sensor

A static **green LED** indicates that the machine and, consequently, the Pilot System, have been turned on. The light begins to flash when it receives a signal from the **rotor impulse sensor M18.** The frequency of the flash varies with the speed of the rotor.



THE RESERVOIRS

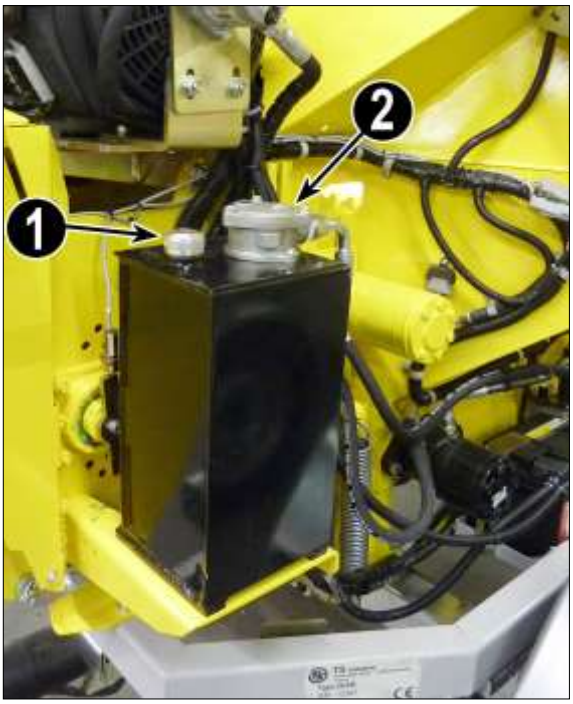
The machine has two reservoirs:

-the **hydraulic oil reservoir** 8,5 liters including:

-The plug gauge filling **(1)**

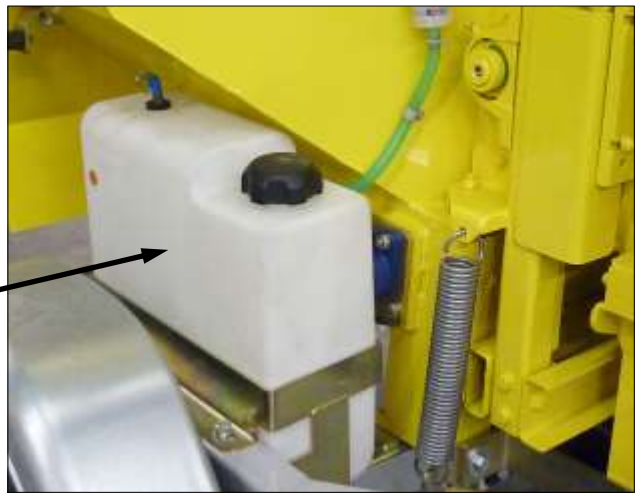
-Hydraulic filter on return **(2)**

-The hydraulic filter suction **(3)**
(accessible by removing the suction port)





-The **fuel tank transparent** 18 liters



EVACUATION SHAFT



The top part of the discharge chute can be oriented 90° to the left and 90° to the right via the indexer

Problem - Solving

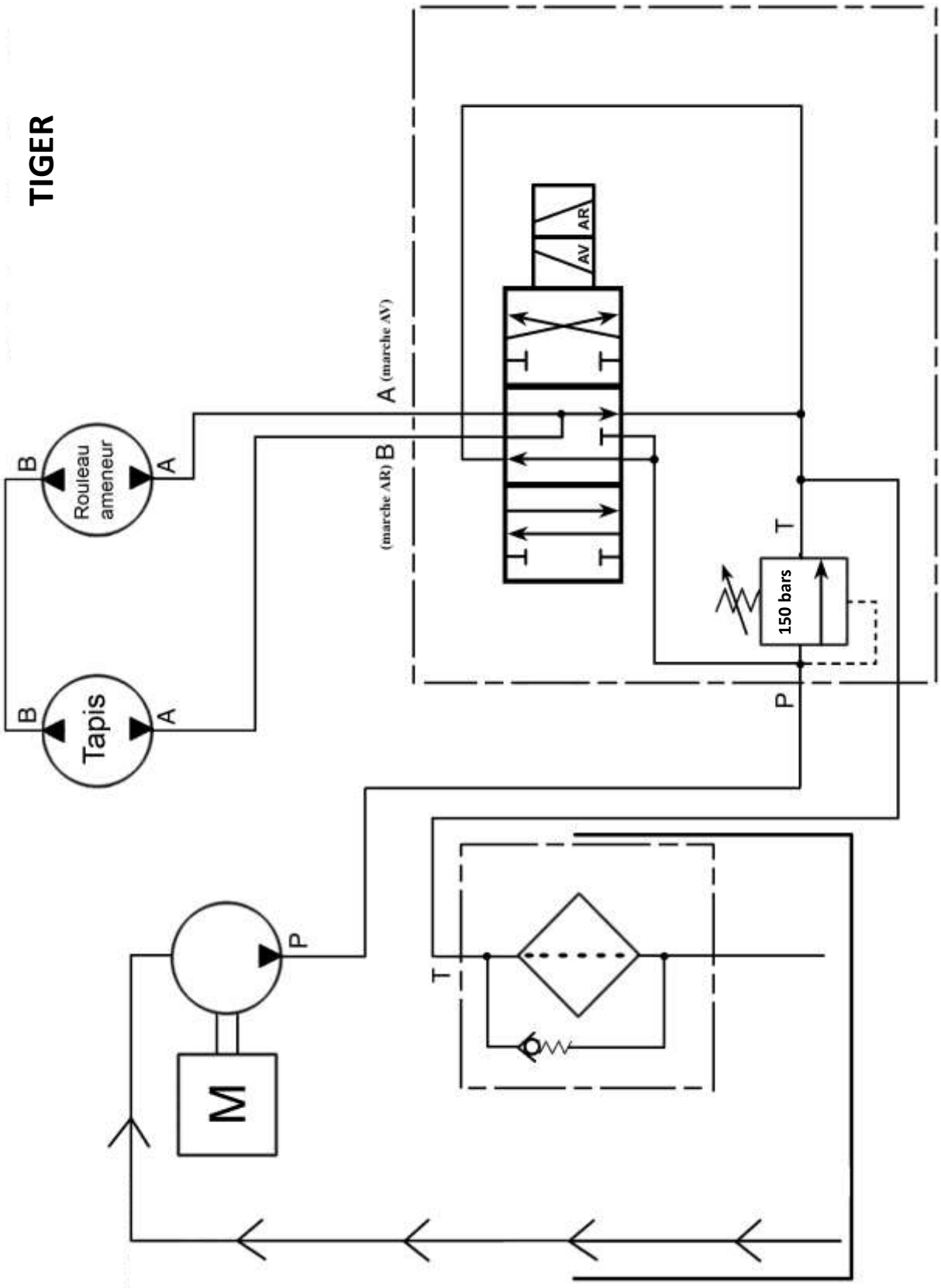
In this section, we provide a list of problems, their causes as well as possible Solutions. If you experience a problem that is not mentioned here, please contact your reseller. Keep your user manual and the serial number of your chipper at hand.

PROBLEM	CAUSE	SOLUTION
The engine stops just after start-up or during operation and the message slip error is displayed on the Pilot System.	-Rotor belts loose or defect with centrifugal clutch or hydraulic coupler -Feed roller speed to high for the type of matter (too large and hard) -Engine accelerated too slowly from a ticking over.	-Have rotor belts tightened and/or clutch or hydraulic coupler controlled by dealer. -Reduce the feed roller speed using the flow divider on the hydraulic distributor. -Accelerate more vigorously
The dashboard and Pilot System will not turn on	-Safety of the emergency button activated -Fuse melted **15A.** (on the starter Tiger **ER**) -Fuse melted **40A.** (on the starter Tiger **DR**)	-Turn off the safety -Replace the fuse 15A -Replace the fuse 40A
The engine will not start	-Hood and / or the chimney is open or not closed -Safety of the emergency button activated -The battery is low -The power cables have been damaged. -The electromagnet that stops the engine is broken (DR)	-Control the closure of the bonnet and chimney -Turn off the safety -Load or replace the battery -Check the electrical circuits. -Check the electromagnet
The motor stops when grinding large branches	-Capacitor slammed between terminal 5 and 8 in table startup MC704	-Change the capacitor

PROBLEM	CAUSE	SOLUTION
The engine stops early and will not start again	-Safety hood or chimney incorrectly adjusted -The red light of the water temperature is on. -There is no fuel left.	-Check and adjust security -The radiator is dirty: clean -Add fuel
Reduced engine power	-Filter blocked -Blades and hammers blunt	-Replace the filter -Grind or replace the blades. Replace the hammer inserts.
The belt/roll will not rotate forward or backward	-Speed wheel feeding equipment completely tightened --Hydraulic engine or pump defect -Not enough oil in the tank	-Loosen the setting wheel on the distributor -Check or replace the defect part -Check the oil level

Hydraulic diagram

TIGER



Spécifications

	TIGER P	TIGER D
Capacity:	5,51 in (14 cm)	5,51 in (14 cm)
Hourly output:	17 m3/h	17 m3/h
Length:	161,41 in (4,10 m)	161,41 in (4,10 m)
Largeur:	64,96 in (1,65 m)	64,96 in (1,65 m)
Height:	90,55 in (2,30 m)	90,55 in (2,30 m)
Weight without belt:	Between 670 and 664 Kgs with fuels full	Between 750 and 744 Kgs with fuels full
Number of hammers:	8	8
Number of knives:	2	2
Rotor's diameter:	15,74 in (400 mm)	15,74 in (400 mm)
Rotor's weight:	45 Kg	45 Kg
Rotor's width:	9,84 in (250 mm)	9,84 in (250 mm)
Engine's power:	25Cv Kohler CH730	25Cv Kubota D902
Gas-oil capacity:	19 L	19 L
Engine speed:	3600 Tmn	3600 Tmn
Rotor's speed:	2800 T/mn	2800 T/mn
Anti-jamming:	YES	YES
Hydraulic supply:	YES	YES
Hydraulic capacity:	8,5 L	8,5 L
Hydraulic pressure:	150 bars	150 bars
Road axle:	YES	YES
Soundproofing:	NO	NO
Number of wheels:	2	2
Tyre dimensions:	155/70R13	155/70R13
Tyre air pressure:	2,5 bars	2,5 bars

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