Αποθηκεύστε Αυτό Το Εγχειρίδιο Για Μελλοντική Αναφορά

Save This Manual for Future Reference

ΥΔΡΑΥΛΙΚΟΣ ΤΕΜΑΧΙΣΤΗΣ ΞΥΛΟΥ

HYDRAULIC WOOD CHIPPER

Εγχειρίδιο Χρήστη
Αρχικές Οδηγίες

User Manual

Original Instructions

Αυτή η εικόνα του προϊόντος είναι ένα σχηματικό διάγραμμα, ορισμένες λεπτομέρειες μπορεί να μην είναι ακριβώς ίδιες με το προϊόν που αγοράσατε.

This product picture is a schematic diagram, some details may not be exactly the same with the product you bought.

ENGLISH

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INTRODUCTION

IMPORTANT HEALTH AND SAFETY INFORMATION

Before using your new chipper, please take time to read this manual. Failure to do so could result in:

- personal injury
- equipment damage
- damage to property
- 3rd party injuries

This manual covers the operation and maintenance of the hydraulic wood chipper. All information in this manual is based on the latest product information available at the time of purchase.

All the information you need to operate the machine safely and efectively is contained within pages 2 to 12. Ensure that all operators are **properly trained** for operating this machine, especially in **safe working practices.**

Due to improvements in design and performance during production there may be, in some cases, minor discrepancies between the actual chipper and the text in this manual.

The manual should be considered an important part of the machine and should remain with it if the machine is resold.

CAUTION or WARNING
BE AWARE OF THIS SYMBOLAND WHERE SHOWN,CAREFULLY FOLLOW THEINSTRUCTIONS.

CAUTION or WARNING
THIS SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL,BE ALERT TO THE POSSIBILITY OF INJURY TO YOURSELF OR OTHERS AND CAREFULLY READ THE MESSAGE THAT FOLLOWS.

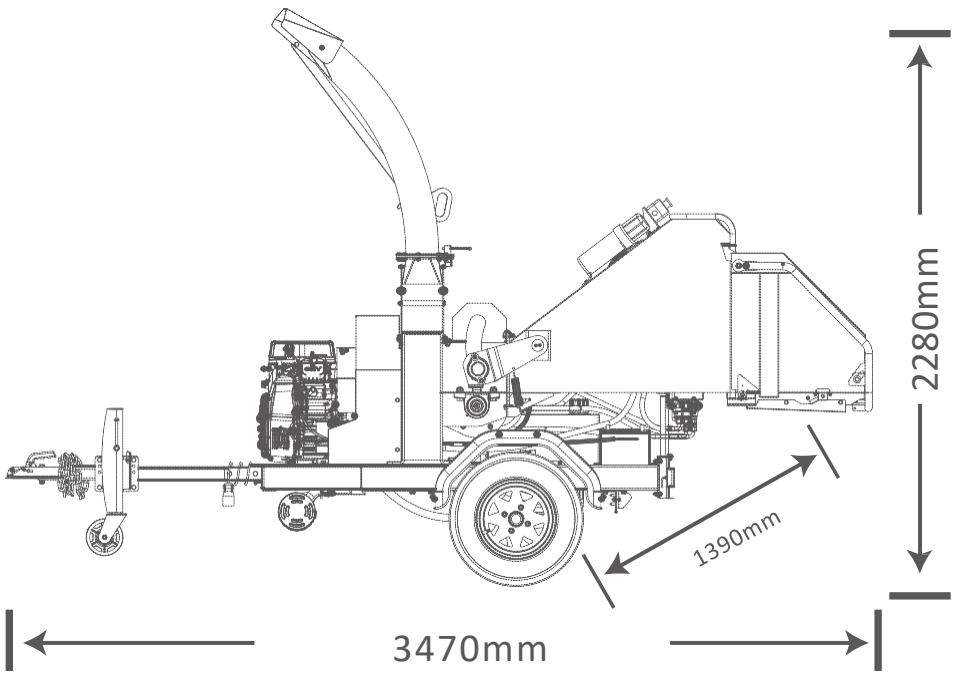
CAUTION or WARNING
ALWAYS FOLLOW SAFE OPERATING AND MAINTENANCE PRACTICES

Designed to chip solid wood material up to 150mm in diameter and capable of chipping up to 3.5 tonnes of brushwood per hour.

SPECIFICATIONS

HYDRAULIC WOOD CHIPPER	
Engine type	V-twin cylinder: Four Stroke: Forced air cooling
Start	Electric Start 12V 36Ah battery
Fuel Tank	12L
Hydraulic Oil Tank	25L
Cutting Method	Disc
Max.Chipping Capacity	7 inch
Blade Nos.	2xRotating blades; 1xAnuil
Blade Material	A8
Feeding System	Hydraulic motor feeding
Hydraulic Motor/Roller	2 pcs
Wheel	5.3-12 Tubeless tire
Axle	Damping torsion axis
Weight(N.W./G.W.)	650/700 KGS
Overall Size	3470*1390*2280mm
Packing Size	2200*1180*1300mm

DIMENSIONS



SECTION I

SAFE WORKING

SAFE WORKING

OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Chainsaw safety helmet (EN 397) fitted with mesh visor (EN 1731) and ear defenders (EN 352).
- Work gloves with elasticated wrist.
- Steel toe cap safety boots (EN 345-1).
- Close fitting heavy-duty non-snag clothing. High-visibility clothing (EN 471) if risk assessment identifies the need.
- Face mask if appropriate.
- DO NOT wear rings, bracelets, watches, jewellery or any other items that could be caught in the material and draw you into the chipper.

WARNING

THE CHIPPER WILL FEED MATERIAL THROUGH HOLD-TO RUN. TO DO THIS,IT RELIES ON SHARP BLADES BOTH ON THE FEED ROLLERS AND THECHIPPER ROTOR. TO KEEP THE BLADES SHARP, ONLY FEED THE MACHINEWITH CLEAN BRUSHWOOD. DO NOT PUT MUDDY/DIRTY WOOD, ROOTS,POTTED PLANTS, BRICKS, STONES OR METAL INTO THE CHIPPER.

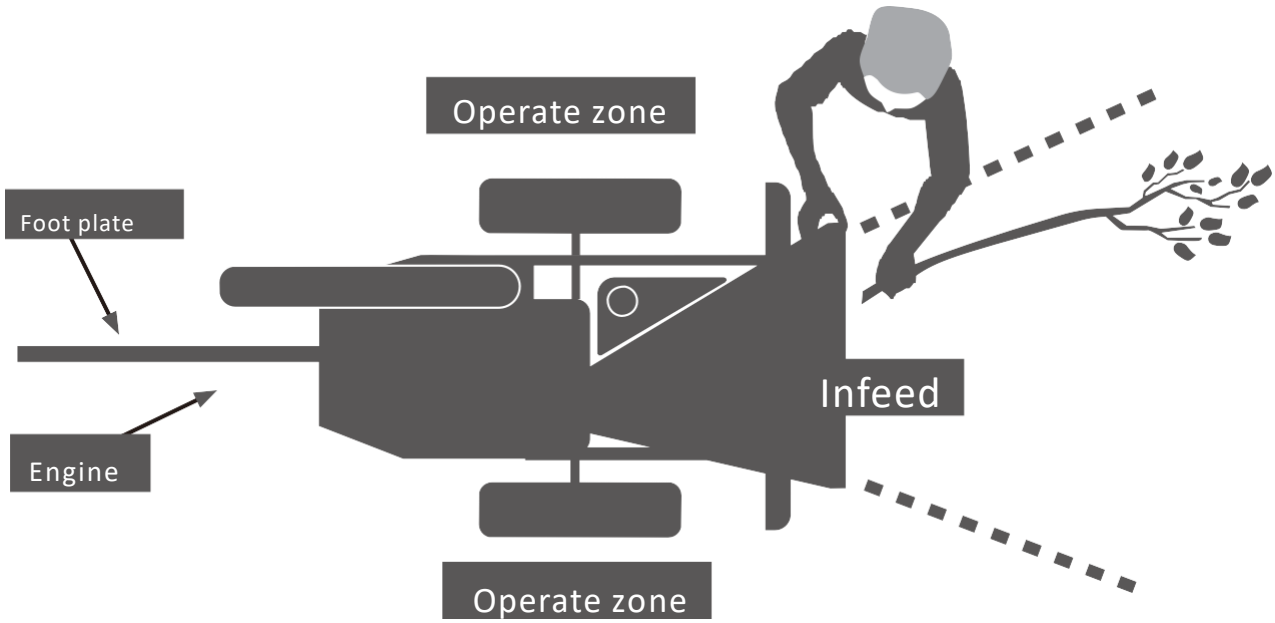
BASIC WOOD CHIPPING SAFETY

The operator should be aware of the following points:

- Maintain a safety exclusion zone around the chipper of at least 10 meters for the general public or employees without adequate protection. Use hazard tape to identify this working area and keep it clear from debris build up. Chips should be ejected away from any area the general public have access to.
- Hazardous material - Some species of trees and bushes are poisonous. The chipping action can produce vapour, spray and dust that can irritate the skin. This may lead to respiratory problems or even cause serious poisoning. Check the material to be chipped before you start. Avoid confined spaces and use a face mask if necessary.
- Be aware when the chipper is processing material that is an awkward shape. The material can move from side to side in the funnel with great force. If the material extends beyond the funnel, the brash may push you to one side causing danger. Badly twisted brash should be trimmed before being chipped to avoid thrashing in the feed funnel.

SAFE WORKING

- Be aware that the chipper can eject chips out of the feed funnel with considerable force. Always wear full head and face protection.
- Always work on the side of the machine furthest from any local danger, e.g. not road side.



- Never leave the chipper unattended when running. Machines must be supervised at all times when in use.
- In the event of an accident, stop the machine, remove the key and call the emergency services immediately.
- Only use the machine in daylight or illuminance above 500lux. Never operate the wood chipper after dark.
- Always operate the chipper outdoors and in a well ventilated area - exhaust fumes are dangerous. Always keep the operating area clear of people, animals and children. Never operate the chipper in rainy days.
- Keep the warehouse clean and dry for storage, check the battery to be safe, stabilize the chipper on hard level ground and then use the wedges on both side of the wheels.

SAFE WORKING

GENERAL SAFETY MATTERS

- Always stop the chipper engine before making any adjustments, refuelling or cleaning.
- Always check the rotor has stopped rotating and remove the chipper ignition key before maintenance of any kind, or whenever the machine is to be left unattended. The way to confirm that the rotating cutting parts have stopped is to see that the two-color rotating axis inside the transparent cover no longer rotates, then maintenance work can be carried out.
- Always check the machine is well supported and cannot move. If working on an incline, position on solid ground, across the slope. Stabilize the chipper on hard level ground and then use the wedgeson both side of wheels.
- Always operate the chipper with the engine set to maximum speed when chipping.
- Always check (visually) for fluid leaks. If found, resolve the leak before operating the chipper.
- Always take regular breaks. Wearing personal protective equipment for long periods can be tiring and hot.
- Always keep hands, feet and clothing out of feed opening, discharge and moving parts.
- Always use a push stick to push in short pieces. Under no circumstances should you reach into the funnel.
- Always keep the operating area clear of people, animals and children.
- Always keep the operating area clear from debris build up.
- Always keep clear of the chip discharge tube. Foreign objects may be ejected with great force.
- Always ensure protective guarding is in place before commencing work. Failure to do so may result in personal injury or loss of life.
- Always operate the chipper in a well ventilated area - exhaust fumes are dangerous.
- Ensure a fire extinguisher is available on site.
- Ensure a personal first aid kit and hand cleaning materials are available (e.g. waterless skin cleanser).
- Always cover ignition switch with plug provided when towing or jet wash cleaning.

SAFE WORKING

DO NOT ALLOW THE FOLLOWING TO ENTER THE MACHINE, AS DAMAGE IS LIKELY

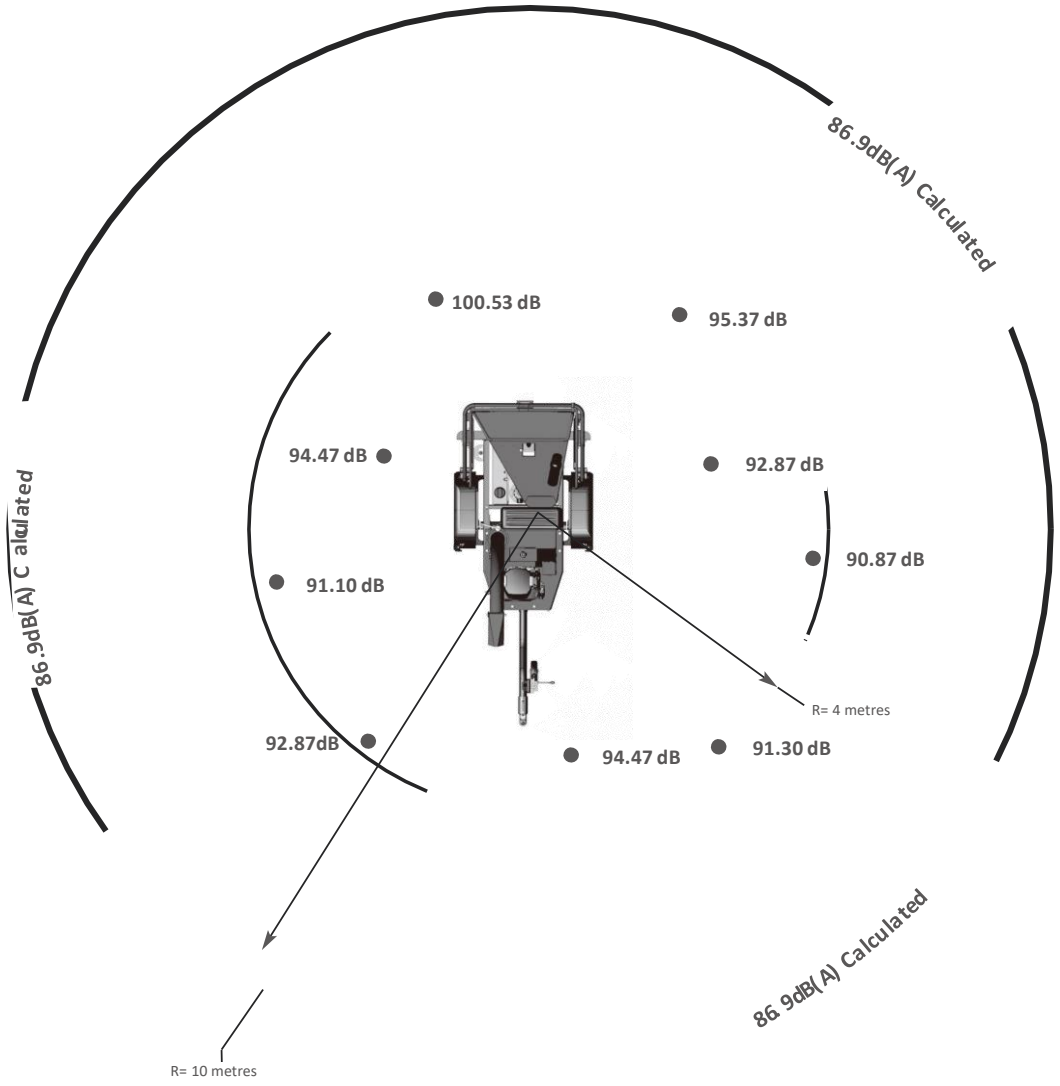
- Do not operate chipper unless available light is suicient to see clearly.
- Do not use or attempt to start the chipper without the feed funnel, guards and discharge unit securely in place.
- Do not stand directly in front of the feed funnel when using the chipper. Stand to one side.
- Do not smoke when refuelling.
- Do not let anyone who has not received instruction operate the machine.
- Do not climb on the machine at any time.
- Do not handle material that is partially engaged in the machine.
- Do not touch any exposed wiring while the machine is running.
- Do not use the chipper inside buildings.

SAFE WORKING

NOISE TEST

MACHINE: Hydraulic Wood Chipper
NOTES: TESTED CHIPPING 120MM CORSICAN PINE 1.5M IN LENGTH

Noise levels above 80dB (A) will be experienced at the working position. Wear ear protection at all times to• prevent possible damage to hearing. All persons within a 4 metre radius must also wear good quality ear protection.



Guaranteed Sound Power: 117dB *(A)*

As required by Annex III of Directive 2000/14/EC "Noise Emission in the environment by equipment for use outdoors".

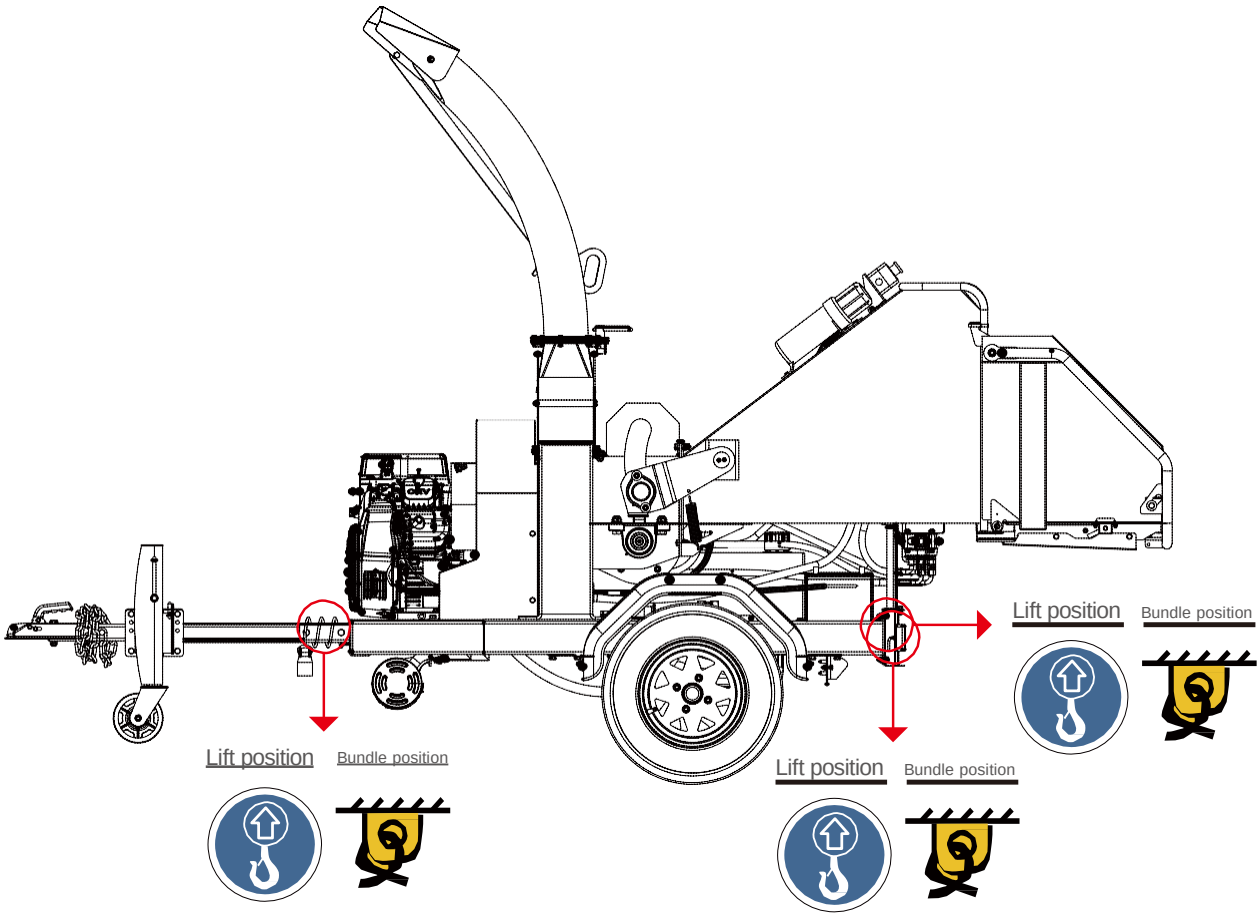
SECTION II

OPERATING INSTRUCTIONS

OPERATING INSTRUCTIONS

SAFE TRANSPORTATION

- The wood chipper is designed to be transported via a van or small trailer. The machine is equipped with grab bars that are to be used for both lifting the machine, and strapping it down. This machine weighs approximately 700kg and should only be lifted using correct apparatus.
- When the wood chipper is packaged in the plywood case, we can carry machine by forklift.
- Without package, we can lift the machine at the point of lift label shown.
- Tie the machine at the point of tying label when transport for long distance to keep the machine stable.



Note: The machine is not designed to travel on the road, it's only permitted to move for short distance by its wheels.

OPERATING INSTRUCTIONS

STABLISHING THE CHIPPER

- Stabilize the chipper on hard level ground
- Use the wedges on both side of wheels.

DELIVERY

All machines have a full pre-delivery inspection before leaving the factory and
are ready to use. Read and understand this instruction manual before attempting to operate the chipper. In particular, read pages which contain important health and safety information and advice.

OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT REQUIRED

- Chainsaw safety helmet fitted with visor and recommended ear defenders to an appropriate specification.
- Heavy-duty gloves with elasticated wristarea.
- Close - fitting heavy-duty non-snag clothing.
- Safety footwear.
- Face mask (ifappropriate).

MANUAL CONTROLS

Their function is to control the feed roller whilst processing material. They do not control the main rotor.

YELLOW SAFETY BAR: This is the large yellow bar that surrounds the feed tray and side of the feed funnel. The bar is spring loaded and connected to a switch that will interrupt the power to the rollers. The switch is designed so that it only activates if the bar is pushed to the limit of its travel, then the rollers stop instantly.

YELLOW SAFETY BAR TEST

To ensure the safety bar is always operational it must be activated once before each work session. The rollers will not function until the bar is activated. This procedure must be repeated each time the ignition is switched of.

Do not rely on the yellow bar to keep the rollers stationary if it is necessary to clear or touch the rollers. Always switch of the machine and remove ignition key before approaching the rollers.

WARNING

DO NOT REMOVE, JAM,DISABLE, BYPASS, OVERRIDE。OR OTHERWISE IMPEDE THE EFFECTIVENESS OF THE YELLOW SAFETY BAR.

OPERATING INSTRUCTIONS

EMERGENCY STOPPING

There are two methods of stopping the chipper in the event of an emergency.

STOPPING THE ROLLERS

-Activating the yellow safety bar will stop the rollers immediately.

STOPPING THE ROLLERS & ENGINE

Pushing the Emergency stop button positioned on top of the funnel kills all power to both the engine and the rollers, bringing the machine to a complete stop. It overrides all buttons and bars and will not allow the chipper to function until it has been reset. To reset, pull out button until it returns to its original position, turn the ignition key back to the of position, before restarting the machine.

ENGINE CONTROLS

This label indicates the speed setting of the chipper. With the throttle lever in the fast position (hare) the machine is ready to chip.When the machine is not in use for short periods of time move the lever to the idle position (tortoise) or turn of completely.Move the lever to idle position and turn of the choke, the engine will be stopped.

OPERATING INSTRUCTIONS

BLADE WEAR

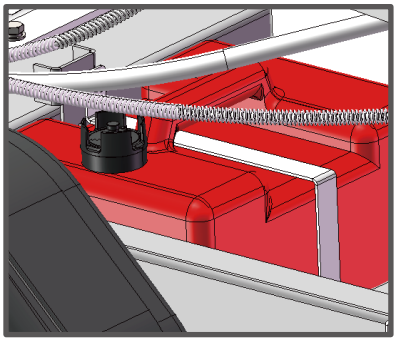
The most important part of using a wood chipper is keeping the cutter blades sharp. chipper blades are hollow ground to an angle of 40 degrees. When performing daily blade checks ensure blade edge is sharp and free from chips, if there is any evidence of damage, or the edge is "dull" change the blade(s). The wood chipper is fitted with 2 blades 109mm long. They are 100mm wide when new. A new blade should chip for up to 25 hours before it requires sharpening. This figure will be drastically reduced by feeding the machine with stony, sandy or muddy material.

As the blade becomes blunt, performance is reduced. With increased stress and load on the machine the chips will become more irregular and stringy. At this point the blade should be sent to a reputable blade sharpening company. The blade can be sharpened several times in its life. A wear mark indicates the safe limit of blade wear. Replace when this line is exceeded.

The machine is also fitted with a static blade (anvil). It is important that the anvil is in good condition to allow the cutting blades to function eiciently. Performance will be poor even with sharp cutter blades if the anvil is worn.

HYDRAULIC OIL LEVEL INDICATOR

The oil level will be visible through the tank wall. It should be within the upper and lower level marks.



PETROL TANK INDICATOR

The fuel level may be inspected by removing the fuel filler cap and looking into the tank.

DAILY CHECKS BEFORE STARTING

- Locate the machine on firm level ground.
- Check machine is well supported and cannot move.
- Check jack stand is lowered and secure.
- Check all guards are fitted and secure.
- Check the discharge unit is in place and fastened securely.
- Check discharge tube is pointing in a safe direction.
- Check the feed funnel to ensure no objects are inside.
- Check feed tray is in up position - to prevent people reaching rollers.
- Check controls as described below.
- Check (visually) for fluid leaks.
- Check fuel and hydraulic oil levels.

OPERATING INSTRUCTIONS

BEFORE USING THE CHIPPER

It is essential to carry out the following tests to check safety equipment - this sequence of tests will only take a few seconds to carry out. We recommend that these tests are carried out daily. Observing the function as described will confirm that the safety circuits are working correctly. This is also a good opportunity to remind all operators of the control and emergency stop systems.

- Start the engine, test if the feed roller and its hydraulic system can operate normally.
- To ensure the safety bar is always operational it must be activated once before each work session. The rollers will not function until the bar is activated. This procedure must be repeated each time the ignition is switched of.
- Check the emergency stop button as well

STARTING THE ENGINE

FOR A COLD ENGINE:

- Place the throttle control at 1/3 throttle and pull the choke out.
- Insert ignition key into starter switch.
- Turn the key to start the engine. Release the key as soon as the engine starts.
- Gradually return the choke to the of position as the engine starts and warms up. Allow the engine to warm up for at least one minute before chipping.

FOR A WARM ENGINE:

Follow the instructions for a 'cold engine' but return the choke to the of position as soon as the engine starts.

If engine fails to start after 10 seconds leave for 1 minute and try again.

STOPPING THE ENGINE

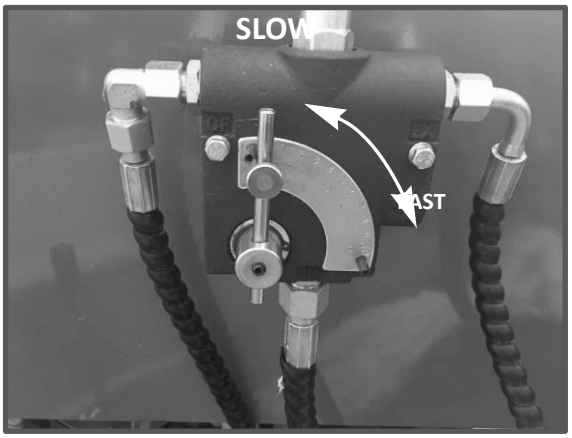
- Set engine to idle position.
- Allow to run for at least one full minute.
- Switch of and remove ignition key.

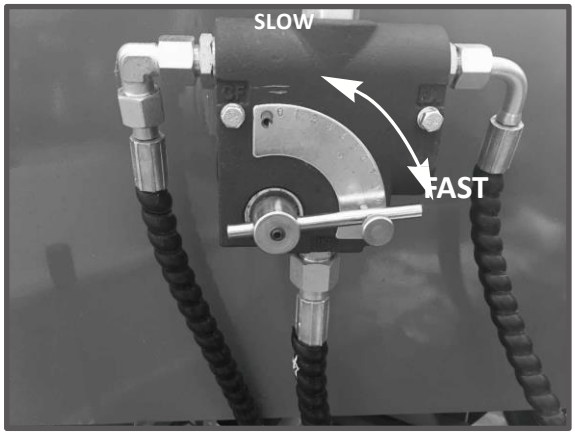
For more detailed information refer to the Engine Owner's Manual

OPERATING INSTRUCTIONS

FEEDING SPEED ADJUSTMENT

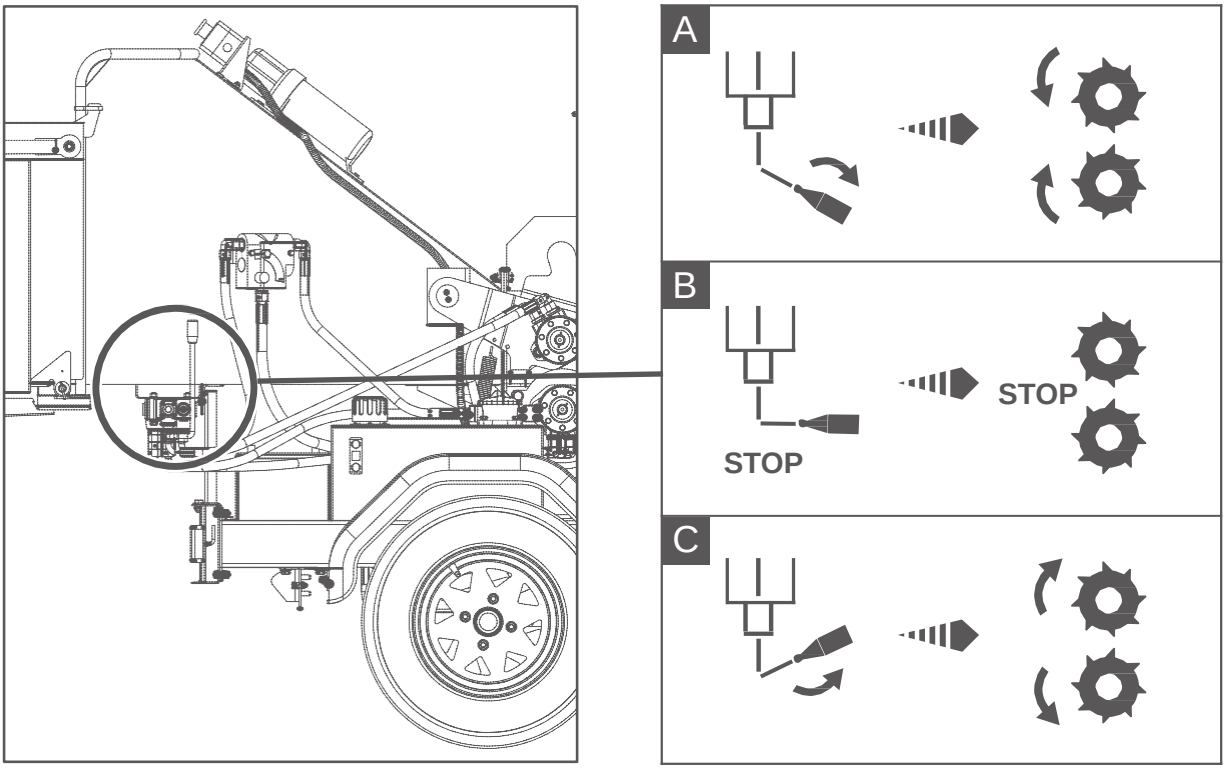
Flow control valve controls the motor rotation speed. When breaking branches with large diameter, the flow rate can be appropriately lowered, and the speed can be adjusted up when the branches are small.





HYDRAULIC MOTOR RATATION AND STOP

Two hydraulic motors are fixed on the feeding roller and rotate in opposite directions to roll the wood into the chipping house.



OPERATING INSTRUCTIONS

A

Two hydraulic motors are fixed on the feeding roller and rotate in opposite directions to roll the wood into the chipping house.

B

When put the control valve handle to the middle position, hydraulic motors will not rotate, and wood will not move.

C

When push the control valve handle in to the inner position,hydraulic motors will rotate reversely, then the wood will be returned back.

OPERATING INSTRUCTIONS

STARTING TO CHIP

WARNING

DO NOT USE OR ATTEMPT TO START THE CHIPPER WITHOUT THE PROTECTIVE GUARDING AND DISCHARGE UNIT SECURELY INPLACE. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE.

- Check that the chipper is runningsmoothly.
- Release the catches on the feed tray and lower.Pull to release the red stop button.
- Perform the "before using the chipper"tests.
- Stand to one side of the feed funnel.
- Proceed to feed material into the feed funnel.

CHIPPING

Wood up to the recommended diameter can be fed into the feed funnel. Put the butt end in first and engage it with the feed rollers. The hydraulic feed rollers will pull the branch into the machine quite quickly. Large diameter material will have its feed rate automatically controlled by the no stress unit.

Sometimes a piece of wood that is a particularly awkward shape is too strong for the feed rollers to break. This will cause the top roller to either bounce up and down on the wood, or both rollers to stall. Pull the material out of the feed funnel and trim it so the chipper can handle it.

Both feed rollers should always turn at the same speed. If one or both rollers stop or suddenly slow down it may be that a piece of wood has become stuck behind one of the rollers. If this occurs, adjust hydraulic directional control valve to 'reverse feed' position, the rollers will turn reverse and roll out the stuck wood, then you can adjust the hydraulic directional control valve to "forward feed" position, the chipper will work again. If this operation doesn't work, pls push the EMERGENCY STOP BUTTON, turn the engine of, remove the ignition key and investigate.

BLOCKAGES

Always be aware that what you are putting into the chipper must come out. If the chips stop coming out of the discharge tube but the chipper is taking material in - STOP IMMEDIATELY. Continuing to feed material into a blocked machine may cause damage and will make it diicult to clear.

If the chipper becomes blocked, proceed as follows:

- Stop the engine and remove the ignition keys.
- Remove the discharge tube. Check that it is clear.
- Wearing gloves, reach into the rotor housing and scoop out the majority of the debris causing the blockage.

OPERATING INSTRUCTIONS

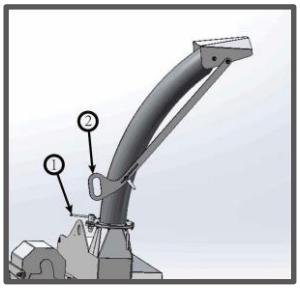
WARNING

DO NOT REACH INTO THE ROTOR HOUSING WITH UNPROTECTED HANDS. THERE ARE SHARP BLADES AND ANYSMALL MOVEMENT OF THE ROTOR MAY CAUSE SERIOUS INJURY.

- Replace the discharge tube.
- Restart the engine and increase to full speed.
- Allow machine time to clear excess chips still remaining in rotor housing before you continue feeding brushwood. Feed in a small piece of wood while watching to make sure that it comes out of the discharge. If this does not clear it, repeat the process and carefully inspect the discharge tube to find any obstruction.

NOTE: Continuing to feed the chipper with brushwood once it has become blocked will cause the chipper to compact the chips in the rotor housing and it will be diicult and time consuming to clear.

DISCHARGE CONTROLS ROTATION



Controlling the discharge is an essential part of safe working.

- Slacken nut using integral handle 1.
- Rotate to desired angle using handle 2.
- Retighten nut

SERVICE SCHEDULE

WARNING

ALWAYS IMMOBILISE THE MACHINE BY STOPPING THE ENGINE, REMOVING THEIGNITION KEY AND DISCONNECTING THE BATTERY BEFORE UNDERTAKING ANY MAINTENANCE WORK.

OPERATING INSTRUCTIONS

SERVICE SCHEDULE	Daily Check	50 Hours	100 Hours	500 Hours	1 Year
Check engine oil - top up if necessary (10W-30).	√				
Check for engine oil / hydraulic oil leaks.	√				
Check fuel level.	√				
Check feed funnel, feed roller cover, access covers, engine covers and discharge unit are securely fitted.	√				
Check blades	√				
Ensure engine air intake is free from leaf build up.	√				
Check tyre pressure is 2.2 Bar (32 psi).	√				
Check safety bar mechanism.	√				
Grease the roller box slides.	√	OR AS REQUIRED - SEE PAGE 20			
Grease the roller spline and bearing.	√	OR AS REQUIRED - SEE PAGE 20			
Clean air filter element.	DEPENDING ON WORKING ENVIRONMENT				
Check for tightness all nuts, bolts and fastenings making surenothing has worked loose.		√			
Grease discharge flange.		√			
Check tension of main drive belts (and tension if necessary).		√			
Check anvils for wear.		√			
Check fuel pipes and clamp bands.			√		
Check battery electrolyte level.			√		
Check for loose electrical wiring.			√		

OPERATING INSTRUCTIONS

SERVICE SCHEDULE	Daily Check	50 Hours	100 Hours	500 Hours	1 Year
Replace hydraulic oil filter - every year or 100 hours after service or repair work to the hydraulic system.			√	OR	√
Replace hydraulic oil.			√	OR	√
Replace fuel pipes and clamp bands.	REFER TO YOUR ENGINE SUPPLIERS MANUAL				
Check spark plugs.					
Change engine oil.					
Replace engine oil filter cartridge.					
Check valve clearance.					
Replace anvils when worn.	RETURN TO DEALER FOR ANVIL CHANGE				
Axle maintenance.	REFER TO SUPPLIERS INSTRUCTION SHEET				
Tow head maintenance.					

NOTE: Your woodchipper is covered by a full 12 months parts and labour warranty. Subject to correct maintenance and proper machine usage, the bearings are guaranteed for 12 months regardless of hours worked by the machine. In conditions of 'heavy usage' - i.e. in excess of 500 hours per year - it is recommended that the bearings are changed annually to ensure that the machine retains optimum working performance.

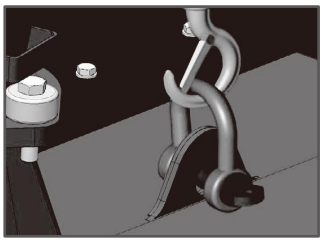
SAFE MAINTENANCE

ALWAYS IMMOBILISE THE ENGINE BEFORE UNDERTAKING ANY MAINTENANCE WORK ON THE CHIPPER BY REMOVING THE KEY AND DISCONNECTING THE BATTERY.

- Handle blades with extreme caution to avoid injury.Gloves should always be worn when handling the cutter blades.
- THE drive belts should be connected while changing blades, as this will restrict sudden movement of the rotor.
- The major components of this machine are heavy.Lifting equipment must be used for disassembly.
- CLEAN machines are safer and easier to service.
- Avoid contact with hydraulic oil.

OPERATING INSTRUCTIONS

SAFE LIFTING OF THE CHIPPER



The lifting eye is designed to lift the machine's weight only. Do not use hoist hook directly on the lifting eye, use a correctly rated safety shackle. Inspect the lifting eye prior to each use - DO NOT USE LIFTING EYE IF DAMAGED.

SPARES

Only fit genuine replacement blades, screws and chipper spares. Failure to do so will result in the invalidation of the warranty and may result in damage to the chipper, personal injury or even loss of life.

BATTERY REMOVAL AND MAINTENANCE

- Remove the negative lead first and then the positive lead.
- Clean, charge and/or top up the battery as required.
- Refitting is the reverse of removal. Apply a smear of petroleum jelly to the terminals to prevent corrosion.

WARNING
REFER TO THE BATTERY SAFETY SECTION ON PAGE 17.

CHECK FITTINGS

The HYDRAULIC WOOD CHIPPER is subject to large vibrations during the normal course of operation. Consequently there is always a possibility that nuts and bolts will work themselves loose. It is important that periodic checks are made to ensure the security of all fasteners. Fasteners should be tightened using a torque wrench to the required torque (see below). Uncalibrated torque wrenches can be inaccurate by as much as 25%. It is therefore essential that a calibrated torque wrench is used to achieve the tightening torques listed below.

	Size	Pitch	Head	Torque lb ft	Torque Nm
Blade Bolts	M16	Standard	24mm Hex	125	170
Anvil Bolts	M10	Standard	8 mmAllen Key	65	88
General	M8	Standard	13 mm Hex	20	27
General	M10	Standard	17 mm Hex	45	61
General	M12	Standard	19 mm Hex	65	88

OPERATING INSTRUCTIONS

COPPER EASE SAFETY INFORMATION

Product name: Copper Ease.

Copper Ease contains no hazardous ingredients at or above regulatory disclosure limits, however, safety precautions should be taken when handling (use of oil-resistant gloves and saftey glasses are recommended respiratory protection is not required). Avoid direct contact with the substance and store in a cool, well ventilated area avoiding sources of ignition, strong oxidising agents and strong acids. Dispose of as normal industrial waste (be aware of the possible existance of regional or national regulations regarding disposal), do not discharge into drains or rivers.

IN CASE OF FIRE: in combustion the product emits toxic fumes, extinguish with alcohol or polymer foam, carbon dioxide or dry chemical powder. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

FIRST AID

SKIN CONTACT: there may be mild irritation at the site of contact, wash immediately with plenty of soap and water.

EYE CONTACT: there may be irritation and redness, bathe the eye with running water for 15 minutes.

INGESTION: there may be irritation of the throat, do not induce vomiting, wash out mouth with water.

OPERATING INSTRUCTIONS

BATTERY SAFETY INFORMATION

WARNING NOTES AND SAFETY REGULATIONS FOR FILLED LEAD-ACID BATTERIES

- For safety reasons, wear eye protection when handling a battery.

- Keep out of reach of children.

- Fires, sparks, naked flames and smoking are prohibited.
- Avoid causing sparks when dealing with cables and electrical equipment, and beware of electrostatic discharges.
- Avoid short circuits.

EXPLOSION HAZARD:

- A highly explosive oxyhydrogen gas mixture is produced when batteries are charged.

CORROSIVE HAZARD:

Battery acid is highly corrosive, therefore:

- Wear protective gloves and eye protection.
- Do not tilt the battery, acid may escape from the vent openings.

FIRST AID:

- Rinse of acid splashed in the eyes immediately for several minutes with clear water!Remove contact lenses if worn and continue rinsing.Then consult a doctor immediately.
- Neutralise acid splashes on the skin or clothes immediately with acid neutraliser (soda) or soap suds, and rinse with plenty ofwater.
- If acid is swallowed, consult a doctor immediately.

WARNING NOTES: THE BATTERY CASE CAN BECOME BRITTLE, TO AVOID THIS:

- Do not store batteries in direct sunlight.
- Discharged batteries may freeze up, therefore store in an area free from frost.

DISPOSAL:

- Dispose of old batteries at an authorised collection point.
- The notes listed under item 1are to be followed for transport.
- Never dispose of old batteries in household waste.

OPERATING INSTRUCTIONS

STORAGE AND TRANSPORT

- Batteries are filled with acid.
- Always store and transport batteries upright and prevent from tilting so that no acid can escape.
- Store in a cool and dry place.
- Do not remove the protective cap from the positive terminal.
- Run a FIFO (first in-first out) warehouse management system.

1. INITIAL OPERATION

- The batteries are filled with acid at a density of 1.28g/ml during the manufacturing process and are ready for use.
- Recharge in case of insuicient starting power (see no. 4).

2. INSTALLATION IN THE VEHICLE AND REMOVAL FROM THE VEHICLE

- Switch o f the engine and all electrical equipment.
- When removing, disconnect the negative terminal first.
- Avoid short circuits caused by tools, for example.
- Remove any foreign body from the battery tray, and clamp battery tightly after installation.
- Clean the terminals and clamps, and lubricate slightly with battery grease.
- When installing, first connect the positive terminal, and check the terminal clamps for tight fit.
- After having fitted the battery in the vehicle, remove the protective cap from the positive terminal, and place it on the terminal of the replaced battery in order to prevent short circuits and possible sparks.
- Use parts from the replaced battery, such as the terminal covers, elbows, vent pipe connection and terminal holders (where applicable); use available or supplied filler caps.
- Leave at least one vent open, otherwise there is a danger of explosion. This also applies when old batteries are returned.

3. CHARGING

- Remove the battery from the vehicle; disconnect the lead of the negative terminal first.
- Ensure good ventilation.
- Use suitable direct current chargers only.
- Connect the positive terminal of the battery to the positive output of the charger. Connect the negative terminal accordingly.
- Switch on the charger only after the battery has been connected, and switch o f the charger first after charging has been completed.
- Charging current-recommendation: 1/10 ampere of the battery capacity Ah.
- Use a charger with a constant charging voltage of 14.4V for re-charging.
- If the acid temperature rises above 55° Celsius, stop charging.
- The battery is fully charged when the charging voltage has stopped rising for two hours.

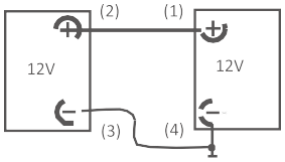
OPERATING INSTRUCTIONS

4. MAINTENANCE

- Keep the battery clean and dry.
- Use a moist anti-static cloth only to wipe the battery, otherwise there is a danger of explosion.
- Do not open the battery.
- Recharge in case of insuicient starting power (see no. 4).

5. JUMP STARTING

- Use the standardised jumper cable in compliance with DIN 72553 only, and follow the operating instructions.
- Use batteries of the same nominal voltage only.
- Switch of the engines of both vehicles.
- First connect the two positive terminals (1) and (2), then connect the negative terminal of the charged battery (3) to a metal part (4) of the vehicle requiring assistance away from the battery.



- Start the engine of the vehicle providing assistance, then start the engine of the vehicle requiring assistance for a maximum of 15 seconds.
- Disconnect the cables in reverse sequence (4-3-2-1).

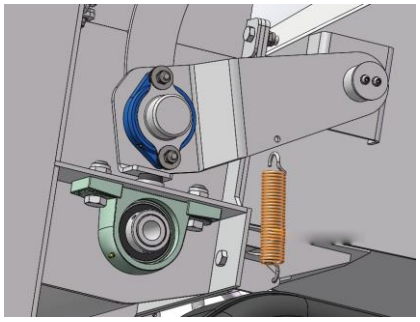
6. TAKING THE BATTERY OUT OF SERVICE

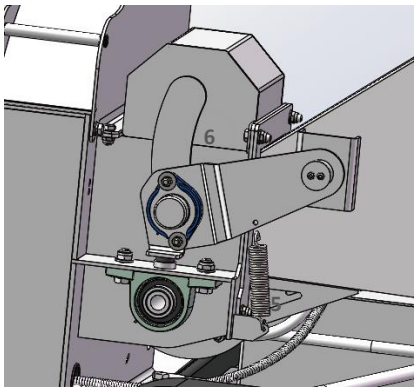
- Charge the battery; store in a cool place or in the vehicle with the negative terminal disconnected.
- Check the battery state of charge at regular intervals, and correct by recharging when necessary (see no. 4).

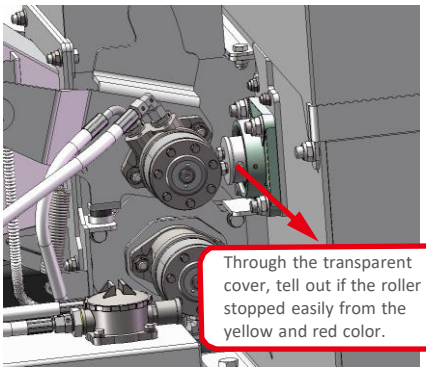
OPERATING INSTRUCTIONS

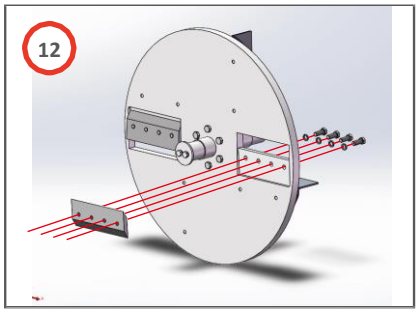
CHANGE BLADES

WARNING
WEAR RIGGERS GLOVES FOR THE BLADE CHANGING OPERATION.









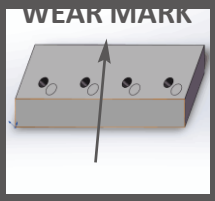
1. Turn the chipper o f and remove the ignition keys.
2. Remove battery leads.
3. Remove the M10 bolt retaining the guard, allowing the guard to be opened.
4. Remove the 3 nuts retaining the access hatch, pull hatch open clear of the rotor housing.
5. Turn rotor to blade change position.
6. Insert locking bar into rotor housing and rotor. Must ensure that the opening time must longer than the time when the moving parts stop.
   Before opening the housing cover, pls see through the transparent cover to see if the roller stopped.
7. Brush away all dirt and debris from the rotor and blades.
8. With a 24mm spanner/socket undo the two nyloc nuts and washers that are holding the blade in place. Remove both blade bolts from the blade.
9. Grasp the blade by the flat edges while wearing heavy duty gloves.
10. Withdraw the blade from the rotor.
11. Clean the back surface of the blade, blade bolts and blade area of the rotor before reseating blades. The blades must not have any material underneath them when tightened. If they are not flat and tight they will become loose very quickly.
12. Reassemble the blades, bolts, washers and nuts in the order shown in the diagram above. Use only genuine nuts and washers, as they are of a higher grade than normally stocked at fastener factories.Failure to use the appropriate grade nuts or washers may result in damage, injury or death. The use of genuine blades and bolts is recommended.
13. Apply a smear of anti seize compound (copper ease) to the bolt threads and back face ofthe nuts. Do not apply copper grease onto the counter bore faces ofthe blades or bolts.

OPERATING INSTRUCTIONS

14. A calibrated torque wrench must be used to tighten the bolts to a torque setting of 125 lbs ft (170 Nm).
15. Remove lock pin, rotate rotor to next blade then replace lock pin and repeat steps 7 - 14.
16. Refit access hatch.
17. Refitthe nuts and tighten to 45lb/ft.
18. Refit battery leads.

WARNING

ALWAYS SHARPEN BLADES ON A REGULAR BASIS. FAILURE TO DO SO WILLCAUSE THE MACHINE TO UNDER PERFORM AND WILL OVERLOAD ENGINEAND BEARINGS CAUSING MACHINE BREAKDOWN. BLADES MUST NOT BESHARPENED BEYOND THE WEAR MARK (SEE DIAGRAM). FAILURE TOCOMPLY WITH THIS COULD RESULT IN MACHINE DAMAGE, INJURY ORLOSS OF LIFE.

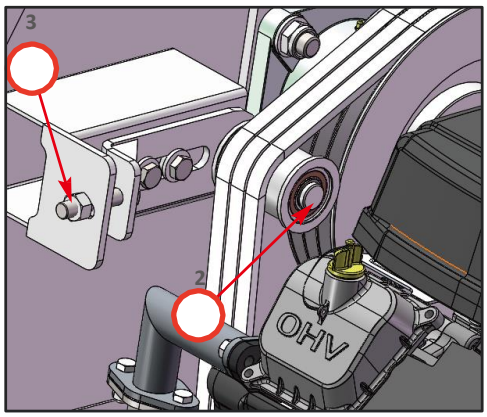


TENSION BELTS

NOTE: There will normally be a rapid drop in tension during run-in period for new belts. When new belts are fitted, check the tension every 2- 3 hours and adjust until the tension remains constant.

Belt failures due to lack of correct tensioning will not be covered under your warranty.

TENSION DRIVE BELTS



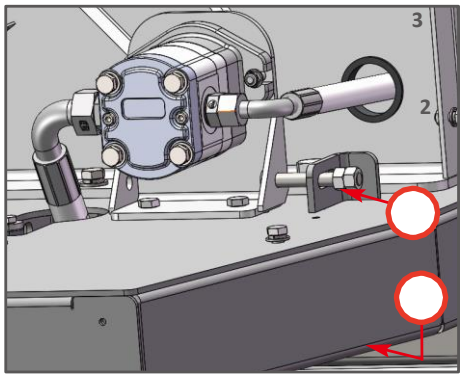
1. Remove belt guard.
2. Loosen bolt in centre of tensioner pulley with a 19mm spanner so that pulley is able to slide with minimal wobble.
3. Turn nut in end of tensioner pulley slider until correct belt tension is achieved. For instructions on checking belt tension & correct belt tension values, please refer to the V-Belt Tensioning Data Table.
4. Retighten bolt in centre of tensioner pulley.
5. Refit belt guard.
6. Run machine and test, recheck belt tension.

NOTE: Slack drive belts will cause poor performance and excess belt and pulley wear.

OPERATING INSTRUCTIONS

TENSION HYDRAULIC PUMP BELT

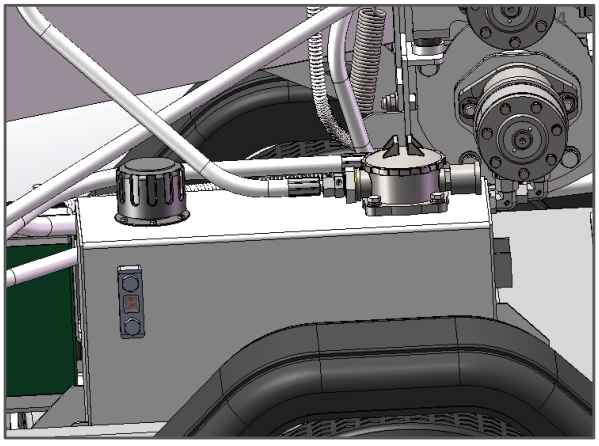
1. Remove belt guard.
2. Access the two nuts on the under side of the chassis and slacken using a 19 mm socket spanner.
3. Adjust the M8 bolt on the outside plate until the desired tension is achieved. For instructions on checking belt tension & correct belt tension values, please refer to the V-Belt Tensioning Data Table (pg. 30).
4. Retighten the two nuts to (88 Nm) 65 Ibs/ft.
5. Refit belt guard.



CHANGE HYDRAULIC OIL AND FILTER

WARNING

USE PLASTIC GLOVES TO KEEP OIL OFF SKIN AND DISPOSE OF THE USED OIL AND FILTERIN AN ECOLOGICALLY SOUND WAY. THE OIL AND FILTER SHOULD BE CHANGED ONCE AYEAR OR AT ANY TIME IT BECOMES CONTAMINATED. BEFORE STARTING CHECK THATTHE CHIPPER IS STANDING LEVEL AND BRUSH AWAY LOOSE CHIPS.

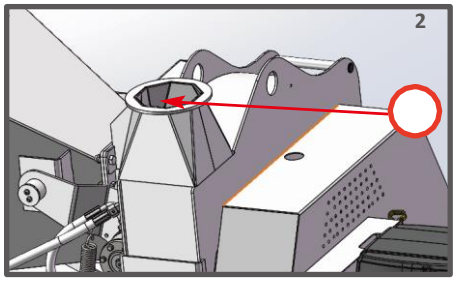


NOTE: This is a non-adjustable air breather filter.

1. Remove the black screw cap from the top of the filter housing.
2. Partially remove filter element from inner cup. Leave filter to drain for 15 minutes.
3. Remove filter element from cup when clear of hydraulic oil.
4. Remove drain plug and drain oil into a suitable container.
5. Replace drain plug.
6. Refill with VG 32 hydraulic oil until the level is between the min and max lines on the tank (about 15 litres).
7. Refit the filter cup, install a new filter element and refit the black screw cap, to the filter housing, ensuring o-ring remains in place.

OPERATING INSTRUCTIONS

GREASE THE DISCHARGE FLANGE



1.Remove the discharge tube.

2. Apply multipurpose grease to surface shown.

3. Refit discharge tube.

ENGINE SERVICING

All engine servicing must be performed in accordance with the Engine Manufacturer's handbook provided with the machine. FAILURE TO ADHERE TO THIS MAY INVALIDATE WARRANTY AND/OR SHORTEN THE LIFE OF THE ENGINE.

CHECK HOSES

All the hydraulic hoses should be regularly inspected for chafing and leaks. The hydraulic system is pressurized to 150 Bar and thus the equipment containing it must be kept in good condition.

Identify the hoses that run to the top motor. These have the highest chance of damage as they are constantly moving. If any hydraulic components are changed new seals should be installed during reassembly. Fittings should then be retightened.

SECTION III

ASSEMBLY

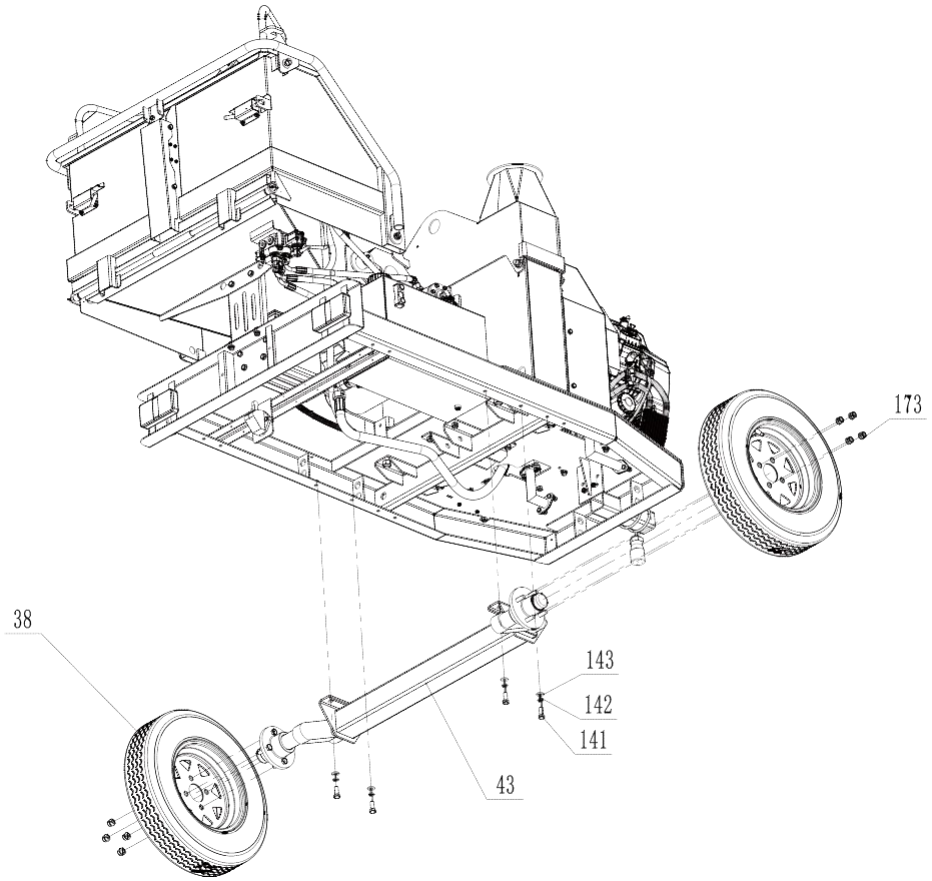
ASSEMBLY

WOOD CHIPPER ASSEMBLY

Set the shipping crate on a solid flat surface and carefully remove the lid. Use two people and take all parts out of the crate and inspect the components to ensure there are no missing pieces before starting to assemble the wood chipper.

1.ATTACHING THE TIRES

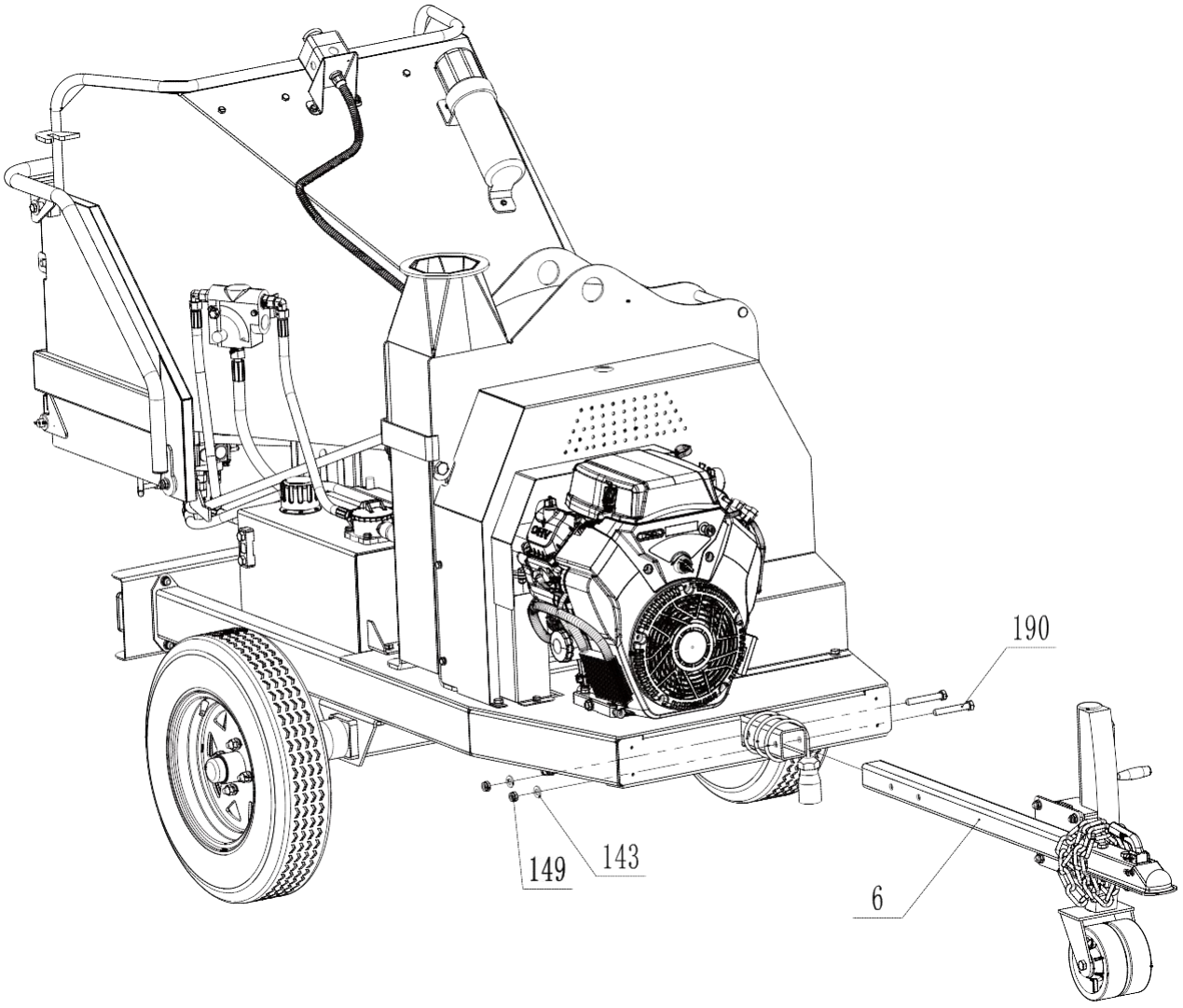
1.Attach the torsion axle(43) to the chassis(1) using hex bolt M12x30(141) and spring washer 12(143).
2.Attach the wheel(38) to the torsion axle(43) using flange spherical nut Q30812T13(173).



ASSEMBLY

2.ATTACHING TOW BAR

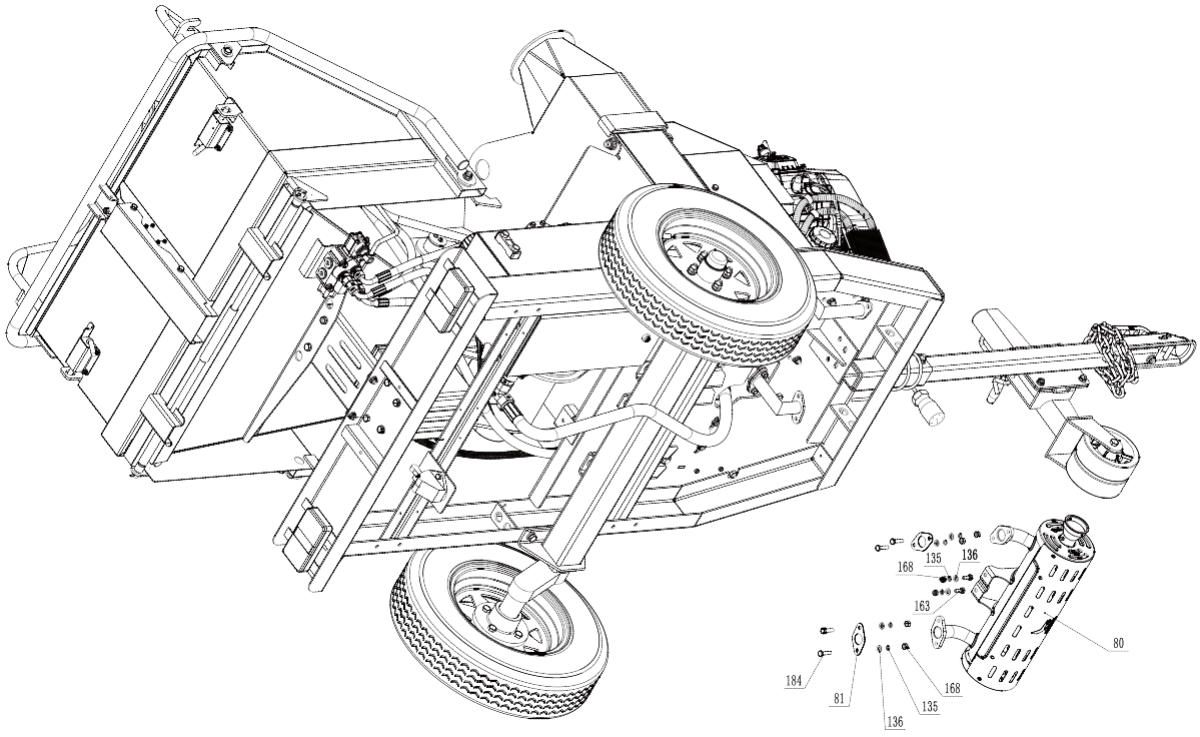
1.Attach the tow bar(6) to the chassis(1) using hex bolt M12x80(143) ,flat washer12(143) and lock nut M12(149)



ASSEMBLY

3.ATTACHING THE MUFFLER

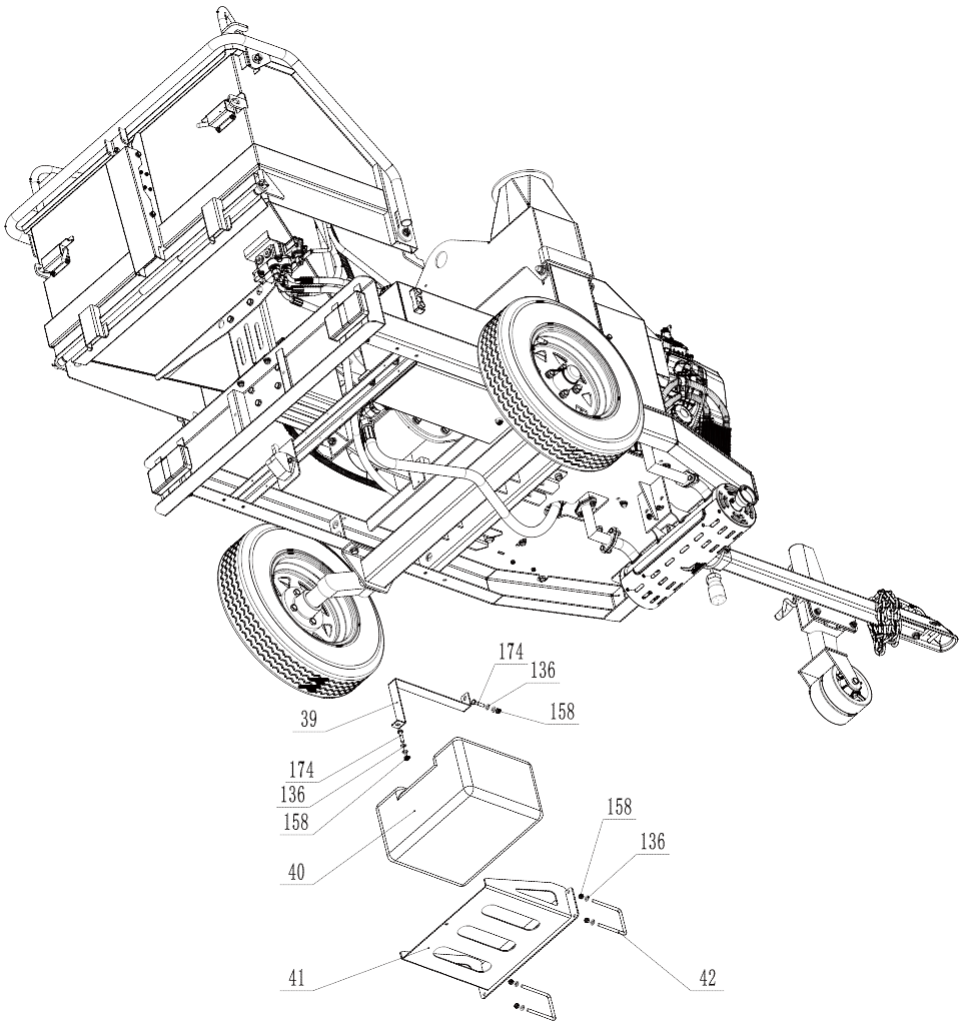
1.Attach the muffler gasket (81) to the middle of exhaust pipe 2(82),exhaust pipe 1(83) and muffler(80).
2.Attach the muffler(80) with the exhaust pipe 2(82),exhaust pipe 1(83) using hex bolt M8x30(184),flat washer 8(136）， spring washer(135) and hex nut M8(168).
3.Attach the muffler(80) to the Chassis(1) using hex bolt M8x20(163),flat washer8(136），spring washer8(135) and hex nut M8(168).



ASSEMBLY

4.ATTACHING THE FULE TANK

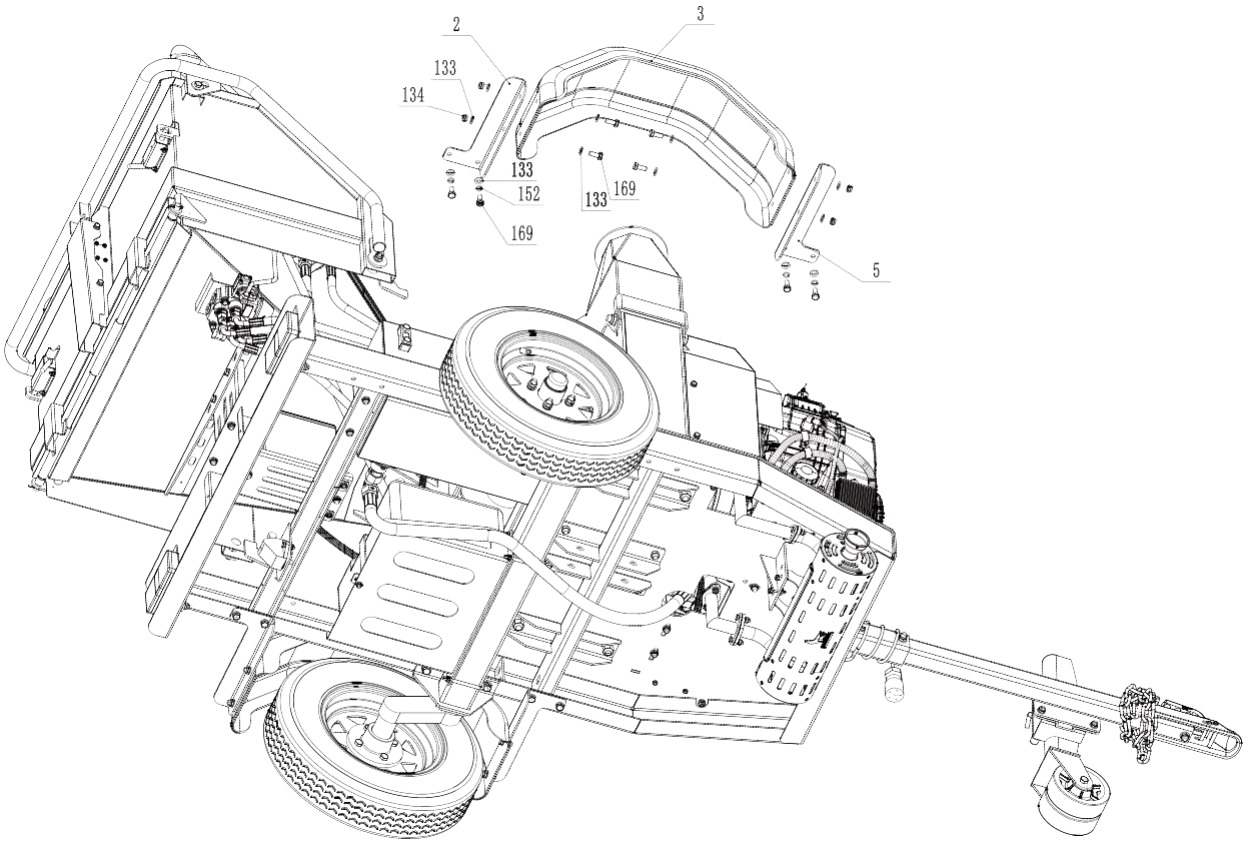
1.Attach the fuel tank rack to the torsion axle(43) using U-Bolt(42),flat washer8(136) and lock nut M8(158).
2.Attach the fuel tank(40) on the fuel tank rack(41)。
3.Attach the Fuel tank fixing plate（39）on the fuel tank(40).
4.Attach the lower end of the fuel tank fixing plate（39）to the fuel tank rack(41) using hex bolt M8x35(174),flat washer(136) and lock nut M8(158).
5.Attach the upper end of the fuel tank fixing plate（39）to the chassis(1) using M8x35(174),flat washer8(136),and lock nut M8(158).



ASSEMBLY

5.ATTACH THE MUDGUARD

1.Attach the mudguard bracket1(2) and the mudguard bracket2(5) to the chassis(1) using M10x25(152),spring washer10(152),and flat washer 10 (133).
2.Attach the mudguard(3) to the mudguard bracket1(2) and the mudguard bracket2(5) using M10x25(169),flat washer10(133),and lock nut M10(134).



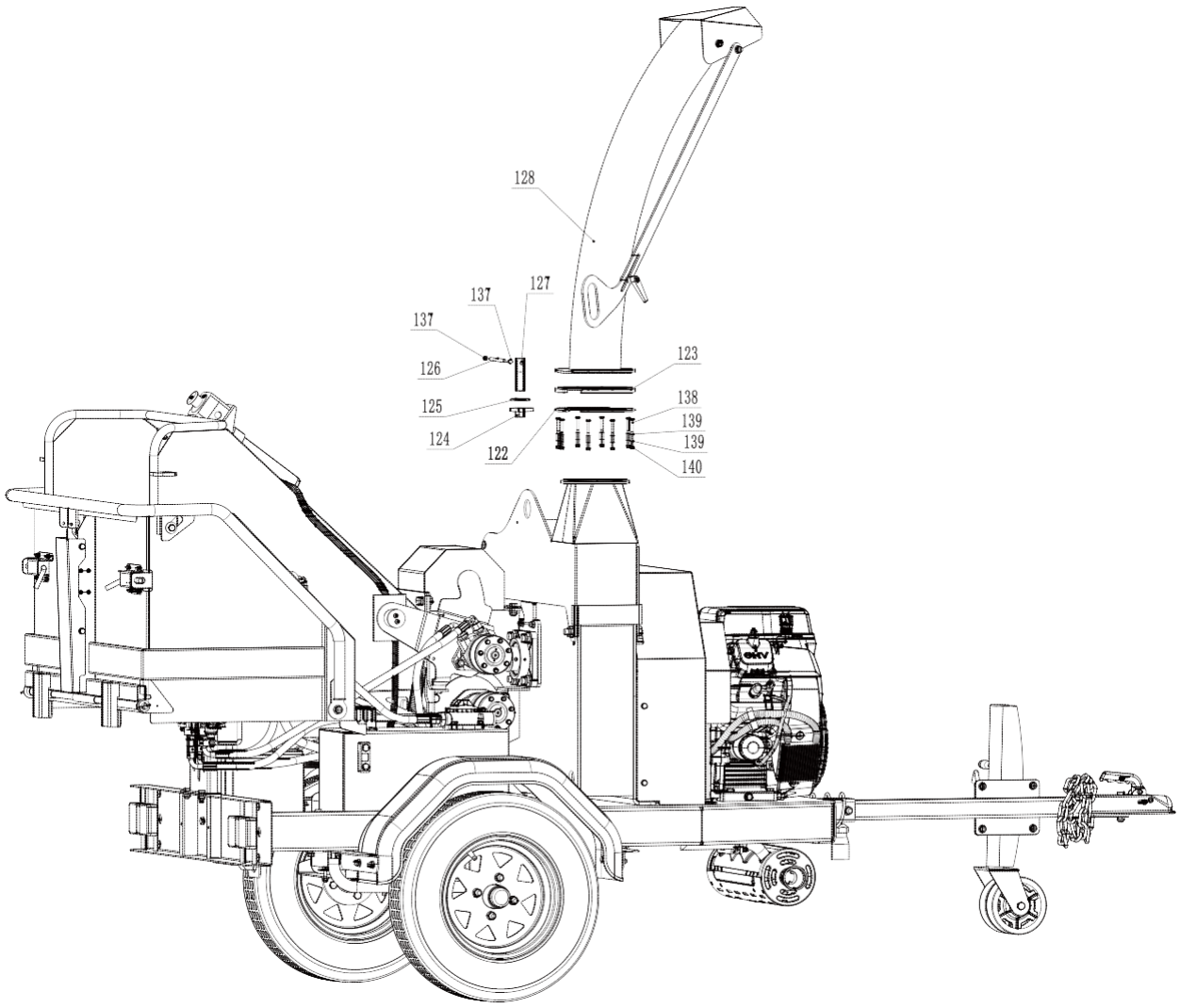
ASSEMBLY

6.ATTACH THE EXPULSION CHUTE

1.Place the Compression plate（122）， Rotating gasket（123）， Discharge chute（128）on the rotor cover(111) in turn, and attach them using M6x30(138),flat washer6(139),and lock nut M6(140).

2. Place the clamp(124) and the flange plate(125) at the notch of the Rotating gasket(123), then attach them to the discharge chute(128) using handle shaft(127).

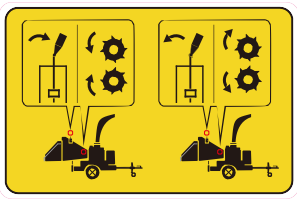
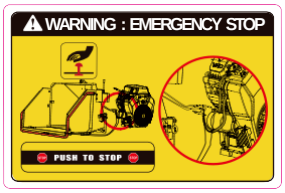
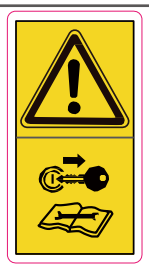
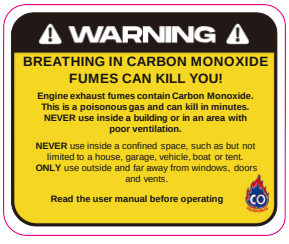
3.Attach the lever(126) to the handle shaft(127), and mount the hex nut M6 to both ends of the lever(126).



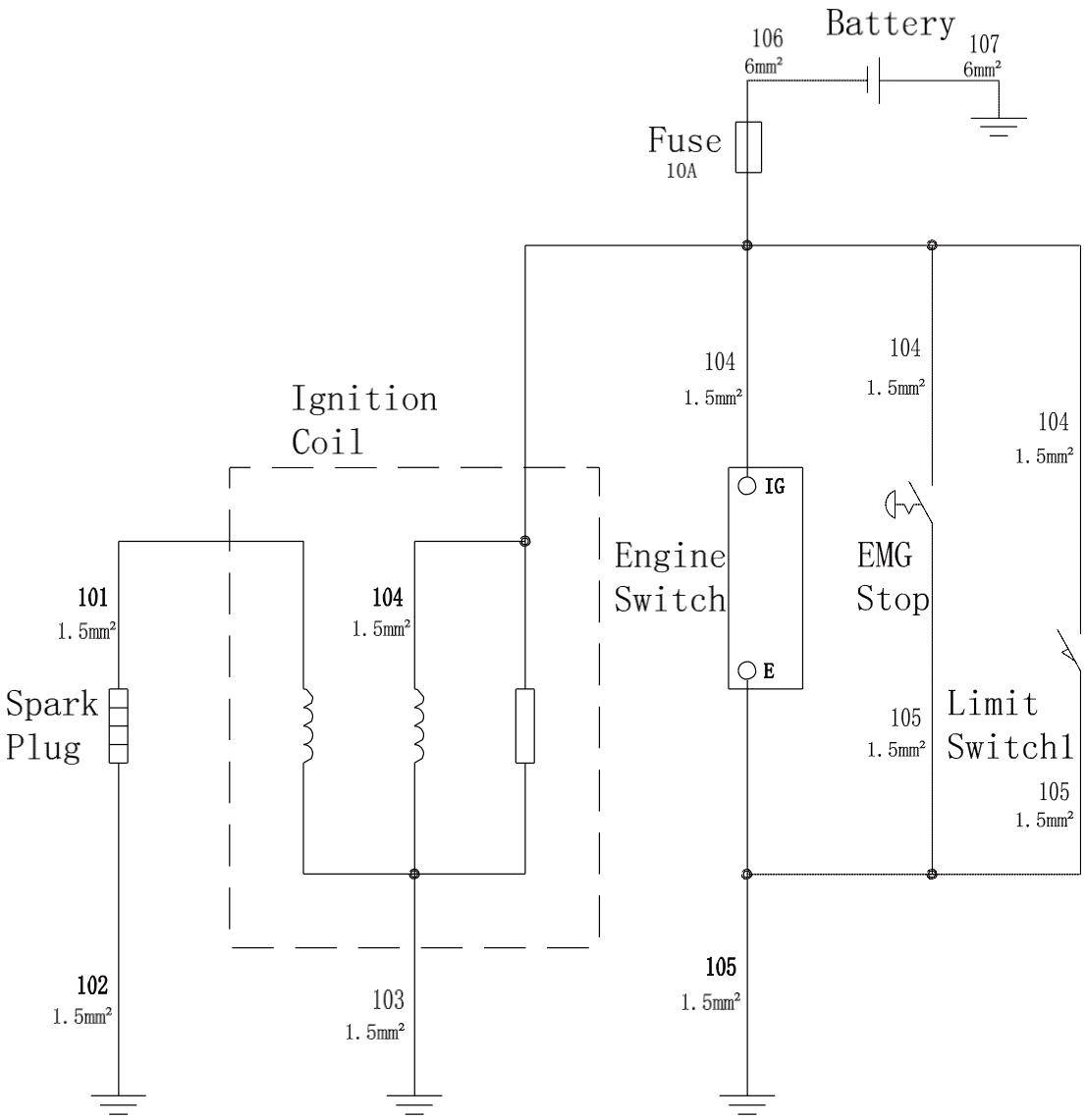
SECTION IV

DECALS

DECALS

Decal	Description	Decal	Description
	Hot exhaust		Danger. Rotating blades. Keep hands and feet out.
	Warning: Ensure that the opening time is longer than the time when the moving parts stop		Reverse feed Forward feed
	Emergency Stop		Push to stop
	Read Instruction Manual. The instruction manual with this machine contains important operating, maintenance and health and safety information. Failure to follow the information contained in the instruction manual may lead to death or serious injury.		Danger Keep distance from wood chips
	Caution. Avoid standing directly in front of feed funnel to reduce exposure to noise, dust and risk from ejected particles.		Caution: Avoid engine exhaust
	Danger. Autofeed system fitted. Rollers may turn without warning! When the engine is switched of the rollers will turn during the run down period.		Fuel Here. Risk of fire. Allow engine to cool for 1minute before refuelling. Use unleaded petrol.

SECTION V

CIRCUIT DIAGRAM

CIRCUIT DIAGRAM