

OPERATION AND MAINTENANCE MANUAL



CONTENTS

INTRODUCTION	3
GENERAL INFORMATION	4
SAFETY NOTES.....	7
SPECIFICATIONS.....	12
.....	14
ASSEMBLY	15
OPERATOR REQUIREMENTS.....	34
MAINTENANCE.....	36
PARTS DRAWINGS AND LISTS	25

INTRODUCTION

GEO wants to thank you for having chosen one of its products.

The technological evolution and the new request of the agricultural world have pushed our firm to a continue improvement, focused on the product, on the quality of the materials and on the quality of work.

The present manual contains the description of the machine and the necessary instructions to correctly use it, along with the instructions for an ordinary and periodic maintenance of the shredder.

Such manual is subdivided in easily recognizable chapters for a practical consultation.

The indications in the present manual are addressed to a professional user, who must have specific knowledge about the driving modalities of the tractor with which the machine is connected. The user has to be authorized, instructed and opportunely trained.

We recommend you to use only original spare parts and accessories.

The use of non-original parts could be dangerous reducing the duration and the performances of the machine as well as the decay of the warranty.

In the case of doubt about the interpretation of the subjects illustrated in this handbook, we suggest you to contact the dealer who will be ready to assist you whenever you need it.

This hydraulic reach mower bar is with three size cutting bar for cutting hedges and bushes. Simple control of the rotation of the second arm makes it possible to work both on right and left hand side of tractor. The innovative reversible frame enables assembly of the machine to either the back or front without need for any particular alteration

GENERAL INFORMATION



This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. READ, UNDERSTAND, and FOLLOW the Safety and Operation Instructions contained in this manual before operating the equipment.

Information about the manual

The using prescriptions shown in this handbook must be carefully observed to obtain the best performances, to assure the greatest duration of the different parts and to avoid damages to the machine and accidents to the operator. It is advised the careful reading of the present handbook, to deepen the knowledge of the MOWER BAR, before starting to use it.

The present manual is to be considered an integral part of the machine, it must go with the machine in case of resale and till its demolition.

Some illustrations in this manual show particulars or accessories that could be different from those of your machine, some component could have been removed to assure the clearness of the illustrations.

The subjects dealt in this handbook are those expressly requested by the "CE/98/37directive" and by the relatives technical standards.

On the machine are inserted apposite pictograms, which the operator will take care to maintain in perfect visual state and to replace when they are not more readable.



This symbol with the under indicated words:

DANGER
ATTENTION
WARNING

is used in this handbook to draw Your attention on the safety and the good working of the machine. So it is necessary to observe all the indicated rules.

This Handbook has been written following the effective regulations at the moment of its printing. It is an integral part of the machine and must go with the machine with the Declaration of Conformity in case of resale.

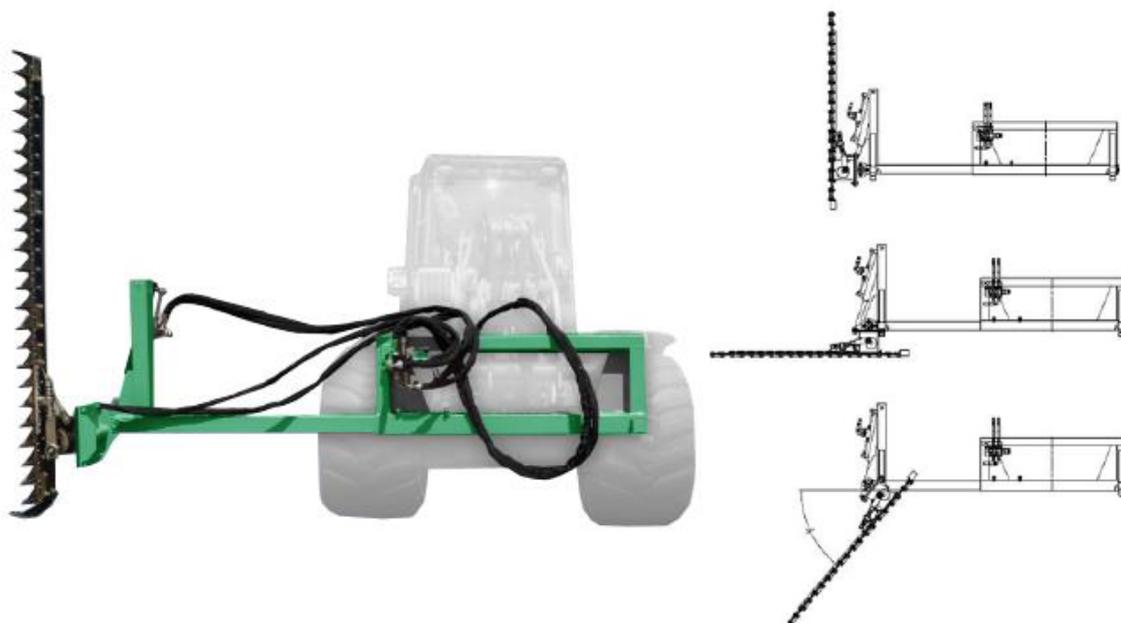
2 IDENTIFICATION OF THE MACHINE

You will find on frame of each machine: the EC mark and a plate reporting the information about the constructor, the model and the serial number, the year of construction, the weight.

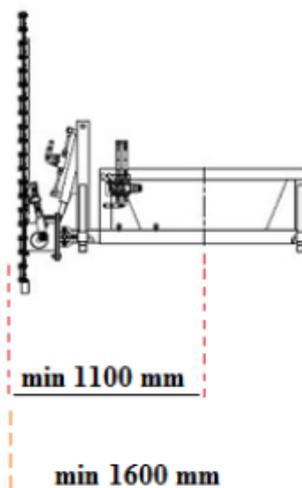
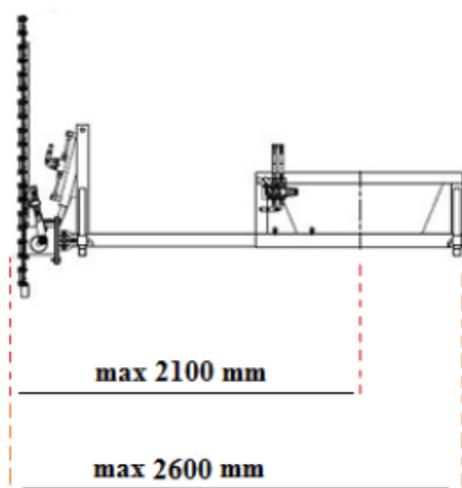
EC Identification plate



		
Montechiaro d'Asti - Italy		
Type		
Ser.Nr.		
Max Kg		
Max rpm		
Year		



tipo	larghezza di lavoro	Intervallo angolare	Flusso idraulico richiesto	Pressione idraulica richiesta	massa	Diametro di taglio
BJ 120	1.200 mm	-50 ° +90 °	30-42 l / min	14-15,5 MPa	152 kg	2 cm
BJ 150	1.500 mm	-50 ° +90 °	30-42 l / min	14-15,5 MPa	162 kg	2 cm
BJ 180	1.800 mm	-50 ° +90 °	30-42 l / min	14-15,5 MPa	172 kg	2 cm



Operator Safety Instructions and Practices

WARNING: Engine exhaust and certain vehicle components contain or emit chemicals.

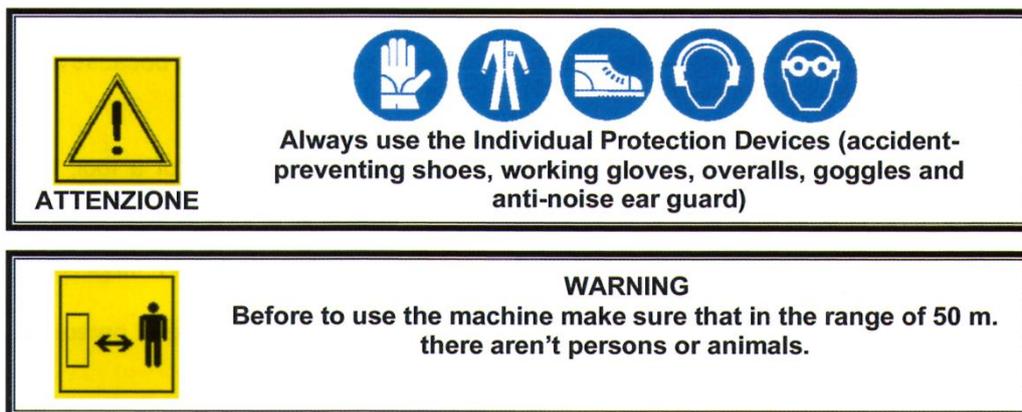
WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to cause cancer, birth defects or other reproductive harm. (SG-31)

WARNING: The rotating parts of this machine continue to rotate even after it has been turned off. The operator should remain in his seat for 60 seconds after the brake has been set, the tractor turned off, and all evidence of rotation has ceased.

WARNING: Never crawl under a raised Implement supported solely by the Tractor 3-Point hitch. Release of the control lever or mechanical failure will result in the Implement falling and possible injury or death. Always securely block up the Implement before crawling underneath to perform repairs and service.

WARNING: Never operate the Tractor or Implement until you have read and completely understand this Manual, the Tractor Operator's Manual, and each of the Safety Messages found in the Manual or on the Tractor and Implement. Learn how to stop the tractor engine suddenly in an emergency.

SAFETY NOTES



WARNING: Never allow inexperienced or untrained personnel to operate the Tractor and Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation. The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items that may be thrown by the equipment.

CAUTION PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS! Tractors with or without an Implement attached can often be noisy enough to cause permanent hearing loss.

We recommend that you always wear hearing protection if the noise in the Operator's position exceeds 80db. Noise over 85db over an extended period of time will cause severe hearing loss. Noise over 90db adjacent to the Operator over an extended period of time will cause permanent or total hearing loss.

NOTE: Hearing loss from loud noise [from tractors, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery

DANGER KEEP AWAY FROM ROTATING ELEMENTS to prevent entanglement and possible serious injury or death. Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Children can cause the Implement to shift or fall crushing themselves or others. (

DANGER NEVER use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely.

DANGER NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol.

Prolonged operation may cause operator boredom and fatigue affecting safe operation.

Take scheduled work breaks to help prevent these potentially impaired operating conditions. Never operate the Implement and Tractor in a fatigued or bored mental state which impairs proper and safe operation.

WARNING Use extreme caution when getting onto the Implement to perform repairs, maintenance and when removing accumulated material. Only stand on solid flat surfaces to ensure good footing. Use a ladder or raised stand to access high spots which cannot be reached from ground level. Slipping and falling can cause serious injury or death.

WARNING Avoid contact with hot surfaces including hydraulic oil tanks, pumps, motors, valves and hose connections. Relieve hydraulic pressure before performing maintenance or repairs. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (

DANGER DO NOT operate this Implement on a Tractor that is not properly maintained. Should a mechanical or Tractor control failure occur while operating, immediately shut down the Tractor and perform repairs before resuming operation. Serious injury and possible death could occur from not maintaining this Implement and Tractor in good operating condition.

WARNING Avoid contact with hot surfaces of the engine or muffler. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding.

Do not put hands or feet under mower decks. Blade Contact can result in serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up.

DANGER Always keep a careful lookout and use extreme care when working around utility and municipal obstructions. Never allow the Mower to contact any utility, municipal, or other type structure. Clearly mark all mowing obstructions and consult local utility providers for a safe code of operation.

DANGER Do not operate the implement while wearing loose fitting clothing. Entanglement of the clothing with the rotating elements can result in serious injury or even death. Stay clear of all rotating elements at all times.

Equipment Operation Safety Instructions and Practices

WARNING Never leave the Tractor and Implement unattended while the Implement is in the lifted position. Accidental operation of lifting lever or a hydraulic failure may cause sudden drop of unit with injury or death by crushing. To properly park the implement when disconnecting it from the tractor, lower the stand and put the retaining pin securely in place, or put a secure support under the A-Frame. Lower the implement carefully to the ground. Do not put hands or feet under lifted components.

WARNING Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines.

DANGER This Implement is wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles.

DANGER Be sure you have adequate knowledge of the property you will be working on. Take time to make yourself aware of any area underground lines or cables. Contact with buried lines or cable could result in **serious injury or death**

WARNING Do not operate Mower if excessive vibration exists. Shut down the Tractor engine. Inspect the Mower to determine the source of the vibration. If Mower blades are missing or damaged replace them immediately. Do not operate the mower until the blades have been replaced and the Mower operates smoothly. Operating the Mower with excessive vibration can result in component failure and broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the Mower to be operated with blades missing. (SFL-4)

WARNING Operate this Equipment only with a Tractor equipped with an approved rollover-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor--particularly during a turnover when the operator could be pinned under the ROPS.

DANGER BEFORE leaving the tractor seat, always engage the brake and/or set the tractor transmission in parking gear, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only.

DANGER Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death

DANGER Never allow children to operate, ride on, or come close to the Tractor or Implement.

Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)

DANGER Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)

DANGER Do not operate this Equipment with hydraulic oil or fuel leaking. Oil and fuel are explosive and their presence could present a hazard. Do not check for leaks with your hand! High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. To check for a hose leak, SHUT the unit ENGINE OFF and remove all hydraulic pressure. Wear oil impenetrable gloves, safety glasses and use Cardboard to check for evidence of oil leaks. If you suspect a leak, REMOVE the HOSE and have it tested at a Dealer. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)

DANGER Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)

WARNING Operate the Tractor and/or Implement controls only while properly seated in the Tractor seat with the seat belt securely fastened around you. Inadvertent movement of the Tractor or Implement may cause serious injury or death.

WARNING In case of mechanical difficulty during operation, place the transmission in the park position, set the parking brake, shut down all power, including the engine and remove the key. Wait until all rotating motion has stopped before dismounting.

DANGER Do Not operate this equipment in areas where insects such as bees may attack you and/or cause you to lose control of the equipment. If you must enter in such areas, use a tractor with an enclosed Cab and close the windows to prevent insects from entering. If a tractor cab is not available, wear suitable clothing including head, face, and hand protection to shield you from the insects. Attacking insects can cause you to lose control of the tractor, which can result in serious injury or death to you or bystanders. Never dismount a moving tractor.

DANGER Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards(90 m) in front and to the sides of the tractor and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these type of items discontinue mowing

DANGER There are obvious and hidden potential hazards in the operation of this Mower. REMEMBER! This machine is often operated in heavy brush and in heavy weeds. The Blades of this Mower can throw objects if shields are not properly installed and maintained. Serious injury or even death may occur unless care is taken to insure the safety of the operator, bystanders, or passersby in the area. Do not operate this machine with anyone in the immediate area. Stop mowing if anyone is within 100 yards of mower

DANGER The rotating parts of this machine have been designed and tested for rugged use. However, the blades could fail upon impact with heavy, solid objects such as metal guard rails and concrete structures. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles.

WARNING Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing.

WARNING Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items.

DANGER Mow at the speed that you can safely operate and control the tractor and mower. The correct mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 2 to 5 mph(3-8 kph). Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material.

DANGER Do not mow with two machines in the same area except with Cab tractors with the windows closed

WARNING Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:
-Equip the Tractor with a fire extinguisher in an accesible location.

- Do Not operate the Mower on a Tractor with an underframe exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating. - Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck.

The Mower is designed for certain mowing applications and is rated to cut up to a specific size vegetation (see Mower Standard Equipment and Specifications). DO NOT use this mower to cut vegetation above the Mower's rated capacity or to cut any type of nonvegetative material. Only operate this Mower on a properly sized and equipped Tractor.

Operating this Mower in an application for which it is not designed and/or operating the Mower with the wrong size Tractor can cause Mower component damage and equipment failure resulting in possible serious injury or death. (SGM-14)

Do not operate or pull the mower into standing water. When uplift or fan type mower blades contact water they can be severely deflected downward causing possible failure of blade resulting in serious injury to the operator or bystanders. (SGM-15)

Use extreme caution when raising the Mower above ground level. Stop the Blades from turning when the Mower is raised and passersby are within 100 yards. Raising the Mower exposes the Cutting Blades which creates a potentially serious hazard and can cause serious injury by objects thrown from the Blades or by contact with the Blades.

Connecting or Disconnecting Implement Safety Instructions and Practices

Rotary Mowers are capable under adverse conditions of throwing objects for great distances (300 feet or more) and causing serious injury or death. Follow safety messages carefully.

STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

NOTE: *Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected, closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, reduce streaking, and make the final cut more uniform).* (SRM-01)

WARNING Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-04)

Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades.

Transporting Safety Instructions and Practices

Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches

WARNING Be particularly careful when transporting the Implement with the Tractor. Turn curves or go up hills only at a low speed and using a gradual steering angle. Rear mounted implements move the center of gravity to the rear and remove weight from the front wheels. Make certain, by adding front ballast, that at least 20% of the tractor's weight is on the front wheels to prevent rearing up, loss of steering control or Tractor tip-over. Slow down on rough or uneven surfaces to prevent loss of steering control which could result in property damage or possible injury. Do not transport unless 3-

Point lift lever is fully raised and in the latched transport position. Dropping implement in transport can cause serious damage to the tractor and/or Implement and possibly cause the operator or others to be injured or killed.

WARNING Allow sufficient clearance for the Implement to swing outward while turning.

Implements carried behind the Tractor will swing outside the tire path when making turns.

Contacting a solid object while turning will cause equipment damage and possible injury. (S3PT-20)

WARNING Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy.

Be particularly careful when transporting the Implement using the tractor. Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces.

Maintenance and Service Safety Instructions and Practices

Your driving vision may be reduced or impaired by the tractor, cab, or implement. Before driving on public roadways identify any limited vision areas, and make adjustments to your operating position, mirrors, and the implement transport position so that you can clearly see the area where you will be traveling, and any traffic that may approach you. Failure to maintain adequate vision of the public roadway and traffic can result in serious injury or even death.

WARNING Always maintain the safety signs in good readable condition. If the safety signs are missing, damaged, or unreadable, obtain and install replacement safety signs immediately. (SG-5) **WARNING** Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function.

Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death.

Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running.

SPECIFICATIONS

- Connection: Euro-hitch
- Drive mower bar: hydraulic
- Cutting width: 1.200 – 1.500 – 1.800 mm
- Brush cutting diameter (max.): 2-4 cm
- Sideshift: 800 mm
- Working speed: 2 - 4 km/h
- Hydraulic connections: 1x double acting
- Hydraulic oil pressure: 155-240 bar
- Required hydraulic flow: min. 30 l/min
- Weight (without trimmer weight): ca. 110 kg
- Weight trimmer head only: 62 kg
- Weight packaging: ca. 190 kg
- Dimensions packaging: 1950x740x450 mm

ASSEMBLY

General information:

Read and ensure you understand the full assembly instructions before you begin assembling your machine.

The machine is delivered ex works in transport configuration. Always use tools, appliances, and lifting equipment of suitable size and power for installation. Always use 2 people to lift, move and assemble the machine. Wear suitable protective clothing such as safety shoes, safety goggles and protective gloves. Observe the safety precautions as described in chapter "**Safety**" of these operating instructions. Verify all screws and nuts are fitted correctly when assembling the machine. When opening the wooden crate, beware of sharp edges on the locking mechanisms.

Please note when beginning machine assembly:

- Clear the area of nearby persons, particularly children.
- Use suitable lifting equipment to move or raise the pallet/machine.
- Keep the load close to the ground.
- Move the device to the assembly site.
- Ensure there is enough room to safely assemble the device and access it from all sides.

Other important information:

Connecting the electromagnetic control valve (switches over between sickle bar blade drive and vertical sickle bar adjustment) **requires** a 12 V connection on your machine.

You will further need lugs to make the connection and a cable extension for the specific 12V socket on your machine. A changeover switch (e.g. pressure or toggle switch) is also required to be able to operate the electromagnetic control valve correctly. This is not included with the machine, since the connections on the machine are too specific and cannot be mass produced. Various machines may already be factory equipped with this function. The switch itself must have the following functions: The sickle bar adjustment (horizontal and vertical direction) must respond when pushing the switch, meaning the hydraulic cylinder is being actuated. After releasing the switch the electromagnetic control valve then redirects the hydraulic oil flow back to the hydraulic motor to power the blades.

Verify **all hydraulic connections and screw connections** are seated correctly and tight during installation and prior to first use, and regularly before use. Once installed, verify the hydraulic hoses are connected properly and tighten as necessary. When doing so, please remember the THS-180 also has a mechanical lateral adjustment and ensure the hydraulic hoses are able to work properly when fully extended, they must not be crushed.

The control block for the electromagnetic valve typically comes with the flow regulator connected. If once the machine is fully assembled you notice during the first test run the switch doesn't work as described in the sections above, reverse

the terminals on the connected cable clamps.
(Push/Position A = cylinder control, Release/Position B = hydraulic motor)



Fig. A control valve with power cables



Fig. B Cable lugs connected

1. Remove transport packaging

Remove the transport packaging. When opening the steel crate, beware of sharp edges on the locking mechanisms.

2. Scope of delivery

Remove all of the wood packaging and protective film. Remove all loose parts and put them aside for later use. Verify the delivery is complete, see Figures 4 to 7. Always be careful not to crush or damage the hydraulic lines.

Fig. 4 Open crate

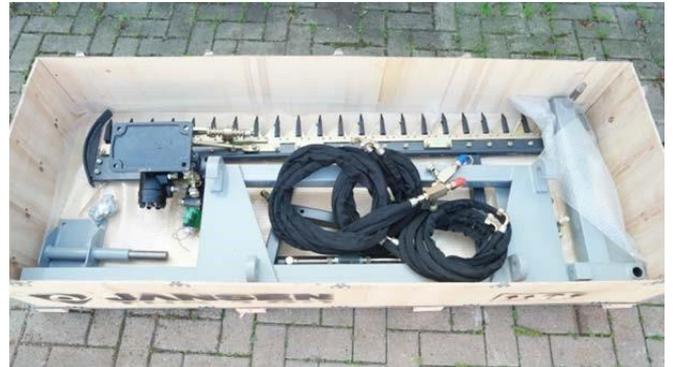


Fig. 6 Sickle bar and European attachment



Fig. 7 Fastening materials

3. Attaching European attachment to the machine



Important note:

The transport box may contain more bolts, nuts, washers, etc. than required for initial installation. This is intentional and not a defect in quality.

Fig. 5 Scope of delivery



Connection your machine with the European attachment and secure with the locking mechanism (Fig. 8 to 10).

Fig. 8 Attach

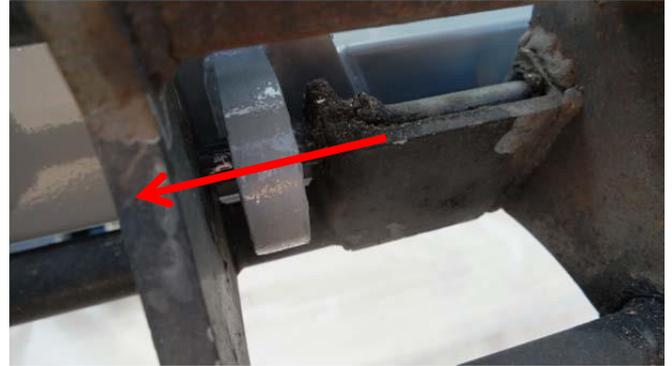


Fig. 9 Secure and lock



Fig. 10 Secured attachment

4. Assembling the sickle bar frame

Attach the sickle bar frame and the lever arm as shown in Fig. 11 to 18. **Never** grease the bar of the axle or the taper socket will not work correctly. **The taper socket must be screwed in in the correct tightening sequence 1 to 6 for the screws as shown in figure 16. This will**

normally be needed 3 to 4 times. After tightening screw 6, screw 1 will have loosened again. You will need to repeat this until screw 1 is tight, then retighten all screws until all screws feel tight. To loosen the taper socket, loosen all 6 screws and screwing 3 of these into different bores.

Be sure the to secure the cutter bar against dropping during installation.

Note the specified angles to allow the cutter bar to rotate properly during operation.



Fig. 11 Flange with axle



Fig. 14 Attached frame



Fig. 12 Accessories and taper socket



Fig. 13 Correct position

Fig. 15 Taper socket installed

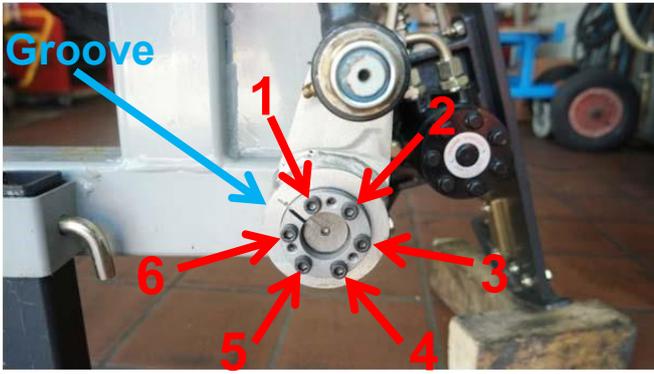


Fig. 16 Sequence 1-6 (retighten 3x!)



Fig. 17 Hydraulic cylinder attached

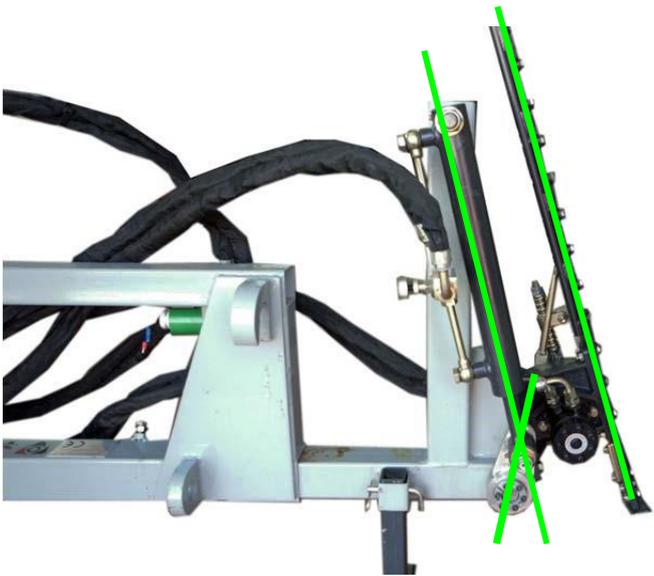


Fig. 18 Information: note the angle

During the following **steps 5 and 8**, be sure the sickle bar is installed in the upright position as shown in figure 18 (“protruding slightly”). The angle can be adjusted via the lever arm using the taper socket. If it doesn’t fit straight away it may need to be

readjusted with the taper socket.

5. Installing the hydraulic cylinder

Install the hydraulic cylinder as shown in figures 19-23. Please note, the mount for the extending cylinder rod itself must be installed to the bottom of the lever arm. Align the rods for the flow regulator and the check valve. Particularly be sure to tighten the screw for the lever arm well.



Fig. 19 Cylinder with check valve and accessories



Fig. 20 Attaching to the European attachment



6. Electric solenoid valve Fig. 25 12 Volt connecting cable

Fig. 21 Correct order



Fig. 22 Attaching to the lever arm

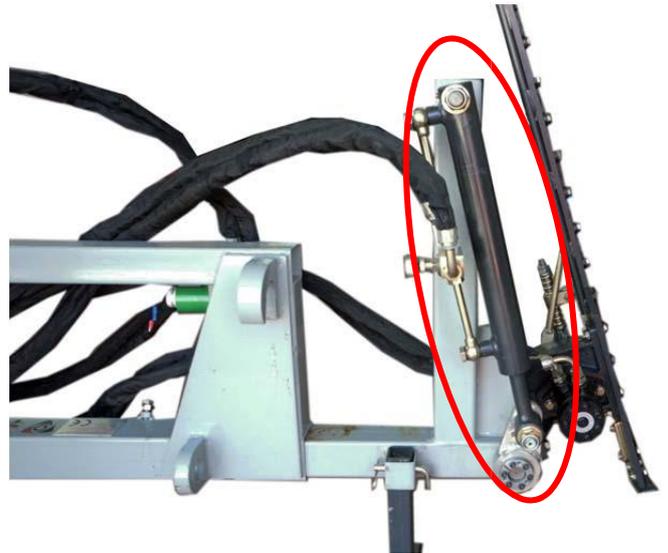


Fig. 23 Installed cylinder

Connect the valve as shown in figures 24 to 29.



Fig. 26 Screws and nuts



Fig. 27 Flange on the European attachment



Fig. 24 Electromagnetic control valve

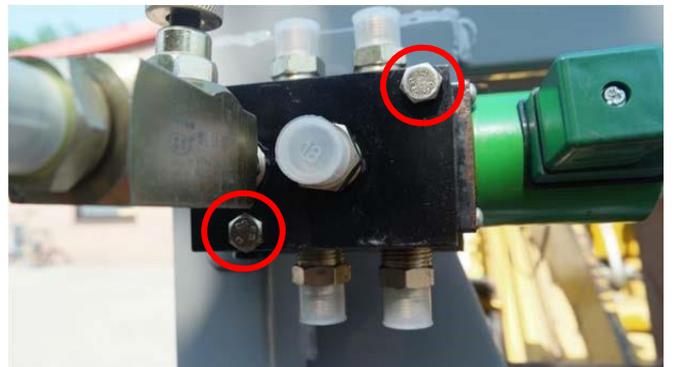


Fig. 28 Correct order



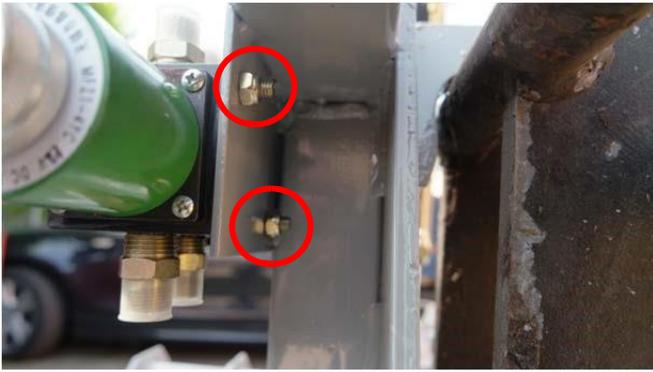


Fig. 29 Correct order

7. Checking the screws on the sickle bar

Always check all screw connections are tight and seated correctly before every use. This particularly applies to the screws for the blade drive shown in figures 30 to 36.



Fig. 32 Blade drive brace



Fig. 33 Blade drive



Fig. 30 Right hydraulic motor flange



Fig. 34 Blade drive detail



Fig. 31 Left hydraulic motor flange



Fig. 35 Blade drive brace

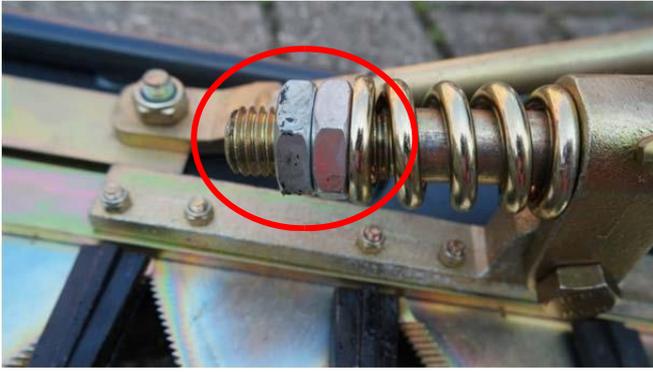


Fig. 36 Spring with lock nut

8. Connecting the sickle bar to the main frame

Attach the sickle bar as shown in figures 37 to 42. Be careful not to hurt yourself on the sharp blades and be sure to have a second person help you with this step. **NEVER place your fingers between the blades during installation, particularly when moving the sickle bar, to prevent any type of injuries**



Fig. 39 Positioning the flange

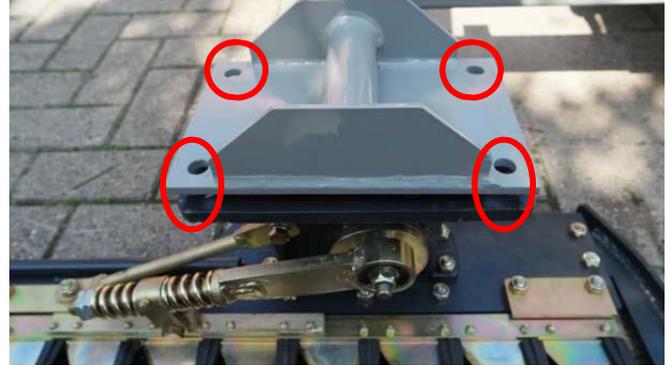


Fig. 40 Correct position



Fig. 37 Sickle bar



Fig. 41 Correctly installed



Fig. 38 Screws and nuts

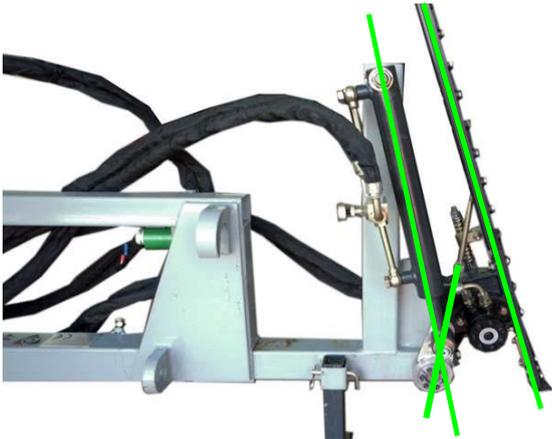


Fig. 42 Correct installed position

9. Connecting the hydraulic hoses

The electric solenoid valve comes with the hydraulic connections and flow regulator installed. (figure C)



Fig. C Pre-assembled changeover valve

Be sure to connect the included hydraulic lines correctly as shown in figures 43 to 61. Be sure not to crush the hydraulic lines, including when operating the machine. **Use safety gloves and safety goggles when working on the hydraulic lines to prevent serious injuries due to pressurised hydraulic lines**



Fig. 44 Hoses to the cylinder



Fig. 45 Hoses to the machine



Fig. 48 Machine connection (example)



Fig. 52 First connection to the hydraulic
Fig. 46 First connection to the machine



Fig. 43 Hoses to the hydraulic motor



Fig. 47 Flow regulator with protective cap motor

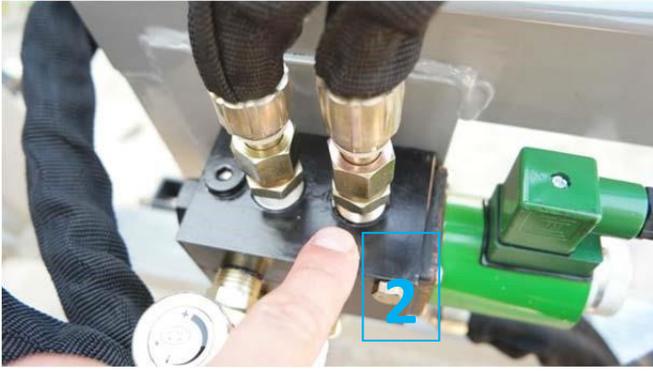


Fig. 49 Second connection to the machine



Fig. 53 First connection on the hydraulic motor



Fig. 50 Flow regulator with protective cap



Fig. 54 Connection to hydraulic motor two



Fig. 51 Machine connection (example)



Fig. 55 Second hydraulic motor connection

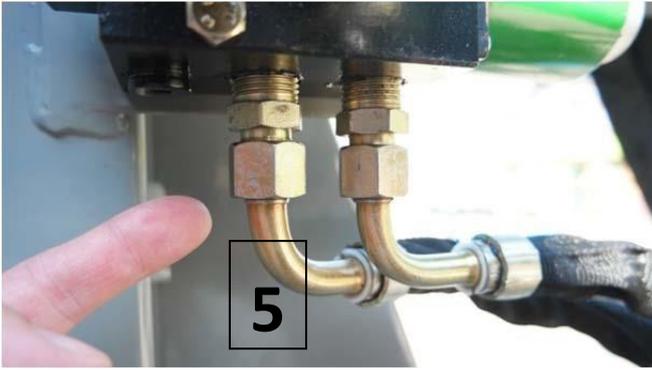


Fig. 57 First connection on the cylinder (top)

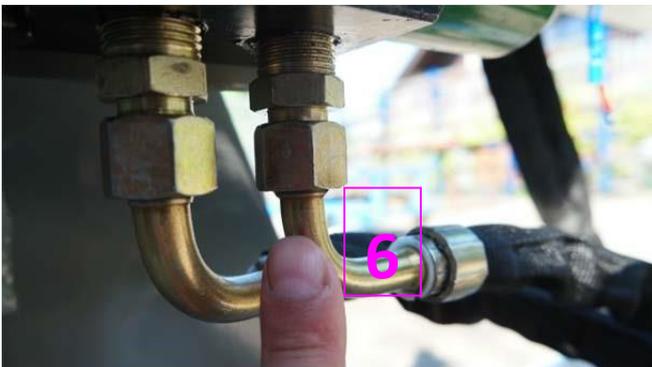


Fig. 58 Second connection to the cylinder

Fig. 56 First connection to the cylinder



Fig. 59 Second connection on the cylinder

Now check **all hydraulic connections are seated correctly and tight.** This applies to all hose connections, flow regulator, check valve and connections on the actual machine. Once adjusted the flow control valve must be secured with the lock screw.



Fig. 60 Flow control valve fixed by locknut



Fig. 61 Adjusting the flow control valve

10. Adjusting the displacement

The machine has a mechanical sickle bar displacement. It can be adjusted laterally to



the mowing conditions in a horizontal direction. To do so, slightly loosen the screws and lock nuts, move the extension to the desired position (if necessary with a 2 person) and secure the extension with screws and lock nuts again. To make it easier to move, you can also lubricate with a little spray oil, etc. as necessary.

Fig. 62 Displacement secured



Fig. 63 Displacement loosened

Fig. 64 Maximum extension



Fig. 65 Minimum extension

11. Lubricating the machine

The machine needs to be lubricated prior to first use and regularly thereafter. You will need a grease gun and suitable multipurpose grease (not graphite grease). Figures 66 to 70 show the location of lubricating points. You will need spray oil

or similar to lubricate the sickle bar. **Never grease the sickle bar axle the taper socket attaches to.**



Fig. 67 Sickle bar axle



Fig. 68 Bottom cylinder



Fig. 69 Top cylinder

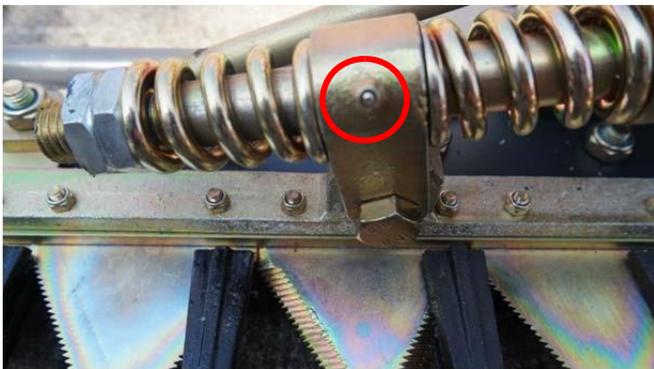


Fig. 66 Blade drive

Fig. 70 Lubricate the blade bar with spray oil

12. Storage legs

If the machine will not be used for a longer period, secure the legs and store the machine on it. Always secure with the bolts.



Fig. 71 Legs with bolts



Fig. 72 Order

Fig. 73 Left leg



Fig. 74 Right leg



13. Flow regulator

Set **all** flow regulators to minimal flow before first use and open as necessary.



Fig. 75 Flow regulator (example)

OPERATOR REQUIREMENTS

Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained in this manual,

safety signs are affixed to the implement and tractor. If any part of the operation and safe use of this equipment is not completely understood, consult an authorized dealer for a complete explanation.

If the operator cannot read the manuals for themselves or does not completely understand the operation of the equipment, it is not the responsibility of we to read and explain the manuals, safety practices, and operating instructions to the operator, but operator itself.

Safe operation of equipment requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions when attaching, operating, servicing, and repairing the equipment. PPE is designed to provide operator protection and includes the following safety wear:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Protective Eye Glasses, Goggles, or Face Shield
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions)



4 INCONVENIENCES AND REMEDIES

INCONVENIENCES	CAUSE	REMEDY
Clogging of hammers/knives	Rotor speed is too low	Increase rotor speed
Excessive wear of hammers/knives	Rotor speed is too high	Decrease rotor speed
Shredder vibrates during works	<ul style="list-style-type: none"> • Foreign matter stuck in between knives broken • Bolts of the rotor shaft support have come loose 	<ul style="list-style-type: none"> • Remove foreign matter • Replace knives • Lock bolts

MAINTENANCE

LUBRICATION

Grease Points

All grease points shown in **FIGURE 5-1** below should be greased before operating the machine. To make greasing easier by relieving the weight from the pivot pins, rest the rotor unit on the ground, stop tractor engine and operate control levers in both directions. Grease daily or every 8 hours of operation. Use a high quality lithium base #2 grease.

Hoses and rotor drive circuit

It is false economy to try and make a damage hose last a bit longer, because a failure can spill several gallons of oil on the road endangering traffic and costing money. To reduce the risk of this happening and ensure a long life from the hoses follow instructions given below:

- A. Check weekly that all hoses and their connections (with particular attention to the rotor drive circuit) are in good condition and that there are no leaks or damage.
- B. Replace any hose that is leaking or damaged.
- C. Ensure that hoses have not chafed against sharp edges. If they have, inspect damage and replace if necessary.
- D. Re-route any hose that has been chafing.
- E. Ensure that when fitting hoses that they are fitted without kinks or sharp bends.
- F. Pay particular attention to the suction hose from tank to pump.
- G. If in doubt about the condition of a hose REPLACE IT.

HYDRAULIC OILS

Only use Universal Hydraulic Oil

Hydraulic Cylinders

It is advisable to check all cylinder caps for tightness occasionally and if found to be loose, tighten them immediately.

Storage

Before removing the machine from the tractor, a thorough check of the machine should be made as follows:

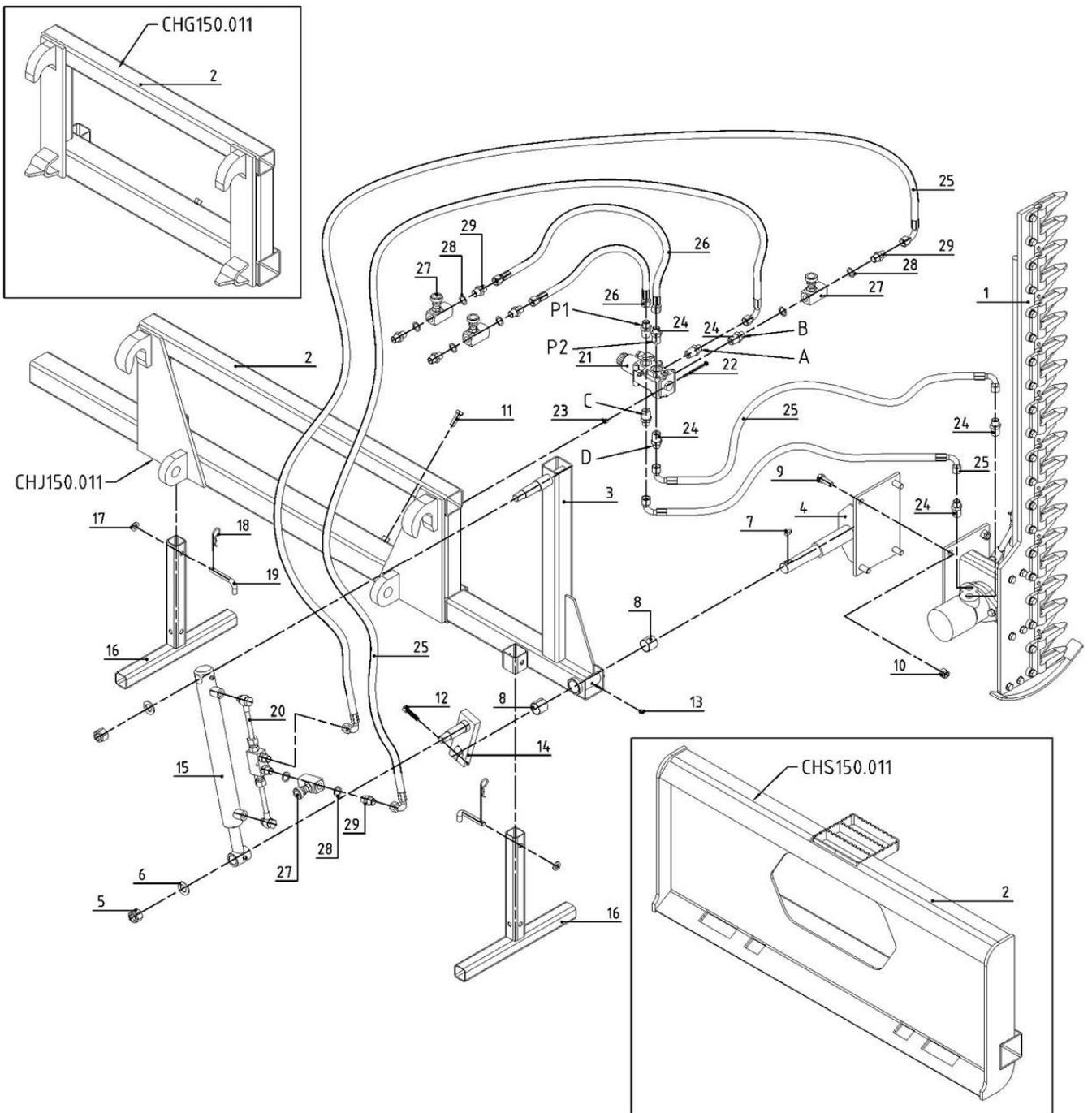
- A. Thoroughly clean all moving parts, particularly the rotor unit.
- B. Check that all flails are in place, and that they are in good condition.
- C. Check all hoses for damage, such as cracks, evidence of chafing and leaks.
- D. Smear all unpainted metal parts with grease and lubricate all grease fittings.
- E. Make a note of item that needs replacing so that parts can be ordered.

This manual cannot possibly cover all of the potentially hazardous situations you will encounter. By being familiar, though, with the safety rules, operating and maintenance instructions in this manual you can help prevent accidents. The objective of this manual is to help make you a better operator. Remember, **SAFETY IS YOU!**



Your safety and the safety of those around you depends on **YOU**. Common sense should play a large role in the operation of this machine.

PARTS DRAWINGS AND LISTS



NO.	PART NO.	Name & Specifications	QTY
1	CH150.001	Hedge trimmer	1
2	CHJ150.011	Hanging Weldment(EURO Hitch)	1
	CHG150.011	Hanging Weldment(SMS Hitch)	
	CHS150.011	Hanging Weldment(Skidder Hitch)	
3	CHJ150.012	Beam Weldment	1
4	CHJ150.013	Rotation Seat Weldment	1
5	GB/T889.1-2000	Lock Nut M20	2
6	GB/T97.1-1987	Plain Washer	2
7	GB/T1096-1979	Key A 8x22	1
8	CHJ150.102	Bearing 30*34*30	2
9	GB/T5783-2000	Bolt M14*35	4
10	GB/T889.1-2000	Lock Nut M14	4
11	GB/T5783-2000	Bolt M12*35	2
12	GB/T70. 1-2000	Soket head cap screw M10x40	1
13	JB/T7940. 1-1995	Oil Cup M8	1
14	CHJ150.014	Swing Arm Weldment	1
15	CHJ150.015	Cylinder	1
16	CHJ150.016	Support Leg	2
17	GB/T97.1-1987	Plain Washer	2
18		R Pin 3.2	2
19	1G135.00.107	Plug Pin	2
20		Safety Valve	1
21	DV26.001	Solenoid Valve	1
22	GB/T5783-2000	Bolt M8x80	2
23	GB/T889.1-2000	Lock Nut M8	2
24	CP5.60.104	Adapter R1/2-M18*1.5	8
25	CHJ150.017	Oil Hoses	4
26	CHJ150.018	In-out oil hose	2
27	LA-H10L	One- way throttle valve	4
28		Washer 18	8
29		Adapter 18-18	6