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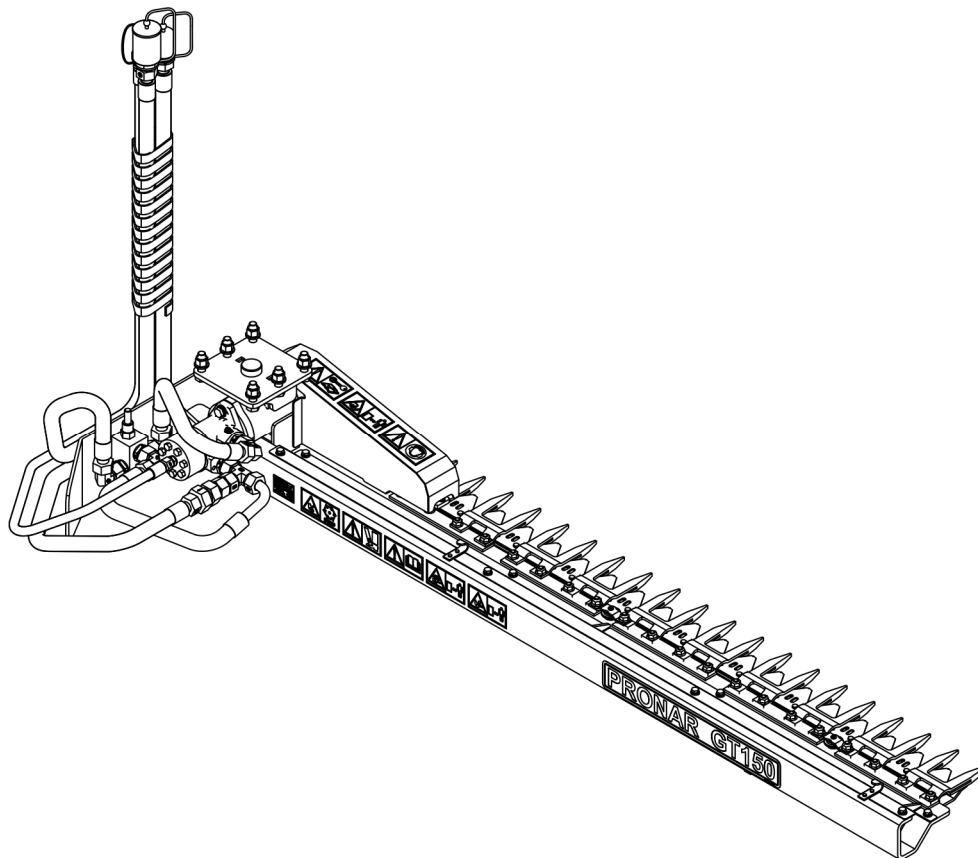
www.pronar.pl

OPERATOR MANUAL

TRIMMER

PRONAR GT150

TRANSLATION OF THE ORIGINAL COPY OF THE MANUAL



EDITION 1A-02-2017

PUBLICATION NO. 88N-00000000-UM



TRIMMER

PRONAR GT150

MACHINE IDENTIFICATION

SYMBOL /TYPE:

SERIAL NUMBER:

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INTRODUCTION

Information in this document is current at date of publication. As a result of improvements, some numerical values and illustrations in this publication may not correspond to the actual specification of the machine supplied to the user. The manufacturer reserves the right to introduce design changes in machines produced that facilitate and improve the quality of machine operation, without making minor amendments to this Operator Manual.

This Operator Manual is an integral part of the machine documentation. Before using the machine, the user must carefully read this Operator Manual and observe all recommendations. This guarantees safe operation and ensures failure-free work of the machine. The machine is designed to meet obligatory standards, documents and legal regulations currently in force.

The manual describes the basic principles of safe use and operation of PRONAR GT150 trimmer. If the information in this Operator Manual needs clarification, refer for assistance to the sale point where the machine was purchased or to the Manufacturer.

MANUFACTURER'S ADDRESS:

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SYMBOLS APPEARING IN THIS OPERATOR MANUAL

Information, descriptions of danger and precautions and also recommendations and prohibitions associated with user safety instructions are marked:



and also preceded by the word "**DANGER.**" Failure to observe the instructions may endanger the machine operator's or other person's health or life.

Vital information and instructions that must be observed are by the symbol:



and also preceded by the word "**IMPORTANT**". Failure to observe the instructions may lead to damage to the machine as a result of improper operation, adjustment or use.

In order to focus the user's attention on the need to perform maintenance, the relevant section of the Operator Manual is marked with the pictogram:



Additional tips and advice for machine operation are marked with the sign:



and also preceded by the word "**TIP**".

DIRECTIONS USED IN THIS OPERATOR MANUAL

Left side – side to the left hand of the operator facing in the direction of machine's forward travel.

Right side – side to the right hand of the operator facing in the direction of machine's forward travel.



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EC DECLARATION OF CONFORMITY OF THE MACHINERY

PRONAR Sp. z o.o. declares with full responsibility, that the machine:

Description and identification of the machinery	
Generic denomination and function:	Cutting head
Type:	GT150
Model:	—
Serial number:	
Commercial name:	Cutting head PRONAR GT150

to which this declaration relates, fulfills all the relevant provisions of the Directive **2006/42/EC** of The European Parliament and of The Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (Official Journal of the EU, L 157/24 of 09.06.2006).

The person authorized to compile the technical file is the Head of Research and Development Department at PRONAR Sp. z o.o., 17-210 Narew, ul. Mickiewicza 101A, Poland.

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user.

Narew, the 2017-04-21

Place and date

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position, signature

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SECTION

1

**BASIC
INFORMATION**

1.1 IDENTIFICATION

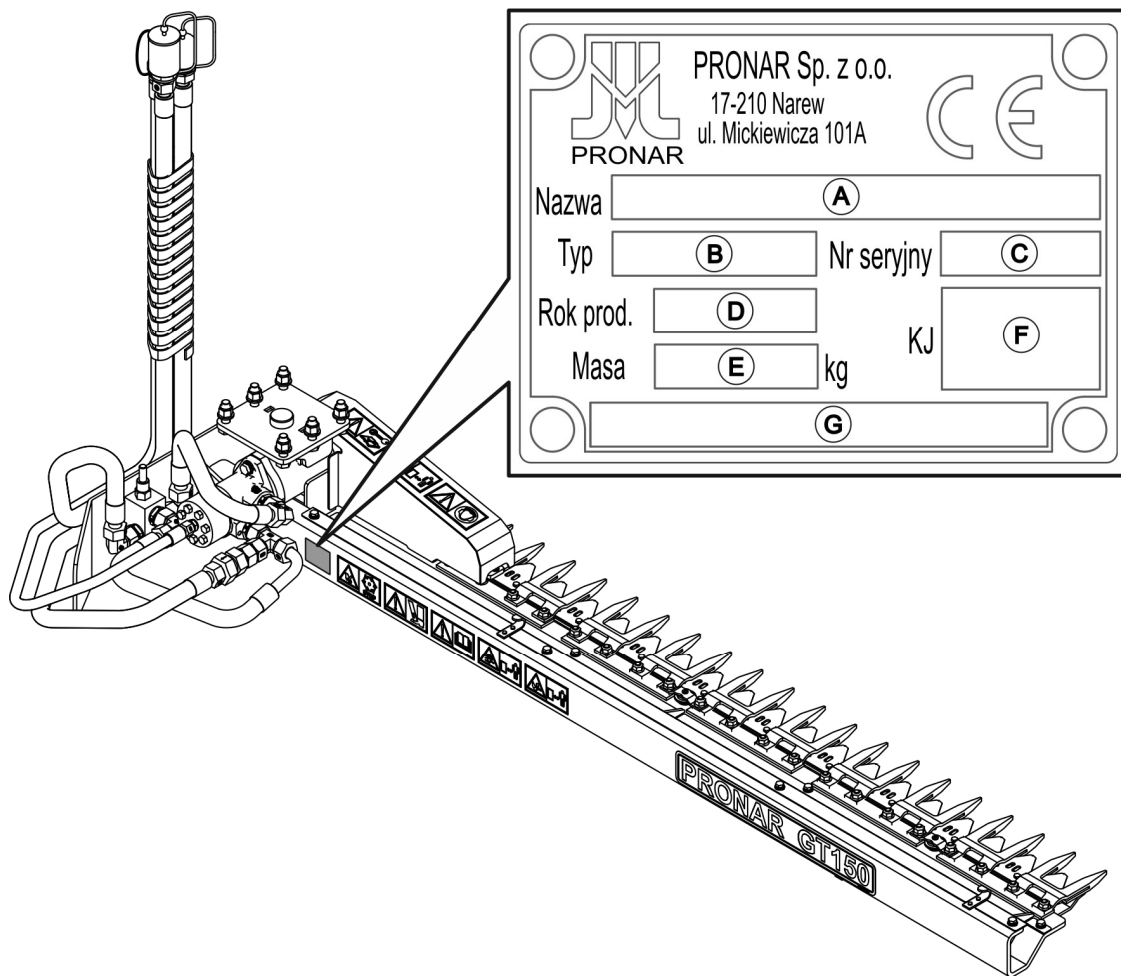


FIGURE 1.1 Location of the nameplate.

PRONAR GT150 trimmer is marked with the nameplate located on the frame. When purchasing the machine, make sure that the serial numbers on the machine are the same as entered in the *WARRANTY BOOK*, in sales documents and in the *OPERATOR MANUAL*.

The meaning of individual items of the nameplate – figure (FIGURE 1.1) are presented in the table below:

A – machine name, B – machine type/symbol
C – serial number, D – year of manufacture,
E – gross weight [kg], F – Quality control stamp,
G – machine name, name extension

1.2 INTENDED USE

PRONAR GT150 trimmer is designed and constructed according to current safety and engineering standards.



ATTENTION

PRONAR GT150 trimmer is compatible with PRONAR WWT600 / WWT700T / WWP500 / WWP600 / WWP500U / WWP500UH / WWT420 / WWT480 multifunction arms.

PRONAR GT150 trimmer installed on PRONAR WWT600 / WWT700T / WWP500 / WWP600 / WWP500U / WWP500UH / WWT420 / WWT480 multifunction arm is used for trimming thin branches in orchards and gardens and for pruning shrubs and hedges. Design of multifunction arm enables operation in hard to reach areas such as roadside ditches or drainage ditches behind protective barriers.

Transporting people, animals or other materials on the trimmer is prohibited and regarded as contrary to the intended purpose. During the use of the machine comply with all road traffic regulations and transport regulations in force in the given country, and any breach of these regulations is regarded by the Manufacturer as use contrary to the intended use of the machine.



ATTENTION

The trimmer must not be used for purposes other than those for which it is intended, in particular:

- for transporting people and animals,
- for transporting whatever materials or objects.

Using it as intended involves all actions connected with the safe and proper operation and maintenance of the machine. Due to the above, the user is obliged to:

- carefully read the *OPERATOR MANUAL* and comply with its recommendations,
- understand the machine's operating principle and how to operate it safely and correctly,
- adhere to the established maintenance and adjustment plans,
- comply with general safety regulations while working,
- prevent accidents,
- comply with the road traffic regulations and transport regulations in force in the given country, in which the machine is used,
- carefully read the Operator Manual of the agricultural tractor or implement carrier and the Operator Manual of the multifunction arm and comply with their recommendations.

The trimmer may only be used by persons, who:

- are familiar with the contents of this publication and with the contents of the Operator Manual of the agricultural tractor or implement carrier and the Operator Manual of the multifunction arm,
- have been trained in the trimmer operation and work safety,
- have the required authorisation to drive and are familiar with the road traffic regulations and transport regulations.

1.3 EQUIPMENT

TABLE 1.1 Equipment of PRONAR GT150 trimmer

EQUIPMENT	STANDARD	OPTION
Operator Manual	•	
Warranty Book	•	
POG01 adapter head		•

1.4 TERMS & CONDITIONS OF WARRANTY

PRONAR Sp. z o.o. Narew guarantees the reliable operation of the machine when it is used according to its intended purpose as described in the *OPERATOR MANUAL*. Defects discovered during the warranty period will be removed by the Warranty Service. The repair period is specified in the *WARRANTY BOOK*.

The warranty does not cover those parts and sub-assemblies of the machine which are subject to wear in normal usage conditions, regardless of the warranty period. Consumables include, among others, cutter bar teeth and bearings.

The warranty service only applies to such cases as: mechanical damage which is not the user's fault, factory defects of parts, etc.

In the event of damage arising from:

- mechanical damage which is the user's fault, damage caused by road accidents,
- by incorrect use, adjustment or maintenance, use of the trimmer for purposes other than those for which it is intended,
- use of damaged machine,
- repairs carried out by unauthorised persons, repairs carried out improperly,
- making unauthorised alterations to machine design,

the user will lose the right to warranty service.



TIP

Demand that the seller carefully and accurately fills out the *WARRANTY BOOK* and warranty repair coupons. A missing date of purchase or sale point stamp may make the user ineligible for any warranty repair or refund.

The user is obliged to report immediately on noticing any wear in the paint coating or traces of corrosion, and to have the faults rectified whether they are covered by the warranty or not. For detailed Terms & Conditions of Warranty, please refer to the WARRANTY BOOK attached to each newly purchased machine.

Modification of the trimmer without the written consent of the Manufacturer is prohibited. In particular, do NOT weld, drill holes in, cut or heat the main structural elements of the machine, which have a direct impact on the machine operation safety.

1.5 TRANSPORT

The trimmer is ready for sale completely assembled and does not require packing. Packing is only required for the machine's technical documentation and any extra accessories.

ATTENTION



When transporting the multifunction arm independently, the carrier vehicle driver must carefully read this Operator Manual and observe all its instructions. When being transported on a motor vehicle, the trimmer must be mounted on the vehicle's platform in accordance with the transport safety requirements. The driver of the vehicle should use extreme caution while driving. This is due to the vehicle's centre of gravity shifting upwards when the machine is loaded.

Before transport, install the shield on the trimmer's cutter bar.

Delivery is either by transport on a vehicle or independently. Transporting the machine connected to the multifunction arm is allowed provided that the tractor or implement carrier driver is familiar with the Operator Manual of the machine and of the multifunction arm, and in particular, familiar with all the relevant safety information and how to hitch and transport the machine on public roads. Do NOT drive the tractor or implement carrier with the multifunction arm and the trimmer connected when visibility is limited.

When being transported on a motor vehicle the trimmer shall be secured in accordance with the road transport safety requirements. It is recommended that the trimmer should be transported on a wooden pallet.

When loading and unloading the trimmer, follow the general health and safety regulations for reloading work. Persons operating reloading equipment must have the qualifications required to operate these machines.

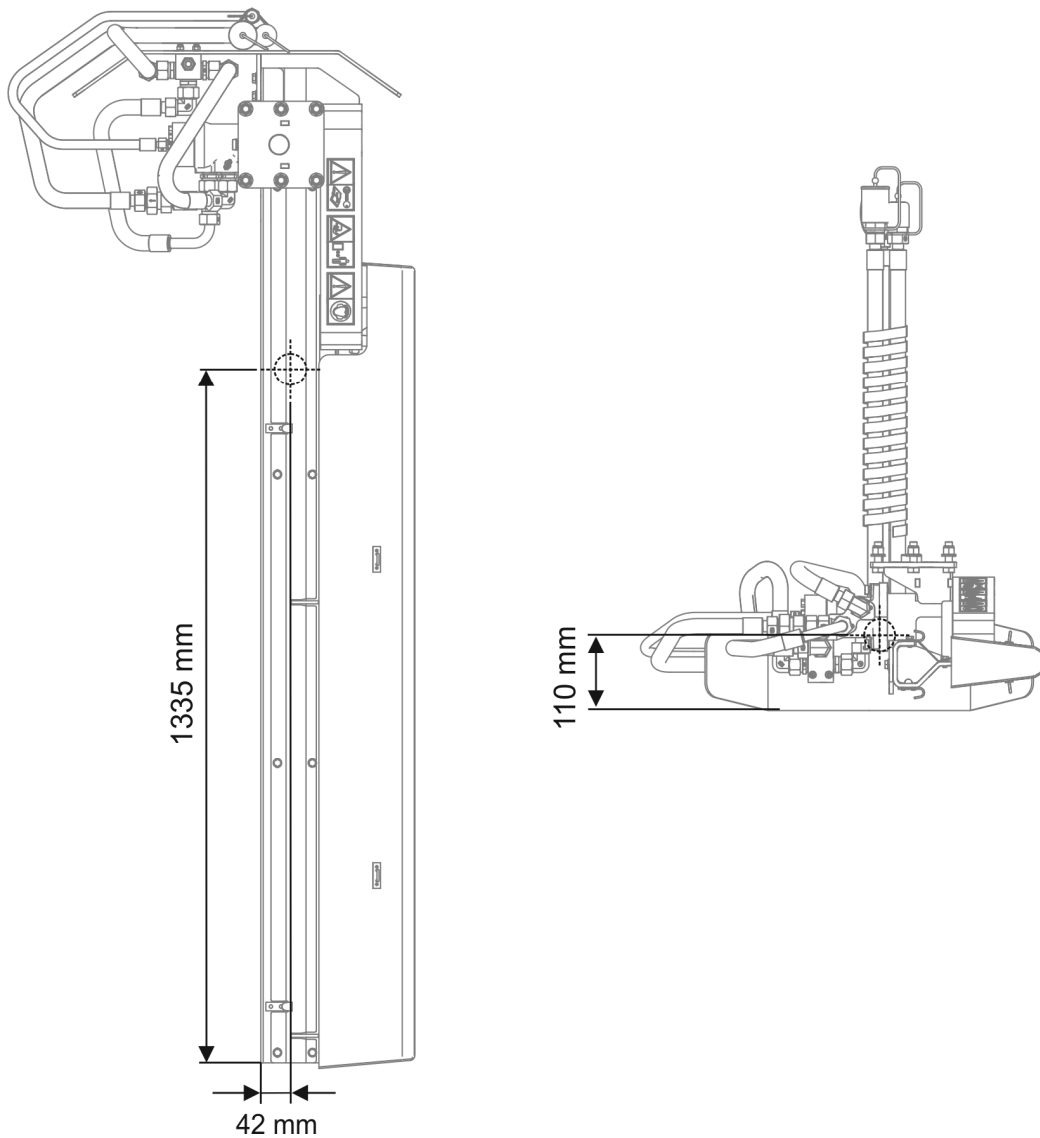


FIGURE 1.2 Location of centre of gravity of GT150 trimmer.

The machine should be firmly secured on the transport vehicle platform with belts or chains equipped with a tensioning mechanism. The fastening equipment used must have a valid safety certificate. Exercise due caution when lifting the machine. To keep lifted machine in the correct direction it is recommended to apply additional guy cables. During reloading work, special care should be taken not to damage the paint coating.



ATTENTION

Nobody may be in the manoeuvring zone when transferring the trimmer to another means of transport.

1.6 ENVIRONMENTAL RISK

A hydraulic oil leak constitutes a direct threat to the natural environment owing to its limited biodegradability. While carrying out maintenance and repair work which involves the risk of an oil leak, this work should take place on an oil resistant floor or surface. In the event of oil leaking into the environment, first of all contain the source of the leak, and then collect the leaked oil using available means. Remaining oil should be collected using sorbents, or by mixing the oil with sand, sawdust or other absorbent materials. The oil contaminations, once gathered up, should be kept in a sealed, marked, hydrocarbon resistant container, and then passed on to the appropriate oil waste recycling centre. The container should be kept away from heat sources, flammable materials and food.

Oil which has been used up or is unsuitable for further use owing to loss of its properties should be stored in its original packaging in the conditions described above.

1.7 WITHDRAWAL FROM USE

Should you decide to withdraw the machine from use, comply with the regulations in force in the given country regarding withdrawal from use and recycling of machines withdrawn from use.

Before proceeding to dismantle machine, oil shall be completely removed from hydraulic system.

When spare parts are changed, worn out or damaged parts should be taken to a collection point for recyclable raw materials. Used oil and also rubber and plastic elements should be taken to the appropriate facilities dealing with the recycling of this type of waste.



ATTENTION

During dismantling, use the appropriate tools, equipment and use personal protection equipment, i.e. protective clothing, footwear, gloves and eye protection etc.

Avoid contact of skin with oil. Do not allow used oil to spill.

SECTION

2

**SAFETY
ADVICE**

2.1 BASIC SAFETY RULES

2.1.1 MACHINE USE

- Before use, the user must carefully read this Operator Manual and the *WARRANTY BOOK*. When operating the machine, follow all instructions in these documents.
- The trimmer may only be used and operated by persons qualified to drive agricultural tractors and implement carriers and trained in the use of the machine. The trimmer can be operated by a single person only.
- If the information in this Operator Manual is difficult to understand, contact the seller who runs the authorised technical service on behalf of the Manufacturer, or contact the Manufacturer directly.
- Careless and improper use and operation of the machine, and failure to comply with the instructions of this operator manual is dangerous to your health.
- Be aware of the residual risk. Use caution when operating this trimmer and apply all relevant safety principles.
- This machine must never be used by persons who are not authorised to drive agricultural tractors or implement carrier, including children and people under the influence of alcohol, drugs or other drugs.
- Non-compliance with the safety rules of this Operator's Manual can be dangerous to the health and life of the operator and others.
- The machine must not be used for purposes other than those for which it is intended. Anyone who uses the trimmer other than the way intended takes full responsibility for himself for any consequences of this use. Use of the machine for purposes other than those for which it is intended by the Manufacturer may invalidate the guarantee.
- The trimmer may only be used when all the safety guards and other protective elements are technically sound and correctly positioned. In the event of loss or damage to the protective guards , they must be replaced with new ones.
- Use personal protective equipment (hearing protectors) in order to limit occupational risks associated with exposure to noise during trimmer operation. In

order to reduce the level of noise during work, the operator cab windows and door should be closed.

2.1.2 HITCHING AND UNHITCHING THE MACHINE

- After hitching the machine, check the safeguards. Carefully read the tractor (carrier vehicle) Operator Manual.
- Use only original bolts and protections to hitch the trimmer to the multifunction arm.
- The multifunction arm to which the trimmer will be hitched must be technically reliable and must fulfil the requirements of the trimmer Manufacturer.
- Be especially careful when hitching and unhitching the machine. During these operations, the shield of the cutter bar blades should be on at all times.
- When hitching, there must be nobody between the trimmer and the multifunction arm and the tractor.
- Do NOT unhitch the trimmer from the multifunction arm if the trimmer is raised. Exercise caution when unhitching the machine.
- Connect the machine with multifunction arm only when the tractor/carrier vehicle engine and the machine are off.
- The trimmer disconnected from the multifunction arm must rest on a stable, level surface.
- All hydraulic quick couplers of the trimmer must be connected to the multi-function arm.

2.1.3 HYDRAULIC SYSTEM

- The hydraulic system is under high pressure when operating.
- Regularly check the technical condition of the hydraulic lines and connections. There must be no oil leaks.
- In the event of the hydraulic system malfunction, discontinue using the machine until the malfunction is corrected.

- When connecting the hydraulic quick couplers to the trimmer, make sure that the hydraulic system of the multifunction arm is not under pressure. If necessary, reduce residual pressure in the system.
- In the event of injuries being caused by pressurised hydraulic oil, contact a doctor immediately. Hydraulic oil may penetrate the skin and cause infections. In the event of contact of oil with eye, rinse with large quantity of water and in the event of the occurrence of irritation consult a doctor. In the event of contact of oil with skin wash the area of contact with water and soap. Do NOT apply organic solvents (petrol, kerosene).
- Use the hydraulic oil recommended by the Manufacturer. Never mix two types of oil.
- After changing the hydraulic oil, the used oil should be properly disposed of. Used oil or deteriorated oil should be stored in original containers or replacement containers resistant to hydrocarbons. Replacement containers must be clearly marked and appropriately stored.
- Do not store hydraulic oil in packaging designed for storing food or foodstuffs.
- Rubber hydraulic lines must be replaced every 4 years regardless of their technical condition.
- Repair and replacement of hydraulic system elements should be entrusted to the appropriately qualified persons.

2.1.4 TRANSPORTING THE MACHINE

- When driving on public roads, observe all road traffic regulations in force in the country, in which the machine is used.
- Do not exceed the maximum speed resulting from road conditions and design restrictions. Adjust speed to the prevailing road conditions and other limitations arising from road traffic regulations.
- Before driving off, the multifunction arm and the trimmer must be folded into transport position.
- Do NOT leave machine raised and unsecured while the tractor (implement carrier) is parked. When parked, the machine should be lowered.

- Do not transport the trimmer set in the working position.
- The trimmer may not be used or transported in conditions of limited visibility.
- Do NOT ride on the machine or transport any materials on it.
- Before using the machine always check its technical condition, especially in terms of safety. In particular, check the technical condition of the linkage, guards, cutter bar blades and hydraulic system connections.
- Reckless driving and excessive speed may cause accidents.
- When driving on public roads, the transport protective guard of the trimmer's cutter bar blades should be on at all times.

2.1.5 MAINTENANCE

- During the warranty period, any repairs may only be carried out by warranty service authorised by the Manufacturer. It is recommended that necessary repairs to machine should be undertaken by specialised workshops.
- In the event of any fault or damage, do not use the trimmer until the fault has been corrected.
- During work, use appropriate, close-fitting protective clothing, gloves and appropriate tools. When working on hydraulic system it is recommended to use oil resistant gloves and protective goggles.
- Any modification to the trimmer frees PRONAR Narew from any responsibility for damage or detriment to health, which may arise as a result.
- Before commencing any work on the trimmer, turn off the tractor (carrying vehicle) engine and wait until all rotating parts have come to a stop.
- Regularly check the technical condition of the safety devices and correct tightening of bolt connections.
- Regularly perform service inspections of machine as recommended by the Manufacturer.
- Do NOT perform maintenance or repair work under raised and unsupported machine.
- Before beginning repairs on hydraulic systems, reduce oil pressure.

- Servicing and repair work should be carried out in line with the general principles of workplace health and safety. In the event of injury, the wound must be immediately cleaned and disinfected. In the event of more serious injuries, seek a doctor's advice.
- Repair, maintenance and cleaning work should be carried out with the tractor/carrier vehicle engine turned off and the ignition key removed. Immobilise the tractor/carrier vehicle with parking brake. Ensure that unauthorised persons do not have access to the vehicle cab.
- Should it be necessary to change individual parts, use only original parts. Non-adherence to these requirements may put the user and other people's health and life at risk, and also damage the machine and invalidate the warranty.
- Regularly check technical condition and mounting of all guards and protective elements.
- In the event of work requiring the trimmer to be raised, use properly certified hydraulic or mechanical lift jacks for this purpose. After lifting the machine, stable and durable supports must also be used. Do NOT carry out work under the machine, which has only been raised with the multifunction arm.
- The machine must not be supported using fragile elements (bricks or concrete blocks).
- After completing work associated with lubrication, remove excess oil or grease.
- Damaged or excessively worn trimmer blades must be replaced with new ones recommended by the trimmer Manufacturer.
- In order to reduce the danger of fire the machine must be kept in a clean condition.

2.1.6 TRIMMER OPERATION

- Before lowering or lifting the trimmer mounted on the multifunction arm, make sure there are no bystanders near the machine.
- Remove the transport protective guard before starting the trimmer drive.
- Before starting the trimmer drive, set the trimmer in working position.

- Before starting the trimmer, make sure that there are no bystanders (especially children) or animals in the danger zone. The machine operator is obliged to ensure proper visibility of the machine and the working area.
- Cut branches only when nominal PTO speed or nominal hydraulic power is reached. Do NOT overload the trimmer.
- When trimming branches, the pressure and oil flow in the trimmer's drive system must not exceed the recommended values.
- Cutting the branches at a high altitude could be hazardous for the operator. The operator's cab should be equipped with a Falling-Object Protective Structure (FOPS) according to ISO 8083.
- When trimming the branches on the edge of the road, there is a risk that falling branches and debris can pose a hazard to bystanders and other road users.
- Do NOT leave the tractor/carrier vehicle cab, when the machine drive is engaged.
- Do NOT stand within the trimmer's working zone.
- Do NOT approach cutting blades until the rotating parts have come to a complete stop.
- Do NOT operate the trimmer while reversing. When reversing raise the machine and stop the trimmer drive.
- Do not operate the trimmer when visibility is limited or at night.
- Keep a safe distance from overhead electric power lines during travel with raised trimmer.

2.2 RESIDUAL RISK

Pronar Sp. z o. o. in Narew has made every effort to eliminate the risk of accidents. There is, however, a certain residual risk, which could lead to an accident, and this is connected mainly with the actions described below:

- using the machine for purposes other than those for which it is intended,
- being between the tractor/carrier vehicle and the machine while the engine is running and when the machine is being attached,
- being on the machine while the engine is running,
- operating the trimmer with removed or faulty safety guards,

- failure to maintain a safe distance from the danger zone or being within the zones while the machine is operating,
- the machine must never be used by unauthorised persons, including children, and people under the influence of alcohol, drugs or other intoxicants.
- cleaning, maintenance and technical inspection with the multifunction arm connected and in operation.

The residual risk may be kept to a minimum by following the recommendations below:

- operate the machine in prudent and unhurried manner,
- sensibly apply the remarks and recommendations contained in the Operator Manual,
- carry out repairs and maintenance work in line with operating safety rules,
- repair and maintenance work should be carried out by persons trained to do so,
- use close fitting protective clothing,
- ensure unauthorised persons have no access to the machine, especially children.
- maintain a safe distance from forbidden or dangerous places
- do not climb on the machine when it is operating

2.3 INFORMATION AND WARNING DECALS

The trimmer is labelled with the information and warning decals mentioned in table (2.1). The arrangement of symbols is shown in figure (2.1). Throughout the machine use, you must ensure that any warning messages and information decals located on the machine are clear and legible. If any are destroyed or damaged, they must be replaced with new. Safety decals can be purchased from the Manufacturer of the machine or your PRONAR dealer. New assemblies, changed during repair, must be labelled once again with the appropriate safety signs. When cleaning the trimmer, do not use solvents that may damage the coating of information decals and do not subject them to action of strong water jets.

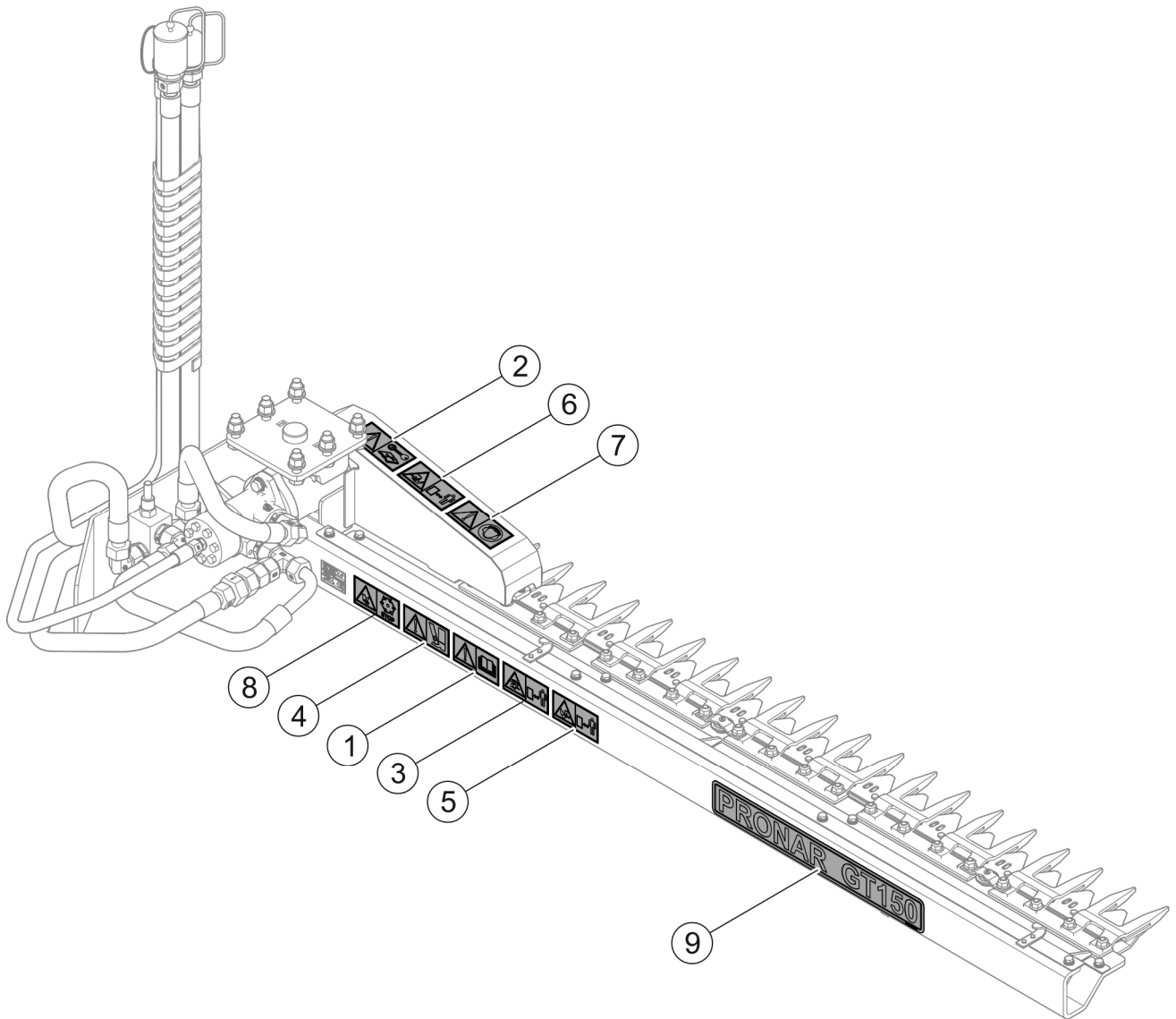
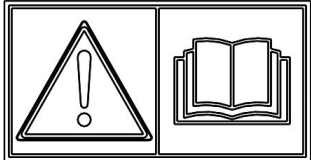
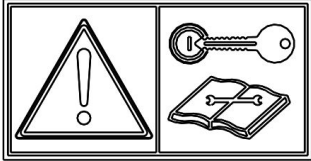
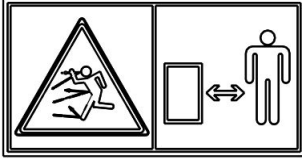

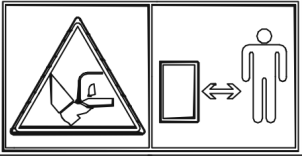
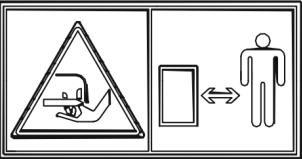





FIGURE 2.1 Locations of information and warning decals

Meaning of symbols (TABLE 2.1)

TABLE 2.1 Information and warning decals

ITEM	DECAL	MEANING
1		Before starting work, carefully read the Operator Manual.
2		Before maintenance or repairs, turn off engine and remove key from ignition.

ITEM	DECAL	MEANING
3		<p>Thrown out objects endanger the whole body. Keep a safe distance from the operating machine.</p>
4		<p>Danger of crushing toes or feet.</p>
5		<p>IMPORTANT. Cutting blades — do NOT approach an operating machine.</p>
6		<p>IMPORTANT. Cutting blades — do NOT approach an operating machine.</p>
7		<p>High noise level warning.</p>
8		<p>Do not touch any rotating elements until they come to a complete stop.</p>
9		<p>Machine type</p>

Numbers in the item column correspond to decals in figure (2.1)

SECTION

3

**DESIGN AND
OPERATION**

3.1 TECHNICAL SPECIFICATION

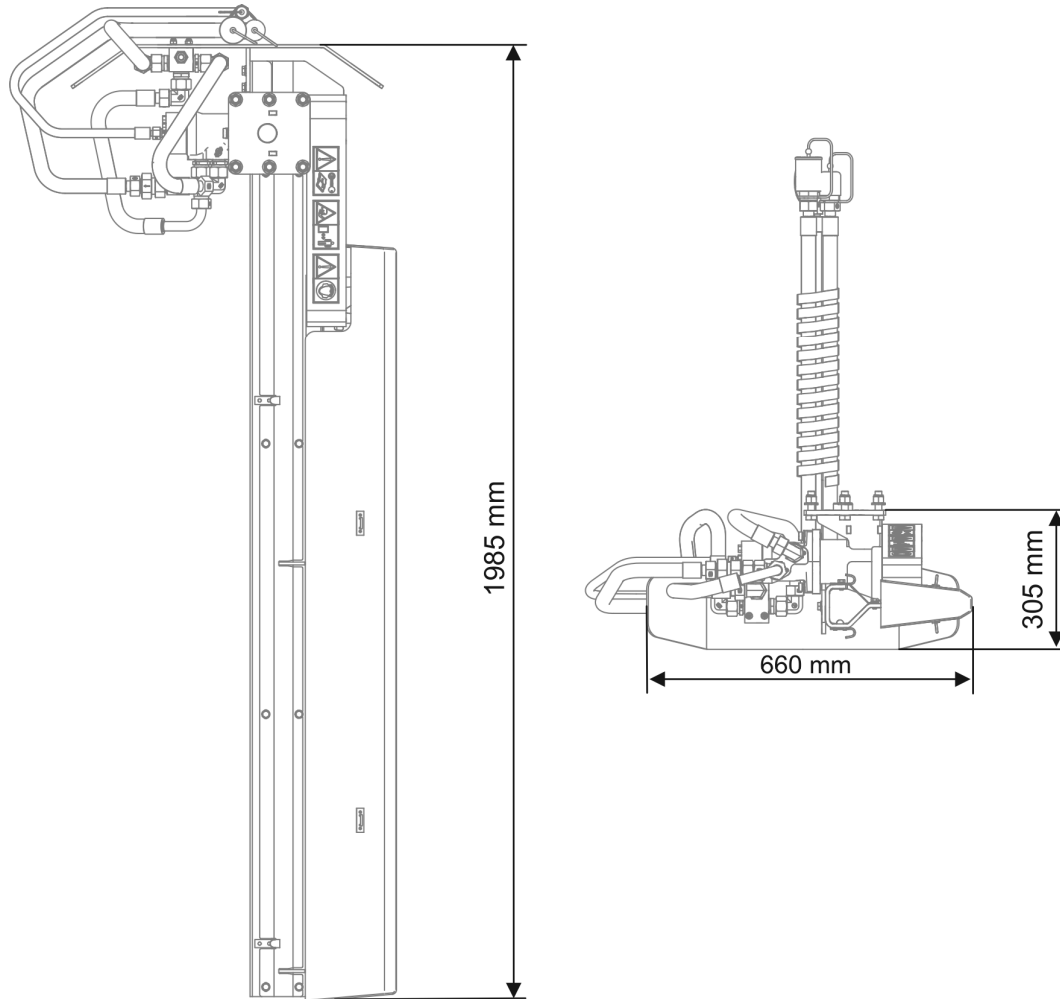


FIGURE 3.1 Basic dimensions

TABLE 3.1 BASIC TECHNICAL DATA

	Unit	GT150
Dimensions and weight		
Transport length:	mm	660
Transport width:	mm	1985
Transport height:	mm	305
Cutting width:	mm	1500
Tare weight	kg	85
Technical specification		
Method of linking with carrier vehicle	-	Square plate 140x140 – 6 x M14x50
Transmission type	-	hydraulic
Maximum trimming diameter	mm	Ø20

Number of cutting blades	pc.	19
Carrier vehicle requirement		
Implement carrier type	-	The WWT420/480/600/700T multifunction arm – use without TYP60 and TYP80 couplers The WWP500/600/U/UH Multifunction arm – requires POG01 adapter head and TYP80P coupler
Nominal oil flow rate	l/min	80
Nominal oil working pressure	bar	210
Hydraulic supply	pc.	1x supply; 1x return; 1x "free drain"

3.2 GENERAL DESIGN

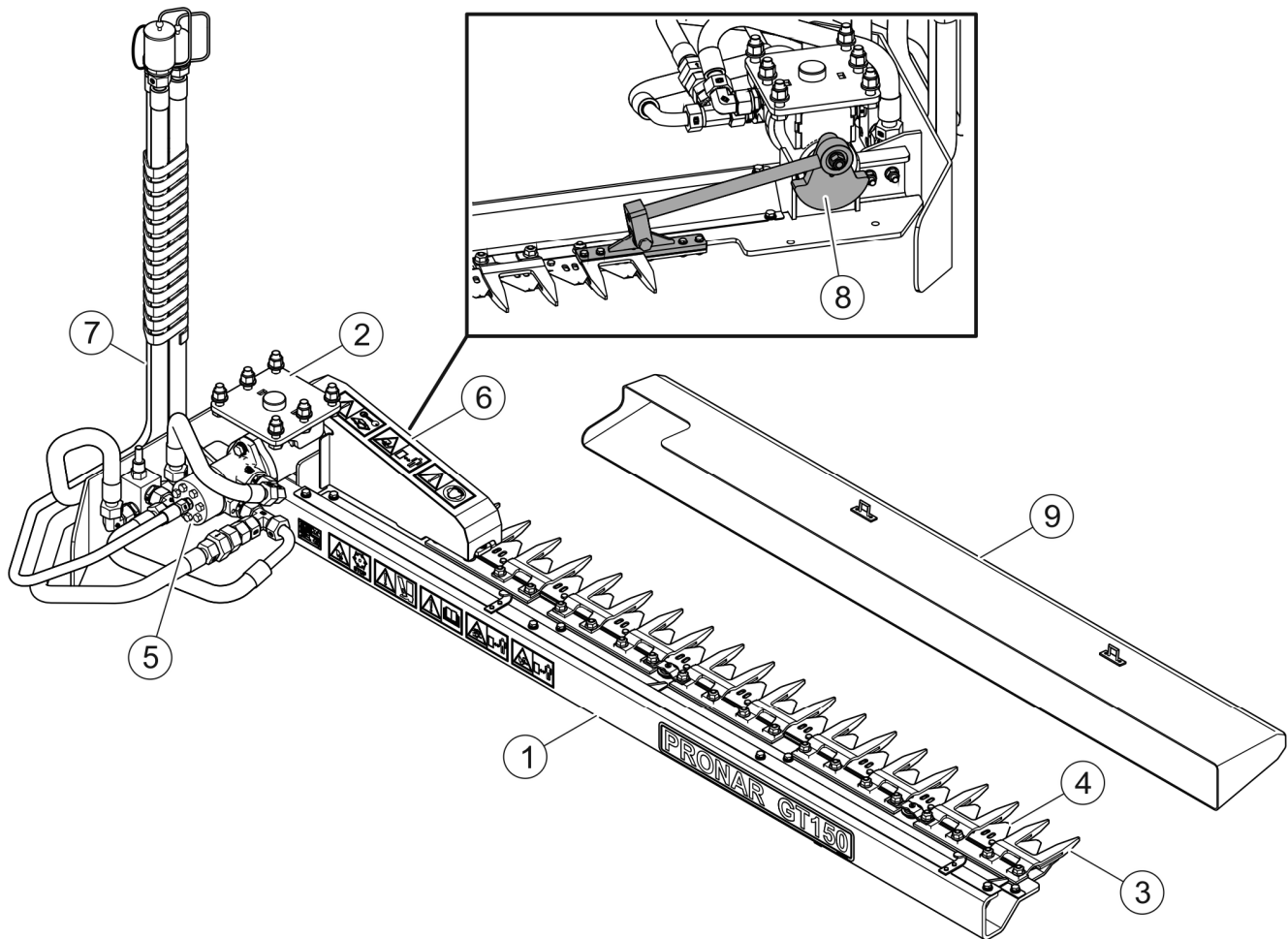


FIGURE 3.2 General design.

(1)- frame; (2)- connection; (3)- bayonet; (4)- cutter bar; (5)- hydraulic motor; (6)- drive shield; (7)- hydraulic lines; (8)- crank system; (9)- cutter bar transport protective guard.

The trimmer consists of frame (1) (FIGURE 3.2) with connection (2) that enables the connection of the trimmer with the multifunction arm.

Branches are trimmed by the moving cutter bar (4) that moves between the bayonets (3) forming the cutting edge for the cutting blades.

The cutter bar is driven through the crank system (8) by the hydraulic motor (5) supplied through hydraulic lines (7) from the multifunction arm. The crank system (8) of the cutter bar drive is located under the shield (6).

During transport, the cutter bar (4) should be shielded with the transport protective guard (9).

SECTION

4

**CORRECTY
USE**

4.1 GET READY FOR OPERATION

The manufacturer guarantees that the machine is fully operational and has been checked according to quality control procedures and is ready for use. This does not release the user from an obligation to check the machine's condition after delivery and before first use. The machine is delivered to the user completely assembled.



NOTE

Before using the trimmer always check its technical condition. In particular, check the technical condition of the cutter bar, drive system, and integrity of protective guards.

Before connecting to the multifunction arm, the machine operator must check the technical condition of the trimmer and prepare it for test start-up. In order to do this:

- the user must carefully read this Operator Manual and observe all recommendations, understand the design and the principle of machine operation,
- check the condition of protective paint coat,
- inspect machine's individual components for mechanical damage resulting from incorrect transport (dents, piercing, bent or broken components),
- check technical condition of the hydraulic system;
- check if cutter bar, linkage and safety guards are correctly installed,

If all the above checks have been performed and there is no doubt as to the machine's good technical condition, hitch the machine to the multifunction arm. Start the tractor/carrier vehicle's engine, check all systems and perform a test run before beginning work. In order to inspect:

- hitch the trimmer to the multifunction arm (see "*HITCHING TO MULTIFUNCTION ARM*")
- set it in working position,
- remove the cutter bar protective guard (FIGURE 5.1);
- power up the multifunction arm, and then use the control panel to start the trimmer drive.

Engage trimmer's drive for 3 minutes and check the following:

- that there is no knocking or noise in the hydraulic motor arising from scraping or grinding of metal elements,

The trimmer operation without load should be smooth. Shaking, knocking, abnormal noise and vibrations coming from loose bolt and nut connections are not acceptable. After a complete stop of the cutter bar drive, check the mounting of the cutter bar to the holder of the drive crank system and the bayonets to the trimmer frame. Check the hydraulic cylinder and hydraulic line connections for oil leaks.

DANGER



Before starting the trimmer operation, the user must carefully read this Operator Manual. Careless and incorrect use and operation of the trimmer, and failure to follow instructions in this Operator Manual is dangerous to your health.

The trimmer must never be used by persons who are not authorised to drive agricultural tractors/carrier vehicles, including children and people under the influence of alcohol or other drugs.

Non-compliance with the safety rules of this Operator's Manual can be dangerous to the health and life of the operator and others.

Before starting the trimmer, make sure that there are no bystanders in the danger zone.

If any faults are detected they must be identified and rectified. If a fault cannot be rectified or the repair could void the warranty, please contact retailer for additional clarifications.

4.2 TECHNICAL INSPECTION

To get the trimmer ready for use, check components according to guidelines presented in Table 4.1.

TABLE 4.1 TECHNICAL INSPECTION SCHEDULE

DESCRIPTION	MAINTENANCE ACTIVITIES	FREQUENCY
Condition of safety guards	Check the technical condition of safety guards, if complete and correctly mounted.	Daily before beginning work
Check if hydraulic lines and linkage are correctly installed	Check if correctly installed	
Technical condition of the hydraulic system.	Check according to section " <i>DRIVE SYSTEM MAINTENANCE</i> "	
Check if all main nut and bolt connections are properly tightened	Tightening torque values should be according to table (5.2) or the instructions in the Operator's Manual.	
Technical condition of drive system	Check the mounting of hydraulic motor, crank system and cutter bar.	
Lubrication points	Lubricate in accordance with the "LUBRICATION" section	
Technical condition of cutter bar	Visually inspect and, if necessary, sharpen or replace the blades	



NOTE

Do NOT use out of order trimmer.

4.3 HITCHING TO MULTIFUNCTION ARM

PRONAR GT150 trimmer can be used with WWT600/700T/420/480 multifunction arm without TYP60 and TYP80 connection and WWP600, WWP500, WWP500U or WWP500UH multifunction arm with POG01 adapter head and TYP80P connection (FIGURE 4.1).



NOTE

Before hitching the trimmer, the user must carefully read the Operator Manuals of the trimmer, tractor (carrier vehicle) and multifunction arm and observe all instructions contained in the manuals.



DANGER

When hitching, there must be nobody between the machine and the tractor/carrier vehicle. Exercise caution when hitching the machine.



DANGER

Before hitching the trimmer, turn off the tractor/carrier vehicle's engine and remove the key from the ignition. Ensure that unauthorised persons do not have access to the tractor/carrier vehicle cab.

Check technical condition of the trimmer's guards and general technical condition of the machine.

In order to hitch the trimmer to the multifunction arm (FIGURE 4.1), proceed as follows:

- Control the multifunction arm and bring its connector (1) close to the connection (2) of the trimmer.
- Using the control panel, position the multifunction arm connector (1) above the trimmer connector (2).
- Immobilize the tractor/carrier vehicle and prevent it from moving.
- Connect the multifunction arm connector (1) to the trimmer connection (2) using six fixing bolts (3).
- When connecting the trimmer connector (2) with WWP600/500/500U or WWP500UH multifunction arm connector (1), use POG01 adapter head (6) with TYP80P connector (7).
- Connect the quick couplers of the multifunction arm hydraulic lines (A), (B) and (C) with the quick couplers (D), (E) and (F) of the trimmer's hydraulic system.
- Raise trimmer using control panel of multifunction arm.

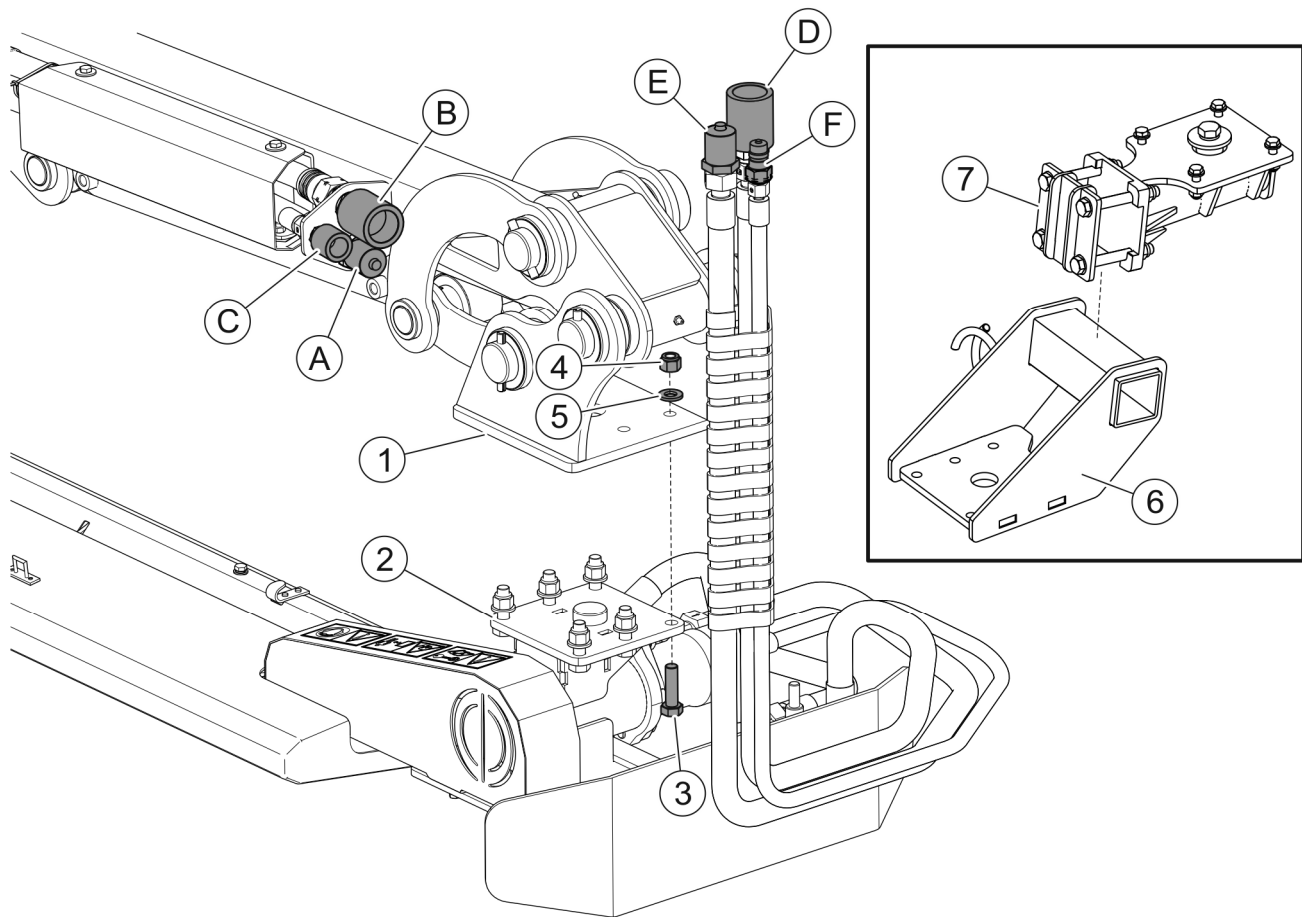




FIGURE 4.1 Hitching to multifunction arm

(1)- multifunction arm connector; (2)- trimmer connector; (3)- securing bolts; (4)- nuts; (5)- washers; (6)- POG01 adapter head; (7)- TYP80P connection; (A)- supply hydraulic quick coupler (plug) on the multifunction arm; (B)- return hydraulic quick coupler (socket) on the multifunction arm; (C)- "free drain" hydraulic quick coupler; (D)- supply hydraulic quick coupler (socket) on the trimmer; (E)- return hydraulic quick coupler (plug) on the trimmer; (F)- "free drain" hydraulic quick coupler of the hydraulic motor.

	<p>DANGER</p> <p>Prior to connecting individual hydraulic system lines, the user must carefully read the Operator Manual of the multifunction arm and observe all recommendations of the Manufacturer.</p>
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	<p>DANGER</p> <p>When connecting the hydraulic lines to the trimmer, make sure that the hydraulic system of the multifunction arm is not under pressure.</p>
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4.4 TRANSPORTING THE MACHINE

ATTENTION



Before driving on public roads in order to transport the multifunction arm with the trimmer to the work site and back, the multifunction arm must be folded to its transport position.

When driving on public roads, observe all road traffic regulations in force in the country, in which the machine is used.

Before driving onto a public road, check if all the lights and warning plates on the multifunction arm are properly mounted and visible.

The multifunction arm may not be used or transported in conditions of limited visibility.

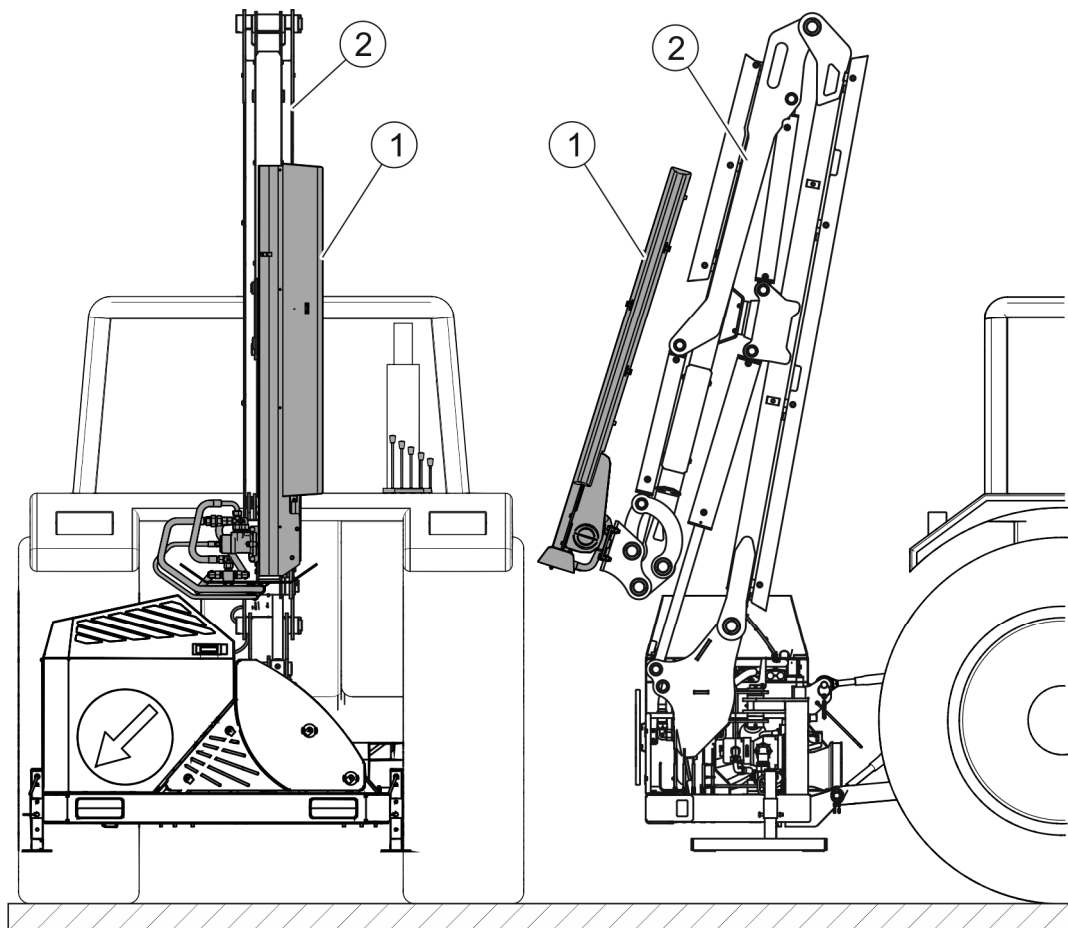


FIGURE 4.2 Example transport position of the trimmer on the multifunction arm

(1)-trimmer in the transport position; (2)- multifunction arm.

For transport to work site and back, set the multifunction arm in the transport position (FIGURE 4.2), so that the transport width of the multifunction arm with the trimmer installed is the minimum, and the trimmer does not protrude beyond the outline of the tractor and secure

the machine according to the Operator Manual of the multifunction arm. Protect the trimmer's cutter bar with protective guard (FIGURE 5.1).

**DANGER**

The trimmer drive must not be turned on when the multifunction arm is in its transport position.

4.5 SETTING THE TRIMMER IN WORKING POSITION AND OPERATION OF THE TRIMMER

4.5.1 SETTING THE TRIMMER IN WORKING POSITION

To set the trimmer in working position:

- remove the transport protective guard of the trimmer cutter bar (FIGURE 5.1)
- Control the relevant hydraulic circuits and position the multifunction arm so as to place the trimmer in the working area (FIGURE 4.3)

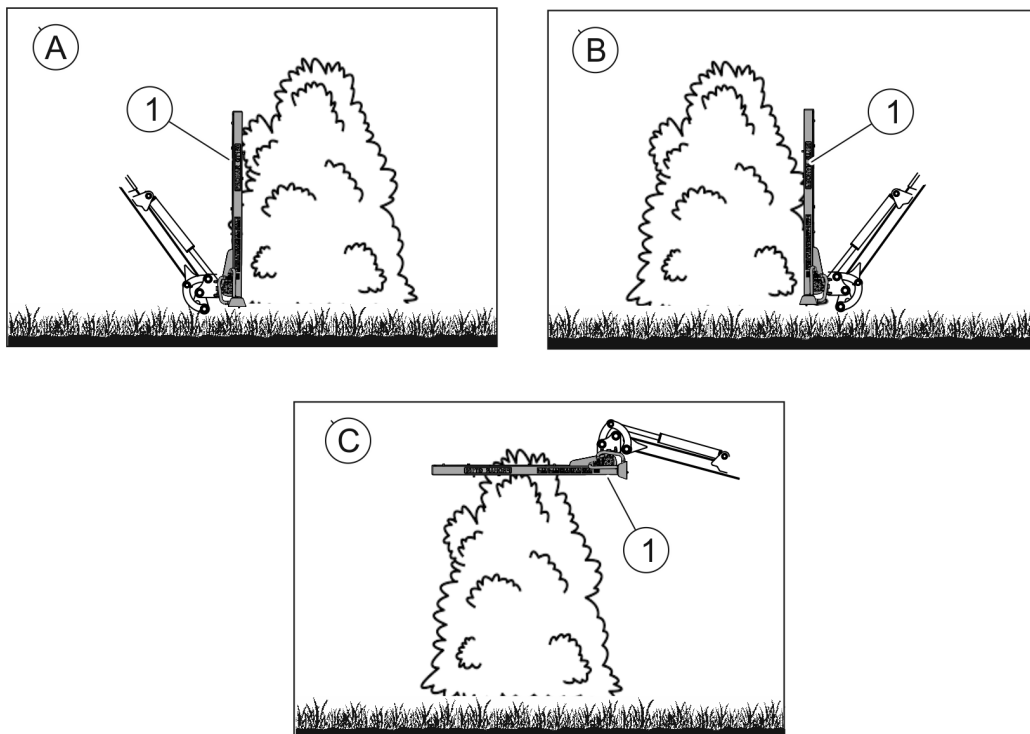


FIGURE 4.3 Examples of the trimmer working positions on the multifunction arm during hedge trimming.

(1)- trimmer;

4.5.2 TRIMMER OPERATION

DANGER



The trimmer may only be started when all guards, except the transport protective guard, are mounted and the trimmer is set in working position.

Before engaging the trimmer drive, make sure that there are no bystanders, especially children, near the trimmer and then remove the transport protective guard.

Other persons should be at a safe distance from the trimmer during work because of the danger that objects may be ejected (splinters, branches, etc.).

Do not operate the trimmer when visibility is limited or at night.

When the trimmer is set in working position, you can start the cutter bar drive using the multifunction arm controls.

Engage appropriate gear of the carrier vehicle (tractor) and start working.

HIGH NOISE LEVEL WARNING



Depending on the working conditions, the tractor (carrier vehicle) with the machine may generate noise exceeding the level of 85dB at the driver position. In such conditions, the operator should use personal protective equipment (ear protectors).

In order to reduce the level of noise during work, the operator cab windows and door should be closed.

During trimmer operation, the multifunction arm operator must ensure unrestricted visibility of the machine and work area so that the operator can see obstacles and possible hazards in the route of the working trimmer (power lines, poles, fences, etc.).

DANGER



Bystanders should be at a safe distance from the trimmer during its operation on the raised arm because of the risk of various materials (stones, branches etc.) falling and being thrown by the trimmer.

DANGER



During operation with the arm of the multifunction arm raised, keep the arms and the trimmer at a safe distance from overhead power lines (FIGURE 4.4).

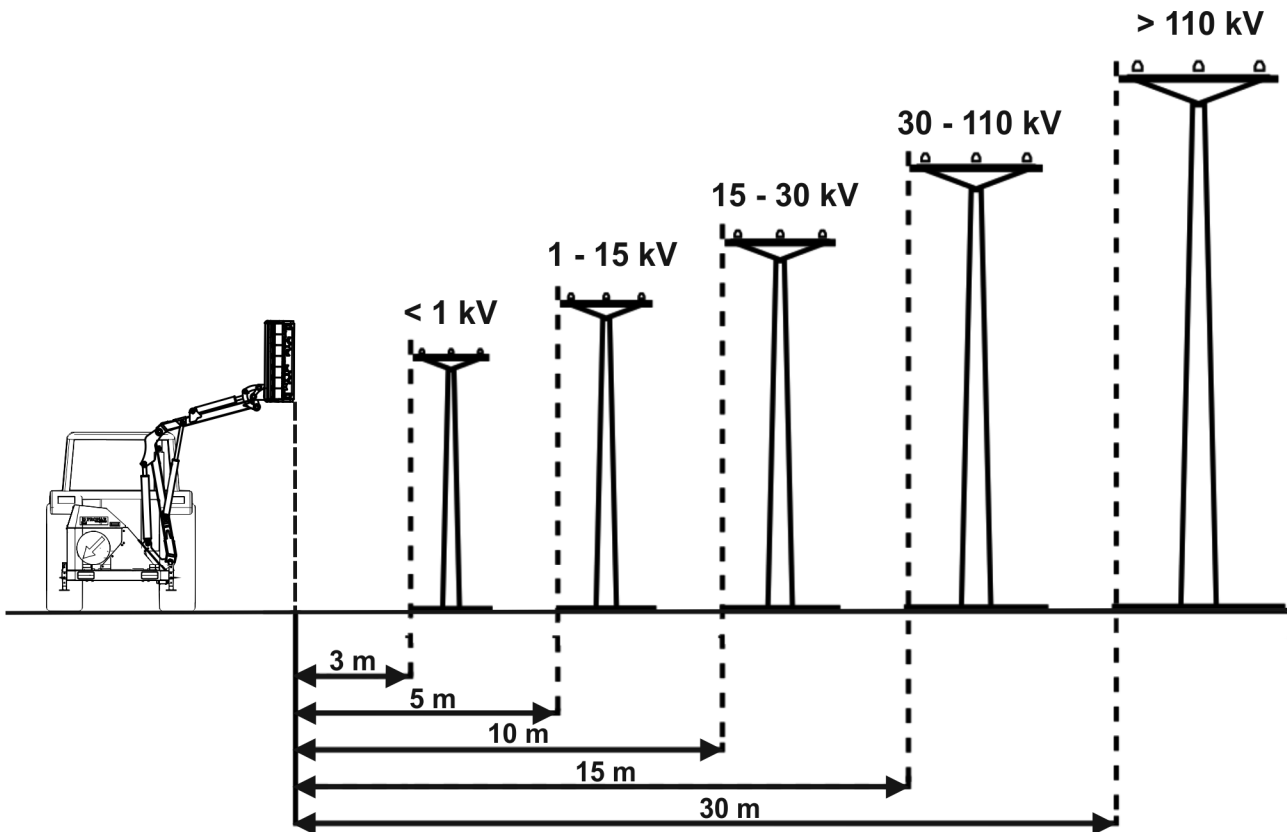


FIGURE 4.4 Safe distances of the machine from power lines.

In line with regulations in force, it is not acceptable to place work stations, machines or devices directly below overhead power lines or at a distance, calculated horizontally from extreme lines, lower than (FIGURE 4.4):

- 3 m - for lines with rated voltage up to 1 kV,
- 5 m - for lines with rated voltage above 1 kV and up to 15 kV,
- 10 m - for lines with rated voltage above 15 kV and up to 30 kV,
- 15 m - for lines with rated voltage above 30 kV and up to 110 kV,
- 30 m - for lines with rated voltage above 110 kV.

If it is impossible to keep the minimum distances in order to work safely in the vicinity of power lines, then apply to the nearest Power Utility and have the lines deenergised for the duration of operation.

NOTE

Operation and transport of the carrier vehicle (tractor) with the hitched multifunction arm and the trimmer is allowed only on slopes with the maximum inclination of 7°. However, due to changing location of centre of gravity depending on type of carrier vehicle (tractor) and length of multifunction arm, the allowable slope inclination angle may be smaller. That is why the user must exercise particular caution and determine by himself the maximum slope inclination angle for operating the carrier vehicle (tractor) with the trimmer.

If the full reach of the multifunction arm is to be used, make sure that stability of the carrier vehicle (agricultural tractor) will be maintained.

While working on slopes, do not raise the trimmer more than 0.5 m above the ground.

In the event of a tilt of the carrier vehicle (tractor) with the multifunction arm, immediately lower the trimmer to the ground and stop the carrier vehicle (tractor).

When the multifunction arm with the working trimmer is raised, always start operating the trimmer at the highest point and move the trimmer gradually downward. When the operation of the trimmer involves the falling of diverse plant material (branches) from a height, secure the work site so that no one is present in the zone of operation of the head and of the falling plant material.

Follow the proper sequence for hedge trimming. First, cut the side of the hedge on one side (A) (FIGURE 4.3) and then, cut the side of the hedge on the opposite side (B). Finally, cut the top part of the hedge (C) to a required height.

- Do not operate the trimmer near the ground. This could cause damage to the cutter bar blades.
- When working with the trimmer do not move the multifunction arm. This could cause damage to the cutter bar blades.
- Do not operate the trimmer with the trimming blades dirty. Sand, stones and other debris may cause blunting or damage to the blades.
- Branch cutter is designed only to cut branches and other wood materials with a diameter of not more than 2 cm
- Do NOT operate the trimmer if the cutter bar blades are not lubricated.

While operating the trimmer, pay attention to uneven surface and obstacles on the route of moving multifunction arm. If you encounter an obstacle, stop the carrier vehicle as soon as possible and bypass the obstacle with the raised trimmer.

The speed of the tractor (carrier vehicle) with operating trimmer depends on the thickness and quantity of cut branches, as well as the type of terrain.

Tractor speed must be reduced if:

- The number of branches is large or branches are too thick,
- the terrain is uneven and there are obstacles nearby,
- there is a high risk of collision with an obstacle.

When driving across the road, pavement or other obstacles and when making turns, raise the trimmer by means of the multifunction arm and disengage the cutter bar drive.

Be especially careful when mowing along ditches, furrows and slopes.

4.5.3 REMOVING BLOCKAGES

DANGER



If the trimmer's cutter bar gets stuck, turn off the tractor engine and remove the key from the ignition. Secure tractor using parking brake and ensure that unauthorised persons, especially children, have no access to the tractor.

In the event of work requiring the trimmer to be raised, after lifting the machine, stable and durable supports must also be used. Do NOT carry out work under the machine, which has only been raised with the multifunction arm.

The machine must not be supported using fragile elements (bricks or concrete blocks).

If the cutter bar is blocked during operation, disengage the drive and check the cause of blockage.

If the blockage is a result of foreign objects (stones, heaps of soil), then put on protective gloves and remove accumulated material (with a sharp tool), and then check the condition of the cutting blades and their fastening.

If the trimmer drive is blocked due to excessive number of branches cut, do the following:

- stop the trimmer drive;
- withdraw the trimmer to release the cutter bar;
- start the trimmer drive and make another attempt at trimming branches.

To minimize the risk of blocking the trimmer drive, limit the tractor (carrier vehicle) speed while operating the trimmer.

4.6 UNHITCHING FROM MULTIFUNCTION ARM



DANGER

Reduce pressure prior to disconnecting the hydraulic system.

In order to unhitch the trimmer from the multifunction arm (FIGURE 4.1), proceed as follows:

- lower the trimmer by means of the multifunction arm to rest position, on a level surface,
- power off the multifunction arm and remove the key from ignition
- reduce residual pressure in the hydraulic system using the appropriate hydraulic circuit control lever,
- install the transport protective guard;
- disconnect the quick couplers of the multifunction arm's hydraulic system lines from the trimmer's hydraulic system and secure them with stoppers,
- disconnect the multifunction arm connector (1) from the trimmer connection (2) by unscrewing six bolts (3) that fix the connector to the connection,

The trimmer unhitched from the multifunction arm should be supported on the ground in a stable manner.

SECTION

5

MAINTENANCE

5.1 INSPECTION AND DISASSEMBLY OF SAFETY GUARDS

The trimmer may only be used when all the safety guards and other protective elements are technically sound and correctly positioned. The cutter bar transport protective guard should be installed during transport. In the event of loss or damage to the protective guards, they must be replaced with new ones.



DANGER

When inspecting and dismantling safety guards be sure to power off the multifunction arm. The trimmer must rest on the ground. Ensure unauthorised persons, especially children, have no access to the machine.

Method of dismantling of the cutter bar transport protective guard is shown in FIGURE 5.1.

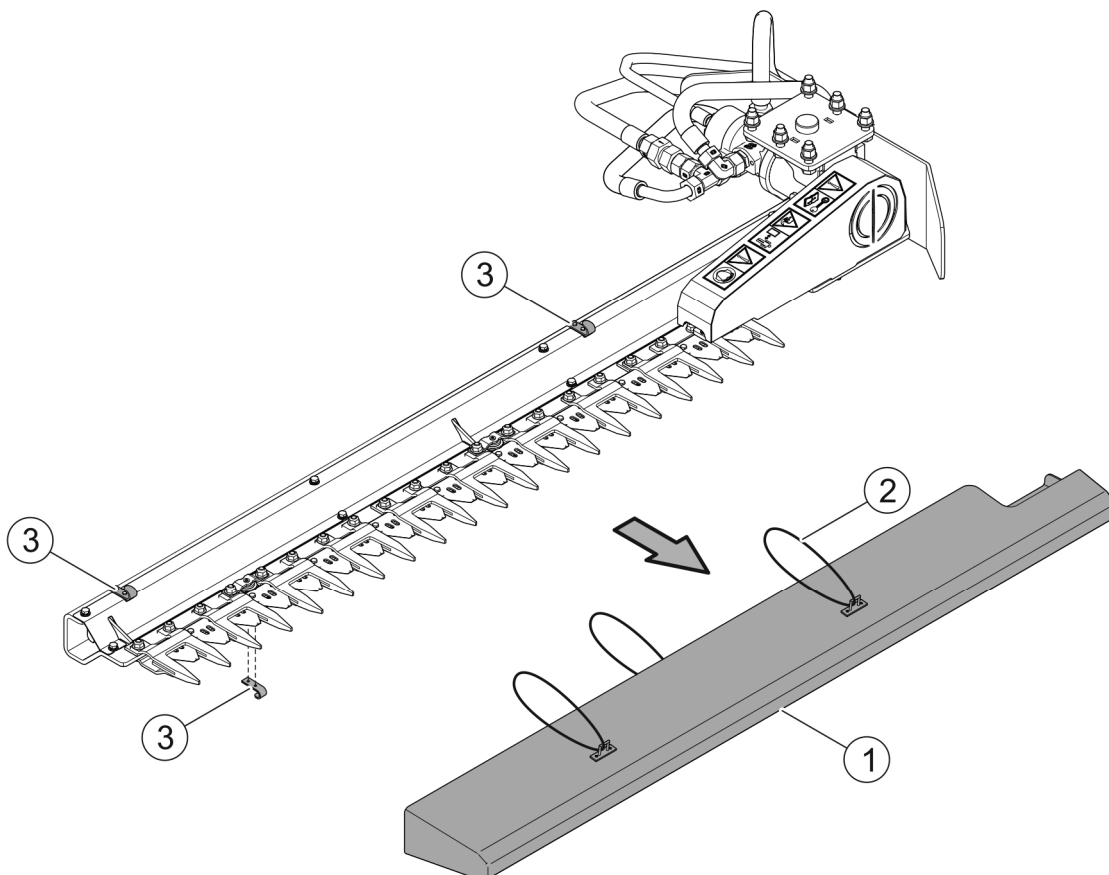


FIGURE 5.1 Dismounting the cutter bar transport protective guard.

(1)- cutter bar transport protective guard; (2)- rubber cord; (3)- hook.

To dismount the transport protective guard (1) of the cutter bar, take the rubber cords (2) off the three hooks (3), and remove the guard from the trimming unit.

When installing the guard (1), pay special attention to correct mounting of the guard. Rubber cords (2) attached to hooks (3) should firmly keep the guard (1) on the trimming unit.

Method of dismounting of the cutter bar drive guard is shown in FIGURE 5.2.

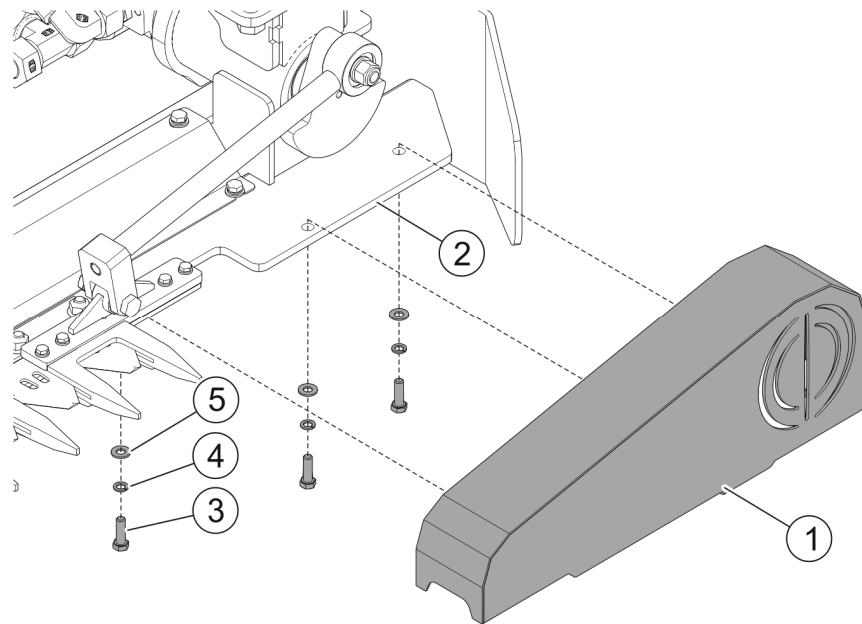


FIGURE 5.2 Dismounting the cutter bar drive guard.

(1)- cutter bar drive guard; (2)- frame; (3)- bolt; (4)- spring washer; (5)- washer.

To dismount the cutter bar drive guard (1) , unscrew three bolts (3) and remove the guard from the frame (2).



ATTENTION

Do NOT transport the trimmer when the transport protective guards are damaged or incorrectly fitted.

Do NOT start the trimmer if the transport protective guard is mounted on the cutter bar.

5.2 INSPECTION AND REPLACEMENT OF THE CUTTER BAR BLADES



DANGER

Before inspecting or replacing the cutter bar blades, turn off the tractor/carrier vehicle's engine and remove the key from the ignition. The trimmer must firmly rest on a flat and hard surface.



NOTE

Each time before starting work, check the technical condition of the cutter bar and the cutter bar blades and their mounting.

Regularly inspect the cutting blades. Visually inspect the technical condition of the blades and their fixing. The blades must be sharp. The blade teeth should be sharpened by a qualified specialist. A bent, cracked or otherwise damaged blade must be replaced with a new one provided by the trimmer manufacturer. Before replacing the blades, remove the residues of trimmed material from the trimmer.



NOTE

Damaged or bent cutter bar blades may damage the trimmer and pose a risk to the operator.

In order to replace the blade (7) proceed as follows (FIGURE 5.3):

- dismantle the drive system guard (1) by unscrewing three bolts;
- unscrew the bolts (4) that fix the cutter bar (2) to the crank holder (3);
- slide the cutter bar (2) from the guides;
- dismantle a damaged blade (7) by unscrewing two bolts (9) that fix the blade to the cutter bar (8)
- attach a new blade (7) to the cutter bar (8) with bolts (9), tighten the bolts using the tightening torque of 18 Nm;
- slide the cutter bar (2) with replaced blades (7) into the guides and attach it to the crank holder (3) ;
- to attach the cutter bar (2) to the crank holder (3), tighten the fixing bolts (4) using the tightening torque of 18 Nm.

- mount the drive system guard (1).

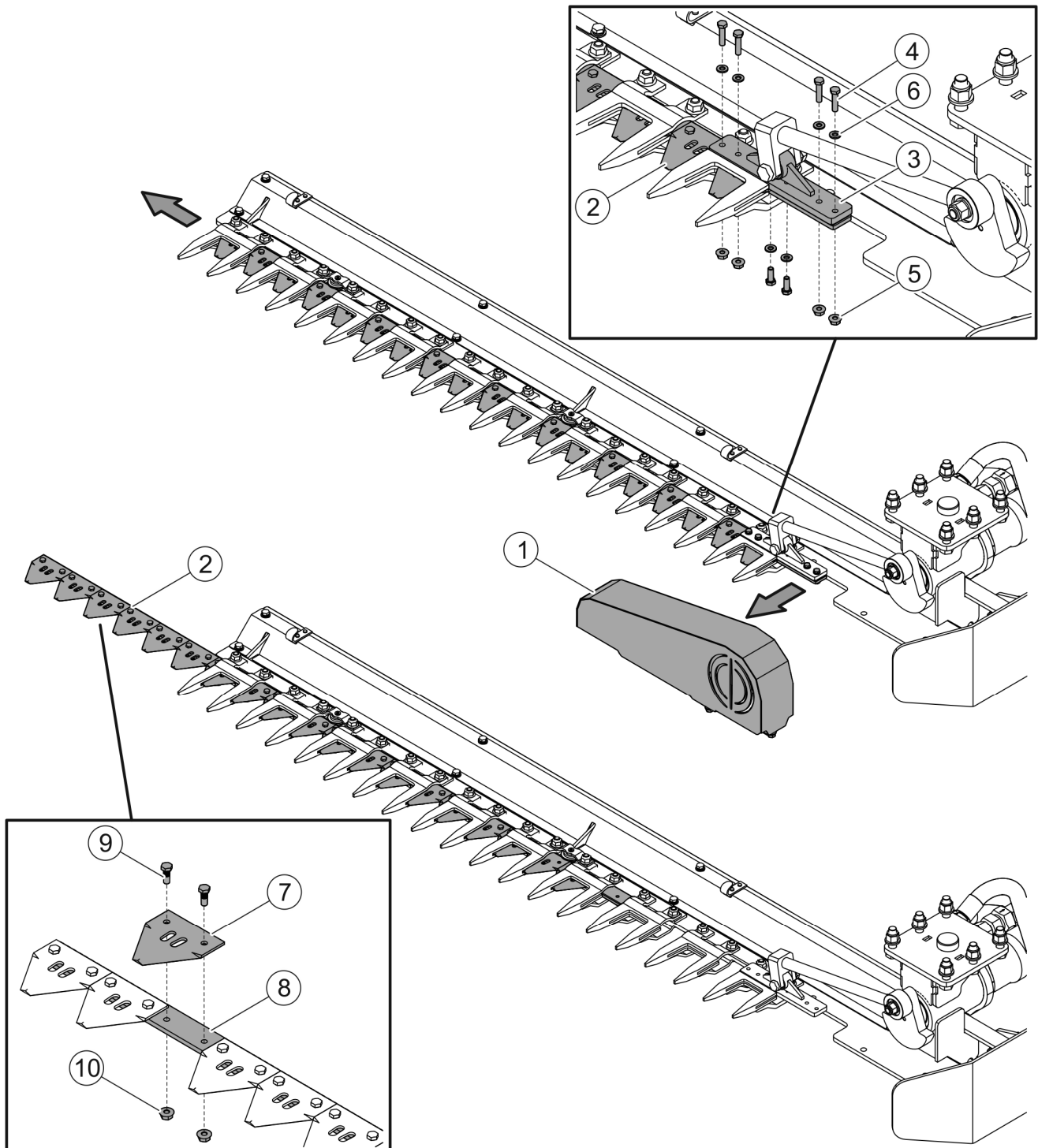


FIGURE 5.3 Replacement of trimming blades.

(1)- drives system guard; (2)- cutter bar; (3)- crank holder; (4)- bolt; (5)- nut; (6)- washer; (7)- trimming blade; (8)- cutter bar; (9)- bolt; (10)- nut.



DANGER

Use only the blades provided by the trimmer manufacturer.

5.3 DRIVE SYSTEM MAINTENANCE



DANGER

Do NOT perform service or repair work under raised and unsupported machine.

Drive system maintenance involves periodic inspection of the condition of hydraulic system conduit connections (2) (FIGURE 5.4) and the technical condition and attachment points of the hydraulic motor (1) and the overflow valve (5).

Tightening of the bolts and nuts of the crank mechanism of the cutter bar drive system should be also checked.

5.3.1 INSPECTION OF HYDRAULIC SYSTEM



Connections of hydraulic lines supplying hydraulic motor should be checked daily.



DANGER

Before commencing whatever work on hydraulic system reduce the pressure in the system.



DANGER

During work on hydraulic system, use the appropriate personal protection equipment i.e. protective clothing, footwear, gloves and eye protection. Avoid contact of skin with oil.

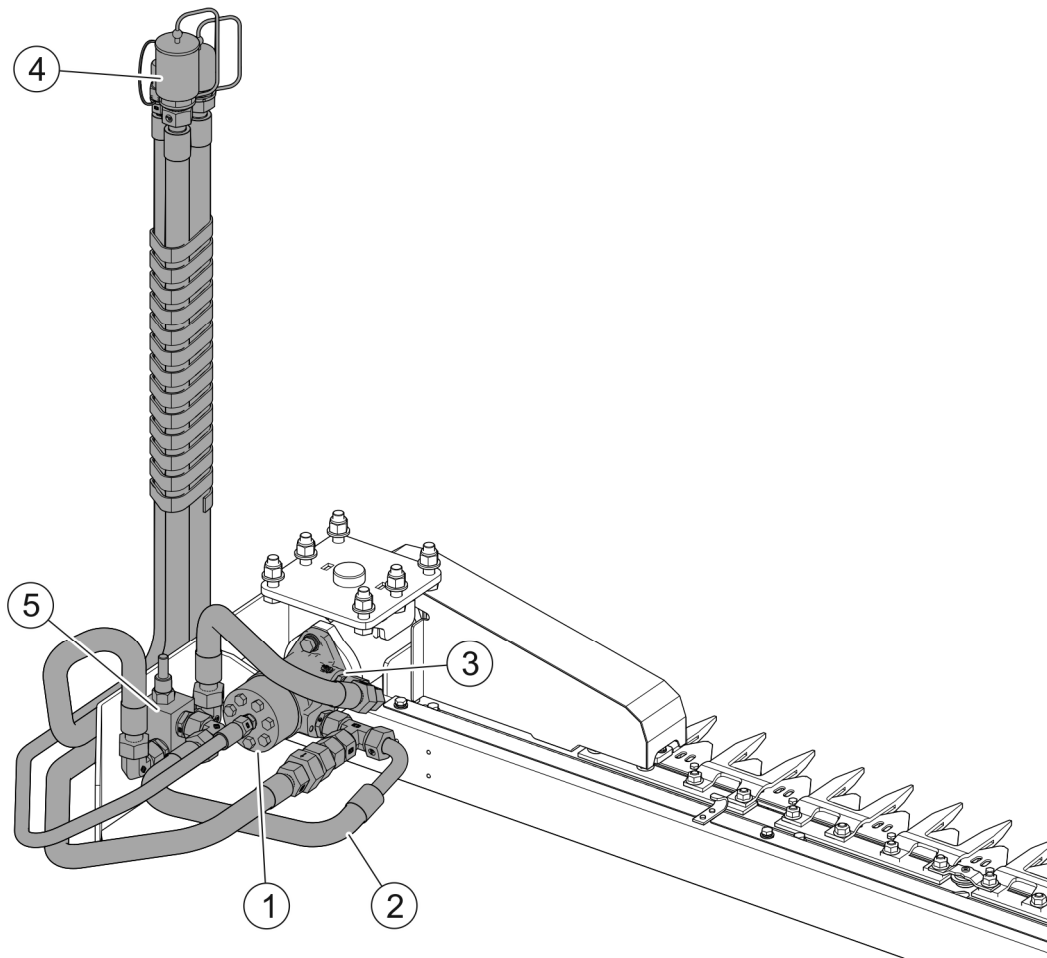


FIGURE 5.4 Checking the connections of the hydraulic lines supplying the hydraulic motor.

(1)- hydraulic motor; (2)- hydraulic lines; (3)- connectors; (4)- hydraulic quick couplers; (5)- overflow valve.



NOTE

The condition of hydraulic system should be inspected regularly while using the machine.

The hydraulic system must be tight. If oil leak is detected on hydraulic motor body (1) (FIGURE 5.4), ascertain origin of leak. In the event of noticing leaks stop using the machine until faults are remedied.

Connections of hydraulic lines (2), with connectors (3), to hydraulic motor (1), overflow valve (5) and quick couplers (4) of the multifunction arm should be tight.

If an oil leak is found on hydraulic connections, tighten the connections. If this does not remedy the problem, replace the lines and connection components. Always exchange each

mechanically damaged component. Also, pay attention to ensure that flexible hydraulic lines are not fractured.



Flexible hydraulic lines should be replaced every 4 years of the machine operation.

Make sure that the oil in the trimmer's hydraulic system is of adequate grade. Do not add hydraulic oil of other grade. The hydraulic system of a new trimmer is filled with HL46 hydraulic oil.

Because of its composition, the oil is not classified as a dangerous substance, however long-term action on the skin or eyes may cause irritation. In the event of contact of oil with skin wash the place of contact with water and soap. Do NOT apply organic solvents (petrol, kerosene). Contaminated clothing should be changed to prevent access of oil to skin. In the event of contact of oil with eye, rinse with large quantity of water and in the event of the occurrence of irritation consult a doctor. Hydraulic oil in normal conditions is not harmful to the respiratory tract. A hazard only occurs when oil is strongly atomised (oil vapour), or in the case of fire during which toxic compounds may be released. Oil fires should be quenched with carbon dioxide (CO₂), foam or extinguisher steam. Do NOT use water for fire extinguishing.

Spilt oil should be immediately collected and placed in a marked tight container. Used oil should be taken to the appropriate facility dealing with recycling or regeneration of oils.

5.4 STORAGE

After completed work, the cutting unit should be carefully cleaned and washed with a water jet. While washing do not direct a strong water or steam jet at information and warning decals, or hydraulic lines. Nozzle of pressure or steam washer should be kept at a distance of not less than 30 cm from cleaned surface.

After cleaning, inspect the whole machine, inspect technical condition of individual elements. Repair or replace any used or damaged components.


In the event of damage to the paint coat, clean rust and dust from damaged area, degrease and then paint with undercoat and after it is dry paint with surface coat paint retaining colour uniformity and even thickness of protective coating. Until the time of touch-up painting, the damaged place may be covered with a thin layer of grease or anticorrosion preparation. The trimmer should be stored in a closed or roofed building.

If the cutting unit will not be used for an extended period of time, protect it against adverse weather conditions.

During storage of the trimmer, the protective guard must be mounted on the cutter bar.

5.5 LUBRICATION

Machine lubrication should be performed with the aid of a manually or foot operated grease gun, filled with generally available grease. Before commencing lubrication insofar as is possible remove old grease and other contamination. Remove and wipe off excess oil or grease



When using the machine the user is obliged to observe lubrication instructions according to attached schedule. Excess lubricant causes depositing of additional contaminants in places requiring lubrication, therefore it is essential to keep individual machine components clean.

Lubricate all bearings of the cutter bar drive mechanism and the cutter bar.

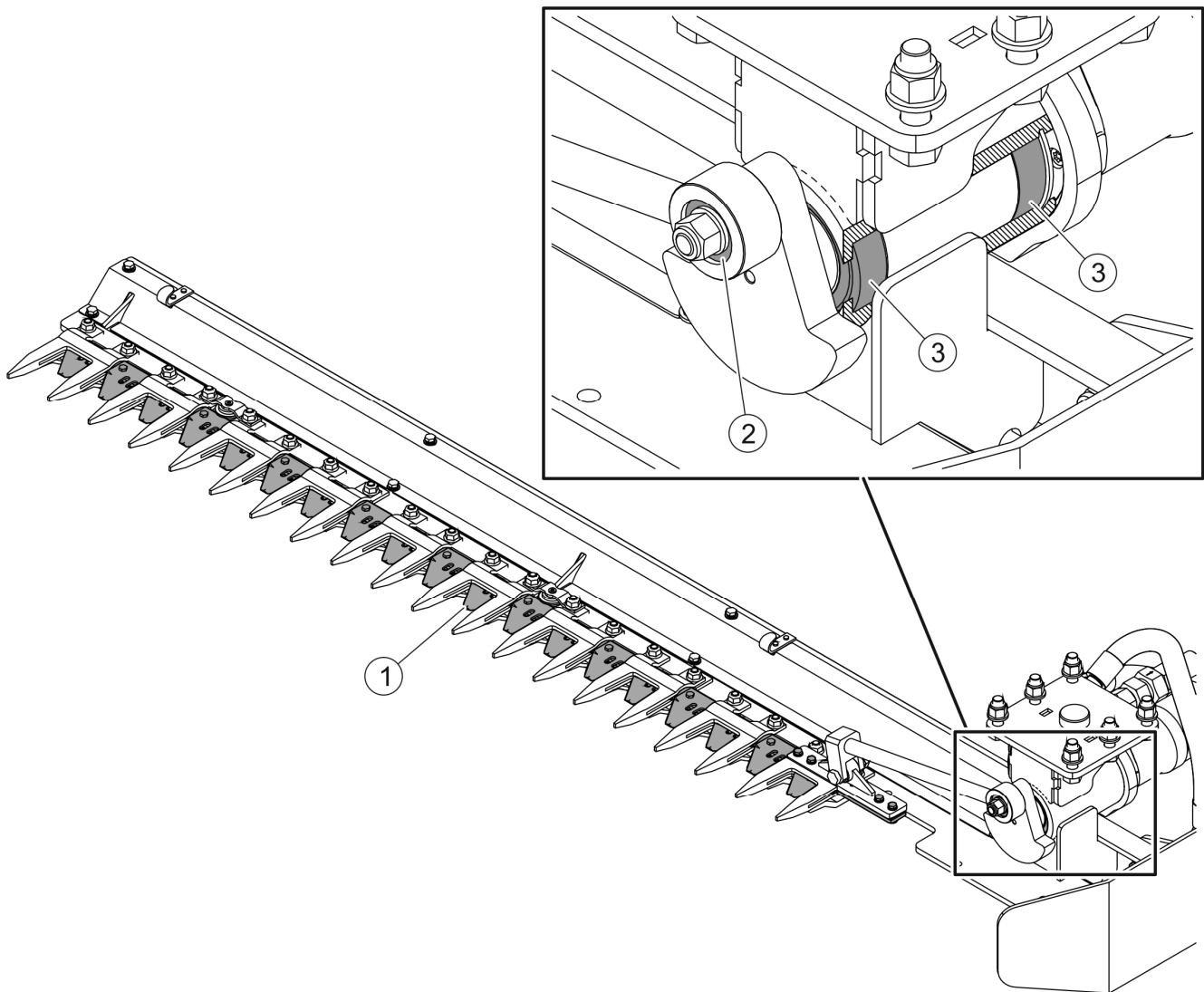


FIGURE 5.5 Lubrication points.

Lubrication points are detailed in table 5.1

TABLE 5.1 LUBRICATION POINTS

ITEM	NAME	NUMBER OF LUBRICATION POINTS	TYPE OF GREASE	LUBRICATION FREQUENCY
1	Cutter bar	1	grease	daily
2	Crank bearing	1	grease	daily
3	Flywheel bearing	2	grease	before working season

Marking description in Item column TABLE 5.1 conforms with numbering shown (FIGURE 5.5)

5.6 TIGHTENING TORQUE FOR NUT AND BOLT CONNECTIONS

During maintenance or repair work, apply appropriate torque when tightening bolt and nut connections, unless other tightening torque values are given. Recommended torque values apply to non-greased steel bolts.



NOTE

Should it be necessary to change individual parts, use only original parts or those indicated by the Manufacturer. Non-adherence to these requirements may put the user and other people's health and life at risk, and also cause damage to the machine.

TABLE 5.2 TIGHTENING TORQUE FOR NUT AND BOLT CONNECTIONS

THREAD DIAMETER [mm]	5.8	8.8	10.9
	TIGHTENING TORQUE [Nm]		
M6	8	10	15
M8	18	25	36
M10	37	49	72
M12	64	85	125
M14	100	135	200
M16	160	210	310
M20	300	425	610
M24	530	730	1,050
M27	820	1,150	1,650
M30	1050	1,450	2,100
M32	1050	1,450	2,100

5.7 TROUBLESHOOTING

TABLE 5.3 TROUBLESHOOTING

TYPE OF FAULT	POSSIBLE CAUSE	REMEDY
It is impossible to start the trimmer drive	Incorrectly connected or damaged quick couplers of the multifunction arm	Check quick couplers and manner of their connection
	Hydraulic system of multifunction arm is out of order	Check condition of the multifunction arm's hydraulic system
	Hydraulic system of the trimmer is out of order	Check the technical condition of the hydraulic system of the trimmer
	Damaged hydraulic motor of the trimmer	Repair or replace with a new one
It is impossible to set the trimmer by means of the multifunction arm	Hydraulic system of multifunction arm is out of order	Check condition of the multifunction arm's hydraulic system
Noisy operation of the trimmer	Clearances of bolt and nut connections	Check tightening of bolt and nut connections
	Cutting blades not lubricated	Lubricate
The trimmer drive stops during operation	The hydraulic system of the multifunction arm or the trimmer is out of order	Repair at an authorised service point
Problem when trimming branches	Damaged or blunt trimming blades	Repair or replace with a new one

NOTES

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