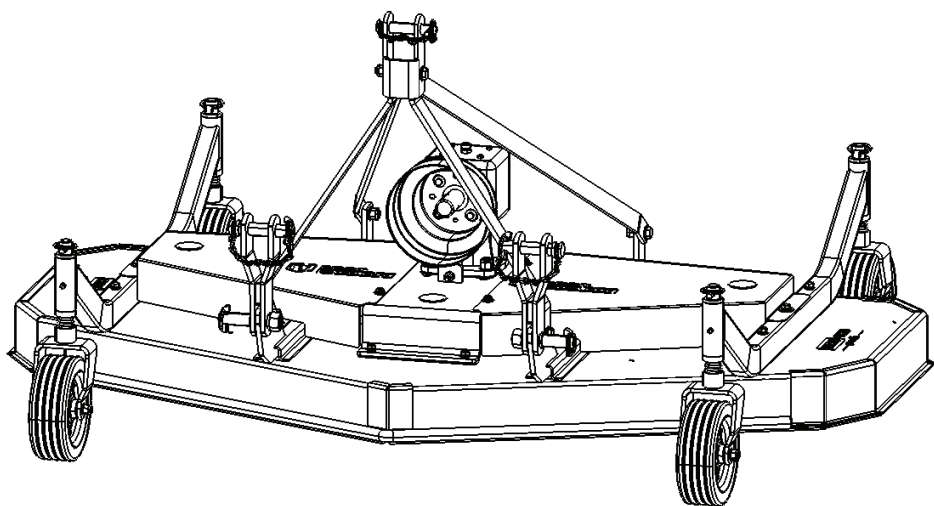


USER MANUAL
WARRANTY CARD

ROTARY MOWER

GRS 180 Profi



READ THIS MANUAL BEFORE USING
THIS IMPLEMENT

UAB „AGROTEKAS”
K.Donelaicio g. 62-1 LT-44248 Kaunas, Lithuania
info@agrotekas.com
+370 656 50607



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Original user manual language
Polish



EC DECLARATION OF CONFORMITY



Pursuant to Regulation of the Polish Minister of Economy of 21 October 2008 on essential requirements for machines (Polish Journal of Laws No. 199 item 1228) and Directive 2006/42/EC of the European Parliament and of the Council

**UAB „AGROTEKAS”
K.Donelaičio g.62-1,
LT-44248 Kaunas, Lithuania**

**The person responsible for preparing the technical
documentation for the machine:**

Name and surname: Justina Stankutė *Address:* K. Donelaičio 62-1, LT-44248 Kaunas ,

Machine:	ROTARY MOWER
Type/model:	GRS 180 PROFI
Serial number:	
Year of manufacture:	
Function:	MOWING GRASS AND DESTROYING WEEDS

**which this declaration refers to,
meets the requirements of:**

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery (OJEU L157 of 09.06.2006, pp. 24-86)

and Regulation of the Polish Minister of Economy of 21 October 2008 on essential requirements for machines (Polish Journal of Laws No. 199 item 1228)

The following harmonized standards have been applied to assess conformity:

PN-EN ISO 4254-1:2016-02

PN-EN ISO 12100:2012

PN-EN ISO 13857:2020-03

oraz normy i przepisy:

ISO 3600:2022

PN-EN SO 20607:2019-08

PN-ISO 11684:1998

PN-ISO 730:2018-02

ISO 2332:2009

This EC declaration of conformity shall become invalid if the machine is altered or rebuilt
without the manufacturer's consent.

The user manual is an integral part of the machine.

The machine may only be handed over to another person if it is fully technically operational, with attached user manual and declaration of conformity.

2025.01.01

Place and date of issue

*Direktorė
Justina Stankutė*

*Name, surname, job title and signature of the person authorized to
draw up the declaration of conformity on the manufacturer's behalf*



WARRANTY CARD

Flail mower

Serial number

Date of manufacture

Controller's signature

Date of sales

Seller's signature

.....
Seller's stamp

.....
Manufacturer's stamp

NOTE: The seller must fill out the warranty card and complaint forms accurately (legibly). For example, the lack of the date of sales or of a shop's stamp may result in the user being at the risk of their complaints being rejected. A warranty card with corrected or illegible entries shall be invalid.

Warranty procedure

1. The term "user" shall mean a natural or legal person purchasing the agricultural machine, the term "seller" shall mean a commercial entity supplying the machine to the user and the term "manufacturer" shall mean the producer of the agricultural machine.

2. The manufacturer shall guarantee good quality and proper operation of the machine for which this warranty has been issued.

3. Defects of or damage to the machine shall be removed free of charge within 12 months from the date of sales.

4. Any defects or damage discovered must be reported on the complaint form in person, by letter, by e-mail or by telephone call.

5. If during the warranty period three warranty repairs must be carried out and the product still shows defects that prevent its use as per its intended use, the purchaser is entitled to replace the product with a new defect-free product or to claim a refund.

6. Unless the manufacturer, seller and user agree on different timescales for processing the complaint, replacing the product or paying the refund, it should be carried out within 14 days from the date of making a complaint by the user.

7. Repairs resulting from the following reasons shall not be qualified as warranty repairs:

- using the machine contrary to the user manual and its intended use;
- random or other events for which the manufacturer is not responsible.

Such repairs can only be performed at the expense of the user who is the purchaser.

8. The manufacturer may void the product warranty in the event when the following is discovered:

- making design changes;
- unauthorized repairs without consultation with the machine manufacturer;
- the use of an inappropriate PTO drive shaft;
- damage caused by random events;
- the lack of required entries in the warranty card or making such entries independently;
- using the machine contrary to its intended use or the user manual.

Complaint Form No. 1

Rotary mower

Serial No. Date of purchase

.....
seller's signature and stamp

Complaint Report No.

Complaint Form No. 2

Rotary mower

Serial No. Date of purchase

.....
seller's signature and stamp

Complaint Report No.

Complaint Form No. 3

Rotary mower

Serial No. Date of purchase

.....
seller's signature and stamp

Complaint Report No.

I collected the machine in working order after repairs

on
user's signature

Notes
.....
.....
.....

I collected the machine in working order after repairs

on
user's signature

Notes
.....
.....
.....

I collected the machine in working order after repairs

on
user's signature

Notes
.....
.....
.....

MACHINE IDENTIFICATION

ROTARY MOWER

The rotary mower has a manufacturer's statutory plate on its frame. It contains basic data used to identify the machine: the manufacturer's name, machine symbol, serial number, the year of manufacture.

The data on the manufacturer's statutory plate are used to identify the machine and should be identical to the following data entered at the time of sales.

Symbol

Year of manufacture

Serial No.

UAB „AGROTEKAS“ K. Dondulioja, 62-1, LT-04248 Kaunas, Lithuania			
ROTARY MOWER			
Model:	GRS 120 PROFI	Type:	GRS 120 PROFI
Year:		Weight:	
Serial N.:		QC:	☆

A SUPPLIER OF MACHINES, BOTH NEW AND USED ONES, MUST OBTAIN THE ACKNOWLEDGEMENT OF RECEIPT OF USER MANUALS FOR THE FLAIL MOWER AND FOR THE COMBUSTION ENGINE SIGNED BY THE PURCHASER.



**THE USER MANUAL IS A BASIC ELEMENT OF THE MACHINE!
KEEP THE USER MANUAL FOR FUTURE REFERENCE**



NOTE!

When renting the machine, please remember to provide the user manual with the rented machine.



NOTE!

THE USE OF AN INAPPROPRIATE PTO DRIVE SHAFT WILL VOID YOUR WARRANTY!



REMEMBER

Before work, check the correct operation of the PTO drive shaft with the tractor. The length of the PTO drive shaft should be adjusted to align with the tractor by changing the length of telescopic tubes – see the PTO drive shaft user manual.

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1. INTRODUCTION

This user manual is attached to each machine so that the user can familiarize themselves with the structure, operation and adjustment of the rotary mower. Its aim is also to warn the user about existing or potential threats. The manual also contains information concerning the preparation of the rotary mower for operation and transport.

Strict adherence to the recommendations contained in the manual will ensure long-term and failure-free operation and reduce the operating costs of the machine.

Individual chapters of the manual describe the relevant topics in detail. If the manual contains information that is not understandable to the user or if they encounter problems when operating and using the machine, they can obtain comprehensive information by writing to the manufacturer's address (provided on the cover); in such a case, the following information should be provided: the exact address of the machine buyer, the machine symbol, serial number, year of manufacture, year and number of issue of the user manual.

The terms used in the user manual: left, right, rear and front – refer to the position of the observer facing the direction of the machine travel.

Whenever the user manual refers to a machine, this should be understood to mean the rotary mower.

The warranty procedure regulations and the rights arising therefrom are stated in the warranty card attached to each rotary mower.

2. THE PURPOSE OF THE ROTARY MOWER

The rotary mower is intended solely for works in orchards, parks, gardens and on plantations, meadows and for other agricultural or gardening works involving mowing grass and destroying weeds. Using it for other purposes will be understood as the use contrary to the intended use.

You must not use a rotary mower for:

- transporting people, animals and objects on the machine;
- working in stone-covered areas;
- working in areas with thick branches;

Meeting the requirements regarding the use of the machine, i.e. its servicing and repairs in accordance with the manufacturer's recommendations, and following them strictly is the precondition of its use in accordance with its intended use.

The machine should be used and operated only by persons familiar with its detailed characteristics and familiar with safety rules. Accident prevention regulations and all basic occupational health and safety regulations, occupational medicine regulations and road traffic regulations must be observed at all times.

To drive the rotary mower, use an appropriate PTO drive shaft with parameters presented in Table 5. The rotary mower should only be used with tractors recommended by the manufacturer (see Table 5) equipped with category 1 linkage and standard front axle weights to maintain the required stability index ($s \geq 0.2$). The calculation of the controllability coefficient can be performed in accordance with Annex D to PN-EN ISO 4254-1:2016-02 standard or Annex A to this user manual.

3. SAFETY NOTES AND WARNINGS

3.1. Symbols: meaning and application

Symbols are used in this manual to draw the user's attention and to highlight certain particularly important aspects that must be discussed.



HAZARD

This word indicates danger with a possible serious risk of accident. Failure to follow the instructions marked with this symbol may result in a serious risk of injury to the operator and/or persons in the close area!
Please follow such instructions carefully!



NOTE!

This word indicates the possibility of damage to the machine or surrounding objects and the user must be careful.
This is an important guidance that the user should pay special attention to!



REMEMBER

This word indicates guidance or a note regarding key features or useful information concerning the proper operation of the machine.

3.2. Expected use of the rotary mower

The rotary mower has been designed, built and adapted for works in orchards, parks, gardens and on plantations, meadows and for other agricultural or gardening works involving mowing grass and destroying weeds. The rotary mower can be used in areas with a slope angle up to 8.5 degrees. The rotary mower can only be used with tractors recommended by the manufacturer – see Table 5.



REMEMBER

The intended use regulations and setups stated for this machine are the only permitted regulations and setups. Do not use the machine for purposes other than its intended use. The regulations cited in this user manual do not replace the obligations under applicable statutory regulations relating to safety and accident prevention standards, but summarize them.

3.3. Residual risk description

Residual risk results from incorrect or inappropriate behavior of the rotary mower operator. The greatest danger may occur when performing the following activities:

- the operation of the machine by minors or persons not familiar with the user manual or not having the license to drive an agricultural tractor;
- the operation of the machine by persons who are ill or intoxicated with alcohol or drugs;
- transport and work without taking appropriate precautions;
- coupling the machine with a tractor if the operator is between the machine and the tractor with the engine running;
- performing work if people or animals are within the operating range of the tractor-machine unit;

- maintenance and adjustment works on the machine if the tractor engine is running and the machine is not secured against lowering down;
- use of a faulty PTO drive shaft or a PTO drive shaft with damaged guards. When describing the residual risk of a rotary mower, the rotary mower is treated as a machine that has been designed and manufactured in accordance with the current state of the art from the moment of launching its production.

3.4. Residual risk evaluation

When using a rotary mower, residual hazards and risks can be reduced to minimum if the following instructions are complied with:

- the user manual must be read carefully;
- a ban for persons to stay on the machine during operation and transport;
- a ban for persons to stay between the tractor and the machine if the tractor engine is on;
- all adjustment, maintenance and lubrication works on the machine must be performed only with the tractor engine off;
- machine repairs must be performed only by persons trained for this purpose;
- the machine must be operated by persons who have the license to drive an agricultural tractor and have read the machine user manual;
- bystanders must maintain safe distance from a working machine of minimum 50m;
- children must be kept away from the machine.

Although UAB "AGROTEKAS" takes responsibility for the design and construction in order to eliminate hazards and residual risks, certain risk elements when working with a rotary mower are unavoidable.



1) A hazard of cutting or severing body parts by rotating mower blades during operation and blades replacement works.



2) A hazard of entrapment or injury to body parts from protruding machine parts during operation, repairs or maintenance works and during work.



3) A hazard of crushing body parts when coupling, raising and lowering the mower. Please exercise extreme caution and keep safe distance when performing these activities.



4) A hazard of cuts or abrasions caused by machine parts when making adjustments due to the operator's incorrect position during this activity.



5) A hazard of losing stability during storage and transport. When stored, the machine should be placed on a flat surface on four supporting wheels to maintain its stability.



6) A hazard of being drawn in or caught by rotating driving parts. You must keep safe distance when rotating parts are in motion and use all guards. The operator and bystanders should not approach the machine while it is working.



7) A hazard of stones being thrown out by blades during operation. You must maintain special caution and keep safe distance when the machine is working (minimum 50m). The operator and bystanders should not approach the machine while it is working.

3.5. Occupational health and safety regulations



NOTE!

To avoid hazards, before starting work with the rotary mower, you must read this user manual and ensure compliance with the following hazard and safety precautions:

General regulations

- In addition to this user manual, you must also observe road traffic regulations, occupational health and safety regulations and the user manual of the agricultural tractor.
- Pictograms on the machine provide guidance on the safety of the user and third parties and the prevention of accidents by such persons.
- When moving on non-public roads, the regulations of the Road Traffic Code of the country in which the machine is used must be observed.
- The machine may only be coupled with a tractor equipped with a complete cabin or protective frame.
- Before the machine leaves for work, you must check if all machine components are in good technical condition. Any damage must be repaired immediately and any deficiencies must be supplemented.
- Avoid staying in the area where the rotary mower is operating.
- Before leaving the tractor cabin and prior to any activity performed on the machine, switch off the tractor engine, remove the key from the ignition and make sure that all rotating components have stopped.
- The rotary mower should be stored in a dry room, on a hard and flat surface. Be especially careful when lowering down the machine to the ground. There is a hazard of sustaining injuries!!!
- The user manual should be read carefully both before starting the machine for the first time and after a longer break in its use.

Coupling

- Exercise particular caution when coupling and uncoupling the machine with/from the tractor.
- You must not stand between the machine and the tractor when performing any operations with the rear-mounted linkage lever.
- When coupling the machine with a tractor, no-one may stand between the machine and the tractor while the engine is running.
- When coupling the machine with a tractor or performing any repairs, turn off the vehicle engine, remove the keys from the ignition and engage the parking brake.
- The machine's linkage pins should only be secured using typical linchpins.
- The rotary mower should only be coupled with a tractor recommended by the manufacturer and equipped with front axle weights.
- The machine may be used by a person with a valid license to drive agricultural tractors.
- The machine must not be operated by unauthorized persons who have not read the user manual.
- You must use the recommended PTO drive shaft. You must not operate the PTO drive shaft without a guard or with a damaged or incomplete guard.
- PTO drive shaft guards should overlap with the PIC guard and the PTO guard. The overlap of the guards should be min. 50mm when the shaft is in a straight line.

- After mounting the PTO drive shaft onto the end of the tractor's power take-off shaft and onto the end of the machine's power-input connection, its locking pin must be located in the shaft groove. Check if the shaft is properly mounted.
- After disconnecting the PTO drive shaft from the tractor, it should be attached to a holder used for this purpose on the machine.
- You must not work without guards or with incomplete or damaged guards.
- When coupling the tractor and the machine, the minimum load on the front axle of the tractor must be observed, as a mounted machine in the transport position may affect the tractor stability and steerability. The tractor will remain steerable and stable when the load on the tractor front axle with the mounted machine is at least equal to 20 % of the weight of the tractor itself.



NOTE!

Using a tractor other than the tractor recommended by the manufacturer may result in a risk of losing stability — a risk of the vehicle overturning! The tractor front axle load must not be less than 20 % of the tractor curb weight.

Operation

- **The rotary mower may only be operated with the appropriate PTO drive shaft supplied by the Manufacturer or with the parameters provided in Table 5.**
- The machine can be operated by a person of full age with a valid license to drive agricultural tractors and who has read the machine's user manual.
- The rotary mower must not be operated by unauthorized persons who have not read the user manual.
- The machine must not be operated by children or people under the influence of alcohol or intoxicants.
- The machine should be lifted onto the tractor three-point linkage gently, without jerking or vibrations.
- Always lift the machine up when turning or reversing.
- Before reversing the tractor and each time before starting work, use the tractor's horn to warn bystanders close to the machine of the danger.
- The machine coupled with the tractor must not be used on slopes with a slope angle exceeding 8.5 degrees. The tractor with the machine may tip over!
- Each time the operator gets off the tractor, the tractor engine must be turned off, the key must be removed from the ignition and the machine must be left in the lowered position resting on the ground.
- Clogs that occur during machine operation and require the operator's intervention must only be removed after turning off the tractor engine, removing the key from the ignition, applying the parking brake and disconnecting the PTO drive shaft from the tractor.
- Tractor reverse gear must not be used during operation when the machine is in the working position. The machine may become damaged!
- All service and maintenance works (lubrication, repairs, cleaning, etc.) must be performed when the machine is lowered down and resting on the ground, when the tractor engine is off, the key is removed from the ignition and the parking brake is engaged.
- Persons operating the machine should wear working clothes and footwear as well as

personal protective equipment suitable for the hazards involved.

- Whenever the machine lifted on the three-point linkage is repaired, it must be secured against lowering down with a stable, strong support and a chain.
- You must not use the tractor's hydraulic lift lever from outside the tractor.
- During each break in work, lower the machine down to the ground, turn off the tractor engine and remove the key from the ignition.

Transport

- Transport of the rotary mower by means of transport from the manufacturer to the seller or the customer is described in detail in the chapter "Transport". Please remember to follow safety rules when loading the machine and to properly immobilize the machine on the trailer. The attachment points for ropes or chains are marked with pictograms.
- **You must not transport a rotary mower mounted on a tractor on public roads.** The machine must be transported to the work area using other means of transport. Driving a tractor with the machine mounted on it on public roads may result in a road accident!
- You must not climb onto a working machine or to transport people, animals or objects on the rotary mower during its operation and transport.
- Attention should be paid to the machine offtracking (swinging wide) due to the width of the machine and the rigid connection to the tractor, especially when turning during work and during transport.
- Exercise particular caution when turning the tractor with the machine mounted on it, both during transport and when taking turns, especially if there are people or objects in the vicinity.
- The driving speed of the tractor with the machine mounted on it during transport on non- public roads must not exceed:
 - when driving on hard-surfaced roads with a flat surface – 15km/h;
 - when driving on dirt roads – 10km/h.

Storage

- The rotary mower may only be uncoupled from the tractor when the tractor engine is off, the key is removed from the ignition and the parking brake is engaged.
- The machine should be stored in places where there is no possibility of accidental injury to people or animals. The machine should stand on a flat, hardened surface, supported on four support wheels, preferably under a roof, and must be immobilized.
- The rotary mower should be stored in a dry room, on a hard and level surface. Be especially careful when lowering down the machine to the ground due to the risk of injury!!!!



HAZARD

Exercise extreme caution when working around the machine.
Failure to immobilize the mower may result in an accident!

Fire regulations

- Fire-fighting equipment should be part of the tractor's equipment and kept in its cabin (ABC dry chemicals).
- Smoking and the use of open flames near the working machine are prohibited.
- You must not carry out repairs, especially welding works, without first cleaning the machine of any residues of materials that could cause a fire.
- Before starting welding works, disconnect the tractor battery and secure electrical cables and hydraulic pipes against damage.



REMEMBER

Please remember that occupational health and safety requirements and fire regulations must be strictly observed!

Other

- Do not use the rotary mower for any other purpose than the purpose specified in the user manual.



NOTE!

Failure to comply with the above rules may pose a risk to the operator and bystanders and may also result in damage to the machine. The user is solely responsible for any damage resulting from the failure to comply with these rules.

3.6. Compliance with standards

The machine has been designed and manufactured in compliance with safety standards in the machinery industry applicable on the date the rotary mower was made available for sale. In particular, the following legal acts and harmonized standards were taken into account:

- 2006/42/EC – Machinery directive implemented by Regulation of the Minister of Economy of 21 October 2008 (Polish Journal of Laws No. 199, item 1228).
- PN-EN ISO 12100:2012 – Safety of machinery. General principles for design. Risk assessment and risk reduction.
- PN-EN ISO 4254-1:2016-02 – Agricultural machinery. Safety. Part 1: General requirements.
- PN-ISO 730:2018-02 – Agricultural wheeled tractors. Rear-mounted three-point linkage. Categories N1, 1, N2, 2, N3, 3, N4 and 4.
- PN-ISO 730:2018-02/A1:2018-06 – Agricultural wheeled tractors. Rear-mounted three-point linkage. Categories N1, 1, N2, 2, N3, 3, N4 and 4.
- ISO 2332:2009 – Agricultural tractors and machinery. Connection of implements via three-point linkage. Clearance zone around implement.
- ISO 3600:2022 – Tractors, machinery for agriculture and forestry, powered lawn and garden equipment. Operator's manuals. Content and format
- PN-EN ISO 20607:2019-08 – Safety of machinery. Instruction handbook. General drafting principles.
- PN-ISO 11684:1998 – Tractors, machinery for agriculture and forestry, powered lawn and garden equipment. Safety signs and hazard pictorials. General principles.

3.7 Safety signs and text

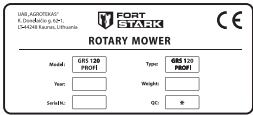
Rotary mowers from UAB “AGROTEKAS” are equipped with all devices that ensure safe operation. Where places hazardous in the context of the proper machine operation cannot be completely secured, there are warning signs – pictograms that show possible hazards and how to avoid them.

Table 1 contains the pictograms on the machine and their meanings. Safety pictograms should be protected against loss and should always be legible. Lost or illegible signs and inscriptions should be replaced with new ones.

New components used during repairs must be be marked with all the safety signs envisaged by the manufacturer.

Pictograms can be purchased by writing to the manufacturer’s address or sending information to its e-mail address, specifying the symbol number (as per Table 1) and the user manual version and year of issue.

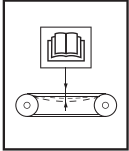
Table 1. Safety signs

No.	Pictogram	Meaning	Location
1	2	3	4
1.		Manufacturer’s statutory plate for machine and manufacturer identification	On the rotary mower frame
2.		READ THIS MANUAL BEFORE USING THIS IMPLEMENT	On the rotary mower frame
3.		NOTE! Before starting any maintenance works, turn off the engine and remove the key from the ignition.	On the rotary mower frame
4.		Do not stand near the lift links when operating the lift.	On the rotary mower frame

Continuation of Table 1

5.		Keep safe distance from the machine. A hazard of cutting off your fingers or feet by blades	On the rotary mower frame
6.		NOTE! Do not touch the machine components before all units have stopped	On the rotary mower frame
7.		Keep safe distance from the machine (min. 50m), objects may be thrown from the machine	On the rotary mower frame
8.		Do not open or remove safety guards while the tractor engine or the machine are running	On the belt drive cover
9.		Zakaz jazdy na maszynie podczas pracy i transportu	On the rotary mower frame
10.		Do not stay on the machine during its operation and transport	On the rotary mower frame
11.		Do not reach into the crush area if the components can move	On the rotary mower frame

Continuation of Table 1

12.		Keep safe distance from the machine due to the hazard of crushing the entire human body.	On the rotary mower frame
13.		Be careful with the power transmission system – a hazard of getting caught in	On the power-input connection (PIC) guard
14.		Information about the power take-off shaft (PTO) rotational speed and direction of rotation	On the rotary mower frame
15.		Adjust the transmission belt tension in accordance with the user manual.	On the belt drive cover
16.		Marking the location of loading hooks	On the support wheel guides
17.		Marking lubrication points	On the support wheel guides On the belt drive cover
18.		Marking oil refill locations	On the bevel gear

Continuation of Table 1

19.	 IT IS PROHIBITED TO DRIVE THE MACHINE ON PUBLIC ROADS JULKISILLA TEILLÄ AJO KIELLETTY NICHT AUF ÖFFENTLICHEN STRASSEN FAHREN ZAKAZ PRZEJAZDU PO DROGACH PUBLICZNYCH	You must not drive the vehicle with the machine mounted on it on public roads	On the rotary mower frame
20.	THE MACHINE MAY NOT BE OPERATED IN THE PRESENCE OF UNAUTHORISED PERSONS STANDING CLOSER THAN 50 M TYÖSKENTELY KIELLETTY, KUIN SIVULLISIA EN ALLLE 50 METRIN ETÄÄSYDÖLLÄ BETRIEB DER MASCHINE IN ANWESENHEIT VON DRITTEN PERSONEN IM ABSTAND VON WECHSELN ALS 50 METER IST VERBODEN ZABRANIA SIĘ PRACY MASZYN W OBECNOŚCI OSÓB POSTRONNYCH W ODLEGŁOŚCI MNIEJSZEJ NIŻ 50 m	You must not operate the machine in the presence of unauthorized persons staying at a distance of less than 50m from the machine	On the rotary mower frame
21.	OPERATION OF THE MOWING MACHINE WITHOUT SAFETY SHOULDS BE NOT PERMITTED. THE MACHINE MAY EJECT HARD OBJECTS DURING MOWING LAITTEEN KÄYTTÖ MUUN SUOJAUSKESKUS ON KIELLETTY, KOSKA NITTÄESSÄ SAATAA LENTÄÄ PIRNA TERNIT. DEN BETRIEB DER MÄHER OHNE SICHERHEITSVORRICHTUNG IST VERBODEN WEGEN UNTERSCHÜLDERUNGE GEGENSTÄNDE PRACA KOSZAROWCZĄ BEZ WYPOSAŻENIA BEZPIECZNOŚCIOWEGO PRZECIĄŻA KOSZAROWCZĄ BEZWIECZYSTWIE WYPOUSZCZA PRZECIĄŻA MASZYN TWARDEGO PRZECIĄŻA	You must not operate the mower without guards	On the rotary mower frame

3.8. Manufacturer's liability and warranty

With respect to the types of machines described in this manual, UAG "AGROTEKAS" will not accept any civil liability in the following circumstances:

- improper use of the machine or its use contrary to the manufacturer's recommendations;
- using the machine in a way that violates national safety and accident prevention regulations;
- the failure to comply or incorrect compliance with this user manual;
- making unauthorized changes to the machine;
- the use of the machine by untrained personnel;
- the use of non-original spare parts.

If the purchaser wants to take advantage of the warranty, they must strictly follow the user manual. In particular, they:

- should only work with the machine taking into account the specified machine operating ranges;
- should use an appropriate PTO drive shaft;
- should always carry out diligent maintenance works;
- must only allow operators with appropriate skills and qualifications to use the machine;
- should only use original spare parts recommended by the manufacturer.

3.9. Noise and vibrations

Podczas pracy kosiarką wirnikową nie występuje dla operatora zagrożenie powodowane hałasem przyczyniające się do utraty słuchu, ponieważ miejsce pracy operatora znajduje się w kabinie ciągnika. Pomiar poziomu ciśnienia akustycznego na stanowisku pracy operatora wykonano na postoju maszyny (maszyna pracowała bez obciążenia), zgodnie z załącznikiem B normy PN-EN ISO 4254-1:2016-02, przy nominalnych obrotach silnika ciągnika hałas wynosi $74 \pm 3,2$ dB.

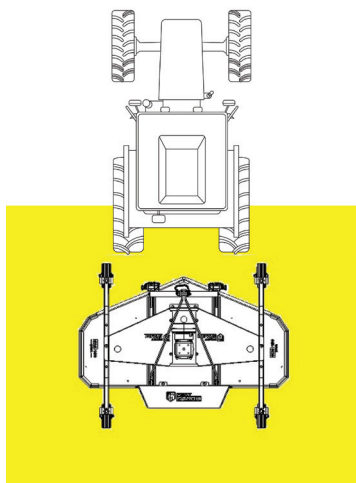
Przy pracy kosiarką wirnikową nie występują zagrożenia powodowane drganiami, gdyż miejsce pracy operatora znajduje się w kabinie ciągnika, gdzie siedzisko jest amortyzowane i odpowiednio ukształtowane ergonomicznie.

3.10 Danger zone

When working with a rotary mower, you should not be staying in the machine danger zone.

The danger zone covers the area where bystanders stay within a radius of 50m around the tractor-machine unit, where people may sustain injuries caused by:

- movements of the machine working elements;
- stones thrown from the machine;
- accidental machine lowering down or raising;
- accidental rolling away/down of the vehicle.



The yellow area is the machine danger zone

The danger zone for the machine covers areas where continuous or unexpected danger is present. These areas are marked with signs warning of residual risks that cannot be avoided due to the machine structure. Special safety regulations apply which are provided in relevant chapters.

No persons may be present in the areas where the machine moves;

- as long as the tractor engine is running;
- until the tractor and the machine are secured against unintentional starting and rolling away/down.

Hazardous areas are:

- between the tractor and the rotary mower, especially during their coupling and uncoupling;
- in the area of moving elements, e.g. PTO drive shaft, etc.;
- under a lifted and not immobilized machine.



NOTE!

Staying in the danger zone of the rotary mower during its operation exposes the operator or bystanders to the risk of impact, cuts, injuries or other unforeseen hazards. Keep safe distance from the machine (min. 50m)!

4. INFORMATION ON THE MACHINE USE

4.1. General information

Rotary mowers are designed to work on slopes with a slope angle not exceeding 8.5 degrees and are compatible with tractors with a minimum power of 30hp equipped with standard wheel weights.

4.2. Machine structure and operation

The rotary mower is mounted on the rear-mounted three-point linkage of an agricultural tractor. The rotary mower structure is shown in Figure 1.

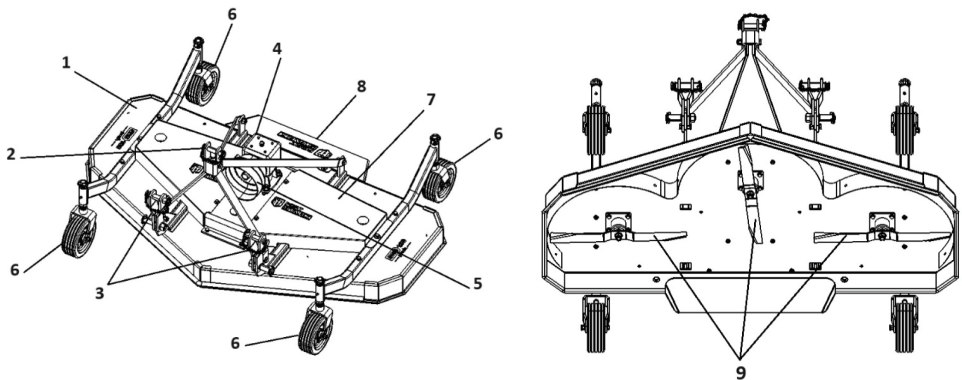


Fig. 1. Rotary mower – general structure: 1 – frame, 2 – top link, 3 – lower link, 4 – bevel gear, 5 – power-input connection (PIC) guard, 6 – support wheels, 7 – belt drive cover, 8 – rear discharge chute, 9 – blades

The machine frame (1) is made of steel sheet. The mower is coupled with an agricultural tractor using a category 1 three-point linkage (2 and 3). In the rotary mower, three blades (9) are driven by the tractor via a power take-off (PTO) drive shaft, a power-input connection (PIC) on the bevel gear (4) covered with a plastic bell-shaped guard (5) and a belt drive shielded from above with two sheet metal covers (7).

At the rear of the machine, there is a discharge chute (8) of the cut material.

To ensure even mowing, the mower is supported on four support wheels (6).

4.3. Equipment and accessories for the rotary mower

The manufacturer makes available for sale an assembled rotary mower. The manufacturer supplies the machine with a PTO drive shaft, the user manual and the warranty card.

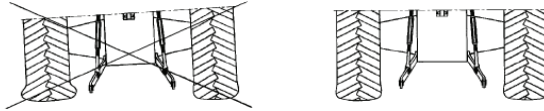


REMEMBER

The user manual is a basic element of the machine.

4.4. Preparing the tractor for work

To prepare the tractor for work with a rotary mower, you must check its overall proper operation in accordance with the tractor user manual (pay particular attention to the proper operation of the braking system and linkage). The machine should be coupled with recommended tractors equipped with standard front axle and rear wheel weights in accordance with the tractor technical specification.



The air pressure, particularly in the tractor rear tires, should be the same in both wheels and in accordance with the tractor user manual!

Before hitching the machine, the lower links of the tractor linkage should be moved to the lower position at the same height. Links set at the same height from the ground make it easier to link the machine to the tractor.

4.5. Preparing the rotary mower for work

To prepare the rotary mower for work and after a period of storage (e.g. after winter), you must check its technical condition and, above all, the state of the connections between the working components. If any damage or wear to the components is detected, they must be replaced with new or reconditioned components. Otherwise, it may result in lower quality of the machine work.



NOTE!

The operator must not be present in the area between the tractor and the machine when the tractor engine is running. It poses a hazard to the operator's life!

The machine should be lifted gently, without jerking or vibrations.

In addition, you must:

- check the screw joints and, if any are loose, tighten them;
- check whether blades rotate easily and without jamming and if jamming occurs check the bearings and replace them if necessary;
- check the condition of blades and, if they are damaged, replace them all with new blades;
- check the condition of the guards and covers;
- check the condition and adjustment of the support wheels;
- check the oil level in the bevel gear;
- lubricate the machine according to the recommendations (see section 5.7);
- check the length of the PTO drive shaft in the transport and operation positions and then, if necessary, cut the shaft to the proper length according to the shaft manufacturer's recommendations.

Remember that the telescopic tubes of the PTO drive shaft must overlap to at least 1/2 of their lengths under normal operating conditions and to at least 1/3 of their lengths in all other positions (e.g. transport position). Even when the shaft is not rotating, the telescopic tubes must overlap properly to avoid jamming. zachodzić, aby uniknąć zacinań się.

**NOTE!**

All inspections on the rotary mower must be performed before mounting it on the tractor.

4.6. Linking the rotary mower to the tractor

When linking the rotary mower to a tractor, take the following steps:

- drive the tractor close enough to the machine;
- **turn off the tractor engine, remove the key from the ignition and engage the parking brake;**
- place the tractor lower links on the lower points of the machine linkage (fixed pins) and fix them with standard linchpins;
- connect the tractor top link with the upper point of the linkage using a pin and fix it with a typical linchpin;
- tighten lightly the chains of the tractor lower links maintaining the symmetry of the mounted machine in relation to the tractor;
- install the PTO drive shaft;
- fix the PTO drive shaft guard with a chain, hooking it into the proper place on the PIC guard.

To uncouple the machine from the tractor, take the above steps in reverse order, i.e. lower the machine down to the ground, remove the lower links pins and the top link pin.

**NOTE!**

You must not couple the machine with a tractor while the tractor engine is running. You must not use elements to fix the machine linkage other than those recommended by the manufacturer. This may result in an accident or damage to the machine!

4.7. Rotary mower adjustment

Before starting work with the machine, it must be adjusted. Such adjustment involves setting the required mowing height and leveling the machine transversely and longitudinally.

The mowing height can be changed by changing the position of the sleeves on the support wheels. Remove the linchpin with the ring, remove the support wheel, change the position of the sleeve remembering that the spring should be under the support wheel guide between the two sleeves, reinstall the support wheel in the guide, fix it with the linchpin with the ring. Make sure that after adjustment the sleeves are positioned on the same level on all support wheels.

Transverse levelling must be done to ensure the same mowing height and is performed using the right-hand hanger of the tractor linkage link.

Longitudinal leveling ensures that the machine is positioned parallel to the ground. Longitudinal leveling is done by shortening or lengthening the top link of the tractor linkage. Incorrect longitudinal leveling may result in damage to the PTO drive shaft (shaft operating angle smaller than 25°).

**WARNING**

You must not make adjustments to the rotary mower while the tractor engine is running.

4.8. Working with the rotary mower

The rotary mower should only be used with a suitable PTO drive shaft. A properly coupled and adjusted mower should move smoothly behind the tractor during work and mow plants at the same height all the time. The operating speed of the mower should be maximum 5km/h.

Before you start work, please do the following:

- lower the mower down to the ground;
- **turn off the tractor engine, remove the key from the ignition and engage the parking brake;**
- disconnect the PTO drive shaft from the tractor;
- remove the tractor lower links from the lower points of the machine linkage (fixed pins);
- disconnect the top link from the upper point of the linkage;
- place the tractor lower links on the lower points of the machine linkage (moving elements) and fix them with standard linchpins;
- adjust the length of the tractor top link and connect it with the upper point of the linkage using a pin and fix it with a typical linchpin;
- tighten lightly the chains of the tractor lower links maintaining the symmetry of the mounted machine in relation to the tractor;
- install the PTO drive shaft.

**NOTE!**

You should check the length of the PTO drive shaft in the transport and operation positions. The length of the PTO drive shaft should be adjusted to the tractor according to the shaft manufacturer's recommendations, i.e. if the shaft is too long, the telescopic tubes should be shortened to the correct length.

If during work the mower becomes clogged with mowed plants, you must clear the machine. To do that, lift it and then, moving forward slowly, lower it down and continue work. If plant material becomes wrapped around the blades, you must stop the tractor, turn off the engine, remove the key from the ignition and disconnect the PTO drive shaft from the tractor and only then start clearing the machine. During this operation, the operator must wear protective gloves to prevent hand cuts. In addition, you must not leave the machine or the tractor with the machine coupled with it on a slope or other incline without first immobilizing it to prevent its spontaneous rolling away/down.

**NOTE!**

Tractor reverse gear must not be used during work when the machine is in the working position, as there is a risk of damage to the machine! The rotary mower should be lifted gently, without jerking or vibrations.

WARNING



Clogs that occur during machine operation and require the operator's intervention must only be removed after stopping the tractor, lowering the machine down to the ground and turning off the tractor engine, removing the key from the ignition, engaging the parking brake and disconnecting the PTO drive shaft from the tractor.

When removing clogs, wear protective gloves, as there is a risk of cutting yourself!

Removing clogs while the tractor engine is running can result in being pulled into or caught by the machine, and it poses a risk to the operator's health and life!

5. MAINTENANCE

To ensure long-term and failure-free operation of the rotary mower, check the condition of screw joints and tighten them if they become loose. The machine must be thoroughly cleared after work is finished. Worn out or damaged working parts must be replaced as per the following recommendations:

- all worn out components should be replaced when wear or damage is detected;
- observe oil change deadlines and check the condition of the belts in the belt drive;
- only original parts ensuring good quality should be used for replacement, and this is one of the conditions for maintaining the validity of the warranty.

5.1. Maintenance tips for the rotary mower

Each time after finishing work, the machine should be cleared of soil and plant debris and then the connections of parts and assemblies should be inspected. Maintenance of the machine involves checking the condition of bearings and blades, and of the screw and pin joints.

Replace damaged and completely worn out parts with new or reconditioned parts. All loose screw joints must be tightened. Broken, damaged or worn out blades should be replaced with new blades – if one blade is damaged, the other blades should also be replaced with new blades. The pins of the machine linkage should not be lubricated and must be kept clean and dry.

If repairs, maintenance or adjustments works must be carried out under a lifted machine, it must be secured against lowering down using a stable, strong and certified support.

5.2. Post-seasonal maintenance

At the end of the working season, the machine should be carefully cleared of dirt and washed thoroughly, especially under the mower frame. Worn out or damaged working parts must be replaced and any loose screw joints must be tightened.

Any removed paint coating should be cleaned and replaced by applying a fresh layer of protective paint, and then the machine should be lubricated according to the lubrication instructions.

5.3. Storage of the rotary mower

Kosiarka wirnikowa po odłączeniu od ciągnika powinna wspierać się na czterech kołach podporowych oraz powinna być zabezpieczona przed przemieszczaniem się. Maszyna powinna być przechowywana pod zadaszeniem na płaskim, twardym podłożu, w pomieszczeniach o temperaturze powyżej 5°C i wilgotności nie przekraczającej 70%. W przypadku braku miejsca zadaszonego, dopuszcza się przechowywanie maszyny na zewnątrz przez krótki okres czasu, maszyna musi być zabezpieczona przed wpływem czynników atmosferycznych. Podczas długotrwałego przechowywania maszyny na zewnątrz, konserwację elementów roboczych należy powtarzać w przypadku splukania warstwy konserwującej.



NOTE!

The rotary mower should be stored in a place that does not pose any hazard to people and the area nearby. During storage, the machine must be supported on the ground on four support wheels and must be immobilized. Improper positioning and securing of the machine in the storage position may cause an accident – the machine may tip over or move!

5.4. Blades replacement

To replace the blades in a rotary mower, the machine attached to the tractor three-point linkage should be raised as high as possible and secured against lowering down using a stable, strong support and chain.



NOTE!

All works related to the disassembly and assembly of worn out machine components must be performed on a hard, even surface, applying security measures to prevent the lowering down of the raised machine.

Blades replacement:

- couple the rotary mower with the tractor and raise it as high as possible;
- secure the machine to prevent its lowering down;
- lock a blade so that it does not rotate using a 32mm wrench (1 in Fig. 2)
- unscrew the blade fixing nut (2 in Fig. 2),
- replace the blade (2 in Fig. 2) with a new blade and pay attention to the correct assembly of the cutting edge so that it is aligned with the direction of the blade rotation (Fig. 3);
- place the washer and tighten the fixing nut.

NOTE!



When replacing working parts, use appropriate tools and protective gloves, as there is a risk of cutting yourself! When replacing worn out or damaged parts, only original factory parts should be used. The use of non-original parts may result in incorrect work of the machine or its damage!

All blades should be replaced at the same time to prevent the imbalance of the machine. When replacing blades, pay attention to the correct assembly of cutting edges so that they are aligned with the direction of the blade rotation.

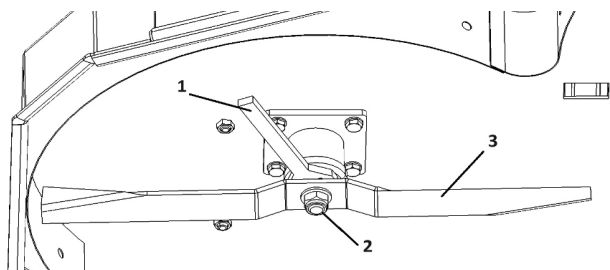


Fig. 2. Blades replacement: 1 – wrench, 2 – blade fixing nut, 3 – blade

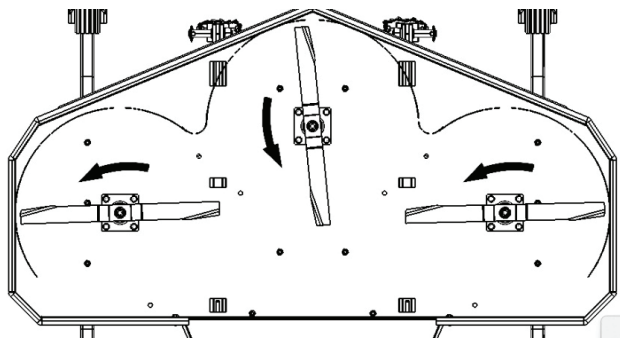


Fig. 3. Direction of blades rotation

5.5. Belt drive operation and maintenance



UWAGA!

All works related to the operation of the belt drive should be performed on a hard and even surface after stopping the tractor, lowering the machine down to the ground and turning off the tractor engine, removing the key from the ignition, engaging the parking brake and disconnecting the PTO drive shaft from the tractor.

Basic maintenance works for the belt drive include regular inspections of the technical condition of the belts and their tension.

To adjust the tension of the belts, you should:

- disassemble the PIC bell-shaped guard (1 in Fig. 4) on the belt drive by unscrewing the four fixing bolts;
- unscrew the bolts fixing the sheet metal belt drive covers (2 in Fig. 4);
- remove the upper belt drive covers (3 in Fig. 4);
- loosen the four belt drive fixing nuts (4 in Fig. 4);
- loosen the counter-nut of the bolt for adjusting the tension of the belt drive belts (5 in Fig. 4);
- tighten the tension adjustment bolt (6 in Fig. 4) until the tension of the belts is correct (when you press the V-belt with your finger halfway between the pulleys, the belt deflects by 12mm) (Fig. 5);
- tighten the counter-nut of the tightening bolt;
- tighten the nuts of the belt drive;
- assemble the upper belt drive covers;
- install the PIC bell-shaped guard.

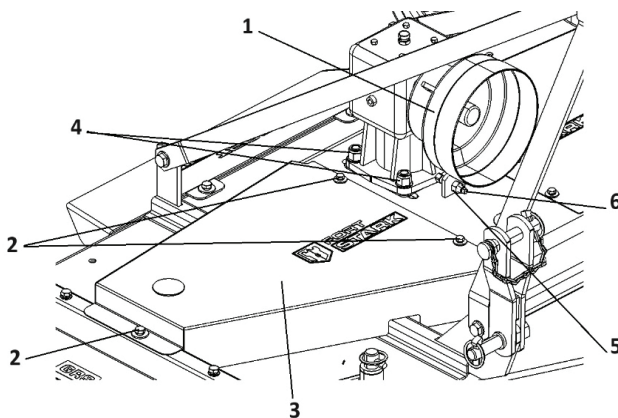


Fig. 4. Belts tension adjustment: 1 – PIC bell-shaped guard, 2 – belt drive cover fixing bolts, 3 – upper belt drive covers, 4 – belt drive fixing nuts, 5 – counter-nut of the bolt for adjusting the tension of the belt drive belts, 6 – bolts for adjusting the tension of the belt drive belts.

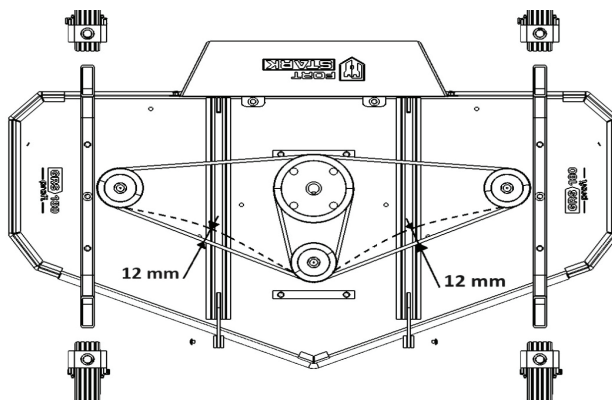


Fig. 5. Belts tension

If one of the belts is damaged, the entire set of V-belts must be replaced with new belts.

5.6. Mowing height adjustment

The mowing height can be changed by changing the position of the sleeves on the support wheels. You can set three different mowing heights depending on the position of the sleeve – see Table 2. To change the mowing height, the machine attached to the tractor three-point linkage should be raised as high as possible and secured against lowering down using a stable, strong support and chain. Make sure that after mowing height adjustment the sleeves are positioned on the same level on all support wheels.



NOTE!

All mowing height adjustment works must be performed on a hard, even surface, applying security measures to prevent the lowering down of the lifted machine, as there is a crushing hazard!

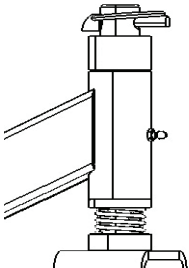
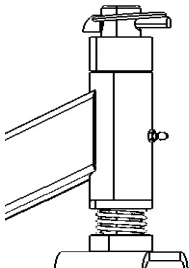
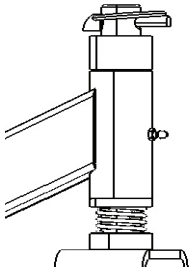
Mowing height adjustment:

- couple the rotary mower with the tractor and raise it up;
- secure the machine to prevent its lowering down;
- remove the linchpin with the ring;
- remove the upper sleeve;
- remove the support wheel;
- change the position of the sleeve remembering that the spring should be under the support wheel guide and between the two sleeves;
- reinstall the support wheel in the guide;
- fix it with the linchpin with the ring;
- lower the mower down to the ground.

**NOTE!**

When adjusting the mowing height, wear protective gloves, as there is a risk of cutting yourself! Make sure that after mowing height adjustment the sleeves are positioned on the same level on all support wheels.

Table 2. Mowing height adjustment

Mowing height adjustment:	Sleeve location:	Approximate mowing height [mm]
Lowest mowing height		54 mm
Medium mowing height		74 mm
Highest mowing height		80 mm

5.7. Lubrication and oil refilling

Basic maintenance works include observing deadlines for lubrication and changing the oil and using appropriate types of lubricants. Prior to lubrication, all lubrication points must be cleared of dirt and contaminants. All lubrication points on the machine are shown in Figure 6. The machine must be lubricated according to Table 2.

Used oils and lubricants should be disposed of to collection points for such materials, where they are processed to be reused.

Table 3. Lubrication points

No.	Lubrication point	Frequency	Lubricant type
1.	Bevel gear	First replacement after 30 hours of operation Second replacement after 60 hours of operation Subsequent replacements after every 100 hours of operation	HD 80W-90 gear oil (<i>ca. 900ml</i>)
2.	Washing the blades	after the season	kerosene
3.	Support wheel guides	every 8 hours of work	ŁT 43 grease
4.	Pulley bearings	every 8 hours of work	ŁT 43 grease

The level of oil in the bevel gear should be checked before each start of operation and the oil must be refilled if necessary. To check the oil level, use the inspection plug, which should be unscrewed, then the oil should reach the lower edge of the inspection plug hole.

The machine should be leveled when checking the oil level.



REMEMBER

Change the oil in the bevel gear when the machine has been running for a longer time, when the oil is heated up. Wear appropriate protective gloves due to the risk of sustaining burns!

As new gears break in during operation, metal filings are created which accumulate in the bevel gear and then, when they mix with oil, they may cause faster wear and tear of gear teeth. To remove the filings created in the initial phase of the machine operation, you must observe the first and second oil changing periods.

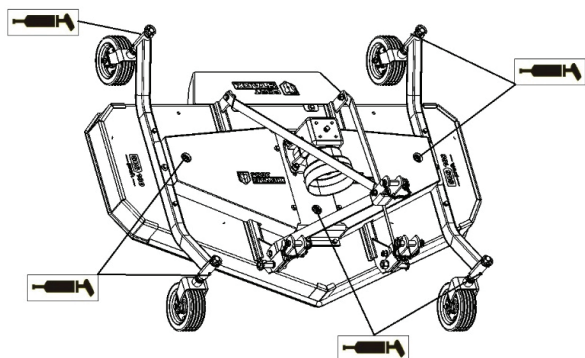


Fig. 6. Grease application points

To refill the oil in the bevel gear, please follow these steps:

- unscrew the filler plug (1 in Fig. 7) and the inspection plug (2 in Fig. 7) on the bevel gear;
- fill the bevel gear with new gear oil until it starts to flow out through the inspection plug hole;
- screw on the inspection plug;
- screw on the filler plug.

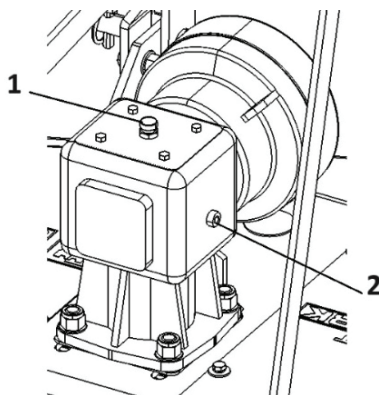


Fig. 7. Oil check and refill points in the bevel gear:
1 – filler plug, 2 – inspection plug

5.8. Detection and removal of malfunctions

The following malfunctions may occur during operation, which may adversely affect the quality of the rotary mower work, increase the costs of the operation and also result in damage to both the machine and the tractor.

If unexpected failures or malfunctions occur, stop work immediately and turn off the tractor engine. The operator should contact the manufacturer using the contact details provided on the first page of the manual.



REMEMBER

Working with a faulty and improperly adjusted machine may result in serious hazards to the operator and bystanders.

Any detected malfunctions or damage must be eliminated immediately.

Table 4. Malfunction causes and elimination methods

Symptoms	Cause	Elimination method
The front of the tractor tends to lift	Too little weight on the tractor front axle. IMPORTANT: The tractor front axle load must not be less than 20 % of the tractor own weight.	Check if the tractor power complies with the recommendations in the user manual. If not, change the tractor. If yes, check and, if necessary, add the appropriate number of front axle weights.
Nierównomierne cięcie	The mower is not level with the ground	Replace all blades with new blades
	Worn out, fractured or damaged blades	Replace all blades with new blades
	Too loose belts of the belt drive	Adjust the tension of the belts
The swath is not distributed evenly	There is an excessive amount of shredded material accumulated from the previous mowing under the frame.	Clear and wash thoroughly the underside of the mower frame.
	Worn out, fractured or damaged blades	Replace all blades with new blades
High noise level	Loose moving parts	Check for loose parts and tighten them
	Oil level in the bevel gear too low	Check the oil level and refill if necessary.
	The tractor PTO rotational speed is not set correctly	Check the tractor PTO rotational speed setting.

After removing any malfunction, check the correct operation of the machine, i.e. perform a short test run to make sure that all machine components are operating correctly.

6. TRANSPORT

6.1. Transporting a rotary mower on means of transport

Rotary mowers can be transported from the manufacturer to the seller or customer and to the work area on a trailer of a transport vehicle. Rotary mowers are transported to the seller or customer assembled and ready for work. The machines are loaded onto trailers using lifting/hoisting equipment after installing ropes or chains in points marked by the manufacturer with appropriate pictograms and shown in Figure 9. Rotary mowers should be immobilized on means of transport; the person transporting the machine is responsible for the correct immobilizing of the machine.

Lifting equipment should be used with a minimum lifting capacity of 300kg.



NOTE!

When loading the machine onto means of transport, ropes or chains must be attached at points marked with pictograms by the manufacturer.

The location of the machine's center of gravity is shown in Figure 8.

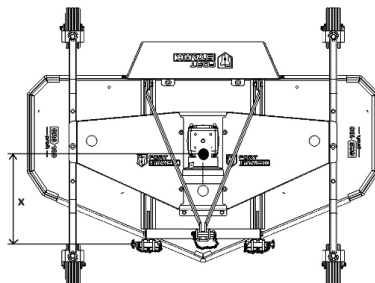
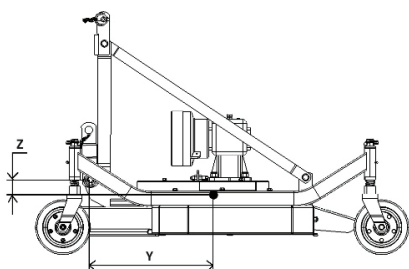


Fig. 8. Center of gravity location

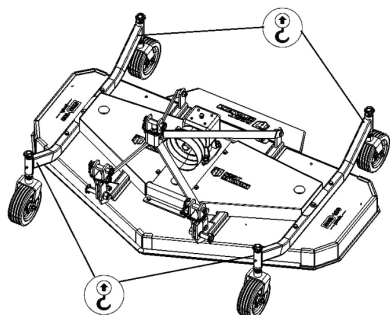


Fig. 9. Lifting equipment attachment points

X = 580 mm

Y = 575 mm

Z = 50 mm

6.2. Transporting a rotary mower on the tractor

The rotary mower may only be transported on a tractor on non-public roads. During transport, the machine should be lifted up to a position complying with the required transport clearance (min. 300mm). The tractor on which the machine is mounted must meet the stability requirements – see Annex A to this manual.

The machine must be transported to the work area using other means of transport. Driving a tractor with the machine hanging on public roads may result in a road accident!



NOTE!

When taking a turn, pay attention to the machine offtracking.



NOTE!

You must not drive the tractor with the machine mounted on it on public roads. Driving a tractor with the machine mounted on it on public roads may result in an accident!

You must not transport people, animals and loads on the machine.



IT IS PROHIBITED TO DRIVE THE
MACHINE ON PUBLIC ROADS

JULKISILLA TEILLÄ AJO KIELLETTY

NICHT AUF ÖFFENTLICHEN
STRASSEN FAHREN

ZAKAZ PRZEJAZDU PO DRÓGACH
PUBLICZNYCH

In the event of an accident or breakdown during work or transport, the scene of the accident must be closed off, the state of the injured persons must be checked and the appropriate services must be notified, e.g. the police, emergency services or fire brigade.

7. DISASSEMBLY



NOTE!

Before starting disassembly works, the machine must be uncoupled from the tractor.

The machine should be disassembled by persons who earlier got familiar with the machine structure. Such works should be performed after placing the machine on a flat and hard surface and using personal protective equipment, i.e. gloves. In the case of worn out components, you should proceed according to the “Disposal” section. Due to the weight of certain machine components which exceeds 20kg, lifting/hoisting equipment must be used during disassembly works.



NOTE!

Lifting equipment used during disassembly works may only be operated by a person with appropriate licenses and qualifications.

All connectors are made from standardized elements adapted to spanners based on metric system. There are free spaces for the movement of the spanners to ensure easy loosening and tightening of nuts and bolts.

8. DISPOSAL

The disposal of a rotary mower should be carried out after its complete disassembly and inspection of the machine components. During disassembly works, parts should be grouped according to material type – ferrous metals. Worn out ferrous metal components should be disposed of in proper groups to collection points for particular metals. Used oils and lubricants should be disposed of through a network of collection points for such materials, where they are processed to be reused.



REMEMBER

Burning plastic materials in devices not designed for this purpose results in environmental pollution and violates applicable regulations.

9. TECHNICAL SPECIFICATION

The technical specification of the rotary mower is shown in Table 5 below.

Table 5. Technical specification

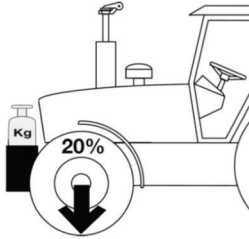
Specification	Measurement unit	Manufacturer data		
Symbol	-	GRS 120 Profi	GRS 150 Profi	GRS 180 Profi
Working width	mm	1200	1500	1800
Machine type	-	mounted		
Minimum mowing height	mm	54		
Maximum mowing height	mm	80		
Overall dimensions:				
- length	mm	1340	1340	1340
- width	mm	1266	1564	1862
- height	mm	860	860	860
Machine weight	kg	170	184	203
Working components				
- number of blades	pc	3		
Power demand				
- tractor power	hp	15	20	30
Linkage category	-	1		
Operating speed	km/h	max 5		
Transport clearance	mm	min. 300		
PTO drive shaft				
- torque	Nm	460		
- transmitted power	kW	26		
- end (splines):				
- from the tractor side	-	6		
- from the machine side	-	6		

- PTO working revolutions	rpm	540
- shaft length:		
- minimum	mm	1000
- maximum	mm	1380
The used PTO drive shafts should have the CE mark		

Geometric dimensions and weights in the technical specification are given with an accuracy of $\pm 1\%$

ANNEX A: TRACTOR-MACHINE UNIT STABILITY

This chapter draws the **User's** attention to information regarding the influence of the weight of the mounted machine on the tractor maneuverability and stability. There is a possibility of losing tractor steerability under the influence of the weight of the machine mounted on the rear-mounted three-point linkage of the tractor.



The tractor should be ballasted at the front with an appropriate number of weights to ensure proper tractor steering and braking. The load on the front axle of the tractor with the machine mounted on its rear-mounted three-point linkage must be at least 20 % of the weight of the tractor itself (see Fig. A).

Fig. A. Minimum load on the tractor front axle

Please remember that the road surface and the machine mounted on the tractor rear-mounted three-point linkage affect driving. The driving speed should be adjusted to the terrain conditions and the type of surface (soil type). When taking turns with a mounted or trailed machine, pay special attention to the machine offtracking.

A tractor with a mounted machine **must meet** the condition of safe stability, i.e. the load on the front axle of the tractor must be equal to or greater than 20 % of the tractor curb weight [$SI \geq 20\%$]. To calculate the stability index **SI**, first you must measure the tractor axle loads. We need to weigh the tractor itself ready for work T_t , and then weigh the load on the front axle of the tractor T_f with the machine mounted on the rear-mounted three-point linkage. With such individual weights, we can calculate the stability index using the formula:

$$W_s = \frac{T_p}{T_c} \times 100 \geq 20\%$$

SI [%] - stability index

T_T [kg] - tractor curb weight

$[T_{F1} + T_{R1}]$ - tractor axle loads without the machine, ready for work]

T_F [kg] - tractor front axle load with weights

T_R [kg] - tractor rear axle load with weights

W_R [kg] - total weight of the rear-mounted machine

W_F [kg] - total weight of front weights

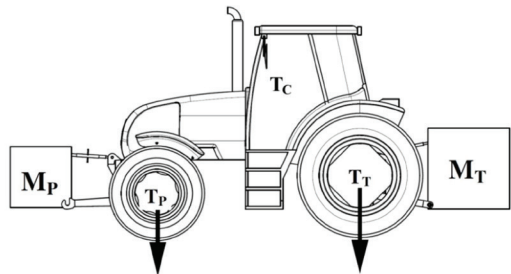


Fig. B. Determination of the tractor-machine unit stability : Mp stands for Wf, Tp stands for Tf, Tc stands for Tt, Mt stands for Wr

If the tractor front axle load with the machine mounted on the rear-mounted three-point linkage is too low ($SI < 20\%$), you **must** increase the mass of the front weights **Wf** to increase the tractor front axle load and obtain SI exceeding 20 %.

MACHINE HANDOVER REPORT

The report is an integral part of the warranty card

Failure to complete the report correctly or illegibly will result in a loss of warranty! The parties signing this report (the seller and the buyer) hereby declare that:

- The machine is delivered to the buyer assembled and ready for work
- The buyer has been informed by the seller about the proper operation of the machine, its servicing and maintenance and the applicable occupational health and safety regulations, in accordance with the user manual provided to the buyer
- The buyer has been informed by the seller about the warranty terms
- The buyer acknowledges the receipt of the user manual

SELLER	BUYER
LAST NAME	LAST NAME
STREET	STREET
TOWN/CITY	TOWN/CITY
SIGNATURE AND DATE	SIGNATURE AND DATE

**THE SELLER MUST KEEP THE LEGIBLY
COMPLETED AND SIGNED MACHINE
HANDOVER REPORT!**

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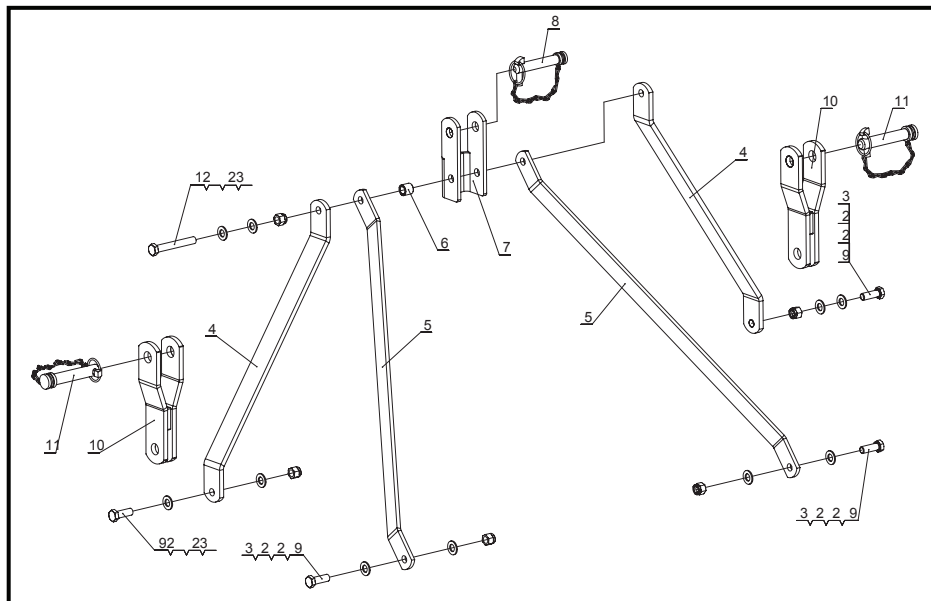
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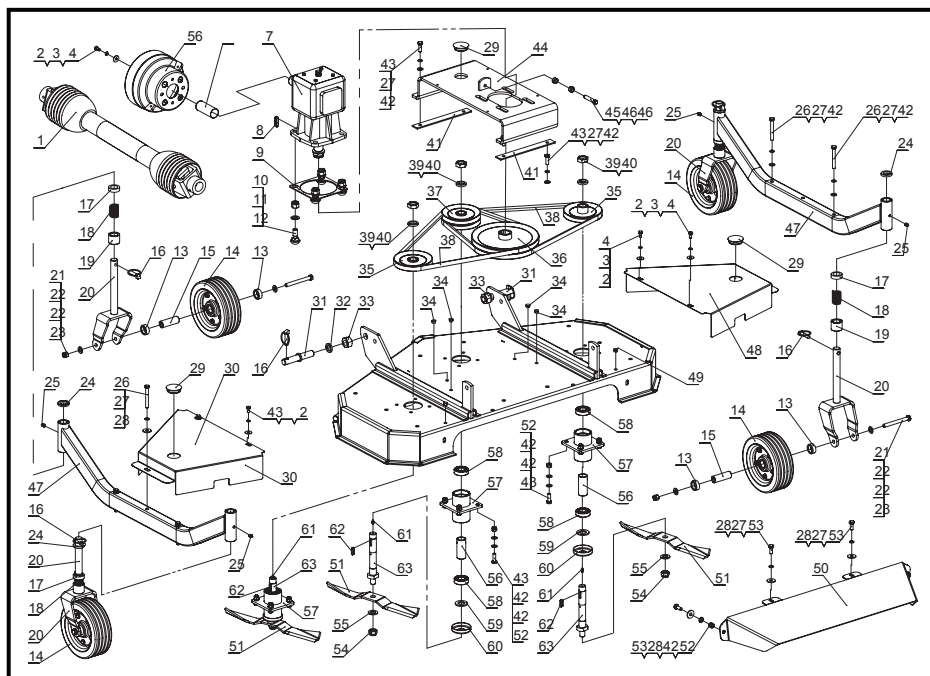
ASSEMBLY DRAWING LIST



GRS PROFI three-point linkage

Ser. No	Code	Name & Specification	Quantity
1	B000152	Bolt M12×50	1
2	W000016	Washer M14	10
3	N000032	Lock nut M14	5
4	170001	Three-point linkage	2
5	170002	Three-point linkage for 120	2
	170003	Three-point linkage for 150	2
	170004	Three-point linkage for 180	2
6	170005	Upper linkage sleeve	1
7	170006	Upper linkage parts	1
8	000001	Upper linkage pin	1
9	B000097	Bolt M14×40	4
10	170065	Lower locking	2
11	300014	Lower linkage pin	2

ASSEMBLY DRAWING LIST



GRS PROFI series

Ser. No	Code	Name & Specification	Quantity
1	000028	PTO shaft 04B1000	1
2	W000013	Big washer 8	8
3	W000008	Spring washer M8	8
4	B000109	Bolt M8×16	8
5	000024	PTO protection	1
6	000030	Gearbox shaft cover	1
7	170033	Gearbox	1
8	K000001	Key A10×40	1
9	170035	Gearbox gasket	1
10	N000033	Lock nut M16	4
11	W000017	Washer M16	4

GRS PROFI series			
Ser. No	Code	Name & Specification	Quantity
12	B000353	Special bolt M16×45	4
13	170021	Nylon wheel spacer	8
14	170022	Rubber wheel	4
15	170023	Wheel axle	4
16	100003	Lock pin	6
17	170016	Wheel chassis sleeve	4
18	170017	Wheel chassis spring	4
19	170018	Wheel chassis sleeve (big)	4
20	170019	Wheel chassis	4
21	B000024	Bolt M12×110	4
22	W000015	Washer M12	8
23	N000031	Lock nut M12	4
24	170015	Chassis mount sleeve	4
25	000082	Grease Nipples M8	4
26	B000023	Bolt M10×80	6
27	W000001	Spring washer M10	12
28	W000009	Big washer 10	6
29	000055	Rubber	3
30	170088	Belt cover for 120 (Left)	1
	170089	Belt cover for 150 (Left)	1
	170090	Belt cover for 180 (Left)	1
31	170064	Lower linkage pin	2
32	W000006	Spring washer M22	2
33	N000006	Nut M22	2
34	170098	Body plug	6
35	170050	Small pulley (single)	2
36	170052	Big pulley (double)	1
37	170051	Small pulley (double)	1
38	170047	Belt 17×1575	2
	170048	Belt 17×1753	2
	170049	Belt 17×1956	2

GRS PROFI series

Ser. No	Code	Name & Specification	Quantity
39	N000120	Nut M24×1.5	3
40	W000036	Spring washer M24	3
41	170044	Rubber seal	2
42	W000014	Washer M10	34
43	B000076	Bolt M10×30	16
44	170043	Bracket for gearbox	1
45	B000255	Tension bolt M12×60	1
46	N000002	Nut M12	2
47	170057	Chassis mount	2
	170058	Chassis mount	2
48	170059	Belt cover for 120 (Right)	1
	170060	Belt cover for 150 (Right)	1
	170061	Belt cover for 180 (Right)	1
49	170082	Main body for 120	1
	170083	Main body for 150	1
	170084	Main body for 180	1
50	170071	Grass flow cover	1
51	170073	Blade for 120	3
	170074	Blade for 150	3
	170075	Blade for 180	3
52	N000030	Lock nut M10	14
53	B000075	Bolt M10×25	4
54	N000012	Nut M18×1.5	3
55	W000005	Spring washer M18	3
56	170085	Bearing sleeve	3
57	170080	Bearing seat	3
58	170081	Bearing 6205-RZ	6
59	W000019	Washer M24	3
60	170087	Bearing cover	3
61	000094	Grease Nipples M6	3
62	K000018	Key A8×28	3
63	170072	Bearing axis	3