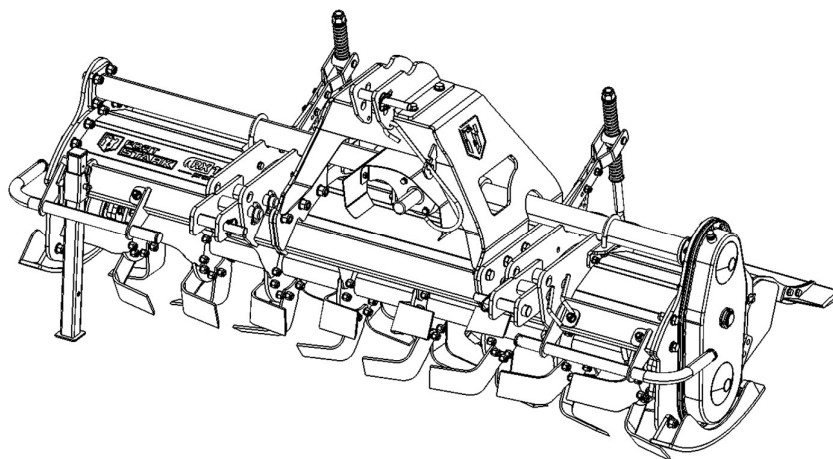


Part List No. 10

OPERATING INSTRUCTIONS WARRANTY CARD

ROTARY TILLER

RX 140 Profi, RX 160 Profi, RX 180 Profi, RX 200 Profi



**BEFORE STARTING WORK, READ THE
OPERATING INSTRUCTIONS**

UAB „AGROTEKAS“
K.Donelaičio g. 62-1
LT-44248 Kaunas, Lithuania
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Issue date: 17.06.2025

Edition 1, Lithuania 2025

*Original instructions
Language: English*



EC DECLARATION OF CONFORMITY



In accordance with the Regulation of the Minister of Economy of 21 October 2008 on the essential requirements for machinery (Journal of Laws 2008 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

Person responsible for compiling the technical documentation of the machine:

Name and surname: *Address:*

Acting as the manufacturer, declares under full responsibility that:

Machine:
Type/model:
Serial no:
Year of production:
Function:

to which this declaration relates meets the requirements:

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery
(Official Journal of the European Union L157 of 09.06.2006, pages 24-86)
and the Regulation of the Minister of Economy of 21 October 2008 on essential requirements for machinery
(Journal of Laws No. 199 item 1228)

The following harmonised standards were used for conformity assessment:

PN-EN 4254-5:2018-08 PN-EN ISO 12100:2012 PN-EN ISO 4254-1:2016-02

PN-EN ISO 4413:2011 PN-EN ISO 13857:2020-03

and standards and regulations:

ISO 3600:2015 PN-EN ISO 20607:2019-08 PN-ISO 11684:1998

This EC Declaration of Conformity becomes invalid if the machine is altered or converted without the
manufacturer's approval.

The operating manual is an integral part of the machine.

The machine may only be passed on to another person in a fully functional condition, accompanied by the
operating manual and the declaration of conformity.

.....
Place and date of issue

Direktorė
Justina Stankutė



.....
*Name, position and signature of the person empowered
to draw up the declaration of conformity on behalf of the
manufacturer*

WARRANTY CARD

Rotary tiller

Serial number

Production date

Controller's signature

Date of sale

Seller's signature

.....
Seller's stamp

.....
Manufacturer's stamp

NOTE: The seller must fill in the warranty card and complaint coupons accurately (legibly). Missing, for example, the sale date or the point-of-sale stamp may result in rejection of possible complaints. A warranty card with corrected entries or filled in illegibly is invalid.

Warranty claim procedure

1. The user means a natural or legal person purchasing the agricultural machine; the seller means the commercial entity supplying the machine to the user; the manufacturer means the producer of the agricultural machine.
2. The manufacturer ensures good quality and proper operation of the rotary tiller for which this warranty is issued.
3. Defects or damage will be repaired free of charge within **12 months** from the date of sale.
4. Discovered defects or damage must be reported on a complaint form in person, by post, by e-mail or by phone.
5. If during the warranty period three warranty repairs are required and the product still has defects that prevent its use as intended, the buyer is entitled to replacement with a new, defect-free product or a refund.
6. Unless the manufacturer, seller and user agree on another date for handling the complaint, replacement or refund, it should be completed within 14 days from the user's report date.
7. The following repairs are not eligible for warranty coverage if caused by:
 - use of the rotary tiller inconsistent with the operating manual and intended use,
 - random events or other occurrences for which the manufacturer bears no responsibility.These repairs may be performed exclusively at the expense of the user or purchaser.
8. The warranty does not cover machine parts and sub-assemblies that are subject to wear under normal operating conditions, regardless of the warranty period. This group of elements includes, among others, the following parts/sub-assemblies:
 - curved blades,
 - guards/shields,
 - bearings.
9. Any modifications to the machine without the written consent of the Manufacturer are prohibited. In particular, it is unacceptable to perform welding, reaming, cutting, or heating of the main structural elements of the machine that directly affect the safety of working with the machine.
10. The Manufacturer has the right to void the product warranty in the event of discovering:
 - the introduction of structural changes,
 - unauthorized repairs performed without consultation with the machine manufacturer,
 - **failure to use a telescopic PTO shaft with an overload clutch,**
 - the occurrence of damage caused by random events,
 - the absence of required entries or the making of unauthorized entries in the warranty card,
 - use of the rotary tiller inconsistent with its intended purpose or the operating manual.

Claim voucher no. 1

Rotary tiller

Serial No. Purchase date

No. of complaint protocol

.....
signature and stamp of the seller

Claim voucher no. 2

Rotary tiller

Serial No. Purchase date

No. of complaint protocol

.....
signature and stamp of the seller

Claim voucher no. 3

Rotary tiller

Serial No. Purchase date

No. of complaint protocol

.....
signature and stamp of the seller

Technical equipment in working order, received after repair

on
.....
user's signature

Notes

.....
.....
.....

Technical equipment in working order, received after repair

on
.....
user's signature

Notes

.....
.....
.....

Technical equipment in working order, received after repair

on
.....
user's signature

Notes

.....
.....
.....

IDENTIFICATION ROTARY TILLER

The rotary tiller has a rating plate on the machine frame. It contains the basic data for identifying the machine: the manufacturer's name, machine symbol, serial number and year of manufacture. The data on the rating plate serves to identify the rotary tiller and should correspond to the following data entered at the time of sale.

Symbol

Year of production

Serial No.

UAB „AGROTEKAS“ K. Donelaičio g. 62-1, LT-44248 Kaunas, Lithuania			
ROTARY TILLER			
Model:	RX 200 PROFI	Type:	RX 200 PROFI
Year:		Weight:	485 kg
Serial N.:		QC:	*

THE SUPPLIER OF THE MACHINERY, WHETHER NEW OR USED, MUST HAVE THE BUYER'S SIGNED ACKNOWLEDGEMENT OF RECEIPT OF THE OPERATING MANUAL with the MACHINERY.



THIS OPERATING MANUAL IS THE BASIC EQUIPMENT OF THE MACHINE! KEEP INSTRUCTIONS FOR FUTURE REFERENCE.



ATTENTION!

WHEN RENTING A MACHINE, PLEASE REMEMBER TO SUPPLY AN OPERATING MANUAL WITH THE RENTED MACHINE.



ATTENTION!

NOT USING THE TELESCOPIV JOINT SHAFT WITH AN OVERLOAD CLUTCH VOIDS THE GUARANTEE!



REMEMBER

BEFORE WORKING, CHECK THAT THE POWER TAKE-OFF (PTO) AND THE TRACTOR ARE WORKING CORRECTLY. ADJUST THE LENGTH OF THE PTO TO THE TRACTOR BY CHANGING THE LENGTH OF THE TELESCOPIC TUBES – SEE PTO OPERATING MANUAL.

TABLE OF CONTENTS

WARRANTY CARD.....	3
IDENTIFICATION ROTARY TILLER.....	6
1. INTRODUCTION.....	8
2. PURPOSE OF THE ROTARY TILLER.....	8
3. SAFETY AND WARNING NOTES	9
3.1. Symbols: meaning and usage.....	9
3.2. Intended use of the rotary tiller.....	9
3.3. Description of residual risk.....	10
3.4. Residual risk assessment	10
3.5. Health and safety regulations.....	11
3.6. Compliance with standards.....	14
3.7. Pictograms.....	15
3.8. Manufacturer liability and warranty.....	17
3.9. Noise and vibrations	17
3.10 Danger zone	17
4. INFORMATION REGARDING USE.....	18
4.1. General Information	18
4.2. Construction and machine description	18
4.3. Equipment and accessories of the rotary tiller.....	19
4.4. Preparing the tractor for operation	20
4.5. Preparing the rotary tiller for operation.....	20
4.6. Mounting the rotary tiller on the tractor.....	21
4.7 Rotary tiller adjustment rules	21
4.8 Adjustment of the rear guard position	22
4.9 Adjustment of working depth.....	22
4.10 Floating position.....	23
4.11 Operation of the rotary tiller	24
5. TECHNICAL MAINTENANCE	25
5.1 Guidelines for maintaining the rotary tiller	25
5.2. Post-season maintenance	25
5.3. Storage of the rotary tiller.....	26
5.4. Replacement of working elements	26
5.5. Lubrication instructions	26
5.5.1 Bevel gearbox.....	27
5.5.2 Gear transmission.....	28
5.6. Detection and elimination of malfunctions	29
6. TRANSPORT	30
6.1. Transport of the rotary tiller using transport vehicles.....	30
6.2. Transport of the rotary tiller on a tractor	31
7. DISASSEMBLY	31
8. DISPOSAL	32
9. TECHNICAL SPECIFICATIONS	32
APPENDIX A: STABILITY OF THE TRACTOR-MACHINE UNIT.....	33

1. INTRODUCTION

These operating manual are supplied with each machine to familiarise you with the rotary tiller's construction, operation, and adjustment. It is also intended to warn of existing or potential risks. The manual also contains information on preparing the rotary tiller for use and transport.

The exact adherence to the advice given in this manual will ensure a long and trouble-free operation and reduce the machine's running costs.

The individual chapters of the manual discuss the relevant issues in detail. If there is any information in this manual which is not apparent to the user, or if there are any problems with the operation or use of the machine, the user can obtain a detailed explanation by writing to the manufacturer's address (the address can be found on the cover) – in this case, the following should be given: the exact address of the buyer of the machine, the machine symbol, the serial number, the year of manufacture, the year and number of issue of the operating manual.

The terms left-hand side, right-hand side, rear and front in the operating manual refer to the observer's orientation facing the direction of travel of the machine.

The warranty regulations and the rights arising from there are set out in the warranty card enclosed with each rotary tiller.

2. PURPOSE OF THE ROTARY TILLER

The rotary tiller is designed exclusively for agricultural use. Its use for other purposes shall be construed as misuse.

It is prohibited to use the rotary tiller for:

- carrying persons, animals or objects on the machine,
- working on stony fields,
- working on surfaces with debris in the ground.

Compliance with the machine's operation requirements, i.e. operation and maintenance following the manufacturer's instructions and the strictest adherence to the latter, is a prerequisite for the intended use.

The machine should only be used and operated by persons acquainted with its detailed characteristics and who have been informed of the safety precautions. Accident prevention regulations and all essential safety and occupational health regulations, as well as traffic regulations, should always be complied with.

A rotary tiller is an implement designed for loosening and mixing soil without turning it over, breaking up clods, pruning weed infestations, quick field preparation after perennial crops, and ploughing meadows and pastures. The rotary tiller can be used to mix mineral fertilisers into the soil in agricultural fields and vegetable crops.

To drive the rotary tiller, an articulated telescopic shaft (PTO shaft) with a torque of 120 Nm, **AN OVERLOAD CLUTCH**, and a non-detachable guard, adapted for a speed of 540 rpm, must be used. The rotary tiller should only operate with tractors recommended by the manufacturer (see technical specifications) equipped with Category I/II linkage and standard front axle weights to maintain the required steerability coefficient ($W_s \geq 20\%$). The calculation of the steerability coefficient can be performed in accordance with Annex D of the PN-EN ISO 4254-1:2016-02 standard or Annex A of this manual.

3. SAFETY AND WARNING NOTES

3.1. Symbols: meaning and usage

Symbols are used in this manual to draw the user's attention and emphasise certain crucial aspects that need to be discussed.



DANGER

The word indicates danger, with a possible severe risk of an accident. Failure to observe the instructions marked with this sign may result in severe risk of injury for the operator or persons in the vicinity!

These recommendations must be strictly adhered to!



ATTENTION!

This word indicates the possibility of damage to the machine or objects in the environment and commands to be careful.

This is a crucial tip to pay particular attention to!



REMEMBER

The word indicates danger, with a possible severe risk of an accident. Failure to observe the instructions marked with this sign may result in severe risk of injury for the operator or persons in the vicinity!

These recommendations must be strictly adhered to!

3.2. Intended use of the rotary tiller

The rotary tiller is designed, built and adapted to cultivate all soil types in stone-free fields. The rotary tiller can be used for loosening and stirring up the soil, crushing clods, destroying weeds and weed infestations and for quick seasoning of fields after perennial crops, after ploughing of meadows and pastures. The machine can also mix mineral fertilisers into the soil on agricultural fields and in vegetable crops. The rotary tiller can be used on land with a slope of up to 8.5°. The rotary tiller must only be operated with tractors recommended by the manufacturer (see Table 4).



REMEMBER

The provisions for the intended use and the configurations provided for this machine are the only ones that are permitted. Do not use the machine for purposes other than those intended for it. The regulations contained in these operating manuals do not replace the obligations arising from applicable statutory provisions relating to safety standards and accident prevention but rather summarise them.

3.3. Description of residual risk

Residual risk arises from the incorrect or improper behavior of the rotary tiller operator. The greatest danger may occur during:

- Operation by minors, persons unfamiliar with the instruction manual, or those without a license to drive agricultural tractors.
- Operation by persons in a state of illness, under the influence of alcohol, or under the influence of intoxicants.
- Transport and operation without maintaining appropriate safety measures.
- Coupling (hitching) the tiller to the tractor if personnel are present between the machine and the tractor while the engine is running.
- Operation if persons or animals are within the operating range of the tractor + machine aggregate.
- Maintenance and adjustment activities if the tractor engine is running and the machine is not secured against falling.

In describing the residual risk, the rotary tiller is treated as a machine that, from the moment of production launch, has been designed and manufactured according to the current state of the art.

3.4. Residual risk assessment

During the use of the rotary tiller, hazards and residual risk can be minimized if the following recommendations are followed:

- Thorough reading of the instruction manual.
- Prohibition of persons staying on the tiller during operation and transport.
- Prohibition of persons staying between the tractor and the tiller if the tractor engine is running.
- All adjustment, maintenance, and lubrication activities are performed only with the tractor engine turned off.
- Repairs are performed only by trained personnel.
- Operation by persons authorized to drive agricultural tractors who have familiarized themselves with the manual.
- Securing the tiller against access by children.

Although UAB "AGROTEKAS" takes responsibility for design and construction to eliminate hazards and residual risk, certain risk elements during operation are unavoidable:



1) The danger of catching or injury from frame edges or sharp knife tips when aggravating or changing from transport to working position and vice versa.



2) Risk of cutting or abrasion by machine parts when making adjustments due to incorrect positioning of the operator during this operation.



3) Risk of the machine tipping over during storage and transport. For stability, the rotary tiller should stand on flat ground on the support and the blades during storage. The rotary tiller should be aggregated with narrow-track tractors recommended by the manufacturer.



4) The danger of being drawn in or caught by rotating drive elements and soil tillage implement blades. Keep a safe distance when rotating parts are in motion. The operator and bystanders should not approach the machine during operation.



5) The danger of ejection of stones from the working drum during operation. Take extra care and keep a safe distance when operating the machine (min. 50 m). The operator and bystanders should not approach the machine during operation.

3.5. Health and safety regulations



ATTENTION!

To avoid hazards, read this manual before starting work and follow these safety rules and precautions:

General regulations

- In addition to this operating manual, traffic regulations, occupational health and safety regulations, and the provisions contained in the tractor operating manual must also be observed.
- The pictograms placed on the rotary tiller provide instructions concerning the safety of the user and third parties and help prevent accidents involving these persons.
- When moving on non-public roads, the regulations contained in 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 cab or a protective frame.
- Before each departure with the machine, check whether all elements of the rotary tiller are in good condition. Any damage that occurs must be repaired immediately and any missing parts must be replaced.
- Avoid staying within the operating zone of the rotary tiller.
- Before leaving the tractor cab and before performing any activity on the rotary tiller, turn off the tractor engine, remove the key from the ignition, lower the machine to the ground, and make sure that all rotating assemblies have stopped.
- The rotary tiller must be stored in a dry room on a hard and level surface. When lowering the rotary tiller to the ground, exercise particular caution. Danger of injury!!!
- The operating manual must be kept with the machine and be easily accessible.
- When lending the machine, it must be handed over in proper technical condition together with the operating manual and the PTO shaft.
- Additional weighting of the machine is prohibited!
- Careless or improper use and operation of the machine, as well as failure to follow the recommendations contained in this operating manual, pose a threat to the health and life of the operator and bystanders.
- Wearing loose clothing, loose belts, or anything that could be caught by the rotating PTO shaft is prohibited. Contact with the rotating PTO shaft may result in entanglement or being caught, which poses a serious danger to the operator's health and life!

Coupling

- Exercise extreme caution when coupling the tiller with the tractor and when disconnecting it.
- It is prohibited to stay between the tiller and the tractor while operating the lever for the rear suspension linkage.
- During the coupling of the tiller with the tractor, it is prohibited for any person to be between the machine and the tractor while the engine is running.
- When coupling the machine with the tractor or performing any repairs, stop the engine, remove the ignition key, and apply the parking brake.
- Secure the suspension system pins only using standard safety devices in the form of linchpins.
- The tiller should only be coupled with a tractor recommended by the manufacturer that is equipped with front axle weights.
- The tiller may only be operated by a person holding valid licenses allowing them to drive agricultural tractors.

- Do not allow unauthorized persons who are not familiar with the operating manual to operate the tiller.
- Use the recommended Power Take-Off (PTO) shaft. Working with a PTO shaft without a guard or with a damaged or incomplete guard is prohibited. Danger of entanglement by the rotating PTO shaft.
- The PTO shaft has markings on its housing indicating which end of the shaft should be connected to the tractor and which to the machine.
- It is prohibited to step over or under the PTO shaft or to stand on the shaft both during operation and while the machine is stationary.
- Working without guards, or with incomplete or damaged guards, is prohibited. In the event of destruction or loss of guards, they must be replaced with new ones.
- During coupling, the minimum front axle load of the tractor must be observed, as the mounted machine in the transport position may affect the stability and steerability of the tractor. The condition for maintaining the steerability and stability of the tractor is ensuring that the pressure on the tractor's front axle with the mounted machine is equal to at least 20% of the tractor's own weight.
- It is prohibited to place, lay, or hang objects on the PTO shaft attached to the tractor and the tiller.
- After finishing work, the PTO shaft must be disconnected from the tractor and placed on the special holder on the tiller.
- The tiller may only work with agricultural tractors equipped with a complete and undamaged operator's cab.
- All manipulations of the lever regulating the position of the tractor's three-point linkage arms must be performed only from the operator's seat. Operating the lever after leaving the operator's seat is prohibited.
- In tractors equipped with EHR (electronic hitch control), the tractor linkage is controlled via buttons located outside the tractor cab. Exercise extreme caution during this activity. Crushing hazard!
- It is prohibited to connect the machine to the tractor if the machine's suspension system is not compatible with the tractor's suspension category.



ATTENTION!

Working with a tractor other than recommended by the manufacturer may cause a risk of loss of stability — danger of the vehicle tipping over!
The load on the tractor's front axle cannot be less than 20% of its curb weight.

Operation

- **The tiller may only work with a Power Take-Off (PTO) shaft equipped with an overload clutch.**
- The tiller may be operated by a person holding valid licenses to drive agricultural tractors and who is familiar with the machine's operating manual.
- Do not allow unauthorized persons unfamiliar with the operating manual to operate the tiller.
- Do not allow children or persons under the influence of alcohol to operate the tiller.
- The tiller should be raised on the tractor's three-point linkage (TUZ) gently, without jerks or vibrations.
- Always raise the tiller when turning and reversing.
- Before every start-up of the tiller, use the tractor's horn to warn bystanders that work is starting.
- Before performing a reversing maneuver, use the tractor's horn.
- Operating the tiller on slopes exceeding 8.5° is impermissible. Danger of the tractor and machine tipping over!

- Every time the operator leaves the tractor, the tractor engine must be turned off and the tiller left in the lowered position.
- Clearing blockages may only be performed after lowering the machine to the ground, turning off the tractor engine, and disconnecting the PTO shaft from the tractor.
- Do not use the tractor's reverse gear during work when the machine is in the operating position. Danger of machine damage!
- All maintenance activities (lubrication, repairs, cleaning, etc.) must be performed with the tiller lowered to the ground, the tractor engine turned off, the key removed from the ignition, the parking brake applied, and the PTO shaft disconnected from the tractor. The tractor-machine unit must be secured against rolling.
- Persons operating agricultural machinery should wear work clothes and footwear, as well as personal protective equipment appropriate for the existing hazards.
- During any repair of the machine raised on the three-point linkage (TUZ), it is necessary to secure it against falling using a stable, strong, certified support and a chain.
- During every break in work, turn off the tractor engine, remove the key from the ignition, and lower the machine to the ground.
- Before starting work, check if there are low-hanging power lines in the work area.
- Exercise extreme caution when working on sloped terrain and near ditches.
- In the event of damage, loss, or wear of guards, they must be replaced with new ones.

Transport

- Transport of the tiller on means of transport from the manufacturer to the dealer or customer is described in detail in the "Transport" chapter. Remember safety rules during loading and the correct immobilization of the tiller on the truck trailer. Attachment points for ropes or chains are marked with pictograms.
- **It is prohibited to transport the tiller mounted on the tractor on public roads.** The machine must be transported to the workplace via other means of transport. Driving a tractor with a mounted tiller on public roads may cause a traffic accident!
- It is prohibited to climb onto the machine while it is running or to carry people, animals, or objects on the tiller during operation and transport.
- During transport, the parking stand must be raised and secured in the upper position. Always verify the security of the stand before moving.
- Pay attention to the "swing-out" (overhang) of the machine due to the tiller's width and the rigid connection to the tractor, especially during U-turns at work and on turns during transport.
- Exercise extreme caution when making a turn with the tractor and mounted tiller, both during transport and when performing U-turns in the field, especially if there are people or objects nearby.
- The travel speed of the tractor with the tiller during transport on **non-public** roads must not exceed:
 - When driving on paved roads with a flat surface: 15 km/h
 - When driving on field roads: 10 km/h

Storage

- Disconnecting the tiller from the tractor may only take place after stopping the tractor engine, removing the key, and applying the parking brake.
- For the duration of storage, the parking stand and the rear guard must be lowered to the bottom position.
- Storage of the tiller should take place in areas where there is no possibility of accidental injury to people or animals. The machine should stand on a flat surface supported by the stand and the blade rotor, preferably under a roof.
- The tiller should be stored in a dry room on hard and level ground. When lowering the tiller to the ground, exercise extreme caution — there is a danger of injury!!!

**DANGER**

Watch out for the sharp ends of the tiller blades- there is a risk of injury! Exercise caution when performing activities around the machine.
Improper positioning of the tiller for storage can cause an accident!

Fire safety regulations

- Firefighting equipment should be part of the tractor's equipment and be located in its cab (ABC extinguisher).
- Smoking and the use of open flames near the working machine are prohibited.
- It is prohibited to conduct repairs, and especially welding work, without first cleaning the machine of any material residue that could cause a fire.
- Before starting welding work, disconnect the tractor battery.
- Working on areas covered with dry grass and near forest areas poses a risk of fire.
- Before starting work with the machine, check if a high degree of fire risk is in effect in the area. Working in such areas is prohibited!

**REMEMBER**

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

Other

- Do not use the tiller for purposes other than those specified in the operating manual.

**ATTENTION!**

Failure to comply with the above rules may create hazards for the operator and bystanders, and may also lead to damage to the tiller. The user is solely responsible for damages resulting from non-compliance with these rules.

3.6. Compliance with standards

The machine has been designed and manufactured in compliance with safety standards in the machinery industry in force on the day the tiller was placed on the market. In particular, the following legal acts and harmonized standards have been taken into account:

- 2006/42/EC – Machinery Directive implemented by the Regulation of the Minister of Economy of October 21, 2008 (Journal of Laws 2008 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-EN ISO 4254-5:2018-08 – Agricultural machinery. Safety. Part 5: Soil-working machines with powered working tools.
- 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.
- 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 principles for drafting.
- PN-ISO 11684:1998 – Tractors, machinery for agriculture and forestry, powered lawn and garden equipment. Safety signs and hazard pictorials. General principles.

3.7. Pictograms

Tillers from UAB "AGROTEKAS" are equipped with all devices that ensure safe operation. Where hazardous areas cannot be fully guarded due to the correct functioning of the tiller, warning signs - pictograms - are placed to indicate the potential for danger and present the method for avoiding it.

Table 1 details the pictograms placed on the machine and provides their meaning. Safety pictograms should be protected from loss and loss of legibility. Lost or illegible signs and inscriptions should be replaced with new ones.

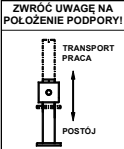
It is required that new assemblies used during repair are marked with all safety signs provided by the manufacturer.

Pictograms can be purchased by writing to the manufacturer's address or by sending information to the e-mail address, providing the sign number (according to Table 1) as well as the version and year of the manual's publication.

Table 1: Pictograms

No.	Pictogram	Meaning	Location on the machine
1	2	3	4
1.		Read the operating manual before starting work.	On the tiller frame.
2.		Caution! Before starting maintenance, turn off the engine and remove the key from the ignition.	On the tiller frame.
3.		Do not stand near the lift linkage while controlling the lift.	On the tiller frame.
4.		Keep a safe distance from the machine. Risk of foot amputation by the rotor with blades.	On the tiller frame.
5.		Caution! Do not touch machine components until all units have come to a complete stop.	On the tiller frame.
6.		Keep a safe distance from the machine (min. 50 m); risk of thrown objects.	On the tiller frame.

Table 1 (continued)

1	2	3	4
7.		Do not open or remove safety guards while the tractor engine or the machine is running.	On the gear transmission housing.
8.		Riding on the machine during operation and transport is prohibited.	On the tiller frame.
9.		Do not reach into the crushing area if components can move.	On the tiller frame.
10.		Pay attention to the position of the stand! Position of the stand during: standstill and during transport and operation of the machine.	On the frame near the stand.
11.		Information about the PTO (Power Take-Off) shaft rotation speed and direction of rotation.	On the WPM (Power Input Shaft) guard.
12.		Identification of loading attachment points.	Lower 3-point linkage (TUZ) points. Rear hatch brackets.
13.		Identification of lubrication points.	On the right side guard.
14.		Identification of oil fill points.	On the gear transmission housing. On the bevel gear housing.
15.	 ZAKAZ PRZEJAZDU PO DROGACH PUBLICZNYCH	Prohibited to travel on public roads with the tractor and mounted machine.	On the tiller frame.

3.8. Manufacturer liability and warranty

Regarding the machine types described in this manual, UAB "AGROTEKAS" does not accept any civil liability in the event of:

- Improper use or use inconsistent with the manufacturer's recommendations.
- Use of the machine in a manner that violates national laws regarding safety and accident prevention.
- Non-compliance or incorrect compliance with the regulations cited in this manual.
- Introduction of unauthorized modifications to the machine.
- Use of the machine by untrained personnel.
- Use of replacement parts that are not original parts.
- If the purchaser wishes to utilize the warranty, they should strictly follow the recommendations and regulations provided in the manual. In particular, they:
 - Should work only within the specified operating ranges of the machine.
 - Should use a Power Take-Off (PTO) shaft with an overload clutch.
 - Should always carry out careful maintenance.
 - Must allow only operators with appropriate skills and qualifications to use the machine.
 - Should use only original spare parts recommended by the manufacturer.

3.9. Noise and vibrations

During operation with the tiller, there is no noise-induced risk of hearing loss for the operator, as the operator's workplace is located inside the tractor cab. To reduce noise levels while working with the machine, the windows and doors of the agricultural tractor cab must be closed.

The acoustic pressure level measurement was performed while the machine was stationary (running without load) in accordance with Annex B of the PN-EN ISO 4254-1:2016-02 standard; at nominal tractor engine speeds, the noise level is 72 ± 3.2 dB.

During operation with the tiller, there are no hazards caused by vibrations, as the operator's workplace is in the tractor cab, where the seat is cushioned and appropriately ergonomically shaped.



ATTENTION!

If the noise in the agricultural tractor cab at the operator's workstation exceeds 85 dB, the operator should wear hearing protection.

3.10 Danger zone

When working with the machine, it is important to avoid staying in the tiller's danger zone, marked in yellow in Figure 1. The danger zone is the area where bystanders are within a 50 m radius around the tractor-machine unit, where injuries may occur due to:

- Movements of the machine's working elements.
- Ejection of stones.
- Unintended lowering or raising of the machine.
- Unintended rolling of the tractor and machine.

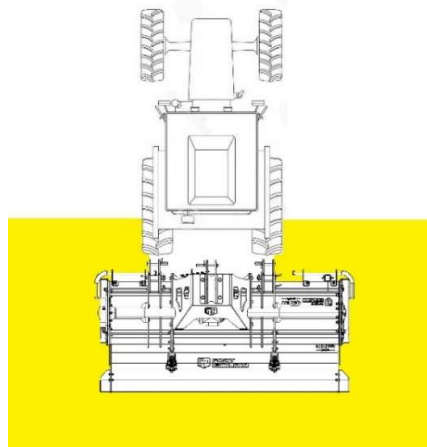


Figure 1. Machine Danger Zone

Within the machine's hazard area, there are places of continuous or unexpected danger. These locations are marked with signs warning of residual hazards that cannot be avoided by design. Special safety regulations given in the relevant chapters apply here.

No persons may remain in the machine's movement areas:

- As long as the tractor engine remains running.
- Until the tractor and machine are secured against unintended start-up and rolling.

Hazardous locations are situated:

- Between the tractor and the tiller, particularly during coupling and uncoupling.
- In the area of moving parts, e.g., the working shaft (rotor), PTO shaft, etc.
- Under a raised and unsecured machine or a raised part of the machine.



ATTENTION!

Staying in the tiller's danger zone during operation exposes the operator or bystanders to the risk of impact, cuts, injury, or other unforeseen hazards. Maintain a safe distance from the machine (min. 50 m)!

4. INFORMATION REGARDING USE

4.1. General Information

The tiller is adapted to work on terrain slopes not exceeding 8.5° and operates with tractors with a power range of min. 40 HP and max. 80 HP (see technical characteristics - Table 4) equipped with standard wheel weights.

4.2. Construction and machine description

The construction and description of the rotary tiller are shown in Fig. 2. The rotary tiller is a machine mounted on the rear three-point hitch of a tractor. The tiller frame (1) is a welded assembly. At the front part of the frame there are the lower hitch points (pins) (2), while the upper hitch point (3) is located on a bolted bracket. In the side plates of the frame, the working shaft (4) with blade discs (5) is mounted on bearings, to which the right curved blades (6) and left curved blades (7) are bolted.

In the rotary tiller, the working shaft receives its drive from the side. The drive from the tractor is transmitted through the PTO shaft to the bevel gearbox (13), then through the intermediate drive shaft (12) to the gear transmission (8). The drive system here consists of gear wheels located in a separate housing positioned on the side of the machine.

At the rear part of the rotary tiller there is an adjustable guard (11), which allows the intensity of soil crumbling to be regulated by adjusting its position, as well as a spring shock absorber of the rear guard (15). The working depth of the rotary tiller is stepwise adjusted by two skids (9) located

on both sides of the machine.

To ensure stability during storage, the machine is equipped with a parking stand (14), located on the right side of the machine.

Protection at the front against access to the moving working elements is provided by protective barriers (10) located on the left and right sides of the machine.

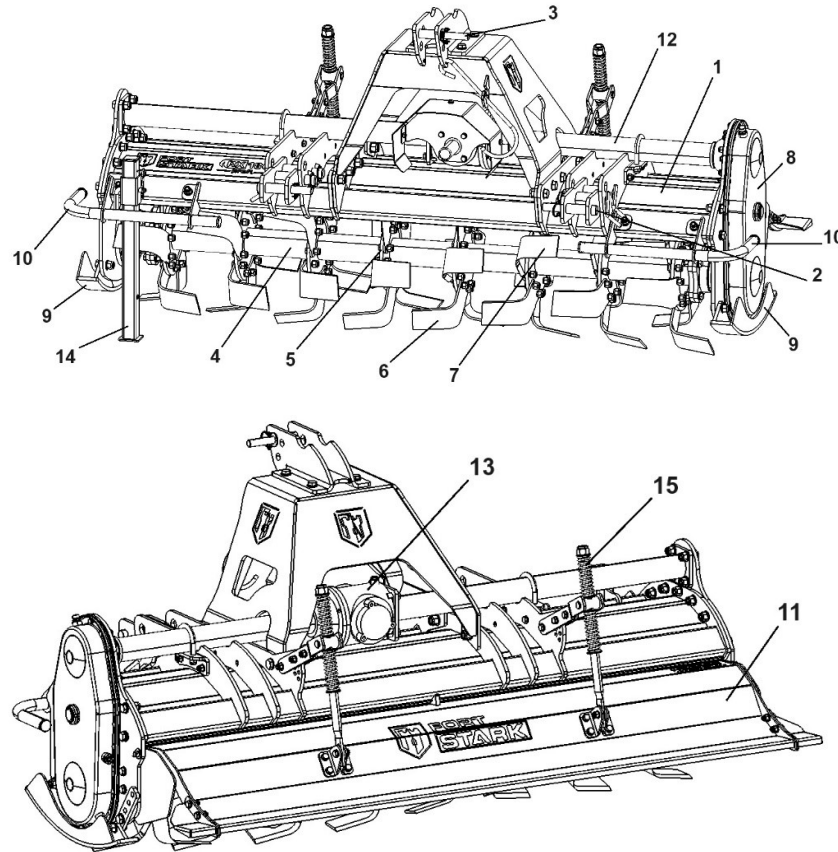


Figure 2. Rotary Tiller – General Construction: 1 – frame, 2 – lower hitch point (pin), 3 – upper hitch point, 4 – working shaft, 5 – blade disc, 6 – right blade, 7 – left blade, 8 – gear transmission, 9 – skid, 10 – front protective barrier, 11 – rear guard, 12 – intermediate drive shaft, 13 – bevel gearbox, 14 – parking stand, 15 – spring shock absorber.

4.3. Equipment and accessories of the rotary tiller

The manufacturer supplies the rotary tiller for sale in an assembled condition. Together with the machine, the manufacturer provides (standard equipment): a PTO shaft with clutch, an operating manual, and a warranty card.



REMEMBER

The operating manual constitutes basic equipment of the rotary tiller.

4.4. Preparing the tractor for operation

Preparing the tractor to work with the rotary tiller consists of checking its general technical condition in accordance with the tractor's operating manual (special attention should be paid to the proper functioning of the braking and suspension systems). The rotary tiller should be coupled with the recommended tractors equipped with standard front axle and rear wheel weights in accordance with the data specified in the tractor's technical specifications.

The air pressure, especially in the rear tires of the tractor, should be the same in both wheels and in accordance with the tractor operating manual!

Before attaching the machine, the lower links of the tractor hitch should be set to the lower position at the same height (distance of the joints from the ground minimum 200 mm). Links set at the same height from the ground facilitate attaching the rotary tiller to the tractor.

4.5. Preparing the rotary tiller for operation

Preparing the rotary tiller for operation and after a storage period (e.g., after winter) consists of checking its technical condition, especially the durability of the connections of the working elements. If damage or wear of elements is detected, they must be replaced with new or refurbished ones. Otherwise, this may reduce the working quality of the machine.



ATTENTION!

It is forbidden for the operator to remain in the space between the tractor and the machine while the tractor engine is running. Danger to the operator's life!
The rotary tiller must be raised smoothly, without jerks or vibrations.



ATTENTION!

During preparation of the rotary tiller for operation, protective gloves must be used – risk of injury!

In addition, the following should be performed:

- check the bolted connections; if looseness is found, tighten the nuts,
- check whether the working drum rotates easily and without jamming; if jamming occurs, check the condition of the bearings and replace them if necessary,
- check the condition of the curved blades; if damage is detected, replace them with new ones,
- check the condition of the rear guard,
- check the condition and position of the skids,
- check the oil level in the gear transmission and bevel gearbox,
- lubricate the rotary tiller according to the recommendations (see section 5.5),
- check the length of the PTO shaft in transport and working positions and, if necessary, shorten the shaft according to the recommendations of the PTO shaft manufacturer.

Remember that the telescopic tubes of the PTO shaft must overlap each other by at least 1/2 of their length under normal working conditions and at least 1/3 of their length under all working conditions. Even when the PTO shaft is not rotating, the telescopic tubes must overlap properly to avoid jamming.



ATTENTION!

All inspection activities on the rotary tiller must be carried out before mounting it on the tractor.

4.6. Mounting the rotary tiller on the tractor

When mounting the rotary tiller on the tractor, perform the following steps:

- drive the tractor sufficiently close to the machine,
- **turn off the tractor engine, remove the key from the ignition, and apply the parking brake,**
- attach the tractor lower links to the lower hitch points of the machine and secure them with standard cotter pins,
- connect the tractor top link with a pin to the upper hitch point on the bracket of the rotary tiller frame and secure it with a standard cotter pin,
- remove the PTO shaft from its holder and connect it to the tractor PTO shaft (attach the PTO shaft with the clutch on the machine side),
- attach the rotation limiters (chains) of the PTO shaft guard to the stationary parts of the machine and tractor,
- slightly tension the chains of the tractor lower links while maintaining symmetry of the machine suspension relative to the tractor,
- raise the machine's parking stand to the upper position and secure it against falling.

Disconnecting the machine from the tractor is performed in the reverse order of mounting; lower the machine to the ground and release the pins of the lower links and the pin of the top link.



ATTENTION!

Connecting the machine to the tractor while the tractor engine is running is prohibited. It is forbidden to use other elements for securing the machine's suspension system than those recommended by the manufacturer. This may result in an accident or damage to the machine!

4.7 Rotary tiller adjustment rules

Before starting work with the rotary tiller, it must be properly adjusted. This adjustment consists of setting the required working depth, the intensity of soil crumbling, and the transverse and longitudinal leveling of the rotary tiller.

Changing the working depth of the rotary tiller is done using two side skids. Each skid is equipped with an adjustment bar with holes for adjusting the working depth. Care should be taken to ensure that both skids are set in the same position after adjustment.

The intensity of soil crumbling depends on the travel speed of the tractor-machine unit and on the gap between the movable rear guard and the soil. Raising the guard reduces soil fragmentation, while lowering it increases fragmentation as soil particles strike the guard. Lower travel speeds result in more intensive crumbling.

Transverse leveling ensures equal working depth of the blades on the right and left sides of the rotary tiller and is performed using the right hanger of the tractor hitch linkage.

Longitudinal leveling ensures that the machine frame is positioned parallel to the ground. Longitudinal leveling of the machine is achieved by shortening or lengthening the tractor's top link. Improper longitudinal leveling may result in damage to the PTO shaft (working angle of the shaft less than 25°).



ATTENTION!

Adjusting the rotary tiller while the tractor engine is running is prohibited.

4.8 Adjustment of the rear guard position

To regulate the intensity of soil crumbling, the position of the rear guard must be adjusted. The position of the rear guard is set using adjustment holes by appropriately positioning the bracket. Additionally, the stiffness of the guard can be adjusted using clamping nuts located at the ends of the adjustment rods with springs.

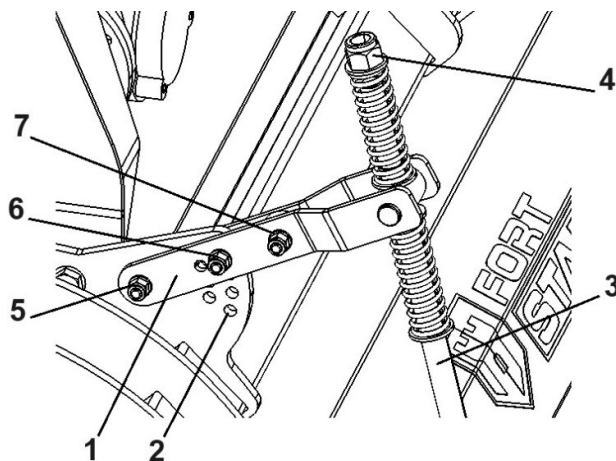


Figure 3. Adjustment of the Rear Guard Position: 1 – bracket, 2 – adjustment holes, 3 – adjustment rod with springs, 4 – clamping nut, 5 – nut “A”, 6 – nut “B”, 7 – nut “C”.

To adjust the position of the rear guard (Fig. 3), the following steps must be performed:

- lower the machine to the ground,
- **switch off the tractor engine, remove the key from the ignition, and apply the parking brake,**
- disconnect the PTO shaft from the tractor,
- loosen nuts “A” and “C”,
- unscrew nut “B” and remove the bolt,
- change the position of the guard by selecting the appropriate adjustment hole,
- insert the bolt and screw on nut “B”,
- tighten all nuts (“A”, “B” and “C”),
- connect the PTO shaft to the tractor.

Attention must be paid to ensure that both brackets are set equally after the adjustment.

4.9 Adjustment of working depth

The working depth of the rotary tiller is adjusted using two side skids. Each skid is equipped with an adjustment bar with holes for adjusting the working depth.

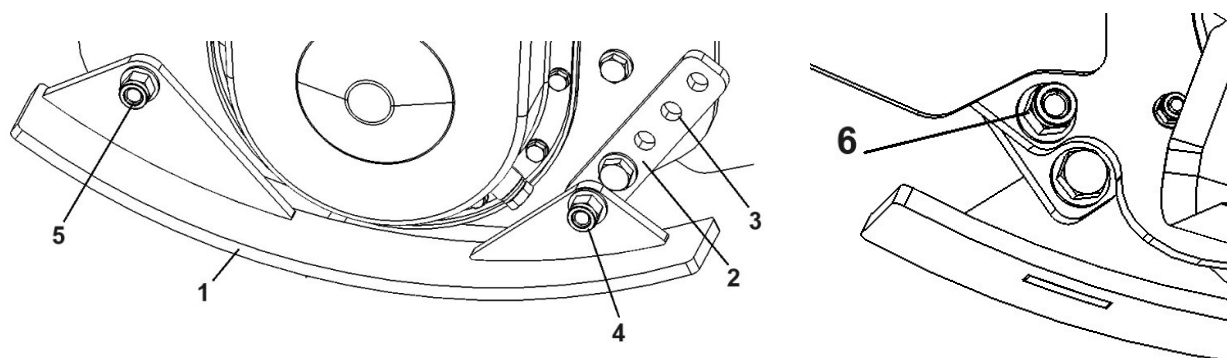


Figure 4. Adjustment of Working Depth: 1 – skid, 2 – adjustment bar, 3 – adjustment holes, 4 – nut “A”, 5 – nut “B”, 6 – nut “C”.

To adjust the working depth (Fig. 4), the following steps must be performed:

- couple the rotary tiller with the tractor and raise it,
- **switch off the tractor engine, remove the key from the ignition, and apply the parking brake,**
- disconnect the PTO shaft from the tractor,
- secure the machine against falling,
- loosen nuts “A” and “B”,
- unscrew nut “C” and remove the bolt from the adjustment bar (2),
- change the position of the skid (1) by selecting the appropriate adjustment hole (3),
- insert the bolt and screw on nut “C”,
- tighten all nuts (“A”, “B” and “C”),
- connect the PTO shaft to the tractor.

Attention must be paid to ensure that both skids are set equally after the adjustment. The approximate working depth (given in mm) depending on the selected hole on the adjustment bar is shown in Figure 5.

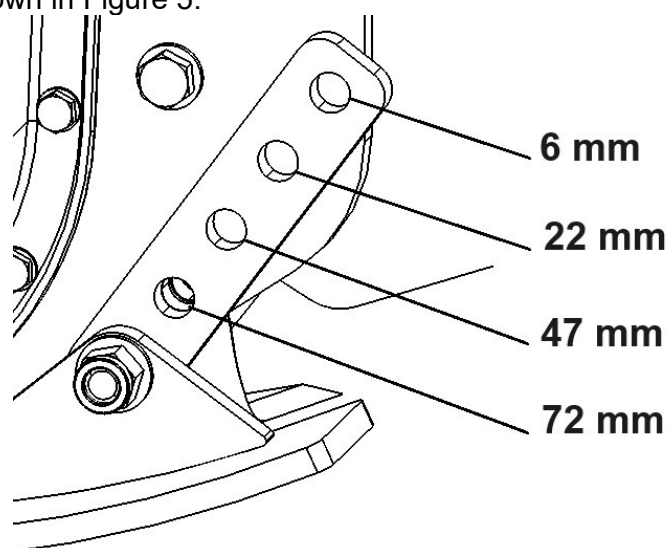


Figure 5. Approximate working depth depending on the adjustment hole

4.10 Floating position

The machine may operate in a floating position by removing the pins from the lower points of the hitch system. This allows the machine to follow the ground contour during operation. The floating position provides flexibility and freedom of movement of the machine.

To set the machine to the floating position, the following steps must be performed (Fig. 6):

- lower the machine to the ground,
- **switch off the tractor engine, remove the key from the ignition, and apply the parking brake,**
- disconnect the PTO shaft from the tractor,
- lower the parking stand and secure it,
- remove the tractor's lower links from the lower hitch points of the machine,
- remove the pins (1) with cotter pins (2) from both sides of the machine,
- place the tractor's lower links on the lower hitch points of the machine and secure them with cotter pins,
- slightly tension the chains of the tractor's lower links while maintaining symmetry of the machine suspension relative to the tractor,
- raise the parking stand and secure it,
- install the PTO shaft.

To set the machine without the floating position, perform the above steps in reverse order. The removed pins with cotter pins should be placed in the cab of the agricultural tractor to prevent their loss.

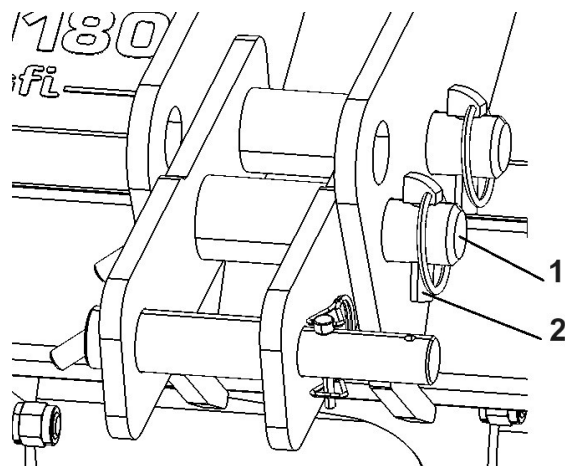


Figure 6. Floating Position of the Machine: 1 – pin, 2 – cotter pin.

4.11 Operation of the rotary tiller

The rotary tiller may operate only with a PTO shaft equipped with an overload clutch. A properly mounted and adjusted rotary tiller should move evenly behind the tractor during operation and maintain the same working depth across the entire width of the machine. The working speed of the rotary tiller should be 1.5–5 km/h. The working speed and the gap of the rear guard affect the degree of soil fragmentation.

On light soils, the guard should generally be raised, while on heavy and dry soils the guard should be lowered to the surface of the field. Lowering the guard to the field surface is also necessary when working on light soils containing stones, as this is a condition for safe operation. A lowered rear guard also ensures good leveling of the field surface after the machine passes.

However, on heavy but highly moist soils it may be necessary to raise the guard due to the rotor becoming clogged with soil.



ATTENTION!

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

If during operation the machine becomes clogged with plant residues, the rotary tiller should be cleaned by lifting it, then moving slowly, lowering it again and continuing work. If plant material becomes wrapped around the working drum, the tractor must be stopped immediately, the rotary tiller placed on the field surface, the engine switched off, and the key removed from the ignition. Only then should cleaning of the working drum be performed. During this operation the operator must use protective gloves to prevent hand injuries.

It is also unacceptable to leave the machine on a slope or other inclined terrain without securing it against rolling.



ATTENTION!

The tractor reverse gear must not be used during operation when the machine is in the working position – risk of damage to the machine! The rotary tiller must be raised smoothly, without jerks or vibrations.

**ATTENTION!**

Any clogging that occurs during operation of the rotary tiller and requires operator intervention must be removed only after stopping the tractor, lowering the machine to the ground, switching off the tractor engine, removing the key from the ignition, applying the parking brake, and disconnecting the PTO shaft from the tractor. Protective gloves must be used when removing blockages – risk of injury! Removing blockages while the tractor engine is running may result in the operator being pulled in or caught!

**ATTENTION!**

Before starting the machine, ensure that no bystanders (especially children) or animals are in the danger zone. The machine operator is responsible for ensuring proper visibility around the machine and the working area.

After starting the rotary tiller, the working shaft must be brought to maximum rotational speed before the machine enters the soil. Work in the field may only begin when the working shaft is already running. Starting the rotary tiller while it is lowered on the ground may cause damage to the machine!

During turns, the rotary tiller must be raised to the transport position and the drive of the working drum must be disengaged. Turning while the blades are engaged in the soil is not permitted. Risk of damage to the machine!

5. TECHNICAL MAINTENANCE

To ensure long-term and trouble-free operation of the rotary tiller, the condition of bolted connections should be regularly checked and tightened if they become loose. After finishing work, the rotary tiller should be carefully cleaned. Worn or damaged working components should be replaced according to the following recommendations:

- all worn components should be replaced immediately after wear or damage is noticed,
- follow the oil replacement intervals and regularly check the condition of the gear transmission,
- only original spare parts should be used for replacement to ensure proper quality; this is also one of the conditions for maintaining the validity of the warranty.

5.1 Guidelines for maintaining the rotary tiller

After each use, the rotary tiller should be cleaned of soil and then the connections of its parts and assemblies should be inspected. Technical maintenance of the rotary tiller includes checking the condition of the gears, blades, and the fastening of bolt and pin connections.

Lost, damaged, or worn parts must be replaced with new ones. All loose bolt connections must be tightened. Broken, bent, or worn blades must be replaced with new ones.

The hitch pins of the rotary tiller should not be lubricated; they should be kept clean and dry.

If it is necessary to perform repairs, maintenance, or adjustments under the raised machine, it must be secured against falling using a stable, strong, certified support.

5.2. Post-season maintenance

After the working season ends, the rotary tiller should be thoroughly cleaned of dirt and washed. Worn or damaged working parts should be replaced, and all loosened bolted connections should be tightened.

Any damage to the paint coating should be cleaned and repaired by applying a fresh layer of protective paint. After that, the rotary tiller should be lubricated according to the lubrication instructions.

5.3. Storage of the rotary tiller

After detaching from the tractor, the rotary tiller should rest on its blades and the parking stand. The machine should be stored under a roof on a flat, hard surface, in rooms with a temperature above 5°C and humidity not exceeding 70%. During storage, the rear guard should be set in the lowest position. If covered storage space is not available, the machine may be stored outdoors for a short period. In the case of long-term outdoor storage, the preservation of working elements should be repeated if the protective coating is washed off.



ATTENTION!

The rotary tiller should be stored in a place that does not pose a danger to people or the surroundings. During storage, the parking stand must be lowered to the bottom position and the rear guard must be set to the lowest position. Improper positioning of the machine during storage may cause an accident – the machine may tip over.

5.4. Replacement of working elements

In the rotary tiller, the curved blade may need to be replaced. For this purpose, place the rotary tiller on a flat, hard surface and lower the support to the lowest position.



ATTENTION!

All activities related to dismantling and installing worn parts of the rotary tiller must be performed on a hard, level surface after lowering the machine to the ground and lowering the support stand.

Replacement of a Curved Blade

- position the working drum so that the damaged blade is easily accessible,
- unscrew the bolts fastening the blade,
- replace the blade with a new one,
- tighten the fastening bolts, making sure that the bolt heads are located on the blade side,
- tighten the bolts gradually until the blade is completely secured.



ATTENTION!

When replacing working parts, appropriate tools and protective gloves must be used – risk of cuts! When replacing worn or damaged parts, only new factory parts should be used. Using non-original parts may cause improper machine operation or damage to the machine.

5.5. Lubrication instructions

Basic maintenance activities include following lubrication and oil replacement intervals and using appropriate types of lubricants. Before lubrication, all lubrication points must be cleaned of dirt. The rotary tiller should be lubricated according to Table 2. Lubrication points requiring grease are shown in Figure 7.

Used oils and lubricants should be delivered to collection points where they undergo processing for reuse.

Table 2. Lubrication Points

No.	Lubrication point	Frequency	Type of lubricant
1.	Bevel gearbox	1st change after 20 hours; 2nd change after 60 hours; next every 200 hours.	Gear oil SAE 80W90 (approx. 0.8 L)
2.	Side gear transmission	1st change after 20 hours; 2nd change after 60 hours; next every 200 hours	Gear oil SAE 80W90 (approx. 1.5 L)
3.	Washing working surfaces	After the season	Kerosene
4.	Preservation of working surfaces	After the season	“Antykor” grease
5.	Working shaft bearing	Every 8 hours of operation	Grease ŁT 43

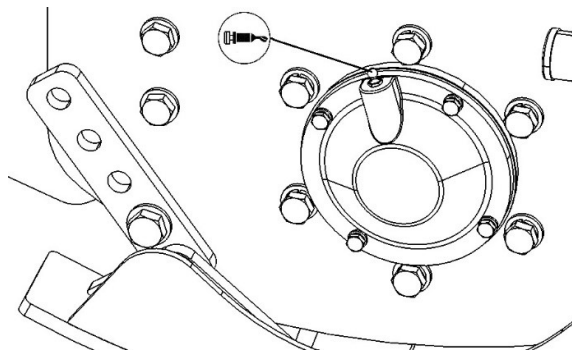


Figure 7. Lubrication points requiring grease

5.5.1 Bevel gearbox

The oil level in the bevel gearbox should be checked before every trip to the field and topped up if necessary (Fig. 8). To check the oil level, use the dipstick plug, which must be unscrewed and removed. The dipstick has markings indicating the minimum and maximum oil levels in the gearbox. The oil level should be between these two marks. When checking the oil level, the rotary tiller must be levelled.

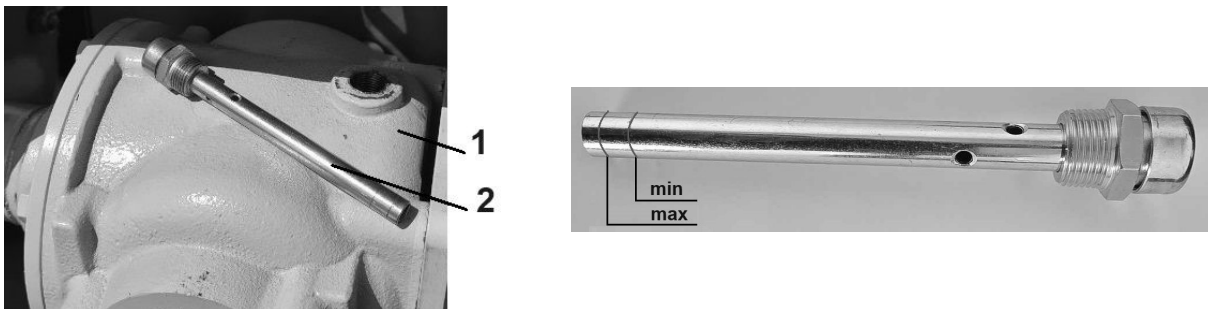


Figure 8. Oil level in the bevel gearbox: 1 – bevel gearbox, 2 – dipstick plug

**REMEMBER**

Oil replacement should be performed after the machine has been operating for some time, when the oil is warm. Appropriate protective gloves must be used due to the risk of burns.

During the initial operation of new gears, metal particles are produced as the gears run in. These particles accumulate in the gearbox and mix with the oil, which may accelerate wear of the gear teeth and bearings. Therefore, it is essential to follow the first and second oil replacement intervals.

Before filling with new oil, the gearbox housing should be flushed with machine oil to remove contaminants.

5.5.2 Gear transmission

The oil level in the gear transmission located on the left side of the machine should be checked before every trip to the field and topped up if necessary.

To check the oil level, use the inspection plug with sight glass (Fig. 9). The oil level should be visible through the sight glass. When checking the oil level, the rotary tiller must be levelled.

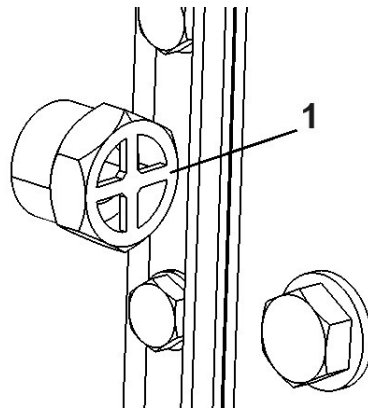


Figure 9. Oil level in the gear transmission: 1 – inspection plug with sight glass

**REMEMBER**

Oil replacement should be performed after the machine has been working for some time when the oil is warm. Protective gloves must be used due to the risk of burns.

As with the bevel gearbox, metal particles may form during the running-in of new gears. These particles accumulate in the gearbox and mix with the oil, which can accelerate wear of gears and bearings. Therefore, the first and second oil replacement intervals must be strictly observed. Before filling with new oil, the gearbox should be flushed with machine oil to remove contaminants.

Oil Replacement Procedure in the Gear Transmission (Fig. 10):

- place a container for used oil under the drain plug (3),
- unscrew the filler plug (1) and the drain plug (3),
- after the used oil drains out, screw the drain plug (3) back in,
- flush the gearbox with machine oil by manually rotating the working drum several times,
- unscrew the drain plug (3) again and drain the contaminated machine oil,
- screw the drain plug (3) back in,
- fill the gearbox with new gear oil up to the level of the inspection plug (2) until it is visible in the sight glass,
- screw in the filler plug (1).

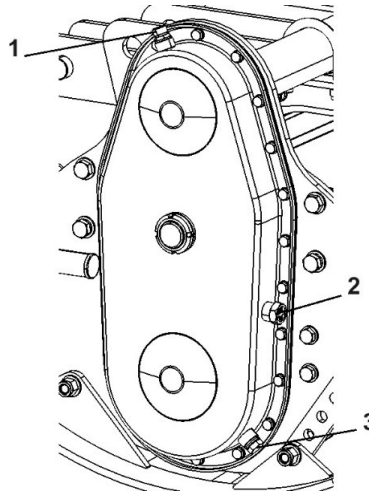


Figure 10. Gear transmission: 1 – filler plug 2 – inspection plug with sight glass 3 – drain plug

5.6. Detection and elimination of malfunctions

During operation, the following malfunctions may occur. They may negatively affect the quality of the rotary tiller's work, increase operating costs, and may lead to damage to both the rotary tiller and the tractor.

If unexpected failures or defects occur, work must be stopped immediately and the tractor engine switched off. The user should contact the manufacturer; contact details are provided on the first page of the manual.



REMEMBER

Operating a faulty or improperly adjusted machine may lead to serious hazards for the operator and bystanders. Detected faults and damage must be removed immediately.

Table 3. Causes of malfunctions and methods of elimination

Symptoms	Cause	Remedy
Front of the tractor tends to lift	Insufficient front weight. Important: the load on the front axle must not be less than 20% of the tractor's own weight.	Check whether the tractor power meets the manual's recommendations. If not – change the tractor. If yes – check and add the appropriate number of front axle weights if necessary.
Rotary tiller does not penetrate the soil	Damaged or worn blades	Check and replace
	Skids lowered too much	Check and adjust working depth
Uneven working depth	Incorrect transverse leveling	Check and adjust
Working drum does not rotate	Damaged gear transmission	Check the condition of gears and replace damaged ones
	Damaged bevel gearbox	Check the condition of gears and replace damaged ones
Soil excessively pulverized	Rear guard lowered too much	Check and adjust
Soil insufficiently crumbled	Rear guard raised too high	Check and adjust
Transverse oscillation of the rotary tiller	Incorrectly adjusted side link stabilizers	Check and adjust

After removing a malfunction, the correct operation of the unloaded machine should be checked by performing a short test start to ensure that all machine assemblies are functioning properly.

6. TRANSPORT

6.1. Transport of the rotary tiller using transport vehicles

Rotary tillers may be transported from the manufacturer to the dealer or customer, and to the workplace, on a transport trailer. They are delivered to the dealer or customer fully assembled and ready for operation.

The machines are loaded onto vehicle trailers using lifting devices after attaching ropes or chains at the points indicated by the manufacturer with appropriate pictograms and shown in Figure 12. The rotary tiller must be secured on the transport vehicle, and the person responsible for transport is responsible for proper fastening of the machine.

Lifting equipment with a minimum lifting capacity of 500 kg must be used.

	ATTENTION! When loading the rotary tiller onto transport vehicles, ropes or chains must be attached only at the points marked by the manufacturer with pictograms.
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The position of the machine's center of gravity is shown in Figure 11.

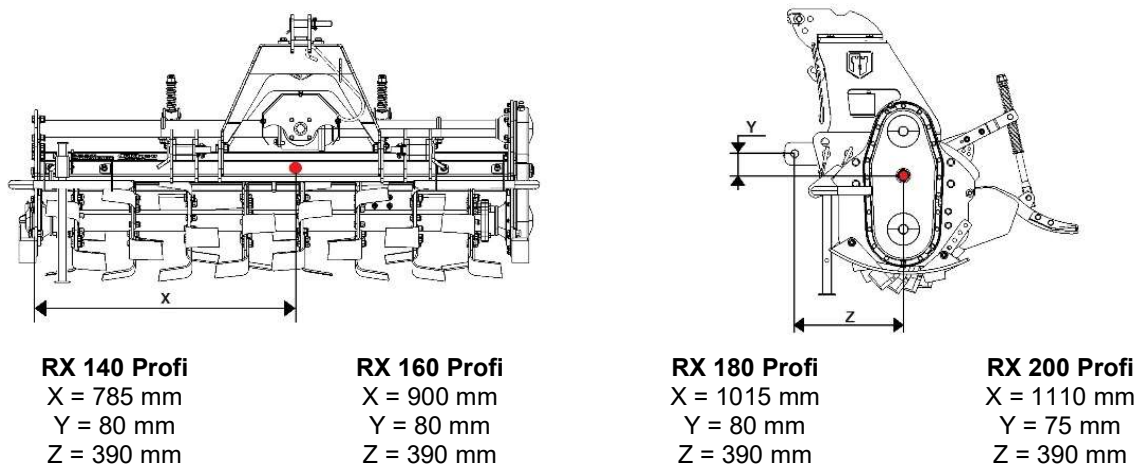


Figure 11. Position of the center of gravity

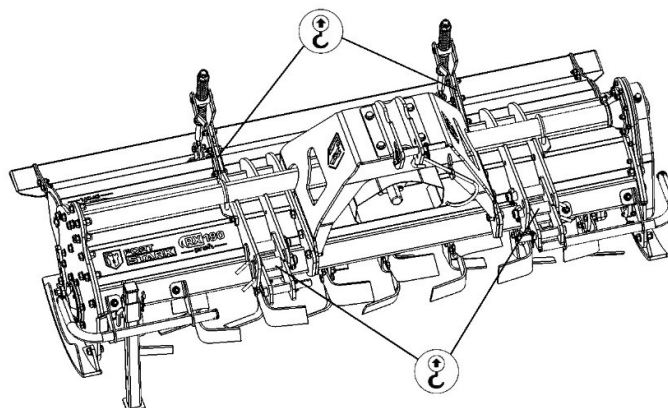


Figure 12. Attachment points for lifting devices

6.2. Transport of the rotary tiller on a tractor

The rotary tiller may be transported on a tractor **only on non-public roads**. During transport, the rotary tiller should be lifted to a position that ensures the required transport clearance (minimum 300 mm).

Additionally, during transport the parking stand must be raised and secured with a pin. The tractor on which the rotary tiller is mounted must meet stability requirements – see Appendix A of this manual.

The machine should be transported to the workplace using other transport vehicles. Driving a tractor with a mounted rotary tiller on public roads may cause a traffic accident.



ATTENTION!

When turning, attention must be paid to the machine overhang.



ATTENTION!

Driving on public roads with a tractor carrying a mounted machine is prohibited. Driving on public roads with the machine mounted may cause an accident. Carrying people, animals, objects, or loads on the machine is prohibited.



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In the event of an accident or failure during work or transport, the accident site should be secured, the condition of injured persons checked, and the appropriate services (e.g., police, ambulance, or fire brigade) should be notified.

7. DISASSEMBLY



ATTENTION!

Before starting disassembly, the rotary tiller must be detached from the tractor and the parking stand lowered.

Disassembly of the machine should be carried out by persons previously familiar with its construction. These activities must be performed with the machine placed on level, hard ground while using personal protective equipment (gloves).

In the case of worn components, follow the procedure described in the “Disposal” section.

Due to the weight of some rotary tiller components exceeding 20 kg (e.g., the frame), lifting devices must be used during disassembly.



ATTENTION!

Lifting devices used during disassembly may be operated only by persons with appropriate qualifications and authorization.

All fastening elements are standardized components designed for metric tools. Sufficient space is provided for tool movement to allow easy loosening and tightening of nuts and bolts.

8. DISPOSAL

Disposal of the rotary tiller should be carried out after complete disassembly and verification of its components. During disassembly, parts should be sorted according to material type: worn ferrous metal components should be delivered to scrap metal collection points, used oils and lubricants should be delivered to collection points where they undergo processing for reuse, worn plastic components should be delivered to facilities specializing in the disposal of such materials.



REMEMBER

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

9. TECHNICAL SPECIFICATIONS

Technical data of the rotary tiller are presented below in Table 4.

Table 4. Technical Specifications

Specification	Unit	Manufacturer's Data			
Symbol	-	RX 140 Profi	RX 160 Profi	RX 180 Profi	RX 200 Profi
Working width	mm	1400	1600	1800	2000
Machine type	-	mounted			
Working depth	mm	min. 6 - max. 72			
Overall dimensions:					
- max. length	mm	1050	1050	1050	1050
- width	mm	1600	1815	2030	2215
- height	mm	1025	1025	1025	1025
Machine weight	kg	366	388	408	481
Working elements:					
- blade type	-	curved			
- number of rotor blade discs	pcs.	6	7	8	9
- number of blades per disc	pcs.	6	6	6	6
Power requirement:					
- tractor power	KM	min. 25 – max. 30	min. 30 – max. 50	min. 40 – max. 80	min. 50 – max. 90
Hitch category:	-	I / II			
Working speed	km/h	1,5 - 5			
Transport speed	km/h	up to 15			
Transport clearance	mm	min. 300			
Operators	persons	1			
PTO shaft (WPT):					
- torque	Nm	120			
– transmitted power	kW	35			
– spline end					
- tractor side	-	6			
- machine side	-	6			
- PTO operating speed	rpm	540			
- PTO shaft length	mm	min. 800 – max. 985			
- Overload clutch	-	Yes			
The PTO shafts used must have a CE marking.					

The geometric dimensions and masses given in the technical specifications are provided with an accuracy of $\pm 1\%$.

APPENDIX A: STABILITY OF THE TRACTOR–MACHINE UNIT

This chapter draws the user's special attention to information concerning the influence of the weight of a mounted machine on the maneuverability and stability of the tractor. It highlights the possibility of loss of tractor steering control due to the weight of the machine mounted at the rear on the tractor's three-point hitch. The tractor should be equipped with a sufficient number of front weights to ensure proper steering and braking performance. The load on the front axle of the tractor with a machine mounted on the rear hitch must be at least 20% of the tractor's own weight (see Figure A).

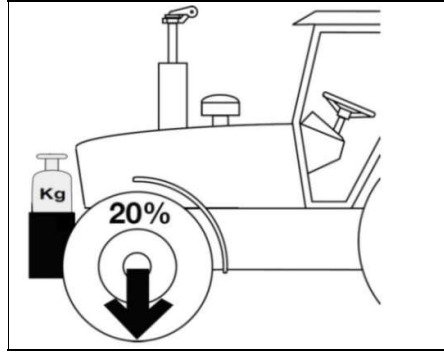


Figure A. Minimum load on the tractor front axle

It should be remembered that the road surface and the machine mounted at the rear hitch influence the driving characteristics of the tractor. The driving speed must be adjusted to terrain conditions and the type of surface (soil type). When turning with a mounted or attached machine, special attention must be paid to the machine overhang.

The tractor with attached machine **must fulfil** the condition for safe stability, i.e. the tractor front axle load must be equal to or greater than 20% of the tractor's net weight [$W_s \geq 20\%$]. To calculate the W_s stability index, the tractor axle loads must first be measured. We need to weigh the tractor itself, ready for operation T_c , and then weigh the front axle load of the tractor T_p with the machine attached to the rear three-point linkage. Having the individual masses, we can count the steering coefficient from the formula:

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

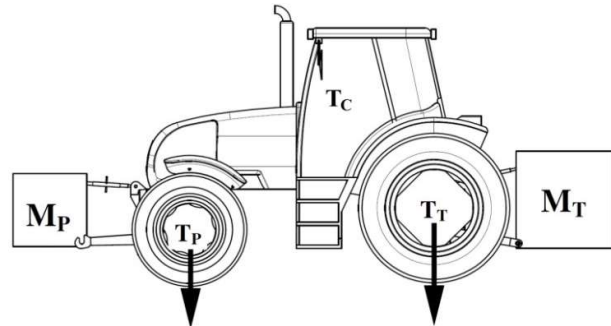


Figure B. Determination of the unit stability

- W_s [%] - stability factor
- T_c [kg] - empty tractor weight
[$T_{P1} + T_{T1}$ – tractor axle loads without machine, ready for operation]
- T_p [kg] - front axle load of the tractor
- T_T [kg] - rear axle load of the tractor
- M_T [kg] - total weight of the rear-mounted machine
- M_P [kg] - total weight of front weights

If the front axle load of the tractor with the machine attached to the rear three-point linkage is too low ($W_s < 20\%$), it is **essential** to increase the weight of the front weights M_p in order to increase the front axle load of the tractor and to achieve a steering ratio above 20%.

MACHINE HANDOVER PROTOCOL

The protocol is an integral part of the warranty card.

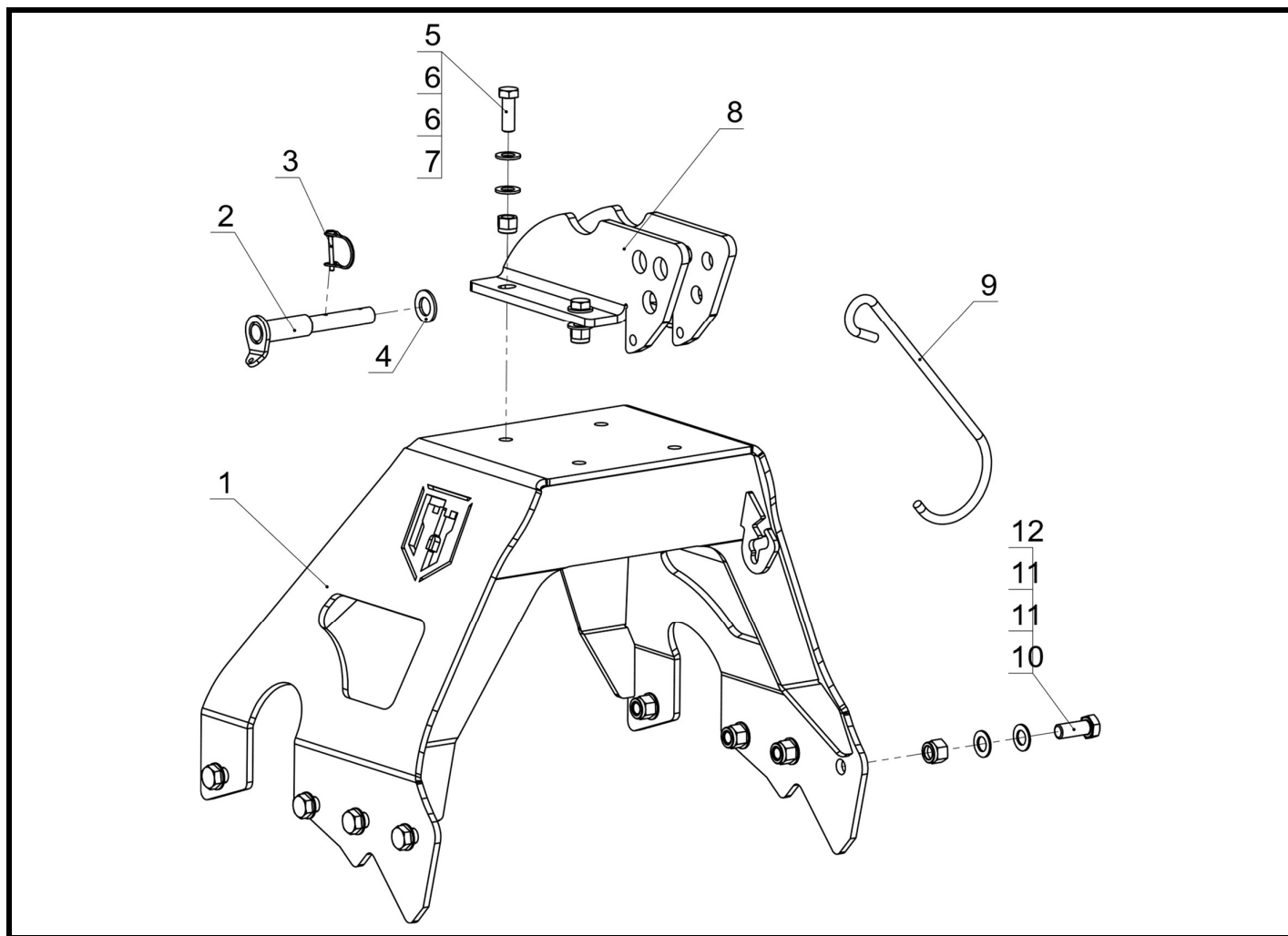
Failure to complete the protocol correctly or legibly will result in loss of warranty.

The parties signing this protocol (seller and buyer) declare that:

- The machine is delivered to the buyer assembled and ready for operation.
- The buyer has been informed by the seller about proper handling, operation, and maintenance of the machine, as well as applicable occupational safety regulations, in accordance with the user manual provided.
- The buyer has been informed by the seller about the warranty conditions.
- The buyer confirms receipt of the user manual.

SELLER	BUYER
FIRST NAME	FIRST NAME
LAST NAME	LAST NAME
STREET	STREET
CITY	CITY
SIGNATURE AND DATE	SIGNATURE AND DATE

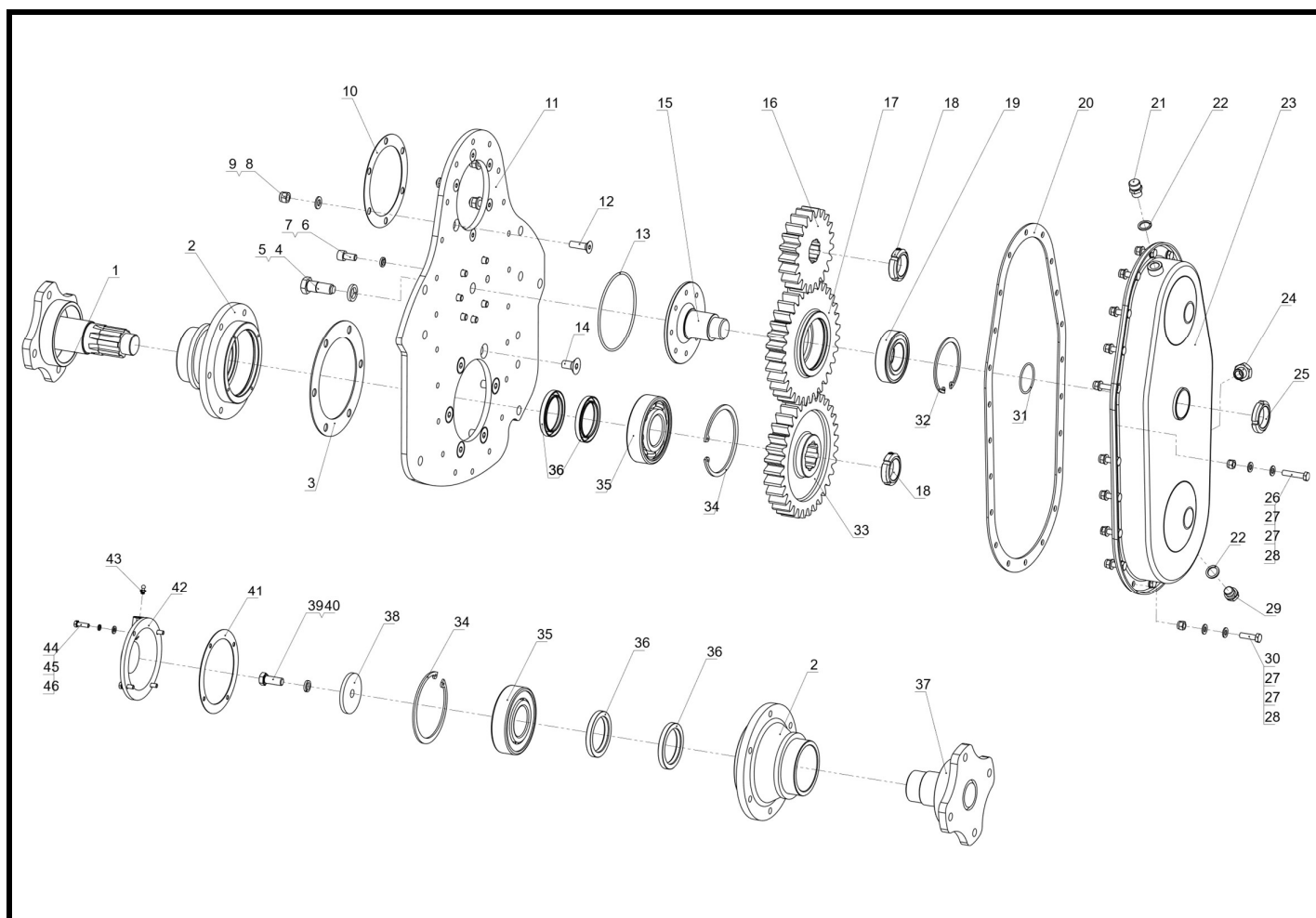
THE SELLER IS OBLIGED TO KEEP THE MACHINE HANDOVER PROTOCOL PROPERLY COMPLETED AND SIGNED.



RX140-180 PROFI three-point linkage

Ser. No	Code	Name & Specification	Quantity
1	130129	Linkage	1
2	130130	Upper linkage pin	1
3	400034	Lock pin 4.5	1
4	W000026	Washer M20	1
5	B000097	Bolt M14×40	4
6	W000016	Washer M14	8
7	N000032	Lock nut M14	4
8	130136	Upper linkage parts	1
9	100002	Hook	1
10	B000102	Bolt M16×40	8
11	W000017	Washer M16	16
12	N000033	Lock nut M16	8

ASSEMBLY DRAWING LIST

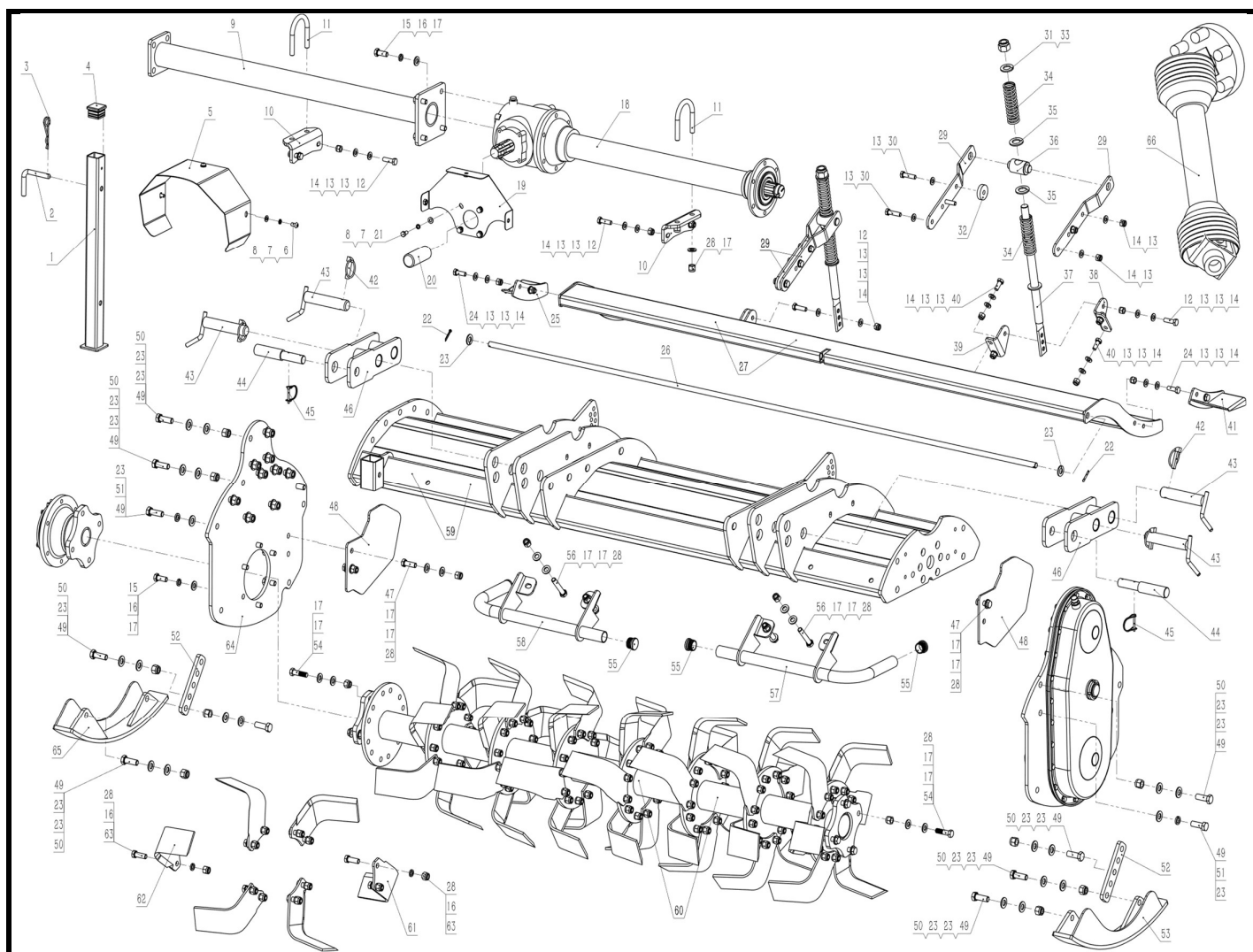


RX 140-180 PROFI drive system			
Ser. No	Code	Name & Specification	Quantity
1	130071	Roller axis (Left)	1
2	130072	Main roller bearing block	2
3	130073	Paper washer	1
4	130074	Special bolt M16×44	1
5	W000005	Spring washer M18	1
6	B001234	Bolt M10×20	7
7	W000001	Spring washer M10	7
8	N000030	Lock nut M10	6
9	W000014	Washer M10	6
10	130080	Paper washer	1
11	130081	Main body (Left) side plate	1
12	B000135	Bolt M10×35	6
13	130083	Rubber seal 125×3.55	1
14	B000137	Bolt M12×25	6
15	130085	Central gear axis	1
16	130086	Upper gear	1
17	130087	Central gear	1

RX 140-180 PROFI drive system

Ser. No	Code	Name & Specification	Quantity
18	130088	Special lock nut M35×1.5	2
19	130089	Bearing 6209	1
20	130090	Gear cover gasket	1
21	900067	Oil plug M16×1.5	1
22	900068	Combination washer 16	2
23	130093	Gear cover	1
24	900070	Oil check plug M18×1.5	1
25	130095	Lock nut M35×1.5	1
26	B001115	Bolt M8×40	4
27	W000021	Washer M8	44
28	N000039	Lock nut M8	22
29	900071	Oil drain plug M16×1.5	1
30	B000113	Bolt M8×30	18
31	130101	Rubber seal 42.5×2.65	1
32	S000020	Circlip for hole 85	1
33	130103	Lower gear	1
34	S000021	Circlip for hole 110	2
35	130105	Bearing 6310	2
36	OS000111	Oli seal 55×75×8	4
37	130112	Roller axis (Right)	1
38	130117	Round plate sleeve from Axis	1
39	B000084	Bolt M12×30	1
40	W000002	Spring washer M12	1
41	130120	Paper washer	1
42	130122	Bearing seat cover	1
43	000094	Grease Nipples M6	1
44	B000107	Bolt M6×20	4
45	W000024	Spring washer M6	4
46	W000025	Washer M6	4

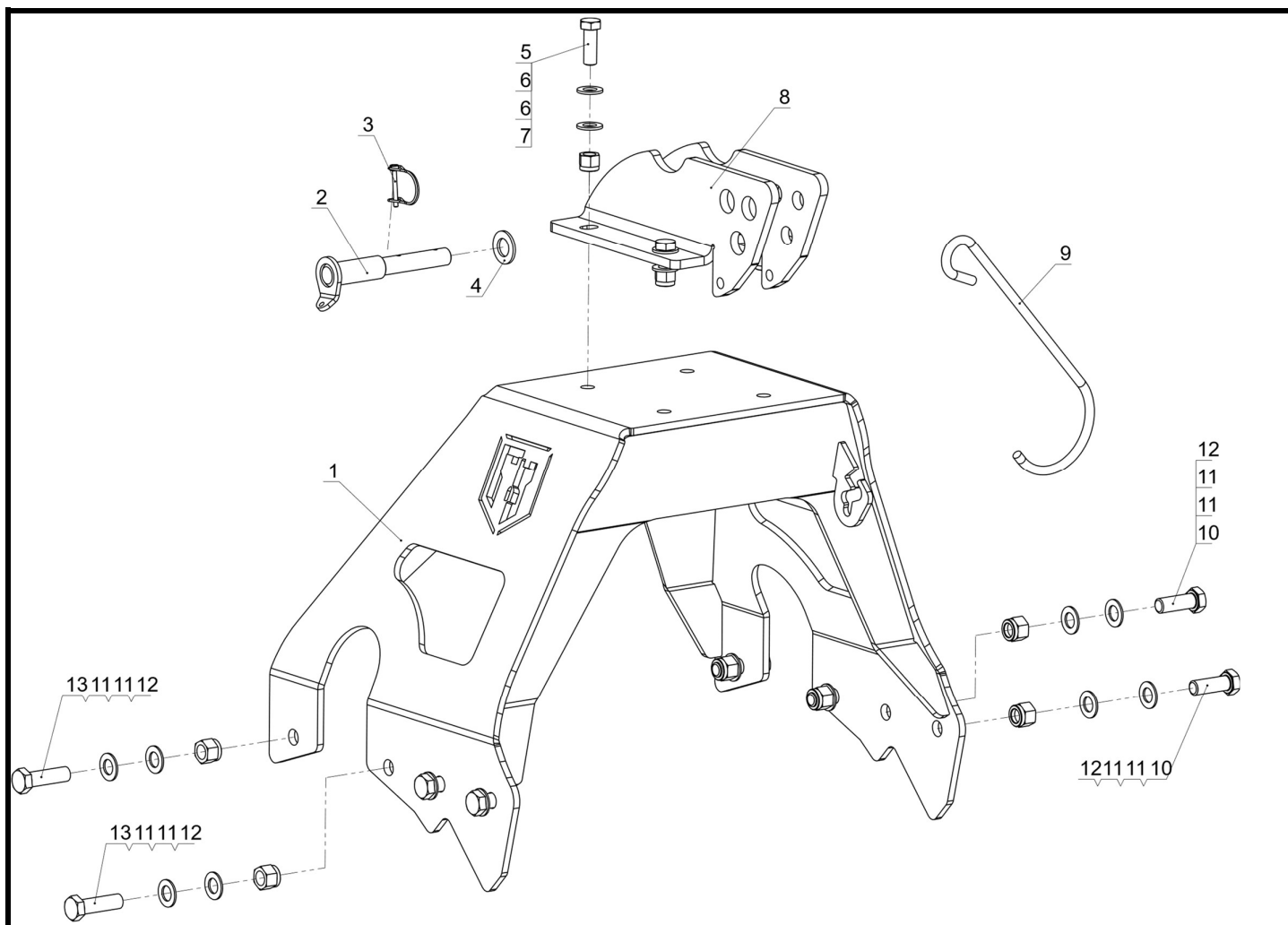
ASSEMBLY DRAWING LIST



RX 140-180 PROFI series			
Ser. No	Code	Name & Specification	Quantity
1	500019	Support foot	1
2	000064	Pin for support foot	1
3	000063	R pin 3.5	1
4	500018	Support tube plug	1
5	130114	PTO protection bracket	1
6	B000254	Cross recessed pan screw M8×16	3
7	W000008	Spring washer M8	7
8	W000021	Washer M8	7
9	130002	Support tube for 140	1
	130003	Support tube for 160	1
	130004	Support tube for 180	1
10	130009	Bracket for gearbox	2
11	130005	U form fastening M12×63	2
12	B000077	Bolt M10×35	6

RX 140-180 PROFI series			
Ser. No	Code	Name & Specification	Quantity
13	W000014	Washer M10	48
14	N000030	Lock nut M10	24
15	B000084	Bolt M12×30	10
16	W000002	Spring washer M12	10
17	W000015	Washer M12	46
18	130023	Gearbox	1
	130024	Gearbox	1
	130025	Gearbox	1
19	130113	PTO Protection Plate	1
20	000030	Gearbox shaft cover	1
21	B000109	Bolt M8×16	4
22	P000005	Cotter pin 4×25	2
23	W000016	Washer M14	44
24	B000076	Bolt M10×30	4
25	130018	Cover spread	1
26	500108	Baffle shaft for 140	1
	500109	Baffle shaft for 160	1
	500110	Baffle shaft for 180	1
27	130019	Rear cover for 140	1
	130020	Rear cover for 160	1
	130021	Rear cover for 180	1
28	N000031	Lock nut M12	N
29	130027	Cover mounting bracket	4
30	B000078	Bolt M10×40	6
31	W000026	Washer M20	2
32	130035	Round plate sleeve	2
33	N000035	Lock nut M20	2
34	130026	Cover spring	4
35	W000018	Washer M22	4
36	130029	Fixing the cover spring	2
37	130030	Fixing the cover	2
38	130037	Cover mounting plate 2	2
39	130036	Cover mounting plate 1	2
40	B000075	Bolt M10×25	8
41	130048	Cover spread	1
42	100003	Lock pin	4
43	500025	Lower linkage pin	4
44	130049	Lower linkage pin	2
45	400034	Lock pin 4.5	2
46	130044	Lower locking	2
47	B000085	Bolt M12×35	4
48	130056	Side cover	2

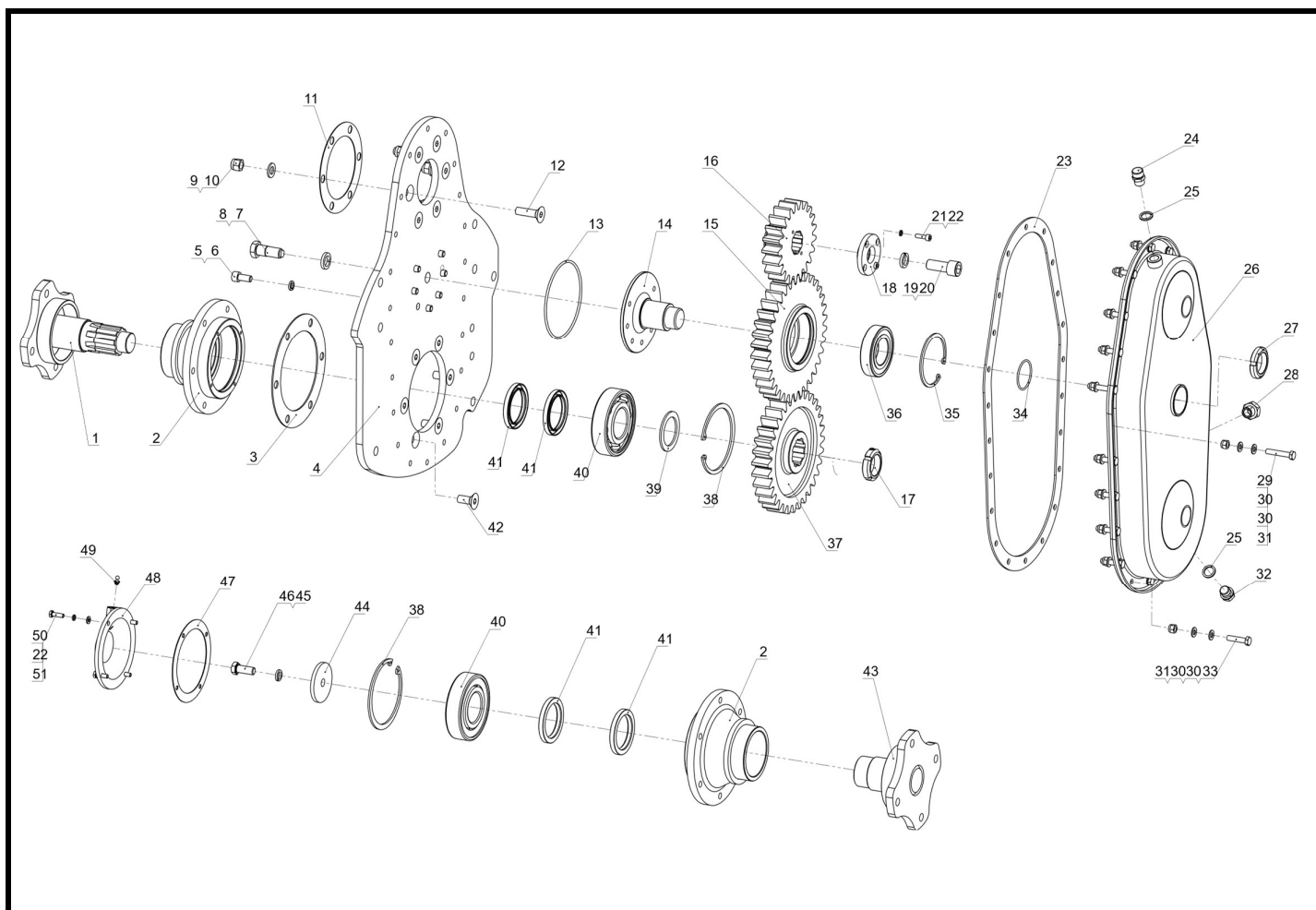
RX 140-180 PROFI series			
Ser. No	Code	Name & Specification	Quantity
49	B000097	Bolt M14×40	23
50	N000032	Lock nut M14	19
51	W000003	Spring washer M14	4
52	130067	Adjust plate (connection)	2
53	130107	Adjust plate (Left)	1
54	B000089	Bolt M12x45 (12.9 Level)	8
55	130057	Round pipe plug	4
56	B000029	Bolt M12×70	4
57	130058	Front shield (Left) for 140	1
	130059	Front shield (Left) for 160-200	1
58	130063	Front shield (Right) for 140	1
	130064	Front shield (Right) for 160-200	1
59	130060	Main body for RX140	1
	130061	Main body for RX160	1
	130062	Main body for RX180	1
60	130149	Main roller for RX140	1
	130150	Main roller for RX160	1
	130151	Main roller for RX180	1
61	130144	Blade (Left)	18/21/24
62	130145	Blade (Right)	18/21/24
63	B000185	Bolt M12×35 (12.9)	N
64	130069	Main body (Right) side plate	1
65	130066	Adjust plate (Right)	1
66	130180	05B800 PTO with clutch	1



RX200 PROFI three-point linkage

Ser. No	Code	Name & Specification	Quantity
1	130237	Linkage	1
2	130130	Upper linkage pin	1
3	400034	Lock pin 4.5	1
4	W000026	Washer M20	1
5	B000097	Bolt M14×40	4
6	W000016	Washer M14	8
7	N000032	Lock nut M14	4
8	130136	Upper linkage parts	1
9	100002	Hook	1
10	B000103	Bolt M16×45	4
11	W000017	Washer M16	16
12	N000033	Lock nut M16	8
13	B000213	Bolt M16×55	4

ASSEMBLY DRAWING LIST

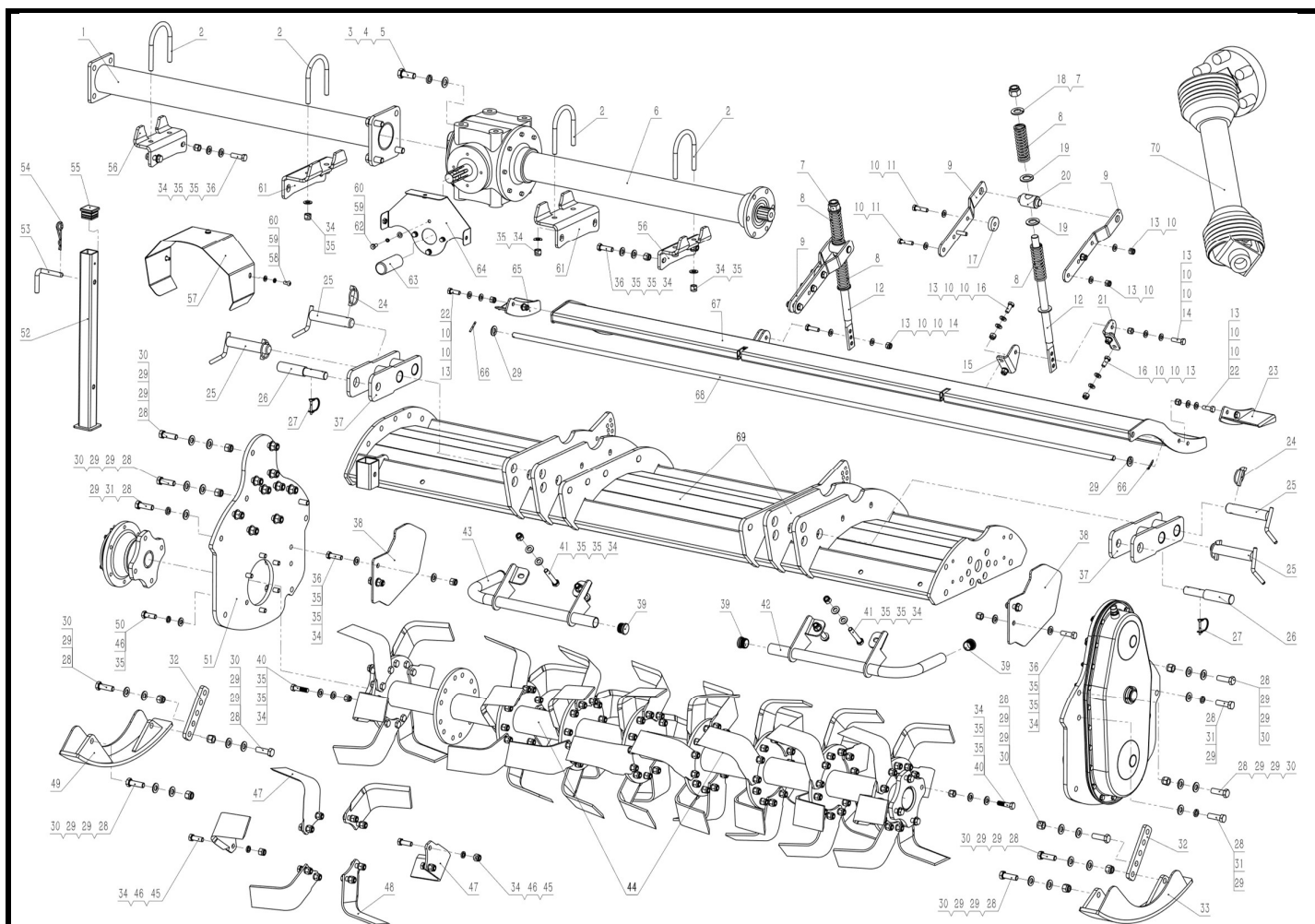


RX200 PROFI drive system			
Ser. No	Code	Name & Specification	Quantity
1	130071	Roller axis (Left)	1
2	130072	Main roller bearing block	2
3	130073	Paper washer	1
4	130238	Main body (Left) side plate	1
5	W000001	Spring washer M10	7
6	B001235	Bolt M10×22	7
7	130074	Special bolt M16×44	1
8	W000005	Spring washer M18	1
9	W000015	Washer M12	6
10	N000031	Lock nut M12	6
11	130239	Paper washer	1
12	B001135	Bolt M12×45	6
13	130083	Rubber seal 125×3.55	1
14	130240	Middle gear axle	1
15	130241	Middle gear	1
16	130242	Upper gear	1
17	130088	Special lock nut M35×1.5	1
18	130243	Upper gear flange	1
19	W000004	Spring washer M16	1

RX200 PROFI drive system

Ser. No	Code	Name & Specification	Quantity
20	B001244	Bolt M16×40	1
21	B001345	Bolt M6×20	2
22	W000024	Spring washer M6	6
23	130244	Gear cover gasket	1
24	900067	Oil plug M16×1.5	1
25	900068	Combination washer 16	2
26	130245	Gear cover	1
27	130095	Lock nut M35×1.5	1
28	900070	Oil check plug M18×1.5	1
29	B002115	Bolt M8×45	4
30	W000021	Washer M8	44
31	N000039	Lock nut M8	22
32	900071	Oil drain plug M16×1.5	1
33	B002116	Bolt M8×35	18
34	130101	Rubber seal 42.5×2.65	1
35	S000020	Circlip for hole 85	1
36	130089	Bearing 6209	1
37	130103	Lower gear	1
38	S000021	Circlip for hole 110	2
39	130146	Lower gear sleeve	1
40	130105	Bearing 6310	2
41	OS000111	Oli seal 55×75×8	4
42	B000334	Bolt M12×30	6
43	130112	Roller axis (Right)	1
44	130117	Round plate sleeve from Axis	1
45	W000002	Spring washer M12	1
46	B000084	Bolt M12×30	1
47	130120	Paper washer	1
48	130122	Bearing seat cover	1
49	000094	Grease Nipples M6	1
50	B000107	Bolt M6×20	4
51	W000025	Washer M6	4

ASSEMBLY DRAWING LIST



RX200 PROFI series

Ser. No	Code	Name & Specification	Quantity
1	130147	Support tube for RX200	1
2	130148	U bolt 12×80	4
3	W000017	Washer M16	4
4	W000004	Spring washer M16	4
5	B000102	Bolt M16×40	4
6	130159	Gearbox	1
7	N000035	Lock nut M20	2
8	130026	Cover spring	4
9	130027	Cover mounting bracket	4
10	W000014	Washer M10	40
11	B000078	Bolt M10×40	6
12	130030	Fixing the cover	2
13	N000030	Lock nut M10	20
14	B000077	Bolt M10×35	2
15	130036	Cover mounting plate 1	2
16	B000075	Bolt M10×25	8
17	130035	Round plate sleeve	2
18	W000026	Washer M20	2
19	W000018	Washer M22	4
20	130029	Fixing the cover spring	2

RX200 PROFI series			
Ser. No	Code	Name & Specification	Quantity
21	130037	Cover mounting plate 2	2
22	B000076	Bolt M10×30	4
23	130048	Cover spread	1
24	100003	Lock pin	4
25	500025	Lower linkage pin	4
26	130049	Lower linkage pin	2
27	400034	Lock pin 4.5	2
28	B000098	Bolt M14×45	23
29	W000016	Washer M14	44
30	N000032	Lock nut M14	19
31	W000003	Spring washer M14	4
32	130067	Adjust plate (connection)	2
33	130107	Adjust plate (Left)	1
34	N000031	Lock nut M12	136
35	W000015	Washer M12	54
36	B000086	Bolt M12×40	4
37	130044	Lower locking	2
38	130056	Side cover	2
39	130057	Round pipe plug	4
40	B000089	Bolt M12x45 (12.9 Level)	8
41	B000029	Bolt M12×70	4
42	130059	Front shield (Left) for 160-200	1
43	130064	Front shield (Right) for 160-200	1
44	130246	Main roller for RX200	1
45	B000185	Bolt M12×35 (12.9)	108
46	W000002	Spring washer M12	114
47	130144	Blade (Left)	27
48	130145	Blade (Right)	27
49	130066	Adjust plate (Right)	1
50	B000085	Bolt M12×35	6
51	130247	Main body (Right) side plate	1
52	500019	Support foot	1
53	000064	Pin for support foot	1
54	000063	R pin 3.5	1
55	500018	Support tube plug	1
56	130248	Bracket for gearbox	2
57	130114	PTO protection bracket	1
58	B000254	Cross recessed pan screw M8×16	3
59	W000008	Spring washer M8	7
60	W000021	Washer M8	7
61	130249	Bracket for gearbox	2
62	B000109	Bolt M8×16	4
63	000030	Gearbox shaft cover	1
64	130250	PTO Protection Plate	1
65	130018	Cover spread	1
66	P000005	Cotter pin 4×25	2
67	130251	Rear cover for RX200	1
68	400096	Baffle shaft for 200	1
69	130253	Main body for RX200	2
70	130180	05B800 PTO with clutch	1