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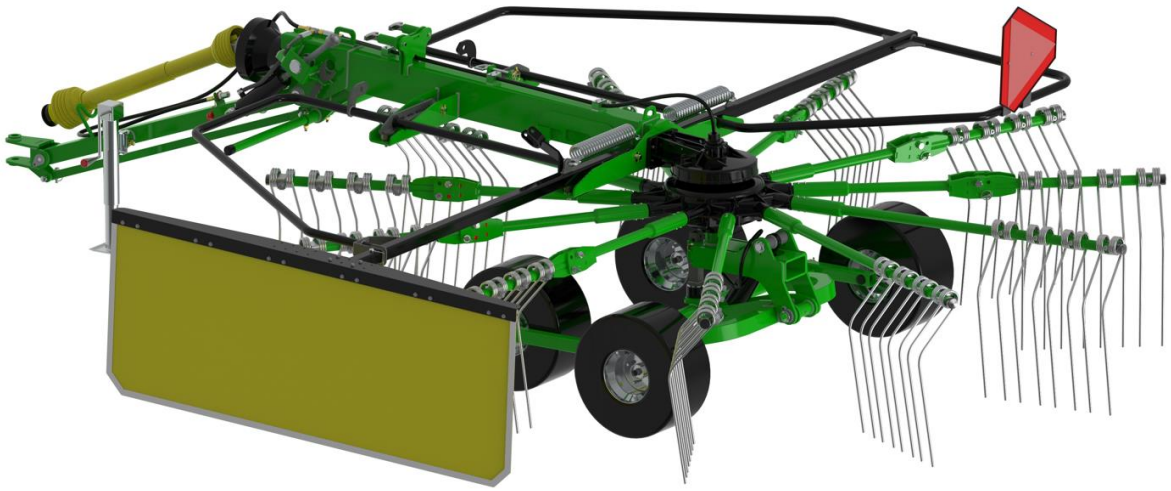
OPERATING MANUAL
SPARE PARTS CATALOG
WARRANTY



SINGLE-ROTOR HAY RAKE
SPYDER 420

CE

Borzytuchom 2024
Rev 01

Translation of the orginal manual

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NOTE!

This operating manual should be read before use and the safety rules contained therein should be observed.
The operating manual is a part of the basic equipment of the machine!

The manual should be kept in a safe place, where they should be available to the user and operator throughout the life of the machine.

If lost or destroyed, purchase a new copy by ordering one from the machine's point of sale or from the manufacturer.

If the machine is sold or made available to another user, the operating manual with a declaration of conformity for the machine must be included.

TALEX guarantees the efficient operation of the machine when used in accordance with the technical and operating conditions described in the OPERATING MANUAL.
Defects revealed during the warranty period will be corrected by the Warranty Service.
The deadline for repair is specified in the WARRANTY CARD.

The warranty does not cover parts and components of the machine that wear out under normal operating conditions regardless of the warranty period, i.e.: bearings, cutting knives/hammers, protective aprons/shields, hydraulic lines, etc.
Warranty benefits apply only to such cases as mechanical damage through no fault of the user, factory defects in parts, etc.

In case the damage was caused by:

- mechanical damage caused by the user or a traffic accident,
- from improper operation, adjustment and maintenance, use of the machine not in accordance with its intended purpose,
- use of the damaged machine,
- performance of repairs by unauthorized persons, improper execution of repairs,
- making arbitrary changes to the design of the machine,

the user may lose warranty benefits.
The user is obliged to immediately report all noticed paint defects or traces of corrosion, and have the defects removed regardless of whether the damage is covered by the warranty or not. Detailed terms and conditions of the warranty are given in the WARRANTY CARD attached to the newly purchased machine.

NOTE!
You should demand that the vendor accurately fill out the WARRANTY CARD. The absence of, for example, the date of sale or the stamp of the point of sale exposes the user to a rejection of possible claims.

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Table of contents

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1. Introduction

The information provided in the following manual is current as of the date of the publication. By way of product development, some sizes and drawings in the following document may differ slightly from the actual state of the machine. The manufacturer reserves the right to make changes in the design of the machine to increase its functionality and improve safety, without making current changes to the manual for minor modifications that do not affect the use and safety.

Before starting the first operation of the rotary rake, it is imperative that you read these operating manual with understanding and follow all the instructions contained therein.

NOTE
Read the operating manual
before use

This manual contains a description of the hazards that may occur if the safety rules are not observed during operation and handling of the rake. The manual lists precautions to be taken to minimize or avoid risks.

The manual also contains rules for the proper use of the machine and explains the maintenance to be performed in doing so.

If the information provided in the manual is incomprehensible, please seek clarification directly from the manufacturer.

NOTE
The symbol warns of a danger.
This warning symbol indicates the important hazard information given in the manual. Please read the given information carefully, follow the recommendations and take special care

2. Machine identification

Each rake is equipped with a nameplate that contains the most important identification data. The plate is located on the machine in a place easy to find and read. The data on the nameplate confirms the rake's compliance with applicable safety regulations. For this reason, the plate cannot be reused or removed.

Fig.1. Nameplate

The nameplate includes:

- the full name of the manufacturer,
- weight,
- factory number of the rake,
- quality control mark,
- rake symbol,
- date of manufacture,
- CE marking

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3. Rules for safe work

3.1 User security

The rake may only be operated by adults who are familiar with its operation and the contents of this manual and are duly qualified. The rake should be operated with all precautions.

- Observe, in addition to the indications of this manual, the general rules of occupational safety and health.
- Observe the warning symbols on the machine.
- The rake may be operated by a person who is authorized to drive the vehicle to which it is mounted, in accordance with the manufacturer's recommendations.
- Note that there are many places on the machine that can cause injury (sharp edges, protruding structural components, etc.). During all maintenance and servicing work, increased caution should be exercised when moving near the listed critical areas, and it is imperative to use personal protective equipment such as protective clothing, protective gloves, safety shoes and safety glasses.
- Before working with the rake, familiarize yourself with its operation by reading the operating manual, operating safety rules and recommendations for operation and adjustment.
- The rake must be equipped with all elements and barriers (as provided by the manufacturer) limiting access to hazardous areas. These components must be complete and fully operational.
- It is warned that there is a residual risk of hazards, so the application of safe use and prudent handling should be the basic principle of using the machine.
- It is forbidden to operate the machine by persons under the influence of alcohol or other intoxicants.
- Never allow a tractor operating a rake to be driven by anyone other than its operator, and under no circumstances allow others to be on the vehicle, at the machine, or in the work area during operation.
- It is forbidden to use the machine contrary to its intended purpose. Use of the machine for purposes other than those stipulated by the manufacturer is incompatible with the intended use of the machine and may void the warranty. The manufacturer also assumes no responsibility for any consequences resulting from improper use of the machine.
- If the information in the manual is incomprehensible, contact your dealer or the manufacturer.
- Improper and careless use of the machine and disregarding the warnings and recommendations in the manual can cause danger to health and life.
- Before each use of the machine, it is recommended to check the actual technical condition. Pay special attention to the condition of the hitch, pins, safety devices, wheelset, PTO shaft guards, guard rails, and the condition of the rake. It is forbidden to use an inoperative machine.
- It is forbidden to carry any thing or person on the machine.
- A machine prepared for aggregation with a tractor should rest on a paved, flat surface, be supported with props, and be secured against movement by using wedges under the running wheels. In addition, if the rake arms are folded into the transport position (i.e., the fingers of the rake face upwards with their sharp ends), it is necessary to use special covers

attached to the machine to eliminate the risk of impaling oneself on protruding sharp edges due to tripping, for example.

- **It is forbidden to turn on the machine when the arms of the rake are folded for transport and secured against free rotation. Failure to do so may result in damage to the transmission system in the rake and may even lead to permanent damage to the transmission in the tractor itself.**
- It is forbidden to occupy the area between the hitched machine and the tractor when reversing the tractor under the hitch of the machine.
- Take special care when connecting the machine to the tractor.
- The rake hitch is designed for use with tractors equipped with a rear drawbar and should be aggregated with such tractors.
- Always check that all pins are secured against displacement using the correct safety devices (cotter pins). Working with other safeguards is prohibited.
- Always use the PTO shaft recommended by the Manufacturer with the correct length for power transmission (for adjustment of the correct length, see the instructions attached to the shaft), in addition, pay special attention to the correct connection according to the arrows showing the direction of connection.
- It is forbidden to use a PTO shaft that does not have guards or that is damaged or defective. It is recommended to remove the defect or replace it with a new one.
- The chain that protects the PTO shaft guard from rotating during operation should be mounted to a fixed structural element of the rake.
- It is forbidden to use safety chains to support the shaft while the rake is stationary or being transported.
- After connecting the shaft, make sure it is properly and securely connected to the tractor and the rake.
- Before starting the rake, make sure that:
    - The direction of rotation of the PTO is correct,
    - the rake arms are spread out and properly secured,
    - the protective railings are unfolded,
    - there are no bystanders (especially children), or animals in the danger zone. The machine operator is required to ensure proper visibility of the machine and the work area.

- The rake must not be used or transported at night or in conditions of limited visibility due to protruding parts and the risk of being impaled by other traffic users.
- Do not use a PTO speed higher than 540 rpm during operation.
- It is forbidden to overload the transmission system by starting work abruptly.
- **When reversing and turning, the drive of the rake must be switched off and the rotor raised by means of a hydraulic cylinder. Failure to do so risks damaging the drive train.**

- It is forbidden to leave the driver's cab during operation when the power transmission system for the rake rotor is engaged.
- Due to the rotating elements, there is a danger of catching and dragging things or persons and throwing stones or other obstacles in the working area of the machine, therefore it is forbidden to approach the working machine at a distance of less than 50m.
- When working, use the correct setting of the working position of the rake.
- When adjusting, do not put fingers or limbs between the structural components of the machine.
- Never get close to the rotating PTO shaft and the rotating rotor of the machine.
- Before disconnecting the shaft, turn off the engine of the agricultural tractor and remove the ignition key.
- All handling should be carried out using the general rules of health and safety; if injured, the wound should be immediately washed and disinfected.
- Perform all maintenance and repair work only with the tractor engine turned off and the ignition key removed from the ignition.
- When operating the machine, use efficient personal protective equipment and appropriate tools,
- If any malfunctions are detected or damage is found, the machine should be immediately taken out of service until the defect is corrected. **IT IS FORBIDDEN TO USE AN INOPERATIVE MACHINE**
- In order to ensure the safety associated with the use of the machine, it is necessary to systematically check the general condition of the machine, i.e. check the condition of the bolted connections, lubricate according to the recommendations of the instructions below, check the completeness and functionality of all components, check the tire pressure, and if any defect is found, remove the defect or replace the defective part with a new one.
- If it is necessary to carry out maintenance and repair work that requires lifting the machine above the ground, use only approved lifts, in addition, use fixed supports (never use brittle elements such as bricks, hollow blocks, etc.) that provide additional protection against falling of the machine. It is forbidden to work underneath a raised machine using only a jack.
- It is forbidden to wear loose clothing such as coats, unbuttoned jackets, scarves, belts, etc., and it is advisable to put long hair up in a bun to reduce the risk of being caught by rotating elements such as the telescopic articulated shaft or the rotor of the machine, and, of course, it is absolutely necessary to observe the prohibition of approaching dangerous areas.

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3.2 Residual risk assessment

Talex Sp. z o.o. has made every effort to eliminate the risk of an unfortunate accident. However, there are some residual risks that could lead to an accident, which are primarily related to the activities described below:

Table 1 Hazards

#	*Hazard*	*Source of hazard (cause)*	*Protective measures against hazards*
1	Overloading of the musculoskeletal system (physical strain)	Working in a standing, bent-over position, walking, moving, lifting	Familiarization with operating manual, job training taking into account lifting standards when performing manual handling work, correct lifting and lifting techniques, use of second person assistance, devices to facilitate movement, e.g. jack, winch
2	Falling on the same level (tripping, slipping, etc.)	Uneven ground, clutter – lying and standing objects, wires lying on traffic routes, slippery surfaces	Proper work footwear, level ground, pay attention, maintain order, familiarize with operating manual
3	Impact against stationary protruding parts of the machine	The machine, its environment	Proper positioning of the machine, safe space for movement, proper organization of work, maintaining attention, familiarization with the operating manual. Use of covers for protruding rake fingers in the transport position
4	Impact by moving objects	Objects, stones, etc. thrown by the machine.	Maintaining attention, marking the danger zone, prohibition of movement near the working machine, removal of stones, prohibition of work in the stoned area, use of personal protective equipment - protective helmet, goggles, familiarization with the operating manual
5	Sharp dangerous edges	Protruding machine components, use of hand tools	Personal protective equipment - protective gloves, fastened work clothes, paying special attention
6	Weight of a standing machine	Improper assembly, aggregation, poor machine positioning, poor operation, leaving a suspended machine on a carrier vehicle	Exercise extreme caution, use of personal protective equipment - protective footwear, protective gloves, safe positioning of the machine, use of the assistance of another person, use of jacks, cranes, familiarization with the operating manual
7	Microclimate – variable atmospheric conditions	Work performed in various weather conditions	Appropriate work clothes, drinks, ventilation, sunscreen, rest, familiarization with operating manual
8	Noise	Machine speed too high, damaged, loose vibrating parts	Working with an efficient machine, ongoing maintenance of the machine, proper rotation of the machine, familiarization with the operating manual
9	A blow to the head	Being in the wrong position when safety barriers are lowered	Maintaining attention while performing activities and staying out of the movement area of the safety barrier; Using springs to dampen the free fall movement; Familiarizing yourself with the operating manual

10	A blow to the body	Energy accumulated in springs released during repair work	Exercise extreme caution, use of personal protective equipment - protective footwear, protective gloves, safe positioning of the machine, use of the assistance of another person, use of appropriate tools, work prudently and without haste
11	Strike to the lower limbs and injury to the hands	During the ejection of the swath forming screen, there is a risk of jamming the shaper inside the other then a sudden jerk by the operator can cause the screen to come loose and rapidly eject uncontrollably and hit the operator in the lower limbs; Grasping the edge of the screen frame due to sudden jerking may result in injury	Exercise extreme caution, use of personal protective equipment - protective footwear, protective gloves, prudent and unhurried work without sudden jerks, make left/right movements to loosen the jammed parts
12	Danger of being grabbed and pulled in	Changing the position of the rake, while working with rotating working parts, working without guards	Exercise extreme caution, never approach the machine while it is running, never approach the rotating PTO shaft, use clothing that fits the body. Familiarize yourself with the manual. Comply with the warnings on the machine
13	Oil mechanical transmissions, hydraulic power systems	Fluids, hydraulic and lubricating oils, solid lubricants, temperature, leaks, slippage, burns, injections, sensitization, poisoning	Exercise extreme caution, use of personal protective equipment - protective footwear, gloves and goggles, safe positioning of the machine. Familiarization with the manual for use. Familiarization with the data sheets of oils and lubricants used in the operation of the machine.

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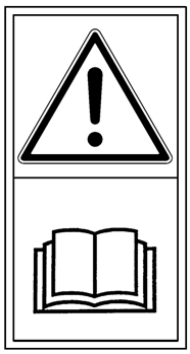
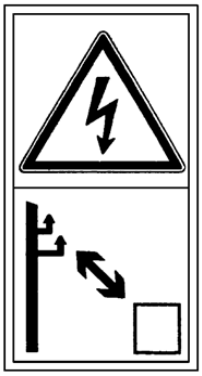
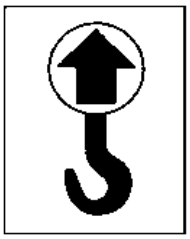
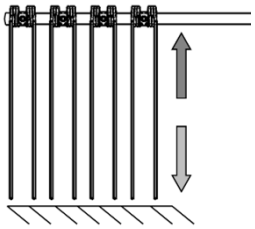
3.3 Safety signs on the machine and their meaning

Table 2 Warning stickers

 1.0 - Read the operating manual before use	 1.1 - Turn off the engine and remove the key before starting maintenance or repairs	 1.2 - Keep a safe distance from the machine. Do not allow bystanders within 50m of you
 1.3 - Danger from rotating articulated-telescopic shaft	 1.4 - Do not touch machine components before all its units have stopped	 1.5 - Do not take a seat near the linkages of the lift when controlling the lift
 1.6 - Note: Danger of being caught in a rotating impeller	 1.7 - Keep a safe distance from power lines	 1.8 - Do not stay in the zone of the area occupied by the folding safety barriers

 1.9 - Do not exceed the maximum speed	 1.10 - The correct position of the arms depending on the function performed	 1.11 - Grip points during movement
 1.12 - Rake height adjustment	 1.13 - Transport lock - always lock arms when moving on roads	 1.14 - Grease nipple symbol indicating lubrication point with solid lubricant
 1.15 - Lubricator symbol indicating oil lubrication	 1.16 - Symbol for maximum tire pressure	 1.17 - Use hearing protectors
 1.18 - Use a protective suit	 1.19 - Use protective gloves	 1st.20 - Use safety glasses
	 1.21 Warning of existing pressure in the hydraulic system.	

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4. Intended use of the machine

The rotary rake is used for field work related to the preparation of animal feed. It can only be used to rake grass clippings, straw or hay and form them into one common swath. The machine should be used on meadows or pastures where stones have been previously removed or where the land is free of stones.

Use of the machine under other conditions will be construed as incompatible with the intended use. Strict adherence to the requirements for handling the machine, operating and repairing it according to the manufacturer's recommendations is a prerequisite for intended use.

The machine should be used, operated and repaired only by persons familiar with its detailed characteristics and familiarized with the principles of safe work practices.

Accident prevention regulations and all basic health and safety regulations, as well as traffic regulations, should always be observed.

Unauthorized structural changes to the machine without the consent of the manufacturer relieve the manufacturer from liability for any damage or injury caused as a result.

All ambiguities about the purpose of the device should be clarified by contacting the manufacturer of the machine. Proper selection of the device and awareness of its purpose will enhance work safety.

Use of the machine for other purposes will be construed as misuse

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5. Construction of a rotary rake

5.1 Technical characteristics- technical details

Table 3 Technical details

#	Size	Unit	Value/TYPE
			420
1	Overall length in transport position	[mm]	4700
2	Overall length in working position	[mm]	4800
3	Width in transport position	[mm]	2300
4	Width in working position (min-max)	[mm]	3910-4510
5	Max height in transport position	[mm]	2770
6	Working width	[mm]	4200
7	Tractor power requirement	[KM]	min.35
8	Maximum PTO shaft speed	[RPM]	540
9	Recommended PTO shaft speed	[RPM]	300÷400
10	Curb weight	[kg]	670
11	Number of rotors	[pcs.]	1
12	Number of rotor arms	[pcs.]	11
13	Working capacity	[ha/h]	4-4.5
14	Working speed	[km/h]	10
15	Noise level	[dB]	<75
16	Number of wheels	[pcs.]	4
17	Tire size	-	18.5x8.5-8
18	Air pressure	[bar]	3.0-3.5max

5.2 Technical characteristics-Main components

The structure of the rotary rake is shown in Figure 2. The main elements include:
Agricultural hitch (1) articulated to the front beam (2). The hitch is additionally coupled to the frame by the link (3), which makes the hitch parallel to the ground. Attached to the main frame (4) is a gearbox (5) that provides simultaneous spinning and pivoting motion of the folding arms seated on its pivots and (9) the rigid arms (10) equipped with raking fingers. The gearbox is mounted directly on a chassis (12) with a tandem arrangement for better terrain mapping. The rake also has a swath scraper (11) equipped with a flexible screen for forming the raked mass into a single roller. The width of the formed shaft is adjustable by extending or retracting the swath scraper into the profile of the left protective barrier (7), which is secured by a cotter pin with an anti-loss element. To restrict access to the work zone, the machine is equipped with a right guard barrier (6), a left guard barrier (7) and a front barrier (8). A hydraulic system (13), supplied from one hydraulic section of the tractor, is responsible for lifting the machine to the transport position. It includes, among other things, two cylinders- responsible for evenly raising and lowering the machine, two throttle valves- responsible for adjusting the operation of both cylinders, hoses, hydraulic fittings, etc.

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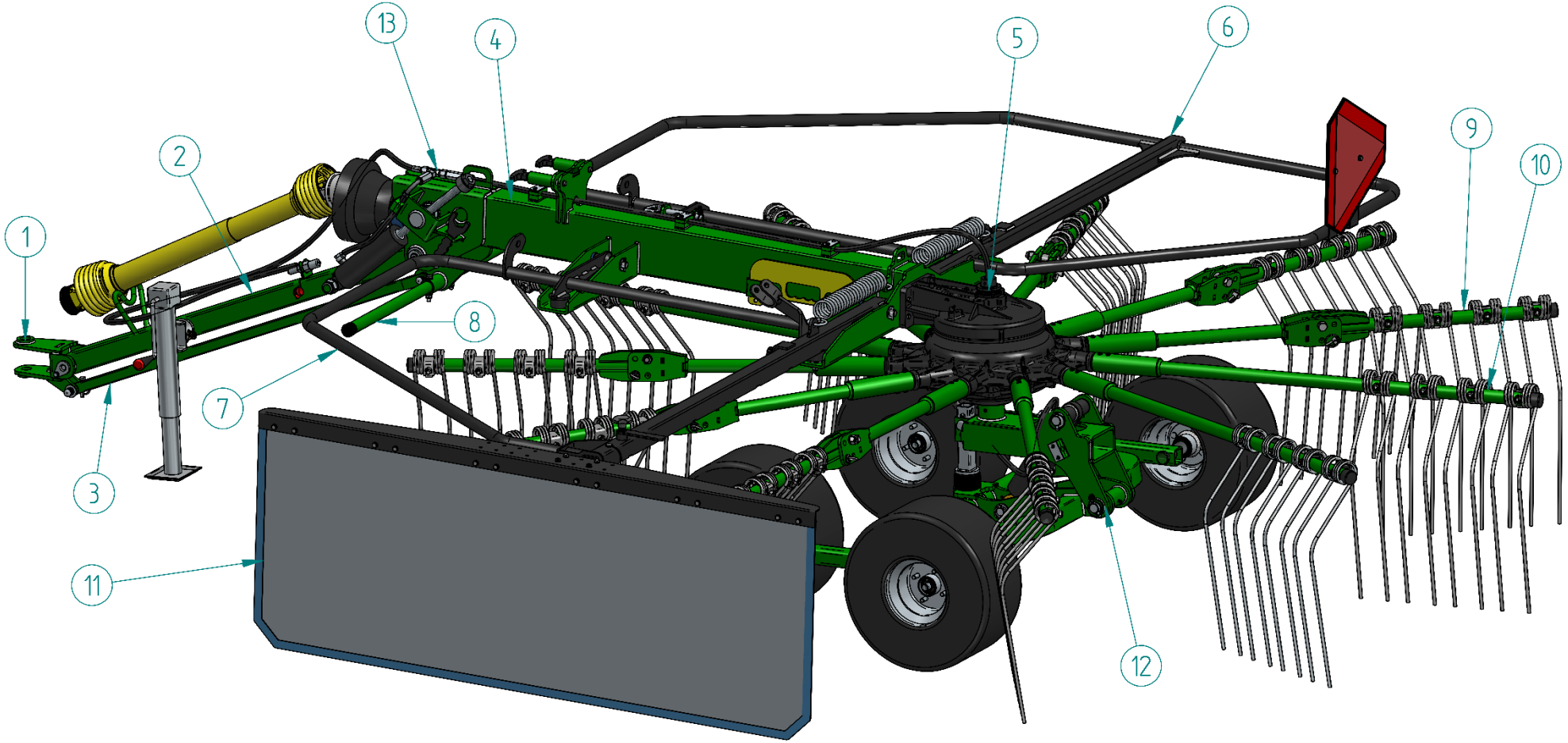

Fig.2. Rotary rake – main components

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6. Use of the device

The manufacturer assures that the machine has been checked and released completely operational. Despite this, the user is required to check the machine after delivery and before first use. Before doing any work on aggregating the rake with the tractor, check the technical condition of the machine and prepare it for a test run. In order to accomplish this, it is necessary to:

a) read and understand all information related to safety, construction, operation, use, transportation, maintenance, etc. contained in the manual,
b) familiarize yourself with the structure and principle of operation,
c) check the completeness of the machine, whether the required safety devices, screws, etc. are missing,
d) check the condition of the bolted connections, make sure that all bolts are tight,
e) check the condition and pressure of the tires,
f) check the correct seating of the running wheels,
g) check the condition of the paint coating,
h) check the general condition of the machine under the sign of any damage caused during transport, loading or as a result of other circumstances (fractures, dents, cracks, punctures, etc.),
i) check all lubrication points for signs of lubrication (if necessary, lubricate according to the recommendations in the "maintenance" section),
j) check the correct functioning of the rake height adjustment mechanism,
k) check the correct attachment of the rake arms,
l) check the correct attachment of raking fingers,
m) check the correct attachment and operation of safety barriers,
n) check the condition of the swath forming tarp,
o) check the condition of the hitch system for completeness and damage to all required safety pins and pins,
p) inspect the mechanical transmission for oil leaks and proper oil condition.

After completing all the steps and determining that the actual condition of the machine does not raise any objections, proceed to the aggregation of the rake with the tractor

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6.1 Connecting the rake to the tractor

Note
It is forbidden to use an inoperative rake.
It is forbidden to use an inoperative tractor.

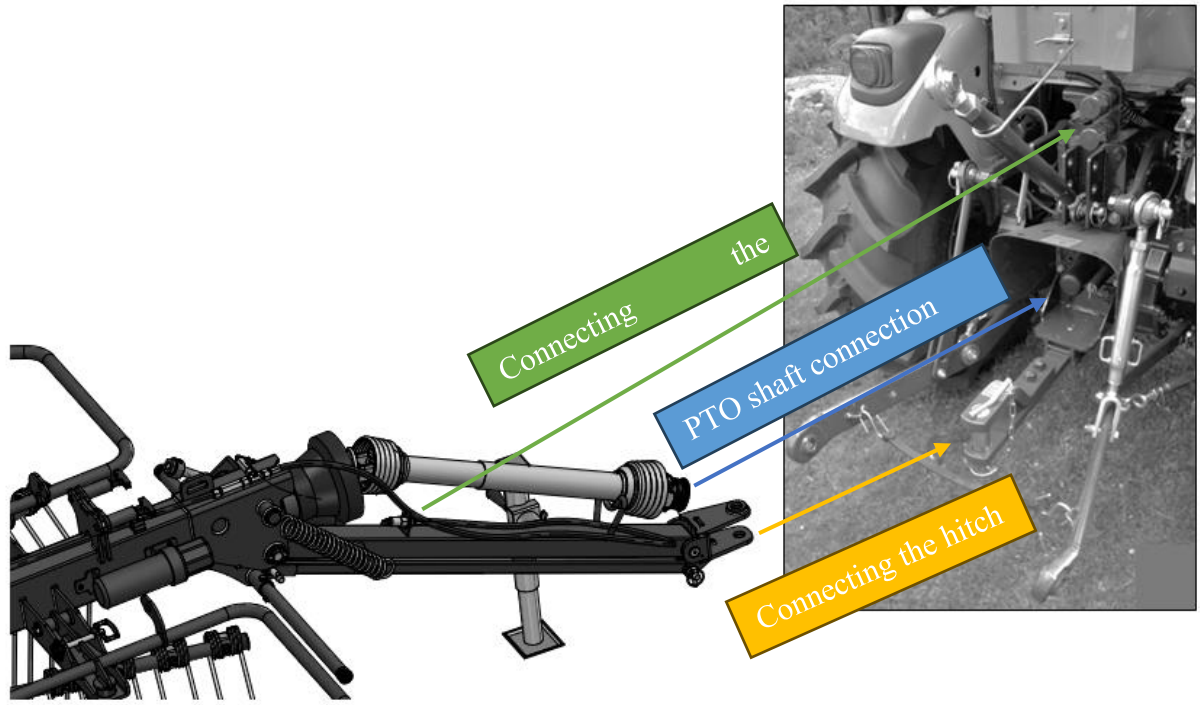

Fig.3. Connecting the rake to the tractor

The rake can only be aggregated with tractors that have a drawbar hitch.

Aggregation of the rake with the tractor should be done on firm and level ground.

Note
Read the manual before aggregating the rake. In addition, always pay special attention to maintain safety when aggregating the machine with the tractor!

The steps to be taken to connect the rake:

- drive the tractor up to the rake,
- in reverse gear, slowly reverse under the hitch of the rake, paying special attention to ensure that no one is between the machine and the tractor and in the nearby area,
- when reversing, approach the tractor's lower hitch as close as possible to the lower hitch of the rake (note whether the links are at the same height, if not, adjust the height of the rake hitch on the support foot),
- drive the tractor so that the holes in the drawbar and hitch are aligned,
- immobilize the tractor and protect it from free movement,

- then connect the hitches with the tractor's bottom pin,
- then secure the hitch pin with a safety pin,
- connect the PTO shaft to the tractor, remembering to connect the correct side to the tractor (see the detailed instructions supplied with the shaft),

Note
It is necessary to use rollers in accordance with the manufacturer's recommendations. It is also necessary to cut the shaft to the required length (see detailed instructions supplied with the PTO shaft)

- connect the hydraulic supply by pushing the rake plug into the hydraulic section socket on the tractor.

Avoid contact with oil! Use personal protective equipment in the form of: protective clothing, footwear, gloves and goggles.

6.2 Preparing the rake for operation

Transported to the work site, the rake must be unfolded to the correct working position. Adaptation of the machine for operation can only be done at the site where the rake will be operated. It is forbidden to drive the machine on roads with the rake arms and guards spread out!

The sequence of steps involved in preparing the rake for operation directly at the work site:

- on flat ground, lower the rake onto the ground to rest freely on the wheels,
- immobilize the tractor and protect it from free movement,
- leave the driver's cab and go to the machine,
- remove the protective covers from the folded arms,
- unlock the folding arms from the transport lock and unfold to the working position according to the information in section 6.5,
- unlock and deploy safety barriers according to the information in section 6.6,
- set the required swath width according to the information in section 6.7,
- set the required rake height according to the information in section 6.8,
- check the installation of the PTO shaft,
- check that all pins are secured from slipping out with pins,
- perform a trial run of the machine at low PTO speed to check the proper functioning of all components. The trial run should last a few minutes. During the test, it should be determined whether there is unnatural crackling, grinding or rattling coming from the drive system, whether the direction of rotation of the rotor is correct, and whether the cam mechanism causing lifting and lowering of the arms is functioning properly. The operation of the rake at idle should be smooth and without much vibration. You should not hear ringing, vibrating or other sounds indicative of loose screw connections.

In addition, after stopping the machine after a trial run once again check the general condition of the transmission system including the complete rotor for damage and leaks. If there are symptoms of a malfunction, locate the exact location of the malfunction and fix it. If the malfunction is serious and cannot be easily corrected, contact your dealer to solve the problem.

Note

Before each use of the rake, check its technical condition. In particular, check the technical condition of the rake system, the driving system, the set of safety guards, the correctness of the attachment of the raking fingers, and the oil level in the transmission

6.3 Preparing the rake for transport

After finishing work, the machine must be folded into the transport position and properly secured for transport. When you have finished working, turn off the tractor engine and remove the ignition key. Next, immobilize the tractor by applying the parking brake and protect the driver's cab from intrusion by bystanders while preparing the rake for transport. Remember that driving on public roads is prohibited after dark and in conditions of reduced visibility.

Start work by folding the swath screen. Actions analogous to unfolding except that in reverse order (see information in section 6.7). Then assemble the protective barriers. Actions analogous to the unfolding except that in reverse order (see information in section 6.6).The next step is to fold the folding arms. Carry out folding operations analogously to unfolding except that in reverse order (see instructions in section 6.5).

Then place protective aprons over the protruding rake fingers and secure them from slipping off by tying the cords. It is also recommended to remove the articulated-telescopic shaft. However, if the shaft had not been dismantled, **remember the strict prohibition of activating the shaft drive during transport.**

After the operations, go to the operator's cabin again, start the tractor and lift the machine up using the linkages. When the machine is lifted, the main pin connecting the frame to the hitch moves in the slot as far as it will go, at the same time the control links are shortened, stiffening the machine permanently during transport. When lifting the rake, the zone between the tractor and the machine should be controlled at all times so that the upper hitch and barriers do not collide with the driver's cab.

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6.4 Raking and forming the swath

The working element of a rotary rake is the rotor. The rotor consists of a reduction gear equipped with pivots on which the rake arms are mounted.
With the help of the power take-off (PTO) shaft, torque is transferred from the tractor to the intermediate shaft, which transmits the drive directly to the transmission. The gearbox, as a result of the applied torque, performs rotary motion of the rotor. In addition, each arm is equipped with a cam mechanism, also embedded in the gearbox body, which gives it a swinging motion. This movement causes the raking fingers entering the raking phase to position themselves vertically and take the encountered swath with them. As the raking arm approaches the swath forming zone, the cam mechanism causes the raking fingers to rotate and lift so that they lose contact with the raked mass, which, due to centrifugal force, is freely ejected in the direction of the roller forming screen. The phase of lifting the fingers continues until they enter back into the raking phase, where they are again lowered in the working phase. Cyclic operation according to the above scheme allows the formation of an even roll from the raked swath.

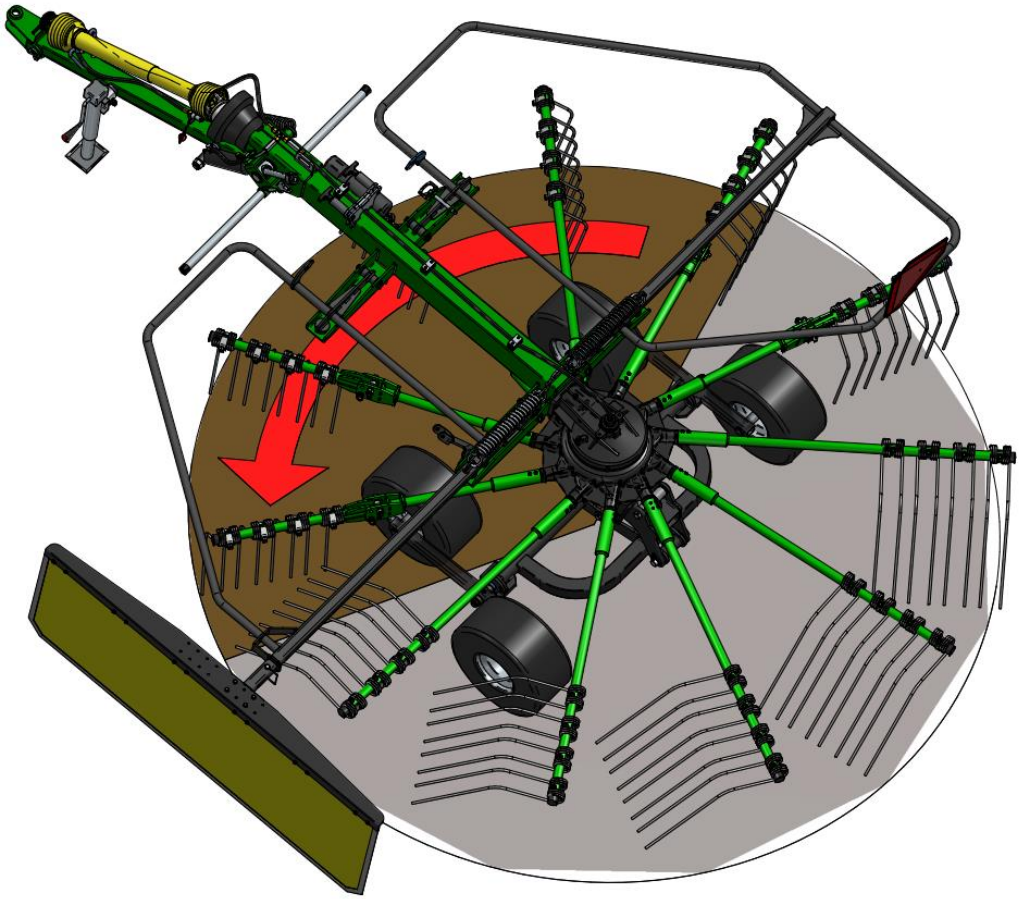

Fig.4. Working principle of the rake – the darkened area corresponds to the working phase (the rake is lowered)

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6.5 Unfolding and folding arms

Before proceeding, unfold the folded rake arms to the correct working position. To do this, start with the arm, which is also embedded in a transport lock that prevents the rotor from rotating freely during transport.

It is imperative that you never turn on the machine drive if at least any of the arms are not extended and the safety barriers not lowered!! Always make sure that all arms are in the working position and safety barriers are down before starting!!

To perform the steps involved in preparing the machine for operation, you need to:

a) Remove the protective aprons from the folded arms. The protective aprons are made of bright yellow tarpaulin. They are designed to warn, protect and guard against access to sharp protruding rake fingers that point upward during transport. Despite the additional steps taken to improve safety, special care should still be taken when folding, unfolding as well as staying in the area of these arms when they are folded into the transport position. After the work is done after the machine is prepared for transport, the protective aprons should be put back on the protruding fingers of the rake and remain on them until the machine is used again.

b) The next step is to unfold the first arm, which further secures the machine against free rotation of the rotor during transport. To do this, unlock the pin and remove the arm retaining pin in the transport lock. Then unfold the arm to the working position and secure it in this position by placing the locking pin in the correct hole. The pin should also be secured against being displaced with a safety pin.

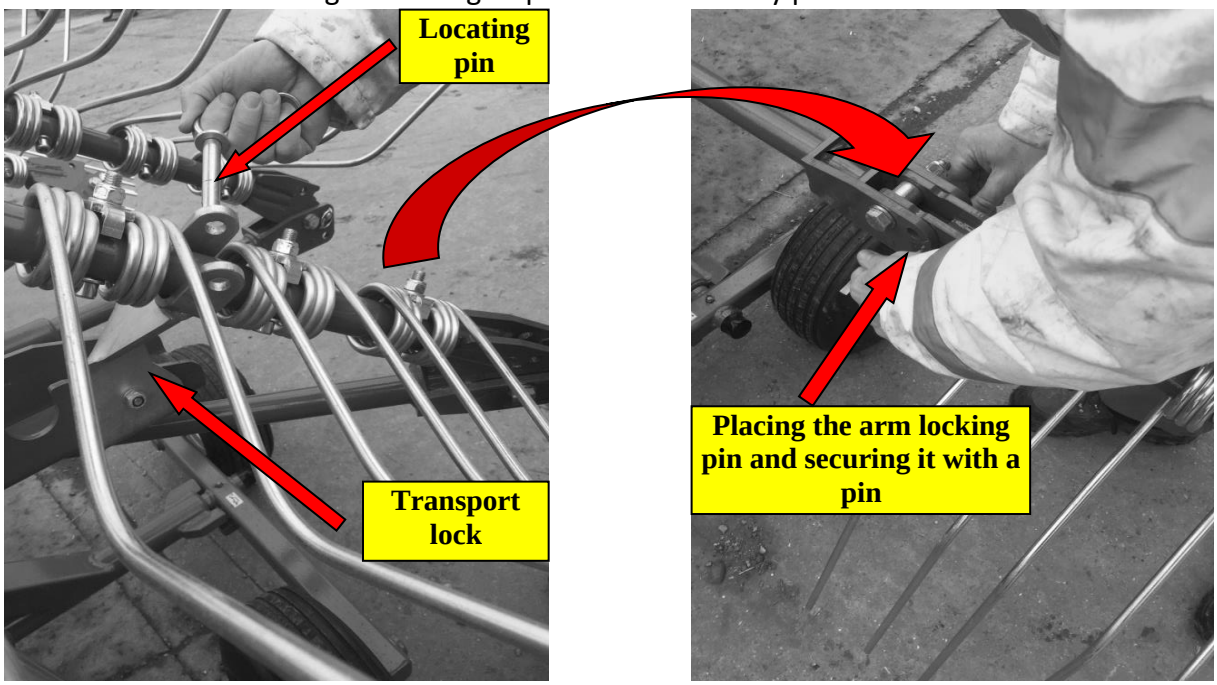

Fig.5. Preparing the folding arms for operation

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c) After unfolding the first arm, repeat the unfolding steps for the other arms (according to the diagram below):

1. removing the safety pin,
2. unfolding the arm to the working position,
3. fixing the arm in the working position by placing the locking pin in the suitable hole,
4. securing the bolt with a pin.

Note
Always perform the adjustment with the vehicle and machine drive off, on level ground!!

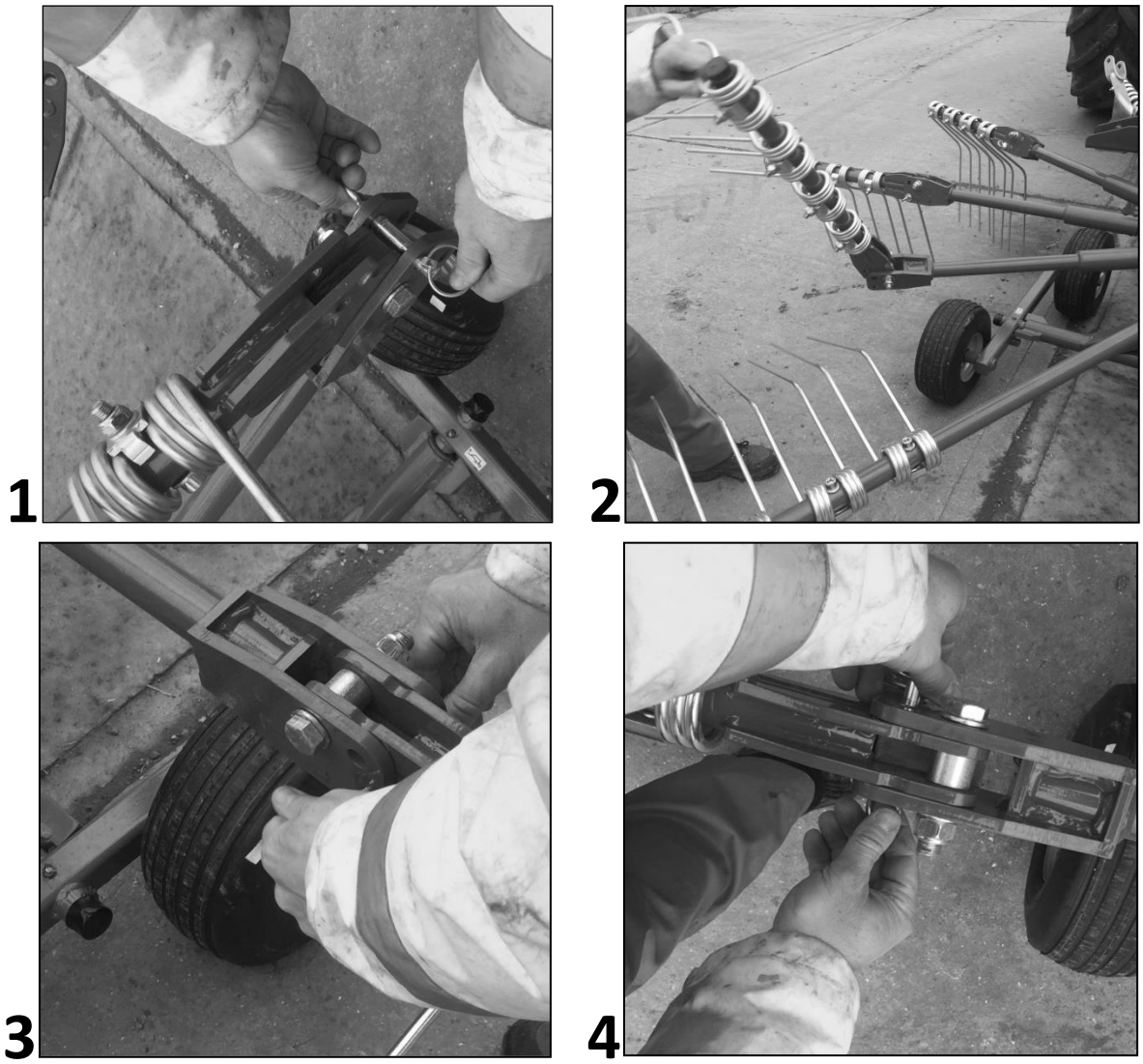

Fig.6. Preparing the folding arms for operation

The preparation of the arms for transport is analogous to the preparation of the arms for work with the only difference being the reverse order.

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6.6 Unfolding and folding of safety barriers

The main safety requirement is to limit the access of the user or outsiders to the working area of the machine. For this purpose, the machine has been equipped with safety barriers, which must absolutely be lowered even before starting work.

The activity of unfolding the safety barriers should be carried out sequentially after unfolding the arms. To unfold the barriers, remove the safety device (1) and insert it into the prepared place on the main frame, grasp the bolt lever (2) with a firm grip and pull it towards the hitch until the spring tension is overcome and resistance is felt. Then, grasping the barrier with the other hand, pivot in the direction of unfolding (3) and release the tension of the bolt. When releasing the bolt, use two hands to securely grasp the barrier and gradually lower it until the barrier rests on the main frame, on rubber bumpers. Further secure the right barrier with a pin (marked with the letter "A" in the figure below). Pay attention and be vigilant not to be in the lowering zone of the barrier because there is a risk of being hit by a falling barrier when the barrier slips from your hand.

Note
Always perform the adjustment with the vehicle and machine drive off, on level ground!!

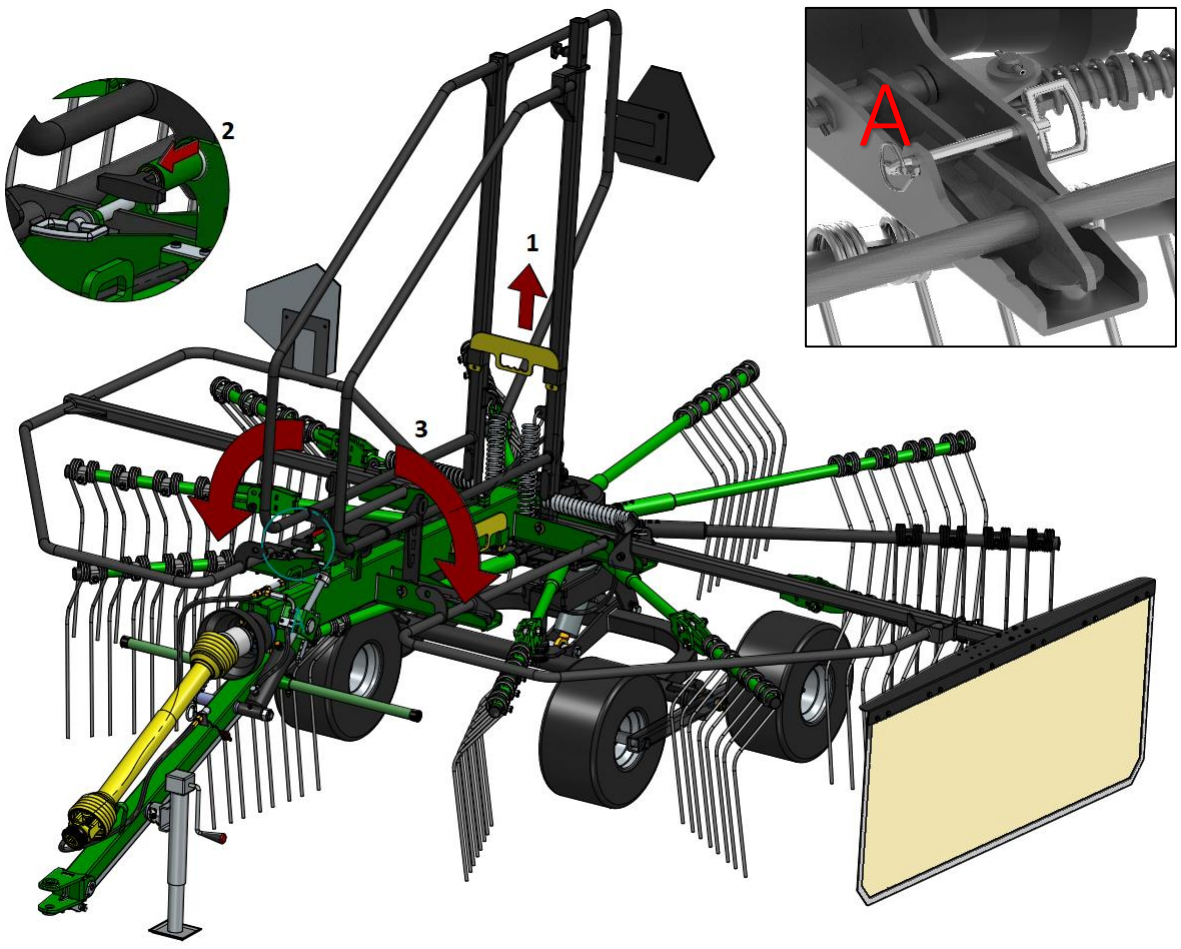

Fig.7. Disassembling the safety barriers

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6.7 Swath width adjustment

The width of the formed shaft can be adjusted as needed. To change the width, remove the locking pin, unscrew the pressure knob and the locking lever, and then extend the scraper to the required value in the range of 0 – 620 [mm]. After adjusting, insert the pin, tighten the knob clockwise and secure the knob with the locking lever. An additional possibility to adjust the swath scraper is to change the position of the screen in relation to the bar. There are 9 positions available to the user. If you want to change the position of the screen, unscrew the 4 mounting screws, then move the screen by the required value in the range from -250 to +250 [mm]. Fixing the mounting holes in relation to each other using the previously removed screws, twist again to clearly fix the screen to the beam.

When adjusting the extension of the screen, suggest the principle that the larger the swath, the further the screen should be extended, and vice versa, with less swath, the distance of the screen should be shorter. In addition, it should be remembered that when preparing a swath for a baler or other collecting device, the width of the formed shaft should be slightly smaller than the width of the pick-up.

Note

Always perform the adjustment with the vehicle and machine drive off, on level ground!!

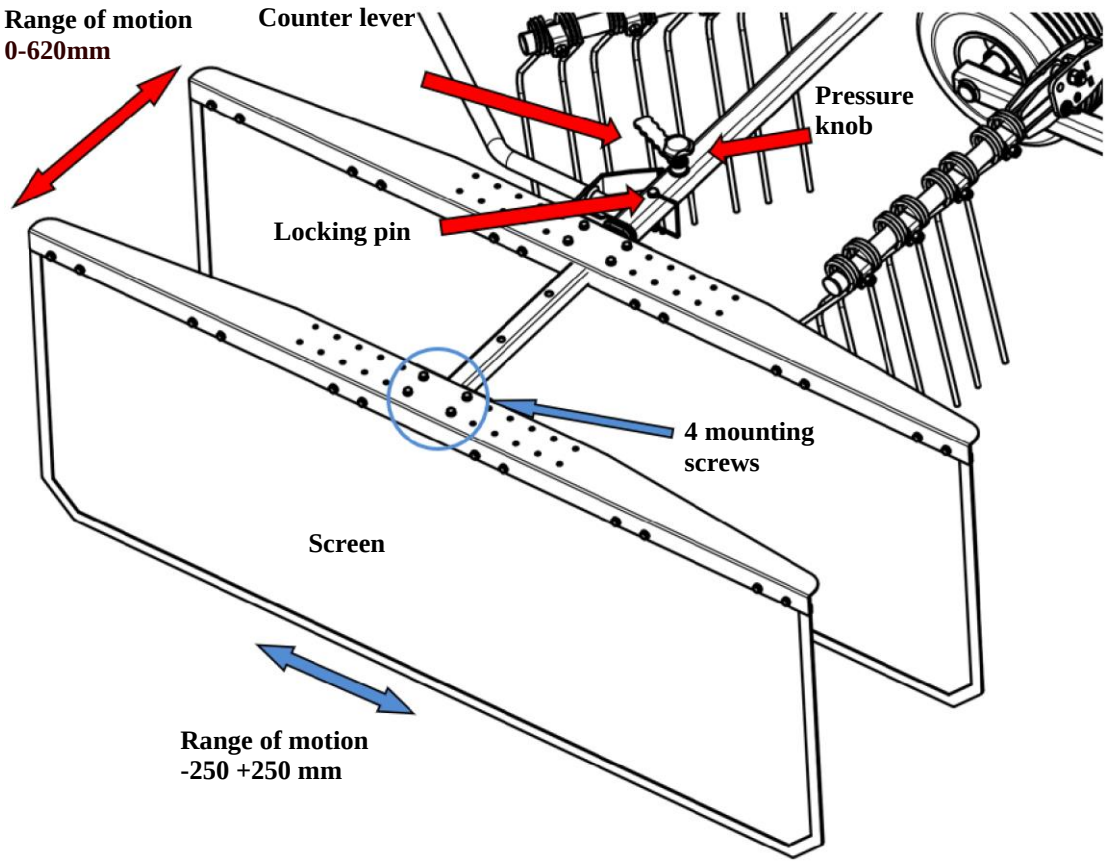

Fig.8. Swath scraper position adjustment

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6.8 Rake height adjustment

The right raking height has a major impact on the quality of work, the cleanliness of the raked swath and the shape of the formed roll. After aggregation with the tractor, adjust the beam cylinder screw of the rake system so that it is located parallel to the ground. Determine the minimum height by locking the bumper profile with a screw connection in the corresponding hole corresponding to the desired minimum height. Depending on the amount of swath, the type of swath, the speed of raking and the terrain over which the rake will travel, the height should be selected individually by the user. It should be remembered when adjusting that raking fingers raised too high will not collect the entire swath, while at too low a height, when raking fingers penetrate the ground, the formed roller will be contaminated with stones and debris of uprooted turf with fragments of soil, and the entire drive system of the machine will be overloaded. Too much overloading will reduce the life of the raking fingers as well as the entire drive train of the machine and in extreme cases will lead to permanent damage. Depending on the need, the rake height can be adjusted smoothly with the chassis cylinder, using the tractor's hydraulic system, a function that is particularly useful on uneven terrain.

Note
Always perform leveling and minimum height adjustment with the vehicle and machine drive off, on level ground!!

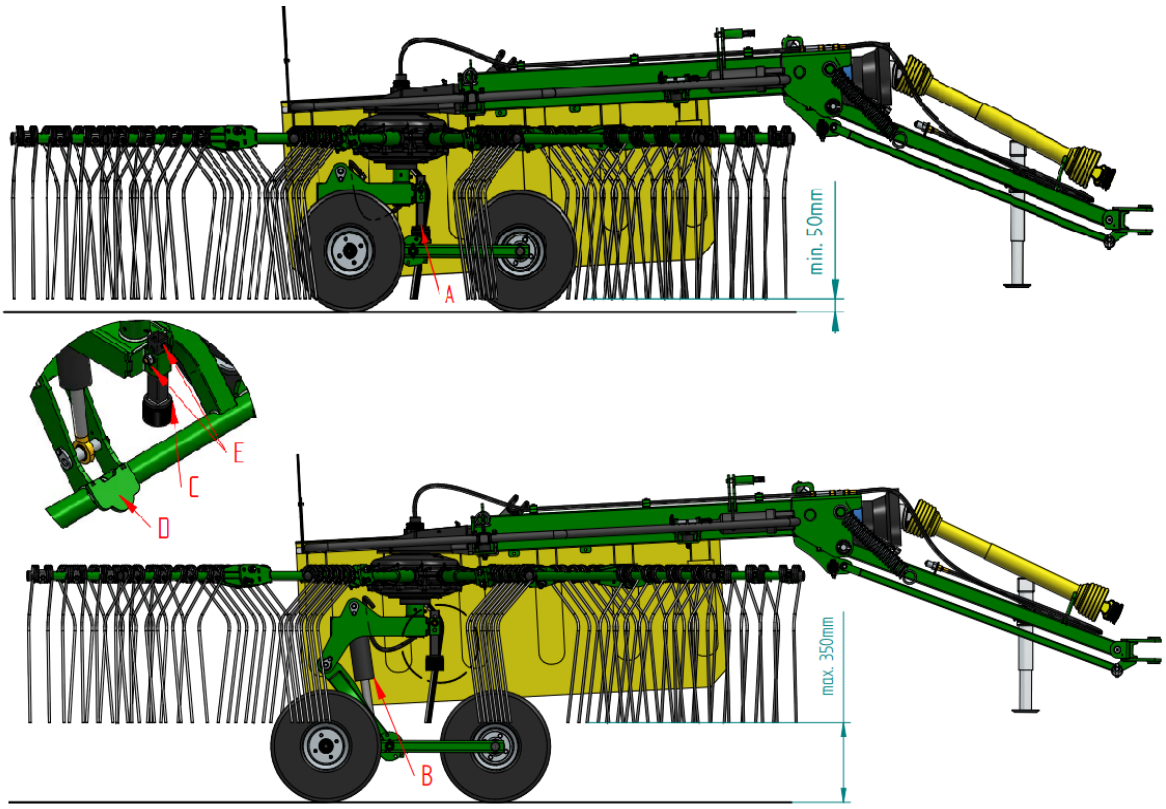

Fig.9. Rake height adjustment

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6.9 Ground contour tracking

In order to collect the raked mass as accurately as possible, the rotary rake was mounted on a pendulum running gear called a tandem. Independently operating pairs of wheels on the left and right with limited movement ensures compensation for any unevenness of the terrain. Thanks to such a solution, the operation of the machine is smooth and undisturbed.

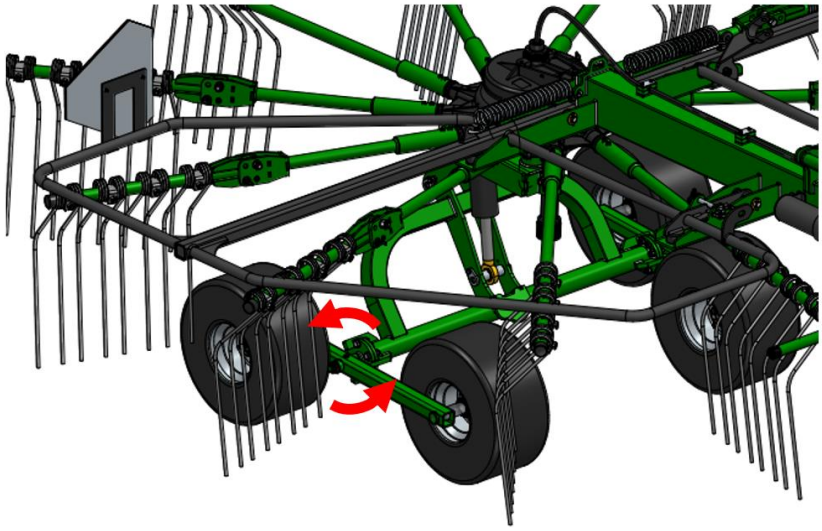

Fig.10. Terrain ground contouring system

The hitching bar (1) with lower link (2), thanks to the hydraulic lifting system (3), allows the wheel rake to be guided over obstacles without having to lift the machine completely. This allows for stability and interoperability with much smaller tractors. Adjusting the screw (4) of the hydraulic cylinder simultaneously allows the angle of the rake to be changed relative to the ground, and the lower link (2) ensures a constant angle of the hitch (5) relative to the drawbar, both during operation and transport.

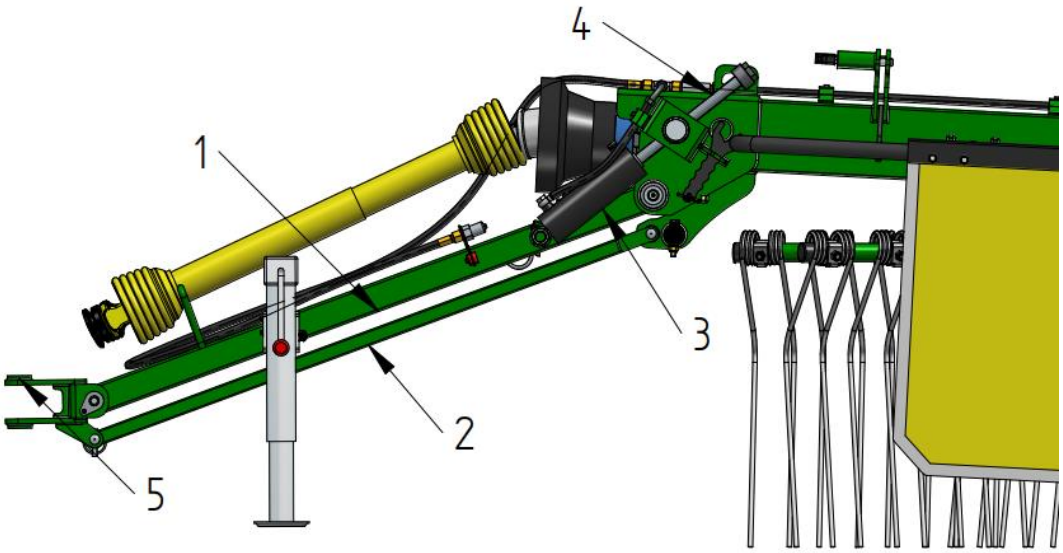

Fig.11. Adjustable hitch system

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6.10 Throttle valve adjustment

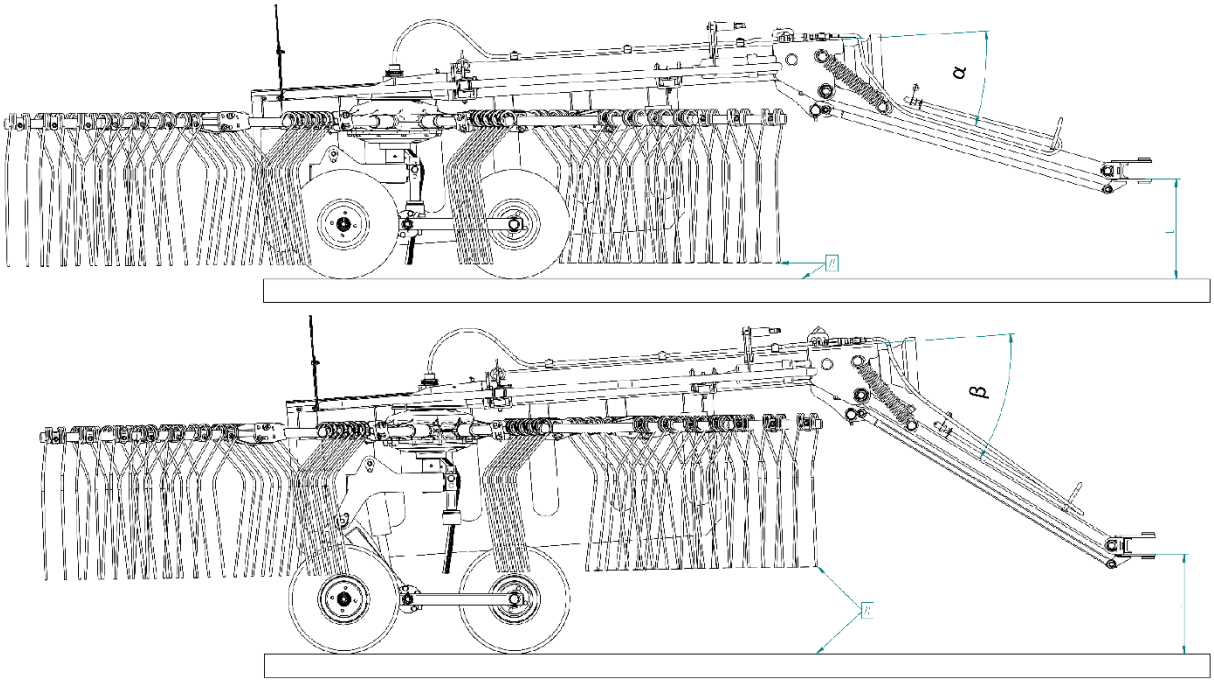

Fig.12. Position of rake components during lifting.

Proper lifting of the rake from the working position to the transport position and vice versa is possible by using synchronization of the throttle valves. The raking fingers should be parallel to the ground level at all times (during operation and during lifting to the transport position), while maintaining a constant hitch height (the hitch connected to the tractor) and with a variable angle of inclination of the intermediate beam with respect to the main frame (denoted as a change in angle α and β). Valves should be pre-adjusted by the manufacturer. However, if there is a need for additional adjustment, it should be done as follows:

1. Connect the rake to the tractor and set it on level, firm ground (sec. 6.1).
2. Adjust the rake fingers parallel to the ground, using the cylinder screw (Figure 10 item 4)
3. Loosen the lock nut (Figure 13 items 1 and 3).
4. Adjust the valves as needed (Figure 13 item 2- chassis cylinder, item 4 hitch cylinder). Adjustment is made by rotating the valve's outer sleeve. Rotation toward the lock nut will increase the amount of oil flowing through, and rotation away from the lock nut will decrease the amount of oil flowing through the valve.
5. When the adjustment is complete, tighten the lock nuts.

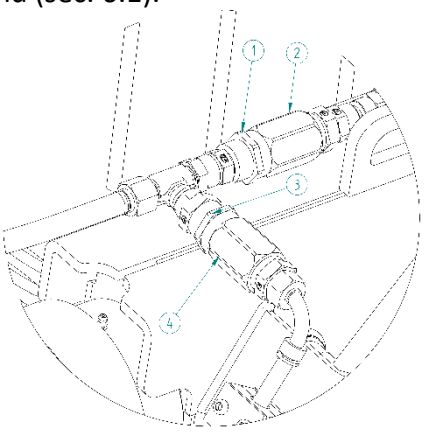

Fig.13. Throttle valves of the hydraulic system

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7. Technical servicing – maintenance of the machine

Any operation of the machine may be performed by the operator of the vehicle to which it is connected, provided that he is authorized to operate that vehicle.

The machine, when detached from the vehicle, should be stored under a canopy on a flat and firm surface and footing.

Before connecting the machine to the tractor, the machine operator must always check the technical condition of the machine and prepare the machine for a test run. To do so:

- Familiarize yourself with the contents of this manual and follow the recommendations contained therein,
- Get to know the structure and understand the operating principle of the machine,
- Perform a visual inspection of all machine components for mechanical damage,
- Lubricate the machine as recommended,
- Check the condition of the hitch system pins and locking pins,
- Check the condition of the oil level in the gearbox,
- Check the condition of the screw connections,

Only the use of original manufacturer parts guarantees a safe and reliable operation of the device. Using non-original parts or repairing damaged parts will void the warranty.

In the case of leaks in the hydraulic system, it is imperative to replace the damaged parts and assemblies of the system so as not to contaminate the environment. **Hydraulic lines regardless of external condition should be replaced after a period of 5 years.**

If all the above steps have been carried out and the technical condition of the machine does not raise any objections, you can connect it to the tractor.

It is forbidden to use an inoperative machine. Once a defect is found, it should always be corrected before using the rake again. Always perform all maintenance, inspection and repair work with the tractor engine turned off and the ignition key removed. In addition, always secure the driver's cab against intrusion by bystanders and especially children. All work should be carried out by users in accordance with all information contained in the manual. Any welding work carried out during post-warranty repair work should be done only by qualified persons with the appropriate authorizations. When welding using the electrical method, always disconnect the tractor from the machine; in addition, protect with special mats any flammable things such as covers made of plastic, etc. Any work under the machine related to its lifting should be carried out using certified lifts. However, it is always necessary to further secure the machine by additional permanent supports (do not use brittle concrete blocks!!).

When conducting any maintenance work, use personal protective equipment. All work should be carried out in accordance with health and safety rules.

7.1 Operation of raking fingers

The rake finger is made of spring steel, so it can withstand dynamic loads well. Despite their high durability, they are subject to natural wear and tear due to constant contact with the ground. In addition, due to vibration, the bolted connections attaching the rake fingers to the arm may loosen. Therefore, each time before starting work, it is necessary to check the technical condition of each finger and the tension of each of the fastening screws. If any rake finger is found to be damaged, replace it with a new one. It is forbidden to repair a damaged finger.

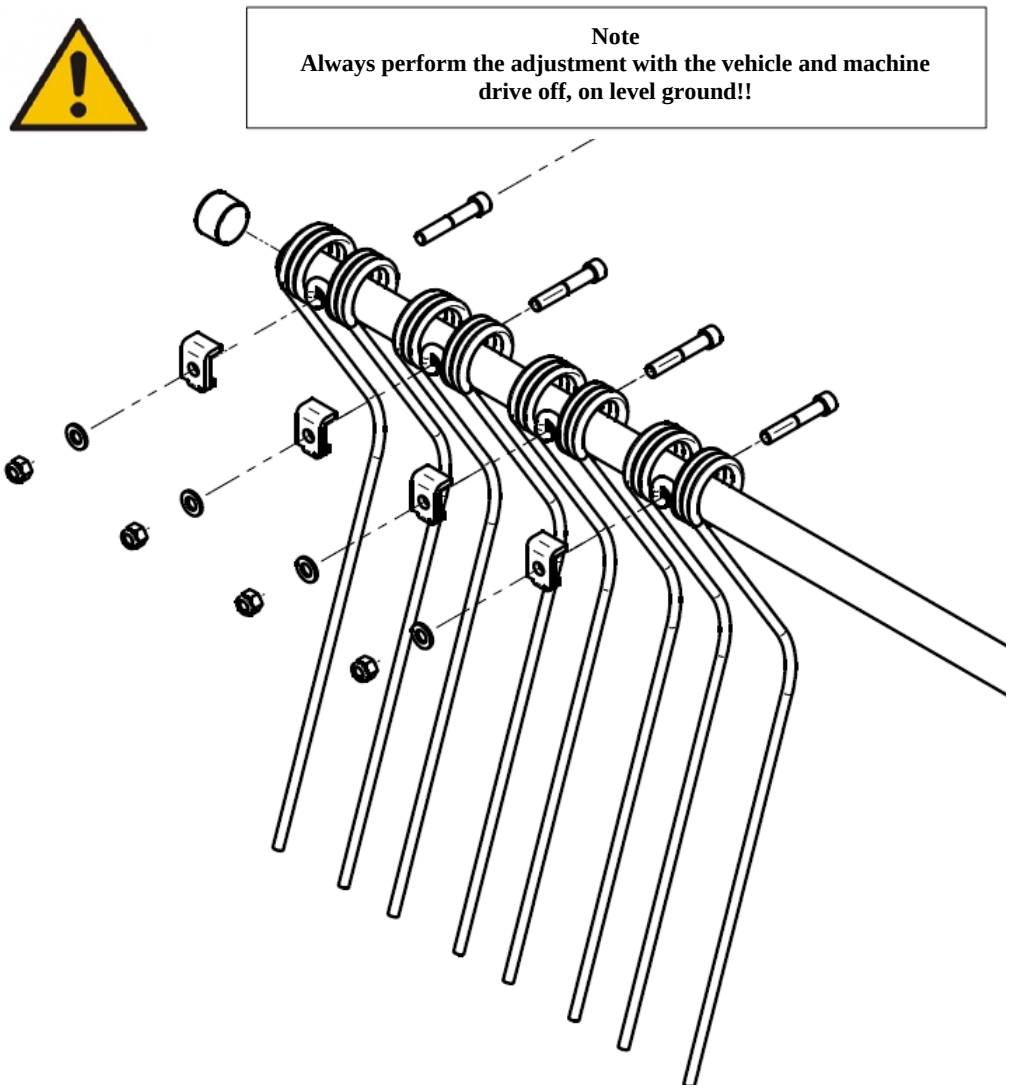

Fig.14. Rake arm

7.2 Service after work

Each time after work, the machine should be thoroughly cleaned, washed with a stream of running water and set on a flat, hard surface. Review the connections of parts and assemblies. Replace damaged and worn parts with new ones. Check all bolted connections, and tighten loose ones according to Table 4.

Important:

Talex, the manufacturer of the machine, ensures availability of all parts.

Table 4. Value of tightening torques

Strength	6.8	8.8	10.9	12.9
Metric thread	Tightening torque [Nm]			
M5	4.5	5.9	8.7	10
M6	7.6	10	15	18
M8	18	25	36	43
M10	37	49	72	84
M12	64	85	125	145
M14	100	135	200	235
M16	160	210	310	365
M18	220	300	430	500
M20	310	425	610	710
M22	425	580	820	960
M24	535	730	1050	1220

7.3 Lubrication of the machine

Properly conducted periodic maintenance significantly reduces wear and tear on mating components and further protects against corrosion.

Lubricate all of the lubrication points listed below. These operations should be carried out using a grease gun for solid lubricants. Before starting lubrication, clean the lubrication area of dirt and residues of previously used grease and check the condition of the grease nipple for damage. If damage is found, replace with a working one. After lubrication, remove excess grease to reduce dust adhesion. In addition, there is SAE90EP oil in the mechanical transmission and only such oil should be used. The first oil change must be done after the first 50 hours worked. Subsequent replacements should be made after 400h of operation at least once a year before the season. There is a filler plug on the top body of the gearbox, which also serves as an oil level indicator. The drain plug is located at the bottom of the body. Check systematically before each use of the rake for oil leaks from the gearbox. If a leak is found, the leak must be repaired immediately and the oil refilled to the required volume. Repair of the transmission during the warranty period can only be performed by specialized mechanical workshops.

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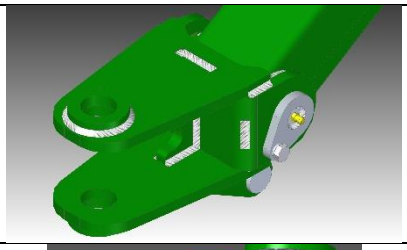
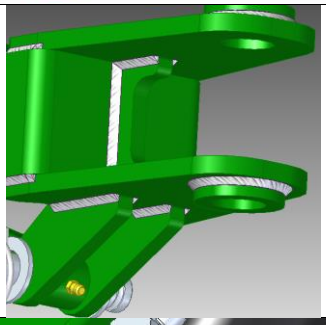
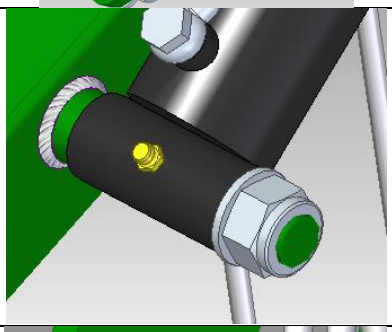
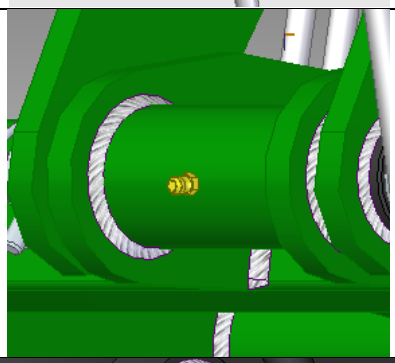
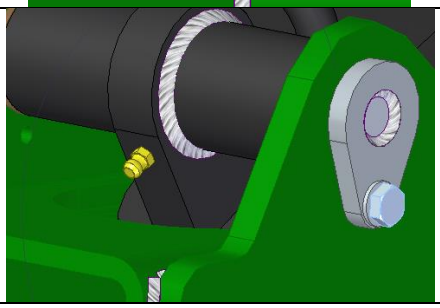
Table 5. Lubrication schedule

#	Lubrication point	Description	Lubrication frequency	Lubricant
1		Hitch and beam connection pin	10h	Solid lubricant
2		Lower link bushing	10h	Solid lubricant
3		Beam cylinder bushing	30h	Solid lubricant
4		Chassis bushing	10h	Solid lubricant
5		Chassis cylinder eye	20h	Solid lubricant

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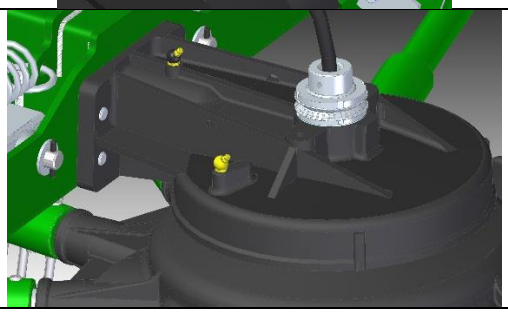
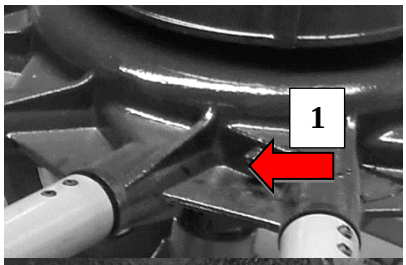
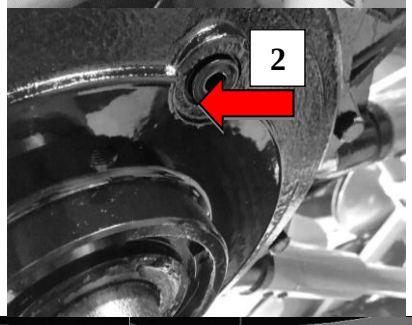
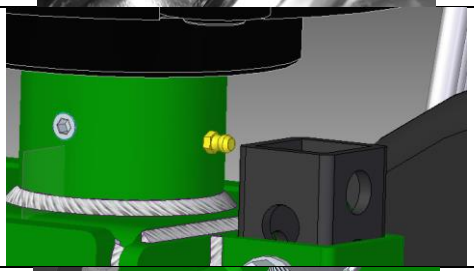
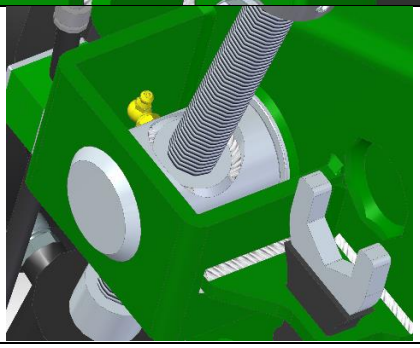
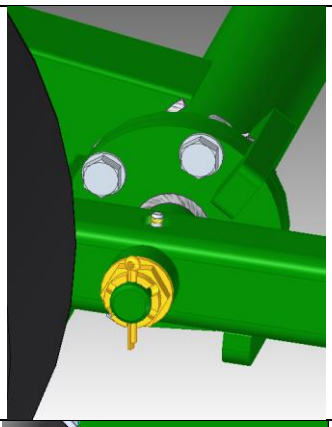
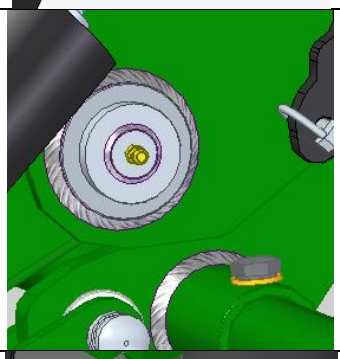
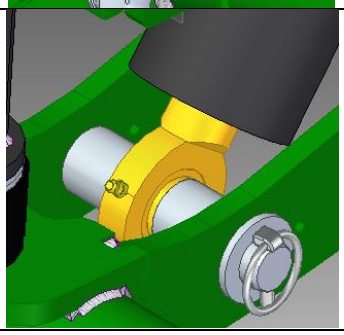
6		Drive shaft bearing support	10h	Solid lubricant
7		Mechanical transmission-bearing	20h	Solid lubricant
8	 	*1 - Level filler cap* Mechanical transmission - oil chamber *2 - Drain plug*	400h At least 1x a year	Oil SAE90EP **TYP420**- 5.7÷6dm^3/ **TYP360**- 2.8÷2.9dm^3
9		Main bushing	50h	Solid lubricant
		Cylinder adjustment sleeve	30h	Solid lubricant

10		Tandem	20h	Solid lubricant
11		Pin connecting the main frame and intermediate beam	10h	Solid lubricant
12		Bottom eye of the chassis cylinder	20h	Solid lubricant
13		Articulated telescopic shaft	According to the instructions attached to the PTO shaft	Solid lubricant

7.4 Storage of the machine

After work, the machine should be thoroughly cleaned and washed with a stream of running water. When using high-pressure generating equipment, be careful and do not direct the jet directly on any kind of stickers placed on the machine and on components such as bearings, shaft joints, etc. It is recommended that cleaning and washing of the machine be carried out in a car wash equipped with a sewage treatment plant or a settling tank for neutralization of the resulting sewage.
After washing and drying, inspect the general technical condition of all components and, if necessary, correct the defect found or replace the worn component with a new one. If the paint coating is damaged, mechanically remove the residue of the old paint, degrease then apply a coat of primer and after it dries apply the actual paint coating. It is recommended that

the machine be stored in a closed and covered room to reduce environmental factors that cause corrosion and aging of any plastics. In addition, during long downtimes (such as the winter period), it is recommended to lubricate with fresh grease all moving joints and the pull screw of the rake height adjustment mechanism. In addition, using widely available silicone-based anti-corrosive agents, coat the surface of bolts and pins to inhibit corrosion. In addition, tires should be protected from UV rays about 2-3 times during the year by spraying widely available tire preservatives.
When not in use for a long period of time, move the machine slightly to reposition the tire so that it does not become permanently deformed, and additionally check the tire pressure. This activity should be carried out on average once per month.

8. Dismantling, disposal and environmental protection

If the machine is completely worn out to the extent that it can no longer be operated, it should be disposed of. This includes ongoing repairs and replacement of damaged parts. To do this, the machine should be thoroughly cleaned. Drain the operating oil and send it for disposal. Then disassemble the machine by segregating the parts according to the type of materials used. The segregated parts should be delivered to a scrap metal collection or disposal center. The machine is a fully environmentally friendly product. The materials used in production are 98% recyclable. Dispose of used machine parts in accordance with local environmental regulations. Throughout its lifetime, care must be taken to avoid oil spills that can contaminate the environment.

Protect hands (body) from mutilation and harmful effects of lubricants, oils. Use personal protective equipment and tools in good working condition. Machine components that may move or rotate during disassembly should be properly secured.

Used or damaged parts obtained during the repair (checkout) should be stored in a separate place with limited access of people and animals. The used items should be delivered to a scrap metal collection point. Take the used plastic parts to a chemical waste (disposal) facility.
When refilling or changing oil, do not allow oil to spill. Used oils should be stored in sealed containers and periodically delivered to points that collect (recycle) them.

Abandoned machine parts or components, spilled oil can create accident hazards and cause environmental pollution and violate applicable regulations.

9. Spare parts catalog

HOW TO ORDER SPARE PARTS

In the order, you must specify each time:

- your address,
- the exact shipping address (the location of the machine or the method of collection),
- payment terms,
- the machine's factory number and year of manufacture (according to the nameplate on the machine),
- spare part index,
- the number of parts ordered.

Spare parts should be ordered from machine dealers or the manufacturer. Only the use of original manufacturer parts guarantees a safe and reliable operation of the device. Using non-original parts or repairing damaged parts will void the warranty.

The manufacturer reserves the right to make design changes to the parts shown in the individual assembly drawings of the spare parts catalog. These changes may not always be up-to-date in the manual and spare parts catalog. Individual drawings of spare parts may differ from the actual state.

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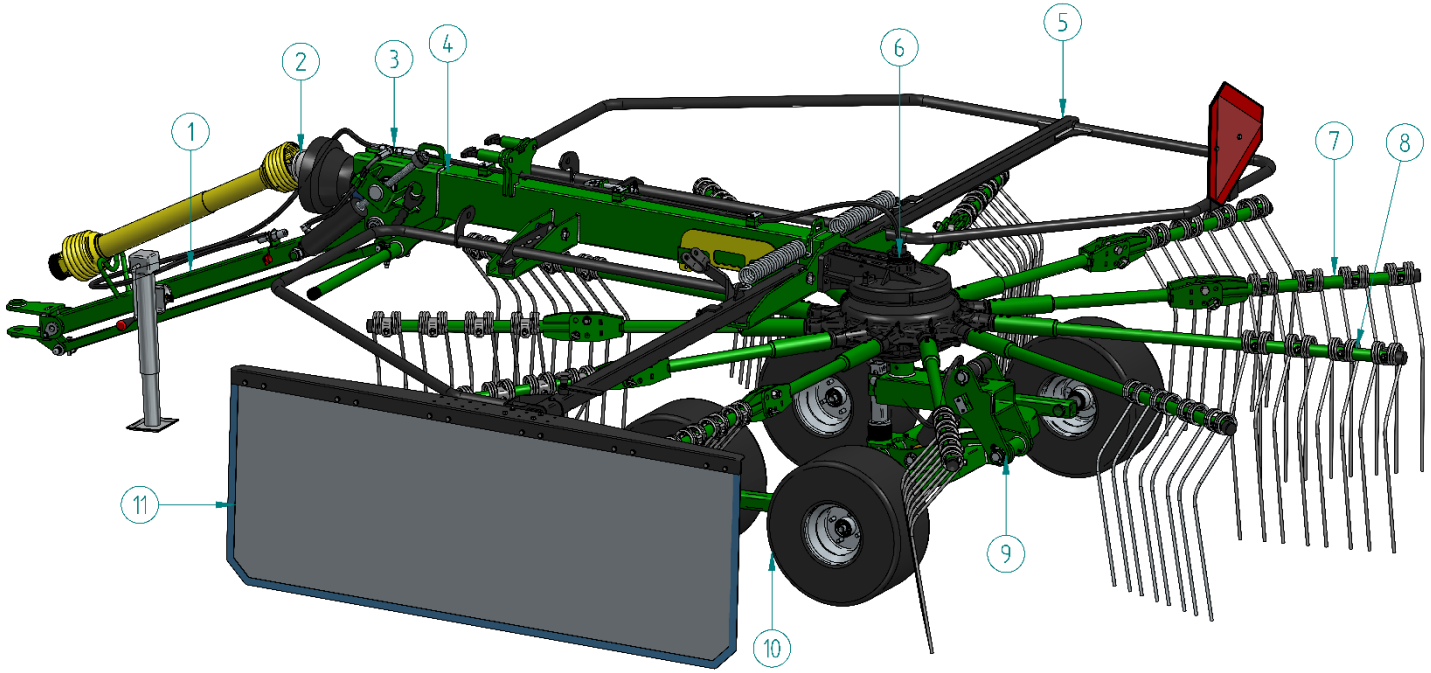
9.1 Rotary rake – main components



1. The hitching system (sec. 9.2)
2. Transmission system (sec. 9.3)
3. Hydraulic system (sec. 9.4)
4. The main frame (sec. 9.5)
5. Protective barriers (sec. 9.6)
6. Gearbox (sec. 9.7)
7. Folding rake arm (sec. 9.8)
8. Rigid rake arm (sec. 9.9)
9. Chassis system (sec. 9.10)
10. Profile with wheels (sec. 9.11)
11. Swath scraper (sec. 9.12)

Fig.15. Rotary rake – main components

S

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9.2 The hitching system

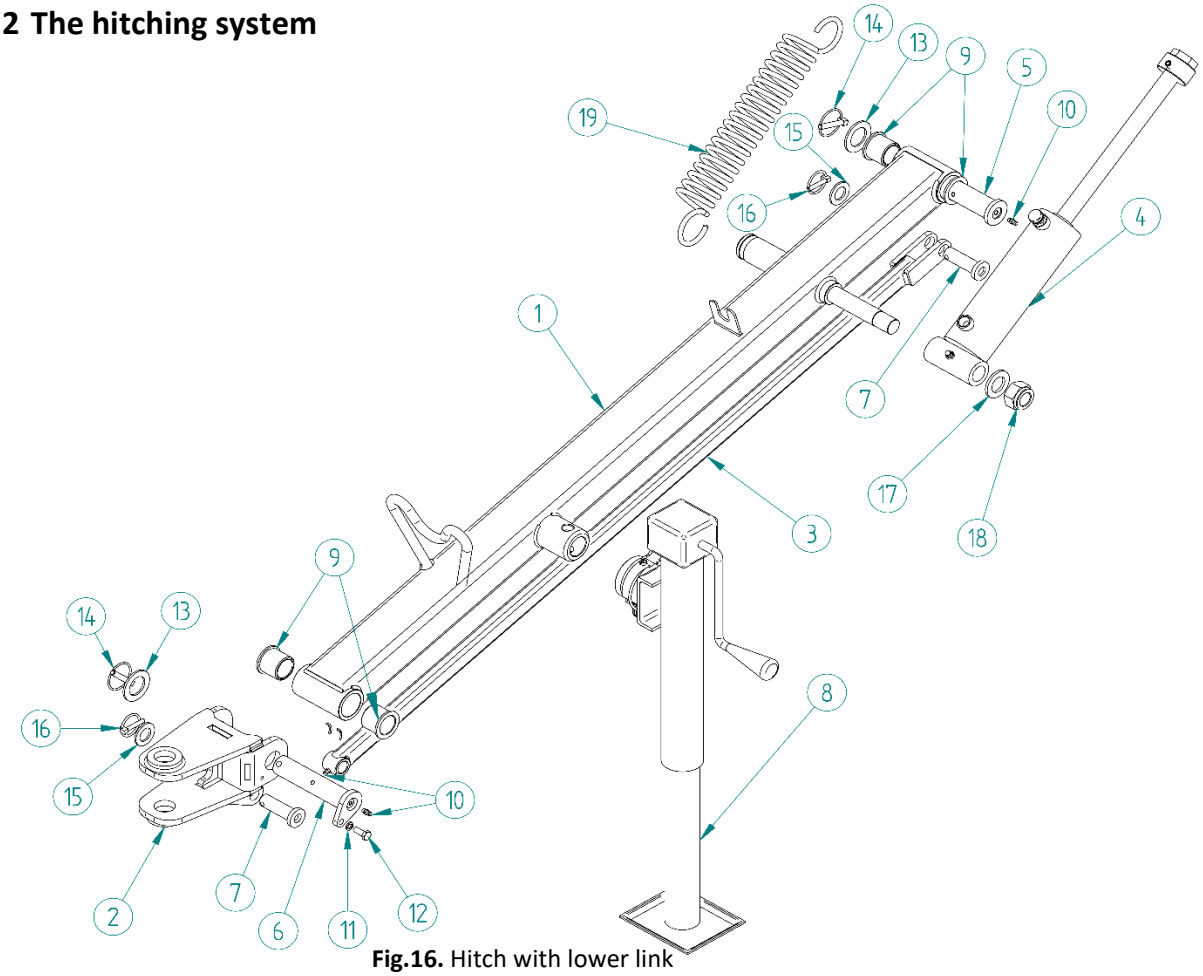

Fig.16. Hitch with lower link

Position	Description	Index	Quantity
1	Intermediate beam	P530020	1
2	Welded hitch	P530025	1
3	Hitch link	P530031	1
4	Hitch cylinder	P530141	1
5	Frame connector pin	P530081	1
6	Hitch pin	P530070	1
7	Link pin	P530098	2
8	Support foot	T003830	1
9	Joint bushing	T001069	4
10	Grease nipple M6x1 DIN 71412-A	T000645	3
11	Spring washer M8 OC DIN 7980	T000455	1
12	Screw M8x20 OC 8.8 DIN 933	T000804	1
13	M30 DIN 125 plain washer	T000466	2
14	OC folding pin 8mm	T000149	2
15	M20 plain washer	T000462	2
16	OC folding pin 6mm	T000986	2
17	M25 OC plain washer	T000464	1
18	Self-locking nut M24 DIN 985	T000290	1
19	Tension spring	T000661	1

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9.3 Transmission system

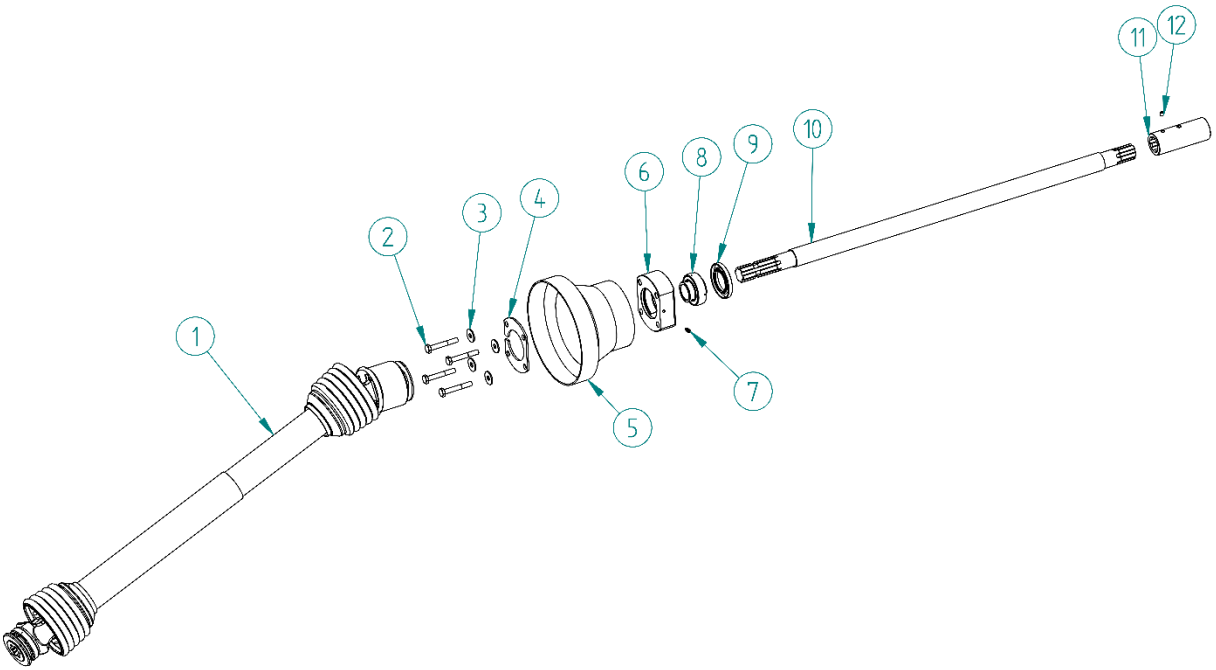

Fig.17. Transmission system

Position	Description	Index	Quantity
1	Power take-off	T001683	1
2	Screw M10x70-8.8 OC DIN 931	T000748	4
3	M10 OC DIN 9021 enlarged washer	T000457	4
4	PTO shield mounting plate	P540108	1
5	PTO cover	T000368	1
6	Bearing housing	P680416	1
7	Grease nipple M6x1 DIN 71412-A	T000645	1
8	UC 207 bearing	T000204	1
9	Sealer 48x80x10	T000884	1
10	Drive shaft	P530085	1
11	Drive shaft connector	P540113	1
12	Pressure screw M8x8 DIN 913	T000936	1

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9.4 Hydraulic system

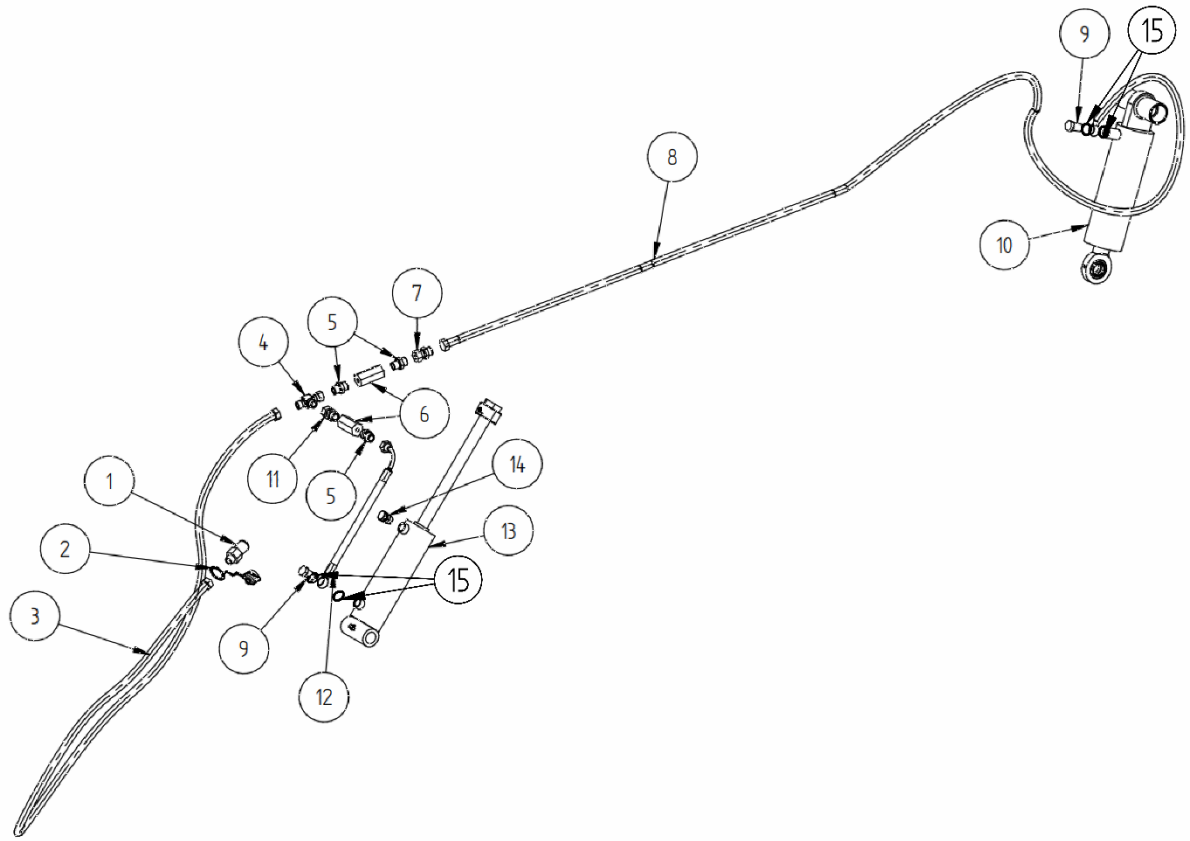

Fig.18. Hydraulic system

Position	Description	Index	Quantity
1	ISO mushroom coupling M18x1.5	T000995	1
2	Plug cover	T000488	1
3	Cable P51/P51 M18x1.5/M18x1.5 1SN DN8 L-2200	T003837	1
4	BAB tee connector M18x1.5	T002900	1
5	Straight connection G3/8 M18x1.5	T000582	3
6	3/8" throttling valve	T003832	2
7	Straight fitting AA M18x1.5/M16x1.5	T003833	1
8	WIRE P01/P21 fi18/M16x1.5 1SN DN8 L-3000	T003839	1
9	Overflow screw M18x1.5	T003834	2
10	Axle height adjustment cylinder	T000642	1
11	Straight connection AB M18x1.5 / G3/8"	T000577	1
12	WIRE P01/P52 fi18/M18x1.5 1SN DN8 L-400	T003838	1
13	Hitch cylinder	T000632	1
14	Vent M18x1.5	T003836	1
15	M18 copper washer	T003835	4

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9.5 Main frame

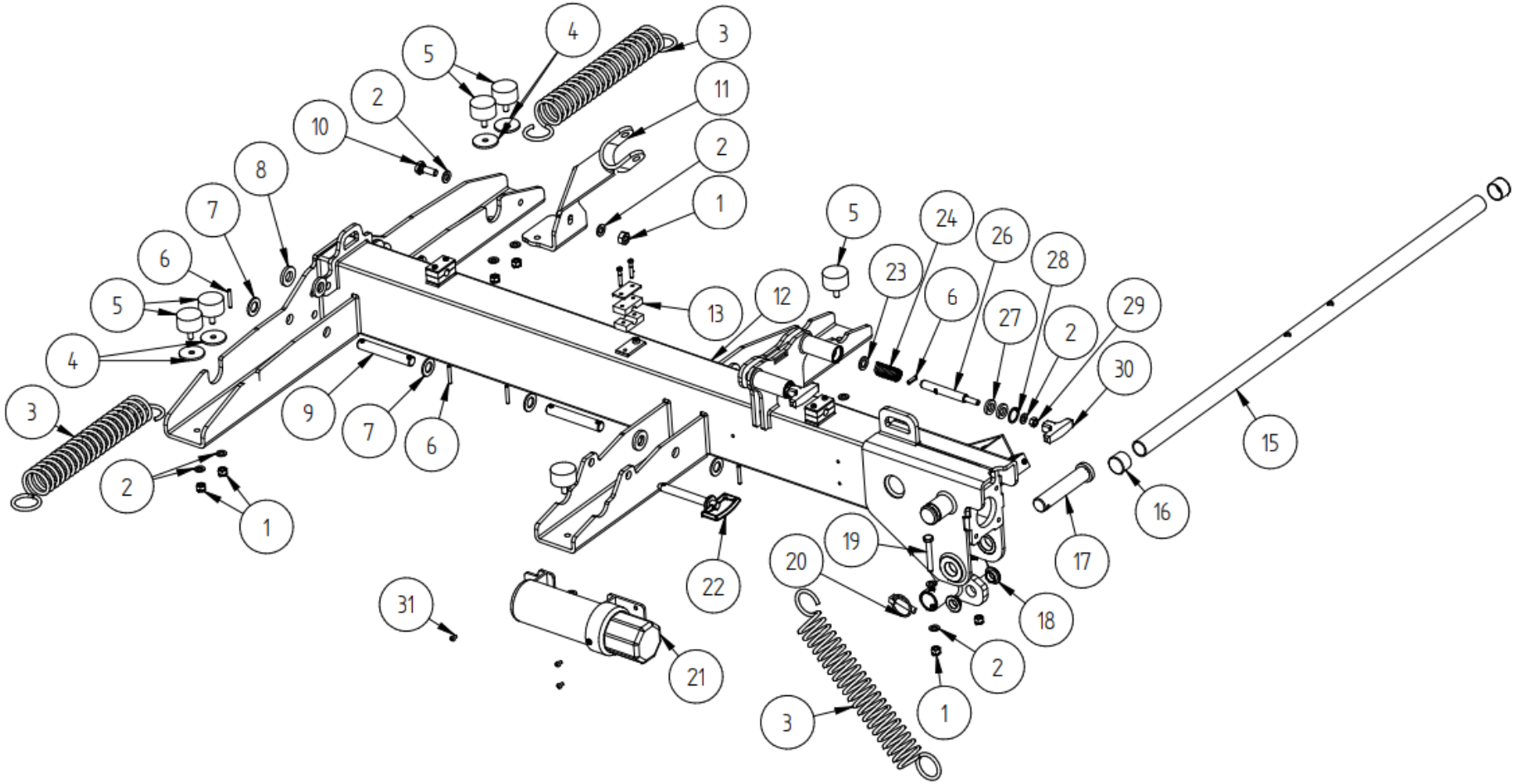

Fig.19. Main frame

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Position	Description	Index	Quantity
1	Self-locking nut M10 OC DIN 985	T000292	9
2	M10 OC DIN 125 plain washer	T000456	13
3	Tension spring	T000661	3
4	OC rubber bumper washer	P540237	4
5	Vibration damper type D 5028.D70	T000841	6
6	Spring pin 6x40 DIN 1481	T000087	10
7	M20 OC DIN 125 plain washer	T000462	8
8	Shield arm spacer	P540236	8
9	Shield arm pin	P540051	4
10	Screw M10x35 OC 8.8 DIN 933	T000743	1
11	Arm rotation lock	P540269	1
12	Welded frame	P530000	1
13	Wire clamp 15mm cpl.	T000316	3
15	Central cover	P530066	1
16	Pipe cover	T000485	2
17	Frame connection pin	P530081	1
18	Link bushing	P530080	2
19	Screw M10x70 OC 8.8 DIN 931	T000748	2
20	OC folding pin 8mm	T000149	1
21	Document container	T000477	1
22	Pin with handle	T003022	1
23	Bolt washer 1	P540096	1
24	Compression spring Ø25 L70Ø2 80.005.044	T000650	2
26	Bolt pin	P540094	2
27	Bolt washer 2	P540095	4
28	W30 circlip	T000626	2
29	Nut M10 OC 8 DIN 934	T000265	2
30	Handle intern. thr. M10	T000872	2
31	Farmers screw 4.8x25	T002239	3

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9.6 Safety barrier

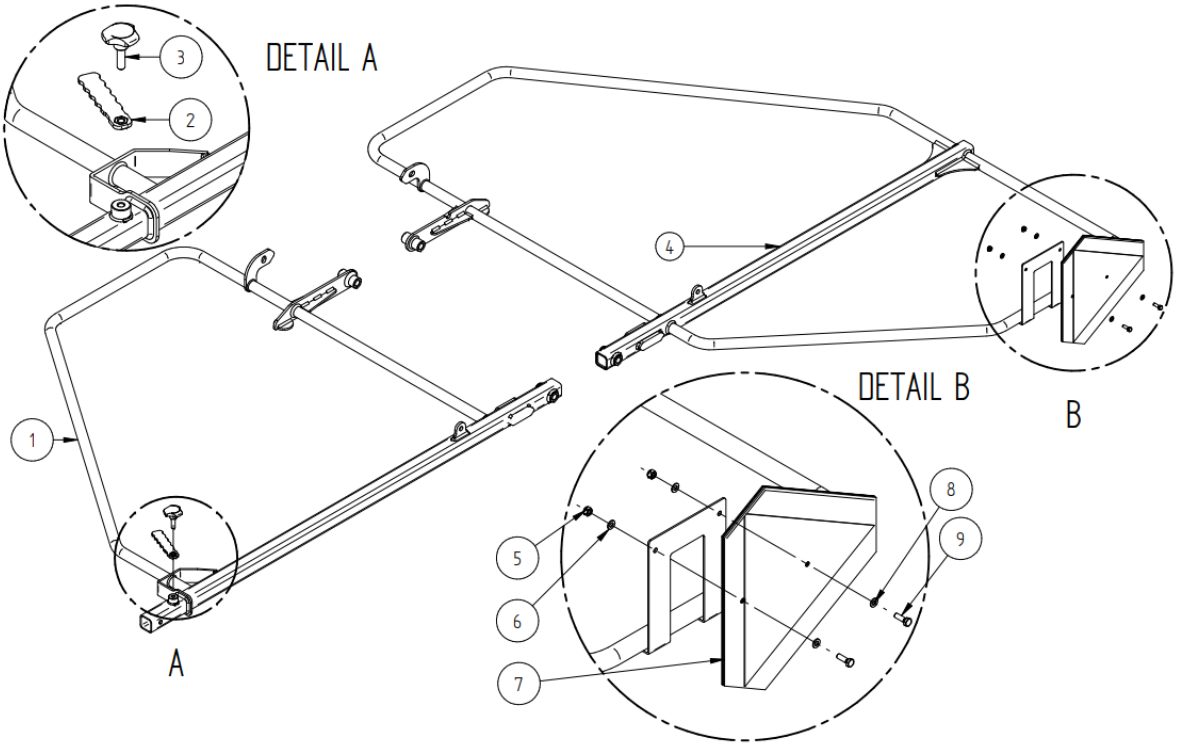

Fig.20. Safety barriers

Position	Description	Index	Quantity
1	Safety barrier-side of the swath	P530056	1
2	Counter lever	P000160	1
3	Cross knob	T003017	1
4	Safety barrier-side of the identification plate	P530057	1
5	Self-locking nut M8 OC DIN 985	T000256	2
6	Plain washer M8 OC DIN 125	T000471	2
7	Identification plate	T000832	1
8	Enlarged washer M8 OC DIN 9021	T000443	2
9	Screw M8x20 OC 8.8 DIN 933	T000804	2

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9.7 Gearbox

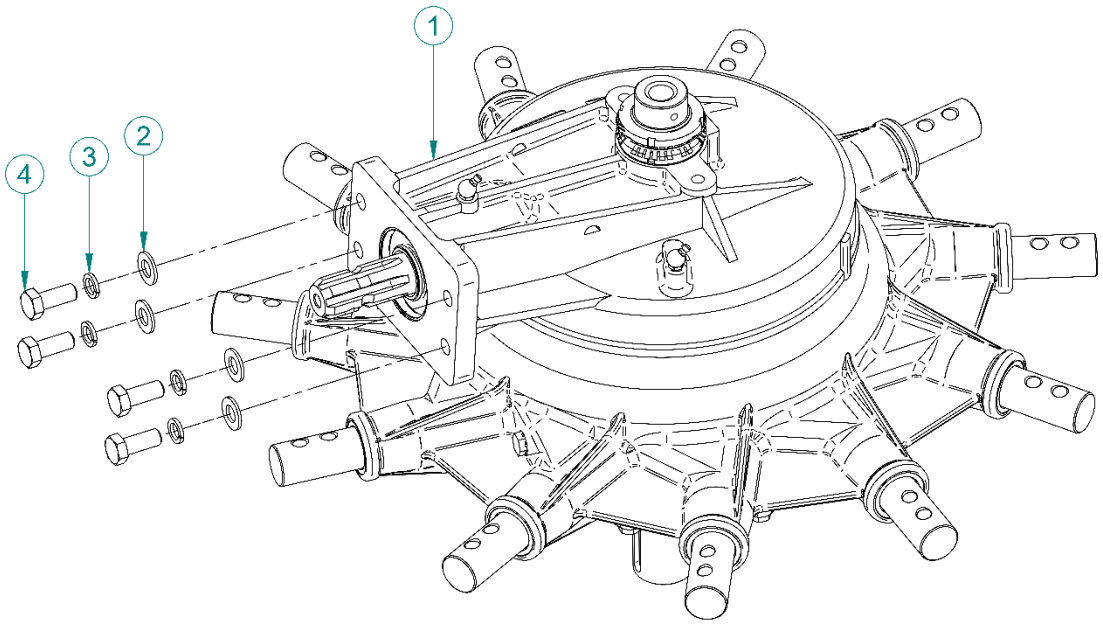

Fig.21. Carousel rake – Gearbox

Position	Description	Index	Quantity
1	11 arm gearbox	T000503	1
2	Plain washer M14 OC DIN 125	T000459	4
2	Spring washer M14 OC DIN DIN 7980	T000452	4
3	Screw M14x35 OC 8.8 DIN 933	T000766	4

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9.8 Folding rake arm

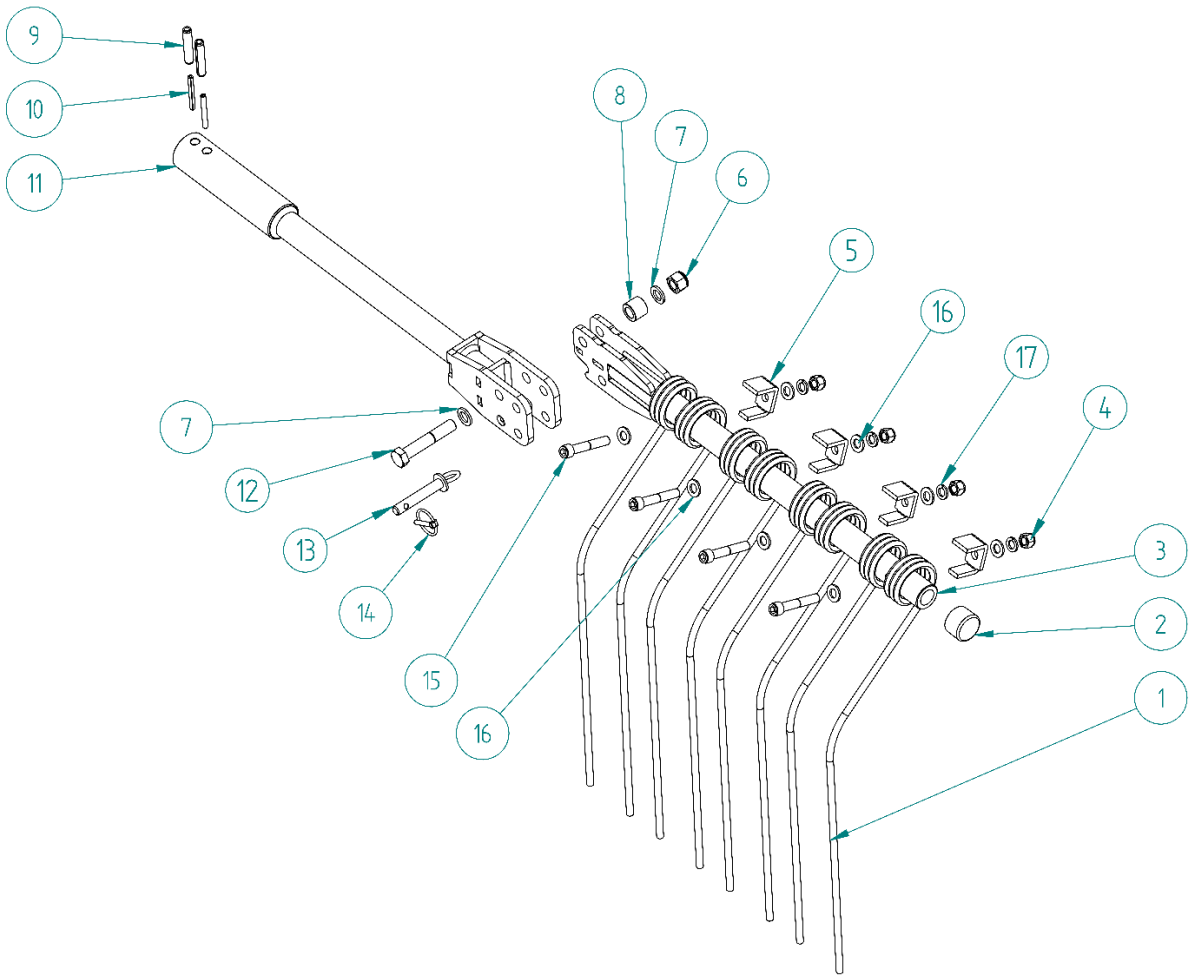

Fig.22. Rake arm – folding

Position	Description	Index	Quantity
1	Rake finger	T000373	4
2	Pipe cap	T003016	1
3	Folding arm - raking section	P540191	1
4	Self-locking nut M12 OC DIN 985	T000291	4
5	Oc rake finger attachment	P540181	4
6	Self-locking nut M16 OC DIN 985	T000294	1
7	Plain washer M16 OC DIN 125	T000460	2
8	Arm spacer	P540202	1
9	Spring pin 12x60 DIN 1481	T000079	2
10	Spring pin 7x60 DIN 1481	T000082	2
11	Folding arm transmission section	P540195	1
12	Screw M16x90-8.8 OC DIN 931	T000785	1
13	Pin for locking folding arms	P540203	1
14	Pin OC 6mm	T000986	1
15	Screw M12x80 OC 8.8 DIN 912	T000734	4
16	Plain washer M12 OC DIN 125	T000458	8
17	Spring washer M12 OC DIN 7980	T000451	4

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9.9 Rigid rake arm

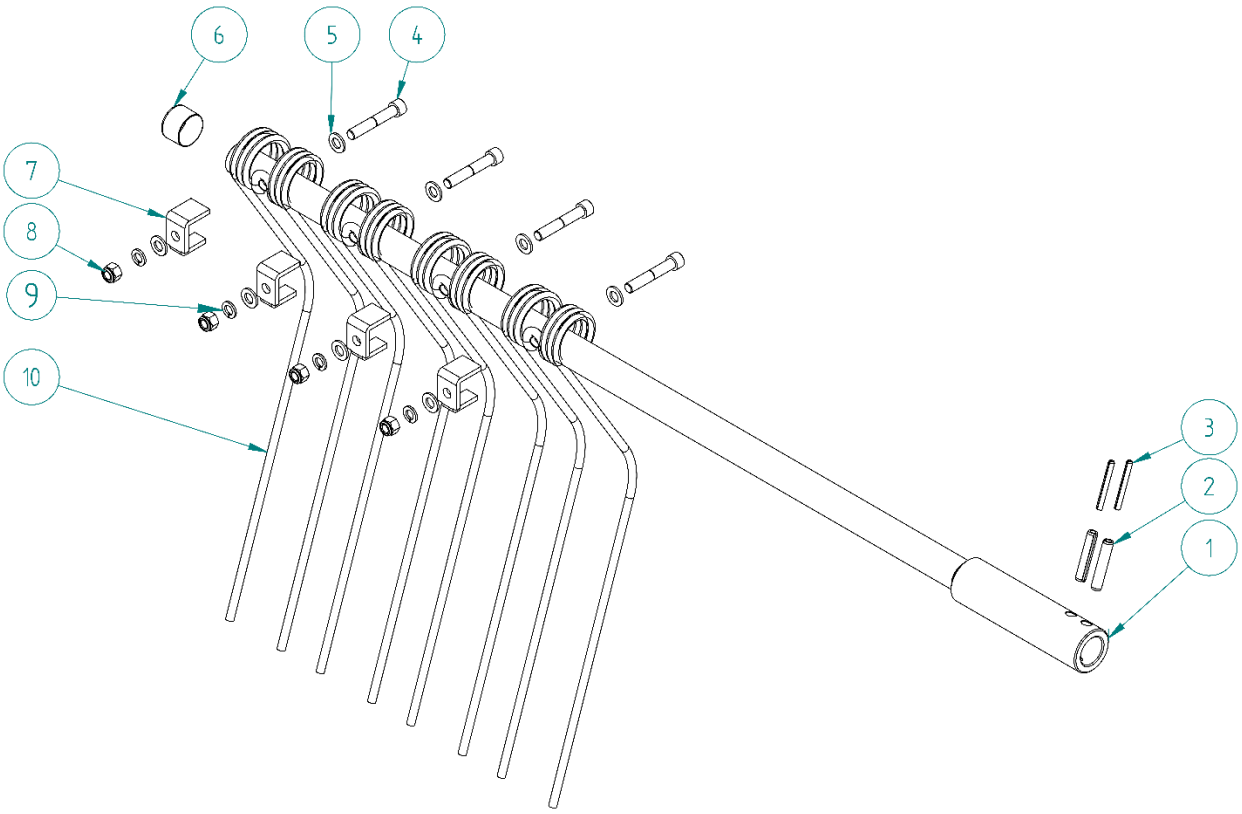

Fig.23. Rake arm - rigid

Position	Description	Index	Quantity
1	Fixed arm	P540178	1
2	Spring pin 12x60 DIN 1481	T000079	2
3	Spring pin 7x60 DIN 1481	T000082	2
4	Screw M12x80-8.8 OC DIN 912	T000734	4
5	Plain washer M12 OC DIN 125	T000458	8
6	Pipe cap	T003016	1
7	Rake finger attachment	P540181	4
8	Self-locking nut M12 OC DIN 985	T000291	4
9	Spring washer M12 OC DIN 7980	T000451	4
10	Rake finger	T000373	4

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9.10 Chassis system

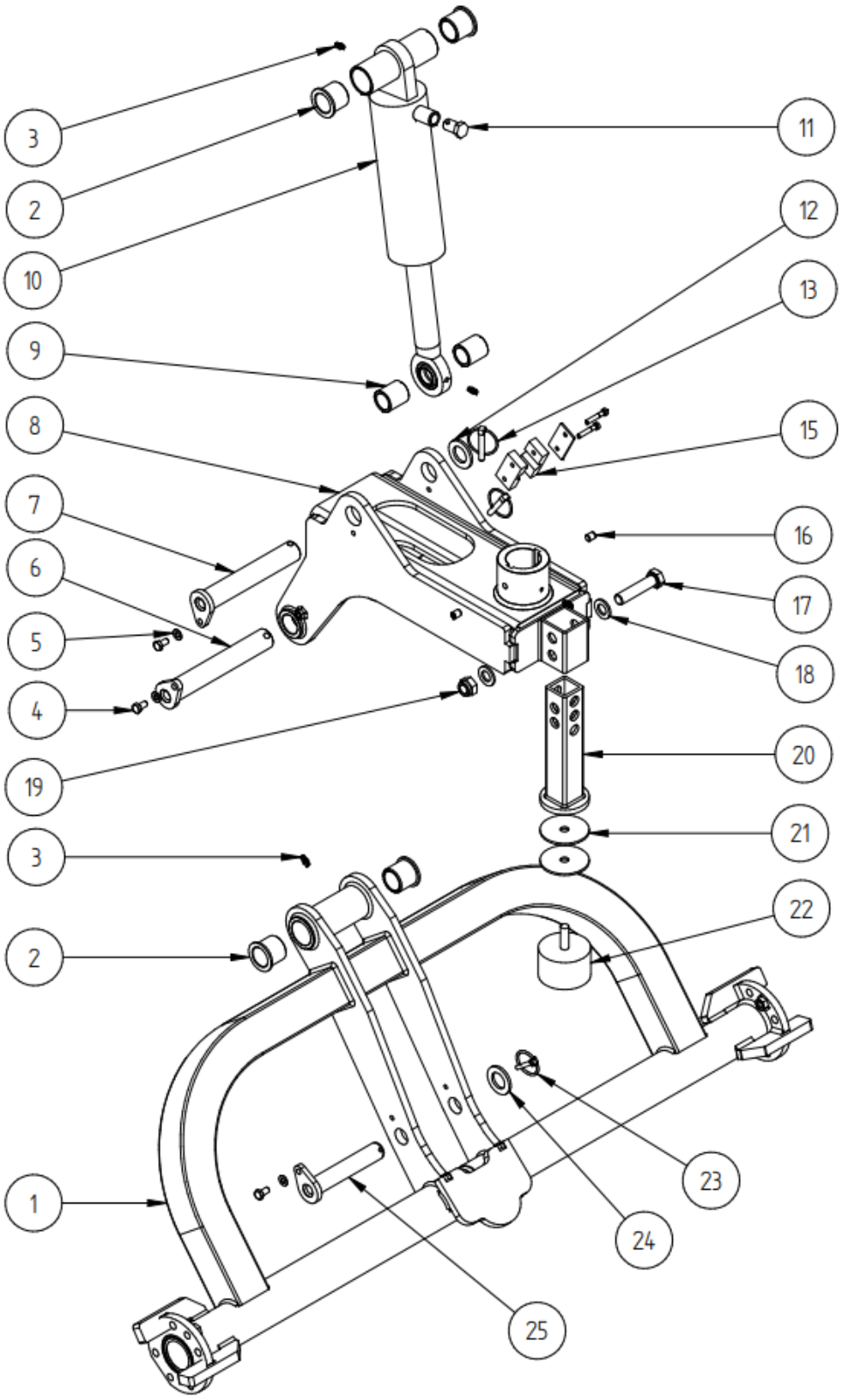

Fig.24. Chassis system

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Position	Description	Index	Quantity
1	Wheel axle frame	P530042	1
2	Joint bushing	T001069	4
3	Grease nipple M6x1 DIN 71412-A	T0000645	3
4	Screw M8x16 OC 8.8 DIN 933	T0000803	3
5	Spring washer M8 OC DIN 7980	T000455	3
6	Chassis hinge pin	P530077	1
7	Cylinder pin	P530087	1
8	Saddle frame	P530035	1
9	Cylinder spacer	P530063	2
10	Chassis cylinder	T000642	1
11	Overflow screw M18x1.5	T003834	1
12	Plain washer M30 OC DIN 125	T000466	2
13	Universal pin OC 8mm	T000149	2
15	Wire clamp 15mm	T000316	1
16	Pressure screw M10 DIN 913	T000808	2
17	Screw M16x80 OC 8.8 DIN 931	T000784	1
18	Plain washer M16 OC DIN 125	T000460	2
19	Self-locking nut M16 OC DIN 985	T000294	1
20	Height adjustment profile	P530074	1
21	Bumper spacers	P530062	2
22	Rubber bumper	T000328	1
23	Universal pin OC 6mm	T000986	1
24	Plain washer M25 OC DIN 125	T000464	1
25	Bottom pin of the cylinder	P530075	1

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9.11 Profile with wheels

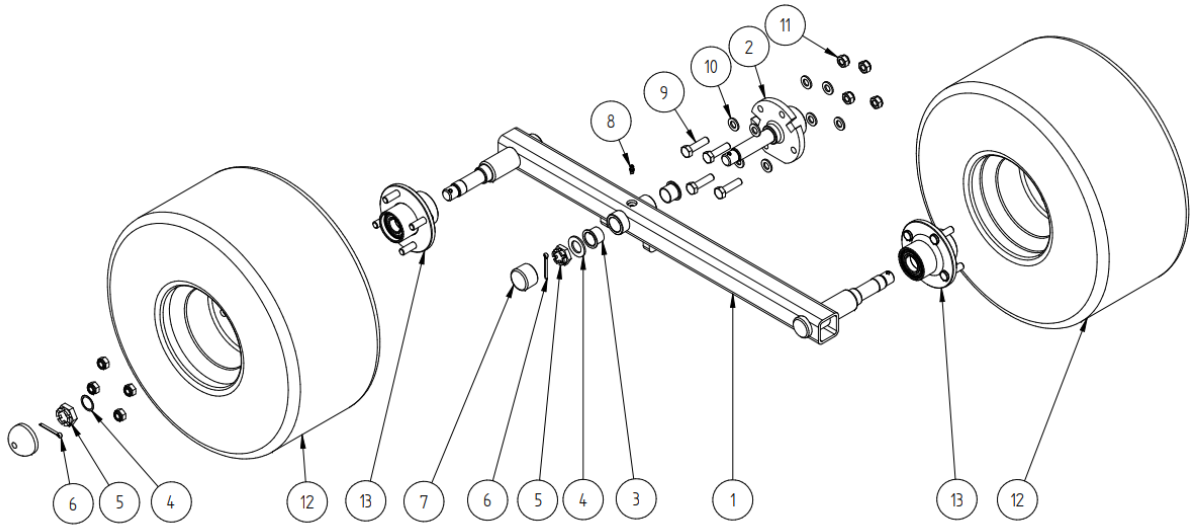

Fig.25. Profile with wheels

Position	Description	Index	Quantity
1	Right/left tandem	P530050/P530051	1P+1L
2	Right/left interchangeable pivot	P530048/P530054	1P+1L
3	Sliding bushing PAF 25215	T002785	2
4	Plain washer M22 OC DIN 125	T000463	3
5	Nut M22x1.5 OC crown low DIN 937	T000275	3
6	Pin 5x40 OC DIN 94	T000985	3
7	Flexible cap 34.9x38	T000301	1
8	Grease nipple M8x1 DIN 71412-A	T000647	1
9	Screw M12x45 OC 8.8 DIN 933	T000758	4
10	Plain washer M12 OC DIN 125	T000458	8
11	Self-locking nut M12 OC 8 DIN 985	T000291	4
12	Wheel AB 18x8.5-8 81B STARCO HIT TR13	T002312	2
13	Wheel hub	T002313	2

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9.12 Swath scraper

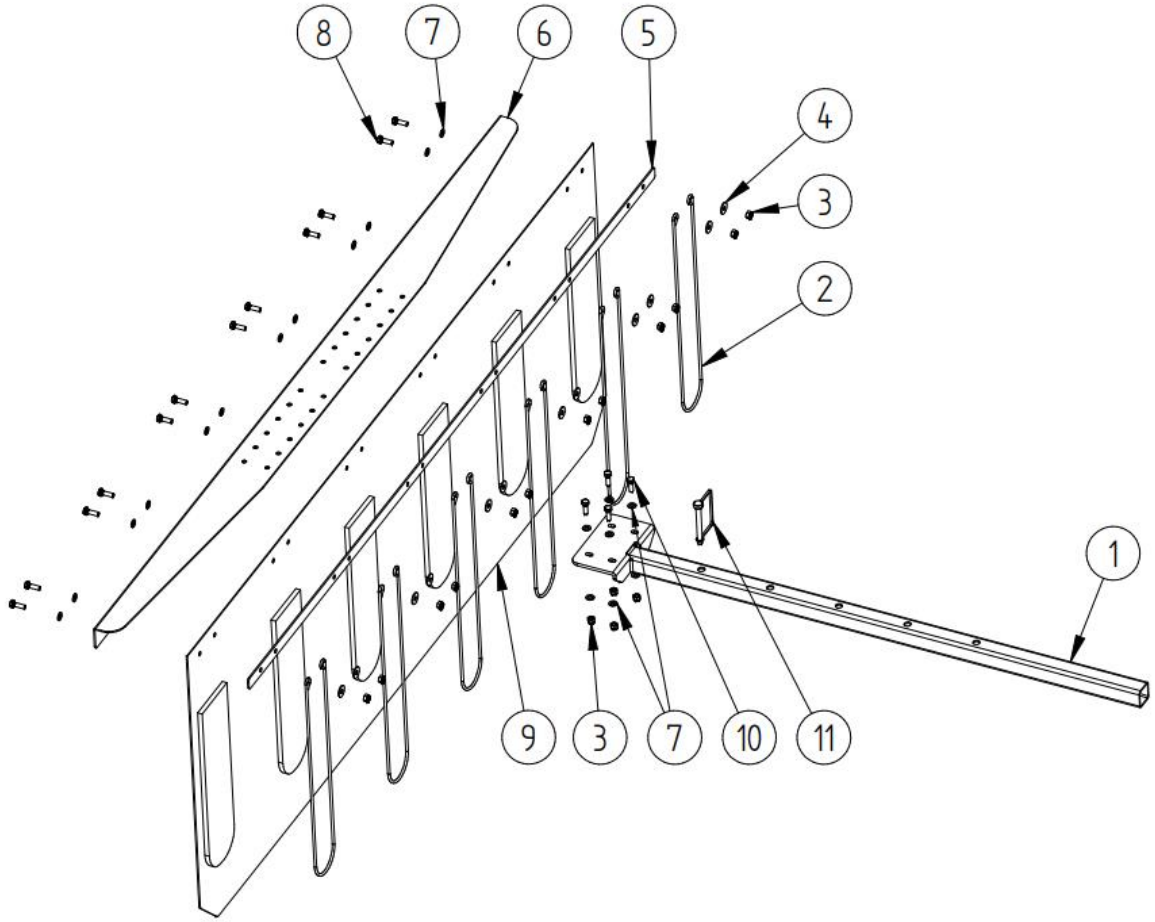

Fig.26. Swath scraper

Position	Description	Index	Quantity
1	Swath arm	P540289	1
2	Stiffening element 500x84x5	T000040	6
3	Self-locking nut M8 oc	T000256	16
4	M8 pad enlarged oc	T000443	12
5	Mounting strip	P540293	1
6	Fixing for the tarpaulin	P540294	1
7	M8 flat washer oc	T000471	20
8	M8 Bolt x25-8.8 oc	T000805	4
9	Apron for rake 5272/512-05-202	T000042	1
10	M8 Bolt x30-8.8 oc	T000807	12
11	Folding pin 12x67	T000992	1

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10. Warranty

WARRANTY CERTIFICATE

Serial number	.....	Type	.....
Year manufactured	.....	KJ	.....

Under the warranty, the manufacturer undertakes to repair, free of charge, the physical defects revealed during the warranty period, which is valid for 12 months from the date of sale.

The manufacturer is released from liability under the warranty in the event of:

- Mechanical damage to the machine after handing it over to the user;
- Improper operation, maintenance, storage of the machine, especially not in accordance with the operating manual;
- Performing repairs by unauthorized persons without the manufacturer's permission to do so;
- Making design changes without consulting the manufacturer;

The warranty card is valid if it has the signature of the seller and the date of sale confirmed by the company stamp of the commercial unit. It must not contain deletions and corrections by unauthorized persons.
A duplicate warranty card can be issued upon written request after the user presents proof of purchase.
In the event of an unfounded service call for warranty repair, the related costs shall be borne by the user.
Claims are reported by the user immediately after the damage occurs, directly to the seller or manufacturer.
The manufacturer shall provide warranty service within 14 days from the date of notification to the date of repair.
The warranty is extended by the time of repair, counting from the date of notification until the time of service, if the defect prevented the use of the machine.
The warranty does not cover natural wear and tear of parts such as bearings, tires, rake fingers, rubber covers, tarpaulins (covers), fasteners, etc.

Date of sale: _____ _____
(day, month, year) *(signature and stamp of point of sale)*

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11. Records of warranty repairs

WARRANTY REPAIRS RECORD

To by filled in by the manufacturer:

Date of complaint: _____

The scope of repairs and replaced parts: _____

_____

_____

_____

Date of repair: _____

Warranty extended till: _____

_____
(details of a service point, legible signature of a person performing warranty repair)

Date of complaint: _____

The scope of repairs and replaced parts: _____

_____

_____

_____

Date of repair: _____

Warranty extended till: _____

_____
(details of a service point, legible signature of a person performing warranty repair)

Date of complaint: _____

The scope of repairs and replaced parts: _____

_____

_____

_____

Date of repair: _____

Warranty extended till: _____

_____
(details of a service point, legible signature of a person performing warranty repair)

Date of complaint: _____

The scope of repairs and replaced parts: _____

_____

_____

_____

Date of repair: _____

Warranty extended till: _____

_____
(details of a service point, legible signature of a person performing warranty repair)*)*

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12. Warranty form

CLAIM FORM NO. .....

Name :…..

Address :.....

Zip Code :.....

City :.....

Phone No :.....

Email address :.....

Method of making the claim :.....

Name of goods subject to the claim: .....

Name of outlet :.....

Proof of purchase - VAT Invoice No. ..... dated .....20.....

Defect/damage description:.....

.....

.....

Agreed date for handling the claim:.....

Method and deadline for handling the claim:.....

.....

.....

Date the defect took place / was found: .....20.....

.....

Date, Name

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13. Declaration of conformity

WE Machine declaration of conformity

Manufacturer:

TALEX Spółka z ograniczoną odpowiedzialnością

Spółka komandytowa

ul. Dworcowa 9C

77-141 Borzytuchom

The manufacturer hereby declares that the machine:

Machine type: **Carousel Hay Rake**

Machine name: SPYDER 420/360

Serial number: .....

Year of production: .....

To which this declaration refers, satisfies the requirements:

REGULATIONS

- Machinery Directive 2006/42/EU from 17.05.2006. (Law Sheet L 157 vom 9.06.2006 S. 24) mit Änderungen aus 2009/127/EU vom 21.10.2009. (Law Sheet L 310 vom 25.11.2009 S. 29).

HARMONIZED STANDARDS

- PN-EN ISO 4254-1/2006 Agricultural machinery. Safety. Part 1: General requirements
- PN-EN 15811/2009 Agricultural machinery. Covers of moving parts of power transmission.
- PN-EN 953/2009 Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards..
- PN-EN 12100/2010 Machine safety. General planning rules. Risk assessment

  Risk reduction
- PN-ISO 11684/1998 Safety marking and pictograms of hazards

The declaration loses its validity if the machine will be rebuilt without the permission of the manufacturer.

Borzytuchom, 19.03.2016

Karol Jaworski

(place and date of issue) *(first and last name and the signature of the authorized by the manufacturer person)*