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SHARP



KULTYWATOR PRZEDSIEWNY

SAATBETTGRUBBER

SEEDBED CULTIVATOR

CULTIVATEUR DE LIT DE SEMENCE

Культиватор



Manual

Biedrzychowice 2020

DEKLARACJA ZGODNOŚCI

DECLARATION OF CONFORMATY
DICHIARAZIONE DI CONFORMITA

003/PM/20

NAMYSLO

NAMYSLO Damian Namysło
Biedrzychowice 96A, 48-250 Głogówek
Ust-IdNr.(NIP): PL 755-184-91-20, Regon: 369058315

Oświadczamy, że produkowany przez nas wyrób

We affirm that product manufactured by us

Affermano che e prodotto da noi

Nazwa: **KOMPAKTOR UPRAWOWY**

Name:

Nome:

Typ/model: **SHARP**

Type/model:

Tipo:

Spełnia wymogi następujących norm i norm zharmonizowanych:

Is in accordance with the following harmonized standards:

E in conformita delle seguenti norme:

oraz spełnia wymogi zasadnicze następujących dyrektyw:

And is in accordance with the following directives:

A conforme alle seguenti directive:

2006/42/WE Dyrektywa Maszyn

2006/42/WE Machinery Directive

2006/42/WE Le direttiva macchine

EN ISO 12100-1:2003 Bezpieczeństwo maszyn - Pojęcie podstawowe, ogólne zasady projektowania - Część 1: Podstawowa terminologia, metodyka

EN ISO 12100-1:2003 Safety of machinery - Basic concepts, general principles for design - Part 1: Basic technology, methodology

EN ISO 12100-1:2003 Sicurezza del macchinario - concetti di base, principi generali di progettazione - Parte 1: Concetti fondamentali e metodologia

89/686/EWG Dyrektywa Środków Ochrony Indywidualnej PPE

89/686/EWG Personal Protective Equipment (PPE) Directive

89/686/EWG Directiva DPI



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TABLE OF CONTENTS

1. Introduction	4
1.1. Safety signs	6
1.2. Construction of the SHARP seed drill	7
2. Intended use of the aggregate	8
3. General safety rules	9
3.1. Hitching and uncoupling with the tractor	10
3.2. Tires	10
3.3. Hydraulic system	10
3.4. Transport on public roads	11
3.5. Description of residual risk	12
3.6. Residual risk assessment	12
4. Information on handling and use	12
4.1. Preparation of the SHARP seedbed preparation	12
4.2. Hitching the seedbed cultivator to the tractor	17
4.3. Work and regulations	17
5. Service	22
5.1. Daily service	22
5.2. Off-season service	24
5.3. Operation of the chassis	24
5.4. Hydraulic system service	25
6. Replacement procedures	25
7. Storage	26
8. Disassembly and cassation	26
9. Technical characteristic	26
10. GUARANTEE CARD	27

1. Introduction

NAMYSLO Damian Namysło congratulates on the purchase of a modern SHARP seedbed cultivator.

We are convinced that the aggregate will meet the customer's expectations.

Upon purchase, the user receives a complete machine, assembled at the factory and ready to work.

For proper and safe use, we recommend that you carefully read this manual.

The manual is an essential part of the machine and should be kept for future use. The manual includes a machine parts catalog and a warranty card.

Correct use of the machine together with appropriate maintenance, lubrication and storage will facilitate keeping it in good condition and ready for work.

The machine has been designed and manufactured taking into account all the requirements related to its safe use, in accordance with applicable standards. However, it is necessary to comply with all recommendations contained in the operating instructions and applicable legal regulations regarding the use of the machine.

It should be borne in mind that, despite the application of solutions aimed at meeting all requirements of national and international standards in the field of ergonomics and safety of use, hazards associated with, for example, residual risk, as well as situations that cannot be predicted during work cannot be excluded.

Using the machine for other purposes will be understood as improper use.

Additional information on the rules of use and spare parts can be obtained on the website: **www.namyslo.pl**, directly or by phone **at NAMYSLO Damian Namysło** or **at machine sales outlets**.

Any deviations from the manufacturer's requirements and applicable legal regulations, including making any changes to the machine's design, without the consent of the manufacturer, the use of non-original spare parts will be understood as non-compliant use.

Damian Namysło is not liable for damages arising at that time.

The manufacturer reserves the right to make constructional, technological and equipment changes agreed with IBMER and PIMR. These changes will be included in the instructions for use and maintenance on an ongoing basis in the form of annexes.

The product is identified by a data plate located on the main frame beam of the plow.

The type plate contains the following data:

- name and address of the manufacturer
- machine name
- machine type
- year of construction
- serial number
- weight
- KTM symbol



1.1. Safety signs






Remember! When using the SHARP aggregate, particular caution should be exercised in places marked with special information and warning signs (yellow stickers)

The characters and inscriptions on the machine are listed below. Safety signs and inscriptions should be protected against loss and loss of readability. Characters and inscriptions lost and illegible should be replaced with new ones.

Tab. 1 Information and warning signs

<i>Safety sign</i>	<i>The meaning of the safety sign</i>	<i>Place of placement on machine</i>
	<p>Read the instructions service before start using.</p>	<p>Frame near the mount upper connector</p>
	<p>Toes crushing or feet.</p>	<p>Frame near the mount upper connector</p>
	<p>Do not take up space in near the linkage rods during control lift.</p>	<p>Frame near the mount upper connector</p>

<i>Safety sign</i>	<i>The meaning of the safety sign</i>	<i>Place of placement on machine</i>
	<p>Keep safe distance from elements folding and movable machinery</p>	<p>The front part of the middle frame in near the side frames</p>
	<p>Do not reach into the area crush if items they can move.</p>	<p>Middle frame near the frame the side.</p>
	<p>Fluid stream under pressure - damage the body.</p>	<p>Actuators</p>

1.2. Construction of the SHARP seed drill

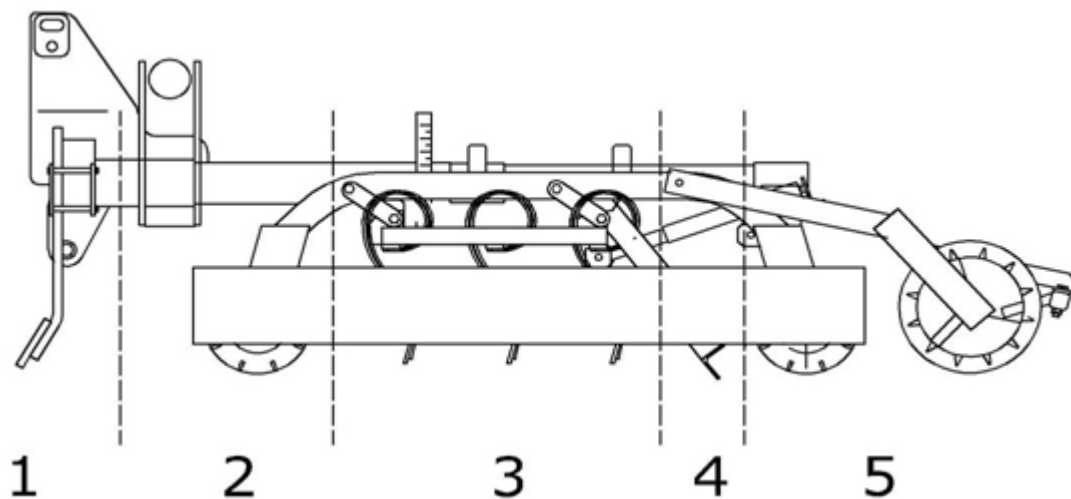


Fig. 1 Working sections of the SHARP seedbed cultivator: 1- track eradicators, 2- roller Ø350 mm crumbling leveling, 3- teeth section, 4- leveling drag, 5- section of burnishing and crushing shafts Ø350 mm and pin Ø400 mm

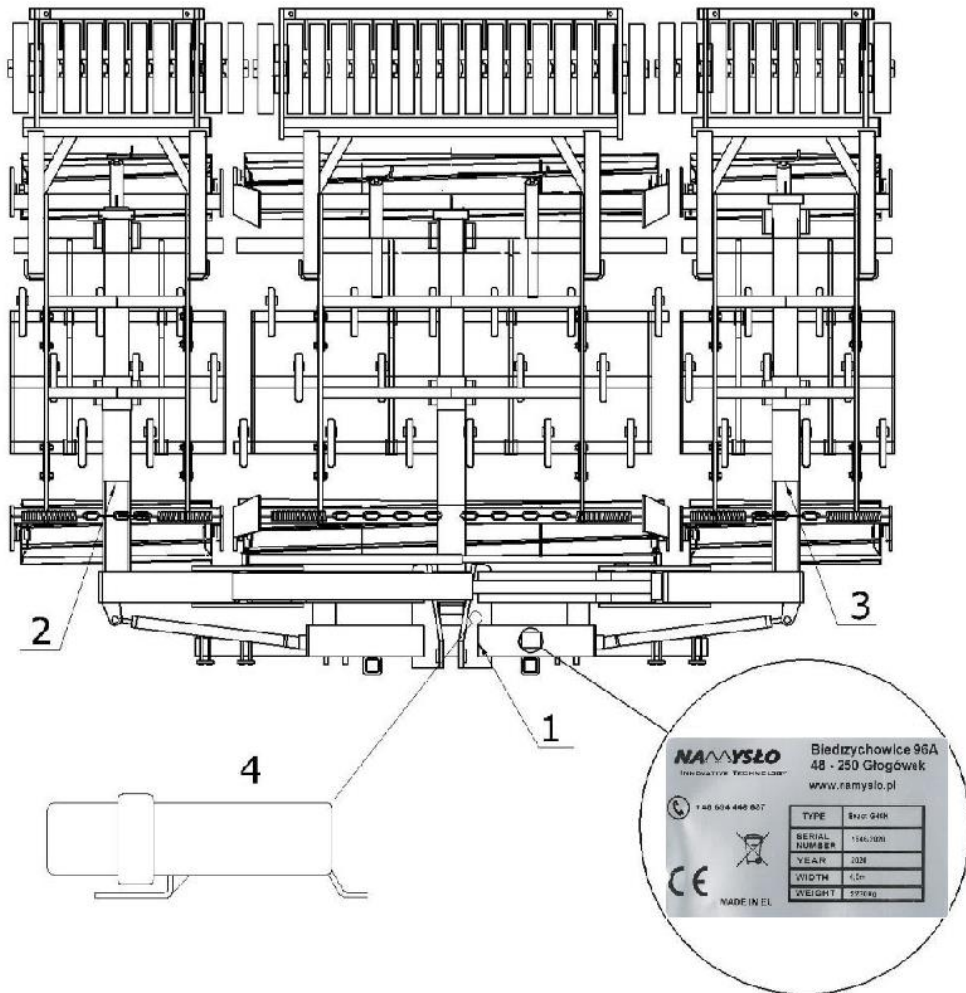


Fig. 2 View of the SHARP seedbed cultivator with a place for mounting the type plate: 1- middle frame, 2- right frame with working sections, 3- left frame with working sections 4- tube for operating instructions.

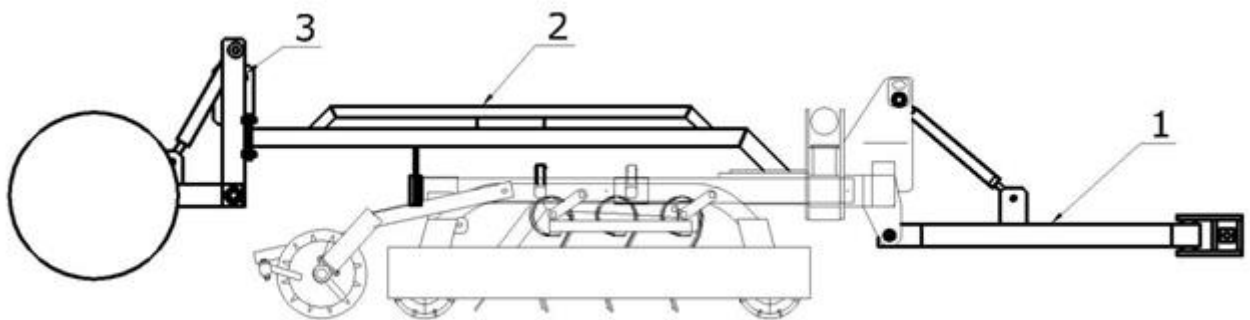


Fig. 3 View of the SHARP seedbed cultivator trolley: 1 - trolley drawbar, 2 - trolley frame, 3 - trolley lifting system

2. Intended use of the aggregate

The SHARP tilling set is intended for pre-sowing soil cultivation. Its task is to loosen the top layer of soil, break up and crush lumps, crusted field surface, leveling and kneading the ground. The purpose of the aggregate is to create a "seedbed" - a loosened surface of the field to the depth of seed sowing, enabling air exchange and flow of rainwater deep into the soil profile, lumpy surface and compacted below for better water absorption.

The seedbed cultivator is especially useful when growing plants that require particularly even and well-structured soil, e.g. sugar beet, rapeseed. Appropriate configuration of the aggregate allows you to prepare the field for sowing after one pass. The working elements of the aggregate are:

- front flat bar with a diameter of Ø 350 mm,
- three rows of reinforced teeth with straight coulter / goose foot,
- leveling drag,
- set of rear shafts: flat bar Ø 300 mm and pin roller Ø 400



WARNING! The SHARP tilling set is intended for soil cultivation only. Using it for other purposes will be understood as improper use and will void the warranty.



WARNING! Failure to comply with these operating instructions will also be understood as improper use. The manufacturer is not liable for damage resulting from the use of the machine other than its intended purpose.

3. General safety rules

The **SHARP** tilling set may be started, used and repaired only by people familiar with its operation and cooperating tractor as well as rules of conduct in the scope of safe operation and operation of the set. The manufacturer is not responsible for any arbitrary changes in the design of the seedbed cultivator.

The **SHARP** seedbed cultivator should be operated with all precautions, in particular, in particular:

- before each start-up check the machine and tractor that their condition guarantees safety in motion and during operation,
- it is forbidden to use the machine by persons under 16 years of age, after drinking alcohol or other intoxicants,
- during maintenance work wear protective clothing, footwear and gloves,
- the permissible axle loads and transport dimensions must not be exceeded,
- only original pins and pins should be used,
- do not approach the unit during its lifting, lowering, folding and unfolding,
- do not stay between the tractor and the machine when the engine is running,
- moving the seedbed cultivator, raising and lowering slowly and gently without sudden jerks and making sure that there are no bystanders nearby,
- do not reverse the tractor or turn while the machine is lowered in working position,
- the tractor's independent brakes must not be applied when making turns,
- during work and transport, do not stand on the machine and additionally load it,
- during relapses, extreme caution should be observed if there are bystanders nearby,
- the aggregate must not be operated on slopes greater than 12°,
- make any repairs, lubrication or cleaning of working elements only with the engine off, the unit lowered and unfolded
- while maintaining and replacing parts, entering the machine without proper protection may result in head injuries - in this case use a helmet,
- during breaks in work, lower the machine to the ground and stop the tractor engine,
- the aggregate with a working width of more than 3.00 m is equipped with a mechanical lock that blocks the wings from uncontrolled opening during parking and transport,
- driving and parking the generator set on an unstable slope may cause landslides,
- the machine must be stored in a manner that prevents injury to persons and animals.

3.1. Hitching and uncoupling with the tractor

- Connecting the machine with the tractor should be made in accordance with the recommendations, remembering to secure the suspension pins with pins.
- When hitching the tractor to the seedbed cultivator, it is forbidden for people to stand between the machine and the tractor at this time.
- The tractor cooperating with the aggregate must be fully functional. It is forbidden to aggregate the machine with a tractor with a faulty hydraulic system.
- Remember to keep: balance of the tractor with suspended aggregate, its controllability and braking capacity - front axle load must not fall below 20% of the total tractor axle load - set of front weights.
- In the rest position, the machine disconnected from the tractor should maintain a stable balance.

3.2. Tires

- The tire pressure must not exceed the pressure recommended by the manufacturer and it is forbidden to transport it at too low pressure, which may cause unevenness and too fast driving, causing an accident or damage to the machine.
- Badly damaged tires (especially profile damage) must be replaced immediately
- When changing tires, secure the machine against rolling away.
- Repair work on the wheels or tires should be carried out by persons trained and authorized to do so. These works should be carried out using appropriately selected tools.
- After installing the wheels, check the tightness of the nuts after 50 km.

3.3. Hydraulic system

The hydraulic system is under high pressure. You should keep all precautions, in particular:

- do not connect or disconnect hydraulic conduits when the tractor hydraulic system is under pressure (hydraulics set to neutral position)
- regularly check the condition of connections and hydraulic lines.
- the unit should be taken out of service for the time of removing the hydraulic failure.

3.4. Transport on public roads

For transport, the side sections of the SHARP 4.0H, 5.0H, 6.0H seedbed cultivator must be folded into the transport position using the hydraulic system. The aggregate should be secured against unfolding with a mechanical lock. The SHARP cultivator equipped with a trolley should lower the wheels to the extent that the side sections will not collide with the ground during folding.

During transport, the clearance under the machine should be at least 30 cm.

When transporting the aggregate on public roads, it is obligatory to use a lighting device, a distinguishing sign and side reflectors. Do not exceed the speed of travel during transport, which is:

- on roads with a smooth surface (asphalt) up to 25 km / h,
- on dirt or cobblestone roads 6-10 km / h,
- on rough roads no more than 5 km / h.

The travel speed must be adapted to the road condition and conditions prevailing on it, so that the aggregate does not jump on the tractor suspension system. Be especially careful when passing, overtaking and when cornering. The permissible working width of the machine traveling on public roads is 3.0 m. It is forbidden to transport the aggregate in which the slope of the previous slope to the aggregate exceeds 7°.



WARNING! Failure to comply with the above rules may endanger the operator and bystanders as well as damage the machine. The user bears all damages resulting from non-compliance with these rules.

In accordance with road safety regulations (Regulation of the Minister of Infrastructure of 31.12.2002, Journal of Laws No. 32 of 2002, Item 262) - an aggregate consisting of an agricultural tractor and an agricultural machine aggregated with it must meet the requirements identical to those laid down tractor.



WARNING! The aggregate as a part of the vehicle protruding beyond the rear side contour of the tractor covering the rear lights of the tractor poses a threat to other vehicles traveling on the road. It is forbidden to drive on public roads without proper marking.

The machine marking is:

- **Two portable warning signs** mounted on the frame of the rear shaft or trolley designating the outline of the machine. Rear-mounted boards should be fitted with combined and reflective red lights visible from the rear and white position lights visible from the front.
- **Low-speed vehicles distinctive plate** mounted in the middle of the shaft frame visible from the rear.
- **Yellow car side reflectors** (permanent marking visible from the sides).

The manufacturer does not provide warning plates as standard equipment. Warning boards are commercially available. Warning boards should be securely mounted in holders and the plug should be connected to the socket of the tractor's electrical system. Check the operation of the lights before transporting.

After lifting the machine, check the ground clearance under the lowest working elements, which should be at least 30 cm.

3.5. Description of residual risk

The greatest danger occurs when:

- using the machine for purposes other than those described in the manual,
- using the machine by unauthorized minors, the sick, after drinking alcohol or other intoxicants,
- people and animals being within range of the machine,
- failure to exercise caution when transporting and maneuvering the tractor,
- staying on the machine or between the machine and the tractor while the engine is running,
- during operation and not following the operating instructions,
- traveling on public roads.

3.6. Residual risk assessment

Residual risk can be reduced to a minimum by following these recommendations:

- prudent and leisurely machine operation,
- careful reading of the instruction manual,
- maintaining a safe distance from hazardous areas,
- a ban on being on the machine and in the operating areas of the machine while the tractor engine is running,
- performing maintenance works in accordance with safety principles,
- the use of protective clothing, and in the case of work under the machine also a helmet,
- protection against access by unauthorized persons and especially children.

4. Information on handling and use

4.1. Preparation of the SHARP seedbed preparation

The SHARP seedbed cultivator is usually delivered for sale in the state ready to work. Due to the limitations of the means of transport, it is also possible to deliver it partially disassembled - Most often it involves disconnecting the pin shaft from the frame. For machines with running gear, it is possible to provide dismantled trolley components.

Installation of pin shafts

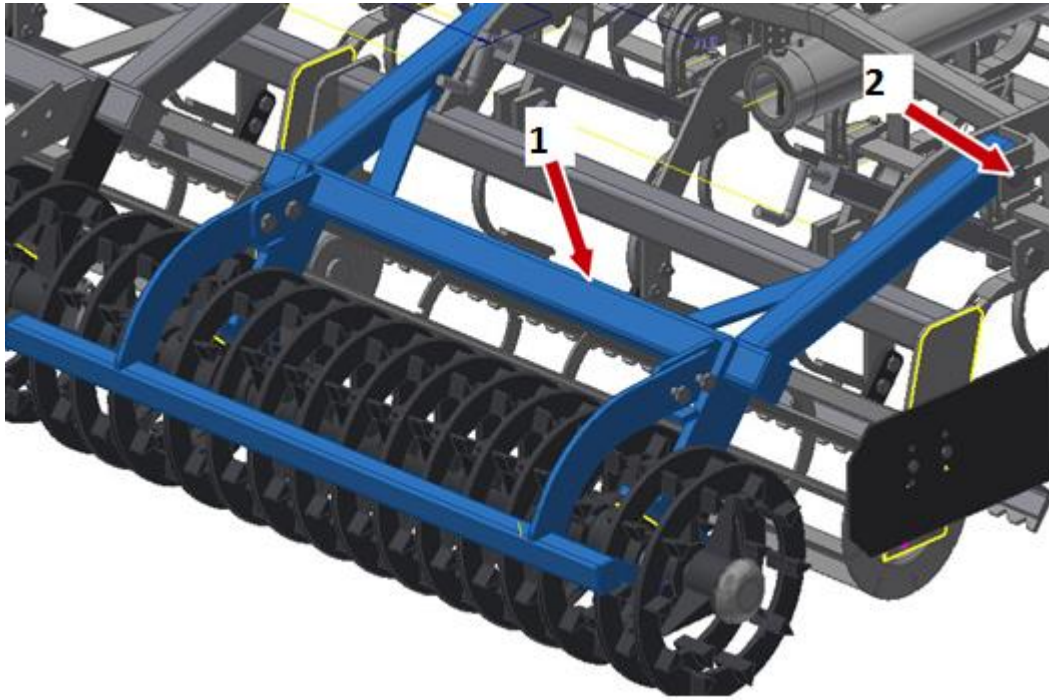


Fig. 4 Assembly view of a pin shaft for SHARP: 1 - pin shaft clamp with arms, 2 - M20x135-8.8 screw + M20-8 nut

Due to the proper operation of the aggregate, the pinion shafts are offset from the flat bar shafts, which allows for proper cultivation of the soil over the entire width of the aggregate's operation. Due to this feature, there are shafts of different widths on one machine. This should be taken into account when assembling the aggregate, because each shaft has a clearly defined place of assembly on the machine.

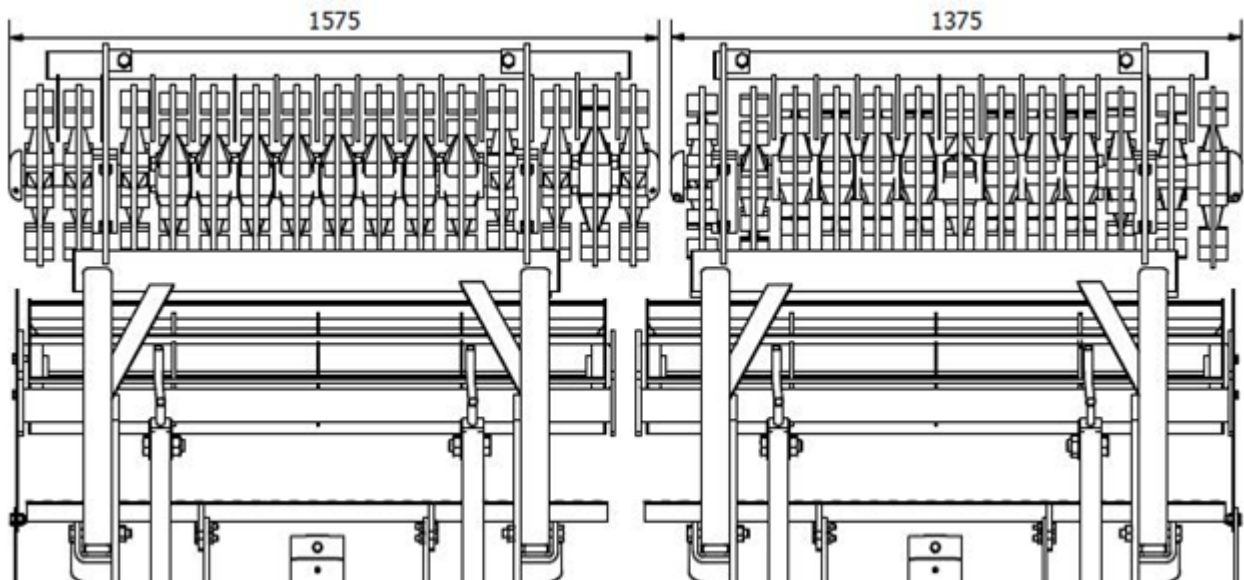


Fig. 5 Arrangement of pin shafts in SHARP

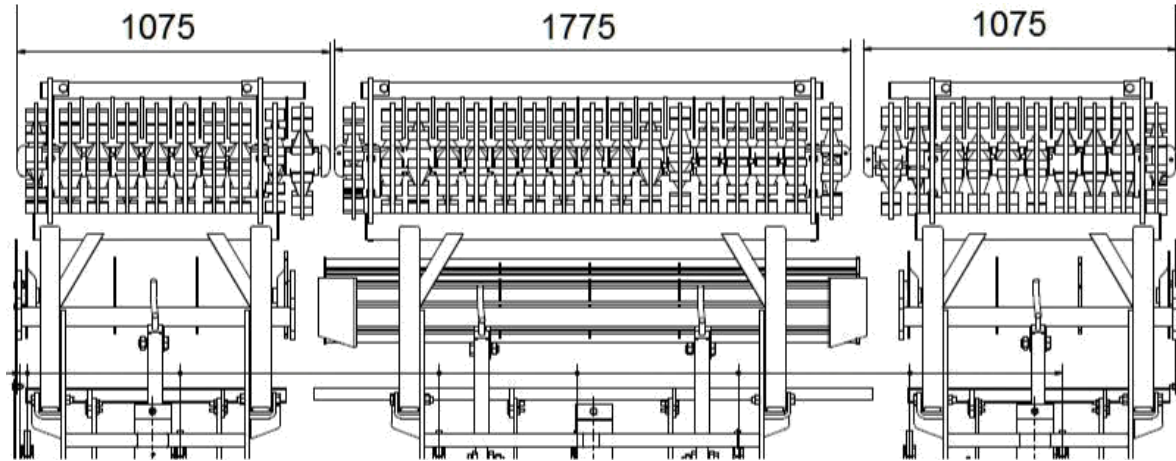


Fig. 6 Arrangement of pin shafts in SHARP 4.0H

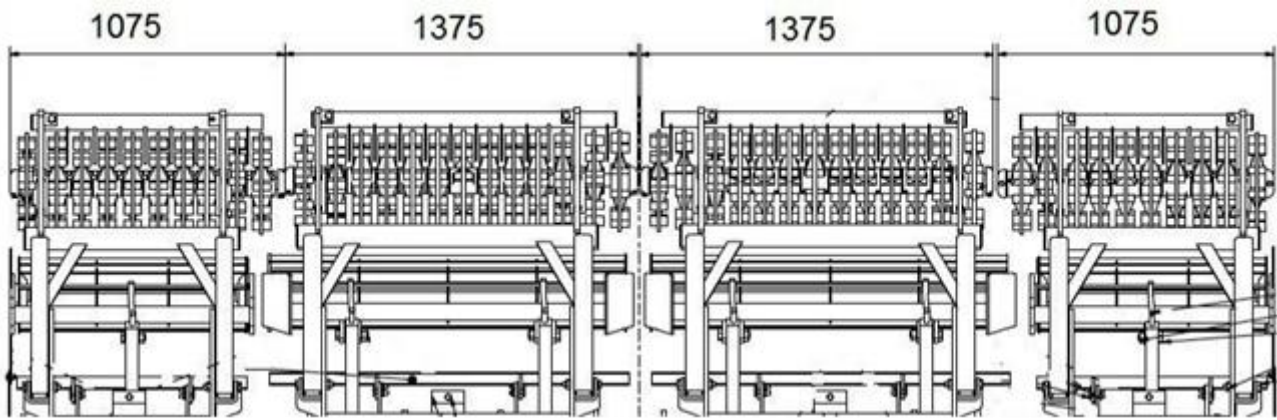


Fig. 7 Arrangement of pin shafts in SHARP 5.0H

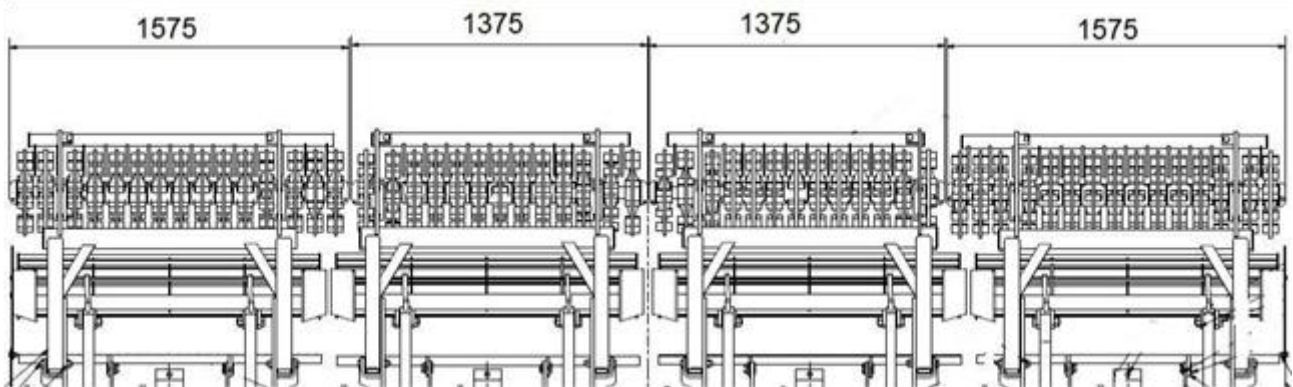


Fig. 8 Laying of pin shafts in SHARP 6.0H

Assembly of the transport trolley

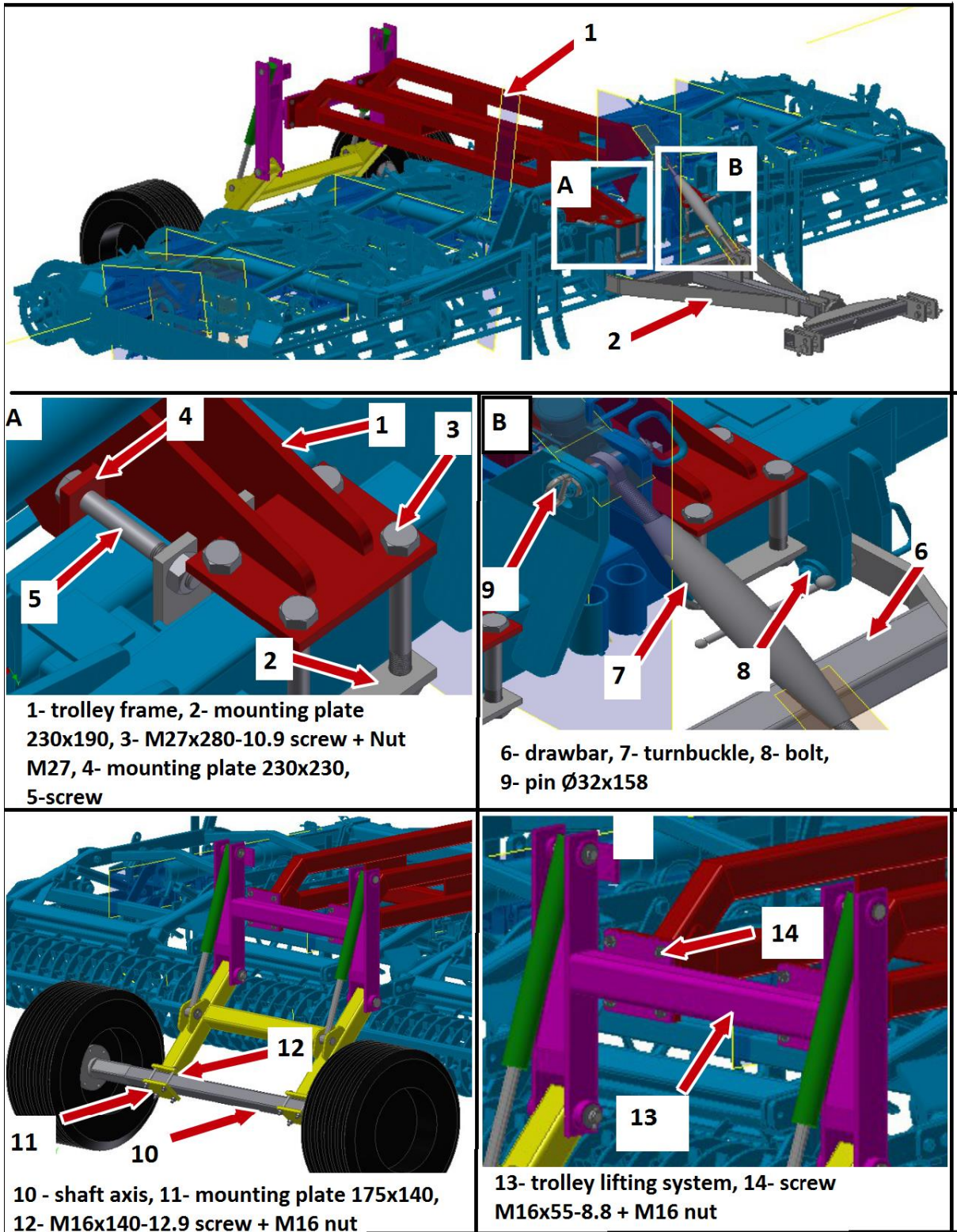


Fig. 9 Mounting the SHARP transport trolley

Before starting work, check the technical condition of the aggregate, especially the condition of working elements and screw connections.



WARNING! The permissible axle loads and tire load capacity must not be exceeded. Tractor front axle load must not be lower than 20% of normal load.

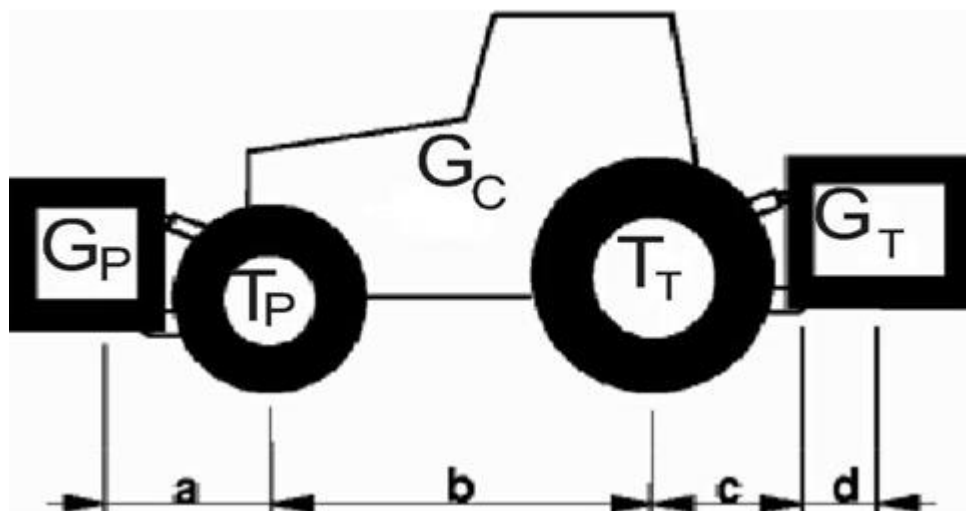


Fig. 10 Diagram of tractor load determinations.

Axle load calculations:

Signs:

G_C – tractor empty weight,

T_P – front axle load of an empty tractor,

T_T – rear axle load of empty tractor,

G_P – total weight of the rear mounted device,

G_T – total weight of the front mounted device,

a – the distance between the center of gravity of the device mounted at the front and the center of the axle,

b – tractor wheel track,

c – distance between the center of the rear axle and the center of the rear attachment hitch pin,

d – distance from the machine's center of gravity to the tractor's hitch pins (hinged machine - 1.5 m, semi-mounted machine - 3 m and 0.7 mass),

x – distance from the center of gravity to the rear axle (if manufacturer does not enter 0.45).

Minimum front load when the machine is hitched to the rear:

$$G_{Pmin} = G_T \cdot c - T_P \cdot b - 0,2 \cdot G_C \cdot b$$

Actual front axle loads:

$$T_{Pcal} = G_P \cdot a - b \cdot T_P - G_T \cdot c - d$$

Real total weight:

$$G_{cal} = G_P + G_C + G_T$$

Actual rear axle load:

$$T_{Tcal} = G_{cal} - T_{Pcal}$$

4.2. Hitching the seedbed cultivator to the tractor

The tire pressure of the tractor wheels should be in accordance with the manufacturer's recommendations. The lower links of the three-point linkage should be located at an equal height, in the spacing corresponding to the spacing of the lower suspension points. When connecting the machine to the tractor, the aggregate should stand on a firm and level surface. When attaching the SHARP seedbed cultivator to the tractor, perform the following actions:

- switch the tractor's hydraulic system to position control,
- remove the lower hitching pins if the three-point linkage of the tractor is not equipped with hooks,
- carefully reverse, hang the machine on the lower links, then secure it,
- connect the upper connector of the tractor (in aggregates not equipped with a truck) - during the operation of the aggregate, the attachment point of the upper connector on the machine should be located higher than the attachment point of this connector on the tractor,
- check the lifting, lowering of the seed drill and hydraulic system operation.

4.3. Work and regulations

The mechanical securing of the side frames must be unlocked before unfolding the side working sections. To do this, pull the strings to unlock the security, then begin to unfold. After unfolding, the lock will be automatically secured.

TELESCOPIC - safety bolt against opening of the side wings of agricultural machinery in accordance with EU No. 2006/42 / EC (PATENT REPORTED IN EU).

INSTRUCTIONS FOR USING THE SECURITY LOCK AT THE TELESCOPIC

To unlock the bolt in the telescope, the cylinders must be completely slid off using the tractor's hydraulic pump (close the wings to the end) and at the same time pull the cord, which should be kept until it opens completely (both wings) - then the wings of the device will open under their own weight or forced by the movement of the cylinders (depending on whether they are single or double acting cylinders). The condition of the cable and its position should be controlled. The cable should be placed freely above the machine so that the user has access to it at all times in the tractor cabin - it should not be blocked by anything. When folding the machine, the cable tension is not necessary, it is automatically secured.

SAFETY INSTALLATION INSTRUCTIONS

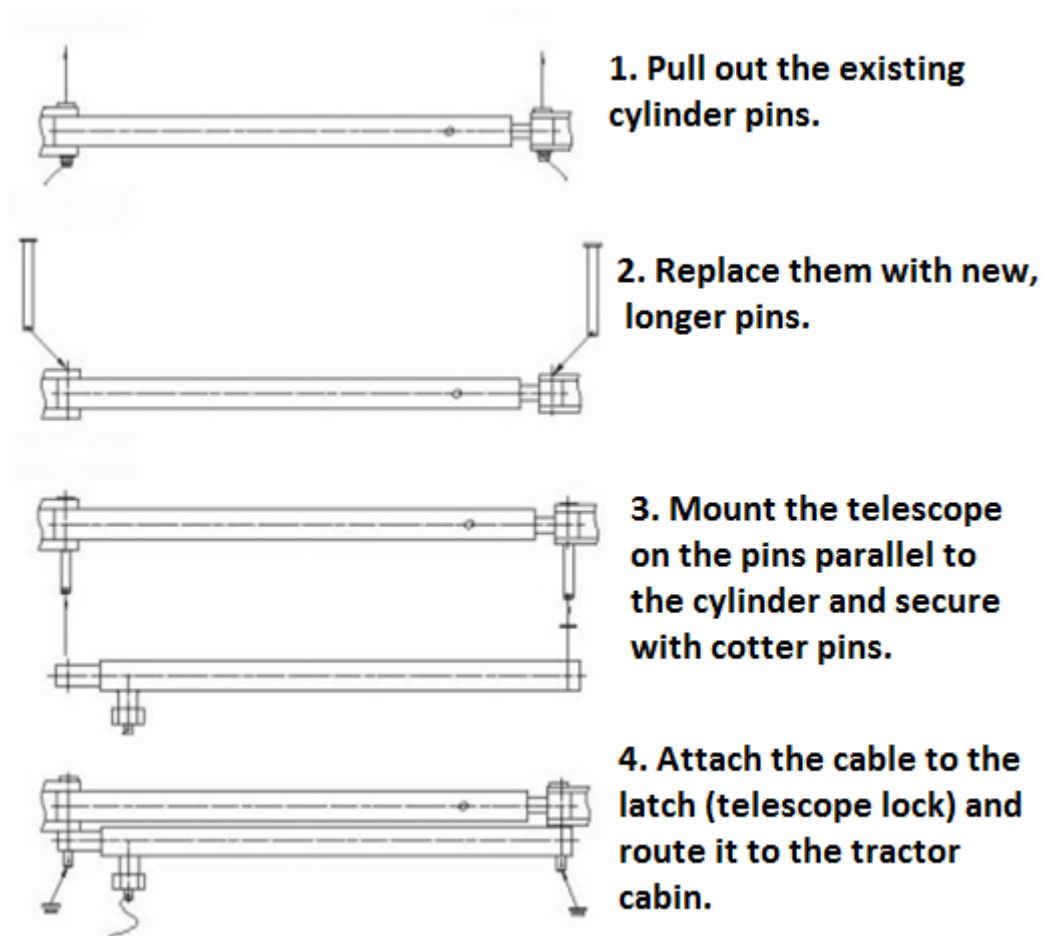


Fig. 11 Method of securing the protection

Before starting to work in the field, the position of the individual working units must be preset. Also level the machine longitudinally with the tractor's top link or the tractor's drawbar's round-nut or drawbar's round-nut and laterally with the tractor's right-hand lower link hanger. Then the first work run must be carried out in order to set the optimum working speed and correct the adjustment based on an assessment of the correct operation of the individual components. The recommended working speed is **8 - 12 km/h**. In a well-adjusted aggregate, the frame should be parallel to the ground and all working units should penetrate the soil evenly over the entire working width.

Adjusting the working depth of the tines

The working depth of the SHARP pre-sowing cultivator tines is adjusted by means of cranks located above the flat roller (Fig. 12). The cranks are accessible from the rear of the machine.

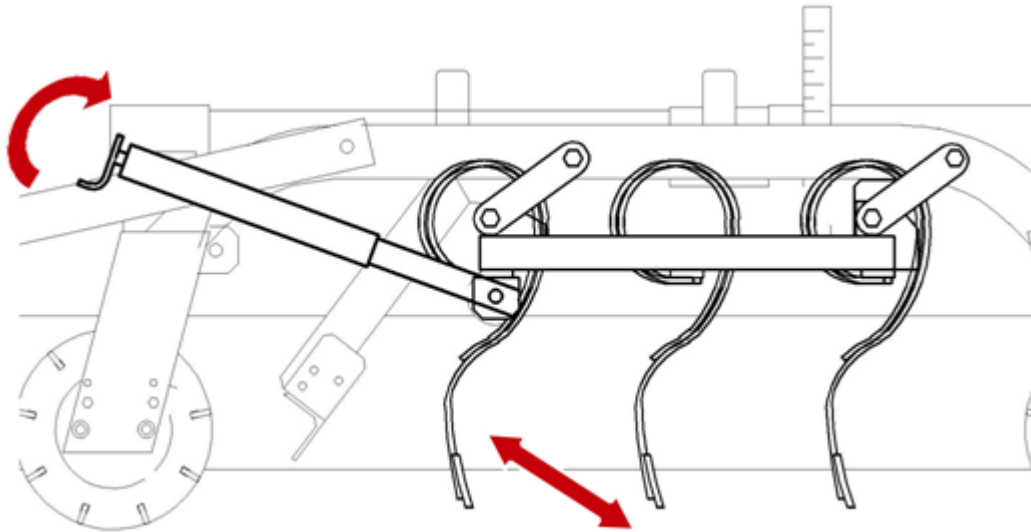


Fig. 12 Working depth adjustment of SHARP pre-sowing cultivator tines.

Adjustment of the work of the trawl

The levelling plate behind the tines can be adjusted in two ways. By limiting its tilt backwards with a pin over the fibre arm, allowing the fibre to work under its own weight. By inserting the pin below the flat bar, the slope of the yarn is limited to avoid the accumulation of soil in front of the yarn. The second way of adjustment is to change the axis of rotation of the fiber arm by moving it up or down. To do this, move the frame up or down to cover the holes, then move the pin and the safety devices.

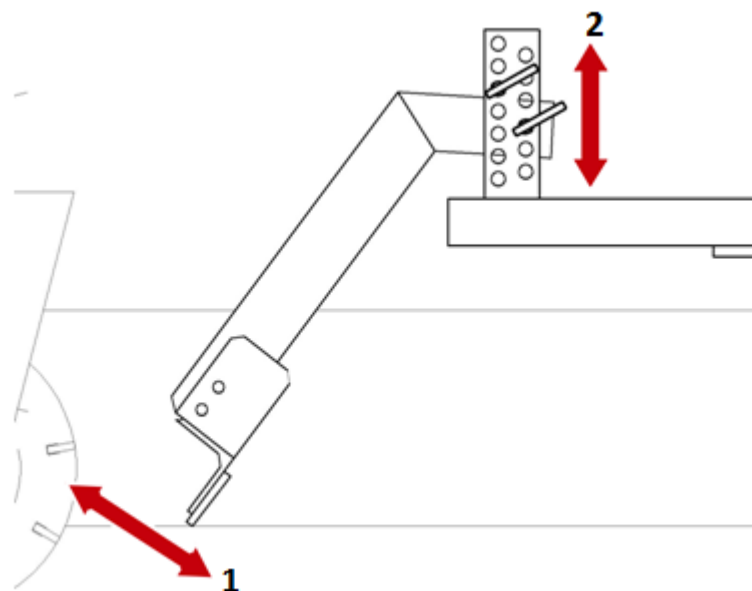


Fig. 13 Adjustment of the levelling trawl: 1 - adjustment of the degree of deviation of the trawl arm, 2 - adjustment of the height of the trawl axis of rotation

Adjusting track eradicators

The track eradicators are attached to the front beam with clamps. The location and depth of work of the tines change in order to adapt to the track width, type of tractor wheels. This is done by loosening the nuts on the clamp, adjusting the teeth and tightening the nuts again.

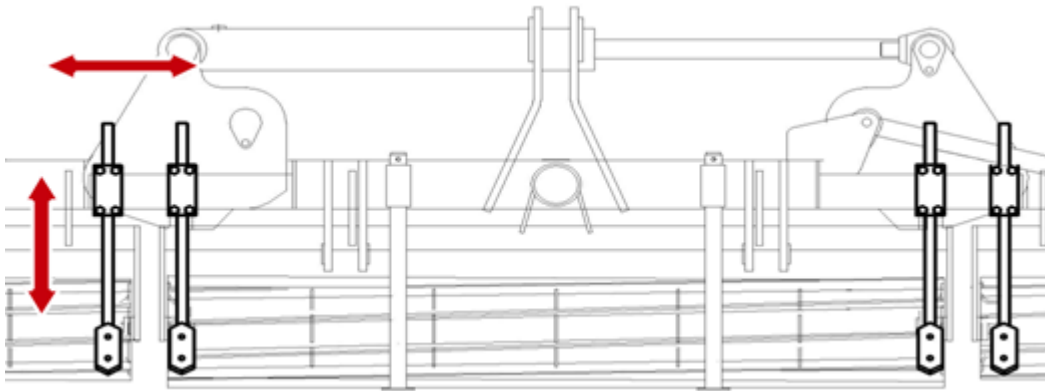


Fig. 14 Adjusting the working depth and spacing of track looseners

Adjusting the side screens

The height of the side plates depends on the depth of the tines' work using screws. There are 3 holes in the side screens, which allows it to be moved vertically.

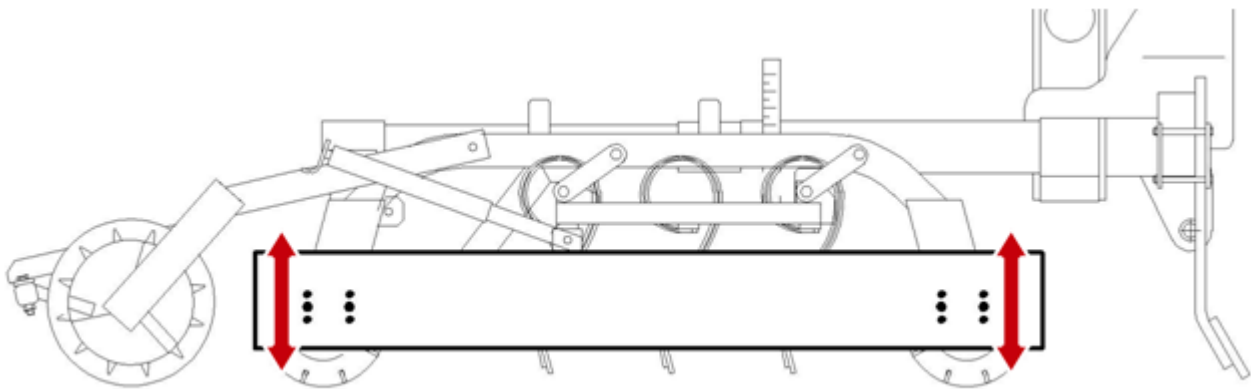


Fig. 15 Adjusting the height of the side screens

The rear pin roller has the ability to be tilted to remove residual stones, pieces of branches or other foreign objects impeding the rotation of the shaft. To do this, unscrew and remove the screws (1 fig. 16) on the cleaning comb arm and slightly unscrew the other ones (2 fig. 16), which will tilt the comb back.

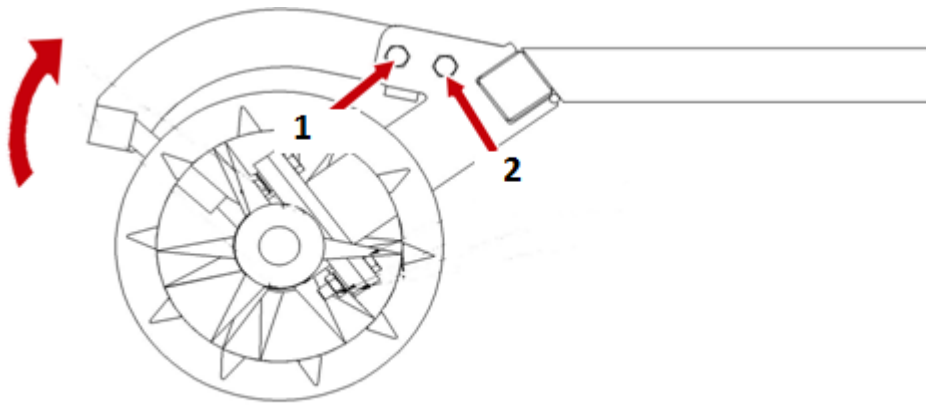


Fig. 16 Deflection of the pin shaft cleaning comb: 1; 2 - cleaning comb attachment screws.

Tab. 2 Causes and methods of repairing faults and malfunctions of the unit

Fault, malfunction	Reason	Repair method
- uneven depression working elements, - uneven shaft pressure string to the ground	- bad leveling of the machine	- level the machine longitudinally and transversely
- string roller does not turn or occurs during filming high resistance	- wound on bearings plant residues or strings, - damaged bearing	- clean the bearings, - replace the bearing
- the pin shaft does not turn	- between the wheels of the shaft there are stones striking a comb cleaning	- unscrew the fixing screws, deflect the comb and pull it out stones
- depth adjustment crank teeth work puts a lot of resistance during trading	- a non-lubricated crank, - too big difference in crank extension in one field	- grease the crank in no effect unfold the crank, clean the thread and grease, - reduce the difference eject
- aggregate fields do not copy crosswise the field	- too tight stabilizing springs, - greasy points on the axis section rotation	- loosen the tension springs on chains, - grease intensively lubrication points
- the drag pushes large amounts of soil and increases work resistance	- leveling bar too low	- raise the leveler on the bolts regulatory
- insufficient blurred marks tractor	- incorrect spacing track eradicators, - too shallow work track eradicators	- spacing adjustment track eradicators for tractor wheel track, - lowering the level of work track loosening teeth
- crumbling soil beyond aggregate working width	- screen raised too high side	- lower the side screen

5. Service

5.1. Daily service

- Each time after finishing work, the SHARP seed drill should be cleaned of soil, and then parts and components should be inspected. During cleaning, remove plant residues and cords winding at the shaft bearings.
- After the first 4 hours of operation, retighten all bolts and periodically check that they are tight.
- During the machine's life, the lubrication points on the hinge pins should be lubricated daily. Lubricate shaft bearings every 25 hours of operation.
- When replacing worn parts, use thread adhesive, original bolts and nuts.
- Always remember to tighten the screw connections correctly.

ATTENTION ! Periodic lubrication is a guarantee of machine durability.

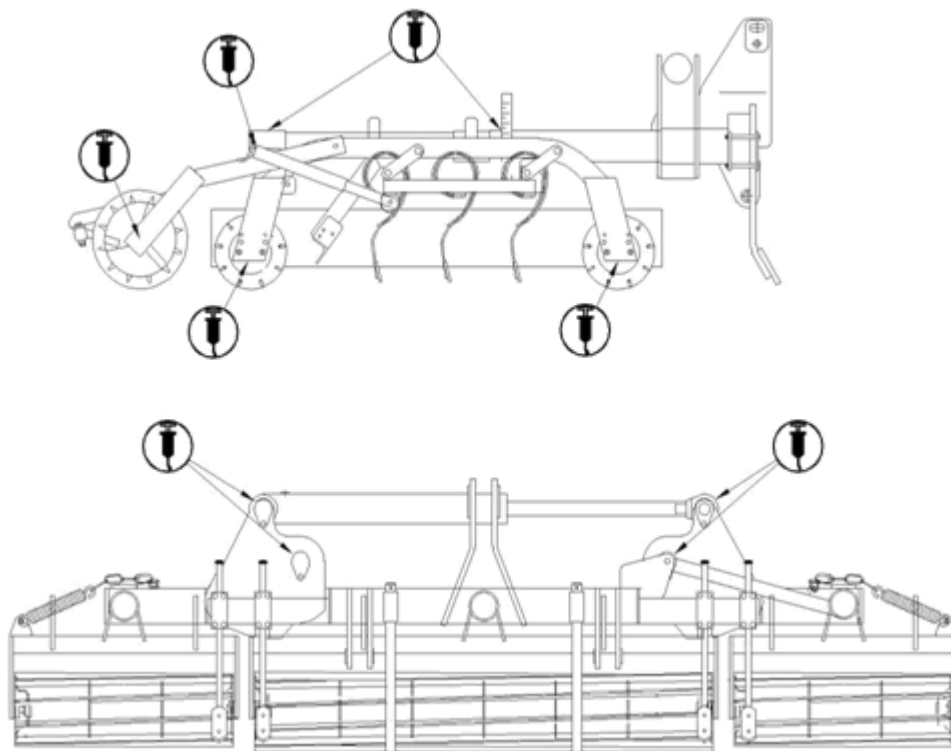


Fig. 17 Lubrication points of the SHARP seedbed combination

The machine's durability and efficiency are highly dependent on systematic lubrication. Use mineral greases for lubrication. Before pressing or applying grease, the lubrication points must be thoroughly cleaned. Lubrication of shaft bearings is difficult due to the lubrication access method. In hard-to-reach places, the method of lubricating points is shown below.

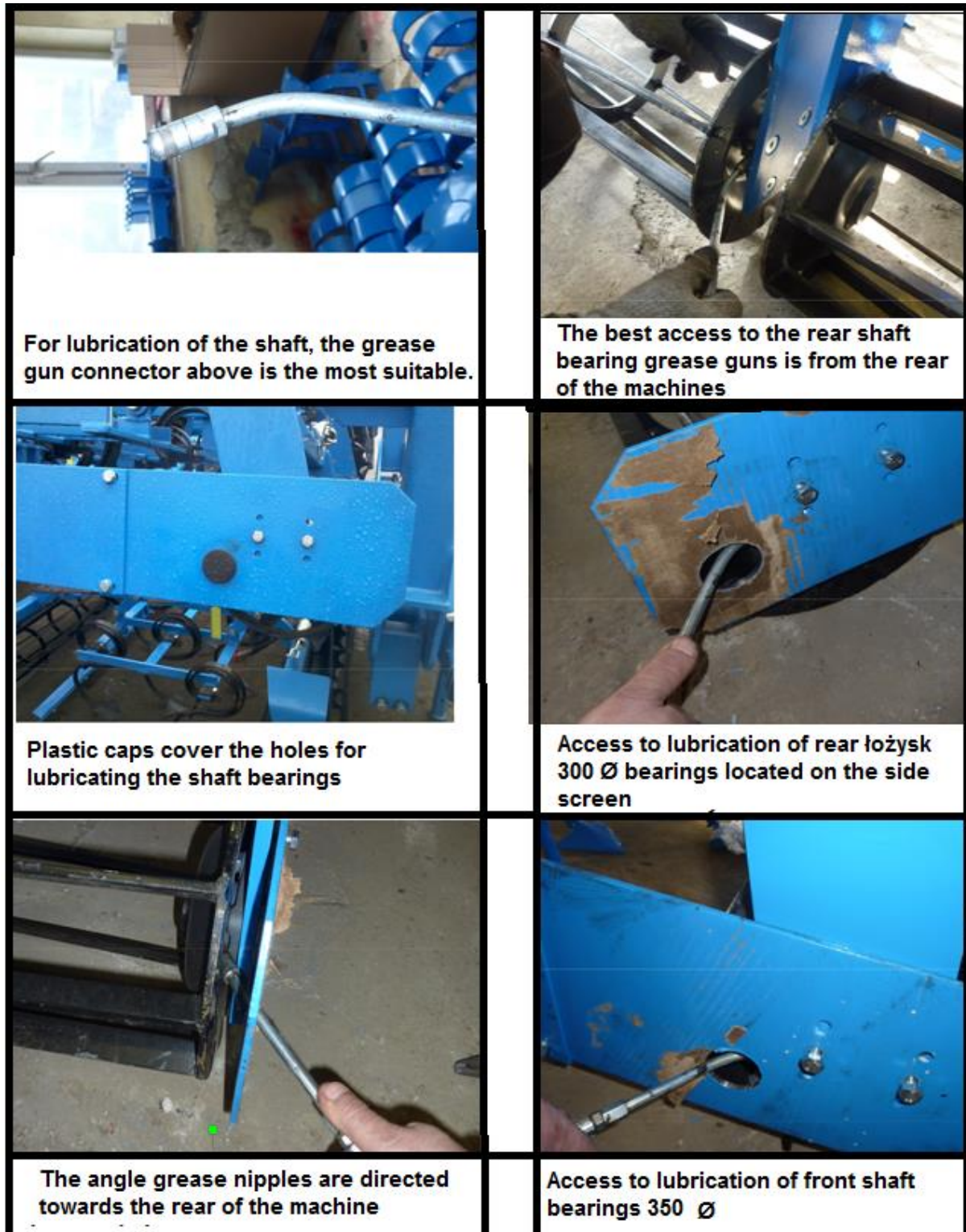


Fig. 18 Lubrication of hard-to-reach points in the SHARP seedbed cultivator

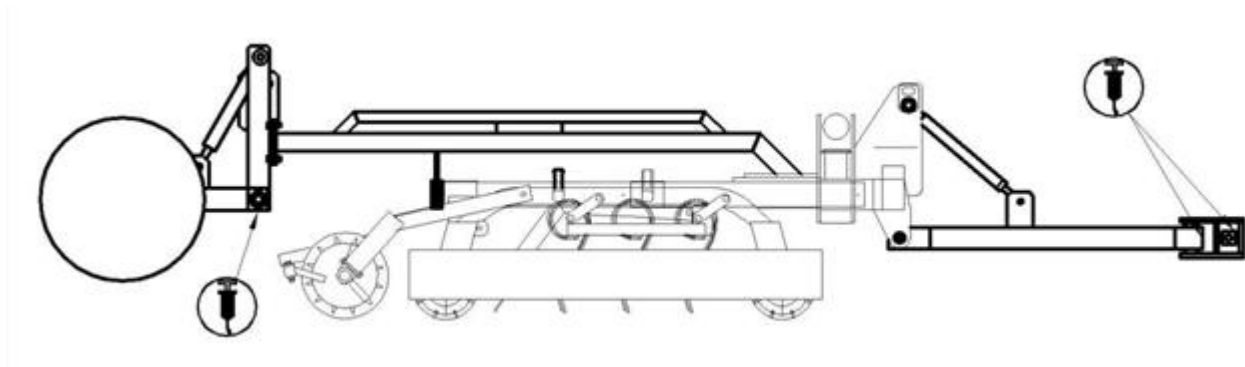


Fig. 19 Lubrication points of the SHARP seed drill transport trolley



WARNING! The unit should be secured against rolling during maintenance and replacements. It should be connected to the tractor with the parking brake applied and the tractor engine should be turned off. The side sections should be unfolded. During maintenance and repairs use proper wrenches and protective gloves, and if necessary a helmet.

5.2. Off-season service

After the end of the working season, the seedbed cultivator should be thoroughly cleaned, damage to the paint coating should be supplemented, and the worn surfaces of teeth, strings and shaft rings, as well as the threads of the adjusting screws should be cleaned and protected against corrosion. In addition, full lubrication should be carried out. It is recommended to store the machine under a roof during the break. However, if this is not possible, check the protection status from time to time and top up if necessary.

5.3. Chassis operation

Regular tire pressure check. In the event of a significant loss of air in the tires, check the air valve for leaks. Then return the wheel to a specialized workshop to locate and repair the damage. Significantly damaged tires (in particular profile damage) must be replaced immediately.

Adjusting the axial clearance of the wheel bearings.

It is recommended that this operation be performed by a specialized plant. Performed by tightening the nut on the wheel hub after removing the wheels. Recommended clearance is 0.12-0.15 mm. Inspection and regulation should take place every two years. Procedure:

- Disassembly of hub cover and spring cotter securing spring nut.
- At the same time turning the hub and tighten the crown nut,
- Finish the tightening when it causes no more than half a turn of the hub when vigorously turning the hand.
- Partially loosen the nut until the hub turns freely and repeat the tightening.
- After repetitive locking of loosening, loosen the nut max. 30° until we find the closest possibility to secure the nut with a cotter pin. Mark the position with a dash.
- From the marked position, unscrew the nut by half a turn and gently tap the hub while pressing the hub against the nut until it stops.
- Tighten the nut to the position marked with a dash.
- Mount the hub cover.

5.4. Hydraulic system support

Operation of the hydraulic system consists of visual inspection in terms of tightness. Remember to put plugs on the quick couplings. Oil leak on hydraulic hose connections - tighten the connector. If the problem persists, replace the element or connector with a new one. Leak occurring outside the connector - replace the leaking hose with a new one. Mechanical damage also requires component replacement. It is recommended to replace the hydraulic lines every 5 years.

The appearance of oily on the piston rod of a hydraulic cylinder should check the nature of the leak. When the piston rod is fully extended, check the seal locations. Small leaks that are characterized by wetting the piston rod with an "oil film" are permissible (damaged pickup ring). In the case of stronger "sweating" or the appearance of drops should be turned off the unit for the time to remove the defect (damaged seal).

6. Replacement procedures

Replacement of flat bar shaft bearings.

In case of damage to shaft bearings they should be replaced:

- place the unfolded machine on a horizontal paved surface,
- the aggregate should be connected to the tractor with the engine switched off and the parking brake applied,
- for side frame shafts, first unscrew the side covers,
- unscrew four bolts on each side securing the shaft to the clamp on each side,
- move the shaft away,
- loosen setscrews in bearings,
- remove bearings using a puller,
- put new bearings loosely on the axle,
- roll the shaft between the bearing pads of the clamp and screw the bearings to them,
- Screw in the bolts without screwing off.

Replacement of pin bearings

If pin bearings are damaged, replace them:

- place the unfolded machine on a horizontal paved surface,
- the aggregate should be connected to the tractor with the engine switched off and the parking brake applied,
- unscrew the cleaning comb from the bracket,
- unscrew the bolts securing the bearing to the shaft clamp,
- move the shaft away,
- remove the ring from the shaft axis located behind the last wheel located closer to the damaged bearing by drinking the expansion pin,
- pull the outer wheels to the bearing,
- unscrew the bolt without bearing head,
- remove the bearing using a puller,
- install a new bearing so that it sits tightly against the wheels and tighten the set screw without the head,
- install the outer wheels and the ring and secure with the expansion pin (use a new pin).

Replacement of tine coulters and working elements

The tine coulters and the working elements of the drag can be used almost until they are completely worn - until the working surface is level with the initial surface of the blade's foot. However, it is recommended to replace the coulters of the tines and working elements of the drag early enough before there is a possibility of wear and damage to the share foot. Working elements working in the ground should be screwed on thread glue.

Cylinder replacement

A malfunctioning actuator, leaking etc. must be replaced, dismantled and returned to a specialized plant. Cylinders must be replaced when the machine is unfolded. The cylinder should be connected to the system and mounted on one side, the work cycle should be performed several times to completely fill the cylinder with oil. Otherwise, the drop section may fall suddenly.

7. Storage

The SHARP seedbed cultivator should be stored under a roof. If there is no roofed space, the machine may be stored outside. The aggregate should be stored in a place that does not pose a threat to people and the environment. In the case of long-term outdoor storage of the machine, the maintenance of the working elements should be repeated once the preservative layer has been rinsed. After disconnecting from the tractor, the machine should stand on an even and hardened surface. The machine should be lowered gently so as not to expose the working elements to hard ground. The aggregate should rest on support feet and be secured against movement. It is recommended to store the machine in hardened, roofed places inaccessible to bystanders and animals.

8. Disassembly and cassation



WARNING! When disassembling the machine, take all precautions using efficient tools and personal protection. Dismantled parts should be deleted in accordance with environmental protection requirements.

The unit, used in accordance with the rules given in the operating instructions, is durable for many years, but replace worn or damaged elements with new ones. In the event of emergency damage (significant cracks and deformations of the frame) that deteriorate the quality of the machine's operation and pose a danger in further operation, the machine should be deleted.

Disassembly of the machine should be carried out by persons familiar with its construction. These operations should be performed after placing the machine on a level and solid surface. Disassembled metal parts must be scrapped. The oil must be drained into an airtight container and returned with the hoses to the recycling plant.

9. Technical characteristics

Tab. 3 Technical data of the SHARP seedbed combination

Type	Working width	Number of coulters		Minimal power	Mass
		simple	goosefoot		
		m	pcs.		
SHARP 3.0	3,00	24	16	110	1557
SHARP 4.0H	4,00	32	22	140	2334
SHARP 5.0H	5,00	40	28	180	2850
SHARP 6.0H	6,00	48	34	210	333

GUARANTEE CARD

SEEDBEED CULTIVATOR SHARP

Serial number:.....

Year of production:.....

The machine complies with the standard and is approved for operation.

Warranty conditions and warranty services:

1. The company NAMYSLO Damian Namysło, Biedrzychowice 96A, 48-250 Głogówek, NIP: PL 755-184-91-20, hereinafter referred to as the guarantor to the buyer a warranty on the disc cultivator, ensures the smooth operation of the offered product, provided that it is used in accordance with the intended use and operating conditions specified in the operating instructions.
2. The warranty period is counted from the date of sale and is:
 - seedbeed cultivator SHARP - 12 months,
3. The guarantor grants the customer a guarantee for the period specified above on the basis of a VAT invoice or receipt confirming the sale of the product.
4. During the warranty period, the guarantor is obliged to provide spare parts or repair a defective product free of charge. If the guarantor finds that repair of the product is not possible or the cost of repairing the device is disproportionately high in relation to the price of the new device, it is obliged to replace the product with one free from defects.
5. Under the warranty, the buyer or third parties shall not be entitled to a claim against the guarantor for any damages resulting from product failure. The guarantor's sole obligation under this warranty is to provide spare parts or repair or replace the product with a non-defective product in accordance with the terms of this warranty.
6. The Guarantor shall be liable to the buyer only for physical defects resulting from causes inherent in the sold product. The warranty does not cover defects resulting from other reasons, especially as a result of:
 - external factors: mechanical, thermal, chemical damages, flooding, excessive dirt etc.
 - installing and using the product contrary to its intended use specified in the operating instructions,
 - incorrect assembly, maintenance, storage and transport of the product,
 - product damage resulting from the use of non-original accessories or materials that do not comply with the manufacturer's instructions,
 - damage resulting from fortuitous events, factors bearing signs of force majeure (fire, flood, lightning, etc.)
 - malfunction of other installations (e.g. electrical, hydraulic, etc.) and / or devices affecting the operation of the product,
7. The warranty does not cover parts subject to normal wear and tear, and parts and consumables, such as filters, fuses, batteries, V-belts, greases, oils, etc.
8. The buyer loses the rights under the product warranty if it finds:
 - any modification of the product,
 - tampering with the product of unauthorized persons,
 - any attempts to repair the product by unauthorized persons,
 - use of any spare or consumable parts in the product that are not original parts or recommended by the manufacturer.
9. Confirmation by the guarantor of the cause referred to in point 6 and 8 is the basis for rejecting the product complaint. If the complaint is not accepted, the advertised product will be returned to the complainant at his written request, provided that he covers the costs of shipping the product "to" and "from" the guarantor's service in advance.
10. Unclaimed goods referred to in point 9 after 60 days will be automatically utilized.
11. The basis for accepting a complaint for consideration is jointly meeting the following conditions:
 - Buyer submitting a complaint, possibly by fax or e-mail: name of product, date of purchase, detailed description of damage along with additional information regarding product defects and photos of the defective product,
 - presenting the original invoice or receipt of the advertised product,
 - personal delivery or via the carrier of the product being advertised to the headquarters of the guarantor.
12. Defects or damage to the product revealed during the warranty period should be reported to the guarantor immediately, but not later than 7 days from the date of disclosure.
13. The product in which a defect was found should be immediately excluded from use under pain of losing the warranty.
14. The guarantor undertakes to perform the warranty service within 14 days from the date of delivery of the device to the guarantor's service.
15. The product should be returned to the address after prior agreement with the guarantor, with the buyer bearing the costs and risk. Acceptance of the buyer's warranty claims will be equivalent to repairing the product or replacing the product with a product free from defects and reimbursement of the shipping costs incurred by the buyer in accordance with the transport price list in force at NAMYSLO Damian Namysło.
16. For the place of performance referred to in point 14, the seat of the guarantor shall be considered. The buyer or carrier is responsible for the correct packaging and delivery of the product to the guarantor. This liability in no way passes to the guarantor.
17. Products sent back to the guarantor's address at his expense and / or sent back without the knowledge and acceptance of the guarantor will not be accepted.
18. The guarantor decides on the legitimacy of the warranty claim and the choice of the method of implementation of recognized warranty claims.
19. Replaced defective products become the property of the guarantor.
20. The Guarantor reserves the right to charge the buyer the handling costs associated with conducting product expertise, if the claimed product is in good working order or damage is not covered by the warranty.
21. The Guarantor reserves the right to conduct a site visit at the place of installation of the advertised product.
22. In the event of product repair, the duration of the warranty is extended by this product's non-operational period. In the event of replacement of the product with a new one, this product is covered by a new statutory warranty calculated from the time the product is delivered.
23. The Guarantor is not obliged to modernize or modify existing products after they enter the market with newer versions.
24. In matters not covered by these regulations, the provisions of the Civil Code shall apply.

.....
Sale date

.....
Seller's signature
and stamp