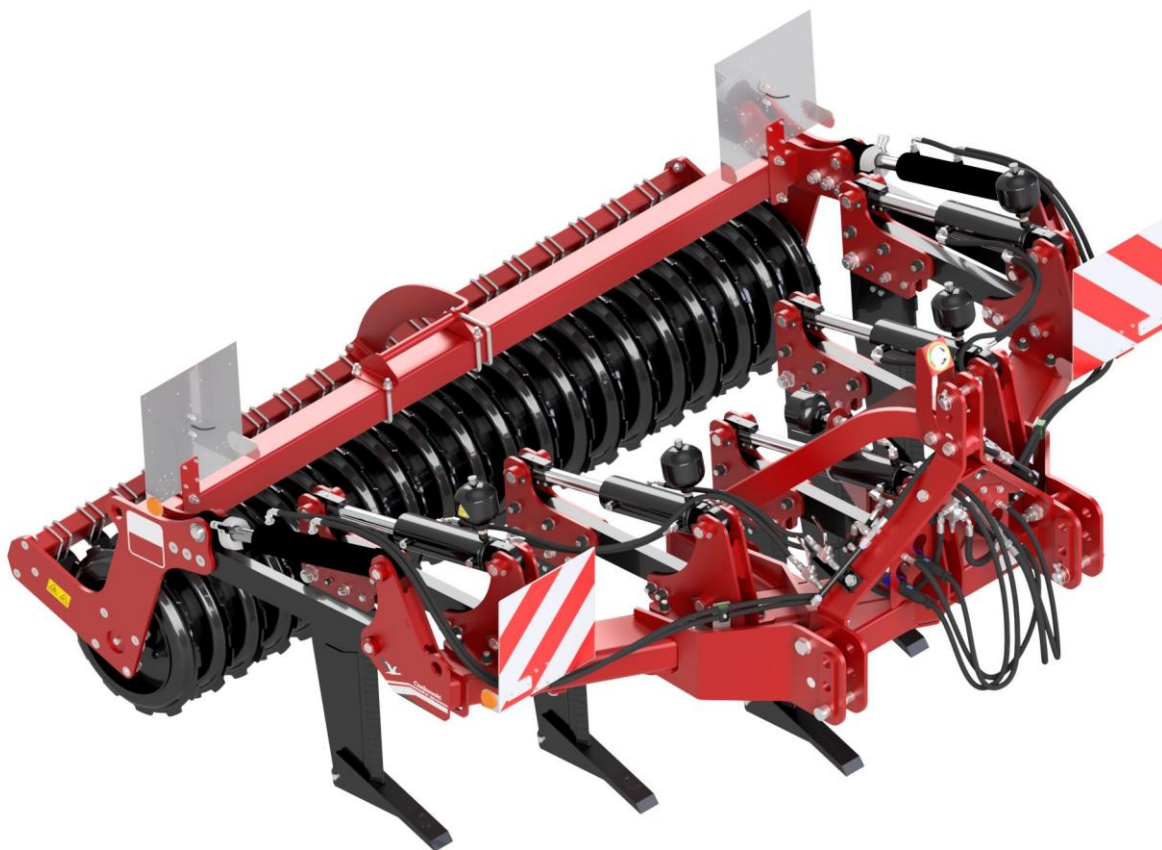


SUBSOILER VT



**Translation of the original
instruction manual**

IM-VT-01

2nd edition, 06.2025 issue

Before using the machine, read the instruction manual!

DECLARATION OF CONFORMITY

Czajkowski Maszyny Sp. z o.o.
Sokołowo 1C, 87-400 Golub-Dobrzyń, Poland
VAT: PL 5030079262

The person authorized to provide technical documentation is the Chairman of the Board of CZAJKOWSKI MASZYNY SP. z o.o., Sokołowo 1c, 87-400 Golub-Dobrzyń, Poland.

Machine:	Subsoiler
Type/model:	VT / VT 300
Commercial name:	Czajkowski VT 300
Serial number/VIN:	_____
Function:	Tearing off plough sole

Product name: Czajkowski VT 300, to which this declaration relates, complies with all the relevant provisions of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (OJ EU L 157 of 09.06.2006, p. 24).

In order to meet the health and safety requirements of the EC Directive, the following standards and technical specifications have been taken into account:

Furthermore, the machine complies with the requirements of the following harmonized standards:

-PN-EN ISO 12100:2012 Safety of machinery - General principles for design - risk assessment and risk reduction

-PN-EN ISO 4254-1: 2016-02/A1:2022-05 Agricultural machinery — Safety — Part 1: General requirements

-PN-EN ISO 20607:2019-08 Machine safety - Operating instructions - General principles for development

This declaration of conformity only refers to the machine in the state in which it was placed on the market and does not cover components added by the end user or any subsequent actions carried out by him.

The user manual is an integral part of the product. The product can only be transferred to another person if it is technically fully functional, together with the attached user manual and declaration of conformity.

INTRODUCTION

Subsoiler VT - Agricultural machine designed to repair subsoil by loosening and breaking up the compacted layer of soil, called the plough sole, located at a depth below the arable layer. This is done by "subsoiling", i.e. an agro-remediation procedure, aimed at loosening the soil below the compacted layer without the effect of inversion and mixing. This is done using long, narrow teeth that cut and loosen the compacted soil layer, causing it to lift and crack.

The most important features of the device are:

- improvement of soil structure
- increased water retention
- preventing soil erosion
- no stagnant water
- better root system development
- improved fertilizer movement

Before starting to use the device, read the user manual carefully. Do not read the user manual carelessly. This may cause the device to malfunction or endanger health or even life. The user manual contains basic principles of conduct and proper use of the device, as well as instructions that must be strictly followed to ensure your own safety, trouble-free operation of the device, reduction of operating costs and reliability and durability of the device. All persons operating the device must read the user manual carefully. It is necessary to comply with occupational health and safety regulations and pay special attention to warning signs. The VT Subsoiler is intended for field work only. The manufacturer is not responsible for any damage to the device resulting from its other use. The warranty expires as a result of unauthorized repairs or changes to the device, as well as neglect and use of non-original parts. If you experience problems operating the device, please contact the manufacturer's service department.

ATTENTION  The user manual is valid on the date of issue. The manufacturer reserves the right to make changes to manufactured products without making changes to the user manual.

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3. Service

Our company has made every effort to ensure that you are fully satisfied with our cooperation and with the continued use of our products. In case of problems, it is recommended to contact the company's service department or our distributor directly. In order for us to solve the problem as quickly as possible, please prepare the following details:

- full name and address;
- model and serial number of the machine;
- model and power of the tractor used with the machine;
- problem description;
- purchase date, number of hours or hectares worked.

Advice and minor faults - quick telephone assistance:

If you need information or advice beyond the scope of the user manual, or assistance in eliminating a minor fault, please contact the service department by phone.

Serious faults and defects - service request:

In the event of major problems or product defects, in addition to contacting us by phone, please submit a service request by sending an email to:

serwis@uprawapasowa.pl

The email must include the above-mentioned information required for the report, a detailed description, and photos showing the fault or defect.

4. Consequential damages

During the use of the machine, failures may occur due to:

- wear and tear of consumable parts;
- damage caused by external factors;
- failure to follow the user manual;
- excessive driving speed exceeding 40 km/h;
- machine overload;
- neglect of maintenance and care or performing them in an unprofessional manner
- incorrect setting of the machine (failure to follow instructions about settings, incorrect installation);

During the use of the machine it needs to be inspected and checked whether it's working correctly. The company is not liable for consequential damages caused by errors resulting from incorrect handling or transportation. Claims for damages that do not occur within the machine are automatically rejected.

5. Safety



Fig. 1. Pictogram NP001

This manual contains safety instructions and warnings that apply to all of its chapters. The machines have been designed and built in accordance with the applicable technical rules and recognized safety principles. Despite this, during use, there may be risks to third parties and the health and property of the user, as well as material losses and damage to the machine. Before starting work, please read the information and follow the instructions contained in the user manual.



This warning symbol:  in this user manual indicates important information when there is a particular danger to the user or others.

Safety regulations:

1. In addition to the recommendations contained in this manual, occupational health and safety regulations must also be followed.
2. It is forbidden for minors and individuals under the influence of alcohol or drugs to operate the machine.
3. It is forbidden for unauthorized persons and animals to remain within the range of the machine.
4. Warnings (self-adhesive labels) placed on the machine provide information regarding the safety of the user and third parties and help to avoid accidents.
5. When driving on public roads, you must comply with the regulations of the applicable Road Traffic Code.
6. Before starting work, familiarize yourself with all components, systems and their operation.
7. The operator's clothing should not be too loose, this will prevent it from getting caught in the moving parts of the machine.
8. Each time before starting the tractor and the machine, check their connection to ensure safe driving and work.
9. Before moving off, check the immediate surroundings of the machine and tractor, especially to make sure there are no unwanted people around. Proper visibility is important.

ATTENTION  It is dangerous for children to be near the unit (especially in the field). Children should be under the supervision of their parents, legal guardian or other adult!!!

10. It is forbidden to stand on the machine during work and transport.
11. Exercise particular caution when attaching to or detaching the tractor.

12. Before attaching the unit, check whether the front axle of the tractor is sufficiently loaded.
13. Strictly follow rules for axle loads, allowable total weight and transport loads.
14. Before leaving on public roads, check the correct location and operation of traffic lights (road lights, reflectors) required by the regulations of the Road Traffic Code.
15. All lines (hoses, cables, etc.) must be secured in such a way that any unexpected disconnection is excluded, as this could result in accidents and damage.
16. Before leaving on public roads, the machine must be in the transport position.
17. When driving the tractor, never leave the operator's cabin.
18. The speed and driving style of the tractor must always correspond to the terrain and road conditions. In all circumstances, avoid sudden changes in direction
19. When cornering, you need to take into account the greater swing range and increased weight of the set.
20. It is forbidden to stay in the working area of the machine and tractor.
21. Before each machine departure, check that all safety devices are in good condition.
22. Pay attention to crush hazard zones, especially those that are remotely and hydraulically operated.
23. Before leaving the tractor cabin, lower the machine to the ground, turn off the engine, remove the key from the ignition and make sure that all rotating units have stopped.
24. Do not stand between the tractor and the connected machine if the parking brake has not been applied or anti-rolling blocks (chocks) have not been placed under the tractor wheels
25. Pay attention to danger zones near the rotating parts of the machine.
26. When operating, starting, folding or unfolding the machine, stay outside the danger zone.
27. During each break, the machine drive should be switched off.
28. The hydraulic system is under high pressure. Escaping liquid may penetrate the skin and cause severe injuries. If you are injured, seek medical attention immediately.
29. There are pressure accumulators in the hydraulic system. It is forbidden to modify or open pressure accumulators. Before maintenance, reduce the pressure in the hydraulic system. After emptying, there is gas pressure in the tank.
30. Use only telescopic shafts with CE marking allowed by the producer of the machine.

6. Rules of conduct in event of breakdown or accident

- In the event of a breakdown or accident on the road or during work, the scene of the incident must be immediately secured, the condition of the injured persons must be checked and the appropriate services must be notified, e.g. ambulance, fire brigade or police.
- In the event of unexpected breakdowns or faults, work must be stopped immediately, the tractor engine must be switched off and the manufacturer must be contacted, providing the contact details and the serial number of the device provided in the operating instructions.

7. Residual risk

Czajkowski Maszyny Sp. z o.o. has made every effort to reduce the risk of accidents. However, there is a certain residual risk that may lead to an accident if the following recommendations are not followed:

- read the user manual carefully;
- precise and careful operation of the machine;
- do not put your hands into forbidden places;
- secure the machine against children access;
- do not stay within area of the machine while it's working;
- keep a safe distance from dangerous places;
- have the machine maintained and repaired only by qualified individuals;
- have the machine operated by individuals familiar with the user manual.

By following the recommendations above, residual risk can be eliminated.

The most common mistakes while operating the machine are:

- use of the machine for purposes other than its intended use;
- having an untrained person operate it;
- having a person under the influence of alcohol or narcotics operate it;
- performing diagnostics while the machine is working;
- machine maintenance and cleaning with the tractor engine running;
- staying outside the tractor cabin while the machine is working;
- staying between the tractor and the machine while attaching them or while the machine is working.

8. Intended use of the machine

The machine is designed for subsoiling. Any other use (e.g. as a means of transport, etc.) is forbidden and may result in bodily injury or even death. The machine may only be used if it is technically sound and all faults must be repaired immediately. Applicable occupational health and safety regulations, generally accepted principles of occupational medicine, road and technical safety must be followed. The operating manual is an integral part of the machine and should be easily accessible. In the event of reselling the machine, the operating manual must also be passed on to the new owner. Original accessories and spare parts are designed specifically for this machine. The installation and use of non-original parts may result in adverse structural changes and negatively affect the safety of people and machines. The manufacturer is not liable for damage resulting from the use of unauthorized parts.

9. Use other than intended

The machine must not be used for activities that could be foreseen as improper use. The risk associated with using the machine other than for its intended purpose is borne solely by its user.

Examples of using the device contrary to its intended purpose:

- For transporting people or animals,
- For transporting building materials,
- For transporting fuels,

10. Personnel qualifications

In order to avoid accidents, all people using the machine must meet the basic requirements:

- understanding the operation of the machine;
- recognize possible threats and prevent them from occurring;
- have proper physical attributes required to handle the machine;
- carrying out work in a safe manner as described in the manual;
- understanding the operating manual and following the information contained therein;
- have experience in driving vehicles;
- having a driving license for transport on public roads;
- adequate qualifications of people working with the machine;
- having appropriate physical conditions necessary to control the machine;
- supervision by a suitably qualified person of the person being trained in the use of the machine;

The owner or persons who will work with the machine must undergo training conducted by service employees during the first start-up and read the user manual.

It is the owner's responsibility to:

- train and instruct the operator;
- make the operating instructions available to the operator and ensure that the operator understands the information contained therein.

Machine operators must have appropriate knowledge to perform activities such as:

- maintenance;
- use;
- troubleshooting and repairing faults and defects;
- transport on public roads;
- adjustment and setting of the machine.

11. Fire regulations

- The tractor must be equipped with a fire extinguisher and placed in the holder;
- Fuel and hydraulic leaks from the machine and the tractor must be prevented;
- Using open fire or smoking is forbidden when fuelling up and operating the fuel system of the tractor;
- The fuel filler cap on the tractor must be tightly closed;
- The engine must remain turned off while refuelling;
- Flammable materials mustn't be stored in the vicinity of the machine.

12. Transportation on public roads

- Before transportation, the working elements of the machine should be properly folded and lifted according to the manufacturer's recommendations.
- During transport, the width of the folded machine must not exceed 3 m and the 4 m height. You should also remember about the appropriate transport clearance.
- When driving, the prevailing road conditions must be taken into account.
- Always abide by allowable dimensions and weights.
- The weight of the tractor must be appropriately matched to the machine to ensure proper handling and braking performance of the entire set.
- Before driving, check whether the road and warning lights are properly connected and working.

UWAGA

- It is forbidden to transport people and objects on the machine.
- Observe the speed limits specified in the road traffic regulations of the country in which you are driving on public roads.
- Regardless of applicable regulations permitting faster driving, the transport speed of the set must never exceed 40 km/h.

13. Danger to children

Children in the close vicinity of the machine are subject to exceptional danger. It's forbidden for children to approach the machine. Before leaving the cabin, you must turn the tractor engine off and remove the keys from the ignition so children cannot start the machine by accident. Before starting work, you must check if there aren't any children in the danger zone. Always secure the machine where it's parked.

14. Complaints

Complaints should be submitted to the service department of Czajkowski Maszyny Sp. z o.o.

15. Warning pictograms

An important safety element of the machine's equipment are warning pictograms that inform about possible threats in dangerous places. The lack of warning pictograms increases the risk of serious and fatal injuries. It is necessary to stick the appropriate warning stickers on spare parts. Dirty warning stickers must be cleaned. Damaged or invisible warning stickers must be replaced immediately. New ones can be purchased from the manufacturer.

Pictograms have the following meaning:

NP001 - Before starting the machine, read the operating manual and follow its recommendations



NP002 – It is forbidden for people to be between the machine and the tractor when hitching the device



NP003 – It is forbidden to transport people on the machine.



NP004 – Before starting inspection, maintenance or repair work, turn off the engine and remove the key from the ignition.



NP005 – Keep your distance



NP006 – Do not enter the folding/unfolding area of the machine



NP007 – As long as there is a possibility of parts turning/folding, never reach into the area where there is a risk of crushing



NP008 – The pressure accumulator is under gas and oil pressure. Disassembly and repairs should be performed only in accordance with generally accepted technical principles



NP014 – Pay attention to the possibility of excessive hydraulic pressure while operating the machine



NP016 – Avoid contact with rotating parts.



16. Warning pictograms placement

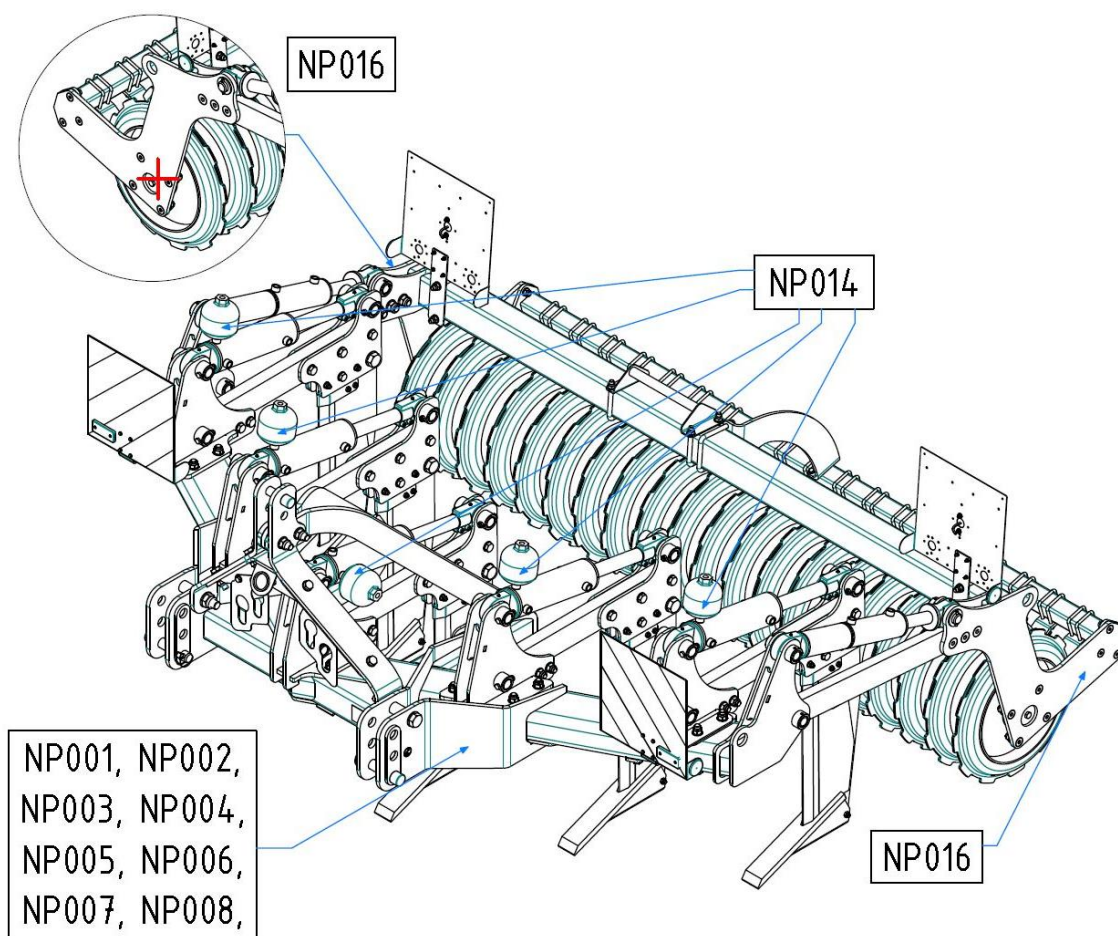


Fig. 2. Pictograms placement

17. Danger zone

The danger zone of the machine is marked in the figure below. Entering or remaining in the danger zone may result in serious injury or death. It is forbidden for people to remain in the zone between the machine and the tractor. The tractor engine must be turned off when in the danger zone – this also applies to routine checks. It is forbidden to remain near the raised machine. It is mandatory to follow the operating instructions.

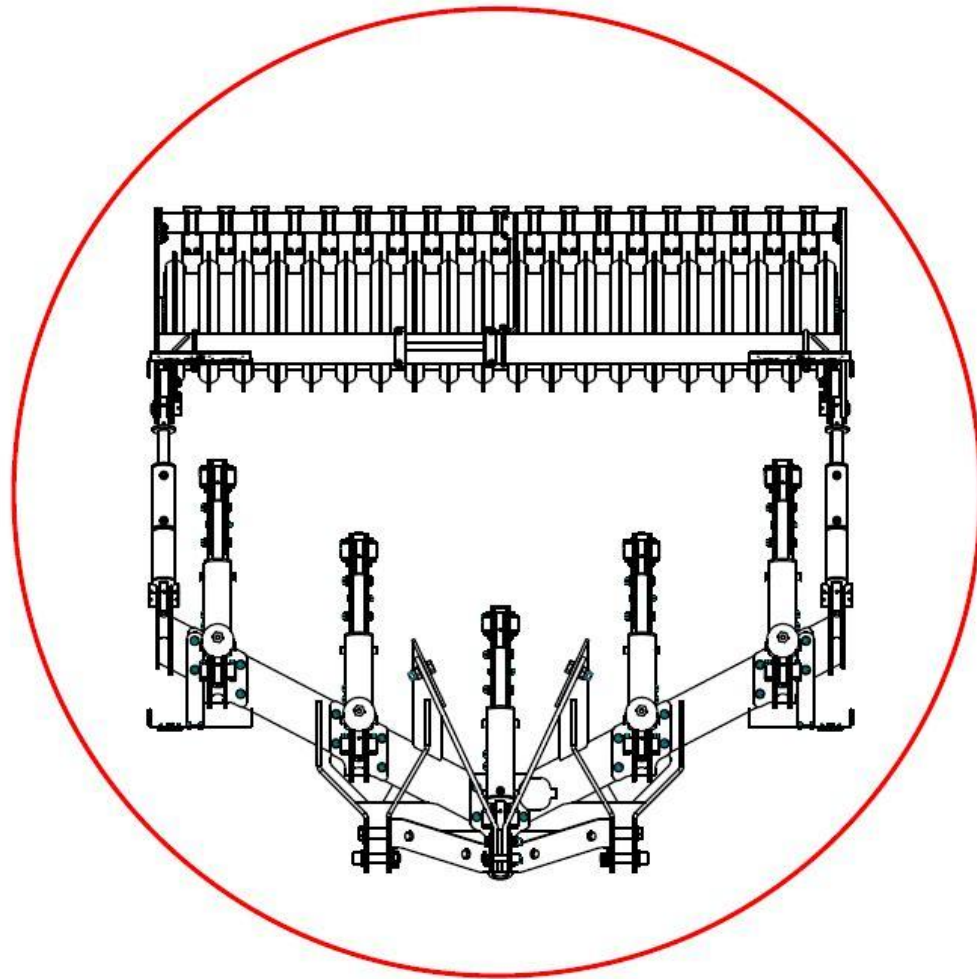


Fig. 3. Danger zone

18. Warning signs with road lighting

When driving on public roads with the device, front and rear warning plates and a position light must be installed. Remember to also connect the lighting cable to the light socket in the tractor and check its correct operation by turning on the position lights. Non-functional or damaged road lighting or warning signs must be replaced with new ones immediately. The signs and lighting must be mounted on the device in a manner that complies with road traffic regulations.

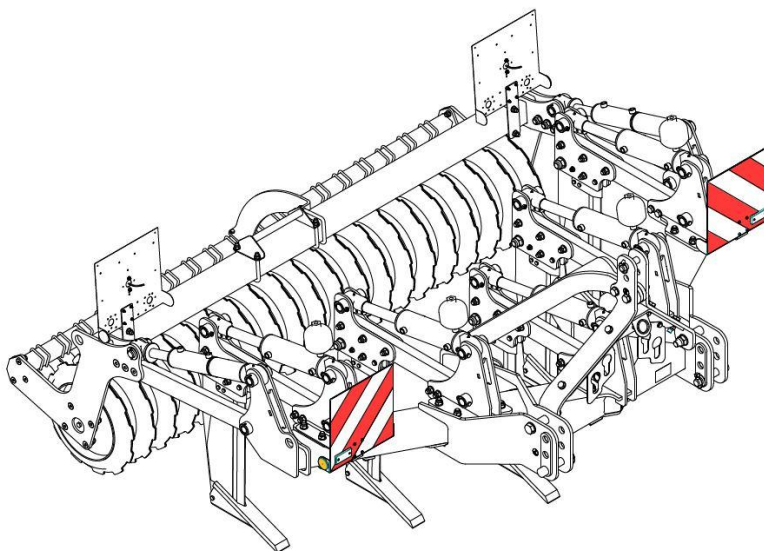


Fig. 4. Warning signs with lighting - front

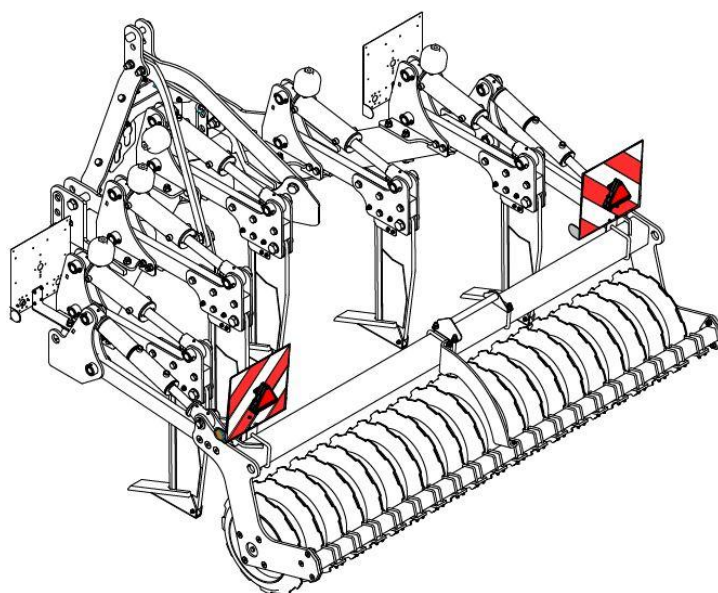


Fig. 5. Warning signs with lighting - back

19. Lightning

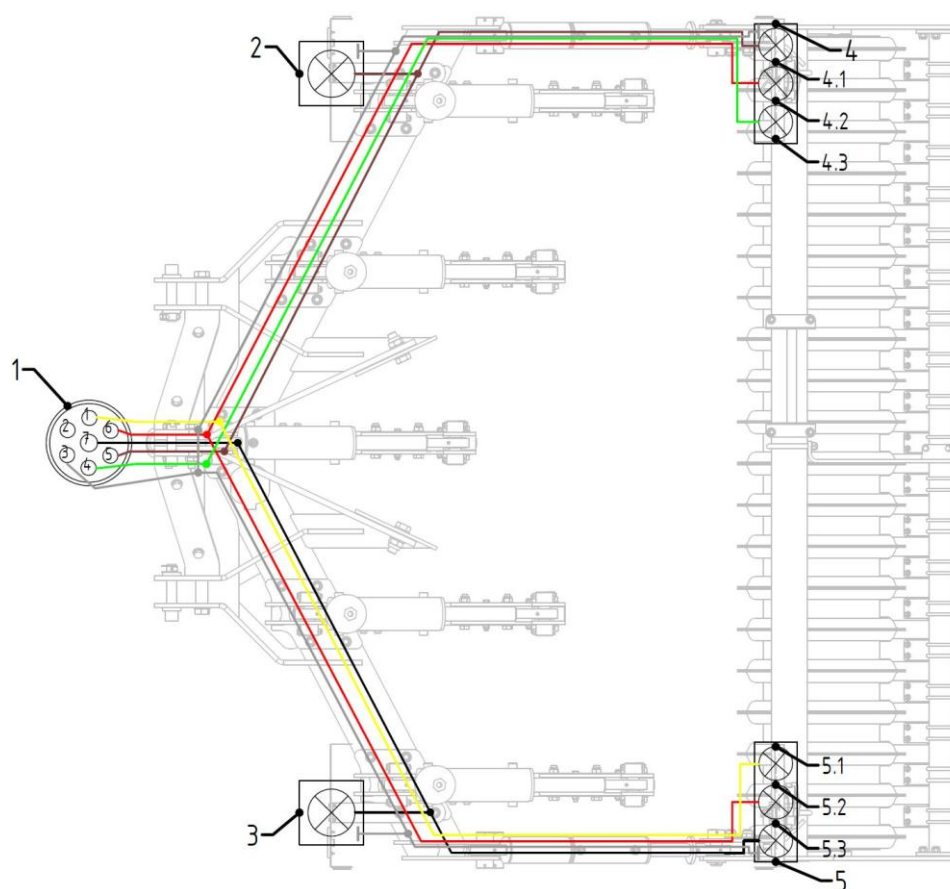


Fig. 6. Lightning system

Lightning installation
1. 7-PIN male connector
2. Right front lamp
3. Left front lamp
4. Rear right lamp
4.1. Right tail light
4.2 Stop
4.3 Right indicator
5. Rear left lamp
5.1 Left indicator
5.2 Stop
5.3 Left tail light

Connectors and wires markings			
Nr.	Symbol	Colour	Function
1.	L	Yellow	Left indicator
2.	-	-	-
3.	31	White / Grey	Ground
4.	R	Green	Right indicator
5.	58R	Brown	Right tail light
6.	54	Red	Stop
7.	58L	Black	Left tail light

ATTENTION

- Electrical repairs can only be performed by a person with electrical qualifications.
- Damaged lighting can lead to an accident.
- Regularly check if the lights are working properly, that they are clean and that the marker boards are clean.

20. Identification plate

GŁĘBOSZ / SUBSOILER			Made in Poland
CZAJKOWSKI MASZYNY Sp. z o.o. Sokołowo 1C, 87-400 Golub-Dobrzyń, Poland www.uprawapasowa.pl / www.czajkowski-st.com NIP PL 5030079262			
Numer seryjny / VIN / Serial number			
Typ / Type / Model /Model			
Rok produkcji / Year of manufacture			
Masa / Mass [kg]			
			CE

Fig. 7. Subsoiler VT 300 ID plate

20.1. Identification plate placement

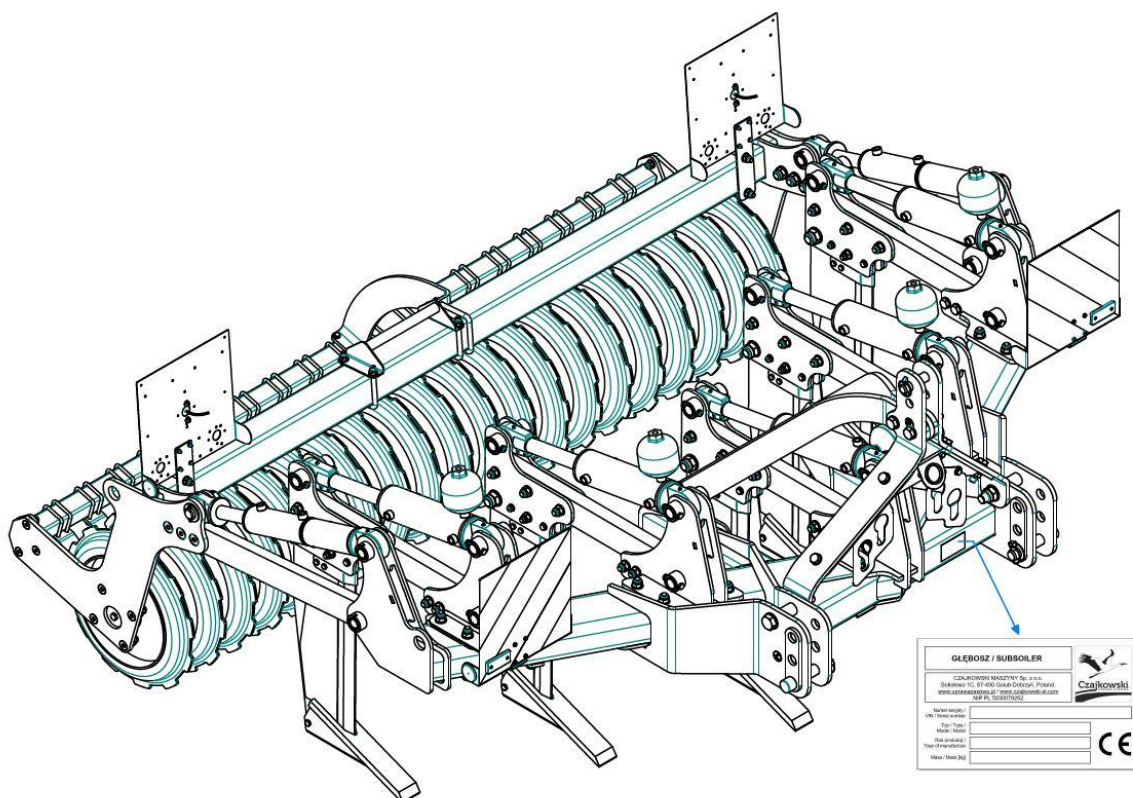


Fig. 8. ID plate placement

21. Load calculation

The permissible load capacity of the tyres, axles and tractor weight must not be exceeded when hitching or mounting the equipment. Before road transport, check whether the tractor being used has not been overloaded and is compatible with the machine. The front axle of the tractor must always be loaded with a weight of at least 20% of the tractor's own weight. Due to differences in equipment, machines must be weighed separately to determine their self-weight.

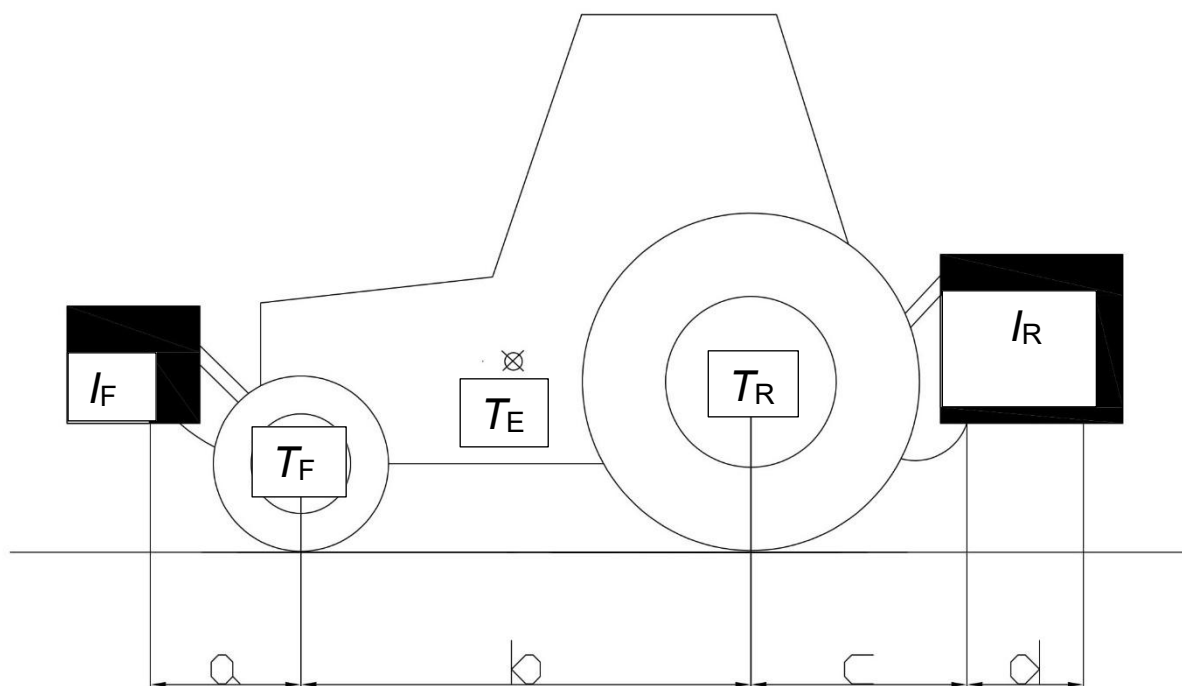


Fig. 9 Load calculation scheme

T_E [kg] – tractor's own weight

T_F [kg] – front axle load of the tractor without load

T_R [kg] – rear axle load of the tractor without load

I_R [kg] – total weight of the rear mounted machine/ rear weights

I_F [kg] – total weight of the front mounted machine/ front weights

a [m] – the distance from the center of the front axle to the center of gravity of the front mounted machine/front weights

b [m] – tractor wheelbase

c [m] – distance from the center of the rear axle to the center of the bottom mounting points

d [m] – distance from the center of the bottom mounting points to the center of gravity of the rear-mounted machine/rear weights

x - the tractor manufacturer's information refers to the minimum rear load (if no additional information is given, enter 0.45).

1. Calculation of the minimum front load when the equipment is mounted at the rear:

$$I_{Fmin} = \frac{[I_R \times (c+d)] - (T_F \times b) + (0,2 \times T_E \times b)}{a+b}$$

2. Calculation of the minimum rear load when the equipment is mounted at the front:

$$I_{Rmin} = \frac{(I_F \times a) - (T_R \times b) + (x \times T_E \times b)}{b+c+d}$$

3. Calculation of actual front axle load:

$$T_{Fmin} = \frac{[I_R \times (a+b)] - (T_F \times b) + [(T_R \times (c+d))]}{b}$$

4. Calculation of the real total weight:

$$T_{real} = I_f + T_E + I_R$$

5. Calculation of the actual rear axle load:

$$T_{R real} = T_{real} - T_{F real}$$

Verification of calculations

The calculations should be additionally checked. It is important to weigh up the front axle load and the rear axle load with the attached machine and the load. The measured values should be compared with the limit values.

In addition, the following should be checked:

- minimum front axle load (20% of the tractor's net weight),
- maximum front and rear axle load,
- allowable total weight.

22. Technical data

Table 1. Technical data

VT 300	Wartość
Length	2830 mm
Width	2990 mm
Height	1700 mm
Weight [kg]*	1900 – 2400 kg
Minimum power demand [KM]	200 KM
Working width	3 m
Working depth [cm]	max 60 cm
Numer of coulter beams	5
Coulter beams spacing	60 cm
Coulter beams safeguard	hydraulic non-stop
Connector type	Beam, cat. III

* The weight of the subsoiler depends on the equipment.

23. Noise level

When operating the VT300 subsoiler, the operator is not exposed to any risk of noise causing hearing loss, as the noise source is the tractor and not the machine.

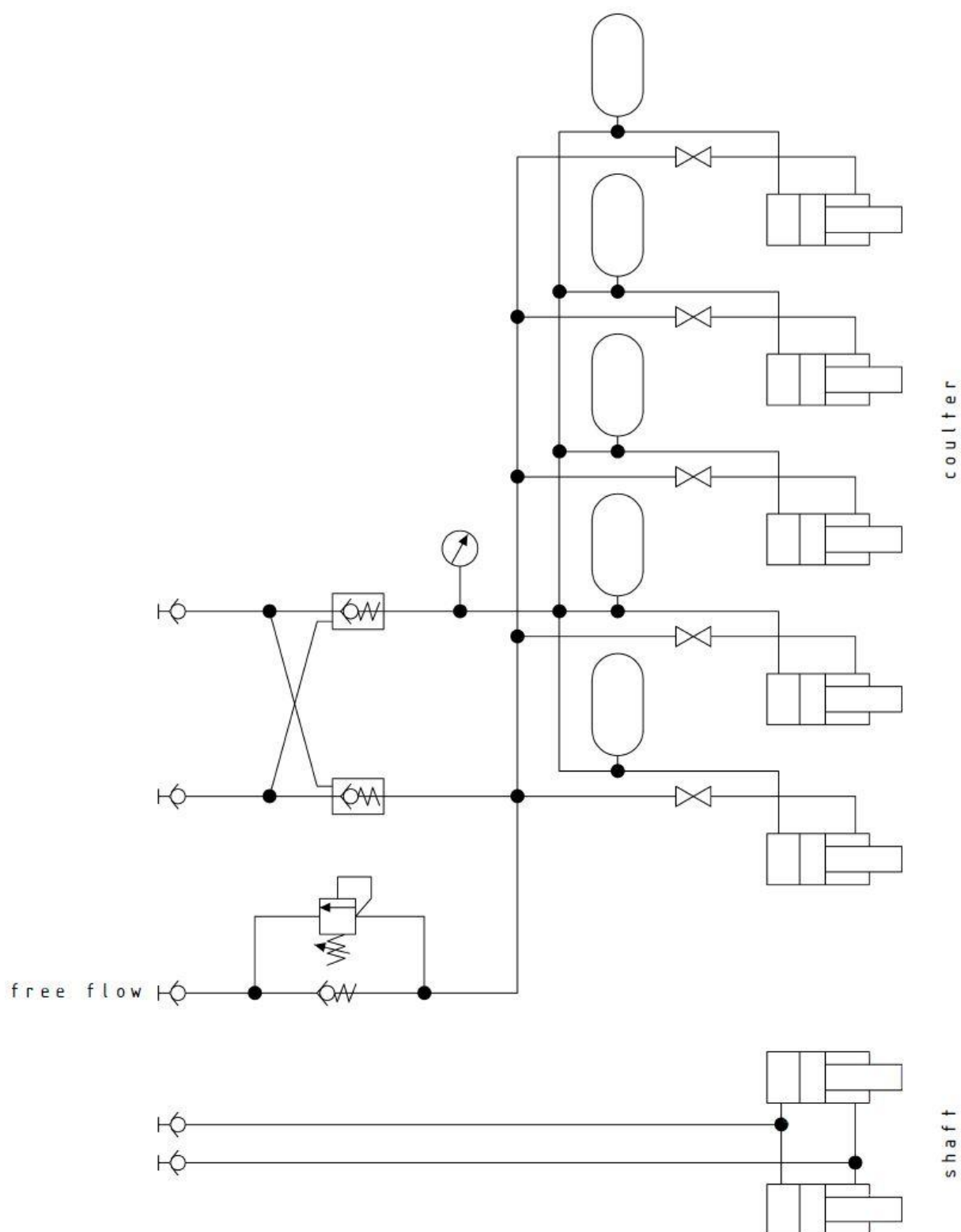
24. Operator position

The machine operator's position is located in the tractor cabin. The machine is operated by one person.

25. Hydraulic system

- The hydraulic system is under high pressure.
- The working pressure of the subsoiler should be set between 50 and 70 bar.
- When connecting hydraulic cylinders or hydraulically driven engines, special attention must be paid to the correct connection of the hydraulic lines.
- When connecting the machine's hydraulic lines to the tractor's hydraulics, make sure that the lines on both the machine and tractor sides are not under pressure.
- You need to pay attention to the correct hydraulic systems connection (between tractor and machine). Incorrect connection may result in the opposite effect than expected (e.g. alternating lowering and lifting, damage to the hydraulic motors).
- Inspections of hydraulic lines should be carried out systematically and damaged elements should be replaced with new ones.
- If a leak is located, take all precautions to avoid the risk of personal injury.
- Hydraulic oil escaping under high pressure can cause serious injury when in contact with the skin. In this case, seek medical attention immediately, as there is a risk of infection.
- Before repairing the hydraulic system, lower the machine, release the pressure from the circuit to 0 and turn off the key.
- Used oil should be taken to designated locations for disposal.
- You must control the oil level in the system.
- The oil used in the hydraulic system is: Dynatrans MPV

ATTENTION  Hydraulic hoses should be replaced at least every 5 years.



Rys. 10. Hydraulic diagram Subsoiler VT300

26. Overall dimensions

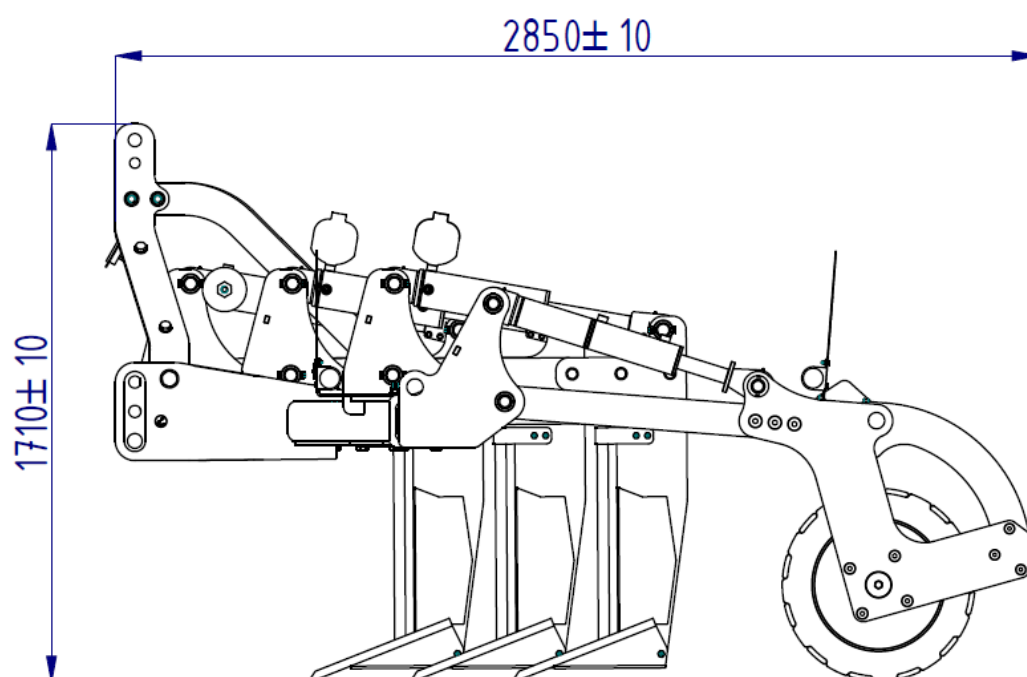


Fig. 11. Overall dimensions – side view.

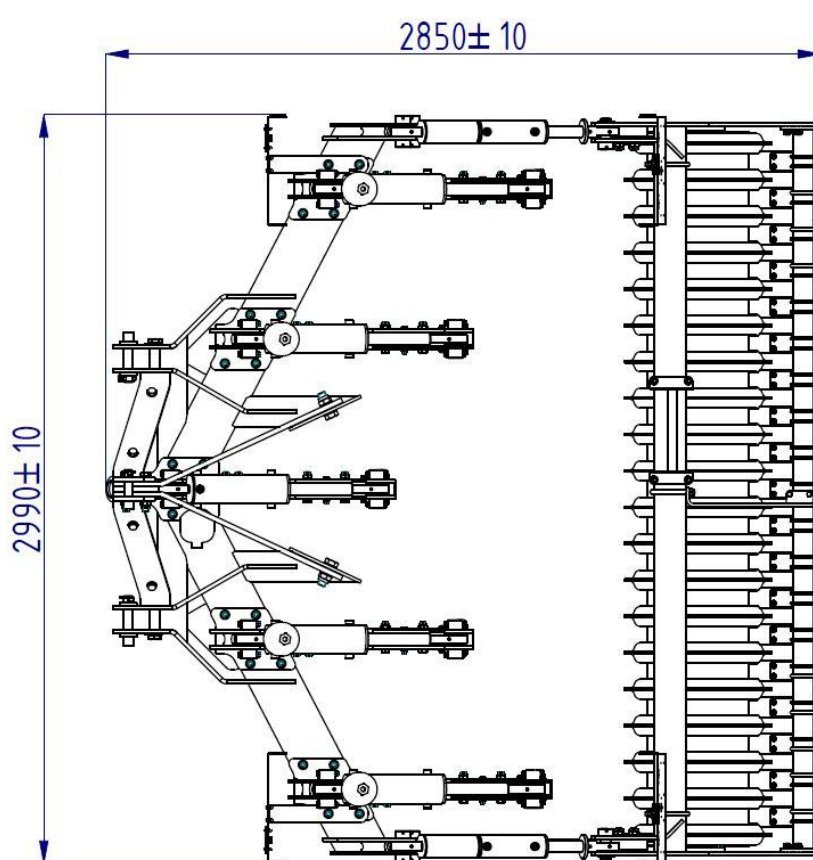


Fig. 12. Overall dimensions – top view.

27. Center of gravity

The subsoiler's center of gravity position shown in the drawings below is an approximate position. The position depends on the depth and working pressure setting.

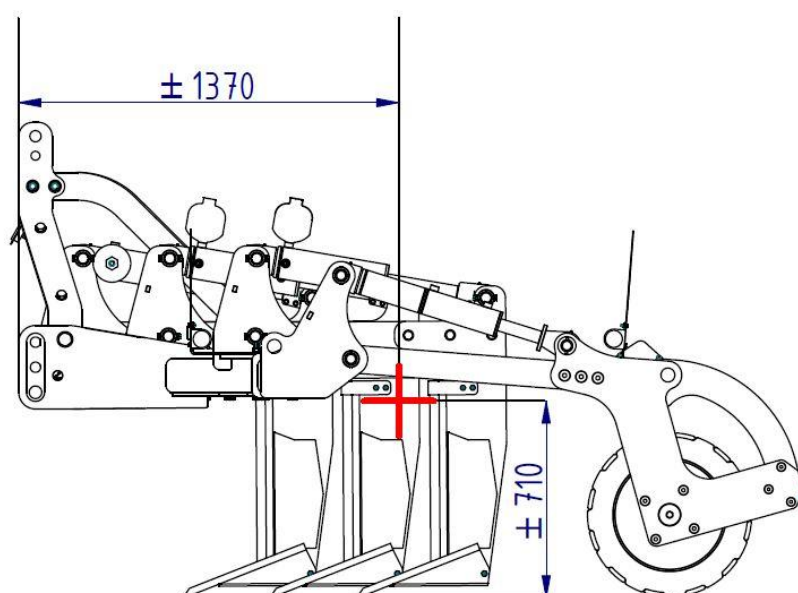


Fig. 13. Center of gravity – side view

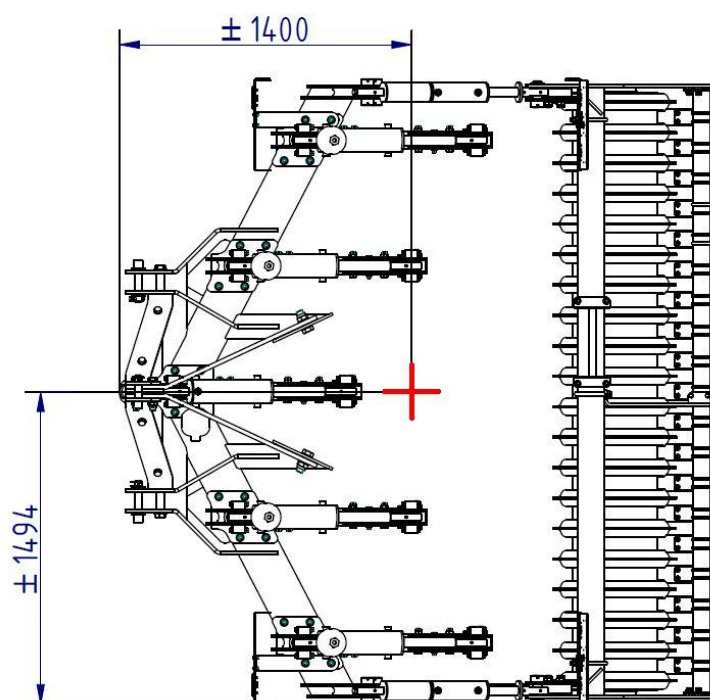


Fig. 14. Center of gravity – top view.

28. Design of the machine

The VT subsoiler is made of a main frame on which a tower is mounted, equipped with an three-point linkage (TUZ) of category 3. The main frame is bolted to the coulter beam assemblies with hydraulic safeguards. The main frame is extended by the roller arms, at the ends of which the compaction roller is mounted.

1. Main frame
2. Tower
3. Three poing linkage
4. Complete coulter beam
5. Roller arm
6. Complaction roller
7. Hydraulic safeguard

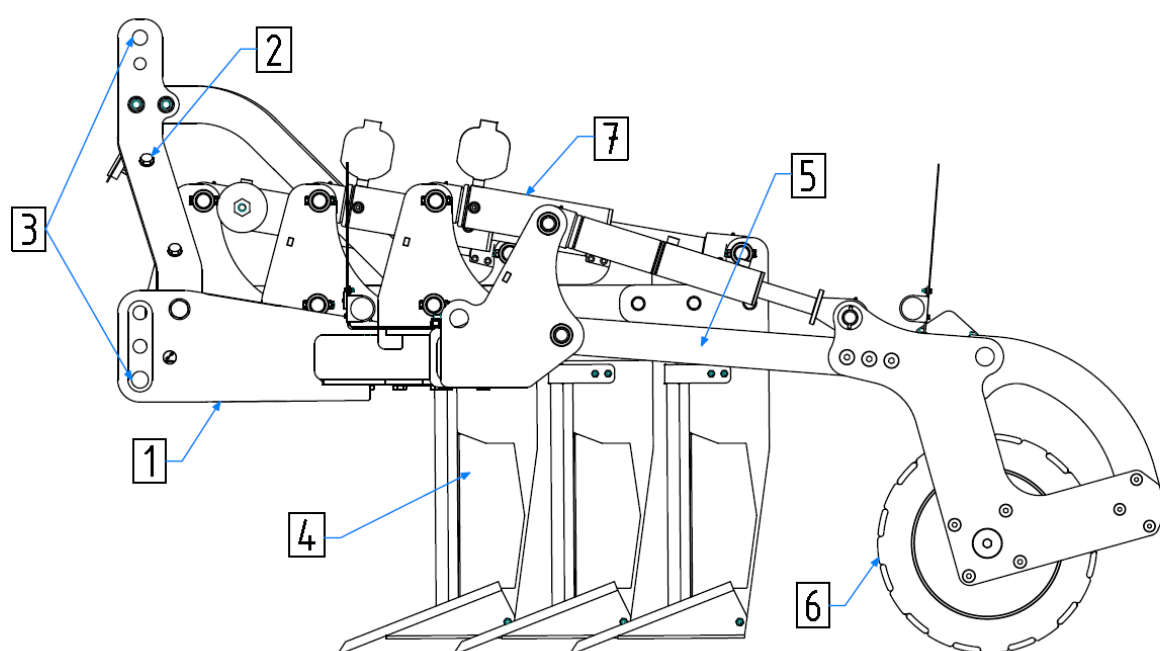


Fig. 15. Subsoiler VT design.

28.1. Coulter beam design

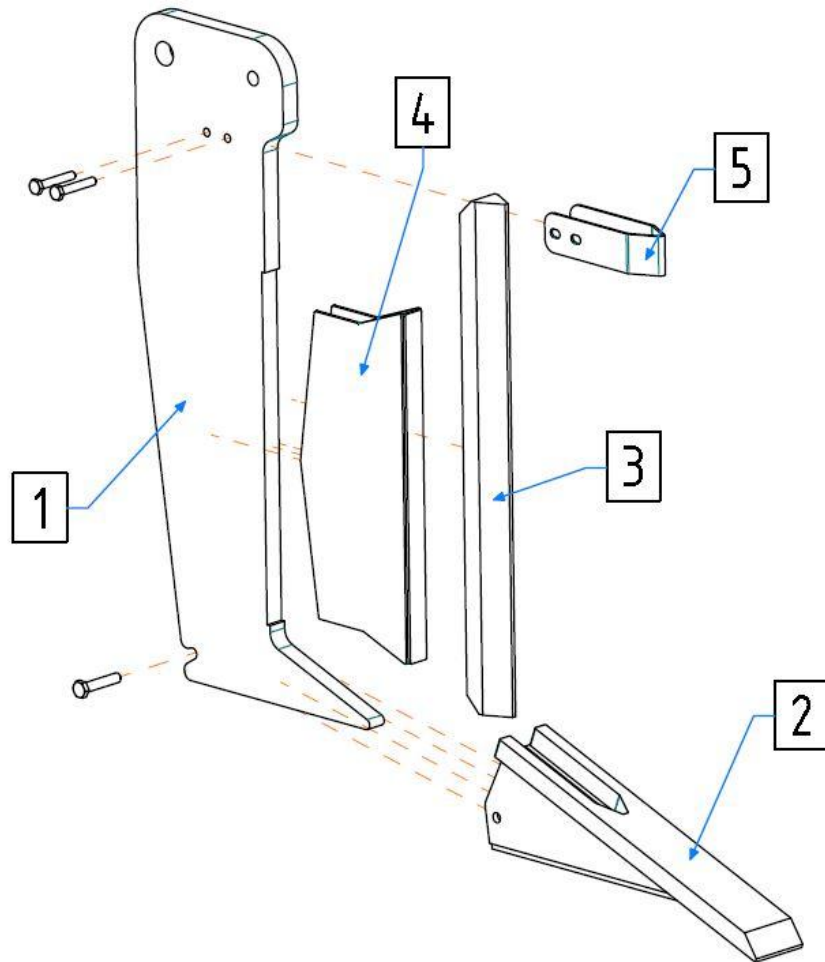


Fig. 16. Coulter beam design.

1. Coulter beam (not replaceable, doesn't wear out)
2. Chisel fixed with a rawlplug (replaceable element, wears out)
3. Self-sharpening rotating sword (replaceable element, wears out)
4. Coulter beam cover (replaceable element, wears out)
5. Self-sharpening sword protection (not replaceable, doesn't wear out)

29. Parking position

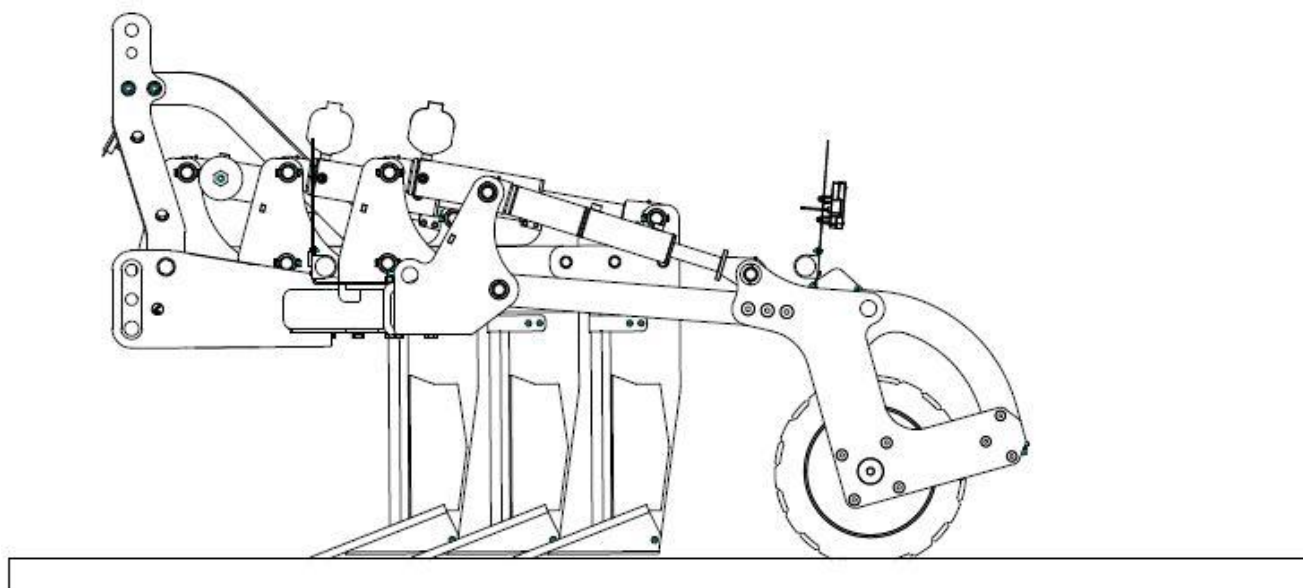


Fig. 17. Parking position

30. Work position

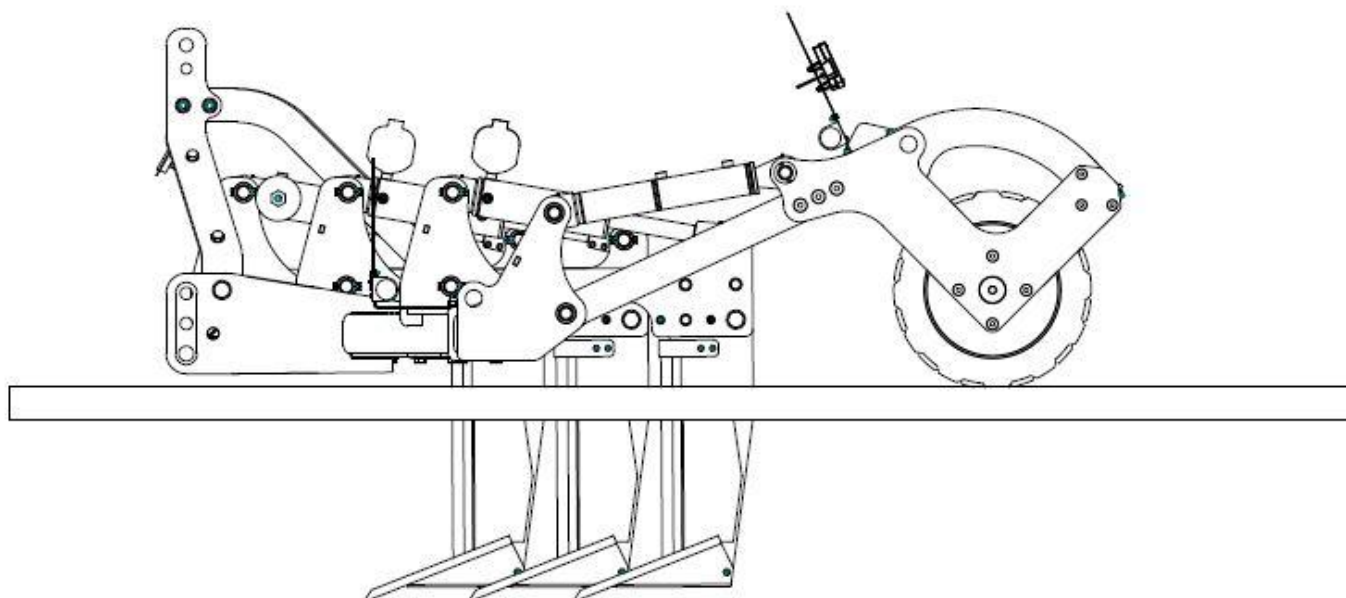


Fig. 18. Work position

30.1. Working depth adjustment

The adjustment of the working depth of the subsoiler is done hydraulically by limiting the stroke of the hydraulic cylinder using special limiters. The smaller their number, the greater the working depth. It is necessary to pay attention to the power of the agricultural tractor aggregated with the subsoiler. If the tractor power is insufficient, we may not achieve the desired working depth despite the settings. In such a case, it is necessary to work shallower or use a tractor with more power.

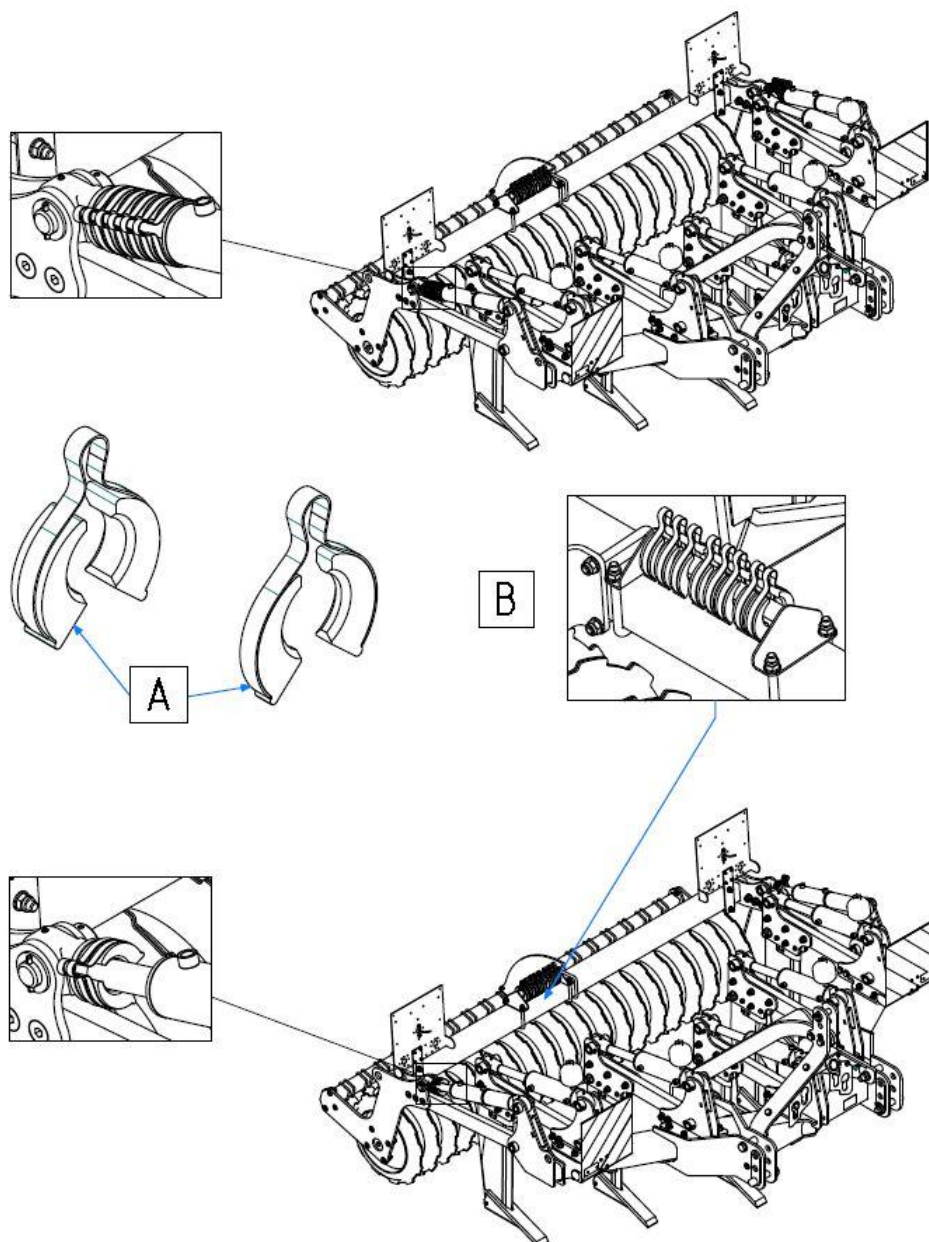


Fig. 19. Working depth

- A. Hydraulic cylinder stroke limiters
- B. Place for stroke limiters on the subsoiler

Examples of working depth settings using stroke limiters.

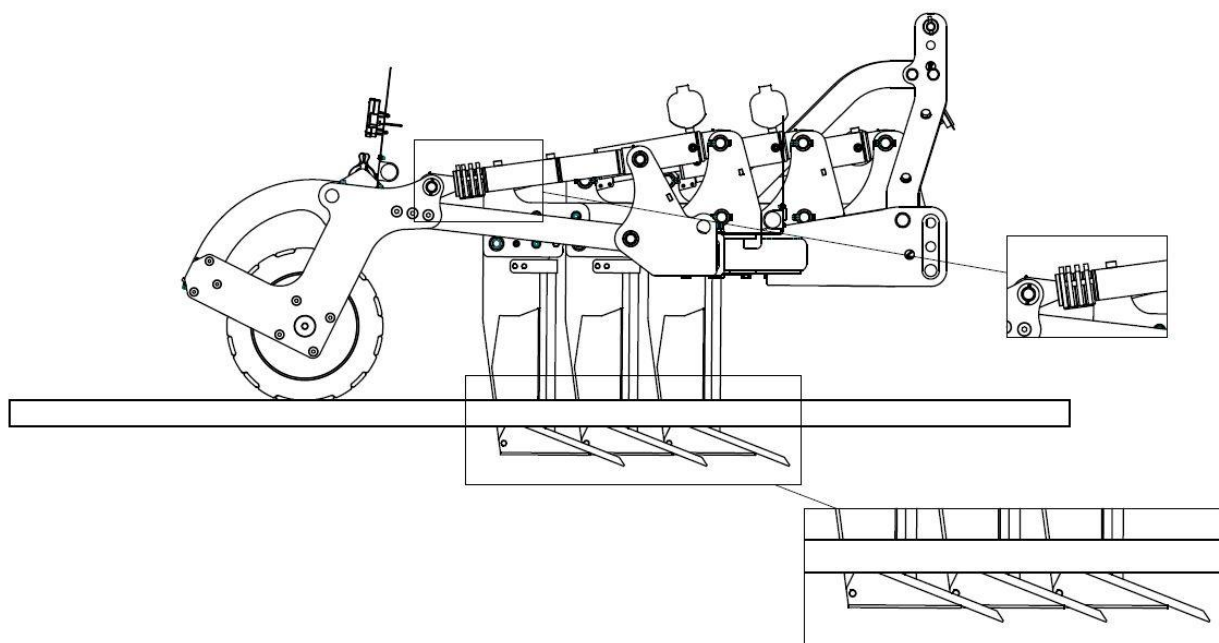


Fig. 20. Working depth – 4 stroke limiters

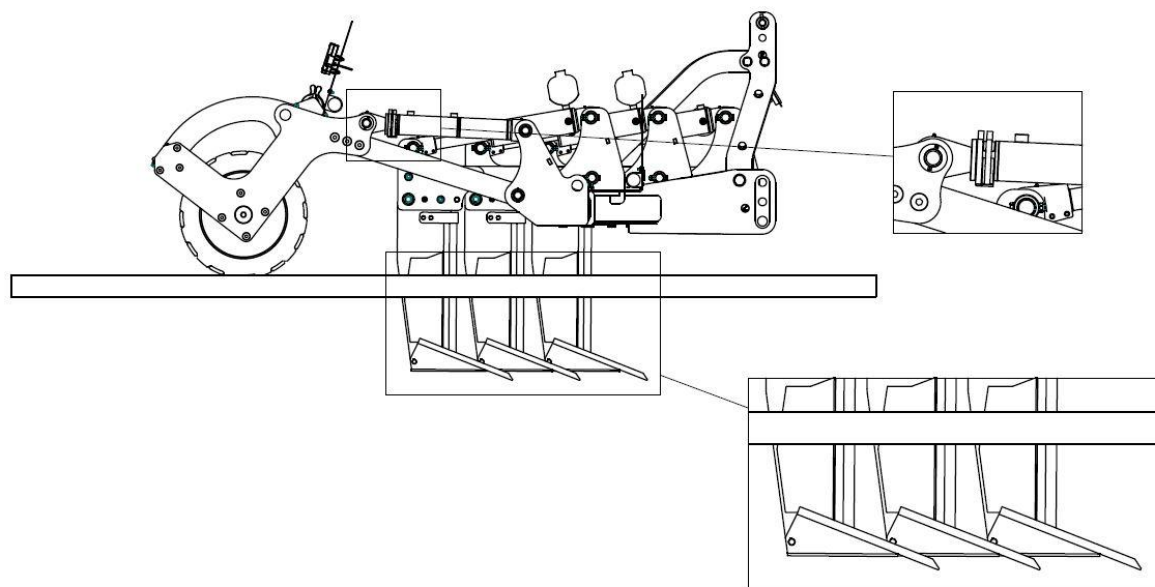


Fig. 21. Working depth – 2 stroke limiters

31. Maintenance

Regular and proper maintenance of the device will ensure:

- Safety of the operator and bystanders.
- Maintaining the quality of work and optimal efficiency.
- Positive impact on the service life of the machine and its components.
- Minimizing the risk of failure at key moments of the season.

The most important issues related to the maintenance of the device:

- Before performing any maintenance, cleaning or repair work on the machine, turn off the tractor engine and remove the key from the ignition if the machine is coupled to the tractor.
- The tightness of the screws and nuts should be checked regularly and tightened if necessary. This should be done before each use of the device.
- Spare parts must meet the technical requirements of the machine manufacturer. Only original spare parts can ensure this.
- It is recommended to wash the device with a high-pressure washer. Do not exceed 60°C. It is also recommended to use recommended and certified cleaning agents.
- If it is necessary to weld, before starting this work, disconnect the terminals from the alternator and the tractor battery if the device is coupled to the tractor. However, it is recommended to disconnect the device from the agricultural tractor.

32. Technical inspections

To ensure safe and effective use of the subsoiler, technical inspections should be performed regularly in accordance with the following guidelines.

Types of technical inspections

a) Daily inspection (before starting work):

- Checking the technical condition of the working elements of the coulter beam.
- Checking the tightness of screws, nuts and other fastening elements.
- Assessment of the condition of hydraulic lines and possible leaks.
- Checking the correct setting of the working depth.

b) Periodic inspection (after the end of the season):

- Detailed inspection of the wear of working elements and their possible replacement.
- Lubrication of all moving points according to the table in the chapter "Lubrication"
- Inspection and maintenance of hydraulic elements (seals, connections).
- Cleaning the machine and removing residual soil and dirt.

c) Service inspection (every 2-3 years):

- Inspection of the frame structure for cracks and deformations.
- Assessment of the technical condition of the entire working and supporting system.
- Have it inspected by an authorized service center (recommended).

ATTENTION

If it is necessary to replace the working elements of the coulter, lift the selected coulter up using a hydraulic cylinder and then lower the device onto the remaining coulters and the compaction roller.

If replacing the entire coulters, suspend the machine on the three-point linkage of the tractor, and additionally use supports under the main frame of the subsoiler.

33. Greasing points

The lubrication points on the machine and their frequency are shown in the drawing below. Before lubrication, clean the lubricator tip and the lubrication nipples. Lubrication of individual machine elements should be completed when fresh, clean grease appears on the given element. Replaced oils, greases and filters should be returned to special disposal points.

The grease used by the manufacturer is: **L2-EP**

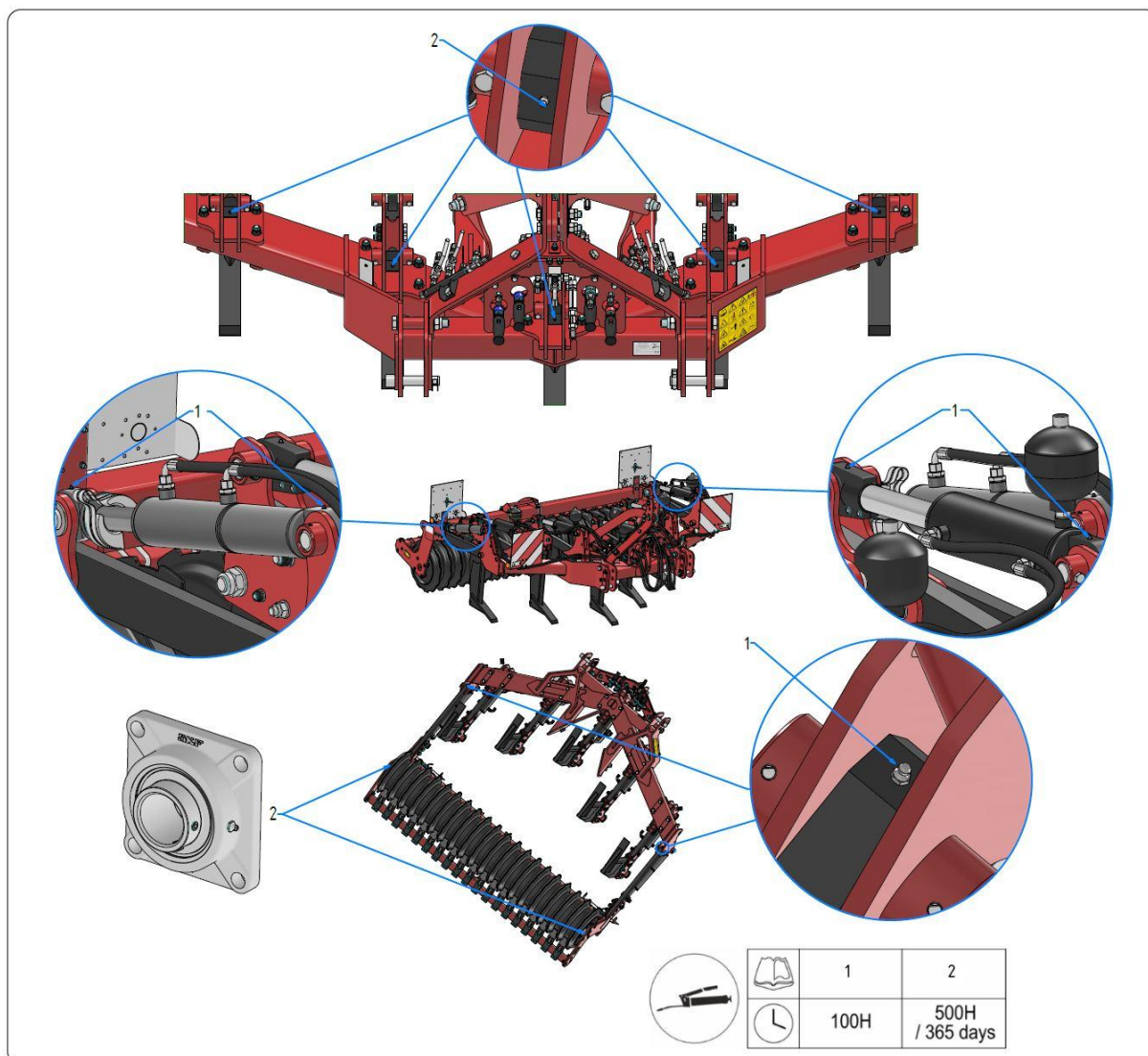


Fig. 22. Greasing points

34. Disposal of lubricants and maintenance products

Lubricants or other maintenance products used during operation of the device pose a major environmental hazard. They must therefore be disposed of in accordance with statutory regulations, in an environmentally friendly manner and in a manner that is safe for people. If necessary, please seek information from your local authority.

35. Connecting and disconnecting the device to/from the tractor

The machine should be connected to the tractor on a firm and even surface, which will ensure its safe connection. The lower links of the tractor must be set at the same height.

The machine should be connected to the tractor as follows:

- reverse the tractor so that the axis of the holes in the rods aligns with the axis of the hitch,
- stop and brake the tractor,
- attach the tractor rods to the hitch and secure them with the original securing device,
- attach the machine to the tractor in its upper part using a cat. 3 central connector,
- lift the machine on the arms of the tractor's rear three-point linkage,

Disconnecting the machine from the tractor should be done in the reverse order, remembering to disconnect on a flat, hard surface.

36. Long-term storage of the machine

- Before storage, the machine should be thoroughly cleaned of soil and plant debris,
- When not in use, it is recommended to store the machine in a closed and roofed room.
- The machine should be placed on a stable, dry surface,
- The working elements (coulter beams) must be lowered, which will provide the device with stability, no support is needed,
- Hydraulic and electrical cables should be protected against dirt and moisture,
- All unpainted steel surfaces, cutting elements and screw connections should be protected with an anti-corrosion agent (e.g. grease).

37. Transportation

If it is necessary to transport the machine on a trailer or other means of transport, they must be secured in places designated for this purpose using transport belts (minimum 4 attachment points) or other types of security that have appropriate certificates. The machine must be transported in a position parallel to the ground.

ATTENTION ⚠ Check that all components are secured against moving or tipping over while driving.

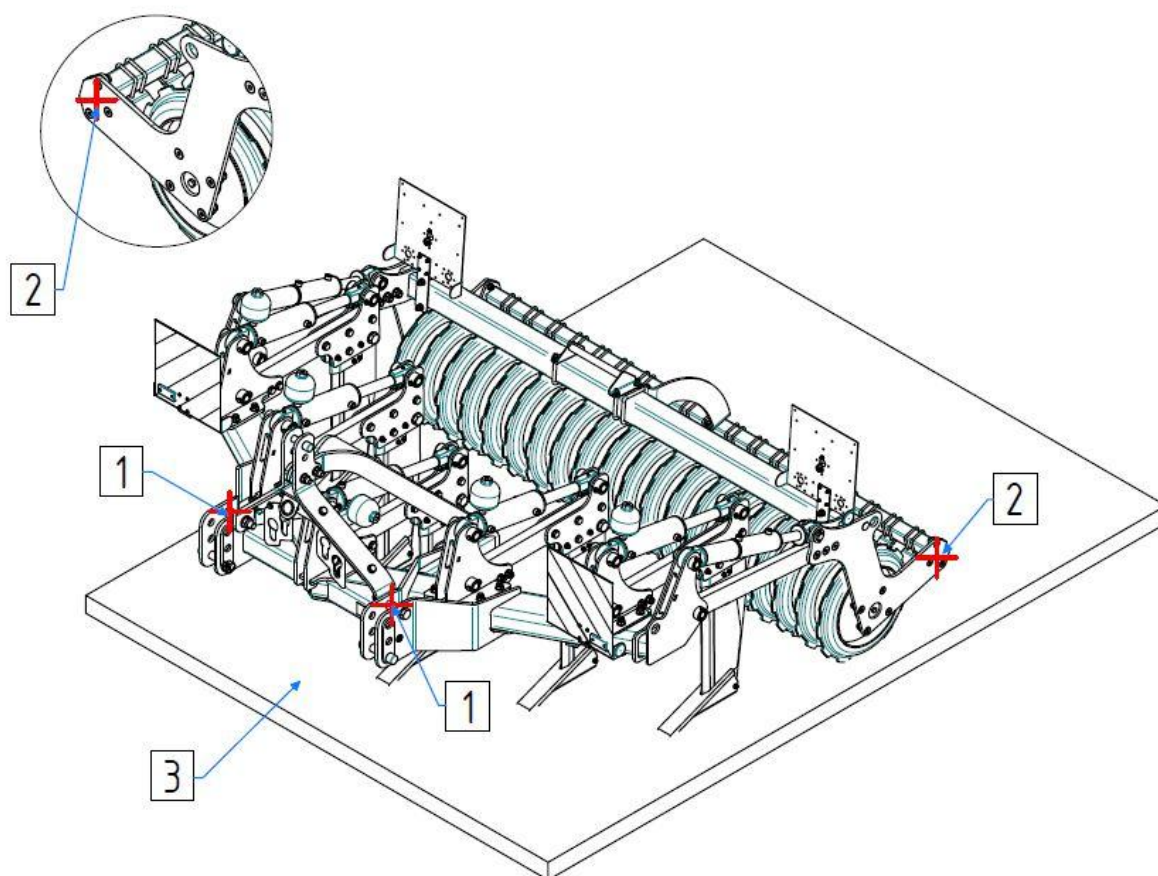


Fig. 23. Machine mounting points

1. Two front attachment points.
2. Two rear attachment points.
3. Flat surface on the means of transport.

38. Machine lifting points

If the machine needs to be lifted, the lifting points on the machine should be used. These points, indicated in the drawings below, are also located in the form of a sticker in the places designated for this purpose.

In the case of the VT Subsoiler, these are:

- A.** Lower pins of the three-point suspension system (TUZ)
- B.** Pressing roller beam

ATTENTION

- the machine can be lifted using a telescopic handler or crane,
- the machine may only be lifted with approved belts / slings,

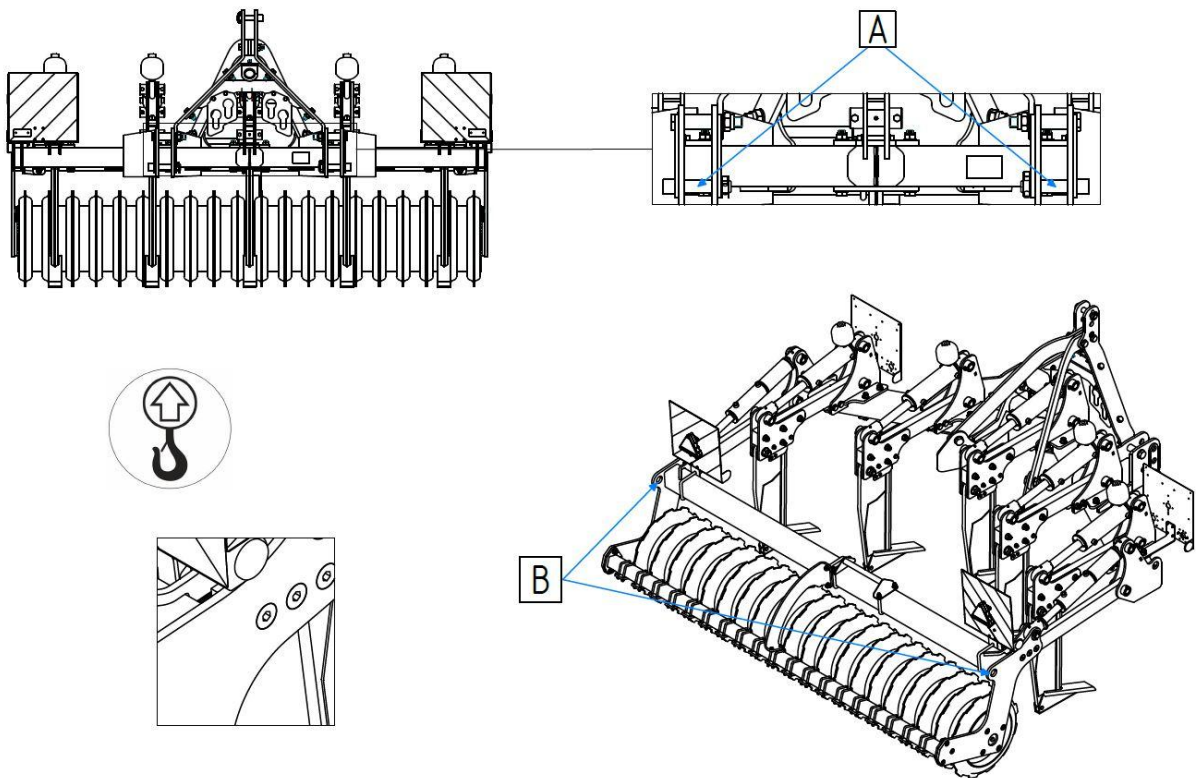


Fig. 24. Machine lifting points

39. Disassembly and disposal

While using and maintaining the machine different substances are created, which must be properly disposed of. In the case of excipients, consumable substances and other chemical agents, always follow instructions of the safety data sheets of those substances.

Decommissioning.

If the machine can no longer be used and should be utilized, it must be decommissioned. Machine parts should be segregated according to materials, and then handed over for eco-friendly disposal or recycling. While doing that you must obey the applicable regulations. Contact a disposal company if necessary.

40. Responsibility of the manufacturer

The manufacturer is not liable if the machine is used contrary to legal regulations, safety regulations or the recommendations of this manual. Due to the fact that situations not foreseen in this manual may occur during the use of the machine, the user should always follow the general safety rules. The manufacturer's liability is excluded in the event of unauthorized use of spare parts other than original or parts approved by the manufacturer in the machine or independent modification of machine components. The manufacturer is not liable for indirect damage, including damage to other machines or devices. The owner of the machine is responsible for the operation and maintenance of the machine. The owner of the machine is responsible for the appropriate qualifications of the operating personnel and their knowledge of the operation and operation of the machine.

41. Warranty

The warranty period is 12 months from the date of handover of the machine to the customer. The warranty covers defects and irregularities resulting from the manufacturer's fault due to incorrect assembly of the machine or defects in materials used in production. The warranty does not cover wear of the working parts of the machine, which wear out during normal use. An additional condition for the warranty to be valid is the use of the machine with a tractor whose power does not exceed 100 HP (horsepower) per meter of the machine's working width.

ATTENTION  The manufacturer will not accept a warranty claim if:

- The warranty card has not been completed or has been completed incompletely.
- The machine, its individual components and accessories have not been used or maintained properly,
- The contents of this user manual have not been followed,
- Any repairs or technical changes have been made without the manufacturer's consent

42. Troubleshooting

Table 2. Fault detection

Fault or irregularity	Failure cause	Solution
The rear of the device is hung too high or too low on the tractor.	The device is not parallel to the ground	Set the device in a horizontal position using the tractor rods and the upper link of the three-point linkage.
Coulter beams bend backwards after being recessed	Pressure in the hydraulic safety system is too low	Increase pressure in the hydraulic safety system
No high beam position light	Lighting cable is not connected to the tractor or the position lights are not switched on	Connect lighting cable
Problem with device recess	The lower hooks of the three-point linkage are connected too low	Reconnecting the lower hooks of the three-point linkage to higher holes
Problem with device recess	Poorly adjusted lower linkage arm hangers of the tractor	Adjust the hangers of the lower arms of the tractor's three-point linkage (lengthen)
Problem with device recess	Incorrect setting or no roller pressure	Set or modify the roller pressure
Problem with device recess	Worn working parts	Replace worn working parts
Clogged compression roller	Roller scrapers misaligned or worn	Adjusting or replacing scrapers
Coulter beam protection safety pin is damaged	Hitting an obstacle while the device is operating	Align the coulter beam with the holes and install the locking pin

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44. Notes

This image shows a full page of a notebook or worksheet. It features approximately 30 horizontal dotted lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There is no text or other markings on the paper.