ORIGINAL INSTRUCTIONS - *according to Directive 2006/42/EC, Annex I 1.7.4.1 and according to Supply of Machinery (Safety) Regulations 2008, Annex I 1.7.4.1*

OPERATOR'S MANUAL

VS500H
VS600H

Vibro Seeder

*PIN KTNKA4**A00001338 and above*

Part number 91745789
1st edition English
July 2022

KONGSKILDE

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1 - GENERAL INFORMATION

Note to the owner

This manual has been prepared to assist you in the correct procedure to run in, to drive, to operate, to adjust and to maintain your new implement.

This implement has been designed and built to give maximum performance, economy and ease of operation under a wide variety of conditions.

Prior to delivery, your implement was carefully inspected both at the factory and by your dealer to make sure that it reaches you in optimum condition. To maintain this condition and assure trouble-free operation it is important that routine services, as specified in this manual, are carried out at the recommended intervals.

Read this manual carefully (especially Chapter 2 that covers the safety information) and keep this manual in a convenient place for future reference. DO NOT operate or permit anyone to operate or service this implement until you and/or other persons have read this manual. Read the manual, it will save you time and hassle later. Lack of knowledge can lead to accidents. Employ only trained operators who have demonstrated the ability to operate and service this implement correctly and safely. Contact your dealer for assistance providing the required training to your operators. Contact your dealer to obtain additional manuals or alternate language versions.

If at any time you require advice that concerns your implement, do not hesitate to contact your authorized dealer. He has factory-trained personnel, genuine service parts and the necessary equipment to carry out your service requirements.

NOTICE: *This implement has been designed and built in line with the requirements put forward by the European Directives 2006/42/EC and 2014/30/EU.*
Always use genuine KONGSKILDE Service Parts or parts that match at least the same quality, reliability and functionality as the equivalent original Service Parts when you service and repair your implement and do not modify your implement without a written permission of the manufacturer. Failure to do so will void the responsibility of the manufacturer.

Check local road legislation before you drive the implement on public roads.

When you operate interchangeable implement, make sure that the implement is CE approved.

As this publication is distributed throughout our international network, the implement illustrated, either as standard or as an accessory, may vary according to the country in which the implement is to be used. Low specification configurations, as chosen by the customer, may deviate from the specifications given.

Several figures in this operator's manual show the safety guarding or the additional guards, legally required by certain countries, open or removed to better illustrate a particular feature or adjustment. The implement must not be used in this condition. For your own safety, make sure that all guards are closed or replaced before you operate the implement.

OWNER ASSISTANCE

We at KONGSKILDE and your KONGSKILDE dealer want you to be completely satisfied with your investment. Normally, your dealer's Service Department will handle any problems with your implement. Sometimes however, misunderstanding can occur. If your problem has not been handled to your satisfaction, we suggest you to contact the owner or General Manager of the dealership, explain the problem and request assistance. When additional assistance is needed, your dealer has direct access to our branch office.

COMPANY POLICY

Company policy, which is one of continuous improvement, reserves the right to make changes in design and specification at any time without notice and without obligation to modify units previously built.

All data given in this book is subject to production variations. The information in this publication is provided on the basis of information that was available at the time that the manual was written. Settings, procedures and other items can change. These changes can affect the service that is given to the implement.
Dimensions and weights are approximate only and the illustrations do not necessarily show the implement in standard condition. For exact information about any particular implement please consult your dealer. Make sure that you have the most current and complete information from your dealer before you start any job.

ACCESSORIES AND OPTIONS

Your implement has been designed to operate in a wide variety of soils/crops and conditions. Nevertheless additional equipment may, in certain cases, be required to improve the implement performance. A list of this additional equipment is given in the "Accessories” chapter in this manual. Use only those accessories designed for your implement.

PARTS AND ACCESSORIES

Genuine KONGSKILDE parts and accessories have been specifically designed for KONGSKILDE implements.

We would like to point out that "non-genuine” parts and accessories have not been examined and released by KONGSKILDE. The installation and/or use of such products could have negative effects upon the design characteristics of your implement and thereby affect its safety. KONGSKILDE is not liable for any damage caused by the use of "non-genuine” parts and accessories.

Rely on your authorized dealer to supply you with genuine KONGSKILDE parts only. These parts are covered by our warranty and will give you the best performance.

See the parts catalog or browse the KONGSKILDE portal to find service parts for your implement.

When you order service parts, always quote the model and serial number printed on the Product Identification Number (PIN) plate.

LUBRICANTS

Your dealer sells a selection of specially formulated lubricants based on own engineering specifications.

Recommended lubricants for your implement are listed in the maintenance chapter.

WARRANTY

Your implement is warranted according to legal rights in your country and the contractual agreement with the selling dealer. No warranty shall, however, apply if the implement has not been used, adjusted and maintained according to the instructions given in this operator's manual.

It is prohibited to carry out any modifications to the implement unless specifically authorized, in writing, by a KONGSKILDE representative.

CLEANING YOUR IMPLEMENT

When you use a high pressure washer, do not stand too close to the implement and avoid directing the jet at electronic components, electrical connections, breathers, seals, filler caps, and so on.

Clean decals only with a soft cloth, water and a gentle detergent. DO NOT use solvent, gasoline or other harsh chemicals to clean decals. Decals could be removed or get damaged.

DISASSEMBLY OR SCRAPPING

The critical condition of the equipment is the complete wear and tear of all components. When the costs of repair, restoration or replacement of the individual components and/or assemblies become economically impractical, a decision is made on decommissioning the equipment.

When your implement is taken out of service because it is damaged beyond repair or has reached the end of its useful life, disassembly, scrapping and/or recycling of components must be performed only by a qualified technician with service instructions, and in compliance with local law and regulations.

Intended use

The implement can only perform the usual work in agriculture. Only connect the implement to a tractor that corresponds with the specifications of the implement and is legal to use.

The implement is a tine seeder, based on the well known vibrating tines. The implement is a fully mounted seed drill.

The implement is mainly designed for seeding in unploughed conditions, where the open frame allows passage of straw and field residues. A soil preparation is normally necessary prior to the seeding operation, in order ensure enough loose soil around the seeds.

The work must occur under reasonable conditions, or thorough agricultural knowledge and authorised operation.

Intended use implies that you observe the prescriptions concerning adjustment, operation and maintenance in the instruction manual. Observed altogether the safety instructions as well as common rules concerning technical safety, working practices and road safety. Also read the spare parts catalog and use original spare parts. If necessary contact an authorised workshop.

If you notice degradation of performance, contact your dealer for assistance. He may have useful information for improvements, or a kit may be available to enhance the performance.

With respect for the routine maintenance and with operating conditions, the assigned service life for the implement is minimum seven years.

Prohibited usage

NOTICE: *DO NOT use this implement for another purpose than intended by the manufacturer (as described in the manual, shown by the decals, or in other product safety information provided with the implement). These information sources define the intended use of the implement.*

Do not use this implement:

1. To perform other works than farm works based on mechanical row crop cleaning.
2. If you have not read this instruction manual.
3. If you have not learn the structure and operation of the implement.

If you use the unit inconsistently with its destination, KONGSKILDE and/or its representatives shall not be held liable for any damages incurred. In such case, full responsibility for the implement use, transport, maintenance, repairs, etc. shall be borne by the owner/user.

Any and all departures from manufacturer requirements and effective legal regulations, as well as performing any modifications in implement structure without obtaining prior manufacturer's approval, using spare parts other than original ones shall be construed as using the unit inconsistently with the requirements and shall result in a waiver performed by KONGSKILDE with respect to the damages.

Electro-Magnetic Compatibility (EMC)

This machine complies strictly with the European Regulations on electro-magnetic emissions. However, interference may arise as a result of add-on equipment which may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

- Ensure that each piece of non- KONGSKILDE equipment fitted to the machine bears the CE mark.
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine.
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components.

Failure to comply with these rules will render the KONGSKILDE warranty null and void.

Manual scope and required training level

Introduction to this manual

This manual gives information about the use of your KONGSKILDE machine as intended and under the conditions foreseen by KONGSKILDE during normal operation, routine service, and maintenance.

This manual does not contain all the information that relates to periodic service, conversions, and repairs that only trained service personnel can perform. Some of these activities may require appropriate facilities, technical skills, and/or tools that KONGSKILDE does not supply with the machine.

The manual contains the chapters as shown on the Contents pages. See the Index at the end of this manual to locate specific items about your KONGSKILDE machine.

Normal operation

Normal operation consists of the use of this machine for the purpose KONGSKILDE intends by an operator that:

- Is familiar with the machine and any mounted equipment or towed equipment
- Complies with the information on operation and safe practices as specified by KONGSKILDE in this manual and by the signs on the machine

Normal operation includes:

- Preparation and storage of the machine
- Addition and removal of ballast
- Connection and disconnection of mounted equipment and/or towed equipment
- Adjustment and configuration of the machine and equipment for the specific conditions of the job site, field, and/or crop
- Movement of components into and out of working positions

Routine service and maintenance

Routine service and maintenance consists of the daily activities necessary to maintain the proper machine function. The operator must:

- Be familiar with the machine characteristics
- Comply with the information on routine service and safe practices as specified by KONGSKILDE in this manual and by the signs on the machine

Routine service can include:

- Fueling
- Cleaning
- Washing
- Topping up fluid levels
- Greasing
- Replacing consumable items such as light bulbs

Periodic service, conversions, and repairs

Periodic service consists of activities that are necessary to maintain the expected life of the KONGSKILDE machine. These activities have defined intervals.

Trained service personnel familiar with the machine characteristics must perform these activities at the defined intervals. Trained service personnel must comply with the information on periodic service and safe practices as partly specified by KONGSKILDE in this manual and/or other company literature.

Periodic service includes:

- Oil change service for the engine, hydraulic circuits, or transmission
- Periodic exchange of other substances or components as required

Conversion activities rebuild the KONGSKILDE machine in a configuration that is appropriate for a specific job site, crop, and/or soil conditions (e.g., installation of dual wheels). Conversion activities must be done:

- By trained service personnel familiar with the machine characteristics
- By trained service personnel that comply with the information on conversion as partly specified by KONGSKILDE in this manual, assembly instructions, and/or other company literature

Repair activities restore proper function to a KONGSKILDE machine after a failure or degradation of performance. Dismantling activities occur during the scrapping and/or dismantling of the machine.

Trained service personnel familiar with the machine characteristics must perform these activities. Trained service personnel must comply with the information for repair as specified by KONGSKILDE in the service manual.

Before you operate

Read this manual before you start the engine or operate this KONGSKILDE machine. Contact your KONGSKILDE dealer if:

- You do not understand any information in this manual
- You need more information
- You need assistance

All persons training to operate, or who will operate this KONGSKILDE machine should be old enough to possess a valid local vehicle operating permit (or meet other applicable local age requirements). These persons

must demonstrate the ability to operate and service the KONGSKILDE machine in a correct and safe manner.

Additional documents

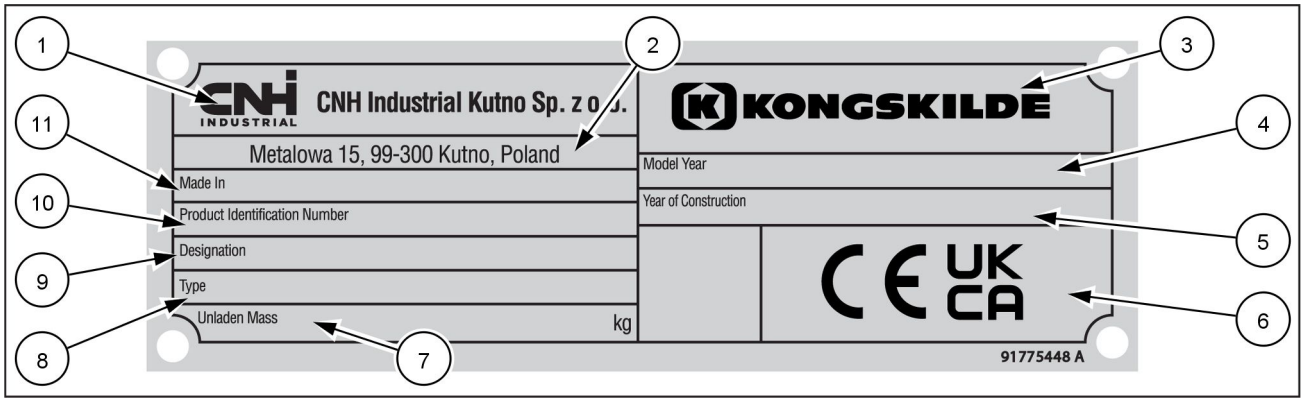
When required, the machine is delivered with an assembly instruction. The assembly instruction shows the packaging depending on the kind of shipment and the related procedure to assemble the received components.

Product Identification Number (PIN)

The Product Identification Number (PIN) is a serial number that identifies the implement.

The serial number, model and other specifications are on the PIN plate.

Provide your KONGSKILDE dealer with the model and the PIN when you order parts.



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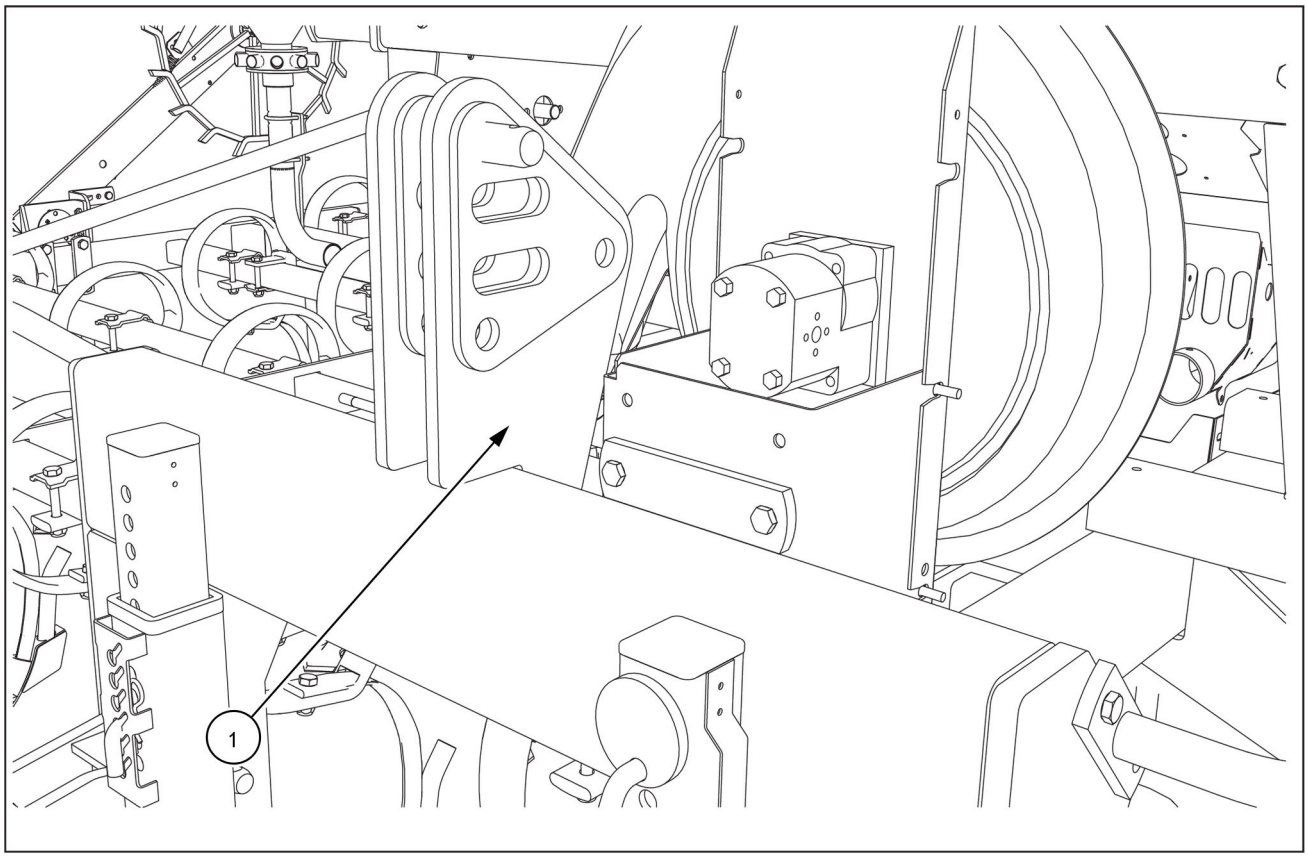
(1) Company name
(2) Mailing address
(3) Brand identification logo
(4) Model year
(5) Year of construction
(6) Certification mark
(7) Unladen mass
(8) Type / Variant
(9) Designation
(10) Product Identification Number (PIN)
(11) Made in (country of origin)

Product identification

NOTE: *Do not remove or change the Product Identification Number (PIN) plate* ***(1)*** *on the implement.*

The PIN plate **(1)** is located on the left side of the head stock.



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For future reference, record your implement model and PIN in the spaces below.

Model _____

Product Identification Number (PIN) _____

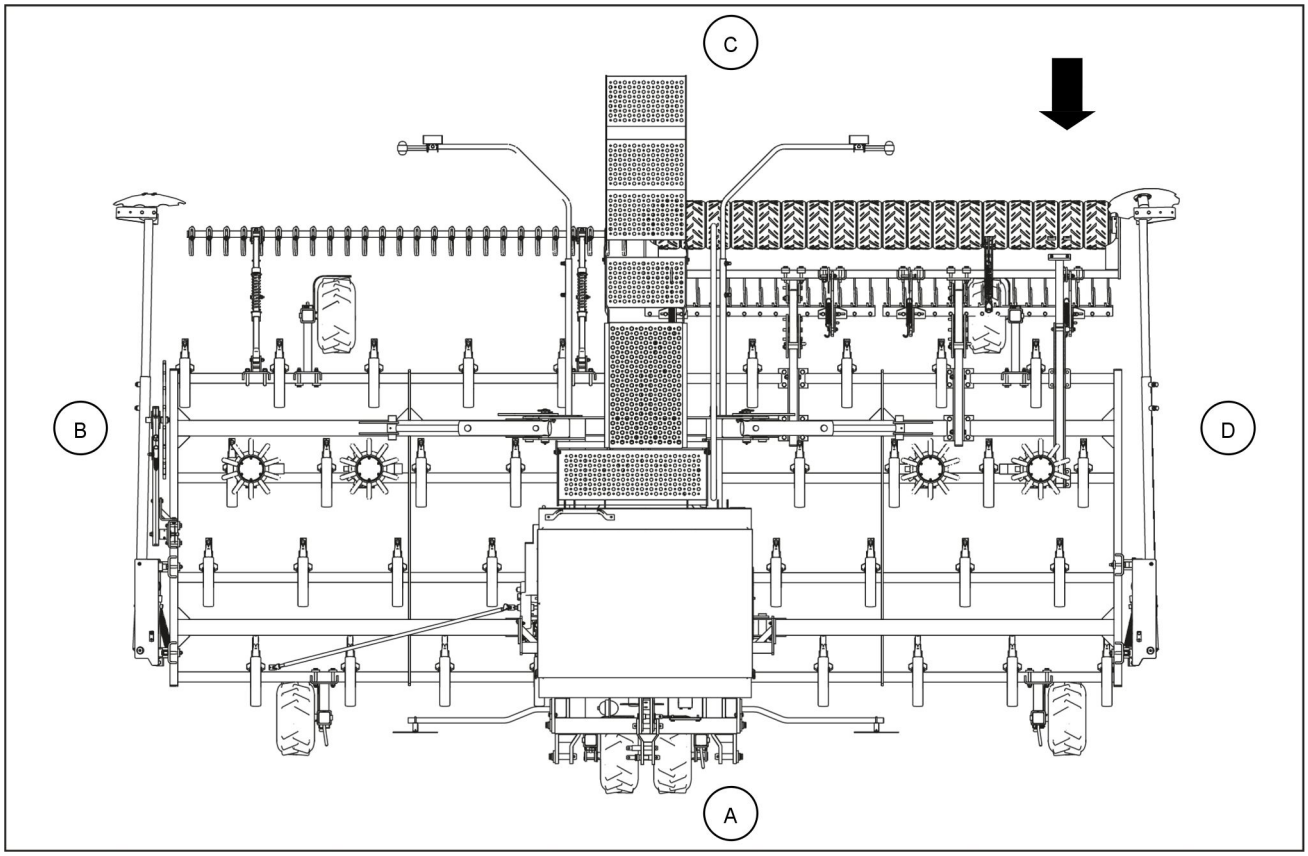
Operator's manual storage on the machine

Keep this operator's manual protected and accessible on the tractor whenever you transport or operate the implement.

Implement orientation (for rear mounted hopper version)

NOTE: *To determine the left-hand side and the right-hand side of the implement, stand behind the implement and face the direction of travel during working operation.*

The following overhead view illustration is a general representation of the implement. The illustration indicates the sides, front, and rear orientations of the implement as referred to throughout this operator's manual.



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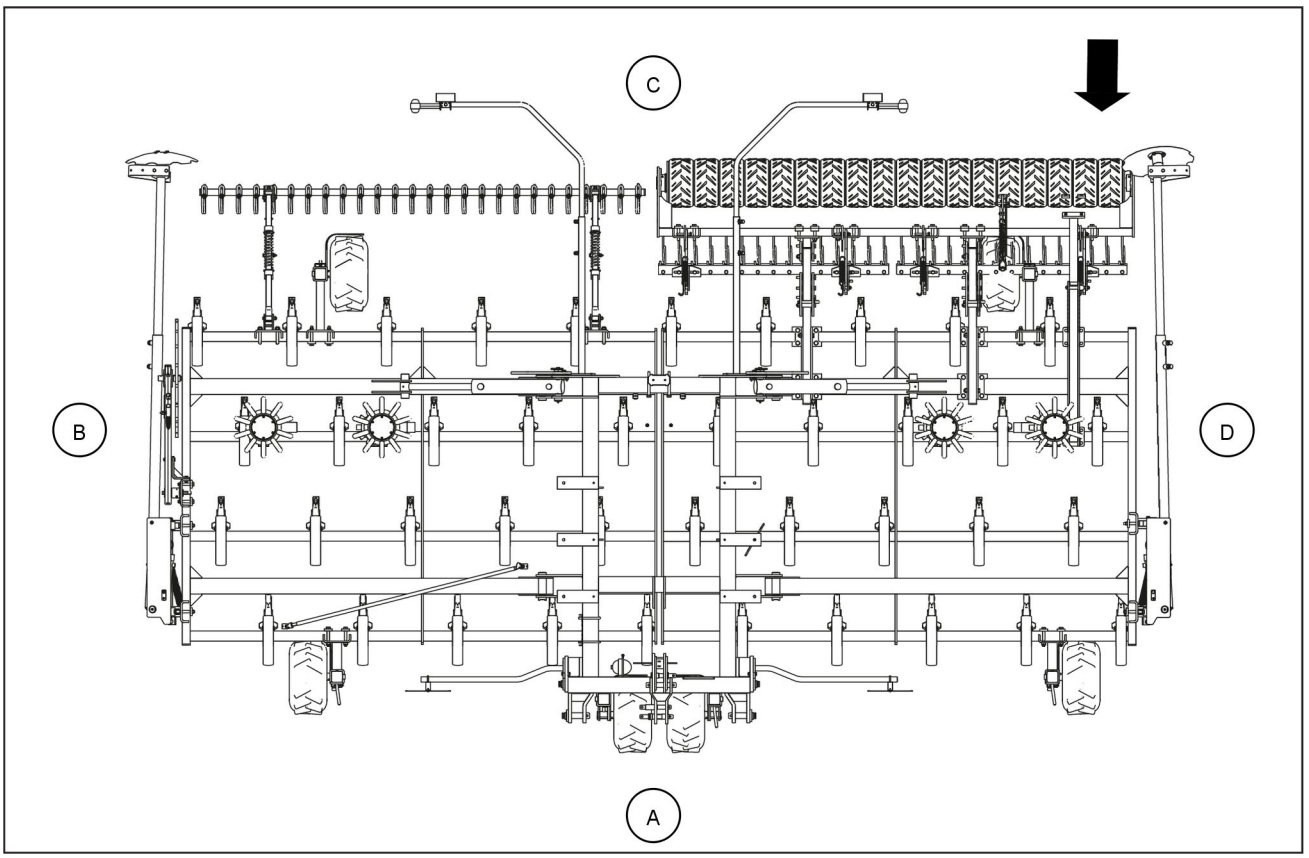
NOTE: *The arrow indicates the direction of the implement during working operation.*

(A) Front of the implement
(B) Right-hand side of the implement
(C) Rear of the implement
(D) Left-hand side of the implement

Implement orientation (for front mounted hopper version)

NOTE: *To determine the left-hand side and the right-hand side of the implement, stand behind the implement and face the direction of travel during working operation.*

The following overhead view illustration is a general representation of the implement. The illustration indicates the sides, front, and rear orientations of the implement as referred to throughout this operator's manual.



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NOTE: *The arrow indicates the direction of the implement during working operation.*

(A) Front of the implement
(B) Right-hand side of the implement
(C) Rear of the implement
(D) Left-hand side of the implement

2 - SAFETY INFORMATION

Safety rules and signal word definitions

Personal safety

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

⚠ DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation that, if not avoided, could result in machine or property damage.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information that clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

General recommendations

Most farm machinery accidents can be avoided by the observance of a few simple safety precautions.

- This operator's manual contains important information concerning operation, maintenance and adjustment of the implement. Furthermore, this operator's manual mentions and emphasizes all the safety instructions.
- Read the operator's manual thoroughly before you start, operate, service, or carry out any other operation on the implement. Even though you have been driving a similar implement before, you must read the manual. This is a matter of your own and other people safety. A few minutes reading will save you time and hassle later. Lack of knowledge can lead to accidents.
- In case of an accident, stop the tractor, turn off the engine and remove the key from the contact, assess the situation and call emergency services when required.
- Your implement was designed with safety in mind. However, there is no real substitute for caution and attention when you need to prevent an accident. Once an accident has occurred, it is too late to think about what you should have done. This means that it is very important that you as user of the implement pay attention and use the implement correctly and thereby avoid exposing yourself and others to unnecessary danger.
- The implement must be operated only by responsible persons who have been adequately trained and authorized to use the implement. Never leave the implement to others before you have made sure that they have the necessary knowledge to operate the implement safely.
- Never let the implement run without supervision.
- Always keep a first aid kit handy.
- The implement has only one operator station and this is the cab of the tractor, which is a one man operated implement. Never permit anyone to ride on or in an implement. Do not allow riders on the implement or tractor; do not allow people to stand on the ladder or steps. Your view to the left or right will be obstructed and a rider risks to fall from the implement or tractor during unforeseen or abrupt movements. There is no need for other people on or around the implement during normal operation.
- Do not use this implement as a lift, ladder or platform to work at heights.
- Before you work on the implement, disengage all drives, stop the engine and remove the ignition key. Wait for the rotating parts to run down.
- Never work around the implement with loose clothing, jewelry, watches, long hair and other loose or hanging items can be pulled in by the moving parts of the implement.

Illustrations

⚠ WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.
Replace all shields before operating the machine.
Failure to comply could result in death or serious injury.

W0012A

NOTE: *Some of the illustrations in this manual have been obtained by photographing prototypes. Standard production machines may differ in some details.*

Local obligations

Your machine may be equipped with special guarding or other devices in compliance with local legislation. Some of these require active action by the operator.

Therefore, check local legislation on the usage of this machine.

Fire or explosion prevention

1. Crop material, trash, debris, bird nests or flammable material can ignite on hot surfaces.
2. Inspect the electrical system for loose connections or frayed insulation. Repair or replace loose or damaged parts.
3. Do not store oily rags or other flammable material on the implement.
4. Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with non-flammable solvent before you weld or cut with a flame.
5. Do not expose the implement to flames, burning brush or explosives.
6. Promptly investigate any unusual smells or odors that may occur during the operation of the implement.

Hazardous chemicals

1. If you are exposed to or come in contact with hazardous chemicals you can be seriously injured.
   The fluids, lubricants, paints, adhesives, coolant, etcetera. required for the function of your machine can be hazardous. They may be attractive and harmfull to domestic animals as well as humans.
2. Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures and procedures to be taken in the event of a spill or accidental release. MSDS are available from your dealer.
3. Before you service your machine check the MSDS for each lubricant, fluid, etcetera. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, on manufacturer containers, as well as the information in this manual when you service the machine.
4. Dispose of all fluids, filters and containers in an environmentally safe manner in accordance with local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.
5. Store fluids and filter in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.
6. Keep out of reach of children or other unauthorized persons.
7. Additional precautions are required for applied chemicals. Obtain complete information from the manufacturer or distributor of the chemicals before you use them.

Starting up the implement safely

Before you attach the implement to the tractor, ensure that the tractor is in good working order and that the brakes are efficient, particularly if you operate on hilly ground. Also, ensure that the hydraulic or pneumatic system is compatible with that of the implement.

When you attach the implement to the tractor:

- Never allow anyone to stand between the tractor and the implement. An unintentional maneuver with the tractor may cause serious injury.
- Never go under an unsupported implement.
- Before you start the implement, learn all components of the implement and service equipment.
- Before you start the implement, make sure that all subassemblies are fully operational and complete. Pay particular attention to all locks and safety devices.
- Before you start the implement, repair or replace all malfunctioning elements with new ones.
- Never start the tractor until all persons are safely away from the tractor and the implement.
- Make sure that all tools have been removed from the implement before starting the tractor.
- Make sure that all spare part and moving equipment are intact and have been mounted correctly.
- Do not stand near the implement while it is working.

Traveling on public roads

Comply with the relevant traffic regulations

⚠ WARNING

Loss of control hazard!
Uneven brake force exists on left-hand and right-hand brakes. Always use brake pedal coupler when traveling on public roads to ensure brakes are actuated together.
Failure to comply could result in death or serious injury.

W0081A

⚠ WARNING

Impact hazard!
Take care when making turns. The machine rear end swings out when changing direction.
Failure to comply could result in death or serious injury.

W0089A

The implement is built according to the homologation requirements of your country. Do not modify the implement in a sense that would conflict with the national regulations.

If you wish to transport the implement on the public road, make sure that the combination tractor and implement observes the traffic rules in your country. This gives you and your surroundings the best possible safety.

The operators must observe relevant statutory or other national regulations that deal with road safety and labor safety issues.

Before you drive the implement on public roads:

- Check the allowable transport dimensions and weights.
- Install correctly the lighting and the warning panels.

Always observe the principles for permissible axle loads, the total unit mass and the transport gauge.

Observe the tractor manufacturer regulations and recommendations, specifically those relating to maximum transport loads and maximum speed.

Even in similar circumstances, the maximum allowed speed can vary depending on which country you travel in.

Always drive with the statutory lights and safety marking during transport on public road and at night.

Install all the required signs that indicate the vehicle width. Also install all the required lights that indicate the vehicle width during the nightly transport. If in doubt, contact your government department responsible for road transport.

Travel may be restricted to certain road types. Transport may be restricted to daytime or outside peak traffic hours. However plan your route to avoid heavy traffic and peak traffic hours.

Passengers

Do not allow passengers to ride in the tractor unless a specific seat is provided.

During transport, the transportation of people on the top of the implement is strictly forbidden.

Transport safety

Transport the implement only in transport position. Secure the implement for transport. Always activate the mechanical transport safety devices before transport.

Make sure to fit all the hitch pins with retaining pins correctly. Mechanically secure the hydraulic cylinders to prevent cylinders from creeping.

Drive safe

Do not drive under the influence of alcohol or drugs.

Never travel at speed in crowded areas.

When you maneuver the tractor with the implement, always be aware and conscious of its size.

The tractor driver must not leave the cabin during transport.

Always consider other road users.

Always adopt safe driving practices. Slow down and signal before turning. Give way to oncoming traffic in all situations, including narrow bridges, intersections etcetera. Pull over to allow faster traffic to pass.

If the implement is marked with a maximum speed limit, never exceed this maximum speed limit.

Always adjust the driving speed to the road and weather conditions. In case of bad road conditions and high driving speeds, big forces may occur and cause overload of tractor and implement.

Drive at a safe speed to ensure control and ability to stop in an emergency.

Lock the tractor brake pedals together. Never use independent breaking at transport speeds.

Mounted implements and ballast weights influence the driving, steering and braking capacity of the tractor. Make sure that the additional weight of the implement on the linkage does not compromise driving, steering and braking capacity of the tractor. Install front weights or repair the brakes if the tractor is not safe to drive.

Reduce speed during turns. Tractors have not been designed for fast turning. Avoid that the rear end of the implement hits an obstacle.

When you turn during transport pay attention to the overhang and/or oscillating weight of the implement.

Use engine braking when you drive down hills. Do not coast.

Watch for obstructions, particularly if over-width. Observe any load ratings applicable on bridges.

After you finish the transport, before you leave the tractor, always lower the implement to the ground in parking position, turn off the tractor engine, pull the parking brake, and remove the key from the ignition.

Operating the implement safely

⚠ WARNING

Roll-over hazard!
Special care is required when operating the machine on slopes or in a tilted position. A wrong maneuver or unexpected event could create a dangerous situation.
Failure to comply could result in death or serious injury.

W0207A

⚠ WARNING

Hazard to bystanders!
Always sound the horn before starting the machine. Make sure the work area is clear of other persons, domestic animals, tools, etc. before you operate the machine. Never allow anyone in the work area during machine operation.
Failure to comply could result in death or serious injury.

W0304A

NOTE: *Only put the implement into operation according to the instructions from the dealer.*

Never operate the implement under the influence of alcohol, drugs, or while otherwise impaired.

Before you operate the implement, familiarize yourself with all facilities and operating elements. Once an accident happens it is too late to think about what you did.

Examine the work surface for hidden obstacles. Obstacles pose a risk.

Keep people away from the implement during operation. Ask bystanders to leave the field. There is the risk for bystanders to be overrun by the implement. Stop the implement immediately if someone approaches.

The tractor or its implement may strike or crush against a person or pet within the operator area of the tractor. Do not allow anyone to enter the work area. Make sure that the area is clear and operation is safe before you move the implement.

Before you raise or lower the implement, check that nobody is near the implement or touches the implement.

When you operate the implement, always remain seated in the tractor cab. Operate controls only when seated in the tractor seat, except for those controls expressly intended for use from other locations.

The transportation of people on top of the implement is strictly forbidden at all times.

Avoid using the implement in unsuitable weather conditions. It is better to stop work temporarily rather than to operate in such conditions.

Do not operate the implement during a thunderstorm. If you are on the ground during a thunderstorm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.
If a lightning from a thunderstorm should strike during operation, remain in the tractor cab. Do not leave the cab. Do not make contact with the ground or objects outside the machine.

Always operate the implement at a safe speed in accordance with the ground conditions. On uneven ground, proceed with the utmost caution to ensure proper stability.

When you turn on hillsides always be careful. Adjust the speed to these conditions.

Drive in a low tractor gear if you work on hillsides.

When you drive up and down and across hillsides, avoid sharp turns.

When you turn during operation, pay attention to the overhang and/or oscillating weight of the implement.

Avoid changing direction abruptly, avoid dangerous pitching of the implement.

Pay the necessary attention while you operate next to public roads or footpaths.

Danger of death by electrocution!
Pay special attention to the overhead power lines. Always ask the owner of the field about the presence of overhead power lines. Make sure the implement has sufficient clearance to pass in all directions (also with raised or opened implement components). Also think of the radio aerial(s) or any other accessory or parts which may have been added afterwards.
High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.
Should a contact between the implement and an electric power line occur, then the following precautions must be taken: Stop the implement movement immediately, stop the tractor engine and apply the tractor handbrake.
Check if you can safely leave the cab or your actual position without direct contact with electric wires. If not, stay in your position and call for help. If you can leave your position without touching the lines, jump off the last step or support position and make sure that there is no contact between any part of your body, the tractor and the ground at the same time. Never touch the tractor or the implement afterwards until power to the lines has been shut off. When people approach the tractor or the implement, warn them not to touch the tractor or the implement but to ask the electric power supply company to shut off the power to the lines.

Maintenance

⚠ WARNING

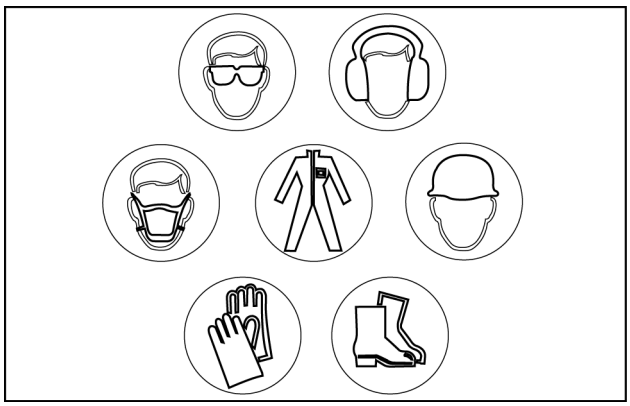
Maintenance hazard!
Before you start servicing the machine, attach a DO NOT OPERATE warning tag to the machine in a visible area.
Failure to comply could result in death or serious injury.

W0004A

- Follow the maintenance schedule with regard to the implement servicing intervals.
  Remember that the implement requires attention from time to time. Also remember that the maintenance will greatly extend the life of the implement.
- Take the necessary precautions: not to spill any oil, fuel or grease.
  To avoid oil and grease contact with your skin, wear protective gloves.
- Service the implement on a firm level surface.
- Do not attempt to remove material from any part of the implement, clean, lubricate or carry out any adjustments on the implement while it is in use.
- Keep hands, feet and/or garments away from parts which move.
- Raised implement and/or loads can fall unexpectedly and crush persons underneath. Never enter or allow anyone to enter the area underneath raised implement during operation.
  Unsupported hydraulic cylinders can lose pressure and drop the implement and cause a crushing hazard. Do not leave the implement in a raised position while parked or during service, unless securely blocked on wooden blocks.
- Never work under a raised implement unless a support chain or other mechanical securing device secure the link arms of the tractor so that the implement cannot move to a lower position unintentionally.
- Relieve the pressure, stop the engine and remove the ignition key, before you connect or disconnect fluid lines.
- Before you adjust, clean, lubricate or you carry out repairs on the implement, stop the engine and remove the ignition key.
- Any leakage of hydraulic oil or fuel under pressure may cause severe harm, so always use a shield, goggles and gloves when you trace oil or fuel leaks.
  Do not use your hand to check for leaks. Use a piece of cardboard or paper.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.
- If hydraulic fluid or diesel penetrates the skin, seek medical care immediately.
- Observe all recommendations that are mentioned in this manual such as service intervals, torques, lubricants, etcetera.
- Always replace all parts that have damage or wear.
- Never build flexible hose assemblies from hoses that were previously part of a hose assembly.
- Never weld to the tubes.
- Always use gloves when you work with parts on the implement as the parts can have sharp edges.
- Transmission and hydraulic lines may become hot during operation. Be careful when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when required.
- Make sure that tires are correctly inflated. Do not exceed any recommended load or pressure. Over pressure could cause explosion hazard, with risk of death or serious injury. Follow the instructions in the manual for proper tire inflation
- Tires are heavy. Always handle the tires with proper equipment. Failure to comply could cause death or serious injury.
- Never weld on a wheel with a tire installed. Always remove the tire completely from the wheel before you weld.
- Always have a qualified tire technician service the tires and wheels. If a tire has lost all pressure, take the tire and wheel to a tire shop or your dealer for service. Explosive separation of the tire can cause serious injury.
- Do not weld to a wheel or rim until the tire is completely removed. Inflated tires can generate a gas mixture with the air that can be ignited by high temperatures from welding procedures performed on the wheel or rim. Removing the air or loosening the tire on the rim (breaking the bead) will not eliminate the hazard. This condition can exist whether tires are inflated or deflated. The tire must be completely removed from the wheel or rim prior to welding the wheel or rim.

Personal protective equipment (PPE)

Wear Personal Protective Equipment (PPE) such as protective clothing, eye protection, hearing protection, dust mask, hard hat, heavy gloves, work boots, and/or any other PPE that provides for the safety and protection of the individual that operates this equipment.



NHIL13RB00001AA 1

Safety requirements for fluid power systems and components - hydraulic systems

Before you start the engine or pressurize the hydraulic system, install and tight correctly all the hydraulic couplings. Check that all hoses and fittings are undamaged. Replace immediately damaged components.

Only connect the hydraulic hoses to the tractor outlets if the tractor and the implement are pressure-free. If the hydraulics of the tractor is activated it may lead to uncontrolled movements which may cause secondary damage.

Make sure that no persons are near the implement when you start the implement, as there might be air in the hydraulic system which might lead to sudden movements.

When the tractor engine has stopped, activate the tractor hydraulic spool valves to make sure that there is no pressure in the hydraulic hoses.

To expel all the air from the oil in the hydraulic cylinders, test all the functions after you connect the hydraulic connections to the tractor, especially before you enter or drive on the public roads. Otherwise you risk that the cutting unit suddenly moves downward after you have dismounted the transport lock

Noise emission

The noise is measured with the engine and all mechanisms engaged and running at normal operating speed for the specified use of the product. This is the maximum value which in normal operating conditions will never be exceeded.

To enable measurement of noise level at the operator seat produced by the tractor - implement combination, it must be noted that the airborne noise produced by the implement attached to the tractor is measured outside the cabin of an average tractor suitable for operating the implement.

The maximum noise emission is **88.75 dB** (A) with an uncertainty of **1.50 dB**.

On tractors with cab provided all windows, doors and other possible openings are kept closed; it is obvious that the real noise level at the operator's seat will be significantly lower. The exact level will depend on the noise insulation qualities of the cab.

On tractors without a cab or when you work with the cab doors or windows open, it is recommended to use ear protection equipment.

Check your local legislation for occupational health & safety requirements with regard to noise.

Always use hearing protectors if the noise from the implement is annoying or if you work with the implement for a considerable period in a tractor that has not an adequate soundproof cabin.

NOTICE: *The level of noise for the operator could be less or greater depending upon the towing tractor.*

Implement stability

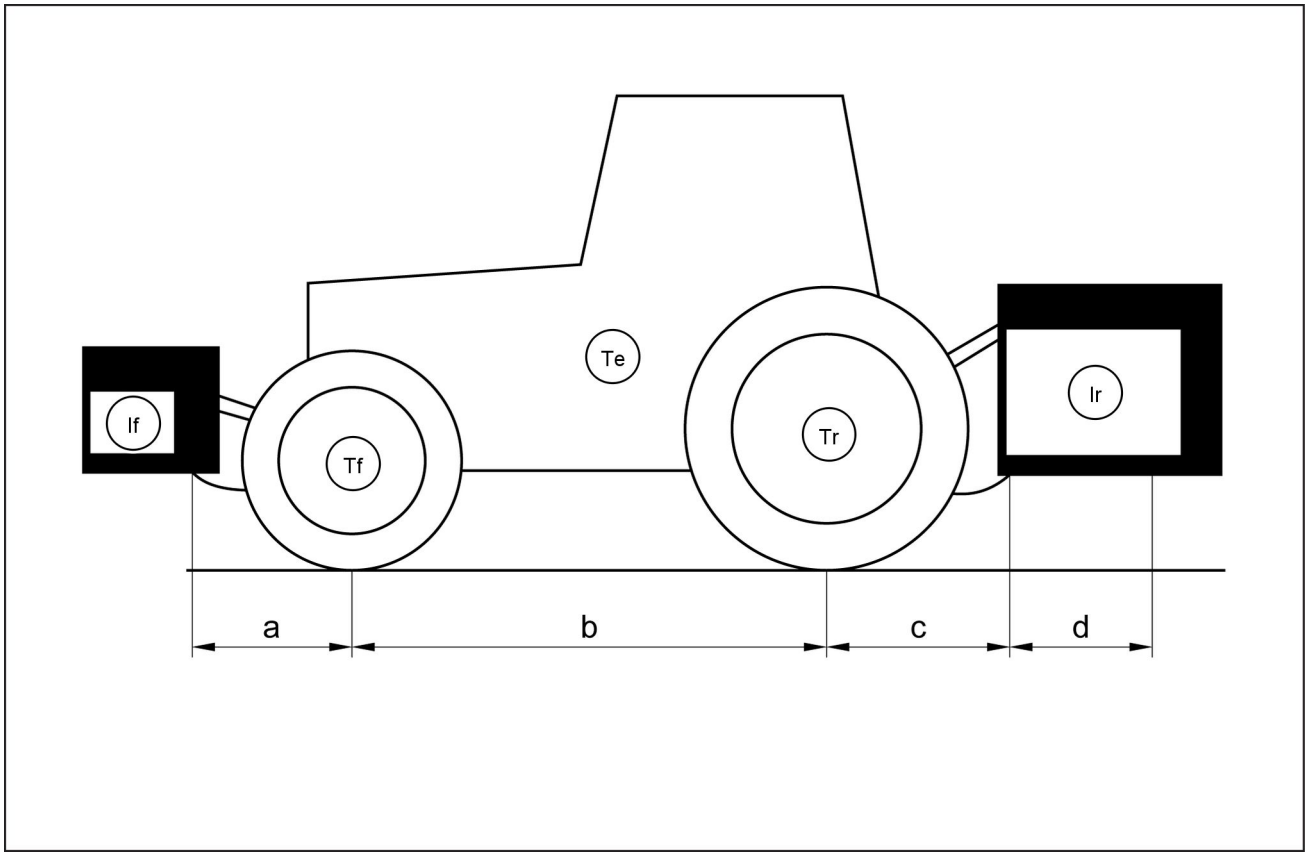
The combination of your tractor and implement can become unstable, due to the additional weight that the implement adds to the tractor.

In order to guarantee stable and safe transport, you must check if you need ballast weights for transport and field work.

You must also check and guarantee that you have at least **20%** from the tractor weight on the front axle.

For rear mounted implements and front-rear combinations, the formula is:

$$If,min = \frac{[Ir \times (c + d)] - (Tf \times b) + (0{,}2 \times Te \times b)}{a + b}$$



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Example of references to stability of the combination tractor – implement

List of signs

Te [kg]	The tractor own weight.
Tf [kg]	Front axle load with empty tractor.
Tr [kg]	Rear axle load with empty tractor.
Ir [kg]	Total weight of the rear-mounted implement/rear ballast.
If [kg]	Total weight of the front-mounted implement/front ballast.
a [m]	Distance between the center of gravity of the front-mounted implement/front ballast and the middle of the front axle.
b [m]	The tractor wheel distance.
c [m]	Distance between the middle of the rear axle and the middle of the link arm balls.
d [m]	Distance between the middle of the link arm balls and the center of gravity of the rear mounted implement/rear ballast.

Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances. Your KONGSKILDE dealer can also provide assistance.

Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your KONGSKILDE dealer or air-conditioning specialist has a special extractor for this purpose and can recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.

Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. KONGSKILDE strongly recommends that you return all used batteries to a KONGSKILDE dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.

NHIL14GEN0038AA 1

Mandatory battery recycling

NOTE: *The following requirements are mandatory in Brazil.*

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 as amended by CONAMA Resolution 424/2010 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

Safety signs

The following safety signs are on your implement as a guide for your safety and for the safety of those who work with you.

Walk around the implement and note the content and location of all safety signs before you operate your implement. Read all the safety decals adhered to the implement and follow the instructions.

Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and a gentle detergent.

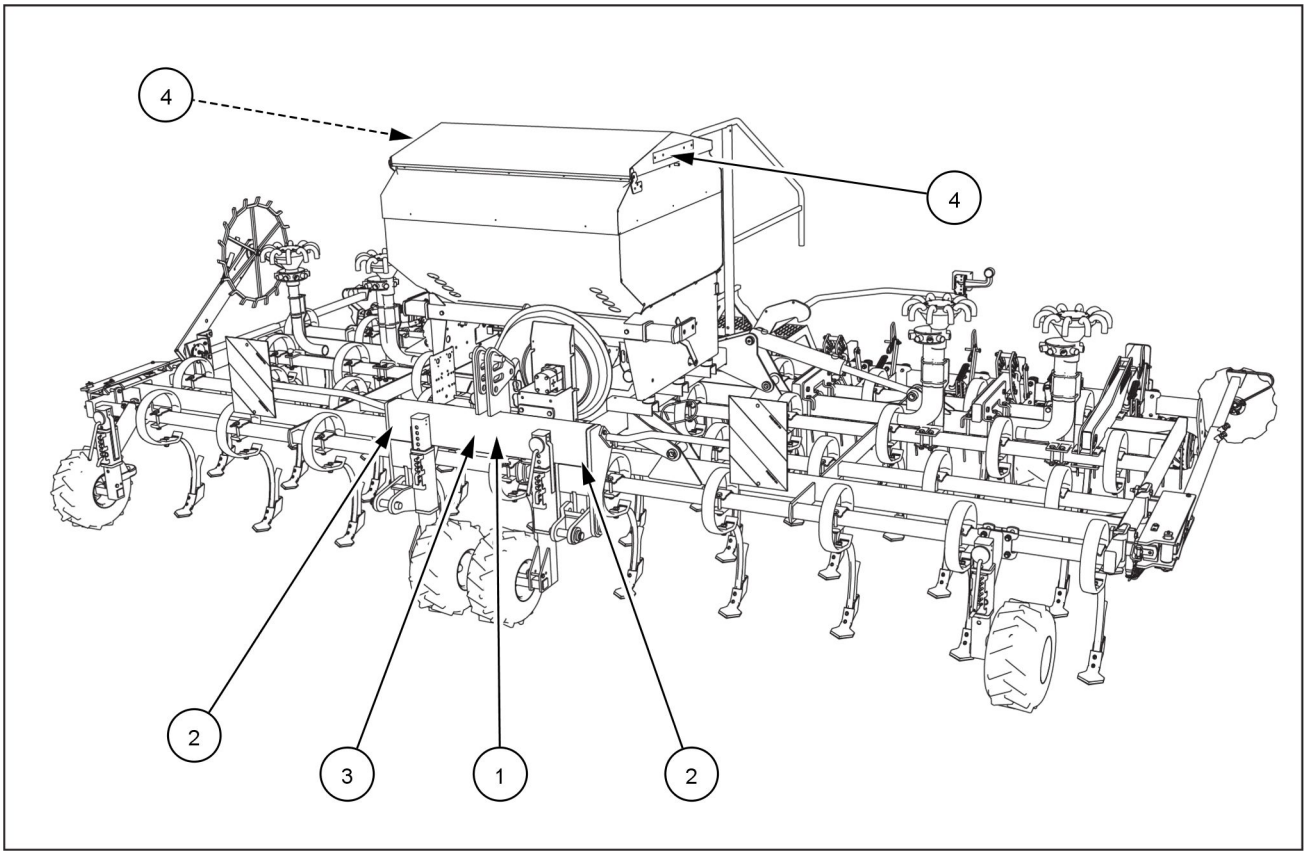
NOTICE: *Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove the safety signs.*

Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part that you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. Contact your dealer for the replacement of the safety signs.

Safety signs that display the “Read operator’s manual” symbol direct you to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the implement. When a safety sign displays this symbol, consult the appropriate page of the operator’s manual.

Safety signs that display the “Read service manual” symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.

For models equipped with rear hopper



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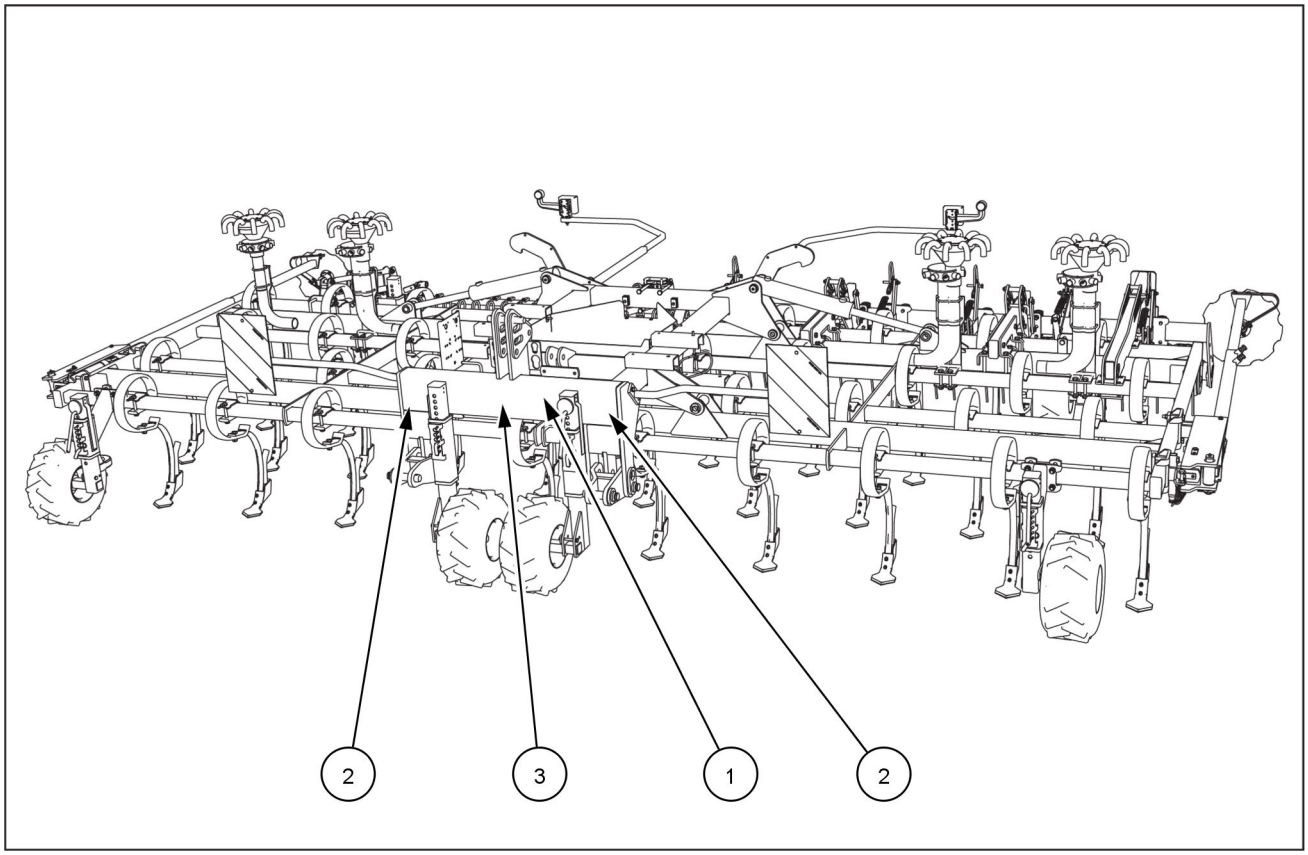
For models equipped with front hopper



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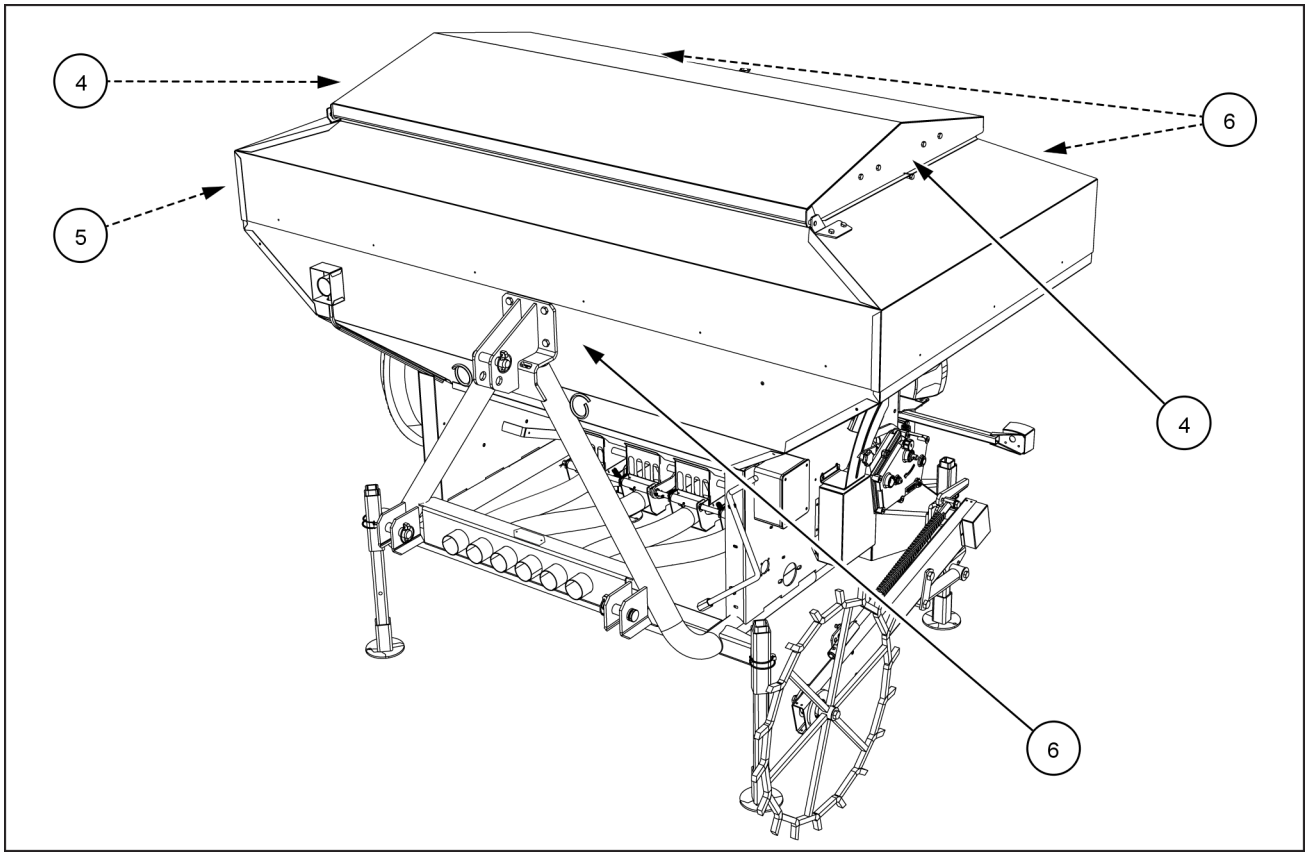
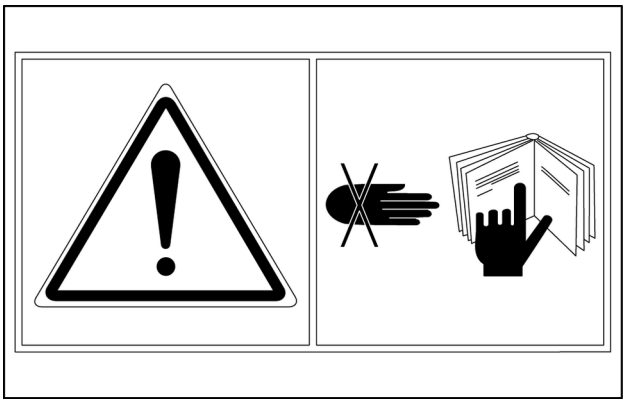


ZEIL20TIL0240FA 3

Safety sign (1)

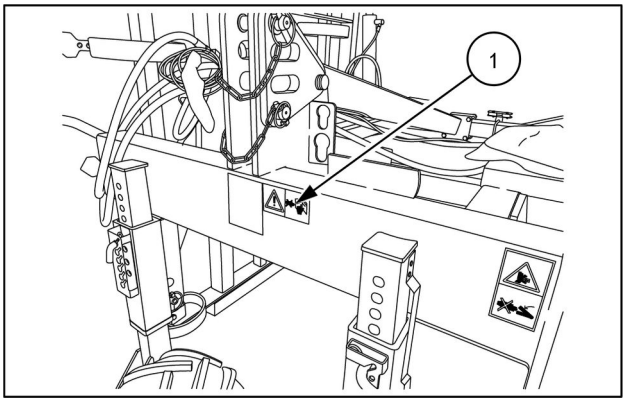
Instructions.
Before commissioning the implement, read and observe both operating instructions and safety advice.

Part number: 71000187250



71000187250 4

Located on the central front frame.

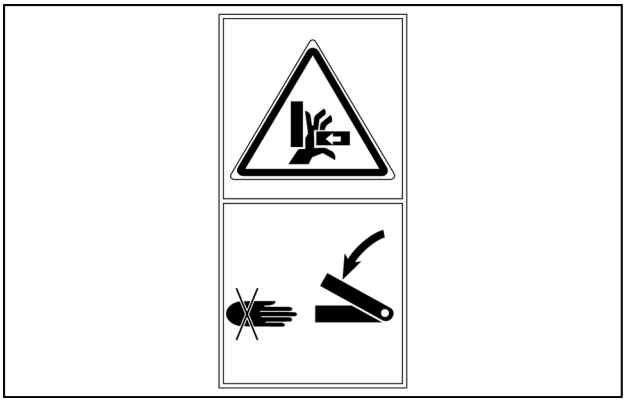


ZEIL22TIL0200AA 5

Safety sign (2)

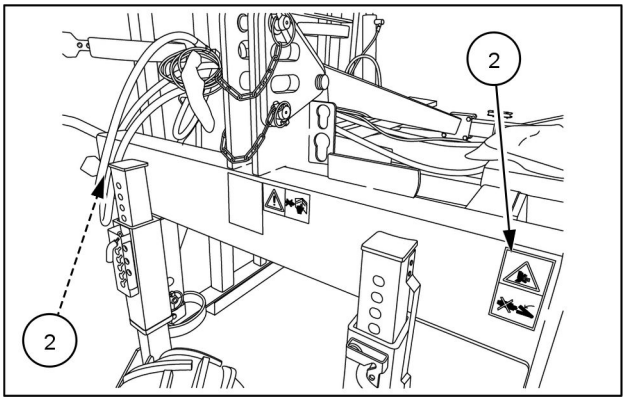
Danger of crushing.
Never reach into the danger zone, as long as there could be moving parts.

Part number: 71000629549



71000629549 6

Located on the central front frame.



ZEIL22TIL0200AA 7

Safety sign (3)

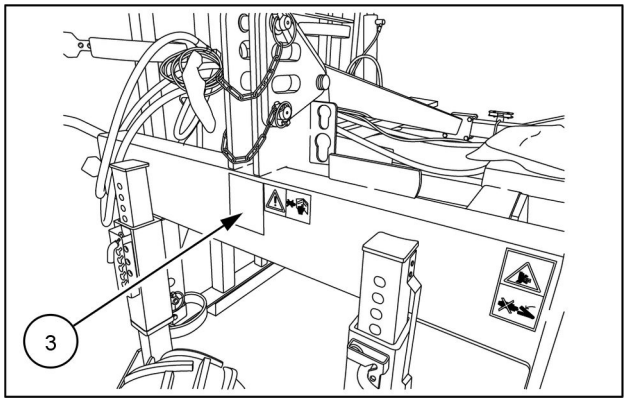
Park in lowered position.

The implement must only be parked in working position.

Part number: 71000646708

71000646708 8

Located on the central front frame.



ZEIL22TIL0200AA 9

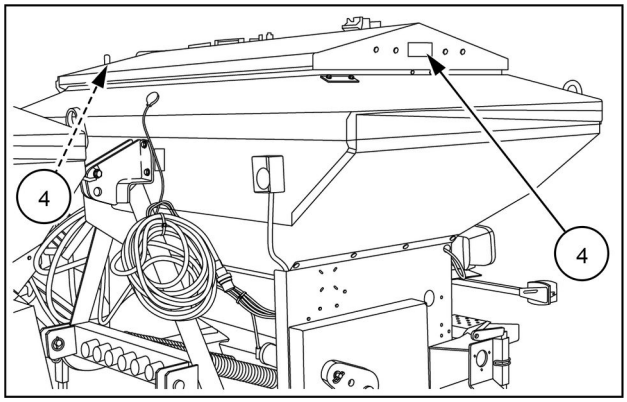
Safety sign (4)

Danger of crushing.
Never reach into the danger zone, as long as there could be moving parts.

Part number: 7002152848

7002152848 10

Located on the left-hand side and right-hand side of the upper cover of the hopper.



ZEIL22SE00058AA 11

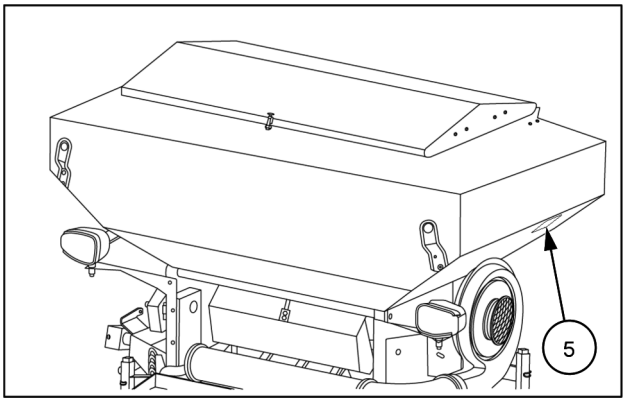
Safety sign (5)

Use hearing protectors if the noise from the implement is annoying or if you work with the implement for a considerable period in a tractor cabin that has not a adequate soundproof cabin.

Part number: TT30454

ZEIL21TIL0017AA 12

Located on the left-hand side of the front hopper.



ZEIL22SE00059AA 13

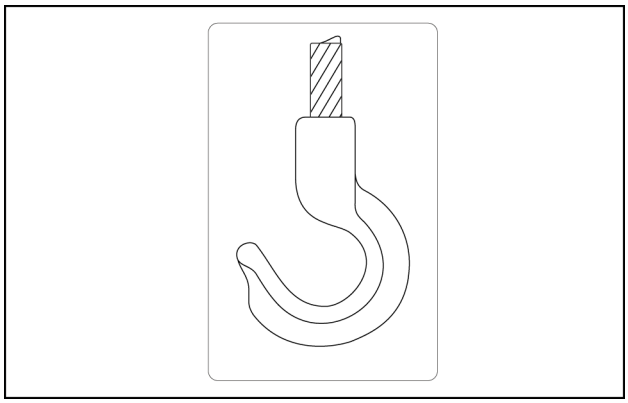
Safety sign (6)

⚠ WARNING

Crushing hazard!
Use the machine lifting points when you lift and/or move the machine with heavy handling equipment. Lift the machine only from the indicated lifting eye hookup points. Always use adequate lifting equipment.
Failure to comply could result in death or serious injury.

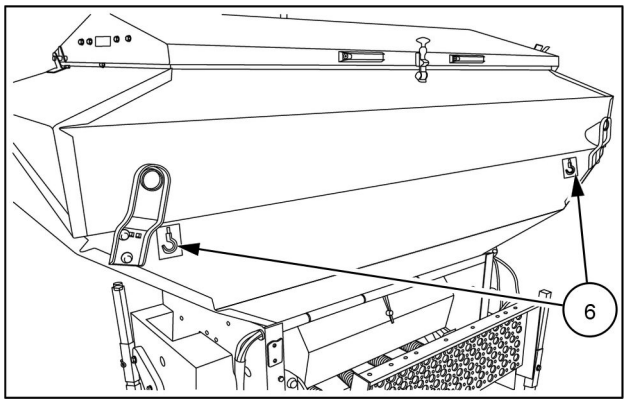
W1432B

Part number: 115.000.961



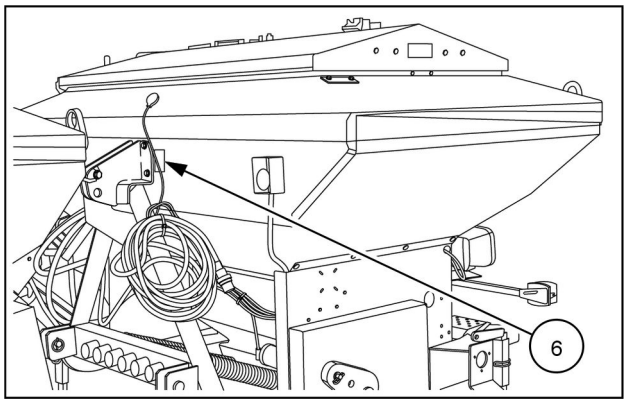
ZEIL21TIL0018AA 14

Located on the front side of the front hopper.



ZEIL22SE00057AA 15

Located on the rear side of the front hopper.

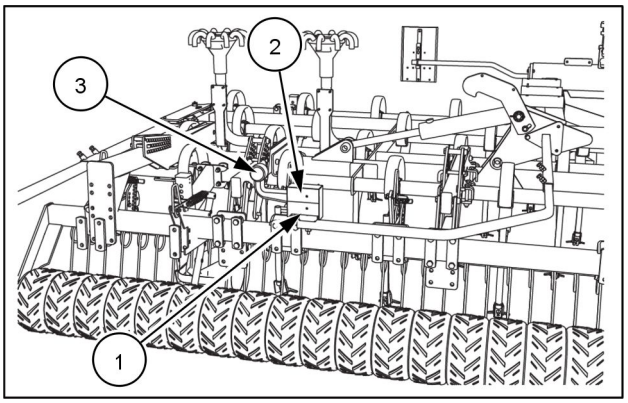


ZEIL22SE00058AA 16

Road travel lights, signs, and reflectors

Road lights

- Rear position and stop lights **(1)** left-hand side
- Rear direction indicator light **(2)** left-hand side
- End outline marker light **(3)** left-hand side



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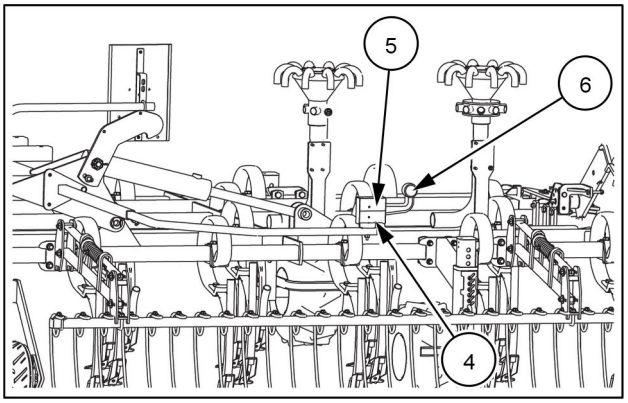
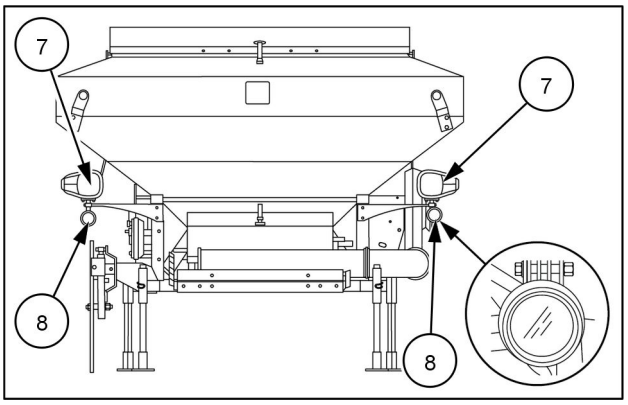
- Rear position and stop lights **(4)** right-hand side
- Rear direction indicator light **(5)** right-hand side
- End outline marker light **(6)** right-hand side



ZEIL22SE00054AA 2

Only for front mounted hopper version

- Road light kit **(7)**
- Work light kit **(8)**



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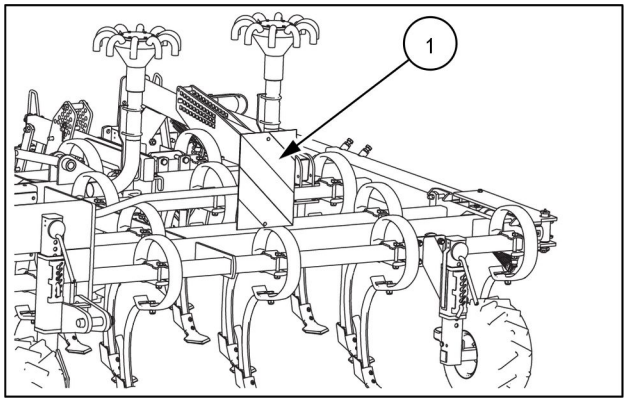
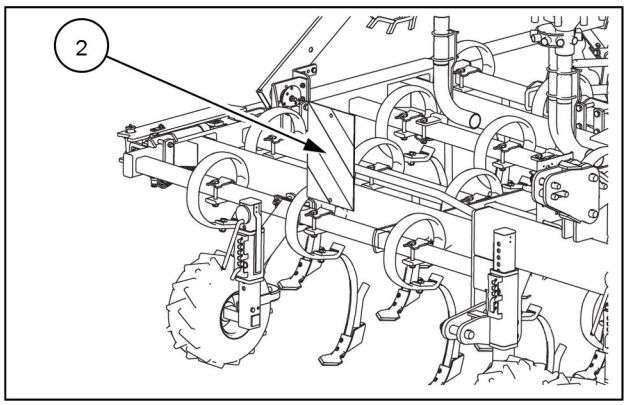
Signal plates

- Front signal plate **(1)** left-hand side



ZEIL22SE00053AA 4

- Front signal plate **(2)** right-hand side



ZEIL22SE00052AA 5

3 - CONTROLS AND INSTRUMENTS

Display

Feeding system

The mechanical driven implement can be equipped with a Konnect 1000 monitor to monitor the data like speed, hectare hopper level and others.

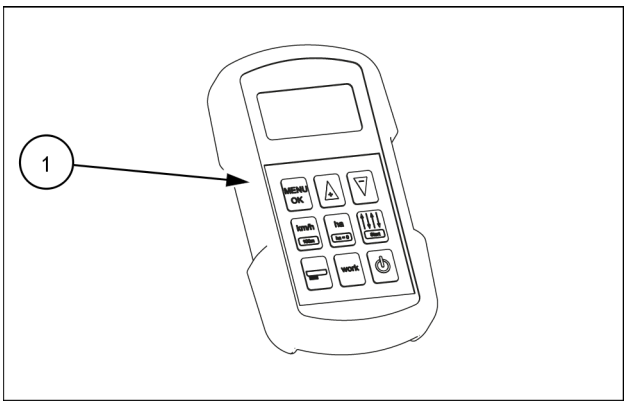
Alternatively, only for the implement with front mounted hopper, an electronically driven motor can also offer a tepless feeding option. The electronic feeding is controlled by a computer.

The computer is an ISOBUS job computer that controls the work of the implement. The job computer controls the implement and serves as an interface. All implement-specific data is stored in the job computer and is therefore maintained even when changing the terminal.

For mechanical version

The implement can be equipped with a Konnect 1000 monitor **(1)** to provide data as follow:

- Speed set tractor – seeder
- Value of the area sown
- Rotation of the sowing shaft
- Seed level in the hopper
- Status of tramelines



ZEIL21SE00013AA 1

The Konnect 1000 device is powered using the included cable to the electrical system **12 V** of the tractor. The terminal can be located in the tractor cab at any place. On the back wall is built magnet for easy mounting.

The Konnect 1000 is fitted with the following equipment:

- Operator terminal Konnect 1000 and a **6.00 m** (**236.22 in**) cable
- Main harness ended plugs
- Two sets to tracks with couplings and connectors
- One set of marker sensors with **1.50 m** (**59.06 in**) wires

Depending on the configuration, the Konnect 1000 can be fitted with the following further equipment:

- Set of sensor for hopper level control
- Half working width clutch for seeding shaft controlled by an actuator

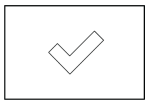
For electronic version

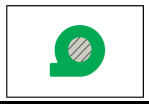
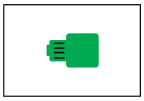
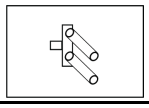
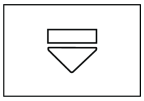
The area of the work screen in which status information appears is divided into a maximum of four areas:

- Display top left
- Display bottom left
- Display top right
- Display bottom right

Depending on the configuration, it is possible to assign different displays to the respective areas.
The following table shows the possible displays. A number on an icon means that the display can be selected multiple times, for example if the machine has several hoppers.

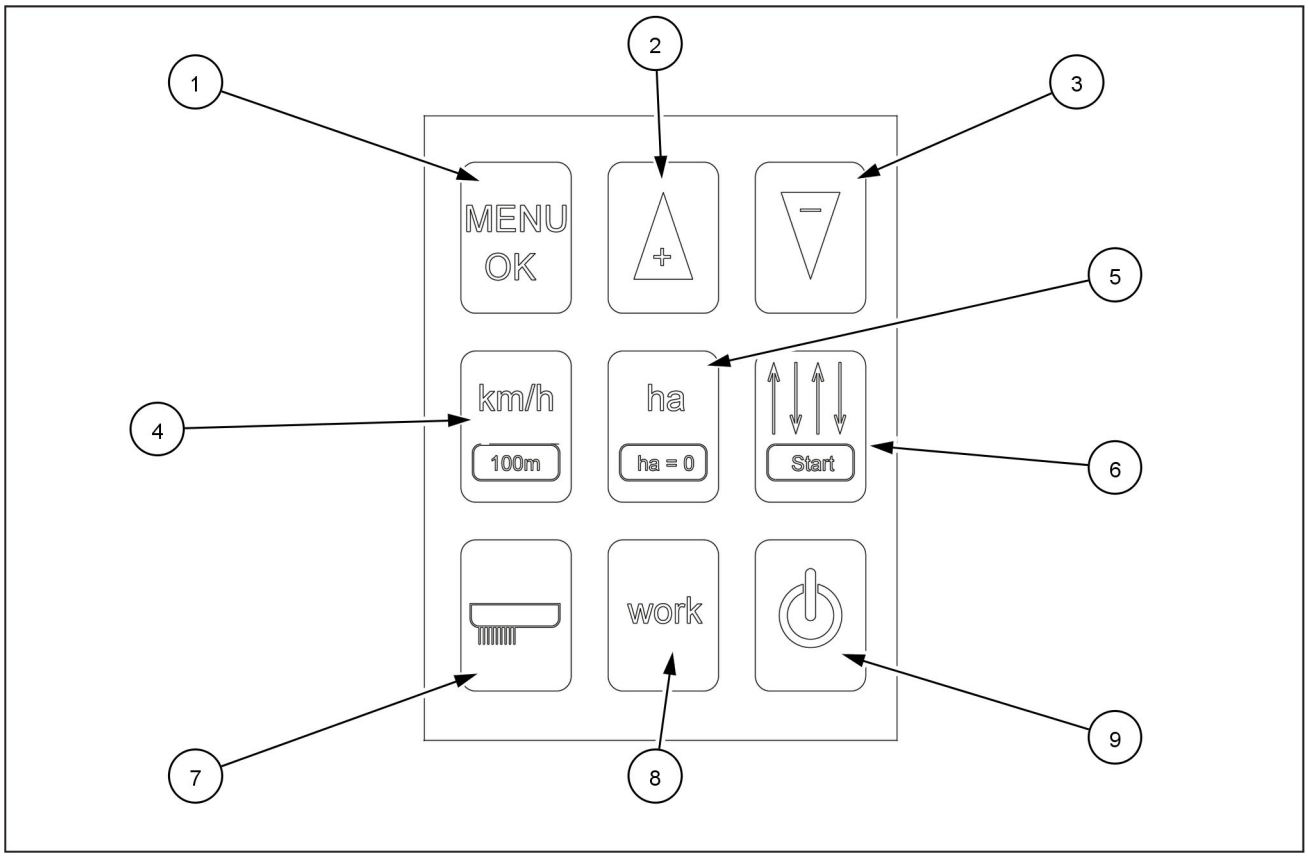
To change the display, proceed as follows:

1. Select the wanted area on the work screen.
2. Select the status that should be shown in the selected area.
3. Select icon  to confirm.

Icon	Unit	Meaning
	km/h	Current driving speed
		Tramline rhythm
	rpm	Fan speed
	rpm	Fan pressure
	%	Relative remaining quantity
	ha	Absolute remaining quantity
	%	Relative metering drive speed
	bar	Coulter pressure
	cm	Working depth

Keypad (for mechanical version)

The handling of Konnect 1000 is possible via keypad with 9 keys.



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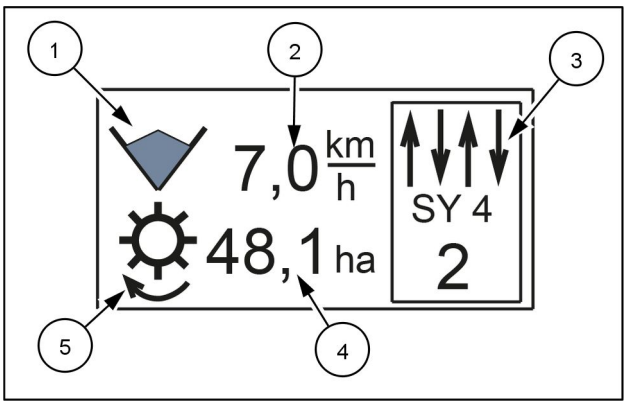
(1) Menu OK
(2) Up
(3) Down
(4) Km-h
(5) ha
(6) Select tramlining
(7) Half width
(8) Work
(9) On/Off

Main work screen (for mechanical version)

On the main screen, it is possible to configure or view during the work the following parameters:

Item	Parameter
(1)	Status of hopper empty or full
(2)	Current speed of the implement
(3)	Selected tramlining system
(4)	Area sown
(5)	Sowing shaft rotation



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Settings (for mechanical version)

On the work screen, it is possible to configure the following parameters:

- Language
- Screen brightness and contrast
- Type of machine
- Number of pulses
- Alarms
- Working width
- Hectare counter
- Calibration of the drill
- Tramline path

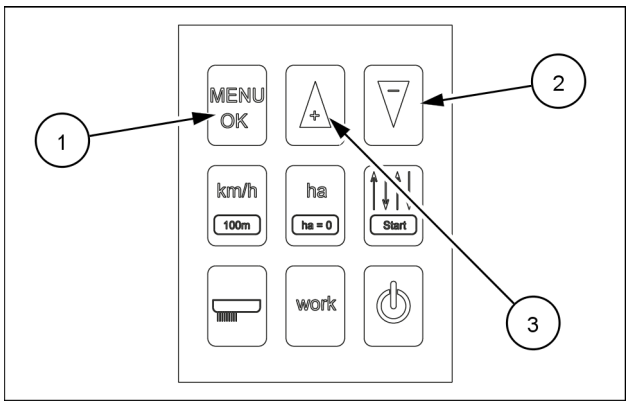
Language selection (for mechanical version)

It is possible to choose between different languages:

- English
- Polish
- German
- French
- Danish
- Dutch
- Hungarian
- Italian
- Swedish
- Spanish

Proceed as follows:

1. Use the key **(1)** and select the setting “Language” in order to display the language menu **(4)**.
2. Press the key **(2)** or **(3)** to select the desired language.
3. Press the key **(1)** for **5 s** to save and memorize the selection.



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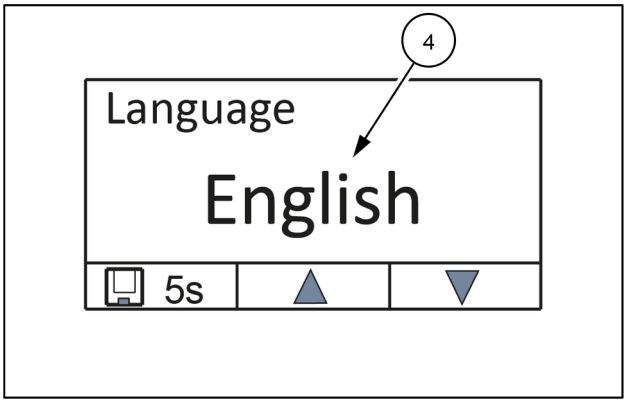
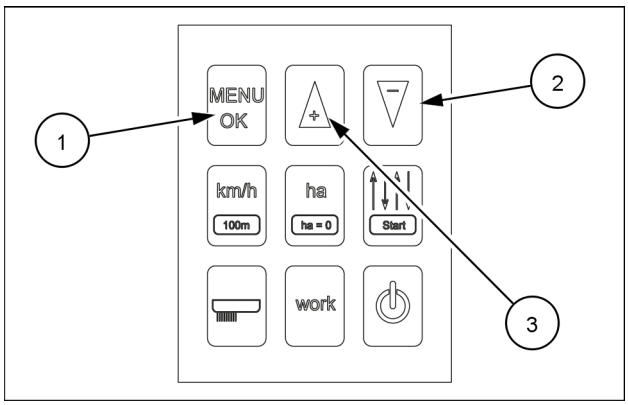


ZEIL21SE00015AA 2

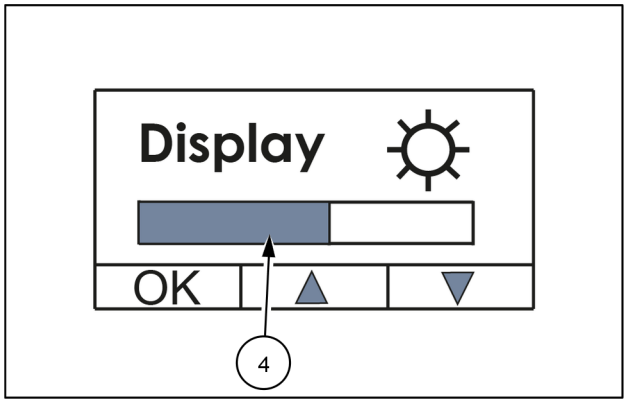
Display brightness (for mechanical version)

In order to modify the brightness of the display, proceed as follows:

1. Press three times the key **(1)**.
2. Use the keys **(2)** or **(3)** to modify the bar chart **(4)** at desired level.
3. Press the key **(1)** to approve the selected level.



ZEIL21SE00037AA 1



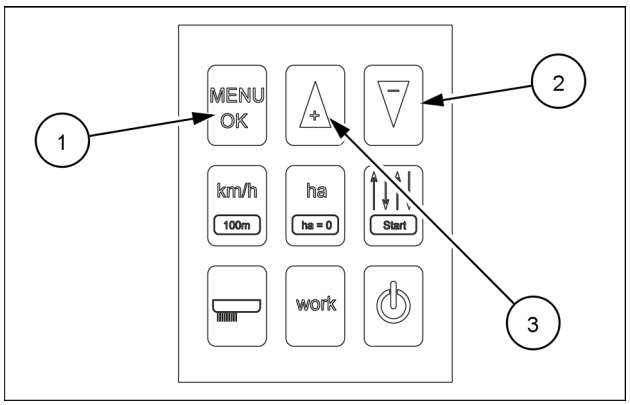
ZEIL21SE00017AA 2

Machine type (for mechanical version)

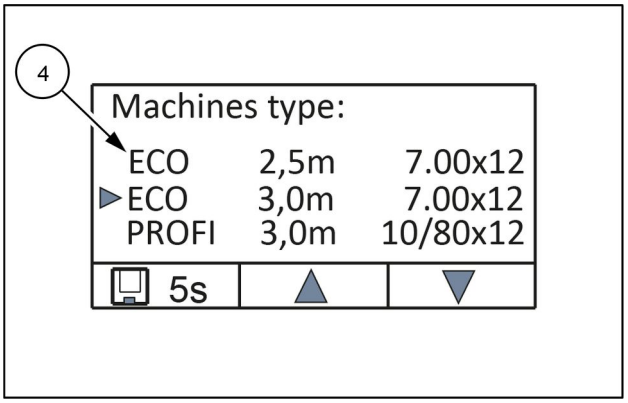
The selection of type of machine is very important because it contains the type of the drive wheel and the working width.

In order to select the type of machine, proceed as follows:

1. Use the key **(1)** and select the setting " Type of machine" in order to display the possible kind of drills **(4)**.
2. Press the key **(2)** or **(3)** to select the type of machine.
3. Press the key **(1)** for **5 s** to save and memorize the selection.



ZEIL21SE00037AA 1



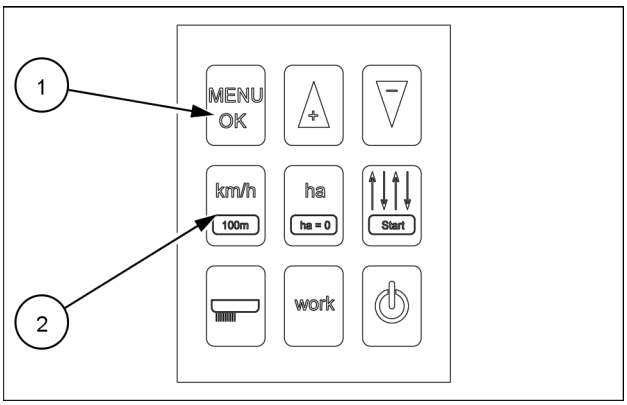
ZEIL21SE00020AA 2

Number of pulses (for mechanical version)

Area meter accuracy of the calculation depends on the number of impulses in the system collects during operation of the drill in the field.

Proceed as follows:

1. Use the key **(1)** and select the setting “Number of pulses” in order to display the impulses **(3)**.
2. Press the key **(2)** in order to enter the number of impulses.
3. Press the key **(1)** for **5 s** to save and memorize the selection.



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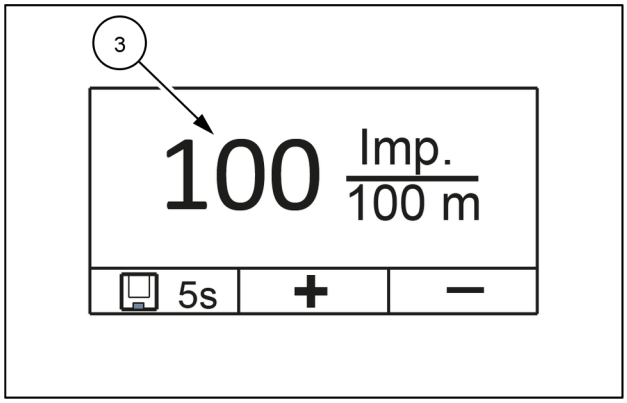

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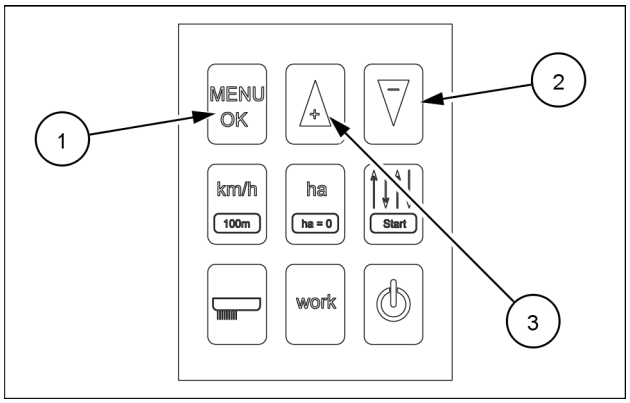
Alarms (for mechanical version)

The seed level in the hopper and work couplings path-names can be monitored by means of audible alarms. The alarms work at a speed of more than **1.0 km/h** (**0.6 mph**). In case of a fault an alarm screen with flash-ing icon is displayed and five beeps are audible. The alarm can be acknowledged by the work-key. This action returns to the work screen.

Alarm settings

Activation or deactivation of alarms is possible. Proceed as follows:

1. Use the key **(1)** and select the setting “Alarms” in order to display the alarm set **(4)**.
2. Press the key **(2)** or **(3)** to select the parameter. It is visible an horizontal bar under the selected icon.
3. Press the key **(3)** to put a check mark to activate the alarm.
4. Press the key **(1)** for **5 s** to save and memorize the selection.



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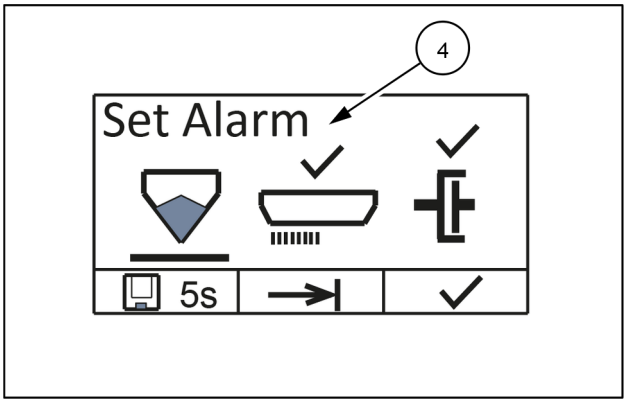
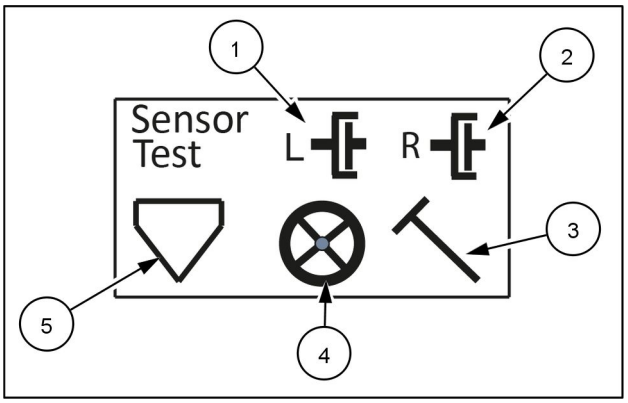


ZEIL21SE00018AA 2

Sensor test

Carrying out the sensor test is to check the condition of electrical connections, the state plugs connecting cables, the technical condition of the sensors.

- State of coupling the left control tramlines **(1)**
- State of coupling the right control tramlines **(2)**
- Position markers **(3)**
- Turns the sowing shaft **(4)**
- Level of seed in the tank **(5)**

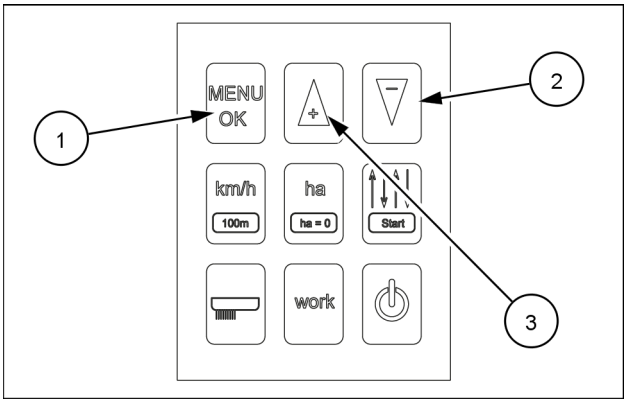


ZEIL21SE00019AA 3

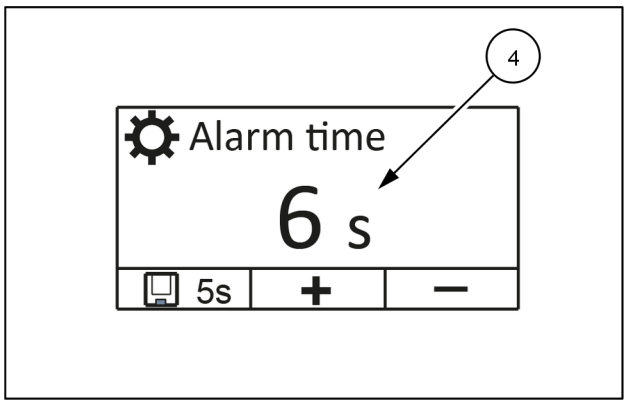
Alarm time

It is possible to determinate the time after which the alarm is activated. This time can be adjusted in the range of **1 – 20 s**.

1. Use the key **(1)** in order to display the alarm time **(4)**.
2. Press the key **(2)** or **(3)** to decrease or increase the alarm time.
3. Press the key **(1)** for **5 s** to save and memorize the selection.



ZEIL21SE00037AA 4



ZEIL21SE00022AA 5

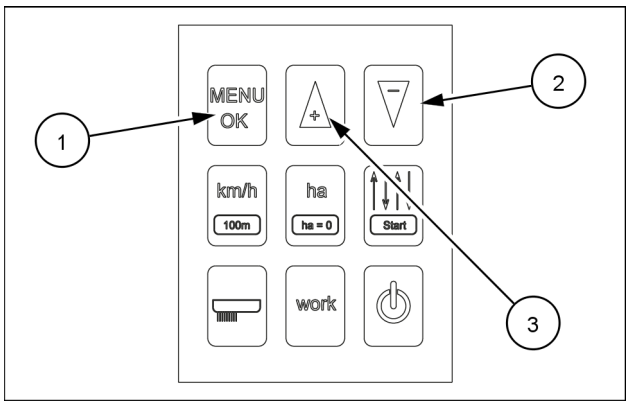
Working width (for mechanical version)

This option allows changing the working width of the drill.

There is a choice of width in the range **2.0 – 12.0 m** (**78.7 – 472.4 in**) with intervals of **0.1 m** (**3.9 in**).

Proceed as follows:

1. Use the key **(1)** and select the setting “Working width” in order to display the working width **(4)**.
2. Press the key **(2)** or **(3)** to select the working width.
3. Press the key **(1)** for **5 s** to save and memorize the selection.



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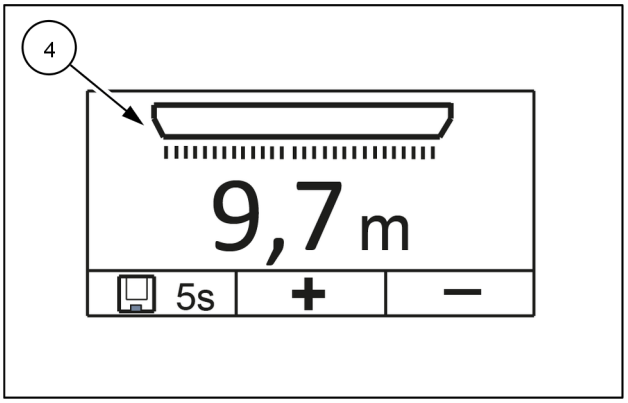
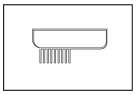


ZEIL21SE00023AA 2

Half working width - If equipped

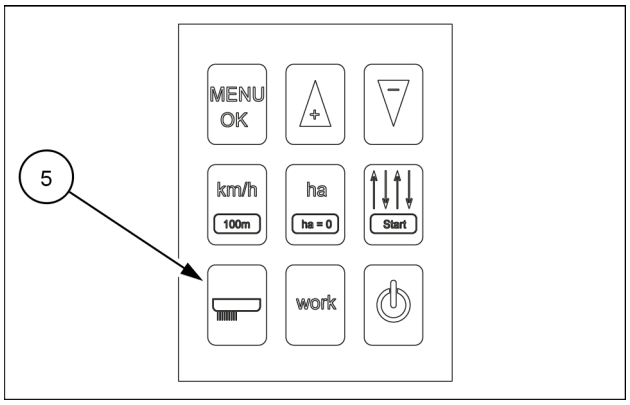
In some tramline sequence systems, it is necessary to begin with a half working width.

The icon  is displayed automatically.

It is possible use this function at any time by pressing the key **(5)** in the lower left corner of the keyboard.

The sowing shaft is disconnected in the middle of its length by means of the clutch center. Thereby half the sowing wheels on the left-hand side of the drill from the rear of the machine are not running.

NOTE: *The implement should be equipped with an actuator system.*

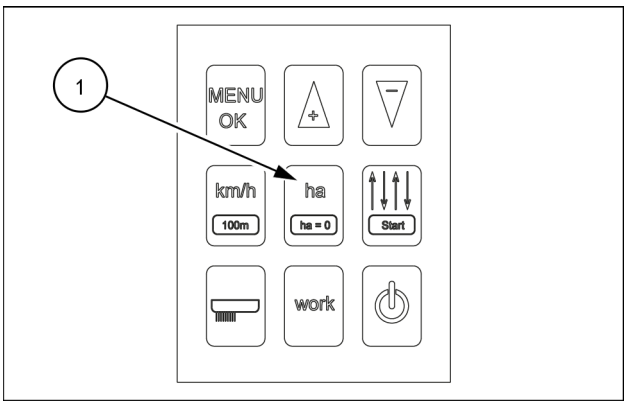


ZEIL21SE00037AA 3

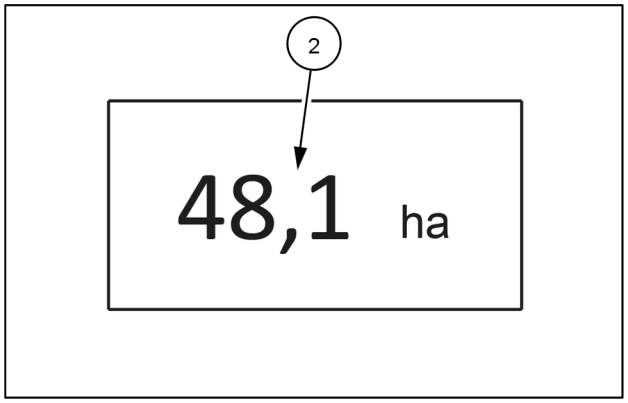
Hectare counter (for mechanical version)

It's possible to view the sown area. Proceed as follows:

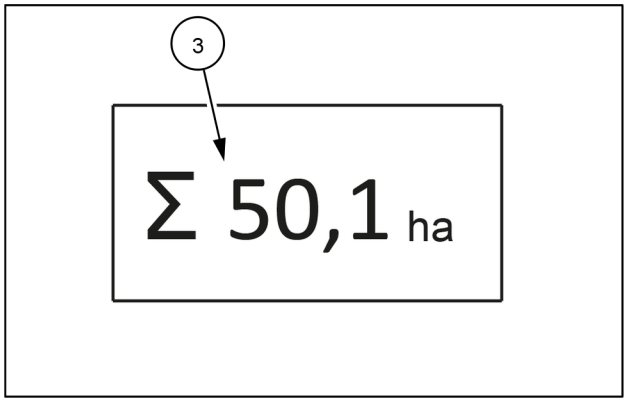
1. Press once the key **(1)** and select the setting "Hectare counter" in order to display a partial result of the count sown area **(2)**.
2. Press the key **(1)** repeatedly to display the total area sown so far **(3)**.
3. Press the key **(1)** for **5 s** to reset the value of sown area.



ZEIL21SE00037AA 1



ZEIL21SE00024AA 2



ZEIL21SE00025AA 3

Calibration of the drill (for mechanical version)

To find the right seed rate, perform the test to calibrate the drill. Depending on hopper version, see Page **6-11** or Page **6-18**.

The results obtained from the test using the Konnect 1000 method should be regarded as indicative. Correct data on the sowing rate can only be obtained by testing using the traditional method.

Tramline control (for mechanical version)

The choice of methods for creating tramlines is brought to the sequence on the surface of the field so as to create a passage of unsown stripes that will be used in later crop treatments like fertilization and spraying.

The distance between tracks depends on the working width of the drill.

In order to determine the distance between the tracks, turn off two or three metering units on one track path.

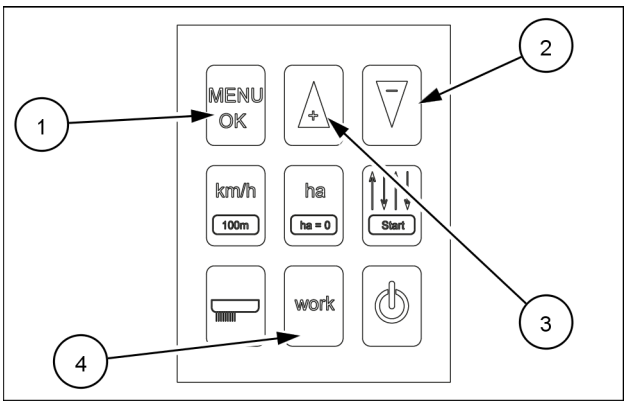
The space between marks and tracks depends on the track of the tractor used in the treatment of fertilization or spraying.

Configuring the tramline control

To select the tramline path proceed as follows:

1. Use the key **(1)** and select the setting “Tramline path” in order to display the the tramline path system **(5)**, according to the tramlines tables.
2. Press the key **(2)** or **(3)** to select the right conditions of tramlining system required.
3. Press the key **(1)** for **5 s** to save and memorize the selection.
4. Press the key **(4)**.
5. Set the markers vertically, in the starting position.

The number **(6)** of the current passage is visible on the screen highlighted in black.



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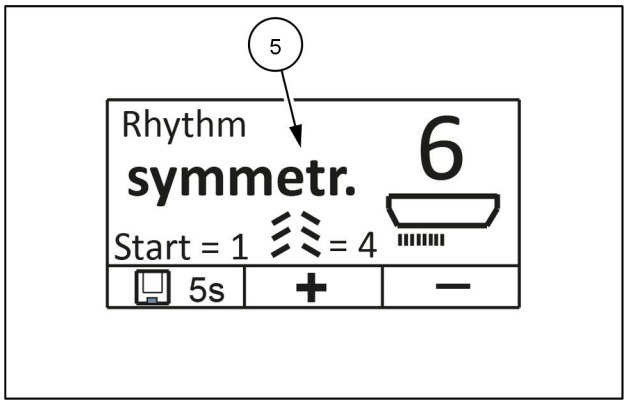

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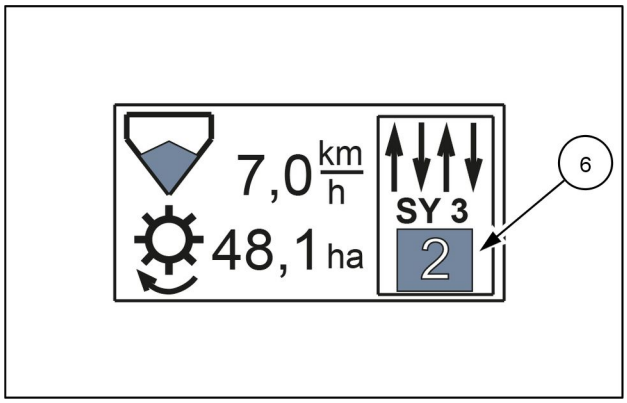


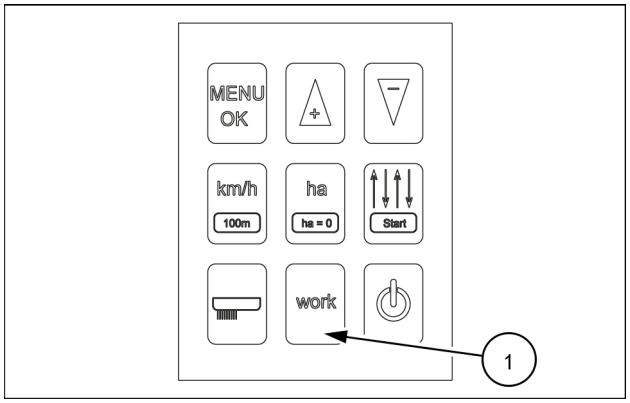
ZEIL21SE00035AA 3

Manually stop the tramlining system

In case of passing an obstacle in the field, it is possible to raise the left or right marker and stop counting paths through the system.

Proceed as follows:

1. Press the key **(1)** in order to froze the trimlining system.
2. On the screen will be visible “OFF” **(2)**.
3. Press the key **(1)** in order to restore the previous settings.



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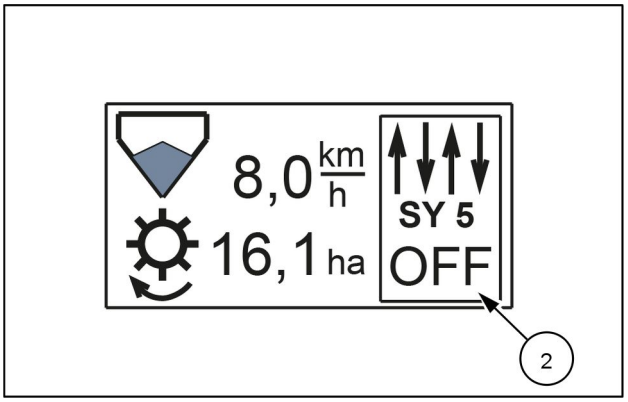
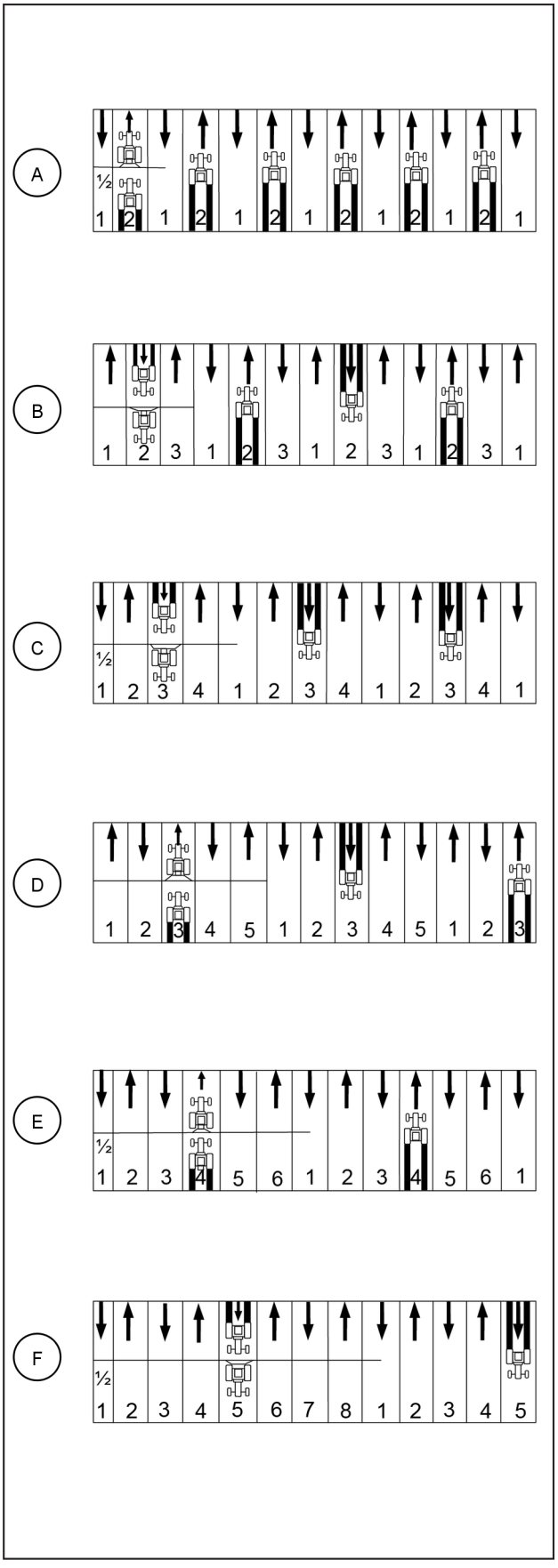


ZEIL21SE00036AA 5

Tramlines tables

Table of symmetrical tramlines

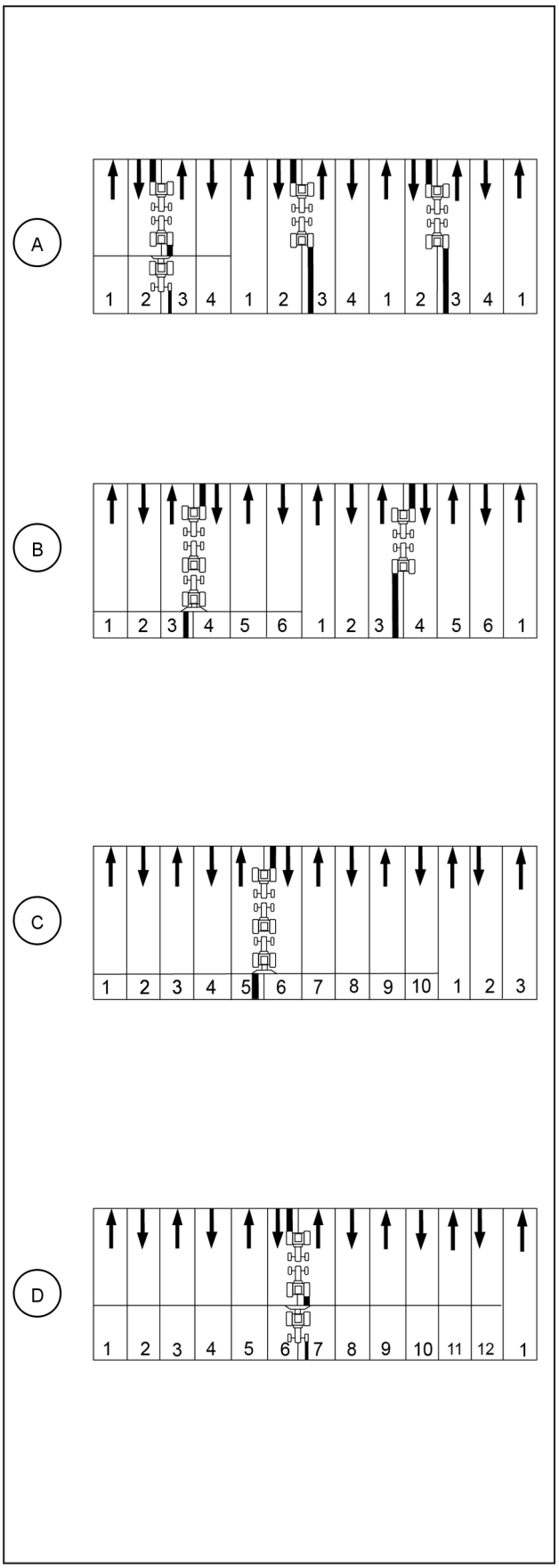
Path	Seed drill working width	Sprayer/ Spreader width	Symmetrical tramline placement in one pass
2	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**10.0 m (393.7 in) 12.0 m (472.4 in)**	**(A)**
3	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**15.0 m (590.6 in) 18.0 m (708.7 in)**	**(B)**
4	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**20.0 m (787.4 in) 24.0 m (944.9 in)**	**(C)**
5	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**25.0 m (984.3 in) 30.0 m (1181.1 in)**	**(D)**
6	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**30.0 m (1181.1 in) 36.0 m (1417.3 in)**	**(E)**
8	**5.0 m (196.9 in) 6.0 m (236.2 in)**	**40.0 m (1574.8 in) 48.0 m (1889.8 in)**	**(F)**



ZEIL22SE00048DA 6

Table of asymmetrical tramlines

Path	Seed drill working width	Sprayer/ Spreader width	Symmetrical tramline placement in one pass
4 2+3	**5.0 m** (**196.9 in**) **6.0 m** (**236.2 in**)	**20.0 m** (**787.4 in**) **24.0 m** (**944.9 in**)	**(A)**
6 3+4	**5.0 m** (**196.9 in**)	**30.0 m** (**1181.1 in**)	**(B)**
10 5+6	**5.0 m** (**196.9 in**)	**50.0 m** (**1968.5 in**)	**(C)**
12 6+7	**5.0 m** (**196.9 in**)	**54.0 m** (**2126.0 in**)	**(D)**



ZEIL22SE00049DA 7

Settings (for electronic version)

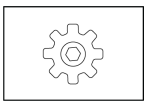
On the Settings screen, it is possible to configure or view the following parameters:

- Products: defines the currently selected product.
- Target Rate: defines how much seed or fertilizer should be spread per hectare.
- Status: shows whether the associated product is currently activated.
- Calibration Factor: for a seeder, defines how much seed or fertilizer is spread per rotation of the metering shaft.
- Min. Speed: defines the minimum working speed that is required for spreading.
- Max. Speed: defines the maximum possible working speed for spreading.

On the Settings / Hopper screen, assign a product to each hopper. The following parameters are possible:

- Hopper: defines the currently selected hopper.
- Assigned Product: defines which product should be assigned with a hopper.

In order to access to settings and configure the parameters proceed as follows:

1. On the work screen, press:  to enter in settings \ hopper screen.
2. Configure the parameters.

Parameter of fill level alarm threshold (for electronic version)

Select the level at which the alarms for the hopper fill level should be displayed.

The following alarm thresholds are possible:

- Low/Empty. The “Hopper is low” and “Hopper is empty” alarms are activated.
- Empty. Only the “Hopper is empty” alarm is activated.
- Deactivated. All fill level alarms are deactivated.

4 - OPERATING INSTRUCTIONS

Commissioning the unit

Check before use

Before operating the implement for the first time, perform the following items:

- Read this operator's manual carefully; especially the chapter headed ”Safety information”.
- Check the correct assembly of the implement. Also check that the implement is undamaged.
- Check that no parts have been tied up inside the implement in connection with the delivery of the implement.
- Remove all the tools from the implement.
- Connect the implement to the tractor and check if the subassemblies work properly.
- Check the correct connection and tightening of the hydraulic components.
- Check the entire hydraulic system – all pipes, hoses and connections. Upon noticing any traces of damages or even the slightest leaks make sure to replace these parts.
- Check that the hydraulic hoses are long enough for the movements of the implement in relation to the tractor.
- Check the length of the hydraulic hoses when the implement is in working position. Check that the hydraulic hoses are not too tense.
- Grease sufficiently the implement (see Page **7-10**).
- Check the proper tightness of all the nuts and bolts.
- Check if the electrical installation works properly, including the lights.

Starting the unit

Connection to the tractor (for rear mounted hopper version)

⚠ WARNING

Avoid injury!
Always stay clear of the implement operating area. In particular, DO NOT stand between the tractor and the trailed vehicle or either three-point linkage when operating lift controls. Make sure no bystanders are within or near these operating areas.
Failure to comply could result in death or serious injury.

W1087A

⚠ WARNING

Tip-over hazard!
Adding additional weight (buckets, attachments, etc.) to the machine can create a tipping hazard. Do not exceed the gross weight indicated by the machine specifications.
Failure to comply could result in death or serious injury.

W0153A

NOTICE: *Make sure that the implement is parked on solid ground and secure it against rolling.*

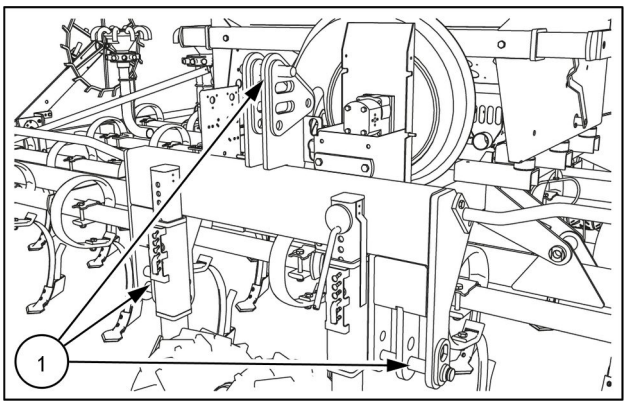
NOTE: *The three-point hitch category on the implement and on the tractor must match with each other. The implement can be connected by category 3.*

NOTE: *Use original and correct coupling parts.*

1. Fit the ball bushes over the pins **(1)** for the lower linkages and the head stock connections.
2. Lower the lower linkages of the tractor and drive backward until the lower link hooks are under the ball bushes.
3. Raise the lift until the lower link hooks are coupled.
4. Install the top link. Use the slotted hole for fieldwork and round hole for transport.
5. Secure all connections against unintentional opening.
6. Make sure the hydraulic fittings are clean and connect the hydraulic hoses.

   NOTE: *The blower needs a free flow return.*

   NOTICE: *Make sure there are no oil leaks in the hydraulic connections.*
7. Connect light equipment (optional).
8. Make sure all functions work correctly.
9. Connect the wires for the electronic control box (optional).



ZEIL22SE00005AA 1

Connection to the tractor (for front mounted hopper version)

⚠ WARNING

Avoid injury!
Always stay clear of the implement operating area. In particular, DO NOT stand between the tractor and the trailed vehicle or either three-point linkage when operating lift controls. Make sure no bystanders are within or near these operating areas.
Failure to comply could result in death or serious injury.

W1087A

⚠ WARNING

Tip-over hazard!
Adding additional weight (buckets, attachments, etc.) to the machine can create a tipping hazard. Do not exceed the gross weight indicated by the machine specifications.
Failure to comply could result in death or serious injury.

W0153A

NOTICE: *Make sure that the implement is parked on solid ground and secure it against rolling.*

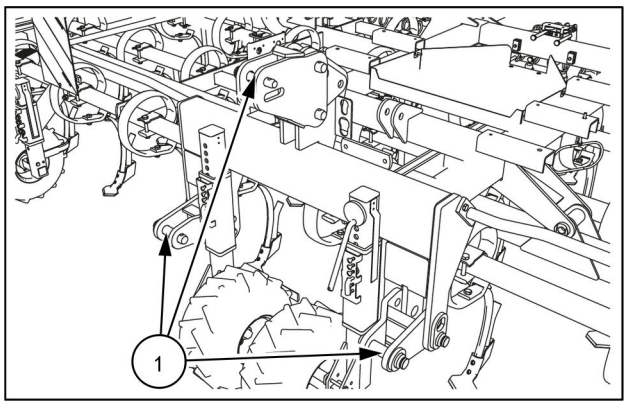
NOTE: *The three-point hitch category on the implement and on the tractor must match with each other. The implement can be connected by category 3.*

NOTE: *Use original and correct coupling parts.*

1. Fit the ball bushes over the pins **(1)** for the lower linkages and the head stock connections.
2. Lower the lower linkages of the tractor and drive backward until the lower link hooks are under the ball bushes.
3. Raise the lift until the lower link hooks are coupled.
4. Install the top link. Use the slotted hole for fieldwork and round hole for transport.
5. Secure all connections against unintentional opening.
6. Make sure the hydraulic fittings are clean and connect the hydraulic hoses.

   NOTE: *The blower needs a free flow return.*

   NOTICE: *Make sure there are no oil leaks in the hydraulic connections.*
7. Connect light equipment (optional).
8. Make sure all functions work correctly.
9. Connect the wires for the electronic control box (optional).



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To connect the front hopper to the tractor, proceed as follows:

1. Place the tank at a height to allowing the air hoses to be mounted as a horizontal as possible.
2. Join or separate the pipes mounted under the tractor in consideration of the driver's cab and the movable parts on the tractor.
3. Check that the front wheel of the tractor have free movement.
4. Use two hydraulic pipes for the oil supply to the fan. Mount the quick couplings and hoses on the return line from the fan the pipe.
5. In order to lift and lower the drive wheel on the tank, connect the quick coupling and the hose to a single acting outlet on the tractor.
6. Secure all the connections to avoid unintentional disconnection.

Parking the unit

Disconnection and parking (for rear mounted hopper version)

⚠ WARNING

Avoid injury!
Always stay clear of the implement operating area. In particular, DO NOT stand between the tractor and the trailed vehicle or either three-point linkage when operating lift controls. Make sure no bystanders are within or near these operating areas.
Failure to comply could result in death or serious injury.

W1087A

⚠ WARNING

Overturning hazard!
Always try to park the machine on firm level ground. Avoid parking on slopes. Block the wheels in both directions.
Failure to comply could result in death or serious injury.

W0051A

NOTICE: *Always disconnect the implement carefully and on a flat surface to prevent damage.*

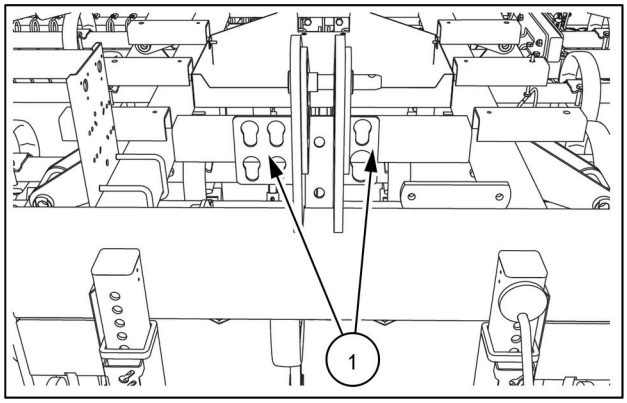
NOTICE: *Before you uncouple the implement to the three-point hitch, put the operating mechanism into a position which will prevent any accidental lifting or lowering.*

NOTE: *Park the implement only with unfolded frame parts to have a larger stability.*

1. Unfold the implement.
2. Park the implement on level and solid ground.
3. Disconnect the wires for the electronic control box (optional).
4. Disconnect the light equipment (optional).
5. Remove the oil pressure from the connections.
6. Uncouple the hydraulic hoses from the tractor and place the couplings in the brackets **(1)** near the top link.

NOTE: *There are two positions in left-hand side and four positions in right-hand side.*

7. Remove the top link from the implement.
8. Release the hooks of the lower linkages.
9. Lower the lower linkages until they free of the implement ball bushes.
10. Drive the tractor slowly forward.



ZEIL22SE00009AA 1

Disconnection and parking (for front mounted hopper version)

⚠ WARNING

Avoid injury!
Always stay clear of the implement operating area. In particular, DO NOT stand between the tractor and the trailed vehicle or either three-point linkage when operating lift controls. Make sure no bystanders are within or near these operating areas.
Failure to comply could result in death or serious injury.

W1087A

⚠ WARNING

Overturning hazard!
Always try to park the machine on firm level ground. Avoid parking on slopes. Block the wheels in both directions.
Failure to comply could result in death or serious injury.

W0051A

NOTICE: *Always disconnect the implement carefully and on a flat surface to prevent damage.*

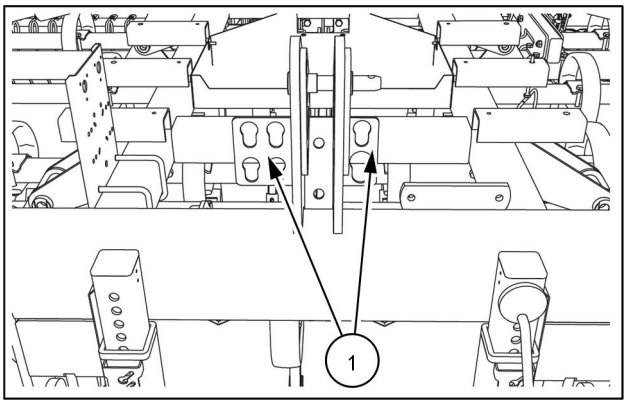
NOTICE: *Before you uncouple the implement to the three-point hitch, put the operating mechanism into a position which will prevent any accidental lifting or lowering.*

NOTE: *Park the implement only with unfolded frame parts to have a larger stability.*

1. Unfold the implement.
2. Park the implement on level and solid ground.
3. Disconnect the wires for the electronic control box (optional).
4. Disconnect the light equipment (optional).
5. Remove the oil pressure from the connections.
6. Uncouple the hydraulic hoses from the tractor and place the couplings in the brackets **(1)** near the top link.

NOTE: *There are two positions in left-hand side and four positions in right-hand side.*

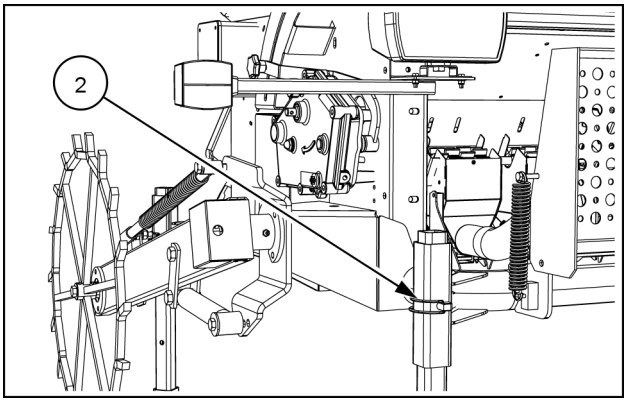
7. Remove the top link from the implement.
8. Release the hooks of the lower linkages.
9. Lower the lower linkages until they free of the implement ball bushes.
10. Drive the tractor slowly forward.



ZEIL22SE00009AA 1

To disconnect and park the front hopper, proceed as follows:

1. Remove the safety split pins **(2)** located on all four parking legs. Lower all the parking legs **(3)**. Secure with the safety split pins **(2)**.
2. Place the implement on a firm and level ground.
3. Disconnect all the hydraulic couplers.
4. Disconnect the electrical connection.
5. Disconnect the hoses of the hydraulic system from the tractor.



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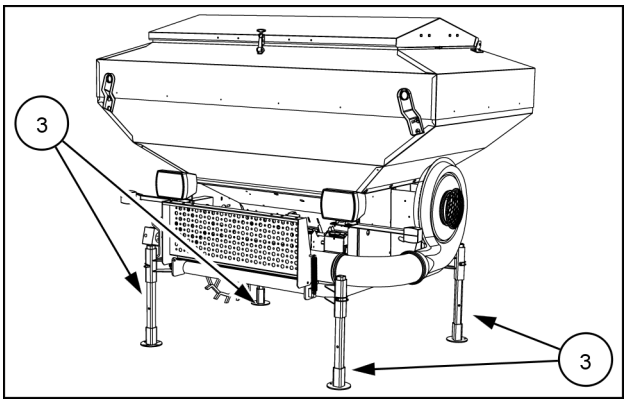


ZEIL21TIL0019AA 3

5 - TRANSPORT OPERATIONS

Road transport

Transport position

NOTE: *Check local road legislation before you drive the implement on public roads.*

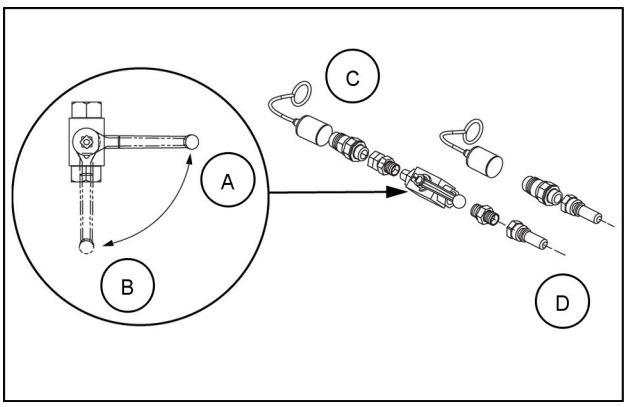
To prepare the implement for road transport, proceed as follows:

1. Make sure that the blower is stopped.
2. Make sure the strings for the security hooks are loose, so the hooks are in the lower position.
3. Lift and fold the implement. See Page **5-4**.
4. Make sure that the security hooks have locked the frames in upright position.
5. To give a lower center of gravity, and thereby a more stable transport, it is recommend to lower the implement to a lower level, so that you keep sufficient distance to the road during transport.
6. Make sure that the implement is secure, that nothing falls off, including big lumps of soil, during transport.

   NOTE: *Ensure sufficient locking at the side of the three-point linkage.*
7. Check that any light kits and warning plates work properly and clean.
8. Lock the control valves of the tractor.
9. Make sure that the valve which prevents from accidental unfolding is closed.

- **(A)** Valve closed
- **(B)** Valve open
- **(C)** To the tractor
- **(D)** To the implement

NOTICE: *The security locking device prevents from accidental unfolding in case of a defect in the hydraulic hoses. However, the security locking device may not prevent unintentional unfolding or lowering if the control device is operated by mistake and the valve preventing from accidental unfolding is not closed.*



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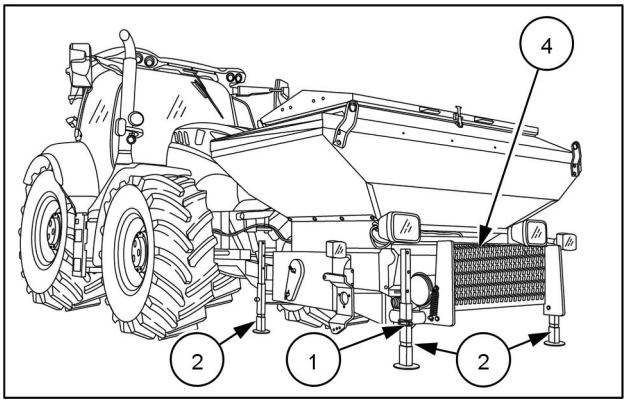
For front mounted hopper version only

10. Make sure that the parking legs are lifted. If the parking legs are lowered:
    - Remove the safety split pins **(1)** located on all four parking legs.
    - Lift all the parking legs **(2)** and secure with the safety split pins **(1)**.
11. Make sure that the footboard **(4)** is closed.



ZEIL21TIL0022AA 2

Preparing for road transport

Lifting the implement

⚠ DANGER

Heavy objects!
Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.
Failure to comply will result in death or serious injury.

D0076A

⚠ WARNING

Crushing hazard!
Use the machine lifting points when you lift and/or move the machine with heavy handling equipment. Lift the machine only from the indicated lifting eye hookup points. Always use adequate lifting equipment.
Failure to comply could result in death or serious injury.

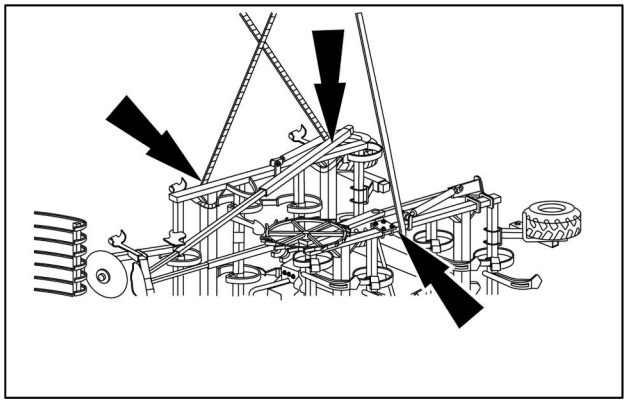
W1432B

NOTE: *Always lift the implement in unfolded position.*

NOTE: *Park in unfolded position after lifting.*

NOTICE: *Make sure that there are no personnel under the implement at any time.*

1. To lift the implement, place the straps as shown.
2. Take care of land wheel and marker arms.



ZEIL22SE00018AA 1

Folding and unfolding

⚠ DANGER

Crushing hazard!
Stay clear of the implement when the wings are folded or unfolded. Hydraulic or mechanical failure may cause rapid uncontrolled falling of the wings.
Failure to comply will result in death or serious injury.

D0108A

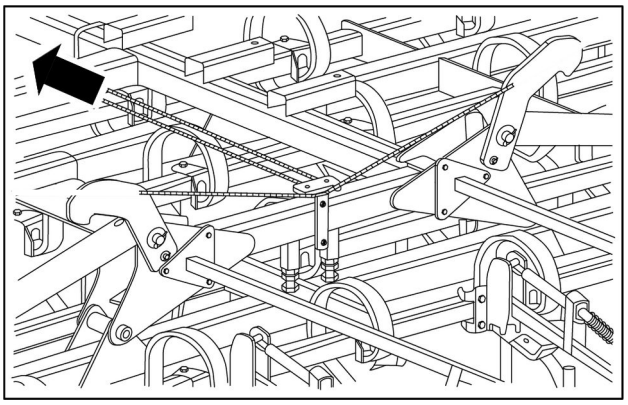
NOTE: *The security hooks prevent the implement from accidental unfolding in case of a defect in the hydraulic hoses. However, it may not prevent unintentional unfolding or lowering if the control device is operated by mistake.*

NOTE: *Raise the implement before you perform folding operations.*

Unfolding

To unfold the implement, proceed as follows:

1. Lift the implement off the ground, high enough to secure it does not hit during unfolding.
2. Pull the two strings attached to the wing locks to open the security hooks.
3. If the tractor hydraulic is slightly leaking, then there may be tension on the security hooks. In this case operate the tractors hydraulic valve as to fold the implement and then pull the strings.
4. Operate the hydraulics of the implement.



ZEIL22SE00017AA 1

Folding

To fold the implement, proceed as follows:

1. Lift the implement off the ground, high enough to secure it does not hit during folding.
2. Make sure the strings for the security hooks are loose.
3. Check that the security hooks are in the lower position.
4. Operate the hydraulics of the implement and check that both wings fold completely in.
5. Check that the security hooks automatically lock the wings in upright position.

6 - WORKING OPERATIONS

General information

Implement overview

The implement is configured with two possible versions:

- With rear mounted hopper
- With front mounted hopper

The rear mounted hopper capacity is **1100 L** (**291 US gal**). It is positioned close to the tractor, which limits the demands of lifting capacity.

The front mounted hopper capacity is **1500 L** (**396 US gal**) or **1900 L** (**502 US gal**). It is mounted in the tractor's front linkage or on a special support.

The implement is fitted with a stepless mechanic gearbox (mechanical version).
Alternatively, only for the implement with front mounted hopper, an electronically driven motor can also offer a tepless feeding option (electronic version).

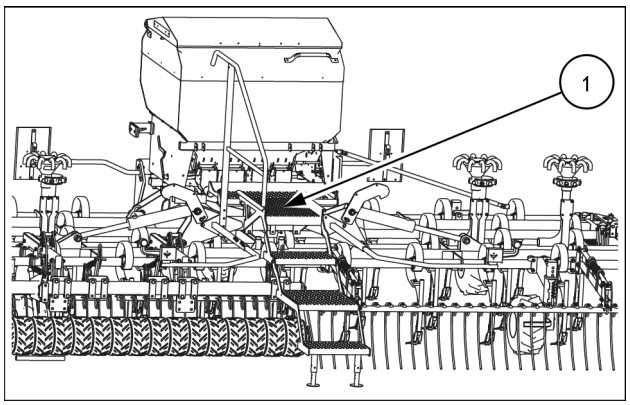
The mechanical drive of the seed roller is driven by a land wheel. The land wheel arm is hydraulically operated from the tractor cab. The monitor to control the machine is the Konnect 1000 and it is available as an option.

The electronic version of the implement is operated by the ISOBUS job computer where the seed roller is driven by an electric motor without a gearbox. This system controls the electronic feeding.
A monitor is needed to control and drive the implement.

Depending on the model, the implement working width is **5.0 m** (**196.9 in**) or **6.0 m** (**236.2 in**).

Filling platform (for rear mounted hopper version)

A filling platform **(1)** is available in the rear of the implement to reach the opening of the hopper.



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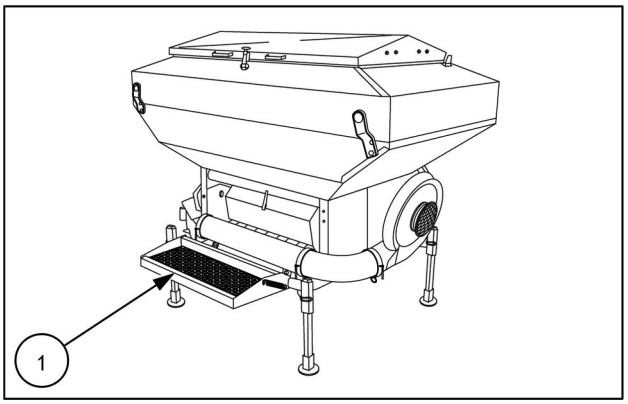
Filling platform (for front mounted hopper version)

A filling platform **(1)** is available in the front of the implement to reach the opening of the hopper.



ZEIL22SE00035AA 1

Markers

⚠ WARNING

Crushing hazard!
The markers actuate automatically. Stand clear of the marker fold zone.
Failure to comply could result in death or serious injury.

W1349A

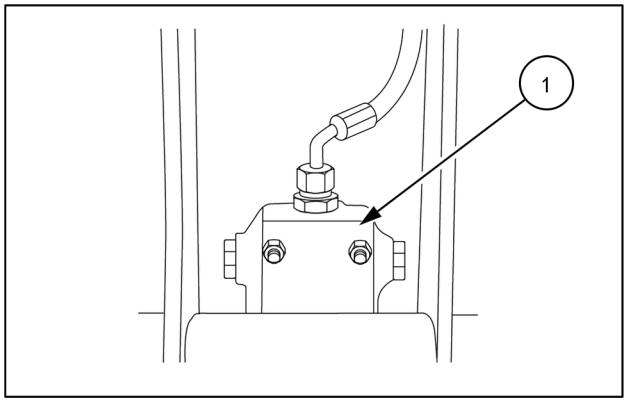
The implement is fitted with hydraulic markers.

A double-acting hydraulic outlet is required. Activate the marker shifter valve **(1)** in the following way:

1. Apply hydraulic pressure to the marker system, to obtain both markers in parking position.
2. Remove hydraulic pressure from the marker system, to move one marker into its working position.
3. Supply and then remove hydraulic pressure from the system to shift between the markers.

If both markers are required in their working position, activate the marker system in the following way:

1. Add hydraulic pressure until the marker, which is in its working position, has moved about 30 degrees.
2. Remove the hydraulic pressure from the system, to move both markers into their respective working positions.



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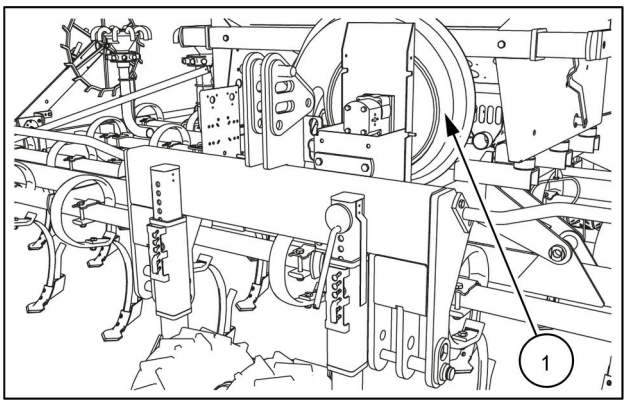
Blower

The tractor hydraulically drives the blower **(1)** and the speed is set by the oil flow.

The manometer **(2)** on the seed hopper should show about **0.06 bar** (**0.87 psi**).

When seeding light seeds, as the grass, the reduction of the speed of the blower can reduce the amount of air.



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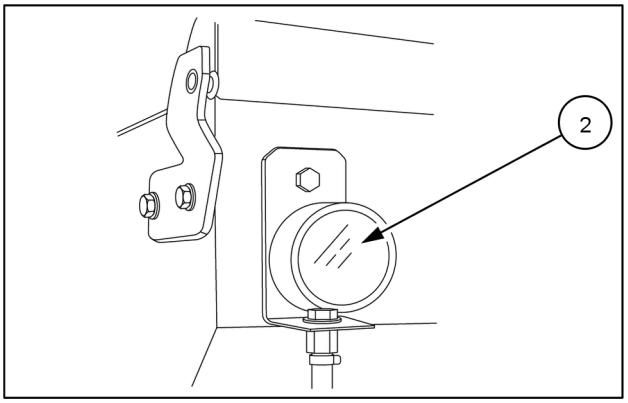


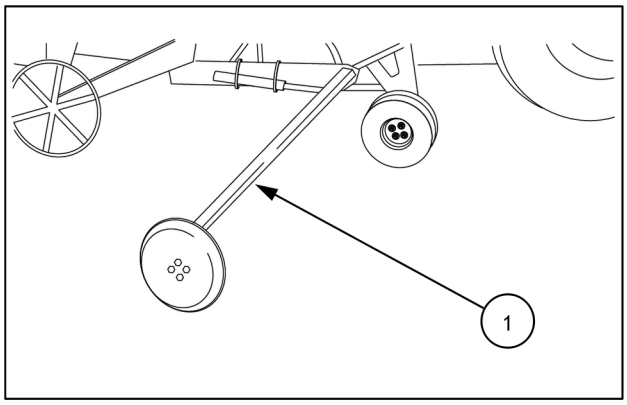
ZEIL22SE00032AA 2

Adjustments

Marker adjustment

The marker **(1)** is used to make a marker track. The track ensures that the outer coulter in one row is both parallel to and correctly spaced with respect to the previous row.

The implement has centre marking. Therefore the marker is set **5.0 m** (**196.9 in**) out, as measured from the centre of a VS500H and **6.0 m** (**236.2 in**) out on a VS600H. This adjustment can be carried out most easily by driving forward a few metres with the markers lowered into their working positions, such that the tracks can be clearly seen in the soil.



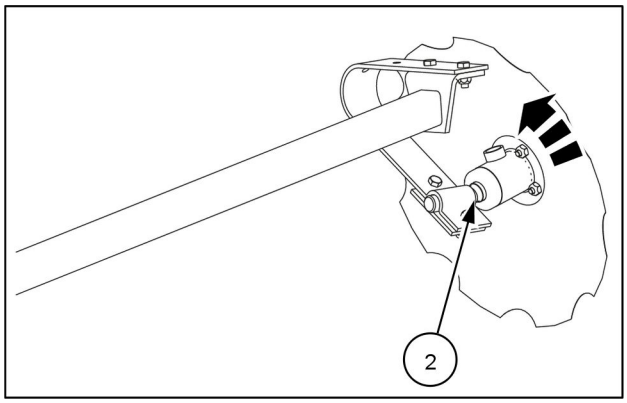
ZEIL22SE00021AA 1

The marking track's width can be regulated by turning the cranked marker shaft **(2)**.

The narrowest track is obtained by turning the shaft downwards such that the marker is parallel to the direction of travel.

The widest track is obtained by turning the shaft such that the marker is angled backwards with respect to the direction of travel.

NOTICE: *The marker shaft should not be directed forwards or upwards as this can damage the shaft and depreciate the track.*



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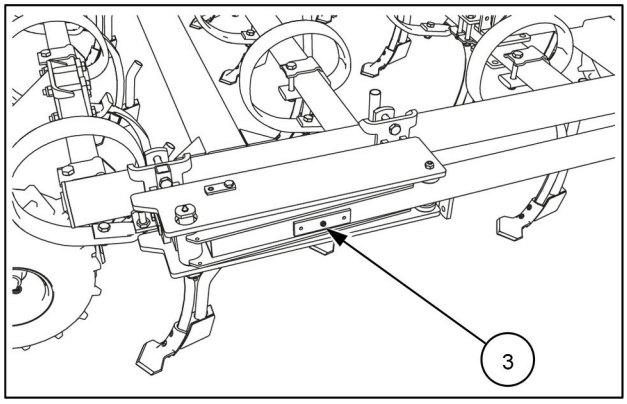
Marker arms, shear bolt

The marker arms are equipped with a shear bolt **(3)** which is released when overloaded. Carrying a few extra shear bolts M8 x 80 – 8.8 and nuts is recommended.



ZEIL22SE00006AA 3

Adjustment of working depth

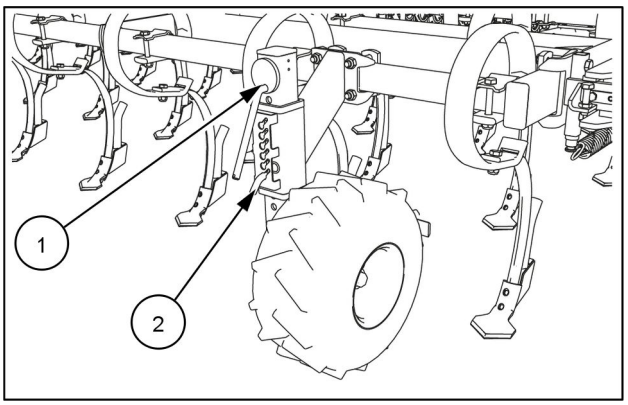
The seeding depth is controlled by the six wheels fitted on the implement.

As the seeds are placed directly on the track of the share, working depth of the tines equals the seeding depth.

The working depth can be change in steps of **5.0 mm** (**0.2 in**) by using a combination of the holes in outer and inner tube, which have different distances.

To set the working depth, proceed as follows:

1. Lower completely the implement.
2. Place the eccentric tool **(1)** in a hole in top of the inner tube.
3. Turn the eccentric tool to take rest on the edge of the outer tube, preventing the wheel to drop uncontrolled when the locking pin **(2)** is removed.
4. Turn counterclockwise and pull the locking pin **(2)** to remove it.
5. Turn the eccentric tool **(1)** to lift or lower the inner tube to another position.
6. Put in the locking pin **(2)** and turn it clockwise to secure it.
7. Remove the eccentric tool **(1)**.
8. Repeat the procedure at all the wheels.
9. Lock the eccentric tool **(1)** to prevent loosing it.



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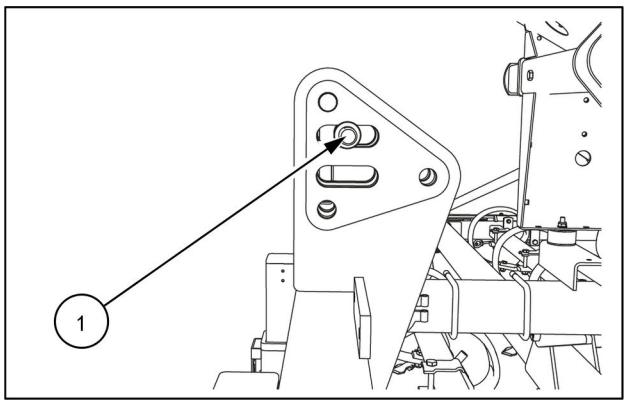
Working adjustment

To adjust the working depth in the field proceed as follows:

1. Check that the implement is in horizontal position: check the seeding depth of first row and rear row. If the seeding depth is different, make the necessary adjustment on rear or front wheel. See Page **6-6**.
2. Put the machine in working position.
3. Drive forward about **10.0 m** (**393.7 in**) and be sure that the top link **(1)** is placed in the middle of the slotted hole in the topmast.
4. Check the depth in which the seeds are placed and make the necessary depth adjustment by changing position of the wheels.



ZEIL22SE00001AA 1

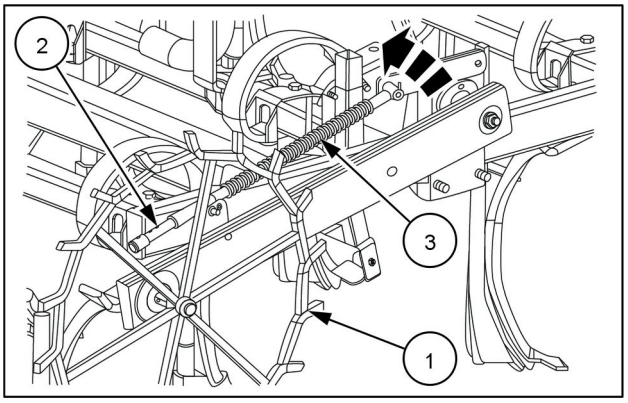
Adjustment of drive wheel

NOTE: *These settings are valid only for the M-version of the implement.*

The rotation of the sowing wheel is partly depending on the adjustment of the gearbox and partly on the run of the drive wheel **(1)** in the field.
In order to have the right sowing rate keep the drive wheel **(1)** in its working position and adjust correctly the spring tension **(3)**. The wheel will rotate easily in the soil without going too deep and without slip.

Adjust correctly the spring tension as follow:

1. Remove the linch pin **(2)**.
2. Set the wheel **(1)** to the ground.
3. Put the linch pin **(2)** back into the hole with the roll pin at the free end of the shaft.
4. Adjust the tension in the spring by rotating the spring **(3)**.



ZEIL22SE00020AA 1

With the drive wheel **(1)** locked in the upper position, the implement is able to work the soil without seeding.

Harrow adjustment (if equipped)

The implement can be equipped with two possible kind of rear harrows listed below:

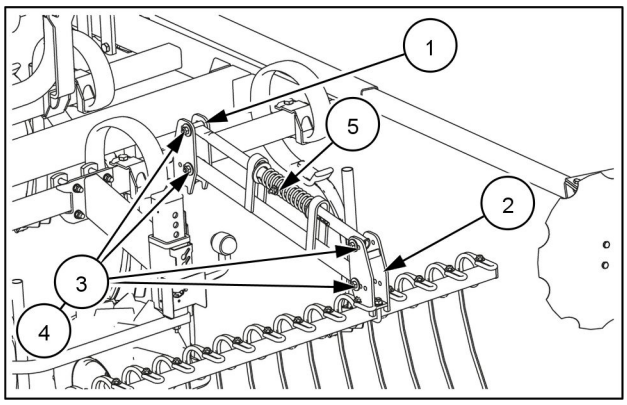
- Max flow
- Wing flow

In order to mount the rear harrow, fix the bracket **(1)** on the parallelogram arms to the cultivator frame of the implement.

The harrow can be set to light or heavy harrowing by using different combinations of upper and lower set of holes in the bracket **(1)** and the bracket **(2)**.

The desired position is secured by cotter bolts **(3)**. The cotter bolts must always be locked with the pins **(4)**.

The rear harrow is equipped with compression springs, which gives the possibility of a more intensive cultivation. The pressure on the cultivator is adjusted by turning the compression spring **(5)**.



ZEIL22SE00008AA 1

Special crops

Depending on kind of seed, certain precautions may have to be taken.

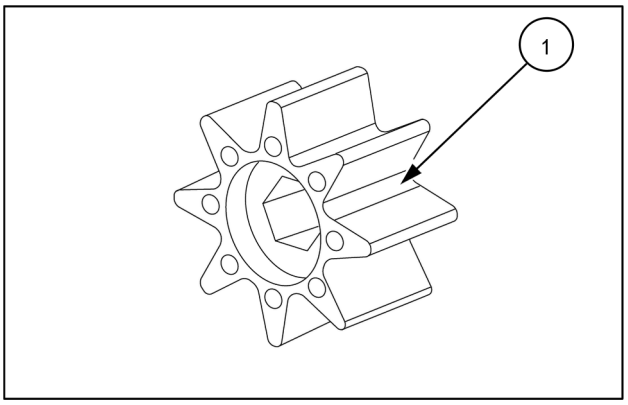
NOTICE: *Due to the rotating agitator shaft, stirring of the hopper contents must only be carried out when the implement is switched off.*

Sowing of grass seed

Use the standard star-wheels **(1)** in case of bigger grass seeds, grain, peas and bean. Use the peg-wheels **(2)** in case of smaller grass seeds.

Sowing of grass seed requires special attention since the seeds can bridge in the hopper, thus affecting the actual sowing rate. This problem will be particularly acute if the hopper is exposed to vibration.

1. Stop the implement.
2. Carry out test sowing with a limited amount of seeds in the hopper.
3. Make regular stops to manually stir the hopper contents in order to achieve uniform sowing.



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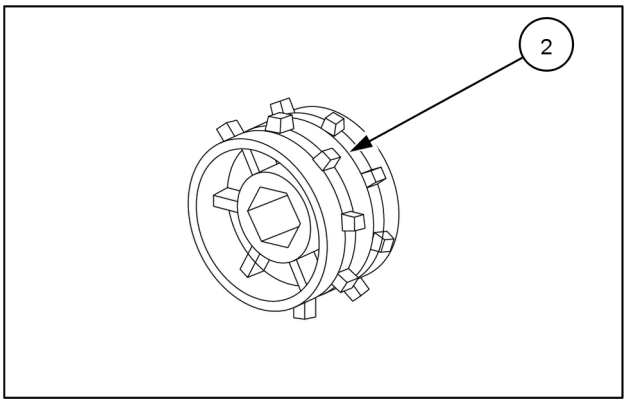


ZEIL22SE00038AA 2

Sowing of fine seed

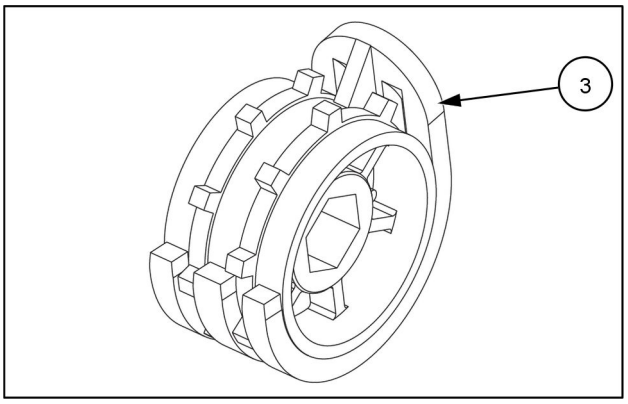
When sowing small, round seeds, use the peg wheels with fine seed fingers **(3)**.

NOTE: *The fine seed fingers reduce the sowing amount by 1/9 and at the same time, waste is avoided since the seeds are only fed out by the pegs.*

To adjust the fine seed fingers proceed as follows:

1. Stop the implement.
2. Loose the black thumbscrew at the front of the seed housing to disengage the covers above the seed wheels.
3. Remove the R-clips and shaft connections on both sides of the seed housings.
4. Push the bearing sideway out of the bearing retainer.
5. Lift the sowing shaft out of the seed housing.
6. Press the fine seed finger over the rollers. As the roller is turned, the fine seed fingers are pulled round to cover the roller.

   NOTE: *The shape of the fine seed fingers allow them to held in place.*



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Adjustment of sowing rate (for rear mounted hopper version)

In order to adjust the sowing, carry out a test that includes both a calibration depending on the weight/size of the seed and the adjustment of the sowing rate per unit.

Before start a test:

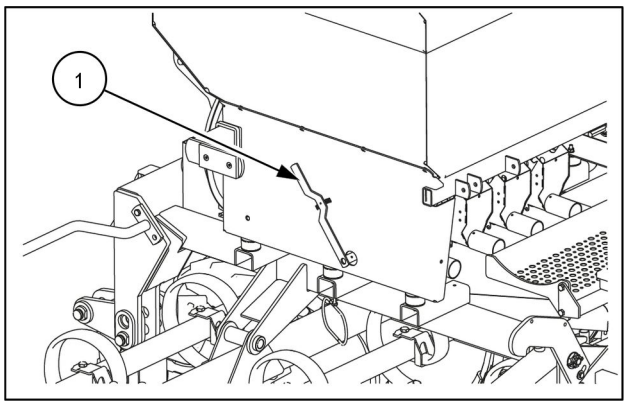
1. Turn off the blower.
2. Check that the wing lock hooks are locked properly.
3. Check that the agitator shaft is engaged.
4. Adjust the bottom flaps using the handle **(1)** at the left-hand side plate of the hopper so that are as close as possible to the seed wheels without damaging or squeezing the seed.
5. Check that the shutters are completely open for the seed housings in operation.
6. Empty the hopper from earlier drilled seeds, if not of the appropriate kind.
7. Use the correct seed wheel to fit the type of seeds to be drilled. See Page **6-10**.
8. Fold the implement to transport position. See Page **5-4**.
9. Flip down the calibration tray and place a bucket in a way enabling the seeds to run into the bucket.
10. Open the calibration flaps.
11. Set the bottom flaps under seed housings.

NOTE: *The shutters must not be used for adjusting of the rate of sowing.*

NOTE: *Is it possible to work with half the sowing width, in this case the shutters at one side can be closed.*

The calibration continues with the traditional method test or with Konnect 1000 method test (if available).

NOTE: *The results obtained from the test using the Konnect 1000 method should be regarded as indicative. Correct data on the sowing rate can only be obtained by testing using the traditional method.*



ZEIL22SE00002AA 1

Seed	Barley	Wheat	Peas	Rape-seed
Position of bottom flaps	2	2	4 – 6	1

Traditional method test

To start a test proceed as follows:

1. Fill sufficient seed in the hopper such that the agitator shaft is still covered after the test sowing.
2. Set the scale for the gear to a value from the seed tables to get the first approximation for the setting.
3. Attach the test sowing handle **(1)** and turn it clockwise until the seed flows from all of the outlets.
4. Empty the contents of the calibration bucket into the seed hopper.
5. Turn the test sowing handle the following number of revolutions.

VS500H	62 revolutions	**1/40 ha**
VS600H	52 revolutions	**1/40 ha**

6. Weigh the seed from the bucket on an accurate pair of scales.

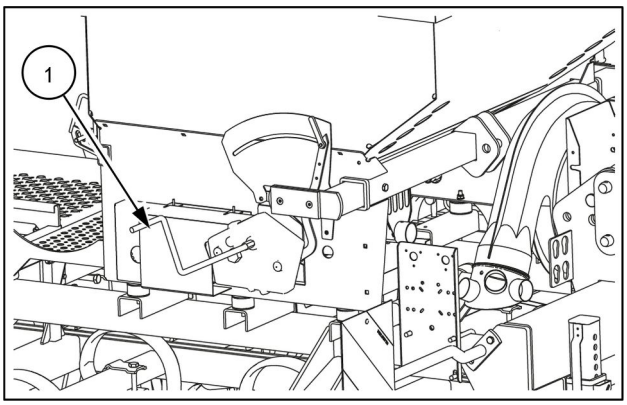
   NOTE: *To obtain the sowing rate for **1 ha**, the measured weight must be multiplied by 40.*

If the calculated sowing rate corresponds to the required rate, then the machine is correctly adjusted.

If the sowing rate is not correct, change the scale setting. Repeat from Step 3 to Step 6.

NOTE: *See Page **8-1** for the check of sowing rate.*

7. Lift into the upper position the calibration tray.
8. Close the calibration flaps under the seed housing.
9. Engage the blower. It's possible to read the working pressure on the pressure gauge. See Page **6-4**.



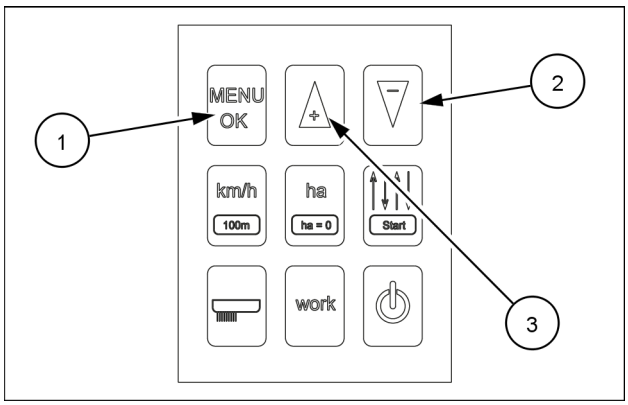
ZEIL22SE00003AA 2

Konnect 1000 method test

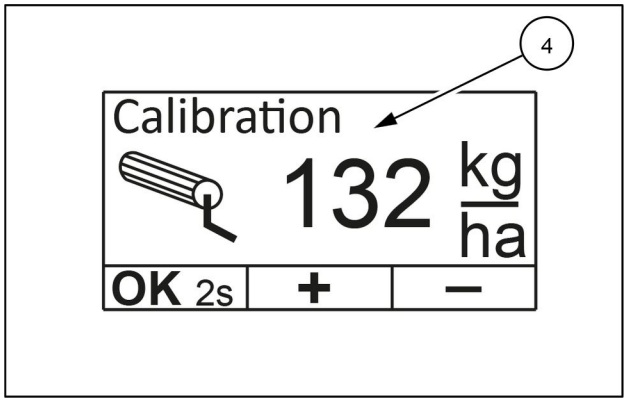
NOTE: *Make sure that the correct type of machine is selected. See Page* ***3-8****.*

To start a test proceed as follows:

1. Fill sufficient seed in the hopper such that the agitator shaft is still covered after test sowing has been carried out.
2. Use the key **(1)** in order to display the sowing rate **(4)**.
3. Press the key **(2)** or **(3)** to select the desired seed quantity per hectare according to the sowing tables.
4. Press the key **(1)** for **2 s**.
5. Use the key **(2)** or **(3)** to choice the position of the lever on the scale gear **(5)** according to the sowing tables.



ZEIL21SE00037AA 3



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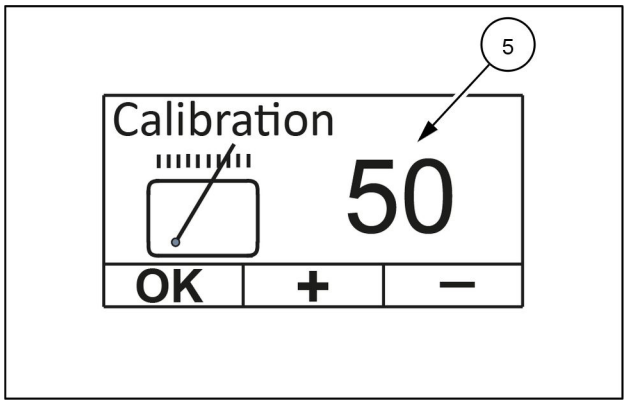


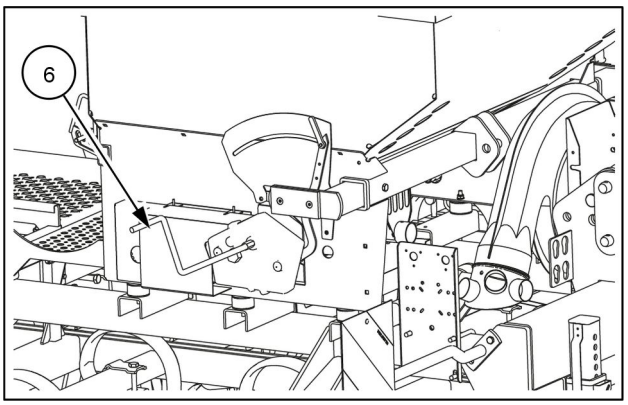
ZEIL21SE00027AA 5

6. Press the key **(1)**. See Figure **3**.
7. Move and lock the test sowing handle **(6)** in line with the following number of revolutions.

VS500H	62 revolutions	**1/40 ha**
VS600H	52 revolutions	**1/40 ha**

8. The display will show the number **(7)** of revolutions.
9. Press the key **(1)** to perform revolutions. See Figure **3**.
10. The display will show the number **(7)** of revolutions still to be made.

    NOTE: *The last 5 turns are signaled acoustically. At the end of the turns a continuous signal tone is triggered.*



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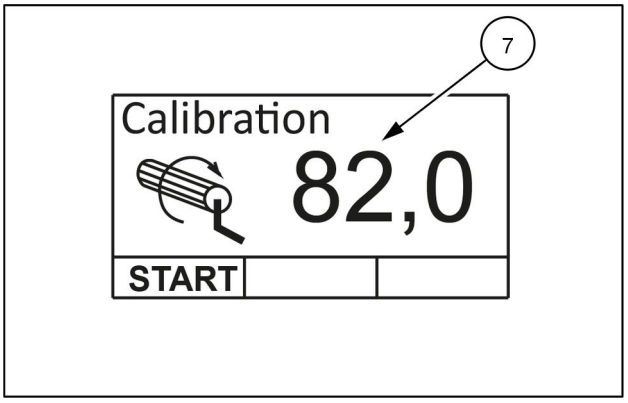
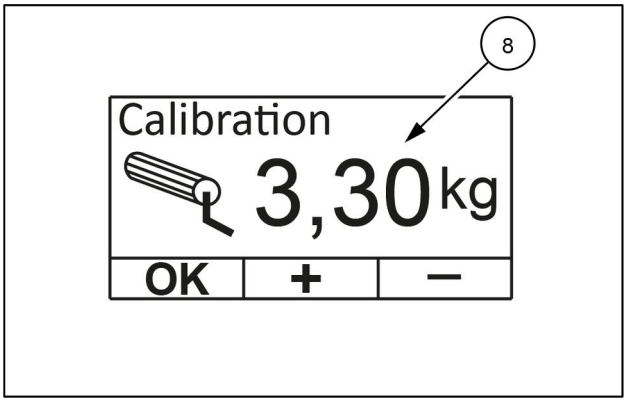


ZEIL21SE00029AA 7

11. Press the key **(1)** of Figure **3** to see the suggested weight **(8)** of the sample seed material on **1/40 ha**.
12. Weigh the seed from the bucket on an accurate pair of scales.

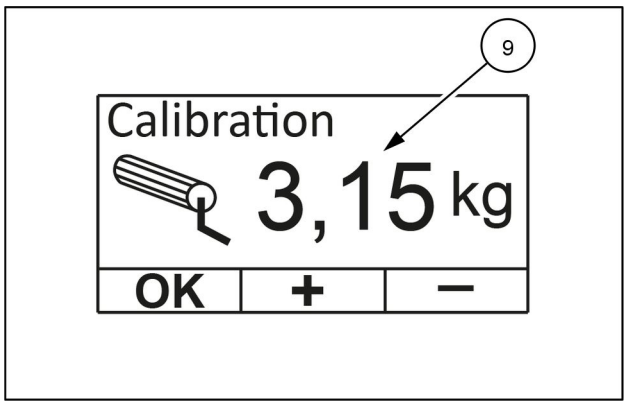


ZEIL21SE00030AA 8

13. If the sample weight of seed material is the same as suggested on the screen:
    1. Press the key **(1)** to see the sowing rate **(4)**. See Figure **3** and Figure **4**.
    2. Press the key **(1)** to see the lever on the scale **(5)**. See Figure **3** and Figure **5**.
    3. The test is complete.

13. If the sample weight of seed material is not the same as suggested on the screen:
    1. Use the key **(2)** or **(3)** of Figure **3** to enter the actual weight **(9)** of the sample seed material.
    2. Press the key **(1)** of Figure **3** to see the new total amount **(10)** of seed per hectare after weight correction.
    3. Press the key **(1)** of Figure **3** to see the suggested lever position **(11)** on the scale.
    4. Move the lever to a new position according to the value visible on the screen.
    5. Perform the sowing test again to obtain the expected value of seed per hectare.

    NOTE: *To obtain correct results, make several sowing tests.*



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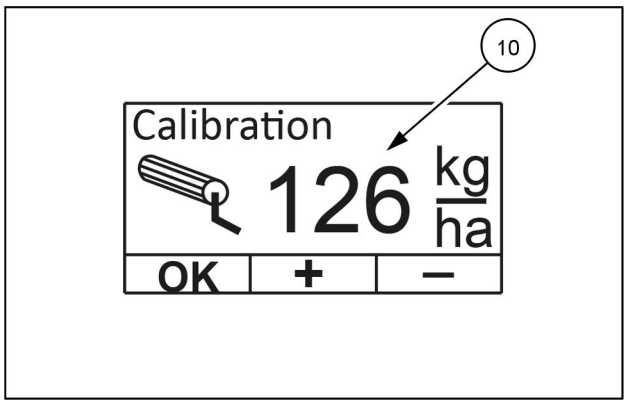

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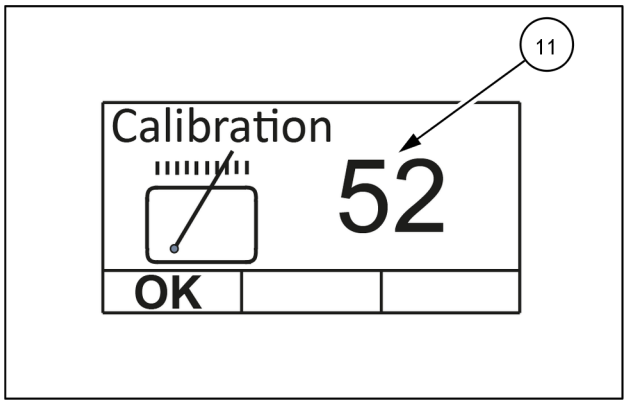


ZEIL21SE00033AA 11

14. Lift into the upper position the calibration tray.
15. Close the calibration flaps under the seed housing.
16. Engage the blower. It's possible to read the working pressure on the pressure gauge. See Page **6-4**.

Sowing tables

Sowing table for barley

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	127	106
40	148	123
45	167	139
50	188	157
55	215	179
60	233	194
65	263	219
70	283	236
75	310	258
80	338	282
85	368	307
90	401	334
95	438	365
100	473	394

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Sowing table for wheat

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	145	121
40	168	140
45	190	158
50	215	179
55	239	199
60	265	221
65	293	244
70	323	269
75	352	293
80	384	320
85	419	349
90	455	379
95	497	414
100	538	448

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Sowing table for peas

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	222	185
40	260	217
45	294	245
50	332	277
55	372	310
60	392	327
65	454	378
70	500	417
75	547	456
80	600	500
85		
90		
95		
100		

NOTE: *The unit of measurement of the values in the table is kg/ha.*

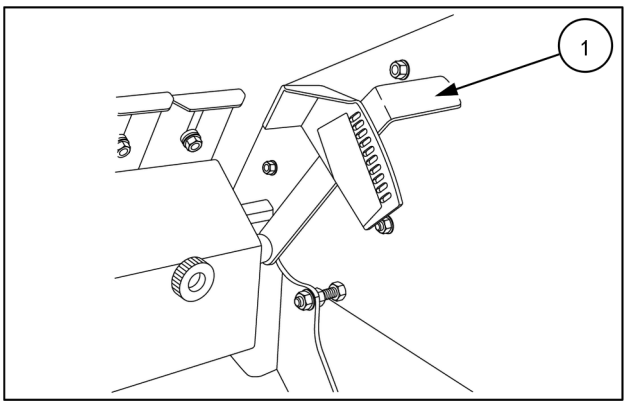
Sowing table for rapeseed

Scale setting	VS500H	VS600H
5	1.2	1.0
6	1.6	1.3
7	1.9	1.6
8	2.2	1.8
9	2.5	2.1
10	2.9	2.4
11	3.1	2.6
12	3.5	2.9
13	3.8	3.2
14	4.1	3.4
15	4.4	3.7
16	4.9	4.1
17	5.2	4.3
18	5.5	4.6
19	5.8	4.8
20	6.1	5.1
21	6.5	5.4
22	6.8	5.7
23	7.1	5.9
24	7.3	6.1
25	7.7	6.4
26	8.2	6.8
27	8.5	7.1
28	8.8	7.3
29	9.1	7.6
30	9.4	7.8
31	9.7	8.1
32	10.1	8.4
33	10.3	8.6
34	10.7	8.9

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Adjustment of sowing rate (for front mounted hopper version)

In order to adjust the sowing, carry out a test that includes both a calibration depending on the weight/size of the seed and the adjustment of the sowing rate per unit.



ZEIL21TIL0013AA 1

Before start a test:

1. Turn off the blower.
2. Check that the agitator shaft is engaged.
3. Adjust the bottom flaps using the handle **(1)** at the end of the hopper so that are as close as possible to the seed wheels without damaging or squeezing the seed.
4. Check that the shutters are completely open for the seed housings in operation.
5. Empty the hopper from earlier drilled seeds, if not of the appropriate kind.
6. Use the correct seed wheel to fit the type of seeds to be drilled. See Page **6-10**.
7. Turn the bottom flap handle backwards. The calibration tray is placed under the seed housings.
8. Set the bottom flaps under seed housings.

NOTE: *The shutters must not be used for adjusting of the rate of sowing.*

NOTE: *Is it possible to work with half the sowing width, in this case the shutters at one side can be closed.*

The calibration continues with the traditional method test or with Konnect 1000 method test (if available).

NOTE: *The results obtained from the test using the Konnect 1000 method should be regarded as indicative. Correct data on the sowing rate can only be obtained by testing using the traditional method.*

Seed	Barley	Wheat	Peas	Rape-seed
Position of bottom flaps	2	2	4 – 6	1

Traditional method test

To start a test for the mechanical driven front hopper with variable K gearbox proceed as follows:

1. Set the correct sowing rate according to previous records or to the sowing table.
2. Fill sufficient seed in the hopper such that the agitator shaft is still covered after the test sowing.
3. Attach the test sowing handle **(1)** and turn it clockwise until the seed flows from all of the outlets.
4. Raise the drive wheel from the ground.
5. Turn the test sowing handle the following number of revolutions.

VS500H	47 revolutions	**1/40 ha**
VS600H	39 revolutions	**1/40 ha**

6. Weigh the seed from the sowing tray on an accurate pair of scales.

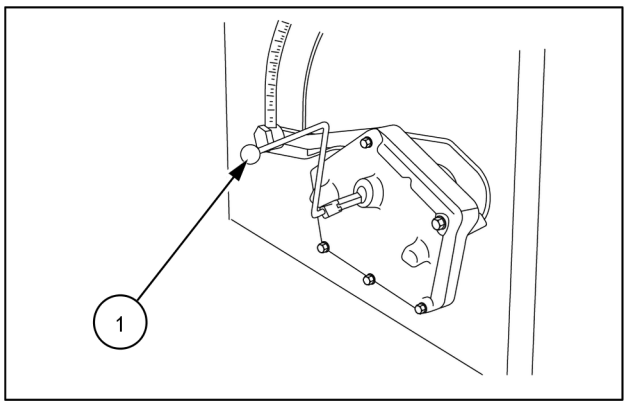
   NOTE: *To obtain the sowing rate for **1 ha**, the measured weight must be multiplied by 40.*

If the calculated sowing rate corresponds to the required rate, then the machine is correctly adjusted.

If the sowing rate is not correct, change the scale setting. Repeat from Step 3 to Step 6.

NOTE: *See Page **8-2** for the check of sowing rate.*

7. Lift into the upper position the calibration tray.
8. Close the calibration flaps under the seed housing.
9. Engage the blower. It's possible to read the working pressure on the pressure gauge. See Page **6-4**.



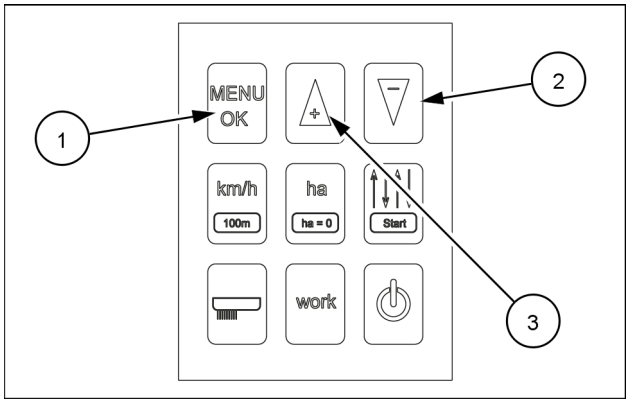
ZEIL22SE00056AA 2

Konnect 1000 method test

NOTE: *Make sure that the correct type of machine is selected. See Page* ***3-8****.*

To start a test for the mechanical driven front hopper with variable K gearbox proceed as follows:

1. Fill sufficient seed in the hopper such that the agitator shaft is still covered after test sowing has been carried out.
2. Use the key **(1)** in order to display the sowing rate **(4)**.
3. Press the key **(2)** or **(3)** to select the desired seed quantity per hectare according to the sowing tables.
4. Press the key **(1)** for **2 s**.
5. Use the key **(2)** or **(3)** to choice the position of the lever on the scale gear **(5)** according to the sowing tables.



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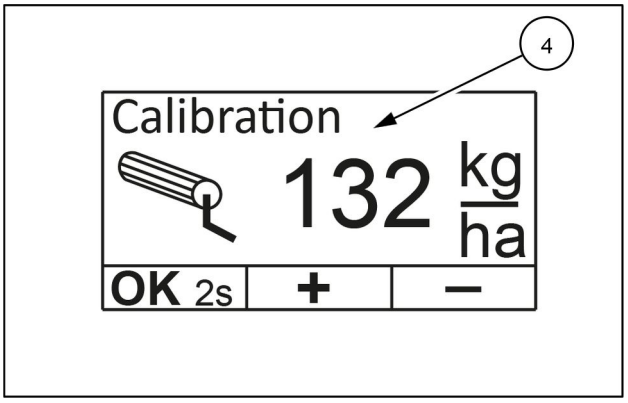

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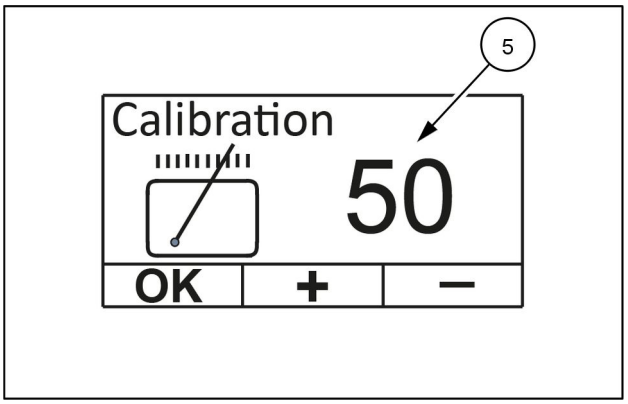


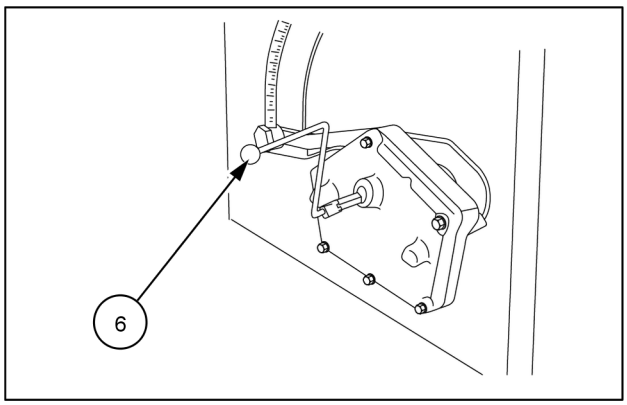
ZEIL21SE00027AA 5

6. Press the key **(1)**. See Figure **3**.
7. Move and lock the test sowing handle **(6)** in line with the following number of revolutions.

VS500H	47 revolutions	**1/40 ha**
VS600H	39 revolutions	**1/40 ha**

8. The display will show the number **(7)** of revolutions.
9. Press the key **(1)** to perform revolutions. See Figure **3**.
10. The display will show the number **(7)** of revolutions still to be made.

    NOTE: *The last 5 turns are signaled acoustically. At the end of the turns a continuous signal tone is triggered.*



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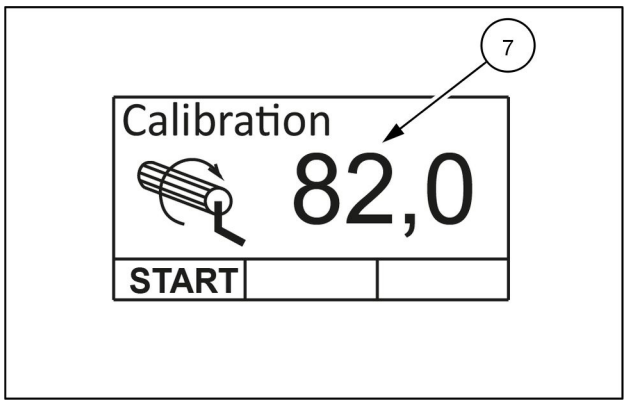
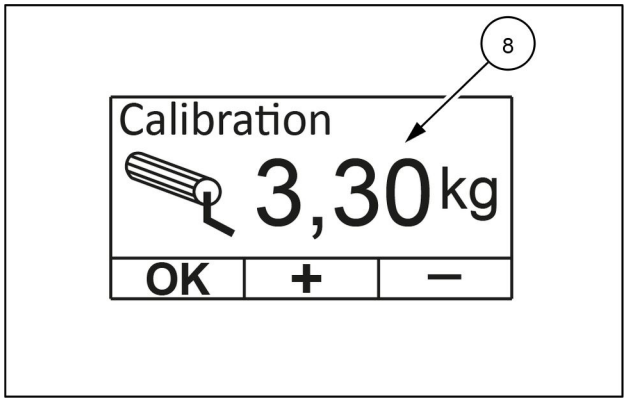


ZEIL21SE00029AA 7

11. Press the key **(1)** of Figure **3** to see the suggested weight **(8)** of the sample seed material on **1/40 ha**.
12. Weigh the seed from the bucket on an accurate pair of scales.

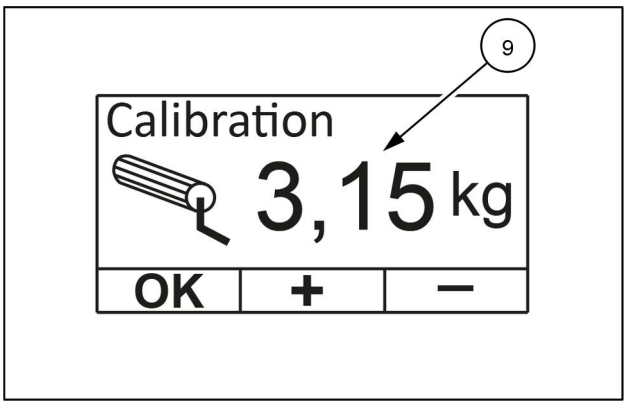


ZEIL21SE00030AA 8

13. If the sample weight of seed material is the same as suggested on the screen:
    1. Press the key **(1)** to see the sowing rate **(4)**. See Figure **3** and Figure **4**.
    2. Press the key **(1)** to see the lever on the scale **(5)**. See Figure **3** and Figure **5**.
    3. The test is complete.

13. If the sample weight of seed material is not the same as suggested on the screen:
    1. Use the key **(2)** or **(3)** of Figure **3** to enter the actual weight **(9)** of the sample seed material.
    2. Press the key **(1)** of Figure **3** to see the new total amount **(10)** of seed per hectare after weight correction.
    3. Press the key **(1)** of Figure **3** to see the suggested lever position **(11)** on the scale.
    4. Move the lever to a new position according to the value visible on the screen.
    5. Perform the sowing test again to obtain the expected value of seed per hectare.

    NOTE: *To obtain correct results, make several sowing tests.*



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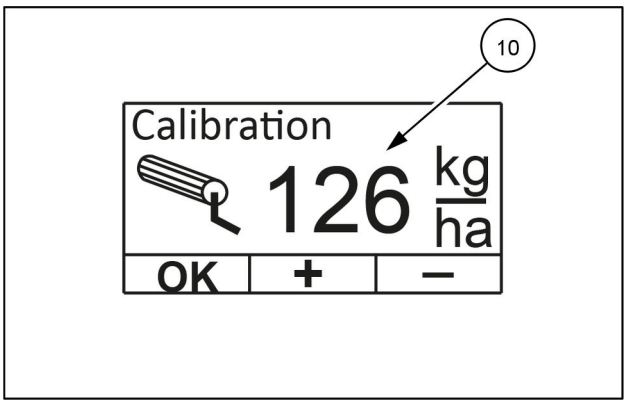

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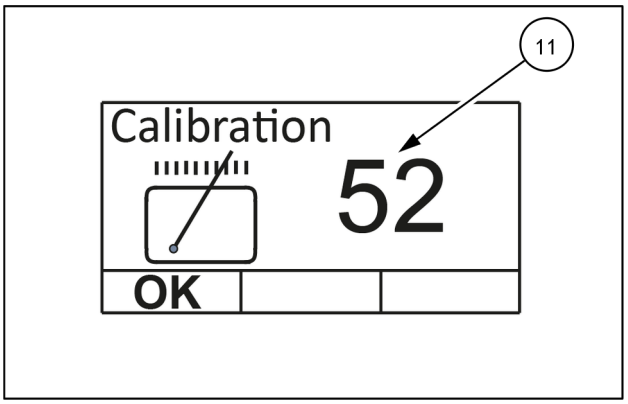


ZEIL21SE00033AA 11

14. Lift into the upper position the calibration tray.
15. Close the calibration flaps under the seed housing.
16. Engage the blower. It's possible to read the working pressure on the pressure gauge. See Page **6-4**.

Sowing tables

Sowing table for barley

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	127	106
40	148	123
45	167	139
50	188	157
55	215	179
60	233	194
65	263	219
70	283	236
75	310	258
80	338	282
85	368	307
90	401	334
95	438	365
100	473	394

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Sowing table for wheat

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	145	121
40	168	140
45	190	158
50	215	179
55	239	199
60	265	221
65	293	244
70	323	269
75	352	293
80	384	320
85	419	349
90	455	379
95	497	414
100	538	448

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Sowing table for peas

Scale setting	VS500H	VS600H
5		
10		
15		
20		
25		
30		
35	222	185
40	260	217
45	294	245
50	332	277
55	372	310
60	392	327
65	454	378
70	500	417
75	547	456
80	600	500
85		
90		
95		
100		

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Sowing table for rapeseed

Scale setting	VS500H	VS600H
5	1.2	1.0
6	1.6	1.3
7	1.9	1.6
8	2.2	1.8
9	2.5	2.1
10	2.9	2.4
11	3.1	2.6
12	3.5	2.9
13	3.8	3.2
14	4.1	3.4
15	4.4	3.7
16	4.9	4.1
17	5.2	4.3
18	5.5	4.6
19	5.8	4.8
20	6.1	5.1
21	6.5	5.4
22	6.8	5.7
23	7.1	5.9
24	7.3	6.1
25	7.7	6.4
26	8.2	6.8
27	8.5	7.1
28	8.8	7.3
29	9.1	7.6
30	9.4	7.8
31	9.7	8.1
32	10.1	8.4
33	10.3	8.6
34	10.7	8.9

NOTE: *The unit of measurement of the values in the table is kg/ha.*

Working in the field

Working speed

It is extremely important that the implement works at the right speed.

At speeds below **6 km/h** (**3.7 mph**), the optimal soil flow is not achieved and the mixing is insufficient.

The recommended speed is **8 – 13 km/h** (**5 – 8.1 mph**). At this speed the tines will create an optimal soil flow on the shares, and a good mixing of the soil and field residues as a result.

In general the speed should depend on the prevailing conditions and, in particular, oscillation of the machine should be avoided.

Never drive the tractor backward with the tines in the soil. Raise the implement to avoid the overload of the tines, as this can lead to breakage of the tines.

Turning

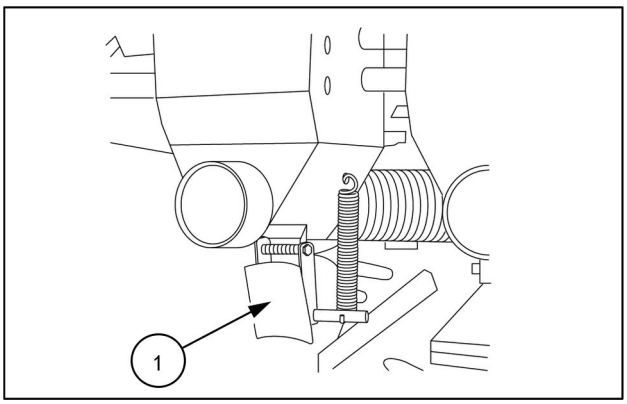
Never turn the implement so sharply in a way you force the tines sideways and backward. The result of the load is in excess of what the tines can support.

Unloading the hopper

If there is still remains in the hopper after finishing work, it is possible to empty it.

To unload the hopper proceed as follows:

1. Turn off the blower.
2. Check that the wing lock hooks are locked properly.
3. Fold the implement into transport position. See Page **5-4**.
4. Flip down the calibration tray and place a bucket in a way enabling the seeds to run into the bucket.
5. Open the calibration flaps **(1)**.
6. Pull back completely the handle **(2)** for the bottom flaps allowing any excess seeds to be emptied into the tray.



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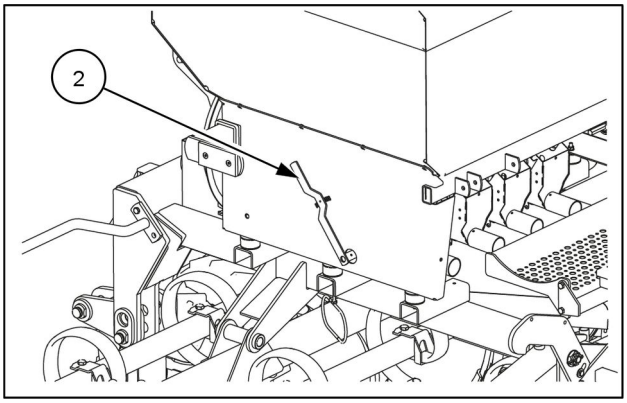

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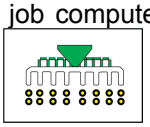
Basic control principles (for electronic version)

NOTE: *These settings are valid only for the front mounted hopper with E-version of the implement.*

Switching on the job computer

To start using the job computer, proceed as follows:

1. Connect the ISOBUS cable of the job computer to the ISOBUS connector on the tractor.
2. Start the ISOBUS terminal and when all of the data from the job computer application has been loaded, this icon  appears on the terminal.

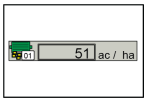
   NOTE: *When starting up for the first time, the job computer initially has to transmit lots of information to the terminal. This can take a few minutes.*
3. Follow the instruction for the ISOBUS terminal to open the job computer application. The work screen of the job computer appears.

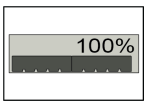
   NOTE: *After starting, the job computer checks whether defined the utilized terminal as the standard. If not, the job computer waits the selected time of the parameters "Wait. Time for Pref. VT" and "Wait. Time for Pref. TC" before it establishes a connection to a different terminal.*

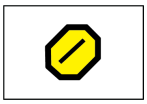
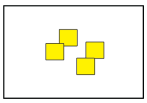
Layout of work screen for a seeder

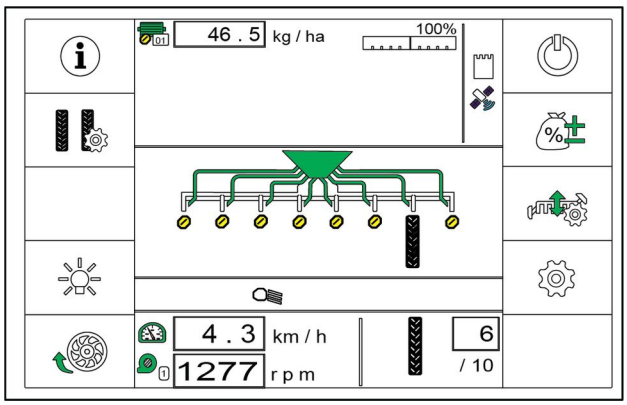
NOTE: *If a predefined limit is exceeded or fallen below during work, the corresponding status display in the work screen is highlighted in red.*

On the work screen for a seeder are shown:

1. Information on the metering drives, in particular:
   - 

     The seed rate for each connected metering drive.
   - 

     The changed target rate entered.
2. Information on the rows, in particular:
   - 
     If is present spread seed.
   - 
     If is present solid fertilizer.



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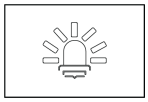
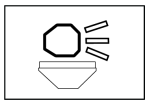
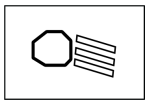
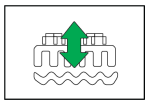
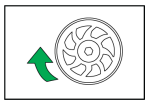
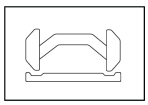
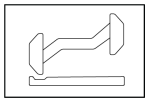
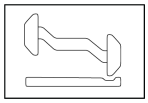
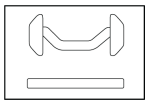
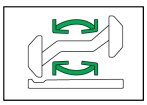
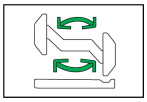
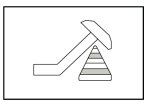
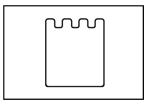
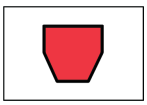
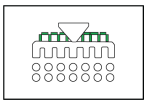
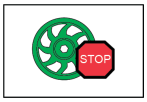
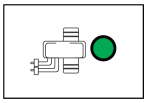
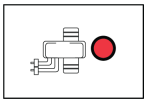
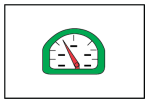
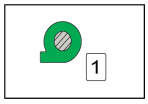
3. Information on the additional functions activated:

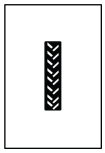
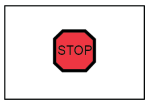
-  The beacon is activated.
-  The hopper lighting is activated.
-  The working light is activated.
-  The waterhole mode is activated.
-  The metering cells are being filled with seed.
-  Both bout markers are being used.
-  The left bout marker is being used.
-  The right bout marker is being used.
-  No bout marker is being used.

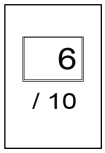
-  The left bout marker is being used and the change mode of the bout marker is activated.
-  The right bout marker is being used and the change mode of the bout marker is activated.
-  The obstacle mode is activated.
-  The ISOBUS-TC application is activated.
-  SECTION-Control is activated and in automatic mode.
-  A hopper has issued an alarm.
-  The implement is in work position.
- 

The early stop function is activated.
-  The seed flow monitoring system is activated and currently detects no errors. This icon is only shown if the “Agtron diagnosis” Agtron alarm type is activated.
-  The seed flow monitoring system is activated and has detected an error. This icon is only shown if the “Agtron diagnosis” Agtron alarm type is activated.

4. Status information, where it is shown:

-  The current speed of the implement.
- 

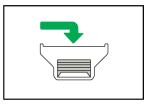
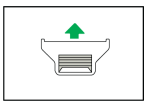
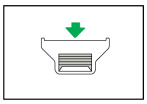
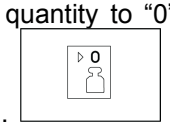
The current fan speed. The number indicates which fan is meant.
-  The current pressure in the monitored system.
-  Whether a tramline is being created on the right side or the left side of the implement.
- 

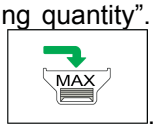
Whether tramline control is deactivated.
- 

Which track you are currently driving on.

Filling the hopper (for electronic version)

Before working, fill the hopper and enter how much seed is in the hopper. Only then the remaining quantity can be shown during operation.

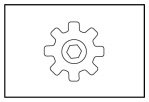
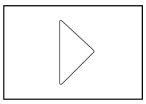
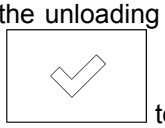
1. On the settings \ hopper screen, select the hopper to fill. The currently selected hopper is shown by the number in the upper area of the screen.
2. Press  to access to the filling \ hopper screen.
3. Press and hold  until the hopper cover is opened. The hopper is ready for filling. The currently adopted hopper content appears in the Remaining quantity parameter.
4. Fill the hopper with the desired quantity of fertilizer.
5. Press and hold  until the hopper cover is closed.
6. Enter how much fertilizer is in the hopper.
7. Set the remaining quantity to “0” if the hopper was empty before filling. 

8. For the “Refill” parameter, enter the quantity of fertilizer added to the “Remaining quantity”. If the hopper is completely filled, press  .

Unloading the hopper (for electronic version)

If there is still remains in the hopper after finishing work, it is possible to empty it.

To unload the hopper proceed as follows:

1. On the work screen, press  to access to the “UNLOAD” screen.
2. Select the metering unit wanted to use to unload the hopper.
3. Press  to start the unloading procedure on the implement.
   The “Calculated value” parameter shows the quantity that was unloaded until now.
4. Wait until the hopper is unloaded.
5. Stop the unloading procedure on the implement and press  to confirm.

Calibration test for electric driven ISOBUS (for electronic version)

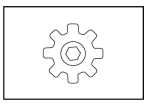
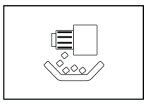
Perform a calibration when the machine is ready for operation.

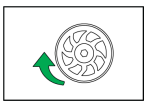
1. Make sure that the hopper is filled with a sufficient quantity of seed or fertilizer.

   NOTE: *Do not fill the hopper all the way, so that it is easier to remove or adjust a metering roll if necessary.*

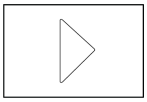
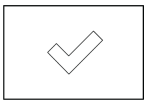
2. Check that the implement is at a standstill.
3. Stop the fan If the “Fan Monitor. Calibration” parameter is activated.

On the work screen, proceed as follows:

1. Press  to enter in settings.
2. Select the product for which to perform the calibration test.
3. Press  to enter in calibration settings.
4. Select the metering unit for which to perform the calibration test.
5. In the input box under the text “Working Speed”, enter the speed you want to use later on when seeding.
6. Enter the target rate with which to work later.
7. Enter a calibration factor, if known. For new products, the optimal calibration factor is calculated automatically.
8. Select the mode to use for calibration. In “Manual”, do not enter any other values. For “Area”, “Time” or “Revolutions”, enter the respective value up to which calibrate.
9. Press  to save the entered data in the database.

10. Press  to fill the metering cells with seed or with fertilizer.

    NOTE: *The metering cells rotate for a few seconds until the defined angle from the "Angle Pre-assignment" parameter has been reached*

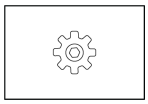
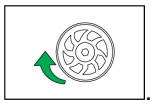
11. Press  to start the calibration.
12. Wait until the required quantity has been applied. The job computer calculates a weight from the available data and shows it in the field beside the text "Calculated Value".
13. Weigh the seed that was applied during the calibration and enter the weight into the "Weighed Value" field.
14. Press  to confirm.

Seeding operation (for electronic version)

Filling with seed

To be able to seed right from the beginning and to avoid having areas without seed at the beginning of the field, it is necessary to fill the metering cells on a seeder with seed before starting travel. It is possible also to use the pre-metering function.

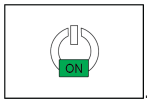
To start filling with seed, proceed as follows:

1. Press  and then for a seeder  .
2. Start driving once the icon of filling mode is turned off.

Start seeding

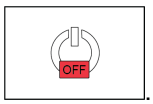
Before start seeding, be sure that:

- The implement is moving.
- The implement is lowered.
- The metering cells or the metering roll is filled with seed.
- The fan has reached the minimum revolution speed.

To start seeding press 

.

Stop seeding

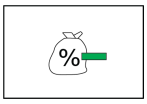
To stop seeding press 

.
The message: “Application is stopped.” appears in the work screen. This means that all of the metering drives are stopped.

Adjusting the target rate during operation

When working with several products, it is possible to adjust the target rate for each product.
A number then appears on the screen and on the function icons for each product.

To adjust the target rate, proceed as follows:

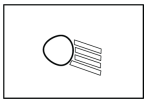
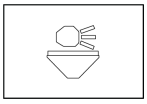
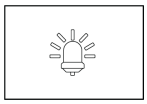
1. On the work screen, press  and the function icons for target rate adjustment appear.
2. Press  to increases the target rate.
   Press  to reduce the target rate.
   Press  to restore the target rate back to **100%**.
3. The target rate of the metering units will be changed and the job computer regulates the seeding according to the new target rate.

NOTE: *After one minute of work with the changed target rate, the display starts flashing.*

Switching the lighting on and off

On the work screen, press and the function icons for switching the lighting on and off appear.

On the work screen:

- Press  to switch working lights on and off.
- Press  to switch hopper lights on and off.
- Press  to switch beacon on and off.

Tramline control (for electronic version)

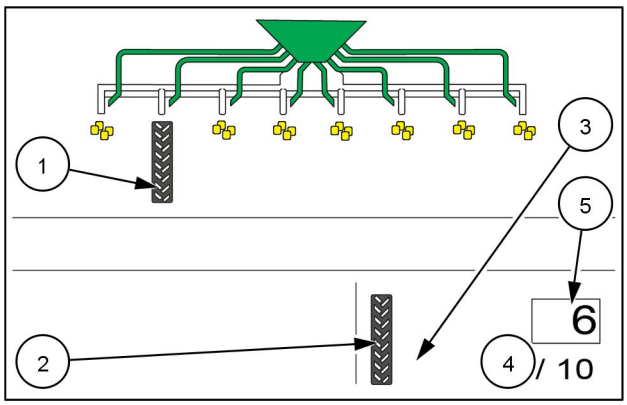
The job computer can help in creating tramlines for the tyres of other vehicles such as sprayers.
A tramline is created by closing the seed tubes to the seeding coulters. This creates an area behind the implement where there is no seeding.

When the tramline control is activated, the tracks are counted to create the tramlines for the defined tracks.

The tracks will be counted as soon as the time that was set for the “Delay Cycle Switching” parameter has been reached.

On the work screen there are five areas that are relevant for the creation of tramline:

- Area **(1)**: indicates that a tramline is being created.
- Area **(2)**: indicates that a tramline is being created on the left side of the implement.
- Area **(3)**: indicates that tramline control is not active on this side of the implement. Therefore, no tramline will be created for this track. No icon appears.
- Area **(4)**: indicates the tramline rhythm length, in particular the number of tracks until the tramline rhythm is repeated.
- Area **(5)**: indicates the number of the current track.



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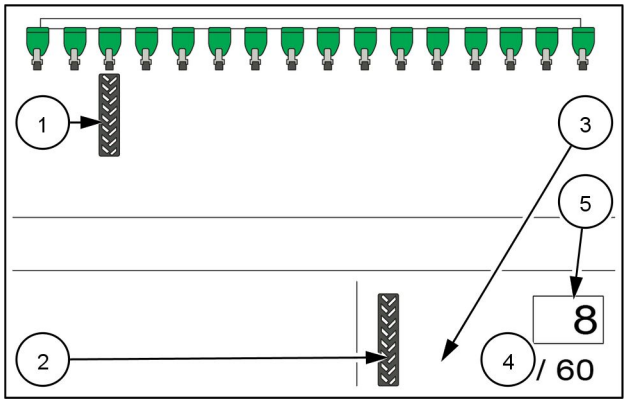

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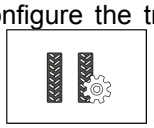
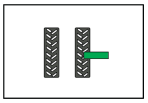
Controls

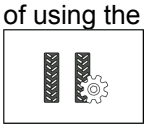
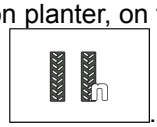
To configure the tramline controls, on the work screen press  and select one of the function icons.

Function icon	Meaning
	Increases the number of the track. This function icon is only shown when the metering unit is stopped.
	Reduces the number of the track. This function icon is only shown when the metering unit is stopped.
	Deactivates the tramline control. If tramline control is deactivated, the following icon  appears on the work screen. If this icon appears, the bout markers are also not switched further in automatic mode.
	Opens the screen for selecting a tramline rhythm for a seeder. Opens the screen to configure the tramline control for a precision planter.

Configuring the tramline control

To configure the tramline control in case of using a seeder, proceed as follows:

1. Determine the implement type.
2. Select a tramline rhythm.
3. If using a blockage system, adjust the blockage system for the tramline rhythm.

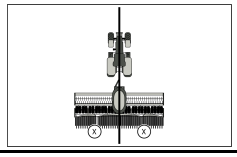
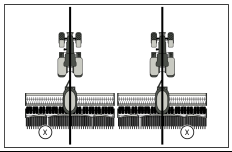
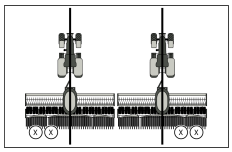
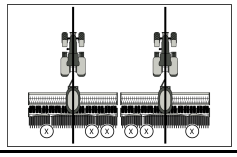
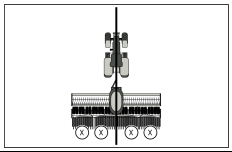
To configure the tramline control in case of using the precision planter, on the work screen press  and then  .
The “Settings / Tramlines” screen will appear.

Then configure the parameters:

- “Sprayer working width”: to define the working width of the sprayer for which to create the tramline.
- “Track width”: to define the track width of the tractor.
- “Rows per tramline”: to define how many rows to switch off for creating a tramline.
- “Working Start”: to define where start working (“Left Field Edge” or “Right Field Edge”).

Determining the machine type

In case of working with a seeder with tramline control, it is important to know where and how many tramline mechanisms are installed on the seeder. The following overview shows how tramline mechanisms can be installed on the seeder.

Configuration	Description
	One tramline mechanism on each side of the seeder.
	One tramline mechanism on one side of the seeder.
	Two tramline mechanisms on one side of the seeder.
	One tramline mechanism on one side and two tramline mechanisms on the other side of the seeder.
	Two tramline mechanisms on each side of the seeder.

Selecting tramline rhythm

Before selecting the tramline rhythm it is important to know:

- The working width of the implement.
- The working width of the sprayer.
- Which side of the seeder is used to create tramlines.
- How many tramline mechanisms the seeder has on each side.

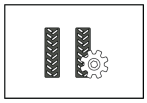
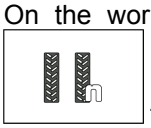
On the “Settings / Tramline” screen are shown:

- RhNo: that indicates the number of the tramline rhythm.
- Length: that indicates the number of tracks until the tramline rhythm is repeated.
- Left, Right: that shows the passes in which the “left” or “right” seed tubes are closed in order to create a tramline.
- Indiv: that defines the tramline rhythm.

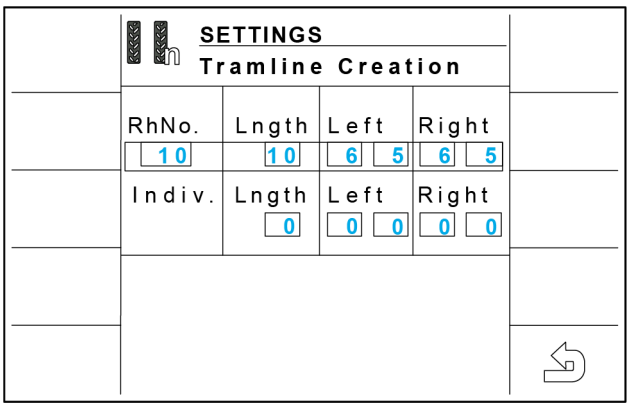
To select the proper tramline rhythm, proceed as follows:

1. Decide whether start working on the left or the right field edge.
2. Perform the following calculation: Working width of the sprayer / Working width of the seeder.

   NOTE: *The following results are possible: even numbers, uneven numbers and decimals.*
3. Find out which section contains the proper tramline rhythm starting from the previous result.
4. Select from the tables shown in this chapter, the one with the proper rhythm numbers.

   NOTE: *The tables can differ depending on the side of the seeder that is used to create the tramlines, the number of tramline mechanisms on the seeder and the working start.*
5. On the work screen, press  and then  to open the “Settings / Tramlines” screen. After select the proper rhythm number.

   NOTE: *Enter an individual tramline rhythm if the rhythm number indicated in the table is “999”.*



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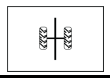
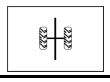
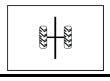
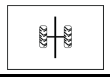
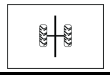
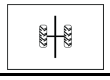
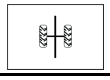
Creating an even tramline rhythm

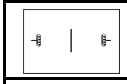
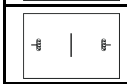
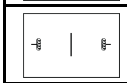
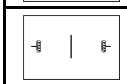
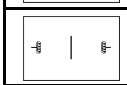
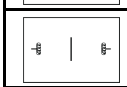
Two even tramline rhythms can be created during one or two passes. There can be three different configurations:

1. In one pass if the tramlines are created on both sides of the seeder.
2. In two passes if the tramlines are created on one side of the seeder and a tramline mechanism is installed on the side.
3. In one pass if the tramlines are created on one side of the seeder and two tramline mechanisms are installed on the side.

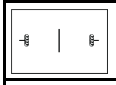
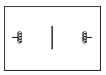
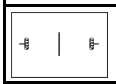
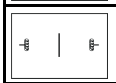
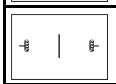
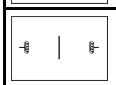
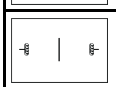
Creating tramlines on both sides of the seeder simultaneously

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	2	2s	2		1		1
	4	4s	4		2		2
	6	6s	6		3		3
	8	8s	8		4		4
	10	10s	10		5		5
	12	12s	12		6		6
	14	999	14		7		7

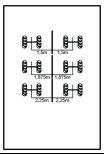
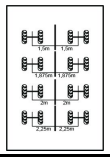
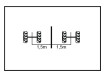
Creating tramlines on one side of the seeder and with only one tramline mechanism - Working start at the left field edge

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	2	2L	2			2	1
	4	4L	4	3	2		
	6	6L	6			4	3
	8	8L	8	5	4		
	10	10L	10			6	5
	12	12L	12	7	6		
	14	14L	14			8	7

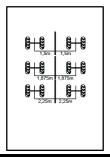
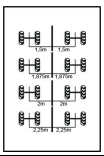
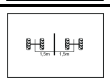
Creating tramlines on one side of the seeder and with only one tramline mechanism - Working start at the right field edge

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	2	2R	2	2	1		
	4	4R	4			3	2
	6	6R	6	4	3		
	8	8R	8			5	4
	10	10R	10	6	5		
	12	12R	12			7	6
	14	14R	14	8	7		

Creating tramlines on one side of the seeder and with two tramline mechanisms - Working start at the left field edge

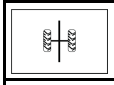
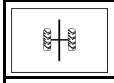
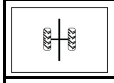
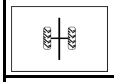
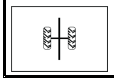
Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	2	999	2				1
	4	999	4		2		
	6	999	6				3

Creating tramlines on one side of the seeder and with two tramline mechanisms - Working start at the right field edge

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	2	999	2		1		
	4	999	4				2
	6	999	6		3		

Creating uneven tramline rhythms

Uneven tramline rhythms are always created in one track. Uneven tramline rhythms can only be created if the tramlines are created with both sides of the seeder.

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	3	3	3		2		2
	5	5	5		3		3
	7	7	7		4		4
	9	9	9		5		5
	11	11	11		6		6

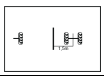
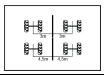
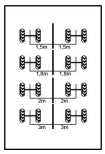
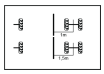
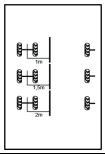
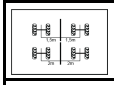
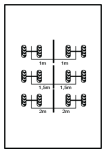
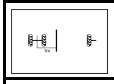
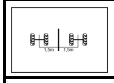
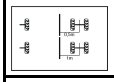
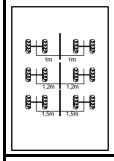
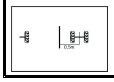
Creating special tramline rhythms

Special tramline rhythms are always created in four tracks. Special tramline rhythms can only be created if the tramlines are created with both sides of the seeder.

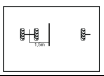
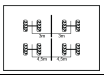
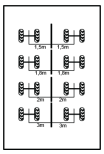
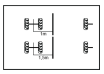
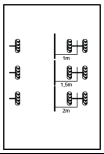
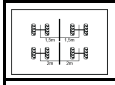
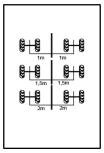
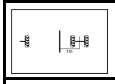
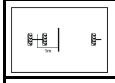
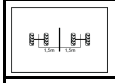
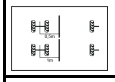
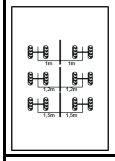
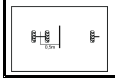
There can be two different configurations:

1. There is one tramline mechanism on one side of the seeder and two tramline mechanisms on the other side of the seeder.
2. Two tramline mechanisms are installed on both sides of the seeder.

Working start at the left field edge

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	1.33	999	4	3	2	1	4
	1.5	22	6	4	3	6	1
	2.5	16	10	7	4	9	2
	2.67	62L	8	5	4	7	2
	3.33	20	10	9	2	6	5
	3.5	28	14	13	2	9	6
	4.5	18	18	16	3	12	7
	4.67	63L	14	3	12	7	8
	5.33	24	16	9	8	14	3
	5.5	65L	22	14	9	3	20
	6.67	64L	20	10	11	4	17
	7.5	30	30	27	4	19	12
	9.33	999	28	14	15	5	24

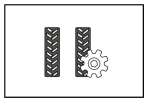
Working start at the right field edge

Possible position of the flaps	Result of the calculation	Rhythm Number	Length	Left		Right	
	1.33	999	4	1	4	3	2
	1.5	23	6	6	1	4	3
	2.5	15	10	9	2	7	4
	2.67	62R	8	7	2	5	4
	3.33	21	10	6	5	9	2
	3.5	29	14	9	6	13	2
	4.5	19	18	12	7	16	3
	4.67	63R	14	7	8	3	12
	5.33	25	16	14	3	9	8
	5.5	65R	22	3	20	14	9
	6.67	64R	20	4	17	10	11
	7.5	31	30	19	12	27	4
	9.33	999	28	5	24	14	15

Programming individual tramline rhythms

If the tramline rhythms stored do not match the work method, it is possible to program an individual tramline rhythm.

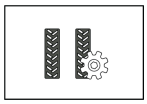
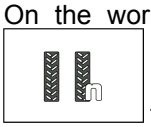
To program the tramline rhythm, proceed as follows:

1. On the work screen, press  and then  to open the “Settings / Tramlines” screen.
2. In the “RhNo.” field, select rhythm number “999”.
3. Configure the “Length”, “Left” and “Right” parameters for individual tramline rhythm.
4. The values entered will remain in the screen also when some other tramline rhythm are selected. To use an individual tramline rhythm, always select the “RhNo.” “999”.

Adjusting the blockage system for the tramline rhythm

If a blockage system is used to control the seed or fertilizer flow in each seed tube, it is necessary to adjust it for the selected tramline rhythm.

To adjust the blockage system, proceed as follows:

1. On the work screen, press  and then  to open the “Settings / Tramlines” screen.
2. In the “Number of Each Sensor” area, enter which blockage system sensors to switch off for the respective tramline.

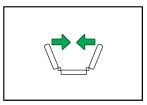
   NOTE: *It is possible to switch off a maximum of ten sensors per tramline.*

Operating the hydraulic system with the job computer (for electronic version)

The job computer is used to adjust the position of the hydraulic valves so that the oil pressure is routed to specified parts of the seeder.
When operating the seeder with the job computer, remember that the job computer cannot control the oil pressure.

NOTE: *Use the control unit in the tractor to generate pressure in the system.*

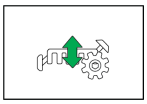
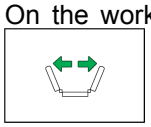
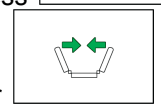
To operate this system using the job computer, proceed as follows:

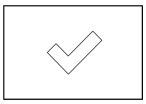
1. Press on the work screen  to fold the seeder.
2. Actuate the control unit of the hydraulic system in the tractor that is responsible for folding the implement. Doing that the pressure increases.
3. Remove the pressure from the valve, the implement will be unfolded.

Folding the implement

It is possible to fold or unfold the implement when it is lifted and at a standstill.

NOTE: *Start working only when the implement is unfolded.*

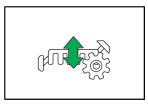
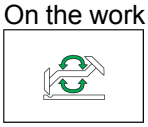
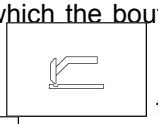
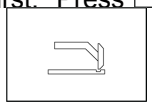
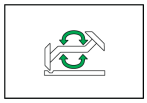
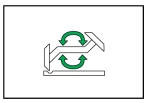
On the work screen press  and then press  to unfold or  to fold the implement.

Press  to confirm.

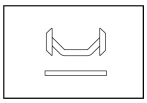
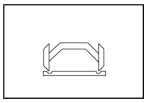
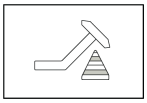
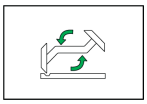
Operating bout markers

It is possible to use bout markers to mark a pass.

To operate bout markers, proceed as follows:

1. On the work screen press  and then press  to use the bout markers alternately.
2. Select the side on which the bout marker should be lowered first. Press  to use the left bout marker or  to use the right bout marker.
3. Press  to activate automatic bout marker control.
4. Press  again to switch between the left and the right bout markers.

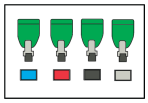
Other available functions are:

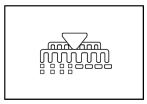
-  To deactivate both bout markers.
-  To use both bout markers at the same time.
-  To lift the bout marker to pass over obstacles.
-  To change the bout markers manually.

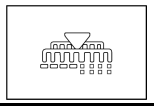
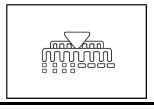
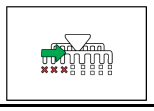
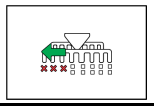
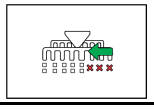
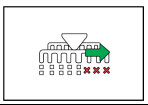
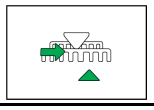
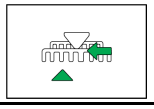
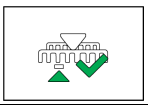
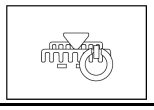
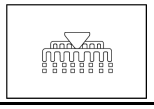
Operating section control

With section control, it is possible to switch the sections of the implement. The size of the respective sections to switch depends on the implement type and equipment.
On the work screen are shown which sections are switched on or off.

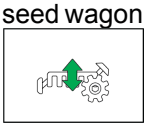
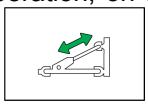
For precision planters, the rows may have the following statuses:

-  The row is activated during application.
-  The row is deactivated during application by section-control or the user.
-  The row will be activated as soon as the application has been started.
-  The row remains deactivated as soon as the application has been started.
-  The row is marked to be permanently switched on or off.

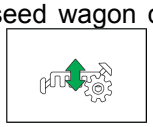
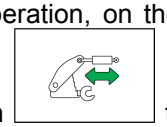
On the work screen press  and perform the desired switching selecting one of the function icons.

Function icon	Meaning
	Switches the left half width on or off.
	Switches the right half width on or off.
	Switches off from left to right.
	Switches on from right to left
	Switches off from right to left.
	Switches on from left to right.
	Moves the cursor on the work screen from left to right.
	Moves the cursor on the work screen from right to left.
	Marks the section/row that was selected with the cursor for switch-off.
	Switches all of the marked sections/rows off or on.
	Switches everything on.

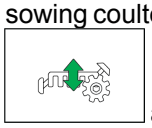
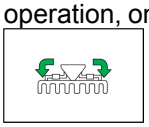
Adjusting the drawbar position

By adjusting the drawbar position, the implement is pressed deeper into the soil. **100%** corresponds to the maximum traveling distance of the hydraulic cylinder.
To adjust and view the drawbar position of the seed wagon during operation, on the work screen press  and then  to activate the hydraulic function.

Adjusting the top link position of the three-point hitch

By adjusting the top link position of the three-point hitch, the percent value indicates the position of the top link. And therefore **100%** corresponds to the maximum traveling distance of the hydraulic cylinder.
To adjust and view the top link position of the three-point hitch of the seed wagon during operation, on the work screen press  and then  to activate the hydraulic function.

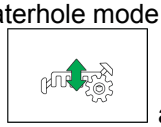
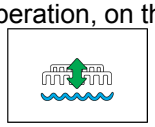
Adjusting the placement depth

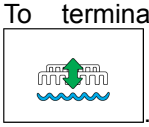
To adjust the placement depth of the sowing coulter during operation, on the work screen press  and then  to activate the hydraulic function.

Using the waterhole mode

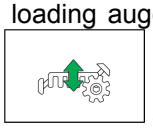
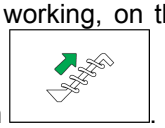
It is possible to lift or lower the implement while working without interruption. By doing so, prevent:

- The implement from sinking into a puddle.
- A new track from being counted.
- The tramline from being switched.

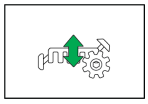
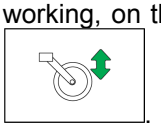
To use the waterhole mode during operation, on the work screen press  and then  to activate the icon of the waterhole mode.

To terminate the waterhole mode press again  .

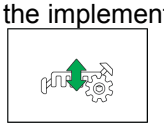
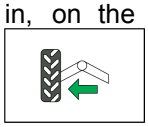
Activating the loading auger

To activate a loading auger while working, on the work screen press  and then  .

Lifting and lowering the tail wheel

To lift and lower a tail wheel while working, on the work screen press  and then  .

Using the wheel adjustment

To change the track width before the implement is folded in, on the work screen press  and then  to activate the wheel adjustment.

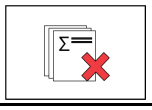
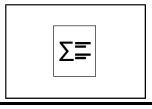
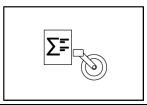
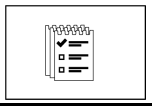
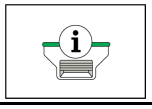
Viewing results on the job computer (for electronic version)

Results

The “Results” screen shows how much of each product spread and on which area. It is possible to reset the counters on this screen before starting work.

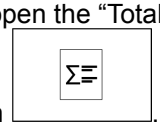
To open the “Results” screen press  and the following counters are available:

- “Area”: indicates the area on which the implement was in work position.
- “Quantity”: indicates the applied quantity.
- “Area Output”: indicates the applied area per hour.

Function icon	Meaning
	Resets the counter.
	Calls up the “Total Results” screen.
	Calls up the “Row Results” screen.
	Calls up the “Task List” screen.
	Calls up the “Results / hopper” screen.

Total results

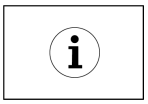
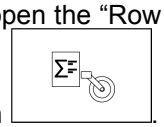
The “Results” screen shows the counter that documents the work performed since the initial startup of the job computer.

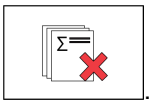
To open the “Total results” screen press  and then  .
The following counters are available:

- “Service Hours: indicates the time for which the job computer is switched on.
- “Total Time”: indicates the time for which the job computer was spreading.
- “Total Distance”: indicates the processed distance.
- “Total Area”: indicates the applied area.
- “Total Quantity”: indicates the for each metering unit.
- “Area Output”: indicates the applied area per hour.

Row results

The “Row results” screen shows how many seeds were spread in each row. These results can only be seen with implements that have counter results for each row.

To open the “Row results” screen press  and then  .

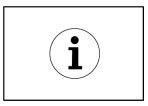
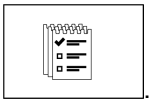
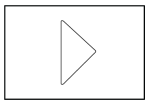
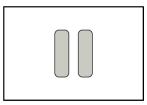
To clear the counter press  .

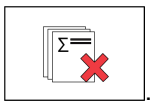
Task Counter

The task counter serves to document task-related results. The data cannot be exported.
The function is intended for users who are working without ISO-XML.

NOTE: *It is possible to maintain up to 30 task counters. Each can be started or stopped at any time.*

To start and stop a task counter:

1. On the work screen, press  and then  .
2. In the “Task” parameter, select a task or create or new task.
3. Use the “Renaming” parameter to give the task a different name.
4. In the “Product” parameter, select the product to spread with this task.
5. Press  to start the counter. A green icon appears beside the task name.
6. Press  to stop the counter.

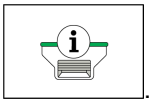
To clear the counter press  .

The following counters are available:

- “Area”: indicates the area on which the implement was in work position.
- “Quantity”: indicates the applied quantity.
- “Area Output”: indicates the applied area per hour.
- “Total Time”: indicates the time for which the job computer was spreading.

Remaining quantity results

On the “Results / hopper” screen, it is shown the counters that show the quantity remaining in the hopper and how much work can still be performed with the remaining hopper content.

To open the “Results / hopper” screen press  and then  . The following counters are available:

- “Rem. quantity”: indicates the remaining hopper content.
- “Rem. area”: indicates the area that can still be worked with the current hopper content.
- “Rem. distance”: indicates the distance that can still be covered with the remaining hopper content.

7 - MAINTENANCE

General information

General

⚠ WARNING

Improper operation or service of this machine can result in an accident.
If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.
Failure to comply could result in death or serious injury.

W0157A

⚠ WARNING

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.
1. Disengage all drives.
2. Engage parking brake.
3. Lower all attachments to the ground, or raise and engage all safety locks.
4. Shut off engine.
5. Remove key from key switch.
6. Switch off battery key, if installed.
7. Wait for all machine movement to stop.
Failure to comply could result in death or serious injury.

W0047A

⚠ WARNING

Cutting hazard!
Use care handling sharp components. Always wear appropriate Personal Protective Equipment (PPE), including heavy gloves.
Failure to comply could result in death or serious injury.

W1267A

NOTICE: *Be sure that all the service operations in this chapter are carried out punctually at the intervals given, in order to ensure optimum performance levels and maximum safety when using the implement.*

Adequate lubrication and maintenance on a regular schedule is vital to maintain your implement. To ensure long service and efficient operation, follow the lubrication and maintenance schedules outlined in this operator's manual. The use of proper, oils, grease, and filters, as well as keeping the systems clean, will also extend the implement and components life.

NOTICE: *Failure to complete the required maintenance at the recommended intervals can cause unnecessary downtime.*

Use the intervals listed in the maintenance chart as guidelines when you operate in normal conditions. Adjust the intervals when you operate in adverse environmental and working conditions. Shorten the intervals for sandy, dusty, and extremely hot operating conditions.

NOTICE: *While any company can perform necessary maintenance or repairs on your implement, KONGSKILDE strongly recommends that you use only authorized KONGSKILDE dealers and products that meet given specifications. Improperly or incorrectly performed maintenance and repair voids the equipment warranty and may affect service intervals.*

Always disengage the hydraulic pressure and power, activate the parking brake and stop the tractor engine before you:

1. Lubricate the implement.
2. Clean the implement.
3. Disassemble any part of the implement.
4. Adjust the implement manually.
5. Connect and disconnect electronics and electrical equipment.

When you repair or maintain the implement it is especially important to ensure the correct personal safety. Therefore, always park the tractor and the implement safely.

Turn off the tractor engine before repair, maintenance and cleaning the implement, to solve any problems related to any malfunctions of the implement. Always turn off engine, take out the key from the ignition and pull the hand brake.

Secure the implement by applying suitable supports before performing maintenance works with the implement in the raised position.

Check and torque all the bolts regularly.

Switch off the electric power supply before doing anything with the electrical system.

Disconnect the cables from the alternator and battery of the tractor before electrically welding of parts of a tractor and the drill implement installed on it.

Used and destroyed parts must be unconditionally replaced with the next possible opportimplementy in order to ensure that the implement operates correctly and safely.

Use only original spare parts and consumables, manufactured by KONGSKILDE.

Cleaning and maintenance

After you finish to work with the implement, clean it thoroughly.

Before you clean the implement:

1. Turn off the drive.
2. Turn off the engine.
3. Remove the key from the ignition.
4. Disconnect the power supply from the implement.

Before you clean the implement, make sure that the implement is properly secured against unintentional rolling.

To protect your health, always wear adequate protective equipment when you clean the implement.

Do not clean hydraulic cylinders, bearings, or any other electrical elements using high-pressure implements.

Torque

Minimum hardware tightening torques (in N m or lb in /lb ft) for normal assembly applications unless otherwise stated

The minimum hardware tightening torque on drawings, in specifications, etcetera have priority.
In the following tables, torque specifications are shown following the standard **ENS7001**, applicable for material class 8.8 and material class 10.9.

Hex head bolts

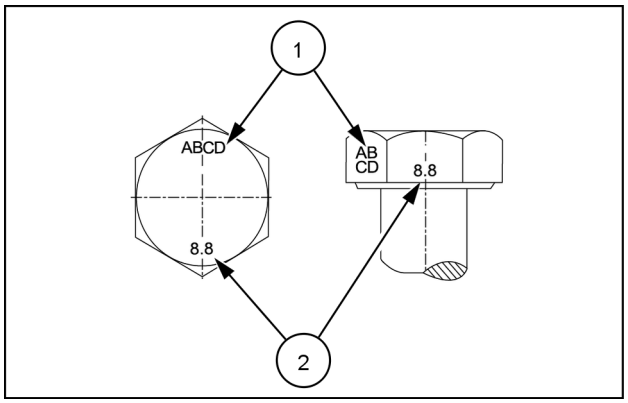
	Class 8.8 in N m (lb in or lb ft)			Class 10.9 in N m (lb in or lb ft)		
Nominal Size	**Plated nut**	**Lock nut**	**Hardened nut/Oiled plated nut**	**Plated nut**	**Lock nut**	**Hardened nut/Oiled plated nut**
M3	**1.3 N·m (11.5 lb in)**	**0.7 N·m (6.2 lb in)**	**1.2 N·m (10.6 lb in)**	**1.8 N·m (15.9 lb in)**	**0.9 N·m (8.0 lb in)**	**1.6 N·m (14.2 lb in)**
M4	**2.9 N·m (25.7 lb in)**	**1.6 N·m (14.2 lb in)**	**2.6 N·m (23.0 lb in)**	**4.2 N·m (37.2 lb in)**	**2.3 N·m (20.4 lb in)**	**3.7 N·m (32.7 lb in)**
M5	**5.9 N·m (52.2 lb in)**	**3.2 N·m (28.3 lb in)**	**5.3 N·m (46.9 lb in)**	**8.5 N·m (75.2 lb in)**	**4.6 N·m (40.7 lb in)**	**7.6 N·m (67.3 lb in)**
M6	**10.1 N·m (89.4 lb in)**	**5.5 N·m (48.7 lb in)**	**9.1 N·m (80.5 lb in)**	**14.5 N·m (10.7 lb ft)**	**7.9 N·m (69.9 lb in)**	**13 N·m (9.6 lb ft)**
M8	**24.5 N·m (18.1 lb ft)**	**13.5 N·m (10.0 lb ft)**	**22 N·m (16.2 lb ft)**	**35.1 N·m (25.9 lb ft)**	**19.3 N·m (14.2 lb ft)**	**31.5 N·m (23.2 lb ft)**
M10	**48.7 N·m (35.9 lb ft)**	**26.8 N·m (19.8 lb ft)**	**43.8 N·m (32.3 lb ft)**	**69.5 N·m (51.3 lb ft)**	**38.2 N·m (28.2 lb ft)**	**62.5 N·m (46.1 lb ft)**
M12	**85 N·m (62.7 lb ft)**	**46.7 N·m (34.4 lb ft)**	**76.5 N·m (56.4 lb ft)**	**121 N·m (89.2 lb ft)**	**66.5 N·m (49.0 lb ft)**	**108.9 N·m (80.3 lb ft)**
M14	**135 N·m (99.6 lb ft)**	**74.2 N·m (54.7 lb ft)**	**121.5 N·m (89.6 lb ft)**	**193 N·m (142.3 lb ft)**	**106.1 N·m (78.3 lb ft)**	**173.7 N·m (128.1 lb ft)**
M16	**210 N·m (154.9 lb ft)**	**115.5 N·m (85.2 lb ft)**	**189 N·m (139.4 lb ft)**	**301 N·m (222 lb ft)**	**165.5 N·m (122.1 lb ft)**	**270.9 N·m (199.8 lb ft)**
M18	**299 N·m (220.5 lb ft)**	**164.4 N·m (121.3 lb ft)**	**269.1 N·m (198.5 lb ft)**	**414 N·m (305.4 lb ft)**	**227.7 N·m (167.9 lb ft)**	**372.6 N·m (274.8 lb ft)**
M20	**425 N·m (313.5 lb ft)**	**233.72 N·m (172.4 lb ft)**	**382.5 N·m (282.1 lb ft)**	**587 N·m (432.9 lb ft)**	**322.8 N·m (238.1 lb ft)**	**528.3 N·m (389.7 lb ft)**
M22	**579 N·m (427 lb ft)**	**318.4 N·m (234.8 lb ft)**	**521.1 N·m (384.3 lb ft)**	**801 N·m (590.8 lb ft)**	**440.5 N·m (324.9 lb ft)**	**720.9 N·m (531.7 lb ft)**
M24	**735 N·m (542.1 lb ft)**	**404.2 N·m (298.1 lb ft)**	**661.5 N·m (487.9 lb ft)**	**1016 N·m (749.4 lb ft)**	**558.8 N·m (412.1 lb ft)**	**914.4 N·m (674.4 lb ft)**
M27	**1073 N·m (791.4 lb ft)**	**590.1 N·m (435.2 lb ft)**	**967.5 N·m (713.6 lb ft)**	**1486 N·m (1096 lb ft)**	**817.3 N·m (602.8 lb ft)**	**1337 N·m (986.1 lb ft)**
M30	**1461 N·m (1077.6 lb ft)**	**803.5 N·m (592.6 lb ft)**	**1315 N·m (969.9 lb ft)**	**2020 N·m (1489.9 lb ft)**	**1111 N·m (819.4 lb ft)**	**1818 N·m (1340.9 lb ft)**

Flange head bolt/Flange nut

Nominal Size	Class 10.9 in N m (lb ft)
M3	**2.0 N·m** (**1.5 lb ft**)
M4	**4.6 N·m** (**3.4 lb ft**)
M5	**9.4 N·m** (**6.9 lb ft**)
M6	**15.9 N·m** (**11.7 lb ft**)
M8	**38.7 N·m** (**28.5 lb ft**)
M10	**76.5 N·m** (**56.4 lb ft**)
M12	**134 N·m** (**98 lb ft**)
M14	**213 N·m** (**157 lb ft**)
M16	**331 N·m** (**244 lb ft**)
M18	**455 N·m** (**336 lb ft**)
M20	**645 N·m** (**476 lb ft**)
M22	**881 N·m** (**650 lb ft**)
M24	**1118 N·m** (**824 lb ft**)
M27	**1635 N·m** (**1206 lb ft**)
M30	**2222 N·m** (**1639 lb ft**)
M36	**3880 N·m** (**2862 lb ft**)

Identification markings

Metric hex head, flange hex head and carriage bolts, Classes (CL) 5.6 and upward

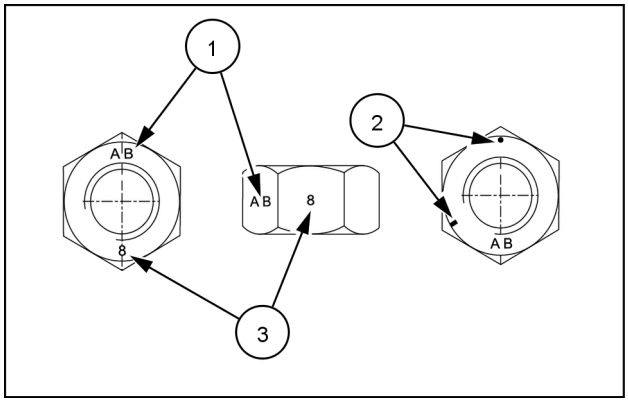


NHIL14RB00662AA 1

Metric bolt identification markings

1. Manufacturer's identification
2. Property class

Metric hex nuts and locknuts, Classes (CL) 05 and upward



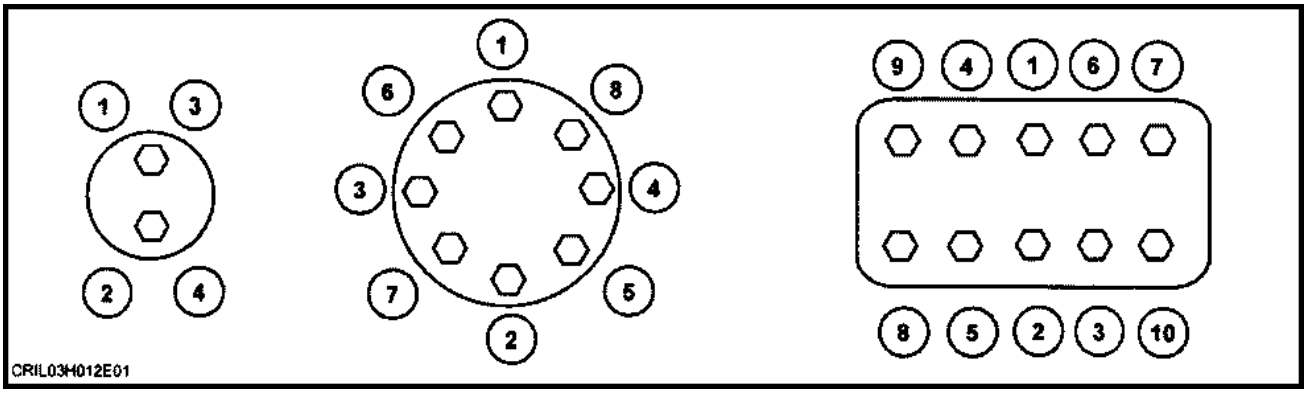
NHIL14RB00663AA 2

Metric hex nut identification markings

- **(1)** – Manufacturer's identification
- **(3)** – Property class
- **(2)** – Clockwise type markings indicate property class and may include manufacturer identification (if applied), Example: property marks **240°** apart (shown) at the eight o'clock position indicate a Class 8 property, and marks **300°** apart at the ten o'clock position indicate a Class 10 property.

Torque tightening sequence

NOTICE: *Shown below is the suggested initial torque tightening sequences for general applications, tighten in sequence from item 1 through to the last item of the hardware.*



DF5019-1 3

Grease fittings and intervals

Regular lubrication is the best insurance against delays and repairs. Proper lubrication will extend the life of the implement.

Grease fittings

On new implements, the grease fitting may be covered with paint. Remove the paint to ensure the grease fitting can accept grease.

Wipe the dirt from all of the fittings and from the grease gun nozzle before you grease the implement to minimize the chance of contamination.

Pump fresh grease into the fitting to adequately lubricate the component and force out any contamination from the grease passage. Wipe off any excess grease.

Follow the lubrication schedule outlined in this operator's manual. Refer to the illustrations to identify each grease fitting on this implement.

Not all grease fittings are readily visible. Various grease fittings can only be accessed through the removal of shields or guards. Always install the shields or guards before you operate the implement.

Grease guns

Different types of grease guns provide a different amount of grease per pump of the handle.

Two commonly used grease gun types are as follows:

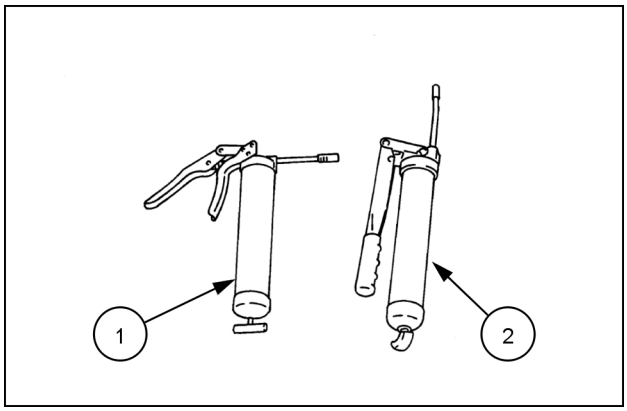
(1) Pistol grip-style grease gun

(2) Lever-style grease gun

In general, a pistol grip-style grease gun injects half of the amount of grease per pump as a lever-style grease gun.

For listed components to grease on this implement, the number of pumps of grease for each grease location are based on the use of a pistol grip-style grease gun **(1)**.

If you use a lever-style grease gun, use only half of the indicated number of pumps of grease.



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Grease specification

See Page **7-9** for the correct grease specification.

Pressure washing

⚠ WARNING

Flying debris!
Always wear protective clothing and safety glasses or a face shield when using a steam cleaner or power washer.
Failure to comply could result in death or serious injury.

W0314A

NOTE: *Legislation in certain countries and good practice requires special treatment of waste water through sedimentation and oil separation and controlled removal of residues.*

Before you use pressure washing, clean the implement with compressed air.

Avoid pressure washing at ambient temperatures below **10 °C** (**50 °F**) or when the implement is wet. Place the implement in a heated workshop or dry barn for at least **24 h**. Clean the implement only when fully dry.

Be careful when you clean the implement with a high pressure washing. Avoid to direct water jets on electric equipment, bearings, seals, gearboxes, etcetera.

Grease all grease fittings carefully after you clean the implement to press possible water outside bearings.

When you use a high pressure washer:

- Keep a minimum distance of **30 cm** (**12 in**) between the spray gun and the surface to be cleaned.
- Spray under an angle of minimum **25°** (do not spray straight at the implement).
- Maximum water temperature: **60 °C** (**140 °F**).
- Maximum water pressure: **60 bar** (**870 psi**).
- Do not use chemicals.

NOTICE: *On the cylinders, do NOT direct the stream of a high pressure washer at the wiper seal. Water could come through the rod guide and create corrosion. This corrosion could generate pollution and seizing of the cylinder rod and the rod guide.*

Fluids, lubricants, and capacities

Application	Capacity	Product name	Specification(s)
Grease fittings	-	- **PETRONAS GREASE LI 0 EP**	**M1C 137-A**
Chains	-	**TUTELA HYPOIDE EP 85W-140 NT**	**MAT3511**
Gearbox oil	-	**TUTELA HYDROSYSTEM HI-TECH 46**	**ISO VG-46**

Maintenance planning

Overview

Maintenance action	Check	Lubricate	Grease	Adjust	Change fluid		Page no.
Every 20 hours							
20 hours grease fittings	x						**7-11**
Chains - Lubricate		x					**7-12**
Every 50 hours or weekly							
Gearbox oil level - Check			x				**7-13**
Chains - Adjust				x			**7-13**
Every 100 hours							
100 hours grease fittings	x						**7-14**
Tire pressure - Check (if equipped)			x				**7-14**
Every beginning of the season							
Gearbox oil – Change fluid					x		**7-15**
Tire pressure - Check (if equipped)			x				**7-14**

After the first 10 hours

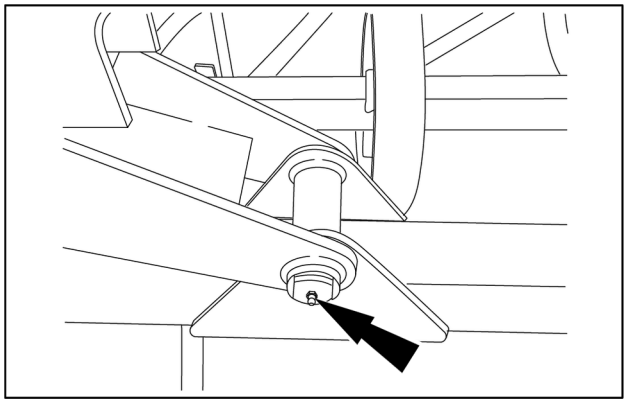
Nuts and bolts

Torque again all the bolts, the nuts and the fasteners after the first **10 h** of work.

Every 20 hours

20 hours grease fittings

Folding joints (4x)



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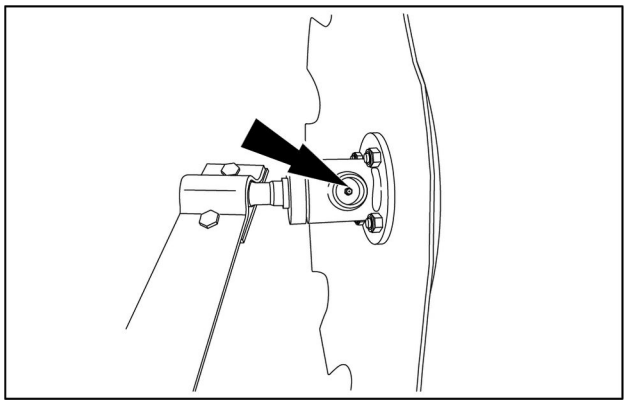
Marker disc bearings (2x)



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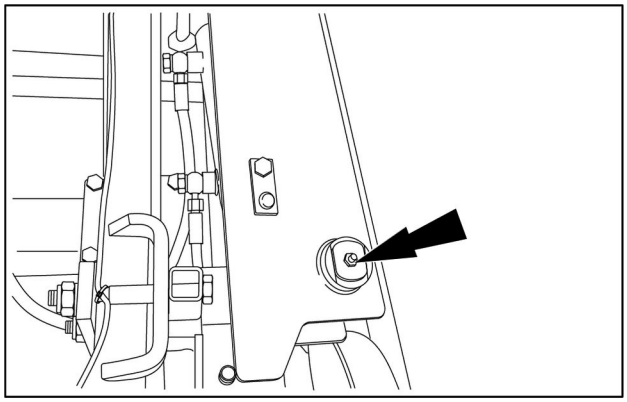
Marker arm (2x)



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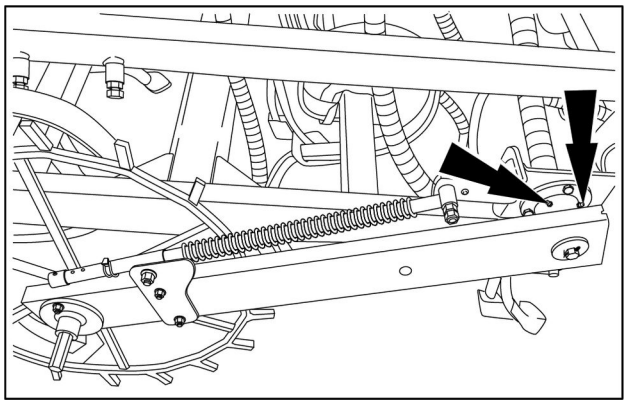
Joint for land wheel



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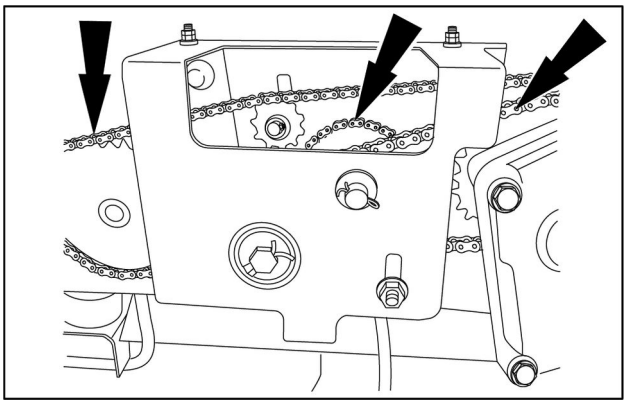
Chains - Lubricate

1. Remove any cover or shield to have access to the chains.
2. Lubricate all the chains. For fluids and lubricants specifications, see Page **7-9**.



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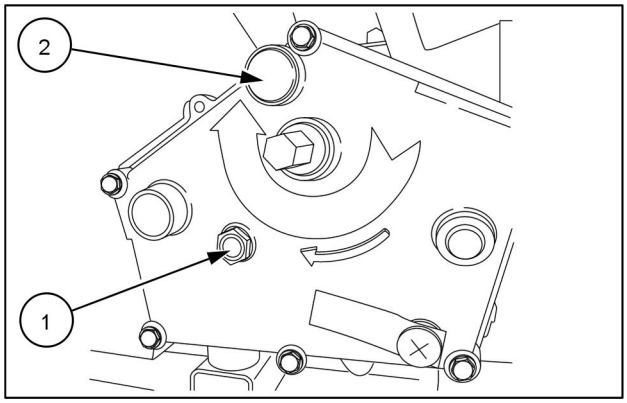
Every 50 hours or weekly

Gearbox oil level - Check

Check the gearbox oil level as follows:

1. Park the implement on level ground.
2. Check through the sight glass **(1)** that the oil level is above the normal level mark.
3. If necessary, remove the filler cap **(2)** and fill up with oil as necessary. For fluids and lubricants specifications, see Page **7-9**.



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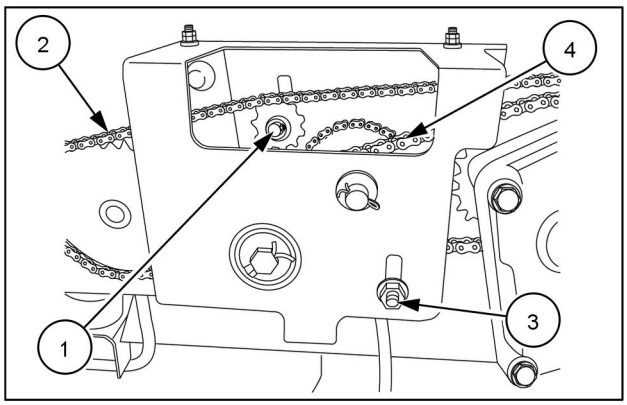
Chains - Adjust

Check the tension of the chains weekly to ensure optimum operation.

To adjust the chains tension, proceed as follows:

1. Remove any cover or shield to have access to the chains.
2. Tighten the nut **(1)** to achieve the correct tension of the chain **(2)**.
3. Tighten nut **(3)** to achieve the correct tension of the chain **(4)**.



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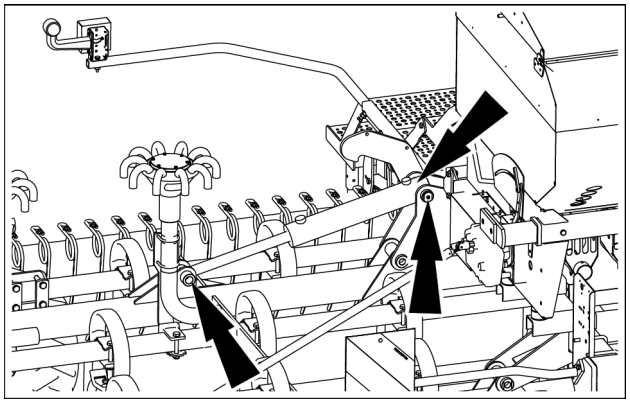
Every 100 hours

100 hours grease fittings

Cylinder joints (2x)



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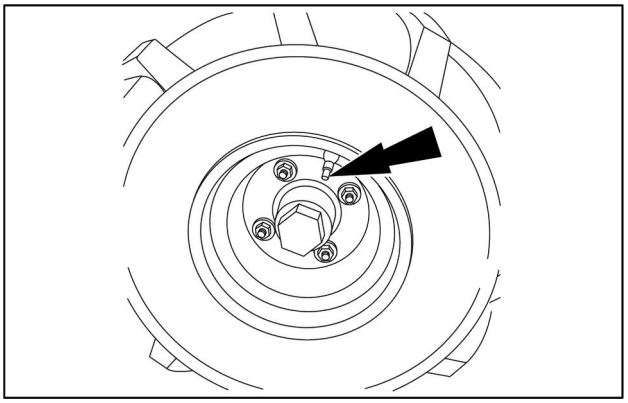
Nuts and bolts

Torque all the bolts, the nuts and the fasteners every **100 h** of work. If necessary, tighten all loosened elements you come across.

Tire pressure - Check (if equipped)

Check the wheels and tire pressure every **100 h** of operation.

NOTE: *For recommended tire pressure, see Page* ***9-6****.*



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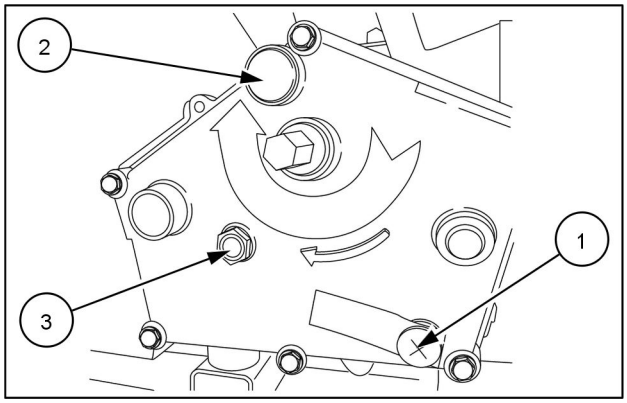
Every beginning of the season

Gearbox oil – Change fluid

The gearbox oil should be replaced before every season. Proceed as follows:

1. Remove the drain plug **(1)** and drain the gearbox oil into a suitable container.
2. Install the drain plug **(1)**.
3. Remove the filler cap **(2)**.
4. Refill the oil as necessary. For oil specifications, see Page **7-9**.
5. Check through the sight glass **(3)** that the oil level is above the normal level mark.
6. Insert the filler cap **(2)**.



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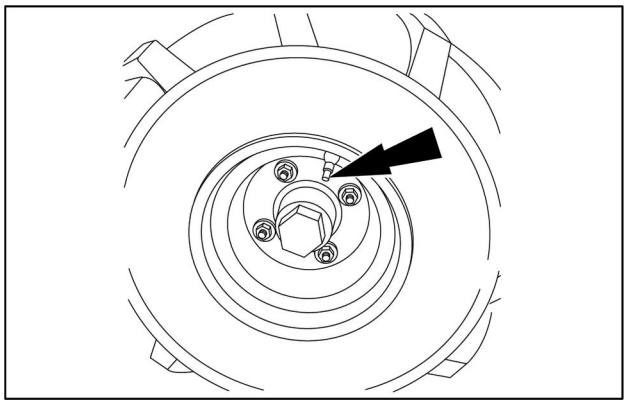
Tire pressure - Check (if equipped)

Check the wheels and tire pressure every beginning of the season.

NOTE: *For recommended tire pressure, see Page* ***9-6****.*



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Storage

End of season service

When the season is over, prepare the implement for the storage immediately.

To prepare the implement for winter storage, proceed as follows:

1. Clean the implement thoroughly. Dust and dirt absorb moisture and moisture increases the formation of rust.
2. Store the implement in a dry place, protected against wind and weather in the best possible way.
3. Store the implement in a safe place, not accessible for children.
4. Grease all grease fittings after you clean the implement. See Page **7-10**.
5. Clean and then lubricate all the chains.
6. During longer operation pauses grease the exposed surfaces of tines, scrapers and rollers in order to prevent the formation of rust.
7. Check the implement for damaged parts, loose screw-joints, leakage, wear and other defects carefully before the storage. If there is any damage, it may be forgotten during the storage and result in problems the following season. Note down the necessary parts you will need before the next season and order the spare parts.

NOTE: *Periodic checks will help to keep your implement maintenance and repairs to a minimum and avoid costly breakdowns during the season. Therefore, it is good practice to have the implement inspected at the end of the season.*

Implement long-term storage and/or disposal

When the implement reaches the end of its useful life, observe the following recommendations for disposal:

- See your KONGSKILDE dealer to make an agreement for your dealer to properly dispose of the implement, or
- Sell the implement to a company that specializes in the proper disposal of industrial machinery.

If you want to keep the implement on your premises (for spare parts or other reusable components, etc.) you must observe the following instructions:

1. Park the implement on hard and level ground. Bring all moveable components to the lowest position and/or safest position.
2. Store the implement with the axles on wooden blocks in order to keep the implement upright, as the tires will deflate over time.
3. Drain the oil from gearbox, and hydraulic systems into appropriate containers. Take the oil to your local waste recycling facility. Pay attention to local rules that may require you to store the different types of oils separately. Remove the filters (if available).

   NOTE: *The implement is now ready for a long-term storage and/or for scrapping after the removal of reusable components.*

Long-term storage

The assigned storage life for the implement is minimum seven years, during this time the implement must be packed in a dry and clean place without condensation.

NOTE: *All the requirements for the storage of the implement must be met.*

Scrapping

When you scrap the vehicle, you must keep materials apart. Separate the following:

- Plastics
- Rubber hoses
- Belts
- Electric and electronic components
- Tires
- Wiring harnesses
- Sheet metal
- Castings
- Weld assemblies
- Aluminium
- Any other additional category

NOTE: *See your local waste recycling facility for specific rules on how to deliver the scrapped materials.*

When you dismount mechanical systems, make sure that there is no risk of residual energy (such as compressed springs in belt variators). If you do not have the proper tools or instructions to disassemble a system or component, contact your KONGSKILDE dealer to perform this service.

NOTE: *Make sure that the implement maintains stability during the dismantling process.*

Ordering parts and/or accessories and / or accessories

When you prepare the implement for storage, check thoroughly for any parts that may have become worn and need replacing.

Order and install the spare parts and/or accessories at once before the next season.

When you order spare parts, always make sure to give your KONGSKILDE dealer the model number and the Product Identification Number (PIN) of your implement. See “Product identification” in Chapter 1 of this operator’s manual.

Insist on genuine KONGSKILDE “quality” spare parts as they will give the best performance and are covered by our warranty.

For best performance, have your implement serviced by an authorized KONGSKILDE dealer.

8 - TROUBLESHOOTING

Fault code resolution

General

This chapter describes the easy diagnostic methods for generic problems and the related remedies for them. If you cannot find the cause of a problem or solve a problem, consult the KONGSKILDE dealer.

Troubleshooting (for rear mounted hopper version)

Problem	Possible Cause	Correction
High sowing rate.	Wrong calibration.	Adjust the regulating handle's indicator to correspond to a smaller value on the scale and make a new sowing test. See Page **6-11**.
	Soil conditions.	Make a supplementary calibration test in the field. See Page **6-11**.
	Wrong tires pressure.	Set the correct tires pressure. See Page **9-6**.
Low sowing rate.	Wrong calibration.	Adjust the regulating handle's indicator to correspond to a higher value on the scale and make a new sowing test. See Page **6-11**.
	Soil conditions.	Make a supplementary calibration test in the field. See Page **6-11**.
	Wrong tires pressure.	Set the correct tires pressure. See Page **9-6**.

Troubleshooting (for front mounted hopper version)

Problem	Possible Cause	Correction
High sowing rate.	Wrong calibration.	Adjust the regulating handle's indicator to correspond to a smaller value on the scale and make a new sowing test. See Page **6-18**.
	Soil conditions.	Make a supplementary calibration test in the field. See Page **6-18**.
	Wrong tires pressure.	Set the correct tires pressure. See Page **9-6**.
Low sowing rate.	Wrong calibration.	Adjust the regulating handle's indicator to correspond to a higher value on the scale and make a new sowing test. See Page **6-18**.
	Soil conditions.	Make a supplementary calibration test in the field. See Page **6-18**.
	Wrong tires pressure.	Set the correct tires pressure. See Page **9-6**.

Troubleshooting - ISOBUS system (for front mounted hopper version)

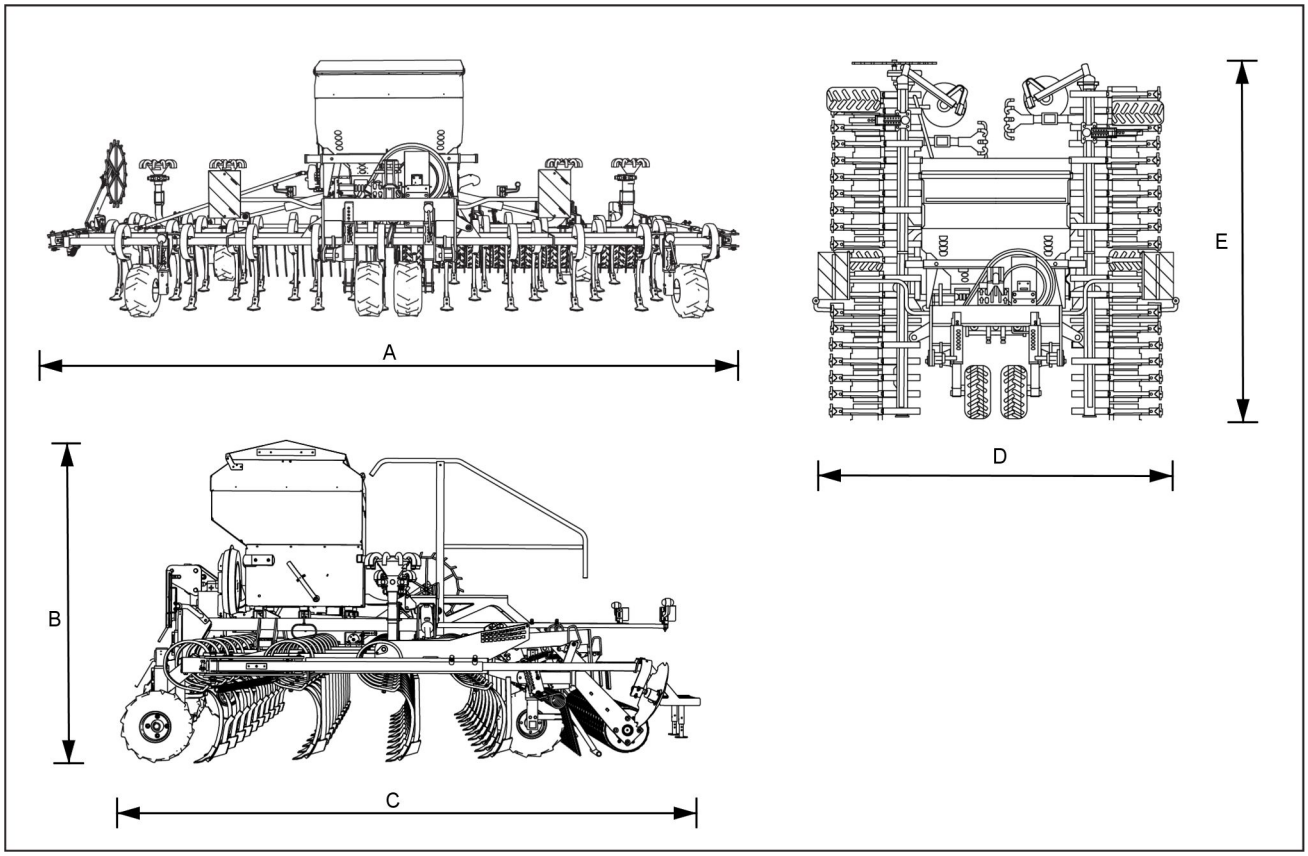
Problem	Possible Cause	Correction
001:System has been stopped. Reboot required.	The connection to a slave job computer has been interrupted.	Restart the job computer.
	A download manager has been activated.	Restart the job computer.
002: Configuration has been changed. The job computer is rebooting.	The configuration has been changed.	Wait until the job computer has rebooted.
003: Input is too high.	The entered value is too high.	Enter a lower value.
004: Input is too low.	The entered value is too low.	Enter a higher value.
005: Error with the reading or writing of data to the flash memory or EEPROM.	An error has occurred while the job computer was starting.	Restart the job computer.
006: Data has been successfully imported.	-	-
007: Error detected in the configuration.	Faulty configuration.	Check the configuration.
008: Procedure is not allowed while a task is activated in the ISOBUS-TC application.	A task is activated in the ISOBUS-TC application.	Deactivate the task.
009: Speed signal from CAN bus has been lost.	The cable was disconnected.	Check the cable connection.
010: Error with the initialisation of the Control Layer configuration.	There was an error in the Control Layer configuration.	Check the configuration.
011: Several terminals have the same number.	There are several terminals with the same number on the ISOBUS (function instance).	Change the number (function instance) on the terminal.
012: Several TASK-Controllers have the save number.	There are several TASK-Controllers with this number on the ISOBUS.	Change the number.
013: The task list is full.	There are too many tasks in the task list.	Delete task data that is no longer required.
014: The recording of an internal task has been stopped because the product was changed.	The product has been changed during the recording of an internal task.	Select the initial product.
015: The task could not be started because a different product was assigned.	A different product is stored in the task than was assigned to the hopper in the configuration.	Check which is the correct product and correct the task or the hopper assignment.
043: Dataset already exists.	An identical dataset already exists.	Check the dataset or change the name.
044: Dataset has errors.	The dataset has an error.	Check the dataset.
045: Dataset not found.	A selected dataset could not be found. You did not performed a calibration for the selected product.	Select a different data set or perform a calibration test for the selected product.
046: Loop overflow.	A conflict has occurred between the database and the implement.	Check the dataset.
047: Dataset is full.	The database is full.	You must first delete a dataset to be able to save a new one.
201: Hydraulic table is not compatible with the configuration.	The hydraulic table does not match with the configuration of the job computer.	Use a different hydraulic table or change the configuration.
202: Hydraulic table is not compatible. All hydraulic functions are deactivated.	The hydraulic table does not match with the configuration of the job computer.	Use a different hydraulic table.

Problem	Possible Cause	Correction
203: Movement of the bout marker is paused. The speed is too low.	The working speed is too low.	Increase the working speed.
204: Bout marker time has not expired yet.	The bout marker time has not expired yet.	Wait until the bout marker time has expired.
401: Fan is rotating too slowly.	The current fan speed is lower than the defined value for the “Fan Speed Tolerance” parameter.	Increase the fan speed or change the tolerance limit.
402: Fan is rotating too fast.	The current fan speed is higher than the defined value for the “Fan Speed Tolerance” parameter.	Reduce the fan speed or change the tolerance limit.
403: Pressure is too high.	The pressure of a linear sensor exceeds the value for the “Maximum Value” parameter.	Reduce the pressure or change the “Maximum Value” parameter.
404: Pressure is too low.	The pressure of a linear sensor is below the value for the “Minimum Value” parameter.	Increase the pressure or change the “Minimum Value” parameter.
405: The metering was stopped because the work position was not reached. Raise the implement.	The implement is not in work position.	Raise the implement.
406: The metering unit has been stopped because the implement has not been completely raised. Raise the implement.	The implement has not been completely raised.	Raise the implement.
407: Metering drive is stationary.	The current speed of the metering drive is lower than the minimum speed.	Stop immediately! Remove the cause.
408: Metering shaft is stationary.	The revolution sensor on the metering shaft does not register any metering shaft movement.	Stop immediately! Remove the cause.
409: Metering drive is rotating too fast.	You are driving too fast. The metering drive cannot work reliably at the current speed.	Drive more slowly or install a larger metering roll.
410: Metering drive regulation range exceeded.	The current speed of the metering drive is higher or lower than the set speed.	Drive more slowly or faster or install a larger metering roll.
411: Metering drive cannot maintain target rate.	You are driving too fast or too slow. It is not possible to reach the target rate at the current speed.	Drive more slowly or faster, so that the job computer can control the target rate.
412: Application has been stopped because of a critical error.	Another error has occurred. This error always appears in combination with another error.	Fix the related error.
413: Application has been stopped because the forward speed was too high.	The forward speed is too high.	Reduce the driving speed.
414: Calibration was interrupted due to an alarm.	-	-
415: Fan is rotating too fast. Metering stopped.	The current fan speed is higher than the value of the “Max. Rotational Speed” parameter.	Decrease the fan speed or change the “Max. Rotational Speed” parameter for the fan.
416: Fan is rotating too slowly. Metering stopped.	The current fan speed is lower than the value for the “Min. Rotational Speed” parameter.	Increase the fan speed or change the “Min. Rotational Speed” parameter for the fan.
602: Connection lost.	The connection to an ERC module has been lost.	Check the cable.
603: Connection disrupted.	The connection to an ERC module has been disrupted.	Check the cable.
604: Supply voltage is too low.	The supply voltage for the ERC modules is too low.	Check the supply voltage and check the vehicle battery.

Problem	Possible Cause	Correction
605: Short circuit.	There is a short circuit in the ERC modules.	Check the cable.
606: Open load circuit.	An open load circuit has been detected in the ERC modules.	Check the cable and check whether the shut-off clutch is available.
607: Error detected in ERC module.	Faulty configuration.	Check the configuration of the inputs and outputs.
608: No seed flow detected.	The blockage system has not detected any seed flow.	Check the blockage system.
609: No seed flow detected.	Seed flow has occurred in a tramline.	Check the tramline control.
610: Seed flow detected in a row that is switched off.	The row is defective.	Check the row.
611: Hopper is low.	There is not enough seed or fertilizer in the hopper.	Fill the hopper.
612: Hopper is empty.	There is no more seed or fertilizer in the hopper.	Fill the hopper.
613: Timeout during section switching.	The switching of the left section is taking too long.	Check if something is stuck.
614: Timeout during section switching.	The switching of the right section is taking too long.	Check if something is stuck.
617: The charger does not work.	There is a malfunction in the alternator of the charger.	Check the alternator of the charger.
618: No product flow detected in active row.	No product flow has been detected in an active row.	Check the product flow, there may be a blockage in one of the supply lines.
619: Excessive product flow detected in active row.	Excessive product flow has been detected in an active row.	Check the calibration.
620: Insufficient product flow detected in active row.	Insufficient product flow has been detected in an active row.	Check the calibration.
621: There is no dataset for this product.	The calibration was not performed yet for the respective product.	Perform a calibration before working with the product.
630: Connection lost.	The connection to an MRC module has been lost.	Check the cable.
631: Undefined Module Index.	A software error has occurred.	Contact Customer Service.
632: Undefined Command.	A software error has occurred.	Contact Customer Service.
633: Motor Standstill.	The MRC motor is at a standstill.	Check the cable.
634: Motor current is too high.	The MRC motor requires too much current.	Check if something is stuck.
635: Deviation from set rpm too high.	The speed of the MRC motor is deviating too strongly from the target rotational speed.	Check if something is stuck.
636: No seed during pre fill.	No seed was detected during pre-metering.	Ensure that seed is available.
637: No PLANTirium sensor online.	No PLANTirium sensor was detected.	Check the wiring.
663: Voltage is too low.	The voltage is lower than the pre-set minimum supply voltage.	Check the cable and the power supply.
670: Error in blockage system. Error: Sensor:	An error has occurred in the blockage system.	Check the blockage system.
671: Error in blockage system.	An error has occurred in the blockage system.	Check the blockage system.
672: Product flow detected in inactive row.	Product flow has been detected in an inactive row.	Check the shut-off.

9 - SPECIFICATIONS

Dimensions (for rear mounted hopper version)



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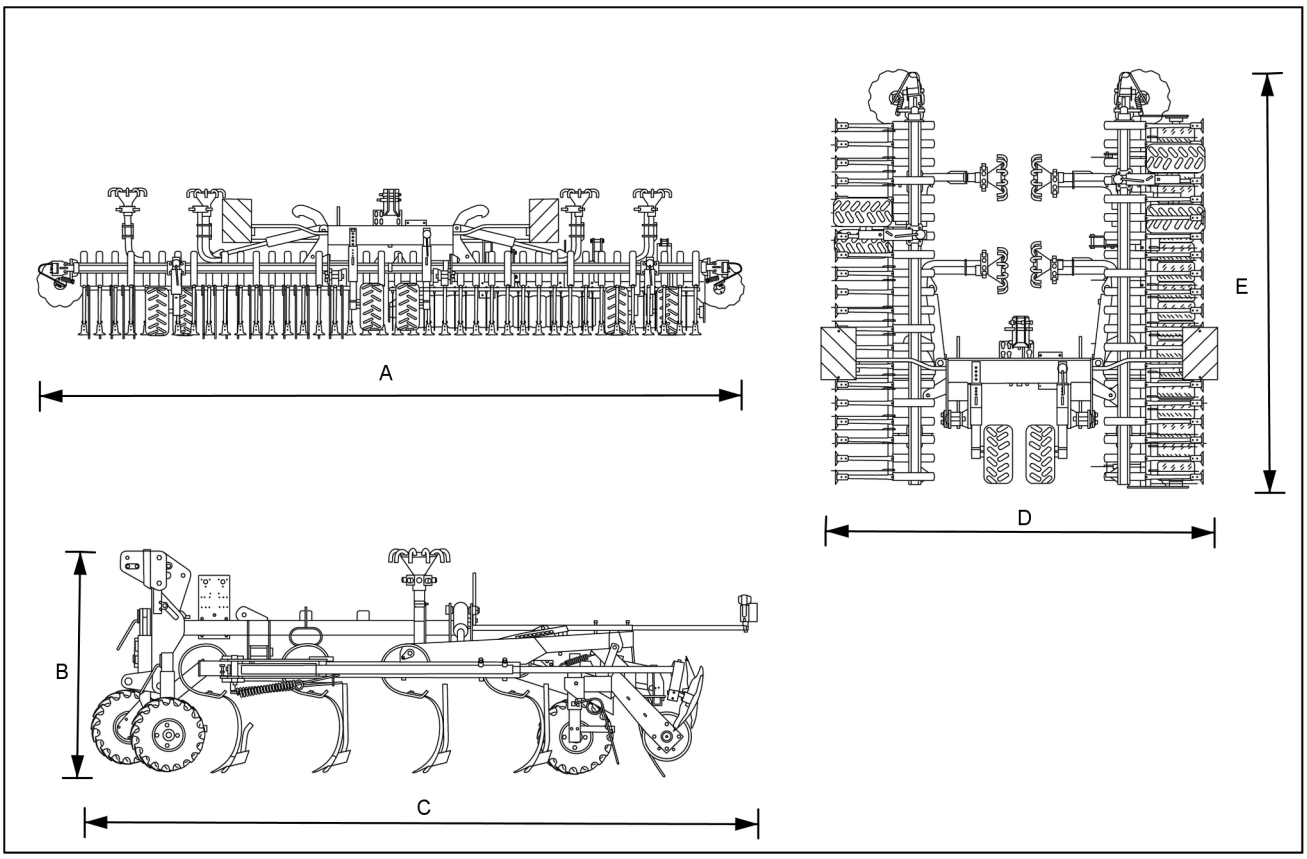
Dimension	VS500H	VS600H
A	**5.42 m (17.78 ft)**	**6.42 m (21.06 ft)**
B	**2.42 m (7.94 ft)**	
C	**4.15 m (13.62 ft)**	
D	**3.00 m (9.84 ft)**	
E	**2.70 m (8.86 ft)**	**3.20 m (10.50 ft)**

Dimensions (for front mounted hopper version)



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Dimension	VS500H	VS600H
A	**5.42 m** (**17.78 ft**)	**6.42 m** (**21.06 ft**)
B	**1.59 m** (**5.22 ft**)	
C	**4.15 m** (**13.62 ft**)	
D	**3.00 m** (**9.84 ft**)	
E	**2.70 m** (**8.86 ft**)	**3.20 m** (**10.50 ft**)

Technical data (for rear mounted hopper version)

Technical data	VS500H	VS600H
Working width	**5.0 m** (**16.4 ft**)	**6.0 m** (**19.7 ft**)
Transport width	**3.0 m** (**9.8 ft**)	
Transport height	**3.4 m** (**11.2 ft**)	**3.9 m** (**12.8 ft**)
Hopper capacity	**1100 L** (**291 US gal**)	
Total weight	**2700 kg** (**5952 lb**)	**3000 kg** (**6614 lb**)
Hydraulic demands	One double acting for the hydraulic folding. One double acting outlet required for the markers. One single acting with free flow return for the fan.	
Recommended tractor	**96 – 110 kW** (**130 – 150 hp**)	**110 – 125 kW** (**150 – 170 hp**)
Number of tines	32	40
Tine spacing	**150 mm** (**6 in**)	

Technical data (for front mounted hopper version)

Technical data	VS500H	VS600H
Working width	**5.0 m** (**16.4 ft**)	**6.0 m** (**19.7 ft**)
Transport width	**3.0 m** (**9.8 ft**)	
Transport height	**3.4 m** (**11.2 ft**)	**3.9 m** (**12.8 ft**)
Hopper capacity	**1500 – 1900 L** (**396 – 502 US gal**)	
Total weight	**2650 – 2675 kg** (**5842 – 5897 lb**)	**2950 – 2975 kg** (**6504 – 6559 lb**)
Hydraulic demands	One double acting for the hydraulic folding. One double acting outlet required for the markers. One single acting with free flow return for the fan.	
Recommended tractor	**96 – 110 kW** (**130 – 150 hp**)	**110 – 125 kW** (**150 – 170 hp**)
Number of tines	32	40
Tine spacing	**150 mm** (**6 in**)	

Fluids, lubricants, and capacities

Application	Capacity	Product name	Specification(s)
Grease fittings	-	- **PETRONAS GREASE LI 0 EP**	**M1C 137-A**
Chains	-	**TUTELA HYPOIDE EP 85W-140 NT**	**MAT3511**
Gearbox oil	-	**TUTELA HYDROSYSTEM HI-TECH 46**	**ISO VG-46**

Tires (if equipped)

The implement can be equipped with support wheels. Two possible kind of tires can be choosen:

1. Standard tires (with air inside)
2. Polyurethane tires

In case of standard wheels with air inside, the tire pressure should be as stated in the table below:

Tire dimension	Recommended tire pressure
18 x 9.50 – 8	**1.5 bar** (**21.8 psi**)

NOTICE: *In wet conditions the recommended tire pressure is* ***1.0 bar*** *(****14.5 psi****).*

NOTICE: *Check the tire pressure regularly. See Page* ***7-10****.*

10 - ACCESSORIES

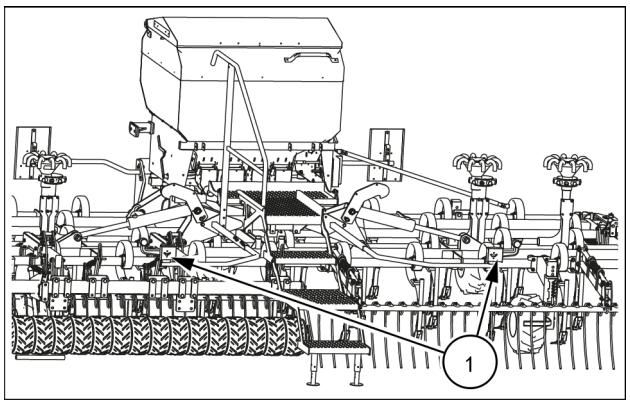
General information

Accessories or optional equipment listed hereafter may be part of the standard equipment for certain countries. Some of these accessories or options may not be available in certain markets.

Light kit

The lights **(1)** enable the implement to work also at night and are necessary for the transport.

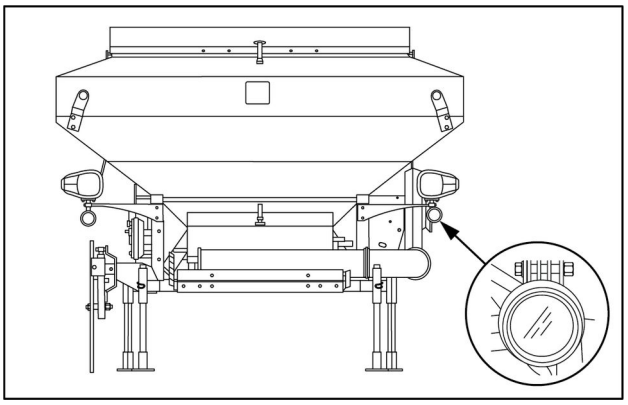
NOTE: *The equipment is available for both hopper versions.*



ZEIL22SE00044AA 1

For front mounted hopper version only

An optional work light kit is available, consisting of a round LED light on each side of the implement. The main customer benefit is that the work area around the Front Hopper can be efficiently illuminated.
The LED lights also have an increased longevity than bulb lights and they shine brighter. Furthermore they consume less current: up to 90% compared to a regular halogen bulb.



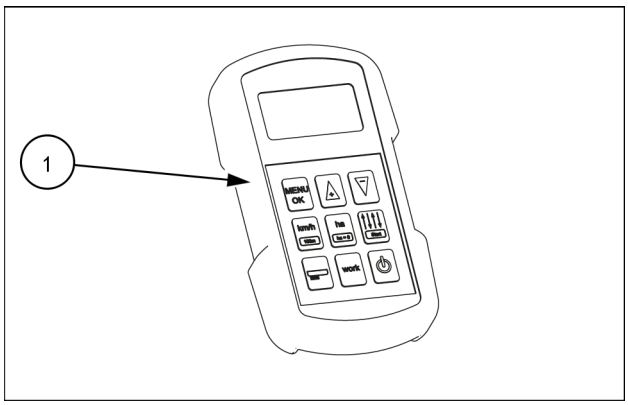
ZEIL21SE00007AA 2

Seed monitoring system

The Konnect 1000 monitor **(1)** is available as an option for the implement with a rear hopper and for the implement with the mechanical version of the front hopper.

The available functions are tramline, hectare counter, and optional sensor for hopper seed level. The seeding speed is not monitored by the Konnect 1000.

For the electronic version of the implement with front hopper, an optional Touch 800 monitor is available when an ISOBUS monitor is not available in the tractor.



ZEIL21SE00013AA 1

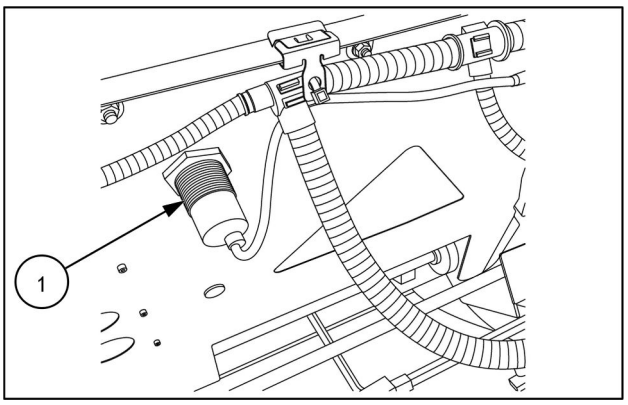
ISOBUS

ISOBUS is a universal communication system enabling the communication section control, with any tractor brand from now on. No additional equipment is needed, only a terminal in the tractor. The ISOBUS controller controls the electric and hydraulic functions.

Hopper level sensor

The implement with M- version can be equipped with an optional hopper level sensor. It is only available in combination with Konnect 1000 monitor.

The implement equipped with front hopper with E- version has the hopper level sensor **(1)** as a standard.



ZEIL21SE00008AA 1

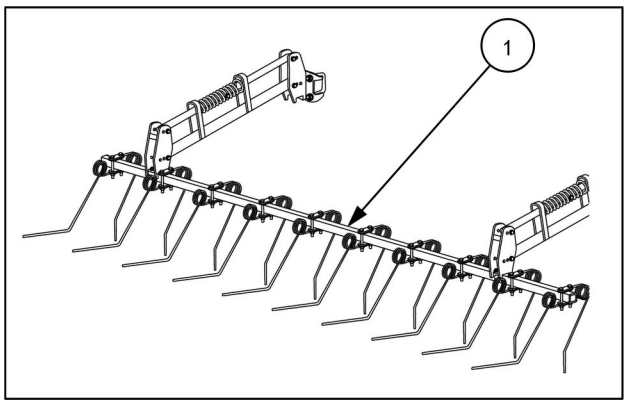
Electric manual tramlining

Electric tramline is done with Konnect 1000 monitor. When a monitor is not available and tramline needs to be used for sprayer tracks, tramlining can be done manually. Manual tramline is also electric but it is a manually operated switch to turn the function on and off in the tractor cab instead of monitor driven.

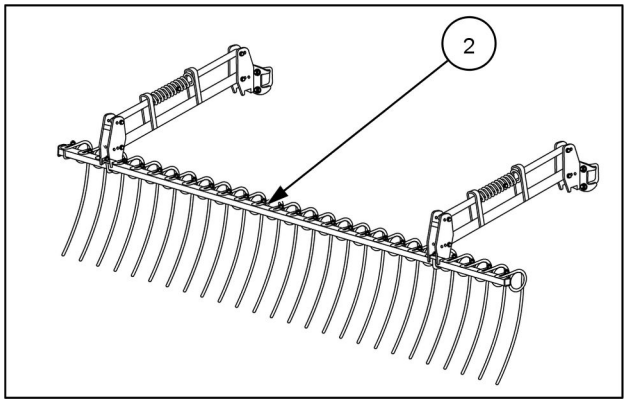
Rear harrow

The implement can be equipped with two possible kind of rear harrows listed in the table below:

Item	Harrow	Tines
(1)	Wing flow	Bended
(2)	Max flow	Straight



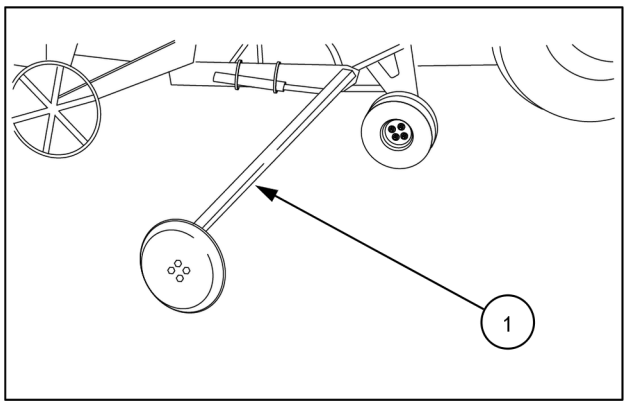
ZEIL22SE00043AA 1



ZEIL22SE00037AA 2

Markers

A hydraulic side marker kit is available as an option. The markers **(1)** are composed by discs that make a track for the seeder implement.



ZEIL22SE00021AA 1

Support wheels

The support wheels are a narrow and a wide tires to ensure stability and less stress on all components.

It's possible to order front and/or rear support wheels.

The implement can be equipped with two kind of tires:

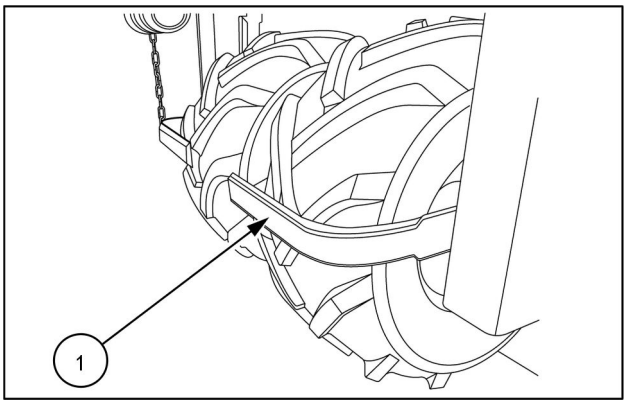
1. Standard tires (with air inside)
2. Polyurethane tires

NOTE: *The polyurethane tires are the recommended choice for stony conditions.*

NOTE: *For standard tires air pressure see Page* ***9-6****.*

Wheel scraper

The wheel scraper **(1)** consists of a metal blade that keeps the depth wheel clean and mud-free allowing to keep an even and consistent seed depth.



ZEIL22SE00040AA 1

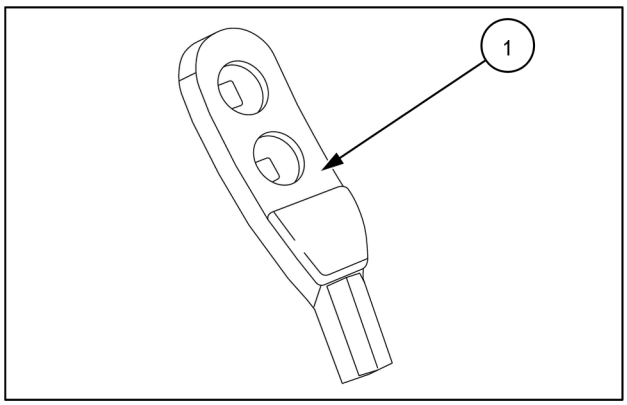
Carbide points

The implement can be equipped with carbide points **(1)**.

The carbide points have much more wear resistance than the standard one.
The carbide points can work from four to eight times longer than the standard ones depending on various factors like for example the soil type and the soil moisture.

The carbide points are much harder than the standard points and thus they are more brittle.

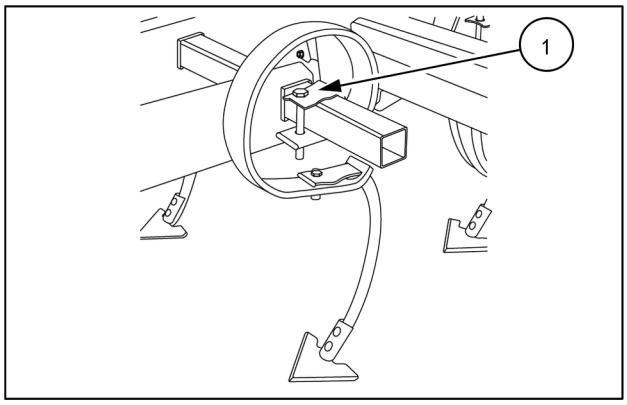
NOTE: *It is not recommended to use the carbide points on stony field due to easy to breaks.*



ZEIL22SE00034AA 1

Lowered tines

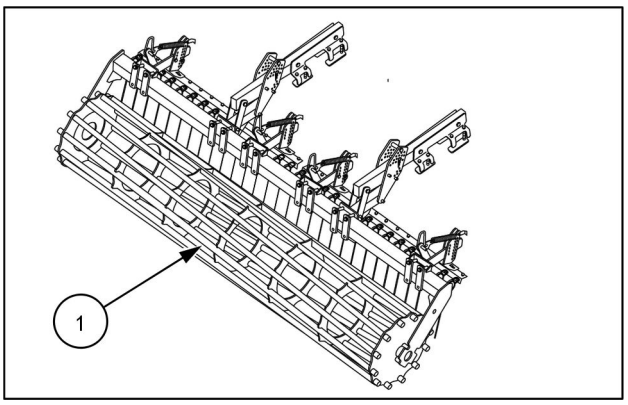
The lowered tines kit **(1)** allows a vibrating tine to work deeper behind the tire tracks of tractors. It replaces the fixing flange of the tooth on the beam.



ZEIL22SE00036AA 1

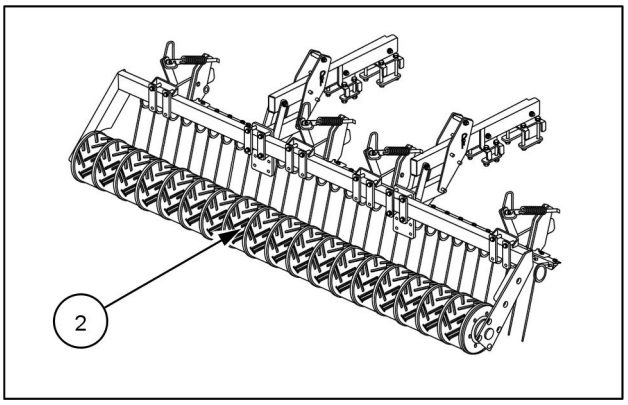
Rollers

The cage roller **(1)** is suitable for the lighter soils without stones. The cage roller ensures a proper flotation and finishing. The weight and sturdiness of the roller ensure crushing and levelling.



ZEIL22SE00033AA 1

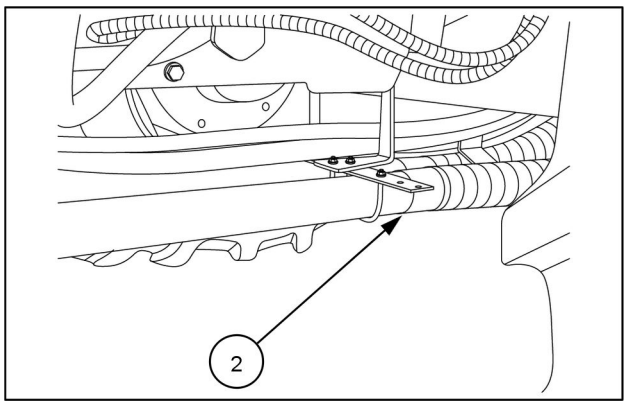
The rubber roller **(2)** is particularly supple to permit maximum self-cleaning even in wet conditions. It's used for different types of soils and applications, working surface soil more than deep soil. The roller excel in sandy soil thanks to ther large surface in contact with the soil.



ZEIL22SE00039AA 2

Pipe coupling set (for front mounted hopper version)

This equipment **(2)** is needed to connect the front hopper with a machine like a seeder behind the tractor when there are several distributor heads.
It contains the tubes, brackets, elbows and holders to mount underneath the tractor and is utilized for two or four dosing units.



ZEIL21SE00009AA 1

Hydraulic kit (for front mounted hopper version)

This kit contains hydraulic hoses to connect the implement to the rear tractor hydraulics.
When there is front hydraulics available on the tractor, this equipment is not needed.

11 - FORMS AND DECLARATIONS

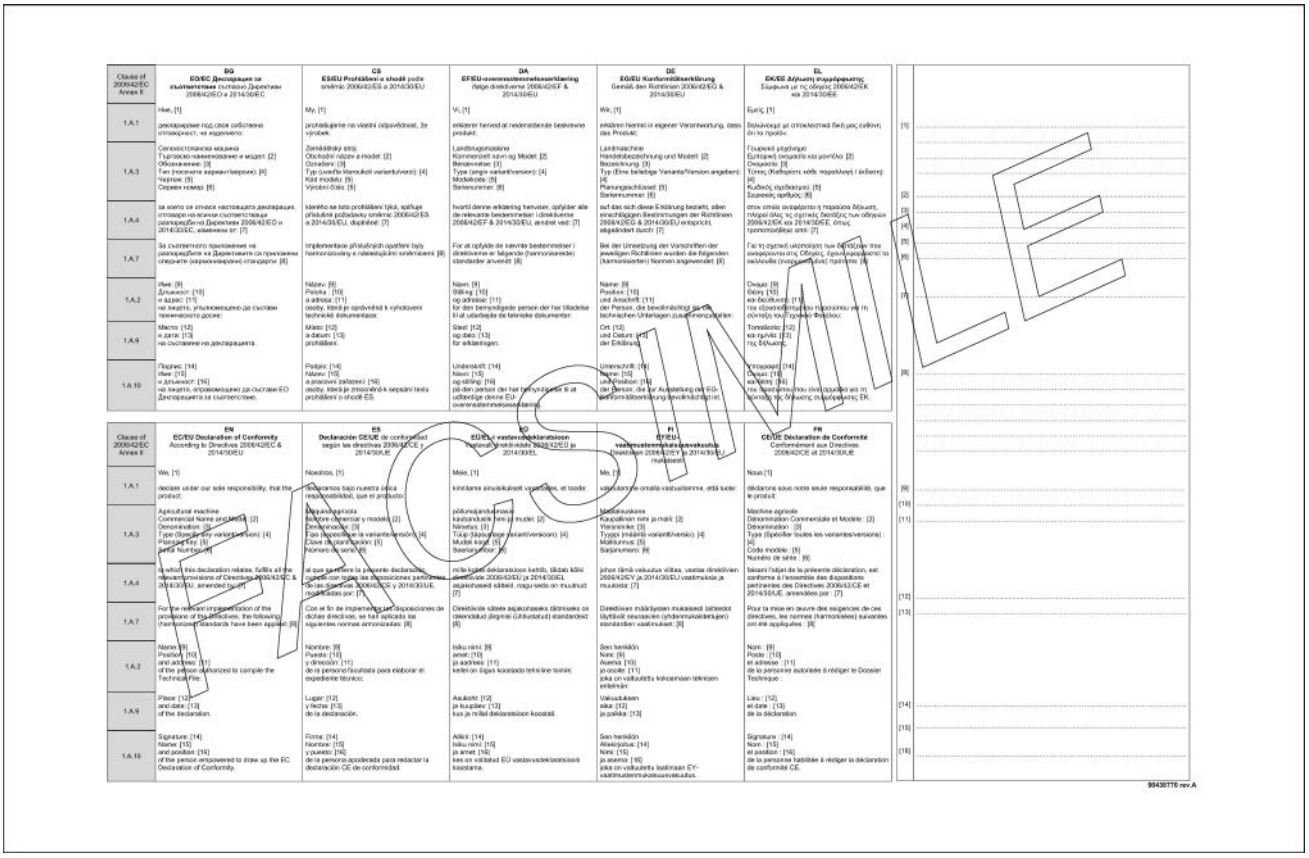
European Community (EC) Declaration of Conformity

ACCORDING TO DIRECTIVES 2006/42/EC & 2014/30/EU

Inside the European Community and for some specific countries, an EC Declaration of Conformity is separately delivered with your implement. The EC Declaration of Conformity is the manufacturer's declaration about equipment compliance to relevant European Union (EU) provisions.

Store the EC Declaration into a safe place like the storage box for your operator's manual. Local authorities may require you to show this document in order to assure compliance of your equipment.

Translation of this declaration in your own country language is provided on the original document.



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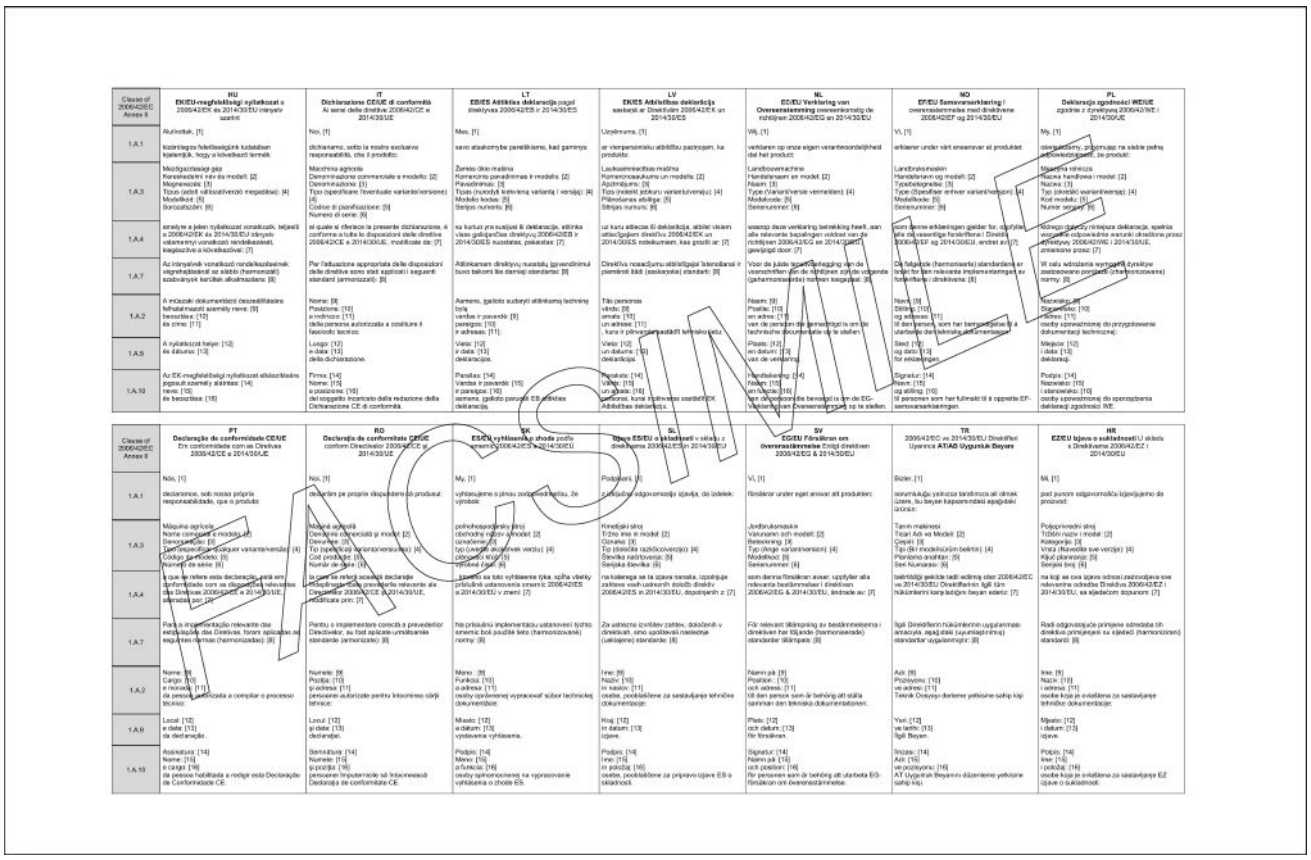

Classe of 2006/42/EC Annex II	HU **EK/EU-megfelelőségi nyilatkozat a** 2006/42/EK és 2014/30/EU irányelv szerint	IT **Dichiarazione CE/UE di conformità** Ai sensi delle direttive 2006/42/CE e 2014/30/UE	LT **EB/ES Atitikties deklaracija** pagal direktyvas 2006/42/ES ir 2014/30/ES	LV **EK/ES Atbilstības deklarācija** saskaņā ar Direktīvām 2006/42/EK un 2014/30/ES	NL **EG/EU Verklaring van Overeenstemming** overeenkomstig de richtlijnen 2006/42/EG en 2014/30/EU	NO **EF/EU Samsvarserklæring /** overensstemmelse med direktivene 2006/42/EF og 2014/30/EU	PL **Deklaracja zgodności WE/UE** zgodnie z dyrektywą 2006/42/WE i 2014/30/UE
1.A.1	Alulírottak, [1] kizárólagos felelősségünk tudatában kijelentjük, hogy a következő termék:	Noi, [1] dichiariamo, sotto la nostra esclusiva responsabilità, che il prodotto:	Mes, [1] savo atsakomybe patvirtiname, kad gaminys:	Uzņēmums, [1] ar vienpersonisku atbildību paziņojam, ka produkts:	Wij, [1] verklaren op onze eigen verantwoordelijkheid dat het product:	Vi, [1] erklærer under vårt eneansvar at produktet:	My, [1] oświadczamy, pod naszą na wyłączną odpowiedzialność, że produkt:
1.A.3	Mezőgazdasági gép Kereskedelmi név és modell: [2] Megnevezés: [3] Típus (adott változat/verzió megadása): [4] Modellkód: [5] Sorozatszám: [6]	Macchina agricola Denominazione commerciale e modello: [2] Denominazione: [3] Tipo (specificare l'eventuale variante/versione): [4] Codice di pianificazione: [5] Numero di serie: [6]	Žemės ūkio mašina Komercinio pavadinimas ir modelis: [2] Pavadinimas: [3] Tipas (nurodyti konkretų variantą / versiją): [4] Modelio kodas: [5] Serijos numeris: [6]	Lauksaimniecības mašīna Komercnosaukums un modelis: [2] Apzīmējums: [3] Tips (norādīt jebkuru variantu/versiju): [4] Plānošanas atsauce: [5] Sērijas numurs: [6]	Landbouwmachine Handelsnaam en model: [2] Naam: [3] Type (Variant/versie vermelden): [4] Modelcode: [5] Serienummer: [6]	Landbruksmaskin Handelsnavn og modell: [2] Typebetegnelse: [3] Type (Spesifiser enhver variant/versjon): [4] Modellkode: [5] Serienummer: [6]	Maszyna rolnicza Nazwa handlowa i model: [2] Nazwa: [3] Typ (określić wariant/wersję): [4] Kod modelu: [5] Numer seryjny: [6]
1.A.4	amelyre a jelen nyilatkozat vonatkozik, teljesíti a 2006/42/EK és 2014/30/EU irányelv vitamennyi vonatkozó rendelkezését, kiegészítve a következőket: [7]	al quale si riferisce la presente dichiarazione, è conforme a tutte le disposizioni delle direttive 2006/42/CE e 2014/30/UE, modificate da: [7]	su kuriuo yra susijusi ši deklaracija, atitinka visas galiojančias direktyvų 2006/42/EB ir 2014/30/ES nuostatas, pakeistas: [7]	uz kuru attiecas šī deklarācija, atbilst visiem attiecīgajiem direktīvu 2006/42/EK un 2014/30/ES noteikumiem, kas grozīti ar: [7]	waarop deze verklaring betrekking heeft, aan alle relevante bepalingen voldoet van de richtlijnen 2006/42/EG en 2014/30/EU, gewijzigd door: [7]	som denne erklæringen gjelder for, oppfyller alle de vesentlige forskriftene i Direktiv 2006/42/EF og 2014/30/EU, endret av: [7]	Wyrobu, którego niniejsza deklaracja, spełnia wszystkie odpowiednie warunki określone przez dyrektywy 2006/42/WE i 2014/30/UE, zmienione przez: [7]
1.A.7	Az irányelvek vonatkozó rendelkezéseinek végrehajtásaként az alábbi (harmonizált) szabványok kerültek alkalmazásra: [8]	Per l'attuazione appropriata delle disposizioni delle direttive sono stati applicati i seguenti standard (armonizzati): [8]	Atitinkamam direktyvų nuostatų įgyvendinimui buvo taikomi šie darniieji standartai: [8]	Direktīvu nosacījumu atbilstīgajai īstenošanai ir piemēroti šādi (saskaņotie) standarti: [8]	Voor de juiste toepassingsregeling van de voorschriften van de richtlijnen zijn de volgende (geharmoniseerde) normen toegepast: [8]	De følgende (harmoniserte) standardene er brukt for den relevante implementeringen av forskriftene i direktivene: [8]	W celu wdrożenia wymogów dyrektyw zastosowano poniższe (zharmonizowane) normy: [8]
1.A.2	A műszaki dokumentációt összeállításáért felhatalmazott személy neve: [9] beosztása: [10] és címe: [11]	Nome: [9] Posizione: [10] e indirizzo: [11] della persona autorizzata a costituire il fascicolo tecnico:	Asmens, įgalioto sudaryti atitikmenų techninį bylą vardas ir pavardė: [9] pareigos: [10] ir adresas: [11]:	Tās personas vārds: [9] amats: [10] un adrese: [11] , kura ir pilnvarota sastādīt tehnisko lietu	Naam: [9] Positie: [10] en adres: [11] van de persoon die gemachtigd is om de technische documentatie op te stellen:	Navn: [9] Stilling: [10] og adresse: [11] til den person, som har bemyndigelse til å utarbeide den tekniske dokumentasjon:	Nazwisko: [9] Stanowisko: [10] i adres: [11] osoby upoważnionej do przygotowania dokumentacji technicznej:
1.A.5	A nyilatkozat helye: [12] és dátuma: [13]:	Luogo: [12] e data: [13] della dichiarazione.	Vieta: [12] ir data: [13] deklaracijos.	Vieta: [12] un datums: [13] deklarācijai.	Plaats: [12] en datum: [13] van de verklaring.	Sted: [12] og dato: [13] for erklæringen.	Miejsce: [12] i data: [13] deklaracji.
1.A.10	Az EK-megfelelőségi nyilatkozat elkészítésére jogosult személy aláírása: [14] neve: [15] és beosztása: [16]	Firma: [14] Nome: [15] e posizione: [16] del soggetto incaricato della redazione della Dichiarazione CE di conformità.	Parašas: [14] Vardas ir pavardė: [15] ir pareigos: [16] asmens, įgalioto parengti ES atitikties deklaraciją.	Paraksts: [14] Vārds: [15] un amats: [16] personai, kura ir pilnvarota sastādīt EK Atbilstības deklarāciju.	Handtekening: [14] Naam: [15] en functie: [16] van de persoon die bevoegd is om de EG-Verklaring van Overeenstemming op te stellen.	Signatur: [14] Navn: [15] og stilling: [16] til personen som har fullmakt til å opprette EF-samsvarserklæringen.	Podpis: [14] Nazwisko: [15] i stanowisko: [16] osoby upoważnionej do sporządzenia deklaracji zgodności WE.

Classe of 2006/42/EC Annex II	PT **Declaração de conformidade CE/UE** Em conformidade com as Directivas 2006/42/CE e 2014/30/UE	RO **Declarația de conformitate CE/UE** conform Directivelor 2006/42/CE și 2014/30/UE	SK **ES/EÚ vyhlásenie o zhode** podľa smerníc 2006/42/ES a 2014/30/EÚ	SL **Izjava ES/EU o skladnosti** v skladu z direktivama 2006/42/ES in 2014/30/EU	SV **EG/EU Försäkran om överensstämmelse** Enligt direktiven 2006/42/EG & 2014/30/EU	TR 2006/42/EC ve 2014/30/EU Direktifleri Uyarınca **ATAB Uygunluk Beyanı**	HR **EZ/EU Izjava o sukladnosti** EU skladu s Direktivama 2006/42/EZ i 2014/30/EU
1.A.1	Nós, [1] declaramos, sob nossa própria responsabilidade, que o produto:	Noi, [1] declarăm pe proprie răspundere că produsul:	My, [1] vyhlasujeme s plnou zodpovednosťou, že výrobok:	Podjetnik, [1] z izključno odgovornostjo izjavlja, da izdelek:	Vi, [1] försäkrar under eget ansvar att produkten:	Biziler, [1] sorumluluğu yalnızca tarafımıza ait olmak üzere, bu beyan kapsamındaki aşağıdaki ürünün:	Mi, [1] pod punom odgovornošću izjavljujemo da proizvod:
1.A.3	Máquina agrícola Nome comercial e modelo: [2] Denominação: [3] (se especificar qualquer variante/versão): [4] Código de modelo: [5] Número de série: [6]	Mașină agricolă Denumire comercială și model: [2] Denumire: [3] Tip (specificați varianta/versiunea): [4] Cod produs: [5] Număr de serie: [6]	poľnohospodársky stroj obchodný názov a model: [2] označenie: [3] typ (uviesť akúkoľvek verziu): [4] plánovací kód: [5] výrobné číslo: [6]	Kmetijski stroj Trgovo ime in model: [2] Oznaka: [3] Tip (določila različico/verzijo): [4] Številka načrtovanja: [5] Serijska številka: [6]	Jordbruksmaskin Varunamn och modell: [2] Beteckning: [3] Typ (Ange variant/version): [4] Modellkod: [5] Serienummer: [6]	Tarım makinesi Ticari Adı ve Modeli: [2] Cinsi: [3] Tipi (Bir model/sürüm belirtin): [4] Planlama anahtarı: [5] Seri Numarası: [6]	Poljoprivredni stroj Trgovački naziv i model: [2] Kategorija: [3] Vrsta (Navedite sve verzije): [4] Ključ planiranja: [5] Serijski broj: [6]
1.A.4	a que se refere esta declaração está em conformidade com as disposições relevantes das Diretivas 2006/42/CE e 2014/30/UE, alteradas por: [7]	la care se referă această declarație este în conformitate cu prevederile relevante ale Directivelor 2006/42/CE și 2014/30/UE, modificate prin: [7]	s ktorým sa toto vyhlásenie týka, spĺňa všetky príslušné ustanovenia smerníc 2006/42/ES a 2014/30/EÚ v znení: [7]	na katerega se ta izjava nanaša, izpolnjuje zahteve vseh ustreznih določb direktiv 2006/42/ES in 2014/30/EU, dopolnjenih z: [7]	som denna försäkran avser, uppfyller alla relevanta bestämmelser i direktiven 2006/42/EG & 2014/30/EU, ändrade av: [7]	bəlirtildiği şekilde tadil edilmiş olan 2006/42/EC ve 2014/30/EU Direktiflerinin ilgili tüm hükümlerini karşıladığını beyan ederiz: [7]	na koji se ova izjava odnosi,zadovoljava sve relevantne odredbe Direktiva 2006/42/EZ i 2014/30/EU, sa sljedećom dopunom: [7]
1.A.7	Para a implementação relevante das estas regras das Diretivas, foram aplicadas as seguintes normas (harmonizadas): [8]	Pentru o implementare corectă a prevederilor Directivelor, au fost aplicate următoarele standarde (armonizate): [8]	Na príslušnú implementáciu ustanovení týchto smerníc boli použité tieto (harmonizované) normy: [8]	Za ustrezne izvrševanje zahtev, določenih v direktivah, smo uporabili naslednje (usklajene) standarde: [8]	För relevant tillämpning av bestämmelserna i direktiven har följande (harmoniserade) standarder tillämpats: [8]	İlgili Direktiflerin hükümlerinin uygulanması amacıyla, aşağıdaki uyumlaştırılmış) standartlar uygulanmıştır: [8]	Radi odgovarajuće primjene odredaba tih direktiva primijenjeni su sljedeći (harmonizirani) standardi: [8]
1.A.2	Nome: [9] Cargo: [10] e morada: [11] da pessoa habilitada a compilar o processo técnico:	Numele: [9] Poziția: [10] și adresa: [11] persoanei autorizate pentru întocmirea sării tehnice:	Meno : [9] Funkcia: [10] a adresa: [11] osoby oprávnenej vypracovať súbor technickej dokumentácie:	Ime: [9] Naziv: [10] in naslov: [11] osebe, pooblaščene za sestavljanje tehnične dokumentacije:	Namn på: [9] Position: [10] och address: [11] till den person som är behörig att ställa samman den tekniska dokumentationen:	Adı: [9] Pozisyonu: [10] ve adresi: [11] Teknik Dosyayı derleme yetkisine sahip kişi:	Ime: [9] Naziv: [10] i adresa: [11] osobe koja je ovlaštena za sastavljanje tehničke dokumentacije:
1.A.6	Local: [12] e data: [13] da declaração.	Locul: [12] și data: [13] declarației.	Miesto: [12] a dátum: [13] vystavenia vyhlásenia.	Kraj: [12] in datum: [13] izjave.	Plats: [12] och datum: [13] för försäkran.	Yer: [12] ve tarih: [13] İlgili Beyan.	Mjesto: [12] i datum: [13] izjave.
1.A.10	Assinatura: [14] Nome: [15] e cargo: [16] da pessoa habilitada a redigir esta Declaração de Conformidade CE.	Semnătura: [14] Numele: [15] și poziția: [16] persoanei împuternicite să întocmească Declarația sa conformitate CE.	Podpis: [14] Meno: [15] a funkcia: [16] osoby oprávnenej na vypracovanie vyhlásenia o zhode ES.	Podpis: [14] Ime: [15] in položaj: [16] osebe, pooblaščene za pripravo izjave ES o skladnosti.	Signatur: [14] Namn på: [15] och position: [16] för personen som är behörig att utarbeta EG-försäkran om överensstämmelse.	İmzası: [14] Adı: [15] ve pozisyonu: [16] AT Uygunluk Beyanını düzenleme yetkisine sahip kişi.	Potpis: [14] Ime: [15] i položaj: [16] osobe koja je ovlaštena za sastavljanje EZ izjave o sukladnosti.

For your better and easier understanding of the document, you will find the text reproduced hereafter.

EC/EU Declaration of Conformity
According to Directives 2006/42/EC & 2014/30/EU

We,

declare under our sole responsibility, that the product:

Agricultural machine

Commercial Name KONGSKILDE and Model: ...

Denomination: Planter

Type (Specify any variant/version): ...

Planning key: ...

Serial Number: ...

to which this declaration relates, fulfills all the relevant provisions of Directives 2006/42/EC & 2014/30/EU, amended by: -

For the relevant implementation of the provisions of the Directives, the following (harmonized) standards have been applied:

• EN ISO 4254-1: 2015
• EN ISO 4254-9:2018

Name, position, and address of the authorized person to compile the Technical Construction File:...

Place and date of the declaration:

Signature, name and position of person empowered to draw up the EC Declaration of Conformity:

NOTE: *Only for United Kingdom.*

	Declaration of Conformityof the Machinery according to Supply of Machinery (Safety) Regulations 2008 n.1597 and Electromagnetic Compatibility Regulations 2016 n.1091	[1]
1.A.1	We, [1] declare under our sole responsibility, that the product:	[2] [3] [4] [5] [6]
1.A.3	Agricultural machine Commercial Name and Model: [2] Denomination: [3] Type (Specify any variant/version): [4] Planning key: [5] Serial Number: [6]	[8]
1.A.4	to which this declaration relates, fulfills all the relevant provisions of these Regulations.	
1.A.7	For the relevant implementation of the provisions of these Regulations, the following published (designated) standards have been applied: [8]	[9] [10] [11]
1.A.2	Name: [9] Position: [10] and address: [11] of the person authorized to compile the Technical File:	[12] [13]
1.A.9	Place: [12] and date: [13] of the declaration.	[14]
1.A.10	Signature: [14] Name: [15] and position: [16] of the person empowered to draw up the UKCA Declaration of Conformity.	[15] [16]

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Dealer's stamp

The manufacturer and its authorized representative reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at the time of publication, but are subject to change without notice.

Availability of some models and equipment builds varies according to the country in which the equipment is being used. For exact information about any particular product, please consult your Kongskilde dealer.

KONGSKILDE