OPERATOR'S MANUAL

Vibro till 500 Vibro till 600 Stubble Cultivator

PIN KTNKA4**A00001316 and above



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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 versatile lift-mounted stubble cultivator capable of tillage and seedbed preparation.

The work must occur under reasonable conditions, or thorough agricultural knowledge and authorised operation, on a normal cultivation that has a reasonable extension without foreign matter and the like. The performance of the implement will depend on the crop, the condition of the field, the ground, and finally the weather.

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:

- 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.

aging depending on the kind of shipment and the related procedure to assemble the received components.

Additional documents

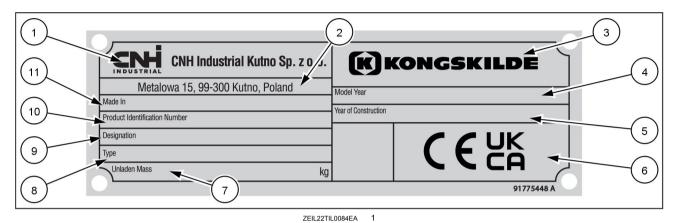
When required, the machine is delivered with an assembly instruction. The assembly instruction shows the pack-

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.



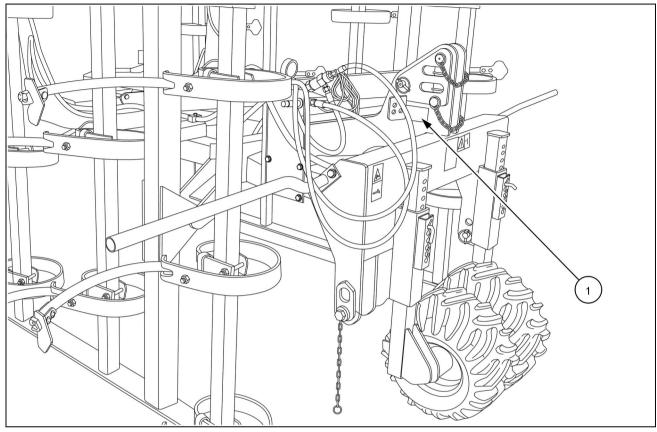
- (1) Company name
- (2) Mailing address
- (3) Brand identification logo
- (4) Model year
- (5) Year of construction
- (6) Certification mark

- (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 right-hand 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)		

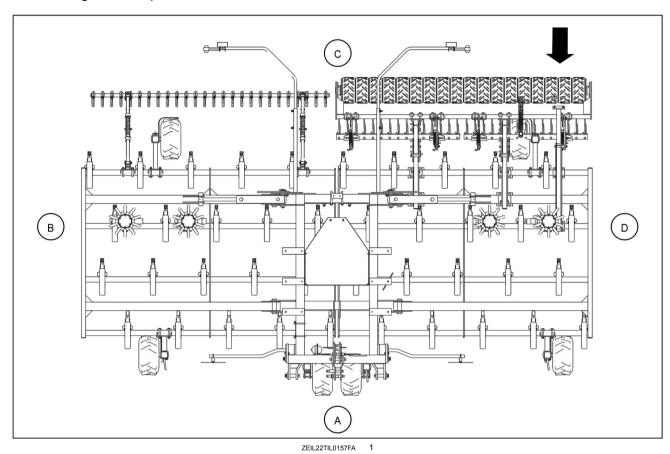
Operator's manual storage on the machine

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

Implement orientation

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.



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

1 - GENERAL INFORMATION

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.

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

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

A 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.
- Keep children away from and off the implement at all times.
- 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.
- Keep hands away from 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.
- 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

- 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.
- 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.
- 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.
- 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

A 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

A 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.

W0089

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.

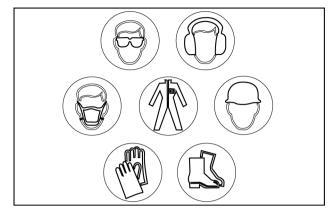
W0004

- 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.



NHII 13RB00001AA

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

Implement stability

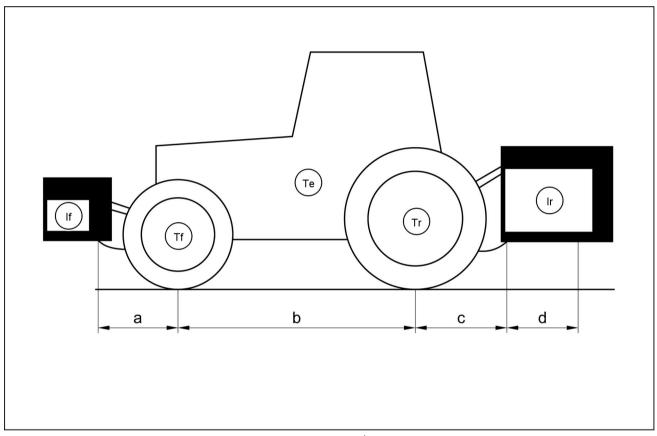
The combination of your tractor and implement can become unstable, due to the additional weight that the implement adds to the tractor.

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 =
$$\frac{[Ir x (c + d)] - (Tf x b) + (0.2 x Te x b)}{a + b}$$



ZEIL18HT00277FA 1

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

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.

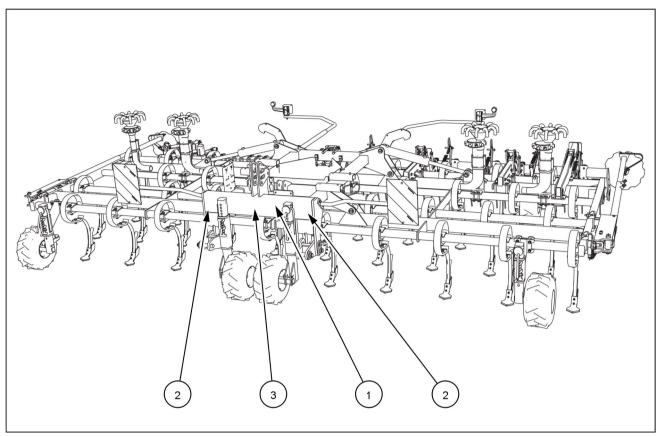
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part that you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. Contact your dealer for the replacement of the safety signs.

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.





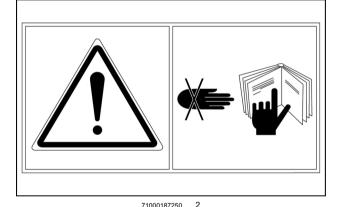
ZEIL22SE00014FA

Safety sign (1)

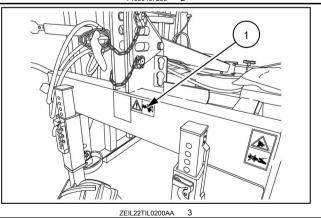
Instructions.

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

Part number: 71000187250



Located on the central front frame.

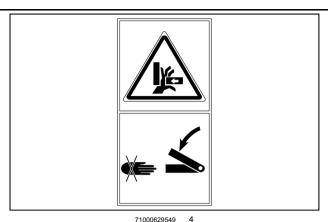


Safety sign (2)

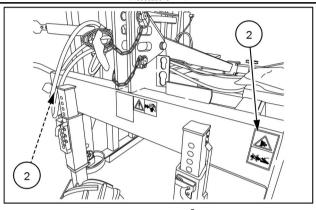
Danger of crushing.

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

Part number: 71000629549



Located on the central front frame.



ZEIL22TIL0200AA

Safety sign (3)

Park in lowered position.

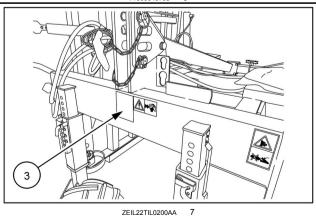
The implement must only be parked in working position.

Part number: 71000646708

MACHINE MUST BE PARKED IN WORKING POSITION LA MACHINE DOIT

ETRE DEPOSEE EN POSITION TRAVAIL MASCHINE NUR IM ABGESENKTEN ZUSTAND PARKEN

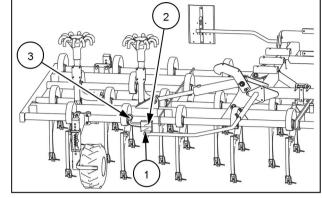
Located on the central front frame.



Road travel lights, signs, and reflectors

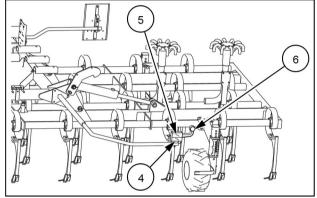
Road lights

- 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



ZEIL22TIL0153AA

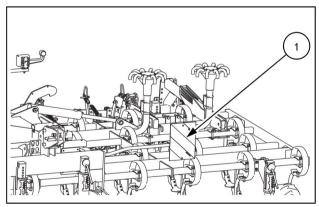
- Rear position and stop lights (4) right-hand side
- Rear direction indicator light (5) right-hand side
- End outline marker light (6) right-hand side



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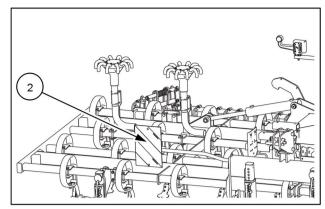
Signal plates

• Front signal plate (1) left-hand side



ZEIL22TIL0150AA

• Front signal plate (2) right-hand side



ZEIL22TIL0151AA

3 - CONTROLS AND INSTRUMENTS

Information

Operating principles

For all information related to the description and the location of the controls to use your implement, see chapter "Controls and Instruments" in the operator's manual of your vehicle.

3 - CONTROLS AND INSTRUMENTS

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

A 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

A 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.

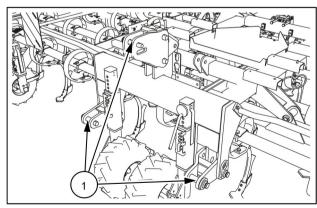
NOTE: Use original and correct coupling parts.

- 1. Fit the ball bushes over the pins (1) for the lower linkages and the head stock connections.
- Lower the lower linkages of the tractor and drive backward until the lower link hooks are under the ball bushes.
- 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).



ZEIL22SE00004AA

Parking the unit

Disconnection and parking

A 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

A 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.

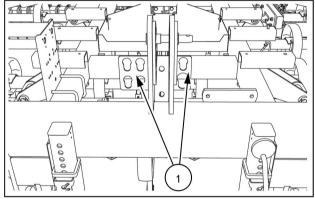
NOTICE: Before you uncouple the implement to the threepoint hitch, put the operating mechanism into a position which will prevent any accidental lifting or lowering.

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.
- 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.
- Lower the lower linkages until they free of the implement ball bushes.
- 10. Drive the tractor slowly forward.



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4 - OPERATING INSTRUCTIONS

5 - TRANSPORT OPERATIONS

Road transport

Transport position

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

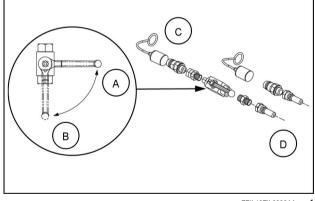
To prepare the implement for road transport, proceed as follows:

- 1. Make sure the strings for the security hooks are loose, so the hooks are in the lower position.
- 2. Lift and fold the implement. See Page 5-3.
- Make sure that the security hooks have locked the frames in upright position.
- 4. 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.
- 5. 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.

- 6. Check that any light kits and warning plates work properly and clean.
- 7. Lock the control valves of the tractor.
- 8. 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.



ZEIL19TIL0393AA

Preparing for road transport

Lifting the implement

A 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

A 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.

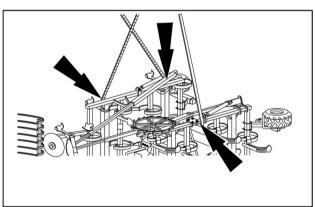
W1432B

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

Folding and unfolding

A 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

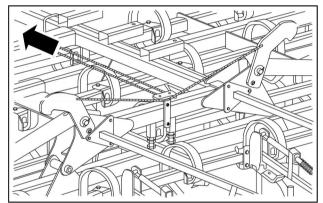
NOTE: The security hooks prevent the implement from accidental unfolding in case of a defect in the hydraulic hoses. However, it may not prevent unintentional unfolding or lowering if the control device is operated by mistake.

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.
- 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

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.

 5 - TRANSPORT OPERATIONS

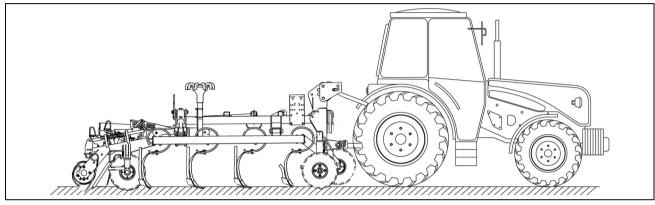
6 - WORKING OPERATIONS

General information

Implement overview

It is possible only to connect the implements at the rear of the tractor.

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



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Adjustments

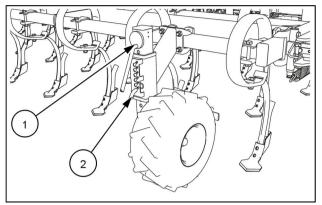
Adjustment of working depth

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

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.

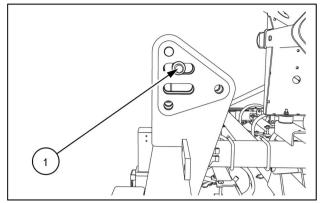


ZEIL22SE00010AA

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 **6-2**.
- 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.



ZEII 22SE00001AA

Harrow adjustment (if equipped)

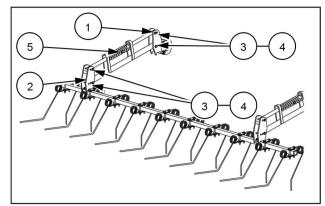
The implement can be equipped with wing flow rear harrows.

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).



ZEII 22SE00043AA

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.

6 - WORKING OPERATIONS

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.

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.
- 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

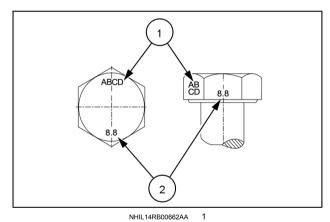
	Class 8.8 in N m (lb in or lb ft)			Class 10.9 in N m (lb in or lb ft)		
Nominal Size	Plated nut	Lock nut	Hardened nut/Oiled plated nut	Plated nut	Lock nut	Hardened nut/Oiled plated nut
M3	1.3 N·m	0.7 N·m	1.2 N·m	1.8 N·m	0.9 N·m	1.6 N·m
	(11.5 lb in)	(6.2 lb in)	(10.6 lb in)	(15.9 lb in)	(8.0 lb in)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

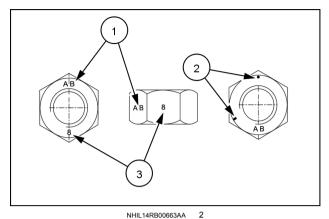
Metric hex head, flange hex head and carriage bolts, Classes (CL) 5.6 and upward



Metric bolt identification markings

- 1. Manufacturer's identification
- 2. Property class

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

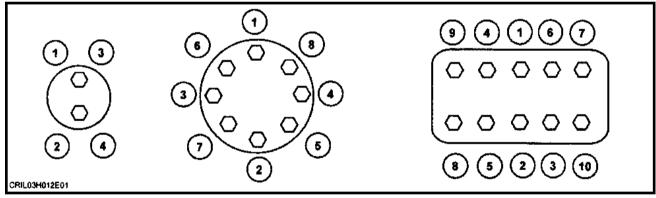


Metric hex nut identification markings

- (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

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

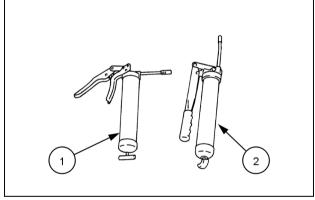
In general, a pistol grip-style grease gun injects half of the amount of grease per pump as a lever-style grease gun.

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.

Grease specification

See Page 7-9 for the correct grease specification.



1431-2-58N

Pressure washing

A 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

Maintenance planning

Overview

Greas	_		ī	Check
Tighten				
Maintenance action				Page no.
After the first 10 hours				
Nuts and bolts	Х			7-11
Every 20 hours				
20 hours grease fittings		Х		7-11
Every 100 hours				
100 hours grease fittings		X		7-12
Nuts and bolts	Х			7-12
Tire pressure - Check (if equipped)			Х	7-12
Every beginning of the season				
Tire pressure - Check (if equipped)			X	7-13

After the first 10 hours

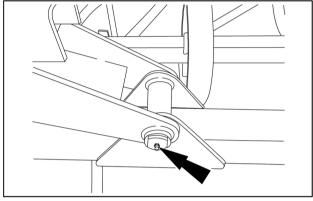
Nuts and bolts

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)

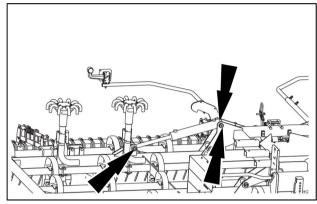


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Every 100 hours

100 hours grease fittings

Cylinder joints (2x)



7FII 22TII 0149AA

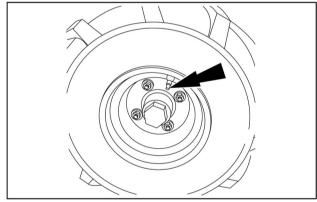
Nuts and bolts

Torque all the bolts, the nuts and the fasteners every ${\bf 100\ h}$ of work. If necessary, tighten all loosened elements you come across.

Tire pressure - Check (if equipped)

Check the wheels and tire pressure every ${\bf 100}~{\bf h}$ of operation.

NOTE: For recommended tire pressure, see Page 9-3.



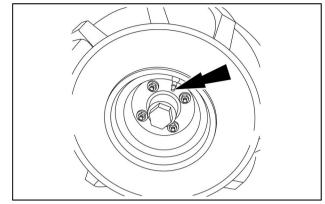
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Every beginning of the season

Tire pressure - Check (if equipped)

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

NOTE: For recommended tire pressure, see Page 9-3.



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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.
- 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:

- Park the implement on hard and level ground. Bring all moveable components to the lowest position and/or safest position.
- Store the implement with the axles on wooden blocks in order to keep the implement upright, as the tires will deflate over time.
- 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

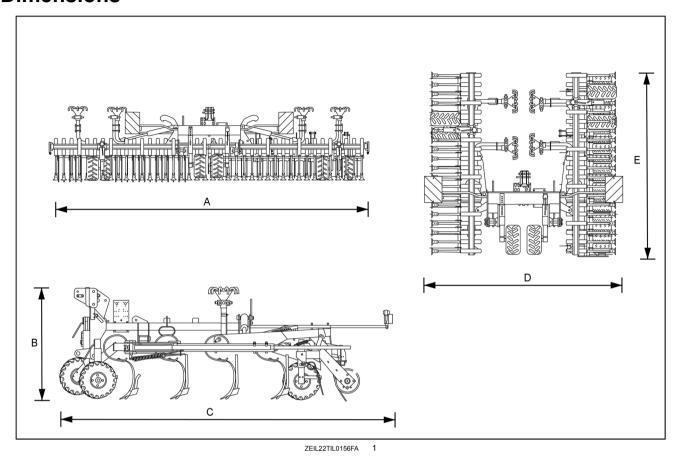
This chapter describes the easy diagnostic methods for generic problems and the related remedies for them. If you cannot find the cause of a problem or solve a problem, consult the KONGSKILDE dealer.

Troubleshooting

Problem	Possible Cause	Correction
Poor soil mixing.	Low working depth.	Increase working depth. See Page 6-2.
	Incorrect leveling of the implement.	Adjust the top link length.
	Low working speed.	Increase the working speed to the recommended value. See Page 6-5 .
Uneven work pattern	Wrong settings of the level unit.	Check and adjust the setting of the leveling
behind.		unit.
Too shallow work.	Incorrect adjustment.	Adjust working depth. See Page 6-2.
Too deep work.	Incorrect adjustment.	Adjust working depth. See Page 6-2.
Roller does not move.	Damaged bearing.	Replace the bearing.
	Stone stuck between the roller and the	Remove the stone.
	roller frame.	

9 - SPECIFICATIONS

Dimensions



Dimension	Vibro till 500 Vibro till 600	
Α	5.42 m (17.78 ft)	6.42 m (21.06 ft)
В	1.59 m (5.22 ft)	
С	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

Technical data	Vibro till 500	Vibro till 600	
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)	
Total weight	2200 kg (4850 lb)	2500 kg (5512 lb)	
Hydraulic demands	One double acting for the hydraulic folding.		
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

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**.

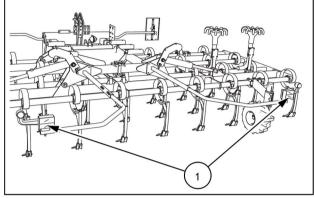
10 - ACCESSORIES

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

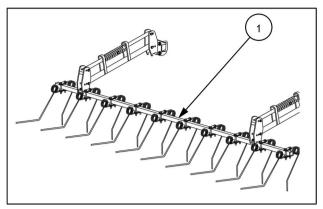
The lights (1) enable the implement to work also at night and are necessary for the transport.



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Rear harrow

The implement can be equipped with wing flow rear harrows (1).



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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:

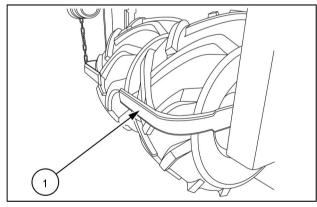
- 1. Standard tires (with air inside)
- 2. Polyurethane tires

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

NOTE: For standard tires air pressure see Page 9-3.

Wheel scraper

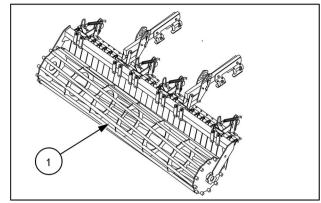
The wheel scraper (1) consists of a metal blade that keeps the depth wheel clean and mud-free allowing to keep an even and consistent seed depth.



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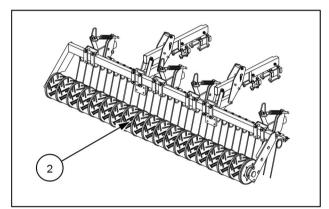
Rollers

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.



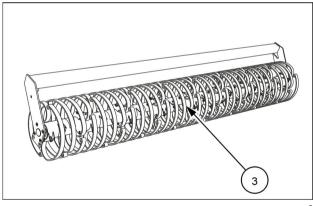
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The rubber roller (2) is particularly supple to permit maximum self-cleaning even in wet conditions. It's used for different types of soils and applications, working surface soil more than deep soil. The roller excel in sandy soil thanks to ther large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



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The vibro pack (3) is with spring steel parts mounted offset to ensure packing in stripes. The spring steel ensure self-cleaning effect and low weight.



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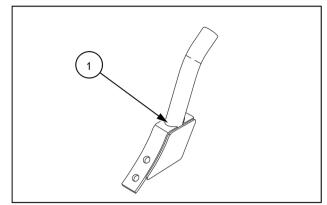
Seed tubes kit

If the Vibro till is bought to be converted to seeding with an aftermarket seeding system, it is possible to order a kit of seed tubes which can bolt on the tines.

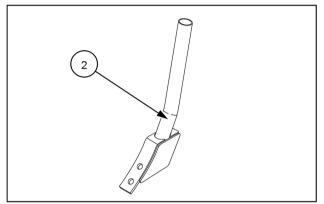
NOTE: There are no seed hoses in the kit.

The quantity and the kind of seed tubes kit are shown in the table below:

Model	Quantity of 30-degree seedtube (1)	Quantity of straight seedtube (2)
Vibro till 500	8	24
Vibro till 600	10	30



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ZEIL22TIL0220AA

11 - FORMS AND DECLARATIONS

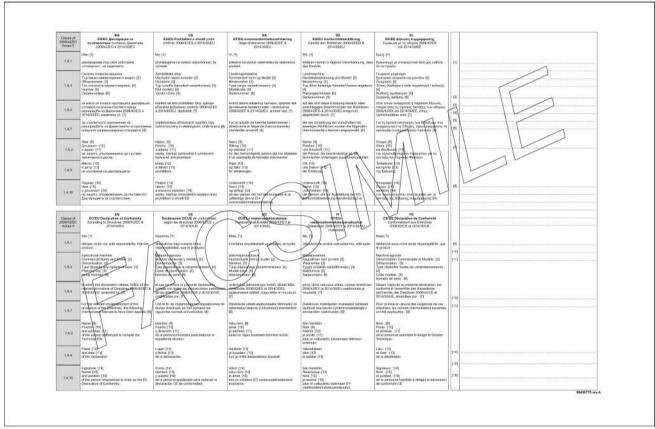
European Community (EC) Declaration of Conformity

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

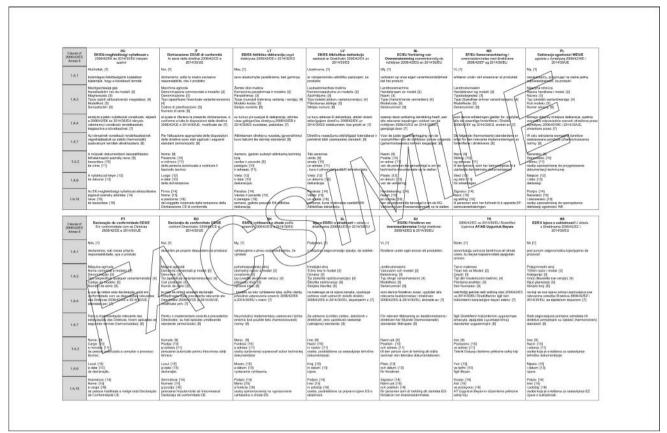
Inside the European Community and for some specific countries, an EC Declaration of Conformity is separately delivered with your implement. The EC Declaration of Conformity is the manufacturer's declaration about equipment compliance to relevant European Union (EU) provisions.

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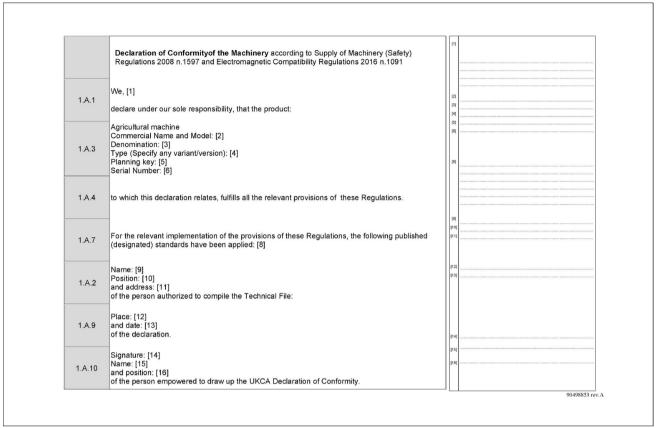
For your better and easier understanding of the document, you will find the text reproduced hereafter.

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

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: Tillage
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
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.



ZEIL22TIL0020FA

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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.



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