OPERATOR'S MANUAL

Delta Flex 3000

Delta Flex 4000

Delta Flex 4000H

Delta Flex 5000H

Delta Flex 5000HT

Delta Flex 6000HT

Delta Flex 7000HT

Stubble Cultivator

PIN KTNKA62*A00001220 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

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

The implement may only be used to windrow green forage (alfalfa, clover, grass, etcetera) hay and straw.

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.

Any other use beyond the intended use is regarded as misuse and requires the authorization of the manufacturer. The manufacturer is not responsible for any damage that results from the improper use of the implement. The user bears that risk.

Contact your local dealer when you are not sure about the use or function of your implement in a particular application (for example crop, variety, unique conditions, etcetera) or you do not know if there is a need for special equipment or special precautions.

No parts must be fitted to this implement, which have not been released by KONGSKILDE. They might affect the implement operation, safety of the user or other people, stability or wear characteristics of the implement. They may also void the homologation approval obtained for your country and compliance with EC directives.

Do not make changes to the implement and its construction without the permission from the manufacturer. The manufacturer does not accept any responsibility for damages that results from unauthorized modification.

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

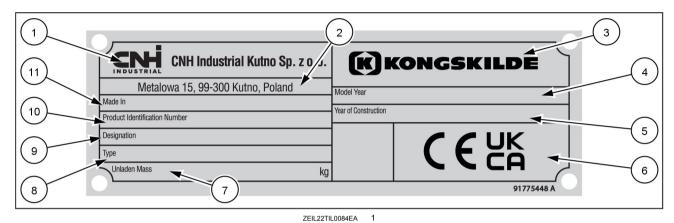
When required, the machine is delivered with an assembly instruction. The assembly instruction shows the pack-

Product Identification Number (PIN) (for lift mounted version)

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

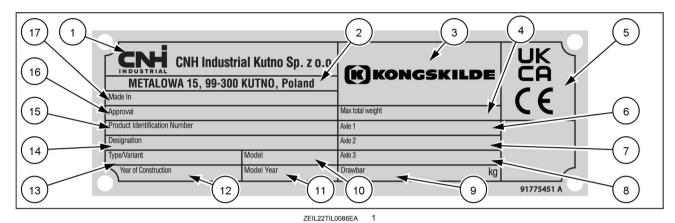
- (7) Unladen mass
- (8) Type / Variant
- (9) Designation
- (10) Product Identification Number (PIN)
- (11) Made in (country of origin)

Product Identification Number (PIN) (for trailed version)

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 PIN when you order spare parts.



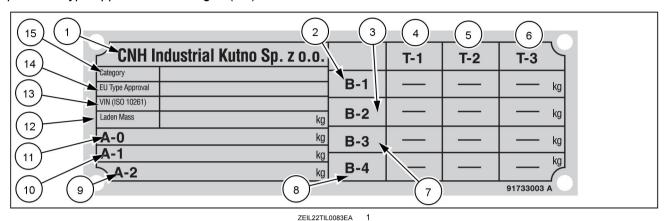
(1)	Company name

- (2) Mailing address
- (3) Brand identification logo
- (4) Maximum total weight
- (5) Certification mark
- (6) Permissible load axle 1
- (7) Permissible load axle 2
- (8) Permissible load axle 3
- (9) Maximum permissible load on the drawbar

- (10) Model
- (11) Model year
- (12) Year of construction
- (13) Type / Variant
- (14) Designation
- (15) Product Identification Number (PIN)
- (16) Approval
- (17) Made in (country of origin)

Homologation plate

NOTE: The homologation plate is used only for trailed implements type approved according to (EU) 167/2013.



- (1) Company name
- (2) Un-braked towable mass
- (3) Inertia-braked towable mass
- (4) Drawbar
- (5) Rigid drawbar
- (6) Centre-axle
- (7) Towable braked mass (pneumatic)
- (8) Towable braked mass (hydraulic)

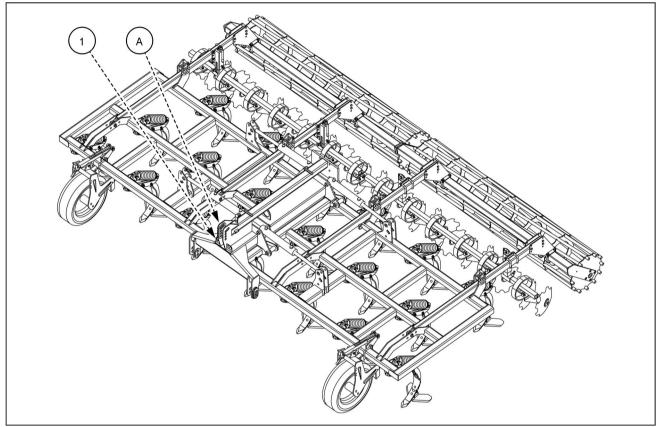
- (9) Permissible load axle 3
- (10) Permissible load axle 2
- (11) Permissible load axle 1
- (12) Maximum permissible laden mass
- (13) Vehicle Identification Number (VIN) (ISO 10261)
- (14) Type approval
- (15) Category

Product identification (for lift mounted version)

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

The PIN plate (1) is on the right-hand side of the headstock frame.

The PIN is also engraved on the chassis at **(A)** above the PIN plate **(1)**.



ZEIL19TL0082FA

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

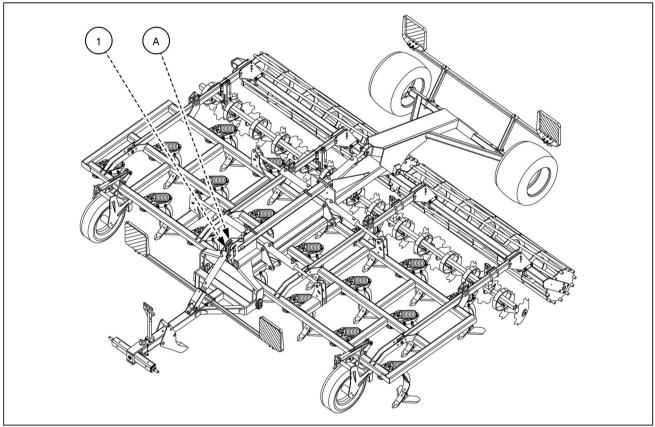
Model	
Product Identification Number (PIN)	

Product identification (for trailed version)

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Model	
Product Identification Number (PIN)	

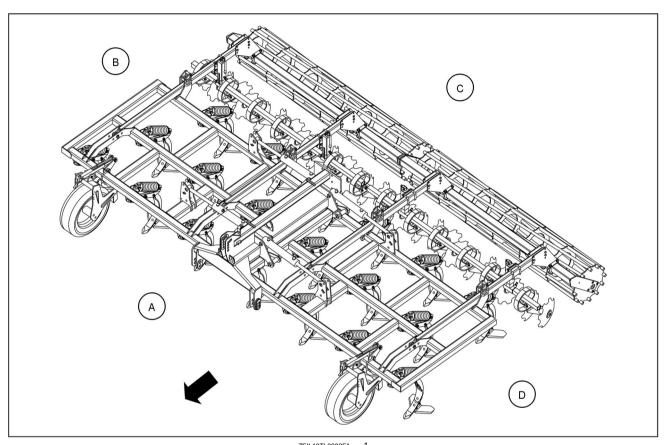
Operator's manual storage on the machine

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

Implement orientation (for lift mounted version)

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

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



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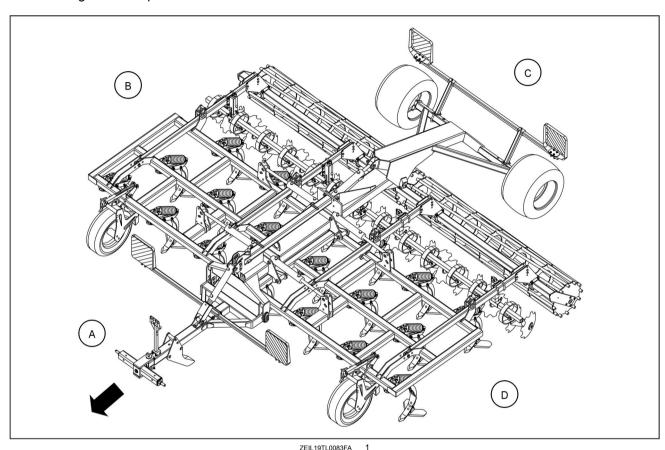
NOTE: The arrow indicates the direction of the implement during working operation.

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

Implement orientation (for trailed version)

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

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



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 - 0	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.

Safety rules

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 autho-

- rized to use the implement. Never leave the implement to others before you have made sure that they have the necessary knowledge to operate the implement safely.
- Never let the implement run without supervision.
- · Always keep a first aid kit handy.
- The implement has only one operator station and this is the cab of the tractor, which is a one man operated implement. Never permit anyone to ride on or in an implement. Do not allow riders on the implement or tractor; do not allow people to stand on the ladder or steps. Your view to the left or right will be obstructed and a rider risks to fall from the implement or tractor during unforeseen or abrupt movements. There is no need for other people on or around the implement during normal operation.
- Do not use this implement as a lift, ladder or platform to work at heights.
- Before you work on the implement, disengage all drives, stop the engine and remove the ignition key. Wait for the rotating parts to run down.
- Never work around the implement with loose clothing, jewelry, watches, long hair and other loose or hanging items can be pulled in by the moving parts of the implement.

Illustrations

▲ WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.

Replace all shields before operating the machine.

Failure to comply could result in death or serious injury.

W0012A

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

Local obligations

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

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

Fire or explosion prevention

- 1. Crop material, trash, debris, bird nests or flammable material can ignite on hot surfaces.
- 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 manoeuvre with the tractor may cause serious injury.
- Never go under an unsupported implement.

Install all the guards correctly before you use the implement.

Before you start up the implement (for example the first time after a long standstill period), make sure that there are no detached loose parts on the drive line area and on the moving parts of the implement.

Travelling on public roads

Comply with the relevant traffic regulations

▲ WARNING

Loss of control hazard!

Uneven brake force exists on left-hand and right-hand brakes. Always use brake pedal coupler when traveling on public roads to ensure brakes are actuated together.

Failure to comply could result in death or serious injury.

W0081A

A WARNING

Transport hazard!

Observe the local government regulations when driving on public roads.

Failure to comply could result in death or serious injury.

W1019

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.

W0089A

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

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

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

Before you drive the implement on public roads:

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

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

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

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

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

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

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

Passengers

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

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

Transport safety

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

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

Drive safe

Do not drive under the influence of alcohol or drugs.

Never travel at speed in crowded areas.

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

The tractor driver must not leave the cabin during transport.

Always consider other road users.

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

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

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

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

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

The implement and the ballast weight 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 place the implement 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.

Stopping the implement safely

Always interrupt the operation of the implement before you leave the tractor seat.

Make sure to secure the tractor by means of the hand brake and/or stop blocks if you need to stand between the tractor and the implement.

When, due to exceptional circumstances, you decide to keep the tractor engine running after you leave the tractor cab, you must:

- Bring the tractor engine to low idle speed.
- · Disengage all drive systems.
- · Shift the tractor transmission into neutral.
- · Apply the parking brake.

When you park the implement there are some operational risks which may cause personal injury. Therefore, you must:

- Make sure that the ground is firm and even during parking.
- Make sure that tractor and implement cannot move.
- · Always lower the implement to the ground.
- · Stop the tractor engine and remove the ignition key.
- Use correct support or transport safety device when the implement is parked. Make sure that the parking stand is secured.

When you detach the implement from the tractor:

- Never allow anyone to stand between the tractor and the implement. An unintentional manoeuvre with the tractor may cause serious injury.
- Always detach the implement carefully and on a flat surface to prevent damage.
- · Never go under an unsupported implement.

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.

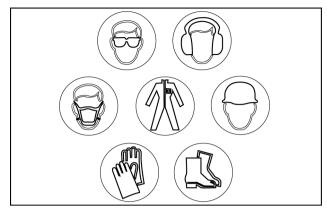
W0004

- 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.



NHIL13RB00001AA

Safety requirements for fluid power systems and components - hydraulic systems

A WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

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 hydraulic system of the tractor is activated, the hydraulic system 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 header suddenly moves downward after you open the transport lock.

Implement stability

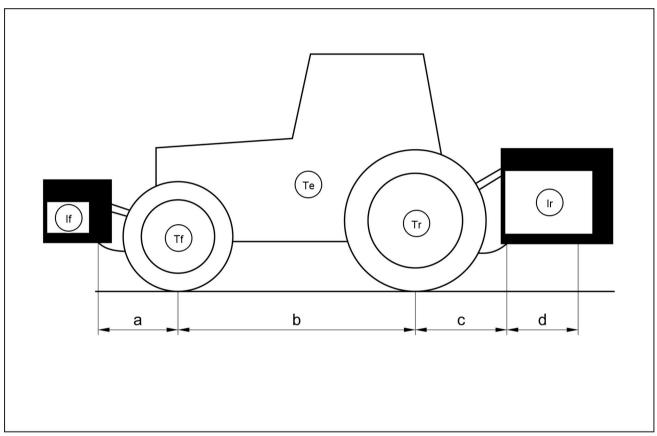
The combination of your tractor and implement can become unstable, due to the additional weight that the implement adds to the tractor.

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



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Example of references to stability of the combination tractor - implement

List of signs

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

Ecology and the environment

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

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

Helpful hints

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

Battery recycling

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



NHIL14GEN0038AA

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 (for lift mounted version)

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.

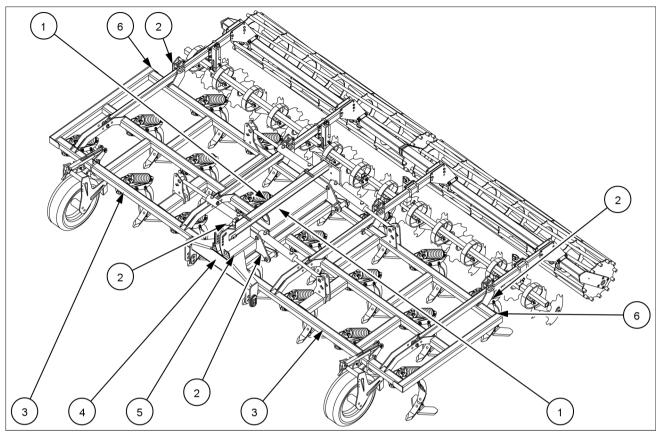
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part that you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. Contact your dealer for the replacement of the safety signs.

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.

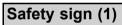


Safety signs that display the "Read service manual" symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.





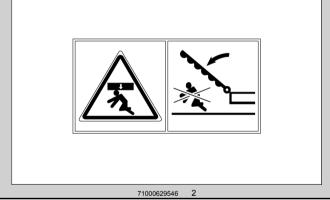
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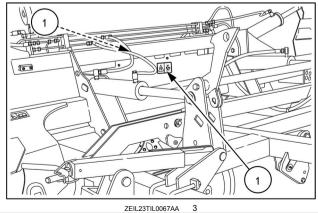
Moving parts

Do not stand near foldable frame of the stubble cultivator.

Part number: 71000629546



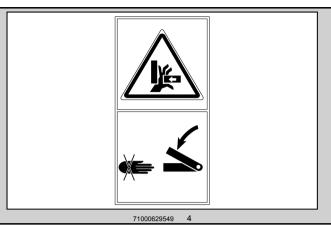
Located on both sides of the central frame.



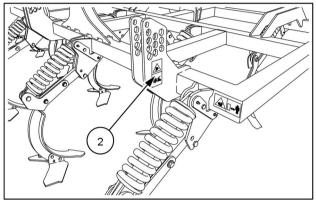
Safety sign (2)

Never move your hand into the danger zone as long as the parts can move. This cause serious injury and, at worst, result in death.

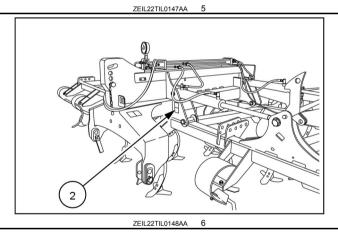
Part number: 71000629549



Located on left-hand side and right-hand side of the rear frame.



Located on left-hand side and right-hand side of the front frame.



Safety sign (3)

A WARNING

Falling object hazard!

Loss of hydraulic pressure or movement of a control can cause raised equipment to fall. Never work under an implement or attachment supported only by the hydraulic system. Always use suitable equipment to support an implement or attachment that must be serviced in a raised position.

Failure to comply could result in death or serious injury.

A hazard of your body being crushed by lowered implement elements.

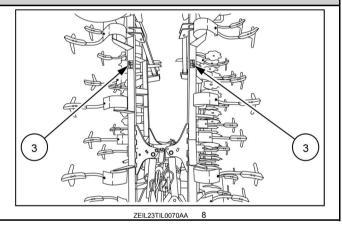
The hazard will result in death or serious injury.

Reaching to the hazard zone with the engine running and the hydraulic or electrical installation connected is strictly prohibited.

Part number: 330600020 Located on both side arms.



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Safety sign (4)

A WARNING

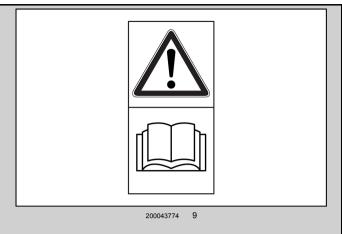
IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY.

MAKE SURE THAT EVERY OPERATOR:

- -is instructed in the safe and proper use of this machine.
- -reads and understands the operator's manual for this machine.
- -reads and understands ALL safety signs on the machine.

Failure to comply could result in death or serious injury.

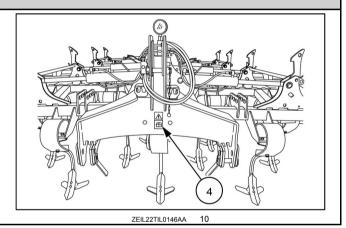
W0188A



Carefully read the operator's manual before handling the implement. Observe instructions and safety rules when operating.

Part number: 200043774

Located on the front frame.



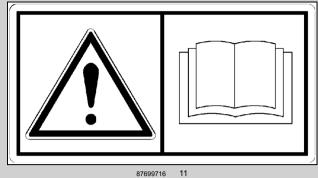
Safety sign (5)

A WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY. MAKE SURE THAT EVERY OPERATOR:

- -is instructed in the safe and proper use of this machine.
- -reads and understands the operator's manual for this machine.
- -reads and understands ALL safety signs on the machine.

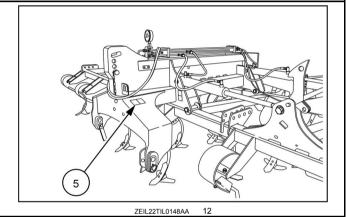
Failure to comply could result in death or serious injury.



Carefully read the operator's manual before you handle the implement. Observe instructions and safety rules when you operate the implement.

Part number: 87699716

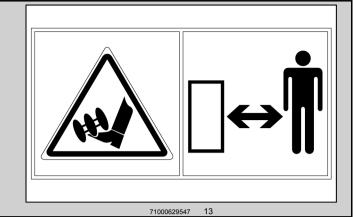
Located on the left-hand side of the front frame.



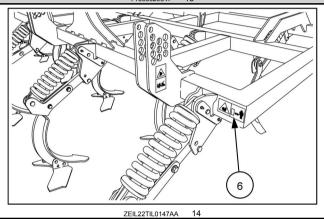
Safety sign (6)

Danger of rotating discs When discs are rotating, keep sufficient distance.

Part number: 71000629547



Located on left-hand side and right-hand side of the rear frame.



Safety signs (for trailed version)

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.

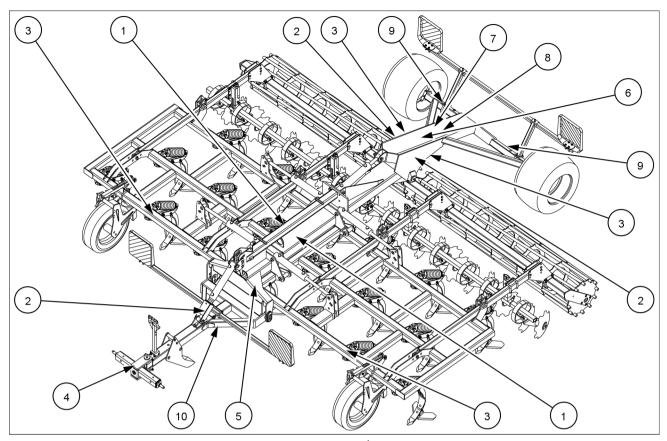
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part that you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. Contact your dealer for the replacement of the safety signs.

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.

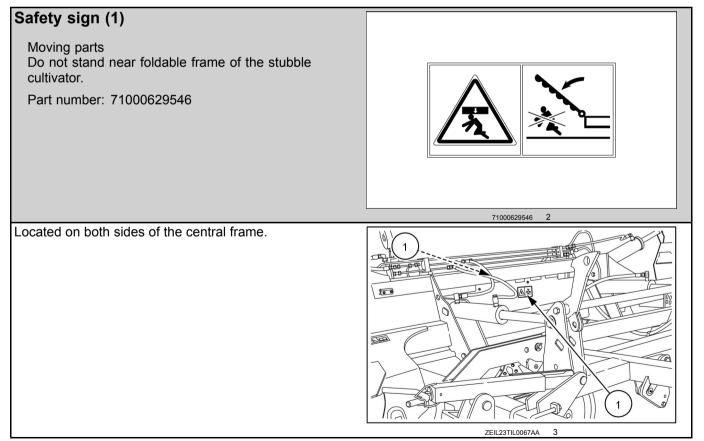


Safety signs that display the "Read service manual" symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.





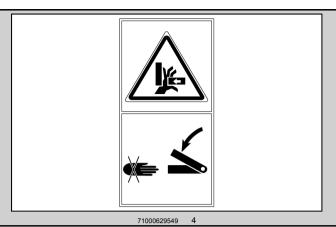
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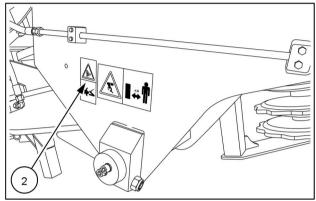
Safety sign (2)

Never move your hand into the danger zone as long as the parts can move. This cause serious injury and, at worst, result in death.

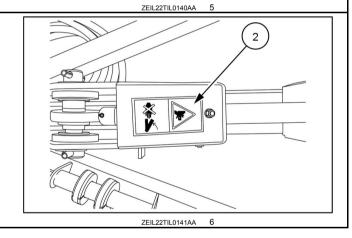
Part number: 71000629549



Located on left-hand side and right-hand side of the rear frame.



Located on the cover of the front hydraulic cylinder.



Safety sign (3)

Stay clear of swinging area

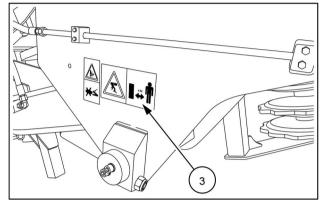
Do not get close to the transport wheels of trailed stubble cultivator.

Take care not to get squeezed between roller and wheels, or to be hit by wheels.

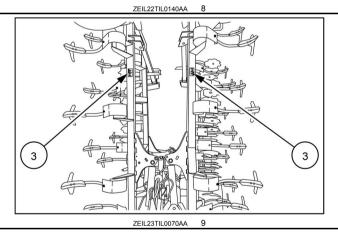
Part number: 330600020



Located on left-hand side and right-hand side of the rear frame.



Located on both side arms.



Safety sign (4)

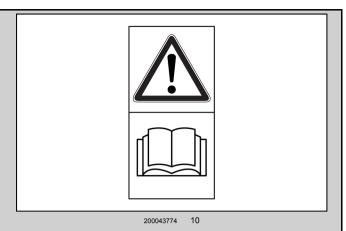
A WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY.

- MAKE SURE THAT EVERY OPERATOR:
 -is instructed in the safe and proper use of this
- machine.
 -reads and understands the operator's manual for this machine.
- -reads and understands ALL safety signs on the machine.

Failure to comply could result in death or serious injury.

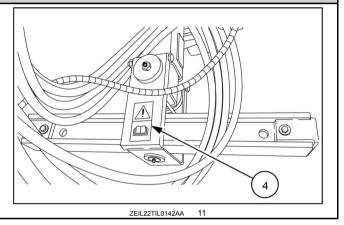
W0188A



Carefully read the operator's manual before handling the implement. Observe instructions and safety rules when operating.

Part number: 200043774

Located on the drawbar.



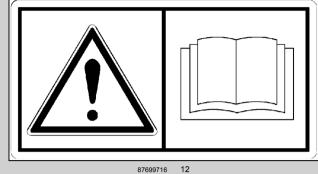
Safety sign (5)

A WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY. MAKE SURE THAT EVERY OPERATOR:

- -is instructed in the safe and proper use of this machine.
- -reads and understands the operator's manual for this machine.
- -reads and understands ALL safety signs on the machine.

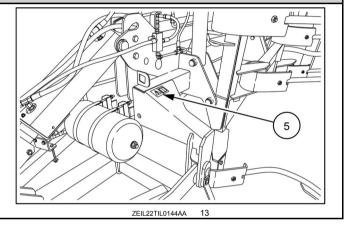
Failure to comply could result in death or serious injury.



Carefully read the operator's manual before you handle the implement. Observe instructions and safety rules when you operate the implement.

Part number: 87699716

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



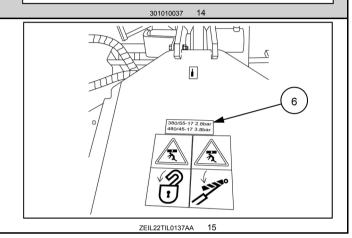
Safety sign (6)

Required tire pressure.

Part number: 301010037

380/55-17 2,8bar 480/45-17 3,2bar

Located on the chassis at rear of the implement.

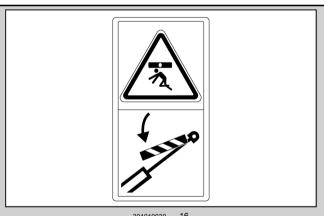


Safety sign (7)

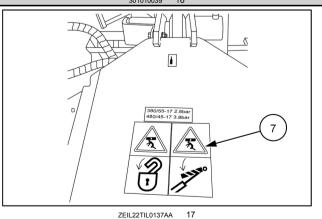
Hazard of your body parts being crushed causing severe injuries, with possible lethal effect.

Make sure the transport lock is safely closed during transport, operation and maintenance.

Part number: 301010039



Located on the chassis at rear of the implement.

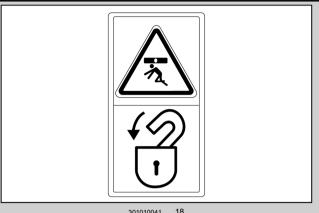


Safety sign (8)

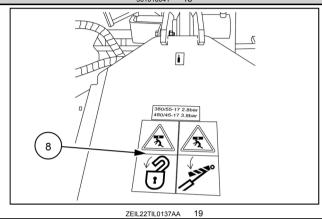
Hazard of your body parts being crushed causing severe injuries, with possible lethal effect.

Make sure wing hooks are safely locked during transport, operation and maintenance.

Part number: 301010041



Located on the chassis at rear of the implement.



Safety sign (9)

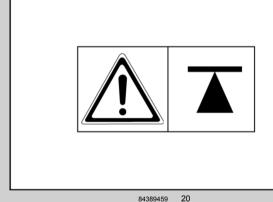
A WARNING

Crushing hazard!

Unit could fall if not properly supported. Follow jacking instructions provided for the unit. Use suitable jack stands. Be sure to position them properly.

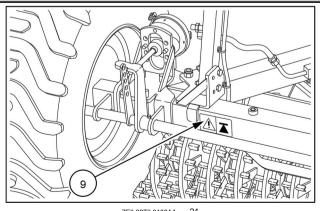
Failure to comply could result in death or serious injury.

W0919



Part number: 84389459

Located on both sides of wheel axle.



ZEIL22TIL0138AA 2

Safety sign (10)

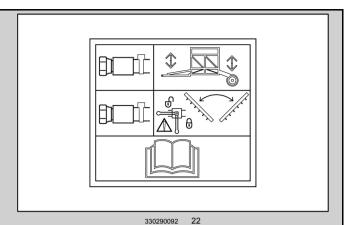
Unexpected machine movement can cause death or serious injury.

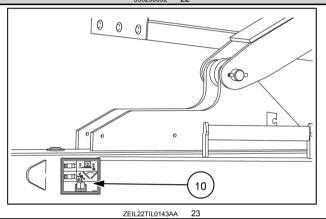
Make sure the implement is connected to a stable device when activating the hydraulics to fold and unfold the wings. Follow the correct operating procedure.

When working underneath the wings, when transporting, or when leaving the implement wings up for any extended length of time, make sure the valve which preventing from accidental unfolding is closed.

Part number: 330290092

Located on front left-hand side of the drawbar.

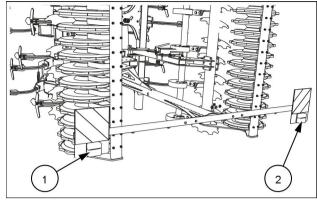




Road travel lights, signs, and reflectors (for lift mounted version)

Road lights

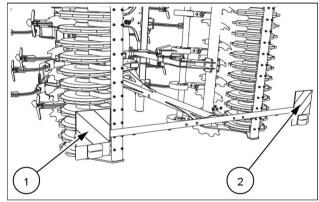
- Rear lights (1) left-hand side
- Rear lights (2) right-hand side



ZEIL22TIL0024AA

Signal plates

- Rear signal plate (1) left-hand side
- Rear signal plate (2) right-hand side



ZEIL22TIL0024AA

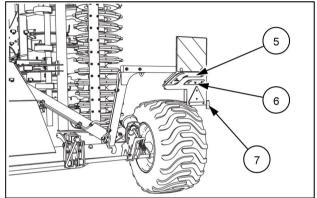
Road travel lights, signs, and reflectors (for trailed version)

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
- · License plate light (4)

ZEIL22TIL0218AA

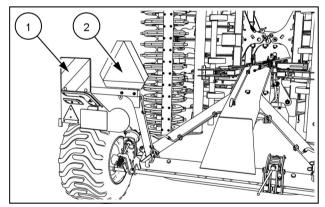
- Rear position and stop lights (5) right-hand side
- Rear direction indicator light (6) right-hand side
- End outline marker light (7) right-hand side



ZEIL22TIL0217AA

Signal plates

- Rear signal plate (1) left-hand side
- Slow-Moving Vehicle (SMV) sign (2) (if equipped)

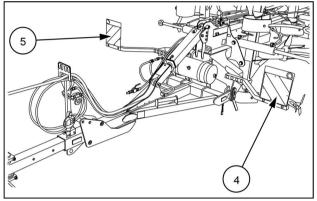


ZEIL22TIL0218AA

• Rear signal plate (3) right-hand side

- 3
 - ZEIL22TIL0217AA

- Front signal plate (4) left-hand side
- Front signal plate (5) right-hand side



ZEIL23II01223AA

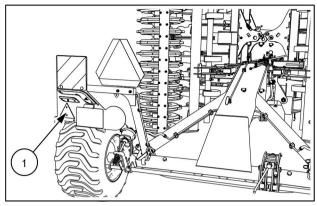
Reflectors

• Rear reflector (1) left-hand side

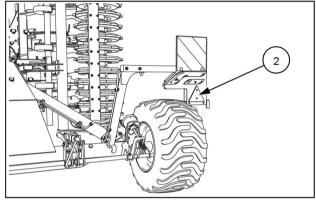
• Rear reflector (2) right-hand side



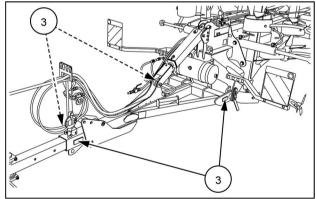
- Front reflector (4) left-hand side
- Front reflector (5) right-hand side



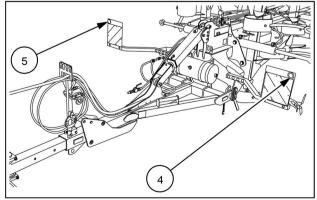
ZEIL22TIL0218AA



ZEIL22TIL0217AA



ZEIL23II01223AA



ZEIL23II01223AA

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 you operate the implement, perform the following operations:

- 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.
- Check the correct installation of the discs, tines and roller.
- Check the implement visually to find possible errors.
 Always replace all parts that are damaged or wear.
- Check the correct installation of the safety devices.
 Also check if the safety devices are intact.
- Remove all the tools from the implement.
- Check the correct connection and tightening of the hydraulic components.
- 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.
- · Check the proper tightness of all the nuts and bolts.
- Grease the implement before you start the operations.
 This is also necessary before you use the implement for the first time.
- Check the tire pressure (if applicable).

NOTE: If there is any doubt, stop the tractor and the implement immediately. If necessary, seek authorized assistance.

Starting the unit

Connection to the tractor (for lift mounted version)

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

Rear upset hazard!

Use the correct location on the tractor when attaching equipment. Always use the drawbar for trailed equipment. Always use the three-point hitch for mounted or semi-mounted equipment. Do not use the hitch as a drawbar.

Failure to comply could result in death or serious injury.

W0331B

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: Before you couple the implement to the threepoint hitch, put the operating mechanism into a position which prevents any accidental lifting or lowering.

NOTE: The three-point hitch category on the stubble cultivator and on the tractor must match with each other. If they do not correspond, adjust the three-point linkage on the tractor.

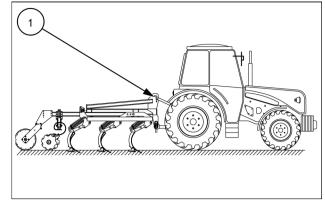
NOTE: Use original and correct coupling parts.

- 1. Fit the ball bushes in correct category over the pins 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 (1).
- 5. Connect the hydraulic hoses.

NOTE: Make sure there are no oil leaks in the hydraulic connections.

- 6. Connect light equipment (optional).
- 7. Make sure all functions work correctly.



ZEIL19TIL0121AA

Connection to the tractor (for trailed version)

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

Rear upset hazard!

Use the correct location on the tractor when attaching equipment. Always use the drawbar for trailed equipment. Always use the three-point hitch for mounted or semi-mounted equipment. Do not use the hitch as a drawbar.

Failure to comply could result in death or serious injury.

W0331B

Hydraulic system

NOTICE: When you connect or disconnect hydraulic hoses or connections, make sure that the system is depressurized both in the tractor and in the implement. There is a risk of infection from the side of the outflowing pressurized oil.

Prior to connecting the implement to the hydraulic system:

- 1. Verify if the oil used in the tractor hydraulics and the implement hydraulics matches.
- 2. Remember that the permissible working pressure of oil in the system is **200 bar** (**3190.00 psi**).
- Verify that the quick-couplers are properly clean; if not, clean them.
- 4. Verify that the connection are properly tightened.
- Set the tractor's steering implement in the neutral position.

NOTICE: Only qualified servicing personnel may perform adjustment and repair of the hydraulic system.

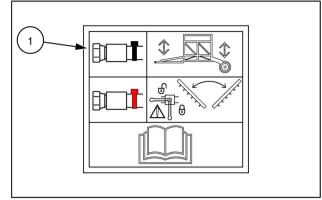
Before you connect the implement to the tractor:

- Verify if the connection matches the three-point suspension system of the implement and the tractor.
- Perform all the necessary adjustments if the connection is inconsistent.
- 3. Make sure that the implement is standing on firm ground and is secured against unintentional rolling.

Hydraulic connections are marked with the following colors:

- Black the line operating the drawbar cylinder and the transport trailer.
- Red the line operating the wing cylinders.

NOTE: Refer to decal (1) to identify the hydraulic hoses.



ZEIL22TIL0214AA

Hitching the implement to the tractor - General

The implement can be connected to the tractor either by linkage or drawbar.

Standard equipment is a hook coupling **40 mm (1)**. The optional equipment is:

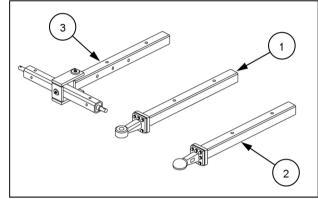
- Towing eye K80 ball coupling (2).
- 2-point drawbar category 3 normal coupling (3)
- Hook coupling 50 mm (1)
- 2-point drawbar category 4 normal coupling (3)
- 2-point drawbar category 4 narrow coupling (3)

NOTE: Category 4 narrow coupling has the same width as category 3 but with category 4 pins.

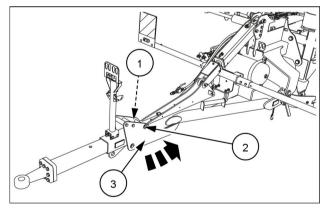
NOTE: Use original and correct coupling parts.

Hitching the implement with hook coupling

- Reverse the tractor to approach the implement, so that their couplings line up.
- 2. Position the coupling until it reaches the proper height to connect it to the tractor.
- 3. Connect the hydraulic hoses.
- 4. Connect the tractor with the implement.
- 5. Connect light equipment.
- 6. Secure all connections against unintentional disconnection.
- 7. Inspect the hydraulic connections for oil leaks.
- 8. Make sure all functions work correctly.
- 9. Remove the linchpin (1) and remove the pin (2).
- 10. Turn the jack (3) to the working position.
- 11. Install the pin (2) and secure the pin with the linchpin (1).



ZEIL19TIL0510AA 2



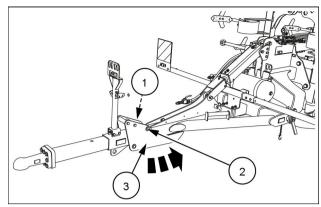
ZEIL22TIL0030AA

Hitching the implement with the K80 ball coupling

- Position the coupling until it reaches the proper height 1. to connect it to the tractor.
- Reverse the tractor so that the coupling of the implement is placed directly above the tractor coupling.
- Use the hydraulic line to lower the implement so that the coupling ball rests on the tractor coupling.
- 4. Connect the hydraulic hoses.
- 5. Connect the tractor with the implement.
- Connect light equipment.
- 7. Secure all connections against unintentional disconnection.
- 8. Inspect the hydraulic connections for oil leaks.
- Make sure all functions work correctly.
- 10. Remove the linchpin (1) and remove the pin (2).
- 11. Turn the jack (3) to the working position.
- 12. Install the pin (2) and secure the pin with the linchpin

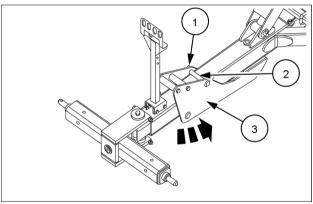
Hitching the implement with a 2-point drawbar

- Put the ball bushes in correct category over the pins 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.
- 3. Raise the lower linkages until the lower linkages hooks are coupled.
- Connect the hydraulic hoses. 4.
- 5. Connect light equipment.
- Secure all connections against unintentional disconnection.
- 7. Inspect the hydraulic connections for oil leaks.
- Make sure all functions work correctly.
- Remove the linchpin (1) and remove the pin (2).
- 10. Turn the jack (3) to the working position.
- 11. Install the pin (2) and secure the pin with the linchpin (1).



ZEIL22TIL0031AA





ZEIL17TIL0218AA

Stopping the unit

Disconnection and parking (for lift mounted version)

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.

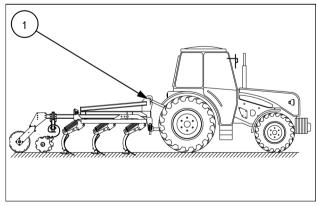
Failure to comply could result in death or serious injury.

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.

- Unfold the stubble cultivator (hydraulic foldable version only).
- 2. Park the stubble cultivator on level and solid ground.
- 3. Remove the oil pressure from the connections.
- 4. Uncouple the hydraulic hoses from the tractor.
- 5. Disconnect the light equipment (optional).
- 6. Remove the top link from the stubble cultivator (1).
- 7. Release the hooks of the lower linkages.
- 8. Lower the lower linkages until they free of the implement hitching points.
- 9. Drive the tractor slowly forward.



ZEIL19TIL0121AA

Disconnection and parking (for trailed version)

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 drawbar 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.

- Unfold the stubble cultivator (hydraulic foldable version only).
- 2. Park the stubble cultivator on level and solid ground.

NOTE: Although you can park the stubble cultivator in folded position, park the stubble cultivator only unfolded to have a larger stability.

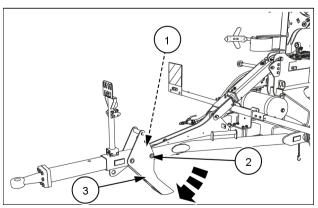
- 3. Remove the oil pressure from the connections.
- 4. Uncouple the hydraulic hoses from the tractor.
- 5. Disconnect the light equipment.

Disconnecting the implement attached on a hook coupling

- 1. Loosen the linchpin (1) and remove the pin (2).
- 2. Lower the jack (3).
- 3. Install the pin (2) and secure the pin with the linchpin (1).
- 4. Unlock the coupling.

NOTICE: Before driving away from the implement with the tractor, make sure that all components are disconnected. Risk of damaging implement components.

5. Drive the tractor slowly forward.



ZEIL22TIL0032AA

Disconnecting the implement attached in a K80 ball coupling

- 1. Loosen the linchpin (1) and remove the pin (2).
- 2. Lower the jack (3).
- 3. Install the pin (2) and secure the pin with the linchpin (1).
- 4. Unlock the coupling.

NOTICE: Before driving away from the implement with the tractor, make sure that all components are disconnected. Risk of damaging implement components.

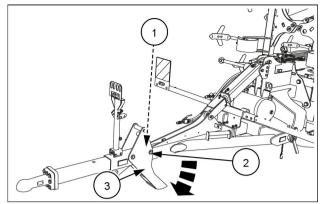
5. Drive the tractor slowly forward.

Disconnecting the implement attached on the 2-point drawbar

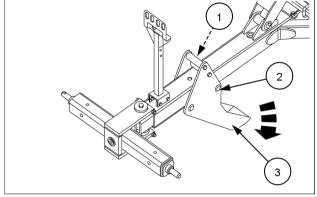
- 1. Loosen the linchpin (1) and remove the pin (2).
- 2. Lower the jack (3).
- 3. Install the pin (2) and secure the pin with the linchpin (1).
- 4. Release the hooks of the lower linkages.
- 5. Lower the lower linkages until the lower linkages are free of the implement hitching points.

NOTICE: Before driving away from the implement with the tractor, make sure that all components are disconnected. Risk of damaging implement components.

6. Drive the tractor slowly forward.



ZEIL22TIL0033AA



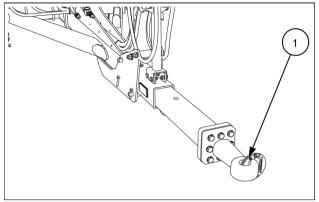
ZEIL17TIL0216AA

Anti-theft protection

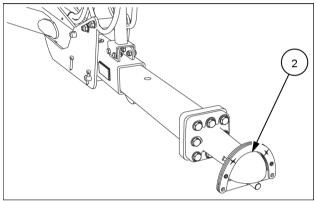
The implement is fitted with a device against unauthorized use, to be used at the end of the work shift, during parking or during downtime, to prevent it from being hooked to a tractor and reducing the risk of unauthorized use.

Depending on the equipped front couplings listed below, use the proper device against unauthorized use:

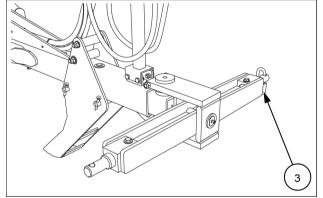
- Hook 40 mm/ 50 mm (1)
- Towing eye K80 (2)
- Two point drawbar (3)



ZEIL22TIL0029AA



ZEIL22TIL0027AA



ZEIL22TIL0028AA

Jack point locations (for trailed version)

A WARNING

Jack stands can slip or fall over. Dropping, tipping, or slipping of machine or its components is possible.

DO NOT work under a vehicle supported by jack stands only. Park machine on a level surface. Block wheels. Support machine with safety stands.

Failure to comply could result in death or serious injury.

W0069A

▲ WARNING

Crushing hazard!

Unit could fall if not properly supported. Follow jacking instructions provided for the unit. Use suitable jack stands. Be sure to position them properly.

Failure to comply could result in death or serious injury.

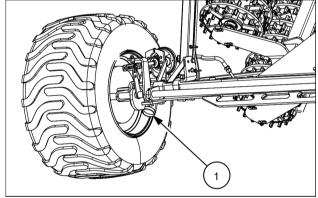
W0919A

To jack the implement in a correct way, proceed as follows:

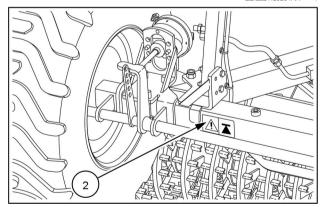
- 1. Park the implement on a firm and level ground.
- Place the jack under the jack point (1) of the implement.

NOTE: A safety decal (2) highlights the correct position.

NOTE: The picture depict the left-hand side of the implement. The same jack point is present on the right-hand side of the implement.



ZEIL22TIL0201AA



ZEIL22TIL0138AA

4 - OPERATING INSTRUCTIONS

5 - TRANSPORT OPERATIONS

Road transport

Transport position (for lift mounted version)

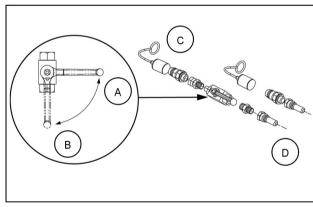
To set the implement for road transport, proceed as follows:

- 1. Lift and fold the implement. See Page 5-6.
- 2. Make sure that the security hooks couple the frames in upright position (for foldable version).
- To give a lower center of gravity, and thereby a more stabile transport, lower the implement to a lower level, and keep sufficient distance to the road during transport.
- Make sure that the implement is secure, that nothing can fall off, including big lumps of soil, during transport.

NOTE: Ensure sufficient locking at the side of the three-point linkage.

- Check that the outer discs of leveling tool are in transport position. See Page 6-17.
- 6. Check that any light kits and warning plates work properly and are 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.

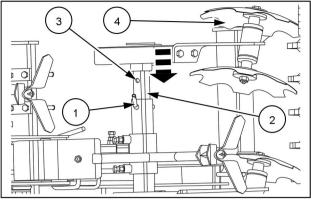


ZEIL19TIL0393AA

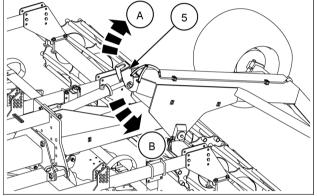
Transport position (for trailed version)

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

- 1. Use the drawbar cylinder and the cylinder for the wheel system to lift the implement.
- 2. Remove the lock pin (1).
- 3. Move the cutting discs bar (2) as shown.
- 4. Position the lock pin (1) in the hole (3) in order to reduce the height of the cutting discs (4) in the folded position.
- 5. Fold the stubble cultivator. See Page 5-6.
- 6. Close the security lock (5) for the wheel system.
 - o (A) Open
 - o (B) Locked
- 7. Make sure that the wing security hooks lock the frames in upright position (for foldable version).
- 8. Use the drawbar cylinder to lower the implement.
- 9. Control the driver valve to adjust the cylinder for the wheel system.

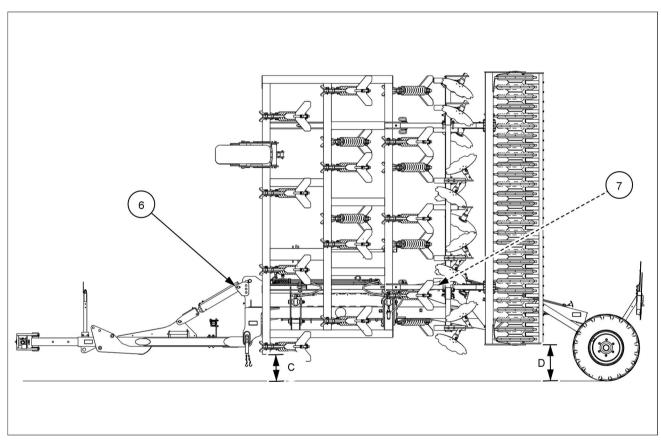


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ZEIL19TIL0123AA

- 10. Verify that the dimension (C) is 200.0 300.0 mm (7.9 11.8 in) and the dimension (D) is 300.0 400.0 mm (11.8 15.7 in).
 - If the dimensions **(C)** and **(D)** are not the required values, adjust the height of the implement with the use of black hydraulic line operating the cylinders of the drawbar **(6)** and trailer **(7)**.
- 11. Check that all the lights work properly, are clearly visible and perpendicular to the ground.
- 12. Check that the height of the cultivator is below **4.0 m** (**157.5 in**).
- 13. Make sure that the implement is secure, that nothing will fall off, including big lumps of soil, during transport.



ZEIL22TIL0057FA

Preparing for road transport

Lifting the implement (for lift mounted version)

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.

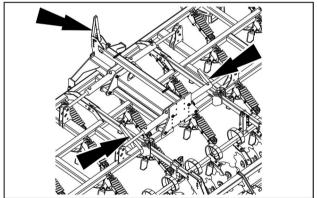
Failure to comply could result in death or serious injury.

W1432B

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

NOTE: Always lift the stubble cultivator in unfolded position.

To lift the implement place the straps as shown.



ZEIL17TIL0214AA

Lifting the implement (for trailed version)

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.

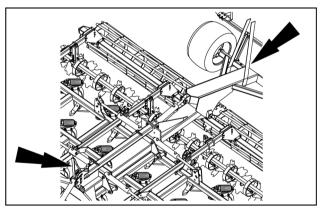
Failure to comply could result in death or serious injury.

W1432B

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

NOTE: Always lift the stubble cultivator in unfolded position.

To lift the implement place the straps as shown.



ZEIL17TIL0215AA

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

NOTICE: Make sure that no one gets close to the discs, due to risk of cutting.

NOTE: Raise the implement before you perform folding operations.

All hydraulic foldable cultivators are equipped with an automatic wing lock system, for easy operation of the security hooks.

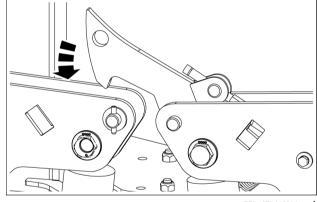
Activate the wing lock hooks by a small hydraulic cylinder; the hydraulic cylinder is in the hydraulic system for folding.

The security hooks prevent the implement from accidental unfolding in case of a defect in the hydraulic hoses.

Folding

To fold the implement, proceed as follows:

- 1. Close the valve to prevent accidental unfolding.
- 2. Lift the implement completely off the ground.
- 3. Operate the hydraulics of the folding cylinders and check that both wings fold completely in.
- 4. Check that the security hooks automatically click into place.
- 5. Check that the security hooks have locked the frames in the upright position.

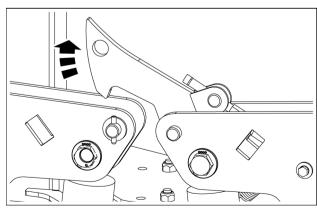


ZEIL19TIL0125AA

Unfolding

To unfold the implement, proceed as follows:

- 1. Open the valve to prevent accidental unfolding.
- 2. Lift the implement completely off the ground.
- 3. Operate the hydraulics of the folding cylinders.
- 4. The security hooks open automatically.
- Slowly unfold both wings and fully extend the wing cylinders.



ZEIL19TIL0125AA

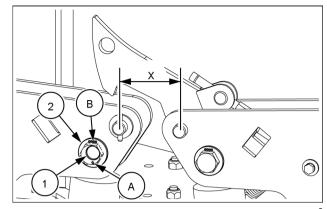
Adjustment of folding

It is possible to adjust the folding cylinder slightly, to ensure that the wing lock system makes a firm locking.

Adjust the folding cylinder only when you unfold completely the implement.

- 1. Loosen the security bolt (1).
- 2. To change the distance (X), move the hexagonal bushes (2) to a different position.
 - (A) = Maximum
 - (B) 0000 = Minimum
- 3. Retighten the security bolt (1).

NOTICE: For the bushes from both sides of the same cylinder, the markers have the same height.

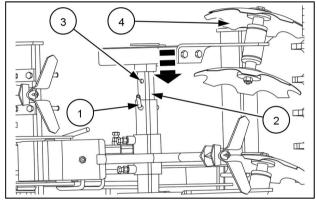


ZEIL19TIL0125AA

Adjustment of the height of the cutting discs in folded position (for trailed version)

It is possible to reduce the height of cutting discs in folded position.

- 1. Remove the lock pin (1).
- 2. Move the cutting discs bar (2) as shown.
- 3. Position the lock pin (1) in the hole (3) in order to reduce the height of the cutting discs (4) in the folded position.

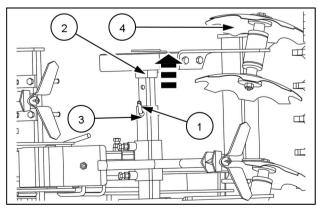


ZEIL21TIL0747AA

Adjustment of the height of the cutting discs in unfolded position (for trailed version)

It is possible to increase the height of cutting discs in unfolded position.

- 1. Move the cutting discs bar (2) as shown.
- 2. Position the lock pin (1) in the hole (3) in order to increase the height of the cutting discs (4) in the unfolded position.



ZEIL21TIL0747AA

 5 - TRANSPORT OPERATIONS	

6 - WORKING OPERATIONS

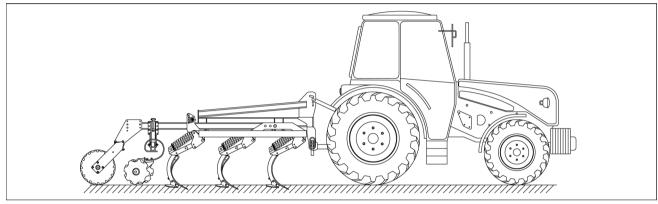
General information

Implement overview (for lift mounted version)

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

The implement with working widths 2.5 – 4 m (98.4 – 157.5 in) has not the hydraulic folding possibility.

The implement with working widths of $4 - 5 \, \text{m}$ (157.5 - 196.9 in) has the hydraulic folding possibility.

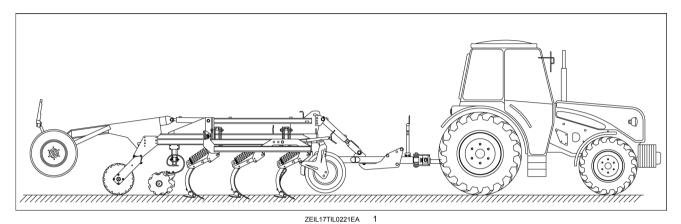


ZEIL17TIL0219EA

Implement overview (for trailed version)

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

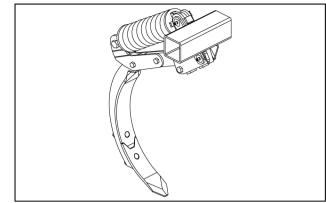
The implement with working widths $4 - 7 \, m$ (157.5 - 275.6 in) has the hydraulic folding possibility.



Tines

You can use different types of tine on the implement:

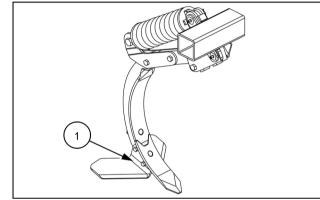
• 80 mm (3.1 in) tines without wing shares. Use this type of tines for deeper tillage down to 25 cm (9.8 in).



ZEIL17TIL0227AA

• 80 mm (3.1 in) tines with wing shares (1). Use this type of tines for full cutting of the surface and for working depth down to 12 cm (4.7 in).

NOTE: Use the wing shares in order to ensure the correct mixing effect of the soil.



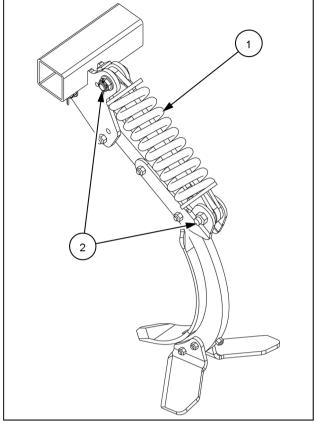
ZEIL17TIL0226AA

Tine protection

NOTE: The non-stop protection usually does not require any maintenance.

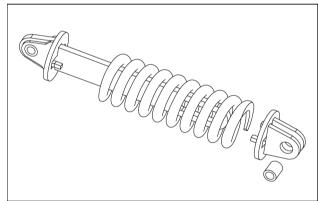
To replace the spring, proceed as follows:

- 1. Completely loosen the locking bolts (2).
- 2. Replace a complete spring unit (1).



ZEIL17TIL0238BA

NOTICE: Never dismantle a spring unit into parts. The unit usually does not require any maintenance. If you need to disassemble, please contact the dealer. The spring can cause severe damage, if suddenly released.



ZEIL17TIL0239AA

Carbide shares

The implement is equipped with two possible shares:

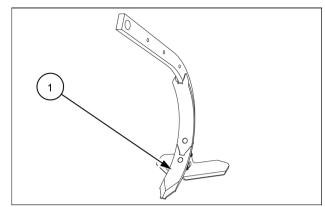
- Standard shares (1)
- Carbide shares (2)

The carbide shares have much more wear resistance than the standard one.

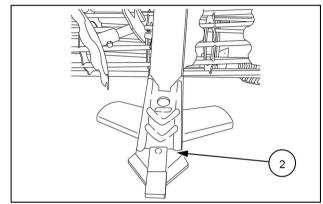
The carbide shares can work from four to eight times longer than the standard shares depending on various factors like for example the soil type and the soil moisture.

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

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



ZEIL22TIL0021AA

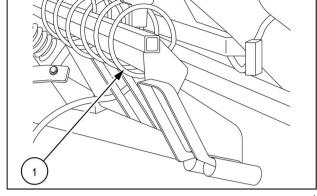


ZEIL21TIL0254AA

Levelling device

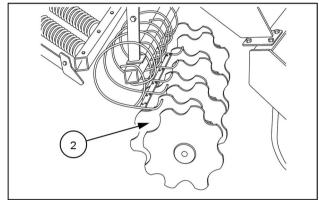
In order to level out the soil after cultivation, you can use an hockey stick leveller (1) and a disc leveller (2). The spring reduce stress and ensure that stones or other obstacles can pass through the implement.

You can use the hockey stick (1) in conditions with low to medium amounts of residues and lighter soil types.



ZFII 19TI 0109AA

Use the disc for more intensive cutting and levelling on heavier soil types. The notched discs ensure that discs do not block and always turn in a way not dependent on the soil type. The disc leveller (2) also ensures a final mixing before the roller.

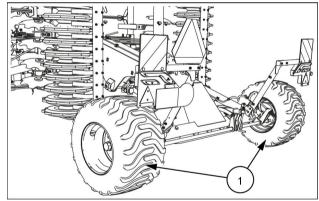


ZEIL19TL0099AA

Rear wheels and axles

The rear wheels (1) are in the far corners to maximize stability when you transport cultivator on the road.

Wheel Type	No brakes	Hydraulics brakes	Pneumatics brakes
380/55–17	X	Х	Х
480/45–17	Х	Х	Х



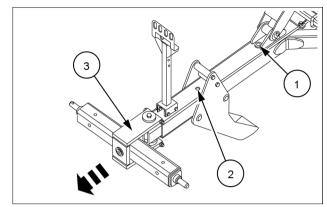
ZEIL22TIL0026AA

Drawbar adjustment (for trailed version)

You can extend the length of the drawbar on the stubble cultivator to match the space taken by the tractor when you turn. If you use a tractor with dual rear wheels, extend the drawbar of the implement.

To extend the drawbar, proceed as follows:

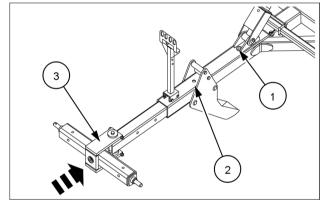
- 1. Remove the security clip and the pin (1).
- 2. Pull the drawbar (3) outward.
- 3. Install the pin in the hole (2) and lock the pin with the clip.



ZEIL17TIL0216AA

To shorten the drawbar, proceed as follows:

- 1. Remove the security clip and the pin (2).
- 2. Push the drawbar (3) to the inner position.
- 3. Install the pin in the hole (1) and lock it with the clip.

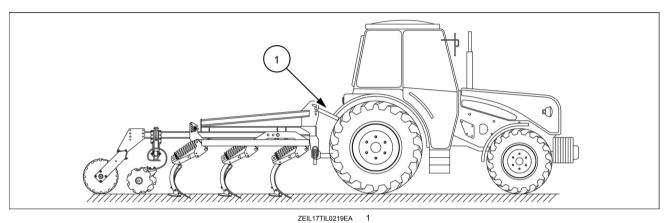


ZEIL17TIL0217AA

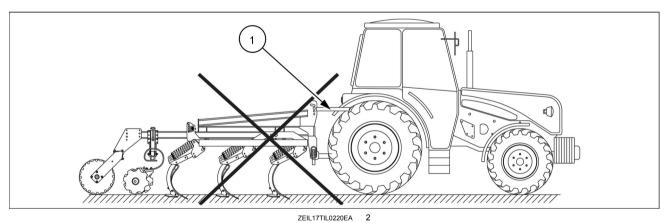
Working adjustment (for lift mounted version)

The stubble cultivator frame must stay horizontal during work to make both the front and the rear row of tines work at the same depth. Adjust the stubble cultivator frame by means of the top link (1) of the tractor. A short top link raises the rear row of tines whereas a lengthened top link lowers the rear row of tines. When the cultivator works in the field, the top link (1) is lower at the tractor end than at the headstock of the cultivator.

The top link (1) must never be horizontal or parallel to the lower linkages as the cultivator runs unsteadily and makes the steering of the tractor difficult.



Correct adjustment of the top link



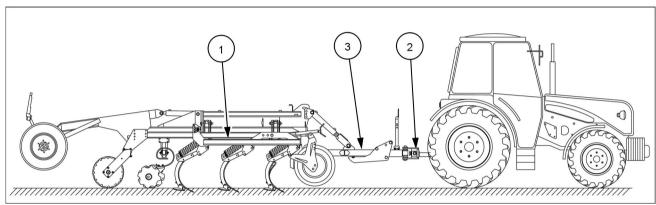
Wrong adjustment of the top link

Working adjustment (for trailed version)

Adjustment of the lower linkages

The stubble cultivator frame (1) is horizontal (parallel to the ground) during work to make the front and the rear rows of tines work at the same depth. Adjust the stubble cultivator frame by means of the lower links on the tractor.

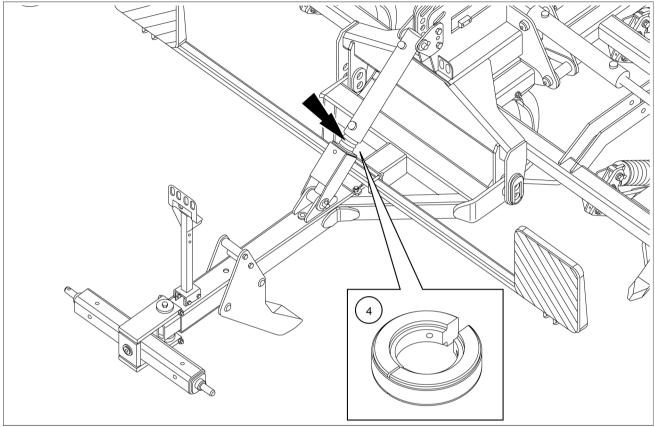
When the stubble cultivator works, the lower links of the tractor (2) are in a horizontal position or pointing slightly downward. This depends on the tractor's size and the desired working depth.



ZEIL17TIL0221EA

Adjustment of the drawbar position

The drawbar (3) is in a horizontal position during work, similar to the lower link arms. Adjust the angle of the drawbar by means of the clips (4) and insert the clips on the cylinder rod.



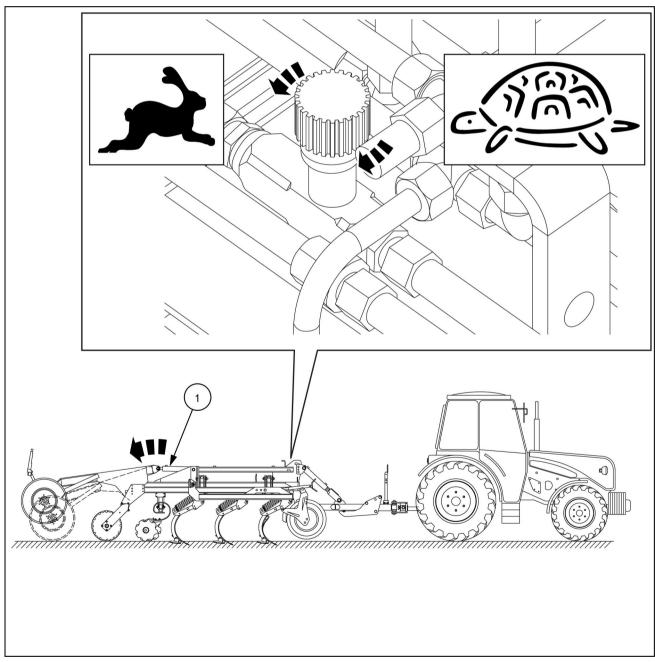
ZEIL17TIL0222FA 2

Adjustment of the flow divider valve for lifting (for trailed version)

Trailed stubble cultivators are equipped with a flow divider valve; the valve adjusts the oil flow on the rear hydraulic cylinder (1) to lift the rear wheels.

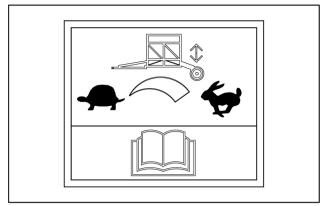
The valve controls the lift rate of the rear wheels in comparison with the front end of the cultivator. It is recommended to set the valve in a position that allows the front row of tines to enter the soil before the second and third rows of tines. The valve ensures better penetration in dry and hard conditions.

- For faster operation of the rear cylinder, turn the handle counter-clockwise.
- For slower operation of the rear cylinder, turn the handle clockwise.

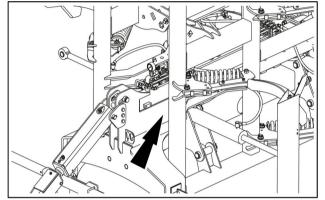


ZEIL17TIL0223GA

A decal is available at the left-hand side of the handle, under the flow divider valve.



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ZEIL22TIL0119AA

Adjustment of the roller arms

A WARNING

Avoid injury!

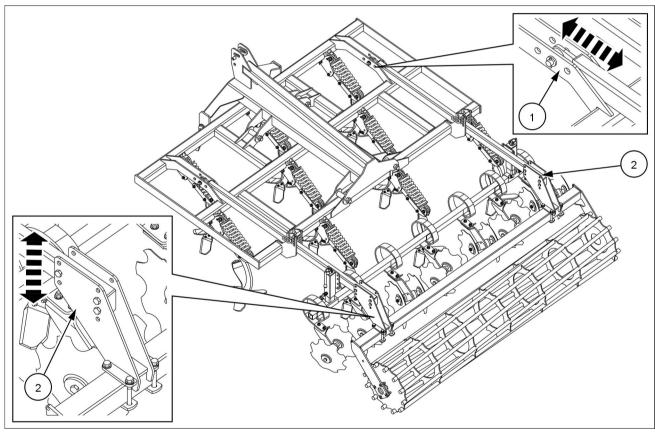
Always engage the parking brake and switch off the engine before working on the machine. Failure to comply could result in death or serious injury.

W1046A

You can set the roller arms in different positions (1):

- The front hole gives the least distance between the rear roller and the stubble cultivator section.
 The advantage is that the gravity point moves closer to the tractor.
- The rear hole gives the longest distance between the rear roller and the stubble cultivator section.
 The advantage is to improve the passage of field residues.

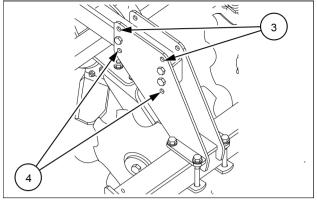
The brackets (2) connect the roller frame to the roller arms. The dimension of the bracket is in relation with the dimension of the roller.



ZEIL17TIL0228FA

To set the working depth move the bolts to:

- · The lower holes (4) for less working depth.
- The higher holes (3) for larger working depth.

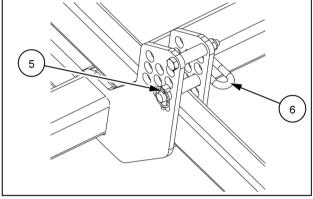


ZEIL19TIL0126AA

To set the working depth, proceed as follows:

- 1. Loosen the security linchpin (5).
- 2. Move the bolt **(6)** to a different position in the drilled plate.
- 3. Secure the bolt with the linchpin (5).
- 4. Repeat the setting at the other roller arms.

NOTE: When the working depth changes, remember to change also the position of the front wheel; the front wheel acts only as a support, to prevent that the front end of the cultivator digs in too deep.



ZEIL17TIL0229AA

Adjustment of the front wheels

A WARNING

Avoid injury!

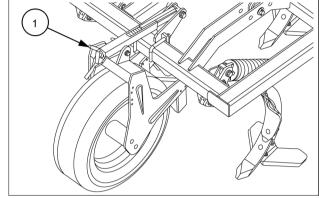
Always engage the parking brake and switch off the engine before working on the machine. Failure to comply could result in death or serious injury.

W1046A

Act on the spindle (1) to adjust the front wheels.

Set to the same height all front wheels.

NOTE: The front wheels are only support wheels; adjust the front wheel in a way that they take the load of the front end, when the stubble cultivator has a tendency to dig in.



ZEIL17TIL0230AA

Adjustment of the working depth of the levelling tool

A WARNING

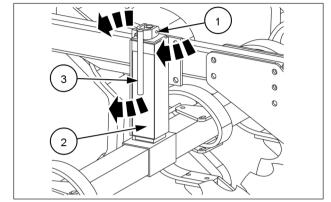
Avoid injury!

Always engage the parking brake and switch off the engine before working on the machine. Failure to comply could result in death or serious injury.

W1046A

To set the working depth of the levelling tool, proceed as follows:

- 1. Lower completely the implement.
- 2. Remove the security nut (1).
- 3. Turn the handle (3) to horizontal position.
- 4. Turn counter-clockwise the handle (3) to lift the levelling device (2). Turn the handle (3) clockwise to lower the levelling device (2).
- 5. Read the height on the indicator rod markings.
- 6. Install the security nut (1).
- 7. Repeat the procedure at the other bars.



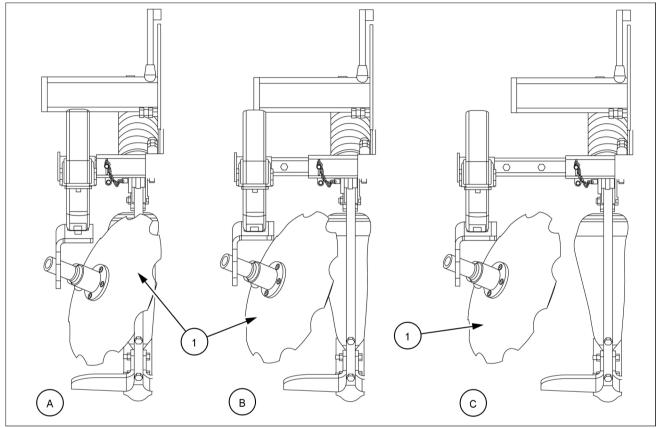
ZEIL17TIL0231AA

Adjustment of outer disc (for not foldable version)

You can set the outer disc (1) in three different positions.

- Transport position (A).
- Working positions (B) and (C).

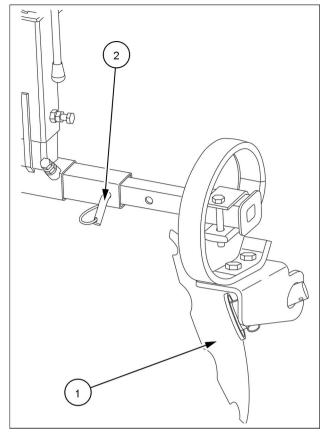
NOTICE: You must transport the implement only in position (A).



ZEIL17TIL0232FA

To change the position of the outer disc, proceed as follows:

- 1. Remove the pin (2).
- 2. Set the outer disc (1) on required position.
- 3. Install the pin (2) to secure the outer disc.



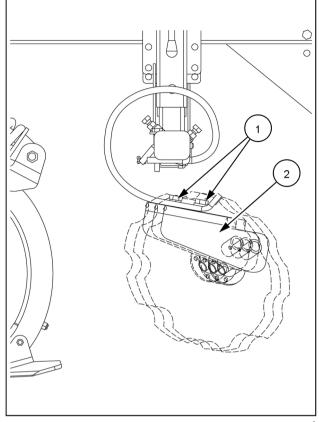
ZEIL17TIL0233BA

Adjustment of the working disc of the levelling tool

You can set the handles for outer disc in three different positions on all stubble cultivators.

To change the position of the working disc, proceed as follow:

- 1. Remove the screws (1).
- 2. Set handle (2) in required position.
- 3. Install and tighten the screws (1).

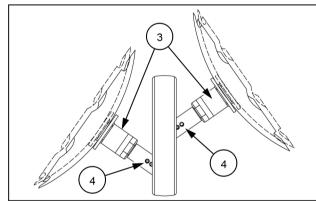


ZEIL17TIL0234BA

You can set every set of the middle disc in two different positions.

To change the position of the middle disc, proceed as follow:

- 1. Remove the screws (4).
- 2. Set handle (3) in required position.
- 3. Install and tighten the screws (4).



ZEIL17TIL0235AA

Adjustment of the accumulator pressure for the wings (for foldable version)

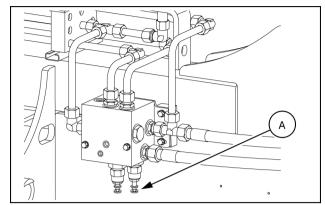
The foldable stubble cultivator is equipped with a hydraulic accumulator to give to the cultivator the best possible contact to the soil in even or uneven fields.

Normally the gauge value is about **70 bar** (**1015 psi**) when the stubble works in the field.

Pull the tractors hydraulic lever that is used to unfold the implement to set the accumulator pressure. When you unfold the stubble, the value on the pressure gauge increases.

The machine is equipped with a valve that will set and will not allow to increase pressure higher than that required during operation **70 bar** (**1015 psi**).

Valve is factory set and there is no need to adjust it. If for some reason adjustment is necessary, use bolt (A) to adjust (one full turn is change of 53.14 bar (770.5 psi), adjustment range is 70 – 210 bar (1015 – 3045 psi)).



ZEIL21TIL0020AA

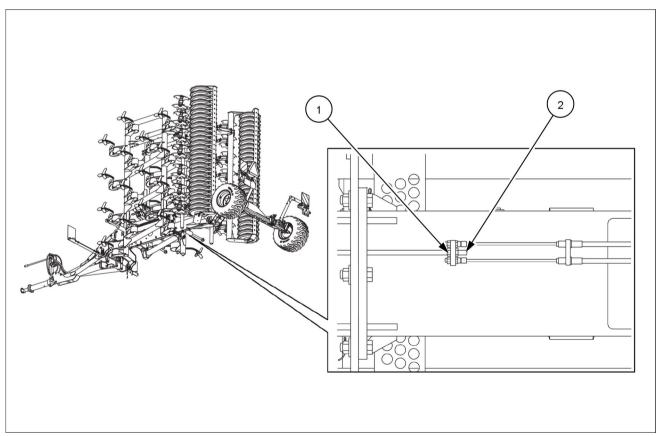
Axles and brakes

Adjustment of the emergency-parking brake

Verification of the proper operation of the brake should always be performed before connecting and disconnecting the tractor and the implement.

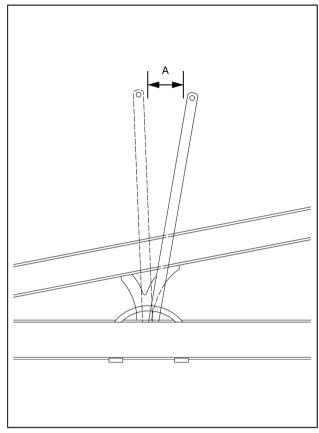
Adjustments are performed by raising/lowering the tension of Bowden cables.

- 1. Loosen the nut (1).
- 2. Tighten (in order to raise the tension) or loosen (in order to lower the tension) of the nut (2) according to the needs.
- 3. Check if the brake works correctly by pulling the parking brake.
- 4. If necessary, repeat Step 2 until you reach the desired setting.
- 5. Tighten the nut (1) to lock the system and secure it against an unintentional change in setting.



ZEIL22TIL0198FA

The system must be adjusted so that the parking brake clearance is between $5-10^{\circ}$ (A).



ZEIL18TIL0039BA

Service brake adjustment

NOTICE: Remember that, if they are not properly adjusted, the condition of the brakes will deteriorate, braking will be weaker and the system will ultimately stop working.

The aim of this adjustment is to ensure that the wheels can turn with a minimum of resistance, whilst you maintain maximum braking performance.

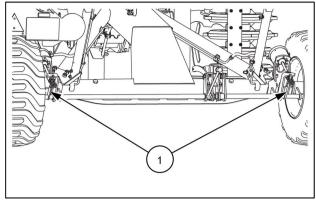
Brake adjustment should be checked frequently at the beginning and periodically thereafter as part of a regular maintenance schedule.

The brakes of the machine are adjusted ex-factory. After a short bedding-in period, readjust the brakes.

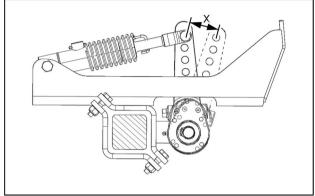
To adjust the brakes proceed as follows:

- 1. Connect the brake hoses to the tractor.
- Depress the tractor brake pedals to activate the braking system.
- 3. While you keep the pedals depressed, measure the distance the brake cylinder(s) or the brake chamber(s) (if pneumatic brakes) is (are) extended. Then release the brake pedals.

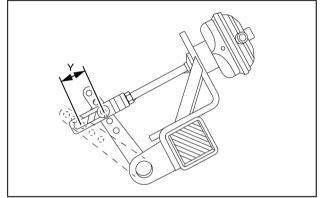
If this distance is more than X = 70 - 80 mm (2.8 - 3.1 in) for the brake cylinder(s) or Y = 45 mm (1.8 in) for the brake chamber(s), adjust the lever (1).



ZEIL22TIL0216AA



ZEIL22TIL0222AA

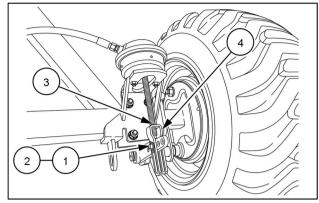


ZEIL22TIL0221AA

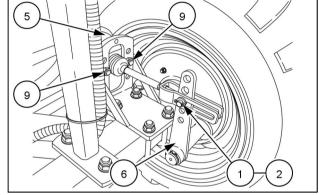
Air brake adjustment

The stroke can be adapted by adjusting the fork position. Proceed as follows:

- 1. Lift up the axle to allow manual rotating of the wheels.
- 2. Remove the linchpin (1) and the pin (2).
- 3. Loosen the nut (3) and turn the fork (4) to the needed position.
- The angle between air brake cylinder (5) and the lever (6) must be 85 – 95°. If not, modify the position of the lever. Proceed as follows:
- · Remove the nuts (9).
- Remove the circlip and the lever (6) from the axle.
- · Position the lever (6) on the next spline.
- · Install the circlip.
- Position the air brake cylinder (5) to the needed position using the holes of its support bracket.
- · Install the nuts (9).
- 5. Install the pin (2) and the linchpin (1).
- 6. Verify that the wheels rotate freely.



ZEIL22TIL0209AA

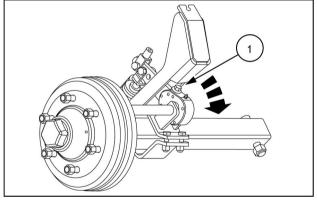


ZEIL22TIL0208AA

Hydraulic working brake adjustment

In the case of excessive strokes of the hydraulic cylinder, perform an adjustment of the brake lever. Proceed as follows:

- 1. Lift up the axle to allow manual rotating of the wheels to verify that they rotate freely.
- 2. Tighten the bolts (1) until the brake shoes begin to rub against the drum, then turn the bolts (1) in the opposite way about one eight till the next position stop.



ZEIL18TIL0041AA

Checking the lining thickness

- In order to check the thickness of linings, disassemble
 the brake drum first. The thickness of linings should be
 verified every 500 h. This period is a recommended period, whereas in the case of working on inclined terrain
 or with frequent use of the brakes, shorten the period
 accordingly.
- Replace the brake calipers after they reach the minimum thickness, which is 2 mm (0.1 in). Use original calipers only. If necessary, replace the caliper tension springs.

Disassembly of the brake drum

- Demount the wheel observing all applicable safety principles.
- Unscrew the hub cover, remove the pin and unscrew the cap.
- · Detach the brake drum using a dedicated clip.
- · Protect the linings against grease and other pollutions.

Assembly of the brake drum

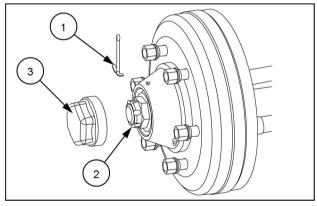
- · Prior to assembling, clean all parts of the brake drum.
- Perform assembly by reversing the directions for the disassembly procedure.
- Be careful not to smear the brake linings with grease.
- After mounting the drum and tightening the castle nut, apply lubricant.

Inspecting far bearing play

- Lift the wheel from the ground to be able to turn the wheel freely.
- Move the wheel crosswise to the wheel axle to detect potential play.
- Upon sensing noticeable play, proceed to the play elimination procedure defined below.

Elimination of bearing play

- · Demount the wheel.
- Unscrew hub cover (3) and remove pin (1).
- Tighten castle nut (2) to allow the wheel to move freely and to allow for re-installing pin (1).
- · If necessary, apply lubricant.
- · Mount and tighten the hub cover (3).
- · Mount the wheel.



ZEIL18TIL0042AA

Connecting and disconnecting hydraulic brakes

NOTICE: Do not release the emergency-parking brake when attaching the implement to the tractor. The emergency-parking brake is released by the operator directly before setting the tractor-implement into motion, as intended. Before starting off, always verify the operation of the braking system. Upon noticing any defects, proceed immediately to performing the necessary repair/adjustments of the system.

NOTE: Only tractors with proper connections equipped with one line in the ISO 5676 standard may be used to operate the working hydraulic brake of the implement.

NOTE: Before making any connections, verify the condition of all hydraulic hoses and connections, inspecting them for cracks or leaks.

Connecting

- 1. Always connect only clean hydraulic connections. If necessary, clean the hydraulic plug or socket.
- Connect the hydraulics plug from the side of the implement to the hydraulics socket from the side of the tractor.
- 3. Make sure the connection is done correctly.
- 4. Make sure the connection is tight.

Disconnecting

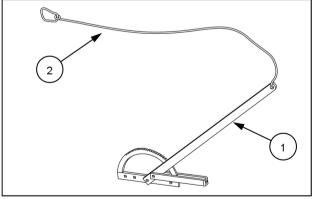
- 1. If the implement is equipped with a parking brake, engage it.
- Loosen and disconnect the hydraulics plug from the tractor socket.
- 3. Lay the hydraulics pipe on the handle designed for hydraulics hoses.

Emergency-parking brake

In order to engage the parking brake:

- 1. Pull the brake lever (1) toward the tractor.
- 2. Disconnect the hydraulic working brake according to the instructions specified above.
- 3. Disconnect brake jack line (2) from the tractor
- 4. Disconnect the implement by following the instructions on disconnecting the implement.

NOTE: In order to ensure the proper operation of the emergency brake, the brake lever line (2) should be permanently fixed to the tractor. The emergency brake is engaged upon unexpected disconnection of the implement from the tractor.



ZEIL18TIL0009AA

Safety chain

The safety chain is offered and it is mandatory for all units without brakes. The chain hooks from the drawbar of the cultivator and to the tractor.

Working in the field

Working speed

It is extremely important that the stubble cultivators 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 – 12 km/h** (**5 – 7.5 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.

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

Turning

When you find the correct position of the lower link arms, use only the hydraulic system of the stubble cultivator to raise and lower the implement during headland turns.

Never turn the stubble cultivator 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.

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

NOTE: 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.

NOTE: Always support a raised stubble cultivator before you work under the stubble cultivator.

Only use original KONGSKILDE spare parts to avoid unintentional risks and damages.

Install the used spare parts correctly and torque all the bolts and nuts to the correct tightening torque.

NOTICE: Worn and damaged parts must be changed at the earliest possible moment in order to secure correct and safe function.

Hydraulic system

When you replace parts of the hydraulic system, always make sure that the implement rests on the ground.

Remember to relieve the oil pressure before you work with the hydraulic system.

Hydraulic hoses must be checked before each use, and minimum once a year. If necessary, replace the hydraulic hoses. All hoses are marked with date of production. The working life of hydraulic hoses should not exceed 6 years, including maximum 2 years of storage.

When you replace hoses, always use hoses which comply with the requirements stated by the manufacturer.

Before every use of the stubble cultivator, check the hydraulic pipes, hoses and connections. If there is any sign of breakage emerging, make sure to change the parts in question.

To perform the maintenance and the repair work on the foldable frame parts, lower the foldable frame parts and release the pressure of the hydraulic system (only for hydraulic foldable version).

NOTICE: When the hydraulic system fails during folding or unfolding, then the wings may immediately unfold (for foldable version).

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

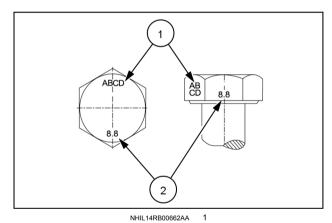
	Class 8.8 in N m (lb in or lb ft)			Class 10.9 in N m (lb in or lb ft)		
Nominal Size	Plated nut	Lock nut	Hardened nut/Oiled plated nut	Plated nut	Lock nut	Hardened nut/Oiled plated nut
M3	1.3 N·m	0.7 N·m	1.2 N·m	1.8 N·m	0.9 N·m	1.6 N·m
	(11.5 lb in)	(6.2 lb in)	(10.6 lb in)	(15.9 lb in)	(8.0 lb in)	(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

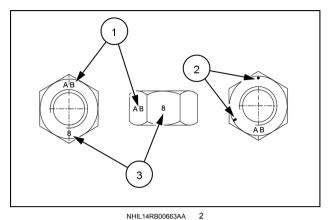
Metric hex head, flange hex head and carriage bolts, Classes (CL) 5.6 and upward



Metric bolt identification markings

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

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

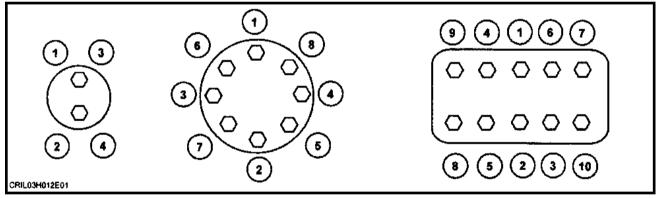


Metric hex nut identification markings

- (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.



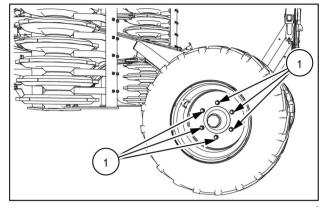
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Special torques (for trailed version)

Wheel nuts

(1) 270 N·m (199.1 lb ft)

NOTE: The special torque is applicable to both sides of the implement.



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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.

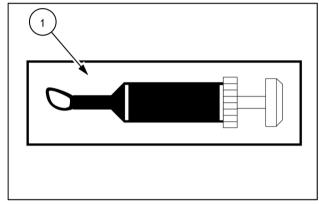
Wipe the dirt from all of the fittings and from the grease gun nozzle before you grease the implement to minimize the chance of contamination.

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.

All grease fittings are labeled with the sticker (1).

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.



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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

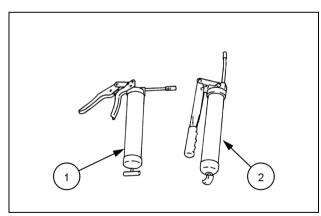
In general, a pistol grip-style grease gun injects half of the amount of grease per pump as a lever-style grease gun.

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 **7-10** 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	-	Tutela Multi-Purpose GR-9 Grease NT or TUTELA 75 MD GREASE	NLGI 2 M1C 137-A or M1C 75-B

Maintenance planning

Overview

Drain f Great Tighten		d			C	CI	ning heck Replace
Maintenance action	1					Ī	Page no.
After the first 10 hou	ırs	_					_
Nuts and bolts	Χ						7-12
Every 20 hours							
20 hours grease fittings (for lift mounted version)		Х					7-12
20 hours grease fittings (for trailed version)		Х					7-14
Every 50 hours							
Drain air reservoir on pneumatic brake (for trailed version, if			Х				7-17
equipped)							
Every 100 hours							
100 hours grease fittings (for lift mounted version)		Х					7-17
100 hours grease fittings (for trailed version)		Х					7-19
Nuts and bolts	Χ						7-21
Every year							
Pneumatic brake system – Air filters – Cleaning (for trailed				Х			7-22
version, if equipped)	Ш						
As required							
Tire pressure (for lift mounted version)					Χ		7-22
Tire pressure (for trailed version)					Χ		7-23
Pneumatic brake system - Air filters - Replace (for trailed version, if equipped)						Х	7-24

After the first 10 hours

Nuts and bolts

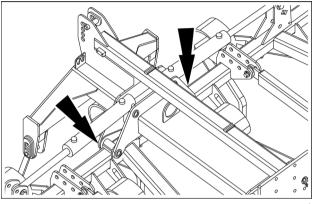
Torque again all the nuts and screws after the first 10 h.

Every 20 hours

20 hours grease fittings (for lift mounted version)

Front side

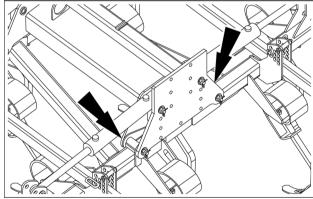
1. Hinges of the foldable frame (2x).



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Central

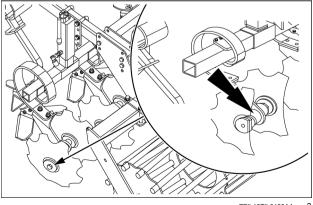
2. Hinges of the foldable frame (2x).



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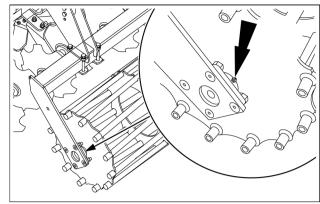
Rear side

3. Discs bearing. One grease fittings for each couple of discs.



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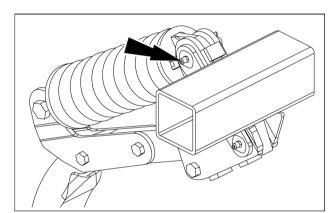
4. Roller bearing (2x).



ZEIL19TIL0140AA 4

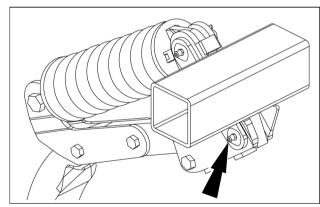
Tines

5. Spring pin.



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6. Pin.

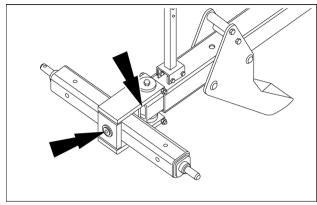


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20 hours grease fittings (for trailed version)

Drawbar

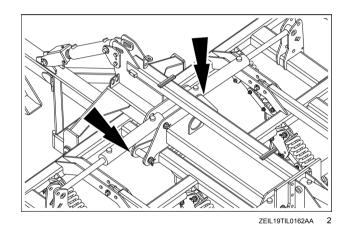
1. Hitch (2x).



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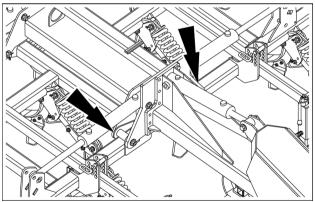
Front side

2. Hinges of the foldable frame (2x).



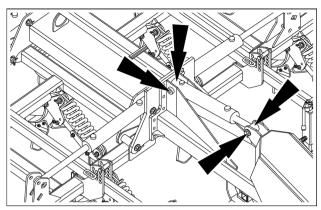
Central

3. Hinges of the foldable frame (2x).



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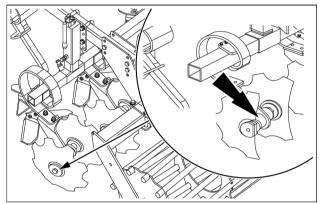
4. Cylinder hinge (4x).



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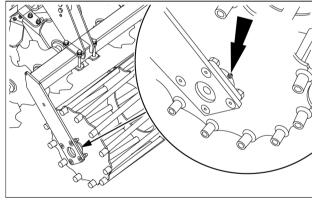
Rear side

5. Discs bearing. One grease fittings for each couple of discs



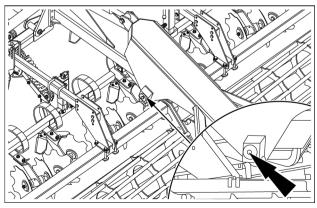
ZEIL19TIL0139AA 5

6. Roller bearing (2x).



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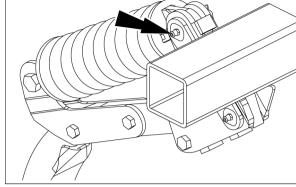
7. Rear wheel frame hinge.



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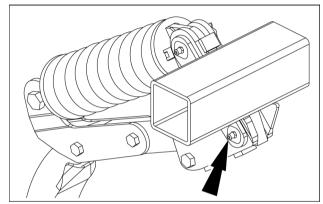
Tines

8. Spring pin.



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9. Pin.

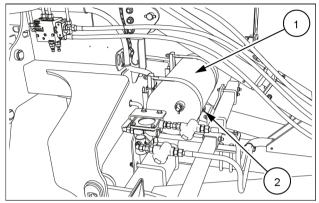


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Every 50 hours

Drain air reservoir on pneumatic brake (for trailed version, if equipped)

1. Drain condensate out of air reservoir (1). Use a suitable container and activate the drain valve (2).



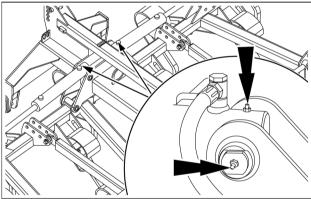
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Every 100 hours

100 hours grease fittings (for lift mounted version)

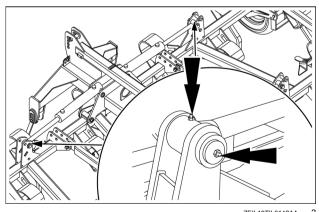
Front side

1. Cylinder hinge (4x).



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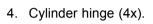
2. Cylinder hinge (4x).

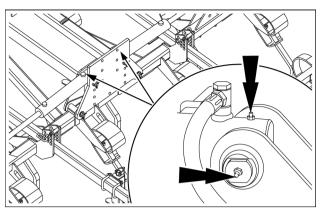


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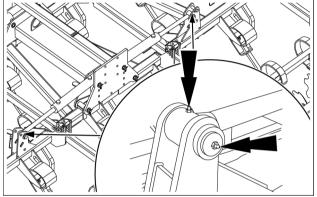
Central

3. Cylinder hinge (4x).





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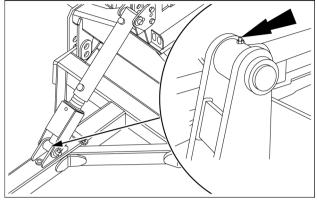


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100 hours grease fittings (for trailed version)

Drawbar

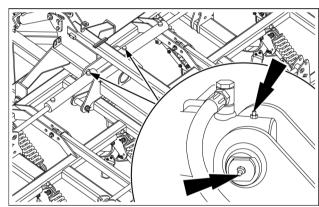
1. Cylinder hinge.



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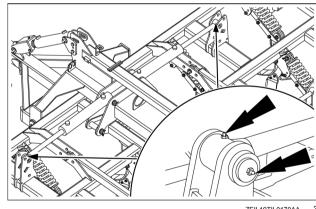
Front side

2. Cylinder hinge (4x).



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3. Cylinder hinge (4x).

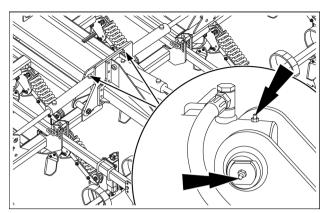


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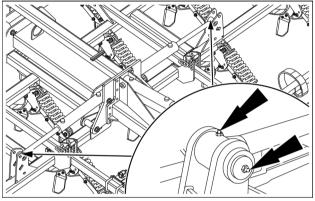
Central

4. Cylinder hinge (4x).

5. Cylinder hinge (4x).



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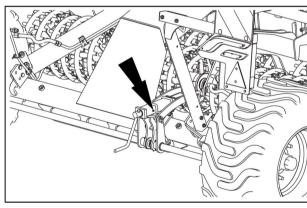


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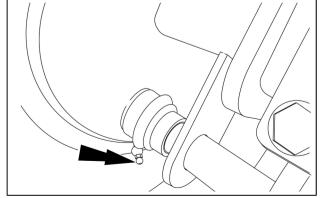
Rear side

6. Parking brake.

7. Left-hand side of the rear axle (1x).

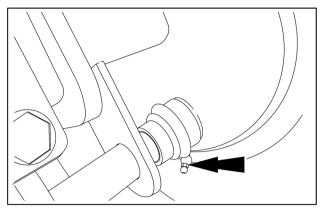


ZEIL22TIL0159AA



ZEIL23TIL0068AA

8. Right-hand side of the rear axle (1x).



ZEIL23TIL0069AA

Nuts and bolts

Torque again all the nuts and the screws every 100 h.

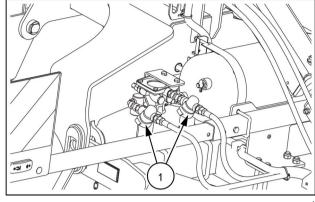
Every year

Pneumatic brake system – Air filters – Cleaning (for trailed version, if equipped)

Two air filters are installed in the pneumatic air brake system. They need to be cleaned every year. To clean the air filters proceed as follows:

- 1. Disconnect the air lines.
- 2. Use a screw driver to open the air filter housings (1).
- 3. Use compressed air to clean dust and debris from the air filters.
- 4. Close the air filter housings (1).

NOTE: Make sure the rubber seals are in place.



ZEIL22TIL0160AA

As required

Tire pressure (for lift mounted version)

Check the wheels regularly for damage and correct tire pressure.

Check the wheel-fixing bolts regularly and re-tightened if necessary.

Only experts make repairs of wheels by and with correct tools.

When you work on the wheels, secure the stubble cultivator so that the stubble can not move.

The required tire pressure for the front wheels is **2.8 bar** (**40.6 psi**).

Tire pressure (for trailed version)

Check the wheels regularly for damage and correct tire pressure.

Check the wheel-fixing bolts regularly and re-tightened if necessary.

Only experts make repair of wheels by and with correct tools

The required tire pressures are:

- Rear wheels 380/55–17: 2.8 bar (40.6 psi).
- Rear wheels 480/45–17: 3.2 bar (46.4 psi).
- Front wheels 10.0/80-12: 2.8 bar (40.6 psi).

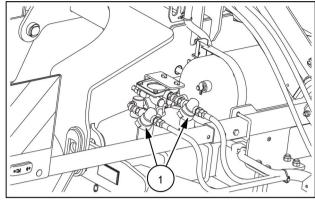
Pneumatic brake system - Air filters - Replace (for trailed version, if equipped)

Two air filters are installed in the pneumatic air brake system.

To replace the air filters proceed as follows:

- 1. Disconnect the air lines.
- 2. Use a screw driver to open the air filter housings (1).
- 3. Remove the air filters.
- 4. Install the new air filters.
- 5. Close the air filter housings (1).

NOTE: Make sure the rubber seals are in place.



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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:

- Clean the implement thoroughly. Dust and dirt absorb moisture and moisture increases the formation of rust.
- 2. Store the implement in a dry place, protected against wind and weather in the best possible way.
- 3. Grease all grease fittings after you clean the implement, according to the "Maintenance chart".
- 4. 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.
- The piston rod of the hydraulic cylinders may get rusty.Clean with brush and grease the components in order to protect them against wind and weather.
- 6. Dismount the hydraulics and electronic cables and wires, keep the ends dry.
- Support the implement to relieve the weight from the tires. Leave tires inflated. Tire and rubber components life will be extended if protected from sunlight during storage.

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.
- 2. 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

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

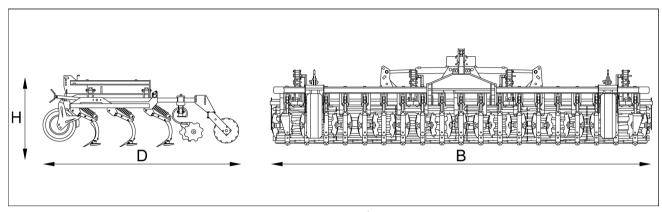
This chapter describes the easy diagnostic methods for generic problems and the related remedies for them. If you cannot find the cause of a problem or solve a problem, consult the KONGSKILDE dealer.

Troubleshooting chart

Problem	Possible Cause	Correction
Poor soil mixing with crop residues.	Low working depth.	Increase working depth.
	Incorrect leveling of the implement.	Adjust the top link length (only with lift mounted implements).
		 Adjust the drawbar and the lower link of tractor (only with trailed implements).
	Low working speed.	Increase the working speed to the recommended value.
	Worn working parts.	Replace the worn parts.
Uneven work pattern	Wrong settings of the level unit.	Check and adjust the setting of the leveling
behind the roller.		unit.
Tines and discs rows clog	Wrong working depth.	 Raise and lower the implement again.
with crop material.		 Check and adjust the working depth.
Blockage on max pack roller.	The scrapers are worn.	Replace the worn scrapers.
Build up of soil on front of	Wrong working depth.	 Raise and lower the implement again.
the roller.		Check and adjust the working depth.

9 - SPECIFICATIONS

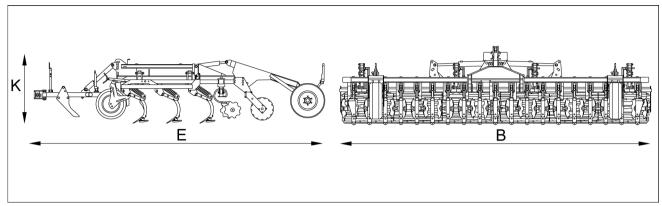
Dimensions (for lift mounted version)



ZEIL18TIL0182EA

Dimension	Delta Flex 3000	Delta Flex 4000	Delta flex 4000H	Delta flex 5000H	
(H)	1.5 m (5.1 ft)				
(D) (without wheels)	3.8 m (12.6 ft)				
(B)	3.1 m (10.3 ft)	4.1 m (13.6 ft)	4.2 m (13.7 ft)	5.1 m (16.7 ft)	
Height when folded		-	2.5 m (8.2 ft)	3 m (9.8 ft)	

Dimensions (for trailed version)



ZEIL18TIL0183EA

Dimension	Delta Flex 5000HT	Delta Flex 6000HT	Delta Flex 7000HT	
(K)	2 m (6.7 ft)			
(E)		7.5 m (24.6 ft)		
(B)	5.1 m (16.7 ft)	6.0 m (19.7 ft)	7.1 m (23.2 ft)	
Height when folded	2.95 m (9.68 ft)	3.45 m (11.32 ft)	3.95 m (12.96 ft)	

Technical data (for lift mounted version)

Technical data	Delta Flex 3000	Delta Flex 4000	Delta Flex 4000H	Delta Flex 5000H		
Working width reference	3.0 m (9.8 ft)	4.0 m (13.1 ft)	4.0 m (13.1 ft) Foldable version	5.0 m (16.4 ft) Foldable version		
Working width	3.0 m (9.8 ft)	4.0 m	(13.1 ft)	5.0 m (16.4 ft)		
Transport width	3.05 m (10.01 ft)	4.05 m (13.29 ft)	2.5 – 3.0 m (8.2 – 9.8 ft)	2.5 – 3.0 m (8.2 – 9.8 ft)		
Total weight (equipped with bar roller)	1675 kg (3693 lb)	2100 kg (4630 lb)	2290 kg (5049 lb)	2780 kg (6129 lb)		
Working depth	6.0 – 25.0 cm (2.4 – 9.8 in)					
Hydraulic demand	One double acting valve needed					
Recommended tractor	81 – 103 kW (110 – 140 Hp)	125 – 162 kW (170 – 220 Hp)		162 – 184 kW (220 – 250 Hp)		
Number of tines	9	13		15		

Technical data (for trailed version)

Technical data	Delta Flex 5000HT	Delta Flex 6000HT	Delta Flex 7000HT			
Working width	5.0 m (16.4 ft)	6.0 m (19.7 ft)	7.0 m (23.0 ft)			
reference	Foldable version	Foldable version	Foldable version			
Working width	5.0 m (16.4 ft)	5.9 m (19.3 ft)	7.0 m (23.0 ft)			
Transport width	2.5 – 3.0 m (8.2 – 9.8 ft)	3.0 m (9.8 ft)	3.0 m (9.8 ft)			
Total weight (equipped with max pack roller, disc, three point drawbar and front wheel kit)	5110 kg (11266 lb)	5440 kg (11993 lb)	5880 kg (12963 lb)			
Working depth		6.0 - 25.0 cm (2.4 - 9.8 in)				
Hydraulic demand	Two double acting valves needed					
Recommended tractor	1 - 0	162 kW 220 Hp)	162 – 184 kW (220 – 250 Hp)			
Number of tines	15	19	21			

Fluids, lubricants, and capacities

Application	Capacity	Product name	Specification(s)
Grease fittings	-	TUTELA MULTI-PURPOSE GR-9 GREASE NT	NLGI 2 M1C 137-A
		TUTELA 75 MD GREASE	or M1C 75-B

Tire pressure (for trailed version)

Place	Tire size	Tire pressure
Described	380/55–17	2.8 bar (40.6 psi)
Rear wheels	480/45–17	3.2 bar (46.4 psi)
Front wheels	10.0/80–12	2.8 bar (40.6 psi)

Tire pressure (for lift mounted version)

Place	Tire size	Tire pressure
Front wheels	24 x 8.00–17 10.0/80–12	2.8 bar (40.6 psi)

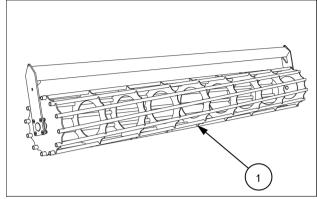
10 - ACCESSORIES

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.

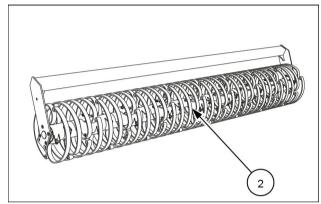
Rollers

The cage roller (1) (\emptyset = 550 mm (21.6 in)) 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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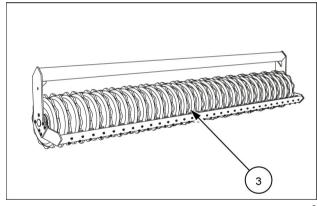
The vibro pack (2) (\emptyset = 570 mm (22.4 in)) is with spring steel parts mounted offset to ensure packing in stripes. The spring steel ensure self-cleaning effect and low weight.



ZEIL21TIL0741AA

The max pack (3) (Ø= 550 mm (21.6 in)) is useful for the heavy, hard and even stony soils.

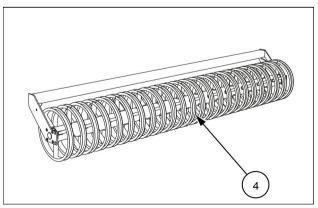
NOTE: In case of tractors with low lift capacity, do not to mount the max pack roller on lift mounted versions wider than **4 m** (**157.5 in**).



ZEIL21TIL0742AA

The single U-roller (4) (\emptyset = 600 mm (23.6 in)) is a good all-round roller suitable for most conditions. It has a good leveling and consolidated without excessive compaction. With the U-profile filled with soil the compaction is done, soil to soil, leaving the surface without a crust and still allowing a good water absorption.

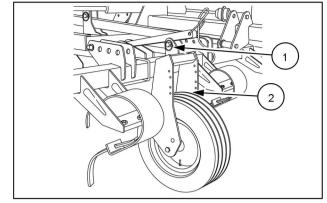
NOTE: The single U-roller is available only for lift mounted versions.



ZEIL21TIL0743AA

Support wheels (for lift mounted version)

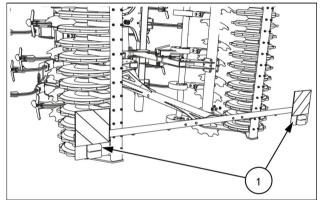
The support wheel (2) is a narrow and a wide tire. You can use the support wheel for implement wider than 4 m (157.48 in) working width to ensure stability and less stress on all components. Turn the spindle (1) to set the position.



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Light kit (for lift mounted version)

The light kit and plates (1) are present in transport position of the implement. This kit marks the rear of the implement.



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Platform for seeder (for trailed version)

A platform can be ordered to have easy access to the seeder (aftermarket equipment).

11 - FORMS AND DECLARATIONS

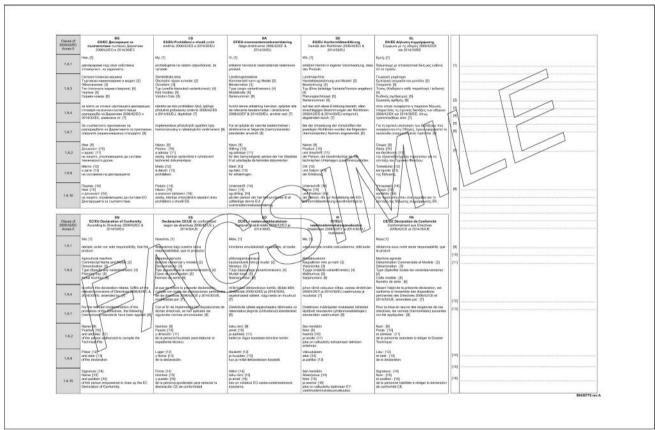
European Community (EC) Declaration of Conformity

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

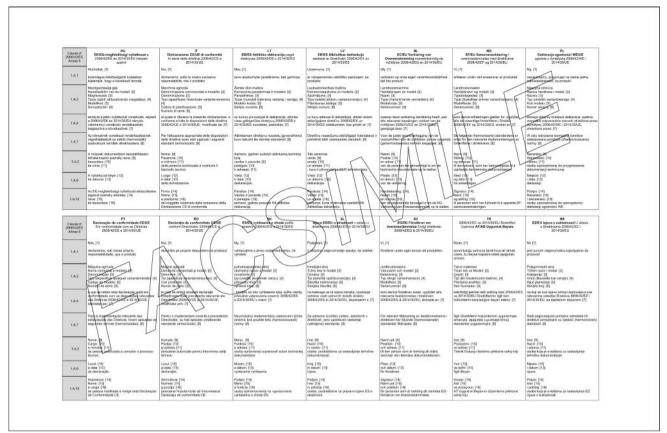
Inside the European Community and for some specific countries, an EC Declaration of Conformity is separately delivered with your implement. The EC Declaration of Conformity is the manufacturer's declaration about equipment compliance to relevant European Union (EU) provisions.

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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ZEIL22TIL0019FA

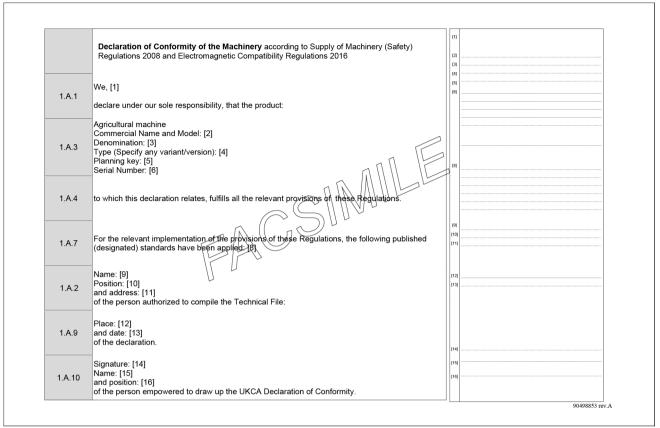
For your better and easier understanding of the document, you will find the text reproduced hereafter.

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.



ZEIL23FR00111FA

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

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



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