ORIGINAL INSTRUCTIONS- according to Directive 2006/42/EC, Annex 1 1.7.4.1

# **OPERATOR'S MANUAL**

**R+ 1410 S R+ 1410 SB** Rotary rake



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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

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

### Intended use

The KONGSKILDE rotary rake can only perform the usual work in agriculture. Only connect the rotary rake to a tractor which corresponds with the specifications of the implement and is legal to use. Only the Power Take- Off (PTO) shaft of the tractor can drive the attached rotary rake.

The rotary rake may only be used for rake grass hay and straw crops on the ground.

Consider any other use contrary to the intended use. The manufacturer is not responsible for any damage that re-

### **Prohibited usage**

Sweeping of for example farmyards with the tine arm assembly or brooms fastened to these is not allowed. There is a risk that for example stones are thrown out from the working area of the implement with danger of personal injury or damage to objects.

Any use beyond the intended use is regarded as foreseeable misuse. sults from the improper use of the implement. The user bears that risk.

Always observe the following safety instructions as well as the common rules concerning technical safety, working practices and road safety.

If you 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 this.

### 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.

### **Product Identification Number (PIN)**

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

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

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

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13		ial Belgium N.V	. B8210 Zedelgem Belgiu	m - 3
	Designation			
(12)-	► T/V/V			
	<ul> <li>Model</li> </ul>			
	Product Identification Number			
	Réceptionné le		par la DRIEE lle de France	
(10)	Permissible load:			<b>/</b> (5)
	Max. total weight	kg	Model year	
$\bigcirc$	Axle I	kg	Year of construction	
$/$	Axle 2	kg	Made in Pola	nd
	Axle 3	kg	()	
	Drawbar	kg	330090046(01)	
	L			

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- (1) Company name
- (2) Brand identification logo
- (3) Mail address
- (4) Model year
- (5) Year of construction
- (6) Made in (country of origin)
- (7) Certification mark

- (8) Maximum permissible load divided per each axle and drawbar
- (9) Réceptionné le par la DRIEE lle de France (for France only)
- (10) Product Identification Number (PIN)
- (11) Model
- (12) Type / Variant / Version
- (13) Designation

### **Product identification**

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

**NOTE:** The following figure indicates the PIN plate localization on R+ 1410 S. The PIN plate localization on R+ 1410 SB is similar.

The PIN plate (1) is placed at the right-hand side of the implement.

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



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

#### Model

#### **Product Identification Number (PIN)**

### Operator's manual storage on the machine

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

### Implement orientation

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

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

#### R+ 1410 S



**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

#### R+ 1410 SB



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

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

### **2 - SAFETY INFORMATION**

### Safety rules and signal word definitions

#### Personal safety



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

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

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

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

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

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

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

#### Machine safety

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

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

#### Information

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

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

### **General recommendations**

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

- This operator's manual contains important information concerning operation, maintenance and adjustment of the implement. Furthermore, this operator's manual mentions and emphasizes all the safety instructions.
- Read the operator's manual thoroughly before you start, operate, service, or carry out any other operation on the implement. Even though you have been driving a similar implement before, you must read the manual. This is a matter of your own and other people safety. A few minutes reading will save you time and hassle later. Lack of knowledge can lead to accidents.
- Your implement was designed with safety in mind. However, there is no real substitute for caution and attention when you need to prevent an accident. Once an accident has occurred, it is too late to think about what you should have done. This means that it is very important that you as user of the implement pay attention and use the implement correctly and thereby avoid exposing yourself and others to unnecessary danger.
- The implement must be operated only by responsible persons who have been adequately trained and authorized to use the implement. Never leave the implement to others before you have made sure that they have the necessary knowledge to operate the implement safely.

- Never let the implement run without supervision.
- · Always keep a first aid kit handy.
- Take the necessary precautions (for example assistance) to always be aware of the possible presence of bystanders and pets.
- Keep children away from and off the implement at all times.
- Do not use this implement as a lift, ladder or platform to work at heights.
- Before you work on the implement, disengage all drives, stop the engine and remove the ignition key. Wait for the rotating parts to run down.
- Never work around the implement with loose clothing, jewelry, watches, long hair and other loose or hanging items can be pulled in by the moving parts of the implement.
- Keep hands away from moving parts of the implement.
- Never attempt to carry out any adjustments on the implement while the implement is in motion or while the Power Take-Off (PTO) shaft is engaged.
- PTO driven implement can cause death or serious injury. Before you work on or near the PTO shaft or service or clear the driven implement, disengage the PTO, stop the engine and remove the ignition key.

### Illustrations

#### A 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.

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

### Legal 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.

### Fire or explosion prevention

- 1. Crop material, trash, debris, bird nests or flammable material can ignite on hot surfaces.
- 2. Inspect the electrical system for loose connections or frayed insulation. Repair or replace loose or damaged parts.
- 3. Do not store oily rags or other flammable material on the implement.
- 4. Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with

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

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.
- 2. Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures and procedures to be taken in the event of a spill or accidental release. MSDS are available from your dealer.
- Before you service your machine check the MSDS for each lubricant, fluid, etcetera. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, on manufacturer containers, as

well as the information in this manual when you service the machine.

- 4. Dispose of all fluids, filters and containers in an environmentally safe manner in accordance with local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.
- 5. Store fluids and filter in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.
- 6. Keep out of reach of children or other unauthorized persons.
- 7. Additional precautions are required for applied chemicals. Obtain complete information from the manufacturer or distributor of the chemicals before you use them.

### Starting up the implement safely

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

When you attach the implement to the tractor:

- Never allow anyone to stand between the tractor and the implement. An unintentional manoeuvre with the tractor may cause serious injury.
- Never go under an unsupported implement.

Install all the guards correctly before you use the implement.

Replace worn and damaged canvases before you work with the implement.

Make sure that you are thoroughly familiar with the instruments and controls before you engage the Power Take-Off (PTO) drive for the first time.

The PTO shaft has its own instruction manual that the manufacturer supply with the implement. To ensure the correct use of the shaft, follow all the instructions of the manufacturer manual. Pay particularly close attention to the safety and maintenance instructions, in order to prevent unintentional injury and damage.

Do not use Power Take-Off (PTO) drive shafts with other specifications than the shaft which was supplied with the implement.

Before you install the PTO drive shaft, check that the Revolutions Per Minute (RPM) and direction of the PTO on the tractor match those of the PTO on the implement. Repair immediately a damaged PTO shaft before you work with the implement.

Always stop the PTO and the tractor engine and remove the ignition key before you connect the PTO drive shafts.

After you attach the implement to the tractor, ensure that the Power Take-Off (PTO) lock pin is properly engaged in the tractor Power Take-Off shaft. An incorrectly locked PTO shaft could work loose and cause accidents or damage to the implement.

Make sure to install and secure the PTO drive shaft correctly. Check that the lock pin is in mesh. Fasten the support chain at both ends.

Always make sure that the guard tubes do not separate at the maximum working or transport length of the PTO drive shaft. Check also that the guard tubes do not jam at the minimum working or transport length of the PTO drive shaft.

Unless the protective guards, the PTO drive shaft may cause serious injury. Be careful not to damage the guards when you connect the PTO drive shaft to or from the tractor.

Fit correctly the guards on the PTO drive shaft. Secure the guard of the PTO shaft with the chain.

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.

### Traveling on public roads

#### Comply with the relevant traffic regulations

#### **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.

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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.

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

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

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

Before you drive the implement on public roads:

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

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

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

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

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

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

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

#### Passengers

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

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

#### Transport safety

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

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

#### Drive safe

Do not drive under the influence of alcohol or drugs.

Never travel at speed in crowded areas.

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

The tractor driver must not leave the cabin during transport.

Always consider other road users.

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

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

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

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

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

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

Reduce speed during turns. Tractors have not been designed for fast turning. Avoid that the rear end of the implement hits an obstacle. When you turn during transport pay attention to the overhang and/or oscillating weight of the implement.

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

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

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

### **Operating the implement safely**

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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.

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Rotating parts! Keep clear of all drives and rotating components. Failure to comply could result in death or serious injury.

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**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.

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

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.

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.

While in operation, the transportation of people on the top of the implement is strictly forbidden.

Never attempt to remove residues from the implement while the implement runs. Such an imprudence could cost life or limb. Always disengage the Power Take-Off (PTO) shaft mechanism, switch OFF the tractor engine and apply the parking brake before you remove residues.

During the daily work you must consider that loose stones and foreign matter on the ground might get in contact with the revolving parts and get thrown out again at a very high speed. Therefore, before you operate the implement make sure that all safety guards are intact, properly fitted and secured.

Before you raise or lower the implement with the link arms of the tractor, check that nobody is near the implement or touches the implement.

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 when you lift the implement with the 3-point linkage because there is a risk of overturning. 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, especially when you reverse, to avoid dangerous pitching of the implement.

When you work with the implement keep a safe distance from steep slopes and similar ground conditions, as the ground may be slippery and pull the implement and the tractor sideways. Also remember to adjust the speed for sharp turns when you drive on hillsides.

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

### Stopping the implement safely

#### 

#### Moving parts!

Some components may continue to run after disengaging the drive systems. Make sure all drive systems are fully disengaged and all movement has stopped before servicing the machine.

Failure to comply could result in death or serious injury.

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

For safety's sake never leave the tractor cab without first to disengage the Power Take-Off (PTO) shaft mechanism and to stop the tractor engine. Furthermore, if you leave the tractor unattended, always remove the ignition key.

Stop the tractor engine and the PTO shaft and wait until the implement has completely stopped before you open any of the safety guards. There are rotating parts under the safety guards which may continue rotating after the implement has been stopped. Look and listen for evidence of rotating parts before you open any of the safety guards.

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 would decide to keep the tractor engine running after leaving

the tractor cab, then the following precautions must be followed:

- 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:

- Always detach the implement carefully and on a flat surface to prevent damage.
- Make sure that nobody stands in front of the implement.
- Never allow anyone to stand between the tractor and the implement.
- 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.

- 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. Check that all rotating parts have a suitable protective guard.
- 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.
- Never adjust the implement while the Power Take-Off (PTO) drive shaft is engaged. Do not to remove the guards until all revolving parts have stopped.
- Any leakage of hydraulic oil or fuel under pressure may cause severe harm, so always use a shielding, 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.

### **Personal Protective Equipment (PPE)**

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



NHIL13RB00001AA 1

## Safety requirements for fluid power systems and components - hydraulic systems

Before you start the engine or pressurize the hydraulic system, install and tight correctly all the hydraulic couplings. Check that all hoses and fittings are not damaged. Replace immediately damaged components.

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

### Noise emission

The measuring and reporting of the noise level were carried out according to ISO 5131.

The noise level of **70 dB** was measured in the cabin of the tractor where the head of the operator is usually situated.

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

### **Vibration levels**

Install all revolving parts correctly before you start the implement. An unbalance can create vibrations that damage the implement.

**NOTE:** You must check that the all part are in the correct position before start the implement.

**NOTE:** If the vibrations or the noise of the implement increase considerably during the operation, stop the work immediately. Correct the fault before you continue the work.

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





#### 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.
lr [kg]	Total weight of the rear-mounted implement/rear ballast.
lf [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 sub-stances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your KONGSKILDE dealer or air-conditioning specialist has a special extractor for this purpose and can recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.

#### **Battery recycling**

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



NHIL14GEN0038AA 1

### Mandatory battery recycling

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

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

Points of sale are obliged to:

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

### Safety signs

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

Walk around your implement and note the significance and location of all safety signs before you operate your implement. Read all the safety signs 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.









ZEIL18HT00792FA 1



ZEIL18HT00793FA 2





ZEIL18HT00794FA 3

![](_page_33_Picture_4.jpeg)

ZEIL18HT00795FA 4

![](_page_34_Figure_1.jpeg)

811650220 5 Part number: 811650220

![](_page_35_Figure_1.jpeg)

![](_page_35_Figure_2.jpeg)
## Safety sign (1)

Read the operator's manual and the safety instructions. Read the operator's manual to operate the implement and to avoid unnecessary accidents and damages to the implement.

## **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

-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

Part of part number: 811650220

## Safety sign (2)

Always stop the tractor engine before you adjust, maintain, repair, or lubricate the implement. Also remember to remove the ignition key. Make sure that nobody starts the engine, until you have finished.

#### **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

Part of part number: 811650220



811650220\_4 7



811650220\_2 8

## Safety sign (3)

Moving parts are dangerous and if the moving parts come in contact to your body the moving parts can pinch your body.

The hazard may cause severe injuries to the entire body, with possible lethal effect.

To avoid the hazards, wait until all moving elements have completely stopped before you touch the moving elements.

## **A** WARNING

Pinch hazard! Wait for all movement to stop before you service or adjust the machine or equipment. Failure to comply could result in death or serious injury.

W1420A

Part of part number: 811650220

## Safety sign (4)

The safety Safety sign indicates the maximum Revolutions Per Minute (RPM) and the direction of rotation of the Power Take-Off (PTO) shaft.

Reference to the minimum overlapping on the profile tubes and the minimum distance required not to bottom the shaft.

Part of part number: 811650220



811650220\_3 10

## Safety sign (5)

Keep a safe distance from the rotating parts of the implement.

Replace immediately the safety pins if the thickness is less than 7 mm (0.28 in).

Part of part number: 810689410



810689410\_5 11

## Safety sign (6)

Connect the hydraulic hose with the yellow protecting cap to the single-acting hydraulic coupler. Connect the two hydraulic hoses with the red protecting caps to the double-acting hydraulic coupler on the tractor. The maximum pressure is **210 bar** (**3045 psi**).

Part of part number: 810689410



810689410\_6 12

## Safety sign (7)

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

Part of part number: 810689410



#### Safety sign (8)

Before road transport of the implement, disconnect the hydraulic system from the tractor. Close the ball valve at the hydraulic hose connector to the tractor.

Part of part number: 810689410



810689410\_8 14

#### Safety sign (9)

Tire inflation pressure safety sign

Part of part number: 810689410



## Safety sign (10)

Lifting point safety sign

## 

**Crushing hazard!** 

Use the machine lifting points when you lift and/or move the machine with heavy handling equipment. Lift the machine only from the indicated lifting eye hookup points. Always use adequate lifting equipment.

Failure to comply could result in death or serious injury.

W1432B

Part of part number: 810689410

## Safety sign (11)

Attention, do a mechanical lock of the arm of the swath canvas when in lifted position.

Part of part number: 810689410



810689410\_11 16



810689410\_12 17

## Safety sign (12)

Safety sign (13)

Adjusting spindle safety sign.

Part of part number: 810689410

Lifting jack safety sign.

Part of part number: 810689410



810689410\_13 18

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810689410\_14 19

#### 2-24

## Safety sign (14)

When you work for one side swath you need to remove the swath canvas on front rotor and place the swath canvas on its parking bracket in the rear side of the implement. The pull out adjustment for the swath canvas on the rear rotor is maximum **86 cm** (**33.86 in**).

Part of part number: 810689410



## Safety sign (15)

Cam track modification safety sign.

Part of part number: 810689410



810689410\_16 21

# **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.

# **4 - OPERATING INSTRUCTIONS**

## Commissioning the unit

## Preparing for operation

**NOTICE:** Only authorized and informed personnel can mount the implement.

**NOTICE:** The necessary tools and adjustment tools must be available.

**NOTICE:** Incorrect assembly of the implement is highly dangerous. Before you perform the functional test, check the correct assembly of the implement.

**NOTICE:** Make sure that there are no tools in the area around the implement.

Make sure that there are no persons in the work zone.

**NOTE:** After the assembly of the implement, perform a complete functional test.

NOTE: Torque all screw joints every 5 h of operation.

The implement is disassembled into parts and delivered on a pallet. For shipment on a big pallet the wheel axle assembly and some arms are dismounted.

Loose parts such as a bag with small parts (screws) and the Power Take-Off (PTO) shaft have been tied to the pallet or the implement to save space.

## Installation of the swath canvas

Install the swath canvas as follows.

- 1. Install the leaf springs (6) into the swath canvas (7).
- Use 13 round-headed screws M6 x 16, 7 washers and locknuts M6 (1) to attach the swath canvas (7) with leaf springs (6) on the windrow former frame, with rail (5).
- 3. Attach the swath canvas (7) to the support (2). Use the top, central, or bottom set of holes, depend on the height setting required.
- 4. Use the hexagonal head bolts M10 x 25, 10 spring washers and hexagonal nuts M10 (4) to secure the swath canvas (7).
- 5. Introduce the swath canvas (7) with support (2) into swath canvas holder (3) and secure with a tommy screw.



ZEIL18HT00438FA 1

## Installation of the safety guards

1. You can use the windrowers in the field after the installation of the rear concentric safety guard (1), lateral safety guard (2), lateral safety guard (3) and the swath canvas.



ZEIL18HT00400FA 2

## Installation of the bearing arms

- 1. Install the bearing arms (1) on the pre-assembled supporting tubes (2).
- 2. Secure the bearing arms (1) with the safety pins (3).

**NOTE:** Before you install the bearing arms (1), remove the protective paint layer from the bearing tube and install the rubber ring (4).



ZEIL18HT00439EA 3

## Starting the unit

## **Connection to the tractor**

## **WARNING**

Crushing hazard!

Use care when you connect and disconnect the machines. Never stand between the tractor and the implement when you connect the link arms.

Failure to comply could result in death or serious injury.

W1545A

## 

**Crushing hazard!** 

Do not stand or place any body part between the implement and a moving tractor. Stop the tractor engine and set the parking brake before you attach cables and hoses.

Failure to comply could result in death or serious injury.

W1544A

## **WARNING**

Hitching hazard!

Always keep the area between the tractor and the implement clear of all persons while the tractor or three-point hitch is in motion. Lock the tractor transmission in Park and engage the parking brake(s) before you allow anyone to complete hitching or unhitching.

Failure to comply could result in death or serious injury.

W1540A

**NOTICE:** For the attaching or removing operation of the implement, bring the supporting devices in position stand safety.

**NOTICE:** Never exceed the maximum permissible load of the coupling drawbar and of the hitch.

**NOTICE:** When you connect the hitches, make sure that the hitch point can move freely.

**NOTICE:** The rope must never be taut during the transport.

- 1. Attach the implement drawbar roughly at the center of the tractor linkage drawbar. Swing the stand into the transport position.
- 2. Secure the drawbar with the safety pin.
- 3. Connect the hydraulic hose with the yellow protecting cap to the single-acting hydraulic coupler.
- 4. Connect the two other hydraulic hoses with the red protecting caps to the double-acting hydraulic coupler on the tractor.
- 5. Connect the connector for lighting equipment to the respective socket on the tractor.

**NOTE:** Before traveling on public roads, make sure that the shut-off taps are closed to prevent any inadvertent operation of the hydraulic system.

6. Open the shut-off taps in the field only. Always close the shut-off taps before you move the implement on the road.

#### Power Take-Off (PTO) shaft connection

**NOTICE:** To install and remove the PTO shaft, stop the engine.

**NOTICE:** Only use the supplied PTO shaft or the PTO shaft that the manufacturer approve.

Adjust the length of the PTO shaft to the tractor before you perform the following steps. If you use the implement with different tractors, check that the PTO shaft has the correct length.

**NOTE:** The safety guards on the tractor side and on the implement side must be intact.

- 1. Release the PTO shaft from the support chain.
- 2. Push the PTO shaft on the tractor PTO shaft until you engage the locking balls.
- The safety chain secure the safety guard of the PTO shafts on the tractor side. On the implement side there is a full-covering protection. The clamp secure the full-covering protection.

**NOTE:** The chain secure the safety guard of the PTO shaft.

#### Functional test

After the preparation of the implement, you must do a functional test.

- 1. The rotors must can fold in and out.
- 2. Check that the implement works correctly.
- 3. Every **50 h** of operation all screws must be torque again.



ZEIL18HT00241AA

## Power Take-Off (PTO) shaft

## Power Take-Off (PTO) shaft length

**NOTE:** Do not shorten your new Power Take-Off (PTO) shaft until you are certain that it is necessary. From the factory the distance from PTO to Power Input Connection (PIC) is standard on most tractor brands.

Check the length of the PTO shaft for each tractor prior to first use.

If it is still necessary to shorten the PTO shaft, the profile tubes of the PTO shaft must fully comply with the following overlapping measures.

- The sliding tubes must have as much overlap as possible, with an acceptable minimum overlap (b) of 200 mm (7.87 in) during normal operation (Top Safe extension links in the normal position).
- There must be a minimum of **40 mm** (**1.6 in**) of free PTO shaft length **(a)** to prevent the shaft from bottoming out.

## Determining the required shaft length

When you determine that you must shorten the PTO shaft, select the length so that the telescoping members never close completely or bottom out when in use. The PTO length must never be smaller than the minimum distance between the joints.

- 1. Attach the implement to the tractor without the PTO shaft.
- 2. Adjust the three-point hitch so that the PTO shaft is parallel with the ground.
- 3. Stop the tractor and engage the parking brake.
- Determine if the PTO shaft bottom out in this position. If the PTO shaft bottoms out in this position or if the free length is less than 40 mm (1.6 in), proceed with the procedure to shorten the PTO shaft.



## Shortening the PTO shaft

To shorten the PTO shaft proceed as follows.

- Fasten the PTO shaft half parts to the PTO (on the tractor) and the PIC (on the implement). The PTO shaft half parts must be at the same horizontal level, opposite each other at the shortest distance from the tractor.
- 2. Make sure that a minimum overlap of **200 mm** (**7.87 in**) exists.
- Check that the PTO shaft does not bottom out at one end. Keep the shaft ends parallel to each other and mark the minimum distance of 40 mm (1.6 in). Only cut enough PTO shaft off to achieve this minimum free shaft length. This will maintain the maximum amount of PTO shaft overlap.
- 4. Shorten all four tubes equally.
- 5. Round off the ends of the profile tubes and remove the burrs carefully.
- 6. Remove the metal shavings.

**NOTICE:** To avoid big friction forces, grease the tube carefully before you reassemble the tube. Use **NLGI 2**.

**NOTE:** If you shorten the PTO shaft, then you must check the minimum overlap and the minimum distance again if you operate the implement with a different tractor.



## Parking the unit

## **Disconnection and parking**

- 1. Place the implement on a firm and level ground.
- 2. Disconnect all the hydraulic couplers.
- 3. Disconnect the electrical connection.
- 4. Disconnect the Power Take-Off (PTO) shaft from the tractor. Support the PTO with the chain.
- 5. Place wheel chocks as follows:
  - $_{\odot}\,$  On a flat surface: one in front of, and one behind a wheel.
  - On a slope: one chock per wheel, either in front of, or behind the wheel, depending on the incline.
- 6. loosen the hardware (1) and turn the support leg (2).
- 7. Tighten the hardware (1).
- 8. Release the implement from the tractor.



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# **5 - TRANSPORT OPERATIONS**

#### Preparing for road transport

## Conversion of the rake from working to transport position

NOTE: Follow the permissible transport measurement.

**NOTE:** Fit and check transport gear, traffic lights, safety signs and safety guards.

**NOTE:** Operating appliances (ropes, chains, rods etc.) of remote controlled appliances should not be able to move while the implement is in the working position or operating position.

- 1. The drive system must be OFF.
- 2. Move the swath canvas of the first rotor (if fitted) under the safety guard and secure the swath canvas using the toggle bolt.
- 3. To reduce the transport width unlock the safety guards. Fold up the safety guards until the safety guards lock.
- 4. Remove the tine arm assembly.
- The distance between the tine arms assembly end and the signalization plate is more than 1.0 m (39.37 in). Therefore remove the tine arms assembly and place the tine arms assembly in the dedicated space as follows.
  - If the tractor is equipped with a PTO-brake, remove the 3 rear bearing arms (1).
  - If the tractor is not equipped with a PTO-brake, remove all the 12 bearing arms from the rear rotor (2).



6. To secure the safety guard, clip the bearing arms on the racks on the safety guard. Place the safety guard over the bearing arm.

- 7. Use the pull rope to unlock the swath canvas. Keep the pull rope under tension and operate the single acting hydraulic control unit to lift the implement.
- 8. To lock the swath canvas, release the rope.
- 9. Operate the double acting hydraulic control unit to move the rear frame section to a straight position. Close the shut-off tap (the connector with the red protective cap) to prevent any inadvertent operation.

ZEIL18HT00561AA 2

## Lowering and raising the implement

Use the hydraulic valve controllable from the operator's seat to lower and raise the implement from the working to the transport position and vice versa.

The hydraulic valve controls the oil flow toward the two running gear swing cylinders, the cylinder for the swath canvas and the drawbar adjusting cylinder.

# 6 - WORKING OPERATIONS

#### **General information**

## **Description of operation**

## Working principle

**NOTICE:** Adhere to the maximum permissible axle loads and total weights.

**NOTICE:** When you drive the implement and turn, take note of the width and of the change of the center of gravity of the implement.

**NOTICE:** Use the implement for the working operation only when all the safety guards are fixed in the correct position.

**NOTICE:** Never stay in the turning and slewing area of the implement.

A cam track that act together with an adjustable swath canvas, control the tangentially attached rotor arms with spring tines. The rotor arms with spring tines, rake the crop together in loose, clean and even swaths.

The axle is inclined to the front, thus acting close to the tine arms assembly. This allows the frame assembly to precisely follow ground contours which makes for best working results.

## Results

These features combined with the considerable working width and high forward speed (up to **12 km/h** (**7.46 mph**)) allow large areas to be covered.

When turning swath canvas, the swath remains fluffy and aerated which speeds up the drying process.

When handling small quantities of crop, several swaths can be raked together to obtain a more economical loading process.

## Working position

1. Transportation.

Transport with tine arms on the machine, safety guards in working position and swath canvas lifted. Width (A): 2.2 m (86.61 in)



ZEIL18HT00245AA 1

 Lateral windrow, limitation strut (L) in position (1) (see Page 6-5).
 Width (B): 3.6 - 6.25 m (141.73 - 246.06 in)





ZEIL18HT00366AA 2



ZEIL18HT00367AA 3



ZEIL18HT00368AA 4

4. Two single windrows, limitation strut (L) in position (2) (see Page 6-5).
Width (D): 3.4 m (133.86 in)
Width (E): 3.6 m (141.73 in)
Width (F): 6.05 m (238.19 in)

## **Basic adjustment**

#### Working height adjustment

- 1. To change the working height, use the adjusting spindles (3) located on the axle support.
- 2. To lift the rotors, actuate the single acting control valve to relieve the load on the adjusting spindles.
- 3. Set the desired working height and lower the rotors.

## Rotor tilt adjustment

1. Use the crank (1) to do the adjustment of the rotor tilt for the front rotor. Use the adjusting spindle (2) to do the adjustment of the rotor tilt for the rear rotor.



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## Lateral tilt setting

**NOTE:** An eccentric bolt secure the right-hand side wheel axle assembly of each rotor. The eccentric bolt allows to match the implement to different types of crop.

NOTE: Only a trained person can set the lateral tilt.

Move the wheel axle assembly outside central position (factory adjustment).

- 1. Remove the two securing bolts from the eccentric bolt.
- 2. Introduce a spanner **30 mm** (**1.2** in) or a toggle (diameter **10 mm** (**0.4** in)) through the expansion pin located at the inner end of the axle pin.
- 3. Turn the axle pin.
- 4. Use the two securing bolts to lock the eccentric bolt.

#### Cam tracks setting

**NOTE:** The implement can match in different conditions of forage. Set the cam tracks so as to vary the moment at which the tine arms assembly are lowered and lifted outside swath.

**NOTE:** An adjusting spindle is provided under each rotor on the left-hand side to match the different forage conditions.

- 1. To adjust the cam track, turn the nuts in or out to rotate the spindle (span of the jaw **30 mm (1.2 in)**).
- 2. After the adjustment torque the nuts.

## Conversion of the rake from transport to working position

## Introduction

**NOTICE:** Only an authorized specialist workshop can do the assembly of the implement.

Before do the conversion of the implement from transport to working position, put the limitation strut **(1)** in the area of the articulation of the second rotor into the desired operational configuration.



ZEIL18HT00240EA

1

Operation configuration (A) for lateral windrow.

• Second rotor swivels from the center stop to the lefthand position.



Operation configuration (B) for 2 single windrows.

• Second rotor swivels from the center stop to the righthand position.



Parking position (C).

• Second rotor swivels to the left-hand position and to the right-hand position.



• Secure the bolts with safety pins.

# Changing from the transport to the working position

- 1. Open the shut-off valves of the hydraulic system. During the road transport, close the shut-off valves of the hydraulic system.
- 2. Select the desired working width on the limiting bar.
- 3. Lift the rotors. Use the double acting hydraulic control unit to move the rear frame section to the working position.

**NOTE:** Due to the tracking of the wheels this step is not possible with the rotors lowered and the implement stationary, especially if the implement is equipped with an optional twin wheel.

- 4. Use the single acting hydraulic control unit to lift and lower the rotors and to control the swath canvas.
- 5. Use the single acting hydraulic control unit to relieve the load from the locking hook of the swath canvas support cylinder. Lower the swath canvas support.

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Operate the pull rope to unlock the swath canvas support. Move the single acting hydraulic control unit to LOWERING position. Keep the pull rope under tension until the swath canvas support has been unfolded to the working position.

**NOTE:** The rotors are automatically lowered into the working position.

- 7. Make sure that is not possible to switch ON the drive system. The engine must be OFF and the Power Take-Off (PTO) shaft must be in neutral position. Take the arms assembly outside racks located on the frame. Fit the arms assembly to the bearing arms. Use the provide lynch pins to secure the arms assembly.
- Move the safety guards to the working position. Use the pull rope to unlock the safety guards. Fold safety guards down until the safety guards lock into the engagement.
- 9. Adjust the swath canvas in a longitudinal direction.

**NOTE:** If you do not need to raise the swath canvas, for example for the headland turns, it is suffices use the single acting hydraulic control unit to lift and lower the implement.

Configuration (D) of the swath canvas (2).

• Move the swath canvas (2) forward and lock the swath canvas (2) at the back.



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Configuration of the (E) 2 single swaths canvas (2).

• Move the swath canvas (2) backwards and lock the swath canvas (2) in the front.



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## Hydraulic valve adjustment (for R+ 1410 SB)

Preselect the working position at the hydraulic valve.

**NOTICE:** For R+ 1410 S for the preselecting the limitation strut must be used.

## Working position A "lateral windrow"

The machine can be moved from transport position to the left and back.

## Working position B "two single windrows"

The machine can be moved from transport position to the right and back (the curve-steering is switched off).

## **O-Central position**

Reversible-hydraulic blocked, position for road transport.



# 7 - MAINTENANCE

**General information** 

## Maintenance

#### **General information**

## **WARNING**

Avoid injury! Follow ALL of the precautions listed below. Failure to comply could result in death or serious injury.

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**NOTICE:** Do the maintenance, the service, the cleaning, and the repair with the Power Take-Off (PTO) shaft and the engine OFF. Remove the ignition key.

**NOTICE:** Take care that oil and grease do not get in contact with your skin.

**NOTICE:** You must always block the tractor wheels before you work on the implement.

**NOTICE:** After the first hours of operation you must torque again all the screws.

**NOTICE:** During greasing, the implement must be in working position and parked safely and firmly on the ground.

**NOTICE:** During maintenance on a lifted implement, you must always place suitable supports underneath.

Check the screws, the bolts, and the nuts after 50 h of operations and torque again if necessary. See the torque table. It is particularly important to check the fixing bolts of the implement.

Only use original spare parts and equipment. There is no warranty on non-original components. The manufacturer is not responsible for any damage resulting from such use.

**NOTICE:** To replace any tools with cutting edges always use suitable tools and protective gloves.

**NOTICE:** Before working on the electric gear, disconnect the battery cables.

**NOTICE:** Always make sure that all the safety guards of the implement are in place and functional. Immediately replace the safety guards worn or damaged. Do not operate the implement until you replace all the worn or damaged safety guards.

After the first **10 h** of operations torque again all the hydraulic screw joints. Only use original spare parts and equipment.

## 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	Plated nut	Lock nut	Hardened	Plated nut	Lock nut	Hardened		
Size			nut/Oiled			nut/Oiled		
			plated nut			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)		

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)

#### Flange head bolt/Flange nut

#### Identification markings

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



NHIL14RB00662AA 1 Metric bolt identification markings

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

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



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.



## Torque for class 12.9

Bolts of quality 12.9 are used on the implements. Make sure to use the same type of bolts and nuts to replace bolts and nuts of quality 12.9. It is easier to torque bolts and nuts to correct value of torque if you lubricate bolts and nuts with oil.

Quality	Size	Torque for dry bolts and nuts	Torque for bolts and nuts lubricated with oil
12.9	M8	40 N·m (29.50 lb ft)	_
12.9	M10	81 N·m (59.74 lb ft)	_
12.9	M12	135 N·m (99.57 lb ft)	-
12.9	M12 x 1.25	146 N·m (107.68 lb ft)	—
12.9	M14	215 N·m (158.58 lb ft)	—
12.9	M14 x 1.5	230 N·m (169.64 lb ft)	_
12.9	M16	333 N·m (245.61 lb ft)	286 N·m (210.94 lb ft)
12.9	M16 x 1.5	350 N·m (258.15 lb ft)	_
12.9	M18	440 N·m (324.53 lb ft)	_
12.9	M20	649 N·m (478.68 lb ft)	558 N·m (411.56 lb ft)
12.9	M20 x 1.5	720 N·m (531.04 lb ft)	_
12.9	M24	1120 N·m (826.07 lb ft)	963 N·m (710.27 lb ft)
12.9	M24 x 1.5	1175 N·m (8666.35 lb ft)	_
12.9	M30	2300 N·m (1696.39 lb ft)	_

## Fluids and lubricants

Item	Capacity	KONGSKILDE brand name	KONGSKILDE specification	Lubricant grade	International specification
Sliding surfaces of the Power Take-Off (PTO) shaft	As required	-	-	NLGI 2	M1C 137-A
Greasing points	As required	PLANTOGEL 2-S	-	-	-

## Maintenance planning

## Maintenance chart

Lubricate			Check		heck		
Tighten					Replace		
Maintenance action					Page no.		
After the first 3 hours of o	After the first 3 hours of operation						
Bolts and fittings	x				7-8		
Every day							
Bevel gears		х			7-9		
Universal joint		х			7-10		
Every week							
Power Take-Off (PTO) shaft		х			7-11		
Cranks		х			7-12		
Universal joints		х			7-13		
Slewing		х			7-14		
Every year							
Implement inspection			х		7-15		
Every 6 years							
Hydraulic hoses				Х	7-15		
As required							
Tire pressure			Х		7-16		
Hinge points		х			7-16		
Transmission		х			7-16		
Bearing arm		х			7-16		

## After the first 3 hours of operation

## **Bolts and fittings**

Torque again all the bolts, the nuts and the fasteners after the first  ${\bf 3} \ {\bf h}$  of work.
#### Every day

## **Bevel gears**

Perform the lubrication every day.

Lubricant: PLANTOGEL 2-S

#### Prior operation:

Place the implement in safe conditions for maintenance.



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Lubricate the front bevel gear (1) and the rear bevel gear (2) every day (one grease fitting (3) each).

## Universal joint

Perform the lubrication of the universal joint on Power Take-Off (PTO) shaft on tractor side every day.

Lubricant: PLANTOGEL 2-S

#### Prior operation:

Place the implement in safe conditions for maintenance.

For the special design of the PTO shaft, the wide angle joint requires daily lubrication of the centering disc between the universal joints.

**NOTE:** The picture shows PTO shaft with normal joint and wide angle joint.



#### Every week

## Power Take-Off (PTO) shaft

Perform the lubrication every week.

Lubricant: PLANTOGEL 2-S

#### Prior operation:

Place the implement in safe conditions for maintenance.



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Lubricate the two PTO shafts every week (nine greasing points each).

**NOTE:** Clean, grease, and adjust the PTO shaft only when you stop the engine and remove ignition key.

**NOTE:** When the PTO shaft has been stopped there will be a momentum. Do not get too close to the implement. Do not make any work on the implement until it has come to a complete stop.

## Cranks

Perform the lubrication every week.

Lubricant: PLANTOGEL 2-S

**Prior operation:** Place the implement in safe conditions for maintenance.



Lubricate the three cranks every week.

## **Universal joints**

Perform the lubrication every week.

Lubricant: PLANTOGEL 2-S

**Prior operation:** Place the implement in safe conditions for maintenance.



Lubricate the eight universal joints every week.

## Slewing

Perform the lubrication every week.

Lubricant: PLANTOGEL 2-S

**Prior operation:** Place the implement in safe conditions for maintenance.



Lubricate the slewing every week.

#### Every year

#### Implement inspection

Submit the implement at least once a year to a meticulous inspection and make sure that you installed all safety guards.

**Every 6 years** 

#### Hydraulic hoses

#### **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.

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**NOTICE:** To avoid wrong hydraulic connection, mark sockets and plugs (for example color coded). This helps to prevent switched controls (lifting instead of lowering or vice versa).

**NOTICE:** Before you start the maintenance on the hydraulic system, actuate the control lever accordingly to relieve the pressure from the system, lower the implement to the ground and stop the tractor engine.

Before the first use of the implement and then at least once a year, an expert worker must check the hoses and replace the damaged hoses.

The lifetime of the hoses should not exceed six years including a maximum storage time of two years.

Replacement hydraulic hoses must to correspond to the technical requirements of the implement. Contact your KONGSKILDE dealer if you need any spare parts.

#### As required

#### Tire pressure

**NOTICE:** Before working on the tires it must be ensured that the machine is stable and cannot move (by means of stop blocks).

**NOTICE:** Mounting of the wheels requires sufficient knowledge and the correct mounting tools.

**NOTICE:** Repair of the tires and wheels should only be made by experts and with the correct mounting tools.

**NOTICE:** The tire pressure must be checked regularly and adjusted if necessary.

The required tire pressure is shown in the below table.

Model	Wheels	Tire pressure
R+ 1410 S	18/8.5-8 (6PR)	2.1 bar (30.45 psi)
R+ 1410 SB		

Check the tire pressure after the two first operating hours.

**NOTICE:** If the pressure is too high the tires may crack. If the pressure is too low the tires may be damaged due to deformation of the tire wall.

#### Hinge points

Check and lubricate all the hinge points at regular intervals.

#### Transmission

**NOTE:** For the transmission (swivel gearbox) there are no lubrication points and no regular interval. The swivel gearbox is lubricated for life (quantity. **0.3 L** (**0.08 US gal**)).

#### Bearing arm

**NOTE:** For the bearing arm there are no lubrication fittings and no regular interval. The bearing arm is maintenance free.

#### Storage

#### Pressure washing

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

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

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.

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

**NOTE:** 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 **25 cm** (**9.8 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: 50 °C (122 °F).
- Maximum water pressure: 80 bar (1160 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.

#### End of season service

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

To prepare the implement for winter storage:

- 1. Clean the implement thoroughly. Dust and dirt absorb moisture and moisture increases the formation of rust.
- 2. Store the implement in a dry place, protected against wind and weather in the best possible way.
- 3. Grease all grease fittings according to the "Maintenance chart".
- 4. Before the storage of the implement, check carefully for damaged parts, loose screw-joints, leakage, wear and other defects. 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.
- 5. Dismount the Power Take-Off (PTO) shafts, lubricate the profile tubes and keep them in a dry place.
- 6. Spray the implement with a coat of rust-preventing oil.
- 7. Parts polished and the cylinder rods of the hydraulic cylinder may get rusty. Clean and brush with grease parts polished and the cylinder rods to protect against wind and weather.
- 8. Change the oil in the hydraulic system and the gearboxes.
- 9. 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.

#### 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

## Troubleshooting

Problem	Possible Cause	Correction
There is too much crop	The tines are too high over the ground.	Adjust the rotors and set the tines closer to
left.		the ground.
	The forward speed does not fit to the speed	Raise the rpm or reduce the forward speed
	of the implement.	of the tractor.
	A tine misses.	Replace the missing tine.
The tine touches the	The pressure of a tire is not correct.	Check and adjust the tire pressure.
ground on one side of the		
implement.		
The rotor does not deliver	The rotor timing is too late or too early.	Adjust the crop delivery timing under the
the crop properly.		rotor.

# 9 - SPECIFICATIONS

# Technical data

Technical data	R+ 1410 S	R+ 1410 SB									
Working width	3.6 – 6.25 m (1	1.81 – 20.51 ft)									
Double swath	13.4 m (43.96 ft)	13.6 m (44.62 ft)									
Swath width	1 – 1.8 m (3.28 – 5.91 ft)										
Transport width, arm dismounted / mounted	2.2 – 3 m (7.22 – 9.84 ft)										
Transport length	7.3 – 8.2 m (23.95 – 26.9 ft)										
Maximum working speed	12 km/h (7.46 mph)										
Power requirements, approximately	30 kW (41 Hp)										
Number of arms per rotor	1	2									
Rotor diameter	3 m (9	<b>.84 ft</b> )									
Number of rotors		2									
Double tines per arms	3	4									
Wide axle inclined to the front	Opti	onal									
Tire	18/8.5-8	3 (6PR)									
Tire inflation pressure	2.1 bar (3	80.45 psi)									
Rear mounting, tool bar	Opti	onal									
Power Take-Off (PTO) speed	540	RPM									
Weight	Weight 1220 kg (2689.64 lb) 1490 kg										
Maximum hydraulics pressure	210 bar (3045 psi)										

## Fluids and lubricants

Item	Capacity	KONGSKILDE brand name	KONGSKILDE specification	Lubricant grade	International specification
Sliding surfaces of the Power Take-Off (PTO) shaft	As required	-	-	NLGI 2	M1C 137-A
Greasing points	As required	PLANTOGEL 2-S	-	-	-

# 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.

### Tandem double wheels

The tandem double wheels (1) are spring loaded wheels. The benefit of the tandem double wheels (1) is to have a better weight distribution of the rotor. The tandem double wheels (1) increase ground following and have better grip when the implement operate on steep slopes.



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#### Twin wheels for the main rotor axle

The front rotor and the rear rotor can be equipped with twin wheels for the main rotor axle (1). Change the axle stub and add two additional wheels on the ridged axle. The twin wheels for the main rotor axle (1) are suitable for fields with deep tracks from previous operations, or when the tractor wheel spacing is the same width as the standard tires of the rotor. On steep slopes the additional twin wheels for the main rotor axle (1) add additional traction.



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## Front gauge wheel

The front gauge wheel (1) mounted on the headstock increase the ground following of the implement and get an optimal work application. The front gauge wheel (1) reduce the risk of crop soil contamination because improves the condition of the ground following of the implement. The front gauge wheel (1) is specially recommended in rolling field conditions. Replace the top link with the chain includes on the kit to increase the movability. Adjust the height with a crank.



### Anti-wrap disc for the wheel rim of the front gauge wheel

In moist conditions the crop can stick or wrap to the wheel arm and lead to damage of the wheel bearings or block the wheel rotation. The anti-wrap disc (1) prevents the crop to wrap around the wheel arm and cause damage to the bearings or blockage of the wheel. The anti-wrap disc (1) is mounted on the wheel arm and covers the rim of the tires.



### Hydraulic valve for successive rotor lift

The hydraulic valve (1) for successive rotor lift make sure that the rotors raise in succession. The front rotor will raise first, followed by the rear rotor. Because of this the front rotor will not touch the headland swath when approaching the headland during a pass. The rear rotor will continue a little further to form the swath of the pass and will then be raised.



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#### Swath canvas for making two single swaths

It is possible to mount an additional swath canvas for two single swaths (1) on the front rotor. The two single swaths canvas are slid into the tube of the safety guard arm where it is possible to adjust the width, height and the lengthways position of the two single swaths (1).

The swath canvas for two single swaths (1) give a nice and uniform swath create with the front rotor when the implement is set for two single swaths.

When the rotors are lifted the swath canvas for two single swaths (1) will raise as well. If necessary the swath canvas for two single swaths (1) can be latched in the "up" position.

With this option it is possible to make two perfect formed swaths.



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#### Cardanic rotor suspension

With the cardanic rotor suspension the rear rotor can move independently to the connection link frame of the two rotors.

Make sure to fix the tandem double wheels of the rear rotor and that the tandem works as an independent carrying frame.

Replace the rotor tilt spindle with a hydraulic dampener that permit the free movement of the rotor.

The cardanic rotor suspension is very suitable for fields with very rolling hills and uneven field conditions.





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## Drawbar for 2-point link arms

The drawbar (1) is mounted on the 2-point link arms of the tractor. The drawbar (1) has an eyeball to pin the rake hitch in which lets it move without damage.



#### **Clevis eye connector**

The clevis eye can be equipped with an adaptor, the clevis eye connector (1), that will turn the drawbar into a tong hitch instead. The tong has an eyeball which will prevent the tong from bending when you raise and lower the implement when the tongue is installed on the clevis of the tractor.

**NOTE:** Check if the clevis eye connector (1) comply with the road regulations of your country.



# 11 - FORMS AND DECLARATIONS

## EC Declaration of Conformity

EF-overensstemmelseserklæring/ EG-Konformitätserklärung/ EC Declaration of Conformity/ Déclaration CE de conformité/ Dichiarazione CE di conformita/ EG Verklaring van Overeenstemming/ EG-försäkran om överensstämmelse/ EY-vaatimustenmukaisuusvakuutus/ Declaración de conformidad CE/ Deklaracja Zgodności WE./ Декларация за съответствие EO/ EK Megfelelőségi Nyilatkozat /ES Prohlášení o shodě/ EB Atitikties deklaracija/ ES prehlásenie o zhode/ Declarația de conformitate CE/ Vastavuse Deklaratsioon EÜ /ES Izjava o skladnosti/ Δήλωση πιστότητας EK/ Declaração de fidelidade CE/ Dikjarazzjoni ta' Konformità tal-KE/ EK Atbilstības deklarācija/

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Maskine: Maschine: Machine: Machine: La macchina: Machine: Maskin: Laite:	La máquina: Maszyna: Машината: Gép: Stroj: Mašina: Stroj: Mašina: Masina:	Masin: Stroj: Η μηχανή: Máquina: II-magna: Mašīna:	Model/Type: Designation: Rake TVV: Serial:
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ZEIL19HT00013EA 1

- er i overensstemmelse med Maskindirektivets bestemmelser (Direktiv 2006/42/EF) og hvis relevant også bestemmelserne i EMC-direktivet 2014/30/EU

- In übereinstimmung mit den Bestimmungen der Maschinen-Richtlinie 2006/42/EG und wenn erforderlich auch mit der EMC-Richtlinie 2014/30/EU hergestellt wurde.

- is in conformity with the provisions of the Machinery Directive 2006/42/EC and if relevant also the provisi¬ons of the EMC Directive 2014/30/EU.

- est conforme aux dispositions de la Directive relatives aux machines 2006/42/CE et également aux dispositi¬ons de la Directive sur la Directive EMC 2014/30/UE

- é in conformita' con la Direttiva Macchine 2006/42/CE e, se pertinente, anche alla Direttiva alla Direttiva EMC 2014/ 30/UE.

- in overeenstemming is met de bepalingen van de Machine richtlijn 2006/42/EG en wanneer relevant ook met de bepalingen van de EMC richtlijn 2014/30/EU.

- är i överensstämmelse med Maskindirektivets benstämmelser (Direktiv 2006/42/EG) och om relevant också bestämmelserna i EMC-direktivet 2014/30/EU.

- täyttää Konedirektiivin (Direktiivi 2006/42/EY) määräykset ja oleellisilta osin myös EMC-direktiivin 2014/30/EU.

- es conforme a la Directiva de Maquinaria 2006/42/CE y, si aplica, es conforme también a la Directiva EMC 2014/ 30/EU.

- pozostaje w zgodzie z warunkami Dyrektywy Maszynowej 2006/42/WE i jeżeli ma to zastosowanie również z warunkami Dyrektywy dot. kompatybilności elektro magnetycznej EMC 2014/30/UE.

- отговаря на изискванията на Директивата за Машините 2006/42/ЕО и ако има приложение на изискванията на Директивата за електромагнитна съвместимост 2014/30/ЕС.

- Megfelel a 2006/42/EK Gépi Eszközökre vonatkozó előírásoknak és amennyiben felhasználásra kerül, a 2014/30/EU Elektromágneses kompatibilitás Irányelv feltételeinek.

 - odpovídá základním požadavkům Strojní směrnice 2006/42/ES a jestliže to její uplatnění vyžaduje i s podmínkami Směrnice 2014/30/EU týkající se elektromagnetické kompatibility.

- atitinka Mašinų direktyvos Nr. 2006/42/EB ir, jeigu taikoma, Elektromagnetinio suderinamumo direktyvos Nr. 2014/ 30/ES reikalavimus.

 - je v súlade s podmienkami Smernice 2006/42/ES o strojných zariadeniach a pokiaľ si to jeho uplatnenie vyžaduje aj s podmienkami Smernice 2014/30/EÚ o elektromagnetickej kompatibilite.

- îndeplinește prevederilor Directivei de Mașini 2006/42/CE și dacă este utilizată de asemenea cu prevederile Directivei referitoare la compatibilitatea electro-magnetică EMC 2014/30/UE.

- on vastavuses Masinate Direktiivi tingimustega 2006/42/EÜ ning sammuti juhul, kui on tegemist sammuti on vastavuses Elektromagnetilise kokkusobivuse Direktiivitingimustega EMC 2014/30/EL. - z določili Direktive o strojih 2006/42/ES ter, če je to relevantno, tudi z določili EMC Direktive 2014/30/EU.

- παραμένει σύμφωνη με τους όρους της Οδηγίας περί Μηχανών 2006/42/ΕΚ και σε περίπτωση που αυτό εφαρμόζεται και με τους όρους της Οδηγίας περί ηλεκτρομαγνητικής συμβατότητας (ΗΜΣ) 2014/30/ΕΕ.

- Está de acordo com exigências das Directivas das Maquínarias 2006/42/CE e no caso em que tiver igualmente aplicação com as exigências das Directivas referentes a compatibilidade electromagnética EMC 2014/30/UE.

- tikkonforma mad-dispożizzjonijiet tad-Direttiva dwar il-Makkinarju 2006/42/KE u jekk rilevanti wkoll mad-dispożizzjonijiet tad d-Direttiva EMC 2014/30/EU.

- atbilst mašīnu direktīvai 2006/42/EK, kā arī nepieciešamības gadījumā elektromagnētiskās saderības direktīvai EMC 2014/30/ES.

Zedelgem,

Antoon Vermeulen

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