Maize Unit 3 rows



Directions for use

"Original instructions"

GB

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FOREWORD

DEAR CUSTOMER

We appreciate the confidence you have shown our company by investing in a JF product and congratulate you with your new machine. Of course, it is our wish that you will experience complete satisfaction with the investment

This instruction manual contains information about correct and safe use of JF 3-row Maize Unit attachment.

When buying the machine you will have received instructions about use, adjustment and maintenance.

However, this first introduction cannot replace a more thorough knowledge of the correct technical use of the machine to keep the machine operational and ensure long life.

Therefore, it is important to read this instruction manual before operating the attachment for the first time. Pay special attention to the safety instructions.

In the event of any doubt, please contact any of our authorized dealers or our Sales Department. We shall be very pleased to help you whenever you need our assistance.

As Kongskilde Industries A/S wishes to constantly improve the technical standard in order to meet the requirements to a modern farm machine, the company reserves the right to make changes or improvements in the design or construction of any part without incurring the obligations to install such changes on any unit previously delivered.

We recommend you to keep this instruction manual so that it can be supplied with the machine in case it is sold later on.

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1. INTRODUCTION

SAFETY

The safety of persons and machines is an integral part of JF's development work. **We wish to ensure the safety of you and your family in the best possible way**, but this also requires an effort on your part. However, damage can occur as a consequence of misuse and insufficient instruction.

A Corn Attachment cannot be constructed in such a way that it guarantees the full safety of persons and at the same time performs an efficient piece of work. This means that it is very important that you as user of the machine pay high attention and use the machine correctly and thereby avoid exposing yourself and others to unnecessary danger.

The machine demands skilled operation, which means that <u>you should read the</u> <u>instruction manual before you connect the machine to the tractor</u>. Even though you have been driving a similar machine before, you should read the manual - this is a matter of your own and other persons' safety!

This is also the reason why you should **never** leave the machine to others before you have made sure that they have received the necessary instructions how to operate the machine correctly.

DEFINITIONS

The safety decals and the instruction manual of the machine contain a line of safety notes. The safety notes mention certain measures, which we recommend you to follow in order to increase the personal safety as much as possible.

We recommend that you take the necessary time to read the safety instructions and inform your staff to do the same.



In the instruction manual this symbol is used where there are factors directly or indirectly of importance in regard to personal safety.

- **CAUTION:** The word CAUTION is used to ensure that the operator follows the general safety instructions or the measures mentioned in the instruction manual to protect himself and others against injuries.
- **WARNING:** The word WARNING is used to warn against visible or hidden risks, which might lead to serious personal injuries.
- **DANGER:** The word DANGER is used to indicate measures which, according to legislation, must be followed to protect oneself and others against serious injuries.

WHEN OPERATING THE ATTACHMENT

- 1 Avoid grease, oil or dust building up on the attachment.
- 2 Never feed the equipment manually.
- 3 Never attempt to adjust or repair components with the attachment in movement.
- 4 Do not start the equipment without the protecting covers.
- 5 Never get close to or operate the attachment wearing loose clothes or long hair as it might get caught by moving mechanisms.
- 6 Never allow unskilled people to operate the attachment or the tractor.
- 7 Do not allow children or other people to get close to the attachment when it is in operation or movement.
- 8 Never replace transmission gears with the attachment turned on.
- 9 Do not start or stop the engine with the PTO running.
- 10 Jack (4): Lower it to disconnect the attachment and remember to lift it again.



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- 11 Be aware of the correct operation and maintenance of the attachment. Before using it for the first time, make sure the operators have seen this manual and are well instructed.
- 12 Always keep the attachment in perfect condition.
- 13 Connection of the attachment should take place on flat and even ground to ensure safe and easy procedure.
- 14 In narrow passages, make sure there is enough width to pass without interference.
- 15 Never stand in front of or put your hands into the delivery chute when the attachment is turned on.
- 16 Only use tractors duly dimensioned for the attachment.
- 17 Never remove the decals from the attachment.
- 18 Remove the plates and protecting covers if necessary, but never work without them.
- 19 Always operate with the correct PTO speed 1000 rpm, according to the attachment standard.

Too high speed means serious risks to your safety.

20 Mainly when you work on inclined or uneven ground, take all cautions to keep the directional steadiness and stability of the tractor, such as:

Use the tractor's correct ballast.

Always adjust the speed according to the conditions.

Whenever you drive downhill, use the same speed you would use driving uphill.

When driving uphill with the tractor never drive in sideward direction, but always straight upwards.

WHEN MAINTAINING THE ATTACHMENT

- 1 The attachment must be turned off for any type of maintenance.
- 2 When disconnecting the attachment, always lower the jack (2) and lock it.
- 3 Observe the right types and amounts of the recommended lubricants to lubricate the different components.



2. ATTACHMENT PRESENTATION

COMPONENTS IDENTIFICATION

- 1 Main attachment
- 2 Side and middle deflectors
- 3 Crop deflector
- 4 Crop guide
- 5 Floating skids
- 6 Chain tensioners (7)
- 7 Gathering chains
- 8 Cutting knives
- 9 Jack



RUNNING

CAUTION: The terms "right" and "left" are defined from a position behind the machine, facing the direction of travel.

The side and middle deflectors (2) guide the crop, allowing the knives (8) to cut the plants.

The gathering chains (7) grab and pull the plants to the feeding cylinder of the FCT 1350.

From this point on, the harvest functions are carried out by the FCT 1350 and are described in the specific manual.

The gathering chains (7) and the knives (8) have two speeds, through one gear change.

Chain lubrication is carried out with oil, through a centralized dosage unit.



TECHNICAL SPECIFICATIONS

Tractor required power Approximated weight Min.: 122 hp (90 kW)/ Max.: 245 hp (180 kW) 720 kg Row capacity by gathering 3 rows Space between rows 75 ± 3 cm Dimensions See drawings below C (length 2341 mm L (width) 2900 mm 1159 mm

- A (height) D (Distance between rows, center)
- 754 mm



3. ATTACHMENT PREPARATION

ASSEMBLY AFTER RECEIPT

Carry out the assembly on flat and even ground. Assemblies to be carried out are as follows:

CROP DEFLECTOR

It aims to protect the plants from the right-hand side wheels.

To install it:

- a) Begin by the crop deflector (1) fastening the bolt (2).
- b) Fasten the plate (3) with four bolts.
- c) Assemble the extension bars (4), fastening them with four bolts in the places indicated by the arrows.
- d) Fasten the bar (5) in the crop deflector(6), locking it with the pin (7).
- e) Fasten the other end of the bar (6) in the attachment according to illustration and lock it with the pin (8).
- f) For adjustment procedure see page 20.

CROP GUARD INSTALLATION

Install the crop guard (9) shown on the picture.

Fasten it with the two "R" type pins, in the places indicated by arrows.







CONNECTING THE ATTACHMENT TO FCT 1350

CONNECTION OF ATTACHMENT

- a) The connection must be done with machine and attachment on levelled ground.
- b) Dismount protective hoop (17) on FCT 1350. Slowly move the machine (1) close, aligning the clamps (2) with their respective connection points (3).
- c) Use the jack (4) to adjust the height of the toggle-points (3) in order to put them in the clamps (2) height.
- d) The machine (1) must be moved close in aligned way. Avoid pushing the attachment, as it could damage the jack (4).







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- e) Conclude installing the pins (5) in both sides and fastening the limiting rod (6) together with the stop (15).
- NOTE: The purpose of the rod (6) and the lowering stop (15) is to set the maximum and minimum height.



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ASSEMBLY OF THE SPRINGS OF THE FLOATING SYSTEM

- a) The attachment must be placed on firm ground. The plate (8) that fastens the springs (7) must be fastened to the attachment with the pin (9).
- b) Raise the attachment with the cylinder (12) so that it does not collide with the feed rollers and adjust the limiting rod (6) page 15.
- c) Lower the attachment completely (cylinder (12) in floating position). Adjust the springs (7) (counter clockwise (10)). Adjust the maize unit to the wanted stubble height so that the ground pressure is 0 kg. Adjust the stop (15) page 15 so that the attachment can go maximum 5 cm below the intended working height.
- e) Check the right tension according to the procedure below.
- f) Test the attachment floating, trying to lift the central tip with your hands, as indicated by arrow. If you can not do it, increase the spring (7) tension, turning the shaft (10) counter clockwise, till you get the correct adjustment.
- g) Finish adjusting the attachment.

ASSEMBLY OF THE TRANSMISSION SYSTEM

Connect the PTO shaft between the attachment and the machine.

DISCONNECTING PROCEDURE

Follow the procedures in reversed order to disconnect the attachment.

Note: Make sure to use the jack (4) correctly. See page 9.









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TRANSPORT AND WORKING POSITION

WARNING: When you are not harvesting, avoid driving with the attachment in working position.

PROCEDURE FOR TRANSPORT POSITION

On levelled ground, activate the cylinder (1) of the floating system springs to lift the attachment to maximum.

WARNING: Place the protecting guard (2) in the cylinder (1) and mount the safety guard (3) during transport.

PLACING THE ATTACHMENT IN WORKING POSITION

Remove the protecting guard (2) and lower the attachment to working position.









4. ADJUSTMENTS TO START OPERATING

PTO SPEED

During operation, the PTO speed must be constant at **540 or 1000 rpm**, according to your attachment configuration.

See the FCT 1350 Manual for guidance.

HARVEST GROUND SPEED

Correct tractor ground speed is one of the factors that directly influence the attachment production and the triturated fodder quality.

For more information, see also the FCT 1350 Manual.

SPEED CHANGE OF THE GATHERING CHAINS

The speed of the gathering chains can be adjusted to match the ground speed.

Once the ground speed has been defined, check whether the chains have the proper speed:

- Plants pushed forward indicate too low speed.
- Plants pulled indicate too high speed.

The gathering chains (1) have two options of speed, set by the gear change (2, next page). See in the table the ratio gear and proportioned speed:



Number of teeth of the gear (2)	Chains Speed (1)
12	6 km/h°
13	5 km/h ^o

^o Depends on adjusted chopping length. On FCT 1350 it must normally short chopping length. The speed shown is with short

chopping length.

CAUTION: See the section regarding chopping length in the instruction manual for FCT 1350.

TRANSMISSION GEAR CHANGE

- a) Loosen the tension of the chain (3).
- b) Remove the pin (4) and remove the gear (2).

Replace it by the gear that provides the desired speed, according to previous table.

Note: With the gear diameter change, the chain length must also be changed, changing the amount of supplementary links - see table.

Number of teeth of the gear (2)	Additional required splices	
12	No additional links	
13	1 additional link	

- c) Remove the clamp (5) to open the chain and check its length. Add or remove splices (or additional link) according to the selected gear (2); see previous table.
- d) Assemble the chain with the correct amount of links, observing the following: the clamp (5) must be put in such a way that the opening is to the opposite side of the rotation direction - see the figure.
- e) Adjust the chain play in such a way that the deflection in the indicated point is around **5 mm.** Tighten the chain (3) with the tensioning gear (6).
- f) Check the performance of the chains in operation.









CROP DEFLECTOR ADJUSTMENT

The crop deflectors (1) and the extension bar (2) are used in case there is need, depending on the crop size and the distance between the rows.

They prevent the front wheel from dropping the plants of the adjacent row.

ADJUSTMENT

Top deflector (2) is the one that can be adjusted.

There are two holes in the right side of the attachment, which allow height adjustment:

1st Hole - Position for large size plants.

2nd Hole - Position for medium size plants.

Remove the pin (2) from the bar (3) and shift the bar to the selected hole.





ADJUSTMENTS ON THE FCT 1350

Adjust the following items according to need and according to description in the FCT 1350 manual.



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FLOATING SKIDS ANGLE ADJUSTMENT

The function of the skids (1) is to prevent the side and middle deflectors (2) from penetrating the ground.

- 1st **position:** Higher deflectors. Used for more uneven ground and/or soft soil.
- 2nd position: Deflectors in an intermediate point from the ground.
- **3rd position:** Lower deflectors. Used for even and/or harder ground.
- 4th position: Gives a higher stubble height.

PROCEDURE:

- a) On flat and even ground, use the auxiliary hydraulic system to lift the attachment.
- b) Loosen the bolts (3) of both skids (1) and select the position.
- c) Retighten the bolts (3).







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5. DESCRIPTION OF THE OPERATION

In order to become familiar with the attachment operation, it is presented step by step.

- WARNING: 1 It is up to the operator to adjust these procedures to his working environment.
 - 2 Be aware of all the safety measures before operating the attachment for the first time see page 6.
- 1 Before starting the attachment check all the harvest conditions (see in the FCT 1350 manual), attachment preparation and initial adjustments. See the attachment preparation and adjustments from page 13.
- 2 It is recommended to carry out a preventive test before moving to the field:
 - a) Place the attachment 15 cm above the ground.
 - b) Start the PTO and let the attachment run for one minute.
 - c) Place the attachment in transport position according to page 17.
- 3 On a levelled ground, place the attachment in working position according to page 17.
- 4 Keep the delivery chute and chute flap correctly guided to the trailer, coupled to the hitch or at the side of the chopper.
- Note: Make sure that loading of the trailer takes place from the rear to the front. Besides making the procedure easier it helps to compact the load.

- 5 Through the hydraulic lifting set the right attachment height according to the desired lifting height and length adjusted by the rod (1).
- 6 Begin the harvest, aligning the side and middle deflectors on the lines to be harvested, with the PTO rotation and ground speed adjusted.

WARNING:



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- Do not overload the attachment or the tractor. Reduce the harvest
- speed whenever necessary.7 During operation concentrate your attention on the front wheels of the
- 7 During operation concentrate your attention on the front wheels of the tractor. This will make it possible to avoid occasional obstacles such as stubs or stones.
- 8 Movements: always observe carefully the proximity of the trailer or the trailer wagon.
- 9 Always leave the field with the attachment in transport position.
- 10 Always keep the attachment in a dry place and protected from bad weather after every working day.



6. MAINTENANCE INSTRUCTIONS

GREASE POINTS

Use the recommended grease at all points indicated by arrows. Use a greasing pump.

RECOMMENDED GREASE

Use grease of good quality.

Attachment grease points Lubricate every 2 hours at the indicated points.



MAINTENANCE OF GATHERING CHAINS

TENSIONING

The tensioning of the gathering chains (1) must be done with following intervals:

First tensioning: after the first 10 hours.

And then: after every 50 hours.

PROCEDURE

1st stage – Removing protecting plates

- a) The attachment has an adjusting rod(7) for each chain (1). To accessthem, remove the plates (2) and (5).
- b) Remove the plate (2) removing the bolts (3) and (4). Pull the plate in the direction indicated by the arrow.
- c) To remove the plates (5) loosen them turning the lever (6) in both sides. Remove the plates by pulling them forward.











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2nd stage - Chain tensioning

- d) Turn the nuts (8) clockwise to tighten the gathering chains.
- IMPORTANT: All springs (9) on the adjusting rods must have the same length (D) of 10 - 15 mm.
- e) Carry out a small test on the chains. Put the tractor PTO in action and check the chain tension. Correct, if necessary.
- f) Mount the protecting plates again.

CHAIN LUBRICATION

Every two hours of operation, fill the lubricators (10) on both sides with the oil held in the plastic bottle (11).

The bottle must be filled up whenever there is need, with SAE 90 oil or any other type of oil specially made for chains.





REPLACEMENT OF THE PLASTIC BARS OF THE GATHERING CHAINS

The function of the bars (1) is to align the movement of the gathering chains. They must be replaced when they show excessive wear, i.e. bar thickness is less than 2 mm.

REPLACEMENT PROCEDURE

1st stage – Removal of protecting plates

- a) See procedures on the previous page.
- 2nd stage Removal of bars
- NOTE: Use original bars.
- b) Remove all the bolts (2) in all bars of the attachment.
- c) Mount the protecting plates again.





MAINTENANCE OF CHAINS

PLAY ADJUSTMENT

A chain working with improper play, besides suffering a premature wear, causes noise and may come off the gears.

The play of the chain (3) must be from **3 to 5 mm** in the point indicated by the arrow (opposite side to the adjusting rod).

Remove the cover (1) to access the chain (3).

Move the adjusting gear (4) according to need and re-tighten the bolt.

CLEANING AND LUBRICATION

Keep the chains clean. Whenever needed, wash them with a brush and kerosene or diesel oil. After that, dry them with compressed air or natural drying.

Apply a thin SAE 90 or 140 transmission oil coat.

If available, use a lubricant especially intended for chains (grease in spray). It provides more efficient lubrication between the pins and rollers of the chains.

NOTE: Do not use ordinary grease in the chain, as it does not penetrate in the links and pins.





REPLACEMENT OF THE SHEAR BOLTS OF THE DRIVE GEAR

Replace the 3 shear bolts (1) in case of breakage.

The bolts are **M8 x 30** bolts, Class **8.8**.

REPLACEMENT OF THE CUTTING KNIVES

Change the knives (1), located according to side arrow indication, when they present excessive wear, lack of sharpness or breakages.

Note: always change the knives in pairs.

Remove the bolts (2) in order to remove the knives.

When mounting the new knives, the torque setting recommended for the bolts (2) is **80 Nm**.

The clearance "D" between the discs must be 0 - 0.1 mm.

WARNING: Observe the side of the knife assembly: the flat side of the knife must be close to each other, see illustration below.

Check, turning by hand, with the drive chain removed, that there is only light contact between the knives. In case there is too much contact or much space, use the supplied spacers to adjust the clearance.









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ATTACHMENT STORAGE

Correct storage is as important as preventive maintenance. Such care basically consists of protection of the attachment against bad weather and corrosive effect of some products.

After you have ended the harvesting work the recommendations below should be observed, aiming to preserve workability and prevent future unnecessary maintenance:

- Remove all product waste that remained inside the attachment.
- Wash the attachment carefully and allow it to dry in the sun.
- Retighten the nuts and bolts in general.
- Remake the painting where needed.
- Lubricate all the grease points mentioned on page 24.
- Very important: always keep the attachment in a dry place, protected from sun and rain.

MAINTENANCE BETWEEN HARVEST SEASONS

When the attachment is not in use for a long period, some maintenance is required to increase its life.

MAIN ITEMS TO BE OBSERVED ARE:

- Keep the attachment in a protected place.
- The attachment must be disconnected from the machine.
- Bear in mind that the period between harvest seasons is the best time to make preventive maintenance and, with that, to prepare for the next harvest.

WHEN YOU COME BACK TO WORK, OBSERVE THE FOLLOWING ITEMS:

- Retighten the nuts and bolts in general.
- Lubricate the points indicated on page 24.
- Check the adjustments for operation described from page 18 in this manual.
- If possible, make a full revision together with a JF dealer or in an authorized workshop.

7. PROBLEMS AND SOLUTIONS

Problem	Causes	Solution
	Excessive speed of gathering chains.	Check the proper speed instruction in the table on page 18.
Blockage of the machine	Tractor excessive speed.	Control the tractor speed according to the harvester intake volume.
Machine does not gather the product.	Gathering chain is often loose.	See gathering chains tension adjustment procedure.
	Cutting knife can be dull.	Replace the cutting knife
	Safety pin can be broken.	Replace the pin.
	Tractor PTO speed is lower than recommended.	Must be 1000 RPM
Excessive noise	Hardware (nuts and bolts) can be loose.	Retighten.
	Product wound around the gathering chains.	Clean and lubricate the gathering chains.
Low cutting efficiency.	Excessive working speed.	Reduce the speed.
	Cutting knife can be dull	Replace cutting knife.
Gathering chain is often loose.	Tension spring is not correctly tightened.	Replace it.
	Excessive speed of gathering chains.	Check the proper speed instruction in the table on page 18.
	Self-locking nut incorrectly fastened or loose.	Tighten or replace it.
	Lock-nut missing in the adjusting rod.	Replace it.
Harvester wheel is squashing the next row.	Product deflector is out of adjustment.	Adjust it according to page 20.

8. TECHNICAL ASSISTANCE

ATTACHMENT SERIAL NUMBER

The attachment is identified through its Serial Number, located on identification plate.

Write down the Serial Number of your attachment here.

Always use JF original items whenever replacing parts. Only original spare parts are made according to the drawings, materials and specifications with great quality control.

Whenever sending communication, or requesting help from JF Technical Assistance, always let us knows the serial number and model of your machine. See identification plate.



WARRANTY

Kongskilde Industries A/S, 6400 Sønderborg, Denmark, hereafter called **"Kongskilde"**, grants warranty to any buyer of new JF machines from authorised JF-dealers.

The warranty covers remedy of material and production faults. This warranty is valid within a year after date of sale to end-user.

The warranty is invalidated in the following cases:

- 1. The machine has been used for other purposes than those described in the instruction manual.
- 2. Improper use.
- 3. Damage caused by external sources e.g. lightning or falling objects.
- 4. Insufficient maintenance.
- 5. Transport damage.
- 6. The construction of the machine has been modified without Kongskildes written permission.
- 7. Unskilled repair of the machine.
- 8. Unoriginal spare parts have been used.

Kongskilde cannot be held responsible for loss of income or legal claim as a result of faults either of the owner or of a third party. Kongskilde is also not responsible for wages beyond current agreements in connection with replacement of warranty parts.

Kongskilde is not responsible for the following costs:

- 1. Normal maintenance such as expenses for oil, grease and minor adjustments.
- 2. Transport of machine to and from workshop.
- 3. The dealer's travelling expenses or freight charges to and from the user.

Warranty is not granted on wearing parts unless it can clearly be proved that Kongskilde has committed a fault.

The following is regarded as wearing parts:

Protective canvases, blades, blade suspensions, shearbars, guide shoes, stone protections, discs, rotor skirts, crimper parts, tyres, tubes, brake shoes, chain tightener parts, guards, hydraulic hoses, conveyors, wheel-fixing bolts and nuts, snap rings, sockets, PTO-shafts, clutches, gaskets and seals, tooth belts, V-belts, chains, sprocket wheels, carriers, conveyor chain slats, rake- and pick-up tines, rubber seals, rubber paddles, cutter blades, wearing plates and lining for spreading platform, shredding blades incl. bolts and nuts, spreading rotors and vanes for farmyard manure spreaders.

In addition, the user must note the following:

- 1. The warranty is only valid if the dealer has undertaken pre-delivery check and has given instruction to the end user in the use of the machine.
- 2. The warranty cannot be transferred to others without Kongskildes written permission.
- 3. The warranty can be nullified if the repair is not undertaken immediately.



