

# HORIZON

AGRICULTURE

## USER MANUAL

## DSX



## Machine data

Machine type:

Serial number:

Year of manufacture:

## Manufacturer address

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**EC Declaration of Conformity**

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# 1 Introduction

## 1.1 Preface

Before putting the machine into operation, the instructions given in this user manual should be read and understood. This prevents hazards, reduces repair costs and downtime, increasing the reliability & service life of your machine. Please observe the safety instructions!

HORIZON AGRICULTURE accepts no responsibility for any damages or malfunctions resulting from failure to comply with this manual.

This manual will allow the user to safely and efficiently operate his machine in order to work to the machines optimum performance.

This user manual must be read and understood by all persons responsible for carrying out work on or with the machine, for example:

Operation (Which includes preparation, troubleshooting during work, maintenance)

Maintenance (Maintenance & inspection)

Transport

The warranty period starts from the date of delivery.

The technical characteristics and weights indicated in this manual are subject to continuous improvement by HORIZON AGRICULTURE and therefore may change at any time, without warning.

The illustrations in this user manual show different versions of the worn/coupled tool as well as different equipment.

## 1.2 Service

HORIZON AGRICULTURE wants you to be completely satisfied with your machine and us.

In case of a problem, contact the Sales manager in your area.

## 1.3 Damages

This machine was carefully manufactured by HORIZON AGRICULTURE, However, small anomalies that may result in a total shutdown may be caused, even in the case of conforming use, for example by:

Deterioration due to external influences.

Excess parts wear.

Missing or damaged work equipment.

Incorrect settings or work-rates.

Improper setting of the appliance (Improper assembly/coupling, failure to observe the adjustment instructions)

Failure to comply with the user manual.

Maintenance either poorly executed or not performed.

You must therefore check, before each use and also during the work of the machine, proper operation of the machine.

Any claim for damages that were not a result of machine malfunction are excluded. HORIZON AGRICULTURE will not be responsible for damages occurring through improper use of the machine.

## 2 Security & Responsibility

The following indications of danger and safety concern all chapters of this manual.

The machine is built in accordance with the rules described in the Machinery Directive. Its use may, however, present a danger of injury or death to the user or third parties and/or cause damage to the machine or other equipment.



*Read and follow the safety instructions below before using the machine!*

### 2.1 Intended Use

The machine is intended to be used for sowing and/or normal tillage in Agriculture. Any other use such as use as a means of transport is considered to be inconsistent with the intended use and may result in injury, if not death, of persons.

HORIZON AGRICULTURE accepts no responsibility for any damage that may result. The user assumes full responsibility.

Comply with the accident prevention requirements of local insurance schemes and local rules on safety, occupational medicine and road safety.

Use the machine only in perfect technical condition according to its destination and in perfect knowledge of the risks!

Specifically remove any incidents that may be detrimental to the safety of the operator and bystanders.

The machine must only be used, maintained and repaired by people familiar with it and informed of the dangers,

### 2.2 Spare Parts

The original spare parts and accessories HORIZON AGRICULTURE are specially designed for this machine.

Other spare parts or accessories are not controlled or authorized by HORIZON AGRICULTURE.

The assembly or use of parts which are not from HORIZON AGRICULTURE may, in some cases, result in the machine being changed to the detriment of its original performance and safety.

The liability of HORIZON AGRICULTURE cannot be incurred for damages caused using parts and accessories which are not purchased from HORIZON AGRICULTURE.

When safety stickers are on the component to be replaced, they must also be ordered and affixed to the replacement component.

### 2.3 User Manual

The machine is designed to be used in compliance with the instructions in this user's manual and the manufacturer's recommended service and maintenance intervals detailed within this manual.

The user manual is a part the machine and must always remain with the machine.

The machine is exclusively intended for use in accordance with the user manual. Failure to observe the user manual may result in serious injury, if not death, of persons.

Read and observe the relevant chapters of the user manual before work.

### 2.4 Operator Competence

Non-conforming use of the machine can result in serious injury, if not death, of persons. To avoid accidents, any person working on the machine must meet at least the general criteria below:

They must be physically able to control the machine.

They must be able to work on the machine safely in accordance with this operator manual

They know how the machine works and are aware of the dangers associated with work.

They have understood the user manual and can apply the information it contains.

They are familiar with the safe driving of vehicles.

For road driving, they are aware of the local rules and regulations and have the correct driving license.

An apprentice must always be supervised when working with the machine.

## 2.5 User Groups

People working with the machine must be trained accordingly to perform the various tasks.

Road Transport of the machine

Use & Adjustment of the machine

Operation of the machine

Maintenance of the machine

Finding Faults & Troubleshooting

## 2.6 Children

Children must be kept away from the machine whilst the machine is being used.

Before machine start up or movement make sure that no child is in the danger zone.

Before leaving the tractor cab, immobilize the tractor.



*A machine parked in an insufficiently secure and unattended manner is a danger to children playing nearby!*

## 2.7 Personal Protective Equipment (PPE)

Missing or incomplete protective equipment increases the risk of health damage. Individual protective equipment means for example:

Well-fitted garment/protective clothing to prevent snagging in moving parts. Please be particularly careful with long hair.

Safety shoes, protective gloves.

Protective goggles to protect against dust or splashes when using fertilizer and liquid fertilizer or other chemicals. (comply with manufacturer's requirements)

Respiratory protective mask and protective gloves for handling seed treatments or treated seeds. (comply with the requirements of disinfectant products manufacturers)

Determine the personal protective equipment required for the task in hand.

Never wear a ring or other jewellery.

## 2.8 Road Safety



*It is forbidden to take passengers on the machine!*

Observe the permitted widths and heights of transport. Consider the height of transport especially to pass under bridges and low power lines.

It is necessary to respect the axle loads, the tyre load capacities and the total permissible weights, so that a sufficient direction and braking accuracy is maintained. The front axle must always have a load at least equivalent to 20% of the tractor's unladen weight.

For road transport, the machine must be in the transport position. The machine must be folded and locked.

Before folding, the folding areas must be cleared of the Earth. This is to prevent damage to the mechanical system.

Mount the lighting, the signalling and protection devices and check the operation.

Before driving on the road, rid the whole machine of any debris that has gathered.

When transporting the machine, consider the large overhang and the inertia mass of the machine as well as any products in the tanks.



*For transport on public roads please respect the local speed limits.*

Always adapt the driving to the road conditions to avoid accidents and damage to the chassis and the transport wheels. Take into account operator experience, road condition, traffic, visibility and weather conditions.

## 2.9 Safety In Use

### 2.9.1 Commissioning

Without proper commissioning of the machine, its operating safety is not guaranteed. This can cause accidents and serious injuries, if not death, of people.

Use the machine only after having received the necessary instructions from the employees of the authorised dealer, representatives of the factory or employees of the company HORIZON AGRICULTURE.



The completed acknowledgement must be returned to the company HORIZON AGRICULTURE.

The machine should only be used if all protective devices and safety-related devices, e.g. removable protective devices (shims, etc.), are in place and function and in good condition.

Regularly check the correct tightening of the nuts and screws, especially those of the wheels and discs and tighten them if necessary.

Regularly check the pressure of the tires.

## 2.9.2 Damage to the machine

Damage to the machine can be detrimental to the operator's operating safety and cause accidents. This can result in serious injury, if not death, of people.

The following parts of the machine are particularly well important in terms of safety:

Hydraulic System

Brakes (if fitted)

Locking devices

Protective Devices

Lighting

In case of doubt as to the condition of the machine, for example in case of consumable part wear, visible damage or unexpected behaviour stop the machine immediately and repair it.

If possible, determine the problem using this user manual and repair it.

Eliminate possible causes of damage (e.g. heavy debris, loosened screws, work parts).

Have the damage repaired by a qualified specialist workshop when you cannot repair it yourself.

## 2.9.3 Coupling & Uncoupling

When a single operator is coupling and uncoupling the machine use external lift controls. Do not reach into the tractor from outside in order to couple or uncouple the machine.

Make sure that no one can position themselves between the tractor and the machine or nearby the machine when coupling or uncoupling.

Before getting off the tractor, to couple or uncouple, put the parking brake on, put the transmission into neutral or Park, stop the engine and remove the ignition key from the tractor.

Before you couple the machine make sure that the coupling pins, coupling clevises or kneecaps show no signs of wear, no breakage and are compatible with your tractor.

Depressurize the tractor hydraulic system before connecting or disconnecting the hydraulic connections.

Connect or unplug electrical connections.

Lower the machine completely to the ground before uncoupling it. Make sure the surface is flat and firm enough to ensure perfect stability of the machine during storage.

When your machine is parked, make sure it is stable so as not to cause personal injury or property damage.

## 2.9.4 Hydraulic System



*The hydraulic system is under high pressure. Hydraulic oil under pressure can penetrate under the skin and cause serious injury. If you think that this has happened, consult a doctor immediately.*

The hydraulic system of the machine has many functions that can cause injury and property damage in case of mishandling.

Only connect the hydraulic hoses to the tractor once the hydraulic pressure is removed from the tractor and the machine.

The hydraulic system is under high pressure. Regularly check the absence of leaks and visible damage to the outside on all pipes, hoses and fittings!

Use only appropriate means to search for leaks. Remedy immediately to deterioration! Oil projections can cause injury and fire! Do not use hands to check for hydraulic oil leaks.

To exclude handling errors, mark the plugs and sockets of the hydraulic fittings to ensure the correct connection.

In case of injury, immediately consult a doctor!

Secure or lock the tractor's distributors in case of non-use!

Hydraulic hoses should be replaced after six years of use.

## 2.9.5 Pneumatic Circuit & Connections

Follow the mounting order of the pneumatic connections.



Before connecting the pneumatic circuit, clean the connections of the tractor and machine, and check that there is no pressure on the tractor and the machine.

~~Replace damaged or worn pneumatic hoses with correctly sized alternatives.~~

For all operations on the pneumatic system, place the machine on the floor, depressurize the pneumatic circuit.

## 2.9.6 Accumulator Pressure

In the hydraulic system there are possible pressure accumulators.



*Do not open or work with pressure accumulators (welding, drilling). Even after they have been emptied, the tanks are still under gas pressure.*

Before performing any maintenance work, the hydraulic system must be depressurized!

## 2.9.7 Braking System

Depending on the equipment, the machines may be equipped with a pneumatic or hydraulic service brake system.

The braking system must always be connected and able to operate properly when driving on the road.

After the coupling of the machine and before any transport, always check first the condition and the operation of the braking system.

Check the setting on the brake force control.

Always loosen the parking brake first before travelling.

Before uncoupling, always apply the parking brake.

## 2.9.8 Overhead Cables and Obstructions

When the side sections are unfolded and folded, the machine can reach the height of overhead lines. The voltage can then be discharged on the machine and cause a fatal electric shock or fire.

When the lateral sections are folded and at the time of unfolding and folding, be sure to keep a sufficient distance from the high-voltage power lines.

*Never unfold or fold side sections near electrical pylons and overhead lines.*

*Never climb on the machine when parked under overhead lines due to the risk of electric shock.*

## 2.9.9 What to do if an overhead cable is struck

Voltage discharge can cause high electrical voltages on the outside of the machine. These can earth through a person to the ground around the machine. Making big steps from the machine, lying on the ground by the machine or leaning on it with your hands can lead to deadly electric shock

Do not leave the cabin.

Do not touch metal objects.

Do not conduct a conductive connection with the Earth.

Advise people: Do not approach the machine. Electrical voltages on the ground can cause strong electric shocks.

Waiting for the help of the emergency services. The overhead line must be cut off.

If people must leave the cabin despite voltage discharges, for example when there is a danger of fire:

Jump out of the machine. Make sure to jump as far as possible from the machine and do not fall back towards the machine. Do not touch the outside of the machine.

Step away from the machine and stay a safe distance away from the machine.

## 2.9.10 Weight Limits

When the weight limits of the machine are not observed, the machine may be damaged and become unsafe. This can cause accidents and serious injuries, if not death, of people.

The weight limit values below are particularly important for the safety of the:

- Total weight allowed
- Maximum axle loads
- Maximum Load carryover
- Maximum speed

Also observe the tractor's maximum load.

### 2.9.11 Use in the field?



*It is forbidden to take passengers on the machine!*

Before starting and commissioning, check that no one is near the machine. Ensure that visibility is sufficient.

Ensure sufficient stability of the machine in case of inclination on rough terrain. Observe the permissible limit values for the tractor.

None of the prescribed and supplied protective devices shall be dismantled.

Ensure that no one is in the pivot area of hydraulically controlled machine elements.

Do not move the machine in reverse when it is lowered. The components are only designed to be used in a forward direction and may be damaged if used in reverse.

### 2.9.12 Replacement of equipment/wear parts

Secure the machine so that it does not move unexpectedly!

If you work under the machine whilst it is raised the machine must be securely supported with suitable supports!



*Protruding parts (Discs, etc.) may represent risks of injury!*

Never climb on rotating parts to step onto the machine. These could turn and you could seriously injure yourself by falling.

### 2.9.13 Transport on public roads

The use of machinery must always be made in accordance with the directives and rules in force, concerning the prevention of accidents, road safety and occupational medicine.

Before moving, check the tightening of the wheel studs and the tandem mounting bolts (if equipped with the machine). Check the pressure and condition of the tyres:

- Do not drive with too low pressure, or with damaged tyres or rims.

For transport use all the lighting and signalling devices required by the law in force in the country of use. If necessary, they can be removed during work in the field so as not to be damaged.

The user is responsible for the compliance with the current regulations and the monitoring of the changes.

Check the condition and fixing of the coupling pins regularly, do not hesitate to change them in case of wear.

The tractor's coupling balls may also show signs of wear, do not hesitate to replace them with new ones.

Drive at a reasonable speed and comply with the local legislation to always keep control of the coupled assembly.

Be particularly careful in rough or sloping terrain. Before approaching a descent, change to a lower gear.

The tractor used to move the machine on the road must have the same weight and power as that used for field work.

Never operate when a person is near the machine or tractor.

For machines equipped with a folding for transport, make sure that no person or obstacle is in the sweep area when the elements are folded.

Observe all the rules of caution when driving, especially in corners and when the road is narrow.

Take all precautions before leaving the tractor.

Put the parking brake on, stop the motor, remove the ignition key.

When travelling on the road, do not allow anyone to ride on the machine or between the machine and the tractor.

## 2.10 Fertilizers and seeds treated with disinfectants

Improper handling of fertilizers and seeds treated with disinfectants can lead to poisoning and death.

Follow the instructions of the product manufacturer's safety data sheet. Ask the dealer Safety Data sheet if necessary.

Determine the personal protective equipment according to the manufacturer's indications and make them available.

## 2.11 Protection of the environment

Consumables such as hydraulic oil, lubricants, etc., can harm the environment and the health of people.

Do not let consumables pollute the environment.

In case of spillage cover the spill with absorbent material or sand, then dispose of in a liquid-tight container that is marked and discarded in accordance with the local requirements.

## 2.12 Modifications

Frame modifications and extenders can affect the operation and safety of the machine. This can result in serious injury, if not death, of people.

Do not make any frame modifications or extensions not authorised or supplied by HORIZON AGRICULTURE.

Only modify or extend the frame in a specialized workshop or by an engineer trained for this purpose by HORIZON AGRICULTURE.

Observe local regulations for weights, weight distribution and dimensions.

For equipment influencing weight or weight distribution, the requirements relating to the coupling device, the load carry-over and the axle load shall be checked and observed.

For machines supplied without brakes, a braking system must be mounted if the modification exceeds the weight limits.

For all changes affecting the data on the nameplate, a new nameplate with the current data must be installed.

Any changes to the road lighting circuit must comply with local legislation.

## 2.13 Maintenance and Maintenance



*Non-compliant maintenance and lack of maintenance threaten the operating safety of the machine. This can cause accidents and serious injuries, if not death, of people.*

You must comply with the manufacturers intervals for periodic inspection and maintenance.

Maintain the machine according to the maintenance plan.

Perform only the work described in this user's manual.

Carry out the maintenance and inspection work after placing the machine flat on level ground and attaching it to a tractor to prevent it from moving.

Release the hydraulic pressure on the machine and lower it to the ground. If working on a raised machine is necessary, ensure that the machine is correctly supported.

Before doing any work on the electrical installation, unplug it from the power supply.

Before performing any welding work on the machine, disconnect the cables from the computers and other electro-mechanical components. Mount the earth terminal as close as possible to the welding. Disconnect the tractor battery.

Before cleaning the machine with a pressure washer, cover any openings or devices that must not get wet. Do not direct the water jet directly onto electrical or electronic components, bearings or fan. For high pressure or steam cleaning, always keep a minimum 50 cm in relation to the parts of the machine.

After cleaning, check all hydraulic lines if there are leaks and loose fittings.

Examine wear due to friction and deterioration. Immediate remedy for any defects found!

Ensure that you tighten all loosened screw fittings during maintenance and repair work.

## 2.14 Loading & Unloading

Loading and unloading with a tractor.

Hitch or unhitch the machine to the tractor to load it on a truck or to unload it from the truck.

An assistant is required to guide the manoeuvres.




Secure or remove transport safety devices.

## 2.15 Safety Stickers

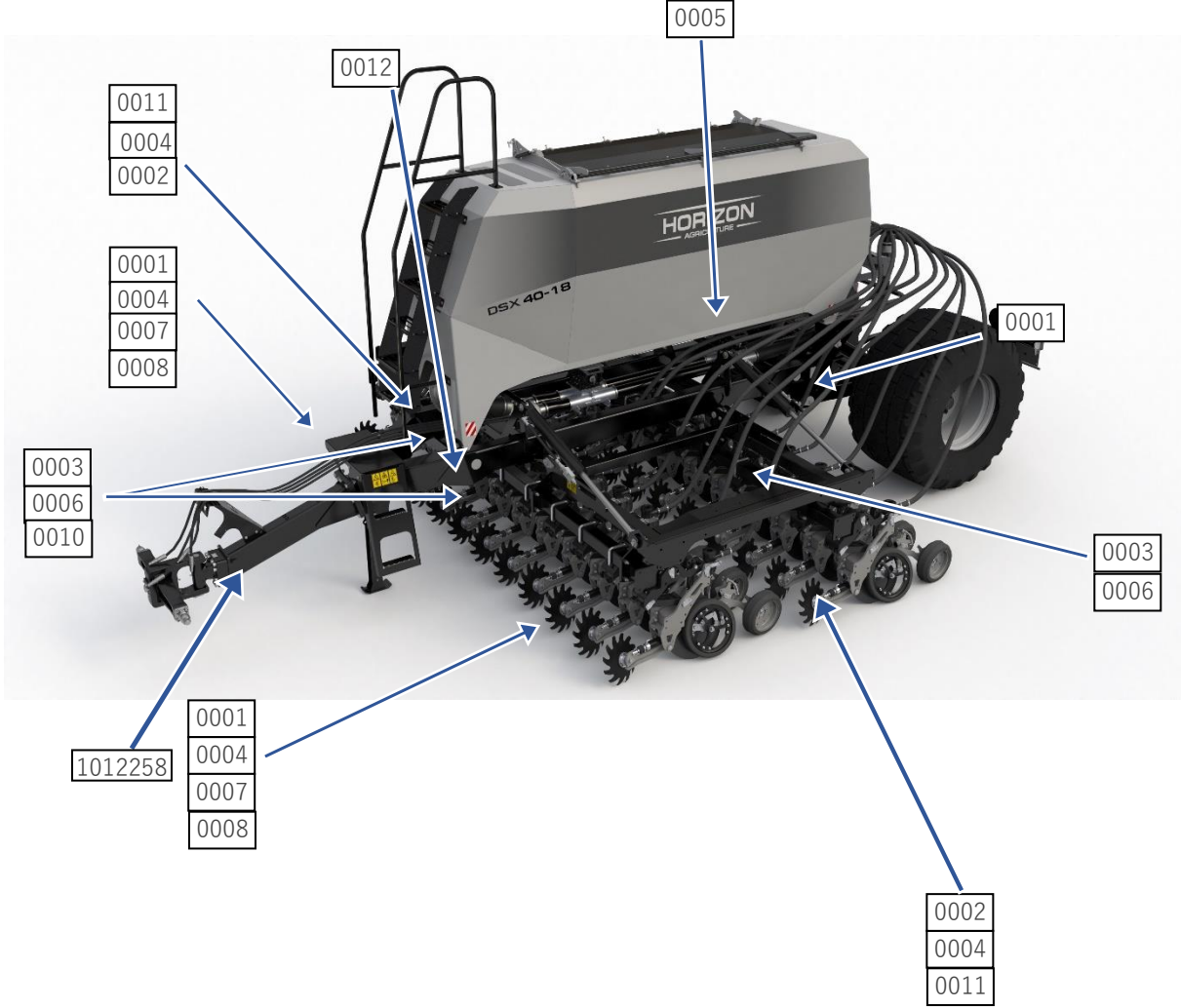


Be careful not to damage the safety stickers when washing the machine. Replace any damaged or missing stickers.

### 2.15.1 Explanations of stickers:

Sticker	Description	Sticker	Description
1012262 	<b>Stay away when unfolding.</b> Keep away from all moving parts when unfolding.	1012268 	<b>Motor stop and remove the key.</b> Stop the engine and remove the ignition key before any maintenance or repair operation.
1012263 	<b>Foot Crush Area.</b> Ensure that feet do not go into this area when folding and unfolding and lifting and raising the machine.	1012257 	<b>Read the user manual.</b> Read the user manual and safety tips before start-up and follow the instructions contained within for safe operation.
1012264 	<b>Crash risk Area.</b> Never intervene in an area where there is a risk of crushing as long as parts can move.	1012261 	<b>Overhead Lines.</b> Stay a safe distance from all overhead lines.
1012265 	<b>Moving part.</b> Never climb on parts that can turn. Use only the devices intended for this purpose.	1012260 	<b>Hydraulic leak.</b> Comply with the instructions in the User manual for maintenance operations.
1012266 	<b>Passengers on the Machine.</b> Never carry passengers on the machine.	1012258 	<b>Crush area.</b> Stay away from this area.
1012267 	<b>Locking device.</b> Set up the locking device before working on the machine.		

2.15.2 Locations of Safety Stickers:



## 3 Machine operation and use.

### 3.1 Coupling

Before proceeding with the coupling of the machine ensure that it is properly secured.

1. Check the wear and cleanliness of the machine and tractor couplings.

2. Manoeuvre the tractor to the Machine.

3. Hitching the Machine.

a) Machines with coupling on the lifting arms:

- Attach the machine to the tractor.
- Ensure the locks on the lift arms are closed.
- Tighten the stabilizers to avoid lateral movements
- Make sure you adjust the level of the lift so that the chassis of the machine is in the horizontal position
- Connecting the hydraulic brake jack

b) Machines with coupling ring:

- Adjust the height of the traction drawbar so that the machine can be hitched.
- Attach the machine to the tractor.
- Insert the bolt and lock it.
- Connect the hydraulic brake jack

c) Machines with ball coupling:

- Lower the traction drawbar or the cap on the ball and raise the machine slightly.
- Attach the machine to the tractor.
- Check and adjust the size of the gap between the blanking clamp and the cap

4. Fold the parking stand and lock it with the pin provided for this purpose



### 3.2 Hydraulic connection

The operation of the seed drill requires:

- 1 double-acting hydraulic service for unfolding and folding the machine wings
- 1 double-acting hydraulic service to raise and lower the seeder in the field
- 1 single acting for the supply of the hydraulic fan
- 1 free flow return (male in 3/4") to the hydraulic oil tank of the tractor for the return of oil from the fan (MAX PRESSURE 3 bar).

1-Fan Hydraulics, 2/3-Wing Folding Hydraulics, 4/5-Brakes, 6-Rear Axle Hydraulics, 7- Free flow return.



*Never operate the service controlling the fan without properly connecting the free flow return otherwise damage to the hydraulic moto will occur.*

When using a tractor with variable flow pump and integrated regulators (closed circuit hydraulics), the oil flow must be used to adjust the speed of the fan

The oil flow required for a fan rotation speed of approximately 4000 rpm is 24 L/MN.

- Clean the hydraulic fittings before proceeding with the connection
- Connect to a double-acting service, the hydraulic hoses for the folding.
- Connect to a double-acting service, the hydraulic hoses for supplying the markers.
- Connect the free return of the fan
- Connect to a single service the supply to the fan

### 3.3 Electrical Connections

1. Connect the 7 pin connector for lights.

2. Connect the Anderson connector for the power supply. (photo)



3. Connect the multi-pin connector to the screen.

## 4 Quick Start.

### 4.1 Unfolding of the seed drill



1. Position Tractor and machine in a straight line on levelled surface with firm ground.
2. Lift the chassis with the rear cylinders
3. Operate the corresponding hydraulic service to unfold the wings and ensure that they completely unfold.



*Caution. Before unfolding the wings, check that the row units are in the high position*

## 4.2 Filling of hoppers

### 4.2.1 Access to hoppers

Before accessing the Hoppers Check that the seeder is fully locked and that the wings are unfolded.

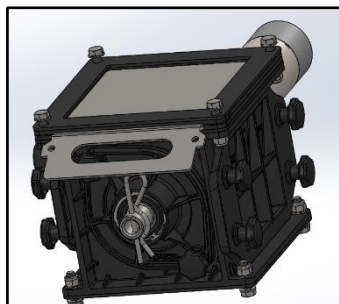
1. Remove the pin and the step pin on the left rear row.
2. To open the hoppers operate the locking levers.



*Caution. The hoppers are pressurised, do not open hoppers when the hydraulic fan is running*

## 4.3 Filling

Before filling the hoppers, close the hopper bottom doors.



When closing the hoppers make sure that no grains or foreign bodies are stuck between the lid gasket and the hopper.

After each opening of the hoppers and after prolonged shutdown periods, check the sealing while the blower is operating. Start the blower and look for the air leaks from the cover with the hand or the ear.

In case of leaks, replace gaskets or adjust hinges and locks. Leaks will result in application rate errors.



### **Important Safety Notes**

- Make sure you never go under a suspended seed bag when filling the hoppers.

- Ensure that no one crosses into the area of the material handler when loading the machine.

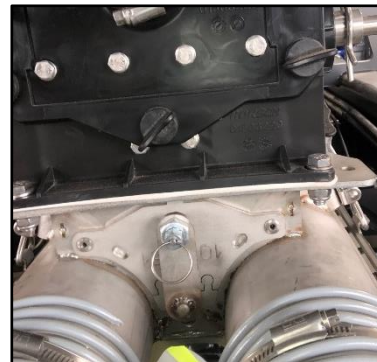
- When the load approaches the hopper, make sure that no one is standing on the man way.

- Open the bag only when the load is stabilized above the hopper opening. If possible, use a knife on a long handle to prevent leaning under the bag.

- When loading avoid contact with the treated seed and wear gloves as well as a dust mask.

## 4.4 Transport of Seeds

Each dispenser is equipped with a half seeder shut off. (1 row on 2)



To send the contents of the hopper to the entire seeder the lever must be in the middle position, to select only one of the two sides. Position the lever on the corresponding row. Repeat this action on all the metering units.

## 4.5 Calibration of Dosing Meters



1. Mount the appropriate seed roller according to the quantity and type of seed (see table and Instructions for measuring unit)
2. Turn on the Seeder's controller and go to the Calibration Setup menu (see Using the Display)
3. Fill the hopper with the seed you wish to use.
4. Open the hopper door to release the seed or fertilizer.



5. Open the flap under the meter, actuate the valve to orient the flow on the selected side for calibration.
6. Insert the receptacle for this purpose (photo)
7. Proceed to the "Flow test" phase (see Using the display)
8. Remember to close the door once the calibration is complete.

**IMPORTANT:**

*A new calibration is necessary at each change of product, variety or metering roller. A change of rate without changing the product or seed roller does not require a new calibration.*

## 4.6 Folding the seeder



**Important Safety Notes**

Make sure no one is on the Seeder or on the walkways.  
Keep people away from the danger zone.

1. Make sure that the row units are in the high position, fully folded before proceeding to fold the machine.
2. Ensure that the bout markers if fitted are in their fully folded position.



3. Operate the hydraulic service corresponding to the folding of the drill

## 4.7 Use of Hopper.

### 4.7.1 The main hoppers

The choice in the allocation of product to each hopper goes to the user according to the convenience of use.

Periodically check the rotors to avoid fouling and dosing errors.



## 5 Machine adjustments in the field.

### 5.1 Adjustment of the sowing depth and the angle of the following wheel.

Before proceeding with the depth adjustment, check the machine is level in the horizontal plane. Make sure that the row units are in the raised position and do not touch the ground.

1. Angle Adjustment

### 5.1.1 Tool-free fast rear adjustment system: (photo)

#### 5.1.1.1 Depth Adjustment

1. Pull the adjustment lever and position it on the desired notch (photo)



Each full step changes the seeding depth by 12mm while half steps, with the handle positioned diagonal, result in 6mm depth variation.

#### 5.1.1.2 Angle Adjustment

1. Pull the adjustment lever at the following wheel and the position on the desired notch (photo)



The angle adjustment improves the closing of the slot.

**IMPORTANT:**

*An excessively aggressive setting will create unnecessary mechanical stresses for the row unit and will cause accelerated system wear and will result in excessive soil movement.*

## 5.2 Hydraulic Pressure Adjustment

- The ground pressure applied by each row unit is paramount to achieve satisfactory sowing quality:

- A seedling at the desired and constant depth
- A good quality groove closure

Each element of sowing is equipped with a hydraulic cylinder which allows to adjust the ground pressure. After adjusting the working depth, adjust the hydraulic pressure of the row units.

Note: The use of high pressure can change the sowing depth, adjust the depth if necessary.

The pressure indication is given by the gauge present front of the chassis (photo)



To change the ground pressure, turn the adjustment knob clockwise to increase the pressure and in the counter clockwise to decrease the pressure.



The working range is between 5 and 40 bar.

- Reduce the pressure if the conditions are too humid or on movable soil (e.g. on ground worked before sowing).

- Increase the pressure in dry conditions if the sowing element has difficulty entering the soil and an irregularity in the seed placement depth is found.



**IMPORTANT:**

*Do not work with excessive ground pressure. Too much pressure will unnecessarily accelerate the*

*mechanical wear of the sowing element but may also have a detrimental effect on the quality of the seeding (excessive compaction when closing the furrow).*

## 5.3 Fan speed adjustment

The fan has a maximum speed of 4500 rpm, any overrun of this threshold can damage the motor.

To switch on the fan, switch on the corresponding hydraulic service and put it in continuous pumping position.

Then adjust the service's hydraulic flow to adjust the fan speed.

The speed of the fan must be adjusted according to the seeds. There is no adjustment table because this setting will depend on the type of product and the application rate used.

The usual range of use is between 2500 and 4000 rpm. To choose the right speed, make sure that there is no accumulation of grain in the two transparent feed hoses of the distribution heads. Small seeds require less air to be transported.

### **i** NOTE:

*Insufficient air flow can lead to accumulation in the ducts and cause pipe blockages. Large seeds require higher air flow than small seeds.*

## 5.4 Adjusting the Seed Boot

The positioning of the seeding plant is essential for a quality seedling. The seed boot is mounted on deformable rubber washers to allow precise accuracy. Before adjusting the seed boots ensure that the row unit is not in contact with the ground. If discs are being blocked, then adjustments should be made to the seed boots.

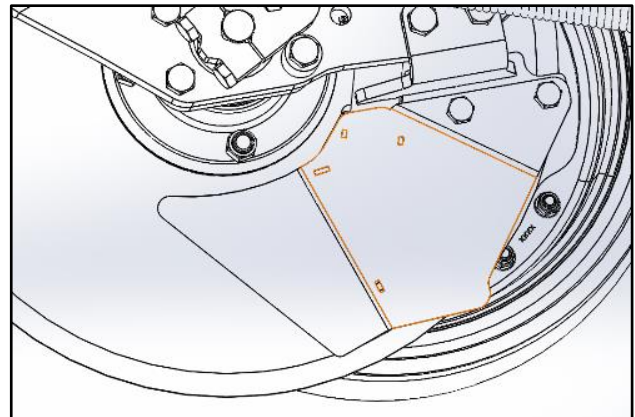
The seed boots must be:

- Parallel to the disc
- As close as possible to the disc without stopping its rotation in order to prevent debris from being lodged between the disc and the seed boots.

To do this, use a 19mm wrench to tighten or loosen the 3 bolts to reach the optimum position:

- the upper front point of the seed boot must touch the disc slightly and conform as closely as possible to the shape of the hub.

- The lower front corner of the seed boot must be offset from the disc surface by 1 mm (maximum) to allow a flexing and movement of the disc.
- the rear of the seed boot should be angled from the front +/-2/3mm.
- The disc must be able to turn freely by hand once the position of the seed boot is set.



### **i** IMPORTANT:

*These settings are paramount to prevent debris and straw from jamming between the disc and the skimmer.*

## 5.5 Adjustment of Side wheels

The ground control wheels must be adjusted against the slot opening discs and must be able to be freely rotated by hand.

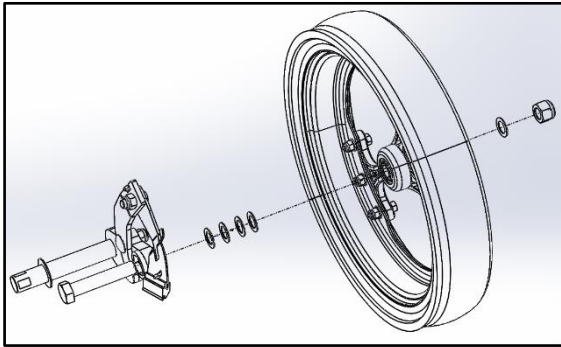
On the DSX opener, the side wheel achieves two objectives:

- Limit and maintain the volume of ground raised by the disc. The wheel must therefore be touching the ground (check that the return spring is correctly fixed).
- Clean the disc on which earth and debris may stick. It is therefore necessary to make sure that the wheel is perfectly against the disc without their movement being affected.

The side wheel can be shifted inward or outward using movable shim washers on the axle of the wheel:

Use a 24 wrench to loosen the replacement wheel retaining brake nut.

Move the shim washers inside or outside the replacement to get the desired setting.

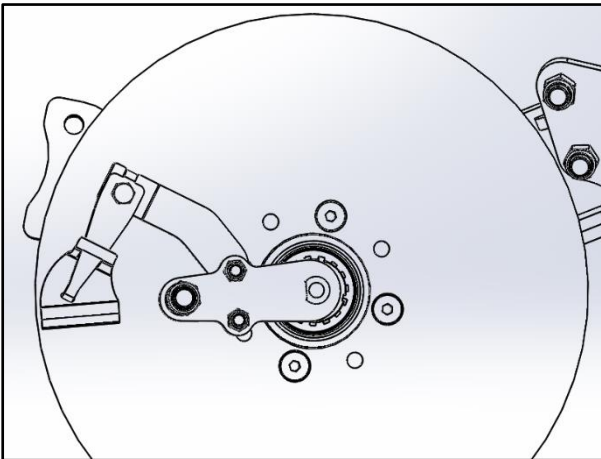


Once the adjustment has been obtained, tighten the side wheel retaining nut firmly.

## 5.6 Disc Scraper

By default, the DSX element is mounted with a scraper inside the cleaning wheel to clean the disc (Soil or debris). The evacuation of the soil and debris is caused by the rim of the cleaning wheel.

The scraper blade must be in contact with the disc all the way across.



1: The scraper blade must be on its entire length in contact with the disc and be located 10 – 12 mm from the outer edge of the disc to avoid damaging the scraper.

- Loosen the locking bolt of the spring arm
- Rotate the arm-spring assembly + blade to reach the desired position.

- firmly tighten the locking bolt of the spring arm.

2: To perform correctly, the scraper blade must apply sufficient pressure to the disc. To refine the setting:

- Dismantle the blade of its arm,
- Slightly distort the spring arm that holds the scraper blade (using a pliers or wrench), ideally the end of the arm touches the disc slightly when the blade is removed.
- Put the scraper blade back into position



### **IMPORTANT:**

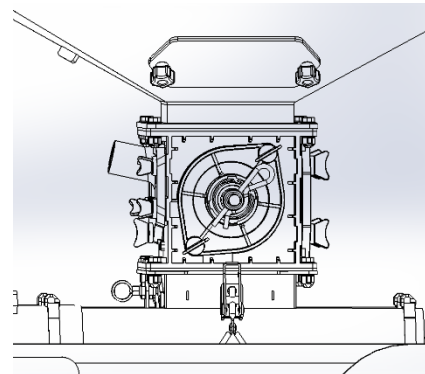
*Regularly check the status of the scraper blade. In case of marked wear or deterioration, replace the blade to ensure optimum cleaning of the disc.*

*Do not wait until the carbide edge is completely gone to change the blade.*

## 5.7 Emptying the Hopper

1. Put the seeder in the transport position
2. Position a big bag or container under the machine
3. Open the drain door on the side of the hopper. (photo)

4.



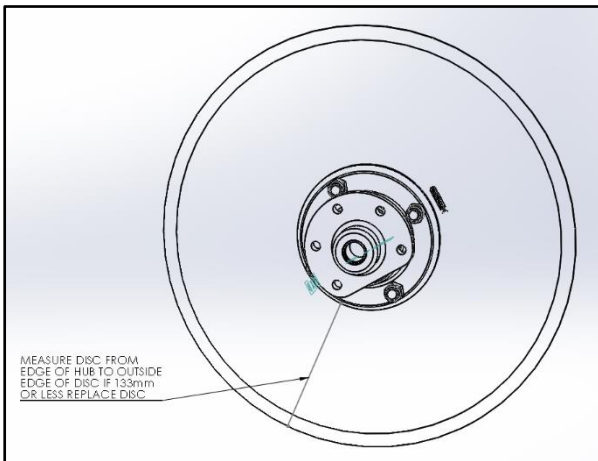
Manually operate the metering unit in order to remove all of the seed from the hopper.

## 6 Maintenance

### 6.1 Drive & Hub Assembly

#### 6.1.1 Opening Disc

The DSX disc has a diameter of 18" (about 457 mm). This is equipped with a bevel that helps penetration into the soil and the cutting of straw and cover crops, thereby severely limiting the phenomenon of hair pinning in the seeding line.



Discs must be replaced when they reach a minimum diameter of 425mm in order to prolong the life of the row unit and maintain a constant sowing depth. Moreover, when the discs reach a 425mm diameter, the bevel is normally worn, resulting in a higher risk of hair pinning. When the disc reaches a diameter of 425 mm or less, the Coulter will no longer work in the shadow of the disc and will therefore begin to wear out much more quickly (depending on the type of soil and working conditions).

**IMPORTANT:**

*Progressive wear means that the sowing depth will need to be adjusted.*

### 6.2 Safety Reminder

- Stop the tractor engine and remove the ignition key.
- Make sure all moving elements are motionless before operating on the machine.
- Before working under the machine, ensure that all the safety stands and locking pins are in

place. Never place your hands or feet under the opener discs (in case of abrupt lowering of the element).

- Review the safety instructions in Chapter 1.

### 6.3 Maintenance Schedules.

**IMPORTANT:**

*The following instructions and recommendations must also be applied after the first 5 hours of work after the machine is started.*

- Visually inspect all bolts and nuts, tighten any bolts/nuts that need them.
- Check that the Coulter is correctly positioned on the disc. See Chapter 3.6.
- Check that the cleaning wheel is properly adjusted against the disc. See Chapter 3.7.
- Check and tighten all wheel nuts.

#### 6.3.1 Daily Maintenance

- Visually inspect all row units for any damage, replace damaged components if necessary.
- Visually inspect all bolts and nuts, tighten any bolts/nuts that are loose.

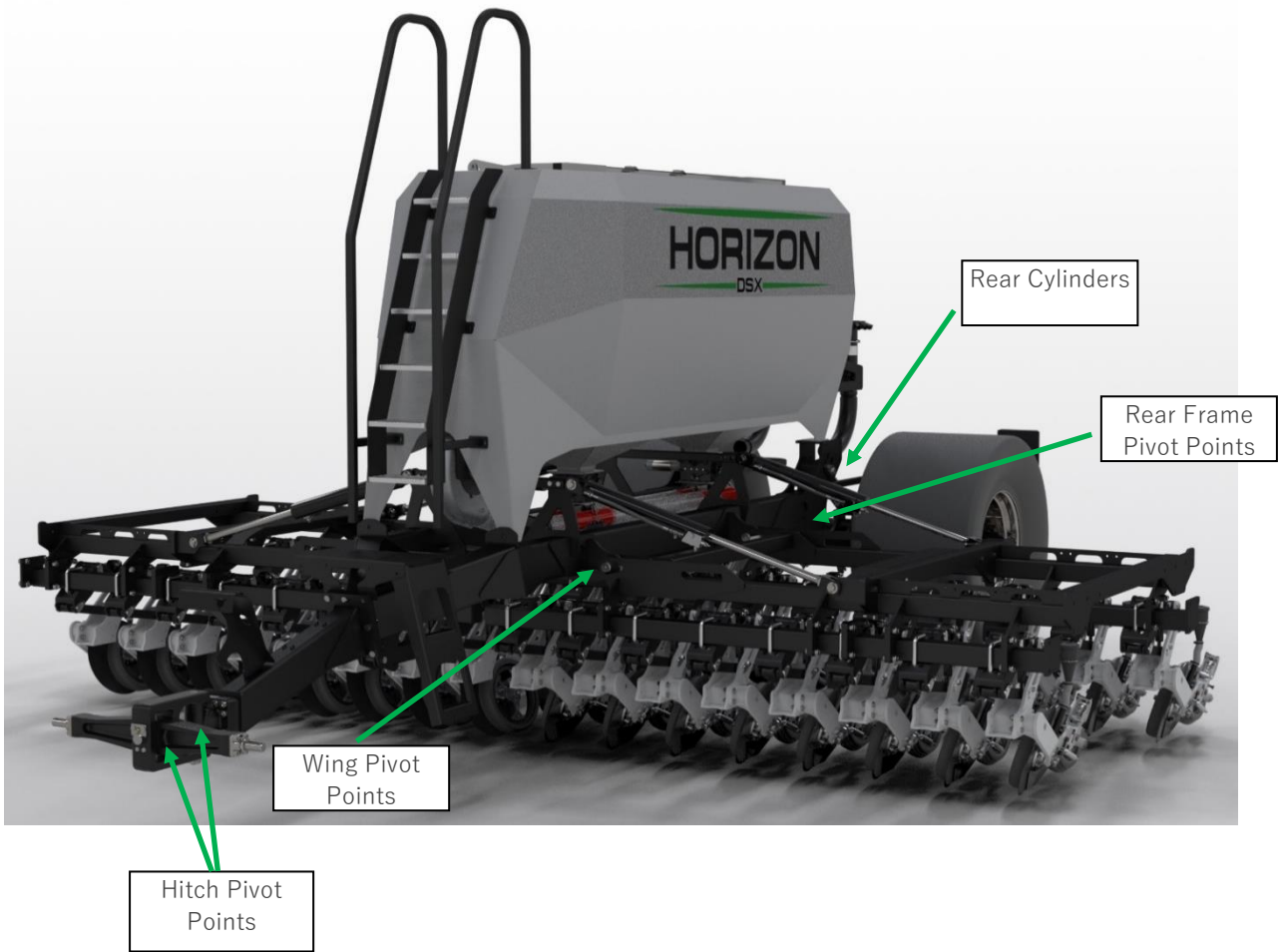
#### 6.3.2 Annual Maintenance

- Adjust the position of the Coulter. In case of excessive wear, replace it if necessary.

Check the status of the opener discs. When the discs reach a 425mm diameter, it is necessary to replace this. See Chapter 3.10.1.



Lubrication Point Plan



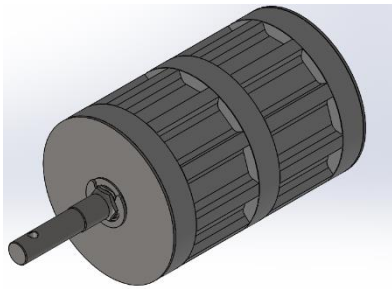
## 7 Meter rotor Assembly Instructions

### 7.1 Dismantling the rotor in the meters

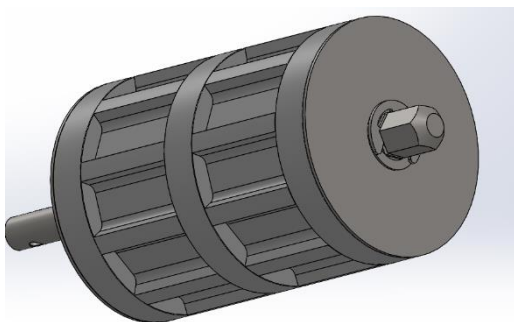
Unscrew both handles on each side of the rotor



Then remove the rotor from its housing.



### 7.2 Change of rotors

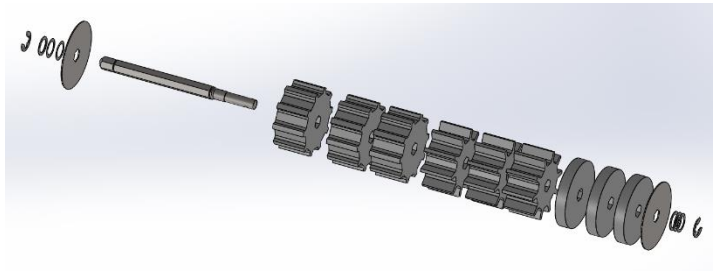


Now remove the circlips from the various rotors on the hexagonal shaft using a hammer and a pin punch.

Then replace the rotors with those corresponding to the type of seed and the selected application rate required. (see Adjustment table)

Each rotor has a specific volume per rotation. Change the rotors to achieve the desired volume per rotation.

Make sure the rotors are assembled correctly and no parts are missing before replacing the Circlips.



## 8 Instructions for use of the DSX seeder regulation

The regulation of the seed meter is electric, they are powered by the red and black 12 volt supply. The regulation of the meter is controlled by either an Artemis ISOCAN or the ISOBUS terminal in the tractor.



### 8.1 ARTEMIS, ISOCAN & RDS Users Guide

Refer to the operating manual and calibration of the RDS control box, supplied with the machine.

### 8.2 ISOBUS User's Guide

Refer to the ISOBUS terminals user manual, supplied with the machine if necessary.



## 9 Optional Extra's

### 9.1 Adjustment of row cleaners

1. Connect the 3 pipes to the air compressor
2. Press the pneumatic switch to the desired pressure on the pneumatic housing. **Change**



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**NOTE:**

*Too much pressure on the row cleaner will cause excessive soil movement.*

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## 10 Problem & Troubleshooting

<u>Problems</u>	<u>POSSIBLE CAUSES</u>	<u>Possible SOLUTIONS</u>
The seed groove is not properly closed and pressed.	Working depth is incorrect.	Check the working depth.
	Not enough pressure on the closing wheels.	Increase the ground pressure of the elements. See Chapter 5.
	Closing wheel not aligned with groove.	Change the alignment of the closing wheel. See Chapter 5.
The seed groove is too compact.	The ground pressure is too high.	Reduce the ground pressure of the row unit. See Chapter 5.
	The chassis is not working parallel to the ground.	Correct the level of the chassis. See Chapter 5.
Debris and soil accumulate on the disk and the cleaning wheel.	Scrapers not adjusted properly	Replace the scrapers or change their setting. See Chapter 3.9.
	The cleaner wheel is too far from the disc.	Move the cleaning wheel closer to the disc. See Chapter 5
	Working conditions are too wet (ground too sticky).	Wait for the working conditions to improve (better soil conditions).
	A foreign body is stuck between the cleaning wheel and the disk	Disassemble the cleaning wheel to remove the foreign body. See Chapter 5.
The disc does not rotate when in work.	The cleaning wheel is too close to the disc.	Adjust the position of the cleaning wheel away from the disc. See Chapter 5
	The Seed Boot is mounted too close to the disc.	Adjust the position of the Seed Boot in accordance with the recommended parameters. See Chapter 5.
	Scrapers are mounted too tight against the disc	Adjust or remove the scrapers from the disc. See Chapter 5.
Seed placement is irregular	The ground pressure of the element is too low	Increase the ground pressure to ensure a constant sowing depth. See Chapter 5.
	The machine frame is not level.	Adjust the level of the machine. See Chapter 3.
	The row unit height at work is incorrect.	Check the row unit height at work and adjust if necessary. See Chapter 3.
The Seed Boot is blocked with soil.	Keep a forward movement when lowering the row units.	Do not lower the row units when the tractor is stationary.
	Working conditions are too wet.	Wait for the conditions to improve.
	<b>Do not reverse when the row units are lowered on the ground!</b>	
Seedling depth is too low	The opener disc is worn.	Adjust the sowing depth according to the disc wear or replace it in

		case of excessive wear. See Chapter 5
The Coulter has excessive wear and tear.	The opener disc is worn.	Replace the disc (recommended maximum wear rib. See Chapter 6.
	The attachment of the row unit to the frame is incorrect.	Check the tightness of the row unit mounting bolts on the frame and check that the row unit is aligned correctly

# 11 Rotor Choice Table

[Change all tables](#)

[4m Seed Drill](#)

[6m Seed Drill](#)

[6.4m Seed Drill](#)

[7.2m Seed Drill](#)

[7.5m Seed Drill](#)