Pneumatic Trailed Precision Planter for No-Tillage
Dear Owner

In buying a Kuhn machine you have chosen wisely. Into it have gone years of thought, research and improvement. You can be assured that you are getting a product that was thought and designed for your total satisfaction. Like thousands of owners around the world, you can enjoy the best technology developed and thoroughly tested by the expertise of our trusty engineering, providing the highest machine efficiency and the best field productivity. You have acquired a safe machine that will achieve its best performance in accordance with the appropriate handling measures.

This manual contains all the necessary information for you to receive full efficiency from your machine. The performance and yield obtained, depend mainly on reading and understanding this user's manual and consequently applying this information and knowledge correctly when using and working your machine.

Please, **DO NOT OPERATE YOUR MACHINE BEFORE CAREFULLY READING THIS USER'S MANUAL. ALWAYS KEEP THIS MANUAL AVAILABLE IN ORDER TO SOLVE ANY EVENTUAL DOUBTS.**

Your KUHN dealer will provide all information concerning the correct handling of your machine. In order that you may get the best out of your machine, KUHN is at your entire disposal to answer any questions or doubts that may arise concerning your machine.

Your KUHN dealer can offer a complete line of genuine KUHN service parts. These parts are manufactured and carefully inspected in the same factory that builds the machine to assure high quality and accurate fitting of any necessary replacements. To place a request for KUHN service parts, it is important that you provide the machine type and model as well as its series number. This information is easily found in the machine's identification plate, attached to the frame.

**About improvements**

We are continually striving to improve our products. We therefore reserve the right to make improvements or changes when it becomes practical to do so, without incurring any obligations to make changes or additions to the equipment sold previously. Any changes and modifications without the express permission of KUHN, as well as the use of non-original replacement parts and the misuse of the machine in conditions and works other than its intended purpose, result in loss of warranty.

**Designated use of the machine**

The seed drill PV/PG PLUS should only be used to carry out work for which it has been designed. Direct precision seed planting and fertilizer distribution.

**Document illustrations**

The illustrations in this manual are based on one machine model and in a given configuration. The applications illustrated in this User's Manual are applicable to specific models and some items may not be set from factory. Contact your manufacturer for information concerning the settings available for your machine.

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</table>
Identification of the machine

1. Front view

2. Rear view
3. Model identification plate

Please write below the type and serial number of the machine. This information is to be given to the Kuhn authorized dealer for any spare parts order or warranty claim.

**Type:** MAXIMA, MAXIMA SEED, MAXIMA EXTRA

**Serial no.:**
4. Optional equipment

Tick box corresponding to the equipment fitted on your machine:

- **Kit no.: Y5705790**
  - KUHN electronic hectare counter - HECTOR

- **Kit no.: YH115000**
  - Row marker - Type: 900

- **Kit no.: YH115100**
  - Row marker - Type: 1000

- **Kit no.: YH115200**
  - Row marker - Type: 1200

- **Kit no.: YH115300**
  - Row marker - Type: 1300

- **Kit no.: YH115400**
  - Row marker - Type: 1500

- **Kit no.: YH115500**
  - Row marker - Type: 1700

- **Kit no.: YH115600**
  - Row marker - Type: 1900

- **Kit no.: Y6001950**
  - Fertilizer incorporator

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Certain items of optional equipment are fitted as standard on the machine in some countries. Availability of optional equipment varies according to country. Not all optional equipment is available on all machines. Optional equipment may be aggregated according to the model and specifications of each machine. For further information please consult the manufacturer.
Safety

1. Description of used symbols

This symbol indicates a potentially hazardous situation that if not avoided, could result in serious bodily injury.

This symbol is used to identify special instructions or procedures which, if not followed strictly, could result in machinery damage.

This symbol is used to communicate technical information of particular interest.
2. Safety instructions

■ Introduction

The machine must only be operated, maintained and repaired by competent persons who are familiar with machines' specifications and operation and aware of safety regulations for preventing accidents.

The operator must imperatively respect safety instructions in this manual and in the warnings posted on the machine. The operator is also obliged to respect current legislation concerning accident prevention, work safety and public traffic circulation.

Designated use of the machine also means following operation, maintenance and repair recommendations given by the manufacturer, and using only genuine spare parts, equipment and accessories, as recommended by the manufacturer.

The manufacturer is not held liable for any damage resulting from machine applications other than those specified by the manufacturer. Any use other than the designated operation is at the risk and responsibility of the operator.

The manufacturer is not held liable for any damage or accident resulting from machine modifications carried out by the operator himself or by a third party without previous written agreement from the manufacturer.

■ Read and follow the safety instructions

Before using the machine, carefully read all the safety instructions in this manual and the warnings placed on the machine.

Before starting work, the operator must be familiar with all machine controls, handling devices and their functions. It is too late to learn once work has been started!

Never let anyone operate the machine who is not trained to do so.

Should you have any difficulties in understanding any parts of this manual, please contact your KUHN dealer.

■ Precautions to be taken before carrying out any operations on the machine

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.
Precautions to take before using the machine

Do not wear loose clothing which could become caught up in moving parts.

Wear the appropriate protective clothing for the work in hand (gloves, shoes, goggles, helmet, ear defenders, etc.).

Ensure that all operating controls (ropes, cables, rods, etc) are placed so as they cannot be operated unintentionally and cause damage or injury.

Before operating the machine, check tightness of nuts and bolts, particularly on fixing elements (tines, forks, blades, knives, etc). Retighten if necessary.

Before operating the machine, ensure that all the safety guards are firmly in place and in good condition. Immediately replace any worn or damaged guard.

Precautions when driving

Tractor handling, stability, performance and braking efficiency are all affected by weight distribution, trailed or mounted implements, additional ballast and driving conditions. It is therefore of great importance that the operator exercises caution in every given situation.

Groundspeed must be adapted to ground conditions as well as to roads and paths. Always avoid abrupt changes of direction.

Be particularly cautious when turning corners, paying attention to machine overhang, length, height and weight.

Never use a narrow track tractor on very uneven or steeply sloping ground.

Never leave the tractor seat while the machine is operating.

Carrying people or animals on the machine when working or in transport is strictly forbidden.
Precautions when driving on public roads

Dimensions

Depending on the dimensions of the machine, contact the relevant authorities to ensure that it can be legally transported on public roads.

If the machine is over the maximum legal size, follow the local regulations for special transportation of oversize equipment.

Gross weight and weight per axle

Check that the tractor’s authorized gross weight as well as its lift capacity and maximum weight per axle are not exceeded.

The front axle load (1) must never, under any circumstances, be less than 20% of the tractor’s unladen weight. If necessary, add ballast weights to the front or to the rear to preserve the steering and braking efficiency.

Do not exceed the gross machine weight rating or the maximum machine axle load allowed.

For machines with hoppers or tanks:

- If the total weight exceeds the machine’s total gross weight, empty the hopper to travel on public roads.
- In any case, we recommend to travel on public roads with empty hoppers and tanks.

Transport position

Before transporting the machine on public roads, place the machine into its transport position, according to the instructions in this manual.
Lights and indicators

Before transporting the machine on public roads, ensure that all legally required lightings and signallings are in place.

Ensure that lightings and signallings are clean and in good working order. Replace any missing or broken equipment.

Always obey current regulations for driving on roads.

- Maximum speed

Always keep to the legal speed limit for driving a tractor-machine assembly on public roads.
Precautions when coupling

Before attaching the machine, make sure that it cannot accidentally start moving (chock the wheels) and that the parking stand is in the right position.
The machine must only be attached to the hitch points provided for this purpose.
Never stand between the tractor and the machine when operating the three point linkage.
Do not stand between the tractor and the machine without ensuring that the parking brake is applied.

Hydraulic circuit

Caution: The hydraulic circuit is under high pressure.
Maximum pressure at work: 200 bar 2857 psi.
Before connecting hoses to the tractor hydraulics, ensure that tractor and machine circuits are not under pressure. Before disconnecting a hose, depressurize the hydraulic circuit.

To avoid making incorrect connections, mark hydraulic couplers and corresponding hoses with colors. WARNING! Functions could be reversed (for example: lift/lower) and cause accidents.

Regularly check the hydraulic hoses. In case of normal wear, replace the hydraulic hoses every 5 years. Damaged or worn hoses must immediately be replaced. When replacing the hydraulic hoses, only use hoses with the specification recommended by the manufacturer of the machine.

To locate a leak, use appropriate means. Protect body and hands from liquid under pressure.

Any liquid under pressure (particularly oil from hydraulics) can penetrate the skin and cause severe injury. If injured, see a doctor immediately, there could be danger of infection.

Before any adjustments, maintenance or repairs are carried out, lower the machine to the ground, depressurize the hydraulics, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop.
Precautions during manoeuvres

When moving the machine from the transport position to the working position and vice versa, make sure that nobody is within the machine pivoting area.

Remote controlled components

Danger of crushing and shearing can exist when components are operated by hydraulic or pneumatic controls. Keep away from these danger zones.

Tyres

Regularly check the tyre pressure. Respect manufacturers’ recommendations on pressure. Assembly, disassembly and repair of wheels and tyres must only be carried out by competent persons who are equipped with standardized tools. Before any work is performed on the wheels, ensure that the machine rests on the ground and is perfectly stable so that it cannot move accidentally (put chocks in place).

Safety decals

Safety warning decals are placed in pictorial form on various parts of the machine. They are there to warn you of potential dangers and to tell you how to avoid accidents. Always keep the safety decals clean and readable, and replace them when they are worn, damaged, missing or illegible.

Waste disposal

Respect the environment! Never spill pollutants (oil, grease, filters, etc.) on the ground, never pour them down the drain and never discard them in any other place where they could pollute the environment. Never throw away or burn a tyre. Always take waste to specialized recycling or waste disposal centers.
■ Precautions for maintenance and repair work

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

Rest the machine on the ground, release the pressure from the hydraulic circuit and leave the machine to cool down.

Make sure that the parts of the machine that need to be lifted for maintenance or repair work are firmly propped up.

Before any work is done on the electric circuit or before any electric welding is carried out on the attached machine, disconnect the machine from the tractor electrical circuit. Also disconnect alternator and battery terminals.

Repairs on elements under pressure or tension (springs, pressure accumulators, etc.) must only be carried out by competent persons with regulation equipment.

Wear the appropriate protective clothing for the work in hand (gloves, shoes, goggles, helmet, ear defenders, etc.).

Do not solder, weld or use a blow torch near fluids under pressure or inflammable products.

For your own safety and for correct machine operation, only use original manufacturer parts.

It is strongly recommended to have your machine checked by your Kuhn dealer after each season, especially tools and their attaching hardware.

■ Projection of stones and foreign objects

For driver safety, always use a tractor equipped with a cab. Never start the machine when there are people nearby. Even when the machine is used in accordance with its purpose, objects may be projected. Stones and other foreign objects projected by the moving parts can travel a considerable distance. Keep all persons and animals away from the danger zone.
Precautions for machine use

Before use, check the condition of the fasteners in accordance with the instructions contained in this manual. Immediately replace any damaged or missing elements. For your safety, only use genuine parts!

Keep all persons and animals away from the danger zone. Stay a safe distance from the machine when the cutting tools are in movement.

Never work in reverse.

After disengaging the PTO drive, tools can continue rotating for some time. Stay away from the machine until all moving parts have come to a complete standstill.

If the machine hits an obstacle, stop the tractor engine, remove the ignition key and wait for all moving parts to come to a complete standstill.
3. Location and description of safety decals on the machine

- Location of safety decals
Description of safety decals

Caution reverse speed (1)
Never drive the machine in reverse speed with the opening and closing furrow elements (furrows, bounders, compactors) lowered to the floor. In order to drive the machine in reverse speed, raise it with the tractor's hydraulic until only the wheels touch the soil.

Operating instructions (2)
The operators' manual contains all the information necessary for using the machine safely. It is imperative to read and comply with all instructions. Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

Crushing area (3)
Never operate in an area where there is a crushing risk before all moving parts have come to a complete stop.

Caution with belts and chains (4)
Take caution with moving belts and chains and refrain from intervening with these parts when they are in movement.
Caution with movable joint components (5)
Always take care with moving parts of the machine, whether the machine is stopped or moving.

Caution and attention to collisions (6)
Before servicing the machine take care with your head or any other parts of your body that might clash with the machine. Always be sure to look on all sides of the machine to prevent any clash with projecting parts.

Hydraulic circuit (7)
Take care when handling the hoses and pipes of the hydraulic circuit. This subsystem is under pressure. Leaks or damage to the system can cause severe injuries.

Improper site (8)
Do not climb or stand in places unsuitable for the transportation of people or animals.
Lubrication every 20 hours (9)
Every 20 working hours carry out the necessary lubrication in all subsystems that get grease points.

Transportation (10)
Never transport the machine loaded.

Manipulation point (11)
Supporting points indicated for the manipulation of the machine.

Incorrect manipulation point (12)
Never attach ropes, chains or any other objects to manipulate the machine to places where there is such a symbol.
4. Road safety equipment and recommendations

Safety devices for the transportation of the machine on public roads must be in accordance with the current regulations of each country where the machine is commercialized. Always keep to the legal speed limit for driving a tractor-machine assembly on public roads. Whatever the speed, we recommend, for everyones’ safety, not to exceed a maximum speed of 25 km/h.
### Machine specifications

#### 1. Description and glossary MAXIMA EXTRA

<table>
<thead>
<tr>
<th>Number</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main frame</td>
</tr>
<tr>
<td>3</td>
<td>Ladder</td>
</tr>
<tr>
<td>5</td>
<td>Deep limiter</td>
</tr>
<tr>
<td>7</td>
<td>Fertilizer hopper</td>
</tr>
<tr>
<td>9</td>
<td>Seed distribution pneumatic</td>
</tr>
<tr>
<td>11</td>
<td>Central gearbox</td>
</tr>
<tr>
<td>2</td>
<td>Platform</td>
</tr>
<tr>
<td>4</td>
<td>Furrows</td>
</tr>
<tr>
<td>6</td>
<td>Press roller</td>
</tr>
<tr>
<td>8</td>
<td>Vacuum turbine</td>
</tr>
<tr>
<td>10</td>
<td>Seeding hopper</td>
</tr>
<tr>
<td>12</td>
<td>Drawbar</td>
</tr>
</tbody>
</table>
2. Description and glossary MAXIMA SEED

1: Main frame
2: Platform
3: Ladder
4: Furrows
5: Deep limiter
6: Press roller
7: Seeding hopper
8: Vacuum turbine
9: Seed distribution pneumatic
10: Hand rail
11: Central gearbox
12: Drawbar
3. Description and glossary MAXIMA

1: Main frame
2: Platform
3: Ladder
4: Furrows
5: Deep limiter
6: Press roller
7: Fertilizer hopper
8: Vacuum turbine
9: Seeding hopper
10: Hand rail
11: Central gearbox
12: Drawbar
MAXIMA can be classified as 3 different models: MAXIMA, MAXIMA SEED e MAXIMA EXTRA.

4. Scheme of hydraulic system

- Hydraulic circuit Wheels

For MAXIMA equipped with 1 or 2 turbines will be needed one additional tractor's hydraulic equipment

For MAXIMAS with 1 turbine, 16l/min flow is required, and for 2 turbines 30l/min flow is required, however both demand continuous oil flow
5. Dimensions
## Pneumatic Trailed Precision Planter for No-Tillage

### Technical specifications

<table>
<thead>
<tr>
<th>Technical specifications</th>
<th>700</th>
<th>900</th>
<th>1000</th>
<th>1100</th>
<th>1200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum spacing (cm)</td>
<td>40</td>
<td></td>
<td></td>
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<tr>
<td>Normal spacing (cm)</td>
<td>45</td>
<td></td>
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<tr>
<td>Number of rows</td>
<td>7 x 45cm</td>
<td>9 x 45cm</td>
<td>10 x 45cm</td>
<td>11 x 45cm</td>
<td>12 x 45cm</td>
</tr>
<tr>
<td>Seed Capacity</td>
<td>455 litres ~364 kg</td>
<td>585 litres ~468 kg</td>
<td>650 litres ~520 kg</td>
<td>650 litres ~520 kg</td>
<td>780 litres ~624 kg</td>
</tr>
<tr>
<td>Fertilizer Capacity</td>
<td>986 litres ~1084 kg</td>
<td>1244 litres ~1368 kg</td>
<td>1484 litres ~1632 kg</td>
<td>1484 litres ~1632 kg</td>
<td>1737 litres ~1910 kg</td>
</tr>
<tr>
<td>Seed distribution</td>
<td>Disc suction system</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer distribution</td>
<td>Rotating shaft with screw conveyor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic equipment -</td>
<td>(Double acting socket) with flow rate of 48 à 65 l/min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres</td>
<td>700 x 16 / 10 pads - 72 pounds (maximum pressure)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Weight (Kg)</td>
<td>~3750</td>
<td>~4290</td>
<td>~4600</td>
<td>~5000</td>
<td>~5400</td>
</tr>
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</table>

Measurements are in millimeters
## Technical specifications

<table>
<thead>
<tr>
<th></th>
<th>1300</th>
<th>1500</th>
<th>1700</th>
<th>1900</th>
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<tbody>
<tr>
<td>Minimum spacing (cm)</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Normal spacing (cm)</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of rows</td>
<td>13 x 45cm</td>
<td>15 x 45cm</td>
<td>17 x 45cm</td>
<td>19 x 45cm</td>
</tr>
<tr>
<td>Seed Capacity</td>
<td>845 litres ~676 kg</td>
<td>975 litres ~780 kg</td>
<td>1105 litres ~884 kg</td>
<td>1235 litres ~988 kg</td>
</tr>
<tr>
<td>Fertilizer Capacity</td>
<td>1866 litres ~2052 kg</td>
<td>2230 litres ~2453 kg</td>
<td>2488 litres ~2736 kg</td>
<td>2732 litres ~3005 kg</td>
</tr>
<tr>
<td>Seed distribution</td>
<td>Disc suction system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer distribution</td>
<td>Rotating shaft with screw conveyor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic equipment - Tractor</td>
<td>(Double acting socket) with flow rate of 48 à 65 l/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres</td>
<td>700 x 16 / 10 pads - 72 pounds (maximum pressure)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Weight (Kg)</td>
<td>~5700</td>
<td>~7900</td>
<td>~8100</td>
<td>~9230</td>
</tr>
</tbody>
</table>

- Mineral fertilizer density - 1 liter = 1.1 kg
- Seed average density - 1 liter = 0.8 kg

## Working Specifications

<table>
<thead>
<tr>
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<th>700</th>
<th>900</th>
<th>1000</th>
<th>1100</th>
<th>1200</th>
<th>1300</th>
<th>1500</th>
<th>1700</th>
<th>1900</th>
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</thead>
<tbody>
<tr>
<td>Transport width (m)</td>
<td>3,51</td>
<td>4,24</td>
<td>4,80</td>
<td>5,20</td>
<td>5,57</td>
<td>6,07</td>
<td>6,98</td>
<td>7,89</td>
<td>8,79</td>
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<tr>
<td>Working width (m)</td>
<td>2,70 (7 rows)</td>
<td>3,60 (9 rows)</td>
<td>4,05 (10 rows)</td>
<td>4,50 (11 rows)</td>
<td>4,95 (12 rows)</td>
<td>5,40 (13 rows)</td>
<td>6,30 (15 rows)</td>
<td>7,20 (17 rows)</td>
<td>8,10 (19 rows)</td>
</tr>
<tr>
<td>Speed (Km/h)</td>
<td>4 à 8</td>
<td></td>
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<td></td>
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**Working width:** width among the first and the last row, plus a spacing;
### 7. Configuration

<table>
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<tr>
<th>Type</th>
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<td></td>
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<td>45</td>
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<tr>
<td>MAXIMA 900</td>
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</table>
To better explanations about the non mentioned spacings, search for manufacturer;

In the purchase of machine you may choose between turbine drived hydraulicly or mechanicaly.
For MAXIMA 1500, 1700 and 1900 is mandatory the use of two turbines to get the necessary suction
Receiving and preparing

- Receiving
  Upon delivery, check that your machine is complete:
  - Check the absence of foreign bodies near the implement;
  - Make sure that the machine has not been damaged during transportation and that no parts are missing.
  Report any possible damage caused by transportation, upon receipt of the machine.

- Preparation
  To carry out with the handling of your machine operate on the points indicated for this purpose.

  The stickers with the handling points are indicated in the appropriate locations for the placement of braces to help the up and down movement of the machine.

  - Park the machine on level hard ground;
  - Pay attention to the places where the supports will be shimmed. If necessary place shims under the supporting shoes;
  - Check the tire pressure and make the necessary adjustments in all subsystems of the machine.

  The machines MAXIMA are equipped with 7.00 x 16 tires - 10 pads and the maximum pressure recommended is 65 à 72 pounds.
1. Preparing the tractor

**Tyres**
To reduce ground pressure, we recommend fitting the tractor with dual wheels or extra-wide tyres.

**Tyre pressure**
To ensure a proper traction of the tractor and a regular work, each tire should be inflated with a pressure corresponding to the effective load.

- Slightly lift the machine from the ground;
- Measure the load on each wheel (or the load on an axle divided by two) with the aid of a weight indicator or scale;
- See the table of tire pressure, indicated by the tractor manufacturer;
- Adjust the tyre pressure to the measured loads;
- The tyre pressure must be identical on each side of the tractor.

**Support for counterweights**
- We recommend placing a minimum number of additional counterweights on the tractor in order to reduce soil compaction;
- Depending on conditions, it may be necessary to make adjustments by placing counterweights, in order to optimize the tractor's traction;
- The counterweights must be placed in the supports intended for this purpose and according to the indications of manufacturer of the tractor.
2. Preparing the machine

- In order to couple the machine to the tractor, make sure that it is placed on a stable and flat surface;
- While the machine is disengaged from the tractor, make sure that it rests on the supports that should have the safety clamps on.

The machine should be coupled to the tractor by a single operator, under conditions of absolute safety.
Parking stands

To intervene with the support brackets of the machine, proceed as follows:

- When the machine is disengaged:
  - Position the tractor next to the machine;
  - Adjustment of the drawbar height through the holes 1 enabling the adjustment to the tractor's hitch;
  - Couple the machine to the tractor;
  - Lift the machine with the hydraulic lift of the tractor until the support brackets no longer touch the soil;
  - Moves the crank 2 to collect drawbar support

- To collect lateral supports
  - Remove the pins (3);
  - Lift the support brackets (4);
  - Replace the pins (5);

- When the machine is engaged:
  - Find a stable, flat surface to accommodate the machine and do the inverse procedure presented to collect the support brackets.
Hydraulic system

- Clean the terminals of the hydraulic hoses;
- The terminals (quick coupling) of the tractor should be equal to those of the machine (brand and type).

To preserve the hydraulic components, avoid sudden speed changes and system operation.

Wedges of hydraulic cylinder

- The plantadoras MAXIMA have two kinds of shims that may be added to the hydraulic cylinder: shims for transport (1) and machine levelling shims (2).
- Remove or add adjusting shims by the hydraulic cylinder, according to the cutting need of the furrower sets, depending on the straw as well as on the hardness of the soil when seeding.
Preparation for use

During transportation, the machine should rest in a lifted position and the handle of the lifting control should remain locked.

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

The machine must only be attached to the hitch points provided for this purpose. Do not stand between the tractor and the machine during a lifting operation or any other movement. Select the lowest possible forward speed during manoeuvres.

1. Description of coupling elements

- Description of coupling elements
  1. Headstock;
  2. Coupling point
3. Height adjustment holes of the yoke;

4. Coupling point of the tractor’s drawbar;
5. Coupling pin;

6. Hydraulic system hoses;
7. Double acting socket.
Coupling the machine

To couple the machine to the tractor proceed as follows:
- Reverse the tractor until the coupling ring is opposite the hole through which the drawbar passes;
- Adjust the yoke height through the regulator holes;
- Move the tractor back to align coupling holes and insert coupling pin;
- Link the two hoses of the hydraulic system;
- Lift the machine with the tractor's hydraulic control;
- Lift the support brackets.

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

The machine must only be attached to the hitch points provided for this purpose.

Before coupling the machine to the tractor make sure that the required weight to the front axle of the tractor is sufficient.

Select the lowest possible forward speed during manoeuvres.
Instructions for transport

Before placing the machine into transport position:
- Wait until the rotating parts have come to a complete stop;
- Keep all persons and animals away from the machine danger zone.

1. Putting the machine into transport position

From the working position:
- Lift the machine using the tractor's lift linkage.
- Place the hydraulic cylinders transport pads

If you carry your machine in trucks, disassemble components that exceed the width of the body;
Lock the support brackets and make sure the machine is safe;
Never transport the machine loaded;
If the driving distance is greater than 10 Km, it is advisable to remove the wheel chains to avoid damaging.

The machine is in transport position.

The transition from forward motion to reverse and vice versa must be performed at low speed to avoid sudden movements that might damage the machine;
Never drive the machine in reverse speed with the opening and closing furrow elements (furrows, bounders, compactors) lowered to the floor.
If you need to collect the drawbar for transport, proceed as follows:

- Loosen the bolts and nuts 1.;
- Lift the turbine and its support 2, careful to not damage the components;

- Loosen the bolts and nuts 3.;
- Lift the drawbar;

- Place the support plate 4 to lock up drawbar.

- Perform the reverse procedure to return the drawbar to its working position.
2. Conformity with the road regulations

Before driving the machine on public roads, ensure that the machine complies with current highway code regulations.

When driving with the machine on public roads, avoid sudden changes of direction that cause swaying of the tractor / machine set and the skidding of the tractor's rear wheel.

During transport, adapt the travel speed to suit the road conditions.
Instructions for work

Before placing the machine in working position:

- Check that nobody is within the machine pivoting area.
- If there is someone, make sure the person moves away.

1. Putting the machine into work position

From transport position:
- Raise the machine off the ground;
- Remove the transport wedges of the hydraulic cylinder;
- Lower the machine until the discs and the wheels come in contact with the soil by placing the tractor's hydraulic in low position.

The machine is in working position.
2. Adjustments in working position

■ Spacing between seeding rows

To change spacings, you must operate by the seeding lines, taking the following steps in each separate line, according to the required spacing:

- Measure the centre of the machine and reposition the front claws of the seeding lines so that they may be well distributed, loosening the bolts that fix the line;
- Adjust the fertilizer lines on the front bar, according to the required spacing
- Fix the lines firmly to prevent them from slipping.
- Repeat the proceedings with the seeding lines on the rear bar.
Adjustments

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

1. Drive system

The drive system is accomplished through the differential gears, mechanically activated by the wheels. The activation of the fertilizer and seeding distributions is carried out independently. Each wheel activates the respective drive (one wheel activates the fertilizer distribution and the other the seeding). The MAXIMA line drive has a broad set of gears that allow several number of combinations and consequently several options of application rates, according to the required needs. The gears may be combined and their handling is easy without the need to use tools.

To modify the gear combinations proceed as follows:
- Operate by the handle of the chain tensioner (1) to remove the chain tension. Disengage the handle and turn it frontwards, removing the tension from the chains;
- Reset the chain according to the selected gears (2), so as to leave the chain aligned;

- Reset the shims (3) to fix the selected position of the gears;
  Tighten the chain by retightening the tensioner.
Transmission Scheme
2. Distribution system

- For the distribution of fertilizer it is used a distributor with a rotating steel worm shaft spring (Fig. 2).

## Distribution scheme

The distribution is carried out by individual distributors (fertilizer and seed) placed between the furrower discs, allowing a good quality seeding.

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The distribution of fertilizer has the option of matchet type furrow openers or of lagging double disc.
■ Seed distribution

Turbines vaccum

Suction turbines are responsible for vacuum in the seed rows, making the seeds adhere to the holes distributors discs. Therefore you need to adjust the operation system to ensure a precise distribution of the seeds.

- Regulate properly the flow and pressure of the hydraulic circuit that feeds the turbines: 50-58 l/min 150-180 bar.
- Check the vacuum generated in the distributors through the vacuum gauges (1).

![Vacuum gauge](image)

Recommended range: 30 - 70 cmH2O.

In case of vacuum does not reach the recommended range, an adjustment can be performed:

Hydraulic turbine drive

One can increase or decrease the flow of the hydraulic system to change the turbine rotation and consequently obtaining the required vacuum

- To adjust the flow just open or close the valve 1, which is located in a hydraulic block between the radiator and the turbine.
Turbine mechanical transmission

- To adjust the vacuum turbine of a cardan machine, simply change the position of the internal flow reducer by opening it or closing it, and consequently obtaining the required vacuum

  • Loosen the wing nut 2 and adjust the position: Turns left to close (vacuum decreases) turns right to open (vacuum increases)
**Distribution disks**

The distribution discs must be replaced when changing the seed variety.

Procedure for changing the distribution discs:
- Move and rotate the handle (1) to open the cover (2) and access the distribution disc;
- Replace the discs by monitoring its position (Soldiers teeth turned inward);
- Move and rotate the handle (1) to close the cover (2);
- Carry out same setting for each seeding unit.

Check the options list of the machine and choose one of recommended discs.

---

**Adjustment dial (Seeding line)**

To avoid missing or repeating seeds during distribution, perform the adjustment dial (1):

- Position the dial (1) in one of the slots indicated on the scale (2) (graded 0 to 30);

---

This adjustment shall be made with the turbines running in the scheme indicated in this manual and supplied seed hoppers.
- Move and manually rotate the handle (3), to check if the disc collects the seeds correctly. Open the monitoring lid (4) and follow the process;

- Carry out same setting for each seeding unit.

**Flow reductor**

For smaller seeds planting (soybean for example) use the flow reducer.
To activate, release the wing nut 1 and pull the lever 2.
Transmission regulation and seed distribution
PTO shaft:
- In order to change speed and amount needed for seed distribution, proceed as follows:
  • Release the tensioner;

  • Select the pair of gears;
  • Remove the shims;

  • Align the pair of gears;
• Replace the shims;
• Adjust the chain and tighten the tensioner.
- The amount of distributed seeds depends on the used pair of gears. The table below defines the quantities (Grains x Meters), according to the combination in the gear pairs.
Range of settings per type of seed
Checking the actual distribution

The checking of the actual distribution of the machine should be done whenever you change the type or variety of seed used.

Example of calibration:
- For soy seeding, assuming we need 14 seeds / m, with spacing of 45 cm, corresponds gears: 14 17 for driving and movement.

Use adequate quantities of seed for 3 to 5 spreaders.

- Reduce as much as possible the depth of the depth limiter. That will help to check the distribution, since it will place the seed on the soil;
- Find a flat space and collect the sample in 15 meters;
- Ignore the first and the last 2 meters and collect the remaining in a container. Count the seeds and divide by 11 meters.

The result will show how many seeds are being released by each meter.

Should the obtained amount be other than the expected:
- Less: use the gears indicated below the chosen one on the table;
- More: use the gears indicated above the chosen one on the table.

If necessary, repeat the proceedings until a satisfactory result is obtained.
Fertilizer distribution

The fertilizer distribution is made with a screw thread.
- The variation of the fertilizer desired amount is given by the variation speed (rotation) of the screws;
- The fertilizer spreader is made of polymer, which reduces adhesion and prevents clogging;
- All screws that come in contact with the fertilizer of stainless steel (anti-corrosion);
- The spreader disposes of a protection cover.

Transmission adjustment and fertilizer distribution

PTO shaft:
- Release the tensioner;
- Select the pair of gears;
- Remove the shims;
- Align the pair of gears;

- Replace the shims;

Adjust the chain and tighten the tensioner.
Distribution:

- For the exchange of threads or maintenance of the system, proceed as follows
  • Release latches 1 and disconnect the nozzle 2;

  • Remove the auger spring 3 by pulling it through the cord fastener tube 4 (which is joined to machine), also removing the lock ring 5;

  • After cleaning or replacement, replace the auger spring 6 together with the locking ring 7, through tube fastener 8, noting that the auger spring and the locking ring are well positioned in the base drive shaft 9.
Table for fertilizer distribution

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<tr>
<th>Cambio / Change</th>
<th>Espaço entre linhas</th>
<th>Fertilizer distribution</th>
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<td>45 cm</td>
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<td>50 cm</td>
<td>155,9 458,1 138,6 407,2 124,7 366,5 103,9 305,4 89,1 261,8 77,9 229,1 69,3 203,6</td>
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<td>70 cm</td>
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<td>80 cm</td>
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<td>90 cm</td>
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<td>100 cm</td>
<td>192,6 566,0 171,2 503,1 154,1 452,8 128,4 377,4 110,1 323,4 96,3 283,0 85,6 251,6</td>
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<td>110 cm</td>
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<td>120 cm</td>
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<td>130 cm</td>
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<td>140 cm</td>
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<td>150 cm</td>
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<td>160 cm</td>
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<tr>
<td>170 cm</td>
<td>222,6 654,2 197,9 581,5 178,1 523,4 148,4 436,2 127,2 373,8 111,3 327,1 98,9 290,6</td>
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<td>180 cm</td>
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<td>190 cm</td>
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<td>200 cm</td>
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<td>210 cm</td>
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<td>220 cm</td>
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<td>230 cm</td>
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<td>240 cm</td>
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<td>250 cm</td>
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<tr>
<td>260 cm</td>
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<tr>
<td>270 cm</td>
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<tr>
<td>280 cm</td>
<td>374,1 1099,4 332,5 977,2 299,3 879,5 249,4 732,9 213,8 628,2 187,0 549,7 168,3 486,6</td>
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Kg Adubo / Hectare Kg Abono / Hectárea Kg Fertilizer / Hectare
3. Seeding Line

- Ground pressure

The ground pressure of the seeding units determines the sowing depth evenness.

To adjust the pressure on the ground proceed as follows:
- Lift the machine off the ground;
- Remove spacers (1);

It is recommended to make the first pass using the two pressure pads (1) on the cylinder and remove them one by one, if the desired depth is not reached.
If the machine is having difficulty reaching the required depth, after removing all shims (1) from the cylinder, proceed as follows:

- Lift the machine off the ground;
- Turn the handle clockwise to increase the pressure on the line and anti-clockwise to decrease it.
Elements of furrow opening - Double Disc Plow lagged

The plow system comprises the twin disc lagged 15.5 and 16. The positioning of the discs on the line, their structure and exposure, allow a closer approach of the seed spreader to the soil, conditioning the most linear distribution and providing the seed spreaders with a slight tilt of the seed reservoir towards the soil, without damaging the seeds.

The disc cleaners should be fitted so as to act on the discs without excessive pressure, leaving the discs loose and allowing them to rotate in contact with the ground. This system prevents or decreases most clogging on the discs.

The adjustment of the disc cleaners is made on the adjustment nut, located on the upper part of the discs.
Elements for furrow opening - Tine

The system of furrow opening with knife is used in the drilling line to deposit fertilizer behind the cutting blade.

The machines Maxima can be equipped with double lagged discs or tines on the fertilizer line, depending on soil compaction, plant residues (covering), stones, etc..

Elements for furrow opening - Tine Non stop

The Non-Stop device is a furrow opener intended to work under very stony conditions, that cause frequent interruptions with a conventional tine (with pin fuse). The Non-Stop furrow opener can open the furrow and overcome any obstacle (stones, roots, etc.), by pressing a spring until losing its cutting angle. Through the strength accumulated in the spring, it returns to its original working position, without the need to stop the implement and to fit the tine into the fertilizer line. The tine automatically returns to its original working position.

The spring pressure is controlled through a fitted screw allowing a degree of freedom, which is regulated to be used on more compact soils, applying more pressure on the spring in order that it will always work on a vertical position while there are no obstacles.

To increase the spring pressure (more compact soil), turn the control screw clockwise, and to decrease the pressure, turn it anti-clockwise.
Elements of furrow closing - Depth limiting device

The depth gauge is intended to keep the depth uniformity of seeding in the furrow, helping its closure.

The limiting devices are coupled to the holders of the double discs, allowing the permanent monitoring of the limiters near the seed, keeping a constant depth.

The adjustment of seeding depth is made on the upper part of the limiters.

- Pull the pin (1) backwards, lift and bring down the limiter with the handle (2);
- Adjust the tilt angle of the limiter wheels by pulling the handle (3) and repositioning it forwards or backwards.

4. Wheels

The wheel system Maxima is an articulated type with the possibility of displacement on the alternator shaft. This device enables an easy spacing adjustment.

The tire pressure adjustment to the ground is done through springs, thus avoiding skidding.

The wheelset is fixed on the alternator shaft through clamps. To displace the wheels loosen the holders, position the wheels and fasten the holders tight.
**Maintenance and storage**

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

### 1. Frequency chart

Maintenance intervals are indicated for normal conditions of use.

<table>
<thead>
<tr>
<th></th>
<th>Before using the machine for the first time</th>
<th>After the first 20 hours of use</th>
<th>Every 50 hours</th>
<th>At the end of each season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubrication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Grease fertilizer and seed distributors</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Grease lubricating points</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>- Put oil in lubricated parts</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Replace grease in discs</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>- Replace grease in limiters</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
### Maintenance and storage

<table>
<thead>
<tr>
<th>Before using the machine for the first time</th>
<th>After the first 20 hours of use</th>
<th>Every 50 hours</th>
<th>At the end of each season</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Replace grease and perform general lubrication</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>- The drive chains</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Check tightness of all nuts and bolts</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
2. Cleaning the machine

Clean the machine regularly with a spray gun. Do not point spray gun on metering components. Avoid any contact with degreasing products with fertilizer and seed hoses, as depending on the product may dries them and makes them brittle.

- When used in sticky grounds, clean seeding units after each use. Never let ground dry on the seeding units.
- Empty and clean hopper inner walls.

3. Lubrication

- **Oil:**
  - The drive chains;
  - The seed tubes and flutes;
  - Replace grease and perform general lubrication.
4. Maintenance

- Before each work shift, check all main mechanisms to avoid problems during work;
- Give a general cleaning and washing to your equipment after each period of use. Always use water and neutral detergents. For cleaning never use materials or products that may cause corrosion to paint. Be careful with the use of chemicals (degreasers, detergents, protective oils);
- After use, remove the rubber hoses, and after cleaning them, store in a dry place and protected from light in order to prevent further deterioration of rubber by ultraviolet rays;
- Proceed with the necessary lubrication, according to the indications of this manual;
- Perform periodic overhauls on all subsystems and proceed with the maintenance and replacement of damaged parts;
- Wash the chains with kerosene and grease them (use SAE 40);
- Do not leave fertilizer waste in the distributors. Clean distributors after use to prevent oxidation of parts;
- Do not leave the line springs under pressure during storage period of the machine;
- For the storage of the machine, proceed with the general washing and cleaning and then spray it with oil.

Securing elements

Check the securing elements:
- After hitting an obstacle;
- When replacing any part or subsystem;
- At the beginning of each season.

The fixing bolts should be changed in the following cases:
- When there is visible distortion;
- When the locking compound is worn or inoperational;
- When the bolt head wear reaches the center line of the bolt;
- When diameter D of the bolt shoulder is less than 15 mm (0.6??);
- After having been removed 5 times.
Replace nuts in the following cases:
- When the contact washer has lost its elasticity;
- When the contact washer loosens itself from the nut;
- When nut wear reaches $a = 5 \text{ mm} (0.2\text{''});$
- Replace knife lock-nuts and bolts when they have been removed 5 times.

Periodically check the fixing elements (bolts, washers and nuts) of all subsystems of the machine.

Before adjusting, maintaining or repairing the machine, turn off ignition key and wait until all moving parts have come to a complete stop.

Immediately replace worn or damaged parts with genuine KUHN parts.

- **Chains**
  - Remove drive belts;
  - Wash with kerosene;
  - Lubricate;
  - Replace in the machine or store under oil.

### Bolt and nut torque chart

<table>
<thead>
<tr>
<th>Bolt</th>
<th>Tight (daN.m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>2.3</td>
</tr>
<tr>
<td>10</td>
<td>4.6</td>
</tr>
<tr>
<td>12</td>
<td>8.1</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Auger assembly:

- Release latches 1 and disconnect the nozzle 2;
- Remove the auger spring 3 by pulling it through the cord fastener tube 4 (which is joined to machine), also removing the lock ring 5;
- After cleaning or replacement, replace the auger spring 6 together with the locking ring 7, through tube fastener 8, noting that the auger spring and the locking ring are well positioned in the base drive shaft 9 or store under oil.
Furrows

Disco duplo defasado
- Remove the retainer;
- Loosen the nut;
- Remove the disc and lubricate the inside;
- Grease the retainer;
- Replace the nut, the retainer and the ring.
Tipped matchet
- Remove the spring clip (2);
- Replace the blade tip (1) by a new one;
- Recolóque o pino elástico.

5. Storage

- At the end of each season
  - Clean the machine with a garden hose;
  - Fully lubricate the machine;
  - Empty the hopper;
  - Clean the splines;
  - Check the operation of the doors and metering flaps;
  - Touch up any areas of damaged paintwork;
  - Put the machine under cover in a dry place;
  - Drain all grease and oil reservoirs and replace with new products;
  - Check the condition and relieve the tension of chains;
  - Remove the existing pressure on all circuits under pressure.
  - Grease the cylinder rods in contact with the outside
  - After the planting period, loosen the fertilizer hoses drivers to store the machine

- At the start of each season
  - Re-read the operators’ manual;
  - Check that all nuts and bolts are sufficiently tightened;
  - Make sure that all protection devices are in place and in good condition;
  - Replace worn or damaged parts;
  - Tighten the chain by retightening the tensioner.
  - Wipe off grease on cylinder rods
## Troubleshooting guide

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The machine does not lift</td>
<td>The cylinder os damaged</td>
<td>Consult your Kuhn dealer</td>
</tr>
<tr>
<td></td>
<td>Internal emptying of the cylinder</td>
<td>Replace the gaskets with a repair kit</td>
</tr>
<tr>
<td></td>
<td>Insufficient pressure hydraulic system</td>
<td>Check the operating pressure</td>
</tr>
<tr>
<td>The machine wheels do not turn</td>
<td>Non-lubricated chain</td>
<td>Clean and lubricate chains</td>
</tr>
<tr>
<td></td>
<td>Fertilizer accumulated in the distribution box</td>
<td>Clean and lubricate the distributor</td>
</tr>
<tr>
<td></td>
<td>Chain out of alignment</td>
<td>Check the alignment of chains</td>
</tr>
<tr>
<td>The line tracer does not work</td>
<td>The sequence valve is damaged</td>
<td>Disassemble and check valve operation</td>
</tr>
<tr>
<td></td>
<td>Lack of pressure from the tractor</td>
<td>Check operating pressure</td>
</tr>
<tr>
<td>Irregular seed distribution</td>
<td>Wrong seed distribution adjustment</td>
<td>Adjust distribution and test again</td>
</tr>
<tr>
<td></td>
<td>Impurities in the seeds</td>
<td>Clean the seed by removing impurities</td>
</tr>
<tr>
<td></td>
<td>Problem in seed rotor</td>
<td>Adjust the position of each rotor, equally between them</td>
</tr>
<tr>
<td></td>
<td>Wera in distribution box</td>
<td>Check and replace defective parts</td>
</tr>
<tr>
<td>Irregular fertilizer distribution</td>
<td>Stony fertilizer or too damp</td>
<td>Break the larger pieces and check steps of screw distributor</td>
</tr>
<tr>
<td></td>
<td>Wrong distributor adjustment</td>
<td>Adjust distribution once more and make test</td>
</tr>
<tr>
<td>Irregular seed and fertilizer distribution</td>
<td>Insufficient tire pressure</td>
<td>Use recommended pressure</td>
</tr>
<tr>
<td></td>
<td>Fertilizer sticking to the distribution box</td>
<td>Disassemble and clean the distributor</td>
</tr>
<tr>
<td></td>
<td>Undue stretching of chains</td>
<td>Clean and lubricate chains</td>
</tr>
<tr>
<td></td>
<td>Insufficient weight on machine wheel</td>
<td>Place shim on back and front cylinder</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Remedy</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Difference of depth between lines</td>
<td>Using wrong disc</td>
<td>Replace the discs and check if they are all alike</td>
</tr>
<tr>
<td></td>
<td>Depth limiter maladjusted</td>
<td>Adjust limiters for same depth in all lines</td>
</tr>
<tr>
<td></td>
<td>Unleveled machine</td>
<td>Level the machine to working position</td>
</tr>
<tr>
<td></td>
<td>Line pressure spring</td>
<td>Adjust all the pressure springs alike</td>
</tr>
<tr>
<td></td>
<td>improperly adjusted or different</td>
<td></td>
</tr>
<tr>
<td>Double disc does not rotate</td>
<td>Scraper too tight</td>
<td>Loosen the scraper bolts</td>
</tr>
<tr>
<td></td>
<td>Damaged bearing or without</td>
<td>Replace bearings and grease them</td>
</tr>
<tr>
<td></td>
<td>grease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bearing too tight</td>
<td>Open and loosen bearings</td>
</tr>
<tr>
<td></td>
<td>Disc clogged with soil (high soil moisture)</td>
<td>Unclog disc</td>
</tr>
</tbody>
</table>
Limited Warranty

The Limited Warranty is dependent on the strict observance of the following conditions:

- The machine has been put in service by the dealer according to our instructions.
- The machine has been registered on line via extranet - www.kuhn.com or the warranty/product registration form has been completed and returned to the address indicated on the form as soon as the machine had been delivered to the retail purchaser.
- The warranty claim is completed on line via extranet - www.kuhn.com or submitted on a KUHN warranty claim form and returned to the Company within one month after the date of failure or the date of problem becoming apparent.
- The claim must be completed by the dealer and following information must be mentioned.
  - Dealer’s name and address
  - Name and address of retail purchaser
  - Exact type of machine
  - Machine serial number
  - Date of delivery to the retail purchaser
  - Date of failure
  - Number of hours of use or area (hectares, acres) worked
  - Power of tractor used
  - PTO speed (if applicable)
  - Detailed description and estimated cause of the failure
  - Quantity, reference number and name of the damaged parts
  - Invoice number and invoicing date for replacement parts.
- The dealer has stored the damaged parts safely and labelled them clearly so that they can be recognised and returned to the Company if requested. They must be retained until a credit note has been issued to cover the parts. Carriage charges for the return of said parts are borne by the sender.
- The machine has been used and maintained according to the instructions in the operator’s manual. The quality and quantity of lubricants used must always be in accordance with Company specifications.
- The safety measures mentioned in the Operator’s manual and on the machine itself have been followed, and all the guards and protective elements, of whatever nature, have been inspected regularly and maintained in perfect working order.
- The judgment of the Company in all case of claims under this Limited Warranty shall be final and conclusive and the retail purchaser agrees to accept its decisions.
- If damaged parts have been returned to the Company and Warranty is refused, the dealer is allowed a period of 1 month from the date of receiving our letter of decision to request the return of the damaged parts to the dealer site.

Further conditions: limits of application and responsibility

- This Limited Warranty can not be assigned or transferred to anyone without the prior written consent of the Company.
- Authorized KUHN Dealers have no right or authority to assume any obligation or take any decision on the Company’s behalf, whether expressly or tacitly.
- Technical assistance given by the Company or its agents for repairing or operating equipment does not lead to any responsibility on the Company’s behalf and cannot under any circumstances bring novation or derogation to the conditions of the present Limited Warranty.
- The Company reserves the right to incorporate changes in its machines without prior notice and without obligation to apply these changes to machines previously manufactured.
- Moreover, because of the constant progress in technology, no guarantee is given to the descriptions of equipment published in any document by the Company.
- The present Limited Warranty excludes any other responsibility, whether legal or conventional, express or implied, and there are no warranties extending beyond those defined herein.
KUHN S.A. 4, Impasse des Fabriques, 67706 SAVERNE Cedex FRANCE (hereinafter called “the Company”) warrants, in accordance with the provisions below, to each retail purchaser of a new KUHN equipment from an authorized KUHN dealer, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship, and that such equipment is covered under this Limited Warranty providing the machine is used and serviced in accordance with the recommendations in the Operator's manual.

This Limited Warranty covers the equipment for a period of one year starting from the date the equipment is delivered to the retail purchaser and during this period up to a limit of 500 hours of use.

The date of invoice to the retail purchaser and the registration of the machine by the dealer are taken as evidence of delivery of the machine.

This Limited Warranty covers the reimbursement (or repair) of components as well as labor charges incurred, based on the Company warranty labor rate and allowable time for repair.

- These conditions are subject to the following exceptions:
  - Parts of the machine which are not of KUHN manufacture, such as tires, PTO shafts, slip clutches, hydraulic cylinders, etc. are not covered by this Limited Warranty, but are subject to the warranty of the original manufacturer.
  - Warranty claims applying to these types of parts must be submitted in the same way as if they were parts manufactured by KUHN. However, compensation will be paid in accordance with the warranty agreement of the manufacturer concerned, in as much as the latter justifies such a claim.
  - This Limited Warranty does not apply to failure through normal wear and tear, to damage resulting from negligence or from lack of inspection, from misuse, from lack of maintenance and/or if the machine has been involved in an accident, lent out or used for purposes other than those for which it was intended by the Company.
  - This Limited Warranty will not apply to any product that has been altered or modified in any way without the express permission of the Company, or if parts and/or equipment not approved by Kuhn are used on a machine manufactured by the Company and/or if repairs have been carried out by anyone other than an authorized KUHN dealer.
  - The Company shall not be responsible for any damage to the machine or its equipment in transit or handling by any common carrier, within or without the Warranty period. Machines, equipment and parts are transported at recipient’s risk.
  - The Company cannot be held responsible for any claims or injuries to the owner or to any third party, nor to any resulting responsibility.
  - Also, on no account can the Company be held liable for incidental or consequential damages (including loss of anticipated profits) or for any impairment due to a failure, a latent defect or a breakdown of the machine.

- The customer will be responsible for and bear the costs of:
  - Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc.
  - Dealer travel time, or travelling costs to and from the machine.
  - Transporting machines, equipment or parts to the repair site and returning them to the user site.
  - Parts defined as normal wearing items such as, but not limited to belts, blades, discs, knives, shares, tines, tine holders, slip clutches, etc. that are not covered by the Limited Warranty.