Read the operators manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Illustrations may show optional equipment not supplied with standard unit.
If you require a copy of this document in your native language please contact your dealer or Great Plains.

Požadujete-li kopii tohoto dokumentu ve svém rodném jazyce, obraťte se prosím na svého prodejce nebo na společnost Great Plains.

Ha szeretné ezt a leírást magyarul is megkapni, kérjük, értesítse a forgalmazóját vagy a Great Plains-t.

Pour obtenir un exemplaire du présent document dans la langue de votre choix, veuillez contacter votre représentant ou Great Plains.

Jei prireiktų šio dokumento kopijos Jūsų gimtaja kalba, kreipkitės į savo platintoją arba į „Great Plains“.

Ако ви е необходимо копие на този документ на родния ви език, моля да се обърнете към вашия дилър или към Great Plains.

Dacă aveți nevoie de o copie a acestui document în limba dumneavoastră natălă vă rugăm să vă contactați dealerul sau Great Plains.

Чтобы получить копию данного документа на вашем родном языке, обратитесь к своему дилеру или в компанию «Great Plains»

Wenn Sie ein Exemplar dieses Dokuments in Ihrer Muttersprache brauchen, dann wenden Sie sich bitte an Ihren Händler oder an die Great Plains.
DECLARATION OF CONFORMITY

Great Plains UK Ltd. hereby declare that the Great Plains Simba DTX, as defined by the Serial Number attached to the Machine Chassis, conforms with the following Directives and Regulations, and has been certified accordingly.

EC Machinery Directive 2006/42/EC.

The Supply of Machinery (Safety) Regulations 2008.


Specifically related harmonised standards are:

EN ISO 12100-1: 2003 (Safety of Machinery).

THE MANUFACTURER:

Great Plains UK Ltd.
Woodbridge Road
SLEAFORD
Lincolnshire
NG34 7EW
England

Telephone (+44) (0)1529 304654.

CERTIFIED ON BEHALF OF GREAT PLAINS UK LTD.:

[Signature]

Colin Adams
Managing Director

2016-07-15
WARRANTY
TERMS AND CONDITIONS

In this warranty Great Plains UK Ltd., is referred to as “the Company”.

1. Subject to the provisions of this warranty the Company warrants each new machine sold by it to be sold free from any defect in material or workmanship for a period of 12 months from date of installation with the end-user.

Some specific items have additional warranty over and above the standard 12 months. Details of these can be obtained upon request directly from the distributor or Great Plains UK Ltd.

2. If the machine or part thereof supplied by the Company is not in accordance with the warranty given in clause 1 the Company will at its option:
   (a) make good the machine or part thereof at the Company’s expense, or
   (b) make an allowance to the purchaser against the purchase price of the machine or part thereof, or
   (c) accept the return of the machine and at the buyers option either:
       I) repay or allow the buyer the invoice price of the machine or part thereof, or
       II) replace the machine or part thereof as is reasonably practical.

3. This warranty shall not oblige the Company to make any payment in respect of loss of profit or other consequential loss or contingent liability of the Purchaser alleged to arise from any defect in the machine or impose any liability on the Company other than that contained in clause 2.

4. Any claim under this warranty must be notified to the Company in writing specifying the matters complained of within 14 days from the date of repair.

5. Any claim under this warranty must be made by the original purchaser of the machine and is not assignable to any third party.

6. If the purchaser hires out the machine to any third party the warranty shall apply only to matters notified to the Company in writing within 90 days of the date of delivery and clause 1 shall be read as if the period of 90 days were substituted for the period of 12 months.

7. The warranty will cease to apply if:
   (a) any parts not made, supplied or approved in writing by the Company are fitted to the machine or
   (b) any repair is carried out to the machine other than by or with the express written approval of the Company or
   (c) any alterations not expressly authorized by the Company in writing are made to the machine or
   (d) the machine is damaged by accident or
   (e) the machine is abused or overloaded or used for a purpose or load beyond its design capabilities, or used in conjunction with a tractor whose power output capability exceeds the stated implement power requirement by more than 40%. For the purpose of these terms and conditions, “stated implement power requirement” refers to wheeled tractors unless specifically stated. These power requirements should be reduced by 20% when used in conjunction with tracked tractors.
   (f) the machine is operated as part of a ‘cultivation train’ where more than one implement is being towed, without the express written approval of Great Plains UK Ltd.
   (g) any maintenance is not carried out in accordance with the service schedules in the operator’s manual.
   (h) the Installation and Warranty Registration Certificate is not received by Great Plains UK Ltd., Service Dept., Woodbridge Road, Sleaford, Lincolnshire, England, NG34 7EW, within 7 days of installing a new machine.
Machine Identification

Enter the relevant data in the following list upon acceptance of the machine:

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<tr>
<th>Accessories</th>
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</table>

Dealer Address:

Name: ___________________________________
Street: ___________________________________
Place: ___________________________________
Tel.: ___________________________________

Dealer's Customer No.: ______________________

Great Plains Address:

Great Plains UK Ltd.
Woodbridge Road Ind. Est.
Sleaford
Lincolnshire
NG34 7EW

Tel.: +44 (0) 1529 304654
Fax: +44 (0) 1529 413468
E-Mail: simba@greatplainsmfg.com

Customer No.: ______________________
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Introduction

Foreword
Make sure you have read and follow the Operating Instructions carefully before using the machine. By doing so, you will avoid accidents, reduce repair costs and downtime and increase the reliability and service life of your machine. Pay attention to the safety instructions!

Great Plains will not accept any responsibility for any damage or malfunctions resulting from failure to comply with the Operating Instructions.

These Operating Instructions will assist you in getting to know your machine and in using it correctly for its intended purposes. First, you are given general instructions in handling the machine. This is followed by sections on servicing, maintenance and the action to be taken should a malfunction occur.

These operating instructions are to be read and followed by all persons working on or with the machine, e.g.:

• Operation (including preparation, remedying of faults in the operating sequence and servicing).
• Maintenance (maintenance and inspection)
• Transportation.

Together with the Operating Instructions, you receive a Spare Parts List and a Machine Registration form. Field service technicians will instruct you in the operation and servicing of your machine. Following this, the Machine Registration form is to be returned to your dealer. This confirms your formal acceptance of the machine. The warranty period begins on the date of delivery.

We reserve the right to alter illustrations as well as technical data and weights contained in these Operating Instructions for the purpose of improving the machine.

Warranty Guidelines
The period of liability for material defects (warranty) relating to our products is 12 months. In the case of written deviations from the statutory provisions, these agreements shall apply.

They shall become effective upon installation of the machine with the end customer. All wear parts are excluded from the warranty.

All warranty claims must be submitted to Great Plains via your dealer.
1.0 Safety Data
The following warnings and safety instructions apply to all sections of these Operating Instructions.

1.1 Safety Symbols on the machine

Read and observe the Operating Instructions before using the machine!

Keep clear of the working range of foldable machine components!

Watch out for escaping pressurised fluids! Follow the instructions in the Operating Instructions!

No passengers are allowed on the machine!

Never reach into areas where there is a danger of being crushed by moving parts!

Never reach into any revolving parts!
Refer to Operating Instructions before attempting maintenance.

Operating Instructions:

The Operating Instructions distinguish between three different types of warning and safety instructions. The following graphic symbols are used:

- **Important!**
- **Risk of injury!**
- **Risk of fatal and serious injuries!**

It is important that all the safety instructions contained in these Operating Instructions and all the warning signs on the machine are read carefully.

Ensure that the warning signs are legible. Replace any signs that are missing or damaged.

These instructions must be followed in order to prevent accidents. Inform other users of the warnings and safety instructions.

Do not carry out any operations which may affect safe use of the machine.

All references to left and right in this manual are made from the rear of the machine, facing the direction of travel (unless otherwise stated).
1.2 Use for the Intended Purpose
The Great Plains Simba DTX is built using the latest technology and in accordance with the relevant recognised safety regulations. However, risks of injury for the operator or third parties and impairment of the machine or other tangible assets can arise during use.

The machine is only to be operated when in a technically perfect condition and for the intended purpose, taking into consideration safety and risks and following the Operating Instructions. In particular, faults that can impair safety are to be remedied immediately.

Original parts and accessories from Great Plains have been specially designed for this machine. Spare parts and accessories not supplied by us have not been tested or authorised. Installation or use of non-original Great Plains products may have a detrimental effect on specific design features of the machine and affect the safety of machine operators and the machine itself. Great Plains will accept no liability for damage resulting from the use of non-original parts or accessories.

The Great Plains Simba DTX is designed solely as a cultivation implement. Use for any other purpose, e.g., as a means of transport, will be deemed to be improper use. Great Plains will accept no liability for damage resulting from improper use. The risk will be borne solely by the operator.

Use of the Simba DTX behind high power tractors (in excess of 40% above the maximum recommended) can lead to high loads and stresses which can cause long term structural damage to the chassis and key components. Such overloading can compromise safety and is to be avoided.

1.3 Operational Safety
The machine is to be put in operation only after instruction has been provided by an employee of the authorised dealer or an employee of Great Plains. The “Machine Registration” form is to be completed and returned to your dealer.

All protective and safety equipment, such as removable protective equipment, must be in place and functioning reliably before the machine is put in use.

- Check screws and bolts regularly for tightness and retighten if necessary.
- In the event of malfunctions, stop and secure the machine immediately.
- Ensure that any faults are remedied immediately.

1.4 No Liability for Consequential Damage
The Simba DTX has been manufactured by Great Plains with great care. However, problems may still occur when it is used for the intended purpose. These may include:

- Worn wearing parts.
- Damage caused by external factors.
- Incorrect driving speeds.
- Incorrect setting of the unit (incorrect attachment, non-adherence to the Setting instructions).

Therefore, it is crucial to always check your machine before and during operation for correct operation and adequate application accuracy.

Compensation claims for damage which has not occurred to the machine is excluded. This includes any consequential damage resulting from incorrect operation.
1.5 Road Traffic Safety
When driving on public roads, tracks and areas, it is important to observe the relevant road traffic laws as well as the specific regulations relating to this machine.

Pay attention to the permitted axle loads, tyre carrying capacity, and total weight in order to maintain adequate braking and steerability.

Passengers on the machine are strictly forbidden!

Check that lights / indicators (if applicable) are working before transporting the machine.

Max. road transport speed 16mph (25km/h).

1.6 Accident Prevention
In addition to the Operating Instructions, it is important to observe the accident prevention regulations specified by agricultural trade associations. It is the Operator’s responsibility to ensure that all other persons are excluded from the danger zones surrounding or on the machine during its operation.

It is the Owner’s responsibility to ensure:

- the Operator is trained and competent to use the machine & tractor,
- the tractor is suitable for the machine
- adequate Risk and COSHH assessments have been undertaken regarding the machine’s use. Specifically, these include issues concerning contact with the soil, dust, crop residues, chemicals, lubricants and other compounds during operation or maintenance, and the possibility of stones being ejected at high speed during work.

1.6.1 Hitching-up the machine
There is a risk of injury when hitching/unhitching the machine. Observe the following:

- Secure the machine against rolling.
- Take special care when reversing the tractor!
- There is a risk of being crushed between the machine and the tractor!
- Park the machine on firm, level ground.

1.6.2 Changing Equipment
- Secure the machine to prevent it from accidentally rolling away!
- Use suitable supports to secure any raised frame sections suspended above you!
- Caution! Risk of injury due to projecting parts!

Never climb on to rotating parts such as the roll unit. These parts may rotate causing you to slip and suffer serious injury!

Removing components during maintenance may affect the stability of the machine. Ensure it is fully supported in case of unexpected weight shifts.
1.7 Servicing & Maintenance

Ensure that regular checks and inspections are always carried out within the periods required by law or specified in these Operating Instructions.

When carrying out service and maintenance work always:

- switch off the tractor engine and remove the ignition key.
- wait until all the machine parts have stopped moving.
- depressurise the hydraulic system.

Many hydraulic circuits contain lock or overcentre valves which can retain pressure in the lines even after depressurising the tractor side of these circuits. If in doubt, consult trained personnel (such as your local Great Plains Dealer) to ensure such valves are depressurised to the correct procedure before removing or servicing any parts connected downstream of these valves.

Check all hydraulic lines for leaks, loose connections, chafe marks and damage. Remedy any deficiencies immediately! Pay particular attention to hose renewal intervals as outlined in the specific sections which follow. ALL hydraulic hoses have a safe maximum working life of 6 (SIX) years from date of installation, provided they remain in a safe condition. Hoses which exceed 6 years of age should be replaced, or inspected and certified by a suitably qualified person to have an extended life period which should be recorded.

Pay particular attention to those items which require specialist service tools or training to be carried out by qualified personnel. Do not attempt to service these items yourself! These include items retaining pressure (e.g. accumulator circuits), or force (e.g. spring tines), and DD axles of any type.
2. Transportation / Installation
2.0 Transportation and Installation
Transportation and initial installation of the machine are described in this chapter.

2.1 Delivery
The machine is normally delivered fully assembled.

- The machine can be lifted off with a crane or other suitable lifting equipment.
- The machine should be hitched to a tractor and driven off a low-loader.

2.2 Transportation
The Simba DTX can be transported on public roads by hitching it up to a tractor or on a low-loader.

- It is important to observe the permitted dimensions and weights when transporting the machine.
- If the machine is transported on a trailer or a low-loader, it must be secured using straps or other devices.
- Before transporting the machine on public roads, it must be adjusted to its transportation position and the stipulations relating to road transportation fulfilled.
- The maximum permissible speed is 25km/h.

On machines fitted with a TurboJet seeder unit the hopper should be emptied before road transport.

2.3 Installation
When carrying out installation and maintenance work there is a higher risk of injury. It is important that you familiarise yourself with the machine and read the Operating Instructions beforehand.

Operator instruction and initial installation of the machine are carried out by our service technicians or authorised distributors.

The machine must not be used in any way beforehand! The machine can only be released for operation after instructions have been provided by our service technicians or authorised distributors.

- If any modules or parts have been removed for transportation, these shall be mounted by our service technicians/authorised dealers before the instruction takes place.
- Check all important screw connections!
- Lubricate all nipples and joints!
- Check all hydraulic connections and lines for damage.
2.4 Hitching Up/Preparing for Transport

When hitching-up the machine, ensure that no-one is between the tractor and the machine.

1. Connect the tractor to the machine using the hydraulics to raise or lower the the height of the tractor lower link arms.
2. When the lower link arms are aligned fit the lower link pins and the lynch pins.
3. Fit the tractor toplink between the tractor and the machine.
4. Raise the machine using the tractor link arms.

2.5 When driving on the road

When driving on the road the machine must be converted to the transportation position.

When driving on the road, raise the machine completely to prevent the working elements dragging on the ground.

Ensure that the tractor rear lights are visible from behind during transport.

2.6 Parking the machine

In order to avoid damage as a result of moisture, the machine should be parked, if possible, indoors or under cover.

When manoeuvring the machine, pay attention to your surroundings. Ensure that nobody is in the manoeuvring area (watch for children!).

- Park the machine on level and solid ground.
- Lower the machine onto the parking stands / tines ensuring that it is stable.
- Remove the toplink and lower the link arms so that pins can be removed.
- Switch off the tractor.

Fig. 2A: Parking Position

Fig. 2B: Parking Stand Stowage
3.0 Technical Data

<table>
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* Dimension from linkage in transport position.
** It is important to correctly match your implement to your tractor for optimum performance.
4.0 Adjustment/Operation

4.1 Description

Fig. 4.01: Great Plains Simba DTX300

1. 3 Point Linkage
2. Pro-Lift Tines
3. Discs
4. Disc Angle Adjuster
5. Roll Depth Linkage
6. DD Lite Roll
7. DD Lite Scrapers
The **Great Plains Simba DTX** is an amalgamation of time proven, successful Great Plains designed components brought together to form this important development. The Simba DTX provides a one pass mix with a fissured layer at disc depth for through drainage and root access to lower horizons. This enables rapid drainage and access after rain, creating a greater effective capacity for moisture compared to ploughing for the same effective total depth of cultivation.

In principle, the machine is a subsoiler followed by an offset disc designed for low draft, high speed operations. The addition of a rear mounted roll enables effective cultivation in one pass. The key to the Simba DTX's success are the tines which maintain shatter across the full width of cultivation. This is followed by the discs that cultivate the soil surface and minimise and clod formation. Finally, the rear roll consolidates the surface, cracks any clods and firms the soil profile after the rear discs complete mixing to depth. This starts the 'top down' cultivation process, retaining weathered tilth in the surface level for stale seedbed purposes. The corrugated top and shattered lower horizons are left fully weatherproof to any conditions between cultivation and drilling whilst retaining moisture below the surface for rapid straw breakdown and optimum establishment of the next crop.
4.2 3 Point Linkage
The Simba DTX is fitted with a standard Category 3 linkage at the front of the machine.

4.3 Tines
The Simba DTX is fitted with either Pro-Lift or LD (Low Disturbance) tines. The tines are arranged in a staggered formation to give lower draft requirements and the ability to work progressively deeper. The tines are spaced at 400mm. Each tine is shear bolt protected. Tine depth is achieved by moving the tines up and down in the adjustable clamps.

Different wings are available to suit the soil conditions and optimise the performance of the machine.

4.3.1 Pro-Lift Wings

- **Standard Wing**
  - P09060
  - Maximum soil disturbance with minimum draft requirement under normal circumstances.
  - Wing angle reduces wear rates on leg.

- **Extra Lift Wing**
  - P10392
  - Increased lift height and rake angle creates greater soil disturbance on all soil types especially in moister conditions.
  - Lower relative distance between edge of wing and point reduces draft requirement.
  - Has ability to work at lower depths with no decrease in soil disturbance or risk of smear.

- **Extra Wide Wing**
  - P10411
  - Improved lateral shatter in moist/wet soils, or non-cohesive soils.
  - Ideal for deep vegetable applications under light/medium soils.
4.4 Disc Units
The Simba DTX features two rows of discs which chop and mix the crop residue. A disc spacing of 250mm ensures a fine tilth.

The discs fitted to the Simba DTX are 500mm in diameter (20") and 6mm thick. They are manufactured from heat treated chrome boron steel which ensures excellent wear resistance and enhanced working life. Each disc is mounted on a Pro-Active sprung leaf linked to a track rod system. Gang angles can be varied with ease and accuracy using a graduated adjuster.

Adjustable angling of the discs (between 10°-25°) ensures penetration and stubble mixing are achieved in one pass. Working depth can be varied via the 3 point linkage and the rear roll linkage.

A level, evenly cultivated finish is maintained by adjusting the balance of soil throw between the front and rear disc.

Sprung Pro-Active leaves offer protection against damage as well as offering a degree of contour following as they flex up and down in work.

4.5 DD Lite Roller
The DD Lite roller is made up of individual Double Disc (patented) Ring segments.

The DD Lite roll is designed to consolidate the soil whilst cutting and crushing any clods.

Even in heavy, wet soils it can easily be operated with minimal blockages occurring.

The rear DD Lite roller carries a proportion of the machine’s weight to ensure consolidation. It also regulates the depth of the disc units. The corrugated surface left by the roller is weatherproof both for wet or dry situations.

4.6 DD600 Roller
The standard DD600 roller is made up of individual Double Disc (patented) Ring segments.

The DD rings are designed to consolidate the soil whilst cutting and crushing any clods.

Even in heavy, wet soils it can easily be operated with minimal blockages occurring.

The rear DD Lite roller carries a proportion of the machine’s weight to ensure consolidation. It also regulates the depth of the disc units. The corrugated surface left by the roller is weatherproof both for wet or dry situations.
4.7 Work Settings
Optimum performance has been found to be achieved when the DD roll rings have worn away the painted finish leaving a smooth shiny surface. When the DD rings are new or rusty, soil may tend to pick up on the surface and blockage may occur, this will reduce when the rings are shiny again.

The Simba DTX should be run with the chassis level to slightly tail low. In practice it is possible to use the Simba DTX on ground conditions that are unsuitable to achieve the desired effect, and it is usually possible to operate the DD roll without regular blockage under such unsuitable conditions, assuming that the roll assemblies are tight, the scrapers correctly adjusted and rings smooth. As such, especially under wet conditions, it is advisable to check on the cultivation effect of the Simba DTX.

The Simba DTX should be lifted fully clear of the ground for all headland turns. Turning with the tines, disc units or roller on the ground could lead to damage of these components.

In work, the tractor lower link arms should be run in position control with draft introduced if required.

4.8 General Rules when Setting the Simba DTX
- The lighter the land conditions the less the disc angle required and the forward speed can be increased.
- The wetter the land conditions the less the disc angle required and the forward speed will need to be decreased.
- Heavier land will require more of a disc angle and a slower forward speed.
- The more the trash the less the angle on the discs and forward speed will have to be decreased.
- On ploughed land reduce the disc angle to give a cutting/chopping action.
- In hard conditions increase the disc angle to increase penetration.
4.10 Adjusting Depth

To change the working depth it is advisable to lift the machine clear of the ground so that the rear roll linkage becomes loose. Move the position of the depth pins to change the depth.

Fig. 4.06: Roll Linkage

When the depth has been altered, lower the machine into work and check operation. If the depth change has been significant then other setting could be affected. This could be chassis pitch (front to rear) and disc angle for the given depth.

A small amount of cultivation, eg. a 20 metre run, should be carried out before altering these settings to check whether they are now suitable for the cultivation effect required. These settings should be addressed immediately to prevent too much work being carried out.
4.11 TurboJet
The Simba DTX can be fitted with an optional TurboJet Oil Seed Rape applicator. The Turbo Jet is an air seeder unit which uses two fans to deliver seed behind the rear roll in work.

The TurboJet can be operated from the cab of the tractor using an advanced computer control module, the RDS Wizard System.

4.12 Work Instructions
Driving speed
The Simba DTX can be driven at speeds of up to 12 km/h.

This depends on the field conditions (type of soil, surface trash, etc.).

Drive more slowly if the conditions are difficult or a firmer finish is required.

Turning:
Before turning, the machine should be lifted out of work while driving. Likewise, it should lowered back into work once the turn has been completed.

4.13 Parking the machine
In order to avoid damage as a result of moisture, the machine should be parked, if possible, indoors or under cover.

When manoeuvring the machine, pay attention to your surroundings. Ensure that nobody is in the manoeuvring area (watch for children!).

- Park the machine on level and solid ground.
- Lower the machine onto the parking stands / tines ensuring that it is stable.
- Remove the toplink and lower the link arms so that pins can be removed.
- Switch off the tractor.

4.14 Checks
The working quality depends on the adjustments and checks made prior to and during work, as well as on regular servicing and maintenance of the machine.

Before beginning work it is therefore important to carry out any necessary servicing and to lubricate the machine as required.

Checks prior to, and during work:
- Is the machine correctly hitched up and the coupling device locked?
- Is the machine in a level operating position and the working depth set correctly?

Working Elements
- Are the discs and other cultivation tools in a serviceable condition?
- Are the scrapers still operable, so that the rolls do not jam?
5.0 Servicing and Maintenance

Follow the safety instructions for servicing and maintenance.

5.1 Servicing

Your machine has been designed and constructed for maximum performance, operational efficiency and operator friendliness under a wide variety of operating conditions.

Prior to delivery, your machine has been checked at the factory and by your authorised dealer to ensure that you receive a machine in optimum condition.

To ensure trouble-free operation, it is important that servicing and maintenance work is performed at the recommended intervals.

5.2 Cleaning

In order to ensure that the machine is always in operating condition and to achieve optimum performance, perform the cleaning and servicing work at regular intervals.

Avoid cleaning the roll / disc bearings with a high-pressure hose or a direct water jet. The housing, screwed connections and ball bearings are not watertight.

5.3 Disc Hub Maintenance

Grease every disc hub until grease shows from the seals according to the lubricating intervals outlined on page 28.

Check disc hubs regularly for tightness.

Regularly examine hub caps, seals, shear and pivot bolts and all tracking bolts for tightness and effectiveness twice weekly or every 50 working hours (whichever is more frequent).

5.3.1 Tightening Disc Hubs

1. Ensure that the bearing seal is in the correct orientation when replacing / assembling components.

2. Ensure that the stub axle is free from dirt and the nut and outer bearing can easily slide on it.

3. Tighten the crown nut with a hand spanner (a torque wrench is not required) while turning the hub clockwise until the bearing drags slightly (you feel the hub turning heavily). Some resistance will be due to friction from the seal.

4. Turn back the crown nut to the next locking position. Even if the tightening of the nut has reached an exact fixing position, turn it back.

5. Insert the retaining pin.

6. Try to shake/rock the outer edge of the hub/spindle: play of 0.1 / 0.2mm will not reduce the bearings’ life and, in addition, prevents overheating. If the adjustment is correct the hub should turn freely with the only friction being from the seal.
5.4.1 Bearing Seals
It is important when replacing the labyrinth type bearing seals in disc hubs that the seal is fitted the right way round. The chamfered lip side should be at the outside of the bearing housing, nearest the disc arm (see Fig. 5.02). This chamfered lip prevents dirt ingress into the housing and also allows grease to be flushed though when greasing.

The scraper is intended to clear dirt from blocking between adjacent DD rings. If adjustment to the scrapers is required ensure that the scraper cannot contact the spacer even under load. Regularly inspect the spacers for signs of wear and adjust any scrapers to ensure no contact can be made.

The assemblies are tight, and scrapers are correctly set.

5.5 Double Disc Axles
The axles on this roller are tensioned by the main axle through the centre of the rings and bearings.

Specialist equipment is required for the disassembly of Double Disc axles. Please consult your dealer under any circumstances that require disassembly of these axles.

Maintenance of these rollers is limited to yearly/end of season greasing of the bearings and regular inspection to ensure the assemblies are tight, and scrapers are correctly set.

Specialist equipment is required for the disassembly of DD Lite Rollers. Please consult your dealer under any circumstances that require disassembly of these rollers.

Maintenance of these rollers is limited to daily greasing of the bearings to flush out dirt, and regular inspection to ensure the assemblies are tight, and scrapers are correctly set. The axles can be tightened provided the bearing pillar ‘U’ bolts are loosened to avoid preloading the bearings as they move sideways to each other. Ensure the bearing pillars are re- tightened to the mainframe after this.

5.6 Preparation for Storage
If you need to store the machine for a longer period, observe the following points:

- Park the machine undercover if possible.
- Protect the roll / discs against rust. If you need to spray the implements with oil, use light, biologically degradable oils, e.g. rape oil.
Cover any rubber sections before using oil sprays. These sections must not be oiled. Remove any traces of oil with a suitable cleaning agent.

5.7 Tines
When performing maintenance work on tines extreme care should be taken. Wear goggles and gloves at all times when maintaining tines.

Safely support unfolded machine in raised position using taps and stands before attempting maintenance work on tines.

Do not attempt to assist fitting tine points with a steel headed hammer, this can lead to splintering of the metal due to its hardness, which can cause injury. If tine fitting requires assistance, a copper/hide or plastic mallet should be used.

5.8 Operator Support
If you have a problem, please contact your dealer. They will endeavour to solve any problems which may occur and provide you with support at all times.

In order to enable your dealer to deal with problems as quickly as possible, it helps if you can provide them with the following data. Always state the:

- Customer Number
- Name and Address
- Machine Model
- Serial Number of Machine
- Date of Purchase and Operating Hours
- Type of Problem

5.9 Maintenance Intervals
Apart from daily maintenance, the maintenance intervals are based on the number of operating hours and time data.

Keep a record of your operating hours to ensure that the specified maintenance intervals are adhered to as closely as possible.

Never use a machine that is due for maintenance. Ensure that all deficiencies found during regular checks are remedied immediately.

Avoid sharp-edged and pointed parts (disc blades, etc.) when working on the machine.

Place the machine on suitable supports when working underneath! Do not work under a machine which is not supported!

On a new machine tighten all nuts and bolts after 5 hours work and again after 15 hours. This also applies to parts that have been moved or replaced. After the initial 15 hours of work a once a week check should be sufficient depending on daily work rates.
5.10 Maintenance Overview

**Key**
- **Inspect**
- **Grease**

**Settings**
- **10 Hours**

**Scrapers**
- **200 Hours**

**Tines**
- **Before Each Use**

**Linkage**
- **Before Each Use**

**Disc Angle Adjusters**
- **10 Hours**

**Parking Stands**
- **10 Hours**

**Disc Hubs**
- **200 Hours**

**DD Lite Roll Bearings**
- **200 Hours**

**DD600 Roll Bearings**
- **One pump only!**

See section 5.11 on page 31
5.11 Lubricating the Machine
Please read the section entitled “Using Lubricants” carefully before lubricating the machine.

The machine must be lubricated regularly in order for it to remain serviceable. Regular lubrication also contributes towards extending the service life of your machine. The recommended lubricating intervals are specified in “Inspection” and “Maintenance Intervals”.

After it has been washed using a high-pressure hose or steam cleaned, the machine should always be lubricated using a grease gun.

5.12 Handling of Lubricants
Please ensure that you read the following instructions as well as the relevant information. This also applies to any of your employees who handle lubricants.

Hygiene
Lubricants do not present a health hazard provided they are used for their specified purpose.

In the case of prolonged skin contact, lubricants - especially low-viscosity oils - may remove the natural layer of fat contained in the skin, resulting in dryness and possible irritation.

It is important to take extreme care when handling waste oil as it may contain other irritants.

Vapours given off by cleaning agents and oils are also a potential health hazard. You should therefore not carry any oily cloths around. Change soiled work clothing as soon as possible.

Always exercise extreme care and observe the recommended hygiene rules when handling mineral oil products. Details of these handling regulations can be found in information provided by the health authorities.

Storage and Handling
- Always store lubricants where they cannot be accessed by children.
- Never store lubricants in open or unlabelled containers.

Fresh Oil
- Apart from taking the usual care and observing hygiene rules, there is no need to take any special precautions when handling fresh oil.

Waste Oil
- Waste oil can contain harmful contaminants which may cause skin cancer, allergies and other illnesses.

Attention!
Oil is a toxic substance. Should you swallow any oil, do not try to vomit. Contact a doctor immediately. Protect your hands with barrier cream or wear gloves to avoid contact with the skin. Wash off any traces of oil thoroughly with soap and hot water.

- Wash your skin thoroughly with soap and water.
- Use special cleaning agents to clean any dirt off your hands.
- Never wash oil residue from your skin with petrol, diesel fuel or paraffin.
- Avoid skin contact with any oily clothing.
- Do not keep any oily rags in your pockets.
- Wash soiled clothing before wearing it again.
- Ensure that any oily footwear is disposed of in the proper manner.
Measures in case of injury through oil

Eyes:
Should any oil be splashed into your eyes, rinse with water for 15 minutes. If the eye is still irritated, contact a doctor immediately.

If oil is swallowed
If oil is swallowed, it is important not to induce vomiting. Contact a doctor immediately.

Skin irritation caused by oil
In case of prolonged skin contact, wash off the oil with soap and water.

Oil Spills
Use either sand or a suitable granular absorbent to soak up any spilt oil. Dispose of the oil-contaminated absorbent in the proper manner.

Oil Fires
Never use water to extinguish an oil fire. The oil will float on the water causing the fire to spread.

Burning oil-lubricant must be extinguished using a carbon dioxide powder or foam extinguisher. Always wear respiratory equipment when dealing with fires of this type.

Waste Oil Disposal
Oil-contaminated waste and used oil must be disposed of in accordance with current legislation.

Waste oil must be collected and disposed of in accordance with local regulations. Never pour used oil into unsealed sewage systems or drains or onto the ground.

5.13 Lubricants
Great Plains strongly recommend the use of Lithium Complex EP2 Grease in the disc hubs of your Simba DTX. This grease is a Lithium Complex soap dispersed in a mineral oil and is interpreted by IARC as being non-carcinogenic. Grease cartridges are available from Great Plains. Using this grease in combination with the labyrinth type seal it is permissible to lengthen the greasing interval on the disc hubs to 200 hours. If using a standard agricultural grease the disc hubs should be lubricated every 50 hours.

Advantages of Lithium Complex EP2 Grease
- Excellent mechanical stability.
- Excellent load carrying properties.
- Wide temperature range.
- Excellent oxidation stability.
- Excellent water resistance.
- Compatibility with other greases.

All other lubricating points on the machine can be lubricated with multigrade lubricating grease as specified in DIN 51825 KP/2K - 40.
5.14 End of Season Service/Storage

The machine should be left parked in the unfolded position

Wheel bearings should be inspected and re-packed with grease if required

All greased pins/pivots should be lubricated.

Check for worn or damaged components and hardware, replace where required.

If fitted, check and where required adjust DD roller tension

Where hydraulic cylinder rods are exposed, re-coat chrome with oil/grease.

If the machine has been washed before storage it is good practice to function all hydraulic cylinders and services before storage.

Remove all fertiliser and seed from all metering units and hoppers.

Remove all metering cassette elements.
# 6.0 Faults and Remedies

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine ‘bouncing’ in work.</td>
<td>Disc angle too great.</td>
<td>Reduce disc angle.</td>
</tr>
<tr>
<td></td>
<td>Speed too fast.</td>
<td>Reduce speed (&lt;12kmh).</td>
</tr>
<tr>
<td>DD Lite Roll blocks regularly.</td>
<td>Scrapers incorrectly adjusted</td>
<td>Adjust scrapers to clear dirt from between DD Rings.</td>
</tr>
<tr>
<td></td>
<td>Conditions may not be ideal for using machine.</td>
<td>Wait for more favourable conditions.</td>
</tr>
<tr>
<td>Inadequate consolidation.</td>
<td>Not enough weight on rear roll.</td>
<td>Increase chassis pitch slightly via tractor toplink.</td>
</tr>
<tr>
<td></td>
<td>Not enough cultivated soil depth.</td>
<td>Increase working depth.</td>
</tr>
<tr>
<td></td>
<td>Speed too fast.</td>
<td>Reduce speed (&lt;12kmh).</td>
</tr>
<tr>
<td>Surface finish is uneven and cloddy</td>
<td>Not enough roll pressure</td>
<td>Reduce draft control</td>
</tr>
<tr>
<td></td>
<td>Wings too aggressive</td>
<td>Fit different wings, either narrower wings or wings with a shallower rake (see page 20)</td>
</tr>
<tr>
<td></td>
<td>Running nose down</td>
<td>Level frame</td>
</tr>
<tr>
<td></td>
<td>Working too shallow</td>
<td>Increase tine depth</td>
</tr>
<tr>
<td>All ground not being moved by tines</td>
<td>Working too shallow</td>
<td>Increase tine depth</td>
</tr>
<tr>
<td></td>
<td>Wings not aggressive enough</td>
<td>Fit wider wings</td>
</tr>
</tbody>
</table>