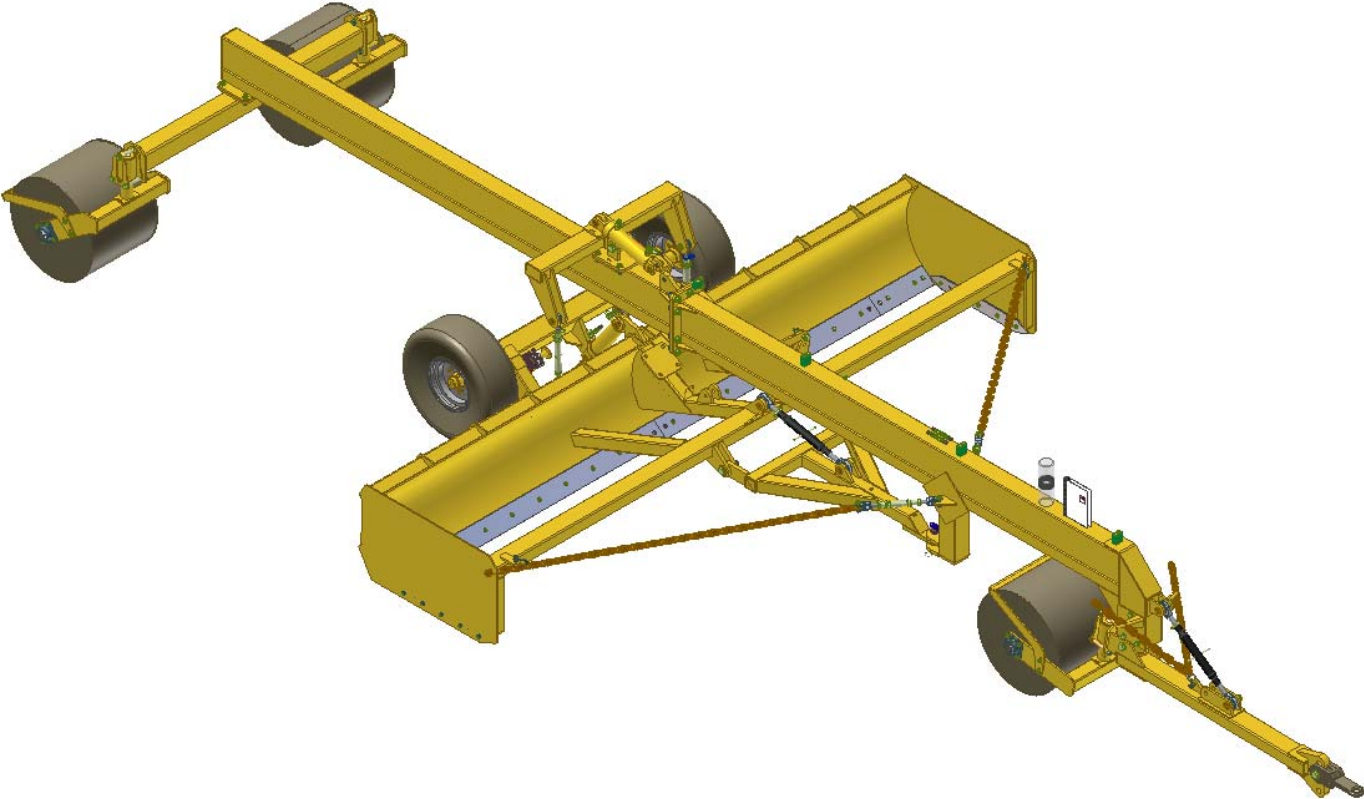




P13918 18/11/05



DECLARATION OF CONFORMITY

Simba International Limited hereby declare that the Product described in this Operators Manual, and defined by the Serial Number Plate attached to the Chassis of the Machine (a part copy of which is detailed overleaf and must be completed indicating the relevant machine details), conforms with the following Directives and Regulations, and has been certified accordingly.

EC Machinery Directive 89/392/EEC, as amended by 91/3688/EEC, 93/44/EEC, and 93/688/EEC.

In order to fulfill the requirements of health and safety described in the EC Directive, the following standards and technical specifications have been taken into account:

EN 292 - 1
EN 292 - 2

THE MANUFACTURER

Simba International Limited
Woodbridge Road
SLEAFORD
NG34 7EW
Lincolnshire
NG34 7EW
England.

Telephone 01529 304654.

CERTIFIED ON BEHALF OF SIMBA INTERNATIONAL LIMITED.

Philip J. Wright. BSc (Hons) C Eng. MI Agr.E
Technical Director.



WARRANTY

TERMS AND CONDITIONS

In this warranty Simba International 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 Simba International 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 Simba International 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 Simba International Ltd., Service Dept., Woodbridge Road, Sleaford, Lincolnshire, England, NG34 7EW, within 7 days of installing a new machine.

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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!

SIMBA 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 SIMBA. 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 Land Plane.

Warranty Guidelines

1. 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.

2. Warranty claims must be submitted to the SIMBA Customer Service Department in Sleaford via your dealer. It is only possible to process claims which have been correctly completed and submitted no later than 14 days after the date of repair.

3. In the case of deliveries made under the warranty which are subject to the return of the old parts, the old parts must be returned to SIMBA within 28 days after the damage occurred.

4. In the case of deliveries made under the warranty which are not subject to the return of the old parts, these parts must be kept for the purpose of further decisions for a period of 3 months after receipt of the warranty claim.

5. Warranty repairs to be carried out by outside companies, or repairs which are expected to take more than 10 working hours, must be agreed upon in advance with the Customer Service Department.

1. Safety Data

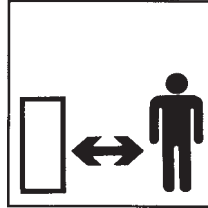
The following warnings and safety instructions apply to all sections of these Operating Instructions.

1.1 Safety Symbols

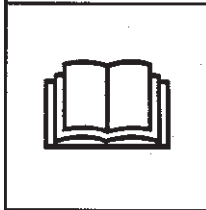
On the machine



Parts may fly off during operation. Keep a safe distance away from the machine!



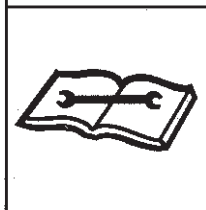
Read and observe the Operating Instructions before starting up the machine!



Keep clear of the working range of foldable machine components!



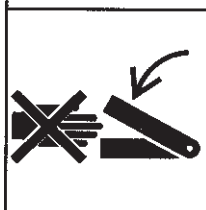
Watch out for escaping pressurised fluids! Follow the instructions in the Operating Instructions!



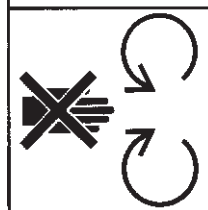
No passengers are allowed on the machine!



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.

1.2 Use for the Intended Purpose

The SIMBA Land Plane 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 SIMBA 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 SIMBA products may have a detrimental effect on specific design features of the machine and affect the safety of machine operators and the machine itself. SIMBA will accept no liability for damage resulting from the use of non-original parts or accessories.

The SIMBA Land Plane is designed solely as a land levelling implement. Use for any other purpose, e.g., as a means of transport, will be deemed to be improper use. SIMBA will accept no liability for damage resulting from improper use. The risk will be borne solely by the operator.

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 SIMBA. The "Machine Registration" form is to be completed and returned to SIMBA.

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.

1.3.1 No Liability for Consequential Damage

The Land Plane has been manufactured by SIMBA 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.

1.4 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!



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

1.5 Accident Prevention

In addition to the Operating Instructions, it is important to observe the accident prevention regulations specified by agricultural trade associations.

1.5.1 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.

1.5.2 On the Hydraulic System

Do not connect the hydraulic lines to the tractor until both hydraulic systems (machine and tractor) are depressurised.

Only use appropriate aids when checking for leaks. Repair any damage immediately. Spurting oil can cause injuries and fires!

In case of injury, contact a doctor immediately.

The socket and plugs for the hydraulic connections between the tractor and the machine should be colour-coded in order to avoid incorrect use.

1.5.3 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 castor wheels. These parts may rotate causing you to slip and suffer serious injury!

1.5.4 During Operation

Ensure that the working range and the area around the machine are clear (children!) before operating the machine.

Always ensure adequate visibility!

Do not stand on the machine while it is in operation!

Operators must have a valid driving licence in order to drive on public roads. In the operating area, the operator is responsible for third parties.

The person in charge must:

- provide the operator with a copy of the Operating Instructions, and
- ensure that the operator has read and understood the instructions.
- make sure that the operator is aware of the specific regulations relating to the machine when driving on public roads.

1.6 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.
- depressurize the hydraulic system.

Prior to performing maintenance and servicing work, ensure that the machine is positioned on solid, level ground and is secured to prevent it rolling away. Do not use any parts to climb on to the machine unless they are specifically designed for this purpose.

Before cleaning the machine with water, steam jets (high-pressure cleaning apparatus) or other cleaning agents, cover all openings into which, for reasons of safety or operation, no water, steam or cleaning agents are to penetrate (bearings, for instance).

Next, check all hydraulic lines for leaks, loose connections, chafe marks and damage. Remedy any deficiencies immediately!

Lubricate all the lubricating points to force out any trapped water.

When carrying out servicing and maintenance work, retighten any loose screw connections.

1.7 Operating Areas

The operating areas include the drawbar, hydraulic connections and depth adjustment equipment as well as all operating points requiring maintenance.

All operating areas will be specified and described in detail in the following chapters on servicing and maintenance.

Observe all safety regulations included in the Section dealing with Safety, and in the subsequent sections.

1.8 Authorised Operators

Only those persons who have been authorised and instructed by the operator may operate the machine. The operator must be at least 16 years of age.

1.9 Protective Equipment

For operation and maintenance, you require:

- Tight fitting clothing.
- Strong protective gloves (to provide protection against sharp-edged machine components).
- Protective goggles (to stop dirt getting into your eyes).

2. 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 Land Plane 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 for road transport is 25 km /h.

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

2.4.1 Hitching up a Tractor to the Land Plane / Preparing for Transport



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



Tractor Oil Flow Adjustment:

As a general rule the tractor oil flow rate should be set in the lowest setting before starting. This can then be increased to allow the desired rate of operation as applicable. This will minimise excessive oil flow and consequent power usage and heat generation.

1. Ensure the tractor hydraulics are depressurised and in the locked or closed (not float) setting.
2. Couple the hydraulic hoses to the tractor ensuring that the two lift axle cylinder hoses (red) are together and the two scraper bowl cylinder hoses (green) are together.
3. Connect the tractor to the drawbar shackle.
4. Carefully operate the hydraulics to lift the Land Plane on the road transport wheels and add in the shims for road transport.

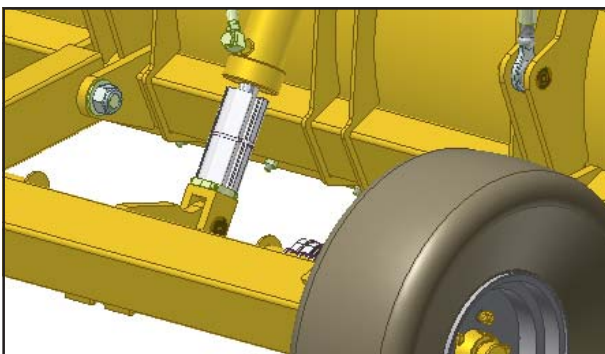


Fig. 2.00: Transport Axle with Transport Shim Fitted

2.5 Road Transport and Work Positions

2.5.1 Changing to Road Transport Position

1. Attach the two transport chains from their fixed position on the drawbar to a hook on either side of the main beam.
2. Connect the toplinek between the drawbar and the pivot on the front of the main beam. The toplinek may need to be adjusted before it will fit.
3. Using the transport wheels raise the machine to its full height then lengthen the front drawbar toplinek to tighten the two transport chains.
4. When the transport chains are fully tightened they should prevent any turning at the drawbar pivot. If there is insufficient ground clearance under the front castor wheel when the chains are tight, loosen the toplinek then lower the machine to the ground. Lengthen the setting of each transport chain, raise the machine and tighten the toplinek. This process may need to be repeated until the beam is parallel to the ground.
5. After the necessary setting for the transport chain is found, mark the chain with paint to eliminate any need for repeating the above procedure.
6. When the drawbar has been set and the machine is at its highest position the transport shims must be fitted to the transport axle hydraulic cylinder.

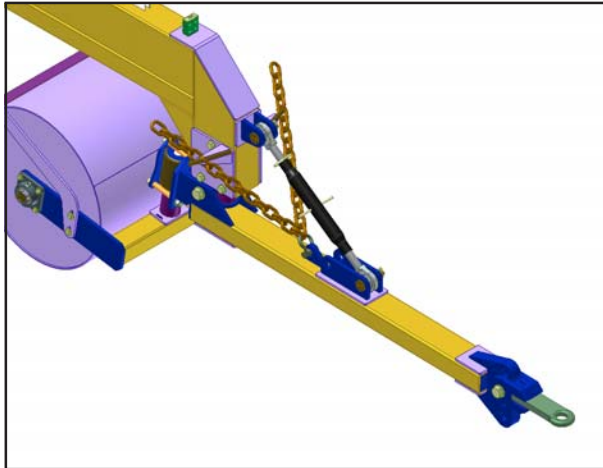


Fig. 2.01: Road Transport Position

2.5.2 Changing to Work Position

1. Remove the two transport chains from their fixed position on main beam and stow on the drawbar mounting point.
2. Disconnect the topline between the drawbar and the pivot on the front of the main beam. The topline may be laid down onto the drawbar. The drawbar is now free to move in all directions.
3. Raise the machine using the lift axle and remove the transport shims. The machine can now be lowered into the work position.

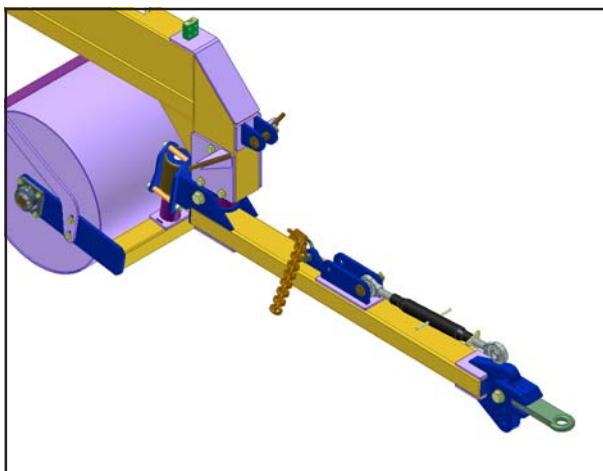


Fig. 2.02: Work Position

2.6 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.

2.7 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!).

With the machine in the transport position:

- Park the machine on level and solid ground.
- Raise the machine and remove shims from the lift axle cylinder.
- Lower the machine to the ground, ensuring that it is stable.
- Remove the drawbar pin and drive forward slowly until hitch is clear of tractor drawbar.
- Switch off the tractor.
- Disconnect hydraulic lines from the tractor.

3. Technical Data Land Plane

	LP3	LP3.5	LP4.0	LP5.0
Working Width	3000mm	3500mm	4000mm	5000mm
Transport Width	3065mm	3565mm	4065mm	5065mm
Transport Height	1975mm	1975mm	1975mm	1975mm
Length	11225mm	11225mm	11225mm	11225mm
Weight	3100kg	3200kg	3275kg	3450kg
Tractor Power Required (H.P.)*	80-100	100-120	110-140	130-180

* It is important to correctly match your implement to your tractor for optimum performance.

4. Adjustment/Operation

4.1 Description

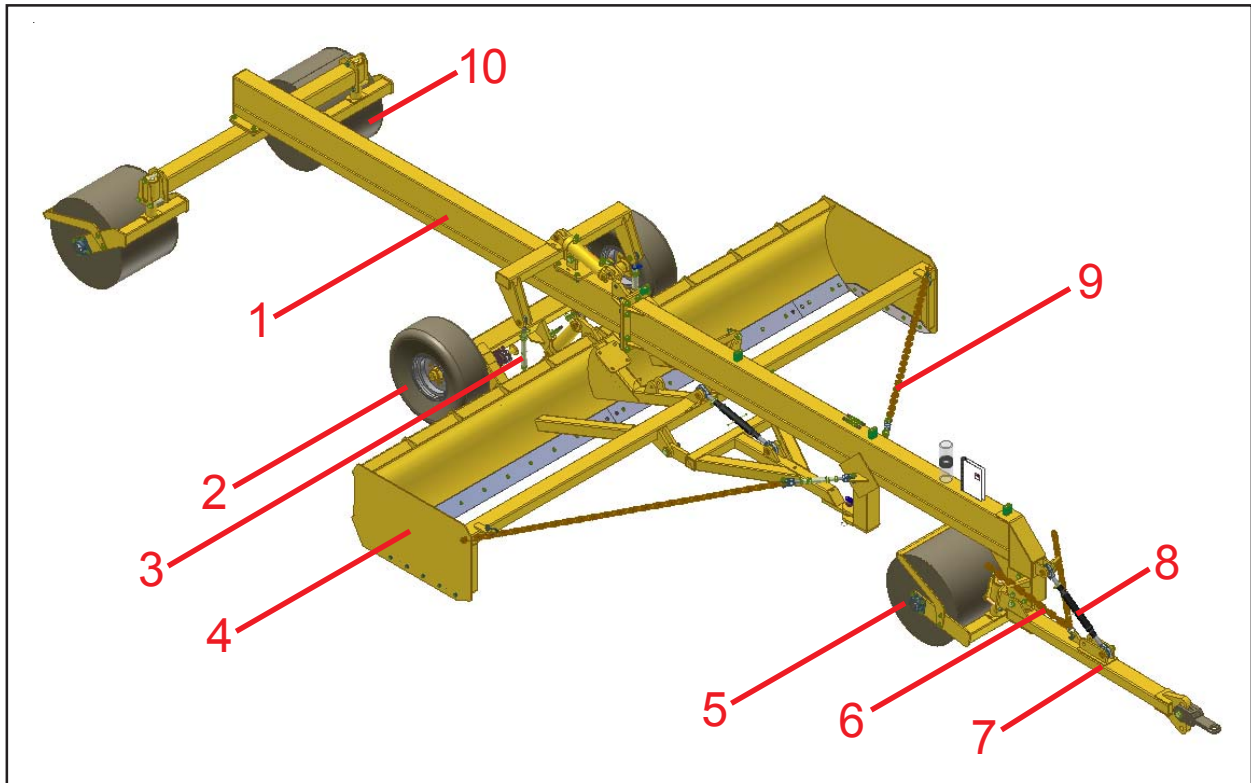


Fig. 4.01: Simba Land Plane

1. Main Beam
2. Transport Wheels
3. Scraper Bowl Depth Adjuster
4. Scraper Bowl
5. Front Castor Wheel
6. Transport Chain
7. Drawbar
8. Drawbar Adjuster
9. Wing Chain
10. Rear Castor Wheels

The Land Plane is designed to the highest specification for optimum levelling performance under the widest range of ground conditions.

The unit has a simple, rigid blade. The scraper bowl is removable from the main beam for use as an independent towed Box Plane if required.

All units are designed to be easily maintained at minimum cost. Cutting edges are reversible and replaceable, being made of toughened steel for longer life, and all pivot points are greasable.

4.2 Castor Wheels

In work, the castor wheels carry the weight of the machine allowing the scraper blade to be moved independently to set the working depth and ensure accurate levelling for large areas. The castor wheel pivots are fitted with nylon bearings that normally do not need lubrication. When excessive play is detected the upper and lower bearings can be replaced.

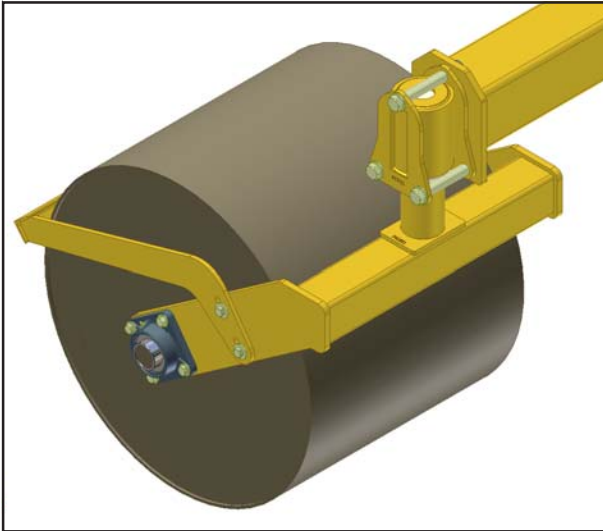


Fig. 4.02: Castor Wheels

4.3 Scraper Bowl

The scraper bowl is fitted with a reversible blade made from toughened steel. The working depth and pitch is adjustable in order to obtain the desired levelling effect on the land. The wing chains attached to the scraper bowl inhibit lateral movement of the bowl ensuring an even finish.



Fig. 4.03: Scraper Bowl

4.4 Work Settings

In work, the transport wheels should be lifted clear of the ground (using cylinder C in Fig.4.04) and need not be used in work under normal circumstances.

The depth of the scraper is altered using toplink B. The pitch of the scraper is altered by adjusting the toplink D. Hydraulic cylinder A is used to lift the scraper bowl out of work when turning.

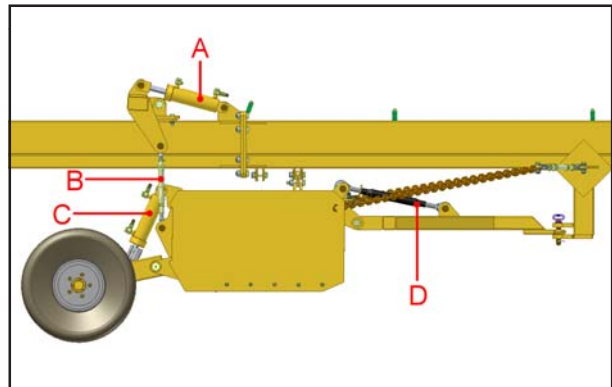


Fig. 4.04: Setting the Machine

4.5 Hydraulic Depth Control

The object of hydraulic depth control is to enable minor adjustments of the blade to be carried out on the move in work whilst still retaining a preset maximum depth. The hydraulic depth control replaces the need to wind the toplinks every time there is a build up of soil in the scraper, usually occurring during the initial pass over uneven ground.

When setting the toplinks the hydraulic cylinder should be fully extended. The adjustable pivot should be set so that it is at its forward limit. With the pivot plate in this position and the cylinder fully extended, the linkage passes over centre, thereby eliminating any excessive hydraulic pressure on the tractor spool valves when at planing depth.

4.6 Work Instructions

Driving speed

In work, the Land Plane can be driven at speeds of up to 6 km/h.

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

Drive more slowly if the conditions are difficult.

Turning:



Before turning, the scraper bowl should be eased out of work. Likewise, it should be eased back into work once the turn has been completed.

4.7 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!).

With the machine in the transport position:

- Park the machine on level and solid ground.
- Raise the machine and remove shims from the lift axle cylinder.
- Lower the machine to the ground, ensuring that it is stable.
- Remove the drawbar pin and drive forward slowly until hitch is clear of tractor drawbar.
- Switch off the tractor.
- Disconnect hydraulic lines from the tractor.

4.8 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?
- Have the hydraulic lines been connected according to the colour coding?
- Is the machine in a level operating position and the working depth set correctly?

Working Elements

- Are the elements of the machine in a serviceable condition?

5. 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 bearings with a high-pressure hose or a direct water jet. The housing, screwed connections and ball bearings are not watertight.

5.3 Hydraulics



A low oil flow should be used, i.e., tractor tickover or low flow selected.



Exercise extreme care when checking the circuits, and *under no circumstances* attempt to adjust or loosen fittings without prior reference to your authorised simba dealer, and detailed maintenance instructions.

5.4 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

5.5 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 (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.

5.6 Maintenance Overview

Land Plane Maintenance Overview			
	Instructions	Interval	Note
After first operation			
Check all screw, bolt and plug connections	Check they are firmly seated. Tighten / Secure if necessary - Refer to table below for bolt torques	---	---
Check wheel studs for tightness	Check on delivery and before transporting the machine	---	---
Lubricate machine	See overview of lubricating points	---	Page 24
During operation			
Lubricate machine	See overview of lubricating points	---	Page 24
Wheel studs	Check tightness before transporting the machine	daily	---
Working Depth	Check setting and ensure implements are firmly secured	daily	Page 20
Hydraulic system and components	Check seals, signs of crushing/wear, function and condition	daily	---
Safety devices (Transport shims)	Check condition and function	daily	---
After season			
Lubricate machine	See overview of lubricating points	---	Page 24
Bolts / Lock Bolts / Toplink adjusters	Grease any exposed threads	---	---
Entire machine	Carry out cleaning and maintenance	---	---
After 4 years			
Hydraulic pipes	Replace	MRL Anh I	EN 1533

Max. Bolt Torques	
M12 8.8	10 KgM (73 lb.ft)
M16 8.8	24 KgM (176 lb.ft)
M20 8.8	47 KgM (345 lb.ft)
M24 8.8	80 KgM (587 lb.ft)
M30 8.8	150 KgM (1100 lb.ft)
M36 8.8	280 KgM (2055 lb.ft)
5/8" UNC	24 KgM (175 lb.ft)

Max. Tyre Pressures		
Tyre Size	Max. P.S.I.	Max. Bar
10.0/75-15, 10 Ply	50	3.5
11.5/80-15, 10 Ply	60	4
12.5/80-15, 10 Ply	80	5.5
15/55-17, 10 Ply	50	3.5

5.7 Overview of Lubricating Points

Land Plane lubrication points	Interval	Diag. No.
Transport Axle Pivots	50 Hours	5.01
Blade Depth Pivot	50 Hours	5.02
Drawbar Pivot	50 Hours	5.03
Wheel Hubs	50 Hours	5.04
Castor Wheel Hubs (<i>Apply one pump only</i>)	End of Season	5.05

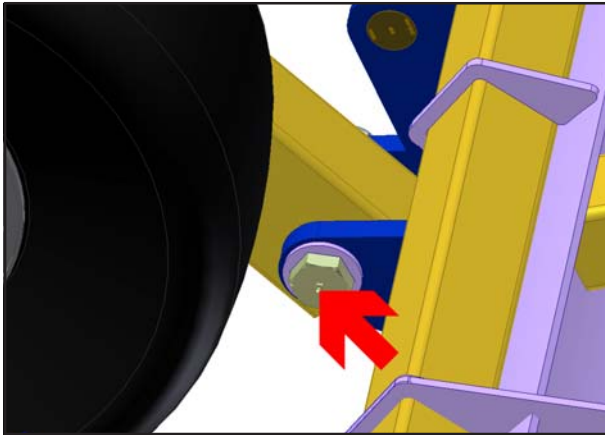


Fig. 5.01: Transport Axle Pivot Points

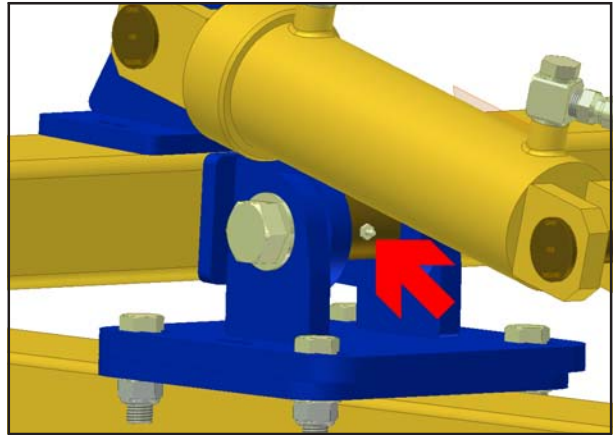


Fig. 5.02: Blade Depth Pivot Grease Point

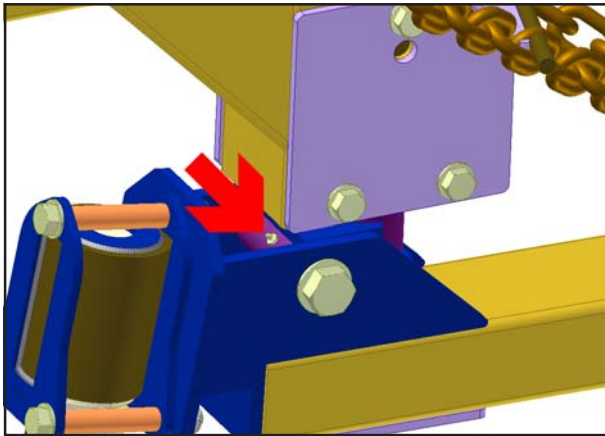


Fig. 5.03: Drawbar Pivot Grease Point

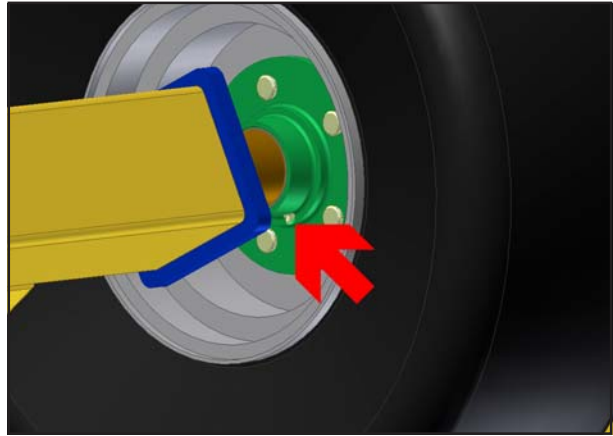


Fig. 5.04: Wheel Hub Grease Points

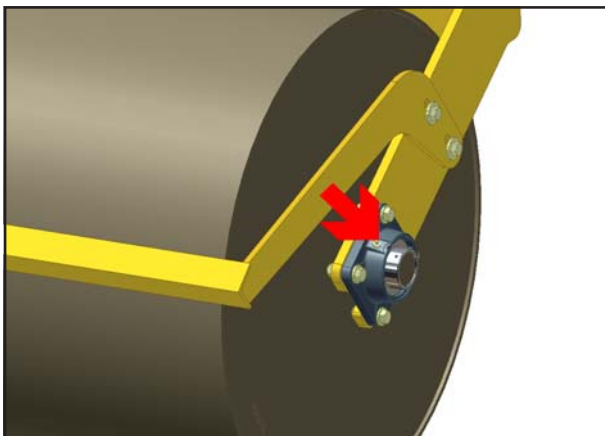


Fig. 5.05: Castor Wheel Hub Grease Points

5.8 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. Ensure that the universal joints and splined shafts are lubricated regularly.

5.9 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.

5.10 Lubricants & Hydraulic Oil

Hydraulic System

The hydraulic fluid from the tractor is mixed with the hydraulic fluid from the machine.

The supplied machine hydraulic system contains Total AZOLLA ZS 32 oil.

Lubricants

All lubricating points on the machine can be lubricated with multigrade lubricating grease as specified in DIN 51825 KP/2K - 40.