

Truflex

LAND ROLLERS



**LAND ROLLER
FIVE & SEVEN SECTION
50' - 85' MODELS
OPERATOR'S MANUAL**

SPRAYFLEX SPRAYERS, INC. EQUIPMENT WARRANTY

Sprayflex Sprayers, Inc. (hereinafter "Sprayflex") warrants to the original retail purchaser of each item of new Sprayflex equipment (hereinafter "Equipment") purchased from an authorized independent sales representative of Sprayflex or directly from Sprayflex that the Equipment is free from material defects in workmanship, under normal and reasonable use and service, for a period of two years from the original date of the receipt of the Equipment by Original retail purchaser. Any Equipment shown to not be free from material defects in that time period, under those circumstances, shall be considered to be "defective" for purposes of this warranty. If such Equipment is found to be defective within two years from the original date of the receipt of the Equipment by original retail purchaser, the obligation of Sprayflex under this warranty is limited to the repairing or replacing (excluding the cost of transportation) of any such Equipment or parts that are reasonably deemed to be defective, which option to repair or replace will be determined in the sole discretion and judgment of Sprayflex.

All Equipment or parts of Equipment claimed to be defective must be made available for inspection by Sprayflex at the place of business of an authorized independent sales representative of Sprayflex, or, upon the request by Sprayflex, shipped to the Sprayflex factory in Detroit Lakes, Minnesota. Sprayflex shall have no obligation to pay the cost of transportation relating to the shipping of the Equipment or any replacement equipment. Sprayflex will pay internal shop rates on the modification or repair of defective parts of Equipment if repair and modification is selected by Sprayflex to remedy defective Equipment versus replacement of Equipment or its parts.

This warranty covers only defects in the workmanship of the Sprayflex Equipment itself. It does not cover depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments, or improper maintenance, including, but not limited to, lack of proper lubrication, improper winterization, or improper use. Damage caused to the Sprayflex Equipment by parts or accessories installed by someone other than Sprayflex or an authorized independent sales representative of Sprayflex shall not be covered under this warranty if the damage is caused, in whole or in part, by the installation.

Sprayflex's liability under this warranty shall not be effective or actionable unless the Equipment is maintained and operated in accordance with the Operating Instructions (Owners' Manual) accompanying the Equipment. Sprayflex shall have no liability under this warranty if the Equipment has been altered or in any way modified without the written authorization of Sprayflex. Sprayflex does not warrant commercial components not manufactured by Sprayflex. But, if new, these components may be by the manufacturer thereof.

The only remedies any purchaser has in connection with the breach or performance of any warranty of Sprayflex are those set forth in this warranty. In no event shall Sprayflex be liable for incidental or consequential damages or injuries including, but not limited to, loss of crops, loss of profits, rental of substitute equipment or other commercial loss.

This warranty is expressly provided in lieu of any other express or implied warranties including any implied warranty of merchantability or warranty of fitness for particular purpose and of any other potential obligations on the part of Sprayflex.

Sprayflex makes no warranties, representations or promises, express or implied, as to the quality or performance of Equipment other than those set forth in this warranty. Neither the authorized independent sales representative of the Sprayflex Equipment nor any other person has any authority to make any representations, warranties or promises on behalf of Sprayflex unless provided directly by Sprayflex in writing.

Sprayflex parts and equipment, which are furnished under this warranty for defective Equipment, shall be warranted to the same extent and for the same warranty duration period as the original Equipment under this warranty. The replacement parts and replacement equipment do not start a new warranty period.

No warranty request will be considered and Sprayflex will have no liability or obligation under this warranty, unless the Sprayflex Equipment Delivery Checklist and Warranty Registration Forms have been properly filled out and returned to Sprayflex Sprayers, Inc., at 1128 B Cormorant Ave, Detroit Lakes, MN 56501, within fifteen (15) days of the receipt of the Equipment by the original retail purchaser.

Sprayflex Claim Forms must be filled out with every claim. Claims must be submitted by the independent sales representative to Sprayflex's home office or directly with Sprayflex. All claims made under warranty must be made within the 30 days of failure of Equipment or of parts for Equipment or reasonable discovery of the defect, whichever occurs first. No claim will be accepted that exceeds this 30-day period.

WARRANTY VOID IF NOT REGISTERED

SPRAYFLEX SPRAYERS, INC.
TRUFLEX LAND ROLLER 50' - 85' MODELS

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (please print)

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____	Dealer Name _____
Address _____	Address _____
City, State/Province, Code _____	City, State/Province, Code _____
Phone Number (____) _____	Phone Number (____) _____
Contact Name _____	
Model _____	
Serial Number _____	
Delivery Date _____	

DEALER INSPECTION REPORT

- ____ All Fasteners Tight
- ____ Wheel Bolts Torqued
- ____ Hydraulic Hoses and Fittings Tight
- ____ Lubricate Machine
- ____ Check Tire Pressure
- ____ Frame and Wings Level
- ____ Wiring Harness Connected

SAFETY

- ____ Safety Chain Installed
- ____ All Guards Installed
- ____ All Safety Signs Installed
- ____ Reflectors, SMV and Lights Clean
- ____ Review Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment which review included the Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____ Dealer's Rep. Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Owner's Signature _____

WHITE	YELLOW	PINK
SPRAYFLEX	DEALER	CUSTOMER

SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Sprayflex Sprayers, Inc. Land Roller when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



SERIAL NUMBER LOCATION (Typical)

Model Number _____

Serial Number _____

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
1	Introduction	1
2	Safety	3
2.1	General Safety	4
2.2	Equipment Safety Guidelines	5
2.3	Safety Training	6
2.4	Safety Signs.....	6
2.5	Preparation	7
2.6	Maintenance Safety	8
2.7	Operating Safety	8
2.8	Hydraulic Safety	9
2.9	Transport Safety.....	9
2.10	Storage Safety	10
2.11	Tire Safety.....	10
2.12	Sign-Off Form	11
3	Safety Sign Locations	13
4	Operation	19
4.1	To the New Operator or Owner	19
4.2	Machine Components.....	20
4.3	Machine Break-In.....	22
4.4	Pre-Operation Checklist.....	22
4.5	Equipment Matching	23
4.6	Controls	24
4.7	Attaching/Unhooking.....	25
4.8	Field Operation	28
4.9	Converting - Transport - Field Configuration	32
4.10	Converting - Field - Transport Configuration	39
4.11	Transporting.....	46
4.12	Storage	50
5	Service and Maintenance	53
6	Trouble Shooting	59
7	Specifications	61
7.1	Mechanical.....	61
7.2	Bolt Torque.....	62
7.3	Hydraulic Fitting Torque.....	63
8	Index	65

1 INTRODUCTION

Congratulations on your choice of a Sprayflex Sprayers, Inc. Truflex Land Roller to compliment your operation. This equipment has been designed and manufactured to meet the needs of a discerning agricultural industry.

Safe, efficient and trouble free operation of your Sprayflex Sprayers, Inc. Truflex Land Roller requires that you and anyone else who will be using or maintaining the roller, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.



This manual covers the Sprayflex Sprayers, Inc. Truflex Land Roller 5 & 7 Section 50' to 85' Models. Use the Table of Contents or Index as a guide to locate required information.

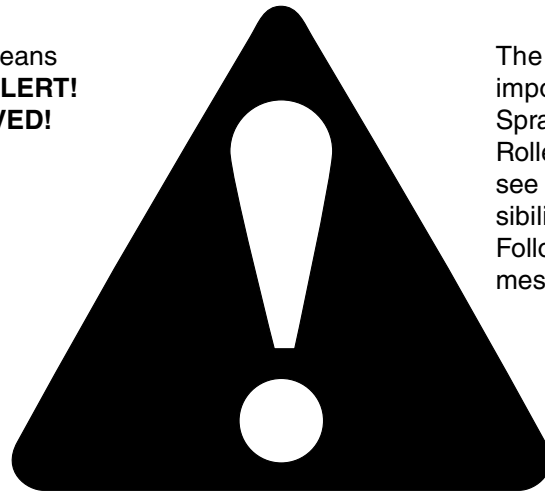
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Sprayflex Sprayers, Inc. dealer if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from the tractor driver's seat and facing in the direction of travel.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



The Safety Alert symbol identifies important safety messages on the Sprayflex Sprayers, Inc. Truflex Land Roller and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Sprayflex Sprayers, Inc., Phone: 218-844-5371 or Toll Free: 1-855-777-3539, 1128 B Cormorant Avenue, Detroit Lakes, MN 56501, Email: info@sprayflexsprayers.com, or at the website: www.sprayflexsprayers.com

SAFETY

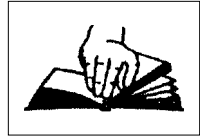
YOU are responsible for the SAFE operation and maintenance of your Sprayflex Sprayers, Inc. Truflex Land Roller. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the Truflex Land Roller be familiar with the using and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the Truflex Land Roller.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** using this equipment is familiar with the recommended using and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

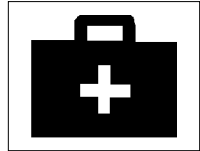
- Truflex Land Roller owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all using and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

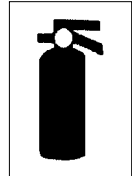
1. Read and understand the Operator's Manual and all safety signs before using, maintaining, adjusting or cleaning the Truflex Land Roller.



2. Have a first-aid kit available for use should the need arise and know how to use it.



3. Have a fire extinguisher available for use should the need arise and know how to use it.



4. Do not allow riders.

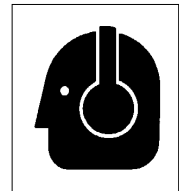
5. Wear appropriate protective gear. This list includes but is not limited to:



- A hard hat
- Protective shoes with slip resistant soles
- Protective glasses, goggles or face shield
- Heavy gloves
- Hearing Protection

6. Install and secure all guards before starting.

7. Wear suitable ear protection for prolonged exposure to excessive noise.



8. Lower machine to ground, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.


9. Clear the area of people, especially small children, before using the unit.

10. Review safety related items annually with all personnel who will operating or maintaining the Truflex Land Roller.

2.2 EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be used in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this equipment. Consult your doctor about using this machine while taking prescription medications.
5. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
7. Use a tractor equipped with a Roll Over Protective Structure (ROPS) and a seat belt.
8. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
9. Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the equipment.
10. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the engine and machine manuals. Pay close attention to the Safety Signs affixed to the tow vehicle and the machine.

2.3 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator.  It is the operator's responsibility to read and understand ALL Safety and Using instructions in the manual and to follow these. Accidents can be avoided.
4. **Working with unfamiliar equipment can lead to careless injuries. Read this manual before assembly or using, to acquaint yourself with the machine. If this machine is used by any person other than yourself, or is loaned or rented, it is the machine owner's responsibility to make certain that the operator, prior to using:**
 - a. **Reads and understands the operator's manuals.**
 - b. **Is instructed in safe and proper use.**
5. Know your controls and how to stop tow unit, engine and machine quickly in an emergency. Read this manual and the one provided with your engine.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will use the machinery. A person who has not read and understood all using and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

2.4 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs displayed in Section 3 each have a part number in the lower right hand corner. Use this part number when ordering replacement parts.
5. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper (See Section 3).
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 PREPARATION

1. Never use the engine and machine until you have read and completely understand this manual, the Engine Operator's Manual and each of the Safety Messages found on the safety signs on the tractor and machine.

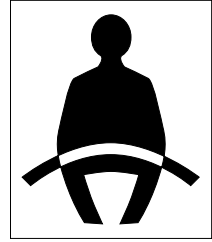
2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, cleaning, or moving the unit. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.



3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Power equipment with or without equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.



4. Operate the machine only with a tractor equipped with an approved Roll-Over-Protective-Structure (ROPS). Always wear a seatbelt. Serious injury or even death could result from falling off the tractor - particularly during a turnover when the operator could be pinned under the ROPS or in the tractor.
5. Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
6. Be sure machine is properly attached, adjusted and in good operating condition.
7. Ensure that all safety shielding and safety signs are properly installed and in good condition.

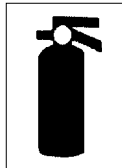
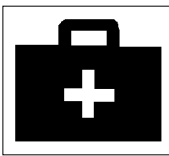


2.6 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.



3. Lower machine to the ground, place all controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
4. Place stand or blocks under the frame before working beneath the machine or when changing tires.
5. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work.
6. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications.
7. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
8. Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
9. Relieve pressure from the hydraulic circuit before servicing or disconnecting from tractor.
10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

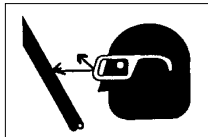


2.7 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Lower machine to ground, place all controls in neutral, stop tractor engine, remove ignition key, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging implement.
3. Do not allow riders.
4. Be sure all guards and locks are in place before starting.
5. Keep hands, feet, hair and clothing away from moving parts.
6. Clear the area of all bystanders, especially children, before starting.
7. Stay away from rollers when folding or extending frame. Keep others away.
8. Clean reflectors, SMV and lights before transporting.
9. Attach securely to towing unit using a hardened pin with a retainer and a safety chain.
10. Install wheel frame lock brackets and tail wheel pins and close valves in hydraulic lines before transporting or working under the frame.
11. Do not exceed a safe travel speed.
12. Use hazard flasher on tractor when transporting.
13. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
14. Review safety instructions annually.

2.8 HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before dismounting.
2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses and steel lines.
4. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
5. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
6. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
7. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
8. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are in good condition.



2.9 TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the roller in the field and/or on the road.
2. Check with local authorities regarding roller transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
5. Install additional lights on the rear of the machine to safeguard against rear end collisions. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
6. Be sure that the machine is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always attach a safety chain between the frame and the towing machine.
7. Install wheel frame lock brackets and tail wheel pins and close valves in hydraulic lines before transporting or working under the frame.
8. Connect transport bar between the outer wing section frame members before transporting.
9. Keep to the right and yield the right-of-way to all faster traffic to pass. Drive on the road shoulder, if permitted by law.
10. Do not exceed 20 mph (32 km/h). Reduce speed on rough roads and surfaces.
11. Always use hazard warning flashers on tractor when transporting unless prohibited by law.
12. Do not raise the frame or transport with water or other fluid in the rollers.

2.10 STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Lower rollers to the ground and raise tires for storage.
3. Do not allow children to play on or around the stored machine.
4. Store the unit in a dry, level area. Support the frame with planks if required.

2.11 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. When replacing worn tires, make sure they meet the original tire specifications. Never undersize.


3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!




A



CAUTION

To prevent serious injury or death:

<ul style="list-style-type: none">• Read and understand Operator's Manual before using. Review safety instructions annually.• Place all controls in neutral, stop tractor engine, remove ignition key, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging implement.• Do not allow riders.• Securely attach to towing unit using a hardened pin with a retainer and an auxiliary attaching device.• Be sure all guards and locks are in place before starting.• Connect transport bar between the outer wing section frame members before transporting.	<ul style="list-style-type: none">• Keep hands, feet, hair and clothing away from moving parts.• Be sure SMV, lights and reflectors are visible before transporting.• Install wheel frame and tail wheel lock pins and frame lock pins and close valves in hydraulic lines before transporting or working under frame.• Do not exceed a safe transport speed.• Use hazard flashers on tractor when transporting.• Keep hydraulic system components in good condition before applying pressure to the system.
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

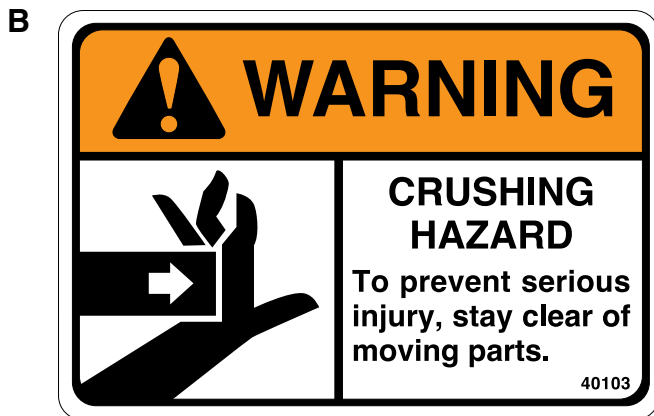


30102

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

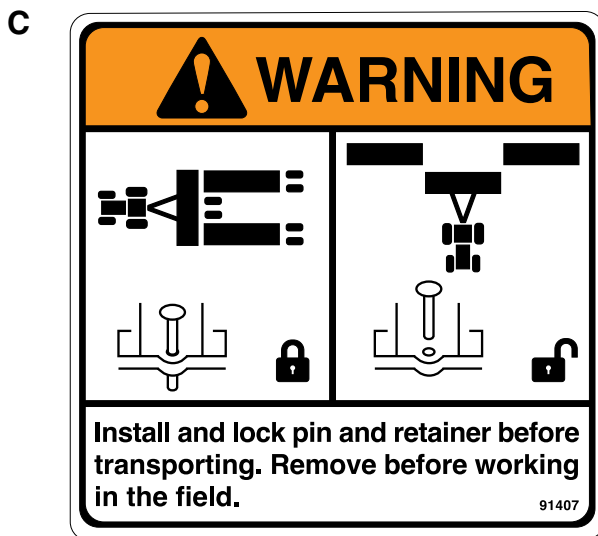
- Think SAFETY! Work SAFELY!



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



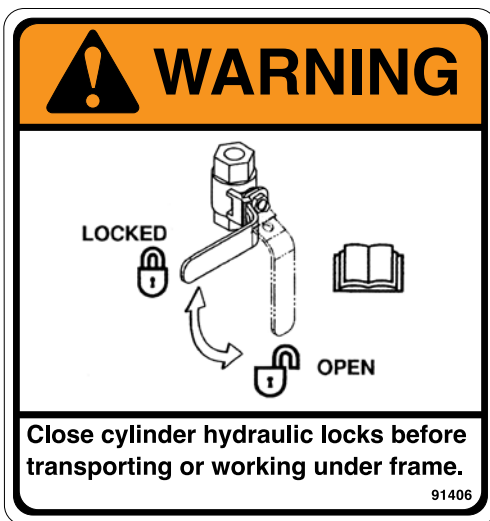
REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



D



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 OPERATION



OPERATING SAFETY

- Read and understand Operator's Manual before using. Review safety instructions annually.
- Place all controls in neutral, stop tractor engine, remove ignition key, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging implement.
- Do not allow riders.
- Securely attach to towing unit using a hardened pin with a retainer and an auxiliary attaching device.
- Be sure all guards and locks are in place before starting.
- Keep hands, feet, hair and clothing away from moving parts.
- Be sure SMV, lights and reflectors are visible before transporting.
- Install wheel frame and tail wheel lock pins and frame lock pins and close valves in hydraulic lines before transporting or working under frame.
- Do not exceed a safe transport speed.
- Use hazard flashers on tractor when transporting.
- Keep hydraulic system components in good condition before applying pressure to the system.

4.1 TO THE NEW OWNER OR OPERATOR

The Sprayflex Sprayers, Inc. Truflex Land Roller is a large seven section folding frame that is designed with large heavy rollers for levelling the soil and pushing rocks into the ground so they are flush with the surface.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the machine.

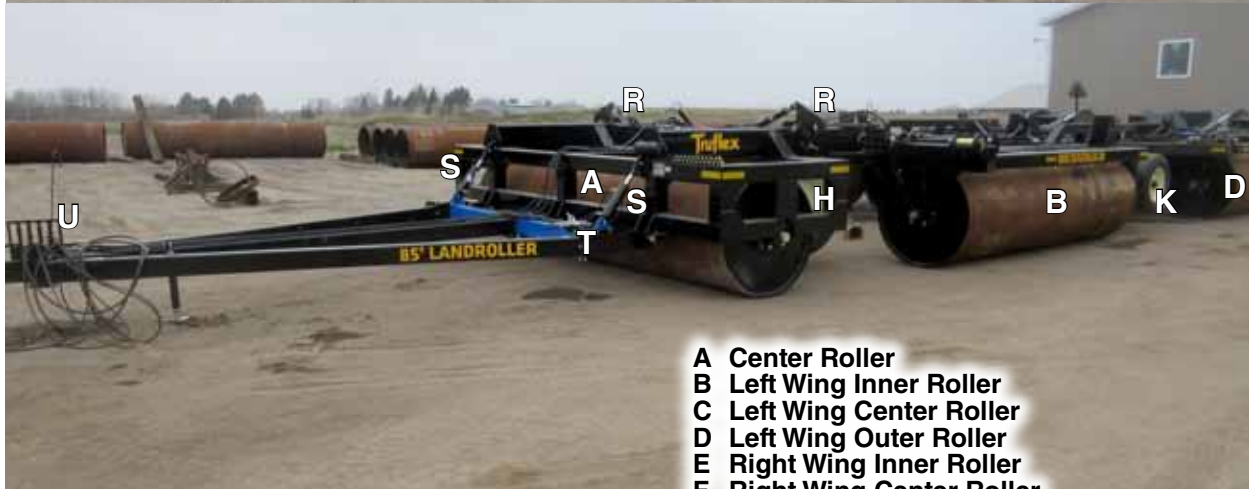
Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance program, your Roller will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The Sprayflex Sprayers, Inc. Truflex Land Roller consists of 5 or 7 large rollers mounted in a folding frame for levelling fields. Each wing folds behind the center roller for transport. Each wing latches to the center frame to lock in position for field operation. Valves in the hydraulic lines to the hitch position cylinders can be locked for service or transport.

Two sets of axles on the center roller frame and wheels on the ends of each of the middle rollers on each wing are used to transport the machine.

The steerable rear wheel is used to angle the rear wheels to extend the wings. All wheel frame assemblies are designed with a lock pin to hold them fully down (rollers up) for transport. All wheel pivots are designed with a lock pin to maintain wings trailing straight and prevent "shimmy" when transporting. A transport lock bar is positioned on the frame of the outer wings to connect them together for transport. A bung in each roller is used to add or drain ballasting fluid as required.



- A Center Roller
- B Left Wing Inner Roller
- C Left Wing Center Roller
- D Left Wing Outer Roller
- E Right Wing Inner Roller
- F Right Wing Center Roller
- G Right Wing Outer Roller
- H Center Roller Frame Wheels
- J Steerable Rear Wheels
- K Left Wing Inner Roller Wheel
- L Left Wing Center Roller Wheel
- M Right Wing Inner Roller Wheel
- N Right Wing Center Roller Wheel
- O Wheel Locks
- P Wheel Cylinder Transport Lock Bracket
- Q Wing Transport Lock Bracket
- R Front Frame Lock
- S Hitch Height Cylinder
- T Hitch Height Lock Valve
- U Hydraulic Coupler Bracket
- V Roller Bung
- W Frame Transport Lock Pins

FIG. 1 PRINCIPLE COMPONENTS



4.3 MACHINE BREAK-IN

Although there are no operational restrictions on the Truflex Land Roller when used for the first time, it is recommended that the following mechanical items be checked:

A. After operating for 1/2 hour:

1. Re-torque all wheel bolts.
2. Re-torque all fasteners and hardware.
3. Check that no hydraulic lines are being pinched or crimped. Re-route as required.
4. Inspect all hydraulic lines, hoses, fittings and couplers for leaks. Tighten any leaking fitting.
5. Check for and remove all entangled material.
6. Lubricate all grease fittings except bearings.

B. After 5 hours and 10 hours of operation:

1. Re-torque all wheel bolts, fasteners and hardware.
2. Inspect all hydraulic lines, hoses, fittings and couplers for leaks. Tighten any leaking fitting.
3. Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

4.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Sprayflex Sprayers, Inc. Truflex Land Roller requires that each operator reads and understands the using procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the Truflex Land Roller that this checklist is followed.

Before operating Truflex Land Roller and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outline in the Maintenance Section.
2. Use only a tractor of adequate power and weight to operate the Truflex Land Roller. See section 4.5 for recommendations.
3. Be sure the machine is properly attached to the tractor. Be sure that a mechanical retainer is installed through the drawbar pin and that the safety chain is used.
4. Inspect all hydraulic lines, hoses, fittings and couplers for leaks. Tighten any leaking fitting.
5. Check the tires and ensure that they are inflated to their specified pressure.
6. Remove all entangled material.

4.5 EQUIPMENT MATCHING

To insure the safe and reliable operation of the Land Roller, it is necessary to use a tractor with appropriate specifications. As a guideline, insure that these requirements are met:

1. Horsepower:

The Land Roller needs both power and mass to pull and stabilize the machine in all operating conditions. The lower levels of power are appropriate for hard, level terrain and the higher levels for soft and hilly land. Extra mass is also required to maintain stability when slowing down or travelling uphill.

2. Hydraulic System:

The tractor hydraulic system must be capable of 5 gpm (19 lpm) at 2800 psi (19,320 kPa).

The machine requires 4 hydraulic circuits for the following circuits:

- a. Transport wheels (green).
- b. Wing lock (red).
- c. Wing steer (blue).
- d. Floating hitch (yellow).

NOTE

Be sure the Floating Hitch circuit is coupled to a valve on the tractor with a "float" feature.

Table 1: Model vs. Tractor HP

Model	Recommended Tractor Horsepower
50	200
85	300



FIG. 2 HYDRAULIC SYSTEM

4.6 CONTROLS

Always review the "controls" section of the tractor operator's manual to be familiar with the location, settings and function of the controls. Be familiar with all controls before starting.

1. Hitch Position Lock Valves:

The cylinders that position the height of the hitch are equipped with a valve that can be used to lock the hitch at a specific height or open so the hitch can 'float' over uneven field conditions.

Move the handle at right angles to the line to lock and parallel to allow it to float. Always connect hoses to the tractor circuit that has the 'float' function.

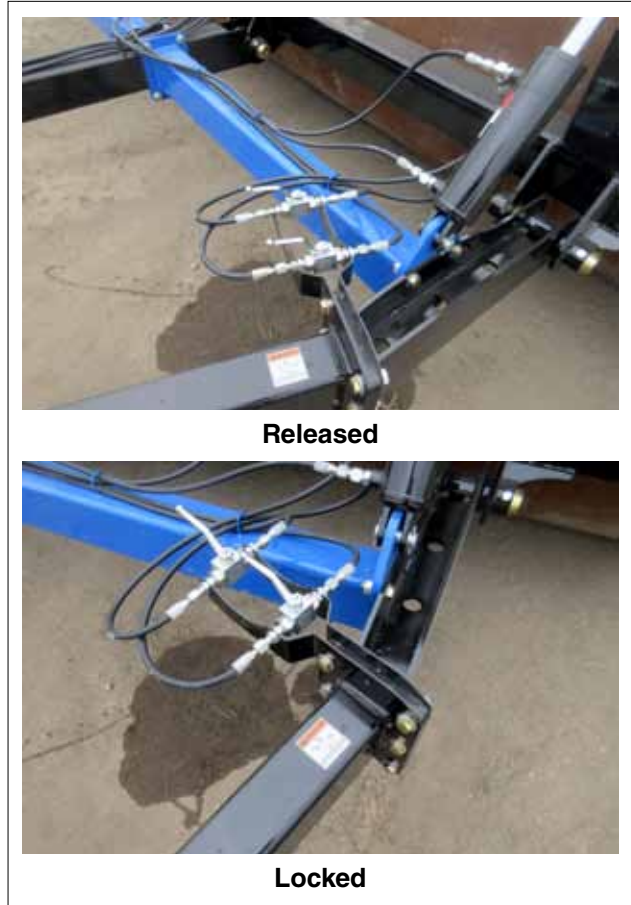
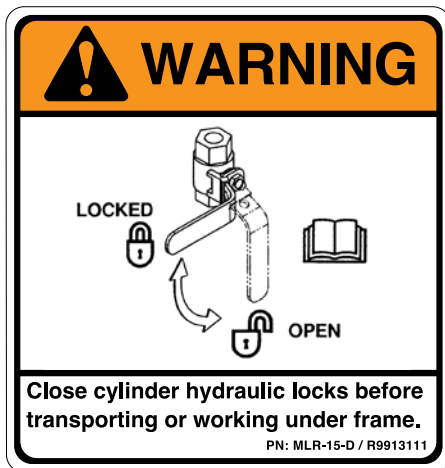


FIG. 3 HITCH POSITION LOCK VALVES

4.7 ATTACHING/UNHOOKING

Follow this procedure when attaching the Land Roller to a tractor:

1. Make sure that all bystanders, especially small children, are clear of the working area.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. Use the jack or floating hitch cylinders to lift the hitch.
4. Slowly back the tow vehicle until the clevis and hitch are aligned.



FIG. 4 ALIGNING

5. Install the drawbar pin and the retainer.

IMPORTANT

Use a drawbar pin with provisions for a mechanical retainer. Always engage the retainer.



FIG. 5 DRAWBAR PIN

6. Review hydraulic circuit colour schematic before attaching male ends to tractor.



FIG. 6 COLOUR SCHEMATIC

7. **Connect the Hydraulic System:**

- a. Use a clean cloth or paper towel to clean the dirt and build-up from around the couplers and male tips.

IMPORTANT

Attach the hitch height circuit to the tractor circuit with a detent if using the hitch cylinders to set the height of the hitch.

- b. Insert the male tips into the couplers. Make sure they are locked in place.
- c. Attach each of the remaining circuits.



- d. Route the hoses through the loop on the hitch stand. Be sure they do not drop to the ground or get pinched when turning. Provide sufficient slack for turning.



Circuit 1



Circuit 2



Connected

FIG. 7 HYDRAULIC HOSES

8. Connect the wiring harness to the tractor if transporting on a public road. Be sure to secure it to the hitch and provide sufficient slack for turning.



FIG. 8 WIRING HARNESS

9. **Safety Chain:**
Attach the safety chain around the drawbar cage to prevent unexpected separation.



FIG. 9 SAFETY CHAIN

10. Raise the jack. Pull out the pin, rotate 90° and place jack in its stowed position. Install the pin.
11. Lower jack and reverse the above procedures when unhooking from tractor.

NOTE

Place hydraulic hose tips into hose storage holder and wiring harness plug into its storage cup when disconnected.



FIG. 10 JACK

4.8 FIELD OPERATION



OPERATING SAFETY

- Read and understand Operator's Manual before using. Review safety instructions annually.
- Place all controls in neutral, stop tractor engine, remove ignition key, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging implement.
- Do not allow riders.
- Securely attach to towing unit using a hardened pin with a retainer and an auxiliary attaching device.
- Be sure all guards and locks are in place before starting.
- Keep hands, feet, hair and clothing away from moving parts.
- Be sure SMV, lights and reflectors are visible before transporting.
- Install wheel frame and tail wheel lock pins and frame lock pins and close valves in hydraulic lines before transporting or working under frame.
- Do not exceed a safe transport speed.
- Use hazard flashers on tractor when transporting.
- Keep hydraulic system components in good condition before applying pressure to the system.

Although the Truflex Land Roller is easy to use, each operator should review this section to familiarize himself with the detailed safety and operating procedures. When using this machine, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Attach the machine to the tractor (See section 4.6).
3. Review and follow the Pre-Operation Checklist (see Section 4.4).
4. Check the unit to be sure it is level and set.
5. Transport to the working area.
6. Convert to field position (See section 4.8).
7. **Starting:**
With the tractor engine at approximately 1/3 throttle position, release the clutch and move forward. Increase throttle position until desired engine RPM is reached.
8. **Stopping:**
Reduce engine RPM and depress clutch to stop machine.



FIG. 11 STARTING / STOPPING

9. **Floating Hitch:**

The hitch is designed with 2 cylinders to raise and lower the hitch as required. The system is also equipped with shut-off valves in the hydraulic lines to hold the hitch in position. Connect the hoses to the tractor hydraulic circuit with the float feature. This floating hitch feature allows the hitch and frame to follow ground contours as the machine travels across the field.

To operate:

- a. Connect the hydraulic lines to the tractor hydraulic circuit with the float feature.
- b. Move the control lever into its "float" detent when operating.

10. **Roller Weight:**

Although rollers are hollow and equipped with a bung, it is not recommended that water be added to the roller to increase machine weight for most applications. Additional weight can overpack the ground and effect crop emergence.

In addition, the axle assembly and frame are not designed to lift and carry more weight than the base machine. **Always remove the fluid from the rollers before folding the frame and transporting.**

11. **Ballasting:**

In certain applications, ballasting or adding weight to the rollers can be recommended. These applications include but are not limited to forage crops, pasture and grazing land. The extra weight is required to push over the plant material and contact the uneven ground surface features.

Normally water is used for ballast. Move the machine and bring the bung to the top of the roller. Remove bung and add water. Generally filling 1/4 full provides sufficient extra weight for most applications. Install and tighten the bung.

To drain the ballast, remove bung and move machine to bring bung to the bottom of the roller. Allow water to drain before moving machine to bring bung to top again. Install and tighten bung.

IMPORTANT

Do not use wheels to lift rollers or transport machine when ballasted.

12. **Soil Moisture:**

It is not recommended that the machine be used to roll a field if the soil sticks together or adheres to the rollers. Wet conditions can cause the soil to stick to the rollers or form a crust on the surface of the field that will prevent plant emergence. Wait until the surface is dry before rolling.



Cylinders



Shut-Off Valves (Float)

FIG. 12 HITCH



Roller Bung



Transporting

FIG. 13 WEIGHT

13. Pintle Hitch:

The Land Roller is designed with a pintle hitch from the factory that works well with a clevis-type hitch on the tractor.

An optional clevis hitch attachment is available that mounts to the bottom of the hitch and allows the machine to be attached to a tractor with a straight hitch.

Be sure to match the machine and tractor hitches before attaching to the tractor and moving the machine.

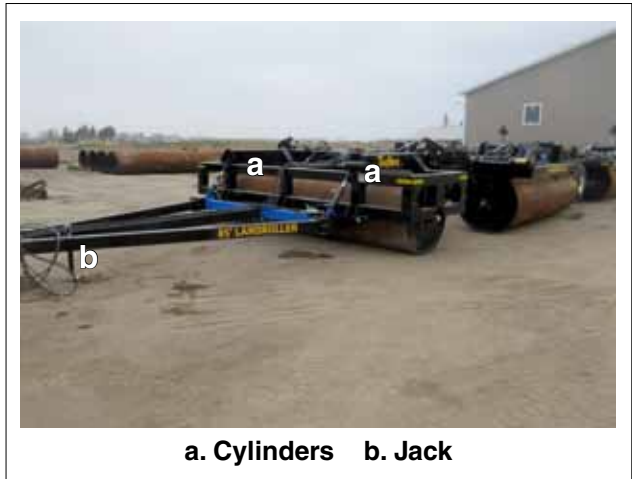


FIG. 14 PINTLE HITCH

14. Hitch Height:

The height of the hitch is controlled and set by the 2 cylinders on the front of the hitch frame. Also connect the cylinders into the tractor circuit with a float feature to allow the hitch to 'float' over field contours during operation.

Use the jack or the hydraulic cylinders (if the hydraulics are connected) to match the machine hitch height to the tractor hitch when hooking up.



a. Cylinders b. Jack

FIG. 15 HITCH HEIGHT

15. Travel Speed:

The operator must determine the appropriate speed for the terrain and field conditions but it is not recommended to travel faster than 6 mph (10 kph) in the field to prevent bouncing. Slow down for rough, hilly or rolling terrain. To be effective, the rollers must remain on the ground during operation. Select a speed that will keep the roller on ground.



FIG. 16 MACHINE

16. Turning (Cornering) Speed:

- a. It is recommended that the speed be reduced by half when approaching the end of the field or a corner. Remember, this is a very wide machine and the outer end will be moving very fast as the unit turns. By slowing to half speed or less, the machine will be more controllable.
- b. Also, if the terrain results in the turn taking place while going down-hill, it is mandatory to slow down well before the turn to ensure control is maintained and prevent pushing the tractor into a jackknife condition. This is particularly important in soft soil conditions.
- c. Slowing down before turning also allows the driver to better judge the distance the outer end of the roller is from the end of the field or corner. Misjudging the distance can result in hitting an obstacle at the end of the field. Do not take the chance.

17. Operating Hints:

- a. Be sure there is sufficient space and clearance to fully extend the outer rollers. Do not stand next to frame when extending to prevent pinching. Keep others away.
- b. When converting from field to transport configuration, release frame-fold anchor latch before lowering wheels / axles and pulling forward.
- c. Turn the rear wheel frame out before backing up to assist in extending the wings.
- d. When ballasting the machine, bring the water truck to the field, add water to the rollers, level and then drain water before leaving the field. The frame is not designed to carry the weight of a ballasted machine and will fail.
- e. Do not back up with the machine. It is designed to move forward only.



FIG. 17 TURNING



FIG. 18 WING FRAME ANCHOR LATCH



FIG. 19 REAR WHEELS OUT

4.9 CONVERTING FROM TRANSPORT TO FIELD CONFIGURATION

The roller is designed to be easily converted from transport to field configuration with minimal effort.

To convert from transport to field, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Move the machine into a large open area so there is sufficient space to extend the outer rollers.
3. Pull forward into the working area with the frame in transport configuration.
4. Place all tractor controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
5. Remove and stow the wing frame transport lock bar.



FIG. 20 WING FRAME TRANSPORT LOCK BAR

6. Remove rear wheel assembly transport lock pins from left wing:

a. Remove right side lock pin.



Right Side

b. Remove left side lock pin.



Left Side

c. Remove centering pin.



Centering Pin

d. Place pins in storage position.

7. Repeat with right wing wheel assembly.



Stowed

FIG. 21 LEFT WING REAR WHEEL TRANSPORT LOCK PINS

8. Remove the transport lock components from the inner and center wing roller wheel assemblies:
 - a. Remove the cylinder ram support bracket.
 - b. Remove the wheel assembly centering pin.
 - c. Place components in their stowed position.
9. Repeat with other wheel assemblies.



Bracket



Centering Pin



Stowed

FIG. 22 WHEEL ASSEMBLY LOCKS

10. Remove the transport lock brackets from the center roller wheel assembly:
 - a. Remove bracket over cylinder ram on wheel assembly.
 - b. Repeat with other cylinder.



Bracket (Typical)

- c. Stow brackets.



Stowed

FIG. 23 CENTER ROLLER WHEEL ASSEMBLY

11. Turn the tail wheels out to assist in spreading the wings to convert the roller to field configuration.



FIG. 24 TAIL WHEEL (TYPICAL)

12. Back up until entire frame is at right angles to direction of travel.



Starting



Backing



Backing



Backing More

FIG. 25 BACKING UP

13. Raise transport wheels when the frame is almost straight.



Almost Straight

14. Continue backing until the frame is straight and at right angles to the direction of travel.



Straight

FIG. 26 TRANSPORT WHEELS

15. Engage wing frame locks.



Locks



Engaged (Typical)

FIG. 27 WING FRAME LOCKS (TYPICAL)

16. Open hitch cylinder hydraulic valve locks so hitch can float.



FIG. 28 OPEN VALVE LOCK

17. Roller is ready for work.



FIG. 29 WORKING

4.10 CONVERTING FROM FIELD TO TRANSPORT CONFIGURATION

When converting from Field Configuration to Transport Configuration follow this procedure:



FIG. 30 FIELD CONFIGURATION

1. Close the hitch cylinders hydraulic lock valves.



FIG. 31 HITCH CYLINDER LOCK VALVES

2. Release wing frame lock brackets.



FIG. 32 WING FRAME LOCK (TYPICAL)

3. Drive forward slowly until the center roller is 10 to 15 feet ahead of the ends of outer wing rollers.



FIG. 33 DRIVE FORWARD

4. Lower wheel assemblies into their fully down position:



Lowering



Down

FIG. 34 LOWERING WHEEL ASSEMBLIES

5. Drive slowly forward to move wings into transport configuration.



Driving



Forward



Wings Close

FIG. 35 DRIVING FORWARD

6. Straighten out the steering wheels.
7. Raise the rollers to their highest position.



FIG. 36 STEERING WHEELS

8. Install the center wheel cylinder lock brackets around cylinder rams:
 - a. Brackets stowed.



Stowed

- b. Left wheel bracket.
 - c. Repeat with right wheel assembly.



Left Side - Installed

FIG. 37 CENTER WHEEL LOCK BRACKETS

9. Install transport lock components in inner and center roller wheel assemblies:



Stowed

a. Centering lock pin.



Centering Pin

b. Cylinder ram bracket.



Bracket

10. Repeat with other wheel assemblies.

FIG. 38 TRANSPORT LOCK COMPONENTS

11. Install steerable wheel transport lock pin components:

a. Install centering pin.

b. Install left side lock pin.

c. Install right side lock pin.

12. Repeat with right side wheel assembly.



Stowed



Centering Pin



Left Side



Right Side

FIG. 39 STEERABLE WHEEL TRANSPORT LOCKS

13. Install wing frame lock bar between ends of wing roller frame.



FIG. 40 WING FRAME LOCK BAR

14. The roller is ready to transport.



TRANSPORT SAFETY

- Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the roller in the field and/or on the road.
- Check with local authorities regarding roller transport on public roads. Obey all applicable laws and regulations.
- Always travel at a safe speed. Use caution when making corners or meeting traffic.
- Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and on-coming traffic.
- Install additional lights on the rear of the machine to safeguard against rear end collisions. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
- Be sure that the machine is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always attach a safety chain between the frame and the towing machine.
- Install wheel frame lock brackets and tail wheel pins and close valves in hydraulic lines before transporting or working under the frame.
- Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
- Do not exceed 20 mph (32 km/h). Reduce speed on rough roads and surfaces.
- Always use hazard warning flashers on tractor when transporting unless prohibited by law.
- Do not raise the frame or transport with water or other fluid in the rollers.

Sprayflex Sprayers, Inc. Rollers are designed to be easily and conveniently moved from field to field. When transporting, follow this procedure:

1. Be sure all bystanders are clear of the machine.
2. Be sure that the machine is hitched positively to the towing vehicle. Always attach the safety chain between the machine and the tractor and install a retainer through the drawbar pin.
3. Convert into transport configuration (Refer to section 4.10).

IMPORTANT

Do not raise the frame or transport with ballast in rollers.

4. Install rear wheel assembly transport lock pins:



Stowed

a. Install right side lock pin.



Right Side

b. Install left side lock pin.



Left Side

c. Install centering pin.

5. Repeat with right wing.



Centering Pin

FIG. 41 LEFT WING TRANSPORT LOCKS

6. Install transport lock components on inner and center wing roller wheel assemblies:



Stowed

- a. Install wheel assembly centering pin.



Centering Pin

- b. Install cylinder ram support bracket.



Bracket

FIG. 42 WING ROLLER LOCK COMPONENTS

8. Install transport lock brackets on the center roller wheel assemblies:
 - a. Install bracket over cylinder ram on wheel assembly.
 - b. Repeat with other wheel assembly.



FIG. 43 TRANSPORT LOCK COMPONENTS

9. Close hitch cylinder lock valve.



FIG. 44 HITCH CYLINDER LOCK VALVE

10. Keep to the right and yield right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
11. Make sure the SMV (Slow Moving Vehicle) emblem and all lights and reflectors that are required by the local highway and transport authorities are in place, clean and can be seen clearly by all overtaking and on-coming traffic.
12. It is not recommended that the machine be transported faster than 20 mph (32 kph). Table 2 gives the acceptable transport speed as the ratio of tractor weight to roller weight.
13. Do not allow riders on the machine or tractor.
14. During periods of limited visibility, use pilot vehicles and use extra lights on the machine.
15. Always use hazard flashers on the tractor when transporting unless prohibited by law.



FIG. 45 WING FRAME LOCK BAR

Table 2: Travel Speed vs. Weight Ratio

Road speed	Weight of fully equipped or loaded implement(s) relative to weight of tow vehicle
Up to 32 kph (20 mph)	1 to 1, or less
Up to 16 kph (10 mph)	2 to 1, or less
Do not tow	More than 2 to 1

4.12 STORAGE



OPERATING SAFETY

- Store the unit in an area away from human activity.
- Lower rollers to ground for storage.
- Do not permit children to play on or around the stored machine.
- Store the unit in a dry, level area. Support the frame with planks if required.

4.12.1 PLACING IN STORAGE

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

Follow this procedure before storing:

1. Remove all entangled material.
2. Thoroughly wash the machine with a pressure washer or water hose to remove all dirt, mud or debris.
3. Lubricate all grease points except the bearings. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
4. Inspect all hydraulic hoses, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or is separating from the crimped end of a fitting.
5. Touch up all paint nicks and scratches to prevent rusting.
6. Move the machine to its storage area.
7. Select an area that is dry, level and free of debris.
8. Place the machine into its transport configuration or rest the roller on the ground.
9. Place planks under the jack for added support if required.
10. Unhook the machine from the tractor (refer to section 4.7).



On Wheels



On Rollers

FIG. 46 STORED

11. Apply a rust inhibitor or heavy grease to the exposed hydraulic cylinder rams to prevent rusting. Remove inhibitor or grease before using machine again.

4.12.2 REMOVING FROM STORAGE

When removing this machine from storage, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Attach the machine to the tractor (see section 4.7).
3. **Check:**
 - a. Electrical harness connections and components.
 - b. All hardware. Tighten as required.
 - c. Tire pressure.
 - d. All hydraulic lines, fittings and connections. Tighten as required.
4. Lubricate all grease fittings except the bearings.
5. Clean rust inhibitor or grease from exposed cylinder ram ends.
6. Replace any worn or defective parts.
7. Go through the pre-operation checklist (See section 4.4) before using machine.

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Lower machine to the ground, place all controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Place stand or blocks under the frame before working beneath the machine or when changing tires.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
- Relieve pressure from the hydraulic circuit before servicing or disconnecting from tractor.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. **Grease:**
Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.
2. **Storing Lubricants:**
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.1.2 GREASING

Refer to section 5.1.1 for recommended grease.

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fittings if necessary.

IMPORTANT

The Roller is designed with sealed bearings on the rollers and bushings in all other locations. The bushings in the knuckles need to be greased every day to insure they provide the expected life. Only give the roller bearings one shot of grease every 100 hours.

5.1.3 SERVICING INTERVALS

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

10 Hours or Daily

1. Grease the roller hinge pivots and knuckles with 1 shot of grease.
 - a. Pivot.
 - b. Knuckle.

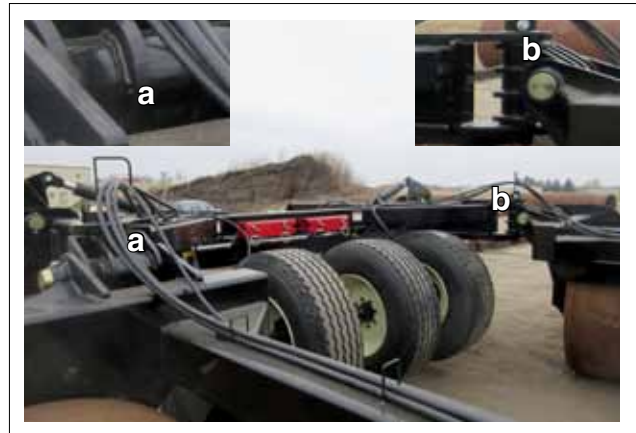


FIG. 47 PIVOT/KNUCKLE (TYPICAL)

2. Grease wheel pivot bushings.



FIG. 48 WHEEL PIVOT BUSHINGS

- Grease the wheel assembly pivot bushings with 1 shot of grease.

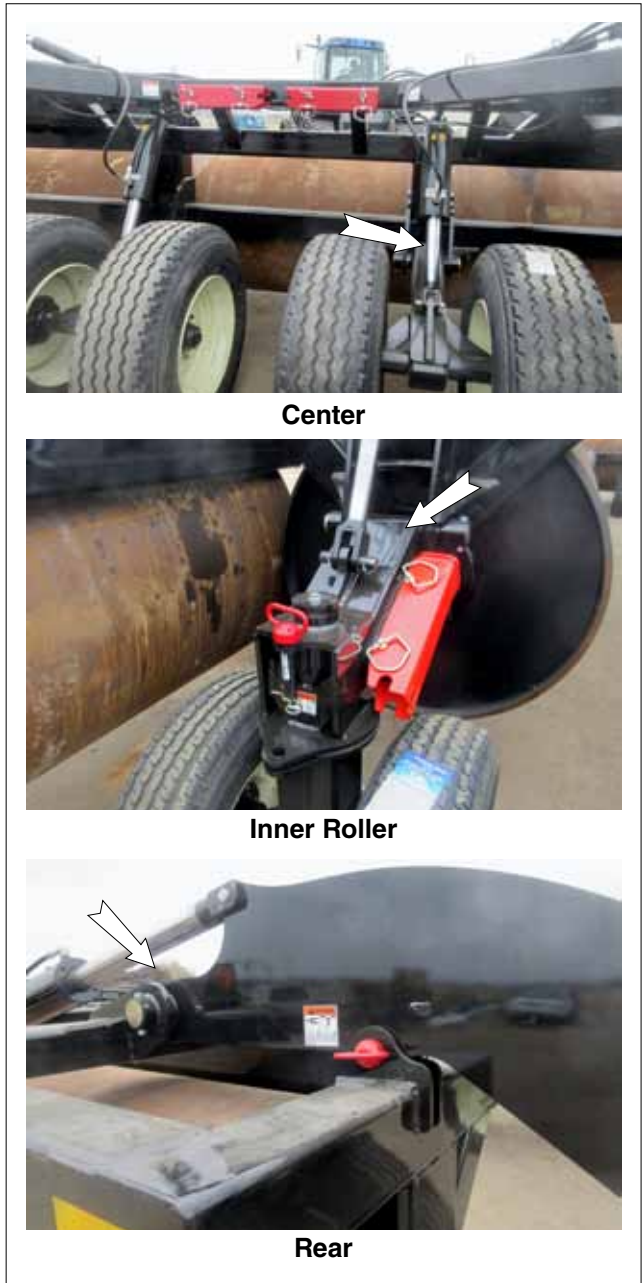


FIG. 49 WHEEL ASSEMBLY PIVOTS BUSHING (TYPICAL)

- Grease the wing lock pivot bushing with 1 shot of grease.



FIG. 50 WING LOCK PIVOT

5. Grease hitch pivot bushings (3 locations).



FIG. 51 HITCH BUSHING (TYPICAL)

100 Hours

1. Grease the each roller axle bearing with 1 shot of grease (2 locations each roller).



Tail Rollers



Wing Roller (Typical)



Center Roller - Left

FIG. 52 ROLLER AXLE BEARING (TYPICAL)

Annually

1. Repack wheel bearings.



Center



Wing (Typical)



Steerable

FIG. 53 WHEEL BEARINGS

2. Clean and wash machine.



FIG. 54 MACHINE (TYPICAL)

6 TROUBLE SHOOTING

The Sprayflex Sprayers, Inc. Truflex Land Roller has 5 or 7 large rollers connected through a hinged frame for rolling fields. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local distributor or dealer. Before you call, please have this Operator's Manual from your unit and serial number ready.

PROBLEM	CAUSE	SOLUTION
Settling of implement from raised position.	Leaking cylinder.	Replace cylinder seals.
Uneven levelling.	Wrong hitch frame angle.	Open valves in hitch cylinder circuit. Place hitch hydraulic circuit in detent.

7 SPECIFICATIONS

7.1 MECHANICAL

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

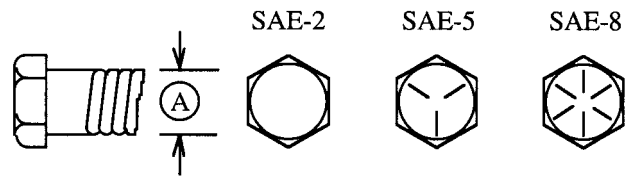
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

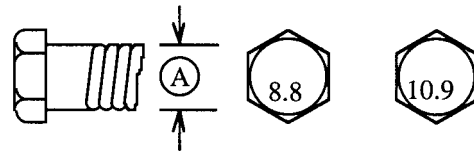
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

7.3 HYDRAULIC FITTING TORQUE

Tightening Flare Type Tube Fittings *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Value*		Recommended Turns To Tighten (After Finger Tightening)	
		(N.m)	(lb-ft)	(Flats)	(Turn)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

- The torque values shown are based on lubricated connections as in reassembly.

8 INDEX

I	PAGE
Index.....	63
Introduction.....	1

O	
Operation.....	19
Attaching/Unhooking.....	25
Controls	24
Convert Field - Transport Configuration....	39
Convert Transport - Field Configuration....	32
Field Operation	28
Machine Break-In	22
Machine Components.....	20
Pre-Operation Checklist.....	22
Storage	50
To the New Operator or Owner	19
Transporting.....	46

S	PAGE
Safety	3
Equipment Safety Guidelines	5
General Safety.....	4
Hydraulic Safety.....	9
Maintenance Safety	8
Operating Safety.....	8
Preparation	7
Safety Signs	6
Safety Training	6
Sign-Off Form	11
Storage Safety	10
Tire Safety.....	10
Transport Safety.....	9
Safety Sign Locations.....	13
Service and Maintenance	53
Specifications	61
Bolt Torque.....	62
Hydraulic Fitting Torque	63
Mechanical Specs	61

T	
Trouble Shooting.....	59



SPRAYFLEX SPRAYERS, INC.

PHONE: 218-844-5371 or

TOLL FREE: 1-855-777-3539

1128 B CORMORANT AVE.

DETROIT LAKES, MN 56501

Email: info@sprayflexsprayers.com

http://sprayflexsprayers.com/truflex_roller.php