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

Cover illustration may show optional equipment not supplied with standard unit.
# Table of Contents

## Important Safety Information
- Wear Protective Equipment ........................................... 5
- Handle Chemicals Properly ........................................... 6
- Safety Decals .......................................................... 8

## Introduction
- Description of Unit ................................................... 9
  - Intended Usage ..................................................... 9
  - Models Covered .................................................... 9
- Using This Manual .................................................... 9
  - Definitions ......................................................... 9
- Owner Assistance ..................................................... 9

## Preparation and Setup
- Tractor Requirements ................................................. 10
- Before You Start ..................................................... 10
  - Sprayer/Boom Assembly Instructions ......................... 10
  - 3-Point/Boom Assembly Instructions ......................... 14

## Operating Instructions
- Basic Sprayer Operating Procedures ............................... 15
- Parking ........................................................................ 15
- Transporting ............................................................ 17
- General Notes For Field Operation ................................. 18
- Operating Checklist ................................................... 18

## Adjustments
- Boom Height ............................................................ 19
- Nozzle Pressure ........................................................ 19
- Break-Away Pivot ...................................................... 19

## Troubleshooting
- Maintenance ............................................................. 20
  - Maintenance .......................................................... 21
  - Equipment Cleanup .................................................. 21
  - General Information ............................................... 21
- Storage ........................................................................ 21
- Lubrication ............................................................... 21
  - Swing Arm Pivot Joints .............................................. 21
  - Break-Away Boom Pivot ............................................ 22
  - Hinge Tube Pivot ...................................................... 22
  - Outer Fold Arm Pivot ................................................ 22

## Specifications and Capacities

## Appendix
- Torque Values Chart .................................................. 24
- Warranty ....................................................................... 25

---

© Copyright 1997 All rights Reserved

Great Plains Manufacturing, Inc. provides this publication “as is” without warranty of any kind, either expressed or implied. While every precaution has been taken in the preparation of this manual, Great Plains Manufacturing, Inc. assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Great Plains Manufacturing, Inc. reserves the right to revise and improve its products as it sees fit. This publication describes the state of this product at the time of its publication, and may not reflect the product in the future.

Great Plains Manufacturing, Incorporated Trademarks
The following are trademarks of Great Plains Mfg., Inc.: Application Systems, Ausherman, Land Pride, Great Plains
All other brands and product names are trademarks or registered trademarks of their respective holders.

*Printed in the United States of America.*

4/15/2003
Important Safety Information

Look for Safety Symbol
The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to 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 equipment.

Be Aware of Signal Words
Signal words designate a degree or level of hazard seriousness.

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

WARNING indicates a potentially hazardous situation which, 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 which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
Be Familiar with Safety Decals
- Read and understand “Safety Decals,” page 8, thoroughly.
- Read all instructions noted on the decals.

Keep Riders Off Machinery
Riders obstruct the operator’s view. Riders could be struck by foreign objects or thrown from the machine.
- Never allow children to operate equipment.
- Keep all bystanders away from machine during operation.

Shutdown and Storage
- Fold the Manual Fold Sprayer Boom, put tractor in park, turn off engine, and remove the key.
- Secure Manual Fold Sprayer Boom using blocks and supports provided.
- Detach and store Manual Fold Sprayer Boom in an area where children normally do not play.

Use Safety Lights and Devices
Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
- Use flashing warning lights and turn signals whenever driving on public roads.
- Use lights and devices provided with implement.

Use A Safety Chain
- Use a safety chain to help control drawn machinery should it separate from tractor drawbar.
- Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.
- Attach chain to tractor drawbar support or other specified anchor location. Allow only enough slack in chain to permit turning.
- Replace chain if any links or end fittings are broken, stretched or damaged.
- Do not use safety chain for towing.
Transport Machinery Safely

Maximum transport speed for implement is 20 mph. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

▲ Do not exceed 20 mph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
▲ Comply with state and local laws.
▲ Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.
▲ Carry reflectors or flags to mark Manual Fold Sprayer Boom in case of breakdown on the road.
▲ Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “Specifications and Capacities,” page 23.
▲ Do not fold or unfold the Manual Fold Sprayer Boom while the tractor is moving.

Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury.

▲ Avoid the hazard by relieving pressure before disconnecting hydraulic lines.
▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
▲ If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
Practice Safe Maintenance

▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.

▲ Work in a clean, dry area.

▲ Fold the Manual Fold Sprayer Boom, put tractor in park, turn off engine, and remove key before performing maintenance.

▲ Make sure all moving parts have stopped and all system pressure is relieved.

▲ Allow Manual Fold Sprayer Boom to cool completely.

▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on Manual Fold Sprayer Boom.

▲ Inspect all parts. Make sure parts are in good condition and installed properly.

▲ Remove buildup of grease, oil or debris.

▲ Remove all tools and unused parts from Manual Fold Sprayer Boom before operation.

Prepare for Emergencies

▲ Be prepared if a fire starts.

▲ Keep a first aid kit and fire extinguisher handy.

▲ Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.

Tire Safety

Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

▲ When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.

▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.
Wear Protective Equipment

Great Plains advises all users of chemical pesticides or herbicides to use the following personal safety equipment.

▲ Waterproof, wide-brimmed hat
▲ Waterproof apron.
▲ Face shield, goggles or full face respirator.
▲ Goggles with side shields or a full face respirator is required if handling or applying dusts, wettable powders, or granules or if being exposed to spray mist.
▲ Cartridge-type respirator approved for pesticide vapors unless label specifies another type of respirator.
▲ Waterproof, unlined gloves. Neoprene gloves are recommended.
▲ Cloth coveralls/outer clothing changed daily; waterproof items if there is a chance of becoming wet with spray
▲ Waterproof boots or foot coverings
▲ Do not wear contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal clothing must be laundered separately from household articles.
▲ Clothing contaminated with certain pesticides must be destroyed according to state and local regulations. Read chemical label for specific instructions.
▲ Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.
▲ Prolonged exposure to loud noise can cause hearing impairment or loss. Wear suitable hearing protection such as earmuffs or earplugs.
▲ Avoid wearing radio headphones while operating machinery. Operating equipment safely requires the full attention of the operator.
Handle Chemicals Properly

▲ Read and follow chemical manufacturer’s instructions.

▲ Wear protective clothing.

▲ Handle all chemicals with care.

▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

▲ Inhaling smoke from any type of chemical fire is a serious health hazard.

▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.

▲ Before adding chemical to the tank, make sure tank is at least half full. Do not pour concentrate into an empty tank.

▲ Never leave fill hose attached to the sprayer after filling tank. Chemicals in tank can siphon out of tank and contaminate freshwater source.

▲ Always keep hand-wash tank filled with clean water and have soap available in case of an emergency. Immediately and thoroughly flush any area of the body that is contaminated by chemicals.

▲ Do not touch sprayer components with mouth or lips.

▲ If chemical is swallowed, carefully follow the chemical manufacturer’s recommendations and consult with a doctor.

▲ If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.

▲ Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.

▲ Wash hands and face before eating after working with chemicals. Shower as soon as spraying is completed for the day.

▲ Spray only with acceptable wind conditions. Wind speed must be below 5 mph. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.

▲ Never wash out the sprayer tank within 100 feet of any freshwater source or in a car wash.

▲ Rinse out the tank. Spray rinse water on last field sprayed.
Safety At All Times

Thoroughly read and understand the instructions in this manual before operation. Read all instructions noted on the safety decals.

▲ Be familiar with all Manual Fold Sprayer Boom functions.
▲ Operate machinery from the driver’s seat only.
▲ Do not leave Manual Fold Sprayer Boom unattended with tractor engine running.
▲ Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.
▲ Do not stand between the tractor and Manual Fold Sprayer Boom during hitching.
▲ Keep hands, feet and clothing away from power-driven parts.
▲ Wear snug-fitting clothing to avoid entanglement with moving parts.
▲ Watch out for wires, trees, etc., when folding and raising Manual Fold Sprayer Boom. Make sure all persons are clear of working area.
▲ Do not turn tractor too tightly, causing Manual Fold Sprayer Boom to ride up on wheels. This could cause personal injury or equipment damage.
▲ Use only water without pesticides added to calibrate the sprayer. Do not exceed the calibrated sprayer speed and pressure when operating.
▲ When using a PTO pump, be sure that PTO shield is in place on the tractor, PTO coupler bolts are torqued to the correct specification, and torque bar is properly chained to tractor drawbar.
▲ Spray with the boom in the unfolded position only.
▲ The boom has many pinch points during field operation and folding. Keep all bystanders away.
Safety Decals

Your implement comes equipped with all safety decals in place. They were designed to help you safely operate your implement.

▲ Read and follow decal directions.
▲ Keep all safety decals clean and legible.
▲ Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.

▲ When ordering new parts or components, also request corresponding safety decals.
▲ To install new decals:

1. Clean the area where the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

818-055C
Slow Moving Vehicle Label
Middle rear of center section, one total

818-335C
Red Reflector

818-367C
Danger Power Line Hazard
Introduction

Great Plains welcomes you to its growing family of new product owners. This Manual Fold Sprayer Boom has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance and safe operating practices will help you get years of satisfactory use from the machine.

Description of Unit
The MF30, MF40 and MF45 sprayer booms are capable of spraying at either 30’, 40’ or 45’ depending on your model.

Intended Usage
Use these booms as part of a pressurized sprayer system to apply liquid pesticides, herbicides or fertilizers to production-agriculture crops only. Do not modify sprayer for use with attachments other than those approved by Great Plains.

Models Covered
MF30, MF40 and MF45

Using This Manual
This manual will familiarize you with safety, assembly, operation, adjustments, troubleshooting and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

The information in this manual is current at printing. Some parts may change to assure top performance.

Definitions
The following terms are used throughout this manual.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated.

Owner Assistance
If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts and equipment specially designed for Manual Fold Sprayer Boom products.

Your machine’s parts were specially designed and should only be replaced with Manual Fold Sprayer Boom parts. Always use the serial and model number when ordering parts from your Great Plains dealer.

Record your sprayer model and serial number here for quick reference:

Model Number: __________________________
Serial Number: __________________________

Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.
3. For further assistance write to:

Product Support
Great Plains Mfg. Inc., Service Department
PO Box 5060
Salina, KS 67402-5060

IMPORTANT: A crucial point of information related to the preceding topic. For safe and correct operation, read and follow the directions provided before continuing.

NOTE: Useful information related to the preceding topic.
Preparation and Setup

Tractor Requirements
When using a 3-point boom, the tractor must have a standard Category II, Category II Quick Hitch, or a Category III-narrow 3-point.

Before You Start
Read and understand the owners manual for your sprayer boom. A basic understanding of how the boom works will aid in the assembly and set up of your sprayer boom.

Before attempting to assemble the boom, use the following as a checklist. Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

1. Check for all sprayer boom components and hardware. The loose components used to fasten the booms are packaged in a box with a packing list and are shipped with the crate.
2. If a bolt, pin or other component has been removed, or if you are unsure about where it is used, refer to the parts section of this manual to identify it.
3. Have a fork lift or loader present to lift the boom wings when assembling the sprayer boom.
4. Two people are required to assemble boom.

Sprayer/Boom Assembly Instructions
Refer to Figure 1

1. Position the sprayer trailer in a clear, level area with the jack placed in the park position. Adjust the jack so that the sprayer tank is level and the elevator mast is straight up and down.
2. Adjust the elevator located on the pull-type sprayer to the lowest position. Refer to the sprayer Owner’s Manual for elevator adjustment instructions.
3. Install the center section of the boom (16) with the hardware (17) provided if installed on a 3-Point boom, a TA500, or a TA520 sprayer. If the boom is installed on another sprayer, install the hardware with the following modifications:
   - If the boom is attached to a 3P200/300 3-Point sprayer, the 501-027S accessory kit must be purchased. Install the spacer tube (4) as illustrated in Figure 2 using the bolts (5), nuts (7), and flat washers (6).
   - When mounting the boom on a TS sprayer, refer to Figure 4. To mount the boom on the TS sprayer, the 506-129V kit must be purchased. Assemble the center section of the boom onto the elevator with the spacer blocks (1) in between.
4. Insert the level-float lock pin (21) into it’s lock position, as shown, if not already done.
5. Before installing a boom wing (14), make sure the outer boom frame is folded over and fastened to the inner boom frame with the transport pin or a cable tie as shown (13). With the outer boom frame folded, it is easier to maneuver the boom wing during assembly.
6. To assemble a boom wing, hook the round tubing of the boom wing (14) into the upper hinge brackets of the center boom section. Use a forklift or loader to lift the weight of the boom wing.
7. Assemble the pivot rod (4) and nut (3) through the hinge components shown. Assemble the washer (8) so that it’s smaller diameter fits down into the spring (7). With a 1/2 inch open end wrench, hold the top of the pivot rod while tightening the top (9) and bottom (3) nuts to compress the spring. Tighten the nuts evenly so they have approximately the same thread depth on the pivot rod, and the dimension from the top of the round pivot bar to the flat washer above the spring is 5 3/8 of an inch. Repeat steps 5, 6, and 7 for the other boom wing.
8. With the boom wings unfolded, assemble the 1/2" x 1 3/4" long bolts, flat washers, and flange nuts (5). Before tightening, align outer boom sections with the center section of the boom by rotating plate (6). Torque the nuts to 85 foot-pounds.
9. Install and center the nozzle bar (18) to the center section of the boom with the 5/16" x 3" long bolts and flange nuts (19). Torque the nuts to 18 foot-pounds.
10. Attach the feed-line hoses (15) from the center frame nozzle bar to the nozzle(s) on the boom wings (14) with the hose clamps provided.
11. Remove cap plugs on solenoid hose barbs (located on the sprayer) and attach boom feed-line hoses (10, 11 and 12) from the three separate boom sections to the electric solenoids with the hose clamps provided. Make sure that the left boom feed-line hose is connected to the front hose solenoid (front being toward the hitch). The left hose and solenoid are marked with a red tape. The center boom feed-line hose (11) is connected to the middle solenoid. The middle hose and solenoid are marked with a yellow tape. The right boom feed-line hose (12) is connected to the back solenoid. The right hose and solenoid are marked with a green tape. If the boom is going to be mounted on the tandem axle sprayer that has front folding booms, route the boom hoses in front of the boom break-away pivot (4) through the hose supports located on the front of the boom center section and through the supports under the sprayer trailer.
If the boom is going to be mounted on a Single Axle or Trailer Sprayer with rear folding booms, route the boom hoses in back of the boom break-away pivot, through the hose supports located on the front of the boom center section, and through the supports under the sprayer.

12. If the boom is being attached to a Great Plains TA500 or TA520 Tandem Axle Sprayer, adjust the boom fold latches (2) to the desired boom height and fold the inner boom sections forward. If the fold latch interferes with a nozzle on the folded boom, use the extension brackets (1) to reposition the boom fold latches. Refer to Field Adjustments in the Tandem Axle Sprayer Owner’s Manual for more information. Fasten the fold latch on the tandem axle sprayer to secure the boom.

13. Fold and unfold the boom wings to check any pinch points where the hose may become damaged. Unfold the boom, remove the boom level-float lock pin (21) and rock the boom to check any pinch points around the swing-bars (20). Use the cable-ties included to fasten hoses in such a way as to prevent hose damage.

14. When attaching the manual fold boom to a 3P200/300 3-Point Sprayer, the 501-027S accessory kit must be purchased. Refer to Figure 2 for the assembly of the fold brackets. Attach the boom supports (3) to the sprayer frame using the u-bolts (2) and nuts (1) provided. Center the boom supports (3) on the sprayer frame.

15. When assembling the manual fold boom to 200/300 3-Point Sprayer, you need to have a 501-027S 3-Point Tank Sprayer manual fold boom mount. Attach the boom supports (3) with the 1/2" u-bolts (2) and 1/2" flange nuts (1). Attach the with spacer blocks (4) and 1/2" x 4" bolts (5), 1/2" washers (6) and 1/2" flange nuts (7). Refer to Figure 2.

16. Check to see all nuts are tightened. See Torque Values Chart for Common Bolt Sizes in Appendix for ad-
ditional torque specifications. Check to see that all hose clamps are tight.

17. Fill the sprayer tank 1/4 full of water. Hook up the pump to a tractor as described in the Sprayer Owner's Manual. Operate the pump with the control box boom switches off and the agitation wide open. If unit is equipped with solenoid throttling valves open throttling valves full open. With the pump running, turn on all the boom switches and flush out the boom lines before assembling the nozzles. Allow water to flow out of all nozzles at least ten seconds to ensure all foreign matter is removed from the plumbing.

18. Assemble the nozzles onto the nozzle check valves and operate each section. If storing unit, refer to Storage in the Sprayer Owner's Manual.

Figure 2
Fold Bracket Assembly Illustration (3-Point)

Figure 3
Fold Bracket Assembly Illustration (Single Axle)
Figure 4
Fold Bracket Assembly Illustration (Trailer Sprayer)

Figure 5
Hitch Pin Configuration
3-Point/Boom Assembly Instructions

1. Refer to Figure 5 on page 13 to determine the pin and spacer configuration needed for your tractor. Mount the 3-point attachment (1) to a tractor with the pins provided. Make sure that the 3-point attachment is level so that after the boom is assembled it will not hit the tractor when the 3-point is raised.

2. Follow Step 3 through Step 10 under Sprayer/Boom Assembly Instructions beginning on page 10 to complete the assembly of the boom.

Refer to Figure 6

3. Attach the fold bracket (4) to the 3-point attachment (1) with the four 1/2" x 4" long bolts (5), 1/2" flange nuts (7), and flat washers (6). Assemble the coupler bracket (8) as shown when you assemble the fold bracket.

4. Fasten the male fluid connectors (2) to the coupler bracket (8) with the coupler clamps (9). Use the 5/16" x 3/4" long bolts and 5/16" flange nuts to secure the coupler clamps.

5. Attach boom line hoses from the three separate boom sections to the cam-lock male fluid connectors (2) with the hose clamps provided. Make sure to route the boom hoses behind the boom break away pivot (Figure 1 (4)) so that when the boom folds to the back, the hoses will not stretch. You will need to route the hoses from your tractor to the cam-lock female fluid connectors (3), which fasten into the stationary male fluid connectors mounted on the 3-point frame.

6. If the 3-point boom is being mounted on a tractor with Great Plains side-mount tanks, remove the cap plugs on the solenoid hose bars and route the left boom feed-line hose from the corresponding female fluid connector to the right solenoid (right being as you sit in the tractor) marked with red tape. Connect the center boom feed-line hose from the corresponding female fluid connector to the middle solenoid marked with yellow tape. Now connect the right feed-line hose from the corresponding female fluid connector to the left solenoid marked with green tape. Take care when routing the boom hoses to the tractor to ensure there will be no kinking, drooping, hanging below the tractor, or rubbing on the tractor frame when in operation. Use cable ties to fasten and protect the hose.

7. Fold and unfold the boom wings and check for any pinch points where the hose may become damaged. Unfold the boom, remove the boom level float lock pin (Figure 1 (21)) and rock the boom to check any pinch points around the swing bars (Figure 1 (20)). Use the included cable ties to fasten the hoses in such a way to prevent hose damage.

8. Check to see all nuts are tightened. See Torque Values Chart for Common Bolt Sizes in Appendix for additional torque specifications. Check to see that all hose clamps are tight.

Fill the sprayer tank 1/4 full of water. Hook up the pump to a tractor and operate the pump with the control box boom switches off and the agitation wide open. If unit is equipped with solenoid throttling valves open throttling valves full open. With the pump running, turn on all the boom switches and flush out the boom lines before assembling the nozzles. Allow water to flow out of all nozzles at least ten seconds to ensure all foreign matter is removed from the plumbing.

Assemble fold bracket like shown in Figure 2 on Page 12.
Basic Sprayer
Operating Procedures

1. Make sure to read the label on the chemical compound that is to be applied. It is the law.

2. Consider how the chemical will be stored and how you will dispose of the chemical, according to the chemical label.

3. When calibrating, filling the tank, or working around chemicals, wear protective clothing that covers the body. Refer to Wear Protective Equipment on page 5. Have soap and clean water available to wash any exposed areas. Never open a container with your bare hands.

4. When filling the sprayer, it is better to mix the chemical in the field where it is to be applied. Position the sprayer 100 feet from any well or other water source before mixing chemical.

5. By law, you must repeat the rinsing of the chemical container 3 times. The container should then be punctured to prevent future use. An alternative is to jet-rinse or pressure rinse the container.

6. Check the condition of hoses and connections frequently. Release system pressure before working on the sprayer by shutting off the pump and flipping the individual boom section switches on the control box. Always wear rubber gloves when making repairs or adjustments.

7. Apply spray when the wind is 5 m.p.h. or less. Minimize drift by using nozzle tips with the largest practical openings and by operating the sprayer boom at the lowest practical height and lowest practical pressure. Refer to Figure 7

8. After unfolding the boom, remove the level float pin and place it in the storage position.


10. If possible work crosswise to the wind, starting from the downwind side of the field. Do this so you won’t ever be heading directly into chemical fumes.

11. Take note of adjoining crops, houses, gardens, people, etc.

12. When you are finished spraying, empty the tank and flush the sprayer with water, including the pump, the nozzles and the by-pass line from the solenoids. Properly store the chemical emptied from the tank or dispose of it by the recommendations on its label.

13. When turning at the end of a field, make sure you are correct on the rows so that the boom will not overlap on crop previously sprayed.

Parking

The following list should be followed when you want to unhook your boom.

1. Flush the boom out with antifreeze (Great Plains strongly recommends the use of recreational vehicle antifreeze) to prevent damage to components when a freeze occurs. Refer to Figure 8

2. Lock the level float pin and fold the booms.
3. Maneuver the tractor where the boom will be parked. The storage position for the boom should be in a flat, level area where wind cannot blow it over and preferably where it is sheltered from direct sunlight and rain.

Refer to Figure 9

4. Assemble the parking stands as illustrated. If you are parking a 3-Point boom, as a safety precaution, you have to fold out the boom wings before these stands can be assembled.

Refer to Figure 10

5. If you are parking a 3-Point sprayer, assemble the parking stand on the back of the 3-Point Sprayer as illustrated.

6. If the ground is soft, place a board or plate under the support to widen the ground contact area.

7. Lower the 3-Point on the tractor and bring the boom to rest on the parking stands.

8. Unhook the PTO pump or unplug hydraulic lines from the hydraulic pump, which ever is applicable.

9. Unhook the cam-lock connectors from the boom as well as the hydraulic hoses and position them so they are resting on the frame of the boom.

10. Remove the 3-Point pins from the tractor and pull the tractor away from the boom.

NOTE: If the sprayer is being hitched up and operated for the first time, it is important to follow the safety, set up, adjustment, and operating information in the front of this manual.

Refer to 3-Point/Boom Assembly Instructions, on page 14, when you are preparing to hitch the sprayer to the tractor.
Transporting
For transporting a boom mounted on a tandem axle sprayer.

Refer to Figure 11
1. Park your sprayer in an open area where you will not hit power lines, buildings, etc. when the boom is folded.
2. Secure the level-float pin in the lock position, Figure 8, page 15.
3. Fold the outer boom wings over and fasten the clevis pin (1) into the fold post on both wings of the sprayer.
4. Fold the boom wings forward and position the boom wing on the fold latch. If the fold latch happens to be positioned where a hose fitting or nozzle is, you will need to reposition the fold latch with the fold latch extension (3). Unbolt the fold latch extension and use it to reposition the fold latch. Discard the fold latch extension if not needed.
5. Position the fold latch lever (2) in the down position to secure the boom for transport.

For transporting a 3-point boom mounted on a single axle sprayer.

Refer to Figure 12
1. Fold the left boom wing up and fasten the corresponding lynch pin (1). Secure the safety wire on the lynch pin.
2. Fold the right boom wing and fasten the corresponding lynch pin (1). Secure the safety wire on this lynch pin as well.
3. Do not exceed 20 mph transporting your sprayer.
4. Do not transport sprayer while filled with chemical mixture. Never allow riders when transporting the sprayer.
5. When transporting your sprayer, be sure to watch the height clearances of your folded boom to prevent damage to the boom and possible injury.

⚠️ DANGER
Contact with electrical power lines can cause death by electrocution.
General Notes For Field Operation

1. Securely hitch the sprayer to the tractor or the 3-point boom to the tractor.

2. Lubricate the sprayer boom as needed. Refer to Lubrication on page 21.

3. When transporting the sprayer, do not exceed 20 mph and do not transport with chemical in the tank. Fasten the level-float pin in the lock position before folding the booms. Before transporting fasten the sprayer fold latch if mounted on a tandem axle, see Figure 3-5 on page 12. If the boom is mounted on a single axle or a 3-point, secure the transport lynch pins before transporting. See Figure 12, page 17.

4. Never allow anyone to ride on the sprayer.

5. Calibrate the sprayer with water only, not chemical and water. Refer to the calibration procedures in the Application Guide.

6. Remove the level-float pin from the lock position, after being transported and unfolded, to the storage position. See Figure 7, page 15.

7. Adjust the boom height required for the nozzles and spacing to be used. (Refer to nozzle tables in the Sprayer Manual or the Application Guide.)

8. Check the nozzles for streaks and non-uniformity. If cleaning the nozzles, wear Personal Safety Equipment and use a nozzle brush. Do not blow on the nozzle or place your lips on the nozzle.

9. Safely and carefully add the chemical to the sprayer tank. Always wear "Personal Safety Equipment" as shown on page 5. By law, you must repeat the rinsing of the chemical container three times. The container should then be punctured to prevent future use. An alternative is to jet-rinse or pressure rinse the container. When adding chemical, remain at least 100 feet from any water well or fresh water source. Follow chemical manufacturer's recommendations for safe handling of chemicals.

10. Check the sprayer initially and periodically for loose bolts, pins and hose clamps. Check the hoses, pumps, valves and fittings for leaks.

Operating Checklist

<table>
<thead>
<tr>
<th>Check</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>“Safety Rules” in this Manual</td>
<td></td>
</tr>
<tr>
<td>The tractor's brakes to make sure they operate properly.</td>
<td></td>
</tr>
<tr>
<td>Lubricate the boom as needed.</td>
<td></td>
</tr>
<tr>
<td>Booms must be locked in place before transporting.</td>
<td></td>
</tr>
<tr>
<td>Use safety equipment as listed on page 1.</td>
<td></td>
</tr>
<tr>
<td>Fill with water and calibrate sprayer BEFORE adding chemical to the tank.</td>
<td></td>
</tr>
<tr>
<td>Check hoses, pumps and valves for any leaks.</td>
<td></td>
</tr>
<tr>
<td>Check nozzles for streaks and non-uniformity.</td>
<td></td>
</tr>
<tr>
<td>Check sprayer initially and periodically for loose bolts, pins and chains.</td>
<td></td>
</tr>
</tbody>
</table>
Adjustments

Boom Height
After calibrating your sprayer for the specific nozzle you will use at a desired pressure, and tractor speed, the main field adjustment is the boom height. Refer to Elevator Option in the Sprayer Owner's Manual. Depending on which type of nozzle you are using, you need to set your boom height so that you achieve the correct overlap for that specific nozzle. If the crop canopy is taller in some fields than others, you will need to adjust the boom height accordingly. Refer to the nozzle charts located in the Sprayer Owner's Manual or the Application Guide to determine the height of the boom needed.

EXAMPLE: A 2.5 Meterconic nozzle at 20 inch spacing is being used. From the nozzle chart (refer to the Sprayer Owner's Manual or the Application Guide), a height of 19 to 21 inches above the top of the crop is required. If the crop is 6 inches off the ground, the boom height should be set to 25 to 27 inches off the ground.

After setting your boom height on the booms mounted on the Tandem Axle Sprayers, there may be a need to adjust the fold latch when the boom is ready to be folded. Refer to Figure 11, page 17. If a hose fitting or nozzle is positioned where the fold latch is located, the fold latch needs to be offset with the fold latch extension provided. The fold latch extension can be mounted in the forward or rear direction; in any direction the fold latch needs to be repositioned. After repositioning the fold latch, be sure to torque bolts to the specifications listed in the Torque Values Chart for Common Bolt Sizes in Appendix. If boom height is in the lower ranges, you may want to raise the boom for transport. Refer to Elevator in the Sprayer Owner's Manual.

Nozzle Pressure
Another area that will need some field adjustments is the nozzle pressure. As your tank level decreases, you may have to adjust the boom pressure to keep the pressure at the same magnitude for what the sprayer was calibrated for. Watch your pressure gauge and be aware of changes in the pressure.

Break-Away Pivot
The boom break-away pivot spring should be adjusted so that the compressed length is 5 3/8 of an inch. If the spring is not compressed to 5 3/8", the boom will tend to break away over bumps and wear out the break-away mechanism. Refer to step 7 under Sprayer/Boom Assembly Instructions on page 10, along with Figure 1 on page 11.
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Problem Area</th>
<th>Specific Checks</th>
<th>Corrections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Increasing</td>
<td>Between Gauge &amp; nozzle</td>
<td>Boom hoses becoming clogged</td>
<td>Remove obstruction from clogged area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Boom hoses pinched</td>
<td>Use cable ties to position hose so it will not kink.</td>
</tr>
</tbody>
</table>
Maintenance and Lubrication

Maintenance
Proper servicing and adjustment is the key to the long life of any farm implement. With careful and systematic inspection, you can avoid costly maintenance, time and repair.

Equipment Cleanup
Nozzles should be cleaned with a low pressure (less than 30 psi) air hose, and periodically replaced. Haul a supply tank of water so you can clean the spray tank and applicator out in the field. Never wash tank out in the yard or at a car wash.

Dispose of left-over chemical in the same manner described on the manufacture’s label of the chemical last used in the sprayer. Rinse out the tank and spray the rinse water on the last field that was sprayed.

General Information
If equipment is to be used in freezing or near freezing conditions, protect pump and plumbing system by thoroughly draining liquid and pumping antifreeze solution through system to coat the interior of the pump and plumbing.

Before working on, servicing or making adjustments on sprayer, always disengage power, shut off tractor engine, make sure all moving parts have stopped, and all pressure in the system is relieved.

Check the conditions of hoses and connections frequently. Release the system pressure before working on the sprayer. To release the pressure flip the boom section switches on and off without the pump running. Always wear rubber gloves when making repairs or adjustments. Make sure all Protective Equipment (gloves, goggles, etc.) listed on page 5, are stored in an easily accessible place but protected from potential contamination from dust or chemicals.

Check the sprayer for any loose bolts, pins, and hose clamps.

Check the hoses, pumps, valves, and fittings for any leaks. Inspect all parts of the sprayer for wear and rust. Repair and paint parts as necessary.

Storage
1. Empty solution from your sprayer tank and store or dispose of the chemical as recommended by the manufacturer’s chemical label.
2. Change filters in the tractor cab after finished.
3. Wash off the exterior of the boom thoroughly using a safe solvent or soap and water.
4. Flush the boom out with antifreeze (Great Plains strongly recommends the use of RV antifreeze) to prevent damage to components when a freeze occurs.
5. Inspect all parts of the sprayer boom for wear and rust. Repair and paint parts as necessary.
6. Store the boom in a dry area away from direct sunlight. Follow the instructions to park the boom. Refer to Parking on page 15.

Lubrication

Swing Arm Pivot Joints
The grease zerks are located in the shaft on the lower pivots and in the tube on the upper pivots. Grease until you just begin to see grease come out.

Type of Lubrication: NLGI grade 2 or 3 grease lubricant
Break-Away Boom Pivot
A zerk is located on the round pivot bar on both sides of the sprayer boom. Grease until you just begin to see grease come out.
Type of Lubrication: NLGI grade 2 or 3 grease lubricant

Hinge Tube Pivot
The grease zerk is located on top pivot tube of the boom fold hinge. Grease until you just begin to see grease come out.
Type of Lubrication: NLGI grade 2 or 3 grease lubricant

Outer Fold Arm Pivot
A zerk is located on the hinge point of the outer boom wing on both sides of the sprayer boom. Grease until you just begin to see grease come out.
Type of Lubrication: NLGI grade 2 or 3 grease lubricant
## Specifications and Capacities

<table>
<thead>
<tr>
<th>Boom Width</th>
<th>30’</th>
<th>40’</th>
<th>45’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear Fold Transport Width</td>
<td>91 1/2”</td>
<td>91 1/2”</td>
<td>135”</td>
</tr>
<tr>
<td>Nozzle Spacing</td>
<td>15”</td>
<td>20”</td>
<td>30”</td>
</tr>
<tr>
<td>Material</td>
<td>1 1/2” Square Tubing &amp; 1 1/4” x 2” Rectangular Tubing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weights</td>
<td>430#</td>
<td>460#</td>
<td>460#</td>
</tr>
</tbody>
</table>
# Appendix

## Torque Values Chart

<table>
<thead>
<tr>
<th>Bolt Size (Inches)</th>
<th>Bolt Head Identification</th>
<th>Bolt Size (Metric)</th>
<th>Bolt Head Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade 2</td>
<td>Grade 5</td>
<td>Grade 8</td>
</tr>
<tr>
<td>1/4&quot; - 20</td>
<td>7.4</td>
<td>5.6</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4/15/03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4&quot; - 28</td>
<td>8.5</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>5/16&quot; - 18</td>
<td>15</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>5/16&quot; - 24</td>
<td>17</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>3/8&quot; - 16</td>
<td>27</td>
<td>20</td>
<td>42</td>
</tr>
<tr>
<td>3/8&quot; - 24</td>
<td>31</td>
<td>22</td>
<td>47</td>
</tr>
<tr>
<td>7/16&quot; - 14</td>
<td>43</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td>7/16&quot; - 20</td>
<td>49</td>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>1/2&quot; - 13</td>
<td>66</td>
<td>49</td>
<td>105</td>
</tr>
<tr>
<td>1/2&quot; - 20</td>
<td>75</td>
<td>55</td>
<td>115</td>
</tr>
<tr>
<td>9/16&quot; - 12</td>
<td>95</td>
<td>70</td>
<td>150</td>
</tr>
<tr>
<td>9/16&quot; - 18</td>
<td>105</td>
<td>79</td>
<td>165</td>
</tr>
<tr>
<td>5/8&quot; - 11</td>
<td>130</td>
<td>97</td>
<td>205</td>
</tr>
<tr>
<td>5/8&quot; - 18</td>
<td>150</td>
<td>110</td>
<td>230</td>
</tr>
<tr>
<td>3/4&quot; - 10</td>
<td>235</td>
<td>170</td>
<td>360</td>
</tr>
<tr>
<td>3/4&quot; - 16</td>
<td>260</td>
<td>190</td>
<td>405</td>
</tr>
<tr>
<td>7/8&quot; - 9</td>
<td>225</td>
<td>165</td>
<td>585</td>
</tr>
<tr>
<td>7/8&quot; - 14</td>
<td>250</td>
<td>185</td>
<td>640</td>
</tr>
<tr>
<td>1&quot; - 8</td>
<td>340</td>
<td>250</td>
<td>875</td>
</tr>
<tr>
<td>1&quot; - 12</td>
<td>370</td>
<td>275</td>
<td>955</td>
</tr>
<tr>
<td>1-1/8&quot; - 7</td>
<td>480</td>
<td>355</td>
<td>1080</td>
</tr>
<tr>
<td>1 1/8&quot; - 12</td>
<td>540</td>
<td>395</td>
<td>1210</td>
</tr>
<tr>
<td>1 1/4&quot; - 7</td>
<td>680</td>
<td>500</td>
<td>1520</td>
</tr>
<tr>
<td>1 1/4&quot; - 12</td>
<td>750</td>
<td>555</td>
<td>1680</td>
</tr>
<tr>
<td>1 3/8&quot; - 6</td>
<td>890</td>
<td>655</td>
<td>1990</td>
</tr>
<tr>
<td>1 3/8&quot; - 12</td>
<td>1010</td>
<td>745</td>
<td>2270</td>
</tr>
<tr>
<td>1 1/2&quot; - 6</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
</tr>
<tr>
<td>1 1/2&quot; - 12</td>
<td>1330</td>
<td>980</td>
<td>2970</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>mm x pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5 X 0.8</td>
<td>4</td>
</tr>
<tr>
<td>M6 X 1.25</td>
<td>17</td>
</tr>
<tr>
<td>M8 X 1.5</td>
<td>18</td>
</tr>
<tr>
<td>M10 X 0.75</td>
<td>39</td>
</tr>
<tr>
<td>M12 X 1.5</td>
<td>58</td>
</tr>
<tr>
<td>M12 X 1.75</td>
<td>60</td>
</tr>
<tr>
<td>M14 X 1.5</td>
<td>99</td>
</tr>
<tr>
<td>M16 X 2.5</td>
<td>145</td>
</tr>
<tr>
<td>M18 X 2.5</td>
<td>195</td>
</tr>
<tr>
<td>M18 X 1.5</td>
<td>220</td>
</tr>
<tr>
<td>M20 X 2.5</td>
<td>280</td>
</tr>
<tr>
<td>M20 X 1.5</td>
<td>310</td>
</tr>
<tr>
<td>M24 X 3</td>
<td>480</td>
</tr>
<tr>
<td>M24 X 2</td>
<td>525</td>
</tr>
<tr>
<td>M30 X 3.5</td>
<td>960</td>
</tr>
<tr>
<td>M30 X 2</td>
<td>1060</td>
</tr>
<tr>
<td>M36 X 3.5</td>
<td>1730</td>
</tr>
<tr>
<td>M36 X 2</td>
<td>1880</td>
</tr>
</tbody>
</table>

1 in-tpi = nominal thread diameter in inches-threads per inch
2 N·m = newton-meters
3 ft-lb = foot pounds
4 mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.
Warranty

Great Plains Manufacturing, Incorporated warrants to the original purchaser that this spraying equipment will be free from defects in material and workmanship for a period of one year from the date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains' judgement shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Great Plains reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct, consequential, or contingent, to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, losses caused by harvest delays or any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Manufacturing, Incorporated within 10 days from the date of original purchase.