



SPRAYER MAINTENANCE GUIDE



Precision
Planting®

Make sure your sprayer is tuned for maximum performance.

It's important the equipment you use throughout the crop lifecycle performs at the best of its abilities with each pass.

Prior to planting each year, you ensure the planter components are optimized to reach their peak performance because you know how costly an untuned planter can be, wasting potentially both your time and money. Before harvest, you're sure to optimize the combine cleaning system to minimize combine loss because after all, a loss in crop is a loss in profits.

Do you do the same for your sprayer?

As an operator, you may spend more hours in the sprayer than any other piece of equipment throughout the growing season. If things go as planned, tillage, planting, and harvest are completed in one pass each. However, your sprayer makes multiple applications of herbicide, fungicide, and potentially pesticide each year depending on that season's field conditions.

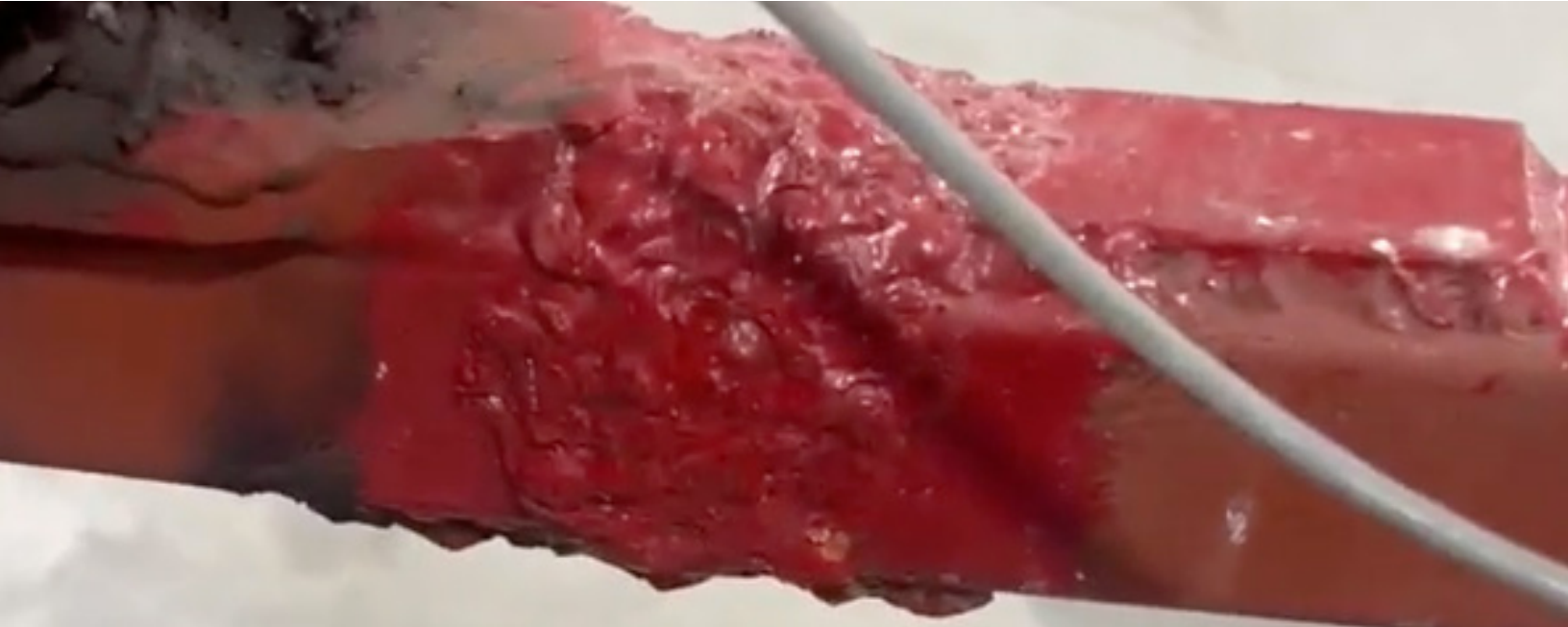
Just like any other piece of equipment on the farm, it's important to keep your sprayer operating at its peak performance. We've created a video series in addition to this guide to highlight the checklist you should be following before, during, and after each season to ensure your sprayer achieves optimal performance each pass.

SPRAYER MAINTENANCE CHECKLIST

- Structure and Lift Assembly
- Boom Plumbing
- Spray Tips
- Machine and Solution Plumbing
- Chassis
- Engine
- Electrical and Spray Control
- Safety
- Vision-Based Spray Systems

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STRUCTURE AND LIFT ASSEMBLY



Compared to other equipment on the farm, sprayers travel at relatively high speeds across the field, causing wear and tear on the machine throughout the growing season. Before, during, and post spray season, it's important to inspect the structure and lift assembly to ensure it is structurally sound.

Inspect Boom Structural Integrity:

- Look for cracks in the boom frame and around welds.
- Clean rust and paint to address corrosion and prevent any further corrosion in the future.
- Check breakaway boom tensions to verify they are not seized and adjust as needed.
- Inspect boom fold point pins and bushings for wear.

Inspect Hydraulic Cylinder and Hoses:

- Confirm hoses are not leaking and that they do not show signs of extensive wear.
- Common signs of wear: cuts or abrasions, cracking, and bulging.
- Check the hydraulic cylinder for leaks as well as for wear and damage to the attachment pins.

Additional Structure and Lift Assembly Maintenance:

- Calibrate boom height system.
- Check electrical harnesses for pinched or bare wires.
- Grease and lubricate the machine as recommended in the Operator's Manual.

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BOOM PLUMBING



It's important that your boom plumbing stays in good condition to ensure that it can effectively and efficiently distribute the product onto the field.

Check Hoses

Before going out to spray each season inspect that all hoses are in good condition.

- Check for sagging or kinked hoses
- Ensure that hoses route around fold points
- Check for any leaking fittings
- Remove end caps and inspect section ends for chemical buildup



Flush and Clean the System

Following each use, it's important to flush and clean the system to prevent cross-contamination and maintain the machine's efficiency. When flushing the system, don't forget the agitation lines, end caps, and fence row nozzles.

ReClaim Makes it Easy

When priming traditional sprayer booms, you often compromise between getting a full concentration of active ingredients at each nozzle and wasting too much product on the ground while trying to do so.

With ReClaim, you can eliminate those problems by priming your booms before a nozzle ever opens. This means your first droplets are effective and you get back time, save product, and allows you to be a good steward of the environment.

ReClaim also allows you to automate your boom cleanout. If your sprayer has a clean water tank, open the flow from there and engage ReClaim. Clean water will circulate through all boom lines and return back to the tank, eliminating end cap dead zones where sediment can accumulate.

ReClaim works with both traditional check-valve nozzles and PWM nozzles.

Winterize

Post-season, use RV antifreeze to winterize all system plumbing. Be sure to include the agitation lines, end caps, eductor system, and fence row nozzle plumbing.

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SPRAY TIPS



Buildup on spray tips can result in an inconsistent spray pattern.

Ensuring the spray tips on your sprayer are in good condition is vital in achieving uniform application, optimal droplet size, and consistently hitting the desired rate. Spray tips that are not operating at their peak performance can result in wasted chemicals, increased drift, and ineffective weed control.

Use the Correct Spray Tips

Chemicals labels will indicate the recommended droplet size and spray quality for each product, helping you narrow down which nozzle is best for your use-case.

Upgrade to SymphonyNozzle

SymphonyNozzle allows you to gain independent control of rate and pressure and as a result, achieve consistent rate and spray quality even around turns or throughout speed changes. When prescriptions and boundaries are loaded into the Gen 3 20|20, you can variable rate the application to target areas of the field with high weed pressure and save on inputs when going through waterways and ditches.

SymphonyNozzles are easy to install, do not require special tools for diagnostics or service, and provide you with full control from the cab as the 20|20 shows clear feedback and sprayer performance metrics.

Test and Observe Spray Pattern

Once you have selected your nozzles, you can run a test to ensure those nozzles achieve the intended spray pattern.

To test the spray pattern:

- Locate a flat surface and place spray cards beneath each nozzle.
- Fill the sprayer tank with water and spray the test area.
- Observe each card for uniformity; gaps, overlaps, or uneven distribution are a sign of plugged or partially plugged spray tips.

Evaluate Rate Variance Across the Boom

After observing the spray pattern, perform a catch test to evaluate rate variance across the boom.

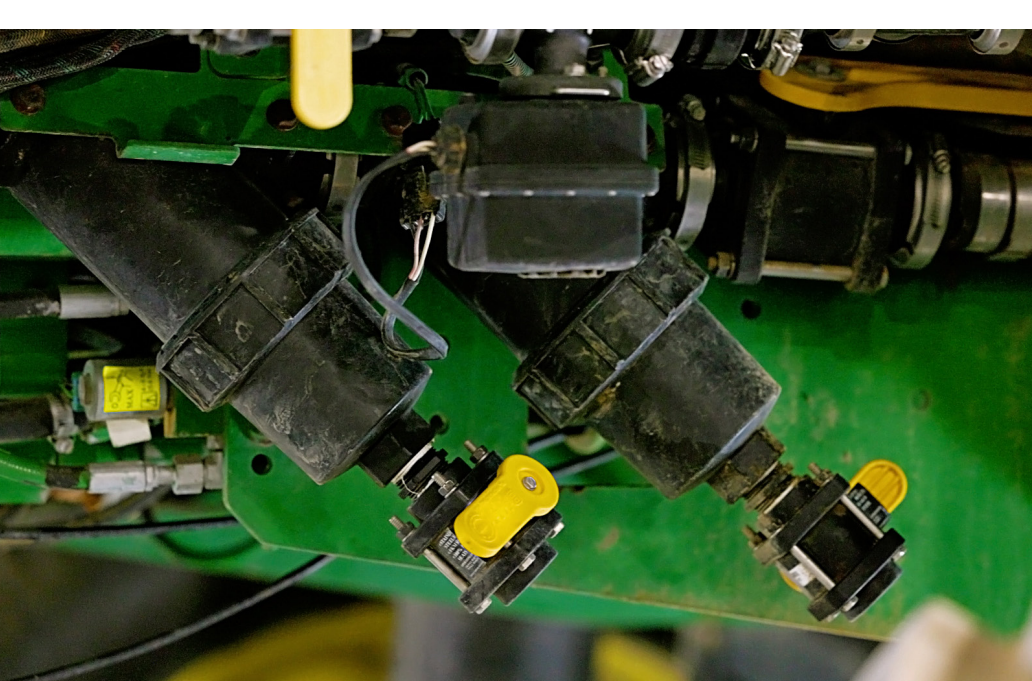
- Place an empty bucket or container beneath each spray tip.
- Turn on the sprayer and adjust the pressure to the desired level then spray water into the container for a set period of time.
- Collect and measure the volume of each container and compare to ensure consistency.

Replace Worn Spray Tips

Worn spray tips can impact the sprayer's efficiency and accuracy, creating uneven coverage and ultimately leading to over or under application of chemicals. The over-application of chemicals equates to wasted inputs and increased costs. Under-application can lead to costly weed escapes and insufficient weed control.

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SOLUTION PUMP AND MACHINE PLUMBING



Solution Pump and Machine Plumbing

The solution pump and machine plumbing are responsible for moving the chemical from the tank to the spray nozzles and it's important that the task can be completed efficiently.

- Ensure that both the pump hoses and connections are not damaged or leaking to prevent chemical waste.
- Check the pump hydraulic motor and verify that it is not leaking. Do not run the pump dry as that will damage the seal.
- Check the electrical connectors and solenoid for damage and ensure they are free of corrosion.

Machine Plumbing

- Inspect and clean all strainers.
- Check for cracked bowls or strainer parts as well as twisted O-rings on strainer bowls.
- Ensure that the tank lid is not cracked or damaged and that the seal is not torn or experiencing extensive wear.
- Verify that the welds and structural support members are free of cracks and loose bolts.
- Additionally, check all valves to ensure that they are functioning properly.
- Check the fill hose for damage and make sure it is secure and not leaking.

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CHASSIS



The chassis is the foundation of the sprayer. To ensure your equipment lasts the many years you are expecting it to, it's important to keep up with routine maintenance.

Before hitting the field each year, complete a thorough maintenance inspection on the machine. Complete all maintenance intervals and yearly service items for your specific machine as noted in the Operator's Manual. This is a great time to grease points and change the hub oil as well as replace any parts that are showing signs of wear to prevent a breakdown mid-season.

Throughout the season be sure to check the following items:

- Tire Pressure
- Lug nut torque
- Torque on tread adjustment bolt
- Hydraulic hoses for wear and leak
- Air bags
- Other suspension systems

Once you're ready to put the machine away for the winter, clean the chassis thoroughly to prevent corrosion or rust. Be sure to remove any dirt, debris, or grease.

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ENGINE



You put a lot of hours on your sprayer throughout the season; it's important that the engine receives the routine maintenance it requires to maintain optimal performance.

Use the Operator's Manual to check all maintenance intervals and yearly service items for your specific machine and complete the following maintenance as needed:

- Make sure the warning lights are operating correctly
- Check engine drive belt for cracks and damage
- Clean the radiator
- Check fluid levels
- Test batteries and clean terminals if necessary
- Perform engine oil and filter service
- Perform fuel system service
- Perform hydraulic oil and filter service
- Check air filters
 - Engine air
 - Cab air and charcoal filter (if applicable)
- Check onboard air compressor
 - Change air dryer filter
 - Drain air tank

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ELECTRICAL AND SPRAY CONTROL

Hydraulic Manifold

Fold and unfold the hydraulic manifold to inspect solenoid valves, check for leaks, and perform an operational check.

Power Distribution Module

The power distribution module (PDM) consolidates the electrical distribution for the sprayer into one compact box. Keeping the PDM functioning as expected is vital in ensuring the sprayer stays up and running.

Be sure to check that the PDM mounting is secure and has no damage. Frequently inspect cable harnessing and ensure no damage or corrosion is present on the harness itself as well as the pins and sockets. It's important to check all harnessing including:

- Power tractor harness from battery to PDM
- CAN harness to PDM
- Pressure sensor harness
- Power harness to PDM
- Apex power harness from PDM to wings



Installed Sprayer PDM with PWM ReClaim mounted beneath it.

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SAFETY



Your safety and the safety of those working on the farm is of the utmost importance.

Before the sprayer hits the field each season, ensure that all safety components are operating as expected.

- Make sure the warning lights are operating correctly.
- Make sure the vehicle's SMV sign is visible and reflective.
- Make sure safety warning signs are clean and in good condition.
- Make sure vehicle reflectors/reflective decals are clean and in good condition.

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VISION-BASED SPRAY SYSTEMS



The cameras utilized in a vision-based spray system require specific maintenance to ensure they operate in the field as expected. It's important to keep the camera lenses clean and free of any mud or debris to ensure they can effectively identify weeds in the field.

Take Weed Control to the Next Level with SymphonyVision

SymphonyVision, Precision Planting's vision-based spraying technology, uses cameras to intelligently adjust the application based on weed severity, allowing you to save on chemicals without sacrificing weed control.

Three packages are available with SymphonyVision:

1. **SymphonyVision | Rate** – Nozzles always on, variable rate based on weed severity
2. **SymphonyVision | Spot** – Nozzles only on when targeting weeds with a variable rate, maximizing herbicide savings
3. **SymphonyVision | Duo** - Broadcast apply a separate mix while spot spraying contact herbicides in a single pass

Don't let your sprayer hold you back.

A Precision Planting Premier Dealer is your partner to help you achieve the weed control you're after this season and steer clear of the regret that comes from insufficient weed control caused by a lack of sprayer maintenance. They will support you throughout the season for sales, recommendations, support, and training.

Find yours today:

www.precisionplanting.com/dealers



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