LMC AG 300/500 Series Sprayer

Owner's Manual

Manufacturer:
LMC AG
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1. Introduction

The **LMC AG 300 Series** (3-point hitch) and **500 Series** (pull-type) sprayers are designed for agricultural spraying applications including herbicides, pesticides, and liquid fertilizers.

- **300 Series:** 3-point hitch mounted sprayer
- **500 Series:** Pull-type trailer sprayer

Read this manual before operating the equipment.

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2. Safety Information

- Always wear proper PPE when handling chemicals
- Do not operate equipment with leaking or damaged hoses
- Keep hands clear of moving parts
- Never service equipment while running
- Relieve system pressure before maintenance
- Follow all chemical manufacturer instructions

⚠ Agricultural chemicals can be dangerous if misused.

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3. Machine Overview

Tank Sizes

- 300 Gallon
- 500 Gallon

Boom Options

- 12/14/16/18/20 Row
    - 36-60Ft
- Dual Boomless (30–35 ft Total coverage)

Nozzles

BOOMLESS

- UDOR 1250
- UDOR 1400

BOOM

- TP8003VP Standard Unless Specified

Pump Options

- PTO Roller Pump (Only available on 12 row)
- PTO Centrifugal Pump
- PTO Diaphragm Pump
- Hydraulic Centrifugal Pump

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4. Setup & Installation

300 Series (3-Point Hitch)

- Attach to tractor 3-point hitch (Unit is CAT1/2 Quick Hitch Compatible)
- Secure all pins and clips
- Connect PTO shaft and/or Hydraulic Hoses
- Ensure driveline is properly shielded and hoses are tied up
- Level sprayer before use

500 Series (Pull-Type)

- Attach to drawbar
- Connect safety chains
- Connect PTO or hydraulic lines
- Check tire pressure
- Ensure unit is level

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5. Operation

Before Starting

- Check all hoses and fittings
- Ensure tank is clean
- Check filters and strainers
- Fill tank with water

Starting the System

- Engage PTO or hydraulic system
- Set desired pressure
- Check for leaks
- Add proper chemical mixture to sprayer

Spraying

- Maintain consistent ground speed
- Monitor pressure gauge
- Ensure even spray pattern
- Adjust pressure as needed

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6. Calibration Basics

- Set travel speed before spraying
- Match nozzle size to desired GPA
- Maintain consistent pressure
- Test spray output before field use
- Complete a catch test as needed (See Teejet Calibration information at the end of this manual)

7. Maintenance

After Each Use

- Flush tank with clean water
- Run clean water through entire system
- Clean strainers and filters

Pump Maintenance

- Do not run pump dry
- Keep suction line clean
- Check for leaks regularly

Storage

- Store out of direct sunlight
- Keep system clean and dry
- Remove all electronic controllers from the weather

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8. Troubleshooting

Low Pressure

- Check for air leaks in suction line
- Clean or replace clogged filters
- Inspect pump

Uneven Spray

- Check nozzles for wear or blockage
- Ensure correct pressure

Pump Not Priming

- Check suction line and ensure the pump is receiving flow and is not air locked
- Ensure tank has enough fluid to not cause vortex while trying to prime
- Check valves and make sure they are in the on position

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9. Winterization

- Flush system
- Drain tank, pump, and lines completely
- Run biodegradable antifreeze through pump and lines
- Store in protected area

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10. Parts & Service

Contact your LMC AG dealer for:

- Replacement parts and service support

TeeJet® SPRAYER CALIBRATION

BROADCAST APPLICATION

Sprayer calibration (1) readies your sprayer for operation and (2) diagnoses tip wear. This will give you optimum performance of your TeeJet tips.

Equipment Needed:

- TeeJet Calibration Container
- Calculator
- TeeJet Cleaning Brush
- One new TeeJet Spray Tip matched to the tips on your sprayer
- Stopwatch or wristwatch with second hand

STEP NUMBER 1

Check Your Tractor/Sprayer Speed!

Knowing your real sprayer speed is an essential part of accurate spraying. Speedometer readings and some electronic measurement devices can be inaccurate because of wheel slippage. Check the time required to move over a 100- or 200-foot strip on your field. Fence posts can serve as permanent markers. The starting post should be far enough away to permit your tractor/sprayer to reach desired spraying speed. Hold that speed as you travel between the "start" and "end" markers. Most accurate measurement will be obtained with the spray tank half full. Refer to the table on page 184 to calculate your real speed. When the correct throttle and gear settings are identified, mark your tachometer or speedometer to help you control this vital part of accurate chemical application.

STEP NUMBER 2

$A=\frac{B+C}{D}$ The Inputs

Before spraying, record the following:	**EXAMPLE:**
Spray tip type on your sprayer (All tips must be identical)	TT11004 Flat Spray Tip
Recommended application volume. (From manufacturer's label)	20 GPA
Measured sprayer speed	6 MPH
Tip spacing	20 inches

STEP NUMBER 3

Calculating Required Nozzle Output

Determine GPM tip output from formula.

FORMULA: $GPM = \frac{GPA \times MPH \times W}{5{,}940 \text{ (constant)}}$

EXAMPLE: $GPM = \frac{20 \times 6 \times 20}{5{,}940} = \frac{2{,}400}{5{,}940}$

ANSWER: 0.404 GPM

STEP NUMBER 4

Setting the Correct Pressure

Turn on your sprayer and check for leaks or blockage. Inspect and clean, if necessary, all tips and strainers with TeeJet brush. Replace one tip and strainer with an identical new tip and strainer on sprayer boom.

Check appropriate tip selection table and determine the pressure required to deliver the tip output calculated from the formula in Step 3 for your new tip. Since all of the tabulations are based on spraying water, conversion factors must be used when spraying solutions that are heavier or lighter than water (see page 185).

EXAMPLE: (Using above inputs) refer to TeeJet table on page 17 for TT11004 flat spray tip. The table shows that this spray tip delivers 0.40 GPM at 40 PSI.

Turn on your sprayer and adjust pressure. Collect and measure the volume of the spray from the new tip for one minute in the collection jar. Fine tune the pressure until you collect 0.40 GPM.

You have now adjusted your sprayer to the proper pressure. It will properly deliver the application rate specified by the chemical manufacturer at your measured sprayer speed.

STEP NUMBER 5

Checking Your System

PROBLEM DIAGNOSIS: Now, check the flow rate of a few tips on each boom section. If the flow rate of any tip is 10% greater or less than that of the newly installed spray tip, recheck the output of that tip. If only one tip is faulty, replace with new tip and strainer and your system is ready for spraying. However, if a second tip is defective, replace all tips on the entire boom. This may sound unrealistic, but two worn tips on a boom are ample indication of tip wear problems. Replacing only a couple of worn tips invites potentially serious application problems.

Banding and Directed Applications

The only difference between the above procedure and calibrating for banding or directed applications is the input value used for "W" in the formula in Step 3.

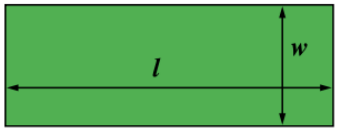
For single tip banding or boomless applications:
W = Sprayed band width or swath width (in inches).

For multiple nozzle directed applications:
W = Row spacing (in inches) divided by the number of tips per row.

AREA MEASUREMENT

It is essential to know the amount of area that you intend to cover when applying a pesticide or fertilizer. Turf areas such as home lawns and golf course greens, tees and fairways should be measured in square feet or acres, depending upon the units needed.

RECTANGULAR AREAS



Area = Length (*l*) x Width (*w*)

EXAMPLE

What is the area of a lawn that is 300 feet long and 150 feet wide?

Area = 300 feet x 150 feet = 45,000 square feet

By using the following equation, it is possible to determine the area in acres.

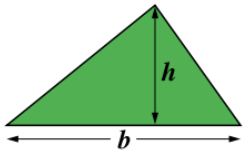
$$\text{Area in acres} = \frac{\text{Area in square feet}}{\text{43,560 sq ft per acre}}$$

(There are 43,560 square feet in an acre.)

EXAMPLE

$$\text{Area in acres} = \frac{\text{45,000 sq ft}}{\text{43,560 sq ft per acre}} = \text{1.03 acres}$$

TRIANGULAR AREAS



$$\text{Area} = \frac{\text{Base } (b) \text{ x Height } (h)}{2}$$

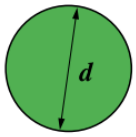
EXAMPLE

The base of a corner lot is 250 feet while the height is 50 feet. What is the area of the lot?

$$\text{Area} = \frac{\text{250 feet x 50 feet}}{2} = \text{6,250 square feet}$$

$$\text{Area in acres} = \frac{\text{6,250 square feet}}{\text{43,560 sq ft per acre}} = \text{0.14 acre}$$

CIRCULAR AREAS



$$\text{Area} = \frac{\pi \text{ x Diameter}^2 \ (d)}{4}$$

$$\pi = 3.14159$$

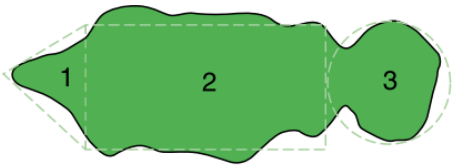
EXAMPLE

What is the area of a green that has a diameter of 45 feet?

$$\text{Area} = \frac{\pi \text{ x (45 feet)}^2}{4} = \frac{\text{3.14 x 2025}}{4} = \text{1,590 square feet}$$

$$\text{Area in acres} = \frac{\text{1,590 square feet}}{\text{43,560 sq ft per acre}} = \text{0.04 acre}$$

IRREGULAR AREAS



Any irregularly shaped turf area can usually be reduced to one or more geometric figures. The area of each figure is calculated and the areas are then added together to obtain the total area.

EXAMPLE

What is the total area of the Par-3 hole illustrated above?

The area can be broken into a triangle (area 1), a rectangle (area 2) and a circle (area 3). Then use the previously mentioned equations for determining areas to find the total area.

$$\text{Area 1} = \frac{\text{25 feet x 30 feet}}{2} = \text{375 square feet}$$

$$\text{Area 2} = \text{25 feet x 475 feet} = \text{11,875 square feet}$$

$$\text{Area 3} = \frac{\text{3.14 x (45 feet)}^2}{4} = \text{1,590 square feet}$$

$$\text{Total Area} = \text{375 + 11,875 + 1,590} = \text{13,840 square feet}$$

$$= \frac{\text{13,840 square feet}}{\text{43,560 sq ft per acre}} = \text{0.32 acre}$$

Notes: