

## Introduction

This manual contains all information for the proper assembly, operation, and care of your sprayer. Carefully read and follow the instructions contained in this manual before operating your sprayer.



# Specifications

Model	HD300	HD400	CD400	CD550				
Net Weight (pounds)	9.7	7.5	9.2	10.6				
Tank Capacity (U.S. gal.)	3.0	4.2	4.2	5.5				
Tank Material	Polyethylene, all models							
Fill Opening Dia. (in.)	4.5	4.5	4.5	4.5				
PumpType	Piston	Piston	Piston	Piston				
Pump Material	Plastic	Plastic	Brass	Brass				
Max. Working Press. (psi)	65	65	65	65				
Lance Length (inches)	18.0	18.0	19.5	19.5				
Hose Length (inches)	53	53	53	53				
Nozzle Installed	JD-12P	JD-12P	JD-12P	JD-12P				
Manufactured in Brazil. Specifications subject to change without notice.								

## Prepare to Assemble



#### Installing the Pump Lever Shaft (Models HD400, CD400, CD550 only) 1. Fit the pump lever Cotter Pin shaft into the **Base Reinforcement** lower right orifice on the sprayer base (chamber side Pump of sprayer). Lever $\odot$ Shaft 2. Use a rubber Mallet mallet to strike the shaft

smoothly until the hole on the shaft end aligns with the opening on the base reinforcement.

3. Lock the shaft in place with cotter pin.

### Installing the Lance Holders



## Installing the Pump Lever

- 1. Lightly grease the end of the pump lever connecting rod, and insert into the upper hole in the pump lever. Secure with flat washer and cotter pin.
- 2. Install a flat washer on the opposite end of the connecting rod. Lightly grease the rod end and insert it into the hole on the top of the pump chamber. Secure with flat washer and cotter pin.
- 3. Install a flat washer on the pump lever shaft.
- 4. Lightly grease the hole on the end of the pump lever and assemble to the pump lever shaft. Secure with flat washer and cotter pin.



### Attaching the Hose to the Trigger Valve

Trigger

Valve

- 1. Unscrew the trigger valve handle screw cap.
- 2. Remove the plastic Hose hose lock from the valve.
- 3. Push the hose through the screw cap and lock into the trigger valve.
- 4. Assemble the screw cap back onto the trigger valve.

#### CAUTION!

Do not overtighten the screw cap!

### Adjusting the Shoulder Straps

#### Tightening

- 1. Hook the shoulder strap ends to the side of the sprayer base.
- 2. Put the sprayer on your back.
- 3. Hold the adjuster ring firmly and pull until backpack is secure in place.

#### Loosening

Lift up on the adjuster to release tension.

### Pressure Test the Sprayer

- 1. Once assembled, fill the sprayer with water.
- 2. Pump the lever approximately 15 times.
- 3. Inspect the tank, hose, lance, and trigger valve for leakage.

#### NOTE: Retightening the appropriate connections and fittings can stop most leaks. Any leakage must be repaired prior to putting the sprayer in service.

### Inverting the Pump Lever Orientation



- 5. Remove the pump lever handle.
- 6. Remove the pump lever shaft from the tank base.
- 7. Install the pump lever shaft in the other pump lever hole on the tank base. NOTE: To install the pump lever shaft refer to "Installing the Pump Lever Shaft" on the previous page.
- 8. Install the washers and pump lever handle on the pump lever connecting rod.
- 9. Detach the shoulder straps from the sprayer.
- 10. Install shoulder straps on opposite side of tank and attach ends to the tank base.

#### Maintenance

Cleaning the sprayer

- After each use, wash and ñ rinse all equipment with water in an approved decontamination area.
- Remove all chemi-cals before storing the sprayer for an extended period! Chemical
- products have different reactions and can cause damage to the sprayer components and environment as well as personal injury. Refer to the Safety Precautions on page 4.
- Periodically clean the chamber and lubricate components as shown. Remove the chamber (0))

Cylinder

Ball

Ball Seat

Spring

Cylinder

Base

Nuts

Bolts

Pump the lever

until the discharge

runs clear.

### Cylinder Maintenance, CD400 and CD550

#### Disassembly

plunger.

to lubricate the

- 1. Remove the pump-lever connecting Chamber rod from the pump chamber, loosen the packing ring nut that secures the chamber to the tank, then remove the chamber from the cylinder.
- 2. Remove the nuts from the cylinder, then remove the cylinder.
- 3. Loosen the bolts, remove the spring, ball seat and ball.
- 4. Clean or replace parts that are excessively worn.

#### Assembly

- 1. Install the ball, ball seat, spring and bolts onto the cylinder base.
- 2. Position the base onto the cylinder and secure it with the bolts.
- 3. Install the whole assembly on the spraver and secure with nuts.
- 4. To ease assembly and help prevent wear, lightly lubricate the plunger with lithium-base grease, then insert the pump chamber into the cylinder.
- 5. Reconnect the pump-lever connecting rod and retighten the packing ring nut.

Cylinder

Valve

### Cylinder Maintenance, HD400

#### Disassembly

- 1. Remove the pump-lever connecting rod from the pump chamber.
- 2. Loosen the nut that secures the chamber to the tank, then push the chamber into the cylinder all the way.
- 3. Turn the chamber counterclockwise until the cylinder Cylinder is free, then pull it out of the tank.
- 4. Disassemble the cylinder valve using the optional maintenance tool.
- 5. Clean or replace parts that are excessively worn.



Lock

Screw Cap

Assembly (HD400)

- 1. Install the valve in the cylinder and secure it using the optional maintenance tool.
- Optional

Maintenance

- 2. Mount the cylinder on the sprayer base.
- 3. To ease assembly and help prevent Tool wear, lightly lubricate the plunger with lithium-base grease, then insert the pump chamber into the cylinder.
- 4. Use the pump chamber to turn the cylinder clockwise until tight.
- 5. Fit the pump-lever connecting rod to the pump chamber.
- 6. Retighten the packing ring nut that secures the pump chamber to the tank.

## Cylinder Maintenance, HD300

### Disassembly

- 1. Remove the pump-lever connecting rod from the pump chamber.
- 2. Loosen the packing ring nut that secures the chamber to the tank, then push the chamber into the cylinder all the way.
  - Push the chamber into the tank all the way
- 3. Turn the pump chamber 90° and pull the pump chamber assembly out of the tank.
- Remove the cylinder assembly through the tank fill opening.
- 5. Disassemble the cylinder valve using the optional maintenance tool.
- 6. Clean or replace parts that are excessively worn.

### Assembly

- Install the valve in the cylinder and secure it using the maintenance tool.
  - During reassembly, add grease here.
- 2. To ease assembly and help prevent wear, lightly lubricate the plunger with lithium-base grease, then insert the pump chamber into the cylinder.
- 3. Turn the pump chamber 90° until it locks in place.
- 4. Reassemble the pumplever connecting rod to the pump chamber.
- 5. Retighten the packing ring nut that secures the pump chamber to the tank.



### Troubleshooting: Lack of Pressure

- Pour about 1/2 gallon of clean water into the sprayer tank.
- 2. While operating the pump lever, look into the tank to identify the problem using the following table and diagram as reference.

DECODIDITION		
DESCRIPTION Leakage through the upper cylinder	Worn or dried out plunger	Lubricate or replace the plunger
After pumping and pressurizing the chamber, the pump lever drops fast	Intake valve not sealing properly due to wear or impurities	Clean or replace the cylinder intake valve
After pumping and pressurizing the chamber, the pumping lever rises slowly when released	Chamber valve not sealing correctly due to wear or impuri- ties	Clean or replace the chamber valve
	Upper Cylinder Plunger Chamber Valve Cylinder Intake Valve	
CD400 and	CD550	HD400

#### IMPORTANT!

Periodically check the distance from the hose to the pump chamber base. The proper distance is 3/8". To adjust, push the hose into the chamber until it touches the valve, then pull the hose back 3/8".

### Safety Precautions



Carefully read the labels on chemical containers prior to use. Chemicals are classified in four categories of toxicity:

Category I, High Toxicity, Red label

- Category II, Moderate Toxicity, Yellow label
- Category III, Low Toxicity, Blue label

■ Category IV, Light Toxicity, Green label There are unique handling recommendations for each category, and you should familiarize yourself with them.



Always wear clothing and safety equipment that will provide appropriate protection against the to the materials you are handling. Equipment may include, but not be limited to:

- Long sleeve shirt
- Impermeable apron or coverall
- Impermeable gloves and boots
- Wide-brim hat
- Protective mask equipped with appropriate filters



Do not eat, drink, or smoke while handling chemicals or while you are spraying. Always handle chemicals in a well ventilated area while wearing appropriate protective clothing and safety equipment. DO NOT STORE OR TRANSPORT CHEMICALS WITH FOOD OR MEDICINES, AND NEVER REUSE A CHEMICAL CONTAINER FOR ANY OTHER PURPOSE.



Keep chemicals out of the reach of children, animals, or other unauthorized people. When not in use, store chemicals in a safe place. Never blow through nozzles, valve, pipes or any other component by mouth!



When handling chemicals and when spraying, make sure you are operating in accordance with local, state, and federal environmental protection rules and guidelines. Do not spray in very hot or windy conditions. DO NOT POLLUTE THE ENVIRONMENT!



After spray application, take a thoroughly cleansing shower using plenty of water and soap, then change into clean clothes. Protective clothing and safety gear should also be cleaned after each use. IN CASE OF EXPO-SURE TO DANGEROUS CHEMICALS, seek a physician immediately and be prepared to provide the label from the chemical container.

### Calibrating the Sprayer

Determining Coverage

- 1. Hold the lance at the working height and spray a test pattern to measure the application band width.
- 2. Based on the band width, calculate the total walking distance required to spray the desired area. Use to the chart below.

Band width (meter)	0.5	0.7	1.0	1.2	1.5	-
Distance to walk (meter)	50.0	35.7	25.0	20.8	16.7	

#### Measuring Flow Rate

(requires optional calibration bottle, P/N 834309)

- 1. Attach the calibration bottle to the lance.
  - a. Remove the nozzle, cap and filter.

b. Mount the calibration cover to the spray lance.

c. Reinstall the nozzle, filter and cap.

d. Screw the calibration bottle onto the cover.

a. Hold the lance at your

2. Using the calibration bottle:



Band

Width

normal working position and spray into the bottle while walking the distance required to spray an area corresponding to 25m<sup>2</sup>.

b. Place the bottle on a level surface and observe the liquid level visible through the side of the bottle. Match the liquid level to the corresponding scale on the calibration bottle.

c. Empty the bottle and repeat Steps a and b to determine the average of two or more readings.

### Typical Nozzle Assemblies





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