

# Operator's Manual

## SDI's PSK Sprayers

General Operation

Maintenance

Troubleshooting



## General Information

Spraying Devices builds a full line of a sprayers. They are sold as separate components so each customer can customize their sprayer to fit their needs. The basic components are:

- Tank
- Pump
- Jet Agitation System
- Weed Wand
- Spray Boom

**Tank:** Polyethylene and range in sizes from 40 to 100 gallons for a variety of applications.

**Pump:** 12-Volt diaphragm style.

**Agitation:** Bypass Jet Agitation is controlled by an easily accessible valve.

**Weed Wand:** Controlled by the operator

**10 Ft. Spray Boom:** Available, it has six single nozzles on 20" spacing with break-away hinges.



# Sprayer Operating Instructions

Read all instructions before spraying. When you complete these instructions, put them with the information on the sprayer.

These instructions will alert you to things you should do very carefully. If you do not, you could:

- Injure yourself or bystanders
- Injure the next person to operate the machine
- Damage the vehicle or attachments
- Damage the area you are spraying

To make sure you are fully aware of safety and service information, the following two symbols are used throughout this instruction manual:



This symbol is a **Safety Warning** and appears next to information which may help keep you and other from being injured.



This symbol appears next to information or instructions which may help you with setup, operation and maintaining your equipment properly.

***Spray with care***

## Installation and Operation

**Use the picture below to identify the key components of your sprayer.**

Connect leads to battery using supplied clamps or eyelet connectors. Pump is controlled using ON/OFF switch.

Add water to tank and turn pump ON to start agitation.

Use the ON/OFF switch to control sprayer.

Adjust agitation with the agitation valve. The higher the pressure, the more agitation occurs in the tank. Conversely, less comes out of the weed wand or boom.

Use the agitation valve to adjust pressure to achieve desired balance between output and agitation.



## Ground Speed

Your ground speed can vary greatly depending on the vehicle and operator. We recommend that you use the procedure that follows to determine the actual ground speed of your vehicle. If the vehicle has a speedometer, you might mark the position of ground speeds on the face of the speedometer. You can also mark a tachometer (engine speed) in different gears to register ground speeds. Actual ground speed is extremely important.

Check your actual ground speed as follows:

1, Measure off a distance—somewhere between 100 and 200 ft. The *longer* the distance the more accurate your speed measurement will be.

2. Drive the vehicle over the measured distance in each gear at a steady speed.

Do this several times and use a stop watch to time each run. Get an accurate average of the time it takes to travel this distance in each gear. This will tell you what the available speeds are.

**Use this simple formula to determine your actual speed:**

<b>Distance x 60</b>	<b>=</b>	<b>(A)</b> _____
<b>Time (secs) x 88</b>	<b>=</b>	<b>(B)</b> _____
<b>Divide A by B</b>	<b>=</b>	<b>Speed</b> _____

**Sample:**

<b>200 feet x 60</b>	<b>=</b>	<b>12000</b>
<b>38 secs x 88</b>	<b>=</b>	<b>3344</b>
<b>12000 / 3844</b>	<b>=</b>	<b>3.59 mph</b>

## Determining Spray Volume

Determining how much spray material you will apply is the MOST important component of sprayer operation. Too much or too little can inadvertently damage what you are spraying or cause the material not to work.

We can help you determine how much liquid you will apply, but it is **your responsibility**—to mix the material in the tank and determine the final application rate. Contact your spray material supplier or advisor to help you determine the proper application rate.

### ***Warning***



**Improper application of some chemicals can be harmful to your health and the health of others. Governmental regulations strictly govern the application rate of many chemicals.**

There are five factors that govern the application rate. You can control all five—they are:

- Ground Speed
- Spray Nozzle Size
- Spraying Pressure
- Ratio of Chemical Mix in Tank
- Nozzle Spacing and Height

## Spray Nozzles

Pressure, nozzle size and nozzle spacing work together. The following principles apply. The bigger the nozzle, the more liquid will be applied. The higher the pressure, the more liquid will be applied. The more nozzles on the boom, the more liquid is applied. You have control over each of these items.

## Spray Nozzles—Continued

Actual nozzle flow is the key to determining the application rate. Several things can affect flow rate.

**Nozzle size and wear**—check all spray tips along the boom and note the tip size. They should all match. As the nozzles slowly wear, the orifice size changes. This affects the flow rate. If you spray abrasive materials, nozzle wear can be accelerated. Make periodic nozzle rate measurements. Change nozzles that flow at higher rates than in the specifications. As a general rule, change all the spray tips at least once a year.

**Pressure**—Flow rate and pressure are closely linked, but pressure has less affect that you might think. Four times the pressure only equals twice the flow rate. Use pressure to make *minor* adjustments to flow rate.

**Nozzle types**—nozzle types affect flow rates and dispersion of material. Check the nozzle manufacturer's catalog for the specific style you may need.

**Flow of the Carrier**—nozzles are calibrated using water. Some materials are lighter or heavier than water. This will affect flow rates at the same pressure.

The only way to accurately insure the proper application rate, is to carefully monitor the flow rate at each tip. Use a calibration device and check frequently.

## Before you Load Spray Materials

### *Warning*



Some spray materials can be hazardous to people and animals. **DO NOT** spray if it is windy or you if you are in close proximity to people or animals.

- Look at the spray material label for safety instructions and application rates.
- Check the label for the use of specific PPE (Personal Protective Equipment) recommendations.

## Before You Load Spray Materials—Continued

As a general rule, always wear:

- Long sleeved shirt
- Long Pants
- Sturdy footwear
- Goggles or Face Shield
- Chemical Resistant gloves, apron or suit as equired
- A Respirator if required.

- Carry a fresh water supply
- Clean PPE with soap and water after each use
- Scrub your hands, arms and face with soap and water before eating, smoking or using the restroom
- Always wash PPE clothing separately
- DO NOT** wear contaminated boots or hats

### Warning



Many spray materials are harmful if they contact the skin or are ingested. Wear PPE appropriate for the materials being applied. Follow all safety information and avoid inadvertent contact. When you have completed spraying, the sprayer should be rinsed with clean water and visually checked. Pay particular attention after applying insoluble spray materials because those materials can leave residues that could cause clogging or misapplication.

### Clean-Up

1. Fill the tank with at least 25 gallons of clean water. Clean the fill strainer at this time.
2. Start the engine and set engine speed
3. Open all boom valves and set pressure to at least 40psi.
4. Flush until tank is empty
5. Remove suction line strainer and clean.

Remember-your sprayer will have residues of the spray materials you have just applied. Be sure to follow regulations regarding the disposal of unused spray materials.

## Operating Tips

Your spray materials supplier should know proper application and dilution rates. Contact them with your spray material questions. Watch for obstacles in the path of the spray booms. SDI booms are equipped with “breakaway” hinges that will pivot if they hit an obstacle. However, you can still damage other boom components.

Traveling up and down a hill may be better than across it. When tips get close to the ground, the area between the tips will get no spray coverage.

Use common sense when spraying. Casual bystanders can become upset if they become victims of your inadvertent overspray. **DO NOT** do elevated spraying (trees and bushes) when it is windy. Spray mist can drift long distances in a light wind.

Always flush the sprayer when you are done. If you want an extended period of time to flush the sprayer, spray residue in the tank and hose may impact your next application.

## Thank You ...

*for purchasing a SDI Sprayer. SDI has been manufacturing  
a full line of sprayers since 1982.*

Each sprayer is assembled and tested prior to shipping.  
Sprayers are then broken down into several components for  
ease of shipment. Reassembly is completed by your dealer or,  
in some cases the end user makes the final assembly.

We take pride in our products and we make sure our sprayers work  
properly when they leave the factory. We make every effort to insure  
that reassembly in the field is done properly.

If you have any problems with the assembly or operation of the  
sprayer, please call our Customer Service Department at  
**559-SDI-5555** between the hours of 7:00 am and 4:00 pm,  
Pacific Time, Monday through Friday.



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