



## ***Instruction Manual***

MANRP50-4 Rev H 20/02/17

## **Rakpak Plus 70L 12V Sprayers**



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No liability can be accepted for any inaccuracies or omissions in this publication, although due care has been taken to make it as complete and accurate as possible.

The information, illustrations and technical data were considered to be correct at the time of preparation.

In accordance with our policy of continuous development Silvan Australia Pty. Ltd. reserves the right to make changes at any time without notice.

#### YOUR SPRAYER DETAILS

Record the details of your Rangkap Sprayer here for future reference when discussing service with your Silvan dealer, ordering service parts or making a warranty claim.

DATE OF DELIVERY \_\_\_\_\_

SELLING DEALER \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE NO. \_\_\_\_\_

PRODUCT CODE \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

INSTALLED BY \_\_\_\_\_

## New Product Warranty Policy

*the Silvan*

# Warranty

**This warranty is the only warranty applicable to Silvan new products ('Products') and, to the maximum extent permitted by law, is expressly in lieu of any other conditions or warranties expressed or implied in relation to the Products.**

**Subject only to legislative obligations to the contrary, Silvan shall not be liable for incidental or consequential damage resulting from ownership or use of a Product.**

**Silvan does not authorize any person to create for it any other obligation or liability in connection with these products.**

Silvan warrants its authorised Dealer, who in turn warrants the original purchaser (owner) of each new Silvan product that it will repair or replace the product, or, pay the cost of repair or replacement, as determined by Silvan without charge for labour or any defective or malfunctioning parts in accordance with the warranty limitations and adjustment schedule below.

The warranty period begins on the date the product is delivered to the first retail purchaser for a period of 12 months

### *This Warranty Covers*

Only conditions resulting directly from defects in workmanship or material under normal use and service.

### *Warranty Exclusions*

The Warranty does not cover:

- Conditions resulting from misuse, use of incompatible chemicals, exceeding machine specifications including overloading, impact damage, negligence, accidental damage or failure to perform recommended maintenance services.
- Any product which has been repaired by other than an authorised Silvan service outlet in a way which, in the sole and absolute judgement of Silvan, adversely affect its performance or reliability.
- The replacement of maintenance items such as diaphragms, batteries, V belts and ground engaging components, etc.
- Loss of time, inconvenience, loss of use of the product liability to third parties or any other consequential damages.
- Incidental costs associated with a warranty repair including any travel costs, out of hour's labour charges, cleaning costs, transportation costs, freight costs or any communication costs.

The repair of a defective product qualifying under this warranty will be performed by any authorised Silvan service outlet within a reasonable time following the delivery of the product, at the cost of the owner, to the service outlet's place of business. The product will be repaired or replaced, using new parts supplied by Silvan. Silvan, in its absolute discretion, may choose to pay the cost of replacement or repair of the product.

The owner is responsible for the performance of regular maintenance services as specified in the Owner/Operator Manual applicable to the product. Failure to carry out regular maintenance may invalidate warranty

## Safety Instructions



Before attempting to operate or install the sprayer carefully read and take note of the following safety warnings.

Failure to comply with these warnings may result in serious injury or death.

**Warning !** This sprayer is designed and manufactured solely for the purpose of applying agricultural chemicals to plants. Under no circumstances may it be used for any other purposes.

**Warning !** Prior to installing or using the sprayer all operators must have read and fully understand the contents of this instruction manual and the safety decal fitted to the sprayer.

**Warning !** Never allow an inadequately trained person to install or operate the sprayer.

**Warning !** When installing the sprayer on a vehicle do not exceed the vehicle manufacturer's specified safe load and carrying capacity when the sprayer tank is full. Exercise extreme care when operating in hilly or uneven terrain to ensure proper stability. Refer also to the vehicle manufacturer's operating and safety instructions.

**Warning !** Stability may be affected by water surging inside the spray tank.

**Warning !** Refer to the chemical manufacturer's label for correct use and safe handling instructions of chemicals before filling or using the sprayer. Always wear the recommended safety clothing and equipment when handling chemicals and operating the sprayer. Ensure that all operators and associated personnel are familiar with the legal regulations and codes of practice that apply to the safe use, storage and disposal of spray chemicals

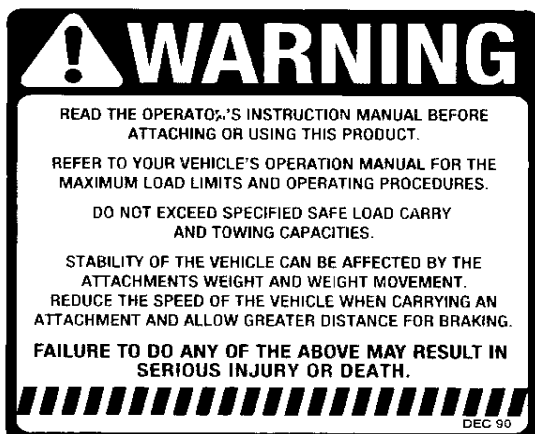
**Warning !** Before carrying out maintenance work, wash the sprayer thoroughly to remove all toxic chemicals that may contaminate the sprayer.

**Warning !** Never point the spray gun at any person or any part of the human body.

**Warning !** Do not pump flammable liquids or operate the pump in an explosive environment.

The wording of the Safety decal is shown below. All operators must be made aware of the decal and follow its instructions.

The decal must be fitted to the machine at all times in the location shown. If the decal is missing or unreadable it should be replaced by ordering a new decal from your Silvan dealer under part number, DEC 48.



## Specifications

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### GENERAL

The Silvan 70 litre Rakpak Plus is a compact portable sprayer. Whether you are a commercial grower, or hobby farmer, you will find many uses for this unit. The tank, pump and spray lance fittings are corrosion resistant and suitable for applying weedicides, herbicides, insecticides, fungicides, miticides, organic and green formulations.

It has been solely designed for mounting on four wheel ATV. The Rakpak is designed for spot spraying but may be used in conjunction with a boom for boom spraying.

### SPECIFICATIONS

#### PUMP AND CONTROLS

There are different models available. All feature Viton Valves and Santoprene diaphragm with an On-Off pressure sensing power switch

#### Spot Spray Pumps

- Shurflo 8000 series, 12 volt DC electric pump. Open flow Capacity 6.8 L/minute or Maximum pressure 60psi.
- Aquatec 552 Series **Smoothflo** 12 volt DC electric, 7 L/min open flow, Max 120psi on demand electric pressure switch.

#### Boom Spray Pumps

- Shurflo 2088 series, 12 volt DC electric pump. Open flow capacity of 11.3L/minute or Maximum pressure 45psi.
- Aquatec 555 Series 12 volt DC electric, 12 L/min open flow, Max 60psi on demand electric pressure switch.

The 552 Series Smoothflo pump is designed with adaptive pressure sensing technology that prevents pressure spikes while maintaining higher pressures and flows

On-Off power switch mounted to the protective pump cover for ease of use and are supplied with 3 metre power loom with alligator clamps for connection to 12 volt battery and a rubberised fuse holder on positive lead fitted with

### IMPORTANT INFORMATION ABOUT SPOT SPRAYERS

To ensure long life of this spot sprayer please read the following.

This product features a positive displacement diaphragm pump with a pressure sensing switch. The pressure switch interrupts power to the pump when the system pressure builds towards maximum and power is resumed to the motor when the pressure falls. **The pressure switch does not in any way substitute for a pressure regulator.**

When the spray lance trigger is depressed fluid is released and the pressure will drop allowing the pressure switch to resume power to the pumps motor.

Depending on your spraying requirements you may need to change or adjust the nozzle to suit your desired droplet size or spray pressure.

**If the pump is subjected to rapid pulsation/cycling during normal operation, or for infrequent periods it may reduce the life of the pump.** Applications which exhibit rapid pulsation/cycling should have restrictions in the nozzle minimized by fitting a larger (less restrictive nozzle) Pulsation can cause premature failure of the pressure switch or pump; these failures are not as a result of the workmanship of the component.

Spotpak's fitted with the Smoothflo model pump are designed not to pulsate and should stop pumping when the valve or spray gun trigger is released. If the pump fails to stop pumping the pressure switch may require re-adjustment to lower the max shut off pressure by a 1/16" Allen head screw on the head of the pump.

It is therefore highly recommended that the user performs the appropriate sets-up of the Spot Sprayer to maintain user safety and facilitate in trouble free usage, long pump life.

#### DIMENSIONS

	70 LITRE
Length	800 mm
Width	850 mm
Height	390 mm
Weight (dry)	12 kg
Nominal capacity	70 litres
Maximum Capacity	55 litres

#### TANK

70 Litre translucent tank moulded from U.V. stabilized and impact resistant polyethylene. 135mm filler neck with screw on anti-spill breather lid. Calibrated fill mark moulded into tank as well as recesses for locating tie down straps and spray lance for transport.

#### FILTRATION:

Wire mesh foot filter on suction line, removable for cleaning.

**DELIVERY HOSE:** 6 metre length, 8 mm I.D.

**SPRAY GUN** Lightweight, 600mm Stainless steel lance with adjustable nozzle.

## Installation

### FITTING TO A VEHICLE

Position the sprayer on the vehicle so as to minimise chemical contamination to the operator. Face the pump away from the operator to minimize the risk of contamination due to hose failure.

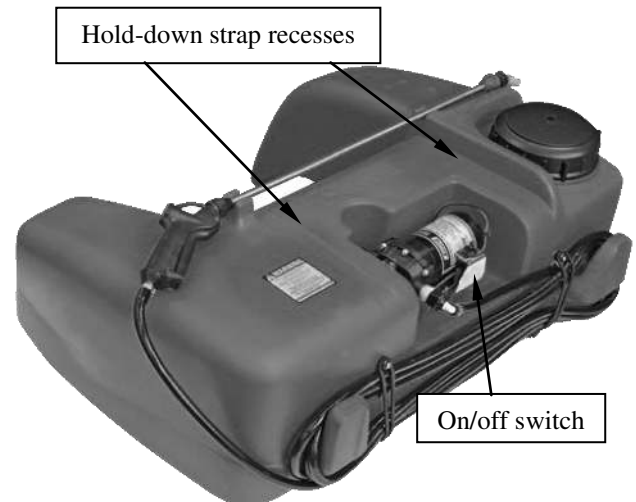
The sprayer should be securely attached to any ATV or other type of vehicle that it is installed on. The transverse recesses moulded into the top of the tank can be used to positively locate tie down straps, which should be firmly secured to approved attachment points on the ATV or other vehicle.

The sprayer should be mounted centrally and as near to the centre of gravity of an ATV as possible. It should not protrude so as to cause an obstruction. Refer to the manufacturer's instructions for appropriate load limits and fitting positions.

Never fill the spray tank to a capacity beyond the specified overall weight limit set by your vehicle manufacturer.

Note : 1 litre of water = 1 kg.

**Warning !** Do not exceed the the vehicle manufacturer's specified safe load and carrying capacity.



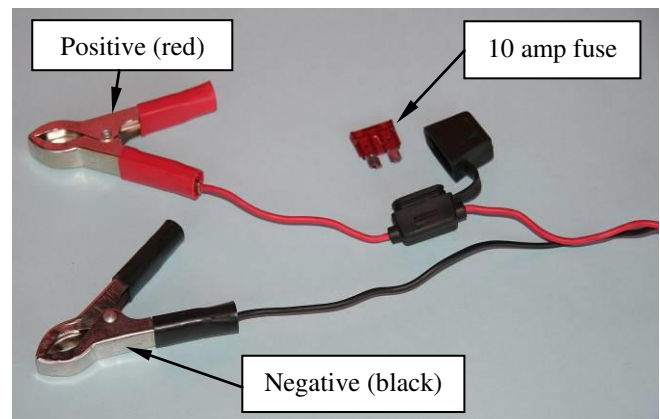
### CONNECTING TO 12 VOLT DC SUPPLY

The sprayer requires a 12 volt DC power source to operate the pump, such as the vehicle battery. The wiring loom is fitted with alligator clamps to facilitate connection to a normal vehicle battery. The red clamp should be connected to the positive terminal and the black clamp to the negative terminal.

If you need to extend the wiring loom use wire of the same gauge or thicker.

### SAFETY FUSE

The positive (red) lead incorporates a 10 amp automotive type fuse in a rubberised holder. This protects the pump and vehicle electrical system from damage should a short circuit occur. If a fuse should blow determine the cause of the short circuit before replacing the fuse.



### ON/OFF SWITCH

The on/off switch mounted on the metal cover operates the pump. It should be switched off when the pump is not in use or when the tank is empty to prevent unnecessary drain of power and overheating and damage to the pump.

## Operation

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### SETUP AND TESTING.

It is always recommended that you first test all spray equipment thoroughly with clean water.

Silvan Rakpack's are supplied with a blue adjustable nozzle containing a large orifice, which when twisting the tip can allow for a greater flow of liquid. It is recommended that adjustable nozzle is used first with the spray gun and can be changed later if you require.

Release the elastic straps that secure the spray hose to the tank and remove the lance and hose from the transport recesses on the tank.

1. Be sure to wear safety equipment as recommended by the chemical manufacturer before adding chemical to the sprayer
2. Check the suction line foot filter is clean and undamaged (see Maintenance section).
3. Fill the tank with clean water.
4. With the 12 volt supply connected and the 6 meter spray hose and spray lance connected. Fit the blue adjustable nozzle or any large orifice nozzle you may wish to use.
5. Check all hoses, hose clamps and connections for leaks or damage.
6. Switch the pump ON.
7. Depress the spray lance trigger. The pump is self priming and will start spraying within 30 seconds.
8. Check the hose connections for leaks, if any are found stop the pump and rectify the problem before continuing.
9. By twisting the tip of the nozzle to the coarsest droplet size, the restriction to flow is minimized and pump pulsation will not occur.
10. Slowly twist the tip of the nozzle from a coarse droplet size to a fine droplet to your preference. If the pump begins to pulsate/cycle you may require a different nozzle that is rated to allow for higher flow rates at your selected droplet size at approximately.
11. Once the nozzle is set and the pump operates free of pulsation/cycling, the spot sprayer is ready to be utilized for spot spraying of chemical.

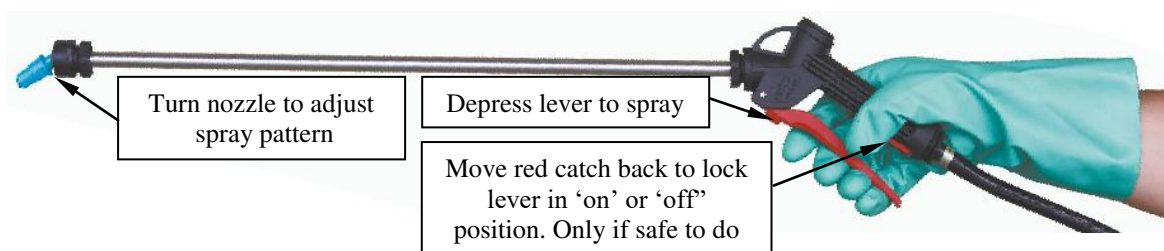
Important note: Spray units must not be operated while the pump is pulsating/cycling because it can cause component failure.

Chemical solution may now be added to the tank.

Follow the mixing instructions and safety precautions provided by the chemical manufacturer. Before adding concentrated chemicals, partially fill the tank with water then add the chemical and complete filling with water.

Wear all the safety equipment recommended by the chemical manufacturer before adding chemical to the sprayer and whilst conducting spraying operations.

For safety the spray gun has a catch that can be used to lock the lever closed to prevent accidental spraying. The catch can also be used to lock the lever open for continuous spraying. This should only be done when safe to operate in this manner and where there is no likelihood of inadvertently spraying any person or property that may suffer damage.



After spraying is completed, drain unused chemicals from the tank. Rinse the tank with clean water then operate the sprayer with clean water in the tank to clean out the pump, hose and spray lance. Do not leave chemicals in the tank as they may settle and form solids that may block the filter.

If heavy frosts are experienced, run the sprayer until the pump and spray lines are dry. This will prevent water freezing in the pump or spray lines and damaging the sprayer.

**Warning !** Dispose of unused chemical and water used for rinsing in a manner that will not endanger people, animals or the environment in accordance with local regulations and the handling and disposal information available from the Chemical manufacturer.





## Maintenance

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After spraying rinse out the spray lines and tank with clean water

### CLEANING THE FILTER

To check the filter, remove the filler cap and hook the suction hose out with a bent piece of wire. To avoid chemical contamination do not put bare hands in the tank to remove the filter. Appropriate protective equipment including gloves should be used whenever maintenance is carried out. Clean the filter with a bristle brush, do not use a wire brush or sharp object as this may damage the mesh. The filter can be pulled from the suction hose if necessary for cleaning. When reinstalling the filter in the tank press the suction hose into the recess to keep the filter on the bottom of the tank so that it will fully empty.