



Instruction Manual

MANLT10 REV G 29/05/20

LIGHTFOOT SPRAYERS 300L

LT30-S8

LT30-34



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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 Lightfoot 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 _____

MODEL NUMBER _____

TELEPHONE NO. _____

INSTALLED BY _____

Silvan Warranty

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

We warrant our goods to be free from defects in materials and workmanship for the warranty period of 12 months from the date the product is delivered to the consumer.

Silvan warrants its authorised Dealer, who in turn warrants the original purchaser (consumer) 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 below.

This Warranty is in addition to any other rights and remedies available to consumers under the law

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 as specified in the Owner/Operator Manual applicable to the product.
- Damage caused by continued use of a product after initial failure
- Any product which has been repaired by other than an authorised Silvan service outlet in a way which, in the sole and absolute judgment of Silvan, adversely affect its performance or reliability.
- The replacement of maintenance items such as diaphragms, batteries, V belts and ground engaging components, etc.

How To Claim Warranty

Return the goods to the place of purchase at your cost and within the warranty period along with evidence of the purchase date. If the original supplier cannot be contacted, then contact Silvan as below and we can direct you on how to proceed with your warranty claim.

How Your Claim Will Be Managed

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 depending on the extent of the problem at the discretion of Silvan and the Silvan dealer.

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 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 or implement.

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

Warning! Exercise extreme care when operating in hilly or uneven terrain to ensure proper stability, and braking ability. Refer also to the vehicle manufacturer's operating and safety instructions.

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

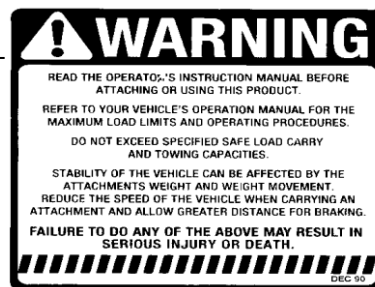
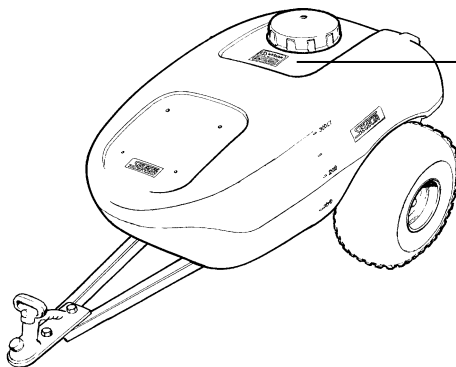
Warning! Before carrying out maintenance work, wash the sprayer thoroughly to remove all toxic chemicals that may contaminate the sprayer. Wear appropriate safety clothing and equipment when carrying out maintenance.

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

Warning! Never operate the sprayer in an explosive environment as arcing from the electric pump may cause an explosion. NEVER attempt to spray flammable liquids.

Warning! NEVER allow any person to ride on the sprayer whilst being towed.

The wording of the Safety decal is shown. 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



GENERAL:

The Silvan Lightfoot sprayers are towable sprayers that have been designed for the application of agricultural chemicals to plants and may be used with a handgun or in conjunction with a boom.

SPECIFICATIONS:

PUMPS OPTIONS:

- 300L UNIT
 - Model LT30-S8 with 12V high capacity Aquatec 20L/min (open flow) pump, 414 kPa/60psi max pressure with regulator
 - Model LT30-34 with Honda GX120 Petrol engine, Comet MC20/20, 20 Bar, 18.5L/m max flow with pressure regulator
 - Optional hose, reels, spray guns, booms & pressure regulators

TANK:

Rotationally moulded translucent polyethylene tank, U.V. stabilized and impact resistant with calibrated fill mark moulded into the tank, Screw down lid with breather. Capacity 300 litres (includes a large basket strainer fitted beneath the lid).

WHEEL EQUIPMENT:

300L UNIT – 22x11.00-8 Mudpuppy Tyres

FILTRATION:

300L UNIT - In line suction filter with removable bowl and element.

CONTROLS:

- 12V version: Power loom for fitment from Lightfoot to vehicle with remote mountable on/off power switch
- Motorized version: controls mounted directly on pump; optional remote controls available

All electric pumps fitted with automatic on/off pressure sensing switches. Optional pressure controls also available.

DIMENSIONS (without boom)	300L (12V Version)	300L (Motorized Version)
Length	1580mm	1580mm
Width	1160mm	1160mm
Height	870mm	1200mm
Weight (dry)	72kg	110kg
Nominal capacity	300L	300L

IMPORTANT INFORMATION ABOUT 12 VOLT SPRAYERS:

Silvan Lightfoot 12V Sprayers feature a positive displacement diaphragm pump with a pressure sensing switch.

Restriction to the flow from the pump results in the increase in system pressure, which if great enough will cause the pressure switch to cut the power to the motor. When using the 12-volt spray unit in spot spraying applications the pressure switch can act to function as an automatic on demand switch, stopping the pump when the spray lance trigger is released. 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. When a pressure regulator has been installed the pumps electric pressure sensing switch will not act as an On-Demand switch because of pump flow bypassing back into the tank will can stop pressure from building to high enough to automatically switch the pump off.

The use of a Lightfoot for the application of chemical requires initial set up before operation to ensure the users personal safety, an even spray pattern and long life of the pump. Depending on your spraying requirements you may need to change or adjust the nozzle(s) to suit your desired droplet size or spray pressure.

When the flow rate through the spray lance or boom is very low, the pump may re-pressurize the outlet faster than the fluid is being released causing rapid pulsation/cycling (pump switching ON/OFF within 1 seconds).

If the pump is subjected to rapid pulsation/cycling during normal operation, or for infrequent periods 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. An alternative to changing the nozzle to stop pulsation is to install a pressure regulator to manage flow and pressure.

It is therefore highly recommended that the user performs the appropriate set-up to facilitate in trouble free usage.

Installations



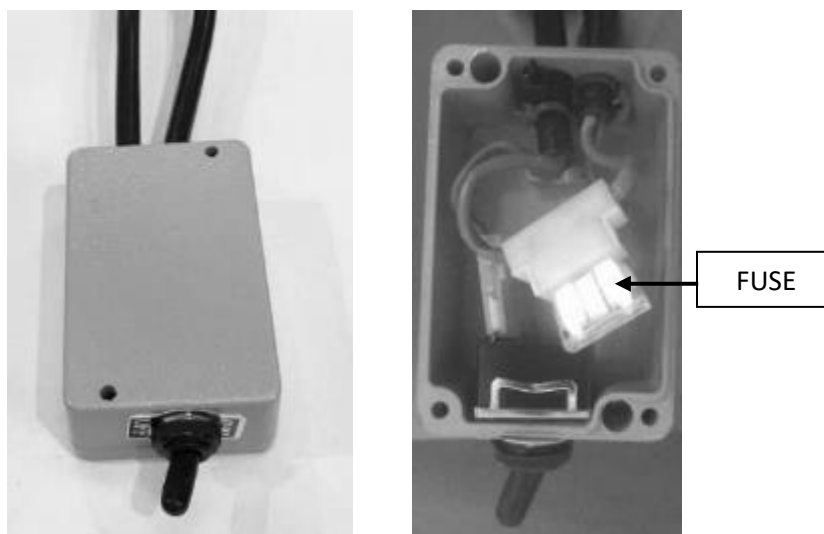
Warning! Do not exceed the vehicle manufacturer's specified safe load and carrying capacity.

CONNECTING TO 12 VOLT DC SUPPLY (12V Version):

The Sprayer requires a 12 volt DC power source. A 3 metre loom is provided with the sprayer to allow the sprayer to be connected to the 12 volt DC source available. The red wire is positive and the black is negative. If you extend the wire use wire of the same gauge or larger.

An on/off switch is fitted to the sprayer control box to allow the sprayer to be switched off from the 12 volt DC source to prevent accidental drain of power. The switch also allows the pump to be shut down when the tank is empty preventing overheating and damage to the pump.

A 30-amp fuse is fitted to the control box to prevent any potential damage to the electrical system of the vehicle. Consult your vehicle instruction manual for correct electrical connection.



FITTING INSTRUCTIONS:

It is recommended that the sprayer be securely attached to any ATV or other vehicle. Refer to manufacturer's instructions for appropriate load limits and fitting positions.

Note: 1 litre of water = 1 kg.

Never fill spray tank to a capacity beyond the specified overall weight limits set by your vehicle manufacturer. When fitted these should be firmly secured to approved attachment points on the ATV or other vehicle.

Operation (12V Version)



It is always recommended that you first test all spray equipment thoroughly with clean water. There are a few accessories available for Lightfoot Sprayers and each will have its own spraying characteristics due to the number and size of nozzles, the diameter and length of hose.

The LIGHTFOOT may be supplied with a Spray Gun containing a large orifice blue adjustable nozzle, which when twisting the tip can allow for a greater flow of liquid. It is recommended that adjustable nozzle is used first and can be changed later if you require.

1. Be sure to wear safety equipment as recommended by the chemical manufacturer before adding chemical to the sprayer
2. Check the filter is clean and undamaged (see Maintenance section).
3. Fill the tank with clean water.
4. Check all pipes, hoses, hose clamps and connections for leaks or damage.
5. Switch the pump ON.
6. The pump is self-priming and should start spraying within 30 seconds.
7. Check the hose connections for leaks if any are found stop the pump and rectify the problem before continuing.
8. If the pump begins to cycle on/off, you may require a different nozzle that is rated to allow for higher flow rates at your selected droplet size (alternatively fit a pressure regulator for managing pressure and flow)
9. Once the nozzle is set and the pump operates free of pulsation/cycling, the sprayer is ready to be utilized.

NOTE: PRESSURE REGULATOR IS LOCATED AT THE BACK OF TANK ON 12V SPRAYERS.



Pressure adjusting knob

Operation (12V Version, cont.)



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

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 crystallize or form solids in the pump, spray lines and 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.

Operation (Motorised Version)

This pump has been designed and constructed solely to pump agricultural liquid chemicals, normally used for pest, weed and fungus control.

Must Not Be Used To Pump:

- Liquids with a density and viscosity greater than water.
- Chemical products if the compatibility with the materials of the pump is not known.
- Sea water or other salty concentrations.
- Water with a temperature above 40°C and less than 5°C.
- Any type of varnish.
- Solvents and thinners for any type of varnish.
- Any type of fuel or lubricant.
- Liquids containing granules or floating solid parts.
- Chlorine.
- For special liquids please contact Silvan service department.

Pre-Operational Checks:

1. Check the oil level while the pump is standing still and sitting horizontally. The oil must reach the level indicated on the sight glass (fig 1). Top up with SAE 20W/50 oil if necessary.

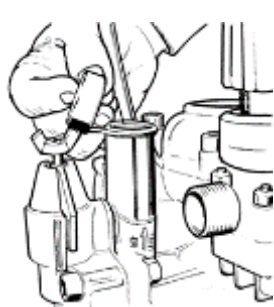


Figure 1

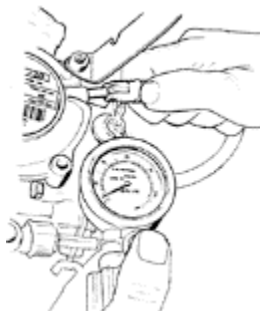


Figure 2

2. Adjust the air pressure in the pressure accumulator if fitted (fig 2) in accordance with the operating pressure used to spray. Adjust according to Table A. The pressure can be measured using a car tyre pressure gauge.

TABLE A					
Spraying Pressure	Bar	2 – 5	5 – 10	10 – 20	20 – 50
	Psi	29 – 73	73 – 145	145 – 290	290 – 725
Surge Air Pressure	Bar	2	2 – 5	5 – 7	7
	Psi	29	29 – 73	73 – 102	102

Start Up:

1. Ensure the control valve is in the bypass position and any taps not being used are in the closed position. Turning the bypass lever in the clockwise direction will place it in the bypass position. Repeat this procedure each time the pump has been emptied of liquid i.e. Run dry.
2. Bring the pump to operating speed.
3. Switch off the bypass and bring the pump to operating pressure for the application using the pressure regulator.
4. Check the oil level during the first hours of operation and top up if necessary.

Shutdown:

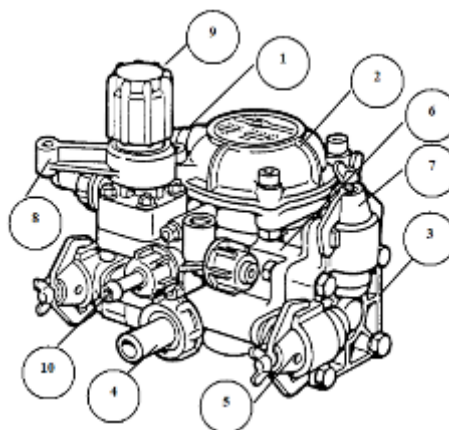
Flush the pump after use by running clean water for a few minutes

If there is a risk of freezing run the pump dry for a few minutes to remove all liquid from the pump

Component Identification:

Refer to the diagram for the position of the various components relating to your pump.

1. Oil Reservoir
2. Pressure Accumulator
3. Pump Head
4. Inlet Hose Barb
5. Inlet Valve Cap
6. Pump Crankcase
7. Retaining Clamp
8. By-pass Lever
9. Pressure Adjusting Knob
10. Outlet

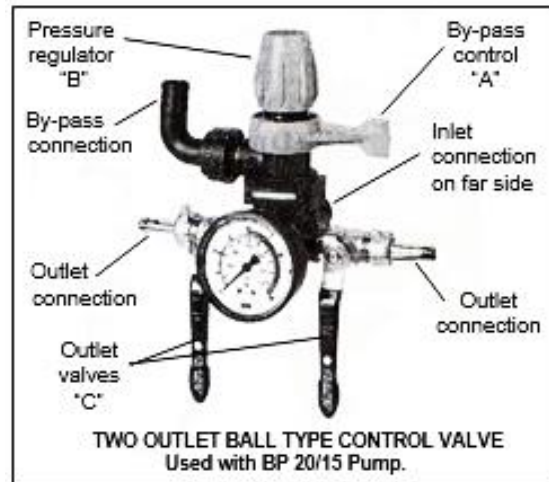


Operation (Motorised Version, cont.)



Two Outlet Ball Type Control Valve:

The selection of either the bypass or pressure mode is controlled by the rotary lever "A" - refer to diagram. Moving the lever clockwise through its full travel selects bypass, which recirculates the full flow of fluid from the pump to the tank via the agitator line.



Moving the lever its full travel anti-clockwise directs pressurised fluid to the boom, and only the overflow from the pressure control is recirculated to maintain agitation within the tank.

System pressure is regulated by turning the knob "B" and observing the reading on the pressure gauge. Turning the knob clockwise increases the pressure and turning anti-clockwise decreases pressure.

Fluid is directed to the boom lines by the outlet valves "C". The outlet valves may be operated individually and are open when the lever is in line with the direction of flow and closed when across the direction of flow.

If you wish to stop spraying but keep the motor running, close the outlet valves "C" and move the bypass lever "A" to bypass mode.



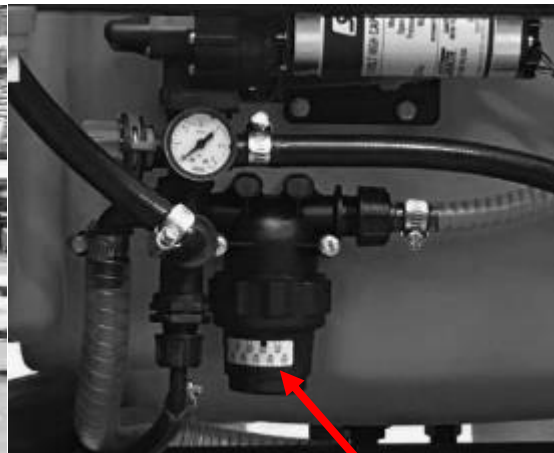
Maintenance

CLEANING THE FILTER:

To avoid chemical contamination, wear appropriate protective equipment including gloves whenever maintenance is carried out. Turn off the pump and depress the trigger on the spray lance to dissipate any pressure.

The sprayer utilises an external suction filter. Unscrew the cap on the filter housing in order to remove the filter. Clean the filter with clean water and a bristle-brush, do not use a wire brush or sharp object as this may damage the mesh.

The suction filter should be checked each time before filling the tank to prevent loss of liquid while the filter is open. Return the filter after cleaning, rinse out the spray lines and tank with clean water.



Suction
Filter

GENERAL INFORMATION:

WHEN TO SPRAY:

Results will be best when wind speed is low, temperature low and relative humidity high. An ideal time is at sunup when these conditions are most likely to apply.

APPLICATION RATE:

The application rate depends on the following.

- Speed of travel - increasing speed reduces application rate and vice versa.
- Operating pressure - increasing pressure increases the application rate and reducing pressure decreases the rate.
- Nozzle size - increasing the nozzle size increases the application rate.

$$\text{Application Rate (L/ha)} = \frac{600 \times \text{Nozzle Output (l/min)}}{\text{Speed (km/hr)} \times \text{Nozzle Spacing (m)}}$$

GROUND SPEED:

The speedometer on many vehicles may not be sufficiently accurate at the slow speeds used when spraying. If in doubt it should be checked by the following method.

Fill the sprayer with water to simulate the normal spraying weight of the vehicle. Ensure that the tyres are correctly inflated.

Measure and mark 100 metres. Approach the starting mark at the required spraying speed and accurately measure the time in seconds to reach the finishing mark. The ground speed can then be calculated as follows.

$$\text{Speed (km/hr)} = \frac{360}{\text{time in seconds for 100m}}$$

BOOM TEST (NOZZLE OUTPUT):

1. Partly fill the sprayer tank with water and mark the level or refer to the sight gauge.
2. Run the sprayer for several minutes with all boom's sections operating and measure the time carefully.
3. Refill the sprayer tank to the mark using a measuring jug and record the amount added.
4. The average output for one nozzle in litres per minute can be calculated as follows.

$$\text{Nozzle Output (l/min)} = \frac{\text{Litres Used}}{\text{No. Nozzles} \times \text{No. Minutes}}$$

The output calculated should agree with the flow rate shown in the Spray Nozzle Selection Chart, for the nozzles fitted.

5. If the nozzle output is lower than shown in the table the pressure may be increased and the test repeated or, if more than shown, the pressure may be reduced. (If optional pressure regulator is fitted)

Accessories



Refer to the chart below for general boom compatibility and details (results may vary depending on your specific pressure, nozzles, and chemical viscosity).

Nozzles	Boom Width	Spray Width	Breakback Facility	Part Number	Compatibility
					LT30-S8
2	1.05 meters	2 meters	NO	L99-09	*YES
3	2.05 meters	3 meters	NO	L99-08	*YES
4	3 meters	4 meters	NO	RP1-10	*YES

Note: * Indicates a Pressure Regulator is highly recommended.

Note: When operating with a boom, it is advisable to not over inflate the tyres. This provides suspension for the boom in rough terrain.

