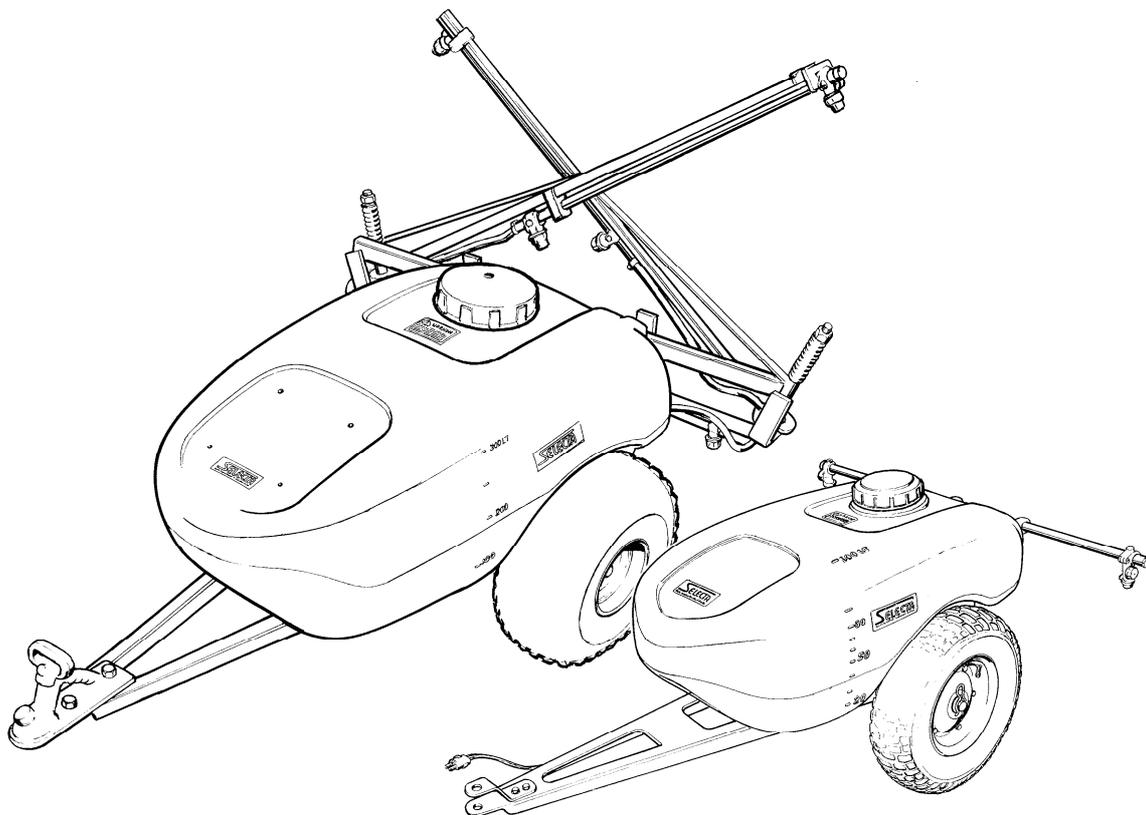


Instruction Manual

MANLT10 REV-D 14/4/10

Lightfoot
100L
300L



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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 _____

New Product Warranty

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 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 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.

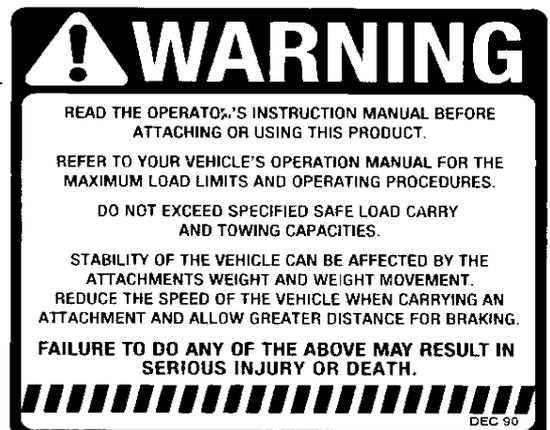
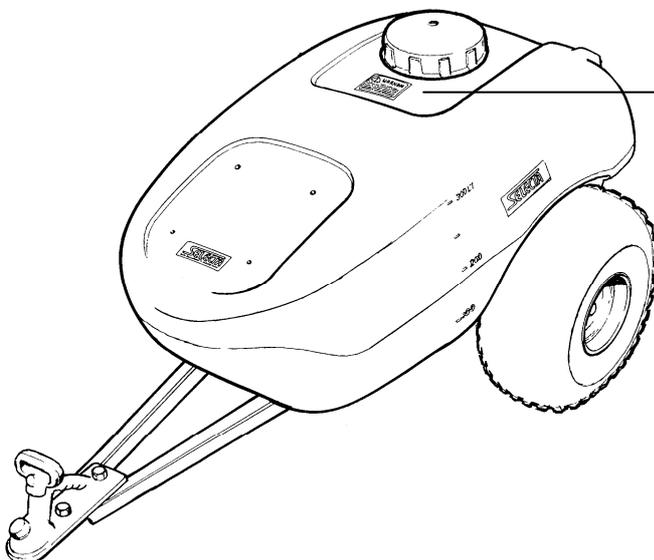
Warning ! Never operate the sprayer in an explosive environment as arcing from the electric pump may cause an explosion. NEVER attempt to spray flammable liquids.

Warning! Do not operate spray lance whilst vehicle is in motion.

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 90.



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.

STANDARD SPECIFICATIONS

PUMPS OPTIONS:

All pump models available feature Viton Valves and Santoprene Diaphragms.

- 100L UNIT (Product Code LT10-P1)
Pakpump 2000 series, 12 volt DC electric, 5.3 liters/minute open flow, Max 60psi on demand electric pressure switch, On/Off switch.
- 300L UNIT (Two models are available).
 - Shurflo 8000 series, 12 volt DC electric, 6.8 litres/minute open flow, Max 60psi on demand electric pressure switch, On/Off switch (fitted to product code LT35-S1).
 - Shurflo 2088 series, 12 volt DC electric, 13.6 litres/minute open flow, Max 45psi on demand electric pressure switch, On/Off switch (fitted to product code LT35-S5).

The **Pakpump 2000** series and the **Shurflo 8000** series pumps both feature an electric pressure sensing switch that interrupts power to the pump when the system pressure builds up to 60 psi (which is factory set); power is resumed to the pump when the pressure falls below 40 psi.

The **Shurflo 2088** series pump features an electric pressure sensing switch that interrupts power to the pump when the system pressure builds up to 45 psi (which is factory set); power is resumed to the pump when the pressure falls below 30 psi.

The pressure switch does not in any way substitute a pressure regulator.

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 100 or 300 litres (the 300L tank also includes a large basket strainer fitted beneath the lid).

WHEEL EQUIPMENT:

- 100L UNIT – 16x6.5-8
- 300L UNIT – 22x11.00-8 Mudpuppy Tyres

HANDGUN AND LANCE:

- 100L UNIT – 6m hose with Spotjet Spray gun with 600mm Stainless steel lance with adjustable nozzle.
- 300L UNIT – Not Supplied (an extensive range of Optional Sprayguns are available).

FILTRATION:

- 100L UNIT - Suction line foot filter standard.
- 300L UNIT - In line suction filter with removable bowl and element.

CONTROLS:

- Power loom for fitment from Lightfoot to vehicle with remote mountable on/off power switch.
- All pumps fitted with automatic on/off pressure sensing switches. Optional pressure controls also available.

DIMENSIONS (Without Boom)

	100 LITRE	300 LITRE
Length	1240 mm	1580 mm
Width	720 mm	1160 mm
Height	630 mm	870 mm
Weight (dry)	24 kg	72 kg
Nominal capacity	100 litres	300 litres

Specifications (cont.)

IMPORTANT INFORMATION ABOUT 12 VOLT SPRAYERS

Silvan Lightfoot Sprayers feature 12V 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.

Installation

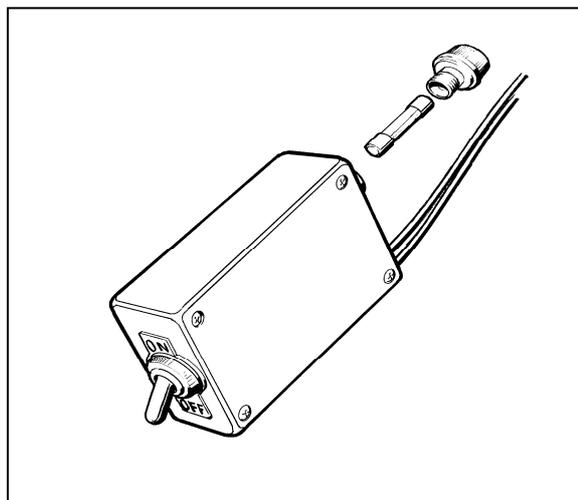
Warning ! Do not exceed the the vehicle manufacturer's specified safe load and carrying capacity.

CONNECTING TO 12 VOLT DC SUPPLY

The Sprayer requires a 12 volt DC power source. 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 10 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



Installation (cont.)

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

Correctly connect sprayer to ATV or vehicle.

SETUP AND TESTING

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

There are a number of 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 LT10-P1 is 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. (For the LT10-P1) Ensure 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 pipes, hoses, hose clamps and connections for leaks or damage.
6. Switch the pump ON.
7. The pump is self priming and should start spraying within 30 seconds. (LT10-P1) Depress the spray lance trigger to flush air from the lines.
8. Check the hose connections for leaks if any are found stop the pump and rectify the problem before continuing.
9. For the LT10-P1 twist the tip of the nozzle to the coarsest droplet size, the restriction to flow is minimized and pump pulsation will not occur.
10. For the LT10-P1 Slowly twist the tip of the nozzle from a course droplet size to a fine droplet to your preference.
11. If the pump begins to cycling 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)
12. 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 premature component failure.

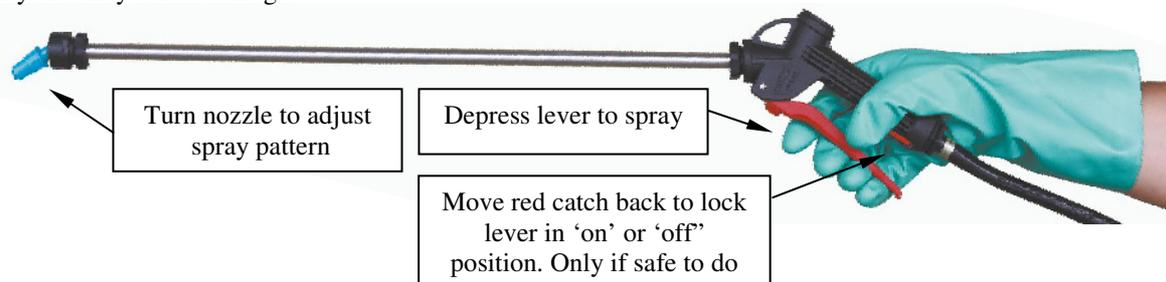
Chemical solution may now be added to the tank.

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.

Operation (cont.)

The Spray Gun supplied with the LT10-P1 has an additional safety feature; the lever catch 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 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.

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 LT10-P1 contains a foot filter on the end of the suction line. To check the filter, hook it out of the tank with a bent piece of wire. 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 TL35-S1 and the LT35-S5 utilise an external element filter that does not require the tank to be opened. 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.

Return the filter after cleaning, rinse out the spray lines and tank with clean water.

Calibration

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 sun up 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 a distance of 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 booms 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.

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

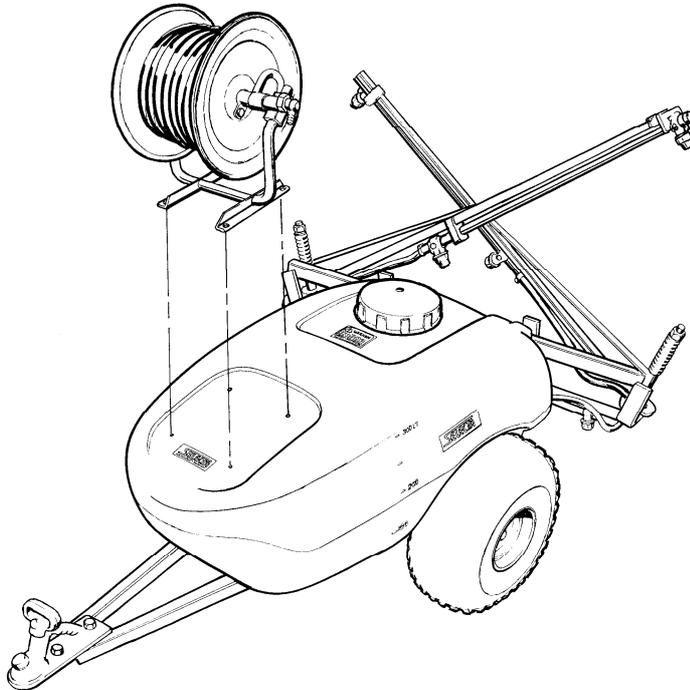
The output calculated should agree with the flow rate shown in the Spray Nozzle Selection Chart, for the particular nozzles fitted.

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

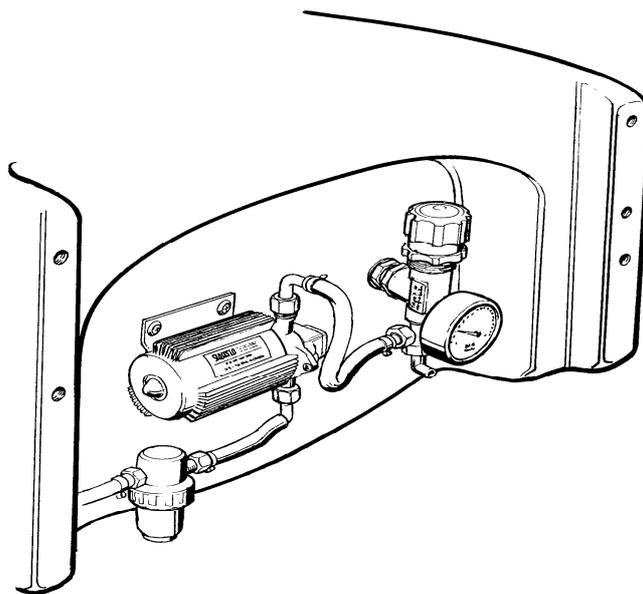
HOSE REEL L99-01

An optional hose reel with 20m of 10mm hose and spray lance can be fitted to the 300L unit. Mounting bolts are provided for direct mounting to the top of the tank. Take care to use the bolts provided so the tank inserts are not damaged by overly long bolts being over tightened and pushing through the plastic. (Pictured with boom, not included).



DIRECT MOUNTED PRESSURE REGULATOR L99-02

An optional pressure regulator and gauge may be fitted to the 300L unit. This allows for accurate pressure regulation, particularly for boom spray applications.

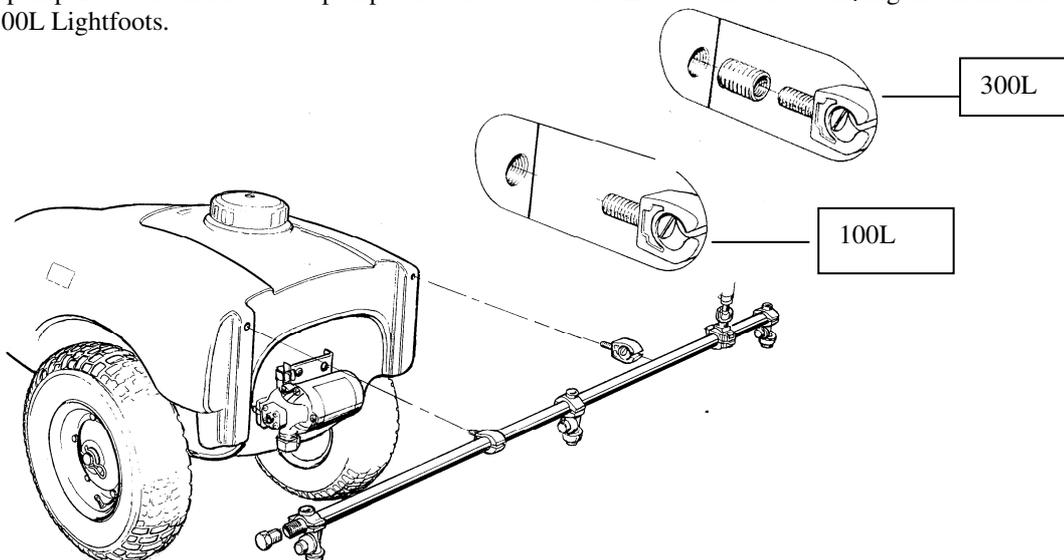


Accessories

BOOMS

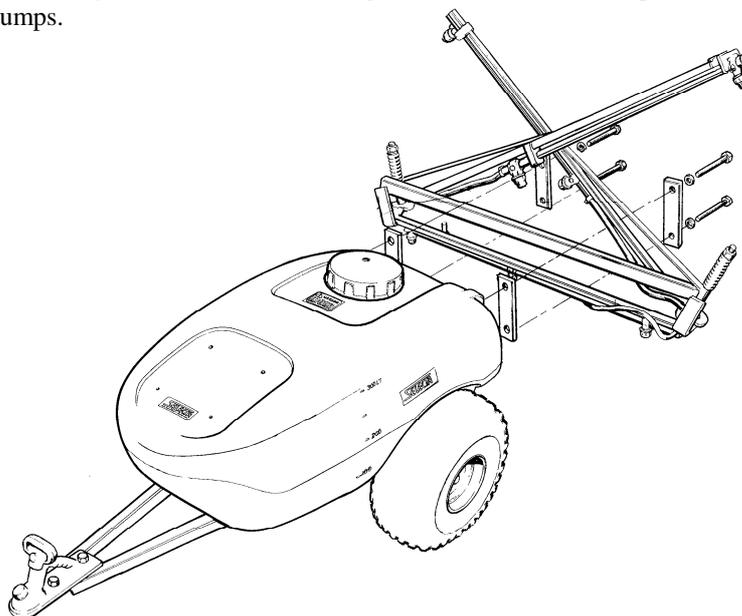
NON-FOLDING BOOMS FOR 100L AND 300L UNITS

Option of 1,2 or 3 meter spraybooms may be fitted to the 100L or 300L Lightfoot. These booms will operate from either the Pakpump 2000 or Shurflo 8000 pump. Shown below is the L99-08 and the clamping mechanism for both the 100 and 300L Lightfoots.



FOLDING BOOM FOR 300L UNIT (L99-04)

An optional 6 jet sprayboom may be fitted to the 300L Lightfoot. This boom will operate from either the Shurflo 8000 or 2088 pumps.



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

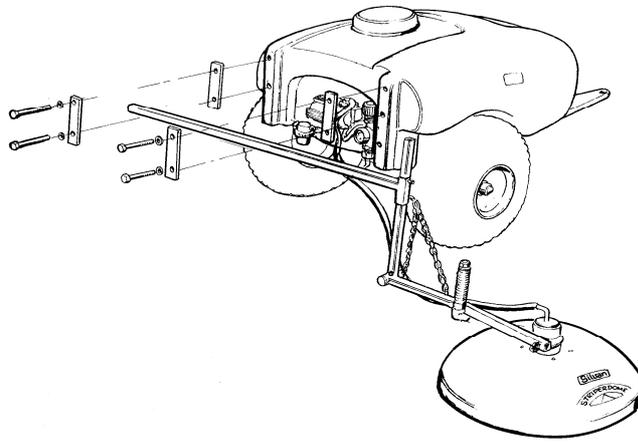
Nozzles	Boom width	Spray width	BreakBack facility	Part Number	Compatibility		
					LT10-P1	LT35-S1	LT35-S5
2	1.05 meters	2 meters	NO	L99-09	YES	YES	*YES
3	2.05 meters	3 meters	NO	L99-08	YES	YES	*YES
4	3 meters	4 meters	NO	RP1-10	YES	YES	*YES
6	6 meters	6 meters	YES	L99-04	NO	YES	*YES

Note: * Indicates a Pressure Regulator is highly recommended

Accessories

BOOM STRIPPER DOME

A range of optional undertree booms may be fitted to the 300L Lightfoot. This boom will operate from either the Shurflo 8000 or 2088 pumps.



BOOMLESS NOZZLE KIT FOR 300L UNITS (L99-75)

A kit allows for boomless spraying to a width of 7 meters using two nozzles when installed on the LT35-S5. The L99-75 can also be fitted to the LT35-S1 and its smaller pump for single sided boom spray up to 3.6 meters (nozzle cap for 1 sided spraying included with L99-75). Boomless spraying is ideal for fire breaks, and broad application of herbicide or fertilizer without the risks of boom damage from fence posts and obstacles.

