



Instruction Manual

MANLBA-100 REV F 29/01/20

**SELECTA POWER PUMP
6.5 HP FIRE PUMP 2 STAGE
LBA-100**



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Introduction

We are extremely proud of our reputation for quality products backed by quality service. Your investment in a Silvan product is an investment in quality.

This manual covers the Selecta Power 6.5 HP Fire Fighting Pump. To ensure continued efficient performance and safe operation of your pump, you need to read this manual thoroughly and fully familiarise yourself with all aspects of the pump's operation, maintenance and safety procedures.

Now that you are a proud Silvan owner, all our services and dealer support are available to you should you need them. We always assure you of our best attention.

YOUR PUMP DETAILS

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

SERIAL NUMBER _____

MODEL _____

DATE OF DELIVERY _____

SELLING DEALER _____

ADDRESS _____

Engine:

- Model 6.5 HP
- Single cylinder 196cc 4-Stroke OHV petrol with forced air cooling and electronic ignition
- Dual element dry air filter
- Manual recoil rope start
- Max Power: 4.8kW (6.5HP) at 3600 rpm
- Noise Level: 82dBA at muffler side

Fuel Tank:

Capacity: 3.6L
Operating Duration: 2 hours approx.

Frame:

Welded tubular steel

Pump:

Direct coupled centrifugal impeller type
Operating Speed: 3600 rpm

Model LBA-100 Fire Pump, 2 Stage:

Max Output – Open Flow: 250 L/min
Max Pressure – No Flow: 7 Bar (100psi) 70m
Suction Lift Height: 3.5 metres
Inlet Connection: 1.5-inch BSP (38mm)
Outlet Connection: 2 x 1.0-inch BSP (25mm)
1 x 1.5-inch BSP (38mm)

Overall Dimension (mm, kg):

	Length	Width	Height	Weight
<u>LBA-100</u>	460	375	395	30

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 authorized 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.

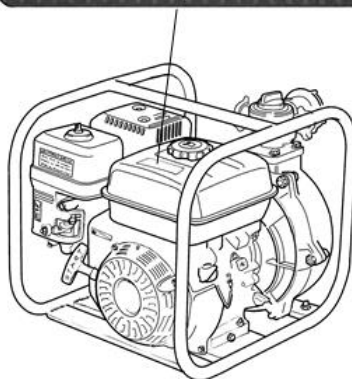
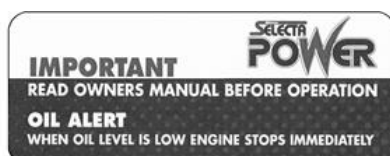


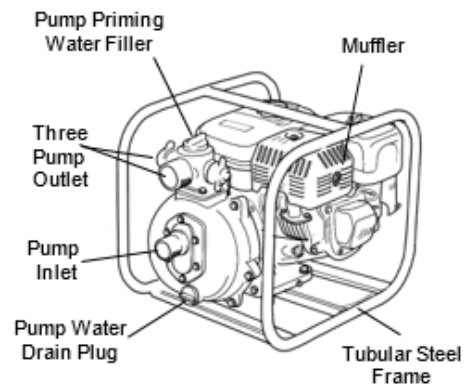
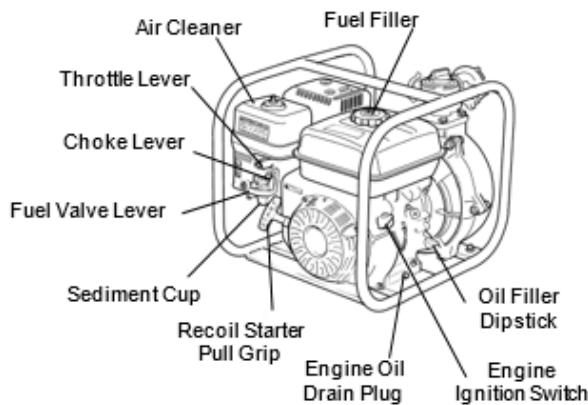
Before operating the pump read the following safety instructions.

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

Whilst your Pump has been designed and manufactured to incorporate all necessary safety features it is essential that any person who operates or works on the machine is aware of the safety precautions that should be exercised.

- The pump is designed and manufactured solely for the purpose of pumping water for firefighting, tank filling or similar activities. Under no circumstances should it be used for pumping flammable or corrosive liquids such as petrol or chemical solutions.
- Before using the pump carefully read and ensure you understand the contents of this manual. Ensure that you are familiar with the starting, operating and stopping procedures.
- Before using the pump ensure all operators read and follow the safety warning carried on the machine. Refer below for the wording of this warning.
- Never allow an inadequately trained person to operate the pump
- Do not operate the pump whilst wearing loose clothing, unrestrained long hair, jewellery or anything which could become entangled in rotating components or limit your vision.
- Always operate the pump in a well ventilated and well-lit area that is free from flammable or other materials that may interfere with its safe operation. Never operate in an enclosed area as engine exhaust fumes contain carbon monoxide, an odourless tasteless asphyxiant, which could cause unconsciousness or death.
- Always operate on firm and level ground. Uneven or sloping terrain could lead to the pump overturning and spilling fuel.
- Never leave the pump unattended while the engine is running.
- Stop the engine before doing any maintenance work on the pump.
- Avoid contact with hot engine parts, which could cause serious burns.
- Keep bystanders, children and animals away from the pump whilst operating.





Connecting the Hoses

1. Suction Hose

The inlet hose must be sufficiently rigid to avoid it collapsing under suction. To achieve a fast-initial take-up, it should be no longer than required to conveniently reach the water supply.

A filter must be fitted to the inlet end of the suction hose to prevent material entering the pump that could cause a blockage or damage the impeller. The filter should be an appropriate type for the water supply.

Attach the other end of the hose to the pump inlet using a 1.5" BSP threaded hose connector according to the pump model. Be sure that the joint is tight and free from air leakage, which could prevent pump priming.

2. Pressure Hose

Fit a pressure hose of matching diameter and required length to the selected outlet(s) using a BSP threaded hose connector. Flow resistance is proportional to hose diameter and length. A hose with largest diameter and shortest length for the particular purpose will produce the best flow rate.

Priming the Pump

Prime the pump before operating the engine. Remove the filler plug from the outlet fitting and fill the pump with clean water. Insert the suction hose in the water supply before starting the engine.

Caution: Do not run the engine without water in the pump as it will overheat and damage the seals. If during operation the water supply is exhausted stop the engine immediately and fill the pump once it cools down.

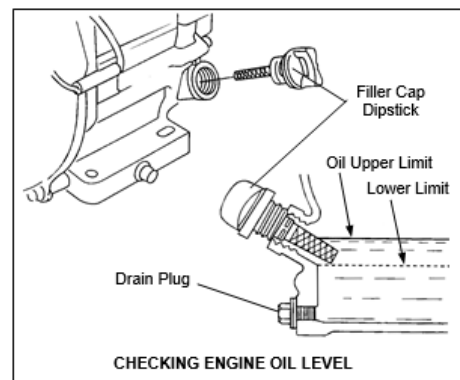
Engine Pre-Starting Checks

1. Oil Level

Caution: The engine is shipped without oil. It must be filled before starting for the first time.

Check the oil level each time before starting pumping operations. Ensure the check is carried out with the engine stopped and on level ground.

Unscrew the filler cap dipstick and wipe clean. Insert the dipstick into the filler neck and remove it without screwing home. If the oil level is less than halfway up the dipstick fill to the edge of the filler neck with high detergent, premium quality SAE 10W-30 engine oil. Refit the filler cap dipstick.



Running the engine with a low oil level can cause serious damage. To safeguard against this the engine is fitted with a 'low oil level' protection system that automatically stops the engine if the oil drops below the safety level. When this occurs the ignition, switch remains in the 'on' position. If the engine should stop during operation always first check the oil level before looking for other causes.

2. Fuel Level

Stop the engine before filling the fuel tank. Remove the fuel filler cap and fill the tank with standard grade, unleaded petrol to the bottom of the filler neck. To avoid spillage, do not fill the neck of the tank. The capacity is 3.6 litres.

WARNING! Petrol is extremely inflammable, and explosive under certain conditions.

Refuel in a well-ventilated area with the engine stopped. Do not allow smoking, a naked flame or electrical sparks to occur during refilling.

Avoid spillage and wipe up spills immediately.

Avoid contact with the skin, petrol can burn.

Keep stored petrol out of the reach of children.

3. Air Cleaner

Unscrew the wing nut, remove the air cleaner cover and inspect the filter element. Clean or replace a dirty filter element and always replace a damaged element – see Maintenance section.

Starting the Engine

Turn the ignition switch on. Slide the fuel valve lever to the “on” position and close the choke lever. Do not use the choke if the engine is warm or the air temperature is high. Open the throttle slightly by moving the lever towards the fast running position.

Pull the starter grip gently until resistance is felt, then pull it briskly and the engine should start. Return the starter grip gently, do not allow it to snap back or the starter may be damaged. If the engine does not start repeat the process.

Open the choke fully when the engine is warm and running smoothly.

Pumping Operation

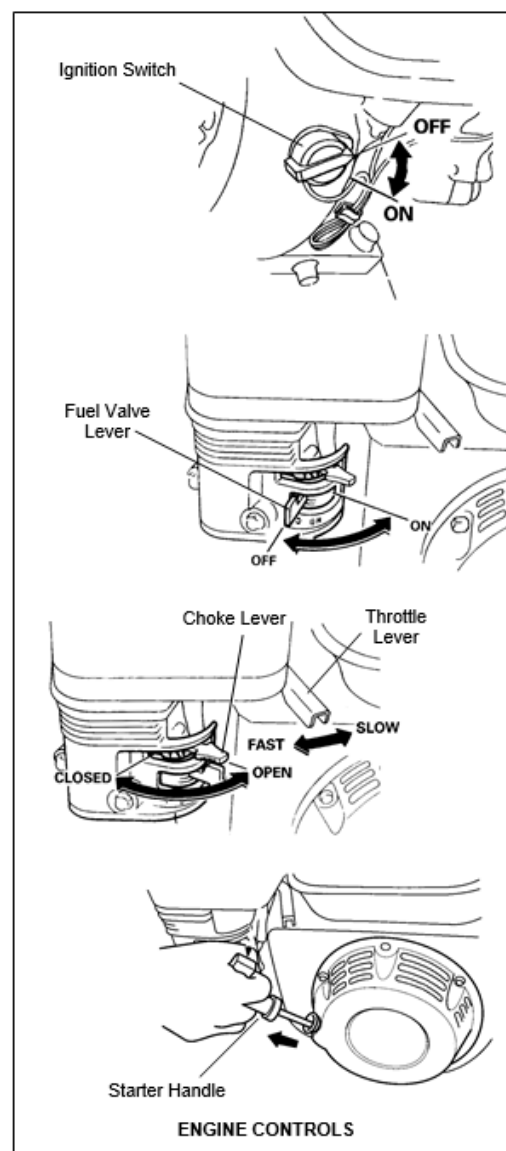
Set the throttle to the fully open position to obtain maximum pump output. If necessary, the flow rate can be regulated by adjusting the throttle position.

Stopping the Engine

To stop the engine under normal circumstances, return the throttle lever to the idle position, close the fuel valve and turn the ignition switch off. In an emergency the engine can be quickly stopped by simply turning the ignition switch off.

Operation at High Altitude

Power will drop by 3.5% for every 300meters increase in altitude. At high altitude, the carburetor will produce an over rich mixture, which will further decrease engine power and increase fuel consumption.



Maintenance Schedule:

Regular maintenance is necessary to ensure optimum performance and extend the service life of the unit. The table below shows the items that require regular maintenance and the frequency at which each should be serviced.

Ensure that the engine is stopped before you begin any maintenance or repairs. This will avoid the possibility of carbon monoxide poisoning from the exhaust fumes. Be sure that there is adequate ventilation whenever you operate the engine.

To avoid burns from hot parts let the engine cool before touching it.

Item	Frequency	Each time used	First month or 20 hours	Each 3 months or 50 hours	Each 6 months or 100 hours	Each year or 300 hours
Engine oil	Check level	O				
	Change		O		O	
Air cleaner element	Check	O				
	Clean			O(1)		
	Replace					O (2)
Sediment cup	Clean				O	
Spark plug	Clean Adjust				O	
	Replace					O
Idle speed	Adjust					O
Valve clearance	Adjust					O(3)
Combustion chamber	Clean	After every 500 hours (3)				
Fuel tank & strainer	Clean					O(3)
Fuel supply pipe	Check	Every 2 years (replace if necessary) (3)				
Pump impeller	Inspect					O(3)
Pump housing	Inspect					O(3)
Pump inlet valve	Inspect					O(3)
(1) Service more frequently in dusty areas. (2) Replace only the paper element. (3) Should be done by a Silvan dealer, unless you have the proper tools and are mechanically proficient.						

Engine Oil Change

Drain the oil when the engine is warm to ensure quick and complete draining.

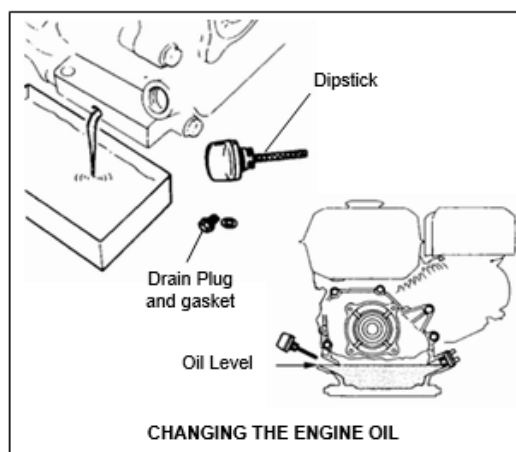
Place a suitable container beneath the drain plug.

Remove the dipstick and drain plug and allow the oil to drain completely into the container.

Reinstall the drain plug and tighten securely.

With the engine level, fill the sump through the dipstick opening with a high detergent, premium quality SAE 10W-30 engine oil, until it is level with the edge of the filler neck. Oil capacity is 0.6 litres.

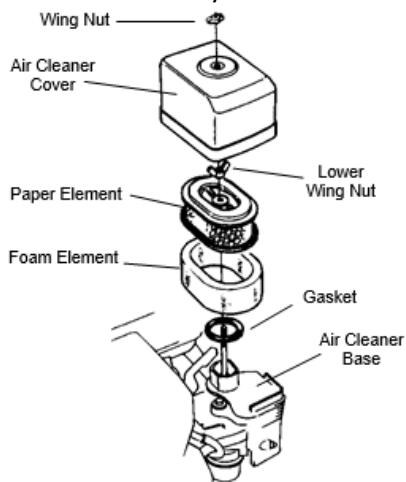
Reinstall the dipstick and tighten.



Dispose of the used oil in a manner consistent with protecting the environment. Take it to a service station or recycling depot for proper disposal.

Air Cleaner Service

A dirty filter will restrict air flow to the carburettor and reduce engine power. Operating without the air cleaner fitted or with a damaged filter will allow dirt to enter the engine causing rapid wear, which will not be covered under warranty.



AIR CLEANER COMPONENTS

Unscrew the wing nut and remove the air cleaner cover. Unscrew the lower wing nut and remove the filter assembly. Remove the outer foam element from the paper element.

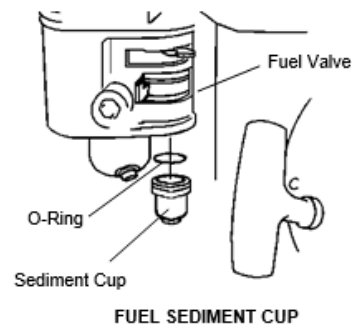
Inspect both elements and replace if damaged. Always replace the paper element at the scheduled service interval. Clean both elements if they are suitable for reuse.

Tap the paper element several times on a hard surface to remove dirt, or blow compressed air not exceeding 200kPa (30 psi) through the element from the inside. Never brush dirt off as this will force dirt into the fibres.

Rinse the foam element in warm soapy water or clean in non-flammable solvent (not petrol) and allow to dry. When dry, dip the element in clean engine oil then squeeze out all excess. The engine will smoke if too much oil is left in the foam.

Clean the interior of the air cleaner cover and base with a moist cloth. Take care to avoid dirt entering the air duct.

Fit the foam element over the paper element and re-install the filter assembly on the air cleaner base, making sure the gasket is in place. Tighten the lower wing nut firmly then install the air cleaner cover and tighten the upper wing nut.



Fuel Sediment Cup

Move the fuel valve to the Off position then unscrew the sediment cup and remove the O-ring.

Wash the cup and O-ring in non-flammable solvent and dry thoroughly. Place the O-ring in the fuel valve then screw the sediment cup into place and tighten securely.

Move the fuel valve to On and check for leaks. Replace the O-ring if there is leakage.

Spark Plug Service

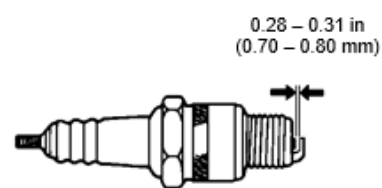
Disconnect the spark plug lead and remove any dirt from around the plug. Remove the plug with a 13/16-inch spark plug wrench.

Inspect the spark plug and clean any carbon from the electrodes with a wire brush. Replace if the electrodes are worn or the insulator is damaged.

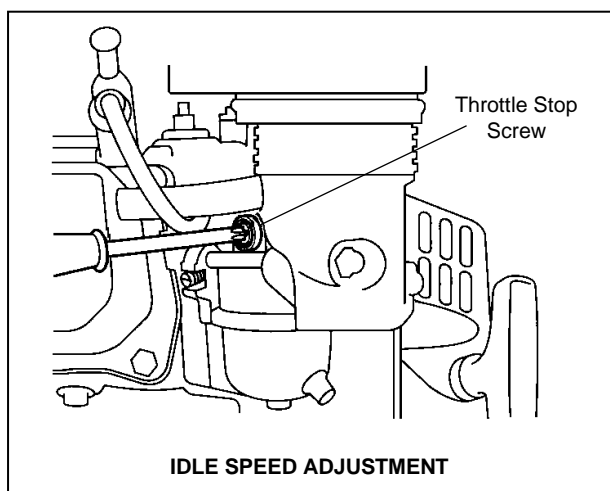
Measure the electrode gap with a spark plug gauge or feelers and adjust as necessary by carefully bending the side electrode - refer diagram below for gap dimension.

Install the plug carefully by hand to avoid cross-threading. Then after it is seated tighten with the spark plug wrench to compress the gasket. If refitting a used plug tighten 1/8 to 1/4 turn after seating or if a new plug 1/2 turn. Refit the spark plug lead.

The recommended plug is NHSP LD F6RTC.



SPARK PLUG GAP



Idle Speed Adjustment

Start the engine outdoors and allow it to warm up to normal operating temperature.

Move the throttle lever to the slowest running position. Then turn the throttle stop screw with a cross head screwdriver to obtain the correct idling speed, which is 1400 rpm, +200/-150 rpm.

Preparation for Storage

Flush the water pump with clean water to remove any sediment. Remove the pump drain plug and drain the pump thoroughly then refit the drain plug.

If storing with petrol in the fuel tank it is important to choose a well-ventilated area to reduce the hazard of petrol vapourisation. Avoid areas with a naked flame, such as a gas pilot light, or spark-producing electric motors.

Petrol will oxidise and deteriorate in storage, which can leave gum deposits and cause hard starting. The length of time it can be left in the fuel tank before causing problems varies depending upon the petrol blend and storage temperature. The air in a partially filled tank promotes fuel deterioration and this is accelerated by high temperature. For lengthy storage it is best to drain the fuel tank into a suitable container by setting the fuel valve to 'on' and removing the sediment cup and the drain plug from the carburettor. Reinstall the sediment cup and drain plug after draining.

Store the unit in a dry location and cover to protect from dust, etc. Avoid areas of high humidity which promotes corrosion.

Troubleshoot

Engine will not start:

- Check if enough fuel in tank
- Check if fuel tap is on
- Check if fuel enters carburettor
Remove drain plug at bottom of fuel bowl
- Check that oil level is not too low
The low oil level protection system may be activated
- Check that the engine switch is on
- Check if spark available at spark plug
Remove spark plug, reconnect lead, earth plug against engine block, turn engine switch on, pull started cord and see if spark jumps at plug gap
- If all above checks are okay and engine still will not start – contact your Silvan dealer

Water Pump does not pump:

- Check that the pump is primed
- Check if suction hose filter is clogged
- Check that suction hose connector is tight
- Check that suction hose is not damaged
- Check that suction height is not too high
- If all above checks are okay and pump still does not pump – contact your Silvan dealer