Operator's Manual

MANLBA-115 REV A 11/12/09

Selecta Power Pump Unit
Portable Water Transfer Pump 1"

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Contents

Introduction

Silvan is an Australian owned company specialising in supply of agricultural equipment to primary producers. A leader in the design of agricultural sprayers, the company was established in 1962 and has grown to become one of the largest manufacturer and supplier of farm equipment in Australia.

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 1" Portable Water Transfer Pump. To ensure continued efficient performance and safe operation of your pump, you need to read this manual thoroughly and fully familiarize 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 assure you of our best attention at all times.

Specifications

Engine
Single cylinder 33.5cc 4-stroke Petrol with air cooling and electronic ignition.
Single element air filter.
Manual recoil rope start.
Max power 0.9kW (1.21HP) at 6500 rpm

Fuel Tank

Capacity	0.6 litre
Operating duration	
At full throttle	approx 70 min
At Idle	approx 3 ½ hours

Frame Welded tubular steel.

Pump
Direct coupled centrifugal impeller type
Operating speed 6500 rpm

Model LBA-115 - 1" Transfer Pump

Max Output -Open flow	115 Litre/min
Max Pressure-No Flow	40psi
Total Head	30m
Suction lift height	3.0 metres (self prime)
Inlet connection	1 inch BSP (25 mm)
Outlet connections	1 inch BSP (25 mm)

Overall Dimensions (mm)

	Length	Width	Height
LBA-115	420	300	360

Weight 8 kg

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 <u>not</u> cover:

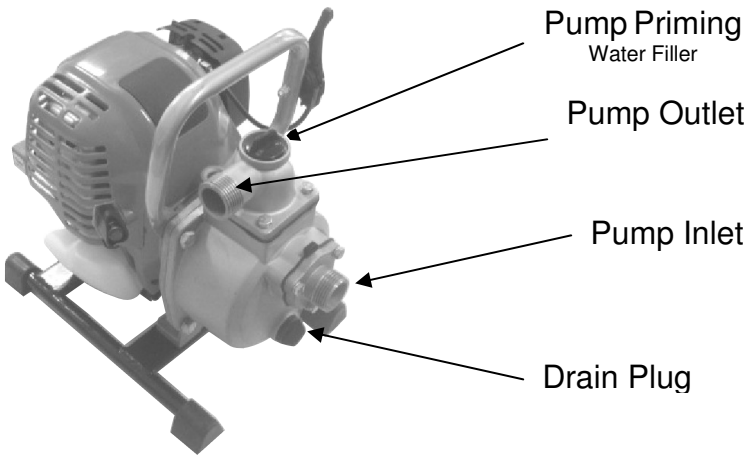
- Conditions resulting from misuse, use of incompatible chemicals, exceeding machine specifications including overloading, impact damage, negligence, accidental damage or failure to perform recommended maintenance services.
- Any product which has been repaired by other than an authorised Silvan service 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

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 clean water. 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.
- ▲ 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.
- ▲ Do not run the pump without prime.



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 suction foot filter is supplied with each pump and 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.

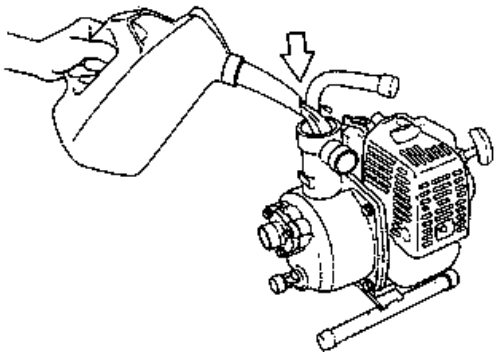
Attach the other end of the hose to the pump inlet using the 1 " BSP threaded hose connector supplied with the pump. Be sure that the joint is tight and that the gasket is in place. The suction hose must be free from air leakage which could prevent pump priming.

2. Pressure Hose

Fit a pressure hose of matching diameter and required length to the outlet using the 1" 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.



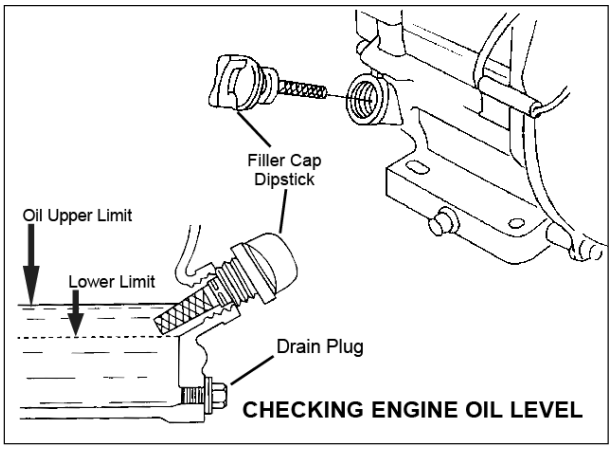
Caution: Do not run the engine without water in the pump as it will overheat and damage the seals. If during operation the water supply is exhausted stop the engine immediately and fill the pump once it cools down.

1. Fuel
The LBA-115 is powered by a 4-Stroke engine which uses Standard unleaded petrol

2. Oil
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 half way 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.



CHECKING ENGINE OIL LEVEL

3. 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. Fuel tank capacity is 0.6 liters.

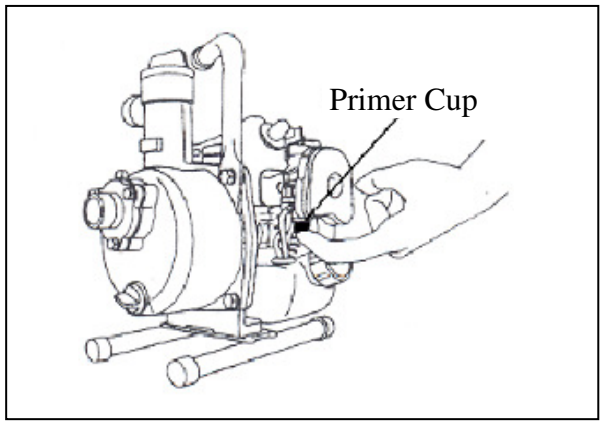
4. Air Cleaner
Unscrew the air cleaner cover screw, remove the air cleaner cover and inspect the filter element. Clean or replace a dirty filter element and always replace a damaged element – see Maintenance section

WARNING

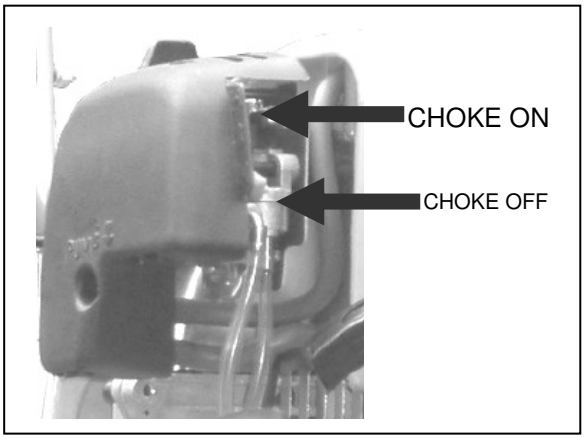
Petrol is extremely flammable, and explosive under certain conditions.

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.

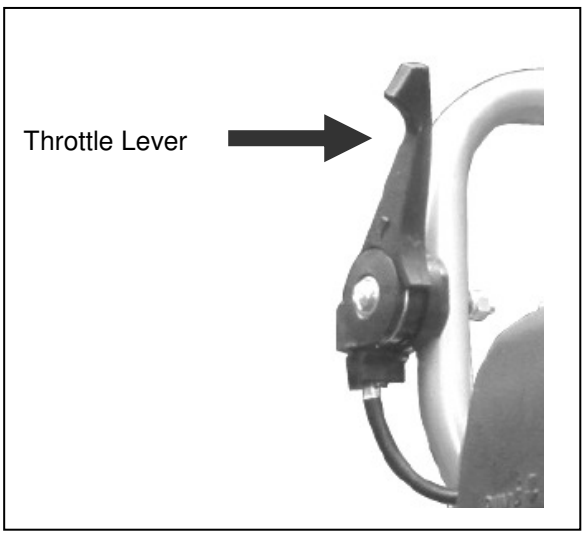
Starting the Engine
1. Pump the clear primer cup, which is located on the underside of the carburettor, repeatedly until it is visibly full of fuel.



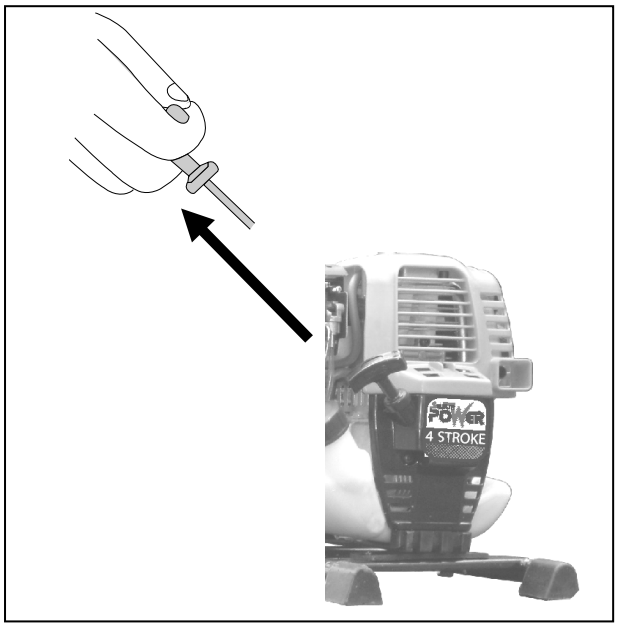
2. Move the choke lever to the fully closed position. Do not use the choke if the engine is already warm or the air temperature is high.
The Choke lever is identified in the image below



3. Move the throttle lever to approximately its middle position.



4. Pull the starter grip slowly 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.



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

Pumping Operation

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

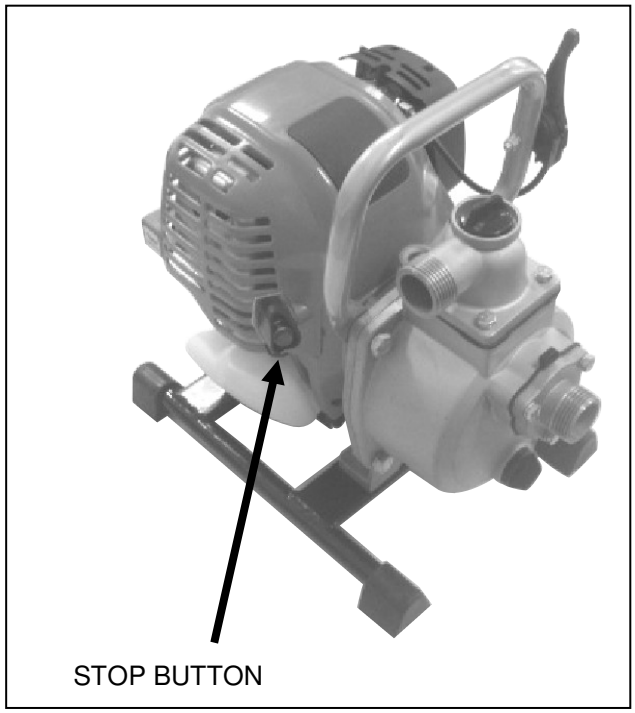
WARNING

Where the pump is used to pump pool or spa water, the pump should be rinsed after each use with clean water

To remove pool or spa chemicals (such as chlorine) which are corrosive.

Stopping the Engine

To stop the engine under normal circumstances, return the throttle lever to the idle position and press the red stop button. In an emergency the engine can be quickly stopped by simply pressing the stop button.



STOP BUTTON

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 vaporisation. Avoid areas with a naked flame, such 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.

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

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)
Spark plug	Clean Adjust				O	
	Replace					O
Idle speed	Adjust					O
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.

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.

Unscrew the air filter cover screw and remove the air cleaner cover. Remove the foam element.

Inspect the element and replace if damaged. Clean the element if it is suitable for reuse.

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.

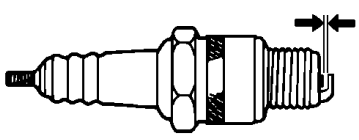
Clean the interior of the air cleaner cover and base with a moist cloth. Take care to avoid dirt entering the air duct. Re-fit the foam element then replace the cover and tighten the cover screw.

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).

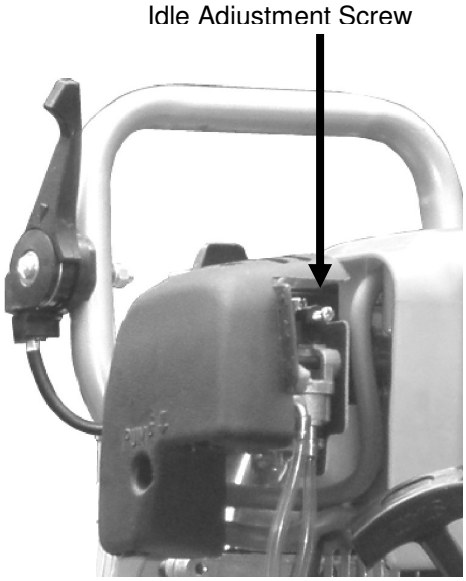
Install the plug carefully by hand to avoid cross-threading. Then after it is seated tighten with the spark plug wrench to compress the gasket. If refitting a used plug tighten 1/8 to 1/4 turn after seating or if a new plug 1/2 turn. Refit the spark plug lead.



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 idling adjustment screw clockwise to increase engine speed and counter clockwise to lower the idling speed.



Cannot start engine

Trouble		Causes	Remedies
Engine miss fires	Spark plug	1 . Firing device wetted	Dry it out
		2 . Carbon deposit on the sparking plug	Clean the carbon
		3 . The spark gap is too big or too small	Adjust gap at 0.6 ~ 0.7mm
		4 . The poles of sparking plug burned	Replace it
		5 . The insulation damaged	Replace it
	Magneto	1 . The junction of wire drop off or broken	Tighten or replace it
		2 . The insulation of coil bad	Change
		3 . The gap between stator and rotor is too big	Adjust gap at 0.4mm
The spark plug works normal	Compression ratio is fine and fuelling normally	1. The fuel suck in excess	Reduce the fuel
		2. Low quality fuel, or contaminated fuel	Change the fuel
	Fuelling well but compression ratio bad	Cylinder and piston ring worn	Replace them
	Carburettor no fuelling	1. No fuel in the tank	Feed the fuel
		2. Fuel cock is not open	Open it
		3. The air hole of the tank clogged	Clean
		4. Fuel not correctly primed	Use primer button

The engine output is insufficient

Trouble	Causes	Remedies
The compression ratio is fine and the fire has not gone out	1. The union of fuel pipe suck in the air	Tighten it
	2. The connection of carburettor suck in air	Change seal and tighten it
	3. The fuel mixed with water	Change the fuel
	4. The filter plate clogged	Clean
	5. The carbon clogs muffler, cylinder	Clean
Engine overheats	1. Mixed gas thin	Adjust the carburettor
	2. Cylinder covered with carbon	Clean
Engine noisy or knocking	1. Fuel bad	Replace
	Firing chamber covered with carbon	Clean
	3.The running parts worn	Check and replace

Engine stops while running

Trouble	Cause	Remedies
Engine stops suddenly	The piston bitten	Change the piston or remedy it
	1. The spark plug has carbon deposits and short circuited	Clean out the carbon
	1. Magneto is bad	Check and remedy
	2. Insufficient or dirty oil seizes engine	Replace all damaged parts
The engine stops slowly	1. Fuel is short	Feed the tank
	2. Carburettor clogged	Clean
	3. Water in fuel	Refill with fresh fuel

Engine hard to stop

Trouble	Cause	Remedies
Engine	Cylinder and piston overheat conduce to self ignition	Clean carbon
Correlative circuit	1. Plug pole overheats	Clean the plug and check the gap
	2. Stop button is bad	Check and remedy

Trouble and remedy of pump

Trouble	Cause	Remedy
Not Pumping water	1. No water or water shortage in pump	Feed water
	2. Sealing of junction damaged or junction loosened make the suction hose suck in air	Change or tighten
	3. Suction hose broken up make the air is sucked in	Change the pipe
	4. The valve connected on the discharge side is closed or doubled	Check and adjust
	5. The gap of impeller and volute shell is incorrect	Adjust
	6. The pump clogged by foreign body	Clean
Water outlet is insufficient and pressure is too low	1. The strainer of sucking pipe clogged	Clean
	2. The suction hose doubled and clogged	Clean
	3. The pump clogged by foreign body	Clean
	4. Impeller and volute shell wore out	Change
	5. The position of discharge port is too high	Change the installing of pump
Can not pull the starter	1. Impeller and volute shell rusting	Clean
	2. The pump clogged	Clean
Leaking water	1. Mechanical seal wore out	Change
	2. O-sealing ring of pump shaft damaged	Change

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