



# 巨輪興有限公司

高雄市岡山區岡山北路199號

# CHU LUN SING CO.,LTD

No.199, Gangshan N. Rd., Gangshan Dist., Kaohsiung City 82059, Taiwan http://www.sunrun.com.tw E-mail:sun.run@msa.hinet.net TEL:886-7-6210505

FAX:886-7-6217575

# OPERATING INSTRUCTIONS HYDRAULIC ELECTRIC PUMP

**SPE-3000** 



English : E1~E5

#### 1. SAFETY PRECAUTIONS



Fail to comply with the following cautions and warnings could cause equipment damage and personal injury.



**IMPORTANT**: Minimum age of the operator must be 18 years The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the SUN RUN equipment. The operator is responsible for this activity towards other persons.



**WARNING:** To avoid personal injury and possible equipment damage, make sure all hydraulic components withstand the maximum pressure of 700 bar(10,000psi).



**WARNING:** Always wear safety glasses. The operator must take precaution against injury due to failure the tool or workpiece.



**WARNING:** Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



**WARNING:** USE ONLY RIGID PIECES TO HOLD LOAD. Carefully select steel or wood blocks that are capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any lifting or pressing application.



**DANGER:** To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.



**WARNING:** Do not overload equipment. Overloading cause equipment failure and possible personal injury. The cylinders are designed for a max. Pressure of 700 bar (10,000psi).



**DANGER: NEVER** set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/ or personal injury. Do not remove relief valve.

Models:SPE-3000



**WARNING:** The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.



**CAUTION:** Avoid sharp bends and kinks that will cause severe back-up pressure in hoses. Bends and kinks lead to premature hose failure.



**DO NOT** drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



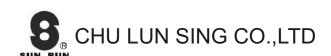
**IMPORTANT:** Do not lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport.



**CAUTION:** KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C(150°F) or higher. Protect hoses and cylinders from weld spatter.



**DANGER:** Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately.



#### 1. SAFETY PRECAUTIONS



**WARNING:** Never pressurize uncoupled couplers. Only use hydraulic equipment in a coupled system.



**WARNING:** BE SURE SETUP IS STABLE BEFORE LIFTING LOAD. Cylinders should be placed on a flat surface that can support the load. Where applicable, use a cylinder base for added stability. Do not weld or otherwise modify the cylinder to attach a base or other support.



**Avoid** situations where loads are not directly centered on the cylinder plunger. Off-center loads produce considerable strain on cylinder and plungers. In addition, the load may slip or fall, causing potentially dangerous results.



Distribute the load evenly across the entire saddle surface. Always use a saddle to protect the plunger.



**WARNING:** Immediately replace worn or damaged parts with genuine SUN RUN parts. SUN RUN parts are designed to fit properly and withstand rated loads.



**IMPORTANT:** Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the SUN RUN Service Center in your area. To protect your warranty, use only SUN RUN oil.

**SPE-3000A** 

Manual 4 way Valve

#### 2.SPECIFICATIONS

#### SPE-3000 A 1 5 1 LT PG 1 2 3 4

1.Valve

A. 3way/ 2position built-in Solenoid Valve :

6.fitting

Advance Hold Return

B. Remote Release Pressure : Advance Return

(Ideal for punching, crimping and cutting)

C.3way/ 2position Manual Valve : Advance Hold Manual return

D.4way/ 3position Manual Valve :

Advance Hold Manual return

2.Voltage

1=115V / 7.5A

2=230V / 2.8A

5=50/60Hz

4.Phase 1=1ph

3.Hz

5.Reservoir

No word=3000c.c PU reservoir LT=6000c.c Iron reservoir

★User can order suitable reservoir.

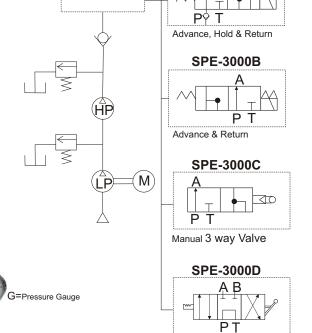




P=Pressure adjust switch

G=Pressure gauge

P= Pressure Adjust Switch



Valve type

Model Number	Motor	Max.Pressure	Pressure Rating (psi)/(bar)		Output flow rate (L/min)		dBA at Idle and 700bar	Weight (include oil)	Dimension
	kW(hp)	(psi)/(bar)	1 <sup>st</sup> stage	2 <sup>nd</sup> stage	1 <sup>st</sup> stage	2 <sup>nd</sup> stage		(kg)	(mm)
SPE-3000	0.37(0.5)	10,000(700)	200(14)	10,000(700)	4	0.4	85-90	16	250*270*400
SPE-3000 LT	0.37(0.5)	10,000(700)	200(14)	10,000(700)	4	0.4	85-90	24	300*350*460

Step2

Install the Vent / Fill plug

#### 3.INSTALLATION

#### 3.1 Install Vent / Fill plug

To avoid oil leak from Vent / Fill plug, so factory obstruct hole by 9/16-18UNF plug (see right photo).

Must remove 9/16-18UNF plug and install Vent/ Fill plug to avoid the damage.

#### 3.2 Hydraulic Connect

Use 1-1/2 wraps of teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure that the tape does not shed into the hydraulic system, causing damage. Trim loose end.



#### **WARNING**

To ensure proper operation, avoid kinking or tightly bending hose. If a hose becomes kinked or otherwise damaged, it must be replaced. Damaged hoses may rupture at high pressure, causing personal injury.

#### SPE-3000A/B/C Model Standard Install (Figure1)

- 1.Remove the shipping plunger from the 3/8-18 NPT gauge port (A) and connect to 3/8-18NPT Gauge accessories male port.
- 2.Install a 0-10,000psi (700 bar) pressure gauge into the gauge port (on top of the Gauge accessories). And inspect the dimension.
- 3. Then connect one of hydraulic hose 3/8-18NPT port to Gauge accessories another 3/8-18NPT female port.



Remove 9/16-18UNF

#### 3.3 Adding Oil (Figure1)

Check the oil by unscrewing and removing the vent/fill plug (F). Add SUN RUN hydraulic oil until the oil level is 1/2 inch (1cm) below the vent/fill opening.

**IMPORTANT:** Add oil only when all system components are fully retracted, or the system will contain more oil than the reservoir can hold.

#### 4.OPERATION

**NOTE:** To avoid power losses between the electrical outlet and pump motor, use the shortest possible extension cord. The pump motor will function at low voltage, but motor speed and oil flow will be reduced.

- 1.Check all system fittings and connections to be sure they are tight and leak free.
- 2. Check the fluid level and add fluid, if necessary.
- 3. Open the pump vent plug (F) located on the front right corner of the reservoir by turning it 1 or 2 complete turns.



#### CAUTION

The vent plug must be open whenever the pump is running.

### 4.1 Switch Operation (Figure 4.1)

Check voltage enquire by 110V or 220V. The pump power cord is 5 ft.(1.5 meters)long. The pump switch is located on the side of the shroud. It is a two position switch.

1.SPE-3000A: Pressing the top button position activates the electrical circuit and turn the motor on. Do not release top button, the pump motor will not stop, position advance. As release top button, the motor will stop, but still to hold pressure until press the button again.

Pressing bottom button, it begin releasing pressure.

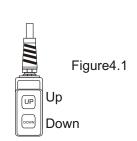
2.SPE-3000B: Pressing the top button position activates the electrical circuit and turn the motor on. Do not release top button, the pump motor will not stop, position advance. As release top button, the motor will stop and begin releasing pressure.

The bottom button function as top button.

3.SPE-3000C: Pressing the top button position activates the electrical circuit and turn the motor on. Do not release top button, the pump motor will not stop, position advance. As release top button, the motor will stop, but still to hold pressure until press the button again.

The bottom button function as top button.

Releasing pressure by screw manual release valve(see figure 2).





#### Models:SPE-3000

Safety valve

#### 4.OPERATION-CONTINUE

#### 4.2 Pump Control Valve (Figure 4.2)

Pumps with 4-way control valves are designed to operate double-acting cylinders. See Figure 3 for valve positions.

- 1. Position lever on 4 way valve to select function as follow
  - (A) Flow to port "A"; port "B" returns flow to the reservoir
  - (N) Neutral; port "A" and "B" are blocked
  - (B) Flow to port "B" port "A" returns flow to the reservoir
- 2.Before operating SPE-3000 please check date plate and connect correct power.
- 3.Install coupler correctly which must connect closely.
- 4.UP

Please turn the control valve to A port then press "UP/START" button. Cylinder start to advance. If you want to stop immediately or stop at stroke, just release "UP/START" button.

5.HOLD

Control valve still at A port position which will be hold.

6.DOWN

Please turn the control valve to B port then press "UP/START" button. Cylinder start to return.

If you want to stop immediately or stop to zero, just release "UP/START" button.

#### 4.3 Air removal

When the hydraulic system is connected for the first time, air will be trapped in the components. To ensure smooth, safe operation, remove the air by running the system through several complete cycles without a load on the cylinder. When cylinders advance and retract without hesitation, the air is vented from the system.



#### **WARNING**

To avoid injury and equipment damage, do not continue pressurizing cylinders after they reach maximum travel or maximum operating pressure.

#### **5.MAINTAIENANCE**

#### 5.1 Checking the oil level

Check reservoir hydraulic oil level every 40 hours of operation. Add oil when necessary to bring the level to 1/2" (1cm) below the fill opening. Use only SUN RUN hydraulic oil. The use of other oils or fluids may damage your system, and will void your SUN RUN warranty.

#### 5.2 Changing the oil level

Check the reservoir after every 100 hours of operation. Refill with new hydraulic oil. If pump is operated in very dusty areas or at high temperatures, drain and refill more frequently.

- 1.To drain the reservoir, remove the vent/fill plug (F) from the top right hand corner of the reservoir.
- 2. Tip the pump until all old oil is drained.
- 3.Refill with new oil through the same opening. Reservoir capacity is 0.75 gal.(2.8L) or 2 gal.(8L) depending on model.
- 4. Replace fill plug (F).

#### 5.3 Cleaning the Reservoir

The pump reservoir can be removed for cleaning. If the pump is constantly used in an extremely dusty environment, the reservoir should be cleaned once a year.

- 1.Drain the reservoir as described in steps 1 and 2 in "Changing the oil".
- 2.Remove the six screws securing the shroud to the reservoir. Lift the shroud off the reservoir. A foam cushion wraps around the motor to keep electrical wires away from the motor. Use caution to avoid damaging or pulling wire connections off the terminals.
- 3.Remove the eight screws holding the pump to the reservoir. Lift the pump off the reservoir and remove the gasket.
- 4. Throughly clean the reservoir with a suitable solvent.
- 5.Re-assemble the pump and reservoir, installing a new gasket. Position the shroud over the motor with the shroud handle facing the valve side of the pump. Install the six mounting screws and internal/external lock washers. If the pump requires repair work, contact a local Authorized SUN RUN.

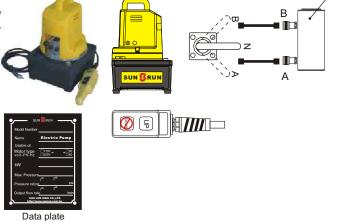


Figure 4.2



## 6.TROUBLESHOOTING GUIDE

The following information is intended as an aid in determining if a problem exists.

PROBLEM	CAUSE	SOLUTION			
Pump will not start.	1.No power. 2.Wrong voltage.	1.Check electrical power source.     2.Check voltage specifications.			
Cylinder will not advance or retract.	1.Fluid level low. 2.Intake screen clogged. 3.Valve in wrong position. 4.Valve failure.	<ol> <li>Fill reservoir to proper level.</li> <li>Clean or replace intake screen.</li> <li>Shift valve to the pressure position.</li> <li>Have pump repaired by a qualified hydraulic technician.</li> </ol>			
Cylinder advances and retracts erratically.	<ul><li>1.Air in the system.</li><li>2.External leak in system.</li><li>3.Internal hydraulic leak.</li></ul>	<ol> <li>Remove air from the system by opening and closing the tool until operation is smooth.</li> <li>Tighten leak connections. Replace any damaged hoses and fittings.</li> <li>Have pump repaired by a qualified hydraulic technician.</li> </ol>			
Pump fails to maintain pressure.	1.External hydraulic leak.     2.Internal hydraulic leak.	1.Tighten leaky connections. Replace any damaged hoses or fittings.     2.Have pump repaired by a qualified hydraulic technician.			
Low Fluid output.	1.Fluid level low.     2.Pump component parts are leaking.     3.By-pass valve malfunction.      4.Fluid intake screens on piston blocks may be clogged with debris.	1.Fill reservoir to the proper level. 2.Test to isolate leaks. 3.Have pump repaired by a qualified hydraulic technician. 4.Inspect intake screens. Flush all components of contamination. Replace any damaged components.			
Pump situation normally ,but cylinder can't go advance.	Coupler A problem.	Please re-install coupler A or test it function.			
Safety valve weep oil.	Coupler B problem.	Please re-install coupler B or test it function. Safety valve will protect cylinder to over pressure for B, please don't adjust safety valve pressure arbitrarily.			