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中文: C1~C7

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## 適用範圍: 手動油壓泵浦頭

1. 安	全預防措失	
3	不遵守以下的注意事項和警告將引起設備損 失及人員傷害。	危險事項:千萬不可將溢流(安全)閥的壓力值設定高於泵浦的額定壓力。超載的壓力值可能引起設備損壞及人員損傷。 尤其千萬不可拆除溢流(安全)閥。
Ι	<b>重要事項</b> :未滿18歲人員不得擅自操作。操作 SUN RUN油壓設備前請先仔細閱讀並了解 相關操作手冊、安全事項和警告事項。 操作人員負有油壓設備週邊之人員及環境之 安全責任。	<b>警告事項:</b> 系統操作壓力絕不可超過最低壓力 元件之值最低值。系統中應加裝壓力錶藉以 監測系統中的壓力並了解使用狀態。
	<b>警告事項:</b> 為確保避免人員傷害和設備作業 損失,請確認所有油壓設備及週邊配件, 使用最大壓力為 700 bar(10,000psi)。	警告事項:避免損壞油壓管。捲收油管時, 避免油管強烈彎曲或打結。使用彎曲或打結 油管易引起背壓。強烈彎曲或打結的油管亦 易引起內部損壞或提早油管老化。
0	警告事項:操作人員於使用期間為避免傷害, 需全程配戴安全防護措施。	<b>千萬不要重壓油管。</b> 劇烈的撞擊會造成油管 內鋼絲網損壞。使用受損的油管可能導致 油管破裂。
*	警告事項:不得使用油壓設備作為支撐重物 使用。當液(油)壓缸作為負載頂昇設備時, 僅可頂昇,不可用來支撐重物使用。當完成頂 升作用後,需使用機械性工具來固定支撐。	重要事項:千萬不要利用油管來提攜其他油壓設備(例如:小型油壓缸、泵浦等)。
Ø.	警告事項:必須使用硬性物體來支撐重物。 慎選能承受重物的鋼鐵或木塊來支撐荷載。 不要在頂升或持壓使用中將液(油)壓缸當做 墊塊使用。	危險事項:液(油)壓設備應遠離火或熱源 高溫會軟化包裝和密封材料,導致液壓油洩漏;高溫同時也會造成油管材質與包裝變質 。為確保最好狀態,不要將液(油)壓設備暴露 於 65°C(150°F)高溫。在電焊場所時亦應注意 防止電焊火花噴到油管。
	▶ 危險事項:為避免人員傷害,請於操作過 ↓程中手、腳遠離液(油)油壓缸和液壓設備 。	
Ø	警告事項:禁止超載使用。 超載使用易造成設備損害及人員損傷。液(油) 壓缸設計最大使用壓力為 700 bar (10,000psi)。	厄熙爭惧:个安用于到洲官施川壓刀(包括拉 或舉高)高壓下洩漏的液壓油會穿透皮膚造 成嚴重傷害。當液壓油侵入皮膚請立即就診。



# 1. 安全預防措失



 警告事項:液(油)壓缸只能在已連接好的液壓
 使用或加壓,否則高壓情況下接頭的油封及 鋼珠會高速噴出造成人員傷亡。

警告事項:頂昇荷載前,請確保油壓裝置平穩 油壓缸必須放在平穩可支撐重物的基座上。 若情況許可,可使用油壓缸基座來增加穩定 性。千萬不可使用焊接或其他方法將油壓缸 與所使用的基礎面(支撐座)連接一起。



避免荷載不直接作用在油壓缸的主軸中心上 。偏心荷載易導致油壓缸和主軸受損。此外 ,重物亦可能因傾斜而滑落,引發潛在危險 0



將荷載平均的分布在墊塊表面。 傾斜墊塊可消除偏荷載。當無使用縲牙連接 其他附件時,一定要使用墊塊以保護主軸。



**警告事項:** 當零件出現裂痕或損壞時,應立即 以SUN RUN 零件更换。正確標準的零件可 防止人員或設備損傷。SUN RUN零件經特別 設計可完全適用並適用產品標稱的額定荷載 或壓力。



重要事項:液壓設備必需由合格的液壓技工進 行維修。需要修理時,請連繫就近的 SUN RUN服務據點並使用SUN RUN 液壓油 保固方為有效。





## 適用範圍: 手動油壓泵浦頭

# 2.規格





單位unit (mm)



Model No. 型號	<b>Pressure Rating</b> 輸出壓力 (psi)/(bar)	<b>Volume</b> 流量 (c.c/stroke)	Max. Handle Eff. 最大施力 <sub>(kgf)</sub>	Weight 重量 <sub>(kg)</sub>
SPHP-50	750(50)	75	36	5
SPHP-70	1,000(70)	35	48	5
SPHP-210	3,000(210)	22	54	4
SPHP-450	6,500(450)	9	54	4
SPHP-700	10,000(700)	5	54	4



### 適用範圍: 手動油壓泵浦頭

### 3.操作

### 3.1 泵浦連接

- 1.先將油管接上泵浦出油口。使用一圈半的鐵弗龍帶(或其他螺紋密封材質)纏在油管接頭上。螺紋第一圈不可被密封帶 遮住,避免密封帶脫落流入液壓系統引發危害,修剪鬆散的密封帶尾端。
- 2. 泵浦上安裝壓力錶,可更安全地操作液壓系統。
- 3.將油管安裝至所使用的液壓缸或液壓工具
   注意:以單動液壓缸來說,可以一條油管連接液壓缸和泵浦;而雙動液壓缸則需二條油管連接液壓缸和液壓泵浦, 其中一條連接泵浦的壓力出口及液壓缸壓力口,另一條油管則連接泵浦及液壓缸回油口。

### 3.2 單動缸組合 (圖3.2)

#### 3.2.1前進

- 1.將T孔油管接入任一樣式油桶且油面蓋過 油管口;同時油桶端油管裝上過濾器。
- 2. P孔油管接上單動油缸。
- 3.2.2洩壓/回縮

打開洩壓閥則液壓油流回油桶,主軸回縮。



### 3.3 雙動缸組合 (圖3.3)

### 3.3.1前進

- 1.將T孔油管接入任一樣式油桶且油面蓋過 油管口;同時油桶端油管裝上過濾器。
- 2. P孔油管接上4口方向閥相對應泵浦P的孔位。 3.方向閥A孔連接油缸A孔(揚程孔);
- 3.万向阀A犯建按油缸A犯(荡柱犯); 方向閥B孔連接油缸B孔(回縮/洩壓孔); 方向閥T孔連接回桶。
- 4.將方向閥把手扳向A。
- 5.關閉洩壓閥,開始上下摇動手摇桿, 主軸揚程。

### 3.3.2前進持壓

手動方向閥仍維持於A方向,勿更換任何方向及動作即可持壓。

### 3.3.3回縮

- 1.將方向閥把手迅速扳向B。
- 2.上下摇動手摇桿,主軸回縮。
- 3.放鬆洩壓閥、移除油管,蓋上防塵蓋即 完成作業。





# 4. 維修及保養

## 4.1 排出空氣

當油位太低時空氣可能累積在系統內;空氣會造成不穩定或是較慢的動作。 所以當重新加滿油後需將系統或是扳手內的累積空氣排出。

排出液(油)壓缸內的空氣-如圖所示 (右圖)

### 單動液(油)壓缸:

將液(油)壓缸主軸朝下倒置,且液(油)壓缸位置需比泵浦低。 將油壓缸完全頂昇/回縮 2~3次。

## 雙動液(油)壓缸:

將液(油)壓缸平放地面,接頭朝上(如右圖所示) 將油壓缸完全頂昇/回縮2~3次。

## 4.2 油位確認

4.21 每使用10小時後即需確認液壓油油位。 確認油位時油缸軸心需完全退回至未使用狀態,檢查油位是否 仍維持所需使用油量1.5倍以上。

4.2.2 一般使用100小時的液壓油需完全排出後重新倒入乾淨且合乎 使用的液壓油(AW32)。更新頻率視使用程度或是使用環境而 定。







# 5.疑難排除

問題	原因	解決
液壓缸無法前進,前進緩慢或是 突然前進	<ol> <li>1.泵浦液壓油太低</li> <li>2.洩壓閥呈打開狀態</li> <li>3.快速接頭未妥善連接</li> <li>4.荷重過重</li> <li>5.系統內空氣阻塞</li> <li>6.液壓缸主軸遭阻礙</li> </ol>	<ol> <li>1.如4.2 說明方式添加液壓油</li> <li>2.關閉洩壓閥</li> <li>3.確認所有接頭是否已鎖緊</li> <li>4.請勿超載使用</li> <li>5.請依4.1說明排出空氣</li> <li>6.確認液壓缸損害情況。請連絡液壓 技術人員</li> </ol>
液壓缸前進但無法持壓	1.漏油或是連接不完全 2.油封漏油 3泵浦內部洩漏	<ol> <li>1.確認所有連接接頭是否鎖緊無洩漏</li> <li>2.確認洩漏位置,連絡液壓技術人員</li> <li>3.連絡液壓技術人員</li> </ol>
液壁缸無法回縮、部份回縮或是回縮緩慢	<ol> <li>1.洩壓閥呈關閉狀態</li> <li>2.快速接頭鬆動</li> <li>3.系統內有空氣阻塞</li> <li>4.油管內徑太小</li> <li>5.液壓缸回縮彈簧毀損或是其他零件 損壞</li> </ol>	<ol> <li>打開洩壓閥</li> <li>請確認所有接頭都已完全鎖緊</li> <li>如4.1 所示將空氣排出</li> <li>改換內徑較大的油管</li> <li>請連絡液壓技術人員</li> </ol>



適用範圍: 液壓手動泵浦頭

















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# OPERATING INSTRUCTIONS SPECIAL APPLICATION PUMP HEAD





English : E1~E7

中文 English Ver.16

# 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).



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**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.

**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

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**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.





# 2.SPECIFICATIONS







Model No.	Pressure Rating	Volume	Max. Handle Eff.	Weight
	(psi)/(bar)	(c.c/stroke)	(kgf)	(kg)
SPHP-50	750(50)	75	36	5
SPHP-70	1,000(70)	35	48	5
SPHP-210	3,000(210)	22	54	4
SPHP-450	6,500(450)	9	54	4
SPHP-700	10,000(700)	5	54	4



## **3.OPERATION**

### 3.1 Connecting the Pump

- 1. Thread hose into pump outlet. Use 1-1/2 wraps of Teflon tape (or suitable thread sealant) on hose fitting, leaving the first complete thread free of tape to ensure that tape does not shed into hydraulic system, causing damage. Trim loose ends.
- 2.Install a pressure gauge in-line from the pump for added safety and better control.
- 3.Connect the hose(s) to your cylinder or tool.

**Note** : For single-acting cylinders, connect one hoses from the pump to the cylinder. For double-acting cylinders, connect two hoses. Connect one hose from the pressure port of the pump to the pressure port of the cylinder. Connect another hose from the retract port of the pump to the retract port of the cylinder.

### 3.2 Operation- Single-acting (fig.3.2)

- 3.2.1 Advance/ Up
  - 1.Connect one hose end to pump "T" port and another end to oil tank and oil face needs to cover the hose end which include filter.
  - 2. Pump "P" port also connects hose to cylinder advance port.
  - 3.Close release valve then moves the handle up and down, plunger starts to advance.

### 3.2.2 Release/ Return

Open release valve and plunger goes back, oil will return to tank.



# 3.3 Operation- Double-acting (fig.3.3)

### 3.3.1 Advance/ Up

- 1.Connect one hose end to pump "T" port and another end to oil tank and oil face needs to cover the hose end which include filter.
- 2. Pump "P" connects to 4ways valve opposite "P" port.
- 4ways valve "A" port connects to cylinder advance port/ "A" port, valve "B" port connect to cylinder return port/

"B" port,

- valve "T" port connect back to oil tank.
- 4. Turn valve handle to "A" position.
- 5.Close release valve then moves the handle up and down, plunger starts to advance.

### 3.3.2 Advance Hold pressure

Manual valve keep "A" position. DO NOT change to other position or adjust anything.

### 3.3.3 Return

- 1.Turn the manual valve to R/B position quickly.
- 2.Working the handle and the plunger will go back.
- 3.Open release valve then remove the hose and cover dust cap.





# 4. Maintain oil level

4.1 Bleeding Air From The System

Air can accumulate in the hydraulic system if the reservoir level is too low. This air cause the hydraulic cylinder in an unstable or slow manner. Just put cylinder on the smooth ground that is no load condition and operates it in full stroke for several times that will bleed air from

torque wench system.

Remove air from the cylinder as show below.

# Single-acting cylinders:

Position the cylinder so that the plunger is pointed down and the cylinder lower than the pump.

Fully extend and retract the cylinder 2 or 3 times.

# Double-acting cylinder:

Lay the cylinder on its side and have the couplers facing up. Fully extend and retract the cylinder 2 or 3 times.

# 4.2 Hydraulic Fluid Level

- 4.21 Check the oil level in the reservoir after each 10 hours of use. To check oil level over 1.5 time for cylinder oil capacity when all plungers are retraced.
- 4.2.2 Drain, flush, and refill the reservoir with an approved, high-grade hydraulic oil (Aw32) after approximately every 300 hours of use. The frequence of oil changes will depend upon the general working conditions, severity of use, and overall cleanliness and care given the pump.







# 5.TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Cylinder does not advance, advances slowly, or advances in spurts.	1.Oil level in pump reservoir is low	1.Add oil according to the Maintenance instructions 4.2.
	2.Release valve open	2.Close the release valve.
	3.Loose hydraulic coupler	<ol> <li>Check that all couplers are fully tightened.</li> </ol>
	4.Load is too heavy	4.Do not attempt to lift more than rated tonnage.
	5.Air trapped in system	5.Remove air according to the instructions 4.1.
	6.Cylinder plunger binding	<ol> <li>Check for damage to cylinder. Have cylinder serviced by a qualified hydraulic technician.</li> </ol>
Cylinder advances, but does not hold pressure.	1.Leaking connection	1.Check that all connects are tight and leak free.
	2.Leaking seals	2.Locate leak(s) and have equipment serviced by a qualified hydraulic
	3.Internal leakage in pump	technician.
		3.Have pump serviced by a qualified hydraulic technician.
Cylinder does not retract, retracts	1.Release valve closed	1.Open release valve.
part way, or retracts more slowly than normal	2.Loose hydraulic coupler	2.Check that all couplers are fully tightened.
	3.Air trapped in system	3.Remove air according to the instructions 4.1.
	4.Hose I.D too narrow	4.Use larger diameter hydraulic hose.
	5.Cylinder retraction spring broken or other cylinder damage	5.Have cylinder serviced by a qualified hydraulic technician.











