



巨輪興股份有限公司

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電動液壓泵浦 操作手冊

SPE-3000



中文 : C1~C7

中文
English
Ver.22

1. 安全預防措施



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。



重要事項：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。



警告事項：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：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。



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。



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：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。



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)**。



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。



警告事項：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。



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。



千萬不要重壓油管。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。



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)。



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。

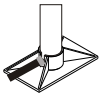


危險事項：不要用手對油管施加壓力(包括拉或舉高) 高壓下洩漏的液壓油會穿透皮膚造成嚴重傷害。當液壓油侵入皮膚請立即就診。

11. 安全預防措施



警告事項：液(油)壓缸只能在已連接好的液壓油路中使用；快速接頭尚未確實連接時禁止使用或加壓，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。



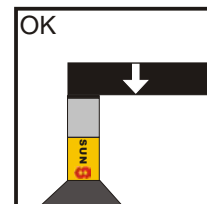
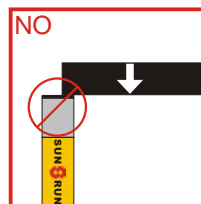
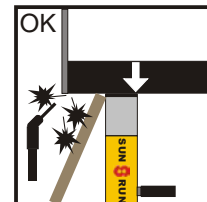
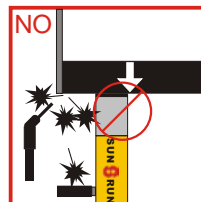
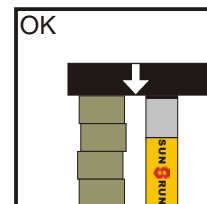
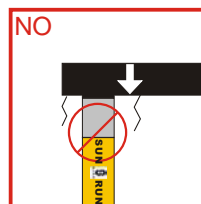
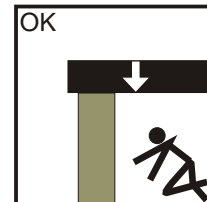
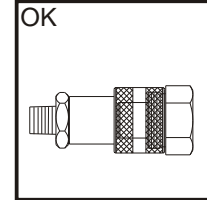
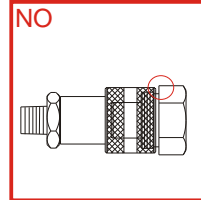
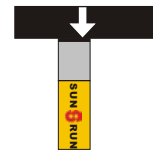
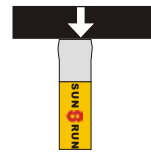
將荷載平均的分布在墊塊表面。傾斜墊塊可消除偏荷載。當無使用螺牙連接其他附件時，一定要使用墊塊以保護主軸。



警告事項：當零件出現裂痕或損壞時，應立即以**SUN RUN**零件更換。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，請聯繫就近的**SUN RUN**服務據點並使用**SUN RUN**液壓油保固方為有效。



2. 規範

SPE-3000 A 1 5 1 LT PBG

1 2 3 4 5 6

1. 閥門樣式

- A. 常閉內建三口二位電磁閥：前進 保持 回復
- B. 常開線控自動洩壓：前進 回復
(馬達停止即洩壓,適用於衝床(打孔機)、壓摺機或切割時使用)
- C. 手動三口二位控制閥：前進 保持 手動回復
- D. 手動四口三位控制閥：前進 保持 手動回復

2. 電壓/安培

- 1=115V/7.5A
- 2=230V/2.8A

3. Hz

- 5=50/60Hz

4. 相數

- 1=1ph

5. 油箱

- 無字樣=3000c.cPU油箱
- LT=6000c.c鐵製油箱
- ★亦可依客戶訂製



LT=鐵製油箱
Iron reservoir



PJ=壓力調整開關
Pressure Adjust Switch

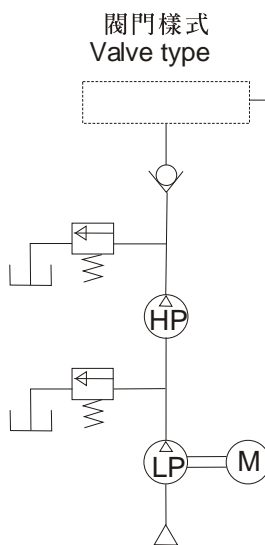


PB=壓力調整開關
Pressure Adjust Switch

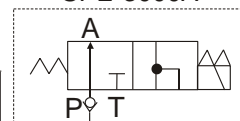


G=充油式壓力錶
Pressure Gauge

閥門樣式 Valve type

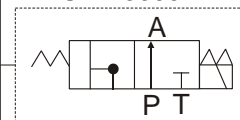


SPE-3000A



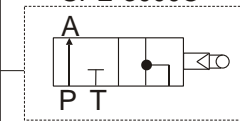
± 3 ~ 100 « Ø T f G i i ' q ° i » Ö
Advance, Hold & Return

SPE-3000B



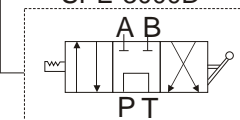
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Advance & Return

SPE-3000C



± a ° Ê T f G i i ± ± i » Ö
Manual 3 way Valve

SPE-3000D



± a ° Ê ¥ | f T i i ± ± i » Ö
Manual 4 way Valve

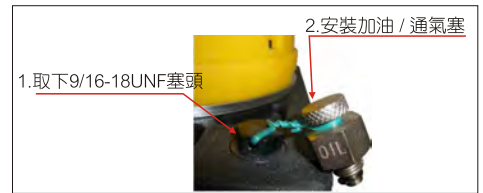
Model Number	Motor	Max. Pressure	Pressure Rating (psi)/(bar)		Output flow rate (L/min)		dBA at Idle and 700bar	Weight (include oil)	Dimension
型 號	馬達	最大使用壓力	輸出壓力		輸出油量		噪音值	重量 (含油)	外型尺寸
	kW(hp)	(psi)/(bar)	1 st stage	2 nd stage	1 st stage	2 nd stage		(kg)	(mm)
SPE-3000	0.37(0.5)	10,000(700)	200(14)	10,000(700)	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

3. 安裝說明

3.1 安裝加油 / 通氣塞

為避免液壓油自加油 / 通氣口滲出，故以9/16-18UNF塞頭封住加油 / 通氣口(如右圖)。

使用者使用前務必先將塞頭取出然後安裝加油 / 通氣塞。



3.2 泵浦連接

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。

警告

為確保正確操作泵浦，應避免過份彎折或鎖太緊的油管。倘若發現油管出現過份彎折或其他危害應立刻汰換。已損害的油管容易在高壓時破裂造成人員傷亡。

SPE-3000A/B/C 標準安裝 (圖1)

1. 將(A)3/8-18NPT塞頭取下，裝上錶接頭3/8-18NPT公接頭端。
2. 將 0-10,000psi (700 bar)的壓力錶安裝在錶接頭上方孔座。
需注意壓力錶接頭與上方孔座尺寸是否相同。
3. 再將油管3/8-18NPT接頭鎖於錶接頭另一端母接頭端。



3.3 如何換油 (圖1)

將加油/通氣塞(F)打開。

加入SUN RUN 液壓油至加油/通氣塞下 1/2 inch (1cm)處。

重要事項: 加油時需確定所有液壓系統回縮歸零狀態，否則所加入的液壓油將超出本身所能容納的液壓油。

4. 操作事項

注意: 為避免電力和馬達之間消耗無謂的動(電)力，應儘量縮短電線(延長線)的使用長度。

馬達低伏特運轉時馬達速度和油流量也會相對減少。

1. 首先先確認系統內是否所有接頭皆已正確且牢固連接，無洩露。
2. 檢查液壓油是否足夠，必要時請加入液壓油。
3. 將泵浦右前方的加油/通氣塞(F)打開旋轉1~2圈。

警告

泵浦動作時通氣口需隨時保持打開通氣狀態。

4.1 操作開關 (圖4.1)

請先檢查電壓為 110V 或 220V。電源線最適長度為 10呎(3M)。

操作開關為二鍵開關，位於泵浦機殼側邊(如圖2)

1. SPE-3000A: 按上方按鈕電力開始啟動循環，馬達開始運轉。持續按著上方按鈕不放鬆則馬達不會停止，系統呈現前進狀態。當放開上方按鈕則馬達停止運轉但仍持壓，直到再重新按下按鈕馬達才有動作。
按下方按鈕則開始洩壓。
2. SPE-3000B: 按上方按鈕電力開始啟動循環，馬達開始運轉。持續按著上方按鈕不放鬆則馬達不會停止，系統呈現前進狀態。當放開上方按鈕則馬達停止運轉並開始洩壓。
下方按鈕作用同上方按鈕。
3. SPE-3000C: 按上方按鈕電力開始啟動循環，馬達開始運轉。持續按著上方按鈕不放鬆則馬達不會停止，系統呈現前進狀態。當放開上方按鈕則馬達停止運轉但仍持壓，直到再重新按下按鈕馬達才有動作。
下方按鈕作用同上方按鈕。
以手動方式放鬆洩壓閥才可洩壓(如圖2下)



圖4.1



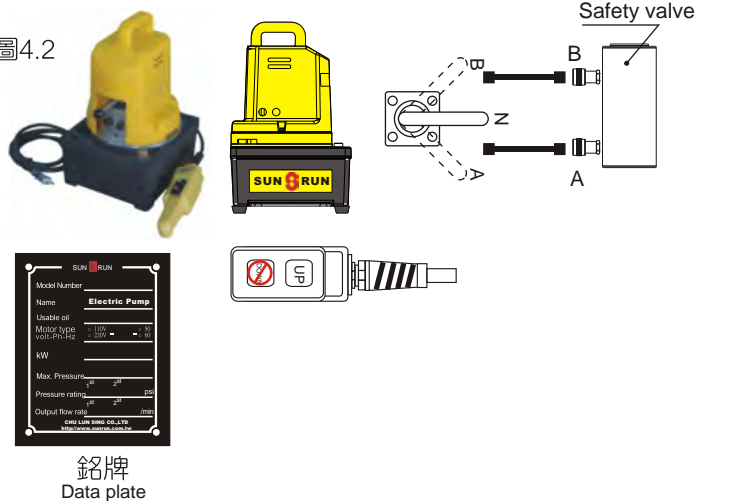
4.操作事項-續頁

4.2 控制閥 (圖4.2)

四口手控閥用來設計操作雙動液壓缸
請參考圖4.2閥門位置

- 下列為四口手控閥的各位置
(A) 流向孔 "A"; 則孔 "B" 為回油流向油箱
(N) 中立; 孔 "A" 和孔 "B" 均為封閉狀態
(B) 流向孔 "B" 則孔 "A" 為回油流向油箱
- 操作前請先依銘版標示連接正確電源。
- 確認快速接頭密合鎖緊並確認油缸油管相對應連接是否正確。
- 上升
先將方向閥轉向A，按下遙控器UP/START鍵。
油缸開始前進/上升，中途需停止或到達揚程停止放開按鍵即可。
- 持壓
方向閥維持A方向，即可持壓。
- 下降
將方向閥轉向B，按下遙控器UP/START鍵。
油缸開始回縮/下降，中途需停止或到達揚程停止放開按鍵即可。

圖4.2



銘牌
Data plate

4.3^a Å ® ð ± Æ° £

當首次使用液壓系統時需先將空氣排出。將空氣自液壓系統排出有助於更平順地的操作。
當液壓缸前進或回縮不平順時即有可能含有空氣。

警告

為避免人員及設備損害，千萬不要超壓或超揚程使用。

4.3 壓力調整

4.3.1 PB 型壓力調整閥 (圖4.3.1)

假如要設定壓力低於700bar (714kgf/cm²), 請一邊確認壓力錶一邊旋轉調壓閥往 "-" (負號) 方向直到壓力錶顯示所需要壓力為止。



圖4.3.1

4.3.2 PJ 型壓力調整閥 (圖4.3.2)

升壓或減壓的設定值變更可依旋轉設定軸 1 做變更。
首先將螺母 2 放鬆，利用六角扳手向右旋(順時針方向)可升壓；
向左旋(逆時針方向)則減壓。

泵浦最大操作壓力為700bar.
請勿超壓 700bar!



圖4.3.2

型 號 Model Number	調壓範圍 Pressure adjusting range (bar)	最大使用壓力 Max.Pressure (bar)	接口尺寸 Port size	接點 Contact capacity
PB	100~700	700	3/8NPT	250V 3A
PJ	80~800	700	3/8PT	250V 3A

5. 維修

5.1 油位確認

操作每隔40小時即需確認液壓油位是否正常。必要時加入液壓油至加油蓋下約1/2" (1cm) 處。
請使用由SUN RUN 所提供之液壓油。使用其他液壓油造成的設備損害，保固無效。

5.2 更換液壓油

操作每隔100小時即需更換新液壓油。假如操作環境較多污染則需更頻繁地更換液壓油。

- 1.將位於儲油箱右前方的加油/通氣栓(F)打開。
- 2.將儲油箱內所有舊油倒光。
- 3.加入新油至儲油箱。油箱容量分別為 0.93 gal.(3.5L) 或 2 gal.(8L) 型。
- 4.再鎖回加油/通氣栓。

5.3 清洗油箱

泵浦需定期拆下來清洗。假如泵浦經常在非常髒的環境內工作，則每年至少清洗一次。

- 1.將油箱內液壓油排除的方法請參照"更換液壓油"第1~2步驟。
 - 2.先將保護蓋與油箱間的六個螺栓鬆開。將保護蓋與油箱分離。內有發泡墊圍繞馬達週圍以分離電線與馬達。
在插座與電線間應有警告標示防止拔除電線時傷害。
 - 3.再將泵浦與油箱間八個螺栓鬆開。將泵浦與油箱和墊片分離。
 - 4.清洗油箱。
 - 5.重新安裝泵浦及油箱並更換墊片。接著安裝馬達及油箱，並注意握把面向閥門位置。將螺栓鎖上。
- 倘若需要其他維修服務，請連絡就近液壓維修廠或SUN RUN 經銷服務中心。

6.故障排除

下列資訊可有助於解決使用疑問

問題	原因	解決
泵浦無法啟動	1.無動力 2.電壓錯誤	1.檢查動力來源 2.檢查電壓
液壓缸無法前進或回縮	1.流量過低 2.濾油網阻塞 3.閥門方向位置不對 4.控制閥損毀	1.添加液壓油 2.清洗或更換濾油網 3.切換閥門位置 4.請洽詢液壓維修部門
液壓缸無法順利前進或回縮	1.系統內含空氣 2.系統管路漏油 3.液壓內部漏油	1.藉由系統啟動-關閉來回操作直到空氣排出為止 2.將洩漏部份鎖緊或更換毀損的油管或配件 3.請洽詢液壓維修部門
泵浦無法持壓	1.外部漏油 2.內部漏油	1.將洩漏部份鎖緊或更換毀損的油管或配件 2.請洽詢液壓維修部門
輸出低流量	1.流量過低 2.泵浦零件洩漏 3.閥門功能故障 4.活塞吸入口濾網被阻塞	1.添加液壓油 2.單獨測試可能洩漏部份 3.請洽詢液壓維修部門 4.檢查濾油網。將阻塞髒污清除或是更換已毀損的零配件
泵浦操作上升下降狀態正常，但油缸無法上升	快速接頭A鬆脫或損毀	重新鎖好快速接頭A或測試接頭功能是否正常
安全閥漏/溢油	快速接頭B鬆脫或損毀	重新鎖好快速接頭B或測試接頭功能是否正常。安全閥液油為保護油缸超壓所設計，請勿任意調整安全閥壓力。



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OPERATING INSTRUCTIONS

HYDRAULIC ELECTRIC PUMP

SPE-3000



English : E1~E7

中文
English
Ver.22

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.



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.




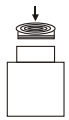
DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately.


1. SAFETY PRECAUTIONS


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

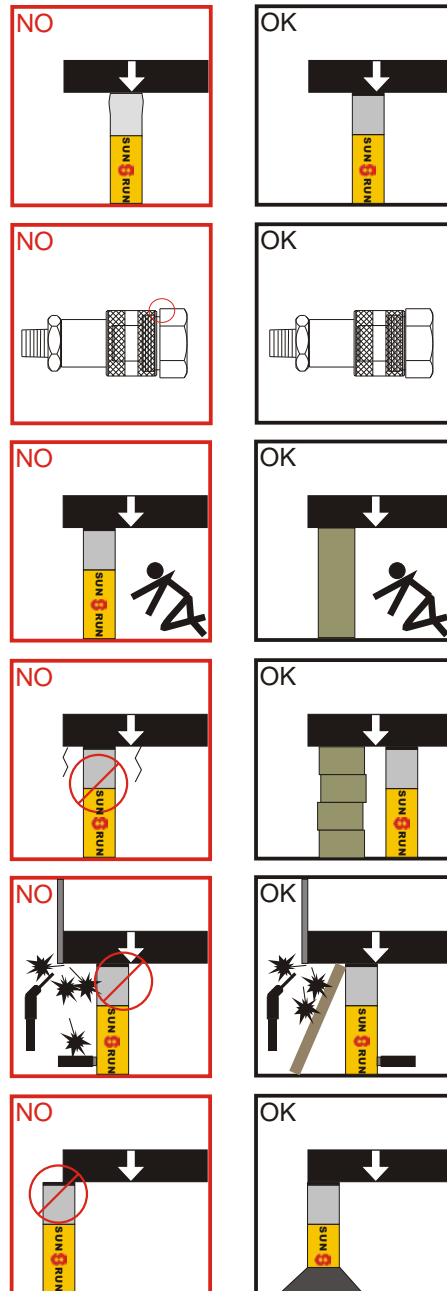
 **WARNING: BE SURE SETUP IS STABLE BEFORE LIFTING LOAD.** Cylinders should be placed on a flat surface that can support the load. Where applicable, use a cylinder base for added stability. Do not weld or otherwise modify the cylinder to attach a base or other support.

 **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.



2.SPECIFICATIONS

Custom build your Electric Pump:

SPE-3000 **A** **1** **5** **1** **LT** **PBG**
1 2 3 4 5 6

1.Valve

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

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/A

1=115V/7.5A

2=230V/2.8A

3.Hz

5=50/60Hz

4.Phase

1=1ph

5.Reservoir

No word=3000c.c PU reservoir

LT=8000c.c Iron reservoir

★User can order suitable reservoir.

6.fitting

PJ=Pressure adjust switch

PB=Pressure adjuster

G=Pressure gauge



PJ=壓力調整開關
Pressure Adjust Switch



LT=鐵製油箱
Iron reservoir

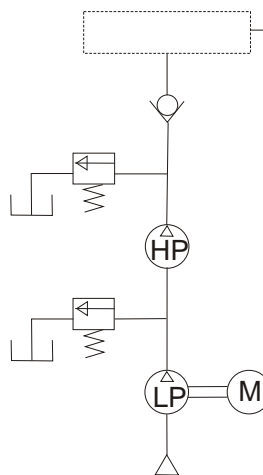


PB=壓力調整開關
Pressure Adjust Switch

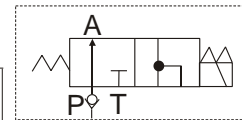


G=充油式壓力錶
Pressure Gauge

閥門樣式 Valve type

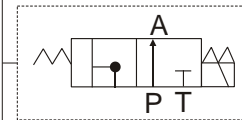


SPE-3000A



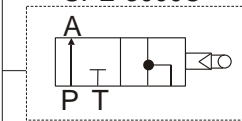
± ³ ~ □ ° « Ø □ T □ f □ G ! i ' q ° i » Ö
Advance, Hold & Return

SPE-3000B



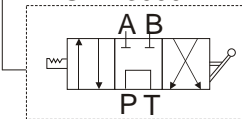
± ³ ~ □ ° « Ø □ T □ f □ G ! i ' q ° i » Ö
Advance & Return

SPE-3000C



± ³ ~ □ ° « Ø □ T □ f □ G ! i ' q ° i » Ö
Manual 3 way Valve

SPE-3000D



± ³ ~ □ ° « Ø □ T □ f □ G ! i ' q ° i » Ö
Manual 4 way Valve

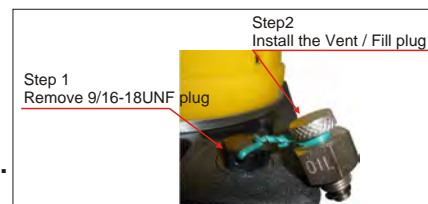
Model Number	Motor	Max.Pressure	Pressure Rating (psi)/(bar)		Output flow rate (L/min)		dBA at Idle and 700bar	Weight (include oil)	Dimension
型 號	馬達	最大使用壓力	輸出壓力		輸出油量		噪音值	重量 (含油)	外型尺寸
	kW(hp)	(psi)/(bar)	1 st stage	2 nd stage	1 st stage	2 nd stage		(kg)	(mm)
SPE-3000	0.37(0.5)	10,000(700)	200(14)	10,000(700)	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

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.



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.

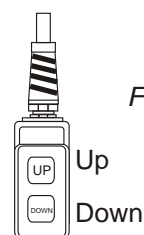
- 1.SPE-3000A : Pressing the top button position activates the electrical circuit and turn the motor on. Do not release top button, the pump motor will not stop, position advance. As release top button ,the motor will stop ,but still to hold pressure until press the button again.
Pressing bottom button,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



4.OPERATION-CONTINUE

4.2 Pump Control Valve (Figure4.2)

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.

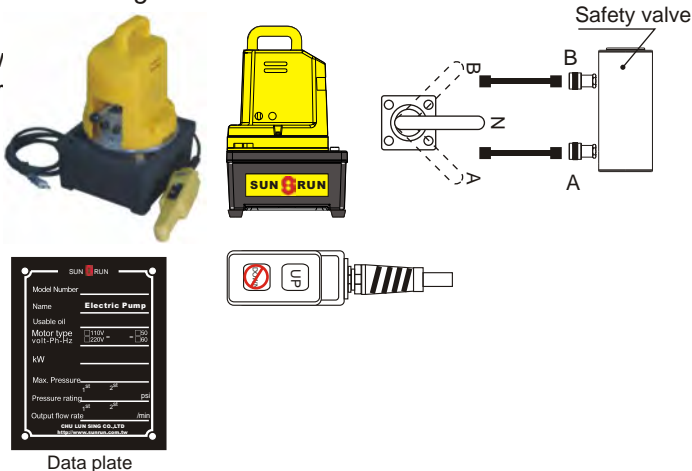
5.HOLD

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.

Figure 4.2



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.

4.3 Pressure adjust

4.3.1 PB type pressure adjust valve (fig.4.3.1)

If want to set pressure lower than 700bar (714kgf/cm²), please check pressure gauge one hand and turn the valve to " _ " (negative) by another hand, till to reach what enquire.



Fig. 4.3.1

4.3.2 PJ type pressure adjust valve (fig.4.3.2)

Turn screw 1 to set high or low pressure.

First, release nut 2 then use wench turn right to add pressure or anticlockwise to reduce pressure.



Fig. 4.3.2

Pump Max. Operating pressure is 700bar.

Don't over 700bar!

Model Number	Pressure adjusting range (bar)	Max.Pressure (bar)	Port size	Contact capacity
PB	100~700	700	3/8NPT	250V 3A
PJ	80~800	700	3/8PT	250V 3A

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 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.Thoroughly 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.

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.	1.Fill reservoir to proper level. 2.Clean or replace intake screen. 3.Shift valve to the pressure position. 4.Have pump repaired by a qualified hydraulic technician.
Cylinder advances and retracts erratically.	1.Air in the system. 2.External leak in system. 3.Internal hydraulic leak.	1.Remove air from the system by opening and closing the tool until operation is smooth. 2.Tighten leak connections. Replace any damaged hoses and fittings. 3.Have pump repaired by a qualified hydraulic technician.
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.