巨輪興股份有限公司
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液壓拉拔器
操作說明

SPM

中文
English
Ver.24

1. 安全預防措失

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: 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。

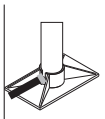
危險事項: 為避免人員傷害，請於操作過程中手、腳遠離液(油)油壓缸和液壓設備。

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)。

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: 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: 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。



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。

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)。

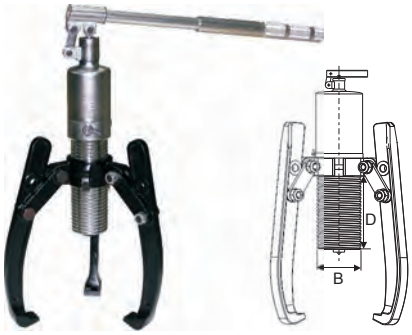
危險事項 : 液(油)壓設備應遠離火或熱源
高溫會軟化包裝和密封材料，導致液壓油洩漏；高溫同時也會造成油管材質與包裝變質。為確保最好狀態，不要將液(油)壓設備暴露於 65°C(150°F)高溫。在電焊場所時亦應注意防止電焊火花噴到油管。

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。

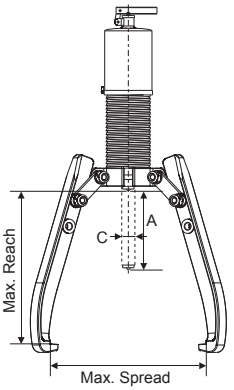
警告事項: 當零件出現裂痕或損壞時，應立即以SUN RUN 零件更換。正確標準的零件可防止人員或設備損傷。SUN RUN零件經特別設計可完全適用並適用產品標稱的額定荷載或壓力。

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。

2. 規格



SPM-1200



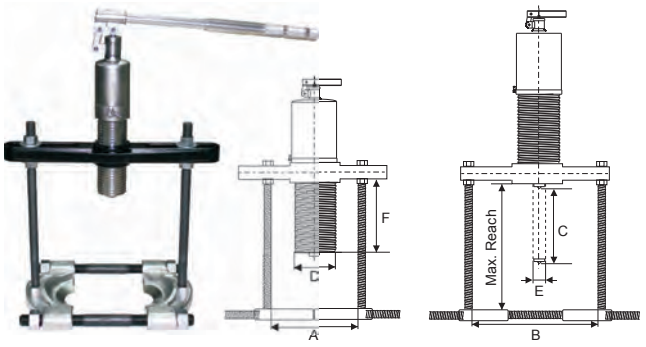
延長桿
Extend plunger

收納工具箱
Stock box

紅色警告線
Red warning line

防護罩
Protective net

型 號 Model No.	能力 Cap. ton (kN)	揚程 Stroke A(mm)	受壓面積 Eff. Area (cm^2)	最大爪深 Max. Reach (mm)	最大爪距 Max. Spread (mm)	頂端 Tip (mm) B	C	D	爪端 Jaw Tip (mm) A1	B1	C1	重量 Weight (kg)
SPM-600	6 (563)	70	8.04	245	330	45	23	91	13	10	22	6.1
SPM-800	8 (793)	85	11.34	230	350	55	26	112	11	10	25	8.4
SPM-1200	12 (1011)	85	14.45	260	375	60	28	118	14	10	29	10.5
SPM-2000	20 (1978)	111	28.26	350	520	80	40	162	20	27	33	24.5
SPM-3000	30 (2940)	111	42.00	435	550	98	50	155	20	27	38	37.3

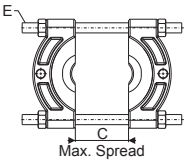


型 號 Model No.	能力 Cap. ton (kN)	揚程 Stroke (mm)	爪深 Max. Reach (mm)	爪距 Spread (mm) A	B	頂端 Tip (mm) D	E	F	重量 Wt. (kg)
SPM-610	6 (563)	70	270	80	180	45	23	91	7.3
SPM-810	8 (793)	85	270	110	220	55	26	112	12.9
SPM-1210	12 (1011)	85	381	146	290	60	28	118	21.9

適用的培林拔套
Suitable bear attachments

BT 培林拔套

Universal Bearing Attachments



型 號 Model No.	撐開 Spread (mm) C	螺栓 Bolt (mm) E	重量 Wt. (kg)
BT-9000	30-50	3/8"-24T-L120mm	0.6
BT-9005	50-75	1/2"-20T-L135mm	1.5
BT-9015	75-105	5/8"-18T-L230mm	2.5
BT-9025	105-150	3/4"-16T-L275mm	5.2
BT-9035	150-200	1"-12T-L350mm	10.6

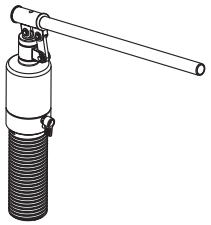
2. 規格

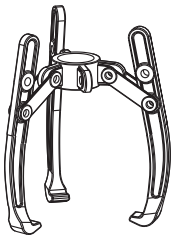
SPM-__00系列
SPM-__00 TYP.

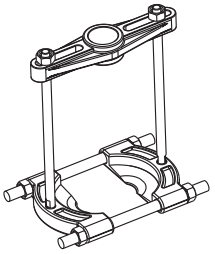
SPM-__10系列
SPM-__10 TYP.

SPM-__30 系列
SPM-__30 Series

選配防護蓋 Opt protect cover
XXSPR-6
XXSPR-8
XXSPR-12





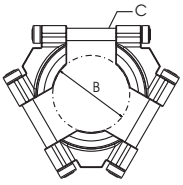


整體型號 Model Number	油缸組 Cylinder Model Number	爪部拉組 Jaws Assembly Model Number	培林支撐組 Bearing Assembly Model Number	壓床支撐組 Press Assembly Model Number
SPM-600	SPM-A-600	SPR6-A-A2		
SPM-800	SPM-A-800	SPR8-A-A2		
SPM-1200	SPM-A-1200	SPR12-A-A2		
SPM-2000	SPM-A-2000	SPR20-A-A2		
SPM-3000	SPM-A-3000	SPR30-A-A2		
SPM-610	SPM-A-600		SPM-A-620	
SPM-810	SPM-A-800		SPM-A-820	
SPM-1210	SPM-A-1200		SPM-A-1220	
SPM-620	SPM-A-600	SPR6-A-A2	SPM-A-620	
SPM-820	SPM-A-800	SPR8-A-A2	SPM-A-820	
SPM-1220	SPM-A-1200	SPR12-A-A2	SPM-A-1220	
SPM-630	SPM-A-600			SPM-A-630
SPM-830	SPM-A-800			SPM-A-830
SPM-1230	SPM-A-1200			SPM-A-1230

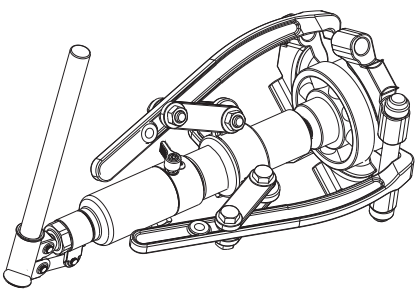
選配 Optional

SK3 三角壓盤

Universal Bearing Attachments



型 號 **Model No.**	撐開 **Spread** (mm)	螺栓 **Bolt** (mm)	重量 **Wt.** (kg)
	B	C	
Sk3-50	φ13.5-50.5	M10*P1.25-L32mm	0.5
SK3-100	φ 26.3-100	M16*P2 - L64mm	2.5
SK3-160	φ 49 - 160	M22*P2.5-L96mm	6.1



3.操作

3.1操作前，必須確認拉拔器與待拆之工件的中心線，成一直線。如未正確的將拉拔器與待拆工件成一直線，則於高壓出力狀態下，將會導致危險的操作情形！此外，開始操作前，亦必需確認所有爪鉤面，均與待拆工件完全結合。

3.2將拉拔器與待拆工件結合後，並在開始施壓之前，務必將防護網完全包覆拉拔器與工件。以防止工件破裂、飛出；而造成人身傷害。(圖 3.2)

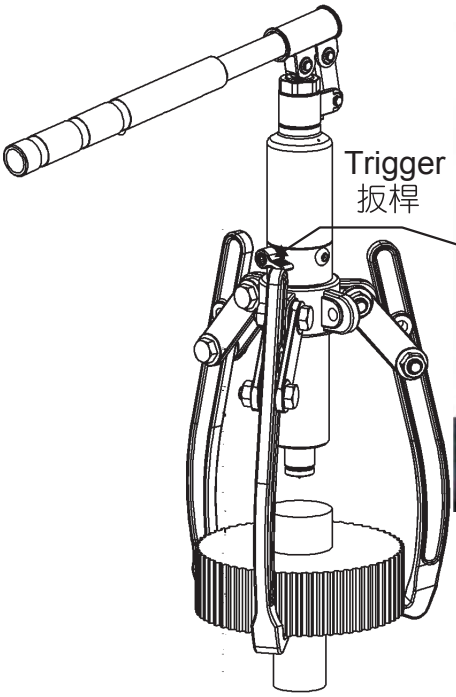
3.3請以持續且漸進的方式施壓。

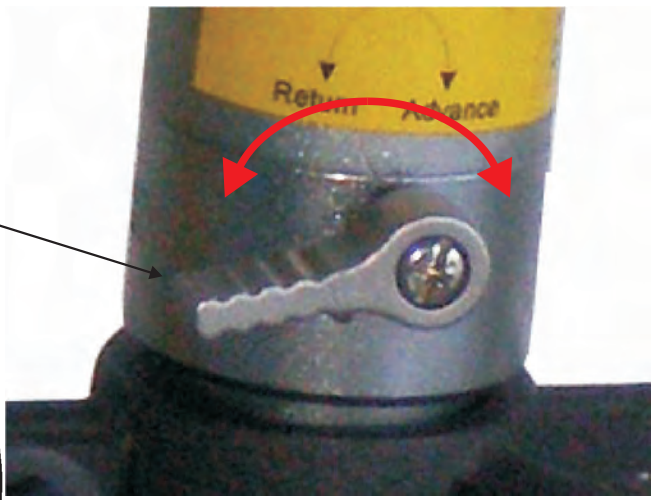
3.4當拉拔器與待拆卸工件結合後，絕對不可以任何方式加熱待拆卸工件。此動作會造成拉拔器零件受損，工具失效。

注意：拉拔器具有2/3爪共用設計。如使用空間許可，強烈建議使用三爪結構進行拆卸工作。因三爪結構可提供較平均與安全的拉力與鎖固力。

圖3.2

3.5將扳桿依順時鐘方向旋轉關閉，如下：

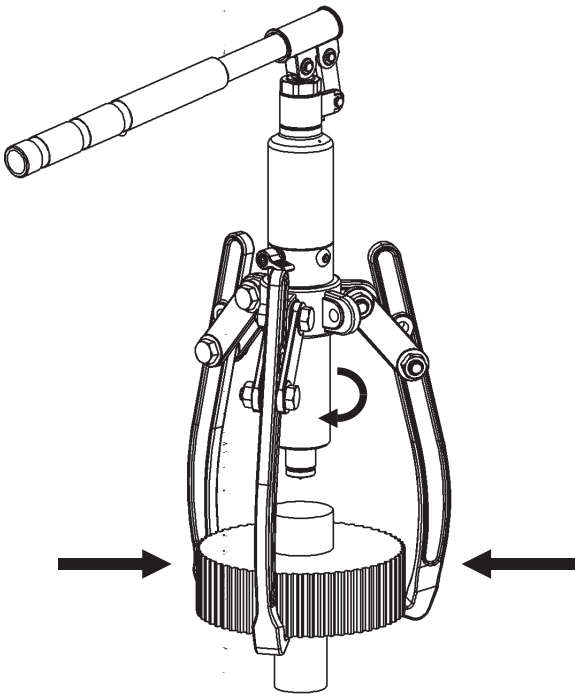


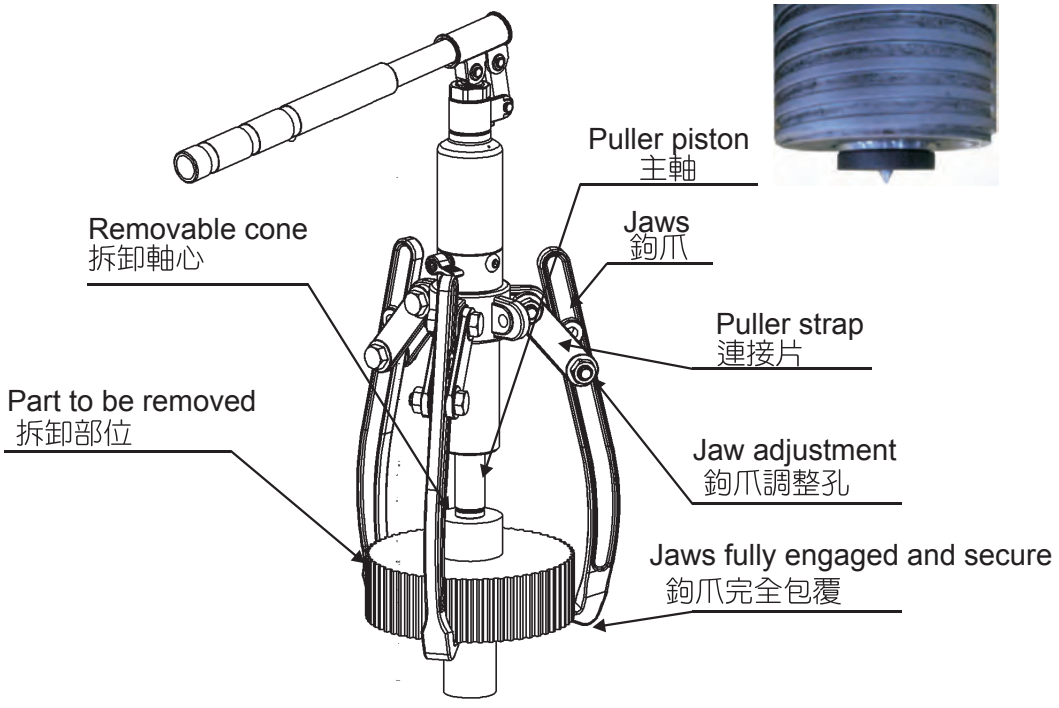


3.操作

3.6 拉拔器定位

3.6.1 將爪鉤自待拆卸工件外緣包覆，並以旋轉油壓主體的方式或調整拉爪片的孔位，來縮短油壓主體與軸心的距離。持續作動搖桿，以驅動拉拔器的主軸伸出，等主軸與軸心接觸後，隨即停止搖桿作動。此時拉拔器定位的最後確認與所有爪鉤與工件結合確認。同時，務必確認拉拔器與待拆卸工件位於同一中心線上。



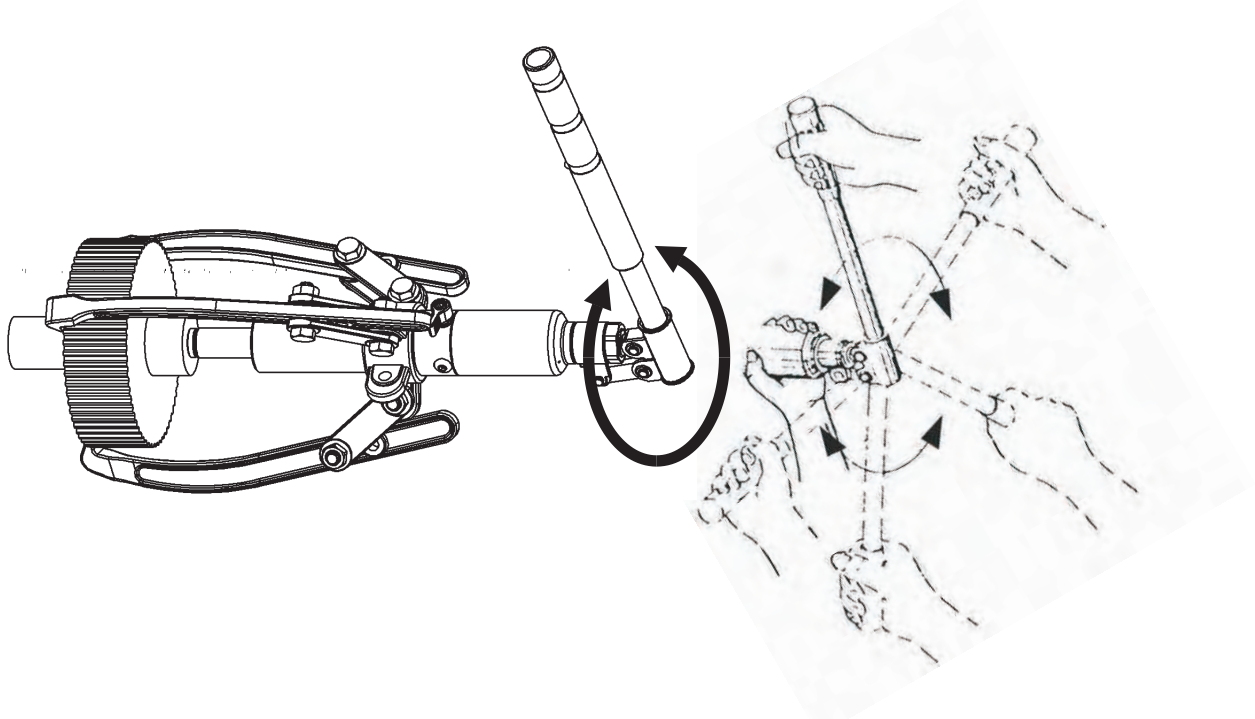


標準軸

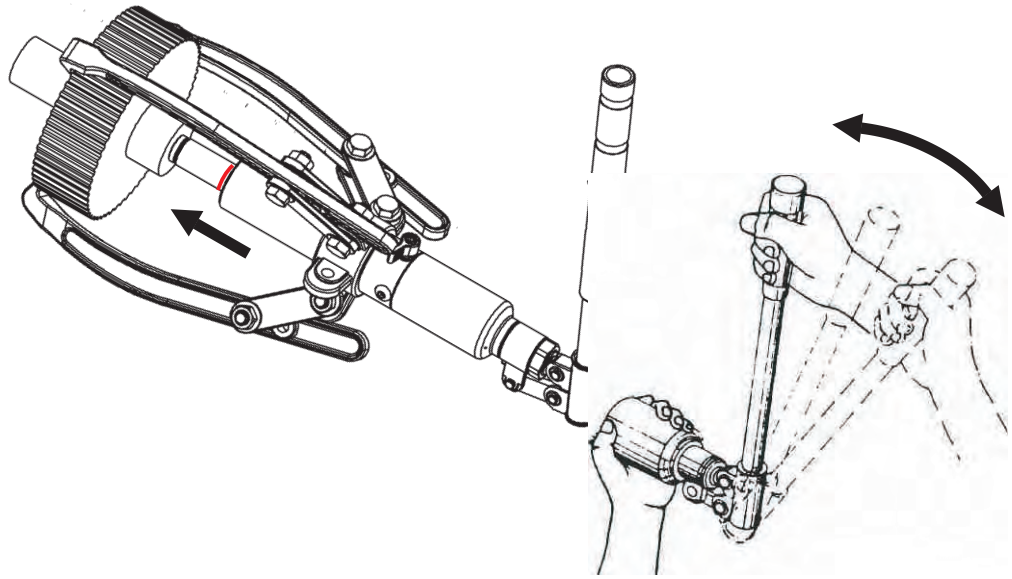
延長軸

3.操作

3.6.2 360^0 可旋轉的手搖桿，可提供最佳旋力位置。



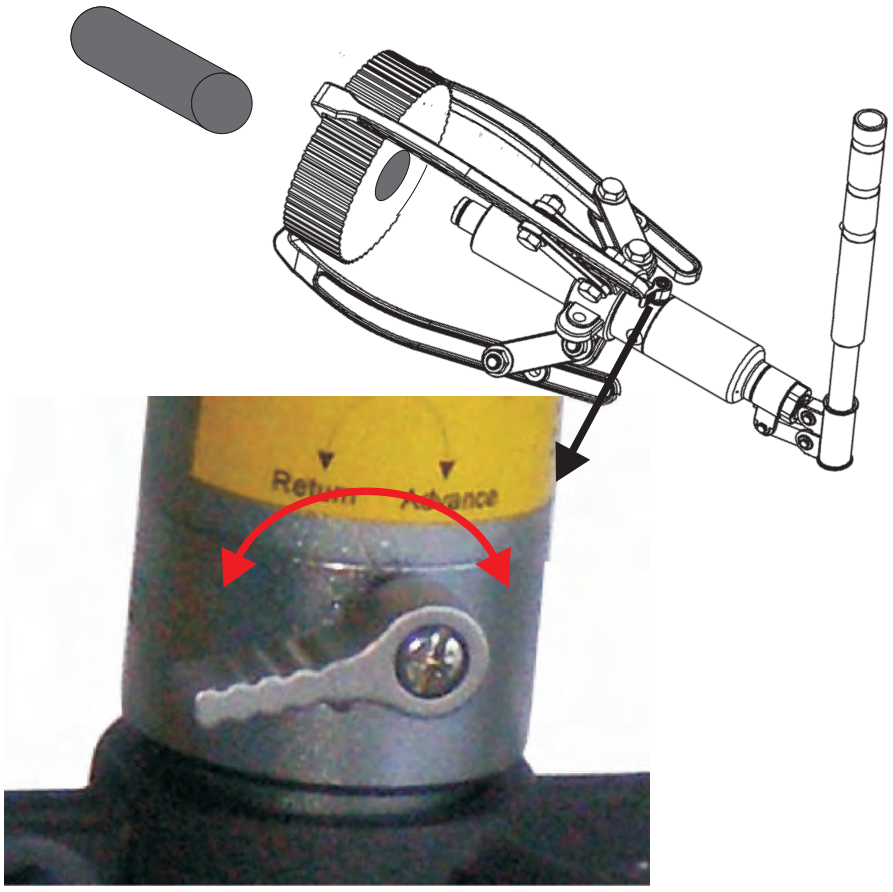
3.6.3 一手扶住拉拔器，另一手作動手搖桿，持續驅動主軸伸出，直到拆卸工件為止。



當主軸出現如上圖紅色警戒線時，請立即停止施壓。避免SPM-600型拉拔器損壞。

3.操作

3.6.4 工件拆卸完成後，將扳桿以逆時針方向旋轉，則主軸會自動回縮。



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OPERATING INSTRUCTIONS
HYDRAULIC PULLERS

SPM

English：E1~E7

中文
English
Ver.24

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

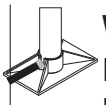
DANGER: To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.

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).

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.

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

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.



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.

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.

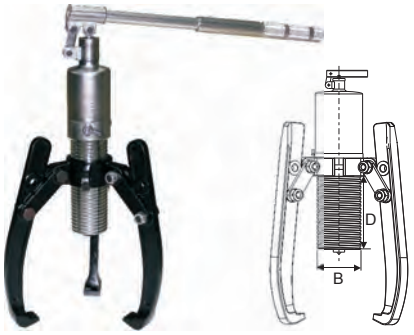
CAUTION : KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65^{0}C(150^{0}F) or higher. Protect hoses and cylinders 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.

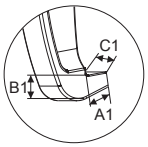
WARNING: Immediately replace worn or damaged parts with genuine SUN RUN parts. SUN RUN parts are designed to fit properly and withstand rated loads.

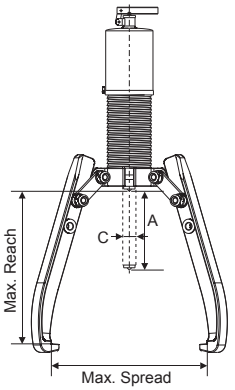
IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the SUN RUN Service Center in your area. To protect your warranty, use only SUN RUN oil.

2. SPECIFICATION



SPM-1200





延長桿
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型 號 Model No.	能力 Cap. ton (kN)	揚程 Stroke A(mm)	受壓面積 Eff. Area (cm^2)	最大爪深 Max. Reach (mm)	最大爪距 Max. Spread (mm)	頂端 Tip (mm) B	C	D	爪端 Jaw Tip (mm) A1	B1	C1	重量 Weight (kg)
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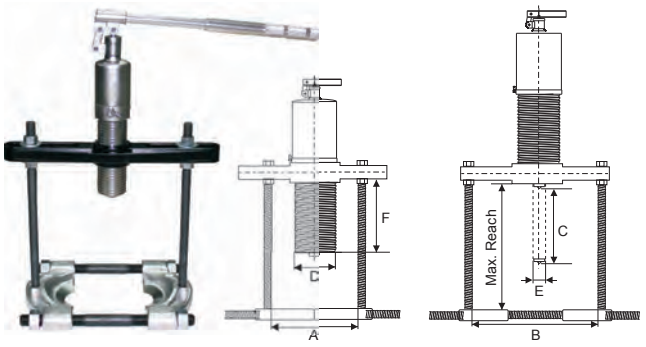
SPM-2000	20 (1978)	111	28.26	350	520	80	40	162	20	27	33	24.5
SPM-3000	30 (2940)	111	42.00	435	550	98	50	155	20	27	38	37.3

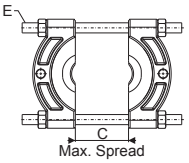


型 號 Model No.	能力 Cap. ton (kN)	揚程 Stroke (mm)	爪深 Max. Reach (mm)	爪距 Spread (mm) A	B	頂端 Tip (mm) D	E	F	重量 Wt. (kg)
SPM-610	6 (563)	70	270	80	180	45	23	91	7.3
SPM-810	8 (793)	85	270	110	220	55	26	112	12.9
SPM-1210	12 (1011)	85	381	146	290	60	28	118	21.9

適用的
培林拔套
Suitable bear attachments

BT 培林拔套

Universal Bearing Attachments



型 號 Model No.	撐開 Spread (mm) C	螺栓 Bolt (mm) E	重量 Wt. (kg)
BT-9000	30-50	3/8"-24T-L120mm	0.6
BT-9005	50-75	1/2"-20T-L135mm	1.5
BT-9015	75-105	5/8"-18T-L230mm	2.5
BT-9025	105-150	3/4"-16T-L275mm	5.2
BT-9035	150-200	1"-12T-L350mm	10.6

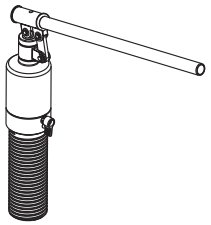
2. SPECIFICATION

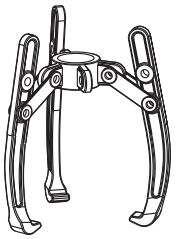
SPM-__00系列
SPM-__00 TYP.

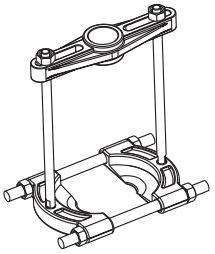
SPM-__10系列
SPM-__10 TYP.

SPM-__30 系列
SPM-__30 Series

選配防護蓋 Opt protect cover
XXSPR-6
XXSPR-8
XXSPR-12





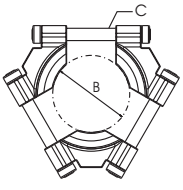


整體型號 Model Number	油缸組 Cylinder Model Number	爪部拉組 Jaws Assembly Model Number	培林支撐組 Bearing Assembly Model Number	壓床支撐組 Press Assembly Model Number
SPM-600	SPM-A-600	SPR6-A-A2		
SPM-800	SPM-A-800	SPR8-A-A2		
SPM-1200	SPM-A-1200	SPR12-A-A2		
SPM-2000	SPM-A-2000	SPR20-A-A2		
SPM-3000	SPM-A-3000	SPR30-A-A2		
SPM-610	SPM-A-600		SPM-A-620	
SPM-810	SPM-A-800		SPM-A-820	
SPM-1210	SPM-A-1200		SPM-A-1220	
SPM-620	SPM-A-600	SPR6-A-A2	SPM-A-620	
SPM-820	SPM-A-800	SPR8-A-A2	SPM-A-820	
SPM-1220	SPM-A-1200	SPR12-A-A2	SPM-A-1220	
SPM-630	SPM-A-600			SPM-A-630
SPM-830	SPM-A-800			SPM-A-830
SPM-1230	SPM-A-1200			SPM-A-1230

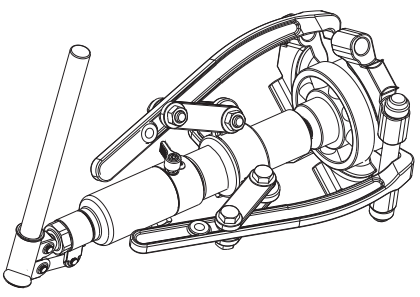
選配 Optional

SK3 三角壓盤

Universal Bearing Attachments



型 號 **Model No.**	撐開 **Spread** (mm)	螺栓 **Bolt** (mm)	重量 **Wt.** (kg)
	B	C	
Sk3-50	φ13.5-50.5	M10*P1.25-L32mm	0.5
SK3-100	φ 26.3-100	M16*P2 - L64mm	2.5
SK3-160	φ 49 - 160	M22*P2.5-L96mm	6.1



3.OPERATION

3.1 Align the puller on the same centerline as the part being removed. Failure to align parts correctly can result in a dangerous operating situation because of the high hydraulic pressure used！
Otherwise, before working should check the all jaws fully engaged and secure.

3.2 Wrap the work in a SUN RUN protective blanket before applying pressure to provide protection from injury caused by flying parts should a part ever break. (Fig. 3.2)

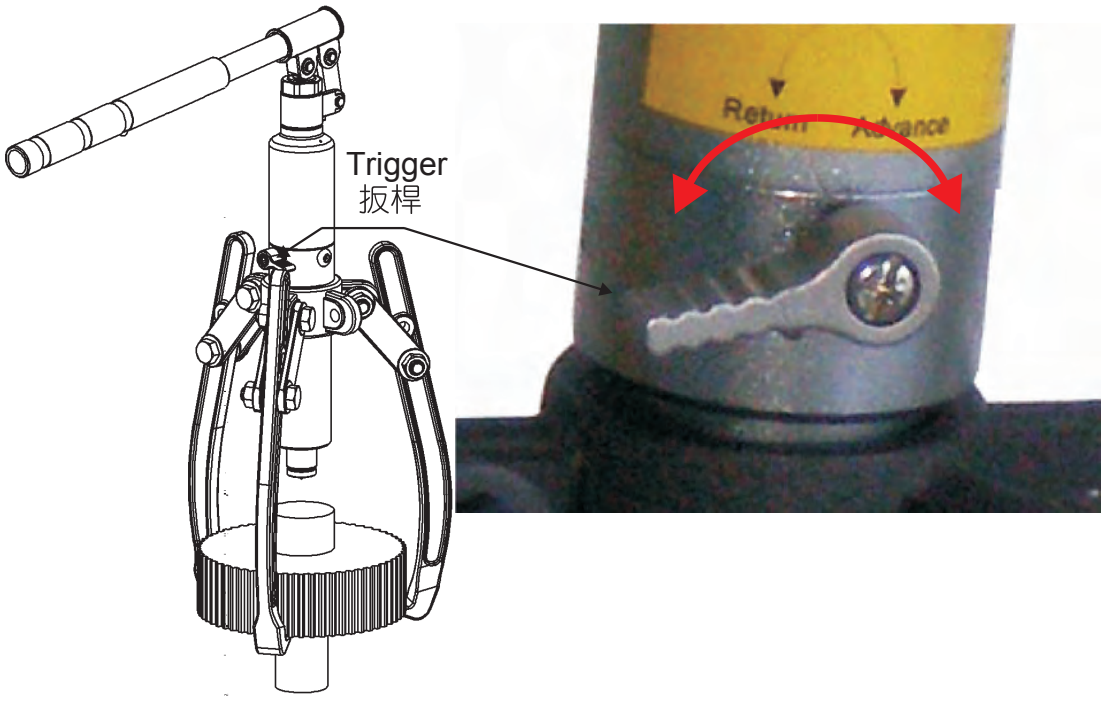
3.3 Always apply force gradually.

3.4 DO NOT USE HEAT, hammers, or impact tools on these pullers.
This will cause damage that voids the pullers warranty.

NOTE：These pullers have a 2/3-way combination puller head. The 3-jaw combination is strongly recommended whenever the job space allows for it. Three jaws give more secure grip and more even pulling force.

Fig.3.2

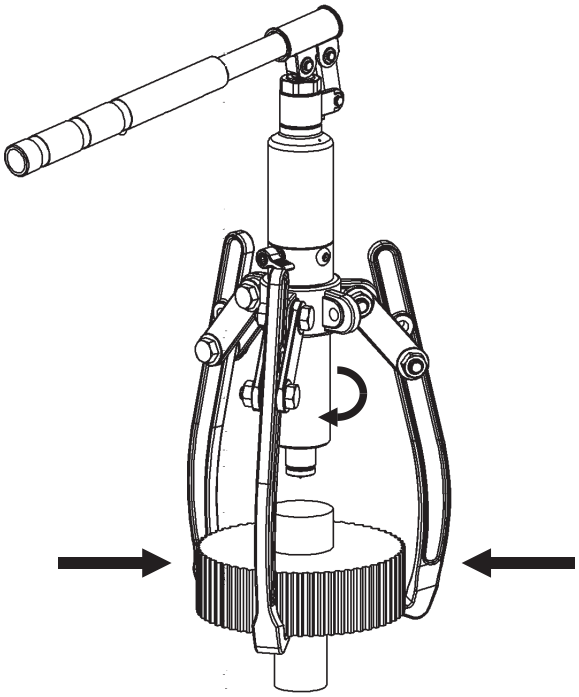
3.5 Turn the trigger completely in a clockwise direction to advance the piston.
As below：

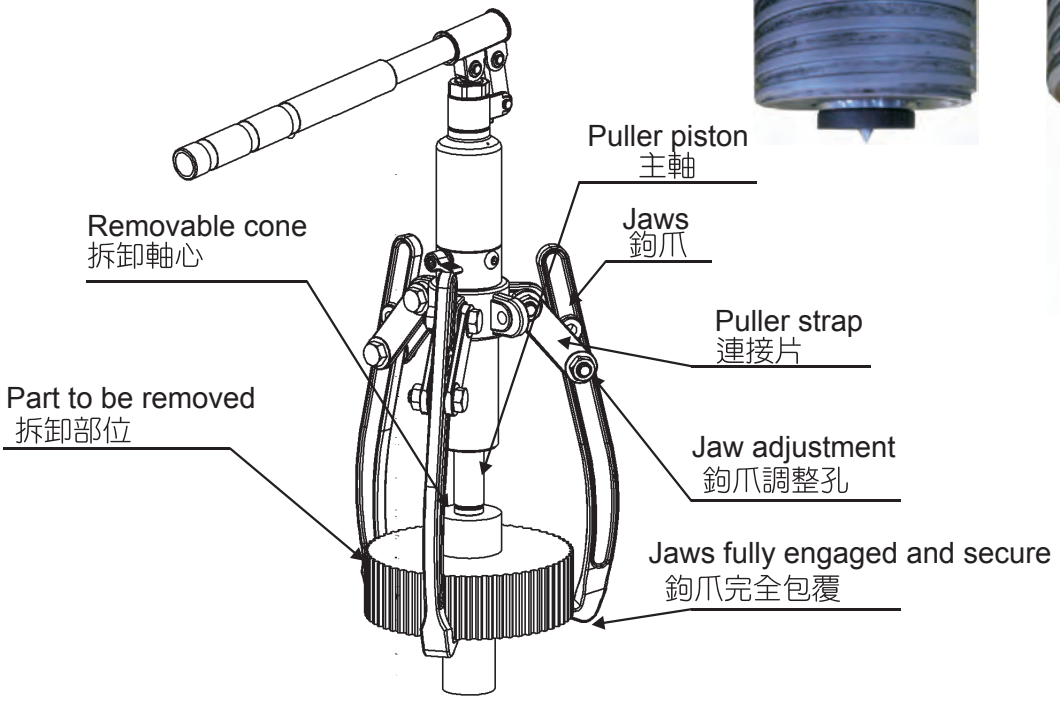


3.OPERATION

3.6 Puller setup

3.6.1 Begin positioning the puller and puller jaws around the part to be pulled, removing most of the slack by threading the adjusting locknut further onto the puller body or adjusting the puller straps on the jaws. Pump the handle to advance the piston, stopping just as the removable cone reaches the part. Make final puller positioning adjustments with the adjusting locknut or the piston. The puller must be on the same centerline as the part to be pulled and the jaws fully engaged and secure. As belwo:



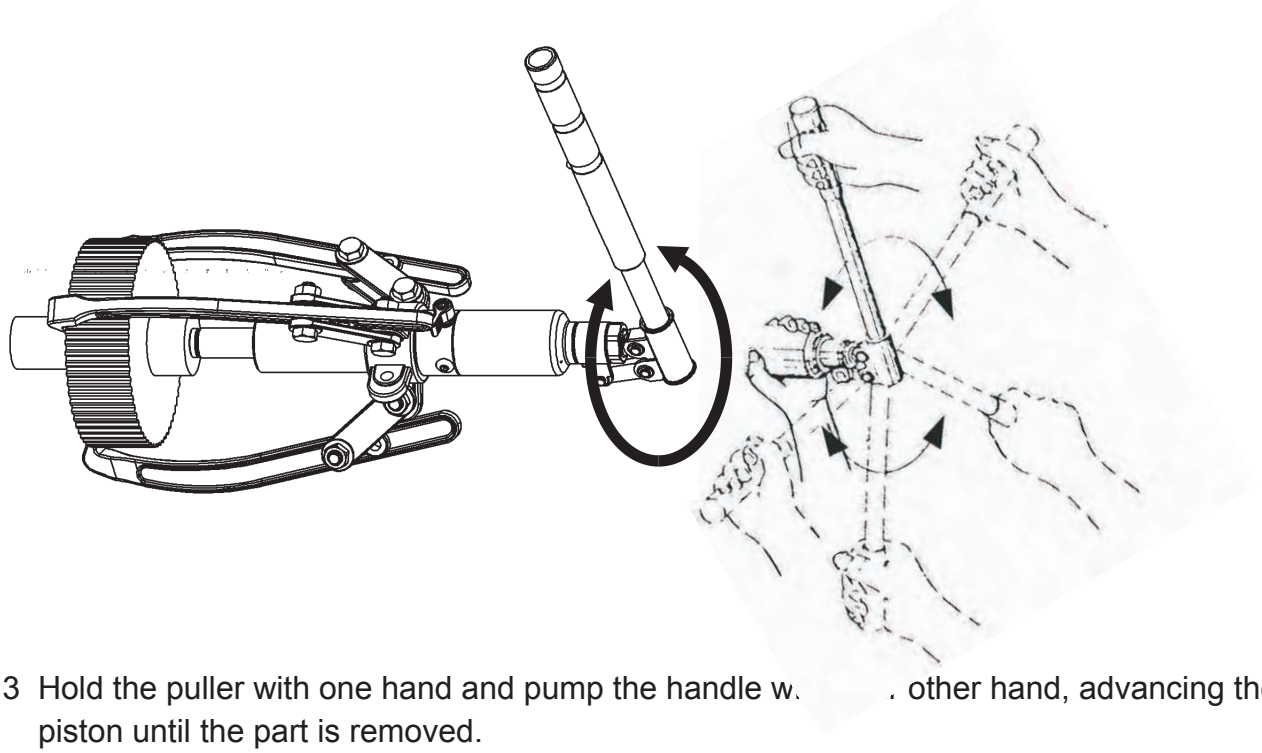


Standard plunger

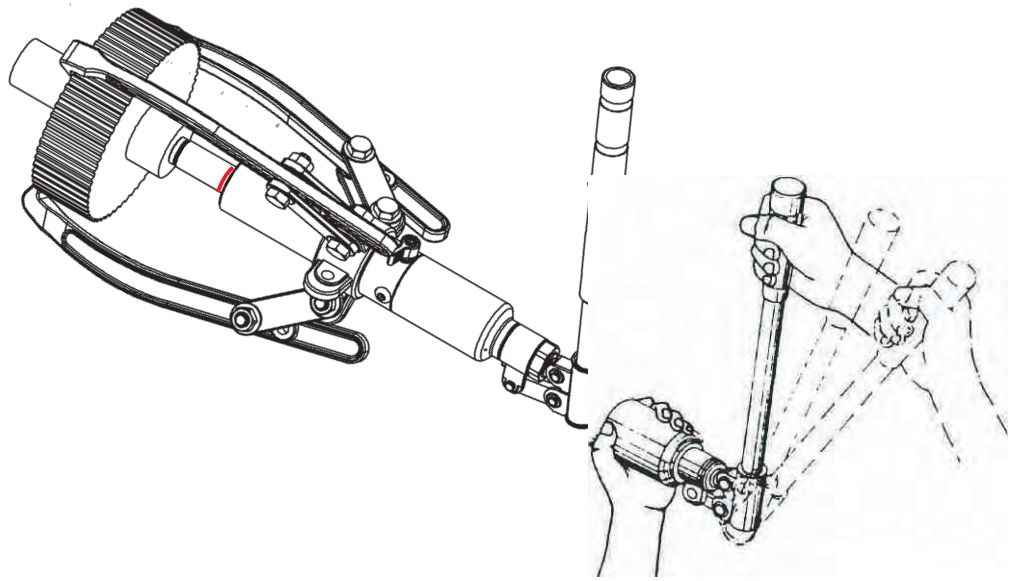
Extend plunger

3.OPERATION

3.6.2 The handle assembly rotates a full 360° to allow the best handle location for the job.



3.6.3 Hold the puller with one hand and pump the handle w. . other hand, advancing the piston until the part is removed.



As the plunger appear red warning line, please stop pressing immediately.
To prevent SPM-600 damage.

3.OPERATION

3.6.4 Turn the trigger completely in a counterclockwise direction to retract the piston.