

# **HYDRALOK 扣压机用户使用手册**

**型号： HE325**



承蒙选购本公司的胶管扣压设备，深表感谢！为使您能有效使用本设备，

请在使用之前仔细阅读本说明书并妥善保管好！

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Optional Electrical power pack

## **产品质量保证说明 WARRANTY CONDITIONS**

**所购机器在发货前均经过严格检测。**

Please note that all machines undergo strict testing before shipment.

1. 购买之日起，所购机器享有 12 个月的质保期。本公司保留要求客户出示销售发票副本的权力。All machines are warranted against any defects for a period of 12 MONTHS starting from the date of delivery to the customer. The company reserves the right to require a copy of the sales invoice.

2. 该质保声明包括在质保期内享有维修和/或更换任何确实存在缺陷的零部件的权益。

This warranty covers replacement and repair of any component found to be defective.

3. 该质保声明不包括正常的机器损耗和由于使用不当或未能按照机器使用说明进行操作而引起的损坏。

This warranty does not cover any damages caused by deterioration from use.

4. 声明不包括由于使用不当或未能按照机器使用说明进行操作而引起的损坏。This warranty is not valid for damage resulting from incorrect operation, or use not in compliance with the machine instructions.

5. 该质保声明不包括用户私自改装以后的机器。该质保声明不包括用户私自改装以后的机器。

This warranty is not valid in case of unauthorised machine modification.

6. 中国用户请参阅独立的“中国地区用户使用手册”

**EC**  
**DECLARATION OF INCORPORATION.**

**MANUFACTURER**

ENDEAVOUR INTERNATIONAL LTD.  
13 THE MALTINGS INDUSTRIAL ESTATE.  
BATH.  
ENGLAND.  
BA1 3JL.

**MACHINERY DESCRIPTION.**

An eight segment hose assembly swaging head.

MODEL :- HE325

**SERIAL NO.**

**警告 WARNING.**

机器仅在与指示组装一致，才提供维修。This machinery must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Engineering Director.

This Declaration only applies when incomplete / un-powered equipment is supplied by the Manufacturer

## **安全操作条款 SAFETY REGULATIONS**

机器始终在安全的条件下工作，机器周围应当留有相当的空间。必须保证机器安放在平稳适当的工作平台上。Always work in safe conditions and with the necessary space around the machine. Ensure that the machine is placed on a stable and appropriate working surface.

1. 未详细阅读此用户手册之前，**请您不要使用机器。**  
DO NOT USE the equipment before reading the user manual.
2. **请注意危险！** 如果使用不当，机器有可能造成损伤。请不要触碰任何 处于工作状态的机器部件。  
CAUTION! If improperly used, the equipment may be dangerous and may cause injury. Do not touch any moving parts.
3. **请注意！** 所有操作应当由一人来完成。  
CAUTION! It is absolutely essential that all working operations are carried out by one operator only
4. 操作人员必须阅读本手册。操作人员必须认识其职责。  
This manual must be provided for the machine operator. Ensure that the operator is aware of his/her responsibilities.
5. 防护装置不可去除或更改。  
Guards must never be removed or tampered with.
6. 如有可能，应当由能胜任的电工连接适合的电源。  
(Where applicable) A fully trained and competent electrician must connect the machine to the appropriate electricity supply.
7. 请始终穿戴工作服，保护手套，和防护眼镜。  
Always wear protective gloves, safety glasses and appropriate clothing.
8. 如有可能，在打开机盖或进行机器维修之前，请先切断电源。  
(Where applicable) Disconnect the power supply before removing any covers, or attempting any maintenance of the machine
9. 只有原装配件才能用于机器的维修。  
Only original spare parts can be used in the maintenance of the machine.

TECHNICAL/DIMENSIONAL DATA	HE325
规格 Capacity	3/16 英寸-11/4 英寸 (两层 钢丝软管 2 wire) R1AT & R2AT 3/16 英寸-1 英寸 (四层钢 丝软管 4 wire) R9R/4SP
可选用气/液压压力系统 Pressure requirements for <b>optional</b> air/hydraulic power pack	7 bar (100 psi)
包装后尺寸 (mm) Packed Dimensions in mm (不包括另外可选择的压力系统 <b>excluding optional power packs</b> )	520x730x800
控制 Controls	变速手动加压杆操纵 Twin speed hand pump (10,000 psi)
可选的电压系统 Voltage (Volts) <b>optional</b> electrical power pack	220 伏单相 50Hz 或 12 伏 直流电 (700 BAR) 220-1-50HZ or 12volt dc 255-440V/60HZ
重量不包括可选择的压力系统 Weight (Kg) without optional power pack	85
噪音量 Noise level	不超过 Not exceeding 70dB

### **装卸/搬运注意事项 HANDLING/TRANSPORT**

机器通常封装在木箱之中。将机器的封定装置拆除后应当使用合适的起重设备将机器置于工作平台之上。The machine will normally be shipped bolted to a wooden pallet . The bolts should be removed and the machine lifted onto the work place using suitable lifting equipment.

### **预备检测 PRELIMINARY CHECKS**

1. 将机器置于平稳的工作平台之上。Place the machine on a stable surface.
2. 如有可能，确保有一个与电源线路适配的自动保险电门，在电流超载时能自动切断电路。Where applicable, ensure that the power supply line is fitted with a differential safety breaker and overload cutout.

### **照明 LIGHTING**

3. 机器本身并不带照明装置，因此应当在适宜的照明条件下进行操作。The equipment does not have its own lighting and so it must be used in a suitably illuminated area.

## **日常维护 ROUTINE MAINTENANCE**

4. 保证经常给活动部件上润滑油。Ensure that moving parts are always lightly greased.

如有可能，定期检查限定开关与紧急按钮，确保其运行正常。Where applicable check periodically that the limit switches and emergency controls are in good working order.

## **操作指南 OPERATING INSTRUCTIONS.**

该机器是由手动加压杆操纵（图 1，部件 1）。当释压阀（图 1，部件 2）关闭且用加压杆操纵时，扣压头将合拢，完成软管的扣压。The machine is operated by a hand operated hydraulic pump. (Item 1, Fig. 1). When the release valve (Item 2, Fig. 1) closed and the pump operated, the swaging head will close and a hose assembly can be swaged.

旋开释压阀两圈，取出扣压后的胶管。To release the finished assembly unscrew the release valve two turns.

根据模具表（图 3）和生产商所提供的扣压后的胶管口径参考数据，选择合适的模具。将模具（图 2，部件 1）插入固定插脚并确保模具被模具固定器（图 2，部件 2）完全固定。To operate the machine, select the appropriate die set using the die chart (Fig 3) in conjunction with the finished swage size required. Fit the dies (item 1, fig 2) onto the location pins and ensure each die segment is fully supported by the die holder. (item 2, fig 2)

根据扣压表上的要求，调节千分尺（图 2，部件 3）到要求的刻度线（图 2，部件 5）和字母。字母必须根据指示器的记号排列（图 2，部件 6）。指示器可装在任何需要的位置。Set the micrometer (Item 3, Fig 2) to the required colour band (item 5, fig 2) and letter as determined from the swaging chart. The letter must be aligned with the indicator mark (item 6, fig 2) The calibrator can be set at any intermediate position as required.

关闭释压阀，操纵加压杆，机头模具收口，扣压胶管。确保套筒在模具长度范围之内。Close the release valve and operate the pump to close the dies onto the assembly to be swaged. Ensure the ferrule is within the die length before proceeding.

调节加压杆直到指示杆（图 2，部件 4）与千分尺调节器的顶部在同一水平面上。这样，扣压就完成了。初次扣压后须与扣压尺寸核对。Operate the pump until the indicator rod (Item 4, Fig. 2) is level with the top of the micrometer adjuster. The swage is now complete. Initial swages should be checked for swage size.

旋开释压阀使扣压机头扩开，就可取出总成后的胶管。扣压机头不需要每次被完全扩开，通过关闭排气阀可停止扣压机头继续扩开。To remove completed assembly, unscrew the release valve and allow the machine to open. The machine opening can be stopped by closing the release valve and need not be fully opened each time.

### **重新校验 RECALIBRATION.**

1. 安装 E12 模具设置 Fit the type E12 die set to the machine.
2. 调节机器使模具接近直径为 32mm 的心轴（图 4，部件 2）。操纵加压杆给心轴 5 次加压。  
Operate the machine and close the dies onto a 32 mm diameter mandrel (item 2, fig 4). Operate the pump for five full strokes to apply pressure to the mandrel.
3. 在银色色带的起始处设置刻度单位（图 4，部件 3）到 C+（C 和 D 之间）。Set the calibration unit (item 3, fig 4) to C+ (the corner between C & D) at the start of the silver band.
4. 调节螺旋（图 4，部件 4）使指示杆（图 4，部件 5）与刻度盘（图 4，部件 6）保持在同一水平面上，然后拧紧螺母使之在该位置上固定（图 4，部件 7）。Alter the adjusting screw (item 4, Fig 4) to bring the indicator rod (item 5, fig 4) level with the calibration disc (item 6, fig 4) and lock in position with nut (item 7, fig 4)
5. 取走心轴，重新设置刻度单位至银色色带 D 处进行扣压。Remove the mandrel and reset the calibration unit to silver D and produce a swage.
6. 核对已完成的扣压尺寸。如果校验尺寸不在 0.127 之内，请重新校验。Check the finished swage size. If the finished size is not within 0.127 repeat the calibration procedure.



## **清空液压系统程序 PROCEDURE TO BLEED THE SYSTEM**

1. 确保活塞完全打开。取下螺旋（图 1，部件 5）和油箱盖（图 1，部件 3）。Ensure the piston is fully retracted. Remove the bleed screw (item 5, fig 1) and the oil filler plug (item 3, fig 1)
2. 缓慢操纵加压杆使气体从系统中完全排出。当油从排泄孔中排出时，系统中变成真空。Slowly operate the pump to expel any air from the system. The system is free from air when clear oil is being expelled through the bleed hole.
3. 重新装上螺旋并拧紧 Replace and tighten the bleed screw.
4. 从（图 1，部件 4）的顶部补充装入型号为 SAE10 的液压油，再盖好油箱塞。请注意填加时不要将油溢出。Replenish the pump with SAE10 oil to the top of the tie rod (item 4, fig 1) and replace the oil filler plug. **DO NOT OVER FILL**

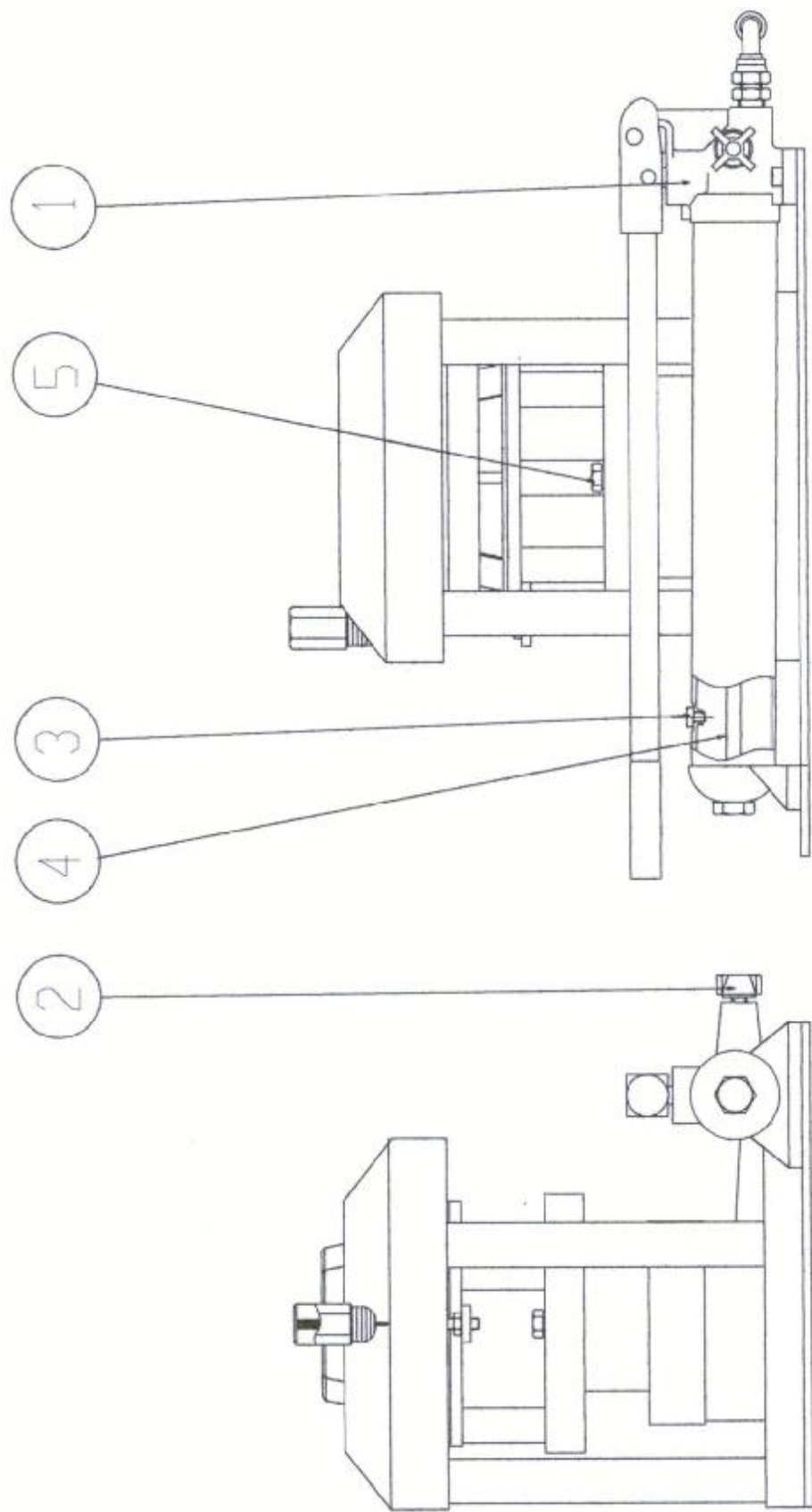
## **维修保养工作 MAINTENANCE AND SERVICE.**

机器正常使用下建议每月检查油位。要检查油位，首先应确保扣压机头完全扩开，然后打开油箱的塞子（图 1，部件 4）。油位应当与（图 1，部件 5）在同一水平面上。如果需要，可在顶部填加型号为 SAE 10 的液压油，**但请注意填加时不要将油溢出**。For machines in regular use it is recommended that a monthly check on the oil level in the pump is carried out. To check oil level, first ensure the machine is fully open and then remove the oil filler (Item 4, Fig.1). The oil should be level with the top of the tie rod (Item 5, Fig.1), that passes through the centre of the pump. If required top up with SAE 10 hydraulic oil. **DO NOT OVER FILL.**

机头的滑槽应当定期用含二硫化钼的喷洒剂进行润滑上油。The sliding surfaces of the machine must be regularly lubricated with molybdenum disulfide based grease.

建议每年重新校验扣压机头。请参见校验指南。At yearly intervals it is recommended that the calibration of the machine is checked in accordance with the calibration instructions.

FIG 1

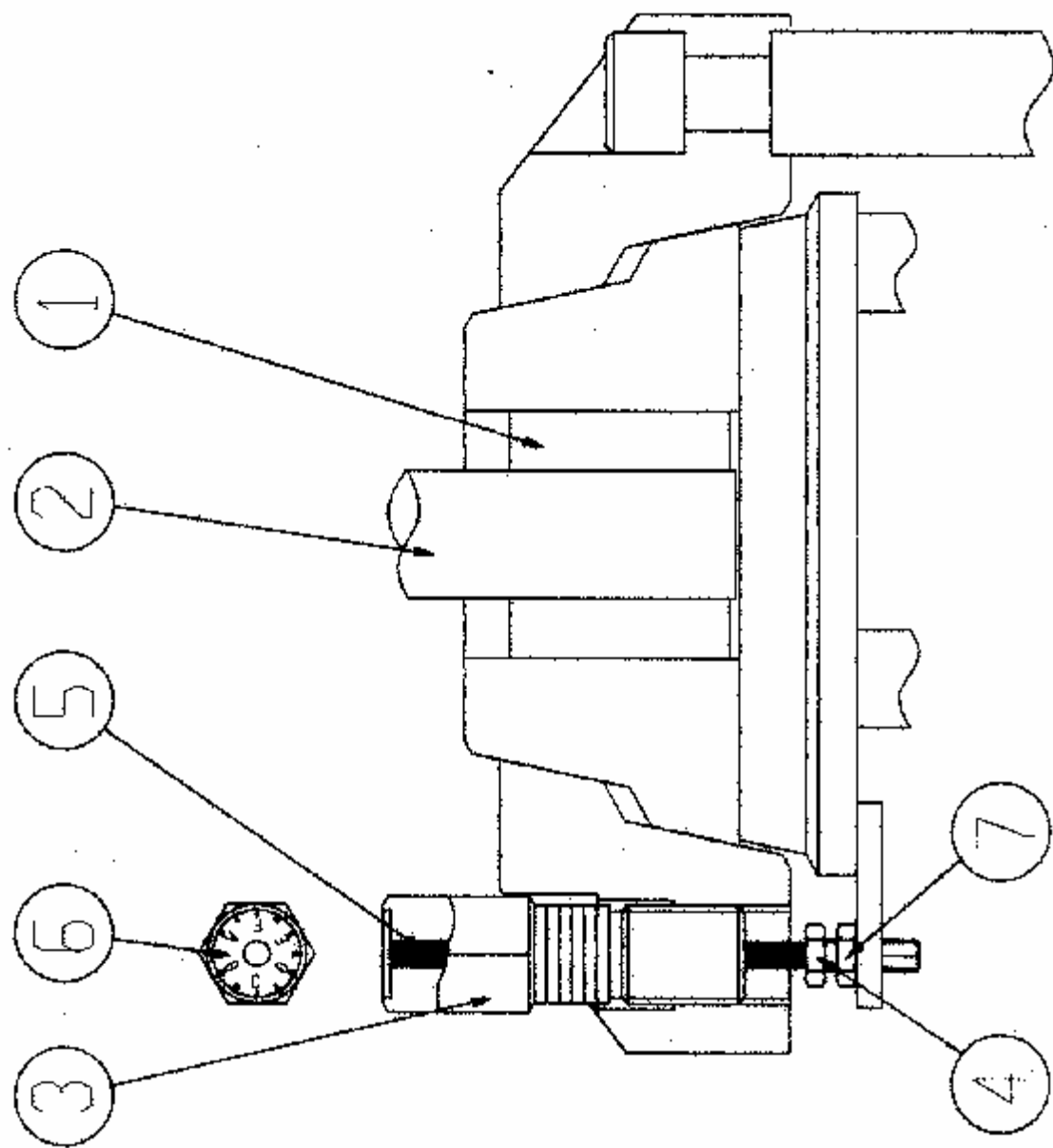


# HE325 CALIBRATION CHART.

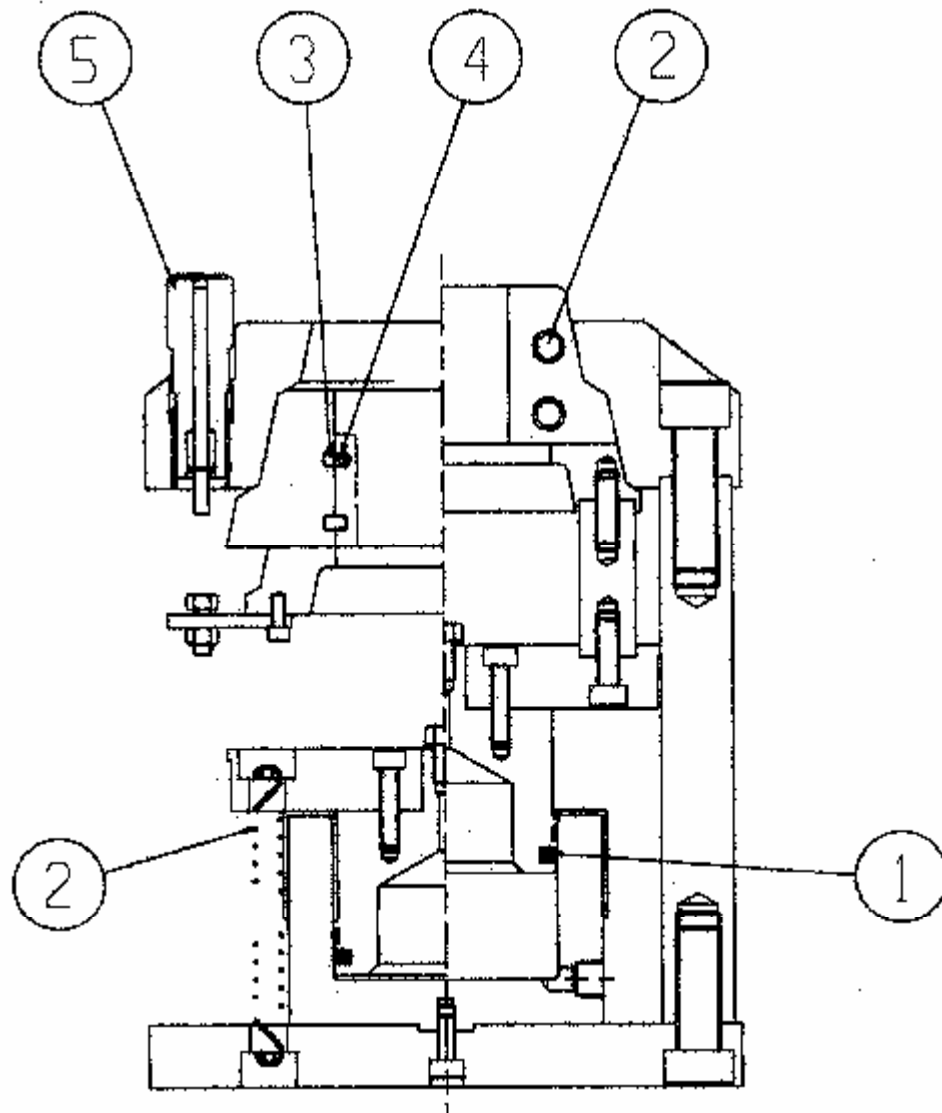
FIG.3

DIE SIZE.		E03	E04	E08	E12	E16	E20
COLOUR LETTER							
W H I T E	F	18.00	24.00	31.50	38.00	45.00	52.50
	E	17.76	23.76	31.26	37.76	44.76	52.26
	D	17.54	23.54	31.04	37.54	44.54	52.04
	C	17.31	23.32	30.81	37.31	44.31	51.81
	B	17.08	23.08	30.58	37.08	44.08	51.58
	A	16.86	22.86	30.36	36.86	43.86	51.36
B L U E	F	16.63	22.63	30.13	36.63	43.63	51.13
	E	16.40	22.40	29.90	36.40	43.40	50.90
	D	16.18	22.18	29.68	36.18	43.18	50.68
	C	15.95	21.95	29.45	35.95	42.95	50.45
	B	15.72	21.72	29.22	35.72	42.72	50.22
	A	15.50	21.50	29.00	35.50	42.50	50.00
R E D	F	15.27	21.27	28.77	35.27	42.27	49.76
	E	15.04	21.04	28.54	35.04	42.04	49.54
	D	14.81	20.81	28.31	34.81	41.81	49.31
	C	14.59	20.59	28.09	34.59	41.59	49.09
	B	14.36	20.36	27.86	34.36	41.36	48.86
	A	14.13	20.13	27.63	34.13	41.13	48.63
B L A C K	F	13.91	19.91	27.41	33.91	40.91	48.40
	E	13.68	19.68	27.18	33.68	40.68	48.18
	D	13.45	19.45	26.95	33.45	40.45	47.95
	C	13.23	19.23	26.73	33.23	40.23	47.73
	B	13.00	19.00	26.50	33.00	40.00	47.50
	A	12.77	18.77	26.27	32.77	39.77	47.27
S I L V E R	F	12.55	18.55	26.05	32.55	39.55	47.05
	E	12.32	18.32	25.82	32.32	39.32	46.82
	D	12.09	18.09	25.59	32.09	39.09	46.59
	C	11.87	17.87	25.37	31.87	38.87	46.37
	B	11.64	17.64	25.14	31.64	38.64	46.14
	A	11.41	17.41	24.91	31.41	38.41	45.91
Y E L L O W	F	11.19	17.19	24.69	31.19	38.19	45.69
	E	10.96	16.96	24.46	30.96	37.96	45.46
	D	10.73	16.73	24.23	30.73	37.73	45.23
	C	10.50	16.50	24.00	30.50	37.50	45.00
	B	10.28	16.28	23.78	30.28	37.28	44.78
	A	10.05	16.05	23.55	30.05	37.05	44.55

FIG. 4



# HE325



HE325 SPARE PARTS LISTS		
ITEM NO.	PART NO.	DESCRIPTION
1	300-052	SEAL KIT
2	300-046	SPRING KIT
3	300-018	DIE LOCATION KIT
4	101-001	DIE LOCATION RING
5	300-040	CALIBRATOR ASSEMBLY

可选用的气/液压加压系统（700 公斤压强）

**OPTIONAL AIR/HYDRAULIC POWER PACK (700 BAR.)**

**安装指南 SETTING INSTRUCTIONS.**

按照指示将胶管的一头连接扣压头，另一头连接泵的出口。确保胶管的最大加压为 700Bar。Connect the hose from the Swaging Head to the outlet connection of the pump as indicated. Ensure pressure rating of the hose is suitable for 700 Bar operation.

**空气供给 AIR SUPPLY.**

根据指南在脚踏泵的空气进口处接入空气源。Connect a suitable air supply to the air inlet connection of the foot pump as indicated.

注意：操作压的最大值限制在 7 Bar (100psig)。N.B. The air must be supplied using a filtered and lubricated supply, regulated to a MAXIMUM operating pressure of 7 Bar (100psig).

**排除液压系统空气的程序 PROCEDURE TO BLEED THE SYSTEM**

如果脚踏泵是另加，而不是原先就安装在扣压机上的，应当先排除液压系统内的空气。扣压机需要垂直放置，使排泄螺旋面向上。The system will require bleeding if the foot pump was not supplied assembled to the machine. The swaging machine will require positioning vertically, with bleed screw facing upwards.

踩脚踏板，直到机器的活塞上升大约 15 至 20mm，这样就排除了系统中的空气。松开脚踏板，但不要使活塞下降。To bleed the system press down on the foot pedal and operate until the machine piston raises approximately 15 to 20 mm. Release the foot pedal but do not operate the release to lower the piston.

拧松位于活塞顶面中心的排泄螺旋但不要取下它。Loosen the bleed screw but do not remove, it is located in the centre of the top face of the piston.

当空气从排泄螺旋孔中排出时可以听到排气的声音。当在螺旋孔周围看到油，而且发现不再有空气排出时，重新拧紧螺旋。正常情况下的排气，当用力下压压力杆时应该是能够一压到底，感觉不到明显的阻碍。如果发现下压压力杆时不顺畅，表明扣压机内部还存在空气应当重复排除空气的操作。如果压力系统需要添加液压油的话，请添加型号为 ISO 32 的液压油。Air will be heard escaping from the bleed screw hole. When oil is seen at the bleed screw hole and no more air is expelled, retighten the bleed screw. This operation may need to be repeated if excess oil was lost whilst fitting the pump, or if the operation of the unit is found not to be smooth. If the power pack requires additional oil use ISO 32 oil where indicated.

### **操作压力系统 OPERATING THE POWER PACK.**

根据操作指南安装扣压机 Set the Swaging Machine as stated in the operating manual.

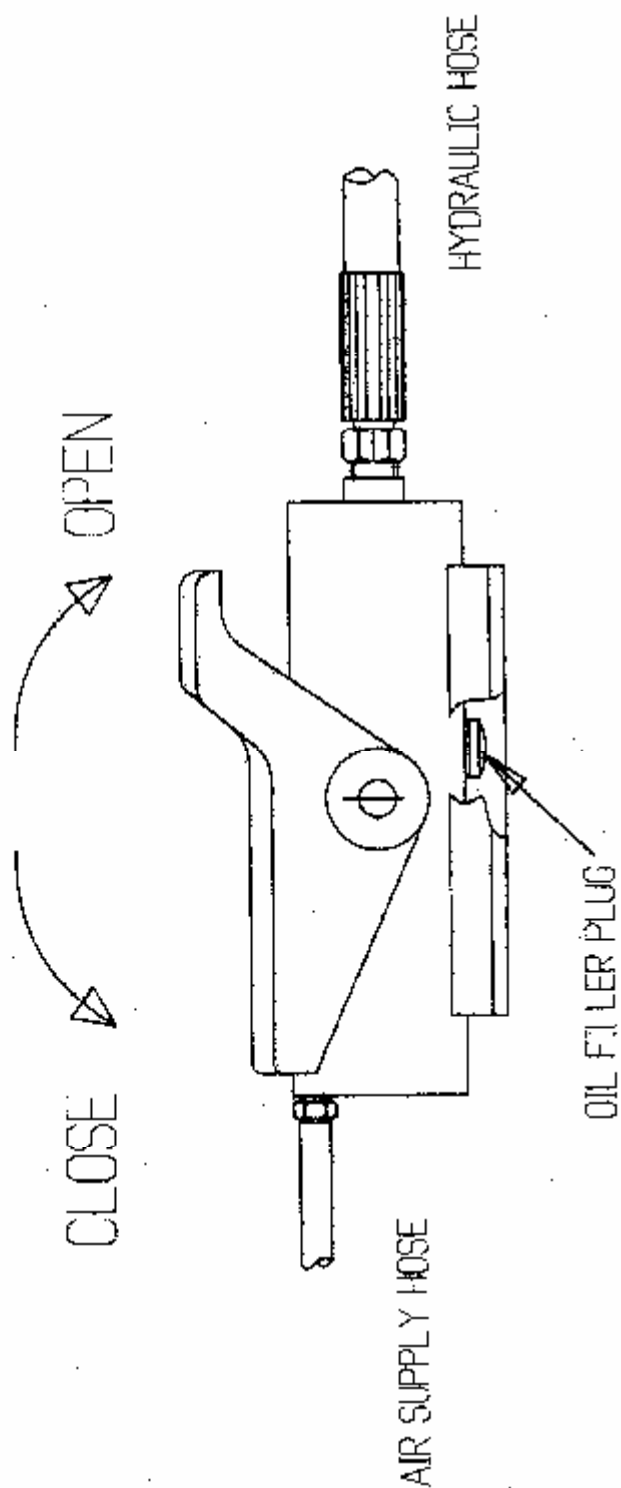
踩脚踏板合拢扣压机头，完成扣压。Press down the Foot Pedal to close the head and perform the swage.

当刻度指示器指向规定的位置，放开脚踏板。Release the Foot Pedal when the Calibration Indicator reaches its set position.

踩脚踏板的“释放部位”，扩开扣压机头。To open the Head press down on the release part of the Foot Pedal.

扣压机头不需要每次被完全扩开，通过松开脚踏板，可在任何位置停止扣压机头继续扩开。The head need not be fully opened after each operation and can be stopped at any position by releasing the Foot Pedal.

# AIR - HYDRAULIC FOOT PUMP



可选择的压力系统为 220 伏单相 50Hz 和 12 伏直流电 (700 BAR)

OPTIONAL POWER PACK, 220-1-50 and 12 volt DC (700 BAR.)



### 电动式连接 ELECTRICAL CONNECTION.

将压力系统连接到合适的电源上去，确保启动器开关在关闭位置，操作阀在打开位置。  
Connect the Power Pack to an appropriate power supply ensuring the starter switch is in the off position and the operating valve is in the open position.

提供大约 2 米长的 6 安培的电缆和一个标准的三眼单相电插座。Single-phase units are supplied with approximately 2 meters of 6-amp cable and a standard 3-pin plug.

12 伏直流电要求电缆有足够的尺寸，这样才能确保最小电压通过，这取决于所使用的电缆的长度而且应该保持在最小值。电压在 12 伏时，马达将下降到 46 安培，如果电压回落到 10 伏时，马达将增加到 55 安培。12 volt DC units will require cables fitted of sufficient size to ensure minimum voltage drop, this will depend on the length of supply cable used, but should be kept to a minimum. The motor will draw 46 amps at 12 volts and will increase to 55 amps if the voltage falls to 10 volts.

电缆的阳极必须连接到启动器的螺线管，阴极则必须连接到标有 A 记号的发动机的终端。请勿将阴极连接到油箱中。如果没有按照指示做的话，将会损坏泵和控制系统。  
The positive cable must be connected to the starter solenoid and the negative cable must be connected to the motor terminal marked A. **DO NOT** connect the negative supply to the tank. Failure to connect the supply as directed will cause damage to both the pump and control system.

注意：电工在完工后必须带走所有电源连接件。**NB.** Appropriately trained personnel must carry out all electrical connections.

### 液压连接 HYDRAULIC CONNECTION.

根据指南将胶管的一头连接到扣压机头，另一头连接到阀门塞子连接处“P”，确保胶管的加压功率是 700Bar。Connect hose from Swaging Head to valve block connection 'P', as indicated. Ensure pressure rating of hose is suitable for 700-bar operation.

### 脚踏开关连接 FOOT SWITCH CONNECTION.

将脚踏开关的空气管连接到马达上的连接点 Connect the Foot Switch air pipe to the connection point on the motor where indicated by pushing onto spigot.

## **压力系统的操作 OPERATING THE POWER PACK.**

操作前保证油箱中有足够的油。油箱中的油也不能溢出。Before operating the power unit always ensure there is sufficient oil in the tank. The tank must not be over filled.

根据操作指南安装扣压机

Set the Swaging Machine as stated in the operating manual.

关闭操作杠杆直到能够感觉到阻力。Close the Operating Lever until resistance is felt.

踩脚踏板合拢扣压机头，完成扣压。

Press the Foot Switch to close the head and perform the swage.

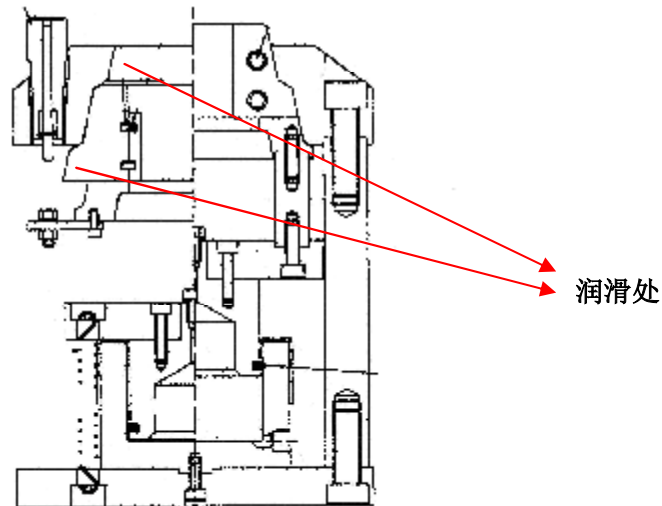
当刻度指示器指向规定的位置，放开脚踏板。

Release the Foot Switch when the Calibration Indicator reaches its set position.

使操作杆回到水平打开位置，可打开扣压机头取出总成好的胶管。To open the Head and release the assembly, return the Operating Lever to the horizontal open position.

扣压机头不需要每次被完全扩开，通过合上操纵杆，可在任何位置停止扣压机头继续扩开。The head need not be fully opened each operation and can be stopped at any position by closing the Operating Lever.

## 怎样润滑机头



### 1. Lubrication. 润滑指示

2. It is important to lubricate at least once per day;

每天至少润滑一次，以在每次需大批量扣压之前润滑最佳。

3. Lubricate as indicated above, with head partly open;

如图所示，润滑时机头必须张开一些；然后按照图示位置涂抹润滑脂，即 8 个模具底座之间以及银白色的缸套内部。只要涂上适量的润滑剂，机头常摩擦，易磨损的部位表面就会马上形成一层薄薄的保护膜，这时应当启动机器，使机头做“开-合-开-合”的空载运动 10-15 分钟，使得润滑剂得以充分接触表面。

4. If the die holder segments move irregularly this indicates lack of lubrication;

如果模具块向外扩开时出现不规则，不均匀的现象，则说明已经缺少润滑；

5. Damage could well occur if you do not use the correct lubricant and procedure.

如果使用非本公司提供的不恰当的润滑剂，或润滑时没有按照上述的正确方法，都会引起机器损坏，严重影响扣压。