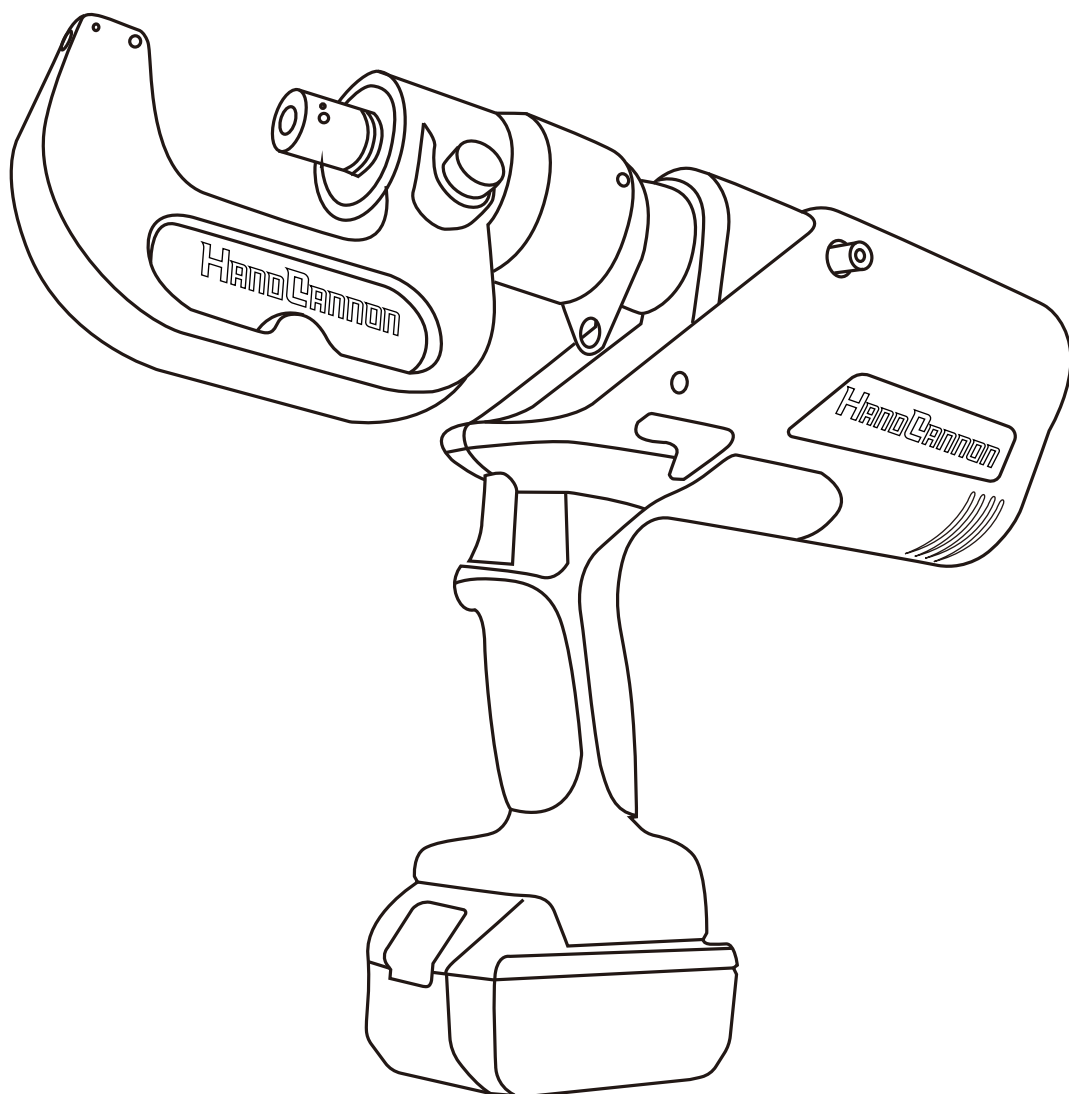


CH-SPR-5

INSTRUCTION MANUAL
FOR ELECTRIC SPR RIVETING GUN



Safety Instructions

1. Precautions



It is essential that all users must be fully trained in the operation of the CH-SPR-5 prior to its use, and they have thoroughly read this instruction manual.



All operators of the CH-SPR-5 must fully understand all aspects of its preparation, use and storage.



Untrained operators must not have access to the CH-SPR-5.



This instruction manual must be kept with the CH-SPR-5 and be available to all users.



When the CH-SPR-5 is being used, in order to avoid accidents such as fire, electric shocks and injury, attention must be paid to the following safety requirements.

2. Work environment

- a) Keep the work environment clean with bright lighting. Untidy and dirty work environments with poor lighting will cause accidents.
- b) The CH-SPR-5 should only be used in a work environment with no children and only people present who are directly related to its use.
- c) Do not use or store the CH-SPR-5 in the presence of strong acids, alkalis or other corrosive liquids, gas or in a high temperature environment.
- d) Do not charge or use this device in the presence of flammable or explosive liquids, gases or dust.

3. Electrical safety

- a) The power plug of the charger must match the socket. The plug must not be modified in any way.
- b) Do not use any batteries or battery chargers other than those supplied with the CH-SPR-5. All replacement batteries and battery chargers must be sourced from Hand Cannon supplier and be specifically designed for use with the CH-SPR-5.
- c) Do not expose, store or use CH-SPR-5, its chargers, rechargeable batteries, in rain or humid environments. If water enters into the electrical system it may cause electric shocks or damage the computer systems. Should the CH-SPR-5 be exposed to water it must not be used and it should be returned to an official representative of Hand Cannon supplier for repair.
- d) Do not short-circuit or incinerate the battery due to the risk of explosion. Rechargeable batteries should be taken to an official recycling center. Rechargeable batteries contain nickel and cadmium, which may be hazardous to the environment if disposed of in a landfill or incinerator. These batteries must be disposed of at a hazardous waste collection site, a recycling facility, or a battery-recycling electronics retailer.

4. Personal safety

- a) Do not operate the CH-SPR-5 while fatigued, using medication, under the influence of alcohol or while receiving treatment that restricts body response or movement.
- b) Safety protection clothing and equipment must be worn at all times while preparing and using the CH-SPR-5. This includes the use of safety goggles, non-slip cut resistant gloves at all times and high-visible clothing is recommended.
- c) At all times, no part of the body, such as fingers or hands should be placed within the working jaws of the CH-SPR-5 due to the risk of injury through accidental activation of the machine.
- d) At all times, the CH-SPR-5 should be kept out of the reach of children and untrained personnel.





Warnings: serious personal injury might be caused if you do not operate the machine according to the instruction.

- The CH-SPR-5 must not be mechanically altered or changed in any manner. Before every use, check whether the CH-SPR-5 is damaged, aging, has parts missing, inaccurate adjustments or components are jamming, along with any other factors that endanger safety and normal operation. Ensure that the trigger switch can operate effectively without becoming stuck. If any problems are discovered, stop using the unit immediately and return it to an official Hand Cannon supplier retailer or repair center.
- The stop block and screw on the clamp head are designed to prevent detachment of the clamp head. Do not remove it as its removal may cause a serious accident.
- Before use, remove any grease and dust on the handle and control components, to prevent slipping during operation and to avoid damage to both personnel and the CH-SPR-5.
- The built-in safety valve has undergone strict pressure testing before leaving the factory and users must not adjust it. If insufficient pressure is encountered, send the CH-SPR-5 to an official maintenance center for repairs and use it only after it has passed a manufacturer approved pressure test.
- When there are no dies in the clamp and arm, do not operate the CH-SPR-5 as this will damage it and may cause personal injury.



Precautions before operation:

-  Do not operate the device when there are no working pieces between female dies and male dies!
-  The CH-SPR-5 must not be operated when there are no dies installed in the arm.
- Take care to avoid damaging the male and female dies as damage to the dies will stop their effective use due to incorrect positioning.
- Follow the instructions for the use of the dies accurately. Incorrect use of male and female riveting dies will cause unsatisfactory riveting performance and may cause permanent damage to the male and female dies.
- Before starting a new riveting project or using new materials undertake a riveting test to ensure the CH-SPR-5 is set to the correct riveting pressure for the particular application.

- If the CH-SPR-5 is not going to be used for an extended period, the following storage rules need to be followed:
 1. Reset the post rod to the end.
 2. Keep the dies securely stored for future by using an anti-rust oil.
 3. Wipe the surface of the device and apply evenly an anti-rust grease on the metal surfaces of the device and its spare parts.
 4. Remove the battery and store it in a suitable cool and dry toolbox.
- Do not try to use the device on the body, it will cause irreversible injury.
- The CH-SPR-5 must not be used by children, untrained personnel, and people who are under the influence of drugs or alcohol.



Keep this manual secure and read it before operation.

1 About CH-SPR-5

Thank you for choosing Hand Cannon supplier CH-SPR-5 rechargeable hydraulic clinching gun. The CH-SPR-5 features a high-performance lithium battery, motor drive, MCU control, ultrahigh pressure hydraulic system and high precision integrated mechanical and electronic technology with an ergonomic design. The CH-SPR-5 is easy and convenient to operate; it boasts a powerful motor producing up to 60KN; it is safe in operation and it is highly efficient, saving time and money. The CH-SPR-5 is the perfect choice to join various sheet metals in different applications such as automotive repair, HVAC, elevator manufacturing, aerospace, high speed train and light rail, electric power construction and many other assembly and construction applications.

2 Construction of CH-SPR-5

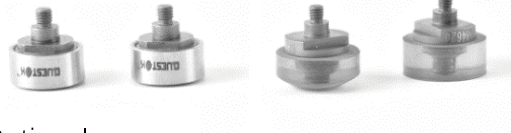


S. No	Name	Function and explanation
1	Arm	various options, 350° rotating
2	Dies	Various options to choose according to different sheet materials
3	Extension bar	output of force, dies installed on it
4	Fast lock plug	Lock arm and fast connection shaft easily
5	Pressure adjust knob	Adjust pressure according to work demand
6	Trigger	Press to turn on the power and start operation, release to stop operation.
7	Pressure release button	Press to release pressure of cylinder and re-set the extension bar.
8	Chargeable battery	18V chargeable lithium battery
9	Sling	Make work easier and convenient
10	Handle	Ergonomic design comfortable to hold

3 Specification and configuration



Optional dies



Optional arms



Configuration :

name	Qty	name	Qty
Main body	1	Charger	1
Arm	Size according to customers' demand	Cabler	1
Dies kit	According to customers' demand	Sling	According to customers' demand
Extension bar	Optional	Packing case	1

Specification :

Output force:	30-60KN adjustable (according to customer's demand)
Pressure accuracy:	±3%
Work stroke:	35~40mm
Work period:	3-5s/time
Motor voltage:	18V DC
Battery:	DC 18V 4AH lithium battery
Charger:	AC 100V-240V 50-60HZ
Charging time:	Around 1 hour
Work temperature:	-10°C-40°C
Hydraulic oil:	15# Low condensation anti-wear hydraulic oil 100ml
Work time/full charge:	130~350 times (varies according to work pressure)
Noise:	75dB

4 CH-SPR-5 set-up and preparation for use

- a) Installation of dies: The Installation and removal of dies does not require excessive tightening and can be installed by hand. If required, a small wrench is provided to be used to assist with assembly and disassembly.
- b) Dies may be installed on either side of the clamp/arm according to the requirement of the project.

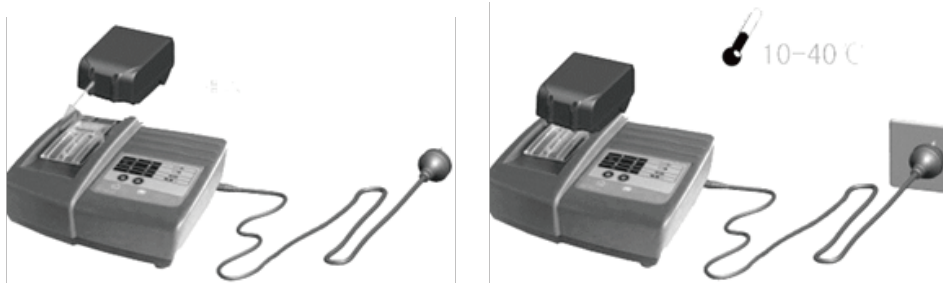


5 Precautions and checks before use

Before operation, check that all parts of the CH-SPR-5 are secure and undamaged, in particular the battery cover, battery, arm, dies and casing.

a) Battery charging

- i. Battery life under normal use is approximately 600 charging and discharging cycles. The battery should be replaced when there is a significant reduction in the number of rivets that may be installed between recharging cycles.
- ii. Do not drain the battery completely as this will reduce its life and may cause permanent failure of the battery.
- iii. When the device is left unused for a long time, self-discharge of the battery will occur. The battery from the CH-SPR-5 should be fully charged once every three months.
- iv. At the end of its life the rechargeable battery should be taken to an official recycling center. Rechargeable batteries contain nickel and cadmium, which may be hazardous to the environment and may explode if disposed of in a landfill or incinerator. These batteries must be disposed of at a hazardous waste collection site, a recycling facility, or a battery-recycling electronics retailer.
- v. The charger must be used away from water, rain or snow at all times.
- vi. The CH-SPR-5 will provide an audible warning that the battery requires recharging or replacement with a fresh charged battery with an alarm sounding "di-di-di" three times and a visual alarm with a red light flashing at the same time.
- vii. The battery and charger must not be disassembled. If there is any failure during use, contact the dealer or manufacturer.










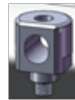
















3.0Ah Charging time \approx 1hour


b) Operation

- i. Before operation, make sure you check whether the device is undamaged, if there are any parts that are worn out or missing, there is inaccurate adjustment or components are jamming, all of which may affect safety and normal operation. Ensure that the CH-SPR-5 may operate effectively and safely. If any problems occur stop using the CH-SPR-5 immediately and rectify the problem.
- ii. The stop screw on arm head's quick connector is to prevent the arm head from falling off or popping out. Do not remove it as a serious injury and damage to the CH-SPR-5 may occur.
- iii. The built-in safety valve has undergone strict pressure testing prior to leaving factory and it is not adjustable by users. If there is insufficient pressure for correct operation, the CH-SPR-5 must repaired by an approved dealer or the manufacturer's maintenance personnel. It must be used only after a successful pressure test following repairs.
- iv. Remove any grease and dust on the handle and control components to prevent slipping during operation and to avoid damage to the CH-SPR-5 and injury to its users.
- v. The machine is equipped with anti-over-temperature sensor in order to protect the motor and electronic control components. Long time consistent usage will cause the red light to turn on and buzzer to alarm. Which indicates that the machine is in normal circuit protect mode. In this situation, let the machine cool down and then you may keep using it.

6. Die type and size

S. No	Model	Photo		Model	Model	Photo	Function	
1	A1			+	N1		rivet removal 3.3mm	
2	A2			+	N2		Rivet removal 5.3mm	
3	A3		+	A3 washer	+	N2		hole punching 8.1mm weld spot removal
4	A4		+	A4washer	+	N10		5.7mmhole punching
5	A5		+	A5washer	+	N3		5.1mmhole punching
6	A7 S7			+	N5 S8		3.3mmSPR	
7	A8 S9			+	N6 S10		5.3mmSPR	
8	A9		+	A9washer	+	N1		6.1mmhole punching
9	A10		+	A10washer	+	N11		4.1mmhole punching
10	A12		+	A12washer	+	N14		6.5mmhole punching
11	N7 S5			+	N7		flattening	
12	N7			+	N12 S6		Solid rivet riveting	

7 Pressure adjustment

- a) Pressure should be adjusted according to sheet metal's material, thickness, and layers. Tests should be made to find the most suitable pressure to guarantee quality clinching.
- b) Turn the knob counterclockwise to the end for minimum pressure: 25Kn (it can be set according to customers' requirement)
- c) Turn the knob clockwise to the end for maximum pressure: 55Kn (it can be set according to customers' requirement)
- d) Every semi-circle turn of knob, pressure value changes by around 3.7Kn.
- e) Turn the pressure adjust knob, when hand encounters resistance, that means it already reached the minimum or maximum, please stop **turning** the knob to avoid damage to knob and the inner pressure adjust device.
- f)  The above pressure value is just for reference, the exact pressure should be set according to the clinching quality of specific work piece.



8 Start-up and pressure release

a) Start-up

- i. Make sure that the lithium battery is fully charged and install the battery in the CH-SPR-5. When installing the battery, make sure that the battery is correctly clamped in place. The CH-SPR-5 will indicate the battery is correctly installed by making the sound "da".
- ii. Adjust to the appropriate pressure according to requirements of work piece. In order to guarantee clinching quality, please maintain the pressure until the work piece is changed.
- iii. Press the trigger of the gun body to start the operation of the gun, and the gun will start to output force. The pressing can be paused during operation to adjust clinching position. Hand Cannon supplier clinching gun can automatically release pressure when it reaches the set pressure value. During operation you can keep pressing the trigger, motor keeps working, pressure goes up and reaches the set value, pressure automatically releases, extension bar retracts, male dies separates from the work-piece, one clinch is completed.

b) pressure release

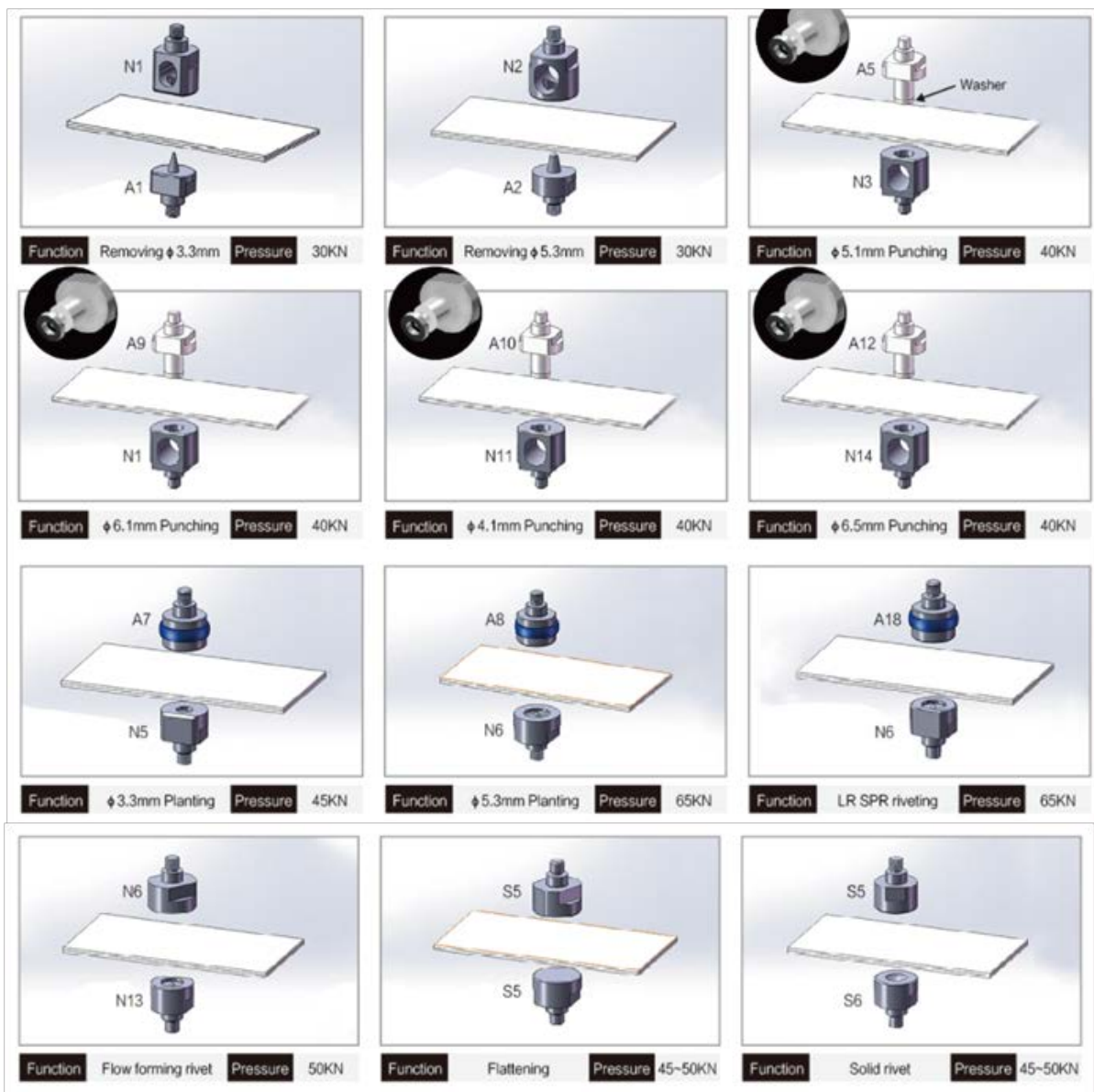
- i. Automatic pressure release: keep pressing trigger, clinching gun keeps working until it reaches the set pressure value, then it will automatically release the pressure.
- ii. Manual pressure release: in operation, after the extension bar extends if you want to stop operation and want the extension bar retracts, you can press the manual release button as the following picture showed.



Warnings: in operation it is essential to strictly follow operating instructions and pay attention to personal safety at all times.

9 Installation of dies

1. With reference to the matching list of riveting dies shown above, select the correct dies and match them correctly according to your application.
2. The dies must be screw in completely when installing, otherwise the dies will be damaged during operation.
3. The CH-SPR-5 must never be operated without a work piece in the arm, otherwise damage to the CH-SPR-5 and its dies will occur. As a reminder, the CH-SPR-5 should not be used or be charged in an environment with gas or dust present.
4. Dies match and function:



10 Common faults and troubleshooting

S.No	Failure	Cause analysis	Troubleshooting methods
1	Device won't start	Dead battery	Charge the battery
		there is problem with circuit	Contact distributor or manufacturer to have professional solution
		impurities in hydraulic oil	change hydraulic oil
2	during operation no pressure output or can not reach set pressure	lack in hydraulic oil	add or change hydraulic oil
		impurities in hydraulic oil	change hydraulic oil
		inner hydraulic oil leakage	contact distributor or manufacturer for professional solution
3	start the machine but no pressure output	lack in hydraulic oil	add or change hydraulic oil
		there is air in hydraulic system	contact distributor or manufacturer for professional solution
		hydraulic oil temperature is too low	use the machine in temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
4	leakage on front part, plunger or pressure adjust valve	damage on sealing components	contact distributor or manufacturer for replacing.
5	Large amount of oil leakage in gun body	oil sac plug falls off	Add hydraulic oil and solve the oil sac sealing problem under the instruction of manufacturer, or return it to manufacturer for repair.
6	ST clinching point is too thick, clinch is not qualified	machine does not reach the set pressure	refer to problem 2.
		use the wrong dies	change to the correct dies
7	ST clinching point thickness is ok, but clinch is not qualified	use the wrong dies	change dies according to sheet materials and thickness.
8	Male dies are hard to demold	Pressure is too high or	Adjust pressure
		male dies reaches its service life	Change to new male dies
9	inaccurate pressure	Pressure adjustment valve is damaged	Contact distributor or manufacturer for professional repair.

11 Maintenance

- a) This CH-SPR-5 is a precision high-pressure electro-hydraulic tool with a high technology design. Do not disassemble the CH-SPR-5 or remove internal parts. All failures caused by unauthorized disassembly or damage caused by improper use are not covered by the warranty.
- b) Keep the device and spare parts dry. Rain, humidity, liquids or moisture may corrode the cover, metal surfaces and electronic circuits. If the device gets wet, take out the battery and wait until the device is completely dry before reinstalling the battery.
- c) Do not store the device in a place that is too cold or too hot. This may deform the plastic parts of the device, shorten the life of electronic components, and damage the battery.
- d) Avoid dropping the CH-SPR-5 or subjecting it to rough usage to avoid irreversible damage to internal electronic components or hydraulic parts.
- e) Do not use strong chemical cleaning agents or strong detergents to the clean tools. A soft cloth should be used for wiping and cleaning.
- f) In order to ensure the full service life of the device, it is recommended to replace the hydraulic oil of the device once a year. Please contact the dealer or manufacturer to have the hydraulic oil replaced by approved professional maintenance personnel.
- g) When the tool is going to be left unused for a long period:
 - i. Please reset the extension bar to the end.
 - ii. Turn the pressure to the minimum.
 - iii. **Clean the surface of the device** and evenly apply anti-rust grease on the metal surface of the device and spare parts.
 - iv. Take out the battery and store it in the toolbox, recharge every three months.
 - v. Store the dies properly for future use with a light anti-rust oil applied.
- h) The sealing element is a single use part and a non-owner replaceable unit. If hydraulic oil leaks out, contact the dealer or the manufacturer to have an approved professional repairer replace the sealing element.

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