

customer manual

ORIGINAL INSTRUCTIONS

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SAFETY PRECAUTIONS — READ THIS FIRST!

IMPORTANT SAFETY INFORMATION

**NOTE**

Keep all decals clean and legible, and replace them when necessary.

**DANGER
FIRE HAZARD**

Do not dispose of batteries in a fire. They will vent fumes and will explode. Instead, dispose of batteries in an environmentally responsible manner or send the battery back to TE.

**CAUTION**

— Do not allow anything to contact the battery terminals.

— Do not immerse the batteries in liquid. Liquid may create a short circuit and damage the battery. If the batteries are immersed, contact your service center for proper handling.

— Do not place the battery into a pocket, tool pouch, or tool box with conductive objects. Conductive objects may create a short circuit and damage the battery.

— Do not place a battery on moist ground or grass. Moisture may create a short circuit and damage the battery.

Failure to observe these precautions may result in injury or property damage.

**CAUTION**

— Do not store the battery at more than 60°C [140°F]. Damage to the battery can result.

— Do not use another manufacturer's charger.

— Do not attempt to open the battery. It contains no user-serviceable parts.

Failure to observe these precautions may result in injury or property damage.

**CAUTION**

— Do not perform any service or maintenance other than as described in this manual. Injury or damage to the tool may result.

Failure to observe these precautions may result in injury or property damage.

SAFETY PRECAUTIONS — AVOID INJURY — READ THIS FIRST!

Safeguards are designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:



Always wear approved eye protection while operating equipment.



Always turn off the main power switch and disconnect the electrical cord from the power source when performing repair or maintenance on the equipment.



Always wear appropriate ear protection while using equipment.



Never insert hands into installed equipment. Never wear loose clothing or jewelry that may catch in moving parts of the equipment.



Moving parts can crush and cut. Always keep guard(s) in place during normal operation.



Never alter, modify, or misuse the equipment.



Electrical shock hazard. ALWAYS insert power plug into a properly grounded receptacle to avoid electrical shock.

SUPPORT CENTER

CALL TOLL FREE 1-800-522-6752 (CONTINENTAL UNITED STATES AND PUERTO RICO ONLY)

The **Support Center** offers a means of providing technical assistance when required. In addition, Field Service Specialists are available to provide assistance in the adjustment or repair of the application equipment when problems arise which your maintenance personnel are unable to correct.

INFORMATION REQUIRED WHEN CONTACTING THE SUPPORT CENTER

When calling the Support Center regarding service to equipment, it is suggested that a person familiar with the device be present with a copy of the manual (and drawings) to receive instructions. Many difficulties can be avoided in this manner.

When calling the Support Center, be ready with the following information:

1. Customer name
2. Customer address
3. Person to contact (name, title, telephone number, and extension)
4. Person calling
5. Equipment number (and serial number if applicable)
6. Product part number (and serial number if applicable)
7. Urgency of request
8. Nature of problem
9. Description of inoperative component(s)
10. Additional information/comments that may be helpful

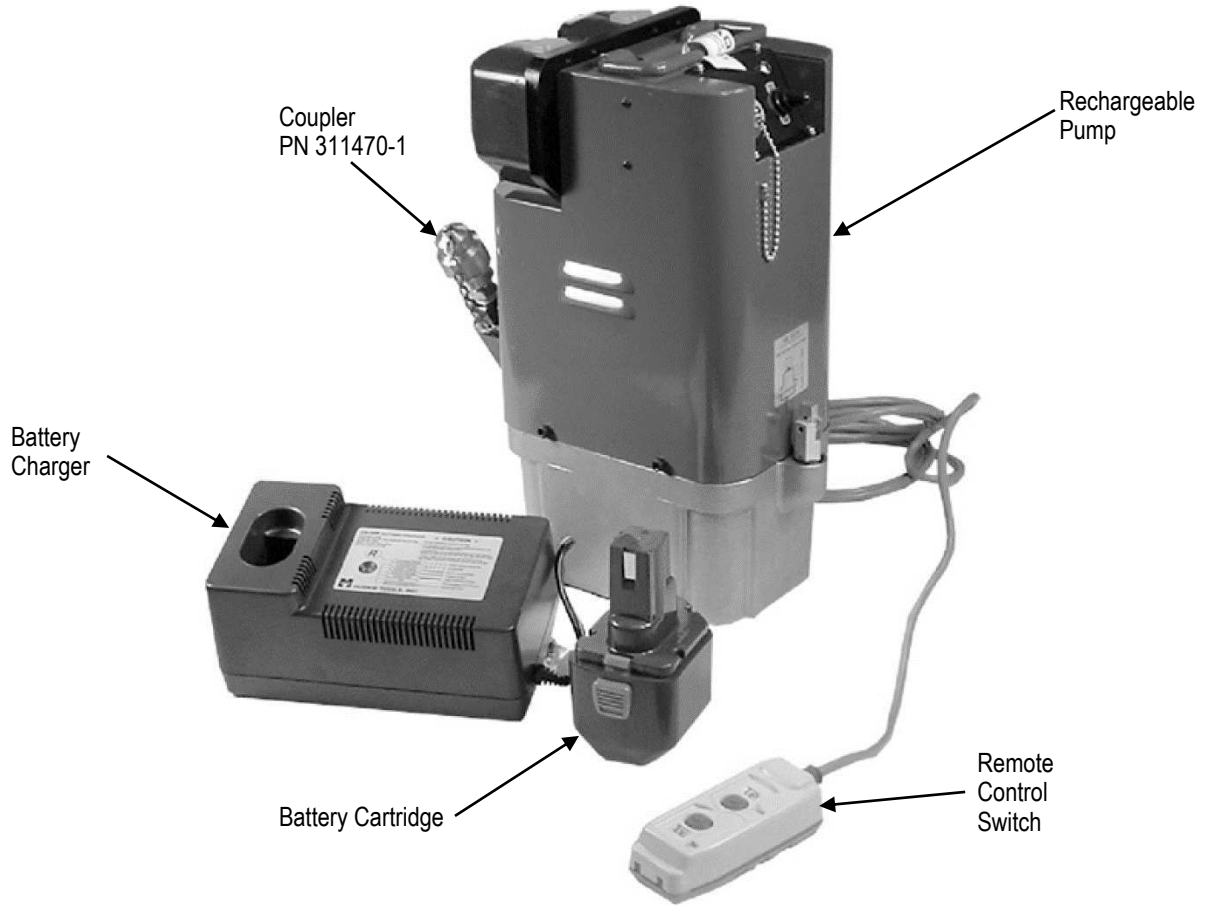


Figure 1

1. INTRODUCTION

The Battery Powered Hydraulic Pump Kit PN 1804111-[] (shown in Figure 1) comes with a portable battery-powered pump (a 10,000 psi hydraulic pump and controller used to power hydraulic crimping heads), two lithium battery cartridges, battery charger, 3/8-in. male screw type coupler, and a metal storage box (the metal storage box is not shown in Figure 1).

Pump Kit PN 1804111-1 has a 110 Volt, 60 Hz battery charger; Pump Kit PN1804111-3 has a 220 Volt, 50 Hz battery charger.

When reading this manual, pay particular attention to DANGER, CAUTION, NOTE statements.



DANGER

Denotes an imminent hazard which may result in moderate or severe injury.



CAUTION

Denotes a condition which may result in product or equipment damage.



NOTE

Highlights special or important information.

Reasons for reissue of this customer manual are provided in Section 8, REVISION SUMMARY.



NOTE

Dimensions in this manual are in metric units [with U.S. customary units in brackets].

2. DESCRIPTION

2.1. Battery Powered Pump (PN 1804116-1)

- Output: 68.95 MPa [10,000 psi]
- Drive Unit (For Single-Acting Cylinders)
 - Rated Voltage: 28.8 V
 - Usage: Light Duty
- Oil Delivery Pressure: 68.5 MPa [9,935 psi]
 - High Pressure Stage 0.31/min
 - Low Pressure Stage 1.81/min
- Dimensions: 406.4 × 152.4 × 254 mm [16 × 6 × 10 in.] Height × Width × Depth
- Weight: 10.43 kg [23 lbs] (with Two Batteries)
- Flow:
 - 1769.8 cc @ 2.068 MPa [108 cu/in./Min @ 300 psi]
 - 1769.8 cc @ 68.95 MPa [108 cu/in./Min @ 10,000 psi]
- Fluid Reservoir Capacity: 1,000 cc [61 cu/in.]

2.2. Battery Cartridge (PN 2844327-1)

- Battery: Type Lithium Ion
- Voltage: 14.4 VDC
- Rated Current: 3.0 Ah
- Charge Time: 1.0 hour
- Weight: 0.454 kg [1.0 lbs]

2.3. Battery Charger (PN 2844328-[])

- | | | |
|-----------------------------------|-----------------------------|-----------------------------|
| • Battery Powered Hydraulic Pump: | 1804111-1 | 1804111-3 |
| • Battery Charger: | 2844328-1 | 2844328-2 |
| • Input Voltage: | 110 VAC, 60 Hz Single Phase | 220 VAC, 50 Hz Single Phase |
| • Charging Capacity: | 20 VA | 20 VA |
| • Weight: | 0.454 kg [1 lb] | 0.454 kg [1.0 lb] |

2.4. Replacement Controller (PN 1804117-1)

May be ordered separately.

3. OPERATING PRECAUTIONS

3.1. Rechargeable Pump

- When connecting the coupler, be sure that no foreign objects are attached. If the coupler has become dirty, clean it carefully before connecting it (engaging the coupler when foreign objects are present will damage the seals and lead to oil leakage from the connection).
- Make sure the coupler is securely connected (if the unit is pressurized while the coupler is not properly connected, there will be damage to the seals or the crimp head).
- Although a flexible hydraulic hose is used, do not bend it while pressure is being applied, or subject the hose to shocks from metal objects (either action will shorten the working life of the hose and may result in a burst hose).
- Never move the pump by pulling on the hydraulic hose or the remote control cords.

3.2. Battery Cartridge and Pump

- To ensure smooth operation of the pump, always use the pump after it has been stored for no less than one hour at 10 to 25 °C [50 to 77 °F] (if the pump is stored for an extended period below -5 °C [23 °F], viscosity of the oil increases).
- Allow the pump to cool 10 minutes after each 20 minutes of use (the pump was designed for light duty and cannot be used continuously). **Be sure neither the motor nor the oil become hot.**
- Check the hydraulic oil regularly. Replenish when the level becomes low. Use the appropriate hydraulic oil type.
- The pump is a precision device and should not be dropped or subjected to shocks or other abuse.

3.3. Battery Cartridge

- Do not short circuit the contacts or expose the cartridge to water, oil, or solvents.
- Do not disassemble or attempt to repair the battery cartridge.
- Do not dispose of the battery cartridge in a fire.
- Do not drop or mishandle the battery cartridge.
- Do not leave the cartridge in an area where it will be exposed to temperatures greater than 60 °C [140 °F] for an extended period.
- The battery has a limited life. When the crimping capacity becomes about one-half that of the original capacity, replace the battery.
- If the battery is stored without being charged, natural drainage will cause the power to be reduced (the battery should be completely re-charged every three months if not in use).

3.4. Battery Cartridge Charger

**NOTE**

Unit is designed for charging the battery cartridge in the pump kit only.

- The LED indicator is solid amber while the unit is charging the battery. The indicator turns a solid green color when charging is complete.
- Allow battery cartridges to cool completely before charging.
- Allow at least 15 minutes between charges when charging several cartridges in succession.
- Charge the batteries at an ambient temperature of 20 to 25 °C [68 to 77 °F] (charging time is approximately one hour).
- Never short circuit the output terminals.
- Do not expose charger to water, oil, or solvents.
- Do not disassemble the charger, attempt to modify it, drop it, or otherwise mishandle it.

4. OPERATION

4.1. Battery Charging

1. Insert the plug end of the charger into a power source of the correct voltage for the charger. The LED indicator on the charger will be solid green, indicating the charger is in “stand by” mode and is ready to charge a battery.

**CAUTION**

DO NOT plug the charger into a generator. This will probably cause the fuse in the charger to "short," and the charger will not operate.

2. To charge a drained battery, insert the battery into the charger until the LED indicator registers a solid amber (this indicates the battery is being charged and will be completed in approximately one hour).
 - The LED indicator will register solid green when charging is complete.
 - Charge only appropriately cooled batteries.

**NOTE**

Do NOT leave the battery in the charger to cool.

If the fault indicator flashes, the battery is faulty or damaged, and should be replaced.

**NOTE**

For technical questions or difficulty in operation, call the SUPPORT CENTER at the number on the bottom of page 1.

4.2. Attaching the Battery Cartridge

1. Pull out on the battery cartridges while pressing the latch (see Figure 2).
2. To install the two battery cartridges, push them firmly into place.

i **NOTE**
Always install and use both battery cartridges at the same time.

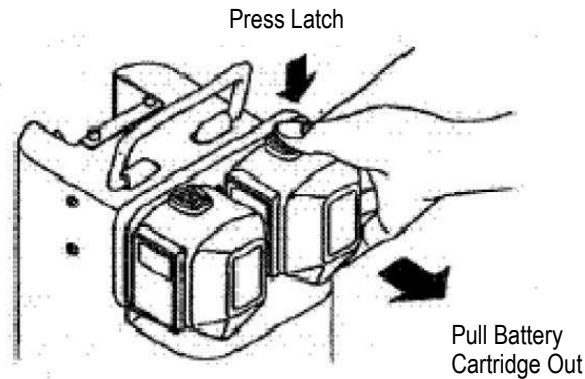


Figure 2

3. After attaching the battery cartridges, verify they are in place by pulling them without pressing the latch.

i **NOTE**
To activate a 28.8 VDC motor, two battery cartridges must be inserted into the cartridge slots since they are connected "in series".

4.3. Attaching the Hydraulic Hose

1. Attach the female coupler of the hydraulic tool to the male coupler of the hydraulic pump as shown in Figure 3.

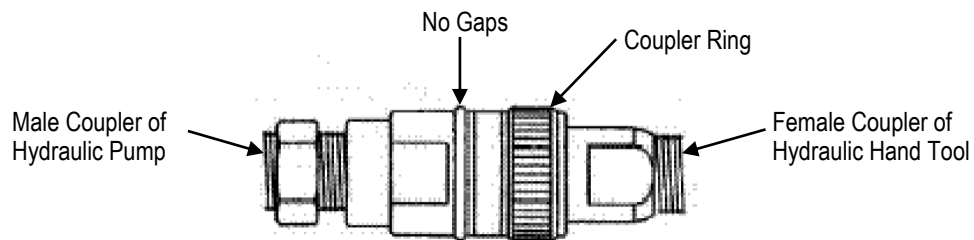


Figure 3

2. Gently pull on couplers to verify they are securely connected.

i **NOTE**
If couplers are not engaged properly, the ram will advance but will not retract.

3. Attach the application head to the opposite side of the hose (if not already attached).

4.4. Attaching the Remote Control Cord

Attach remote control cord to the pump. Remove cap from the receptacle at the pump. Then insert plug of control cord and tighten ring securely (the attached cord should resemble as shown in Figure 4).

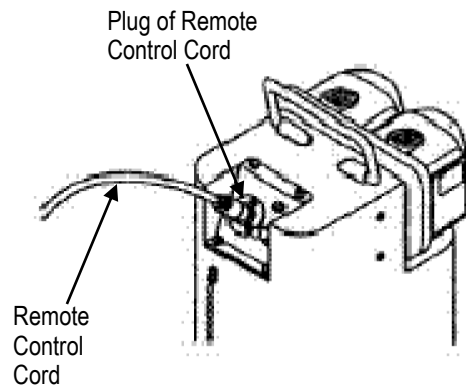


Figure 4

4.5. Controlling the Pump

To advance the piston, press and hold "UP" button.

To retract piston, press and hold "DOWN" button (see Figure 5).



NOTE

When hydraulic power reaches 68.95 MPa [10,000 psi], the motor shuts off, and compression is complete.

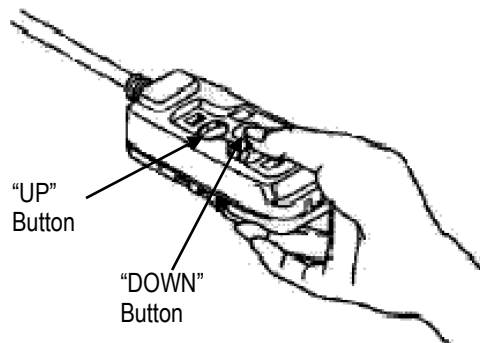


Figure 5

4.6. Guide to Crimping Capacity



NOTE

The following values are approximate and can vary according to charging and crimping conditions.

- The battery can be charged approximately 500 cycles.
- Cable size is 750 MCM
- Average number of crimping cycles is 50 times

When the crimping cycle is reduced to approximately one-half the normal cycle, the battery life is exhausted and the battery should be replaced.

5. MAINTENANCE AND INSPECTION

5.1. Before Storing the Pump

Perform the following steps after the piston has reached the lowest position:

1. Remove the battery cartridge.
2. Disconnect the plug of the remote control cord.



NOTE

Be sure the cord is not pulled, or becomes loose or twisted.

3. Replace the receptacle cover.
4. Disconnect the coupler.
5. Re-attach the dust cap of the coupler to prevent dust from getting into the system.

5.2. Daily Maintenance

It is recommended the pump be inspected daily by operating and maintenance personnel.

- Visually check the hydraulic oil level and it's contamination through the oil gage.
- If applicable, add hydraulic oil.
- If contamination of the oil is observed, replace the hydraulic oil completely (approximately one liter). ConocoPhillips Super Hydraulic Oil MV32 is recommended.



NOTE

Pump is shipped with ConocoPhillips Super Hydraulic Oil MV32 in the pump. Do NOT mix with other oils. Always completely replace the oil if another type of oil is used.

When replacing the hydraulic oil, remove air vent (see Figure 6).

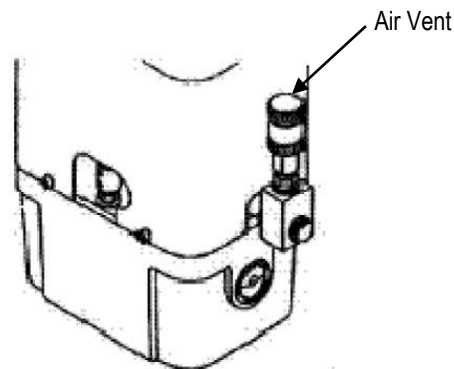


Figure 6

5.3. Semi-Annual Maintenance

Completely replace hydraulic oil every six months (ConocoPhillips Super Hydraulic Oil MV32 is recommended).



CAUTION

NEVER use vegetable oil or brake oil with this pump.

If the tool is maintained regularly and correctly, it should provide trouble-free service. If a problem does occur, contact the SUPPORT CENTER at the number on the bottom of page 1.

5.4. Oil Leaks

In most cases, it is possible to repair oil leaks as follows:

1. Remove the coupler at the point of the leak.
2. Carefully remove the sealing tape (PTFE tape) from the screw.
3. Wrap the NEW sealing tape one and a half times around the screw head.
4. Begin wrapping the sealing tape 1 to 2 mm [.04 to .079 in.] from the edge of the thread (see Figure 7).
5. Tighten the coupler back into position (torque from 29.4 to 48 Nm [3 to 5 Kgf-cm²]).



NOTE

Pump is shipped with ConocoPhillips Super Hydraulic Oil MV32 in the pump. Do NOT mix the oil. Always completely replace the oil if another type of oil is used.

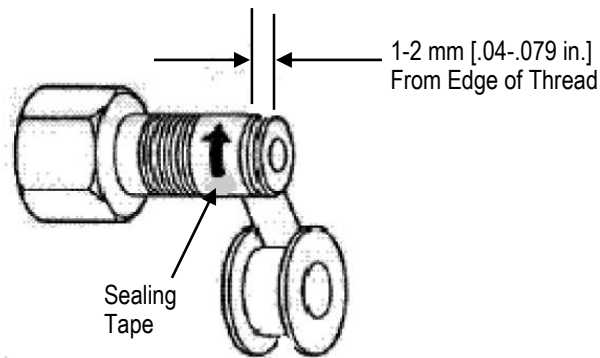


Figure 7

6. TROUBLESHOOTING

1. Replace battery before considering other causes.
 - a. Power to the pump is provided by the battery.
 - b. Low-battery power will not allow the pump to pressurize. The battery should be charged or replaced.
2. Inspect the connection point to verify no leaking exists (the oil delivery of the pump is small, so even the most minimal oil leak will affect performance).
3. Main causes of malfunction are:
 - A pump component requiring repair.
 - Hydraulic oil contamination
 - Clogged strainer
 - Mechanical wear



NOTE

Although some repairs and replacements can be accomplished "on site," it is recommended that parts be returned for replacement or repair. Refer to Section 6.

A troubleshooting guide is provided in Figure 8.

PROBLEM	CAUSE	SOLUTION
When "ON" button is pressed, nothing happens	Defective electrical supply Defective circuit board Remote control connection wire is disconnected	Check the electrical connection. Consult SUPPORTCENTER for repair service
Pressure does not increase (no pressure is measured at the head)	Battery failure Oil leaks from joint Insufficient amounts of hydraulic oil Strainer clogged Pump mechanism broken	1. Charge or replace battery 2. Repair oil leak and replenish hydraulic oil. 3. Overhaul pump and remove blockage. 4. Consult SUPPORT CENTER for repair service
Time for piston to advance is excessive	Battery failure Oil is hot Oil leaks from joint Insufficient amounts of hydraulic oil Air trapped in hose or head Pump mechanism broken	1. Charge or replace battery. 2. Allow pump to cool. Repair leak. 3. Replenish hydraulic oil. 4. Consult SUPPORT CENTER for repair service
Piston does not retract to lowest position	Defective circuit board Remote control connection wire is disconnected Pump mechanism broken	Consult SUPPORT CENTER for repair service

Figure 8

7. REPLACEMENT AND REPAIR

If there are major problems with the battery powered pump, it should be returned to:

CUSTOMER SERVICE (038-035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

Tools may be returned for evaluation and repair. For evaluation and repair service, call 1-800-526-5136.

8. REVISION SUMMARY

Revisions to this customer manual include:

- Paragraph 2.2. changed Battery Cartridge part number from 2280108-1 to 2844327-1
- Paragraph 2.3. changed Battery Charger part number from 2280109-[] to 2844328-[]
- Paragraph 2.3. (PN 1804111-1) changed Battery Charger part number from 2280109-1 to 2844328-1
- Paragraph 2.3. (PN 1804111-3) changed Battery Charger part number from 2280109-2 to 2844328-2