PortaForce PFCT400A
Battery Powered Cable Crimping Tools
Operations Manual



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1. Safety and Usage Instructions

- **Read Before Use:** For your safety, read and fully understand this manual before operating the equipment. Operate the machine only after you have clearly understood all instructions and procedures.
- **Manual Retention:** Retain this manual for future reference. If ownership or operation of the equipment is transferred, ensure this manual is provided to the new user.
- **Before Operation:** Carefully review all operating instructions prior to use. If you encounter any issues or uncertainties during use, contact your dealer or the manufacturer for assistance.
- **Do Not Disassemble:** Do not disassemble the equipment. Unauthorized disassembly may result in the loss of small components, contamination of the hydraulic system, and potential equipment failure.



WARNING: Failure to operate this equipment in strict accordance with the instructions provided may result in serious injury or fatality.



Warning: To prevent electric shock, injury, or fire, follow all safety precautions outlined in this manual. Read the safety instructions carefully before operating the equipment.

1.1 Work Area Safety

1.1.1. **Maintain a Clean and Well-Lit Workspace:**

Keep the work area clean and adequately illuminated. Cluttered or poorly lit environments increase the risk of accidents.

1.1.2. **Keep Children and Bystanders Away:**

Do not allow children or bystanders near the equipment during operation. Distractions can lead to loss of control and injury.

1.1.3. **Avoid Electrical Hazards:**

This tool is not electrically insulated. Do not operate the equipment near live electrical parts or exposed wiring.

Avoid using or storing the tool in environments containing strong acids, alkalis, corrosive liquids, gases, or high temperatures, as these conditions may lead to tool corrosion and accelerated component degradation.

1.1.4. **Keep Away from Flammable or Explosive Environments:**

Do not charge or operate the tool in the presence of flammable liquids, gases, vapors, or dust. Doing so may result in fire or explosion.

1.2. Electrical Safety

1.2.1. **Use Compatible Plugs and Sockets:**

Only connect the charger to a power socket that matches the plug. Do not modify the plug under any circumstances.

1.2.2. **Avoid Moisture Exposure:**

Keep the charger, battery, and tools away from rain, water, and damp

environments. Moisture entering the electrical system significantly increases the risk of electric shock.

1.2.3. **Handle Cables Properly:**

Do not carry or handle the charger by its cord, and never pull the plug out by the cable. Damaged or frayed cords pose a serious risk of electric shock.

1.2.4. **Do Not Use Damaged Chargers:**

If the charger has been dropped or physically damaged in any way, do not use or attempt to disassemble it. Have it inspected and repaired by qualified service personnel only.

1.2.5. **Avoid Charging Outside Safe Temperature Range:**

Do not charge the battery when ambient temperatures are below 10°C or above 40°C. During charging, ensure that the battery and charger heat sinks are not covered or obstructed to allow proper cooling.

1.2.6. **Unplug During Storms:**

Disconnect the charger from the power supply during thunderstorms or lightning to avoid electrical hazards.

1.2.7. **Battery Precautions:**

Never short-circuit or incinerate the battery, as this may cause an explosion or fire.

1.3 Personal Safety

1.3.1 **Stay Alert:**

Remain focused and attentive when operating this tool. Do not use the equipment if you are tired or under the influence of medication, drugs, or alcohol. Losing focus can cause injury.

1.3.2 **Wear Appropriate Personal Protective Equipment (PPE):**

Always wear suitable safety gear, including a hard hat, non-slip gloves, insulating footwear, safety goggles, and a safety harness if required. Proper PPE significantly reduces the risk of personal injury.

1.3.3 **Operate Responsibly:**

Avoid rough handling or misuse of the tool. Do not start or stop the machine abruptly or without intent, as this may damage the microprocessor or electronic protection system.

1.3.4 **Keep Hands Clear:**

Keep your hands and fingers away from moving parts while the tool is running to avoid serious injury.

1.3.5 Restrict Access:

Store tools in a secure location, out of reach of children. Do not allow individuals unfamiliar with the equipment or these instructions to operate the tool.

2. Know Your Tools

The PortaForce PFCT400A is a high-performance, battery-powered crimping tool driven by a lithium battery electric motor and controlled by a microcontroller

(MCU). It utilises a high-pressure hydraulic system integrated with mechatronics technology to deliver reliable and efficient performance.

Designed with ergonomic principles and a streamlined appearance, the tool offers user-friendly operation, high output force, enhanced safety features, and excellent working efficiency.

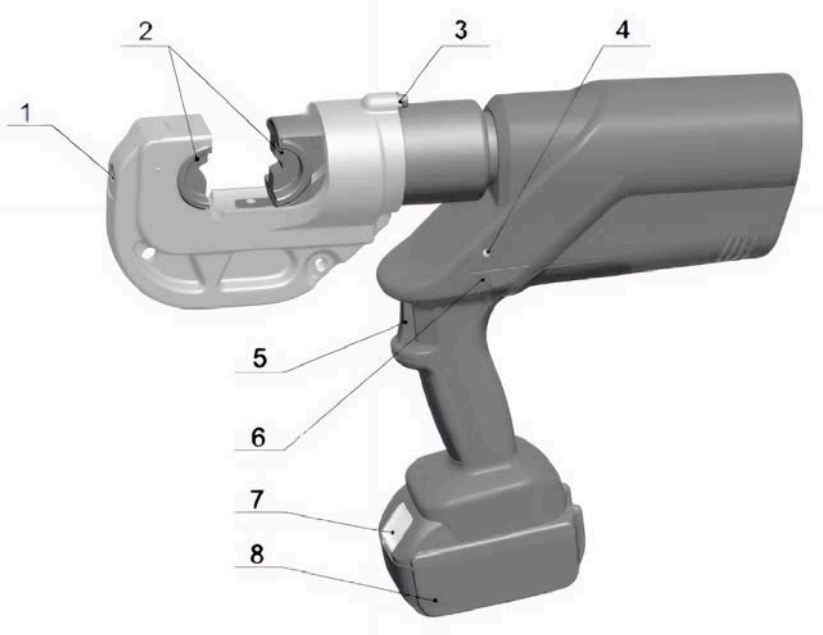
The PortaForce PFCT400A is ideal for crimping copper and aluminium cable terminals in electrical installation tasks, including power distribution and lighting systems.

3. Main Technical Details

Specification	Detail
Maximum Output Force	120 kN
Crimping Range	Copper: up to 400 mm² / Aluminium: up to 300 mm²
Working Stroke	42 mm
Hydraulic Oil	#15 Low-Setting, Anti-Wear Hydraulic Oil (approx. 160 ml)
Ambient Operating Temperature	-10°C to 40°C
Battery Type	DC 18V Lithium Battery

Specification	Detail
Crimping Time	6–18 seconds per cycle (depending on terminal size)
Crimps per Full Charge	Approx. 150 cycles (based on Cu 150 mm^2)
Charging Power Supply	AC 100V–240V, 50/60 Hz
Charging Time	Approx. 2 hours

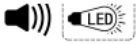
4. Introduction to Product Structure



No	Name	Function
1	Nipper pin	Locking or removing the crimping dies
2	Crimping dies	Interchangeable crimping dies
3	Limiting screw	Prevent pincers from being screwed off
4	Display light （LED）	Display tool working status and battery discharge prompt
5	Start button	Start motor and press joint
6	Reset Button	Manual reposition of piston
7	Battery lock	Locking or removing battery
8	Battery	Rechargeable lithium-ion batteries

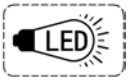
5. Function Description

MCU	**Microcomputer Control System** Integrated microprocessor ensures automatic pressure monitoring and dual safety protection during the crimping process. The system automatically resets and halts motor operation upon completion of the cycle.
AUTO	**Automatic Reset Function** Equipped with an automatic hydraulic pressure relief mechanism. Once the pressure relay reaches the preset

	limit, the piston (lower die base) automatically retracts to its initial position.
	**Manual Reset Function** In the event of an operational error, the piston (lower die base) can be manually reset to its original position.
	**Miniature Bipolar Hydraulic System** The piston advances rapidly under low pressure. Upon die-to-terminal contact, the piston transitions to a slower, controlled motion to ensure precise crimping.
	**330° Rotating Crimping Head** The head can freely rotate up to 330°, allowing for flexible operation at various angles.
	**Error Indication System** If the battery is low or a fault occurs during operation, the microcomputer system will emit an audible alarm and flash a red LED indicator (refer to Table 1 for details).
	**Ergonomic and Compact Design** The tool features a compact structure designed for optimal ergonomics. Anti-slip rubber grip and a balanced center of gravity enhance handling comfort and control.
	**High-Performance Lithium-Ion Battery** Delivers robust power output with no memory effect. Ultra-low standby power consumption supports storage for up to six months. Built-in over-discharge protection extends battery life.

	**Overheat Protection via Temperature Sensor** Continuous operation generates heat. When internal temperature exceeds 60°C, the tool will automatically shut down and issue a fault alert. Operation resumes only after the temperature falls to a safe level, preventing thermal damage.

Table 1: Signal Indication and Meaning

		**Instructions**	**Meaning**
★ ★	● ●	Power-on self-test	Self-examination, normal system
			Possible hydraulic system malfunction and must be inspected immediately.
★ ★ ★	● ● ●	temperature alarm	Tool temperature is too high. It must be cooled before it can be used.

★★★★★	●●●●●	Charging Tips	Battery power is low. Recharge is recommended to avoid interruption.
★—5sec	●—5sec	Power Outage Warning	Battery is fully depleted. Recharge immediately before further use.

6. Operating Instructions and Safety Precautions

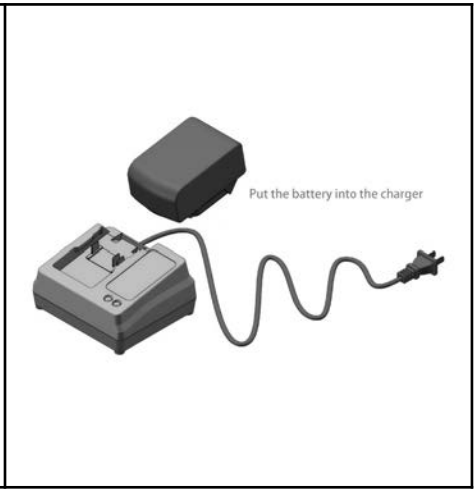
Before each use, perform the following safety checks:

- Ensure the charger housing, battery casing, tool head, and external shell are free from cracks, deformation, or other visible damage.
- Confirm that the battery is properly and securely connected to the tool to ensure stable operation.

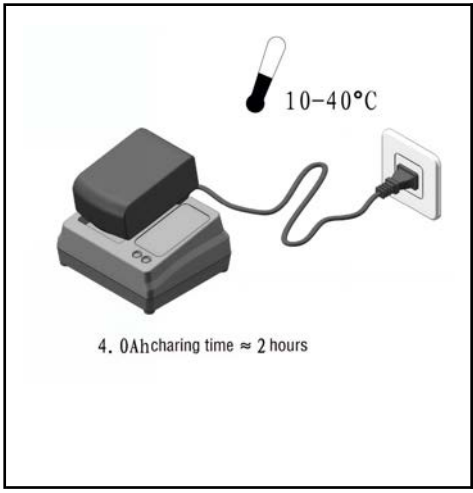
7. Battery Safety and Maintenance Instructions



1



2



3



4

Warning:

a. **Battery Lifespan**

Lithium-ion batteries are capable of withstanding several hundred charge-discharge cycles; however, they will degrade over time. If tool performance declines noticeably, replace the battery. To prevent irreversible battery damage, recharge promptly and avoid complete discharge.

b. **Long-Term Storage**

When the tool is not in use for extended periods, the battery will self-discharge. To maintain battery health, remove the battery from the tool and recharge it at least once every three months.

c. **Short-Circuit Hazard**

Never connect the battery terminals with conductive materials (e.g., wires), as this may result in sparking, fire, or explosion.

d. **Damaged Batteries**

Do not use or attempt to recharge damaged batteries. Doing so increases the risk of electric shock or thermal events.

e. **Incineration Warning**

Batteries must not be incinerated under any circumstances, as this may cause explosion or toxic emissions.

f. **Charging Safety**

During charging, ensure the charger is not covered or obstructed to allow adequate heat dissipation. Obstructed airflow can lead to overheating and fire hazards.

g. **Power Supply Control**

Disconnect the charger from the power source when not in use. This

reduces the risk of accidental injury, particularly to children or untrained users.

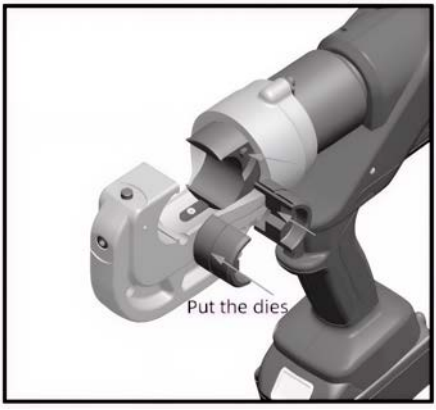
h. **Environmental Conditions**

Do not operate chargers in wet or humid environments, or expose them to rain or snow. Moisture increases the risk of electric shock.

i. **Unauthorized Disassembly**

Do not disassemble batteries or chargers. If malfunction occurs, contact qualified service personnel or the manufacturer for inspection and repair. Unauthorized repair attempts may void warranties and pose safety risks.

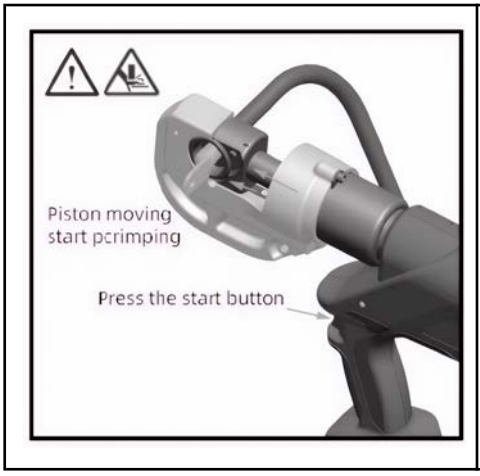
8. Tool Usage



1



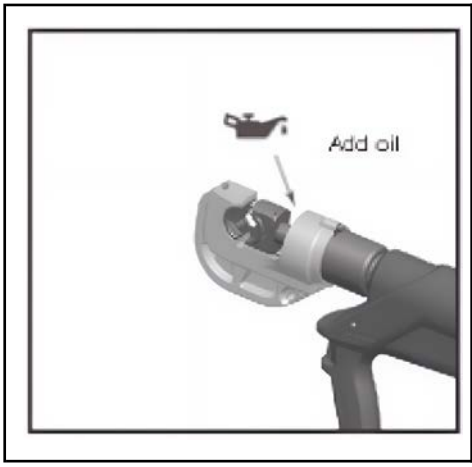
2


Piston moving
start pcrimping
Press the start button

3


when frnish crimping
move it
manual resrt in
case of error

4


Add oil

5


wipe it clean and
put it in the toolbox

6



Warning:

a. **Battery Care**

Lithium batteries can be charged and used many times but will eventually wear out. If the tool starts losing power or runs for less time, it's probably time to replace the battery. Always recharge before the battery is fully flat—running it to zero can cause permanent damage.

b. **Limit Block and Screw**

The limit block and screw on the pliers stop them from falling off or popping out. Do not remove these parts**.** They are there for your safety.

c. **Keep It Clean**

Wipe off any grease or dust from the handle and controls before use. A clean grip helps prevent slipping while you're working.

d. **Safety Valve**

The tool's safety valve is set and tested at the factory. Do not try to adjust it. If the tool isn't building enough pressure, stop using it and have it checked by a qualified technician.

e. **Do not Press Without Moulds**

Never operate the pressing function without moulds in the pliers. This can damage the tool and might cause serious injury.

Warning: Keep fingers and other body parts away from the working pliers while the piston is extending. Serious injury can occur if contact is made during operation.

9. Crimping Dies

Standard Pressing Die (Hexagon) Specification (mm2) for this tool：

16、25、35、50、70、95、120、150、185、240、300、400



Die specifications are marked on the curved side of each die.

If you need to crimp different wire or terminal sizes, please contact your distributor or the manufacturer. Custom die sizes and special shapes can be made to suit your needs.

Note: Always choose the correct crimping die based on the wire size and matching copper or aluminium terminal. Using the wrong die can lead to poor crimping or excessive burrs, which may affect the connection quality.

10. Maintenance Instructions

This tool has been engineered with advanced design and manufacturing standards. **Disassembly of internal components by unauthorized personnel is strictly prohibited.** Damage resulting from unauthorized disassembly or misuse is excluded from warranty coverage. Repairs can be arranged through the manufacturer or authorized service centres; only the cost of parts will be charged.

a. **Moisture Protection**

   Keep the tool and spare parts dry. Exposure to rain, humidity, or other liquids may cause corrosion of the housing, metal components, and electronic circuitry. If the tool becomes wet, immediately remove the battery. Reinsert the battery only after the tool is fully dry.

b. **Temperature Considerations**

   Do not store the tool in environments with excessive heat or cold. Extreme temperatures may deform plastic components, degrade electronic parts, and damage the battery.

c. **Cleaning**

   Avoid using strong chemicals or harsh cleaning agents. Clean the tool using a soft cloth and mild detergent if necessary.

d. **Hydraulic Oil Maintenance**

   To ensure optimal tool performance and longevity, replace the hydraulic oil annually.

e. **Long-Term Storage**

For extended periods of non-use:

- Fully retract the piston
- Clean the tool surface
- Apply rust-preventive grease to all exposed metal parts and crimping dies
- Remove the battery and store it separately in the designated toolbox

f. **Seal Replacement**

Sealing elements are subject to wear. If hydraulic oil leakage is observed after prolonged use, contact the distributor or manufacturer.
Replacement must be performed by authorized service personnel.