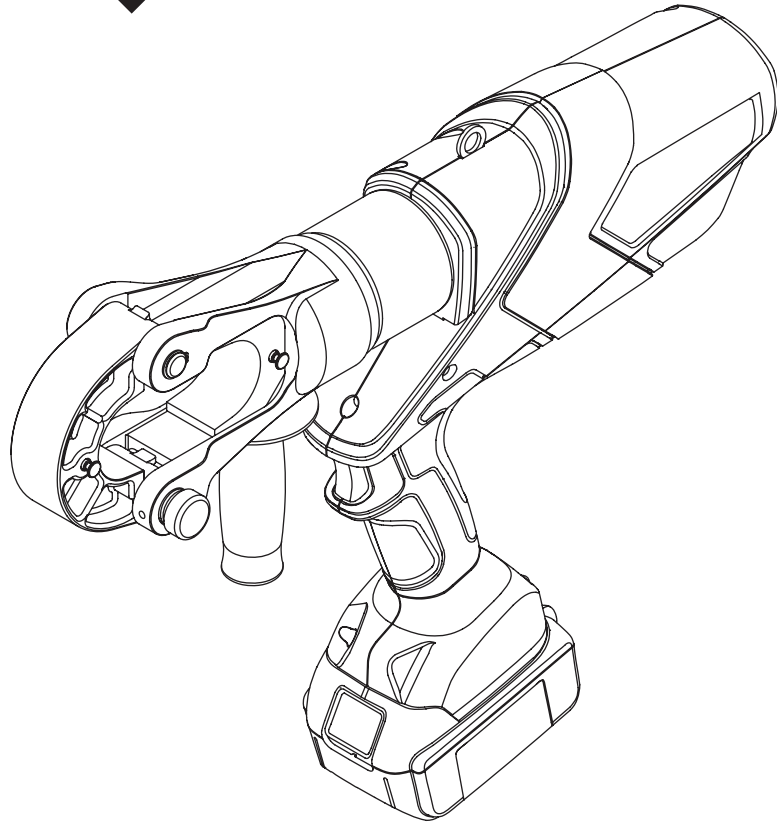


# OPERATION MANUAL



**GREENLEE®**  
A Textron Company

Serial Number



## **EK1550FLX** **GATOR® Battery-powered,** **15-ton Crimping Tool**



**Read and understand** all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at [www.greenlee.com](http://www.greenlee.com)

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## Description

EK1550FLX Battery-powered, 15-ton, High-speed Crimping Tool is a hand-held, self-contained crimping tool intended to crimp aluminum and copper connectors onto electrical cable.

The tool has a retraction stop feature which allows the operator to stop the retraction motion of the ram to shorten cycle time.

The tool has a Bluetooth® connectivity and an LCD screen.

The tool is protected by U.S. Patent No. 6,206,663, 6,276,186, 6,401,515, and 6,718,870.

### **Model X-EK1550FLX—FCC ID: 2AGL2X; IC ID: 20646X**

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

*Note: Change or modifications made to this equipment not expressly approved by Greenlee may void the FCC authorization to operate this equipment.*

## Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

*Note: For body worn operation, this device has been tested and meets the FCC RF exposure guidelines for an uncontrolled environment. The maximum reported SAR value is 0.08 mW/g*

## Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the following Greenlee tool:

- EK1550FLX Battery-powered Crimping Tool

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at [www.greenlee.com](http://www.greenlee.com).



**Do not discard this product or throw away!**

For recycling information, go to [www.greenlee.com](http://www.greenlee.com).

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

GATOR is a registered trademark of Textron Innovations Inc.

Bluetooth is a registered trademark of Bluetooth SIG, Inc.

Blackburn is a registered trademark of Thomas & Betts.

# KEEP THIS MANUAL

## IMPORTANT SAFETY INFORMATION



### SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

#### ⚠ **DANGER**

Immediate hazards which, if not avoided, **WILL** result in severe injury or death.

#### ⚠ **WARNING**

Hazards which, if not avoided, **COULD** result in severe injury or death.

#### ⚠ **CAUTION**

Hazards or unsafe practices which, if not avoided, **MAY** result in injury or property damage.



#### ⚠ **WARNING**

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Failure to observe this warning could result in severe injury or death.

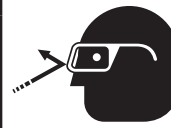


#### ⚠ **WARNING**

Electric shock hazard:

This tool is not insulated. When using this unit on or near energized electrical lines, use proper personal protective equipment.

Failure to observe this warning could result in severe injury or death.



#### ⚠ **WARNING**

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.



#### ⚠ **WARNING**

Skin injection hazard:

Do not use hands to check for oil leaks. Oil under pressure easily punctures skin. If injured, seek medical attention immediately to remove oil.

Failure to observe this warning could result in serious injury, gangrene, or death.



#### ⚠ **WARNING**

Do not use solvents or flammable liquids to clean the tool body. Solvents or flammable liquids could ignite and cause serious injury or property damage.

#### ⚠ **WARNING**

An incomplete crimp can cause a fire.

- Use proper die, connector, and cable combinations. Improper combinations can result in an incomplete crimp.
- The relief valve sounds and the ram automatically retracts to indicate a completed crimp. If you do not hear the sound of the relieve valve or the ram does not automatically retract, the crimp is not complete.

Failure to observe these warnings could result in severe injury or death.



#### ⚠ **WARNING**

Pinch points:

- Remove battery before changing dies, adapters, or jaws.
- Keep hands away from the crimping tool head when crimping.

Failure to observe these warnings could result in severe injury or death.

## **IMPORTANT SAFETY INFORMATION**

### **⚠ WARNING**

Do not dispose of batteries in a fire. They will vent fumes and may explode.

Failure to observe this warning could result in severe injury from harmful fumes or burns from flying debris.

### **⚠ WARNING**

Remove the battery before transporting the T version of this tool by air.

Failure to observe this warning could result in severe injury or death.

### **⚠ WARNING**

- Inspect tool and dies before use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.
- Carrying strap is for carrying only, not to be used to hang or suspend tool.

Failure to observe these warnings could result in severe injury or death.

### **⚠ CAUTION**

- Do not use this tool for continuous use. After 30 to 40 cycles, allow the tool to cool for 15 minutes.
- Do not secure this tool in a vise. This tool is designed for hand-held operation.
- This tool may be used in damp or wet environments; however, air-drying is recommended before use if the tool becomes soaked. Damage may result when the tool is operated prior to thorough drying when electrical components are soaked.
- Use this tool for the manufacturer's intended purpose only.

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

### **⚠ 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 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 122 °F (50 °C) or less than -4 °F (-20 °C). Damage to the battery can result.
- Do not use another manufacturer's charger. Other manufacturers' chargers may overcharge and damage the battery.
- 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**

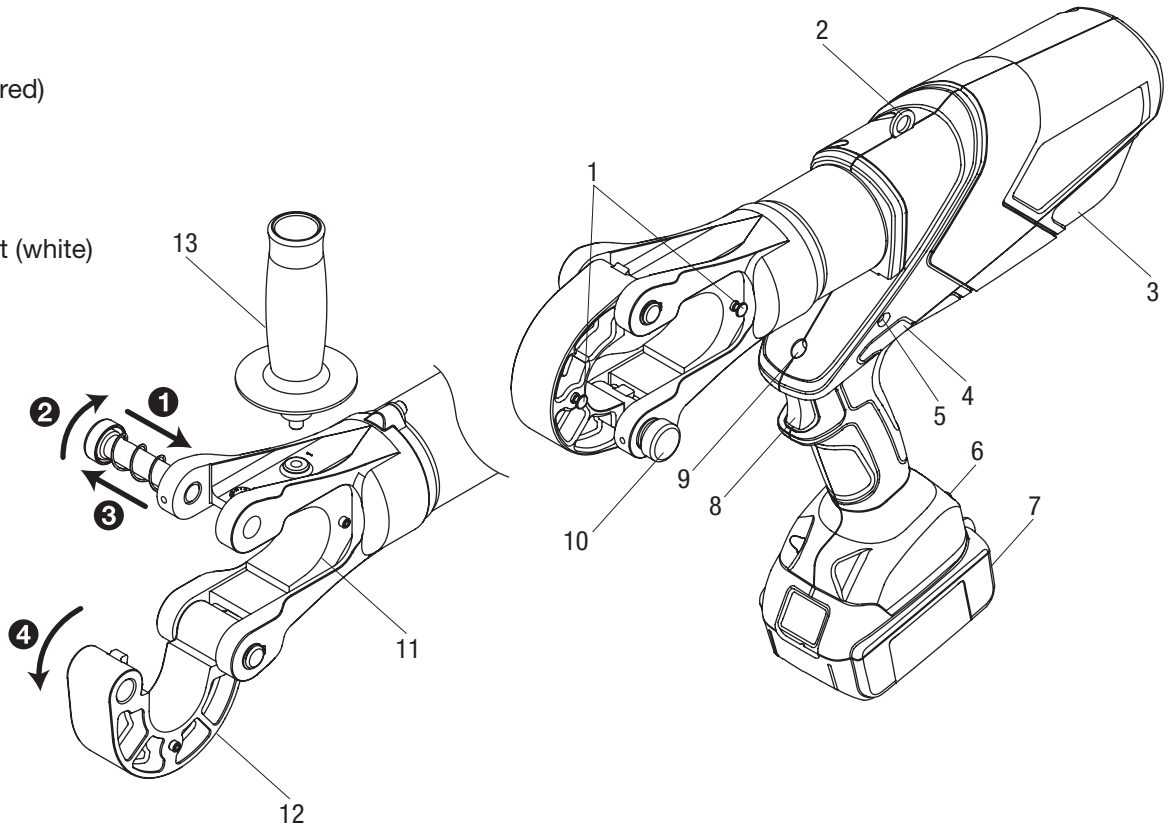
Do not perform any service or maintenance other than as described in this manual. Injury or damage to the tool may result.

Failure to observe this precaution may result in injury and property damage.

*Note: Keep all decals clean and legible, and replace when necessary.*

## Identification

1. Die Release Buttons
2. Lanyard Ring
3. Housing
4. Retract Button
5. LED Indicator (red)
6. LCD Screen
7. Battery
8. Trigger
9. LED Work Light (white)
10. Pull Pin
11. Ram
12. Flip-top Head
13. Handle



## Specifications

### Crimping Tool

Length .....	19.00" (483 mm)
Width .....	3.00" (76 mm)
Height (with battery).....	13.5" (342 mm)
Mass/Weight (with battery) .....	18.2 lb (8.25 kg)
Crimping Force .....	15 tons (135 kN)
Hydraulic Oil.....	52057878 biodegradable hydraulic fluid
Recommended Operating Temperature Range.....	5 °F to 122 °F (-15 °C to 50 °C)

### Battery Charger

Read the instructions supplied with the battery charger

### Crimping Capacities

Maximum Crimping Capacity	
Aluminum.....	1250 kcmil
Copper.....	1500 kcmil

With "P" Style Dies (no adapter kit needed):  
 1250 kcmil aluminum and  
 1500 kcmil copper fittings

With 52060610 Die Adapter Set  
 for 12-ton "U" Style Dies:  
 500 kcmil copper splices,  
 750 kcmil copper terminals,  
 350 kcmil aluminum splices,  
 750 kcmil aluminum terminals

*Note: Do not use non-butting dies (crimps controlled by tonnage) in this tool, as damage could occur to connectors and/or conductors.*

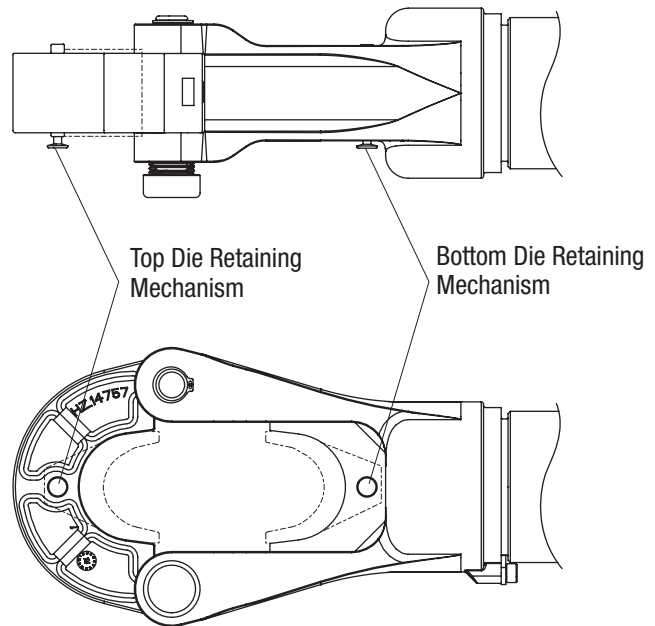
## Adapter Kits

### Procedure for Using Burndy Y46 Dies and “P” Style Dies

1. No die holder assemblies are needed. Dies fit directly into tool.
2. Select proper die set for fitting to be crimped.

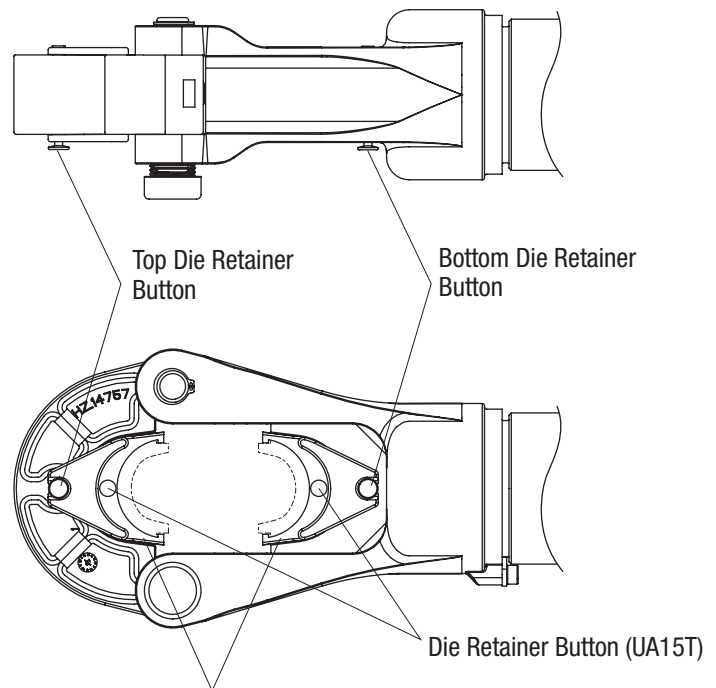
*Note: Do not use non-butting dies (crimps controlled by tonnage) in this tool, as damage could occur to connectors and/or conductors.*

3. Slide top die into place in die holder while simultaneously squeezing retainer button. Release button and allow die to snap into place. Repeat operation for other die entry.



### Procedure for Using 12-ton “U” Style Dies with 52060610 Die Adapter Set

1. Slide a die adapter assembly into the flip-top head while depressing the die retainer button. Release the retainer button while the adapter snaps into place. The die adapter should be locked in position.
2. Repeat Step 1 to install the other die adapter into the ram end.
3. Select the proper “U” die set for the connector to be crimped.
4. Slide the “U” die into the die adapter while depressing the die retainer button. Release the die button while it snaps into place, locking the die into position.
5. Repeat Step 4 with other “U” die.



**12-ton “U” Die Adapter Set UA15T (52060610)  
(contains two die adapters)**



## Setup

1. Select the die set that corresponds to the size, type, and manufacturer of connector to be crimped.
2. Determine if the die adapter set is required:
  - “P” style dies—no die adapters required
  - 12-ton “U” style dies—52060610 die adapter set
3. Install proper size crimping dies in crimping head. Be sure die seat area is clear of debris.

## Operation

### ⚠ WARNING

- Inspect tool and dies before use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.
- Carrying strap is for carrying only, not to be used to hang or suspend tool.

Failure to observe these warnings could result in severe injury or death.

### ⚠ WARNING

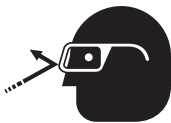


Electric shock hazard:

This tool is not insulated. When using this unit on or near energized electrical lines, use proper personal protective equipment.

Failure to observe this warning could result in severe injury or death.

### ⚠ WARNING



Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.

### ⚠ WARNING



Pinch points:

- Remove battery before changing dies, adapters, or jaws.
- Keep hands away from the crimping tool head when crimping.

Failure to observe these warnings could result in severe injury or death.

### ⚠ CAUTION

- Do not use this tool for continuous use. After 30 to 40 cycles, allow the tool to cool for 15 minutes.
- Do not secure this tool in a vise. This tool is designed for hand-held operation.
- This tool may be used in damp or wet environments; however, air-drying is recommended before use if the tool becomes soaked. Damage may result when the tool is operated prior to thorough drying when electrical components are soaked.
- Use this tool for the manufacturer’s intended purpose only.

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

### Charging the Battery

Read the instructions supplied with the battery charger.

### LED Work Light (white)

This LED automatically turns on when the trigger is pulled. It remains on for 10 seconds after the trigger is released.

### LED Indicator (red)

This tool is equipped with a special circuit board incorporating several important features to inform the user about the current status of the unit. The LED signals in the following cases:

What happens	Signal	What it means
Constant light for 20 seconds at end of cycle	█	Battery charge is below 17 V at beginning of cycle*
Tool will <b>not</b> start, and constant light for 20 seconds when trigger is released	█	Battery charge is below 16 V at beginning of cycle*
Tool will stop, and constant light for 20 seconds after trigger is released	█	Battery voltage drops below 13 V during cycle*
Tool will stop, and flashing light for 20 seconds when trigger is released	●●●●	Motor current exceeds 20 A during cycle
		Circuit has become too hot
Flashing light for 20 seconds at end of cycle	●●●●	Send tool in for service

\* Running the battery below 16 V can damage the battery.

## Operation (cont'd)

### Pressure Sensor

This tool is equipped with a pressure sensor that alerts the user of an incomplete crimp.

- If the tool is manually retracted before completion of a crimp, the red LED and an audible beep will be active for 2 seconds.
- If the tool is unable to reach the required crimp force, the red LED, work light, and an audible beep will pulse until after the trigger is released.

## IMPORTANT

For a cUL or UL classified crimp, see the connector table in this instruction manual.

### Preparation

*Note: When using KC12-type dies, complete the number of crimps listed on the "Connector Selection" chart in this manual. For other dies, complete the number of crimps specified by the manufacturer.*

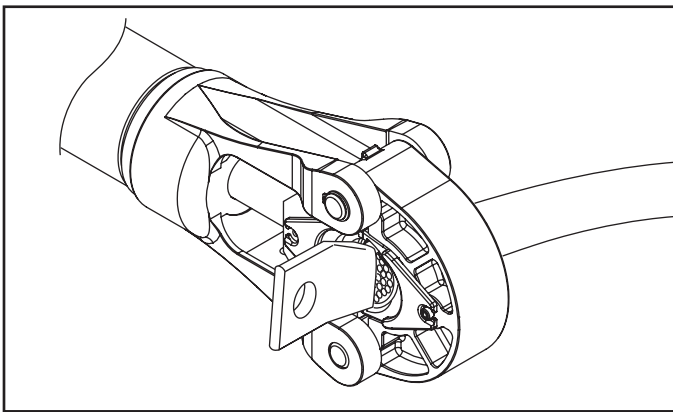
1. Select a proper size and type of connector to correspond with the wire or cable.
2. Strip the cable to an appropriate length. Follow the connector manufacturer's instructions.

*Note: Apply an oxide inhibitor, if required. See the connector manufacturer's instructions.*

3. Clean the die seat area.

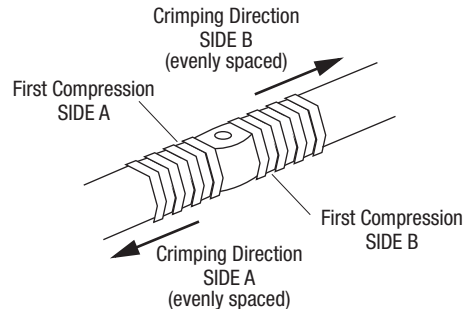
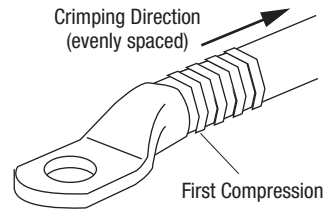
### Crimping

1. Insert the cable fully into the connector.
2. If open, close the flip-top head and engage the pull pin. Make sure the pull pin is fully engaged.
3. Align the connector between the crimping dies as shown below.



4. For a UL or cUL classified crimp, complete the number of crimps specified under "Connector Selection".

5. For a single crimp, position the connector so the crimp will be located at the center of the barrel.



6. Depress the trigger to advance the ram. Hold the trigger down until the ram automatically begins to retract.

*Notes: If the crimping tool does not automatically retract, the crimp is incomplete.*

*It is normal for the battery load display to light at both the beginning and near the end of the crimping cycle.*

7. Release the trigger until the ram retracts completely.
8. To stop the ram from returning fully, activate the trigger for a brief moment. This activation will close the retraction valve and stop the retraction motion.

*Note: if it is necessary to retract the ram before a crimp cycle is complete, push the retract button. Pushing the retract button will result in complete retraction of the ram.*

*After completing the last crimp on an aluminum connector, wipe off the excess oxide inhibitor.*

## ⚠ WARNING

An incomplete crimp can cause a fire.

- Use proper die, connector, and cable combinations. Improper combinations can result in an incomplete crimp.
- The relief valve sounds and the ram automatically retracts to indicate a completed crimp. If you do not hear the sound of the relieve valve or the ram does not automatically retract, the crimp is not complete.

Failure to observe these warnings could result in severe injury or death.



## Die Selection

Refer to “Connector Selection” for brand names and model numbers of appropriate lugs as well as crimping instructions.

Crimps made with this tool and KC12-type or KA12-type dies are cUL and UL classified when used with the appropriate conductor and connectors listed below.

### Dies for Copper Connectors

Catalog No.	UPC No.	Cable Size	Color Code	No. of Crimps
KC12-8	10996	8 AWG	Red	1
KC12-6	10997	6 AWG	Blue	1
KC12-4	10998	4 AWG	Gray	1
KC12-2	10999	2 AWG	Brown	1
KC12-1	11003	1 AWG	Green	1
KC12-1/0	11004	1/0 AWG	Pink	1
KC12-2/0	11007	2/0 AWG	Black	1
KC12-3/0	11010	3/0 AWG	Orange	1
KC12-4/0	11011	4/0 AWG	Purple	1
KC12-250	11012	250 kcmil	Yellow	1
KC12-300	11013	300 kcmil	White	2
KC12-350	11014	350 kcmil	Red	2
KC12-400	11015	400 kcmil	Blue	2
KC12-500	11016	500 kcmil	Brown	2
KC12-600	11018	600 kcmil	Green	2
KC12-750	11020	750 kcmil	Black	2

### Dies for Aluminum Connectors

Catalog No.	UPC No.	Cable Size	Color Code	No. of Crimps
KA12-8	22084	8 AWG	Blue	1
KA12-6	22085	6 AWG	Gray	1
KA12-4	22086	4 AWG	Green	1
KA12-2	22087	2 AWG	Pink	1
KA12-1	22088	1 AWG	Gold	1
KA12-1/0	22089	1/0 AWG	Tan	1
KA12-2/0	22090	2/0 AWG	Olive	2
KA12-3/0	22121	3/0 AWG	Ruby	2
KA12-4/0	22122	4/0 AWG	White	2
KA12-250	22123	250 kcmil	Red	2
KA12-300	22124	300 kcmil	Blue	2
KA12-350	22125	350 kcmil	Brown	2
KA12-400	22126	400 kcmil	Green	3
KA12-500	22127	500 kcmil	Pink	3
KA12-600	22128	600 kcmil	Black	3
KA12-750	22129	750 kcmil	Yellow	3

## Connector Selection

**Tool Range:** 8 AWG to 750 kcmil

When used with KC12-type dies, this tool is cUL and UL classified for use with the following connector brands:

Connector Type	Barrel Type	Anderson	Blackburn®	Burndy	ILSCO	Panduit	T&B	Penn-Union	Number of Crimps*
Copper Splice	Short	VHSS	CSP	YS-L	CT	SCSS SCS	54504 to 54523-TB	BCU	8 AWG to 250 kcmil: 1 crimp
	Long	VHS	CU	YS	CTL	SCL SCH	54804 to 54823	BBCU	
Copper Lugs	Short	VHCS	CTL-2/CTL	YA-2LN/ YA-L/YA-2L; YA/YA-L-TC/ YA-L-2TC	CSW CRA/CRB CRC	LCAS LCA LCD LCAN	54104 to 54123-TB; 54204 to 54223	BLU	300 to 750 kcmil: 2 crimps
	Long	VHCL	CTL-L/LCN	YA/YAZ YA-2N/YA-2TC YAZ-2N/YAZ-2TC	CLN, CLW CRA-L/CRB-L CRA-2/CRB-2L CRC-2L	LCB LCC	54930BE to 54923BE; 54850BE to 54880BE	BBLU	

When used with KA12-type dies, this tool is cUL and UL classified for use with the following connector brands:

Connector Type	Anderson	Blackburn®	Burndy	ILSCO	Panduit	T&B	Penn-Union	Number of Crimps*
Dual-Rated Aluminum Splice	VACS	ASP	YS-A	AS ASN	SA	60501 to 60578	PIK	8 to 1/0 AWG: 1 crimp
Dual-Rated Aluminum Lugs	VACL	ATL	YA-A YA-ATN	ACL/ACN 2ACL/2ACN ALNS/ALNN/ALND	LAA LAB	60101 to 60176; 60230 to 60278	BLUA	2/0 AWG to 350 kcmil: 2 crimps  400 to 750 kcmil: 3 crimps



\* Use the number of crimps listed in this column instead of the number provided with the connector.

## LCD Screen

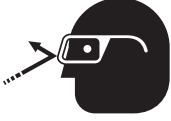
This tool has an LCD screen, which displays information about the tool. Turn on the screen by inserting the battery and jogging the tool. If there are any problems with the tool, an error code appears.

Error Code	Meaning
1	Overcurrent fuse
2	Overcurrent comparator
3	Overheated circuit board
4	Overheated battery
5	Battery empty; operation stops
6	Faulty crimp; complete cycle
7	Faulty crimp; incomplete cycle
8	Low battery
9	Battery empty; tool won't run
10	Real-time clock battery low
11	Tool deactivated
12	Service necessary
13	Real-time clock not found
14	Bluetooth® unit not found
15	
16	Pressure sensor not found
17	Burst pressure exceeded
18	Battery temperature too low


If there is no error code, cycle through the various displays using the left and right buttons on either side of the screen. There are seven displays in total.


Display	Information Shown
1	Bluetooth® status, battery charge, current pressure, max. pressure
2	Firmware, available firmware update, serial number
3	Current user. Press and hold both buttons to change user, select with right button, and confirm by jogging the tool.
4	
5	
6	Cycles until next service
7	Since manufacturing: operating hours, capacity, number of cycles

**Maintenance**

	<b>⚠ WARNING</b>
	<p>Wear eye protection when operating or servicing this tool.</p> <p>Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.</p>

	<b>⚠ WARNING</b>
	<p>Skin injection hazard:</p> <p>Do not use hands to check for oil leaks. Oil under pressure easily punctures skin. If injured, seek medical attention immediately to remove oil.</p> <p>Failure to observe this warning could result in serious injury, gangrene, or death.</p>

	<b>⚠ WARNING</b>
	<p>Do not use solvents or flammable liquids to clean the tool body. Solvents or flammable liquids could ignite and cause serious injury or property damage.</p>

	<b>⚠ WARNING</b>
	<p>Pinch points:</p> <ul style="list-style-type: none"> <li>• Remove battery before changing dies, adapters, or jaws.</li> <li>• Keep hands away from the crimping tool head when crimping.</li> </ul> <p>Failure to observe these warnings could result in severe injury or death.</p>

<b>IMPORTANT</b>
<p>Relief valve adjustments must be done by an authorized service center.</p>

**Daily**
*Before use:*

1. Inspect the tool for wear or damage, such as cracks, gouges, or chips.
2. Inspect the tool for damage or leaks.
3. Inspect the rotation of the head assembly. Fully retract the ram. The head should rotate no more than 360°. If damage is detected, contact Greenlee customer service at 800-435-0786 for warranty service or repair.

*After use:*

1. Use a damp cloth and mild detergent to clean the housing. Allow the housing to dry.
2. Fully retract the ram. Place the tool in the carrying case and store in a cool, dry place.
3. If necessary, recharge the batteries. Refer to the instructions supplied with the battery charger.

**Monthly**

Thoroughly clean all surfaces.

**Annually or After 10,000 Crimps**

Contact Greenlee customer service at 800-435-0786 for warranty service or repair, and hydraulic oil replacement.

## Troubleshooting

### Before You Begin

1. Make sure that the battery is charged. Recheck the battery after several minutes to make sure the battery is holding its charge.
2. Use a **nonflammable** contact cleaner or pencil eraser to clean the electrical contacts on the battery and tool.
3. Reinstall the battery and check the tool again.

<b>Problem</b>	<b>Possible Cause</b>	<b>Probable Remedy</b>
Tool is inoperative.	Battery charge low.	Charge or replace battery.
	Dirt, contaminants, etc., in ram area of tool.	Clean tool.
	Tool components worn or damaged.	Contact Greenlee customer service at 800-435-0786 for warranty service or repair.
Motor is inoperative.	Low or uncharged battery.	Try known charged battery. Inoperative battery may be discharged or may have reached life expectancy.
	Broken switch components.	Contact Greenlee customer service at 800-435-0786 for warranty service or repair.
Motor runs but tool will not complete a cycle.	Oil level low.	Contact Greenlee customer service at 800-435-0786 for warranty service or repair.
	Air in hydraulic system.	Pull trigger and hold retract button simultaneously. Run for approximately 10 seconds, and then attempt to crimp. If unsuccessful, contact Greenlee customer service at 800-435-0786 for warranty service or repair.
	Cold oil.	Pull trigger and hold retract button simultaneously to warm oil. Store tool in warm area.
Tool loses oil.	Damaged seal.	Contact Greenlee customer service at 800-435-0786 for warranty service or repair.