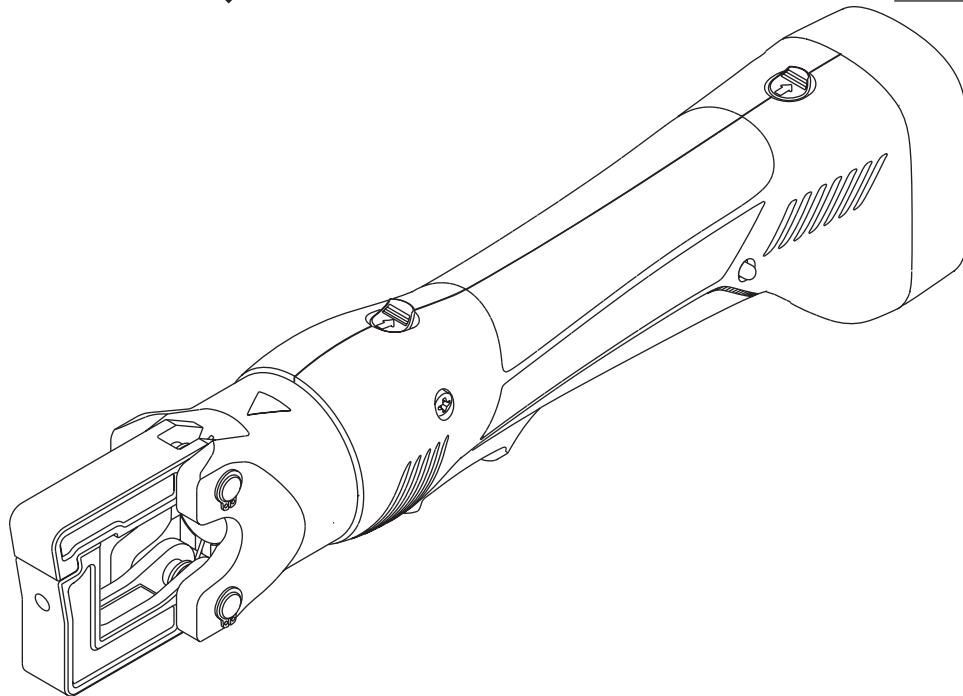


# INSTRUCTION MANUAL



**GREENLEE**<sup>®</sup>  
A Textron Company

Serialnummer



## **GATOR**<sup>®</sup> **EK410** **Battery-powered** **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

The EK410 Battery-powered Crimping Tool is a hand-held, self-contained crimping tool intended to crimp copper and aluminum cable with KC4-type dies.

## 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.

## Purpose of this Manual

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

EK410 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).

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.

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Blackburn is a registered trademark of Thomas & Betts.

Tellus is a registered trademark of Shell Oil Company.

## ***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.

	<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. High pressure oil easily punctures skin causing serious injury, gangrene, or death. If injured, seek medical help immediately to remove oil.</p>


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

<b>⚠ WARNING</b>	
<p>An incomplete crimp can cause a fire.</p> <ul style="list-style-type: none"> <li>• Use proper die, connector, and cable combinations. Improper combinations can result in an incomplete crimp.</li> <li>• The relief valve will sound to indicate a completed crimp. If you do not hear the sound of the relief valve, the crimp is not complete.</li> </ul> <p>Failure to observe these warnings could result in severe injury or death.</p>	

	<b>⚠ WARNING</b>
	<p>Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

	<b>⚠ WARNING</b>
	<p>Electric shock hazard:</p> <p>This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

## IMPORTANT SAFETY INFORMATION

	<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>⚠ WARNING</b>
<p>Do not dispose of batteries in a fire. They will vent fumes and may explode.</p> <p>Failure to observe this warning could result in severe injury from harmful fumes or burns from flying debris.</p>

<b>⚠ WARNING</b>
<p>Inspect tool and dies before use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

<b>⚠ CAUTION</b>
<ul style="list-style-type: none"><li>• Do not operate the tool without dies. Damage to the ram or crimping head can result.</li><li>• Do not operate with the crimping head open. Damage to the ram or seals can result.</li><li>• This tool is not designed for continuous use. After 100 crimping cycles, allow the crimping tool to cool for 15 minutes.</li><li>• Do not place the tool in a vise. The crimping tool is designed for hand-held operation.</li><li>• This tool may be used in damp or wet environments; however, we recommend air-drying the tool before use if it becomes soaked.</li><li>• Use this tool for the manufacturer's intended purpose only.</li></ul> <p>Failure to observe these precautions may result in injury or property damage.</p>

<b>⚠ CAUTION</b>
<p>Do not allow anything to contact the battery terminals.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li><li>• Do not place a battery on moist ground or grass. Moisture may create a short circuit and damage the battery.</li></ul> <p>Failure to observe these precautions may result in injury or property damage.</p>

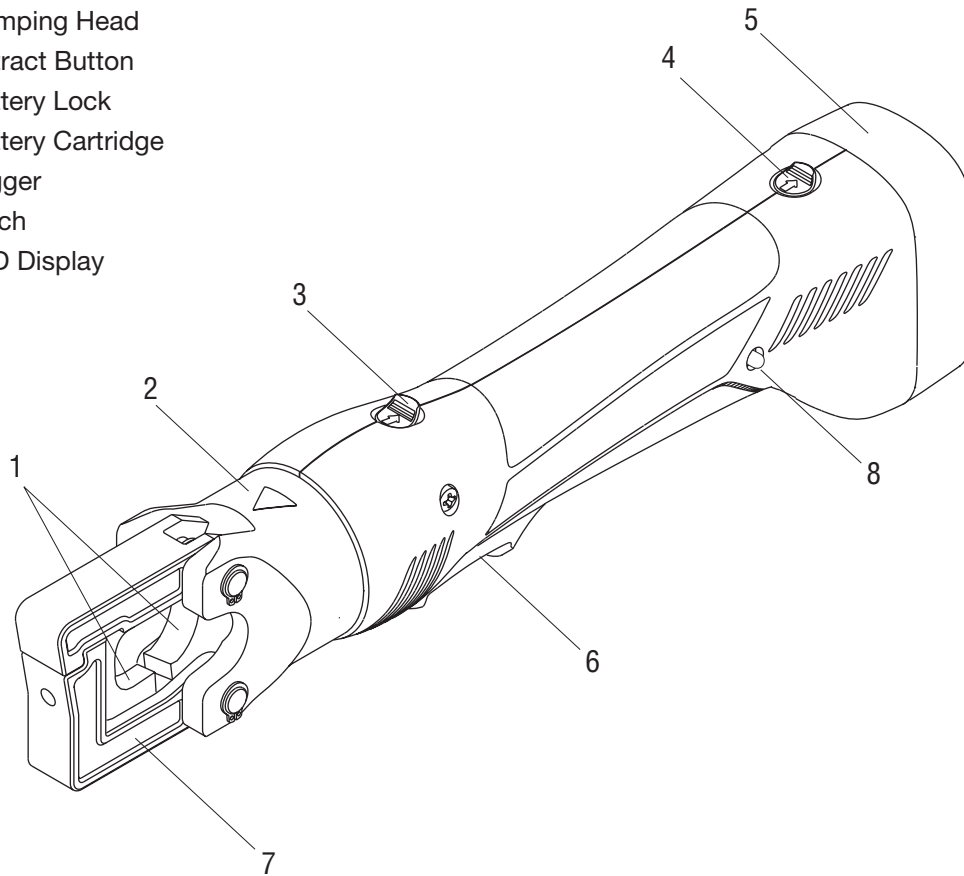
<b>⚠ CAUTION</b>
<ul style="list-style-type: none"><li>• Do not store the battery at more than 60 °C (140 °F). Damage to the battery can result.</li><li>• Do not use another manufacturer's charger. Other manufacturers' chargers may overcharge and damage the battery.</li><li>• Do not attempt to open the battery. It contains no user-serviceable parts.</li></ul> <p>Failure to observe these precautions may result in injury or property damage.</p>

<b>⚠ CAUTION</b>
<p>Do not perform any service or maintenance other than as described in this manual. Injury or damage to the tool may result.</p> <p>Failure to observe this precaution may result in injury and property damage.</p>

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

## Identification

1. Crimping Dies
2. Crimping Head
3. Retract Button
4. Battery Lock
5. Battery Cartridge
6. Trigger
7. Latch
8. LED Display



## Specifications

### Crimping Tool

Length .....	356 mm (14")
Width .....	60 mm (2-3/8")
Depth .....	80 mm (3-1/8")
Mass/Weight (with battery).....	1.6 kg (3.5 lb)
Sound Level .....	75 dB (A) at 1 meter
Vibration .....	< 2.5 m/s <sup>2</sup>
Hydraulic Oil.....	Shell Tellus® T 15


### Crimping Capacities

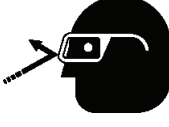
Crimping Force .....	35 kN (4 tons)
Average Crimping Time.....	4 seconds
Average Crimps per Charge.....	approximately 85


### Battery

Charging Voltage.....	9.6 V
Charging Time.....	45 min

**Operation**

	<b>⚠ WARNING</b>
	<p>Electric shock hazard: This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

	<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>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>⚠ CAUTION</b>
<ul style="list-style-type: none"><li>• Do not operate the tool without dies. Damage to the ram or crimping head can result.</li><li>• Do not operate with the crimping head open. Damage to the ram or seals can result.</li><li>• This tool is not designed for continuous use. After 100 crimping cycles, allow the crimping tool to cool for 15 minutes.</li><li>• Do not place the tool in a vise. The crimping tool is designed for hand-held operation.</li><li>• This tool may be used in damp or wet environments; however, we recommend air-drying the tool before use if it becomes soaked.</li><li>• Use this tool for the manufacturer's intended purpose only.</li></ul> <p>Failure to observe these precautions may result in injury or property damage.</p>

## Operation (cont'd)

### Charging the Battery

Read the instructions supplied with the battery charger.

### LED Display

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:

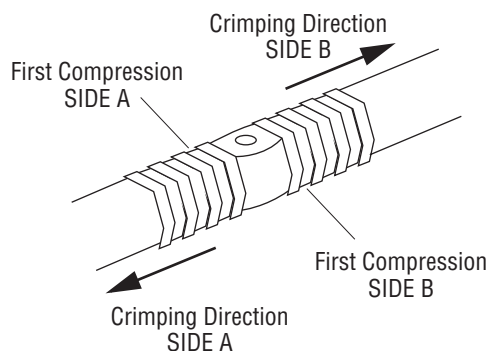
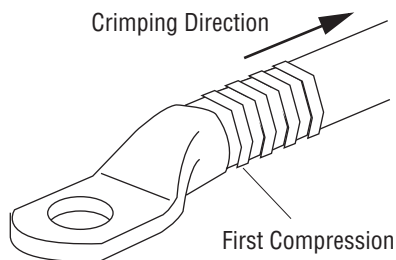
Signal	Duration	When it occurs	What it means
● ●	a few seconds of flashing	battery insertion	self check - O.K.
■	glowing for 20 seconds	after crimp	battery discharged
● ● ●	flashing for 20 seconds (2Hz)	after crimp	time for inspection and preventive maintenance
■ ●	20 sec. glowing and flashing intermittently	after crimp	battery discharged—time for inspection and preventive maintenance

### Installing Dies

1. Select the proper dies for the intended crimp.
2. Slide the die into the crimping head until it “snaps” into place.
3. Properly position the second die. Repeat Step 2.

### Preparing Cable

Follow the lug manufacturer’s instructions for appropriate cable strip length.



### Crimping Cable

1. Press the locking flange and open the crimping head.
2. Insert the properly assembled connector into the crimping head.
3. Close the crimping head.
4. Pull the trigger to make the crimp.
5. Hold the trigger down until the crimping tool achieves pressure relief, which is accompanied by an audible “pop”.
6. The crimping tool returns automatically.
7. Position the crimping tool for next crimp. Repeat Steps 4 through 6 for the number of crimps as described in this manual.
8. Open the crimping head and remove the connector.

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

## ⚠ 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 will sound to indicate a completed crimp. If you do not hear the sound of the relief valve, the crimp is not complete.

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

## Die Selection

Crimps made on copper cable with Greenlee KC4-type dies and the copper connectors listed here are cUL and UL classified.

Crimps made on copper or aluminum cable with Greenlee KA4-type dies and the aluminum connectors listed here are cUL and UL classified.

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

### Dies for Aluminum Connectors

Catalog Number	UPC Number	Cable Size	Color Code
KA4-8	12222	8 AWG	Blue
KA4-6	12223	6 AWG	Gray
KA4-4	12225	4 AWG	Green
KA4-2	12226	2 AWG	Pink
KA4-1	12227	1 AWG	Gold
KA4-1/0	12228	1/0 AWG	Tan
KA4-2/0	12229	2/0 AWG	Olive

### Dies for Copper Connectors

Catalog Number	UPC Number	Cable Size	Color Code
KC4-8	02075	8 AWG	Red
KC4-6	02076	6 AWG	Blue
KC4-4	02077	4 AWG	Gray
KC4-2	02078	2 AWG	Brown
KC4-1	02079	1 AWG	Green
KC4-1/0	02080	1/0 AWG	Pink
KC4-2/0	02081	2/0 AWG	Black
KC4-3/0	02082	3/0 AWG	Orange
KC4-4/0	02083	4/0 AWG	Purple
KC4-250	02084	250 kcmil	Yellow
KC4-300	10988	300 kcmil	White

### Dies for Service Entrance Connectors

Catalog Number	UPC Number	Usage
KD4-10	02021	5/8" Service Entrance
KD4-840	02022	840 Service Entrance

## Connector Selection

**Tool Range:** Copper – 8 AWG to 300 kcmil copper wire; Dual-rated Aluminum – 8 AWG to 2/0 AWG copper or aluminum wire

When used with KC4-type dies, this tool is cUL and UL classified for use with the following connector brands:

Connector Type	Barrel Type	Anderson	Blackburn®	FCI Burndy	IlSCO	Panduit	T&B	Penn-Union	No. of Crimps*
Copper Splice	Short	VHSS**	CSP	YS-L	CT	SCSS/SCS	54504-54520	BCU	A
	Long	VHS**	CU	YS	CTL	SCL/SCH	54804-54820	BBCU	
Copper Lugs	Short	VHCS**	CTL-2/CTL	YA-2LN/YA-L/YA-2L YA/YA-L-TC/YA-L-2TC	CRA/CRB	LCAS/LCA LCD	54104-54120 54204-54218	BLU	A
	Long	VHCL**	CTL-L/LCN	YA-2N	CRA-L/CRB-L CRA-2L/CRB-2L	LCB/LCC	54930BE-54920BE 54850BE-54878BE	BBLU	

When used with KA4-type dies, this tool is cUL and UL classified for use with the following connector brands:

Connector Type	Barrel Type	Anderson	Blackburn®	FCI Burndy	IlSCO	Panduit	T&B	Penn-Union	No. of Crimps*
Dual-rated Aluminum Splice	—	VACS	ASP	YS-A	AS	SA ***	60501-60536	PIK	B
Dual-rated Aluminum Lugs	—	VACL	ATL	YA-A YA-ATN	ACL/ACN 2ACL/2ACN	LAA/LAB ***	60101-60138 60230-60238	BLUA	B

\* Use the number of crimps listed in the last column instead of the number provided with the connector:

A — 8 to 1/0 AWG: 1 crimp  
2/0 AWG to 300 kcmil: 2 crimps

B — 8 to 2 AWG: 2 crimps  
1 to 2/0 AWG: 3 crimps

\*\* 6 AWG to 300 kcmil

\*\*\* 6 AWG to 2/0 AWG






## Maintenance

### Each Operating Day


#### Before use:

1. Inspect dies for wear or damage such as cracks, gouges, or chips.
2. Inspect the tool for damage or leaks. If damage is detected, return the tool to an authorized Greenlee service center for inspection.

	<b>⚠ WARNING</b>
	<p>Skin injection hazard:</p> <p>Do not use hands to check for oil leaks. High pressure oil easily punctures skin causing serious injury, gangrene, or death. If injured, seek medical help immediately to remove oil.</p>

#### After use:

1. Wipe all tool surfaces clean with a damp cloth and mild detergent.

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

2. Fully retract the ram. Place the tool in the carrying case. Store in a cool, dry place.
3. Charge the battery.

#### Monthly

1. Thoroughly clean all surfaces.
2. Oil the pin joints.

#### Annually or After 10,000 Crimps

Return the tool to an authorized Greenlee service center for inspection.

## Troubleshooting

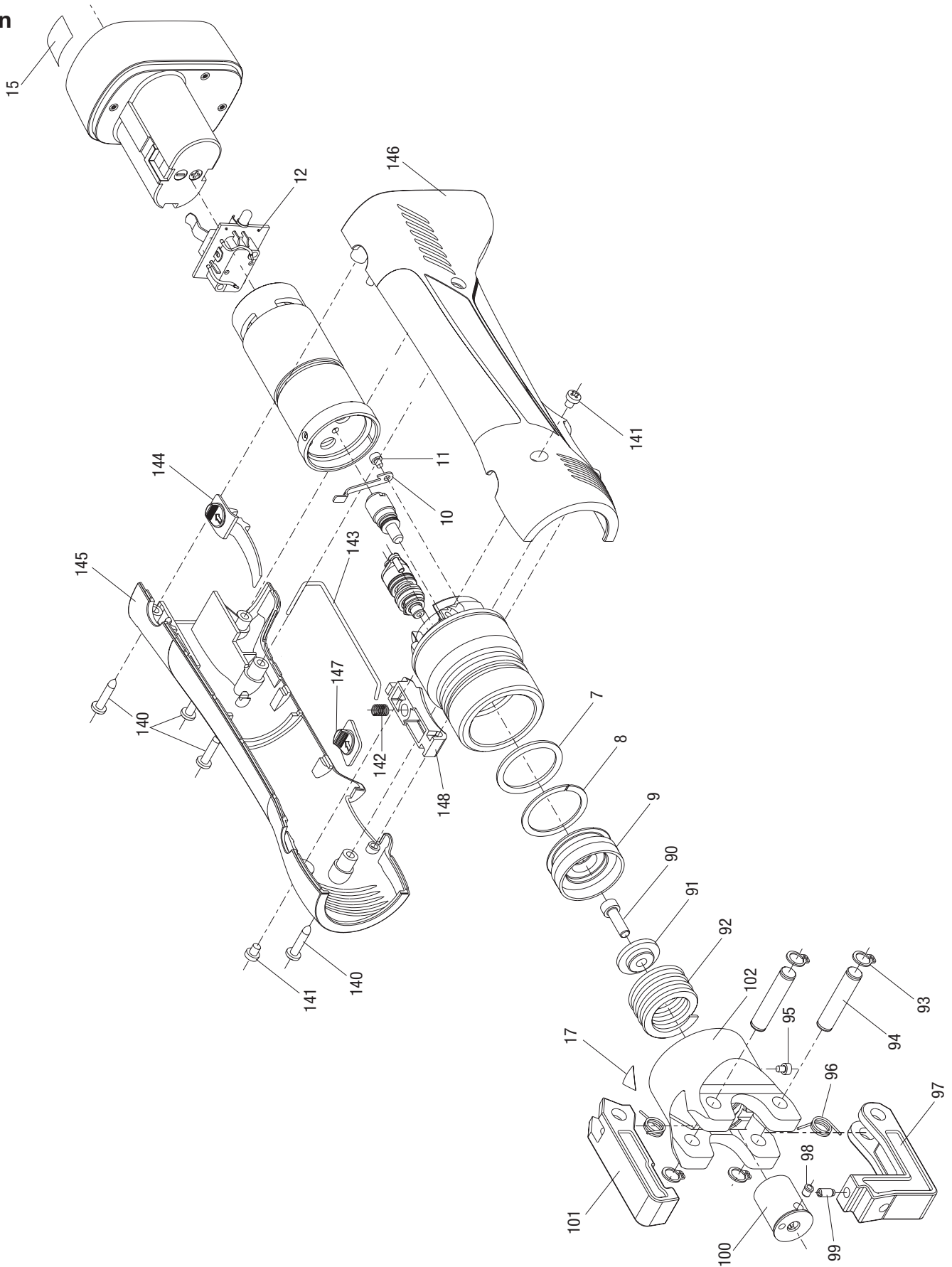
### Before You Begin

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 crimping tool.
3. Reinstall the battery and check the tool again.

Problem	Probable Cause	Probable Remedy
Tool is inoperative.	<p>Dirt, contaminants, etc., in ram area of tool.</p> <p>Crimping tool battery contacts damaged.</p> <p>Tool components worn or damaged.</p>	<p>Clean tool.</p> <p>Reform contacts.</p> <p>Return tool to an authorized Greenlee service center.</p>
Dies stop during operation.	<p>Oil level is low.</p> <p>Air in hydraulic system.</p>	<p>Return tool to an authorized Greenlee service center.</p> <p>Pull trigger and hold retract button simultaneously. Hold for approximately 10 seconds.</p>
LED glows for 20 seconds.	Battery charge low.	Charge or replace battery.
Tool loses oil.	Damaged internal seal.	Return tool to an authorized Greenlee service center.

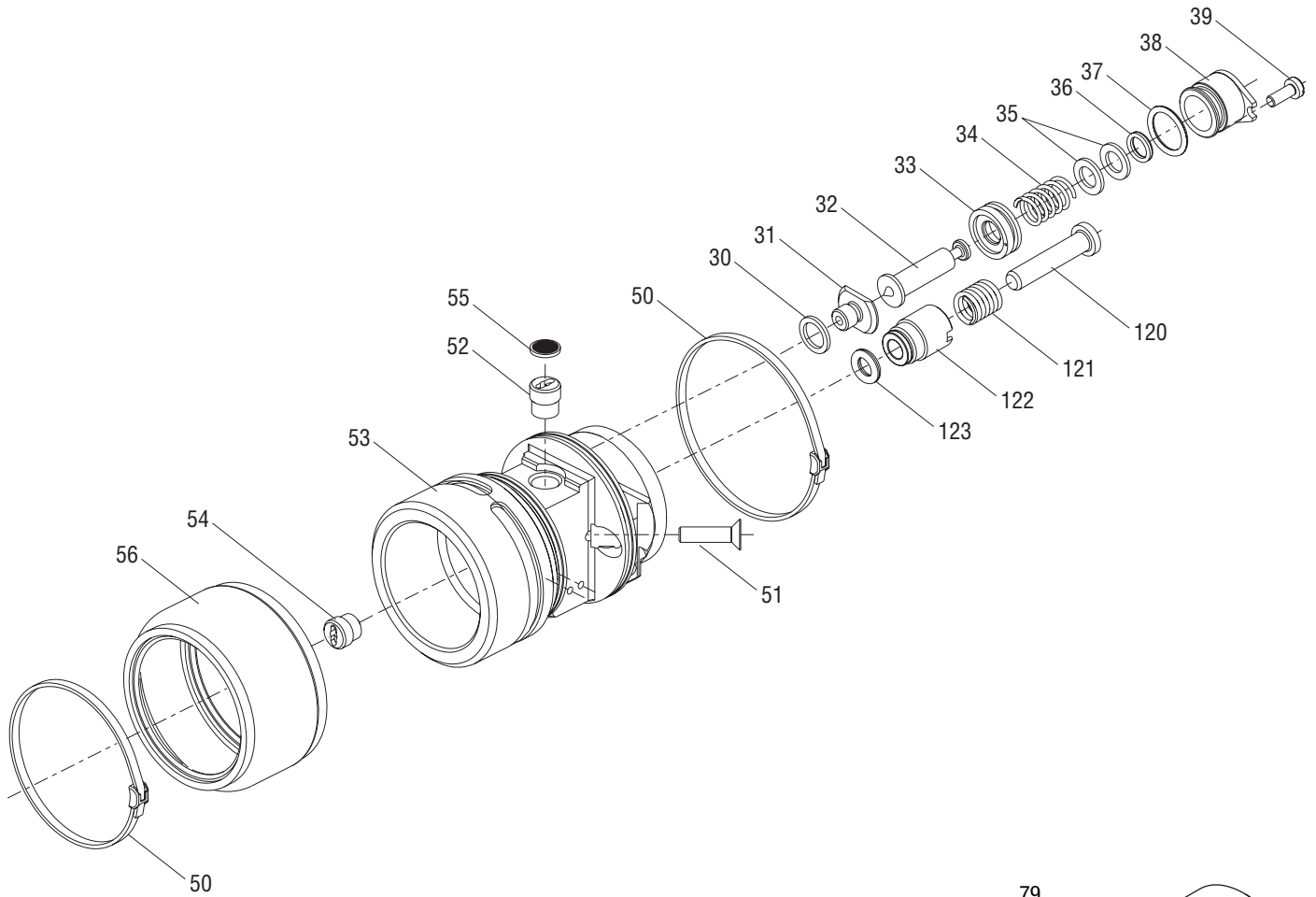
**Illustrations**

**Main**

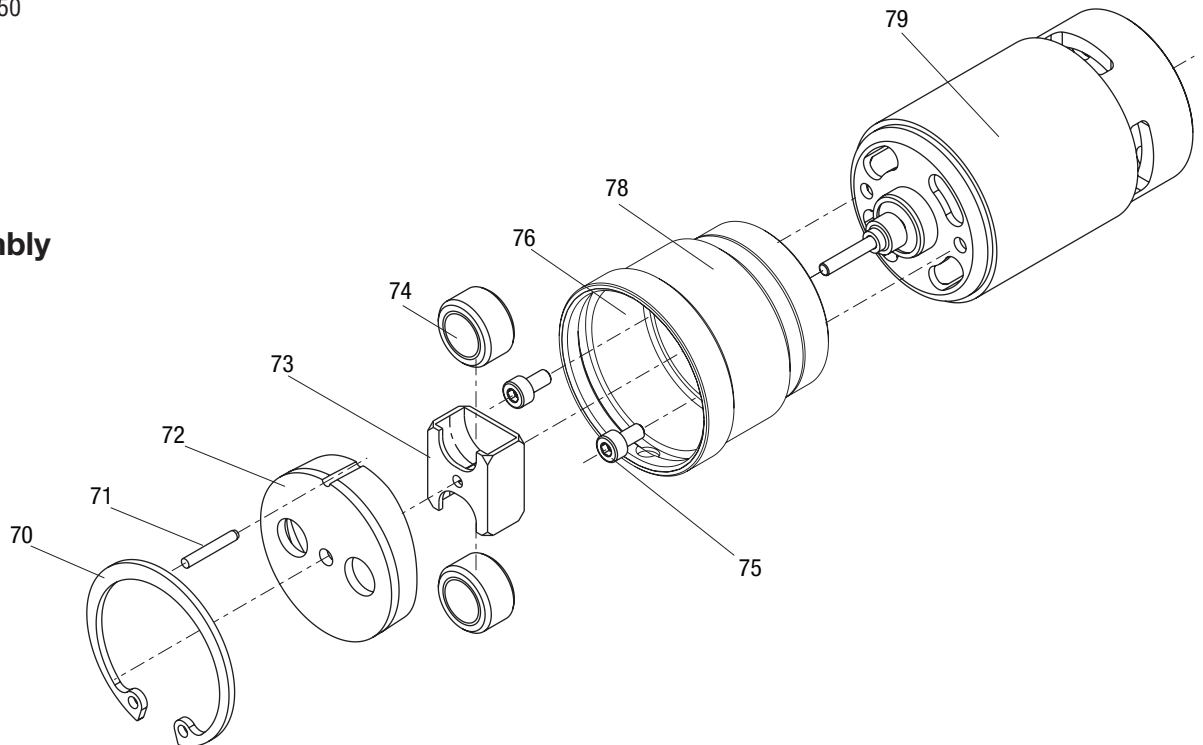


**Illustrations (cont'd)**

**Pump Housing Unit, Relief Valve Unit, and Piston Pump Assembly**



**Motor Assembly**



## Parts List

Key	Part No.	Description	Qty	Key	Part No.	Description	Qty
7*		O-ring .....	1		50018981	Head unit (includes 90–102)	
8*		Backup ring, piston .....	1	90	50019210	Bolt, shoulder .....	1
9	50019082	Bushing .....	1	91	50019058	Disc .....	1
10	50019287	Lever, relief valve .....	1	92	50019236	Spring .....	1
11	50019295	Screw .....	1	93	50034324	Retaining ring .....	4
12	52026640	Switch.....	1	94	50019198	Pin .....	2
13	50019414	Decal, Greenlee GATOR .....	1	95	50019295	Screw .....	1
14	50019422	Decal, Greenlee GATOR .....	1	96	50019678	Spring .....	2
15	50019430	Decal, warning.....	1	97	50019031	Movable head.....	1
16	50019660	Decal, specification .....	1	98	50019694	Pin .....	1
17	50019708	Decal, pinch hazard.....	1	99	50019775	Screw .....	1
	50018922	Relief valve unit (includes 30–39)		100	50019201	Ram adapter.....	1
30*		Seal .....	1	101	50019040	Latch head .....	1
31	50019554	Valve seat .....	1	102	50019180	Fixed head.....	1
32	50019465	Needle valve.....	1		50018990	Piston pump assembly (includes 120–123)	
33	50019546	Plunger .....	1	120	50019317	Piston pump .....	1
34	50103776	Spring .....	1	121	50019015	Spring .....	1
35	50070150	Lock washer .....	2	122	50019309	Piston pump housing .....	1
36*		O-ring .....	1	123*		Piston seal.....	1
37*		O-ring .....	1		50109430	Housing unit, green (includes 140–148)	
38	50019520	Pressure relief.....	1	140	50042076	Screw .....	4
39	50109146	Screw .....	1	141	50019767	Screw .....	2
	50018930	Pump housing unit (includes 50–56)		142	50043960	Compression spring, DA5.5 x L14.0 .....	1
50	52055861	Clamp, 10 pack .....		143	50019341	Link, trigger .....	1
50*		Clamp .....	2	144		Lever, battery release .....	1
51	50019023	Screw .....	1	145		Housing half .....	1
52	50109162	Threaded bushing .....	1	146		Housing half .....	1
53	50019562	Pump block .....	1	147		Button, relief valve.....	1
54	50109308	Threaded bushing .....	1	148		Cover, trigger.....	1
55	50109316	Screen .....	1		* 50047957	Seal kit (includes items marked with an asterisk)	
56	50019449	Reservoir .....	1		50020196	Case with inserts	
	50018957	Motor assembly (includes 70–79)			50107607	Decal, crimping chart	
70	50019651	Retaining ring .....	1		52026638	9.6 V battery	
71	50019589	Pin .....	1		50021788	12 V charger 110 VAC	
72	50019619	Motor cap.....	1		50021800	12 V charger 220 VAC	
73	50019538	Disc housing.....	1		52023076	12 V charger 12 VDC	
74	50019627	Disc .....	2				
75	50019791	Screw .....	2				
76	50019740	Gear lube, 1.5 g.....	1				
78	50109332	Motor adapter .....	1				
79	50018965	Motor, electric.....	1				



USA	800-435-0786	Fax: 800-451-2632
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Canada	800-435-0786	Fax: 800-524-2853
International	+1-815-397-7070	Fax: +1-815-397-9247

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