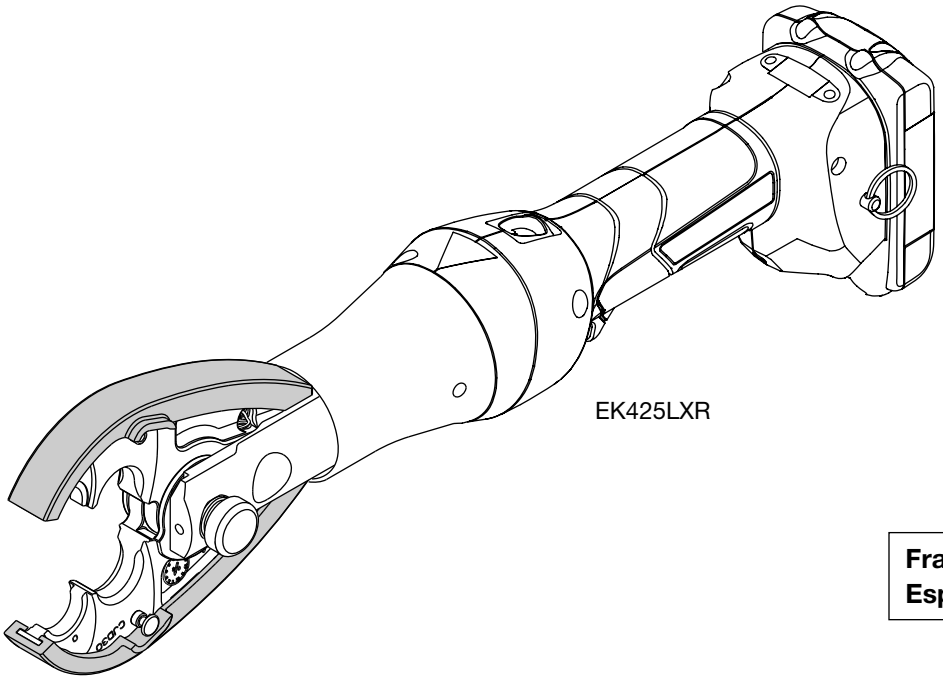
OPERATION MANUAL

GREENLEE®

Serial Number



EK425LXR

GATOR® Remote Service 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

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Table of Contents

KEEP THIS MANUAL

Safety Symbols Key

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER

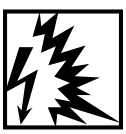
indicates a hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠WARNING

indicates a hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠CAUTION

indicates hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.

	This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.
	This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.
	Always wear gloves when handling or using this equipment to reduce the risk of injury.
	This symbol means always wear hearing protection while using this equipment to reduce the risk of injury.
	This symbol indicates the risk of arc flash.
 	This symbol indicates the risk of electrical shock.
	This symbol indicates the risk of components breaking free and striking nearby personnel.
	This symbol indicates the risk of a hose or rope whipping and causing striking injuries.
	This symbol indicates that risk of injury from falling objects.
	This symbol indicates the risk of hands, fingers or other body parts being cut or severed if caught between sharp elements.
	This symbol indicates the risk of hands, fingers or other body parts being crushed.
	This symbol indicates the risk of fire.
	This symbol indicates the risk of pressurized fluid directed at hand or body parts, causing skin puncture and injection injuries.
	This symbol indicates to not cut here.
	This symbol indicates it is OK to cut here.

General Safety Warnings*

⚠WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery operated (cordless) power tool.

WORK AREA SAFETY

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool. D**istractions can cause you to lose control.

ELECTRICAL SAFETY

- **Power tool plugs must match the outlet. Never modify the plug in any way.** Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord.** Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable, use a RESIDUAL CURRENT DEVICE (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool. D**o not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment (PPE). Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting.** Ensure the switch is in the off-position before connecting to power source and/or BATTERY pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry.** Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

POWER TOOL USE AND CARE

- **Do not force the power tool.** Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or remove the BATTERY pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools and accessories.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

BATTERY TOOL USE AND CARE

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of BATTERY pack may create a risk of fire when used with another BATTERY pack.
- **Use power tool only with specifically designated BATTERY packs.** Use of any other BATTERY packs may create a risk of injury and fire. When BATTERY pack is not in use, keep it away from other metal objects, like paper clip, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another. Shorting the BATTERY terminals together may cause burns or a fire.
- **Under abusive conditions, liquid may be ejected from the BATTERY; avoid contact.** If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the BATTERY may cause irritation or burns.
- **Do not use a BATTERY pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, EXPLOSION or risk of injury.
- **Do not expose a BATTERY pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 265°F (130°C) may cause explosion.
- **Follow all charging instructions and do not charge the BATTERY pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

SERVICE

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
- **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

** The text used in the General Power Tool Safety Warnings section of this manual is required from the applicable EN 62841-1 standard to which this tool is tested. This section contains general safety practices for many different types of power tools. Not every precaution applies to every tool, and some may not apply to this tool.*

Tool Specific Safety Information

⚠DANGER

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

Before operating this tool, read and understand:

- This operator's manual
- The instructions for any other equipment or material used with this tool
- Markings on the tool
- Required work-site safety procedures

Failure to follow all instructions and warnings may result in serious injury.

- **Always use a hot stick and follow rigorous hot stick work practices when using this tool in remote mode, to reduce the risk of injury.**
- **Never allow another high voltage conductor, or grounded point to contact the tool during use.** Always keep the tool housing clear of all conductors to prevent shorting the circuit and causing an arc flash that could result in severe injury or death.
- **Never touch any part of the tool while it is in contact with high voltage, if not avoided severe injury or death will occur.** The tool should be considered as at the same voltage as the circuit.

- **Always use proper high voltage procedures, including use of personal protective equipment, when working near or around high voltage equipment or conductors.** Remain outside of the arc flash boundary in accordance with NFPA 70E for the conductor being cut to reduce the risk of severe injury. If you are not trained and familiar with appropriate job site and PPE requirements do not use this tool.

⚠WARNING

- **Do not use on live electrical lines in handheld mode.** This tool is not insulated, severe injury or death could occur from electric shock and arc flash.
- **Keep your fingers and hands away from the tool head when jaws are moving or the battery is inserted.** Your fingers or hands can be crushed, fractured, or amputated if they become caught in the tool head or between the tool head and other objects.
- **Large forces are generated during use that can break or throw parts and cause injury.** Keep all unnecessary personnel away from work area and wear appropriate PPE.
- **Do not use any worn or damaged dies with this tool.** A damaged or worn die can break and strike nearby personnel.
- **Do not cut cable under tension.** Cable can whip and strike when cut and result in severe injury or death.
- **Do not cut diagonally, twist or pry with jaws while cutting.** Keep cutter jaws at the right angle to the material being cut. The jaw can chip or break and strike nearby personnel.
- **Do not cut cable under tension.** Cable can whip and strike when cut and result in severe injury or death
- **Do not stand directly under overhead cables and this tool when attached to a hot stick.** The cable or tool can fall and cause severe injuries or death.
- **Do not exceed tool capacity, both in size and hardness of material.** Use this equipment only in accordance with these instructions, considering the working conditions and the work to be performed. Use of this equipment for operations different from those intended could result in a hazardous situation
- **Use proper die, connector, and cable combinations, improper combinations can result in an incomplete crimp.** An incomplete crimp can cause a fire.
- **One person must control work process and machine operation.** Only the operator should be in the area when the tool is running and in control of the remote.
- **Proper set up is essential to minimizing risk during use.** Set up the tool and work area according to these procedures to reduce the risk of injury.
- **Before use, inspect the tool and correct any problems before using to reduce the risk of injury and prevent product damage.**
- **If during inspection, damage to tool is observed or suspected, do not use the tool**. Large forces are generated during use that can break or throw parts and cause injury.
- **Confirm proper operation before and after each use to reduce the risk of injury.** If during inspection, hydraulic oil has leaked from the tool or damage to tool is observed or suspected, do not use the tool.
- **Do not use hands to check for oil leaks.** Oil under pressure easily punctures skin. If injured, seek medical attention immediately.
- **Do not modify tool.** Modifying the tool in any manner may result in personal injury and voidance of the tool's warranty. A head that has been welded, ground, drilled or modified in any manner can break during use. To reduce risk of injury, replace and dispose of the whole damaged head, never individual components.
- **Maintain this tool according to these procedures.** Do not perform any maintenance other than as described in this manual. Personal injury or damage to the tool may result.

Greenlee Contact Information

If you have any questions, need to arrange service or purchase parts or accessories for this Greenlee/HDE product: Contact your local Greenlee distributor or Greenlee's Customer Service Center

Additional copies of this manual are available for download at www.greenlee.com

Greenlee Customer Service

USA: 1-800-435-0786 | Canada: 800-435-0786

International: 1-815-397-7070

GRNCustomerService@emerson.com

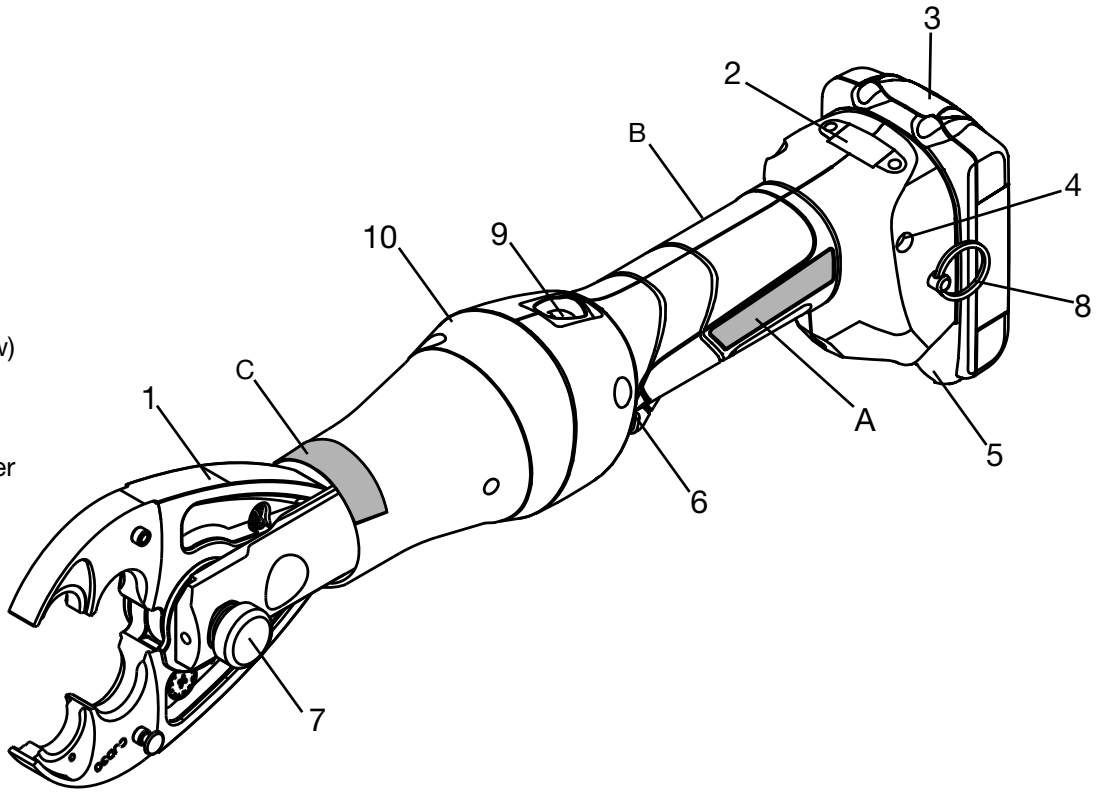
Shipping address:

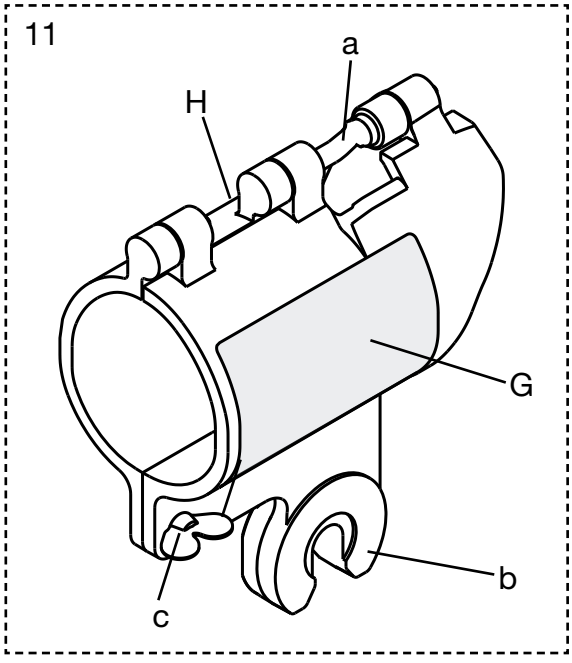
Greenlee Factory Service Center

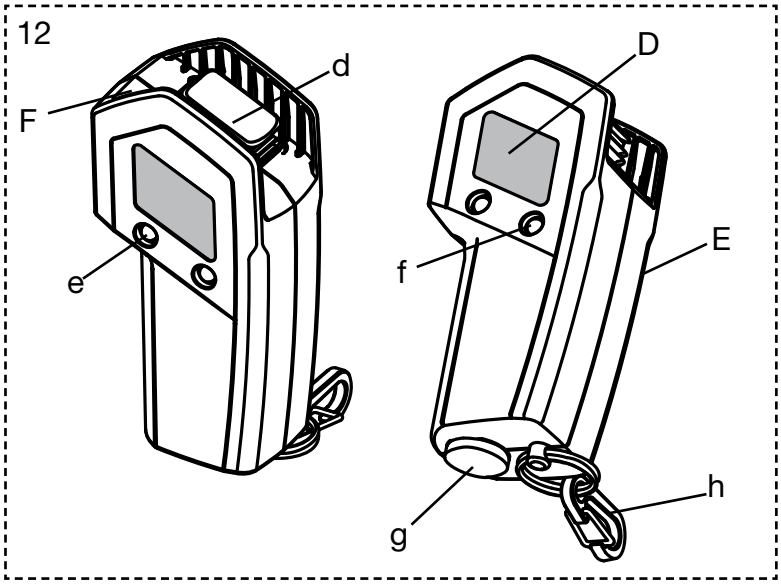
4411 Boeing Dr., Rockford, IL 61109

Tool Identification

1. Tool Head
2. OLED Screen
3. Battery
4. LED Indicator (Red)
5. LED Work Light (White)
6. Trigger
7. Lock Pin
8. Lanyard Ring
9. Retract Button
10. Remote Tool ID Ring (Yellow)
11. Hot Stick Mount
    a. Trigger Lock
    b. Universal Spline Adapter
    c. Wing Nut Lock
12. Remote
    d. Remote Operation Toggle Switch
    e. Blade Movement LED (Green)
    f. Wireless Connectivity LED (Blue)
    g. Battery Port Cover
    h. Remote Carrying Clip







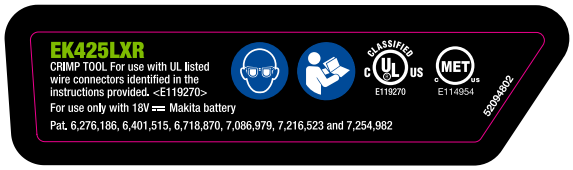
Keep all decals clean and legible, and replace when necessary.

Decals & Tool Markings

A. Gator® Decal
B. Model Information Decal
C. Hazard Decal
D. Remote LED Guide Decal
E. Remote Information Decal
F. Remote ID Etching
G. Mount Safety Decal
H. Mount Set Up Decal

A.

B.



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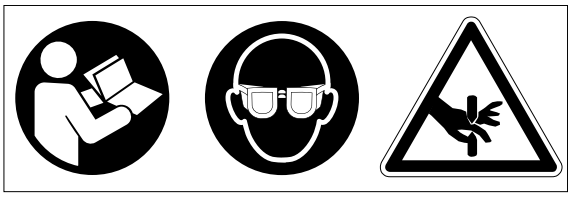

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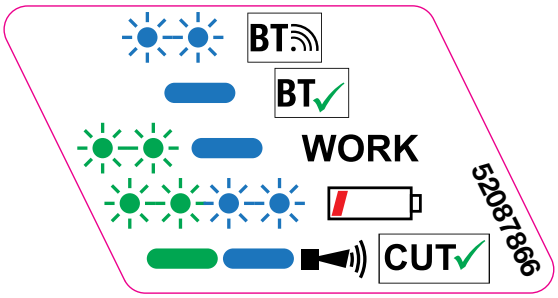
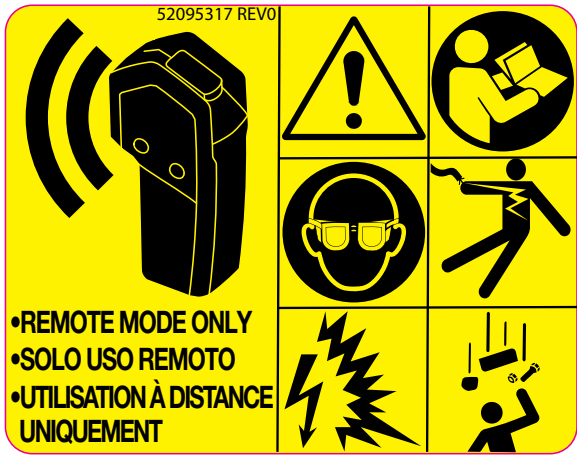
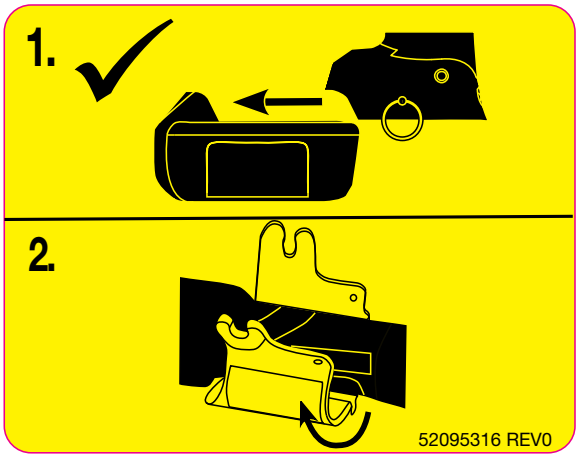


E.

G.



H.



Tool Description

The EK425LX Remote Service Tool is a hand-held, self-contained tool with interchangeable cutting and crimping jaws. This tool can be used remotely when mounted on an appropriate hot stick or as a normal handheld battery hydraulic tool.

Features

- Remote and Handheld Operation Profiles
- Hot Stick Mount
- Wireless Remote
- Connects with Greenlee I-Press App
- OLED Screen
- Retract Button
- Magnetic Solenoid Brake
- Automatic Blade Retraction
- Pressure Sensor for Incomplete Crimp Alerts
- 330° Head Rotation
- Interchangeable Tool Heads for Crimping and Cutting

Specifications

Jaw Force……......6 tons (53 kN)
Jaw Capacities ..... See Table 4 & 5

Dimensions With Battery

Length .....18 in (456 mm)
Width ..... 2.95 (75 mm)
Depth .....4.92" (125 mm)
Weight .....6.4 lb (2.9 kg)

Hydraulic Oil .....Biodegradable Hydraulic Fluid (52057878)
Recommended Operating Temperature Range..... 5 °F to 122 °F (–15 °C to 50°C)
Noise Emissions* .....L_{pA} = 66 dB(A), K_{pa} = 1.5 dB(A)
L_{WA} = 77 dB(A), K_{WA} = 2.5 dB(A)
Battery Charger ..... Read the instructions supplied with the battery charger
Battery Technology..... MAKITA® LXT® Lithium ion BL1815, BL1820, BL1830, BL1840, BL1850
Remote Battery ..... 2 AA (LR03)

**Sound and Vibration measurements are measured in accordance with a standardized test per Standard EN62481-1.*

Sound and vibration emissions may vary due to your location and specific use of these tools.

L_{pA} does not exceed 70 dB(A).

The vibration total value does not exceed 2.5 m/s^2 .

Daily exposure levels for sound and vibration need to be evaluated for each application and appropriate safety measures taken when needed. Evaluation of exposure levels should consider the time a tool is switched OFF and not in use. This may significantly reduce the exposure level over the total working period.

All specifications are nominal and may change as design improvements occur.

LED Signals

Table 1: Tool LED Signals

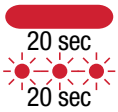
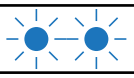
Signal	Red LED	White LED	Sound	Meaning	Action
Red LED stays lit for 20 seconds after trigger is released.	 20 sec			Battery Charge Low	Change or charge the battery.
LED will flash for 20 sec. after trigger is released.	 2x			Motor Current Exceeds 20A During Cycle Tool is Overheated	Allow tool to cool before continuing.
Slow flashing light for 20 sec. at end of cycle.	 20 sec/2 Hz			Internal Error	Send in for service.
Fast flashing light for 20 sec.	 20 sec/5 Hz			Tool Overheating	Allow tool to cool before continuing.
20 sec. steady light then 20 sec flashing after tool cycle	 20 sec 20 sec			Battery Flat	Change or charge the battery.
Tool makes alert sound, both red and white LEDs flash 1 time.	 1x	 1x		Error: Necessary oil pressure for auto-retract is not reached, or there is manual retraction with the motor not running. For crimping: Crimp is not complete.	Inspect workpiece/crimp is within tool capacity or wait for ram to fully retract before starting new cycle.
Tool makes alert sound, both red and white LEDs flash 3 times.	 3x	 3x		Error: Necessary oil pressure for auto-retract is not reached with the motor running. For crimping: Crimp is not complete.	Use manual retract to open tool head and remove workpiece. Inspect workpiece/crimp is within tool capacity.

Table 2: Remote LED Signals

Signal	Green LED	Blue LED	Meaning
Blue light flashes. Green remains off.			Searching for Wireless Signal
Blue light solid. Green remains off.			Wireless Signal Found & Paired
Green light flashes and blue light is solid.			Tool Head is Moving
Green and blue lights both flash.			Remote Battery is Low
Green and Blue LEDs solid.			Cut is Complete (Only for products equipped with end position sensor)

OLED Screen

The OLED screen displays information about the tool and error codes in the event of abnormal operation (See Troubleshooting). Insert battery, then press and release trigger to turn ON the screen. Use the right and left buttons to cycle through the displays.

To change Units or User Profile:

1. Press and hold both buttons (Fig.1) after cycling to correct display. (See Table 3)
2. Cycle through menu with right button (Fig.1).
3. Press and release trigger confirm selection (Fig.2).

The screens will not cycle after the remote is paired with the tool.

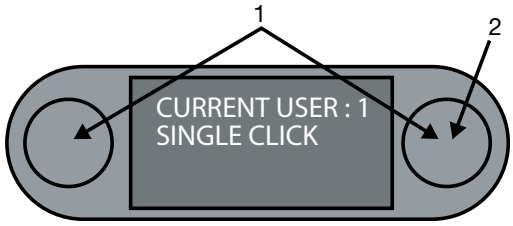


Figure 1

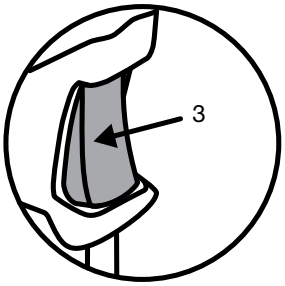


Figure 2

Table 3: OLED Screen

Display	Information Shown
P XXX PSI P̂ XXX PSI	Wireless Status; Battery Charge; Current Pressure; Maximum Pressure. Units can be changed between XXX and PSI in this screen.
INFO FW: 2.0 123456AB001	Firmware Version & Serial Number
CURRENT USER : 1 DOUBLE CLICK MRS+	Current User Profile Choose Remote and Double Click profiles in this screen. This profile will stay selected, ON or OFF, until changed.
#ODS #DAYS	Number of Tool Cycles Number of Days Until Next Service
TOTAL: t= 1.35 h Q= 8.87 Ah n= 1560	Total Elapsed Operating Hours (t) Total Ah used (Q) Total Number of Cycles Since Date of Manufacture (n)

I-Press App

This tool has wireless capability that allows it to communicate with the Greenlee i-Press App on your smart device. If not already installed, the “i-press Klauke Software Solutions” app is available through the App Store or Google Play.

To connect to the app:

1. Open the app on your smart device and select the “Greenlee” option.
2. Switch ON the wireless function on your smart device.
3. Press and release the trigger to activate the tool to establish a connection. Wait up to 20 sec. for the model number to appear on the app. Repeat trigger press if no option appears.
4. Choose the option on the screen for your tool based on model number.

The app will allow you to create projects, change user profiles, and review tool data (tool pressure readings, battery charge, the last service date, etc.).

Further instructions how to use the i-press features are within the app.

Remote tools in wireless mode and paired with a remote will not connect with the app.

i—Press is a registered trademark of Gustav Klauke GmbH
App Store is a registered trademark of Apple Inc.
Google Play is a registered trademark of GOOGLE INC.

Training & Qualifications

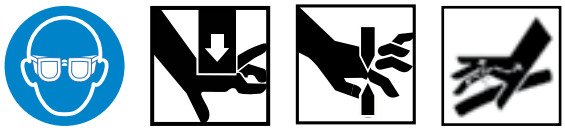
This product is designed for use by professionals trained for working on and around high voltage electrical equipment. If you are not trained in the work methods required for safe operation, do not use this product.

Always follow all training and proper live electricity job site safety precautions outlined by your industry, government, and employer. See also OSHA standard for electric power generation, transmission and distribution (29 CFR 1910.269) and NEC 70E: Standard for Electrical Safety in the Workplace.

When required, such as for installation, removal and repair of lines energized at more than 600V, it is recommended at least a second trained and qualified person is present at appropriate distance.

Pre-Operation Inspection

⚠WARNING



- **Before use, inspect the tool and correct any problems before using to reduce the risk of injury and prevent product damage.**
- **Do not use hands to check for oil leaks.** Oil under pressure easily punctures skin. If injured, seek medical attention immediately.
- **If during inspection, damage to tool is observed or suspected, do not use the tool**. Large forces are generated during use that can break or throw parts and cause injury.

Remove battery before inspecting the tool head. Severe injury can result from unexpected activation of the tool.

1. Clean any oil, grease or dirt from the tool body and head, including handles and controls. A clean tool aids inspection.
2. Inspect for wear and damage, such as cracks, gouges, or chips in tool housing and head. Do not use if any parts are worn, corroded, rusted, or cracked.
3. Inspect the tool head for any cracks, gouges, or chips or significant wear. Replace cutting heads with dull or chipped blades before operating for a clean cut. Do not sharpen blades, send in for service. Replace crimping heads with any of the listed imperfections to reduce the risk of the jaws breaking and throwing parts.
4. Inspect for leaking hydraulic oil. Do not use if leak is detected, send in for service.
5. Test the rotation of the head assembly, the head should be free to rotate almost one full turn (about 330˚). If head rotates past a full turn, send in for service. A loose head increases the risk of the head separating from the body.
6. Inspect the hot stick adapter for damage and the presence of the wing nut. Replace if adapter is damaged or wing nut is missing.
7. Check for proper assembly and completeness, do not use if there are missing or misaligned parts.
8. Check for the presence and condition of decals.
9. Inspect and maintain any other equipment being used per its’ instructions and is functioning properly.

   If any issues are found, do not use this tool until corrected.

Work Area & Tool Set Up

⚠WARNING

- **Proper set up is essential to minimizing risk during use.** Set up the tool and work area according to these procedures to reduce the risk of injury.
- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Large forces are generated during use that can break or throw parts and cause injury.** Keep all unnecessary personnel away from work area and wear appropriate PPE.
- **Always wear appropriate PPE to reduce the risk of injury.**

1. Confirm work area safety (Inspect the job site in accordance with OSHA and employer work requirements and see General Power Tool Safety Warnings). Operate in a clear, level, stable and dry location.
2. Confirm the circuit is de-energized or properly grounded before using this tool. Follow all workplace procedures for control of hazardous energy to prevent unintended activation while working. Always handle the line as though it is energized. Cutting live cables can result in arc flash, electrocution, or death.
3. If cutting, inspect cable to confirm that the cable can be cut by this tool, cutting the wrong type of cable can damage the tool or cause personal injury. (See, Specifications).
4. Confirm cutting tool heads have been properly maintained. Cutting tools with sharp cutting edges are less likely to bind and are easier to control. Do not sharpen blades or replace individual components, replace the whole damaged head or send in for service to be sharpened. Discard damaged heads using proper disposal methods.
5. If crimping, confirm the correct dies are available for the connectors and cable to be crimped.
6. Check that the work site is easily recognizable to outside observers to prevent people from coming into the area while the tool is being used. Barriers or cones around work site are some of the ways to do this.
7. For remote use, identify the appropriate hot stick for the operation and inspect per industry guidelines.
8. Make sure all other equipment has been properly inspected.

Ek425LXR has two profiles, handheld and remote. Handheld operation allows the tool to used as normal. This tool can perform cutting and crimping operations by using one of eight tool heads. Remote operation allows the operator to be physically separated from the tool due to a special paired remote and an appropriate hot stick.

Before operating tool in either profile, check the correct tool head is installed. Remove battery before attaching changing the tool head. Severe injury can result from unexpected activation of the tool.

To change tool heads:

1. Press and twist a quarter turn left on the lock pin. Release, the pin should spring back further than in the locked position. (Fig. 3)

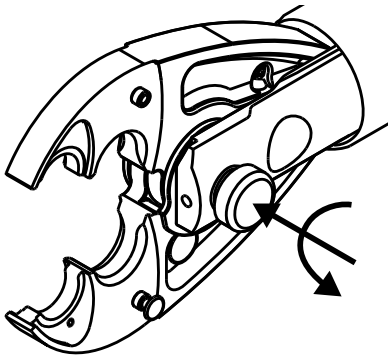


Figure 3

2. Pull out pin from current tool head to disconnect it from tool body.
3. Align hole in new tool head between prongs in tool body.
4. Press lock pin through tool head until it locks in place. Pin should not pull free and tool head should be able to rock back and forth slightly. (Fig. 4)

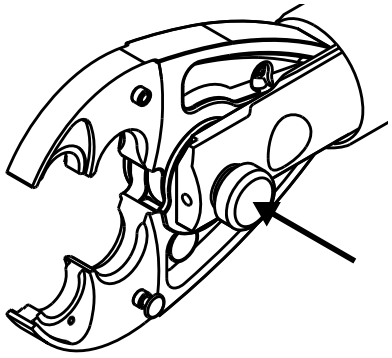


Figure 4

See Tables 4 and 5 in for help identifying the tool heads.

Table 4: Cutting Jaws		
CJB	**CJ-CUAL**	**CJ-ACSR**
		
Soft Steel Locks & up to 3/8 in. Bolt Seals	600 kcmil Copper (Cu) & Aluminum (Al)	477 kcmil Pelican ACSR 5/16 in. Guy Strand (EHS) 3/8 in. Guy Strand (HS)

Table 5: Crimping Jaws		
Capacity	**CJD3BG**	**CJD3O**
• 5/8 in Service Entrance Connectors (10-1/0 AWG) • 0.840 Service Entrance Connectors (1/0-4/0 AWG) • Copper "H" Taps (10-2 AWG) • Aluminum "H" Taps (6-4/0 AWG) • Copper Tension Splices (6-2/0 AWG) • Aluminum Tension Splices (6-4/0 AWG) • One Piece ACSR Tension Splices (4-1/0 AWG) • Two Piece ACSR Tension Splices (2 AWG to 477 kcmil) • Aluminum Jumper Splices (4 AWG to 266.8 kcmil) • Stirrups (2-4/0 AWG) • Aluminum Color-Coded Lugs and Splices (8-4/0 AWG)		
	D3 & BG Die Groove	D3 & O Die Groove
CJD3	**CJK**	**CJXPJ**
		
Single D3 Die Groove	Kearney Dies	Nicopress X, P & J Die Grooves

CJ22 (Fig.5) & KA22/KC22-type Die Selection Tables

Crimps made on copper cable and connectors with Greenlee KC22-type dies are cUL and UL classified. Crimps made on copper or aluminum cable with Greenlee KA22-type dies and the dual-rated 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.

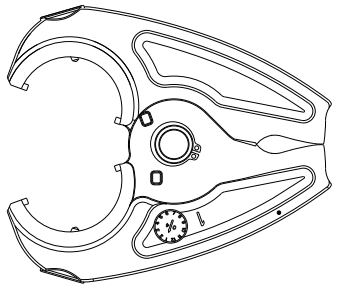


Figure 5

Table 6: Dies for Copper Connectors

Catalog Number	UPC Number	Cable Size	Color Code
KC22-8	03079	8 AWG	Red
KC22-6	03080	6 AWG	Blue
KC22-4	03081	4 AWG	Gray
KC22-2	03082	2 AWG	Brown
KC22-1	03083	1 AWG	Green
KC22-1/0	03084	1/0 AWG	Pink
KC22-2/0	03085	2/0 AWG	Black
KC22-3/0	03086	3/0 AWG	Orange
KC22-4/0	03087	4/0 AWG	Purple
KC22-250	03088	250 kcmil	Yellow
KC22-300	03089	300 kcmil	White
KC22-350	03090	350 kcmil	Red
KC22-400	03091	400 kcmil	Blue
KC22-500	03092	500 kcmil	Brown
KC22-600B	03094	600 kcmil	Green

Table 7: Dies for Dual-rated Aluminum Connectors

Catalog Number	UPC Number	Cable Size
KA22-8	06744	8 AWG
KA22-6	06745	6 AWG
KA22-4	06746	4 AWG
KA22-2	06747	2 AWG
KA22-1	06749	1 AWG
KA22-1/0	06750	1/0 AWG
KA22-2/0	06751	2/0 AWG
KA22-3/0	06752	3/0 AWG
KA22-4/0	06753	4/0 AWG
KA22-250	06754	250 kcmil
KA22-300	06755	300 kcmil
KA22-350	06756	350 kcmil

Table 8: Connector Selection for CJ22 Crimping Jaw Range:

Copper — 8 AWG to 600 kcmil†; Dual-rated Aluminum — 8 AWG to 350 kcmil

When used with KC22-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†	No. of Crimps*
Copper Splice	Short	VHSS	CSP	YS-L[s]	CT	SCSS/SCS	54504-54518	BCU	A
	Long	VHS	CU	YS[s]	CTL	SCL/SCH	54804-54818	BBCU	
Copper Lugs	Short	VHCS	CTL-2/CTL	YA-2LN/YA-L/YA-2L YA/YA-L-TC/YA-L-2TC	CSW CRA/CRB	LCAS/LCA LCD	54104-54118 54204-54218	BLU	
	Long	VHCL	CTL-L/LCN	YA-2N	CLN/CLW CRA-L/CRB-L CRA-2L/CRB-2L	LCB/LCC	54930BE-54918BE 54850BE-54876BE	BBLU	

When used with KA22-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	No. of Crimps*
Dual-rated Aluminum Splice	—	VACS	ASP	YS-A	AS ASN	SA	60501-60565	PIK	B
Dual-rated Aluminum Lugs	—	VACL	ATL	YA-A YA-ATN	ACL/ACN 2ACL/2ACN ALNS/ALNN/ALND	LAA/LAB	60101-60166 60230-60267	BLUA	

95R7

* 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 600 kcmil: 2 crimps

B — 8 to 2 AWG: 2 crimps
1 to 3/0 AWG: 3 crimps
4/0 AWG to 350 kcmil: 4 crimps

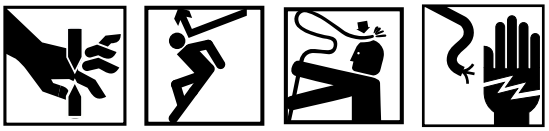
** 6 AWG to 350 kcmil

† 500 kcmil maximum with Penn-Union connectors

S 8 AWG to 350 kcmil with Burndy copper splices

Handheld Operation: Cutting

⚠WARNING



- **Keep your fingers and hands away from the tool head when jaws are moving or the battery is inserted.** Your fingers or hands can be crushed, fractured, or amputated if they become caught in the tool head or between the tool head and other objects.
- **Do not cut cable under tension.** Cable can whip and strike when cut and result in severe injury or death.
- **Do not exceed tool capacity, both in size and hardness of material.** Use this equipment only in accordance with these instructions, considering the working conditions and the work to be performed. Use of this equipment for operations different from those intended could result in a hazardous situation
- **Do not use on live electrical lines in handheld mode.** This tool is not insulated, severe injury or death could occur from electric shock and arc flash.
- **Do not cut diagonally, twist or pry with jaws while cutting.** Keep cutter jaws at the right angle to the material being cut. The jaw can chip or break and strike nearby personnel.

The EK425LXR can be used for normal handheld operations such as cutting cable.

1. Remove battery before installing appropriate head. (See Table 4)
2. Insert battery.
3. Navigate OLED screen to select Double Click user profile. (See Table 3: OLED Screen)
4. Press and release trigger to activate user profile.
5. Double click and hold the trigger for one complete cycle to test the tool, support tool and keep hands away from tool head while cutting head is moving.
6. Hold tool steady and position tool at a 90° angle to the cable (Fig.6) and the cable is in the open jaw. Do not cut diagonally or twist work piece/tool during operation, this can result in the jaw breaking or chipping. Large forces generated during cutting can throw broken pieces and cause injury.
7. Double click and hold the trigger until the cutting cycle is complete. The tool head will automatically open at the end of a cycle. Release the trigger at any time to stop the tool.

   Press and hold the retract button to return the blade to the open position. The red LED and an audible beep will be active for 2 seconds.

   Note: Tool will automatically shut off when idle for 15 min. This will be indicated by countdown on the OLED screen. Pressing the trigger or any buttons will reset the countdown.

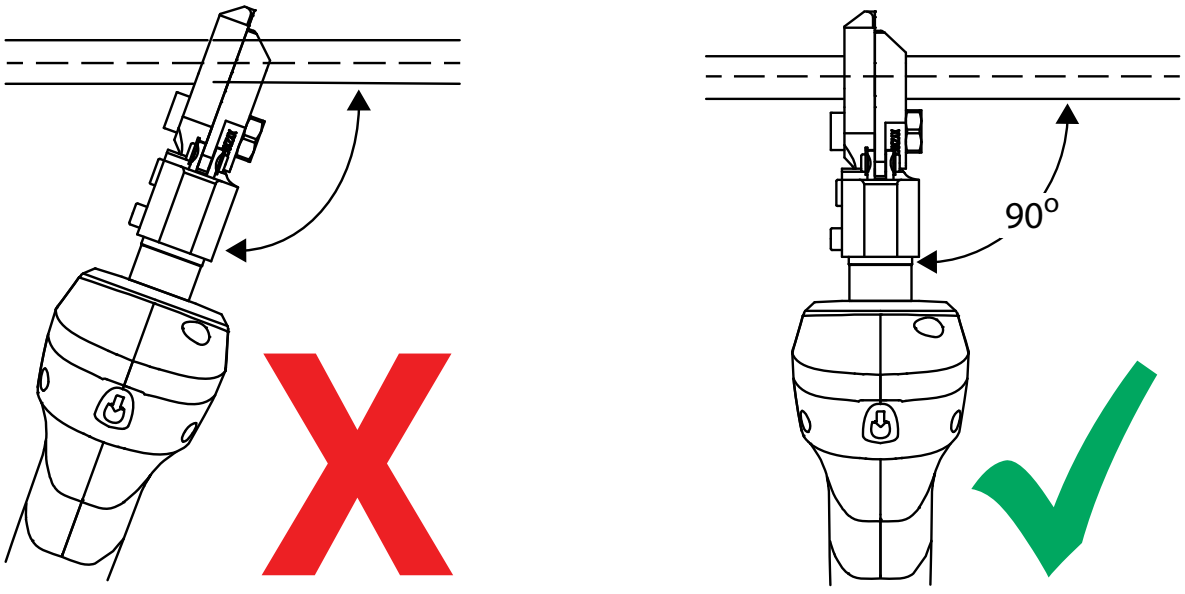
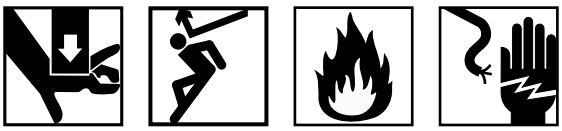


Figure 6

Handheld Operation: Crimping

⚠WARNING



- **Keep your fingers and hands away from the tool head when jaws are moving or the battery is inserted.** Your fingers or hands can be crushed, fractured, or amputated if they become caught in the tool head or between the tool head and other objects.
- **Use proper die, connector, and cable combinations, improper combinations can result in an incomplete crimp.** An incomplete crimp can cause a fire.
- **Do not use any worn or damaged dies with this tool.** A damaged or worn die can break and strike nearby personnel.
- **Do not exceed tool capacity, both in size and hardness of material.** Use this equipment only in accordance with these instructions, considering the working conditions and the work to be performed. Use of this equipment for operations different from those intended could result in a hazardous situation
- **Do not use on live electrical lines in handheld mode.** This tool is not insulated, severe injury or death could occur from electric shock and arc flash.

Each crimping jaw is compatible certain style jaws. Make sure the jaw installed is correct for the dies to be used. Interchangeable dies may be used in the standard die opening. Dies that may be used include:

- Greenlee KD6 series
- Burndy W and X series
- ILSCO ND series
- Huskie HT58 series
- Panduit CD-2001 series
- Other industry W-type dies

Installing Dies

1. Remove battery.
2. Install appropriate head for the dies to be used. (See Table 4)
3. Install dies in jaws making certain that they are properly secured by the spring-loaded, positive lock, die buttons.

Preparing Cable

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

Crimping Procedure

1. Insert battery.
2. Navigate OLED screen to select Double Click user profile. (See OLED Screen)
3. Press and release trigger to activate user profile.
4. Double click and hold the trigger for one complete cycle to test the tool, support tool and keep hands away from tool head while cutting head is moving.
5. Insert cable into the appropriate connector or terminal.
6. Align the cable and connector so they are centered in the crimping jaws. Start crimping from the appropriate start point.
   - For splices and "H" frame connectors, start the 1st compression in the center alternating sides if possible. (Fig.7)

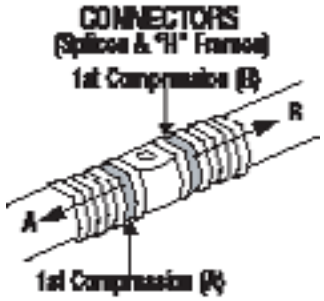


Figure 7

   - For terminals, start the 1st compression from the side nearest the terminal pad and travel back along the cable. (Fig.8)

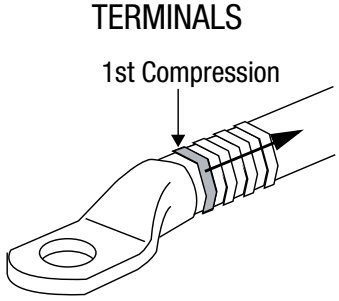


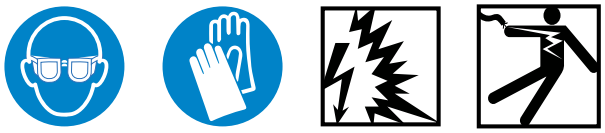
Figure 8

7. Double click and hold the trigger until the crimping cycle is complete and the ram retreats. The tool head will automatically open at the end of a cycle. The crimp is not complete if the ram does not automatically retreat and the LEDs flash. A beeping sound will also be heard. Release the trigger at any time to stop the tool.

   Press and hold the retract button to return the blade to the open position. The red LED and an audible beep will be active for 2 seconds in the case of an interrupted cycle.
8. Continue crimping the connector until the correct number of crimps has been completed.

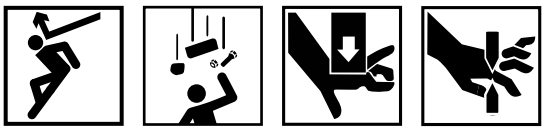
Remote Operation Set Up

⚠DANGER



- **Never touch any part of the tool while it is in contact with high voltage.** The tool should be considered as at the same voltage as the circuit.
- **Always use proper high voltage procedures, including use of personal protective equipment, when working near or around high voltage equipment or conductors.** Remain outside of the arc flash boundary in accordance with NFPA 70E for the conductor being cut to reduce the risk of severe injury. If you are not trained and familiar with appropriate job site and PPE requirements do not use this tool.
- **Always use a hot stick and follow rigorous hot stick work practices when using this tool in remote mode, to reduce the risk of injury.**
- **Only a person trained in working around and on high voltage electric systems should use this tool.** The voltages these instruments operate at are to be considered live and dangerous and are lethal. Severe injury or death can occur if improperly used.
- **Never allow another high voltage conductor, or grounded point to contact the tool during use.** Always keep the tool housing clear of all conductors to prevent shorting the circuit and causing an arc flash that could result in severe injury or death.

⚠WARNING



- **Keep your fingers and hands away from the tool head when jaws are moving or the battery is inserted.** Your fingers or hands can be crushed, fractured, or amputated if they become caught in the tool head or between the tool head and other objects.
- **Do not stand directly under overhead cables and this tool when attached to a hot stick.** The cable or tool can fall and cause severe injuries or death.
- **One person must control work process and machine operation.** Only the operator should be in the area when the tool is running.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- **Large forces are generated during use that can break or throw parts and cause injury.** Keep all unnecessary personnel away from work area and wear appropriate PPE.
- **Do not exceed tool capacity, both in size and hardness of material.** Use this equipment only in accordance with these instructions, considering the working conditions and the work to be performed. Use of this equipment for operations different from those intended could result in a hazardous situation

This profile is meant to be used with a remote and an appropriate hot stick. Before operation, it is important the tool is properly secured to the hot stick and paired to the remote.

Mount Tool to Hot Stick

1. Remove battery before attaching the hot stick mount to the tool. Severe injury can result from unexpected activation of the tool.
2. Unscrew the wing nut to open the mount.
3. Open the mount and place it around the housing of the tool. (Fig. 9)

Figure 9

4. Close the mount around the handle so that the hinge presses down on the trigger.
5. Tighten wing nut and screw so the mount is secure and pressing down on the trigger. (Fig. 10)

Figure 10

6. Line up hot stick head and hot stick universal spline adapter. (Fig. 11)

Figure 11

7. Insert the hot stick mount knob from the tool side and turn enough to attach to the hot stick end. Leave the knob loose enough to allow for adjustment of the position then tighten to engage the teeth to keep the cutter in position. (Fig. 12)

Figure 12

Pairing Remote

1. Insert battery into tool.
2. Navigate the screen (see Table 3: OLED Screen) to select Remote user profile.
3. Press Extend on the toggle switch on the remote to activate Remote mode. The blue LED on the remote will start flashing. (Fig.13)

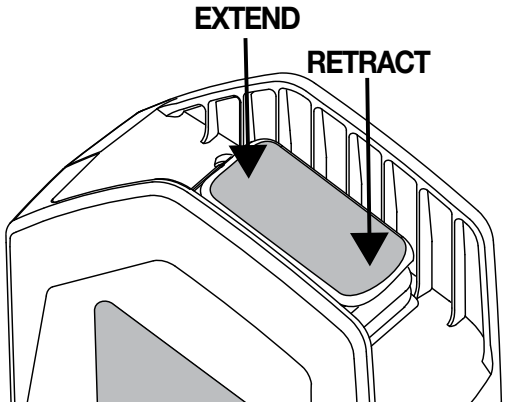


Figure 13

4. Wait for the Remote ID prompt to appear on the screen (Fig.14), then press the left OLED button. The ID of the remote is etched on the remote.

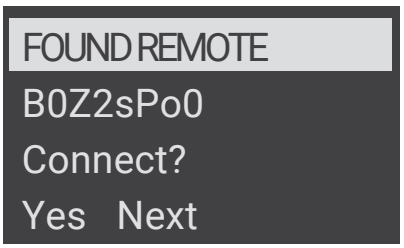


Figure 14

5. When prompted by the tool screen, press the remote toggle switch to complete the pairing. The pairing is complete with the blue LED stops flashing and remains solid. (Fig.15)

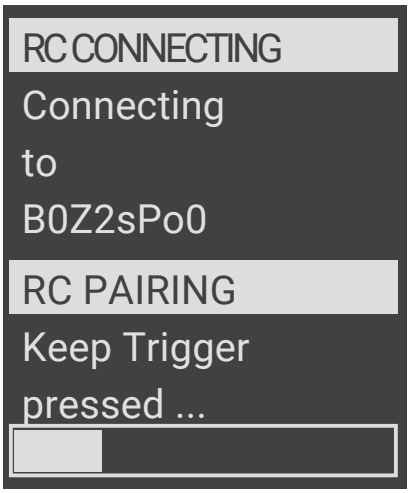


Figure 15

6. Double click Extend on toggle switch to activate remote operation. Test the connection by double clicking and holding the toggle switch. At the end of a tool cycle the tool head will automatically open.

   While the tool head is moving the green LED on the remote will flash.

Remote Operation

1. Locate a place to stand that provides a clear view of the cable to be cut or crimped. Do not stand directly below the cable to reduce the risk of the cable or tool falling and causing injury.
2. Hold the hot stick with both hands and brace the end of the hot stick with your foot or the basket wall to reduce the risk of twisting or losing control of the tool. Extend the hot stick and keep the hot stick angled slightly in front of you (Fig. 16).

   Angling the hot stick with the tool too far from the body increases the risk loosing control and dropping the tool. Keep any bystanders away from the operator at least the length of the extended hot stick to reduce the risk of the tool end falling and causing injury. Special training is needed if using a hot stick greater than 8.5 ft. (2.6 m) from the ground.
3. Hold tool steady and follow the instructions for cutting or crimping outlined in the Handheld section of this manual.
4. Double click **Extend** on the remote toggle until the cut is complete. A tool cycle can be interrupted at any time by releasing the toggle and retracted by pressing and holding **Retract.**

Note: The tool will automatically shut down after 30 min. of idleness when in Remote mode. A countdown will show on the OLED screen and will reset when the remote is used or disconnected.

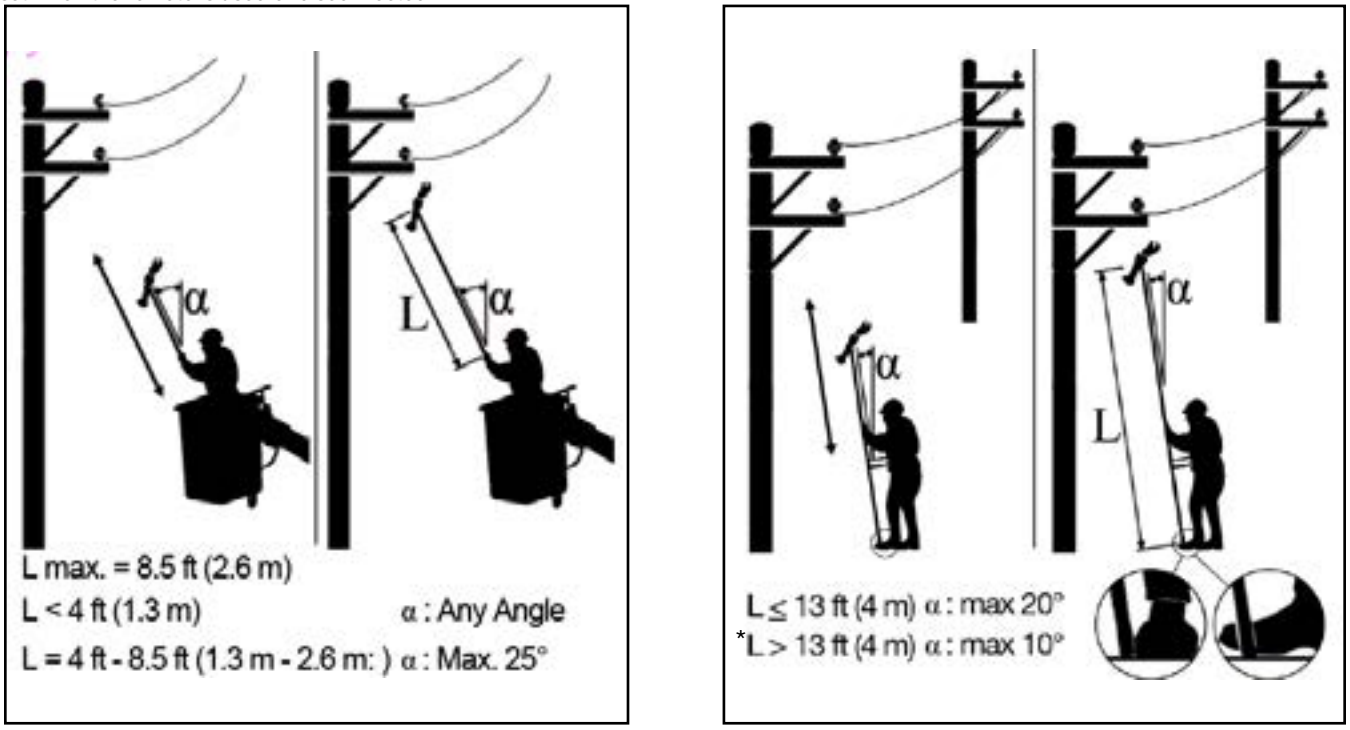


Figure 16

**This tool is not certified for use with hot sticks longer than 13ft (4m). It requires more strength to control the tool on a longer hot stick. Keep the hot stick closer to the body to reduce the risk of losing control and causing injury.*

Overhead Cutting

If cutting long overhead cables that are potentially energized, pay attention to the current flow and cut the cable in a way that reduces the risk of the energized end of the cable falling. (Fig. 17)

If a cable falls to the ground and is energized, lethal levels of electricity can be present in the ground around where the cable fell. This creates a Live Working Zone containing potentially life-threatening step voltage. Step voltage occurs when a person walks in the voltage funnel (Fig. 18). They are electrocuted when they put their foot down while walking. The difference in electric potential causes the electricity to pass through their body from the foot of higher voltage to the foot with lower voltage.

The ground will disperse the electricity, meaning the further a person is from where the energized cable touches the ground, the lower the risk lethal levels of electricity is present. The size of the Live Working Zone depends on the voltage from the cable and will increase in size with higher voltage. The Live-Work Minimum Approach Distances from NESC rule 441* (Table 9) provides guidance on the distance the operator and bystanders should stand to be outside of the potential live working zone when cutting cable.

If an area is potentially energized, follow all safety protocols outlined by your employer and national safety organizations to move away from the Live Working Zone into the Vicinity Zone and further.

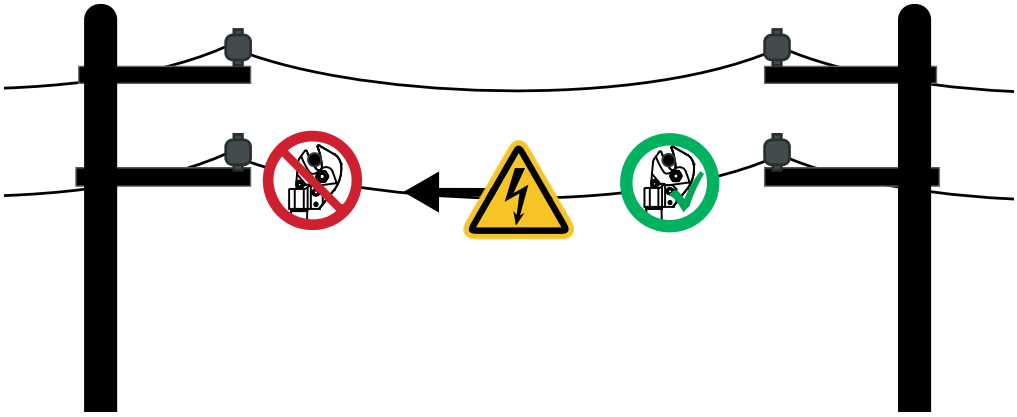


Figure 17

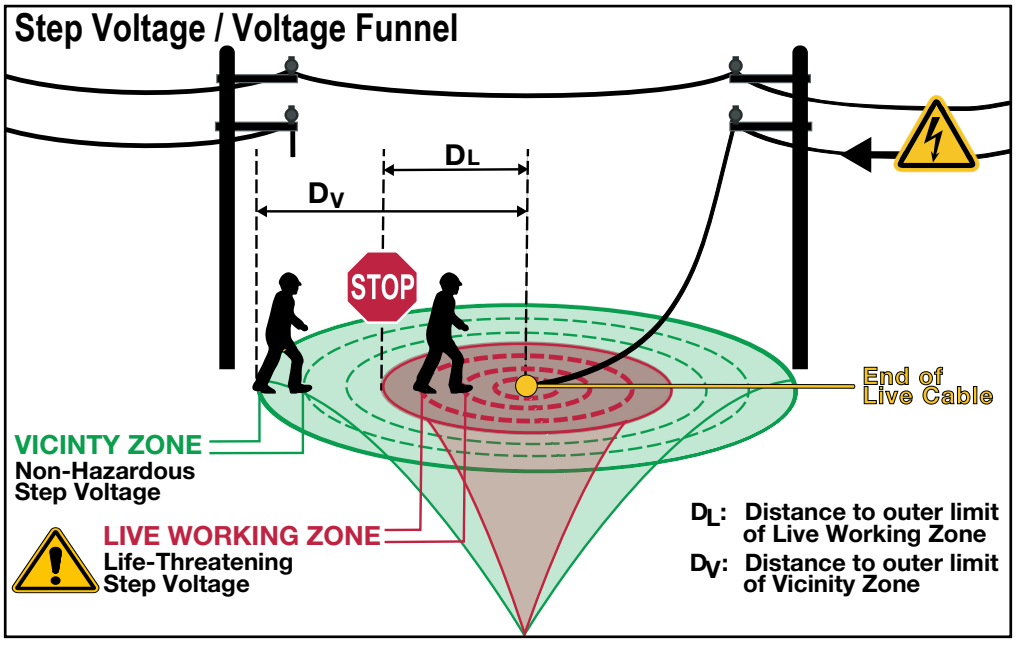


Figure 18

**These tables and figures are meant to provide guidance on operating distances and are not a substitute for proper training or employer safety policies in high voltage working zones.*

Table 9: AC Live-Work Minimum Approach Distance
(See NESC Rule 441 in its entirety for more details)

Phase-to-Phase(kV) □◇△		Distance to Employee*			
		Phase-to-Ground		Phase-to-Phase +	
Min	Max	(m)	(ft-in)	(m)	(ft-in)
0	0.050 □	Not specified		Not specified	
0.051	0.300 □	Avoid contact		Avoid contact	
0.301	0.750 □	0.32	1-1		
0.751	15.0	0.64	2-2	0.67	2-3
15.1	36.0	0.73	2-5	0.87	2-10
36.1	46.0	0.79	2-7	0.94	3-1
46.1	72.5	0.89	2-11	1.15	3-9

Phase-to-Phase (kV) ✿●■		Distance to Employee from Energized Part*					
		Without Tools◆▲ Phase-to-Ground		With Tools Phase-to-Ground		With Tools Phase-to-Phase	
Max	Min	(m)	(ft-in)	(m)	(ft-in)	(m)	(ft-in)
72.6	121.0	0.94	3-1	1.01	3-4	1.37	4-7
121.1	145.0	1.07	3-7	1.15	3-10	1.62	5-4
145.1	169.0	1.20	4-0	1.29	4-3	1.88	6-3
169.1	242.0	1.58	5-2	1.71	5-8	2.77	9-2
242.1	362.0	2.56	8-5	2.75	9-1	4.32	14-3
362.1	550.0	3.38	11-1	3.61	11-11	6.01	19-2
550.1	800.0	4.54	14-11	4.82	15-10	8.87	29-2

**Distances listed are for standard atmospheric conditions. The data used to formulate this table was obtained from test data taken with standard atmospheric conditions. Standard atmospheric conditions are defined as temperatures above freezing, wind less than 15 mi/hr or 24 km/hr, unsaturated air, normal barometer, uncontaminated air, and clean and dry insulators. If standard atmospheric conditions do not exist, extra care must be taken.*

□ *For single-phase systems, use the highest voltage available.*

◇ *For single-phase lines off three phase systems, use the phase-to-phase voltage of the system*

△ *Inadvertent movement factors used in these tables are as follows:*
0.301 kV to 0.750 kV= 1 ft
0.751 kV to 72.5 kV= 2 ft
72.6 kV to 800 kV = 1 ft

✿ *For voltages above 72.5 kV, distances are based on altitudes below 900 m (3000 ft) above sea level. For altitudes above 900 m (3000 ft), Rule 441A6 applies.*

● *Distances were calculated using the following TOV values:*
72.6 kV to 362 kV = 3 .0
362.1 kV to 550 kV = 2.4
550.1 kV to 800 kV= 2.0

■ *For bare hand work where the employee is at line potential, this distance is to an object at a different potential.*

◆ *Distances for live-line tools in the air gap were calculated by adding a tool factor to the electrical component (IEEE 516 C2 1.1 tool factor).*

▲ *With tools means a live-line tool bridging the air gap to the employee from the energized part.*

\+ *Phase-to-phase live-line in the air gap values are not available. If this situation exists, an engineering evaluation should be performed.*

Troubleshooting

1. Check that the battery is charged. If drained, charge and recheck the battery after several minutes to make sure the battery is holding its charge.
2. Remove battery from tool.
3. Check the tool, see Pre-Operation Inspection.
4. Reinstall the battery and check the tool over again.

Consult Table 10 and Table 11 for explanations of error codes and solutions to possible issues the tool may face. Consult also Table 1 and Table 2 at the beginning of this manual to explain signals from the tool and remote.

Table 10: Troubleshooting

Problem	Possible Cause	Solution
Tool is does not activate when pressing trigger.	Contaminants (dirt, rust etc.) in Tool Head	Remove battery and clean tool head thoroughly.
	Components Worn or Damaged	Replace tool head or send in for service.
	Motor is Not Working	Charge or Change battery.
		Check for broken switch components and send in for service.
	Tool Set in Remote Profile	Change profile to Handheld.
	Low or Expired Battery	Charge or Change battery.
	Broken Components	Send in for service.
Tool is does not activate when pressing remote toggle.	Tool in Handheld Profile	Change profile to Remote.
	Wireless Receiver Damaged	Send in for service.
	Another Remote is Paired with Tool	Remove then replace tool battery to reset and follow steps to set up Remote profile with correct remote.
Motor runs but tool will not complete a cycle.	Low Oil	Send in for service.
	Air in Hydraulic System	Press trigger and hold retract button simultaneously 10 sec, then attempt to activate the tool again. If unsuccessful, contact Customer Services or send in for service.
	Cold Oil	Press trigger and hold retract button simultaneously 10-20 sec. to warm oil. Press and hold trigger for one full cycle. Repeat until tool completes a cycle successfully.
Red LED stays ON for 20 seconds.	Low Battery	Charge or replace battery.
Tool is losing oil.	Damaged Seal	Send in for service.
Red LED is flashing slowly for 20 sec. after trigger is released.	Motor current exceeds 20 A during cycle	Send in for service.
The tool makes alert sound and, both Red and While LED flash 1 time.	The necessary oil pressure was not reached.	Check material and design of work piece is compatible with tool.
	Operator let go of trigger mid-cycle	Retract ram to starting point and start cycle over.
		Press and hold trigger and continue cycle from stopping point.
The tool makes alert sound and, both Red and While LED flash 3 times.	The necessary oil pressure with the motor running was not achieved	Check material and design of work piece is compatible with tool.
		Check tool head is the correct model and is in good repair.
Red LED is flashing fast for 20 sec. after trigger is released.	Tool Overheating	Allow tool to cool.

Table 11: OLED Screen Error Codes		
Code	**Error**	**Action**
1	Over current fuse	Seek Service
2	Over current comparator	Seek Service
3	Overheated circuit board	Cool Tool
4	Overheated battery	Cool Battery
5	Battery empty: operation stops	Charge Battery
6	Faulty cut; complete cycle	Seek Service
7	Faulty cut; incomplete cycle	Seek Service
8	Low battery	Charge Battery
9	Battery empty	Charge Battery
10	Real-time clock battery low	Seek Service
11	Tool deactivated	Seek Service
12	Service necessary	Seek Service
13	Real-time clock not found	Re-insert Battery Seek Service
14	Wireless Bluetooth® unit not found	Re-insert Battery Seek Service
15	[Not Used]	
16	Pressure sensor not found	Seek Service
17	Pressure exceeded	Seek Service
18	Battery temperature too low	Warm Battery
21	Remote control battery low	Replace Battery

Transportation & Storage

Fully retract ram and remove battery and tool from hot stick before transporting or storing. Store tool in a cool, dry place in the provided case with the remote.

Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

Service

⚠WARNING

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

At either 3 years or 10,000 cycles, schedule a factory service maintenance. Factory service includes general inspections, replacement of tool's di-electric hydraulic oil and testing of tool by trained technicians.

When the Factory Service Date is approaching or arrived, contact Greenlee Customer Service. Expedited shipping is available.

Maintenance

⚠WARNING

- **Maintain this tool according to these procedures.** Do not perform any maintenance other than as described in this manual. Personal injury or damage to the tool may result.
- **Do not modify tool.** Modifying the tool in any manner may result in personal injury and damage to the tool. A tool with a tool head that has been welded, ground, drilled or modified in any manner can break during use and throw parts that could result in severe injury or death.
- **Maintain power tools and accessories.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

Remove battery before performing any maintenance. Severe injury can result from unexpected activation of the tool.

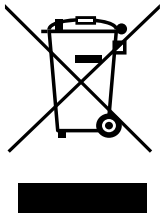
Clean the housing with a damp cloth and mild detergent after every use. Allow tool to dry completely before replacing battery.

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

Table 12: Repair Parts & Accessories	
CAT #	**Description**
BTC3-CK	BHT CONV KIT
BTC3GL	REMOTE CONTROL, BHT CONTROL
BTC3-TJ	HOT STICK ADAPTER
52177	BATTERY, 18V LI ION 2.0AH(PKG)
52178	CHARGER, BATTERY 120V (PKGD)
52179	CHARGER, BATTERY 230V (PKGD)
52180	CHARGER, BATTERY 12V (PKGD)
CP1	POUCH (PKGD)
12274	CARRYING STRAP

Disposal

Parts of these tools contain valuable materials and can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.



For EU Countries: Do not dispose of electrical equipment with household waste! According to the European Guideline 2012/19/EU for Waste Electrical and Electronic Equipment and its implementation into national legislation, electrical equipment that is no longer usable must be collected separately and disposed of in an environmentally correct manner.

Regulatory Statements

Model ES20LXR—FCC ID: RFR-S50; IC ID: 4957A-S50

USA requirements:

Responsible party: Greenlee Tools, Inc. Rockford, IL 61109 USA

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with the RF exposure SAR test exclusion requirements for portable devices if a minimum separation distance is kept. However, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

Canada requirements:

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1) l'appareil ne doit pas produire de brouillage;

2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est