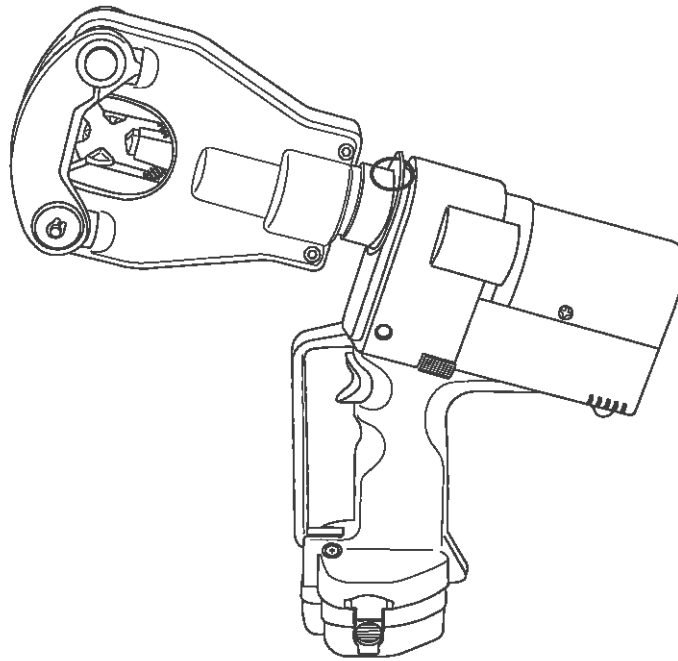


INSTRUCTION MANUAL

ILSCO



IDTB-6

Battery-powered Crimping Tool



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

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Description

The IDTB-6 Battery-powered Crimping Tool is a hand-held, self-contained, dieless crimping tool intended to crimp aluminum and copper connectors onto electrical cable.

Safety

Safety is essential in the use and maintenance of IlSCO 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 IlSCO tool:

IDTB-6 Battery-powered Crimping Tool

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge.

Warranty and Service

ILSCO warrants this tool to the original purchaser for a period of three years from the date of purchase, provided the tool is operated, maintained and used in accordance with ILSCO's written instructions. Ordinary wear and tear, damage from abuse, neglect or alterations are not covered by this warranty. This warranty is null and void if instructions and operating procedures are not followed. Contact ILSCO for all warranty and service issues at 800-776-9775.

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NUTO is a registered trademark of Exxon Corporation.

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

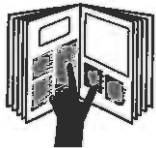
Immediate hazards which, if not avoided, **WILL** result in severe injury or death.

⚠ 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.



⚠ WARNING

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

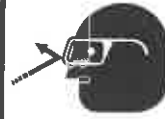
Failure to observe this warning could result in severe injury or death.



⚠ 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:

Oil under pressure easily punctures skin causing serious injury, gangrene, or death. If you are injured by escaping oil, seek medical attention immediately.

- Do not use hands to check for leaks.
- Depressurize the hydraulic system before servicing.



⚠ WARNING

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.

⚠ WARNING

An incomplete crimp can cause a fire.

- Use proper 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.



⚠ WARNING

Keep hands away from the crimping tool head when crimping.

Failure to observe this warning 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

Inspect tool before use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.

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

⚠ CAUTION

- Do not operate the tool without a connector in place. Damage to the ram or crimping tool head can result.
- This tool is not designed for continuous use. After 30 to 40 crimping cycles, allow the crimping tool to cool for 15 minutes.
- Do not place the tool in a vise. The crimping tool is designed for hand-held operation.
- Protect the crimping tool from rain and moisture. Water will damage the crimping tool and battery.
- 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 60 °C (140 °F). 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.

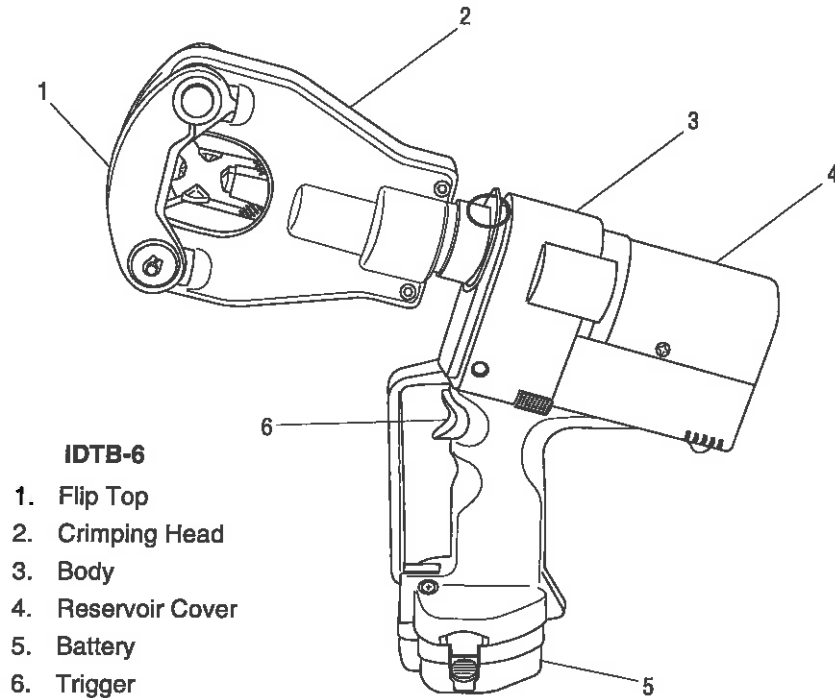
⚠ CAUTION

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



- IDTB-6**
- 1. Flip Top
 - 2. Crimping Head
 - 3. Body
 - 4. Reservoir Cover
 - 5. Battery
 - 6. Trigger

Specifications

Crimping Tool

Length	377.7 mm (14.87")
Width	311.2 mm (12.25")
Height	76.2 mm (3.00")
Mass/Weight (with battery)	4.9 kg (10 lb 12 oz)
Sound Level	75 dB (A) at 1 meter
Vibration	< 2.5 m/s ²
Motor Type	DC permanent field motor
Motor Voltage	12 VDC
Hydraulic Oil	50 ml (0.1 pint) of Shell Tellus® T 15


Crimping Capacities

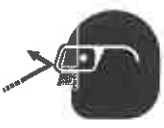
Crimping Range	#6 AWG to 750 kcmil
Crimping Force	55 kN (6.2 tons)
Crimps per Charge	approximately 40

Battery

Charging Voltage	12 V
Charging Time	1 hour


Operation

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

	⚠ WARNING
	<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>

⚠ WARNING
<p>An incomplete crimp can cause a fire.</p> <ul style="list-style-type: none"> • Use proper 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. <p>Failure to observe these warnings could result in severe injury or death.</p>

⚠ WARNING
<p>Inspect tool 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>

	⚠ WARNING
	<p>Keep hands away from the crimping tool head when crimping.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

Charging the Battery


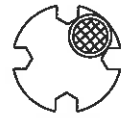
Read the instructions supplied with the battery charger.

Battery Condition

Battery Load Display	Battery Condition
Momentary illumination at beginning of crimp	Normal
Flickering at end of crimp	Normal
Flickering during entire crimp	Low charge
Constant illumination during entire crimp	Low charge

Crimping

1. Insert cable fully into connector. Center the connector between the nibs.

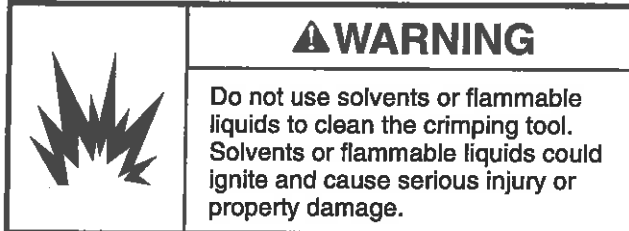
 <p style="text-align: center;">RIGHT</p>  <p style="text-align: center;">WRONG</p>	IMPORTANT
	<p>Small connectors may become wedged between the nibs of the tool. Center the connector between the four nibs before crimping.</p> <p>Failure to observe this precaution can cause property damage.</p>

2. Pull the trigger to advance the nibs. Hold the trigger down until the pressure relief valve activates.

Note: Pressure relief occurs at approximately 690 bar (10,000 psi) and is indicated by an audible "pop."
3. After achieving pressure relief, the ram automatically returns to the start position and the nibs retract.
4. Complete the number of crimps specified in the IlSCO stuffer sheet.

Maintenance

1. Inspect nibs for wear or damage such as cracks, gouges, or chips.
2. Inspect the crimping tool for damage or leaks. Return a damaged or leaking crimping tool to IlSCO.

After Each Use

1. Wipe all tool surfaces clean with a damp cloth and mild detergent.
2. Fully retract the ram. Place the crimping tool in the carrying case. Store in a cool, dry place.
3. Charge the battery.

Monthly

1. Thoroughly clean all surfaces.
2. Check the oil level.
3. Oil the bolt joints.

Annually or Every 10,000 Crimps

1. Change the hydraulic oil.
2. Return the tool to IlSCO for inspection.

Checking the Oil Level

1. Remove the two screws that retain the tank housing cover.
2. Remove the tank housing cover.
3. Point the cutting head downward and remove the oil plug. Add oil if necessary.
4. Replace the oil plug and the tank housing cover. Secure with screws.

Recommended Hydraulic Oils

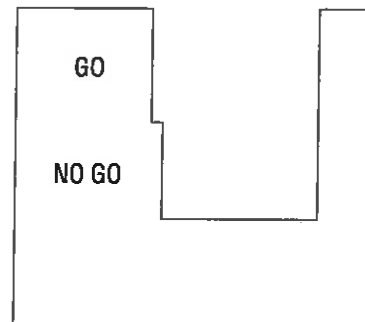
AVIA® HVI 15
 Shell Tellus T 15
 Mobil® DTE 11M
 NUTO® H 15

Periodic Pressure Relief Valve Check

Test the crimping tool periodically to ensure that the pressure relief valve activates at the proper pressure.

Testing the Crimping Tool

1. Center a test slug between the nibs.
2. Pull the trigger to advance the nibs. Hold the trigger down until the pressure relief valve activates.
3. After achieving pressure relief, the ram automatically returns to the start position and the nibs retract.
4. Evaluate the test slug as follows:
 - If the test slug does not fit into GO slot, the pressure relief valve is set too high. Send the crimping tool to IlSCO.
 - If the test slug fits into the GO slot, the pressure relief valve is set correctly.
 - If the test slug fits into the NO GO slot, the pressure relief valve is set too low. Send the crimping tool to IlSCO.



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.	Dirt, contaminants, etc., in ram area of tool. Crimping tool battery contacts damaged. Tool components worn or damaged. Dead battery.	Clean tool. Reform contacts. Return tool to IlSCO. Charge or replace.
Ram does not advance completely.	Oil level is low. Air in hydraulic system.	Check oil level. Refill reservoir. Pull trigger and hold retract button simultaneously. Hold for approximately 10 seconds.
Battery load display flashes constantly.	Battery charge low.	Charge or replace battery.
Tool loses oil.	Damaged internal seal. Oil plug not installed properly.	Return tool to IlSCO. Refill reservoir and replace plug.

Disassembly

Main Components

1. Remove the battery.
2. Remove the retaining ring (37) and pin (31). Pull out the locking pin (33) and remove the flip top (27).
3. Remove screws (38, 39). Remove the head cover. Remove the battery driver from the bottom head cover.
4. Drive out the pin (23) from between the yoke assembly (26) and piston (22).
5. Remove the sleeve (25), spring (24), and piston (22). Replace the piston O-ring (20) and piston backup ring (21).
6. Unscrew two tank cover screws (50) and remove the tank cover (55).
7. Remove the hydraulic reservoir plug (76) and drain the hydraulic fluid.
8. Reinstall the plug.
9. Remove the remaining housing screws (51, 50).
10. Remove the right housing half (56).
11. Remove the trigger cover (53).
12. Lift the pump/motor assembly and circuit card from the left housing half (57). Lift the LED from its housing (8).
13. Slide a plastic bag over the circuit card and electronic subassemblies. Tape the bag shut to protect the subassemblies from hydraulic oil and other contamination.
14. Unscrew the shoulder bolt (99) and remove the release lever (107).
15. Remove screws (108) and separate the gear housing/motor subassembly from the pump housing.

Pump

1. Use a hooked tool to remove the reservoir O-ring (80). Gently tug it over the reservoir.
2. Remove the reservoir (74).
3. Remove the pump piston (152).
4. Remove the screw plug (151), washer (153), pump piston (150), valve stem (156), and spring (155). Replace the sealing washer (154).
5. Use a piece of tape to mark the side of the relief (126) that is facing up. (This is a reference point for reassembly). Remove unloading valve by unscrewing the plug (126).
6. Remove the feeder tube subassembly by unscrewing the feeder tube (78). Replace the oil filter (77). Remove metal chips from the magnet (82).
8. Remove the threaded bushing (72) and replace the O-ring (73).

Motor, Gearbox, and Bearing

1. Remove the tamper-proof paper seal (96).
2. Remove two screws (92). Remove the end cap (102).
3. Apply pressure evenly at three points around the ball bearing (91) and gently pry the bearing up to remove it.
4. Remove the eccentric (103), grooved ball bearing (101), and snap ring (100) subassembly from the shaft.
5. Remove four screws (93). Remove the mounting block (109) from the gear housing (94).
6. Use a snap-ring removal tool to remove the snap ring (100).
7. Unscrew four bolts (not numbered) from the gear housing (94). Separate the gear housing from the spacer (not numbered). Unscrew two Fillister head screws (112) to separate the spacer from the motor (90).

Assembly

Motor, Gearbox, and Bearing

1. Install two Fillister head screws (112) into the spacer (not numbered) and motor (90). Tighten the screws.
2. Install four screws (not numbered) into the gear housing (94). Tighten the screws.
3. Install four screws (93) into the mounting block (109) and gear housing (94). Tighten the screws.
4. Replace the grooved ball bearing (101) and snap ring (100) subassembly.
5. Replace the eccentric (103). Use a fiber mallet to tap the eccentric onto the shaft. Replace the ball bearing (91).
6. Align the end cap (102). Use a fiber mallet to tap the cover until it is flush on the mounting block (109). Install two screws (92).
7. Align the gear housing/motor subassembly so that the pump piston (152) extends through the mounting block (109) and makes contact with the grooved bearing (101). Locate and start the screws (108) through the mounting block and into the pump housing. Tighten the screws.

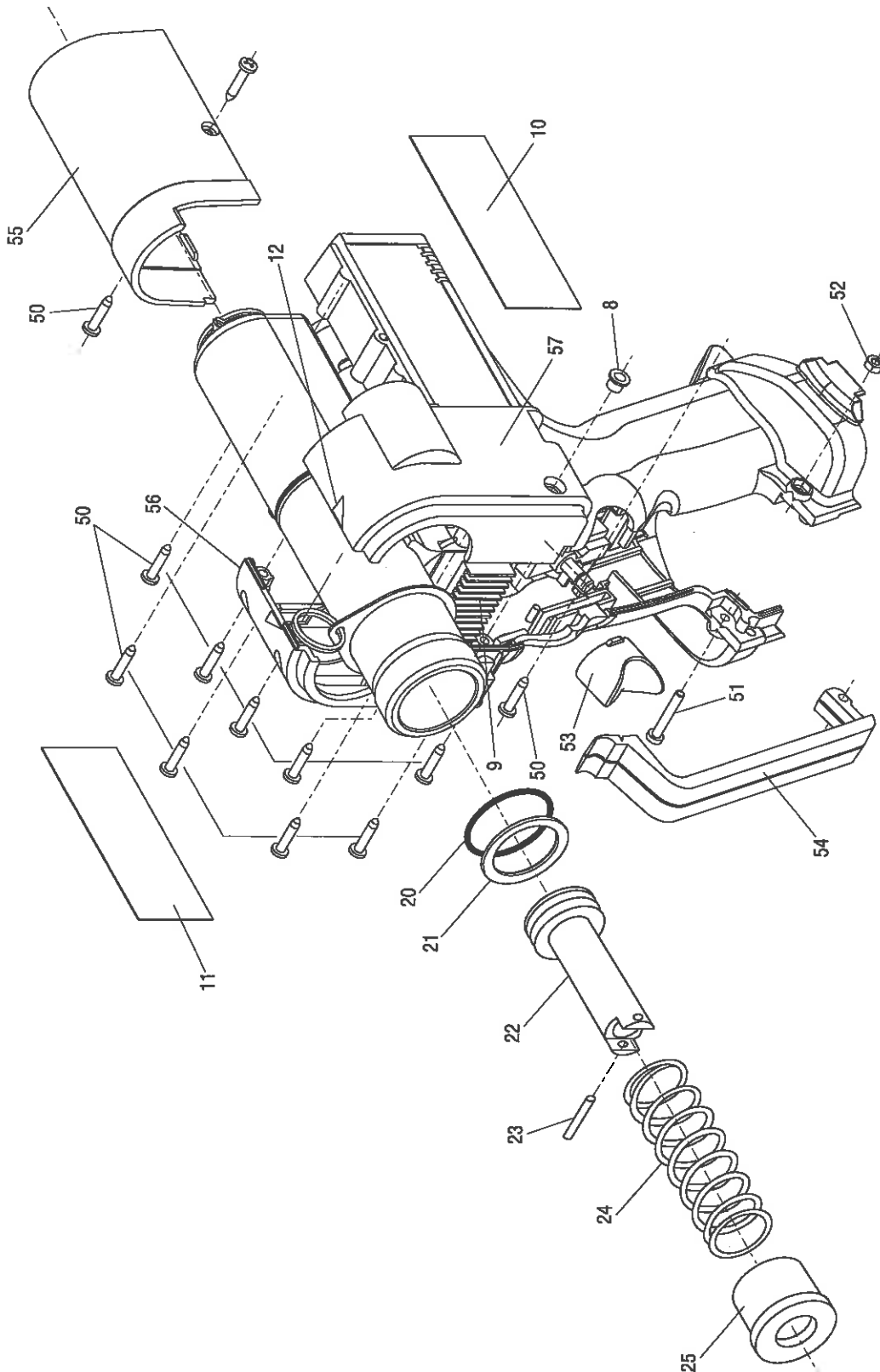
Pump

1. Insert the pump piston (152) into the pump housing.
2. Insert the seal (122) and unloading valve assembly into the pump housing. Grasp the needle valve subassembly by the pressure relief (126) and twist it several turns clockwise. Stop when the piece of tape is facing up.
3. Assemble the pump piston (150), valve stem (156), washer (153), spring (155), and screw plug (151). Be sure to replace the sealing washer (154). Torque the screw plug (151) to 101 Nm (75 ft-lb).
4. Install the release lever (107) so that the forked end engages the unloading valve subassembly between the pressure relief (126) and the support ring (127). Install the screw (99) and washer (104).
5. Insert the threaded bushing (79) and feed tube subassembly (77, 78, 82). Screw in until snug.
6. Install the reservoir (74). Slip the O-ring (80) over the reservoir. Using a hooked tool, carefully slip the O-ring over the lip of the pump housing. Insert the plug (76) into the reservoir.

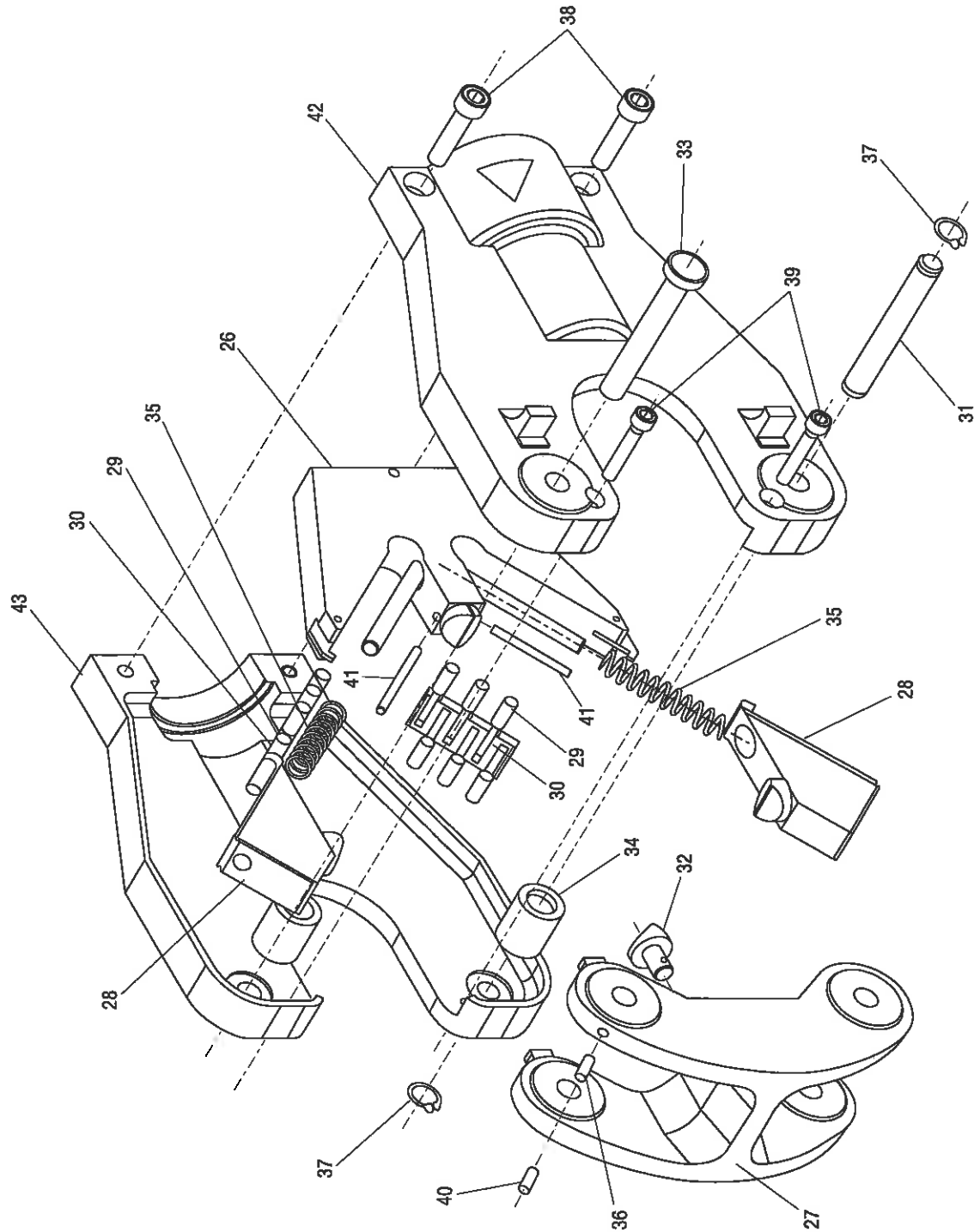
Main Components

1. Remove the protective plastic bag from the electronics subassembly. Insert the LED into the LED bushing (8).
2. Lay the gear housing/motor subassembly into the left half (57) of the housing. Insert the circuit board into the circuit board slot so that the wires and chip face in the direction of the trigger.
3. Lay the wires into the case. Be sure that the wires will not be pinched.
4. Guide the wires for the battery clip so that the battery wires lay on top of the electronics box; install the battery clip so that the red wire is upward.
5. Install the trigger cover (53). Press and release the trigger to be sure that it operates freely.
6. Locate the right housing half (56) on top of the left housing half (57). Check for pinched wires.
7. Install the housing screws (51, 50).
Note: The handle screw (51) must engage the nut (52).
8. Install the piston (22).
9. Install the spring (24) and sleeve (25). Assemble the pin (23) into the piston (22) and yoke assembly (26).
10. Set the pump block into the bottom half of the crimping head. Lay the top half of the crimping head onto the unit. Assemble with screws (38, 39).
11. Assemble the pin (31) into the head with flip top (27) in place. Assemble the retaining ring (37) into place. Make sure the locking pin (33) functions properly.
12. Clamp the head assembly into a vise with the reservoir plug facing upward. Remove the fill plug (76) and fill the reservoir with hydraulic oil.
13. Install the battery.
14. Squeeze the trigger while depressing the release lever for 45 to 60 seconds. Fill the reservoir with hydraulic oil. Replace the fill plug (76).
15. Replace the tank cover (55) and tank cover screws (50).

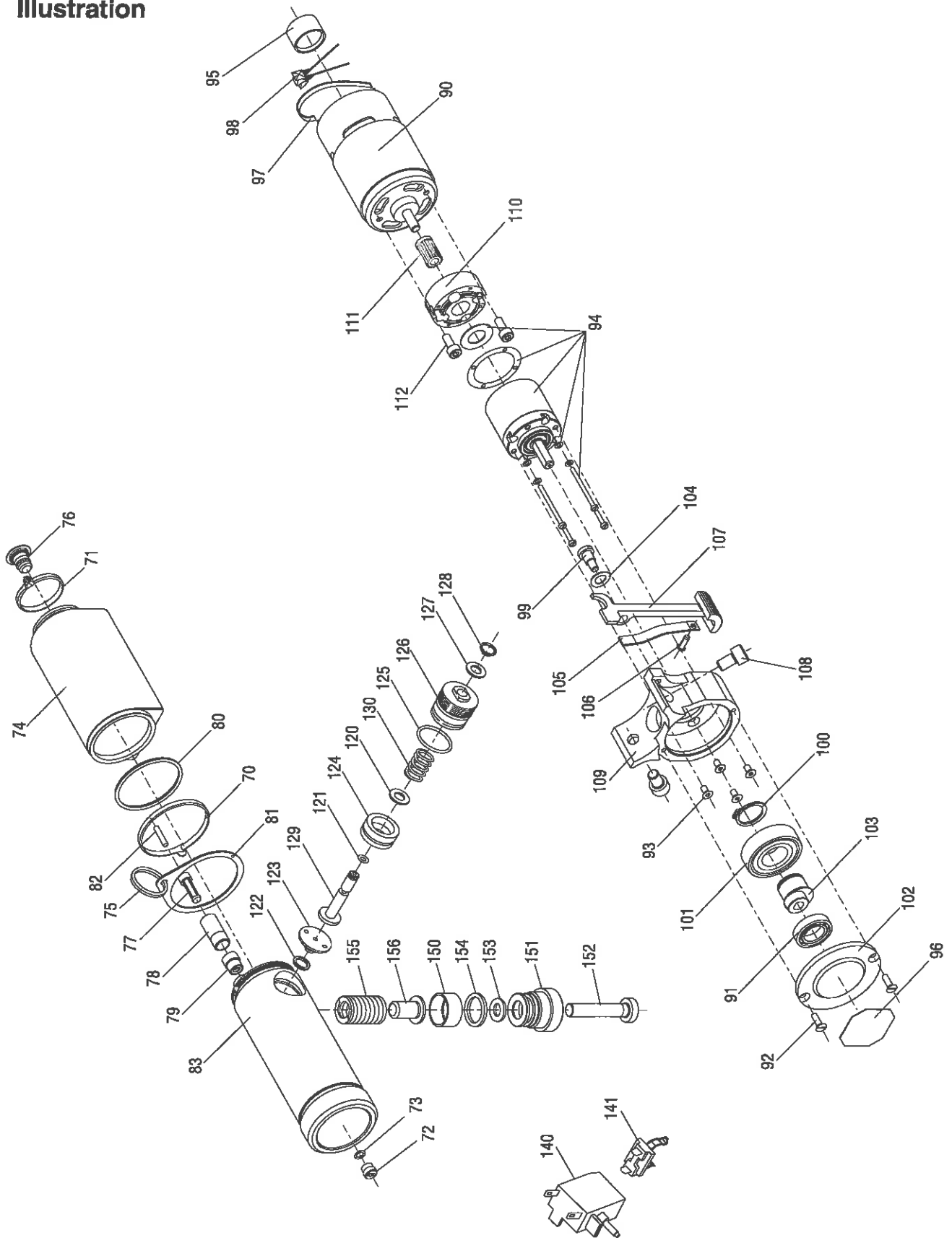
Illustration



Illustration



Illustration



Parts List

Key	Part No.	Description	Qty
8	500 4241.6	Bushing LED	1
9	500 7151.3	Circuit board, programmed	1
10	500 1479.0	Decal, identification	1
11	500 1482.0	Decal, warning	1
12	500 6214.0	Decal, pinch hazard	1
20*	500 4192.4	O-ring	1
21*	500 4194.0	Backup ring	1
22	500 6381.2	Piston	1
23	500 6340.5	Pin	1
24	500 5839.8	Compression spring	1
25	500 6382.0	Sleeve	1
	500 1722.5	Quad point flip-top head assembly (includes 26-43)	
26	500 1723.3	Cam yoke assembly	1
27	500 6117.8	Latch	1
28	500 6127.5	Moving jaw	2
29	500 6089.9	Roller bearing	12
30	500 6088.0	Bearing retainer	2
31	500 6121.6	Latch mounting pin	1
32	500 6118.6	Latch nib	1
33	500 6124.0	Lock pin	1
34	500 6116.0	Side jaw roller	2
35	500 6091.0	Compression spring	2
36	500 6096.1	Ball screw	1
37	500 6122.4	Snap ring	2
38	500 6100.3	Screw	2
39	500 6103.8	Screw	2
40	500 8366.0	Set screw	1
41	500 1727.6	Pin, spring	2
42	500 1726.8	Head cover (LH)	1
43	500 1725.0	Head cover (RH)	1
	501 0984.7	Housing unit (blue) (includes 50-57)	
50	500 4207.6	Screw	12
51	500 4220.3	Screw	1
52	500 4221.1	Nut	1
53	500 7373.7	Switch cover (red)	1
54		Trigger guard	1
55		Reservoir cover	1
56		Housing, right side	1
57		Housing, left side	1

Parts List (cont'd)

Key	Part No.	Description	Qty
	500 1353.0	Pump housing, reservoir assembly (includes items 70-83)	
70	501 0340.7	Ring tie	1
71	500 7177.7	Cable tie	1
72	500 4144.4	Threaded bushing	1
73*	500 4143.6	O-ring	1
74	500 5873.8	Hydraulic reservoir	1
75	500 4198.3	Ring	1
76	500 5878.9	Reservoir plug	1
77	500 5880.0	Filter	1
78	500 5882.7	Filter adapter	1
79	500 5885.1	Threaded bushing	1
80*	500 5886.0	O-ring	1
81	500 5829.0	Attachment ring	1
82	500 5898.3	Magnet	1
83	500 1421.8	Pump housing	1
	500 1349.1	Motor assembly (includes items 90-112)	
90	500 4132.0	Motor	1
91	500 4138.0	Ball bearing	1
92	500 4155.0	Screw	2
93	500 4157.6	Screw	4
94	500 4133.9	Gearbox	1
95	500 4113.4	Spacer	1
96*	500 4153.3	Seal	1
97	500 4136.3	Ground strap	1
98	500 4137.1	Capacitor	3
99	500 4163.0	Screw, socket head	1
100	500 4151.7	Retaining ring	1
101	500 4139.8	Grooved ball bearing	1
102	500 4108.8	End cap	1
103	500 4123.1	Eccentric	1
104	500 4922.4	Lock washer	1
105	500 4125.8	Spring	1
106	500 5872.0	Screw	1
107	500 5879.7	Release lever	1
108	500 8403.8	Screw	2
109	500 8402.2	Eccentric case	1
110	500 1351.3	Gearbox	1
111	500 1352.1	Gear	1
112	500 6772.9	Screw	2

Parts List (cont'd)

Key	Part No.	Description	Qty
	500 1593.1	Relief valve assembly (includes items 120–130)	
120	500 5860.6	Washer	1
121*	500 4134.7	O-ring	1
122*	500 5862.2	Seal	1
123	500 5363.0	Valve seat	1
124	500 5864.9	Plunger	1
125*	500 5869.0	O-ring	1
126	500 5871.1	Pressure relief	1
127	500 5875.4	Support ring	1
128*	500 5876.2	Retaining ring	1
129	500 5877.0	Needle valve	1
130	500 5894.0	Spring	1
	500 1347.5	Electrical assembly (includes items 140–144)	
140	500 4126.6	Switch	1
141	500 4127.4	Battery contacts	1
142	500 6338.3	Circuit board, unprogrammed	1
143	500 5899.1	Wire (not shown)	1
144	500 5900.9	Wire (not shown)	1
	500 1348.3	Piston pump assembly (includes items 150–156)	
150	500 5891.6	Pump piston	1
151	501 0365.2	Screw plug	1
152	501 0370.9	Pump piston	1
153*	501 0369.5	Washer	1
154*	501 0366.0	Sealing washer	1
155	501 0367.9	Spring	1
156	501 0368.7	Valve stem	1
	500 6308.1	10 test slugs with gage	
	500 6129.1	Bearing retainer kit (includes items 29 and 30)	
*	500 1411.0	Seal kit (includes items marked with an asterisk)	
	500 6126.7	Head cover set	
	500 1492.7	Case with inserts	
	500 2999.1	12 V battery	
	500 3046.9	12 V charger 110 VAC	



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Printed in the USA