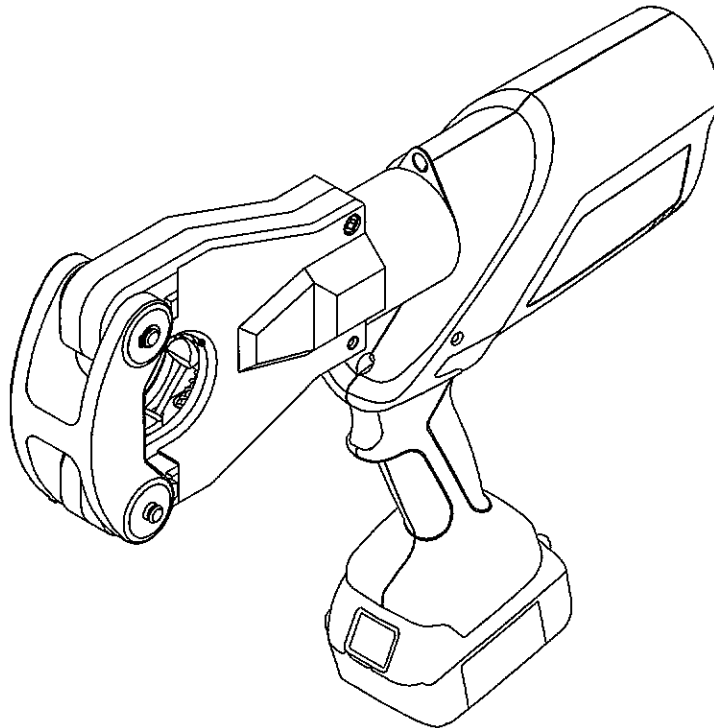


INSTRUCTION MANUAL

ILSCO®



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

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

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

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-LIO Battery-powered Crimping Tool

Keep this manual available to all personnel.


Replacement manuals are available upon request at no charge.

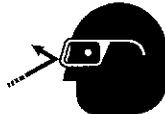
Warranty and Service


ILSCO warrants this tool to the original purchaser for a period of one year 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.


KEEP THIS MANUAL


IMPORTANT SAFETY INFORMATION

	<p>SAFETY ALERT SYMBOL</p>
<p>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.</p>	
<p>⚠ DANGER</p>	
<p>Immediate hazards which, if not avoided, WILL result in severe injury or death.</p>	
<p>⚠ WARNING</p>	
<p>Hazards which, if not avoided, COULD result in severe injury or death.</p>	
<p>⚠ CAUTION</p>	
<p>Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.</p>	


	<p>⚠ WARNING</p>
<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>	

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


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

	<p>⚠ WARNING</p>
<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>	

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

	<p>⚠ WARNING</p>
<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>	

IMPORTANT SAFETY INFORMATION

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

⚠ WARNING
<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>

⚠ WARNING
<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>

⚠ CAUTION
<ul style="list-style-type: none"> • Do not use this tool for continuous use. After 30 to 40 cycles, allow the tool to cool for 15 minutes. • Do not secure this tool in a vise. This tool is designed for hand-held operation. • This tool may be used in damp or wet environments; however, air-drying is recommended before use if the tool becomes soaked. Damage may result when the tool is operated prior to thorough drying when electrical components are soaked. • Use this tool for the manufacturer's intended purpose only. <p>Failure to observe these precautions may result in injury or property damage.</p>

⚠ CAUTION
<p>Do not allow anything to contact the battery terminals.</p> <ul style="list-style-type: none"> • 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. <p>Failure to observe these precautions may result in injury or property damage.</p>

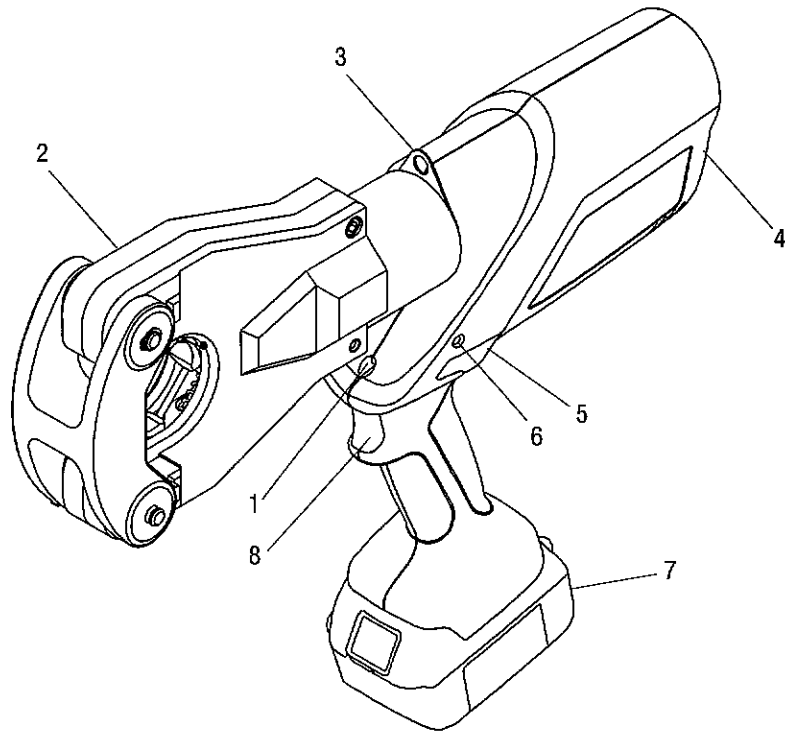
⚠ CAUTION
<ul style="list-style-type: none"> • Do not store the battery at more than 122 °F (50 °C) or less than -4 °F (-20 °C). Damage to the battery can result. • Do not use another manufacturer's charger. Other manufacturers' chargers may overcharge and damage the battery. • Do not attempt to open the battery. It contains no user-serviceable parts. <p>Failure to observe these precautions may result in injury or property damage.</p>

⚠ CAUTION
<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**IDTB-6-LIO**

1. LED Work Light (white)
2. Crimping Head
3. Lanyard Ring
4. Housing
5. Retract Button
6. LED Indicator (red)
7. Battery
8. Trigger

**Specifications****Crimping Tool**

Length	14.87" (377.7 mm)
Width	2.87" (72.9 mm)
Height (with battery)	12.25" (311 mm)
Weight	11 lb (5 kg)
Hydraulic Oil	52057878 biodegradable hydraulic fluid
Recommended Operating Temperature Range	5 °F to 122 °F (-15 °C to 50 °C)

Crimping Capacities

Crimping Range	6 AWG to 750 kcmil
Crimping Force	6.2 tons (55 kN)

Battery Charger


Read the instructions supplied
with the battery charger

Operation

⚠ WARNING

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

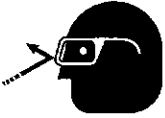
Failure to observe this warning could result in severe injury or death.



⚠ 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

Pinch points:

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

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

⚠ CAUTION

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

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

Charging the Battery

Read the instructions supplied with the battery charger.

LED Work Light (white)

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

LED Indicator (red)

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

What happens	Signal	What it means
Flashing light for 2 seconds	● ●	Battery is inserted in tool
Constant light for 20 seconds at end of cycle	██████	Battery charge is below 17 V at beginning of cycle
Tool will not start, and constant light for 20 seconds when trigger is released	██████	Battery charge is below 16 V at beginning of cycle
Tool will stop, and constant light for 20 seconds after trigger is released	██████	Battery voltage drops below 13 V during cycle
Tool will stop, and flashing light for 20 seconds when trigger is released	● ● ● ●	Motor current exceeds 20 A during cycle Circuit has become too hot

Pressure Sensor

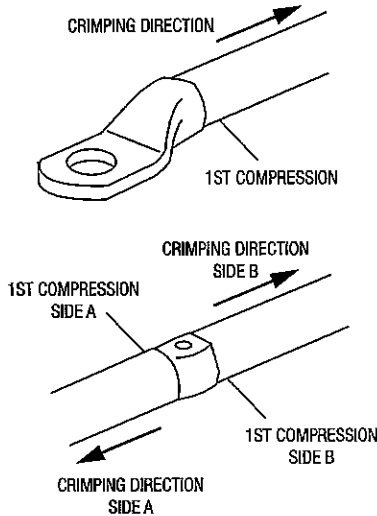
This tool is equipped with a pressure sensor that alerts the user of an incomplete crimp.

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

Operation (cont'd)

Preparation

Follow the instructions in the ILSCO stuffer sheet for appropriate cable strip length and surface preparation.



Crimping Procedure

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

<p>The diagram shows two cross-sections of a connector being inserted into a die. The top one is labeled 'RIGHT' and shows the connector centered between four nibs. The bottom one is labeled 'WRONG' and shows the connector off-center, wedged between the nibs.</p>	<p>⚠ CAUTION</p> <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 may cause property damage.</p>
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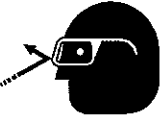
2. Pull the trigger to advance the nibs. Hold the trigger down until the pressure relief valve activates.


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. To stop the ram from returning fully, activate the trigger for a brief moment. This activation will close the retraction valve and stop the retraction motion.
5. Complete the number of crimps specified in the ILSCO stuffer sheet.
6. Remove the connector from the crimping tool.


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


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

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

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

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

IMPORTANT
Relief valve adjustments must be done by an authorized service center.

Daily

Before use:

1. Inspect the tool for wear or damage, such as cracks, gouges, or chips.
2. Inspect the tool for damage or leaks.
3. Inspect the rotation of the head assembly. Fully retract the ram. The head should rotate no more than 360°. If damage is detected, send the tool to a ILSCO Authorized Service Center for inspection.

After use:

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

Monthly

1. Thoroughly clean all surfaces.
2. Check the oil level.

Annually or After 10,000 Crimps

1. Replace the hydraulic oil.
2. Send the tool to a ILSCO Authorized Service Center for inspection.

Checking the Oil Level

1. Remove the screws holding the housing cover together.
2. Point the crimping head downward and remove the oil reservoir plug. Fill reservoir if necessary.
3. Replace the oil plug and housing cover.

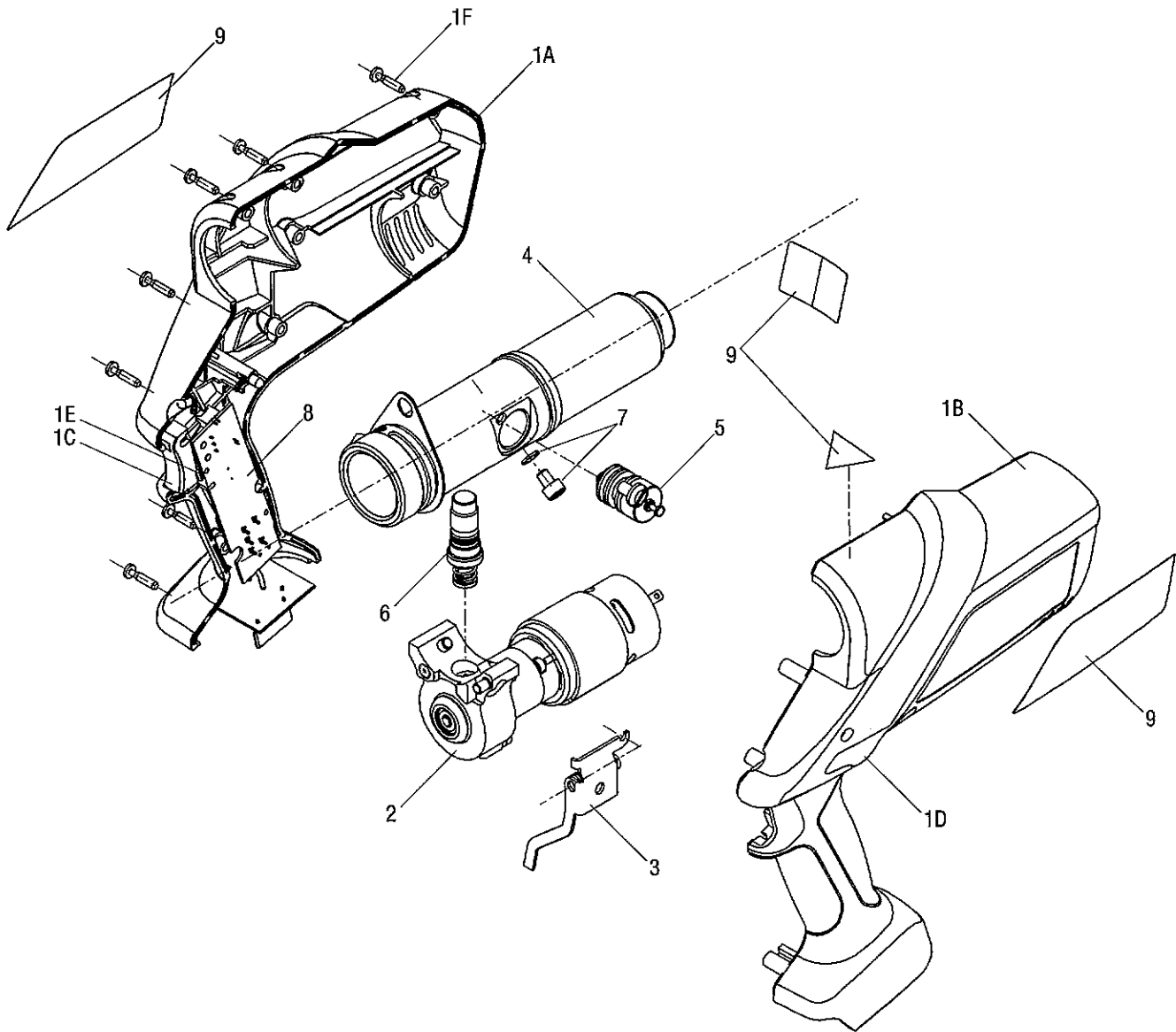
Troubleshooting

Before You Begin

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

Problem	Possible Cause	Probable Remedy
Tool is inoperative.	Dirt, contaminants, etc., in ram area of tool.	Clean tool.
	Tool battery contacts damaged.	Reform contacts.
	Tool components worn or damaged.	Return tool to a ILSCO Authorized Service Center.
Motor is inoperative.	Low or uncharged battery.	Try known charged battery. Inoperative battery may be discharged or may have reached life expectancy.
	Broken switch components.	Return tool to a ILSCO Authorized Service Center.
Motor runs but tool will not complete a cycle.	Oil level low.	Return tool to a ILSCO Authorized Service Center.
	Air in hydraulic system.	Pull trigger and hold retract button simultaneously. Run for approximately 10 seconds, and then attempt to crimp. If unsuccessful, return tool to a ILSCO Authorized Service Center.
	Cold oil.	Pull trigger and hold retract button simultaneously to warm oil. Store tool in warm area.
Dies stop during operation.	Oil level low.	Return tool to a ILSCO Authorized Service Center.
	Air in hydraulic system.	Pull trigger and hold retract button simultaneously. Hold for approximately 10 seconds.
LED glows for 20 seconds.	Battery charge low.	Charge or replace battery.
Tool loses oil.	Damaged internal seal.	Return tool to a ILSCO Authorized Service Center.

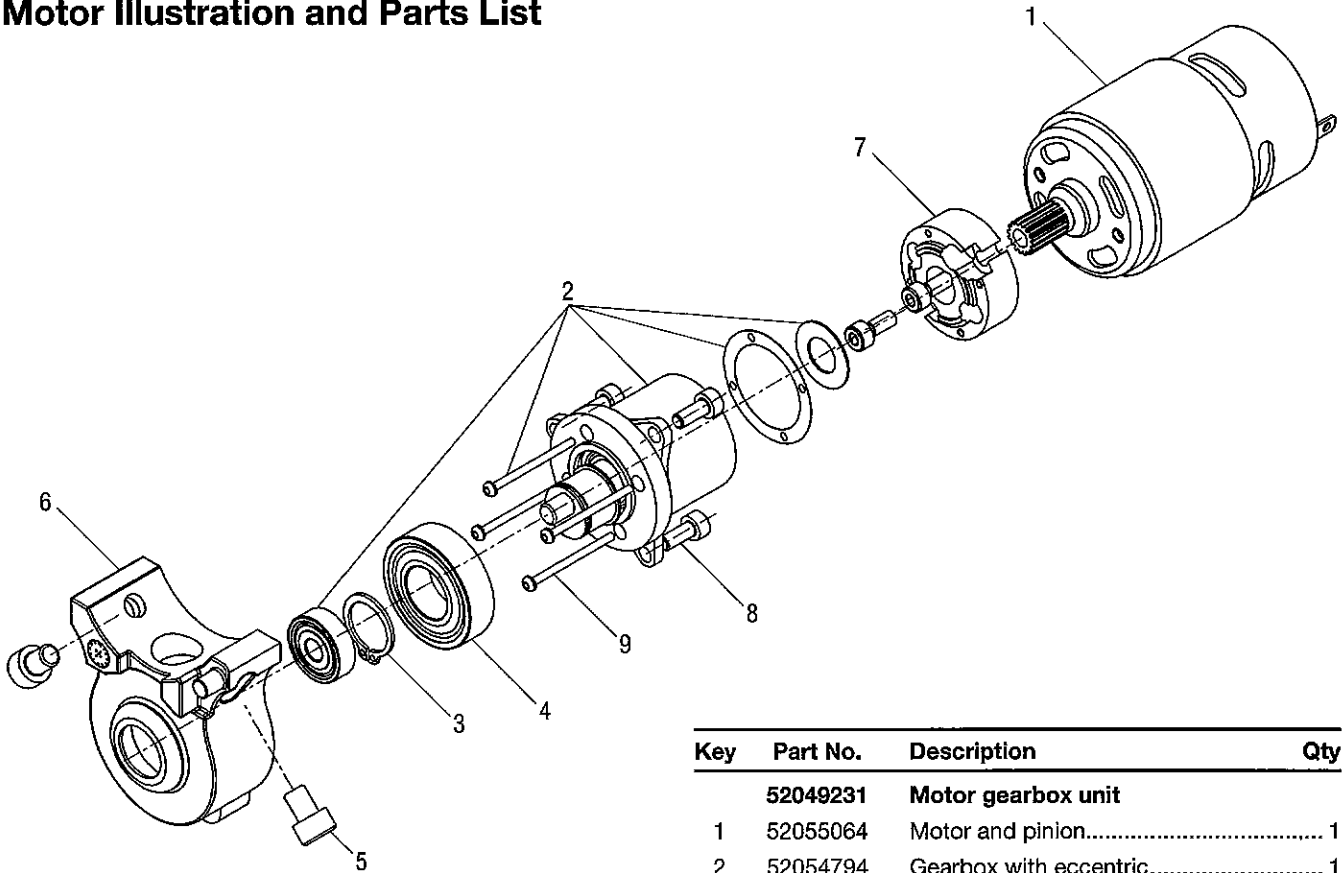
Main Illustration and Parts List



Key	Part No.	Description	Qty
1	52062592	Housing unit, 6-ton	
1A		Left housing	1
1B		Right housing	1
1C		Trigger button.....	1
1D		Retract button.....	1
1E		Spring	1
1F		Screw	12
2	52049231	Motor gearbox unit	1
3	52049233	Release lever unit.....	1
4	52054792	Pump housing unit.....	1
5	52049232	Relief valve unit.....	1
6	52024191	Piston pump unit.....	1

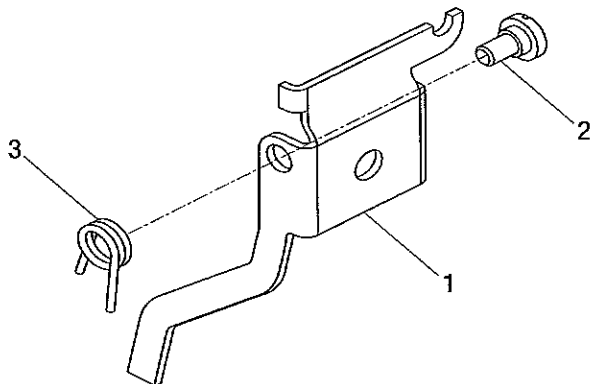
Key	Part No.	Description	Qty
7	52049205	Sensor.....	1
		Seal (included in 52054906 seal kit)	1
8	52054832	Circuit board	1
9	52062593	Decal kit, IDTB-6-LIO.....	1
	52062570	Carrying case	
	52054906	Seal kit	
	52049189	18 V, 3 Ah lithium-ion battery	
	52049201	120 VAC, 18 V charger	
	52054992	Li (18 V) to NiCd, NIMH (12 V) charger adapter	
	50122746	Carrying strap	
	52057878	Biodegradable hydraulic fluid (1 qt)	

Motor Illustration and Parts List



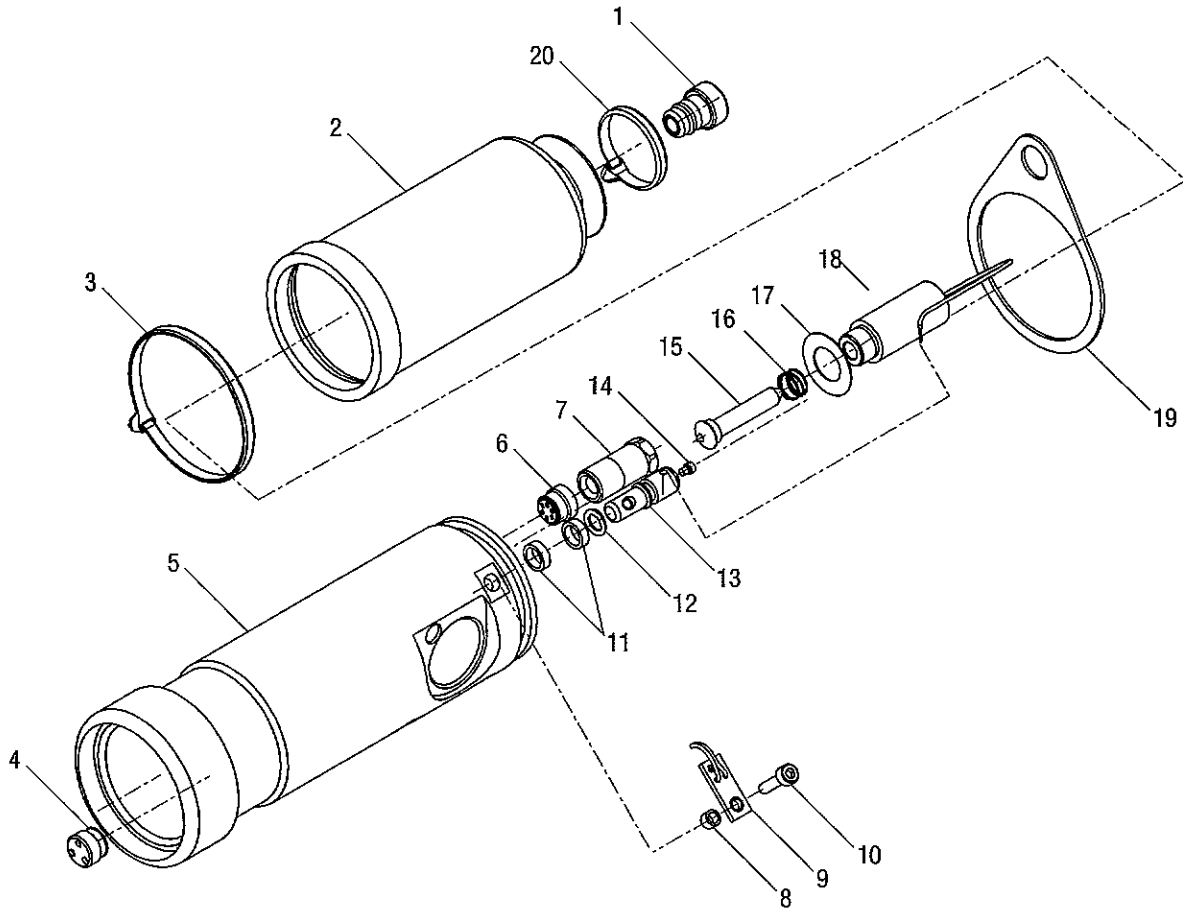
Key	Part No.	Description	Qty
	52049231	Motor gearbox unit	
1	52055064	Motor and pinion.....	1
2	52054794	Gearbox with eccentric.....	1
3		Retaining ring.....	1
4		Grooved ball bearing	1
5		Screw	2
6		Eccentric case	1
7		Flange	1
8		Screw	5
9	52028323	Gear box screw.....	4

Release Lever Illustration and Parts List



Key	Part No.	Description	Qty
	52049233	Release lever unit	
1		Release lever.....	1
2		Socket head screw	1
3		Compression spring.....	1

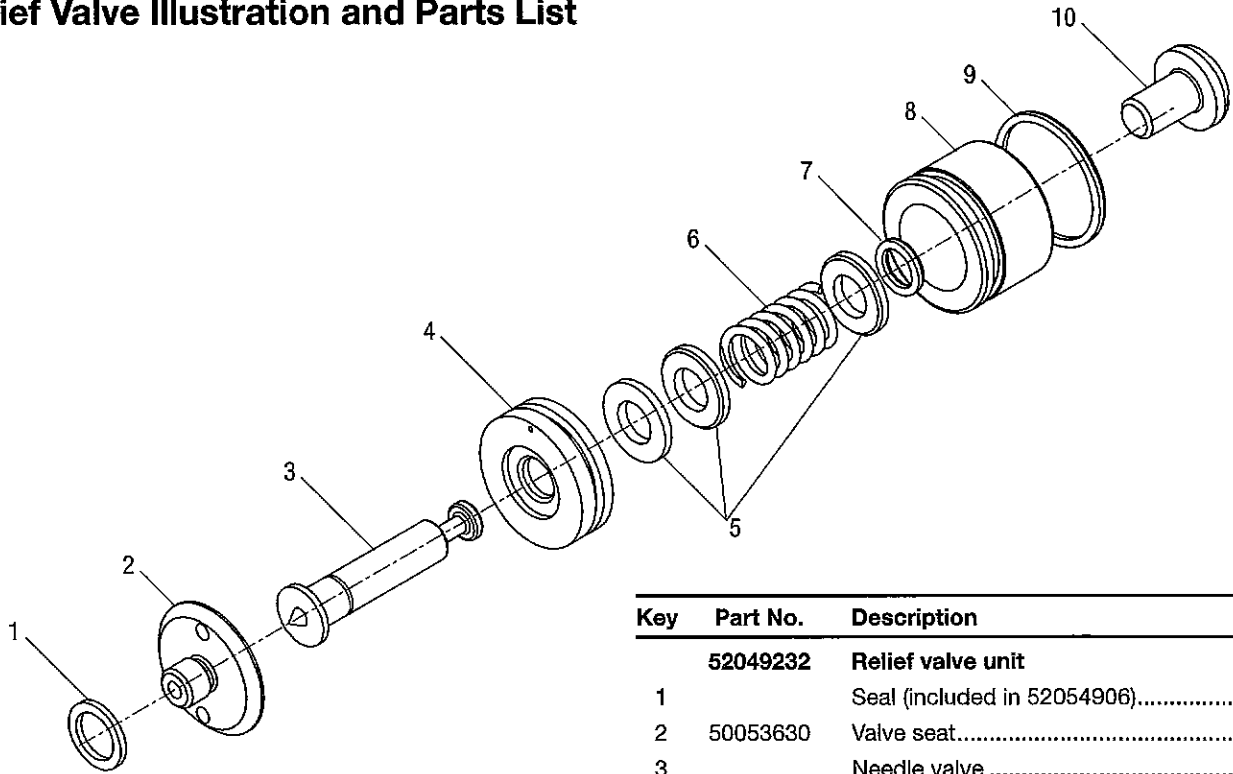
Pump Illustration and Parts List



Key	Part No.	Description	Qty
	52054792	Pump housing unit	
1		Reservoir plug.....	1
2	52054820	Reservoir.....	1
3		Cable tie (included in 52054906).....	1
4	50109308	Threaded bushing.....	1
5		Pump housing.....	1
6	50109162	Threaded bushing.....	1
7		Filter.....	1
8		Bearing.....	1
9		Switch lever.....	1
10		Screw.....	1
11		Bearing.....	2

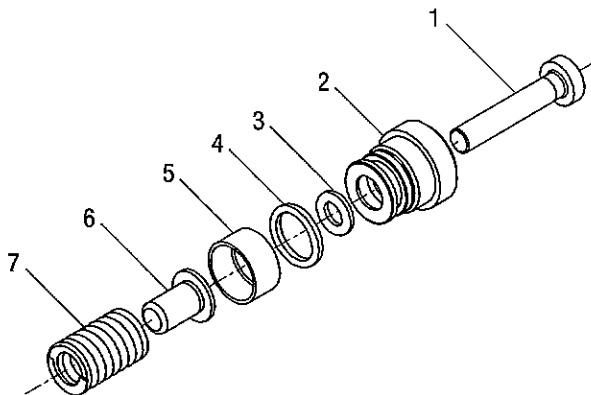
Key	Part No.	Description	Qty
12		O-ring (included in 52054906).....	1
13		Pin.....	1
14		Screw.....	1
15		Needle valve.....	1
16		Compression spring.....	1
17		Disc spring.....	1
18		Solenoid.....	1
19		Hanging ring.....	1
20		Cable tie (included in 52054906).....	1
	52054907	Solenoid kit (includes 15-18)	
	52055065	Switch lever kit (includes 8-10)	
	52055068	Wrench, bushing	

Relief Valve Illustration and Parts List



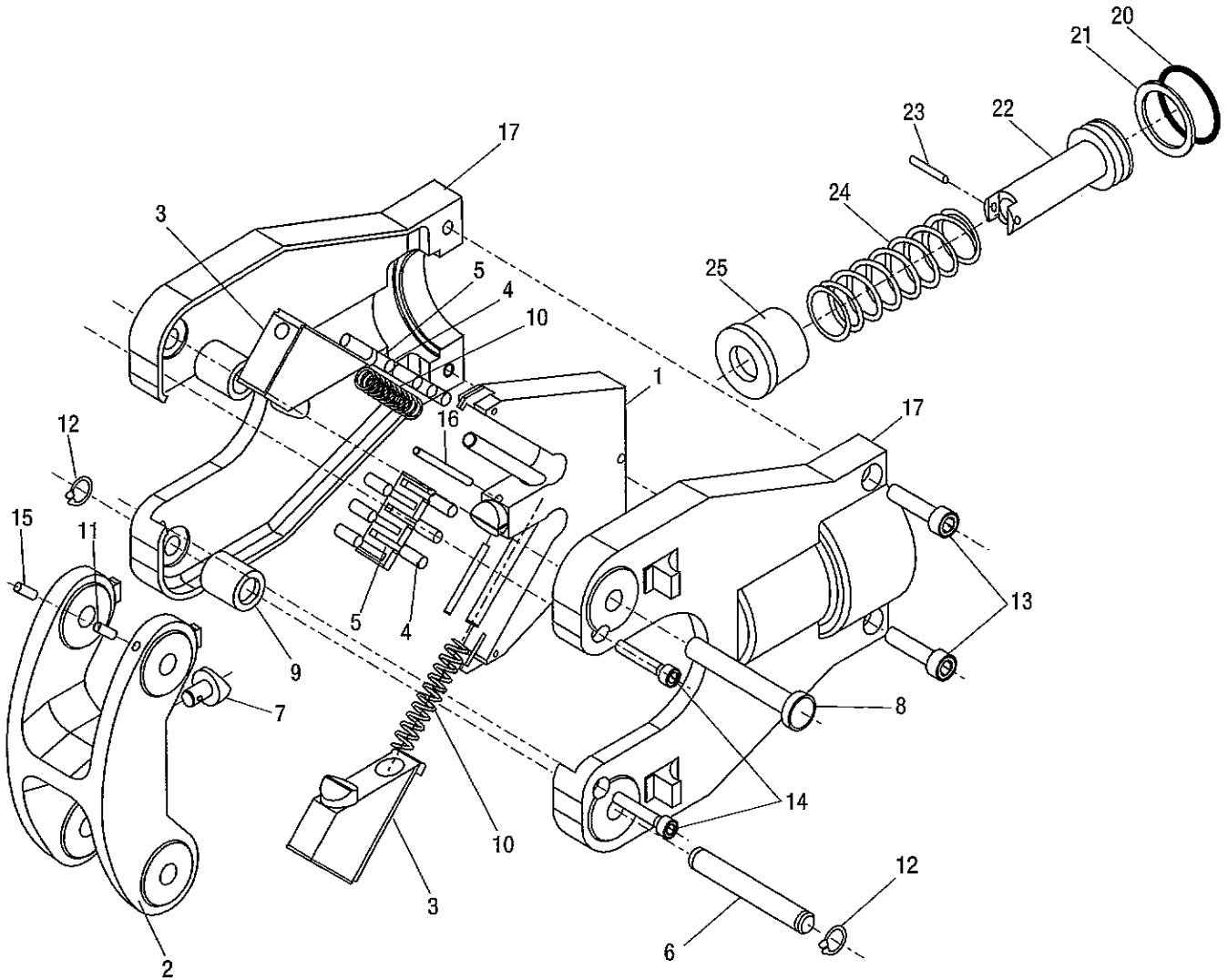
Key	Part No.	Description	Qty
	52049232	Relief valve unit	
1		Seal (included in 52054906).....	1
2	50053630	Valve seat.....	1
3		Needle valve.....	1
4		Plunger.....	1
5		Washer.....	3
6		Compression spring.....	1
7		O-ring (included in 52054906).....	1
8		Pressure relief valve.....	1
9		O-ring (included in 52054906).....	1
10		Screw.....	1

Piston Pump Illustration and Parts List



Key	Part No.	Description	Qty
	52024191	Piston pump unit	
1		Pump piston.....	1
2		Screw plug.....	1
3		Piston seal (included in 52054906).....	1
4		Washer (included in 52054906).....	1
5		Pump piston.....	1
6		Valve stem.....	1
7		Spring.....	1

Head and Ram Illustration and Parts List



Key	Part No.	Description	Qty
	50017225	Quad point flip-top head assembly (includes 1-17)	
1	50017233	Cam yoke assembly	1
2	50061178	Latch	1
3	50061275	Moving jaw	2
4	50060899	Roller bearing	12
5	50060880	Bearing retainer	2
6	50061216	Latch mounting pin	1
7	50061186	Latch nib	1
8	50061240	Lock pin	1
9	50061160	Side jaw roller	2
10	50060910	Compression spring	2
11	50060961	Ball screw	1

Key	Part No.	Description	Qty
12	50061224	Snap ring	2
13	50061003	Screw	2
14	50061038	Screw	2
15	50083660	Set screw	1
16	50017276	Spring pin	2
17	52023662	Head cover	2
20		O-ring (included in 52054906)	1
21		Backup ring (included in 52054906)	1
22	50063812	Piston	1
23	50063405	Pin	1
24	50058398	Compression spring	1
25	50063820	Sleeve	1



U.S. TECHNICAL SUPPORT

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