

ABOT4001 REV1

BATTERY POWERED CRIMP TOOL

DATASHEET

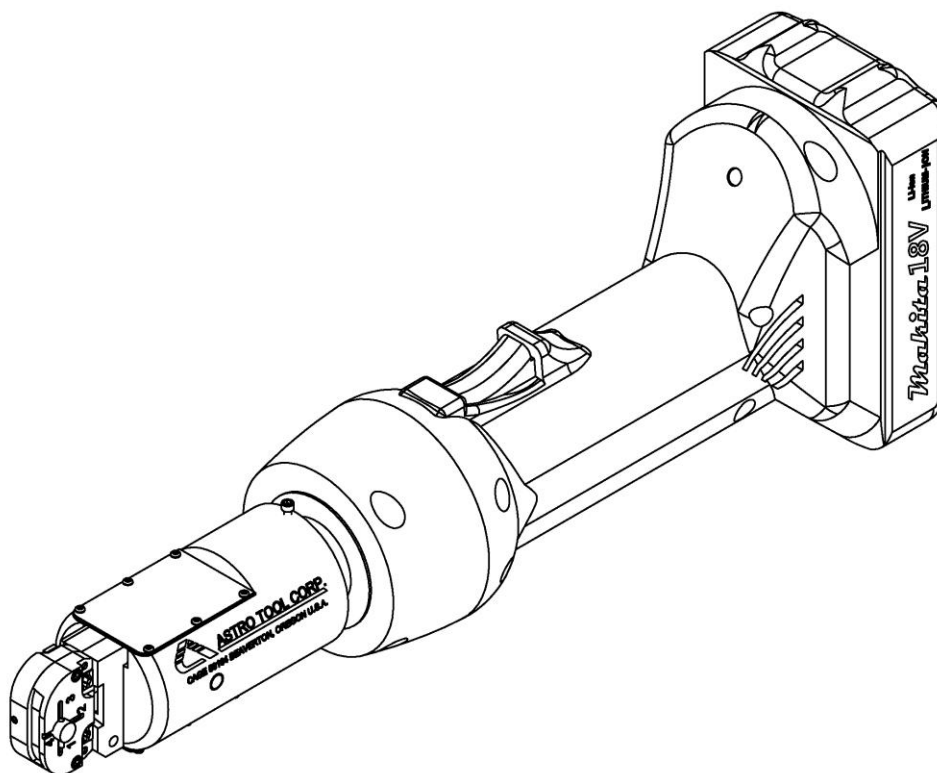


Figure 1

Description

The "ABOT4001 rev1" is a handheld Battery Powered Crimp tool. It uses dies engineered to meet the requirements of the AS22520/40-01 and is intended to crimp insulated terminals, splices, and endcaps manufactured to AS7928 (MIL-T-7928): AS25036 (MS25036), AS17143 (MS17143), and AS25274 (MS25274).

This tool produces crimped assemblies that comply with the IPC/WHMA-A-620-A Industry Guidelines for Stamped and Formed-Closed Barrel-Insulation Support Crimps.

Safety

Safety is essential in the use and maintenance of Astro tools and equipment. Observation of all safety information provided in this manual, as well as any marking on the tool, will avoid hazards and unsafe practices related to the use of this tool.

Purpose of this Manual

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

ABOT4001 rev1 Battery Powered Crimp Tool

Keep this manual available to all personnel. Replacement manuals are available upon request at no charge.

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


KEEP THIS MANUAL


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Important Safety Information


	<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 can result in severe injury or death.</p>
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	<p>⚠ WARNING</p> <p>Electric shock hazard:</p> <p>This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.</p> <p>Failure to observe this warning can result in severe injury or death.</p>
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	<p>⚠ WARNING</p> <p>Wear eye protection when operating or servicing this tool.</p> <p>Failure to wear eye protection can result in serious eye injury from flying debris or hydraulic oil.</p>
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<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 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 can result in severe injury or death.</p>

Important Safety Information


	<p>⚠ WARNING</p> <p>Skin injection hazard:</p> <p>Do not use hands to check for oil leaks. High pressure oil easily punctures skin causing serious injury, gangrene, or death. If injured, seek medical help immediately to remove oil.</p>
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	<p>⚠ WARNING</p> <p>Do not use solvents or flammable liquids to clean the crimping tool. Solvents or flammable liquids could ignite and cause serious injury or property damage.</p>
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	⚠ WARNING
	Keep hands away from the crimping head when crimping. Failure to observe this warning can result in severe injury or death.

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

⚠ 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 can result in severe injury or death.

⚠ CAUTION
<ul style="list-style-type: none">Do not operate the tool without dies. Damage to the ram or crimping head can result.Do not operate with the crimping head open. Damage to the ram or seals can result.This tool is not designed for continuous use. After 100 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 can result in injury or property damage.

Important Safety Information

⚠ CAUTION
Do not allow anything to contact the battery terminals. <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. Failure to observe these precautions can result in injury or property damage.

⚠ CAUTION
<ul style="list-style-type: none">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 can 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 can result in injury and property damage.

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

DO NOT REMOVE TOOL HEAD!

**DO NOT OPERATE TOOL
WITHOUT HEAD INSTALLED!**

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Identification

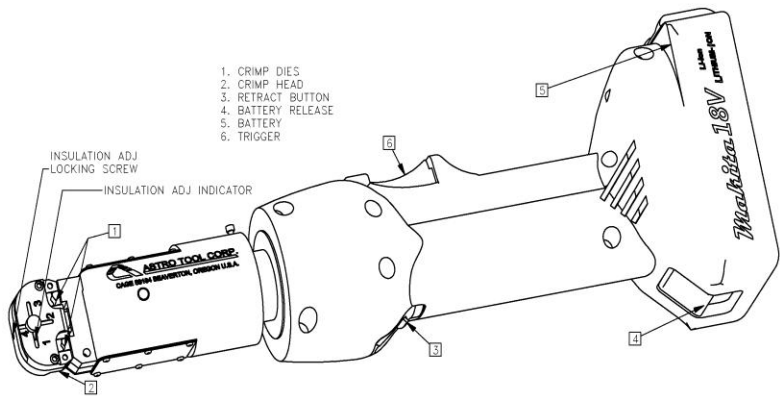


Figure 2

Specifications

Crimp Tool

Length=13.4" (340mm)
Width=2.9" (74mm)
Depth=4.3" (109mm)
Mass/Weight (with battery)=3.74lb (1.7kg)
Sound Level=75db (A) at 1 meter
Vibration=<2.5m/s²
Hydraulic Oil=Shell Tellus® T-15

Crimp Capacities

Crimp Force=1.1 tons (13kN)
Avg. Crimp Time=2 seconds
Avg. Crimps per Charge=Approx. 150

Battery

Charging Voltage=18VDC
Charging Time=22 minutes

US Pat. No. 7,254,982

Operation

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 red LED on the side of the tool signals in the following cases:

What Happens...	Signal	What it Means...
Flashing for 2 seconds	..	Battery is inserted in tool
Constant light for 20 seconds at end of cycle	—	Battery charge is below 17V at beginning of cycle
Tool will not start, and constant light for 20 seconds when trigger is released	—	Battery charge is below 16V at beginning of cycle
Tool stops, and constant light for 20 seconds after trigger is released	—	Battery voltage drops below 13V during cycle
Tool stops, and flashing light for 20 seconds after trigger is released	Motor current exceeds 20A 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 audible beep will be active for 2 seconds.
- If the tool is unable to reach the required crimp force, the red LED, the work light, and an audible beep will pulse until after the trigger is released.

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Insulation Crimp Adjustment

Each tool has four insulation crimp positions. (See Figure 2)
To set the Insulation Crimp Height:

1. Loosen the insulation adjustment locking screw, and turn the indicator to position 4. (See Figure 2)
2. Load the terminal or splice into the crimp cavity.
3. Insert an un-stripped wire into ONLY the insulation barrel of the terminal or splice.
4. Perform a crimp, and remove the crimped terminal or splice.
5. Bend the wire back and forth once. The terminal or splice should retain a grip on the wire insulation.
6. If the wire pulls out, adjust to the next descending insulation crimp position.
7. Perform another crimp, and recheck the wire grip.
8. Repeat the adjustment as necessary until wire is gripped. DO NOT use a tighter setting than required.
9. Retighten the insulation adjustment locking screw.

Crimping Procedure

1. Strip wire to the dimension specified by the terminal, splice, or endcap manufacturer.
2. Place the color coded terminal, splice, or endcap into the proper cavity of the crimp dies, so that the terminal tongue slides under the locator, the splice window slides under the locator, or endcap end rests against the recess in the locator.
3. Depress the trigger on the tool until the terminal, splice, or endcap is held in place by the dies, but not crimped. Release the trigger.
4. Insert the stripped wire into the terminal until the conductor butts against the locator. Or insert the stripped wire into the splice or endcap until the conductor butts against the internal stop of the splice or endcap.
5. Hold the wire in position and complete the crimp by depressing the trigger until the tool has completed its cycle and the dies have opened.
6. If crimping a splice, rotate splice 180 degrees and repeat steps 3-6.

*Note: If it is necessary to retract the Tool Push Rod before a crimp cycle is completed, push and hold the **Emergency Release** button.*

Release button. Pushing and holding the **Emergency Release** button will result in the complete retraction of the push rod.

Inspection and Gauging

Astro recommends the user inspect and gage the tool periodically to ensure dependable and uniform terminations. Frequency of inspection and gauging is determined by the end user to suit their requirements through experience and testing. Frequency of inspection and gauging is dependent upon:

1. The care, amount of use, and handling of the tool.
2. The type and size of the products being crimped.
3. The degree of operator skill.
4. The presence of abnormal amounts of dust and dirt.
5. The user's own established standards.

To ease in the process of inspection, Astro offers the following QPL'd Go/No-go gauges:

MIL #	ASTRO #	GAUGE TYPE	WIRE SIZE (AWG)	GAUGE AREA
AS22520/43-01	AMTG4301	GO/NO-GO	22-16	Red Conductor Cavity
AS22520/43-02	AMTG4302	GO/NO-GO	16-14	Blue Conductor Cavity
AS22520/43-03	AMTG4303	GO/NO-GO	22-16	Red Conductor Cavity
AS22520/43-04	AMTG4304	GO/NO-GO	16-14	Blue Conductor Cavity

CAUTION: DO NOT CRIMP THE GAGE PIN. DOING SO MAY SERIOUSLY DAMAGE THE DIE SET!

Conductor Cavity

1. Depress the trigger on the tool until the dies touch. Release the trigger.
2. Insert the appropriately sized GO gage (Green) under the locator and into the conductor cavity of the die (Red or Blue) you are trying to gage (See Figure 3).
3. The GO gage should freely enter the die.

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4. Attempt to insert the NO-GO gage (Red) under the locator and into the conductor cavity of the die (Red or Blue) you are trying to gage (See Figure 3).
5. The NO-GO gage (Red) member may enter slightly into the die cavity, but should not pass fully through the cavity. If the NO-GO gage (Red) member does enter the cavity fully, the die is worn and should be replaced.

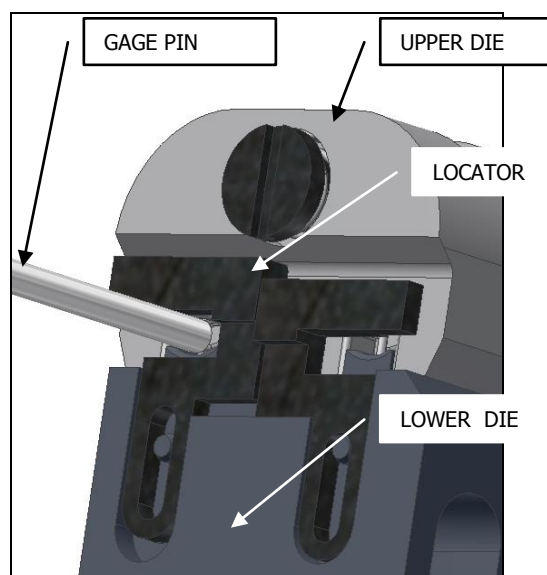


Figure 3

Insulation Cavity

1. With the Insulation Adjustment Indicator on setting #1, depress the trigger on the tool until the dies touch. Release the trigger.
2. Insert the appropriately sized GO gage (Green) into the insulation cavity of the die (Red or Blue) you are trying to gage (See Figure 4).
3. The GO gage (Green) member should freely enter the die.
4. Repeat steps 2 & 3 on the other insulation cavity.
5. Keeping the tool closed. Adjust the Insulation Adjustment to setting #4.
6. Attempt to insert the NO-GO gage (Red) into the insulation cavity of the die (Red or Blue) you are trying to gage (See Figure 4). The NO-GO gage (Red) member may enter slightly into the die cavity, but should not pass fully through the cavity. If the

NO-GO gage (Red) member does enter the cavity fully, the die is worn and should be replaced.

7. Repeat step 6 on the other insulation cavity.

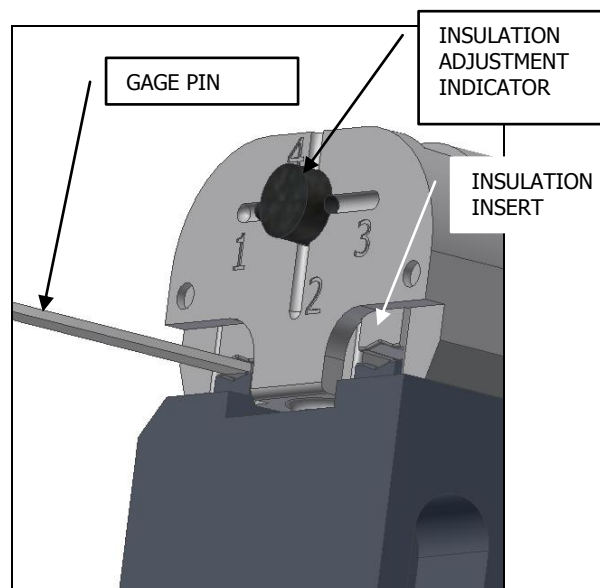


Figure 4

Maintenance

Each Operating Day

Before Use:

1. Inspect the dies for wear or damage such as cracks, gouges, or chips.
2. Inspect the tool for damage or leaks. If damage is detected, return the tool to the Astro Tool repair center for inspection.

After Use:

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

Monthly

1. Thoroughly clean all surfaces.
2. Oil the push rod's outer surface.

Annually or after 10,000 Crimps

1. Return the tool to the Astro Tool repair center for inspection & calibration.

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Trouble Shooting

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 crimp 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.	Clean tool.
	Crimping tool battery contacts are damaged.	Reform contacts.
	Tool components are worn or damaged.	Return tool to Astro Tool.
Dies stop during operation.	Oil level is low.	Return tool to Astro Tool.
	Air in hydraulic system.	Pull trigger and hold emergency release button simultaneously. Hold for approximately 10 seconds.
Tool loses oil.	Damaged internal seal.	Return tool to Astro Tool.

Battery Charger Operating Instructions

Operating Environment

The charger is designed for use in dry areas. All ventilation slots must be kept free. If possible, keep away from heat sources and out of direct sunlight; ambient temperatures in excess of 95°F (35°C) may increase charging times significantly.

AC Connection

Before connecting the charger, check that the AC supply voltage is the same as what is indicated on the charger.

Specifications

Frequency=50Hz to 60Hz
Output Voltage=7.2 to 18VDC
Weight=2.2lb(1.0kg)

Safety Instructions

The charger is designed only for Li-ion and Ni-MH batteries with voltages ranging from 9.6VDC to 18VDC and capacities from 1.7Ah to 3.0Ah.

1. Before using the charger, check power cord, extension cable and connectors for any signs of damage or aging.
2. Do not open batteries or charger. Do not puncture or expose to heat, as there is **RISK OF EXPLOSION**.
3. Only store in dry areas. Protect from moisture and dampness.
4. Do not use if charger is defective and never insert defective batteries.
5. Observe the symbols on the charger's rating plate.
6. Do not throw old batteries into fire or dispose of as domestic waste.
7. Keep metal objects that could cause shorts away from charger.
8. Do not dismantle charger or batteries.

Operation

Green LED

If the charger is connected to the AC line the green LED will flash repeatedly until a battery is installed for charging.

Charging a Battery

When a battery is inserted on to the charger the red LED will illuminate and stay on while charging occurs.

The green LED will turn off while a battery is less than 80% charged.

Both green and red LED's will illuminate when a battery is greater than 80% charged, but not yet fully charged.

When charging is complete, the red LED will turn off, and the green LED will stay on.

If you leave a battery on the charger after it is charged, the charger will switch to its trickle charge mode for 24 hours.

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The following are the possible conditions shown by the right hand yellow LED.

Flashing indicates trouble with the cooling fan system. Ensure that all cooling vents, and battery connections are free of dust or debris. If flashing continues, return the unit to Astro Tool for repair.

Continuous illumination indicates that a conditioning charge is occurring. This happens when the battery being charged is either at a very low or very high temperature. This can also occur if you attempt to charge a fully charged battery. These conditions will increase charging times.

Other conditions indicated by charger LED's

Flashing Red with Green off: Charger is overheated. Unplug charger, and allow it to cool down.

Flashing Red, with Flashing Green: Battery is defective.

Spare Battery Parts

120 VAC Battery Charger	ABTC-110
240 VAC Battery Charger	ABTC-240
18V Replacement Battery	ABT-100
120 VAC Power Adapter	
230 VAC Power Adapter	

Astro Tool offers complete refurbishing and recalibration services. Contact Customer service at Sales@astrotool.com for more information.

Limitation of Liability

ASTRO TOOL CORP. IS NOT LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY NATURE OR KIND RESULTING FROM THE USE, OR MISUSE, OF ANY OF ITS PRODUCTS. OWNERS AND USERS OF ASTRO TOOL PRODUCTS ASSUME FULL RESPONSIBILITY FOR INSTRUCTING THEIR EMPLOYEES IN THE PROPER AND SAFE USE OF SUCH PRODUCTS.

Limited Warranty

Astro Tool Corp. warrants each new product sold by it to be free from defects in material and workmanship under normal use and service. Astro Tool's obligation under this warranty is limited to the free correction or, at Astro Tool's option, the refund of the purchase price of any such product which proves defective in normal service within ninety (90) days after delivery to the first user, provided that the product is returned to Astro Tool with all transportation charges prepaid and which shall appear to Astro Tool's satisfaction, after Astro Tool's inspection, to have been defective in material and workmanship, it being understood that Astro Tool products are not consumer products. This warranty shall not cover any damage to any product which, in the opinion of Astro Tool, was caused by normal wear, misuse, improper operation, tampering, neglect or accident. This warranty is in lieu of all other warranties expressed or implied. No warranty, expressed or implied, is made or authorized to be made or assumed with respect to products of Astro Tool Corp. other than those herein set forth.

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