

ULLMAN

E-MM-1

Metal Marker



WARNING

To reduce the risk of injury, the user must read and understand the operator's manual before using this product.

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GENERAL SAFETY RULES

WARNING

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

WARNING

When using electric appliances, basic precautions should always be followed, including the following:

- a. Read all the instructions before using the appliance.
- b. To reduce the risk of injury, close supervision is necessary when an appliance is used near children.
- c. Only use attachments recommended or sold by the manufacturer.
- d. Do not use outdoors.
- e. To disconnect, release trigger, then remove plug from outlet.
 - Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
 - Unplug from outlet when not in use and before servicing or cleaning.
 - Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner. Return appliance to the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.
- f. To reduce the risk of electrical shock, do not put Metal Marker in water or other liquid. Do not place or store appliance where it can fall or be pulled into a tub or sink.
- g. This appliance is provided with double insulation. Use only identical replacement parts. See instructions for Servicing of Double-Insulated Appliances.

1. WORK AREA

- Keep your work area clean and well lit. Cluttered benches and 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 bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2. ELECTRICAL SAFETY

- To Reduce the Risk of Electric Shock, this appliance has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way. Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three-wire grounded power cord and grounded power supply system.
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
- Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

3. PERSONAL SAFETY

- Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while 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 safety equipment. Always wear eye protection. Gloves must be used for appropriate conditions.

4. TOOL USE AND CARE

- Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
- Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
- Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the plug from power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
- Store idle tools out of the reach of children and other untrained persons.
- Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.
- Keep the tool and its handle dry, clean and free from oil and grease. Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any strong solvents to clean your tool. Following this rule will reduce the risk of loss of control and deterioration of the enclosure plastic.

5. SERVICE

- Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel may result in a risk of injury.
- When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of shock or injury.

SAVE THESE INSTRUCTIONS



WARNING

To reduce skin irritation, eye irritation, risk of breathing harmful fumes, wear chemical resistant gloves and eye protection, use the electrolyte specified in the instructions, use only in a well-ventilated area. The liquid in bottle is alkaline, clean with water if in touch with the liquid. Take care and don't splash the liquid into eyes. Keep this product away from children.

SPECIFIC SAFETY RULES

- Know your power tool. Read operator's manual carefully. Learn its applications and limitations, as well as the specific potential hazards related to this tool. Following this rule will reduce the risk of electric shock, fire, or serious injury.
- Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center. Following this rule will reduce the risk of shock, fire or serious injury.
- Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. A wire gauge size (A.W.G.) of at least 16 is recommended for an extension cord 50 feet or less in length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord. An undersized cord will cause a drop-in line voltage resulting in loss of power and overheating.
- The Metal Marker is UL approved for commercial and household use.
- Do not use the Metal Marker below garage floor level or below grade. Use only in well ventilated areas.
- Do not operate tool if electrolyte is leaking from the onboard spray bottle. Unplug, thoroughly dry all parts and reassemble before using. If spray bottle is cracked or leaking do not use the tool, contact www.Ullman-devices.com/pages/technical-support for a replacement bottle.

- Save these instructions. Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also.

ELECTRICAL

DOUBLE INSULATION

Double insulation is a concept in safety in electric power tools, which eliminates the need for the usual three-wire grounded power cord. Double insulated tools do not need to be grounded.



WARNING

The double insulated system is intended to protect the user from shock resulting from a break in the tool's internal insulation. Observe all normal safety precautions to avoid electrical shock.

SERVICING OF DOUBLE-INSULATED APPLIANCES

In a double-insulated appliance, two systems of insulation are provided instead of grounding. No grounding means is provided on a double-insulated appliance, nor should a means for grounding be added to the appliance. Servicing of a double-insulated appliance requires extreme care and knowledge of the system, and should be done only by qualified service personnel. Replacement parts for a double-insulated appliance must be identical to those parts in the appliance. A double-insulated appliance is marked with the words "DOUBLE INSULATION" or "DOUBLE INSULATED." The symbol (square within a square)" may also be marked on the appliance

ELECTRICAL CONNECTION

This tool should be connected to a power supply that is 110 volts, 60 Hz, AC only (normal household current). Do not operate this tool on direct current (DC).

If the tool does not operate when plugged into an outlet, double-check the power supply.

EXTENSION CORDS

When using a power tool at a considerable distance from a power source, be sure to use an extension cord that has the capacity to handle the current the tool will draw. An undersized cord will cause a drop-in line voltage, resulting in overheating and loss of power.

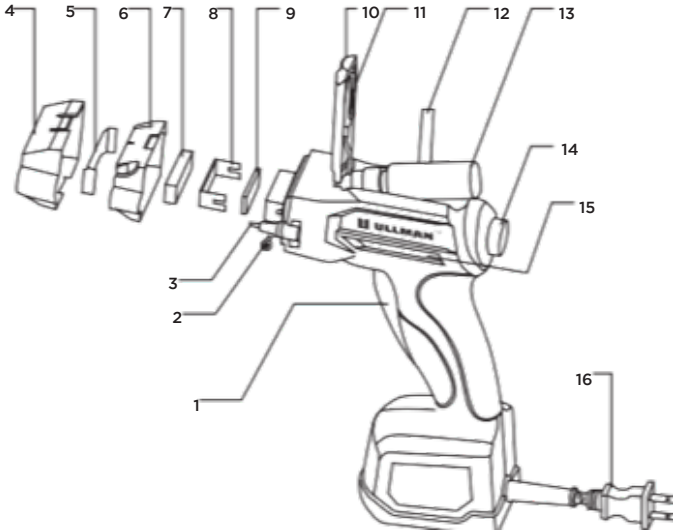
Use the chart to determine the minimum wire size required in an extension cord. Only round jacketed cords listed by Underwriter's Laboratories (UL) should be used.

Before using any extension cord, inspect it for loose or exposed wires and cut or worn insulation.

NOTE

Servicing of a tool with double insulation requires extreme care and knowledge of the system and should be performed only by a qualified service technician. For service, we suggest you return the tool to your nearest authorized service center for repair. Always use original factory replacement parts when servicing.

COMPONENTS IDENTIFICATION



1. Trigger to apply electrical current
2. Screws
3. Automatic Ground post
4. Outer cover
5. Stencil
6. Inner cover
7. Outer fabric pad
8. Metal Mesh
9. Inner fabric pad
10. Door for electrolyte bottle & alternate ground wire
11. Alligator clip & alternate ground wire
12. Electrolyte bottle removal strap
13. Electrolyte bottle
14. Electrolyte application button
15. Electrolyte level window
16. AC plug



Conforms to United States and Canadian standards



Wear eye protection



Double insulated appliance



Waste electrical products should not be disposed of with household waste



Read instructions before use



Wet conditions alert



Risk of electric shock



Risk of injury when instructions are not followed

The Ullman Metal Marking Tool Makes Marks Utilizing AC Current - This tool does not make Etches - Learn the difference and why it is important.

1. Two Different Electrochemical Process: Marking VS. Etching

- Marking is an electrochemical process by which mild metallic salts in the electrolyte, activated by AC electrical current, alters a very thin layer of the surface metal, where electrical current passes through the stencil leaving a black mark on the metal surface. Tests have shown the marking process to only affect a very thin layer of the surface of the metal. The mark made during this process is permanent. The only way to remove the mark is to remove enough surface material to get below the mark.
- Etching is a similar electrochemical process but uses DC current. The process removes metal from the surface of the metal. DC etching penetrates much deeper into the metal and leaves bare metal in the affected areas. The Ullman Metal Marking Tool does not do DC etching.

2. Marking on Chrome Tools

- During the chrome plating process, a relatively thick layer of nickel is applied to the base metal of the tool as an impervious anti-corrosion layer to which the chrome can bond to in a secondary plating operation. The chrome itself is a very thin layer that has microscopic holes in it and is applied for aesthetics. There are various types of chrome utilized by tool manufacturers and the thickness varies based on type and process. The Metal Marker will mark all chrome surfaces and most likely will not penetrate through the chrome layer. The Metal Marker will never penetrate through the nickel layer, so the corrosion resistance of the tool will not be compromised. A properly marked tool treated with neutralizer and subsequent oil film will not rust. Professional mechanics and technicians take pride in their tools and know how to maintain them. Following the tool manufacturers maintenance directions and schedule will protect tools from corrosion.

3. Metals That Can Be Marked

- You can mark tools with surfaces of Chrome, Tool Steels, Stainless Steels, Cast Iron, Monel, and Nickel Alloys. The Metal Marker will not mark aluminum, black oxide coatings, paint, or other surface treatments.

4. Function of The Stencil

- The stencil is a thin sheet of paper, cloth or plastic that is placed between the pad soaked with electrolyte and the surface of the metal. Open areas in the stencil, the chosen design, allows the electrical current pass through the stencil and, with the electrolyte, alter the surface of the metal to make the mark. Any areas on the fabric marking head that are not covered by the stencil will leave a mark. It is important to make sure your stencil covers the whole marking pad.

5. Ullman Metal Marker Stencils

- The Ullman Metal Marking Kit contains a starter set of stencils. Refer to the instructions with the stencils on how to prepare the symbol you want to mark with.

6. Electrolyte

- A two-ounce bottle of electrolyte is included in the Metal Marking Kit. This high-quality electrolyte can be used to mark Chrome, Tool Steels, Stainless Steels, Cast Iron, Monel, and Nickel Alloy finishes.

- Electrolyte can cause minor irritation to some people. Use chemical-resistant gloves. Do not ingest or get electrolyte in your eyes. For more information and full warnings, please go to www.ullman-devices.com/pages/SDS to view the safety data sheets for the Ullman electrolyte.
- Additional Electrolyte can be purchased through the same source as you purchased your Metal Marker or by going to www.Ullman-Devices.com. Use only Ullman electrolyte in your Metal Marker tool.

7. Neutralizer

- A 2 oz bottle of neutralizer concentrate is included in the Metal Marking Kit. This concentrate, when mixed with water, will make 30 oz of neutralizer (15 to 1 ratio). Neutralizer should be liberally applied to the marked area to remove marking residues from the marked area. Ullman also recommends treating the tools with a light oil lubricant after the neutralizer.
- Neutralizer can cause minor irritation to some people. Use chemical-resistant gloves. Do not ingest or get neutralizer in your eyes. For more information and full warnings, please go to www.ullman-devices.com/pages/SDS to view the safety data sheets for the neutralizer.
- Additional Electrolyte can be purchased through the same source as you purchased your Metal Marker or by going to www.Ullman-Devices.com. Use only Ullman electrolyte in your Metal Marker tool.

8. On-Board Electrolyte and Viewing Windows

- As mentioned previously there is a bottle housing the on-board electrolyte within the tool. A small clear electrolyte level viewing window has been provided to allow you to see how much electrolyte is in the tool at any given time without having to open the top door.

OPERATION INSTRUCTIONS

Making a Mark



WARNING

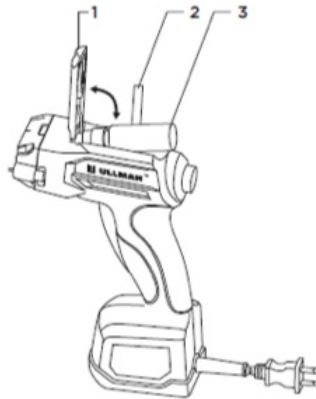
When servicing, use only identical replacement parts. Use of any other parts may create a hazard or cause product damage.

ONE HAND OPERATION

The Ullman Metal Marker is designed to be operated using one hand leaving the other hand free to manipulate the item being marked. Before a mark can be made, the inner and outer marking pads need to be wet with electrolyte.

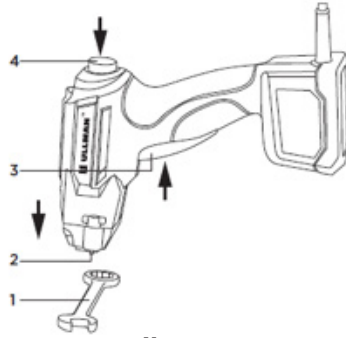
1. Filling Onboard Electrolyte Bottle

- When filling the electrolyte bottle the first time, remove the clear storage cap from the top of the pump spray head.
- If the electrolyte bottle is already mounted in the Metal Marker tool, open the top door (1) pull the black fabric strap (2) that rests under the bottle and remove the bottle and spray head pump (3). Unscrew the pump head from the bottle and fill the bottle with electrolyte, screw the spray pump head back on the bottle, replace bottle and spray head assembly inside the housing with the pump facing toward the marker head and with the black fabric strap under the bottle and close the door (1).
- Make sure the clear storage cap is not on the spray head before inserting filled electrolyte bottle into the tool. The clear cap is only used for long-term storage when spray bottle is removed from the Metal Marker it will restrict the electrolyte flow if inserted in to the tool.



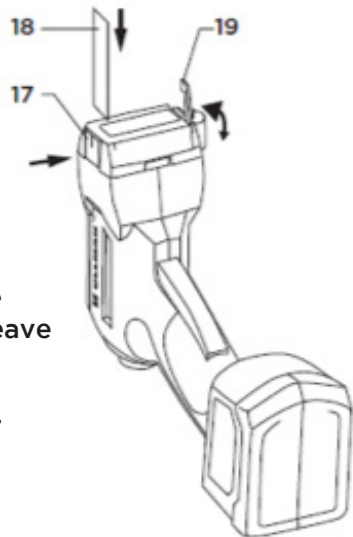
2. Activate Electrolyte

- Pump electrolyte to the marking head by holding the Metal Marker with the marking head facing own and repeatedly push the black button (4) on the back of the tool until the fabric on the marker head is saturated. It may take 25 or more pumps of the black button to saturate the marker head.



3. Mount Your Chosen Stencils

- We suggest that you practice making marks a few times before marking your tools. Use old tools or the stainless-steel grounding pad supplied with the Metal Marker. The marks you make with the Metal Marker are permanent and can only be removed by grinding them off.
- Orient the stencil so the symbol or image you wish to mark faces the fiber marking head with the top of the image toward the top of the tool. Push button (17) to hold the one side of stencil holder open and insert the stencil (18). Lift the stencil retention bar (19) and place the other end of the stencil under the bar, gently pull taught and push the bar slowly into place making sure the stencil stays straight, without wrinkles and covers all the fabric marking head. (see image below).
- Stencils may also be tapped to the item to be marked and the marking head applied to the surface of the stencil and tool.



WARNING

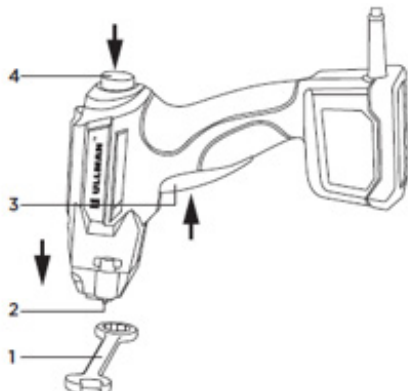
Any contact of the fabric marker pad to the metal surface (item to be marked) outside of the stencil will leave an unwanted mark when the trigger is activated. Make sure the stencil completely covers the fabric marker head.

WARNING

Make sure to unplug the Metal Marker before mounting the stencil.

4. Make a Mark

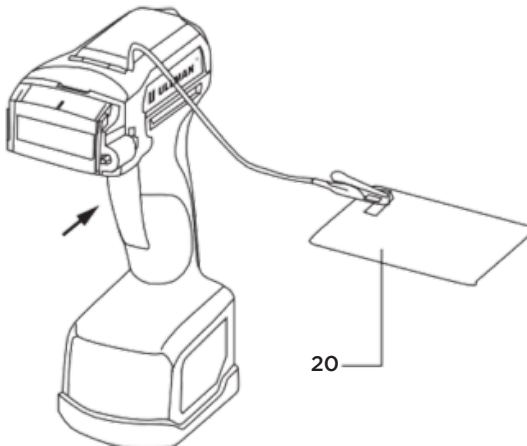
- We suggest that you practice making marks a few times before marking your tools. Use old tools or the stainless-steel grounding pad supplied with the Metal Marker. The marks you make with the Metal Marker are permanent and can only be removed by grinding them off.
- Plug in the Metal Marker to a 110V outlet. Place the tool/item you want to mark on a level surface. Lightly blot access electrolyte from the surface of the stencil using a paper towel (this will eliminate excess electrolyte making contact outside of the stencil and leaving an unwanted line or mark). Position the marker head over the area you wish to mark. The Metal Marker will not make a mark until you pull the trigger to apply electric current, so you can take your time to position the marking head.
- There are vertical and horizontal center lines on the black marker head (1) to align the mark on the stencil with the chosen location on the tool to be marked. Make sure the retractable ground post (2) is touching the metal of the tool. When ready to mark pull the large black trigger (3) on the front of the hand grip and hold for 5 seconds. Make sure not to move the marker while depressing the trigger or you mark will not be clear. Allow 20 seconds of rest time for the Metal Marker after each 5 second activation to make a mark.
- Periodic rinsing of the stencil with electrolyte and blotting with paper towel to remove buildup of marking byproducts will help insure clear, dark marks. This can be done while the stencil is mounted by pumping the electrolyte button and then blotting.
- If, because of the shape of the item to be marked, you cannot make the ground post touch metal and/or place the mark where you want, see the instructions in the alternate alligator clip ground marking method.



ALTERNATE ALLIGATOR CLIP GROUND

If you have difficulty placing the marking head and grounding pin in contact with the tool to be marked at the same time due to tool design, you can utilize the alternate alligator clip ground to make the connection. The alternate grounding wire with alligator clip (11) is housed in a space under a small door on the top of the tool (10). This is the same door that houses the electrolyte bottle and pump (13). Touching or clipping the wire to the tool you wish to mark will eliminate the need for the grounding pin to be in contact with the tool during the marking process.

Another grounding method is to use the stainless-steel metal grounding plate that is provided with the Metal Marker. Place the grounding plate on a solid working surface and attach the alligator clip to the small tab protruding from the surface of the plate. Laying the tool or item you wish to mark on this grounded plate will complete the ground connection allowing you to mark the tool. Using this method eliminates the need to have the retractable pin on the marking head in contact with the tool during the marking process.



MAINTENANCE

CLEANING AND STORING THE METAL MARKER

WARNING

When servicing, use only identical replacement parts. Use of any other parts may create a hazard or cause product damage.

WARNING

Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc., come in contact with plastic parts. Chemicals can damage, weaken or destroy plastic, which may result in serious personal injury.

WARNING

Make sure you unplug the Metal Marker before removing the marker head for cleanup or before replacing the fabric marking pad or stencil. Never make any mark without the outer fabric marking pad, which would result in short circuit or electrical shock.

Remove the marker head by pulling the black front marker head assembly off the tool. The head should come off with moderate pulling motion. Remove the fabric marking pad, rinse the marker head and fabric pad thoroughly to remove built up deposits. You should also thoroughly rinse the metal mesh and inner pad (under the mesh) area on the part of the marker head still attached to the Metal Marker as well as the retracting grounding pin. **USE ONLY CLEAN WATER TO RINSE**, do not use soap, electrolyte, neutralizer or other liquids. Let the parts dry and reassemble.

If you want to store the tool or lay the tool down on its side for an extended period, please remove the electrolyte bottle and put the clear cap back on the bottle spray head, store spray bottle upright.

TECHNICAL SUPPORT

For FAQ, marking tips and technical support, go to www.ullman-devices.com/pages/technical-support or e-mail customer service at info@ullman-devices.com.

WARRANTY

The Ullman Metal Marking Tool is warrantied against manufacturer defect for 1 year from date of purchase. Please go to www.ullman-devices.com/pages/warranty to register your tool. Contact Ullman directly to manage your warranty needs. Please save your receipt as it will be required to prove date of purchase.