

SLAG CLEANER

USER MANUAL

Slag removal tool for use on laser cutting machine slats

For cleaning slag accumulated on laser cutting table slats

1. Safety

1.1 General Safety Instructions



WARNING Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1.2 Specific Safety Warnings and Instructions

- A. Unplug tool from power before performing maintenance.
- B. Use protective equipment. Always wear safety glasses when working with the machine. Protective clothing such as dust mask, gloves, steel toed non-slip footwear and hearing protection is recommended.
- C. Do not expose tool to wet conditions or operate in damp environments.
- D. Keep power cord clear from working range of machine. Always lead cord away from machine. Do not apply tension to power cord.

2. Supporting Information

2.1 Conditions of Use

The tool is only to be used for removing slag from slats on laser cutting machines where the slats create a horizontal plane and the vertical slat sides are cleaned. The slats may be steel, stainless steel, or copper. Not to be used in wet areas or outside.

2.2 Mains Connection

Connect only to single-phase AC voltage as indicated on the rating sticker. Plug-in receptacle must have ground contact with current capacity exceeding the tool rating. Only plug in when tool switches are off.

2.3 Maintenance

The ventilation slots of motor enclosure must be kept clear or overheating may result.

If the supply cord is damaged it must only be replaced by qualified personnel. Only use original replacement parts when performing repairs or maintenance.

3. Description

This machine performs cleaning using two cutters on each side of the slat.

The tool is moved along the slats on the bed of a laser cutting machine to remove slag accumulated during cutting. No pushing force from the rear is required. When the two green start buttons are pressed, the machine will advance automatically through the slagged area.

When the end of the slat is reached, the handle can be lifted slightly to pull the machine backward on its wheel.

Multiple rotary cutting tools are located on both sides of the slat to lift and remove the slag.

The machine can be used on steel, copper, or stainless steel slats. When not in use, it can be rolled on the floor and stored in an upright position.

4. Initial Assembly

This machine is shipped in two pieces: the main machine body and the handle assembly. All fasteners are metric.

- First, assemble the two-piece handle assembly together using the bolts located at the center section. The button panel and the lower section with the power cable outlet must face the same direction.

- On the main machine body, install the handle assembly onto the mounting stub with the handle power cable positioned toward the socket side of the machine body. Tighten the four studs connecting the machine body and the handle assembly.
- Install a plug suitable for the electrical infrastructure of your region onto the end of the power cable.
- The crusher blades will be shipped pre-installed on the machine. Only check the tightness using an Allen key. When the Allen key is turned, the blades will begin to rotate. This does not mean the stud is fully tightened. Apply several light hand impacts to the Allen key and make sure the stud is fully tightened.

5. Warning



WARNING Do not plug the machine into the power outlet before making sure the switches located on the handle control section are in the OFF position.

- Keep the cutters facing downward. Do not tilt the machine while it is plugged in or while the switches are in the ON position. When cleaning of one row is completed, release the green start buttons and pull the machine backward over the slat without operating the machine.
- Keep hands away from the crusher blade system.
- In order for the machine to operate, the main switch must be in the ON position, the fuse located inside the fuse box in front of the buttons must be ON, and the emergency stop button must not be pressed. If the main switch is OFF or the emergency stop button is pressed, the motors will not operate even if power is supplied. If the fuse inside the fuse box is switched OFF, the motors will also not operate.
- If the motor overheats, the fuse located in front of the buttons may trip. Possible causes of stopping include excessive slag accumulation due to infrequent cleaning. Use of unauthorized fuses may void the warranty.

To begin operation, place the tool onto the slat bed of the laser cutting machine, center the cutters over a slat, and turn on the main switch. Then press both green start buttons simultaneously. Rotation of the cutting heads will pull the tool forward along the slats. The slats may be cleaned by moving the tool in either direction along the slat.

With the switches in the OFF position, plug the tool into a suitable electrical outlet capable of supplying the current specified on the machine label or shown in the Technical Data table above.

When stored in the upright position, the unit is unstable and care must be taken to prevent it from tipping over, otherwise components located at the end of the handle may be damaged. Damage caused by dropping, misuse, or tipping over is not covered under warranty.

6. Cutter Installation

The cutter set is shipped pre-installed on the machine for reference purposes. The installed blade orientation and technical drawing are shown below.

Installation of the blades in a different direction will void the machine warranty.

Incorrect blade installation will significantly reduce cleaning performance and may cause motor overheating.



Figure 1
Installed cutter position

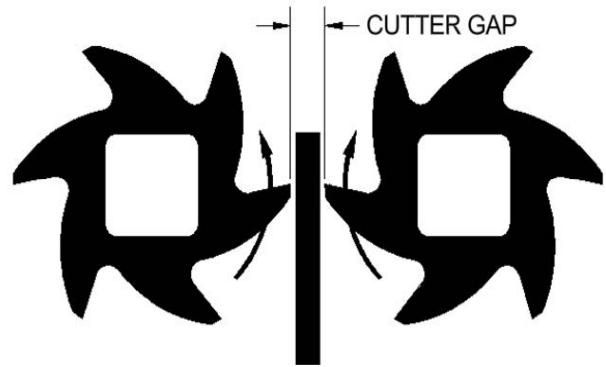


Figure 2
Cutter gap technical drawing

7. Motor Brushes

If the tool has low torque during operation, the brushes may need to be replaced.

Parts Required: 2 Pieces Makita Carbon Brush CB-204

Remove the lower sheet metal cover located on the bottom section of the machine and separate it from the machine body. Remove the studs located between the upper cover and the black sheet metal underneath, then pull off the cover. The motor section will become accessible.

Remove the brush caps from the motor.

Remove the old brushes, install the new brushes, and reinstall the caps.

8. Assembly Drawing

All other repairs require qualified personnel to perform. In this case, the factory or distributor should be contacted for further instructions.

9. Warranty

The product warranty guarantees that all products are free from defects in material and workmanship for a period of 12 months from the date of shipment, provided that the products are used under normal operating conditions.

This limited warranty is non-transferable and applies only to the original purchaser of new products purchased directly from authorized distributors.

If a defect is identified, the company may choose to repair, replace, or refund the purchase price of the product. The purchaser's sole remedy is limited to these options.

Specifically, the warranty does not cover problems resulting from misuse, inadequate maintenance, unauthorized modifications, or normal wear and tear, including consumable items such as cutters.

Troubleshooting Guide

Problem	Possible Cause	Solution
Machine does not clean properly.	Cutters installed incorrectly. (See Section 6)	Check whether the cutters are installed backwards. Install the cutters correctly with the flat surface facing upward.
Machine does not start.	Fuse inside the fuse box on the handle has tripped.	Reset the fuse.
Machine does not start.	Switch inside the handle box has failed.	Replace the switch.
Machine does not start.	Start buttons on the handle have failed.	Replace the start buttons on the handle box.
Machine does not start.	Wiring issue.	Refer to the electrical diagram and verify that all wires are connected correctly.
Burning smell and sparks are coming from inside the motor housing.	Motor failure or worn brushes.	Check whether the brushes are worn. Replace if worn. If the brushes are in good condition, replace the motor.
Grinding noise occurs during operation or cutters do not rotate.	Gears inside the gearbox are broken.	Check the gears and motor, replace if necessary.
Grinding noise occurs during operation or cutters do not rotate.	Motor failure or worn brushes.	Check whether the brushes are worn. Replace if worn. If the brushes are in good condition, replace the motor.
Sparks are coming from inside the motor.	Motor failure.	Replace the motor.