



# FAQ's MagicCleaner 150&300 – Prozesse

## **What are the advantages choosing an electrochemical process to clean the weld?**

The electrochemical process is a combination of electrical power and chemical solution.

This combination helps to:

- Cleaning fast the welds on stainless steel.
- Leaving unaltered the stainless-steel surface without any scratches (mechanical abrasives).
- Easily rebuilding the passivation layer without any contaminations, re-creating a compact and smooth layer.

## **What is the difference between inverter and transformer technology?**

The inverter technology, compare to transformer, can easily control the current during the cleaning/polishing process. This property avoids pitting corrosion, leaving the stainless-steel surface without any damages.

The inverter board is lighter than transformer, in this way it is facilitate the transportation.

## **Why is a cleaning device with pumping system better than a device that uses a dip & work process?**

The pump system ensures:

- The liquid flows from the tube directly to the tip, to wet the felt or the brush.
- The chemical solution interacts only on the specific cleaning area.
- No liquid in contact with the operator.
- No interruption during work.
- No heavy metal contamination into the chemical solution.
- Possibility of obtaining perfect results also in difficult points to reach.

## **Is this cleaning technology suitable for all kind of stainless steel?**

Yes, absolutely, it is possible to use MC150/MC300 with every kind of stainless steel: martensitic, ferritic, austenitic, Duplex, Super duplex, 17-4 PH, etc.

## **How many meters is it possible to clean with one liter of electrochemical solution and one pad/brush?**

The weld quality plays a fundamental role during the cleaning/polishing process.

If the weld is covered by iridescent welding residual, then the cleaning process is fast (fixing power machine and chemical solution).

In this situation, it is possible to estimate with one liter of electrochemical solution:

- 100 -120 m of MIG welding
- 150 - 200 m of TIG welding

For the same reason it is possible to estimate 50-70m of weld cleaning with pad/brush accessories.



### **Is the maximum power of MagicCleaner related to the stainless-steel thickness?**

The cleaning process does not affect by stainless steel thickness because it is a surface treatment. It is affected by the quality and quantity of welding residual.

### **What is the capacity of the tank inside the MagicCleaner 300?**

The maximum tank capacity is 1.8L.

It is designed to resist against the chemical solution inside of it, thus the liquid not used can remain into the machine without any damages of the pumping system.

### **When using the MC300 device for the first time, the liquid does not react with the welds. What should be done?**

During the pump test, we use a specific liquid. This liquid remains into the tube of the torch. The device will not work until all this liquid has poured out and the pad/brush is wet with pickling solution. After fill the tank, and before starting the electrochemical process, it is necessary to let the pump work until the pickling solution starts to pour out. Please, set the pump on maximum level in automatic position. This operation requires some minutes.

### **What are the indicative settings to optimize the cleaning process (AC)?**

- Using MagicCleaner300 with **cleaning solution**:
  - Working setting: AC
  - Power setting: Level 3
  - Pumping settings:
    - 1-2 drops using the pad
    - 2-3 drops using the brush
- Using MagicCleaner150 with **cleaning solution**:
  - Working setting: AC
  - Power setting: Level medium
  - Pumping settings: Not available (manual torch)

### **What are the indicative settings to optimize the polishing process (DC)?**

Usually, polishing function requires a higher quantity of chemical solution than cleaning function.

- Using MagicCleaner300 with **polishing solution**:
  - Working setting: DC
  - Power setting: Level 3
  - Pumping settings:
    - 2-3 drops using the pad
    - 3-4 drops using the brush



- Using MagicCleaner150 with **polishing solution**:
  - Working setting: DC
  - Power setting: Level Medium
  - Pumping settings: Not available (manual torch)

### **In which situation is it better to use the pad or the carbon brush?**

- **The pad** is useful to clean linear weld on flat surface or parts with external or internal angle.
- **The brush** is useful to clean round shape or complicated parts where the pad is not easy to be used. Also, it depends on the customer's feelings during the cleaning process.

### **What is the maximum length of the power torch cable for MC150?**

The maximum length of MC150 power torch cable can be 6m; otherwise, the electrical performances go down quickly.

The standard length of the MC150 power torch cable is 2m.

Other available lengths: 4m - 6m

### **Is it possible to work with two torches at the same time?**

Yes, it is possible to work with two torches at the same time.

(Using MC150 it is necessary to buy a special cable with double connector).

It is advisable to set the device to the maximum level power.

The current is shared by the two torches according to the type of welding residuals, the electrode torch dimensions and chemical solution.

### **MC300: is it necessary connect the device to air pressure system?**

It is recommended to connect the MC300 device to air pressure system to:

- Avoiding inhalation of the vapors.
- Cooling down the torch to avoid overheating of the internal components.
- Increasing the pad/brush lifetime.

### **MC300: Can I use the big torch of the MC300 upside down to clean/polish the welds?**

It is possible to use the big torch upside down when the blowing system is running. Otherwise, the liquid can flow inside the torch, ruining the inverter inside the device.

### **Why the inserts of the small torch are in graphite and for the blowing torch are in tungsten?**

MC300 device is usually used for high productivity (3-8h/day), thus, on the blowing torch we have used a tungsten insert instead of graphite insert because it has a higher mechanical resistance and the probability to break it is extremely low. Using the tungsten, it is possible to provide a good electrical connection, increasing the tenacity of the insert.

Instead MC150 device is usually used for low productivity (1-3h/day), the inserts are made in graphite to reduce the cost of material, increasing the conductivity.

For the same reason, also the big insert (45mm) is made in graphite.

**Sometimes the consumption of the pad/brush is extremely fast. What is the main reason?**

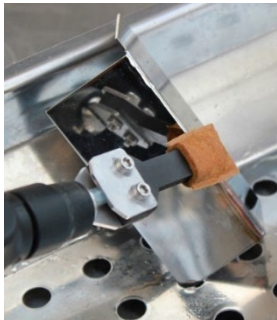
If the power is too high and the liquid flow too low, it is possible that the pad/brush consumes rapidly.

To increase the lifetime of the pad/brush it is advisable to keep the pad/brush always wet during the cleaning process.



In this way, locally, it is possible to cool down the pad/brush because the temperature arises during the cleaning time due to Joule effect.

It is advisable to find an equilibrium between the pumping settings and the power settings of the machine.

**Pad:** we recommend cleaning the welds using the entire length of the pad

	
<p><i>Correct position of the torch with the pad on the stainless steel surface.</i></p>	<p><i>Wrong position of the torch with the pad on the stainless steel surface.</i></p>

**Carbon brush:** the bristles must be taut against the stainless steel. In this way the liquid can wet each bristle, avoiding sparks and fumes. In this way the consumption of the brush/pad is smooth and homogeneous.

	
<p><i>Correct position of the torch with the brush on the stainless steel surface</i></p>	<p><i>Wrong position of the torch with the brush on the stainless steel surface</i></p>

### The plastic sleeve of the brush is deformed. What happened?

When the user works with the torch in dip & work mode it is possible to have this kind of issue. The liquid cannot wet completely the bristles. This situation can increase the temperature inside the plastic shield, deforming it beyond repair.

### How to match the electrochemical devices with the right applications?

- MagicCleaner 300 → MIG/TIG Welding  
4-8 h/day (high productivity)
- MagicCleaner 150 → TIG Welding  
1-3 h/day (lower productivity)

### After the entire cleaning process, it is possible to notice some white stains on stainless steel. What are the reasons? How to fix them?

The reason is related to:

- The neutralization process was not too accurate to neutralize the chemical solution. The liquid residual, not completely removed, has damaged the stainless-steel surface.
- The dry process was not too accurate. The neutralized liquid was not removed correctly and the salt (because the acid was neutralized, transforming it in salt) was sedimented on the stainless-steel surface. It is advisable to use more than one special cloth to correctly absorb the neutralized liquid, leaving the stainless steel completely dry.

To remove the stain, it is advisable to repeat the entire electrochemical process only on the white area and dry carefully.

### Is it possible to replace the neutralization solution with water?

The neutralization solution contains substances able to regulate the pH of the stainless-steel surface better than simple tap water. The electrochemical solution viscosity is extremely high.

The water does not have the ability to easily remove the chemical solution, providing the chance to create dangerous corrosion points. Tap water contains low percentage of chloride. This substance is able to accelerate the corrosion process (pitting corrosion), reducing the stainless-steel lifetime.

### After cleaning process there are some small dark areas on the welds. What should be done?



This situation can happen if the current is too high or there is not enough gas protection during the welding process. This weld cannot be cleaned electrochemically because there is no reaction between black oxide and the chemical solutions during the pickling process. Principally, the substances inside the black oxide could be:

- **Silicium** (no reaction with acids)
- **Chromium** carbide (passivation depleting)



## **DAILY MAINTENANCE**

### **What are the maintenance steps after the cleaning process?**

After the entire cleaning process, it is advisable to remove the pad/brush and clean the insert/adaptor with water to remove the welding/acid residuals. In this way the accessories will be free from contamination, and it is possible to avoid black marks on the stainless steel when it will use the machine next time.

## **FOR SPECIAL REPAIRING**

### **What should be done when the device must be shipped to a service center?**

Regarding the MC300: the device must be shipped on the original box without any liquid inside the tank to avoid transport damages and leakages.

MC150 and MC300 must be shipped with all cables and manual torch to check electrical connections.

## **PRINTING PROCESS**

### **How much liquid should be used to mark?**

It depends on the size of the marking screen. Providing the liquid on the printing foil, it is possible to completely mark an area of 100\*100 mm before to wet the pad again.

### **Sometimes, after printing process, the marked area is brown instead of black and there are haloes around it. What is the reason?**

The marking process depends on some parameters:

- Number of steps with the marking torch
- Electrolytic liquid quantity
- Temperature
- Incorrect neutralization process

If the number of electrode movements is too high, the liquid content on the pad is low, and the temperature on the graphite is high, the probability to obtain a brown area is extremely high. The neutralization liquid helps to avoid stains, drying the surface carefully to obtain a surface cleaned by any liquids.

## **DAILY MAINTENANCE**

### **What are the maintenance steps after the marking process?**

After the marking process, it is advisable to wash the screen with water to clean the marking area from dirty and salt solution, avoiding the salt creation that can fill up the marking area.