



Capital Weld Cleaners
www.capitalweldcleaners.com
(480) 967-0016

Operating instructions

Models:
CW110
CW200



Safety Notices

Explanation of safety notices



DANGER!

Indicates immediate danger.

- If not avoided, death or serious injury will result.
-



WARNING!

Indicates a potentially hazardous situation.

- If not avoided, death or serious injury may result.
-



CAUTION!

Indicates a situation where damage or injury could occur.

- If not avoided, minor injury and/or damage to property may result.
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NOTE!

Indicates a risk of flawed results and possible damage to the equipment.

IMPORTANT!

Indicates tips for correct operation and other particularly useful information.

This does not indicate a potentially hazardous situation.

If you see any of the symbols depicted in the "Safety rules" chapter, special care is required.

General



The device is manufactured using state-of-the-art technology and according to recognized safety standards. If used incorrectly or misused, however, it can cause:

- injury to the operator or a third party,
- damage to the device and other material assets belonging to the operating company,
- inefficient operation of the device.

All persons involved in commissioning, operating, maintaining and servicing the device must:

- be suitably qualified,
- read and follow these operating instructions carefully.

The operating instructions must always be at hand wherever the device is being used. In addition to the operating instructions, attention must also be paid to any generally applicable and local regulations regarding accident prevention and environmental protection.

All safety and danger notices on the device

- must be in a legible state,
- must not be damaged,
- must not be removed,
- must not be covered, pasted or painted over.

Before switching on the device, rectify any faults that could compromise safety.

This is for your personal safety!

Utilization for intended purpose only



The machine may only be used for jobs as defined by the "Intended purpose".

Utilization for any other purpose, or in any other manner, shall be deemed to be "not in accordance with the intended purpose". The manufacturer shall not be liable for any damage resulting from such improper use.

Utilization in accordance with the "intended purpose" also comprises

- complete reading and following of all the instructions given in this manual
- complete reading and following of all the safety instructions and danger warnings
- performing all stipulated inspection and servicing work.

The machine is designed to be used in industrial and workshop environments. The manufacturer shall not be liable for any damage resulting from use of the machine in residential premises.

Likewise Capital Weld Cleaners will accept no liability for defective or faulty work results.

Environmental conditions



Operation or storage of the device outside the stipulated area will be deemed as not in accordance with the intended purpose. The manufacturer shall not be held liable for any damage arising from such usage.

Ambient temperature range:

- during operation: -10 °C to + 40 °C (14 °F to 104 °F)
 - during transport and storage: -20 °C to +55 °C (-4 °F to 131 °F)
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Relative humidity:

- up to 50% at 40 °C (104 °F)
- up to 90% at 20 °C (68 °F)

The surrounding air must be free from dust, acids, corrosive gases or substances, etc.

Can be used at altitudes of up to 2000 m (6561 ft. 8.16 in.)

Obligations of the operating company

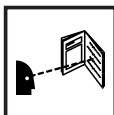


The operating company undertakes to allow only such people to work with the device who:

- are familiar with the fundamental instructions regarding safety and accident prevention, and have been instructed how to use the device
- have read and understood the "Safety rules" section and warning notices in these operating instructions, and then signed them to confirm this
- are trained to produce the required results.

Checks must be carried out at regular intervals to ensure that operators are working in a safety-conscious manner.

Obligations of personnel



Before using the device, all persons instructed to do so undertake:

- to observe the basic instructions regarding safety at work and accident prevention
- to read the "Safety rules" section and warning notices in these operating instructions, and sign them to confirm that they have understood them and will follow them.

Before leaving the work area, ensure that people or property cannot come to any harm in your absence.

Protection for yourself and other persons



When working with this machine, you are exposed to many different hazards such as:

- irritation of skin in case of contact with cleaning agent (cleaning solution,)
- danger of serious eye injury in case of contact with cleaning solution
- general hazards when handling chemicals



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- electrical hazards from mains and cleaning current



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- harmful vapours



Anybody working on the workpiece during cleaning must wear suitable protective clothing with the following characteristics:

- resistant against acids and chemicals
- isolating and dry

Protective clothing" also includes:



- wearing a pair of appropriate regulation goggles (with sideguards)



- wearing stout footwear that will also insulate even in wet conditions



- wearing protective gloves (hand protection), impermeable, resistant against acids and chemicals



- wearing protective apron (e.g. when refilling chemicals)

Immediately remove any working garment contaminated with cleaning agent!



- Don't eat and drink during working
- Keep cleaning solution away from food and drink



- Wash your hands before breaks and at the end of a working day



Keep other people

- well away from the equipment and the working operation while this is in progress. If there are still any other persons nearby during working, you must
- draw their attention to all the dangers
- provide them with suitable protective equipment and/or
- erect suitable protective partitions or curtains.

Instructions for the correct handling of cleaning solutions

The following aspects must be observed when handling cleaning solutions (For more detailed data please refer to the relevant safety data sheets. You will find the current safety data sheets on <http://www.capitalweldcleaners.com>).



First-aid measures

- After inhaling of vapors provide for supply of fresh air. In case of complaint see a doctor.
- After contact with skin wash with water and soap and rinse carefully. In case of continued irritation of skin see a doctor.
- If swallowed do not induce vomiting. Rinse mouth and drink a lot of water, see a doctor immediately.



- After contact with eyes rinse eyes several minutes under running water with eyelid open (eye shower) and see a doctor.

Storage / safekeeping

- Use only containers especially approved for cleaning solutions
- Keep container closed tightly
- Don't store together with alkali (lyes) and metals
- Store in a cool and dry place
- Provide for acid-proof floor



- ! Keep under lock and key and out the reach of children

Other instructions

- Don't heat to avoid thermal decomposition (development of toxic gases)
- Provide for emergency cooling in case of fire close by
- Avoid contact with eyes, skin and mucous membranes
- Use only in well ventilated areas. In case of insufficient ventilation use respiratory protection
- Dispose of cleaning solutions and/or uncleaned packagings as provided by national regulations. Don't dispose together with domestic waste.



- Don't let agent get into drain system, into waters or the ground water (e.g. via the ground).

Hazards from mains and cleaning current



An electric shock can be fatal. Every electric shock is hazardous to life.

Do not touch any live parts, either inside or outside the machine.

Ensure sufficient protection for yourself and for other people by means of a dry base or cover that provides adequate insulation against the ground/frame potential. The base or cover must completely cover the entire area between your body and the ground/frame potential.

All cables and other leads must be firmly attached, undamaged, properly insulated and adequately dimensioned. Immediately replace any loose connections, scorched, damaged or underdimensioned cables or other leads.

Do not loop any cables or other leads around your body or any part of your body.

Have the mains and the machine supply leads checked regularly by a qualified electrician to ensure that the PE (protective earth) conductor is functioning correctly.

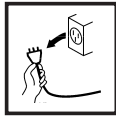
CW110/200 Units require a dedicated Outlet with at least 20A of power available.

It is strongly recommended to plug the CW110/200 unit(s) directly into the outlet. However, if an extension chord is required, the recommended Extension cord should be no longer than 50' and rated as heavy duty (20A w/ 10 Gauge chord)

If a Dedicated Outlet is not available, then it would be best to monitor what is plugged in and running. When the CW110/200 unit is in use, other equipment can be unplugged or turned off to allow for full power usage.

Wherever necessary, use suitable measures to ensure that the workpiece is sufficiently grounded (earthed).

Switch off any appliances that are not in use.



Before doing any work on the machine, switch the machine off and unplug it from the main.

Put up a clearly legible and easy-to-understand warning sign to stop anybody inadvertently plugging the machine back into the mains and switching it back on again.

After opening up the machine:

- ensure that all machine components are electrically dead.
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If work needs to be performed on any live parts, there must be a second person on hand to immediately switch off the machine at the main switch in an emergency.

Particular danger spots

Cover may only be removed as long as is absolutely necessary to carry out maintenance and repair work.

While the machine is in use:

- ensure that the cover is properly secured.
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Special regulations apply to rooms at risk from fire and/or explosion. Observe all relevant national and international regulations.



Power sources for use in spaces with increased electrical danger (e.g. boilers) must be identified by the [S] (for "safety") mark.



Measurement of pollutant emissions while working with the device revealed values below the admissible mean toxic limit.

Nevertheless:

- Provide for sufficient supply of fresh air.
 - Keep head away from generated vapours.
 - Don't inhale generated vapours and/or exhaust them from working area by appropriate means.
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A safety inspection should be carried out by a qualified electrician

- after any changes are made
 - after any additional parts are installed, or after any conversions
 - after repair, care and maintenance has been carried out
 - at least every twelve months.
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For safety inspections, follow the appropriate national and international standards and directives.

Further details on safety inspection and calibration can be obtained from Capital Weld Cleaners. They will provide you on request with any documents you may require.

Safety precautions in normal operation



Only operate the machine if all of its protective features are fully functional. If any of the protective features are not fully functional, this endangers:

- the life and well-being of the operator or other persons
- the equipment and other tangible assets belonging to the owner/operator
- efficient working with the equipment.

Any safety features that are not fully functional must be put right before you switch on the machine.

Never evade safety features and never put safety features out of order.

Before switching on the machine, ensure that nobody can be endangered by your doing so.

At least once a week, check the machine for any damage that may be visible from the outside, and check that the safety features all function correctly.

Only Capital Weld Cleaning solution is suitable for use in our machines.

Do not mix Capital Weld Cleaning solution with other cleaning agents.

If any damage occurs in cases where other cleaning agents have been used, the manufacturer shall not be liable for any such damage, and all warranty claims shall be null and void.

Only transport the cleaning solution in closed original containers.

Commissioning, maintenance and repair



It is impossible to guarantee that bought-in parts are designed and manufactured to meet the demands made of them, or that they satisfy safety requirements.

- Use only original spare and wearing parts (also applies to standard parts).
- Do not carry out any modifications, alterations, etc. to the device without the manufacturer's consent.
- Components that are not in perfect condition must be replaced immediately.

The housing screws provide the ground conductor connection for earthing the housing parts.

Only use original housing screws in the correct number and tightened securely.

Safety inspection



The manufacturer recommends that a safety inspection of the device is performed at least once every 12 months.

Utilization for intended purpose only

The Capital Weld Cleaner is exclusively designed for the electro-chemical cleaning of stainless steels. Utilization for any other purpose, or in any other manner, shall be deemed to be "not in accordance with the intended purpose". The manufacturer shall not be liable for any damage resulting from such improper use.

Utilization in accordance with the "intended purpose" also comprises

- the instructions given in this manual
 - performing all stipulated inspection and servicing work.
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Technical data

CW110

Unit suitable for use in confined spaces	[S]
Mains voltage -15%/+10%	~110 V / 50-60 Hz
Main fuse	20 A slow
Output current	5 - 110A
Output voltage	2 - 12 V
Output power	1320 W
Open-circuit voltage	17 V
Dimension l / b / h	17" x 12.5" x 17"
Weight	70lbs
Pollutant emission during operation (measured acc. to VDI 2462, part 8)	phosphoric acid

CW200

Unit suitable for use in confined spaces	[S]
Mains voltage -6% / +6%	~110V / 50-60 Hz
Main fuse	20 A slow
Output current	5 - 200 A
Output voltage	12 V
Output power	2400 W
Open-circuit voltage	17 V
Dimension l / b / h	22" x 12.5" x 17"
Weight	80lbs
Pollutant emission during operation (measured acc. to VDI 2462, part 8)	phosphoric acid

Controls, connections and mechanical components

Safety



WARNING!

Danger from incorrect operation.

Possible serious injury and damage to property.

- ▶ Do not use the functions described here until you have fully read and understood all of the Operating Instructions for the system components, in particular the safety rules!



Button Controls:

ON/OFF: Allows for switching power outputs to leads on or off.

Clean: Switches to Cleaning output for general weld cleaning. Use this setting with the use of Marking wand and stencils.

Polish: Switches to Polish mode for electro-polishing. Use this setting for chemical Etching with the use of a stencil and etching fluids.

Up: Allows the increase of cleaning output in 10 amp increments

Down: Allows the decrease of cleaning output in 10 amp increments.

Operating Instructions



General Setup Instructions



WARNING!

Danger from incorrect operation.

Operating the equipment incorrectly can cause serious injury and damage.

- ▶ Do not use the functions described here until you have read and completely understood all of the following documents:
- ▶ Operating Instructions
- ▶ Follow all "Operating Instructions" for the system components, especially the "Safety rules"

Preparation

- **Prepare the workpiece to be cleaned. Make sure the area is clean and the floor is dry.**
- **Clean off any grease, oils, dust off the surface of the welds to be cleaned.**
- **Make sure the area is ventilated and there is air movement in the area.**
- **Prepare the area with how you will wipe off excess solution, and prepare for a manner to neutralize the area being cleaned.**
- **Inspect the equipment and cables for any damage.**
- **Repair any damage before operation.**
- **Ensure cables don't become a trip hazard.**

Cleaning - Polishing

Operation

- Connect power cord to properly sized power source.
- Connect ground cable to the bottom port on the front of the machine, twist the connector clockwise until secure.
- Connect wand cable to the upper port on the front of the machine, twist the connector clockwise until secure.
- Turn main paddle ON/OFF switch to the On position.
- This will initiate the start up mode and will run the self-diagnostics program as displayed on the lcd screen.
- Once start up is complete press the On/Off button. This will turn on the power output.
- Depending on the application, press either the Clean or Polish button.
- Adjust Amperage output by pressing Up or Down on the control panel.
- Machine is ready for use.

Take safety precautions: Put on safety goggles, gloves and protective clothing. Ensure the workpiece is grounded by securing the ground clamp onto the workpiece.

With the brush secure into the the end of the wand, dip the brush into the container with weld cleaning solution.

Make contact with the brush to the welded area to be cleaned.

As the chemical reaction happens keep the brush moving back and forth over the weld until desired results are achieved. Do not dwell in one spot more than a few seconds. If the brush starts to burn or is leaving black marks on your part the machine settings are too high. If this happens adjust to a lower amperage.

- As the solution in the brush dissapates, re-dip the brush into the solution to keep the brush saturated in solution

Whether in Clean mode or Polish mode, the process is the same with the brush and cleaning solution. The polish mode will generate more heat on your part so be cautious as your parts can get hot.

Amperage settings:

- 1 brush 30-70 AMPS
- 2 brushes 70-100 AMPS
- 3-4 brushes 100-200 AMPS

Operating brushes at higher than recommended amperages can overheat and cause the silicone sleaving to fail.

Removal of Weld cleaning solution and metal residues

Electrochemical cleaning leaves electrolyte and metal residues on the workpiece surface. Such residues may cause deposits on the workpiece and affect corrosion resistance.

- After weld cleaning is complete, Rinse or wipe off excess solution off the workpiece.
- Spray on neutralizer everywhere the solution contacted.
- Rinsing off with clean water is also acceptable.
- Wipe off neutralizer with a separate rag or rinse with clean water.

Neutralizer wipes can be used in place of the neutralizer spray.

- Ensure the surface is clean and dry and can verify that the surface has been properly neutralized by using the color changing neutralizer wipes. If there is no color change then the surface has been properly neutralized.

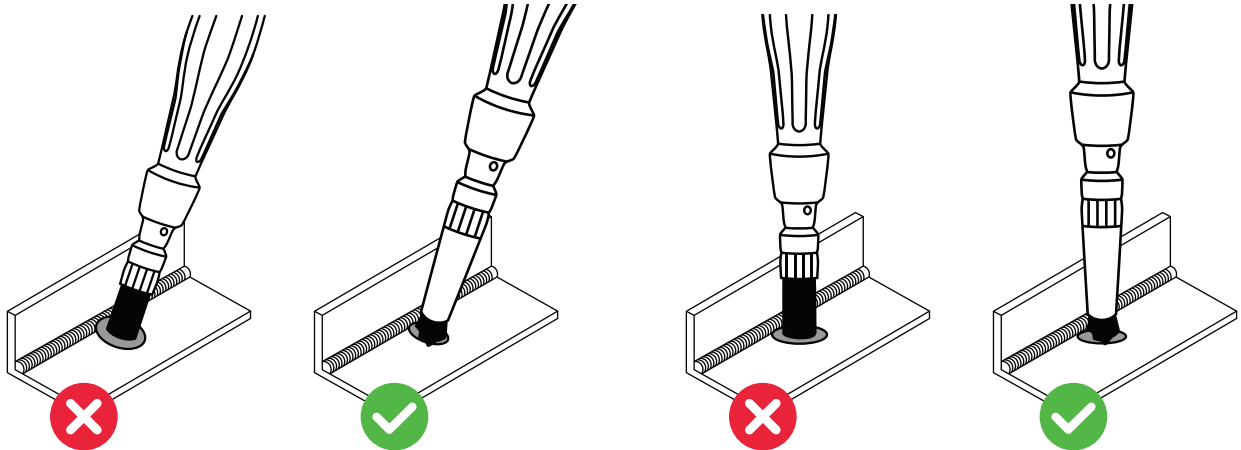
IMPORTANT! During electrochemical cleaning ensure that no cleaning electrolyte enters into any workpiece cavities or seams. In most cases complete removal of electrolyte residue from cavities, overlaps or seams can be difficult.



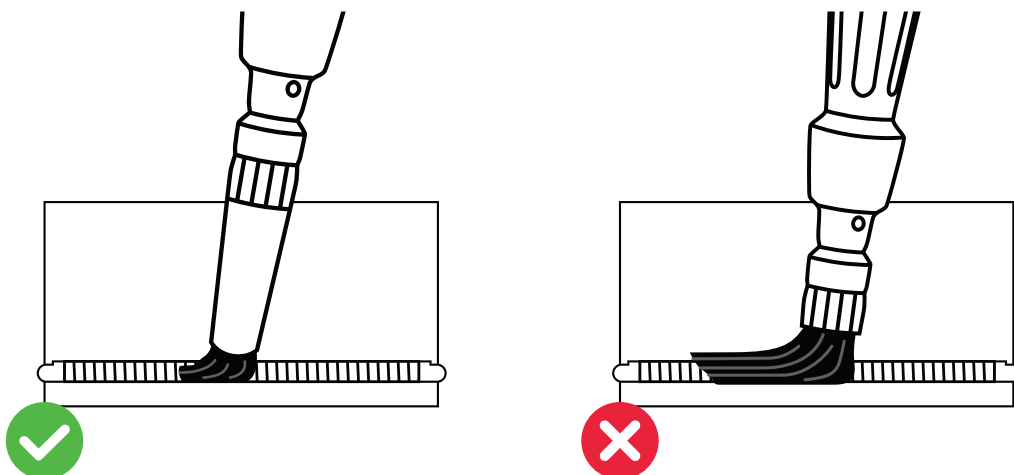
CAPITAL

WELD CLEANERS

Carbon fiber brush instructions



Proper brush usage can improve brush life and cleaning efficiency. Do not use excessive downward pressure on the brush. The Capital Weld Cleaner uses an electro-chemical process, and is not an abrasive process. Pushing down too hard will splay the fibers and cause them to not clean as effectively and can shorten the life of the brush. The electro-chemical process will allow more electrical current to flow through the ends of the fibers than it will if you are cleaning against the sides of the fibers. When trimming the silicone sleeving do not expose more than $\frac{1}{2}$ " of carbon fiber, allowing the silicone sleeving to keep the fibers tighter together, making it easier to clean at the ends of the fibers.



Care, maintenance and disposal

General remarks Under normal operating conditions the Weld Cleaner requires only a minimum of care and maintenance. However, it is important to follow some points to ensure the operability of the machine for many years.



WARNING!

Danger from electric current.

An electric shock can be fatal. Before removing machine cover consult with the manufacturer.

- ▶ Turn the main switch into the "OFF" position
- ▶ unplug the machine from the main
- ▶ put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again
- ▶ using a suitable measuring instrument, check to make sure that electrically charged components (e.g. capacitors) have been discharged

Every start-up

- Check main cable and interconnecting cable for damage
- Check whether the all round distance of (2ft) is kept to ensure that the cooling air can easily flow and escape.

NOTE!

Furthermore, air inlets and outlets must in no case be covered, not even covered partly.

Weekly

Clean device by means of solvent-free products.

Every 6 months



CAUTION!

Danger from pressed air.

Risk of damage to electronic components.

- ▶ Clean electronic components from a certain distance only.

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If a lot of dust has accumulated, clean the vents in the front and back of the machine .

Disposal

Dispose of solutions in accordance with the applicable national and local regulations.