



MODEL 2734

Advanced Agitating Ultrasonic System

Operating Manual



INTRODUCTION

GENERAL INSTRUCTIONS



READ AND UNDERSTAND ALL LABELS, MSDS, AND THIS INSTRUCTION MANUAL BEFORE USE.

The Industrial Aqueous Parts Cleaner is an economical, safe, and innovative system designed to clean parts, using an aqueous based solution. Aqueous solutions, when used to clean grease and oil, must be disposed of properly. Consult your local environmental management agency for additional guidance and other potentially hazardous materials compliance requirements.

Install your parts cleaner on a flat, level surface in an area provided with adequate ventilation. Avoid repeated or prolonged breathing of vapors. Do **NOT** use compressed air to dry parts as this may cause a high concentration of vapors in the immediate area. Local exhaust ventilation should be used in areas of high vapor concentration. Provisions for determining and maintaining adequate ventilation are the responsibility of the operator.

Make sure the parts cleaner is connected to a properly grounded power source. Check serial plate for power requirements.

Do **not** allow parts cleaner to operate unattended.

Complete safety in use is dependent upon proper use and handling of the parts cleaner in your workplace.

It is important that you follow the instructions provided in this manual. If you fail to read, understand, and follow all of the procedures in this manual, you may cause or suffer personal injury.

DO NOT OPERATE ELECTRICAL EQUIPMENT INSIDE OF PARTS CLEANER.



CAUTION

USE ONLY WATER-BASED CLEANING SOLUTIONS DO NOT USE MINERAL SPIRITS

This equipment is designed for use only with Aqueous Based Solutions. Do **NOT** add any other chemicals to the cleaning agent including, but not limited to, kerosene, fuel oil, gasoline, or chlorinated solutions. The use of any other solutions could potentially cause a hazardous condition. Use this machine only for ultrasonic cleaning of parts. It is not designed for any other application.



CAUTION

**DO NOT ALLOW HEATER TO OPERATE UNATTENDED FOR LONG PERIODS,
SUCH AS EVENINGS OR WEEKENDS.**

Avoid contact with eyes or skin. Wear protective eyewear, gloves, and clothing. Operation should be conducted in a manner, which prevents splashing, or spillage. Any spills should be promptly and properly cleaned up. Soak up all spills with absorbent material. Remove and dispose of all soaked material in accordance with regulatory requirements.

- This unit is **NOT** intended for outdoor operation.
- Do **NOT** operate the ultrasonic equipment without water/aqueous chemistry. When the machine is started without fluid, the transducers, the heating element and other components get damaged immediately. **Ensure the tank is FULL before operating the equipment.**
- Do **NOT** leave solution-soaked rags in parts cleaner or in uncovered containers.
- Do **NOT** drop any heavy objects in the tank or press buttons with sharp objects. This can cause serious damage to the equipment or electrical shock.
- Do **NOT** place anything on the transducer box located at the bottom of the tank.
- Do **NOT** contaminate cleaning solutions with gasoline, alcohol or flammable liquids.
- When cleaning carburetors or other fuel supplying components: remove all gasoline into a proper disposal container before placing the component into the parts cleaner.
- Do **NOT** spray aerosols into or around this machine. Install the equipment in an area away from heat, sparks, and open flame. Never put hot parts into the solution.
- Do **NOT** use acidic cleaning liquids (pH below 6.5) in the machine as it may damage the machine. The equipment is designed to work with neutral and basic products (pH above 6.5)
- Turn unit "OFF" and close lid when equipment is not in use. This will reduce evaporation.

IMPORTANT SAFETY INSTRUCTIONS

1. Read all instructions.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.
4. Disconnect the equipment from the electrical source when not in use. Check that the main switch is in the OFF position.
5. To reduce the risk of fire, do **NOT** operate equipment in the vicinity of open containers of flammable liquids (gasoline).
6. To reduce the risk of electric shock, do **NOT** use on wet surfaces or expose to rain.
7. Use only as described in this manual. Use only manufacturer's recommended attachments.
8. **ALWAYS WEAR PROPER PPE**
9. Do **NOT** operate any electrical equipment inside sink or vat.
10. Do **NOT** smoke, eat or drink in the work area.
11. Do **NOT** modify these machines.
12. Do **NOT** activate the platform while there is any body part inside the tank.
13. Do **NOT** transport the machine with water/aqueous chemistry in the tank.
14. Use only the aqueous solution provided.
15. Do **NOT** introduce machine parts larger than those indicated in the technical specifications.
16. In any emergency, turn off the unit using the red emergency stop button on the front, the red emergency cut off switch on the side and unplug the machine.
17. These parts washers employ a safety feature called a fusible link that holds the cover open during use. Do **NOT** modify, alter, or obstruct the operation of the fusible link.
18. Keep cover closed whenever unit is not in use.
19. Do **NOT** remove fluid from this equipment or it may cause malfunction or unsafe conditions.

**This list of safety warnings and precautions does not include all possible misuse of the machine, but it describes the most predictable.*

SAVE THESE INSTRUCTIONS

SERVICE AND MAINTENANCE

- Call your representative should your parts cleaner need service and always unplug unit when servicing.
- Maintenance of the machine should only be carried out by CRYSTAL CLEAN personnel. If the machine requires further cleaning or shortening service intervals, please contact your CRYSTAL CLEAN representative.
- Inspect and keep in good working order the power cord and all electrical components. If components show signs of damage or wear replace immediately. All work should be done by a trained technician.
- The ultrasound emitter/transducer box should **never** be cleaned while at a high temperature (below 130°F). Sudden changes in temperature of the chemistry (putting very cold chemistry into a hot machine) will result in **damage** to the ultrasonics.
- At every service, clean generator and electrical box with compressed air (wear safety glasses). If there is built up dirt and dust, the machine may fail.
- Wipe down heating element and level probe at every services. If these parts are covered by sludge, a fault can occur. Please wear protective gloves and rinse with a water hose.
- The auxiliary tank also needs to be cleaned and debris removed from the filter screen (can be unscrewed to clean outside of the machine). The WFS (weir function) pushes oils and surface contaminates to the auxiliary tank and in some cases, it is dried and accumulated in this tank.

INSTALLATION

1. Install the parts cleaner on a flat, level surface in a well-ventilated area.
2. Remove all items packed inside the machine and inspect machine for damage.
3. Fill the machine with **70 gallons** of aqueous based solvents; 60 gallons in the main tank and 10 gallons in the auxiliary tank. Do **NOT** add any other chemicals to the cleaning agent including, but not limited to, kerosene, fuel oil, gasoline, or chlorinated solutions. The use of any other solutions could potentially cause a hazardous condition.
4. Plug the power cord into a properly grounded power source.

Power Requirements = 230V 1PH + Neutral + Ground

AND

Air Requirements = 85PSI / Reads 6 bar on Regulator

- Weight capacity for this parts cleaner is **300 LBS**
- Ensure that all drain valves are closed

- Do not operate the ultrasonic equipment without water/aqueous chemistry or the transducers, heating element and other components will get damaged.



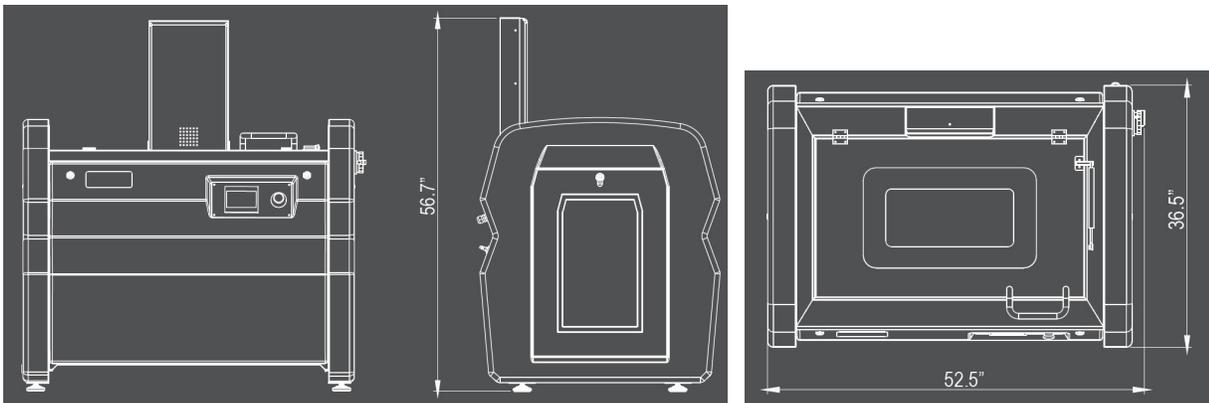
IMPORTANT: Always ensure both the main tank and auxiliary tanks are filled above the level marked. If not so, transducers and heating elements may get damaged.

- Turn on switch located on the rear / on the right side of the equipment.
- Check that the generator is in the ON position and the ultrasonics turn ON using the main screen.
- Before cleaning any part, and every time you change the water of the tank, it is necessary to **DEGAS** the water. Depending on the hardness of the water/aqueous chemistry, this can take as little as 30 minutes or up to 3 hours to complete. The water is degassed when it stops leaving out small bubbles (oxygen molecules). Instructions for the degassing procedure listed under **CONTROL PANEL AND FUNCTIONS**.
- When not in use, close cover to reduce chemistry loss.

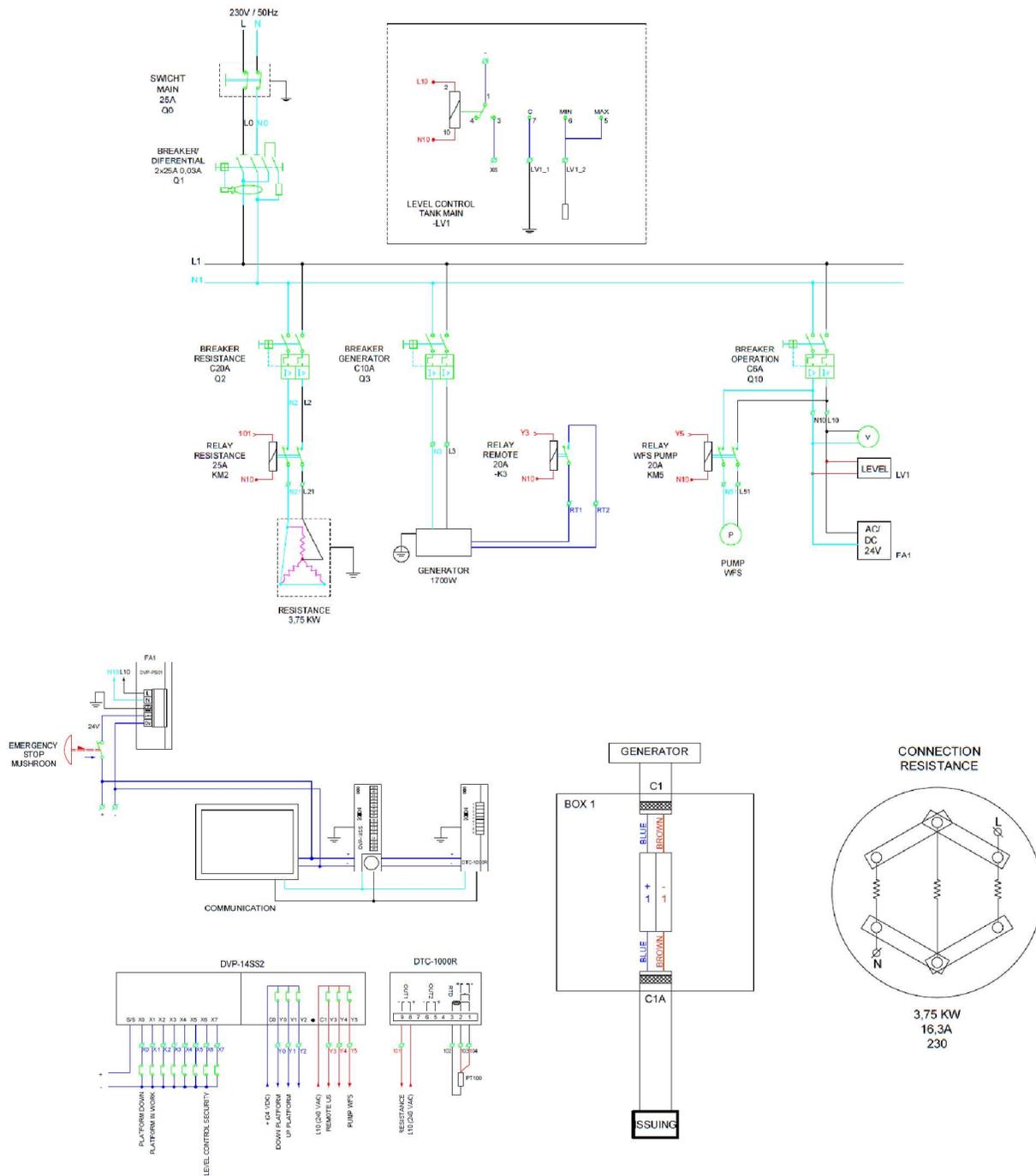
ADDITIONAL SPECIFICATIONS

- Overall Dimensions: 52.5"L x 20.5"W x 23.2"H
- Internal Dimensions: 30"L x 20.5"W x 23.2"H
- Platform Dimensions: 28.7"L x 18.3"W
- Weight Capacity: 330 lbs
- Volume Capacity: 70 gallons
- 230Vac/40HZ/1PH
- 60 Amp

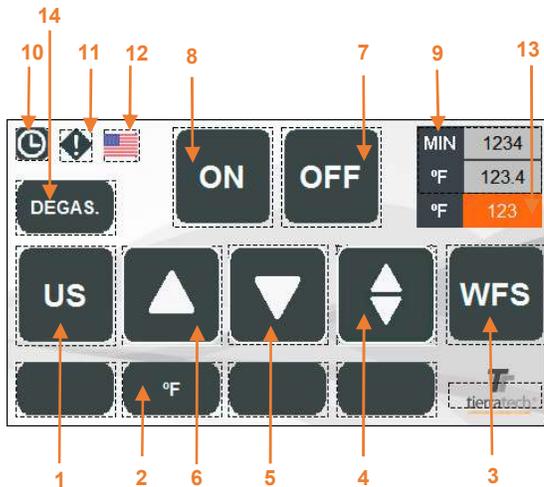
MACHINE DIAGRAMS



ELECTRICAL DIAGRAMS



CONTROL PANEL AND FUNCTIONS



1. **US:** On/Off ultrasound function. If this function is On, the button blinks between **pink** and **green**.
2. **°C / °F:** On/Off heating function. If this function is On, the button is highlighted in **white**.
3. **WFS:** On/Off WFS function. If this function is On, the button is highlighted in **white**.
4. **MOVEMENT FUNCTION:** Activates or deactivates an oscillating movement of the platform during the cleaning process. If this function is On, the button is highlighted in **white**.
5. **PNEUMATIC LOWERING PLATFORM FUNCTION:** Lowers platform for pieces immersion. If this function is On, the button is highlighted in **white**. Button needs to be held all the way through the movement when lowering.
6. **PNEUMATIC LIFTING PLATFORM FUNCTION:** Raises the platform for loading and unloading of parts. If this function is On, the button is highlighted in **white**. Button needs to be held all the way through the movement when raising.

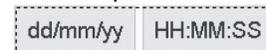
Any movement (4, 5 and 6) that is selected will disable any other which is ON. Also, if any activated button is pressed, it will disable.

7. **AUTOMATIC CYCLE "OFF":** When automatic cycle is ON this button turns in red. Allows to disable the automatic cycle.
8. **AUTOMATIC CYCLE "ON":** Automatic cycle activated (this button turns in green). Once the automatic cycle is ON all the manual functions will be off. Automatic cycle connects and disconnects all the consecutive functions. The timer and the working temperature for each function will set up in each recipe. *The platform will first make a down movement automatically, afterwards it will start to make a continuous agitation automatically.*
9. **MIN FUNCTION:** Time left for automatic cycle (countdown). °C / °F: Current tank temperature. Pressing on this button we enter in the recipe screen for automatic cycle.
10. **PROGRAMMING:** This function allows you to set up a weekly program. (*please see programming section*)
11. **HISTORICAL ALERTS:** This button allows you to check the alarms or warnings. The button will blink and turns in **blue** if there are alarms.
12. **LANGUAGES:** Leave set to USA so showing in °F. If needed in °C can change to international.
13. **TEMPERATURE SET VALUED:** Exhibits the target temperature. Pressing on this button will allow you to modify the temperature setting.
14. **DEGAS:** Activates or deactivates ultrasound operating mode for degassing water (additionally it is required to activate the US function, button 2). If this option is active, the border is highlighted **white**.

IMPORTANT:

If, for any reason, the date and time are reset, please follow the below steps to set the clock:

1. Click on the main screen, option (14) and press on the following area to set up the date and time:



2. Click on arrows to move along the date and time. Press on + (to increase number) or – (to decrease number). Click on SAVE to accept the changes. If you wish to cancel the changes or to exit the screen, click on QUIT.



START UP AND PROGRAMMING

Setting up and initial operations must only be carried out by CRYSTAL CLEAN personnel. At the time of installation, a representative of CRYSTAL CLEAN will conduct a demonstration and give all the explanations deemed appropriate. Installation and commissioning carried out by unauthorized personnel can cause damage to both operators and the machine.

1. Turn on the switch located on the right side of the equipment.
2. Select the function (13) to set up the information for the recipe.

HMI > PLC	123	123	123	123	1
RECIPE	Aut. min	°F	WFS seg	FILT min	Movement
1	123	123	123	12	1
RECIPE 1:	12345	12345	12345	12345	1
RECIPE 2:	12345	12345	12345	12345	1
RECIPE 3:	12345	12345	12345	12345	1
RECIPE 4:	12345	12345	12345	12345	1
RECIPE 5:	12345	12345	12345	12345	1

Press on the white spaces to set the numeric data



- **RECIPE NUMBER:** Select the recipe number which you would like to modify (1-5)
- **AUT. MIN:** Time (minutes) the automatic cycle will run.
- **°C / °F:** Set the working temperature.
- **WFS SEG:** Time (seconds) the water flow feature will run.
- **FILT MIN:** do not have this option
- **MOVEMENT:** Selecting "1" will activate the movement (platform) on automatic cycle. Selecting "0" there will be no movement of the platform during the cycle.
- **HMI>PLC:** Press and hold this button to accept the changes.

NOTE: To lock in the changes, the press and hold the HMI>PLC button until the values in the orange boxes match those of the white boxes on the recipe you just programmed.

HMI > PLC	123	123	123	123	1
RECIPE	Aut. min	°F	WFS seg	FILT min	Movement
1	123	123	123	12	1

3. ZDFSADF

IMPORTANT – If, for any reason the date and time are reset (touch screen battery is damage or machine is not powered on for an extended period of time) please follow the below instructions to correct:

1. Click on the main screen, option (14) and press t

The shelf MUST be all the way down in order to run a programmed recipe. This is different than previous versions. If the shelf is up even slightly, the ON button will not respond. All of the manual functions seem to work regardless of shelf position.

4. Running a programmed recipe does not turn on the heater. The heater always has to be turned on separately.

TROUBLESHOOTING

Machine does not operate:

5. Make sure the parts cleaner is connected to electric power or air supply.
6. Check for incoming power. Check serial plate for power requirements.
7. On electric units: check reset button on GFCI cord to make sure it is not tripped. On air units: an increase in air supply may be required.

Little or no fluid flow thru the flow-thru brush:

- Turn pump switch "ON" or increase air pressure.
- Check the fluid level in the tank.
- Check pump intake for obstructions.

