

ULTRACLEAN



USER MANUAL

PN: 21-10141A_REV04

Front Cover: Standard UltraClean for the T2 and T4 trimmers.

This manual is for both the standard UltraClean (designed for the T2 and T4 trimmers) and the UltraClean Max (designed for the T-ZERO trimmers). While the dimensions of the two machines are different, the features are identical. As such, only images of the standard UltraClean will be shown.

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IMPORTANT SAFETY INFORMATION

This manual is for the Twister UltraClean and UltraClean Max ultrasonic cleaning systems. In this manual, the UltraClean systems will simply be referred to as the UltraClean.

The UltraClean is a high-power, ultrasonic wave-emitting machine requiring special safety precautions to be practiced during operation, cleaning, and maintenance to reduce the risk of personal injury. Read this manual, including all important safety information, danger, warning, and caution signs before using the UltraClean.

Keirton is continually improving all its products. As a result, engineering changes are sometimes made. If operation or appearances differ from this manual, please contact Keirton technical support for assistance (see **Contact Us** on page 50).

Do not allow anyone to use the UltraClean without this manual. A first time user of the UltraClean should obtain proper instruction from this manual.

General Safety Information

- Do not tamper with or bypass the UltraClean's safety systems. **Failure to abide could cause fatal injury.**
- Do not operate the UltraClean while tired or under the influence of drugs, alcohol, or medications.
- Liquid in the UltraClean can get very hot. Wear protective gloves and eyewear when operating, cleaning, or conducting maintenance on the UltraClean.
- Do not wear loose clothing or jewelry when operating the UltraClean.
- Confine long hair when operating the UltraClean.



DANGER

**CARELESS USE OF THE
ULTRACLEAN OR OPERATING
IT WITHOUT READING
THE INSTRUCTIONS AND
ACCOMPANYING DANGER,
WARNING, AND CAUTION
NOTICES MAY RESULT IN
SERIOUS OR FATAL INJURY.**

IMPORTANT SAFETY INFORMATION

- Do not move the UltraClean while the machine is connected to power.
- Do not remove safety labels from the UltraClean. **Replace any safety labels if they become damaged or obscured.**
- Do not connect the UltraClean to power unless the leveling feet are securely placed so the wheels are raised off the floor.
- Substituting factory parts with third-party parts may result in bodily harm or damage to the UltraClean.
- Do not allow water to collect on the ground around the UltraClean. This could cause a slipping hazard.
- The UltraClean is very heavy. Do not attempt to lift the machine without a forklift.

Connection and Electrical Safety Information

- The UltraClean must be used in connection with a properly grounded receptacle. Refer to **Specifications** (see pages 41-47) to determine the correct electrical requirements.
- Observe all applicable building and electrical codes.
- Do not overload outlets as this can result in fire or electric shock.
- To power down the UltraClean, switch it off at the control panel before unplugging the machine.
- The customer is responsible for connecting a plug to or hardwiring the UltraClean Max. To avoid electric shock, only allow a trained electrician to perform these procedures.

Operation Safety Information

- Conduct all pre-operation inspections listed on page 23 before operating the UltraClean.
- Ensure all the side and back panels are attached to the UltraClean before operating it.
- Do not place any electrical equipment inside the UltraClean.
- Keep body parts clear of the tank when the lid is not supported by the lifting rack or in its upright locked position.

IMPORTANT SAFETY INFORMATION

- Do not switch on the UltraClean unless the main tank is full and the storage tanks are filled above the low liquid-level sensors. **Starting the UltraClean's heating or ultrasonic functions without the tanks filled will damage the heating tubes and transducers.**
- Water will evaporate over usage and need to be topped up to avoid damaging the heating tubes and transducers.
- Do not fill the storage tanks above the high liquid-level sensor.
- Do not place any body parts in the tanks while the ultrasonic function is switched on.
- Raise the lifting rack to place objects on it to avoid damaging the tank.
- Place objects on the lifting rack carefully to avoid damaging the rack.
- Do not drain the tanks while the liquid is still hot. **Sudden temperature changes will damage the heating tubes and transistors.** Wait for the liquid to cool down to room temperature before draining.
- Do not jar the machine. Sudden jarring of the machine will damage the transistors.

Maintenance Safety Information

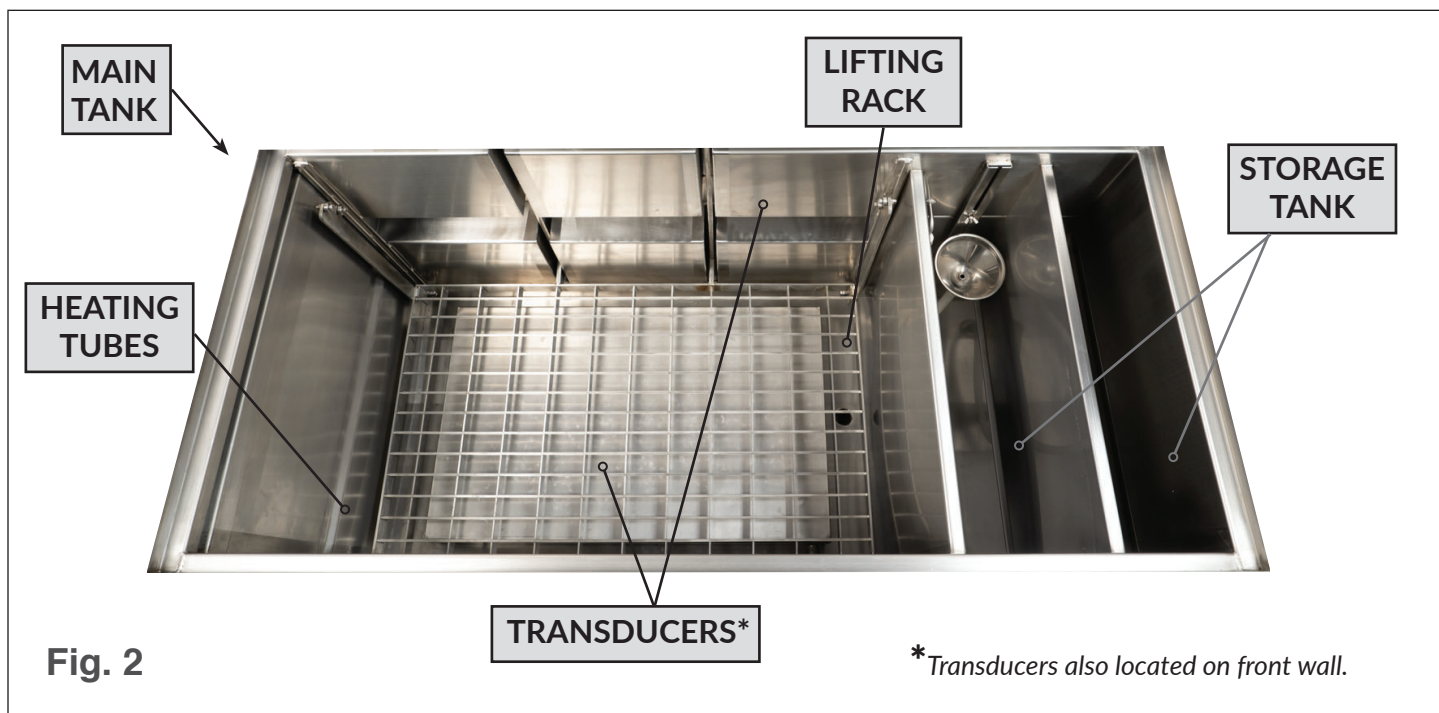
- Conduct regular maintenance of the UltraClean.
- Ensure the UltraClean is powered off before conducting any maintenance.
- To avoid electric shock, do not attempt to service electrical components on the UltraClean unless you are a trained electrician.
- Do not attempt maintenance not covered in this manual unless directed by Keirton technical support.
- Some repair will require a qualified service technician who is trained in machinery maintenance, service, and repair.
- Suspend operation of the UltraClean for two hours after a continual operation of 12 hours to prolong the service life of the machine.

MACHINE OVERVIEW



Fig. 1

MACHINE OVERVIEW



MACHINE OVERVIEW

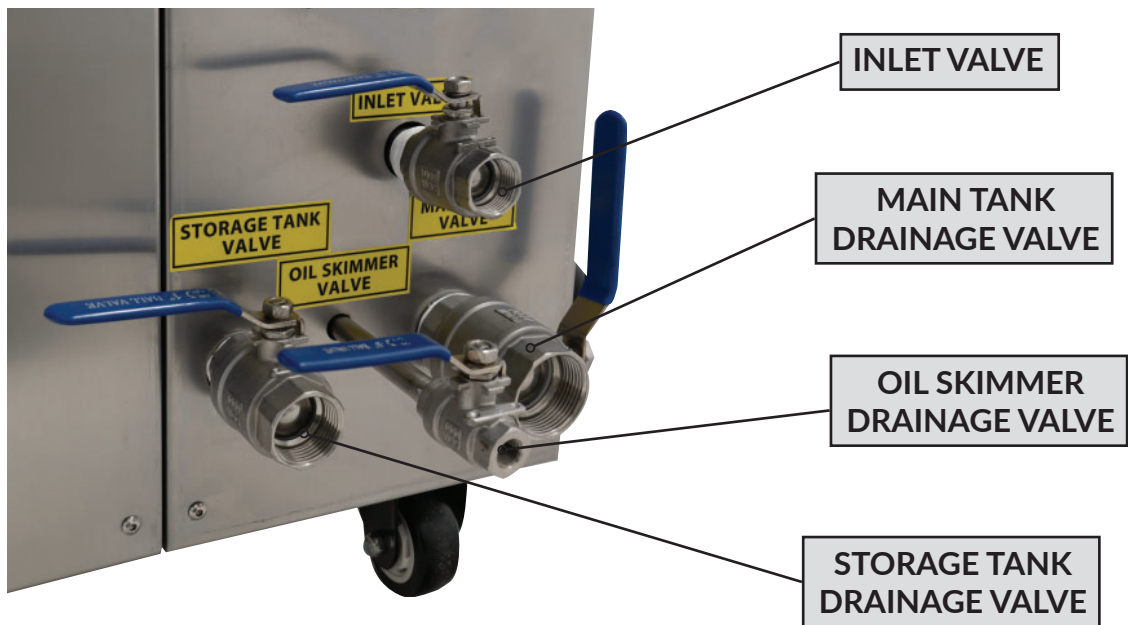
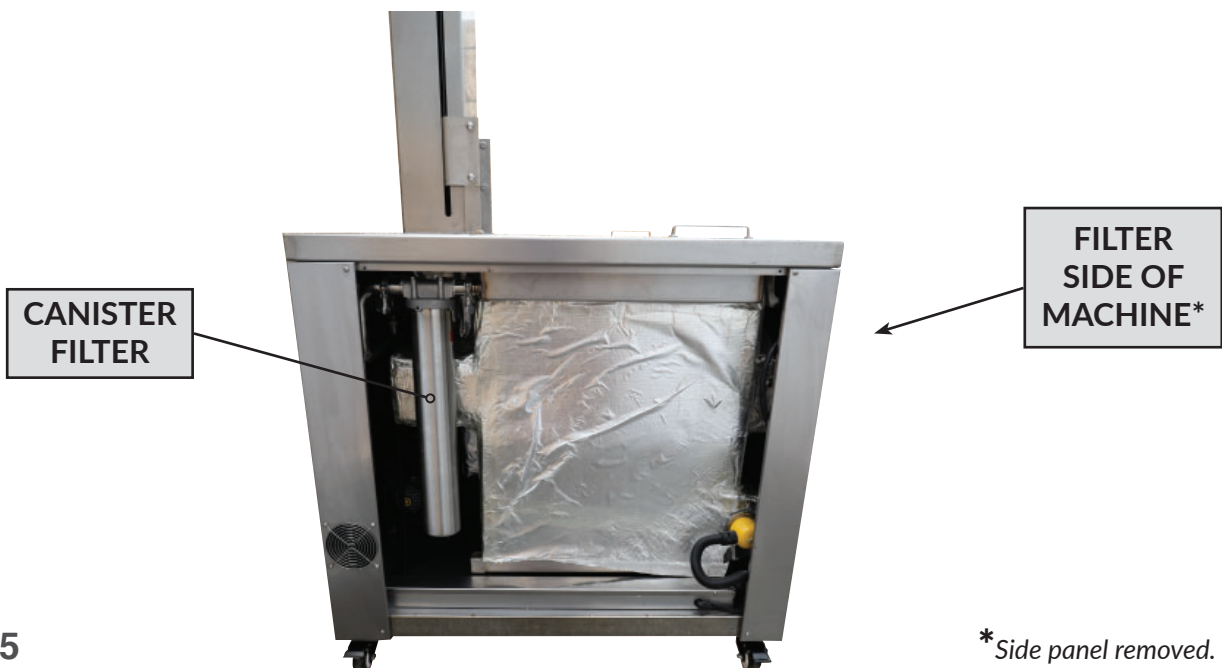


Fig. 4



*Side panel removed.

Step 1: Remove the Crate Base

1. Using a forklift, lift the UltraClean off the crate base. Do not attempt to wheel the machine off the crate base. Sudden jarring of the machine will damage the transducers and electrical components. **Follow your facility's safety procedures when using a forklift.**
2. Lower the UltraClean onto level ground. Do not place the machine on any kind of slope.
3. The locking casters are not designed to support the weight of the machine on a slope.



WARNING

DO NOT WHEEL THE ULTRACLEAN OFF THE CRATE BASE. SUDDEN JARRING WILL DAMAGE THE MACHINE.



WARNING

DO NOT PLACE THE ULTRACLEAN ON ANY KIND OF SLOPE.



Step 2: Secure Placement

1. Wheel the UltraClean to where it will operate (see **Recommended Placement** on page 11).
2. Lock the casters.
3. Unthread the leveling feet until all four casters are lifted 0.2in/5mm off the ground (see Fig. 6). **Do not operate the UltraClean unless it is raised on its leveling feet.**



Fig. 6

5mm Gap

RECOMMENDED PLACEMENT

For the best and safest operation of the UltraClean, place the machine:

- On level ground
- In a dry, ventilated area
- Near an outlet
- Near a water supply
- Near a drain
- With enough space on the sides and back of the machine to allow for access to the side and back panels.

Step 3: Turn on the Breakers

To avoid electric shock, it is extremely important that the UltraClean is not connected to power during the following steps:

1. Using a 3mm hex key, remove the four screws on the electrical side panel, and remove the panel.
2. Turn the three breaker switches highlighted in Fig. 7. **Do not touch any other electrical components.**
3. Reconnect the electrical side panel to the UltraClean.
4. Using a 3mm hex key, thread the four removed screws into the electrical side panel.

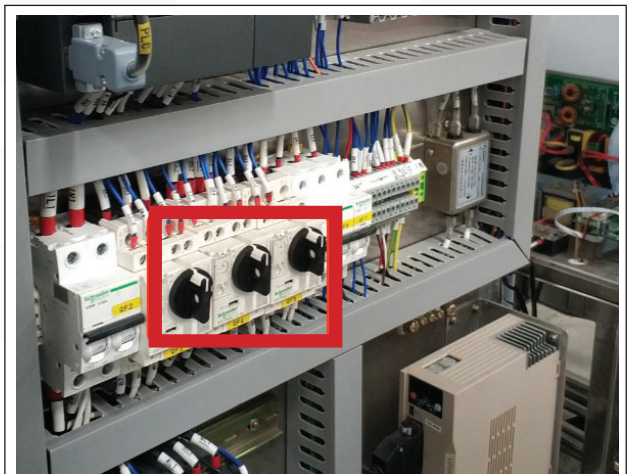


Fig. 7



DANGER

TO PREVENT ELECTRIC SHOCK,
ENSURE THE ULTRACLEAN IS
NOT CONNECTED TO POWER
WHILE TURNING ON THE
BREAKERS.



Step 4: Connect the Hoses

The UltraClean has four different valves (as shown on page 9), each with a different diameter and purpose:

- **INLET VALVE** (1"): pumps water into the main tank.
- **MAIN TANK DRAINAGE VALVE** (1.5"): drains liquid from the main tank.
- **STORAGE TANK DRAINAGE VALVE** (0.75"): drains liquid from the storage tank.
- **OIL SKIMMER DRAINAGE VALVE** (0.5"): drains oil removed during oil skimming (see **Oil Skimming** on page 32).

The UltraClean comes with four pipe fittings that match the different sized valves. Appropriately sized hoses for the drainage valves are available for purchase from Keirton (for purchasing information, see **Accessories** on page 48).

To connect the hoses:

1. Screw the pipe fittings into the corresponding sized valves.

2. Connect drainage hoses to the corresponding sized pipe fittings.
3. Connect a garden hose to the **INLET VALVE**.
4. Connect the free end of the three drainage hoses to a drain.

The UltraClean uses gravity for draining. If the UltraClean is not near a drain, an external pump (not included with the UltraClean) may be required for draining.

Step 5: Connect to Power

1. Read and understand the UltraClean's electrical requirements (see **Specifications** on pages 41-47).
2. Connect the UltraClean to power:
 - **Standard UltraClean:** simply plug in the UltraClean.
 - **UltraClean Max:** get a trained electrician to connect a plug to the UltraClean Max or hardwire it to a power source.



DANGER

TO PREVENT ELECTRIC SHOCK,
ONLY ALLOW A TRAINED
ELECTRICIAN TO CONNECT A
PLUG TO OR HARDWIRE THE
ULTRACLEAN MAX.



BACK PANEL VALVE

Behind the back panel of the UltraClean, there is a valve (highlighted in Fig. 8) that arrives from Keirton half-opened. This is for standard operation. Upon installation, leave this valve in the half-opened position. It can be adjusted to alter circulation (see **Water is Not Circulating as Desired** on page 37).

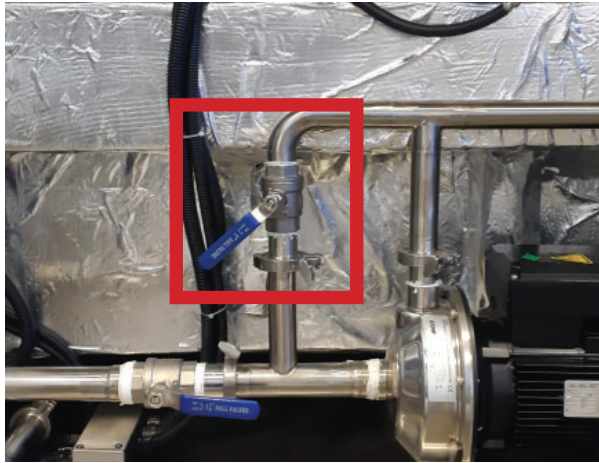


Fig. 8

CONTROL PANEL OVERVIEW

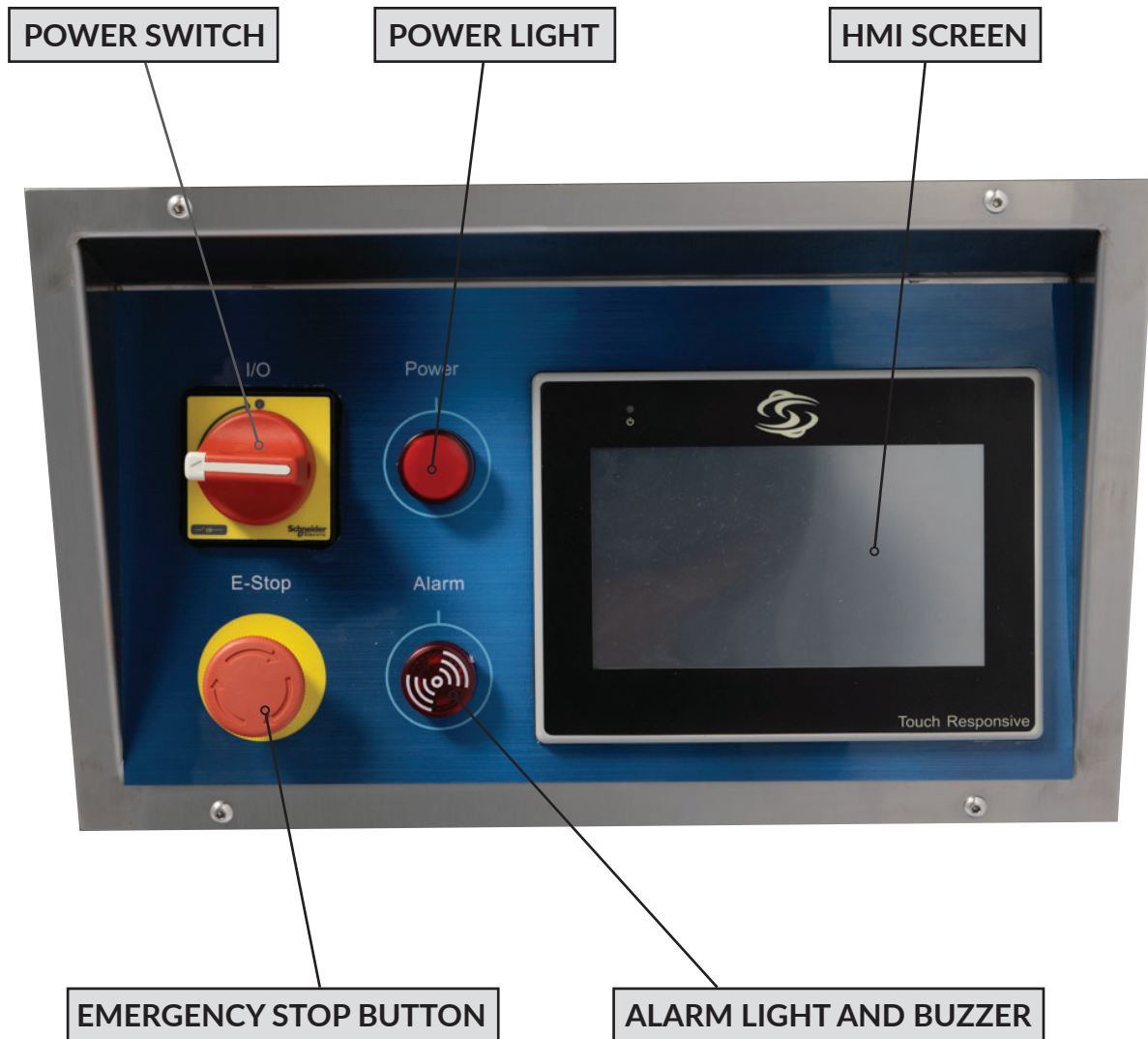


Fig. 9

The UltraClean has three screens on the HMI that users must interact with:

- Home screen
- Operating Screen
- Alarms Screen.

Each screen has unique features:

Home Screen Features



Fig. 10

1. Touch to Begin Button

The **TOUCH TO BEGIN** button takes the user to the operating screen.

2. Settings Button

The **SETTINGS** button takes the user to a password protected settings screen where advanced factory settings can be adjusted for troubleshooting (see Fig. 11). These settings should not be adjusted without guidance from Keirton technical support (see **Contact Us** on page 50).

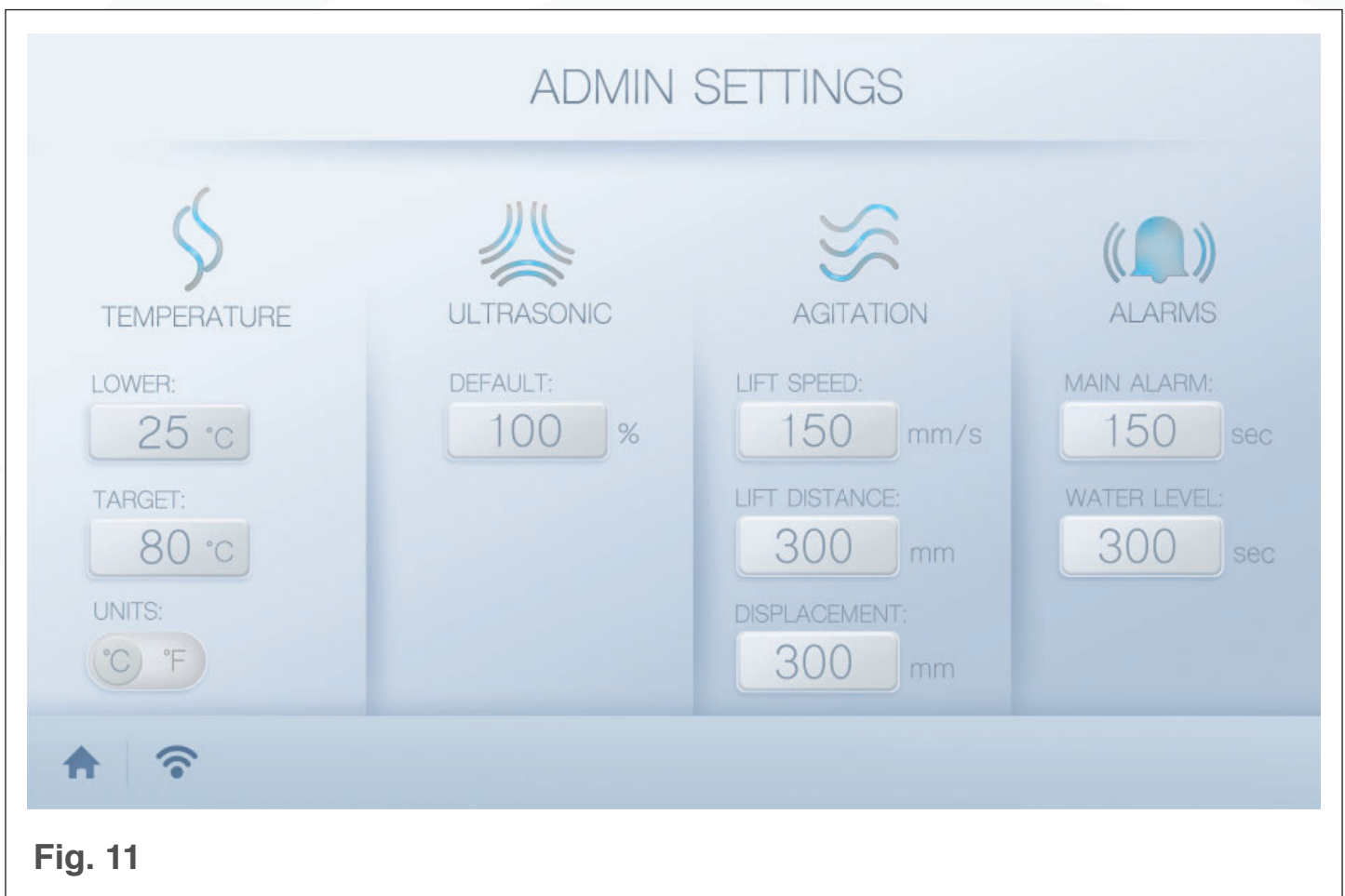
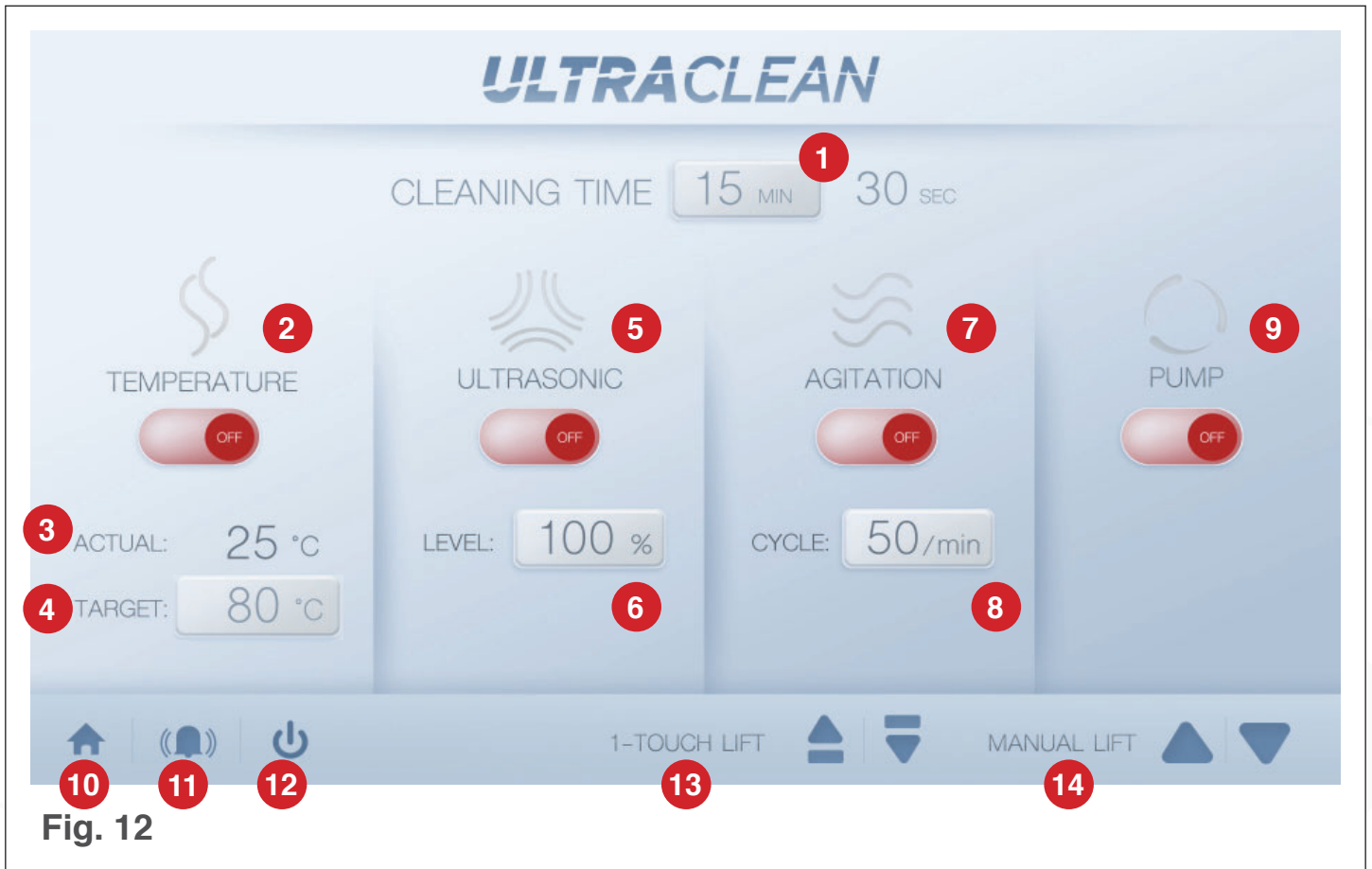


Fig. 11

Operating Screen Features



1. Cleaning Timer Reading

Before operation, the cleaning timer reading displays how long the cleaning functions will run for once the ultrasonic function is started. To adjust this setting, press the minutes reading and type a new value. Once the ultrasonic function has been started, the reading will countdown to **0 MIN 0 SEC**.

2. Temperature Switch

The **TEMPERATURE** switch starts and stops the heating function.

3. Actual Temperature Reading

The **ACTUAL** reading displays the current temperature of the liquid in the tanks.

4. Target Temperature Reading

The **TARGET** reading displays the temperature the liquid in the tanks will increase to. To adjust this setting, press the reading and type a new value.

5. Ultrasonic Switch

The UltraClean's primary cleaning method is emitting ultrasonic pulses through the liquid in the main tank. The **ULTRASONIC** switch starts and stops this function.

6. Ultrasonic Level Reading

The ultrasonic **LEVEL** reading displays the power percentage the ultrasonic function will operate at. To adjust this setting, press the reading and type a new value.

7. Agitation Switch

In addition to ultrasonic pulses, the UltraClean moves its lifting rack up and down during cleaning to further agitate substances off objects. The **AGITATION** switch starts and stops this function.

8. Cycles Per Minute Reading

The **CYCLE/MIN** reading displays the amount of times the lifting rack will move up and down per minute when the agitation function is started. To adjust this setting, press the reading and type a new value.

9. Pump Switch

The UltraClean circulates liquid in the tank to further aid cleaning. The **PUMP** switch starts and stops this function.

10. Home Button

The home button takes the user back to the home screen.

11. Alarm Button

The alarm button takes the user to the alarms screen, which displays a description of any active alarm (for more details, see **Alarms Screen Functions** on page 21).

12. Off Button

The off button stops all operating functions (heating, ultrasonic, agitation, and pumping) that are currently in use.

13. 1-Touch Lift Buttons

The **1-TOUCH LIFT** buttons raise or lower the lifting rack all the way after being pressed once.

14. Manual Lift buttons

The **MANUAL LIFT** buttons raise or lower the lifting rack only while the user is pressing the button.

Alarms Screen Functions

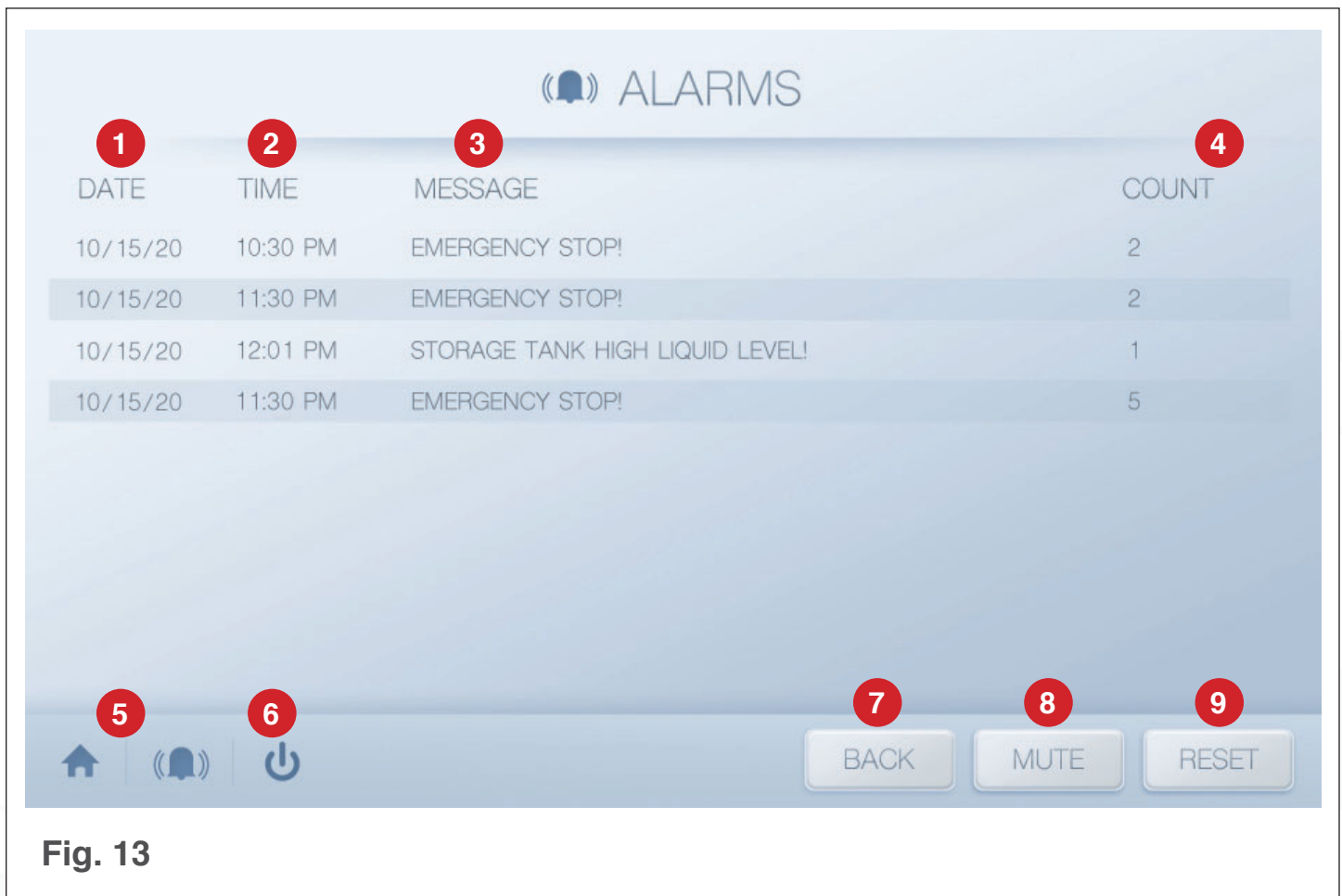


Fig. 13

1. Date Column

The **DATE** column displays the date an alarm has gone off.

2. Time Column

The **TIME** column displays the time an alarm started.

3. Message Column

The **MESSAGE** column displays the description of an alarm.

4. Count Column

The **COUNT** column displays how many times a specific alarm has gone off.

5. Home Button

The home button takes the user back to the home screen.

6. Off Button

The off button stops all operating functions (heating, ultrasonic, agitation, and pumping) that are currently in use.

7. Back Button

The **BACK** button takes the user back to the operating screen.

8. Mute Button

The **MUTE** button silences the alarm buzzer.

9. Reset Button

The **RESET** button clears the alarms screen once the cause of an alarm has been fixed.

Step 1: Pre-Operation Inspections

1. Ensure all users are wearing protective gloves and eyewear before operating the UltraClean.
2. Ensure the UltraClean is securely supported by its leveling feet so the wheels are lifted 0.2in/5mm off the floor.
3. Ensure the UltraClean is safely connected to power.
4. Ensure all the valves have hoses secured to them.
5. Ensure the hose attached to the **INLET VALVE** is also securely attached to a water source.
6. Ensure the hoses attached to the drainage valves are securely attached to a drain.
7. Ensure any power sources won't get wet.



WARNING

**DO NOT OPERATE THE
ULTRACLEAN UNLESS IT IS
RAISED ON ITS LEVELING FEET.**



Step 2: Fill the Tanks

1. Adjust the oil funnel to be higher than the high liquid-level sensor (see Fig. 14).
2. Ensure the **MAIN TANK VALVE**, **STORAGE TANK VALVE**, and **OIL SKIMMING VALVE** are closed.
3. Ensure the **INLET VALVE** is open.
4. Run water into the main tank through the **INLET VALVE**.
5. When the main tank is half full, keep the water running, and add the cleaning agent in the following amounts:



Fig. 14



Fig. 15

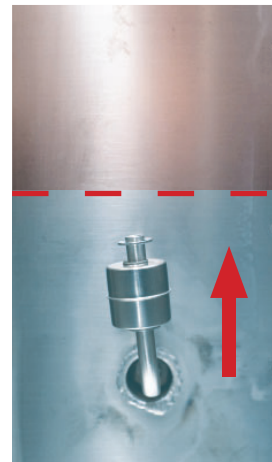


Fig. 16

- **Standard Ultraclean:** approximately five gallons (19L) per tank (see **Recommended Cleaning Agent** on page 25).
 - **UltraClean Max:** approximately 13 gallons (50L) per tank (see **Recommended Cleaning Agent** on page 25).
6. Continue running the water into the main tank so that it overflows into the storage tank (see Fig. 15) and rises to a level between the low and high liquid-level sensors (see Fig. 16).
 7. Close the **INLET VALVE**.

Step 3: Switch on the UltraClean

Do not proceed with operating procedures unless the main tank is full, and the storage tank is filled to a level between the low and high liquid-level sensors. Doing so risks serious damage to the heating tubes and transducers.

1. Twist the power switch (see Fig. 17).



CAUTION

DO NOT SWITCH ON THE ULTRACLEAN UNLESS THE MAIN TANK IS FULL AND THE STORAGE TANK IS FILLED TO BETWEEN THE LOW AND HIGH LIQUID-LEVEL SENSORS.

CLEANING GUIDELINES

Recommended Cleaning Agent

Keirton recommends using the UltraClean Solution by Twister as it has proven to be compatible with our devices. The UltraClean Solution by Twister comes in five gallon (18.9L) pails or 55 gallon (208L) drums* (for purchasing information, see **Consumables, Spare Parts, and Accessories** on page 48).

Users may use other cleaners at their discretion; however, due to the many different materials used in Twister products, Keirton cannot guarantee the effectiveness of non-approved cleaners. Caustic chemicals are strongly discouraged. Keirton takes no responsibility for any negative effects from using non-approved cleaners.

**Keirton recommends using a hand pump to dispense the solution from the drums. The hand pump is available for purchase from Keirton.*

Materials Guidelines

Be aware that objects made of mild steel will corrode if cleaned regularly.

Loading Guidelines

Do not overload the lifting rack*. Overloaded lifting racks will result in decreased cleaning quality. Objects being cleaned should have space on all sides for the ultrasonic pulses to contact. Objects should not be contacting each other.

**The T2 Part Rack optimally arranges two T2 tumblers, brushes, and shrouds on the standard UltraClean lifting rack and is available for purchase from Keirton.*

Recommended Cleaning Time

- For lightly soiled objects, one 15-minute cycle is recommended.
- For medium soiled objects, two 15-minute cycles are recommended.
- For heavily soiled objects, three-to-four 30-minute cycles are recommended.

OPERATION



Fig. 17

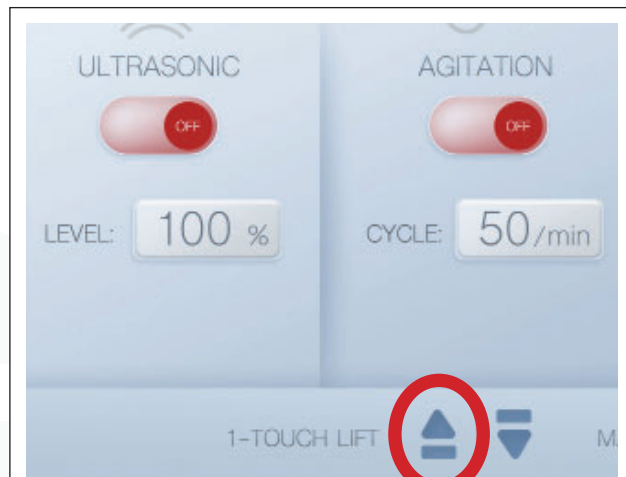


Fig. 18

2. Wait for the home screen to appear.
3. Press the **TOUCH TO BEGIN** button.

Step 4: Prepare Objects for Cleaning

1. Manually remove any large, easy-to-remove solids from the objects.
2. Press the **1-TOUCH LIFT** up button, and wait until the lifting rack is fully raised (see Fig's 18 and 19).
3. Load objects onto the lifting rack (see **Loading Guidelines** on page 25).
4. When all objects have been loaded, press the **1-TOUCH LIFT** down button, and wait until the cleaning rack is fully lowered (see Fig. 20).



Fig. 19

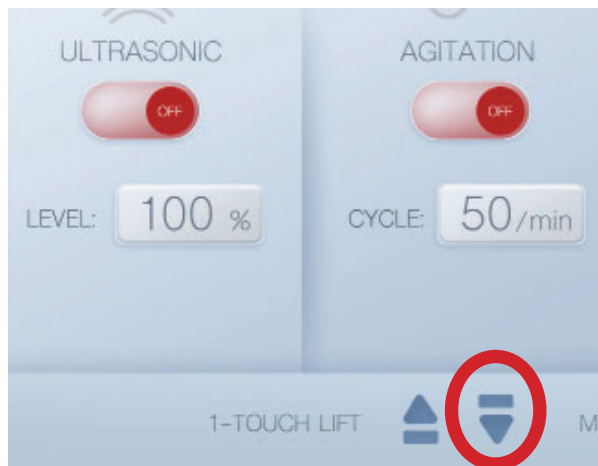


Fig. 20



Fig. 21

Step 5: Adjust the Settings

1. Press the cleaning timer reading and type the desired cleaning time in minutes (see Fig's 21 and 22 on this page and **Recommended Cleaning Time** on page 25).
2. Press the **TARGET** temperature reading (see Fig. 23), and type the desired cleaning temperature. A temperature of 65° is recommended. Adjust based on experience.



Fig. 22

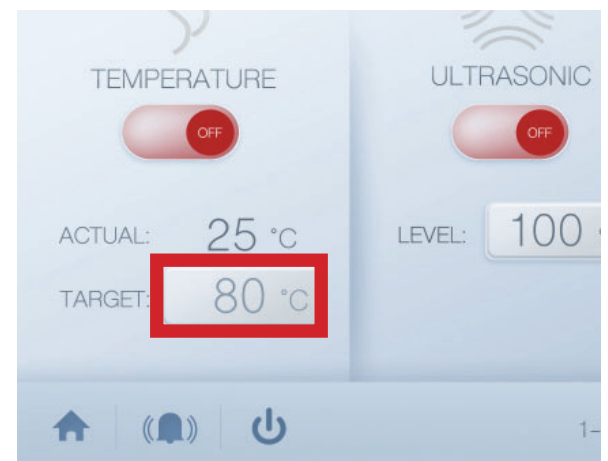


Fig. 23

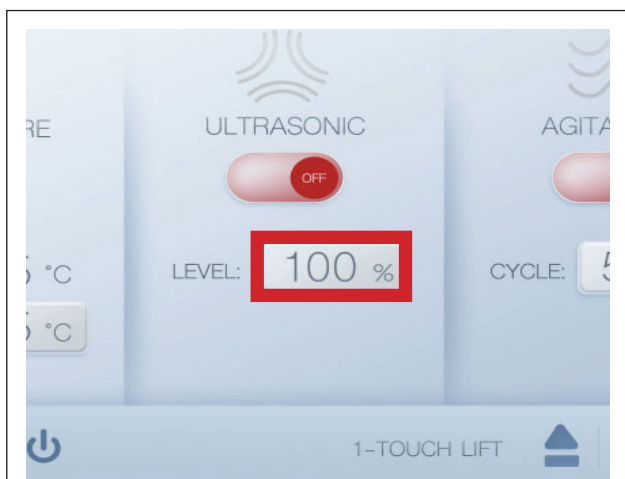


Fig. 24

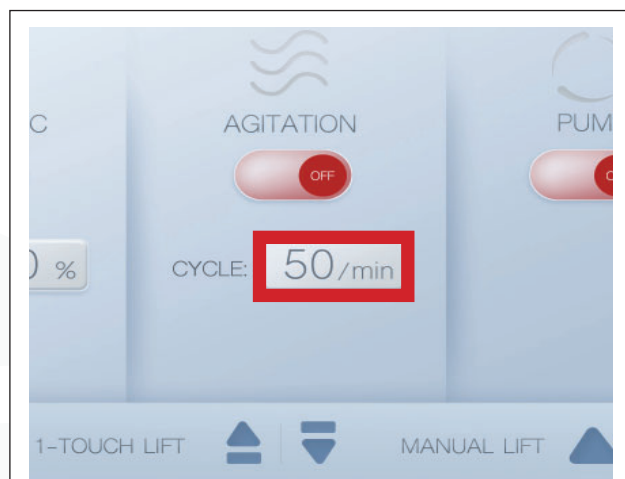


Fig. 25

3. Press the Ultrasonic **LEVEL** reading (see Fig. 24), and type the desired ultrasonic power percentage. A power of 100% is recommended. Adjust based on experience.
4. Press the **CYCLE/MIN** reading (see Fig. 25), and type the desired agitation cycles/minute. A frequency of 20 cycles/minute is recommended. Adjust based on experience.

Step 6: Start the Cleaning Functions

1. Press the **TEMPERATURE** switch (see Fig. 26).
2. When the **ACTUAL** reading is within 5°C of the **TARGET** reading*, press the **ULTRASONIC** switch. The cleaning timer will begin to count down.
3. Press the **AGITATION** switch.
4. Press the **PUMP** switch.
5. Allow the UltraClean to run.

*The **ACTUAL** reading will fluctuate. When the temperature reaches the **TARGET** reading, the heating function will switch off. Once the temperature falls 5°C below the **TARGET** reading, the heating function will restart until the temperature reaches the **TARGET** reading again. This will repeat throughout the cleaning process.

Step 7: Remove the Objects

1. When the cleaning timer reaches **0 MIN 0 SEC** all functions will stop, and the alarm will sound.
2. Once the alarm sounds, press the **1-TOUCH LIFT** up button, and wait until the lifting rack is fully raised (the **MANUAL LIFT** up button can be used instead to prevent spilling).
3. Ensure all users are wearing personal protective equipment. **Liquid inside the UltraClean may be very hot.**
4. Remove the objects from the lifting rack. Be careful of cleaning liquid trapped in any hoses or shrouds spilling out.
5. Prepare objects for the next cleaning/operation:
 - If cleaning objects again, wipe down the objects, and begin operating again from **Step 4: Prepare Objects for Cleaning** on page 26.
 - If cleaning is complete:
 - i. Press the **1-TOUCH LIFT** down button, and wait until the cleaning rack is fully lowered.
 - ii. Pressure wash any residual substances off the objects.



Fig. 26



DANGER

WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN UNLOADING THE ULTRACLEAN. CONTENTS MAY BE VERY HOT RESULTING IN BURNS!



WARNING

BE CAREFUL OF LIQUID TRAPPED IN THE CLEANED OBJECTS SPILLING OUT.

- iii. Dry the objects with compressed air.

Step 8: Switch Off the UltraClean

1. When cleaning is complete and the cleaning rack has been lowered, twist the power switch off.

For the UltraClean to clean most effectively, the tanks need to be cleaned themselves every 20-40 uses. To clean the UltraClean:

1. Ensure all users are wearing protective gloves and eyewear.
2. Ensure the UltraClean is switched off.
3. Ensure the UltraClean is plugged in to prevent electric shock and water damage to uncovered plug ends and sockets. Ensure the plug and socket are adequately covered.
4. Ensure the **INLET** valve is closed.
5. Ensure the liquid in both tanks is room temperature or colder in preparation for draining. Do not drain the tanks if the liquid is any warmer than room temperature. This will cause a sudden change in temperature to the heating tubes and transducers resulting in serious damage to those components.
6. Open the **MAIN TANK VALVE**, **STORAGE TANK VALVE**, and **OIL SKIMMER VALVE** to drain both tanks. Keep these valves open during cleaning. Spray the walls and floor of the tanks so any solids are forced down the drains.
7. Spray all surfaces of the UltraClean tanks (including the underside of the lid) with a foaming degreaser* or 70% isopropyl alcohol.
8. Allow the detergent/alcohol to sit for five minutes.
9. Pressure wash the tanks to remove any remaining foam/alcohol.
10. Refill the tanks (see **Step 2: Fill the Tanks** on page 23).

*The Twister Foam Cannon makes spraying foaming degreasers much easier and is available for purchase from Keirton (for purchasing details, see Consumables, Spare Parts, and Accessories on page 48).



CAUTION

**DO NOT DRAIN THE TANKS WHILE
THE LIQUID INSIDE IS WARMER
THAN ROOM TEMPERATURE.**



DANGER

**KEEP THE ULTRACLEAN
PLUGGED IN DURING CLEANING
TO PREVENT WATER DAMAGE
AND ELECTRIC SHOCK.**



Oil Skimming

After extended use, significant amounts of oil and dirt will float on the surface of the cleaning liquid. If the oil and dirt is left to sit in the cleaning liquid, it will result in sub-optimal cleaning. This can be prevented by oil skimming. Before oil skimming, **check your local and federal regulations on the disposal of oil.** To oil skim:

1. Ensure all users are wearing protective gloves and eyewear before oil skimming.
2. Adjust the oil funnel to be slightly below the level of the oil (see Fig. 27).
3. Ensure a hose is connected to the **OIL SKIMMING VALVE**.
4. Ensure the other end of the **OIL SKIMMING VALVE** hose is connected to a drain.
5. Open the **OIL SKIMMING VALVE**. Oil will flow into the funnel.
6. When all visible oil has disappeared, close the **OIL SKIMMING VALVE**.
7. Refill the tank as required (see **Step 2: Fill the Tanks** on page 23).

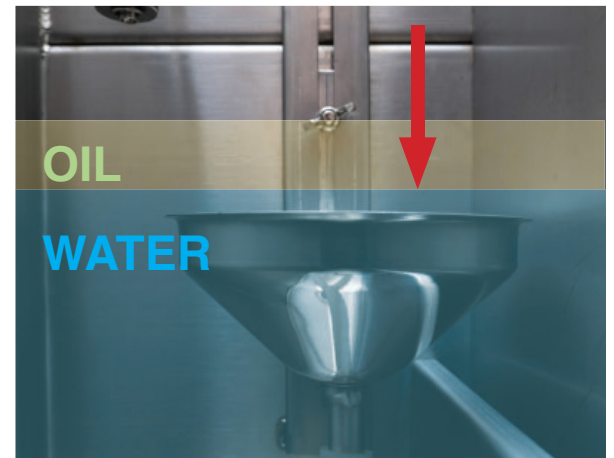


Fig. 27

Filter Replacement

For the UltraClean to operate most effectively, the filter needs to be replaced regularly. The UltraClean has a pressure gauge that determines exactly when the filter needs to be replaced. When it does, an alarm will sound. To replace the filter:

1. Ensure all users are wearing protective gloves and eyewear before replacing the filter.
2. Drain and clean the tanks (see **Cleaning** on page 31).
3. Using a 3mm hex key, remove the four screws on the filter side panel (see Fig. 28), and remove the panel.



Fig. 28



Fig. 29

4. Place a bucket under the filter canister. Water may spill out of the canister when removed.
5. Disconnect the filter canister:
 - a. Support the filter canister with one hand so it does not fall when the filter canister nut is loosened.
 - b. Using the filter removal spanner (provided with the UltraClean), loosen the filter canister nut (see Fig. 29).
 - c. Pull the filter canister loose (see Fig. 30).
6. Keeping the filter canister nut around the canister, empty the water in the canister into the bucket.
7. Remove the old filter (see Fig. 31), and replace it with a new filter.
8. Reconnect the canister to the UltraClean:
 - a. Place the top of the filter canister in the UltraClean's filter opening.
 - b. Using the filter removal spanner,



Fig. 30

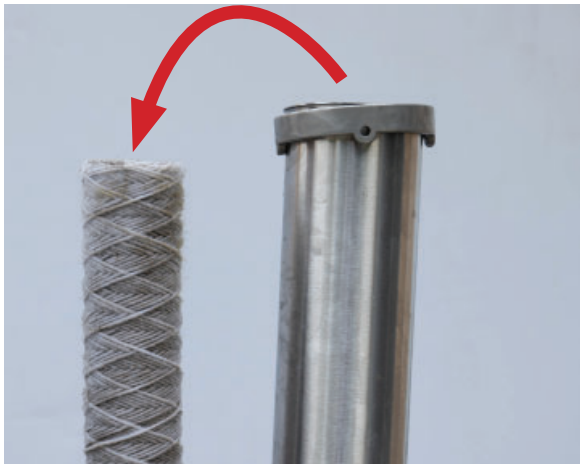


Fig. 31



Fig. 32

tighten the filter canister nut firmly so water cannot leak out (see Fig. 32).

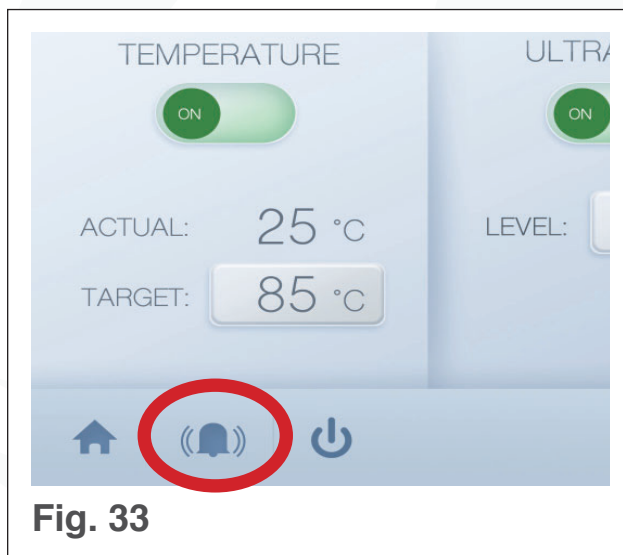
9. Leaving the filter side panel off, refill the tanks with water and a cleaning agent (see **Step 2: Fill the Tanks** on page 23).
10. As the tanks fill, inspect if any water leaks out of the filter canister seal. If it does, tighten the filter canister nut until there is no more leaking.
11. Reconnect the filter side panel to the UltraClean.
12. Using a 3mm hex key, thread the four removed screws into the filter side panel.
13. Discard the contents of the bucket into a drain.

When the UltraClean senses a problem with its functioning, the alarm light and buzzer will activate.

When this occurs:

1. Press the alarm button (see Fig. 33). The alarms screen will appear.
2. Press the **MUTE** button (see Fig. 34). The alarm will silence.
3. Read the **MESSAGE** column to discover the cause of the alarm.
4. Conduct one of the troubleshooting solutions in this section.

If any problems not listed in this section arise, contact Keirton technical support for assistance (see **Contact Us** on page 50).



TROUBLESHOOTING PROBLEMS

- The Liquid Level is Too Low
- The Liquid Level is Too High
- The Heating Tubes are Damaged
- The Transducers are Damaged
- Water is Not Circulating as Desired

The Liquid Level is Too Low

Possible Causes:

- The main tank is not filled high enough.
- The storage tank is not filled high enough.

Solution:

- Run water through the **INLET VALVE** until the main tank is full and liquid has overflowed into the storage tank to a level between the low and high liquid-level sensors (see Fig. 35).

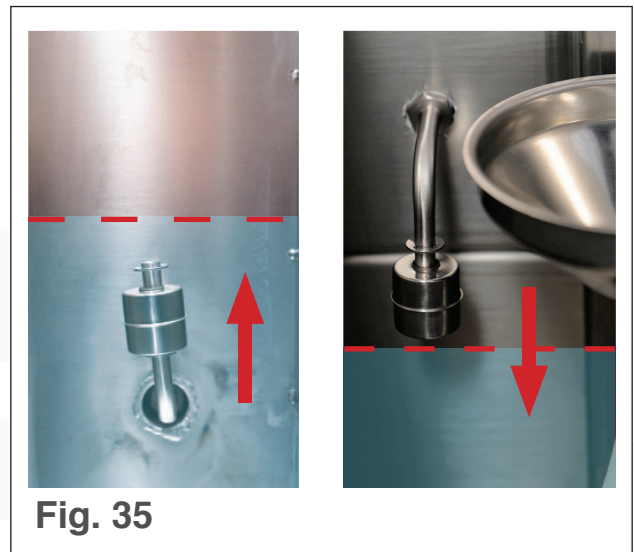


Fig. 35

The Liquid Level is Too High

Possible Causes:

- The liquid level of the storage tank is above the high liquid-level sensor.

Solution:

- Open the **STORAGE TANK VALVE** and drain the storage tank until the liquid level is between the low and high liquid-level sensors (see Fig. 35).

The Heating Tubes are Damaged

Possible Causes:

- The UltraClean has been switched on before being filled.

- The tanks have been drained while the liquid inside was still above room temperature.

Solution:

- Order a Spare Parts Kit from Keirton (see **Spare Parts** on page 49). When the kit arrives, call Keirton technical support for instructions on how to replace the heating tubes (see **Contact Us** on page 50).

The Transducers are Damaged

Possible Causes:

- The UltraClean has been switched on before being filled.
- The tanks have been drained while the liquid inside was still above room temperature.
- The UltraClean has been jarred suddenly.

Solution:

- Order a Spare Parts Kit from Keirton (see **Spare Parts** on page 49). When the kit arrives, call Keirton technical support for instructions on how to replace the transducers (see **Contact Us** on page 50).

Water is Not Circulating as Desired

Possible Causes:

- The filter is plugged.
- The upper back panel valve has been completely opened or shut.

Solution:

- Check the filter. If the filter is plugged, replace it (see **Filter Replacement** on page 32). Until the filter can be replaced, close the half-opened back panel valve (see **Back Panel Valve** on page 14).
- If the filter is not plugged, adjust the upper back panel valve (see **Back Panel Valve** on page 14). Close the valve more to increase the flow rate. Open the valve more to decrease the flow rate.

WARRANTY INFORMATION

Keirton will repair or replace any parts proven defective in material or workmanship without charge for a period of one year.

The warranty period will begin on the date the machine is purchased by the initial purchaser. The UltraClean warranty defects can be remedied at any authorized service dealer or directly by Keirton. Any original parts deemed to be defective will be replaced free of charge. Keirton reserves the right to use any manufacturer approved replacement part for warranty repair.

If warranty repair is required, please contact Keirton at **1-888-254-3204** or **support@keirton.com** and provide the following information:

- Model and serial number (located by the power inlet)
- Proof of purchase date
- Copy of the original Warranty Registration Card (unless registration was completed online)
- Details of the defect or problem (including photos and/or video).

Pending approval from Keirton, the machine or defective part must then be returned to Keirton for analysis and replacement. **Do not return the machine to the place of purchase for repair or warranty claims unless you have been authorized by Keirton to do so.** The place of purchase can only sell replacement parts and will not repair warranty issues unless it is noted as an authorized repair dealer and has been authorized to work on your machine.

You may be denied warranty coverage if your machine has failed due to:

- Abuse
- Accidental damage
- Improper maintenance
- Improper electrical connection

WARRANTY INFORMATION

- Neglect
- Normal wear
- Unapproved modifications including the use of unapproved replacement parts.

Keirton assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the product. In no event will Keirton be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by negligence of the manufacturer or otherwise. If you have any questions regarding your warranty rights and responsibilities, please contact Keirton.

Allow only persons who understand this manual to operate the UltraClean. Keirton claims no liability for any damage or injury that results from the use of the UltraClean by persons who have not read and understood the cautions, warnings, and danger notices contained in this manual or through any misuse of the UltraClean. You are responsible for your safety while operating this machine. **Please keep yourself safe!**

Standard UltraClean North American Specifications

Product Number	Product Number	02-10019A (three phase)
		02-10030A (one phase)
Capacity and Levels	Effective Liquid Level	19.7"/500mm
	Powered Lift Capacity	220.5lbs/100kg
	Total Tank Capacity	470L/124.2GAL
Dimensions	Machine Height	73.2"/1860mm
	Machine Width	65.4"/1660mm
	Machine Length	42.5"/1080mm
	Main Tank Height	29.9"/760mm
	Main Tank Width	39.4"/1000mm
	Main Tank Length	22.8"/580mm
	Storage Tank Height	23.6"/600mm
	Storage Tank Width	13.8"/350mm
	Storage Tank Length	22.8"/580mm
Electrical Requirements	Connector Plug	NEMA 15-60 (three phase – see Fig. 36)
		NEMA 6-50 (one phase – see Fig. 37)
	Current	60A, 60Hz (three phase)
		50A, 60Hz (one phase)
	Input Voltage	208V (three phase)
		240V (one phase)

SPECIFICATIONS

Features	Canister Filter	50 Micron
	HMI	7" Siemens Touch Screen
Heating Time	From 15°C to 65°C	100 Minutes (three phase)
		160 Minutes (one phase)
Materials	Interior	304 Stainless Steel
	Exterior	304 Stainless Steel
Power	Heating Power	12KW (three phase)
		7.5KW (one phase)
	Ultrasonic Power	4KW @ 28KHz

**NEMA
15–60**

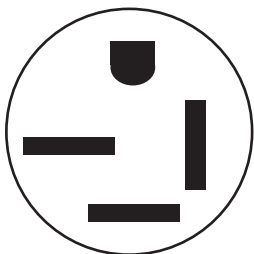


Fig. 36

**NEMA
6–50**

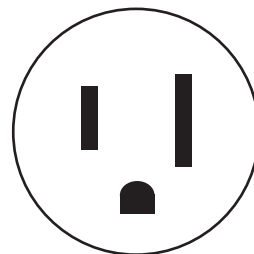


Fig. 37

Standard UltraClean European Specifications

Product Number	Product Number	02-10031A
Capacity and Levels	Effective Liquid Level	500mm/19.7"
	Powered Lift Capacity	100kg/220.5lbs
	Total Tank Capacity	470L/124.2GAL
Dimensions	Machine Height	1860mm/73.2"
	Machine Width	1660mm/65.4"
	Machine Length	1080mm/42.5"
	Main Tank Height	760mm/29.9"
	Main Tank Width	1000mm/39.4"
	Main Tank Length	580mm/22.8"
	Storage Tank Height	600mm/23.6"
	Storage Tank Width	350mm/13.8"
	Storage Tank Length	580mm/22.8"
Electrical Requirements	Connector Plug	380V 3P Plug (see Fig. 38)
	Current	64A, 50Hz
	Input Voltage	380V
Features	Canister Filter	50 Micron
	HMI	7" Siemens Touch Screen

SPECIFICATIONS

Heating Time	From 15°C to 65°C	100 Minutes
Materials	Interior	304 Stainless Steel
	Exterior	304 Stainless Steel
Power	Heating Power	12KW
	Ultrasonic Power	4KW @ 28KHz

**380V
3P Plug**

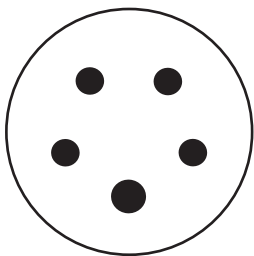


Fig. 38

UltraClean Max North American Specifications

Product Number	Product Number	02-10048A (480V Model)
		02-10049A (600V Model)
Capacity and Levels	Effective Liquid Level	19.7"/500mm
	Powered Lift Capacity	220.5lbs/100kg
	Total Tank Capacity	1051L/277.6GAL
Dimensions	Machine Height	70.9"/1800mm
	Machine Width	79.1"/2010mm
	Machine Length	55.7"/1415mm
	Main Tank Height	29.5"/750mm
	Main Tank Width	51.2"/1300mm
	Main Tank Length	36.4"/925mm
	Storage Tank Height	29.5"/750mm
	Storage Tank Width	13.8"/350mm
	Storage Tank Length	36.4"/925mm
Electrical Requirements	Current	60A, 3P, 60Hz (480V and 600V)
Features	Canister Filter	50 Micron
	HMI	7" Siemens Touch Screen
Heating Time	From 15°C to 65°C	90 Minutes
Materials	Interior	304 Stainless Steel
	Exterior	304 Stainless Steel

SPECIFICATIONS

Power	Heating Power	30KW
	Ultrasonic Power	8KW @ 28KHz

UltraClean Max European Specifications

Product Number	Product Number	02-10050A (380V Model)
Capacity and Levels	Effective Liquid Level	500mm/19.7"
	Powered Lift Capacity	100kg/220.5lbs
	Total Tank Capacity	1051L/277.6GAL
Dimensions	Machine Height	1800mm/70.9"
	Machine Width	2010mm/79.1"
	Machine Length	1415mm/55.7"
	Main Tank Height	750mm/29.5"
	Main Tank Width	1300mm/51.2"
	Main Tank Length	925mm/36.4"
	Storage Tank Height	750mm/29.5"
	Storage Tank Width	350mm/13.8"
	Storage Tank Length	925mm/36.4"
Electrical Requirements	Current	64A, 3P, 50Hz
	Input Voltage	380V
Features	Canister Filter	50 Micron
	HMI	7" Siemens Touch Screen

SPECIFICATIONS

Heating Time	From 15°C to 65°C	90 Minutes
Materials	Interior	304 Stainless Steel
	Exterior	304 Stainless Steel
Power	Heating Power	30KW
	Ultrasonic Power	8KW @ 28KHz

CONSUMABLES, SPARE PARTS AND ACCESSORIES

Accessories

Item	Product Number
1½" Main and Storage Tank Drainage Hose (sold by the ft)	14-10209
¼" Oil Skimmer Drainage Hose (sold by the ft)	14-10210
Clamp for 1½" Hose	14-10211
Clamp for ¼" Hose	14-10212
Hand Pump for 55 GAL UltraClean Solution	14-10216
Twister Foam Cannon	25-0024
T2 Two-Set Cleaning Rack	24-10253A

The T2 Two-Set Cleaning Rack can hold simultaneously:

- Two Tumblers
- Two Vacuum Shrouds
- Two Brushes.

Consumables

Item	Product Number
Canister Filter	14-10178
UltraClean Solution by Twister – 18.9L/5GAL	25-10002
UltraClean Solution by Twister – 208L/55GAL	25-10005

CONSUMABLES, SPARE PARTS AND ACCESSORIES

Spare Parts

Item	Product Number
Spare Parts Kit for Standard UltraClean North American Three Phase Models	27-10059A
Spare Parts Kit for Standard UltraClean North American One Phase Model	27-10058A
Spare Parts Kit for UltraClean Max North American 480V Model	27-10066A
Spare Parts Kit for UltraClean Max North American 600V Model	27-10067A
Spare Parts Kit for UltraClean Max European 380V Model	27-10068A
Main Tank Valve Pipe Fitting	14-10205
Storage Tank Valve Pipe Fitting	14-10206
Oil Skimmer Valve Pipe Fitting	14-10207
Inlet Valve Pipe Fitting	14-10208

The Spare Parts Kits include:

- 3mm Hex Key
- Filter Removal Spanner
- Pressure Gauge
- Main Tank Liquid-Level Sensor
- Storage Tank Liquid-Level Sensor
- Temperature Sensor
- Transducer kit
- Heating Tube
- Lifting System Motor
- Lifting System Leadscrew
- Jacking Wheel Bearing
- Guide Wheel Bearing.

CONTACT US

Keirton technical support is available between 7 a.m. and 7 p.m. Pacific Standard Time seven days a week at:

- **1-888-254-3204**
- **support@keirton.com**

