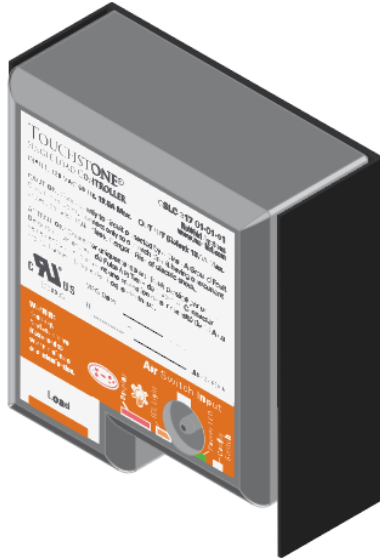




THE BEAUTY OF WATER.  
THE SCIENCE OF RENEWAL.



# TOUCHSTONE<sup>®</sup> SINGLE LOAD CONTROLLER SYSTEM

CSLC-317-02-01-01 Single Load Controller  
Multi-Speed Triac Load

## Installation & Operating Manual with Troubleshooting and Configuration Guide



## Important Safety Instructions

**PLEASE READ CAREFULLY PRIOR TO  
Troubleshooting and Servicing Electrical Equipment**

### Definitions

**WARNING** May cause serious injuries or death

**CAUTION** May cause property damage

**For information on NuWhirl Instructions, see:**  
[www.nuwhirl.com/doc/product-instructions.html](http://www.nuwhirl.com/doc/product-instructions.html)

**When installing and using this electrical equipment, basic safety precautions should always be followed, including:**

**WARNING** Keep dry. Replace control if exposed to water, moisture or contamination.

**WARNING** Use and follow these instructions along with all instructions that have been provided.

**WARNING** Electronic control system components should be installed as per local and national Electrical Codes, in a location not to be subjected to splashing or flooding. Exposure to water or splashing will void all product certifications and warranties.

There are no user serviceable parts inside. Opening, modifying, or tampering with control system components will void all product certifications and warranties.

**WARNING** Risk of electric shock. Connect only to a ground type receptacle protected by a Ground-Fault Circuit Interrupter (GFCI). Contact a qualified electrician if you cannot verify that the power supply is protected by a GFCI. The GFCI should be tested on a routine basis. Consult the GFCI manufacturer's instructions for correct testing and operation

**For electrical connections, see applicable wiring diagram.**

See [www.nuwhirl.com/doc/product-instructions.html](http://www.nuwhirl.com/doc/product-instructions.html)

Do not use an extension cord to connect the product to the electric supply; provide a properly located receptacle.

**WARNING** Failure to install in strict accordance with each and every instruction above may compromise the system, which may cause injury to persons and/or property.

The tub may be supplied from more than one power source. Before working on any electrical device, make sure all power to the control system is off.

Use this unit only for its intended use as described in this manual. Do not use attachments not recommended by the manufacturer. Any improper installation or misuse of the equipment may result in injury to the user and will void the warranty.

Do not run unit dry. Always be certain that the pump casing is filled with water before starting the unit. If pump fails to prime within 30 seconds, turn it off. Check if there is an airlock, clogged plumbing, or closed valve.

**Save these instructions.**

**TOUCHSTONE®**  
**SINGLE LOAD CONTROLLER SYSTEM**  
Installation & Operating Instruction Manual

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**All Installation Procedures are  
for use by Tub Manufacturers or  
Qualified Service Personnel ONLY.**





## Control Configuration Selection and Setting Guide

This only needs to be performed on a newly installed system or when the Controller is replaced.

The TOUCHSTONE Single Load Controller box contains multiple software configurations to offer different sets of features on a bathtub. The control box must be placed in the proper configuration for the set of features on the bathtub in order to function properly. Once a configuration is set, the control box will remain in that configuration, even if power is lost and restored.

### Selectable Configurations

These are the configurations currently available as of September 22, 2021:

#### CSLC-317-02-01-01 Triac Model

Config#	Load	Light	Speed	Purge	Timer	1 BTN	2 BTN	Air Button
1	N/A	✓	N/A		30 mins	✓		✓
2	Pump	✓	3-Speed+ Oscillate		30 mins		✓	
3	Pump	✓	Variable+ Oscillate		30 mins		✓	
4	Blower	✓	2-Speed	✓	30 mins		✓	
5	Blower	✓	3-Speed+ Oscillate	✓	30 mins		✓	
6	Blower	✓	Variable+ Oscillate	✓	30 mins		✓	
7	Pump		3-Speed+ Oscillate		30 mins	✓		✓
8	Pump		Variable+ Oscillate		30 mins	✓		✓
9	Blower		3-Speed+ Oscillate	✓	30 mins	✓		✓
10	Blower		Variable+ Oscillate	✓	30 mins	✓		✓
11	Blower		2-Speed	✓	30 mins	✓		✓
12	Blower		Variable+ Oscillate	Per 24hr	30 mins	✓		✓

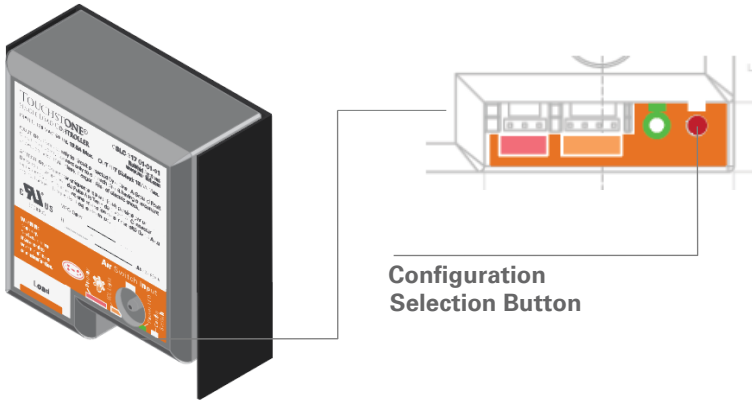
**CAUTION** Ensure that the Controller Model is suitable for the Tub's Load that is to be controlled. Failure to use the correct Model may damage the control box and its components and void any warranties.

# TOUCHSTONE®

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### Setting a Configuration



1. Locate the Configuration Selection Button, as shown above. It is to the right of the green Power Indicator light located on the lower-right corner of the Control box. This button can be used only for 20 seconds after the power is first applied to the control box. This is to ensure that the configuration does not get accidentally changed.
2. Unplug the control box from the AC power, and wait about 10 seconds.
3. Plug the control box back in. The green Power LED will blink the current configuration that it is in.
4. Within 20 seconds, press and hold the Configuration Button. Use a small object such as a pen or pencil to press the button. Only gentle pressure is required.
5. The Power LED will turn off, then blink once, indicating Configuration #1, followed by a pause, then two blinks, indicating Configuration #2, etc. Simply release the Configuration Button at the desired configuration setting. The Power LED will then blink the selected configuration again, as confirmation.

**Configuration is complete and the Controller is now ready for use.**



## Important Installation Notes & Mounting Installation

### Receptacle Location:

A conventional, wall-mounted, vertically-oriented, GFCI-Protected 15 Amp or 20 Amp duplex receptacle under the skirt of the tub must be prepared, located in a sheltered area away from any possible contact with water (e.g. away from the tub deck, plumbing, and water pump).

The Receptacle must be located well within the range of the tub's power cord and must not be accessible to the user after the skirt is installed.

Due to the need to mount the controller, do not use "Decora-style" receptacles, as these do not have a center screw.

### Load:

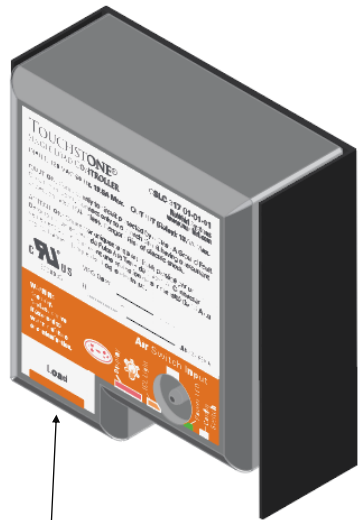
This Controller is only compatible with 120 Volt Brush-Type Pumps and Brush-Type Blowers, with a Maximum Rating of 12 Amps. Plug the Load into the Receptacle at the bottom of the Control Box. Do not exceed the Electrical Ratings listed on the product label.

### Features:

The Air Switch, Keypad, and/or Tub Lights are to be connected to the respective port of the Control Box.

**CAUTION** Turn the power off at the breaker panel, and confirm that it is de-energized before installing.

**CAUTION** Use a non-conductive plastic receptacle cover only. Do not use a metal cover. Metal covers could present a shock hazard if it was to fall across the Controller's Power Blades if the power was accidentally left on during installation, removal, or servicing.



TO BATH PUMP OR BLOWER

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### Mounting Installation:

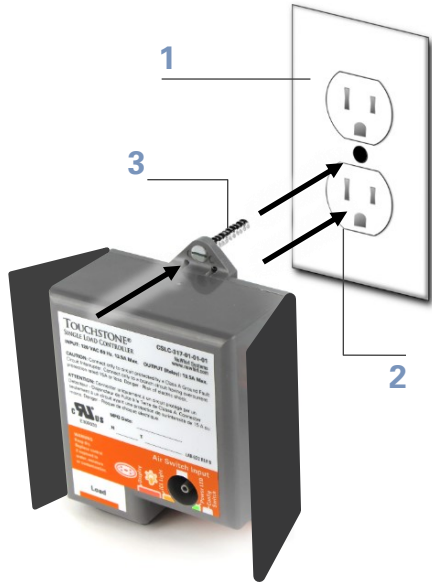
Turn the power off at the breaker panel, and confirm that it is de-energized before installing.

**1. Position the cover in place.**

**2. Plug the Controller into the lower receptacle,** lining up the Screw with the Receptacle.

**3. Fasten the Screw** to secure the Controller in place. Do not overtighten.

**4. Turn the power back on, and confirm correct operation.**



**Note:** If the remaining receptacle above the Controller is being used, the total load must not exceed the circuit's rating.

### Additional Installation Requirements

Plug the Control Box into a standard wall outlet beneath the tub.

The Control Box must be installed with the nipple located in the lower right-hand corner.



The Controller must be installed on a vertical surface with a 6" clearance on all sides for ventilation.

The underside tub temperature must not exceed 122°F (50°C).

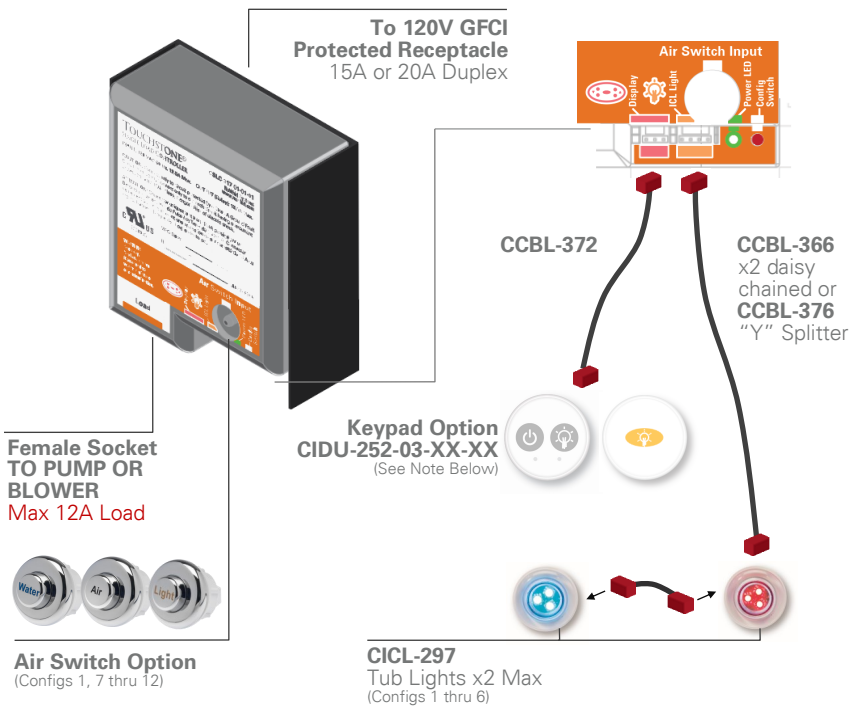


## CSLC-317-02-01-01 Triac Model Installation Configurations 1 through 12

### System Identification CSLC-317-02-01-01

**Note** For instructions on setting the Configuration Number, see Page 4.

### Controller Installation Diagram



#### NOTES:

1. Confirm Keypad Compatibility with your NuWhirl Sales Representative prior to installation.
2. PUMP equipped with air switch must be in the "ON" position prior to plugging into the controller.
3. The Rating of the Loads must not exceed the Controller's Amperage Rating.
4. Connect cables to ports as shown. Installation may not require the use of all connection ports.

**CAUTION** Failure to connect cables to ports as shown, may damage the control box and its components and void any warranties.



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## SINGLE LOAD CONTROLLER SYSTEM

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### Operation

These operating instructions should be used in conjunction with other instructions and warnings provided with the whirlpool bathtub in order to fully understand and safely utilize the tub.

### System Features

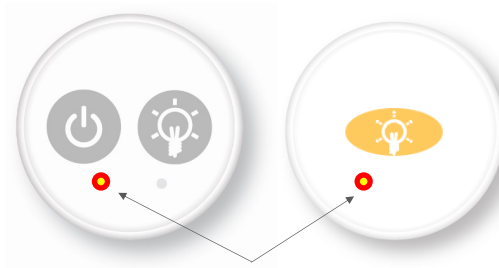
Air Buttons, Function Timers, Variable-Speed Pump or Variable-Speed Blower, Multi-Color LED Tub Lights

### Activation

#### Air Switch Buttons which may be labeled



#### Keypad Options



When LED is lit  
the feature is  
activated.

**Note** Keypad Options CIDU-252-03-02-01 and CIDU-252-03-08-01 shown.  
For instructions on setting the Configuration Number, see Page 4.



## Triac Model Operating Instructions

**Note:** The run timers for each component are independent of each other. At the end of the cycle, the component will automatically turn off.

### Configuration #1—Light Only

The LED Multi-Color Tub Light is activated by pressing the “Light” Air Button or Keypad. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.



### Configuration #2—Tri Speed Pump w/ Oscillation Option & Light

The Whirlpool Water system is activated by pressing the Power button on the Keypad. This will turn on the load at high speed and activate the automatic 30-minute timer. Subsequent presses will change the speed to medium, low, oscillate mode and off. The system will stop automatically when the timer expires.



The LED Multi-Color Tub Light is activated by pressing the Light button Keypad. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.

### Configuration #3—Variable Speed Pump w/ Oscillation Option & Light

The Whirlpool Water system is activated by pressing the Power button on the Keypad. This will turn on the Pump at high speed and activate its 30-minute timer. Press again to turn off.

To reduce speed, Press and Hold to ramp down and release at desired speed. A Subsequent Press-and-Hold resets the load to High Speed and Ramp Down sequence. The Oscillate feature is activated if the button is held for 2 seconds after reaching the “Low” speed in the speed ramp. The system will stop automatically when the timer expires.



The LED Multi-Color Tub Light is activated by pressing the Light button Keypad. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.

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## SINGLE LOAD CONTROLLER SYSTEM

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### Configuration #4—Dual Speed Blower & Light

The Air System is activated by pressing the Power button on the Keypad. The Air System runs independently of the Tub Water Level. This will turn the Blower on at high speed and activate its 30-minute timer. Pressing the Button a second time will cycle the Blower to low speed. Pressing the Button a third time turn the Blower off.



The LED Multi-Color Tub Light is activated by pressing the Light button. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.

### Configuration #5—Tri Speed Blower w/ Oscillation Option & Light

The Air System is activated by pressing the Power button on the Keypad. The Air System runs independently of the Tub Water Level. This will turn the Blower on at high speed and activate its 30-minute timer. Subsequent presses will change the speed to medium, low, oscillate mode and off. The system will stop automatically when the timer expires.



The LED Multi-Color Tub Light is activated by pressing the Light button. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.

### Configuration #6—Variable Speed Blower w/ Oscillation Option & Light

The Air System is activated by pressing the Power button on the Keypad. The Air System runs independently of the Tub Water Level. This will turn on the Blower at high speed and activate its 30-minute timer. Press again to turn off.



To reduce speed, Press and Hold to ramp down and release at desired speed. A Subsequent Press-and-Hold resets the load to High Speed and Ramp Down sequence. The Oscillate feature is activated if the button is held for 2 seconds after reaching the “Low” speed in the speed ramp. The system will stop automatically when the timer expires.



## Triac Model Operating Instructions (continued)

**Note:** The run timers for each component are independent of each other. At the end of the cycle, the component will automatically turn off.

### Configuration #6 (Continued)

The LED Multi-Color Tub Light is activated by pressing the Light button. The first press will start its 30-minute timer, and activate the Tub Light in a “Rainbow” mode. Subsequent presses will change the color to Blue, White, Blue, Aqua, Green, Yellow, Red, Magenta, and off. The Tub Light will turn off automatically when the timer expires. To turn off this function earlier, press and hold the Light Key at any time.

### Configuration #7—Tri Speed Pump w/ Oscillation Option (No Light)

The Whirlpool Water system is activated by pressing the “Water” Air Button. This will turn on the load at high speed and activate the automatic 30-minute timer. Subsequent presses will change the speed to medium, low, oscillate mode and off. The system will stop automatically when the timer expires.



### Configuration #8—Variable Speed Pump w/ Oscillation Option (No Light)

The Whirlpool Water system is activated by pressing the “Water” Air Button. This will turn on the Blower at high speed and activate its 30-minute timer. Press again to turn off.



To reduce speed, Press and Hold to ramp down and release at desired speed. A Subsequent Press-and-Hold resets the load to High Speed and Ramp Down sequence. The Oscillate feature is activated if the button is held for 2 seconds after reaching the “Low” speed in the speed ramp. The system will stop automatically when the timer expires.

### Configuration #9—Tri Speed Blower w/ Oscillation Option (No Light)

The Air System is activated by pressing the “Air” Air Button. The Air System runs independently of the Tub Water Level. This will turn the Blower on at high speed and activate its 30-minute timer. Subsequent presses will change the speed to medium, low, oscillate mode and off. The system will stop automatically when the timer expires.



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### **Configuration #10—Variable Speed Blower w/ Oscillation Option (No Light)**

The Air System is activated by pressing the “Air” Air Button. The Air System runs independently of the Tub Water Level. This will turn on the Blower at high speed and activate its 30-minute timer. Press again to turn off.



To reduce speed, Press and Hold to ramp down and release at desired speed. A Subsequent Press-and-Hold resets the load to High Speed and Ramp Down sequence. The Oscillate feature is activated if the button is held for 2 seconds after reaching the “Low” speed in the speed ramp. The system will stop automatically when the timer expires.

### **Configuration #11—Dual Speed Blower (No Light)**

The Air System is activated by pressing the “Air” Air Button. The Air System runs independently of the Tub Water Level. This will turn the Blower on at high speed and activate its 30-minute timer. Pressing the Button a second time will cycle the Blower to low speed. Pressing the Button a third time turn the Blower off.



### **Configuration #12—Variable Speed Blower w/ Oscillation Option (No Light, 24 Hour Purge Cycle)**

The Air System is activated by pressing the “Air” Air Button. The Air System runs independently of the Tub Water Level. This will turn on the Blower at high speed and activate its 30-minute timer. Press again to turn off.



To reduce speed, Press and Hold to ramp down and release at desired speed. A Subsequent Press-and-Hold resets the load to High Speed and Ramp Down sequence. The Oscillate feature is activated if the button is held for 2 seconds after reaching the “Low” speed in the speed ramp. The system will stop automatically when the timer expires.

**CAUTION** Do not run Whirlpool Water Systems dry. Always be certain that the pump casing is filled with water before starting the unit.

**Air Systems Automatic Dry Cycle** For all Configurations except for Configuration 11, thirty minutes after the Air Blower is turned off, it will automatically come on for 1 minute. For Configuration 11, this cycle will occur automatically once per 24 hour period. This will purge out any residual moisture in the air system, making the system fresh and ready for the next bath.



## System Troubleshooting

For the general troubleshooting issues related to TOUCHSTONE product, please refer to the TOUCHSTONE General Troubleshooting Guide.

**System Identification and Verification:** The first step in troubleshooting is to verify that the hardware required for the system is complete and installed correctly. Each Control System is identified by the Keypad Part Number and the Configuration Number.

**Cable Verification:** Verify that the cables are connected correctly, and that the pins are straight and free of damage. The Display Unit cable may have a Red Flag on the end, and is connected to the Controller's corresponding port, marked in Red.

The Tub Light Accessory's cable may have a Yellow Flag on the end, and is connected to the Controller's corresponding port, marked in Yellow.

**NOTE:** *If these cables were cross-connected or forced-in at any point, irreparable damage may result, and any warranty will be void. Should this happen, replace all the affected components, ensuring that they are connected correctly.*

**Power Verification:** Each control box has a green power indicator light on the face where the Keypad plugs in. It should be constantly illuminated when power is on to the system. If it is not lit, use a meter or suitable device such as a drill motor or hairdryer to verify that there is power to the Control System at the receptacle under the tub. Verify and check that the circuit has GFCI protection, and that the GFCI is functioning properly.

**Configuration Verification:** Each system is capable of operating a number of different configurations. In order to run the specific system at hand, the correct Configuration must be selected when components are replaced. See page 4.

**NOTE:** *Once the Configuration is set it will not be affected by cycling the power; it needs only to be set initially.*

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**Load Verification (Pump, Blower, etc.):** If a Load will not turn off: Unplug the Keypad. If the load is still on, there is a fault in the Control Box. Replace the Control Box.

If a Load will not turn on: Referring to the Operating Instructions section, confirm that the Load is plugged into the correct Receptacle of the correct Control Box. If it still does not function, verify that the Load is operational by plugging it directly into a known-good wall receptacle. If not, replace the Control Box or Load accordingly.

**Non-Functional Keypad:** If the Keypad is not functioning, check that the control box has power by observing the green power indicator LED on the control box is illuminated.

Next, check the cable connecting the Keypad to the control box making sure that both connections are secure. Inspect each cable end to make sure that the pins are not bent or missing. If the Keypad is still non-functional, replace the Keypad and the Cable. Test the system.

# Retain this manual for future reference

For your records and future reference  
please fill in data below:

**Manufacturer:** \_\_\_\_\_

**Model:** \_\_\_\_\_

**Serial:** \_\_\_\_\_

**Date of Installation:** \_\_\_\_\_

