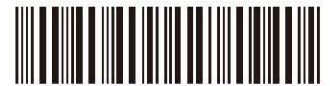


Rinnai

Operation / Installation Manual




MC-195T-US



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U321-0101(01)

130327 

Before Installation

Before installing the MC-195T-US controller to any Rinnai Tankless Water Heater be sure that:

1. The MC-195T-US controller is not be installed in combination with any Rinnai GTK kit, third party recirculation timer, or aquastat control.
2. Only one MC-195T-US controller is connected to the tankless water heater. The MC-195T-US can be connected along with up to 3 additional MC-91-2-US controllers.

The MC-195T-US is only compatible with the following Rinnai products and accessories.

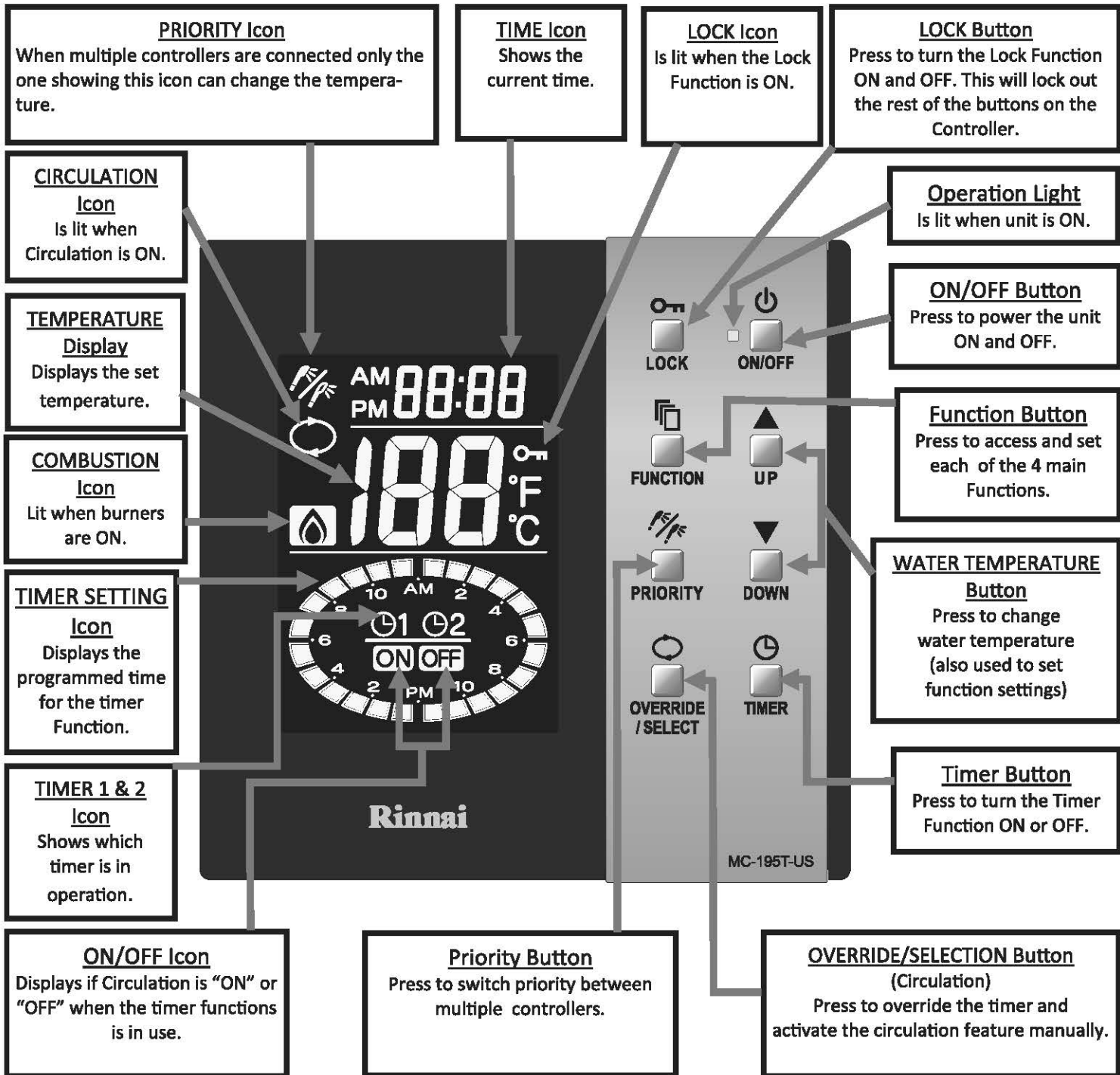


Model	Serial Number	Part Number
RL75i (VC)	Units with an "(A)" on the end of the model number.	REU-VC2528FFUD-US(A)
RL75e (VC)		REU-VC2528WD-US(A)
RL94i (VC)	DB.CA-016788 and higher	REU-VC2837FFUD-US
RL94e (VC)	DC.BA-013335 and higher	REU-VC2837WD-US
RU98i	DB.BA-006175 and higher	REU-KB3237FFUD-US
RU98e	DB.BA-006213 and higher	REU-KB3237WD-US
RU80i	DB.BA-006201 and higher	REU-KB2530FFUD-US
RU80e	DB.BA-006195 and higher	REU-KB2530WD-US

NOTE

The MC-195T-US is an accessory controller to be used with the Rinnai Tankless Water Heater. Please refer to the water heater operation and installation manual for further information regarding operation and safety.

Description of Functions



Setting the Clock

Setting the Clock Time

The display will default to "AMPM—:—" when the controller is powered on for the first time.

1. Press the "FUNCTION" button while the controller is "Off".

- "AM 12:00" will be displayed flashing.



2. Press "UP" or "DOWN" buttons to adjust the current time.

-The "UP" button will move the minute forward, while the "DOWN" button will move the minute backward.

-Continuous pressing of either button will change the time by 10 minute intervals.

-Pay close attention to correctly set the AM vs PM especially when the recirculation timer function is being utilized.



3. Press "FUNCTION" button again.

-The Display will stop flashing and the setting mode will be exited.

-Remember when the "FUNCTION" button is pressed while setting the time, the clock starts at 0 seconds allowing the time to be set as accurately as possible.

-Once finished setting the time, if the "FUNCTION" button is not pressed to exit the setting mode, the controller will exit the mode automatically after 1 minute.



Priority & Temperature Settings

Setting Priority

The "PRIORITY" button is only used when there is more than one temperature controller connected to a tankless water heater. Only the controller with the "Priority" icon will have the ability to change the temperature so as to avoid scalding or other injury. (please note that if only 1 controller is installed the "PRIORITY" button will remain lit)

1. Press "PRIORITY" button
 - "Priority" icon will be displayed on the controller allowing the hot water temperature to be changed.
 - *When the controller is being powered "ON" the controller is prioritized and the "priority" display is shown.
 - *When priority is switched, the set temperature of the prioritized controller becomes the set temperature of the tankless water heater.
 - Regardless of which controller has priority, all settings or functions other than temperature can be adjusted and used.



Adjusting the Temperature

1. Ensure the controller is "ON" and that the Priority icon is displayed.
2. Press the "UP" or "DOWN" buttons as needed to set the controller to the desired temperature.
 - The temperature will increase by 2 degree increments between 98-110 F. Once above 110 F the temperature will change by 5 degree increments.
3. Proceed to open the tap to allow water to flow through the unit allowing combustion to begin.
 - During the call for hot water while the burners are active, the "Combustion" icon will appear on the screen.

NOTE

While combustion is "ON" the controller can only adjust from 98-110 F; to achieve temperatures greater than 110 combustion must be "OFF")



Hot water can be dangerous, especially for infants or children, the elderly, or infirm. There is hot water scald potential if the thermostat is set too high.

Water temperatures over 125° F (52° C) can cause severe burns or scalding resulting in death.

Hot water can cause first degree burns with exposure for as little as:

3 seconds at 140° F (60° C)

20 seconds at 130° F (54° C)

8 minutes at 120° F (49° C)

Test the temperature of the water before placing a child in the bath or shower.

Do not leave a child or an infirm person in the bath unsupervised.

Locking the Controller

Lock Function

The "Lock" function will prevent the buttons on the controller from working a safeguard against small children or otherwise inappropriate operation.

- The "Lock" function can be used whether the controller is "ON" or "OFF".
- When the "Lock" function is active, all other buttons are locked out except for the "LOCK" button.

NOTE

When the controller with priority is locked, all remote controllers will also be locked. Any controller in this case can be used to release the "Lock" function. When all the remote controllers are "OFF", any remote controller can be used to "Lock" all remote controllers.

1. Press "LOCK" button for 3 seconds until it beeps. Once locked the "LOCK" icon will be displayed.







2. Press "LOCK" button again for 3 seconds until it beeps. The controller is now unlocked and the "LOCK" icon is no longer displayed.



Functions

Pressing the "FUNCTION" while the controller is "ON" (without using the Timer feature), will allow the user to set various modes of the 4 main functions. The 4 main functions include: 1. Power Saving, 2. Audible Beep, 3. Clock Display, and 4. Temperature Scale in that order. Each time "FUNCTION" is pressed the display will proceed to the next function. While in a function use the "UP" and/or "DOWN" buttons to select which mode the function is desired to be in. When in "Function" setting the Display will appear as follows:

<p>Function 1. Power Saving This function allows for conservation of energy by dimming the display. Over time the display will go off with only the green operation light being on.</p>  <p>← Function Number</p> <p>← Mode</p>	<table border="1"> <thead> <tr> <th>Mode</th> <th>Display</th> <th>Off Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dark</td> <td>After 10 Min</td> </tr> <tr> <td>2</td> <td>Bright</td> <td>After 20 Min</td> </tr> <tr> <td>OFF</td> <td>Bright</td> <td>Remains On</td> </tr> </tbody> </table>			Mode	Display	Off Time	1	Dark	After 10 Min	2	Bright	After 20 Min	OFF	Bright	Remains On					
Mode	Display	Off Time																		
1	Dark	After 10 Min																		
2	Bright	After 20 Min																		
OFF	Bright	Remains On																		
<p>Function 2. Beep ON/OFF This function deactivates the Beep sound that would normally occur when a button is pressed.</p>  <p>← Function Number</p> <p>← Mode</p>	<table border="1"> <thead> <tr> <th>Mode</th> <th>Beep</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Beep Active</td> </tr> <tr> <td>OFF</td> <td>Silence</td> </tr> </tbody> </table>			Mode	Beep	ON	Beep Active	OFF	Silence											
Mode	Beep																			
ON	Beep Active																			
OFF	Silence																			
<p>Function 3. Clock Display This Function allows the user to choose if the clock function will be shown while the controller is "On" and/or "OFF".</p>  <p>← Function Number</p> <p>← Mode</p>	<table border="1"> <thead> <tr> <th>Mode</th> <th>Controller ON</th> <th>Funct. 1 ON and Control ON</th> <th>Controller OFF</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Clock</td> <td>No Clock</td> <td>No Clock</td> </tr> <tr> <td>2</td> <td>Clock</td> <td>Clock</td> <td>Clock</td> </tr> <tr> <td>OFF</td> <td>No Clock</td> <td>No Clock</td> <td>No Clock</td> </tr> </tbody> </table>				Mode	Controller ON	Funct. 1 ON and Control ON	Controller OFF	1	Clock	No Clock	No Clock	2	Clock	Clock	Clock	OFF	No Clock	No Clock	No Clock
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1	Clock	No Clock	No Clock																	
2	Clock	Clock	Clock																	
OFF	No Clock	No Clock	No Clock																	
<p>Function 4. Temperature Scale This function allows the user to adjust the temperature scale between Fahrenheit and Celsius.</p>  <p>← Function Number</p> <p>← Mode</p>	<table border="1"> <thead> <tr> <th>Mode</th> <th>Temperature</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>°F</td> </tr> <tr> <td>2</td> <td>°C</td> </tr> </tbody> </table>			Mode	Temperature	1	°F	2	°C											
Mode	Temperature																			
1	°F																			
2	°C																			

Circulation & Timer Features

Using the Circulation Function (with Timer)

(Be sure prior to using the timer that the clock time is correct, unless the clock is set the timer setting will not be accessible)

1. Ensure the controller is "ON"

2. Press the "TIMER" button, "TIMER 1" will be displayed.

Timer 1 will be preset for 6AM-9AM and 5PM-11PM. The range that is programmed will be filled in "white". Each "white" section represents 1 hour.

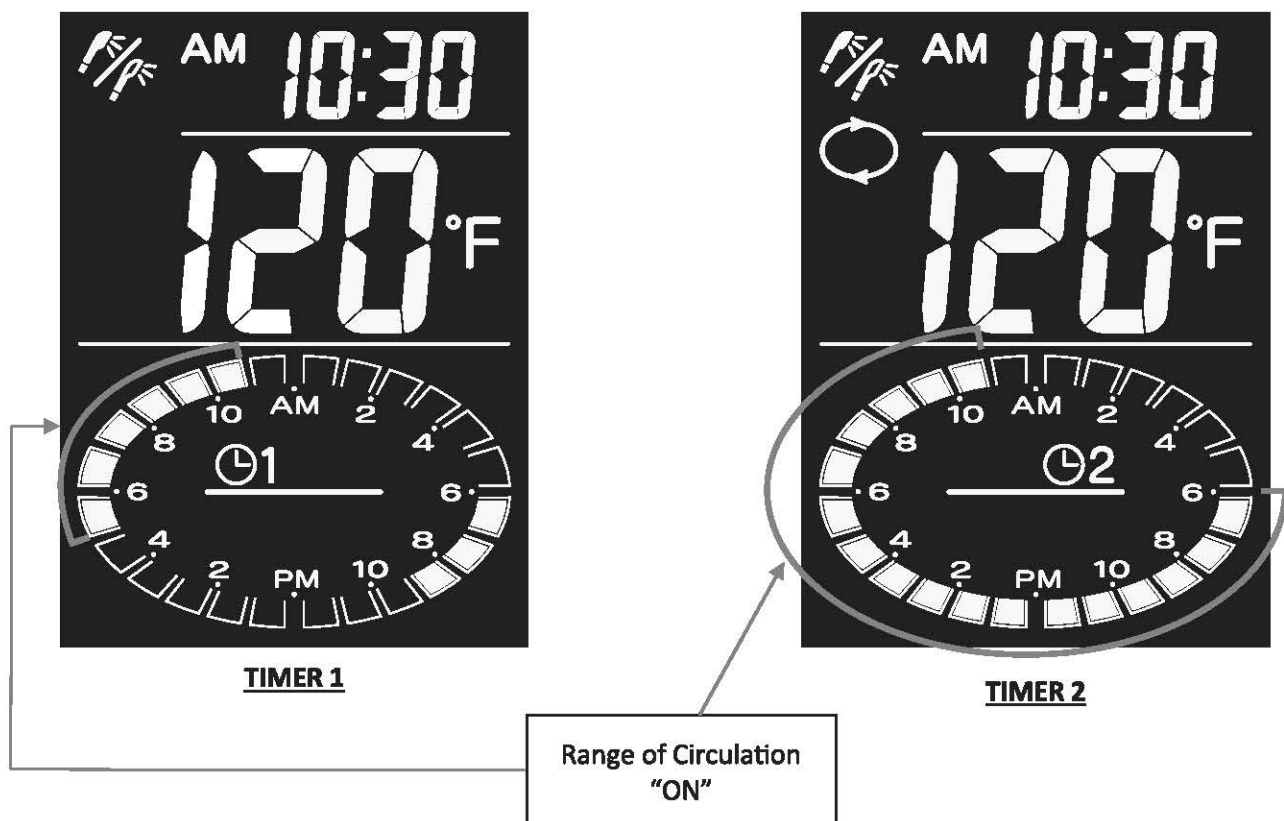
When the time is in the range that is programmed the circulation function will start automatically showing the circulation icon. When the programmed range comes to an end the circulation function will stop automatically and the circulation icon will no longer be shown.

3. Press the "TIMER" button once more to show "TIMER 2". (This preset to 6AM-11PM)

4. Press the "TIMER" button once more to exit from timer setting and the timer setting display will no longer be shown.

NOTE

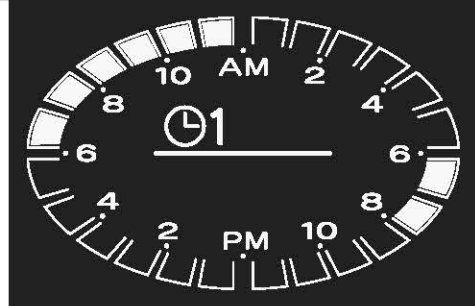
The user can alternate between timers by simply pressing the "TIMER" button once the programming has already been completed and exited



Circulation & Timer Features

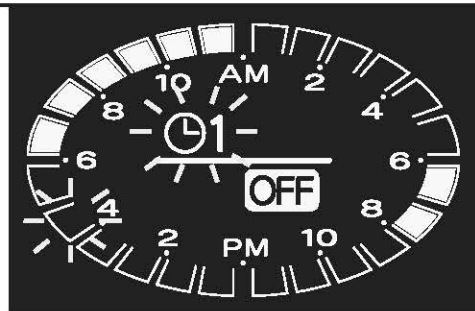
Changing the "TIMER" settings

1. Press the "TIMER" button to display the settings for "TIMER 1".



2. Press the "FUNCTION" button

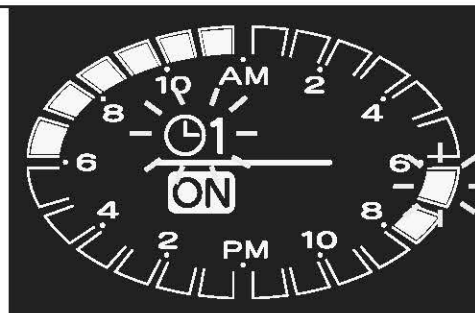
- The grid for the current time will flash along with the "TIMER 1" icon.
- When the flashing grid is within the range of the circulation programming, "ON" will be displayed under the "TIMER 1" icon.
- When the flashing grid is outside the range of the circulation programming, "OFF" will be displayed under the "TIMER 1" icon.



(This image is an example showing the current time is 4:30PM. Since the circulation setting is "OFF" from 4:00PM-5:00PM, "OFF" is displayed under the "TIMER 1" icon)

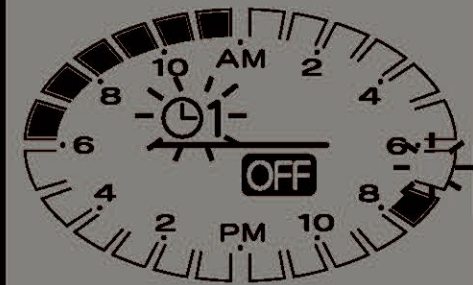
3. Use the "UP" and/or "DOWN" button to move the grid to 6:00AM-7:00AM.

- Press "UP" to move the grid clockwise
- Press "DOWN" to move the grid counter-clockwise.
- Press "UP" or "DOWN" button continuously and the grid moves continuously flashing.

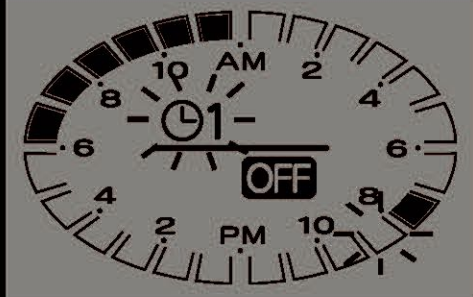


Circulation & Timer Features

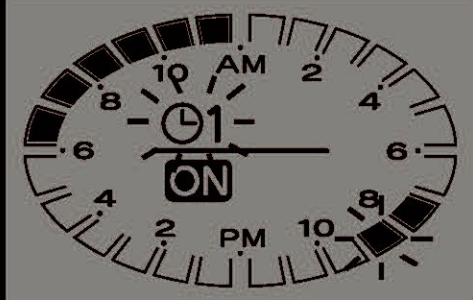
4. Press the "OVERRIDE/SELECT" button.
-"ON" icon will turn to the "OFF" icon
-The grid from 6:00AM-7:00AM will no longer be lit.



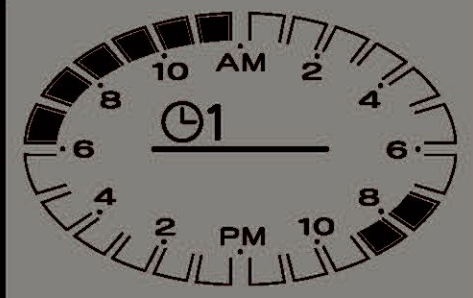
5. Press the "UP" or "DOWN" button to move the grid to 8:00AM-9:00AM.
-The grid from 8:00AM-9:00AM will now flash.



6. Press the "OVERRIDE/SELECT" button again.
-"OFF" icon will turn to the "ON" icon
-The grid from 8:00AM-9:00AM will now be lit.



7. Press the "FUNCTION" button to finish the timer setting.
-The "Timer 1" will now be solidly lit.
-If the "Timer 1" button is not pressed the controller will exit the timer setting automatically after 30 seconds.



("TIMER 2" setting can be changed in the same way by simply pressing "TIMER" again in step 1 so that "TIMER2" has been selected instead.)

Circulation & Timer Features

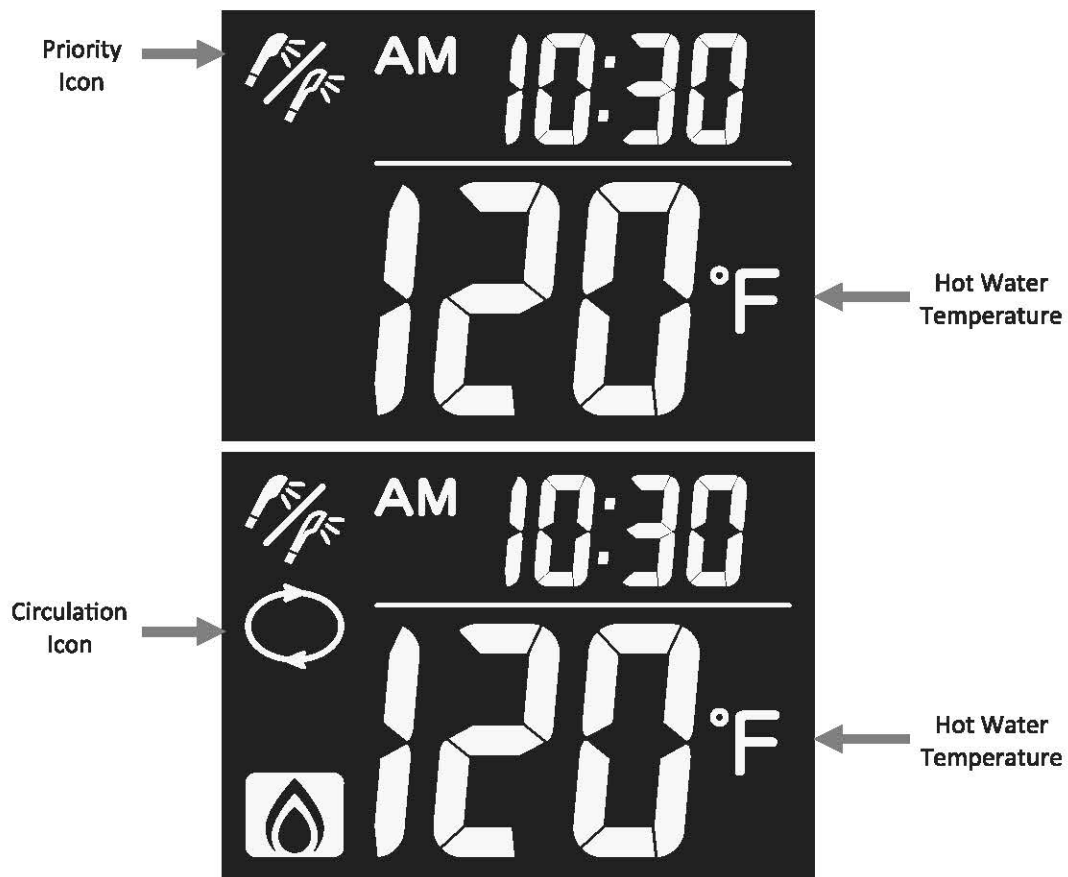
Using the Circulation Function (without timer)

Circulation allows heated water to circulate through the piping in order to keep the supply warm so that hot water can be delivered quicker once a tap is opened.

1. Ensure the controller is "ON".
 - In the event that there are multiple controllers connected to the unit, be sure the "Priority" icon is displayed on the MC-195T-US.
2. Use the "UP" or "DOWN" button to set the desired temperature of the circulation.
 - The circulation will heat and keep the water in the piping at the set temperature.
3. Press the "OVERRIDE/SELECT" button.
 - The circulation icon will come on showing the circulation function is active.
4. Press the "OVERRIDE/SELECT" button again.
 - The circulation icon will no longer be displayed showing the circulation function is now deactivated.

NOTE

When the "OVERRIDE/SELECT" button (circulation) is pressed without a timer program being active, the function will be in manual mode and will run continuously until it is deactivated by use of the button.



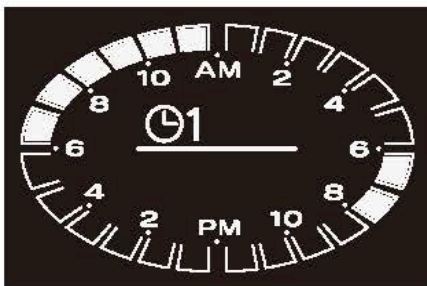
Circulation & Timer Features

Using the Circulation Function (with Override)

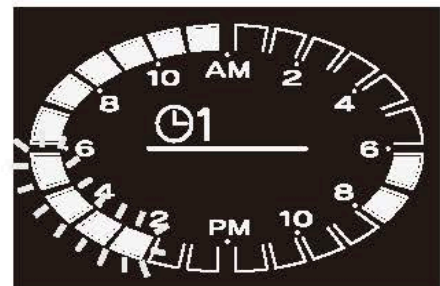
During "Timer" operation the "Override" function can be used to temporarily alternate the programmed circulation setting.

1. Press the "OVERRIDE/SELECTION" button during a "Timer" operation.

Example: When the "OVERRIDE/SELECTION" button is pressed at 2:30PM, the grids from 2:00PM-6:00PM will come "ON" and light up.



Press "OVERRIDE/SELECT"



-The "Override" function is effective only once and will disengage automatically on the next timed setting sequence. For example in the above case, at 6:00PM the 2:00PM-6:00PM grids will turn off automatically and the circulation will now be "OFF".

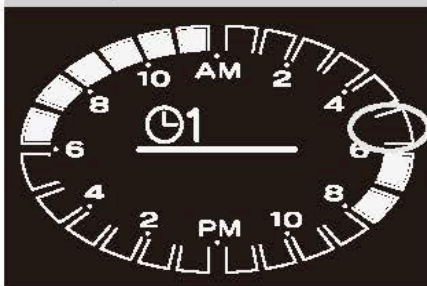
-Press "OVERRIDE/SELECT" during the "Override" function to cancel it and return to the original setting.

-The "Override" function is cancelled by stopping the "TIMER" function or by turning the controller "OFF"

NOTE

When using the "TIMER" function, the user may want to consider setting the program to be activated on the grid icon block before the desired time water is needed to ensure hot water at the desired time.

For Example:



If hot water is desired for 6AM, the program can be set for 5AM to ensure that at 6AM the water is already at the desired temperature.

Controller Installation



WARNING

Turn the power off. Do not attempt to connect the temperature controllers with the power on. Although the controller is a low voltage device, there is 120 volt potential next to the temperature controller connections inside the unit.

Do not connect the temperature controller to the 120VAC terminals provided for the optional solenoid drain valves.

1 Check before installation

- Ensure the cable size is the proper wire gauge (20AWG) to prevent electrical interference.
- The controller should be out of reach of small children.
- Do not install in locations where it can be adjusted by the public.
- Avoid locations where the temperature controller could be splashed with liquids.
- Avoid locations where the controller may become hot (near the oven or radiant heater).
- Avoid locations in direct sunlight. The digital display may be difficult to read in direct sunlight.

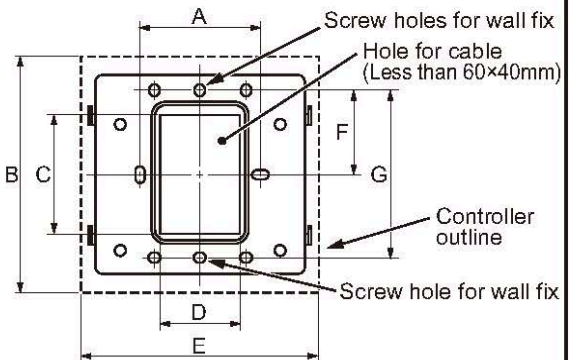
2 Accessories (included)

Parts name	Unit	Part name	Unit
.24in Wall plug	2	Closed end connector	2
.16x.98in screw	2	Wire clamp	2

3 How to install remote controller

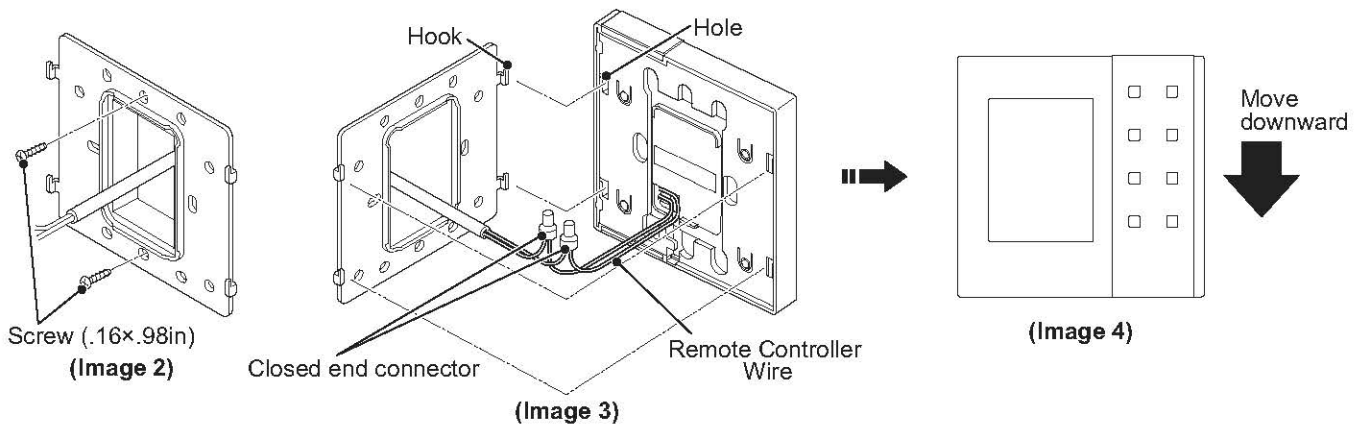
Installation onto wall

- ① Make a hole for the wire and attach the bracket onto the wall using the included screws (refer to image 1 and 2). In case the wall is made from cement, make 2 holes (.24in, more than .98in depth) for the wall plug and attach them using the included screws (.16x.98in)
- ② Connect the wire from the heater to the controller wire of the same color (See image 3).
- ③ Insert hooks of the bracket into the controller and move the controller down until it clicks. (See image 3-4)



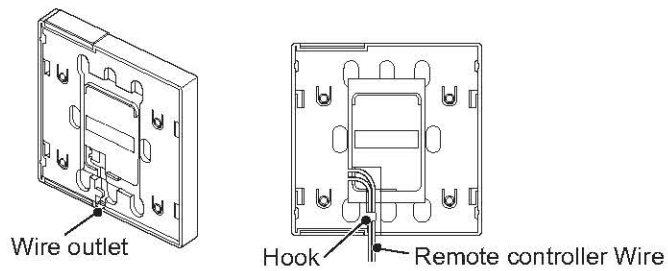
(Image 1)

Reference	A	B	C	D	E	F	G
Inches (mm)	2.36 (60)	4.65 (118)	2.36 (60)	1.58 (40)	4.72 (120)	1.65 (42)	3.29 (83.5)



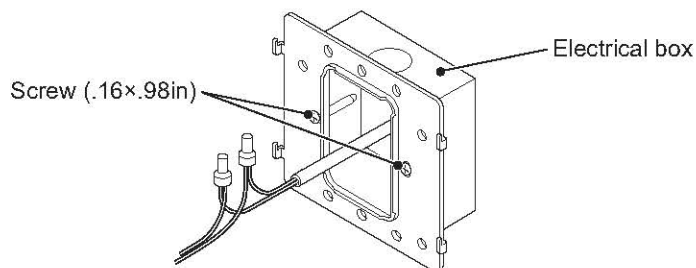
Installation using exposed wires onto wall

- ① Use a utility knife or pair of snips to remove the plastic from the wire outlet. Route the remote control wire through the pathway, under the hook and through the outlet.
- ② Follow instructions 1-3 on the previous page for wall mounting instructions.



Installation using exposed wires onto wall

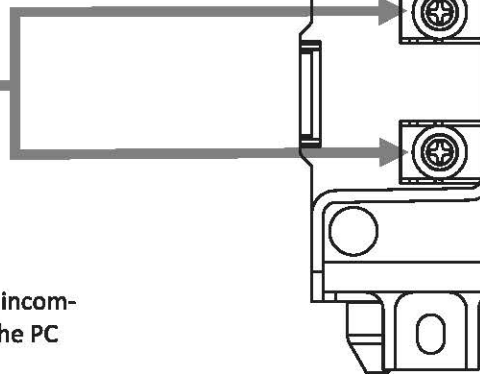
- ① Place the bracket onto the switch box using the .16x.98 in Screws.
- ② Follow instructions 1-3 on the previous page for wall mounting instructions.



Connecting to the PC Board

- 1 Disconnect the power from the water heater.
- 2 Remove the plastic cover from the PCB and electrical connections.
- 3 Thread the cable through the access hole at the base of the unit and connect the wires to the Terminals For Control (TFC) on the right hand side bottom of the PCB.
- 4 Secure the controller cable using the clamp provided.
- 5 Replace plastic cover over PCB and then replace the cover of the water heater.

Terminals
For
Control
(TFC)



NOTICE

Do not under any circumstance connect the 120VAC incoming power to these terminals. Doing so will damage the PC board.

4 Notice

- Protect cables by using a conduit, (in case of installing inside of cement).
- The maximum length of building wire is within 82ft. Make sure the total length of wire is within 164ft.
- Do not install the controller using a wire longer than the maximum allowed length.
- Use the required wire gauge (20AWG) to prevent electrical interference.

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