ADInstruments Thermal Water Circulator (5L)

Quick Start Guide

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Overview

Thermal Water Circulator (5L)

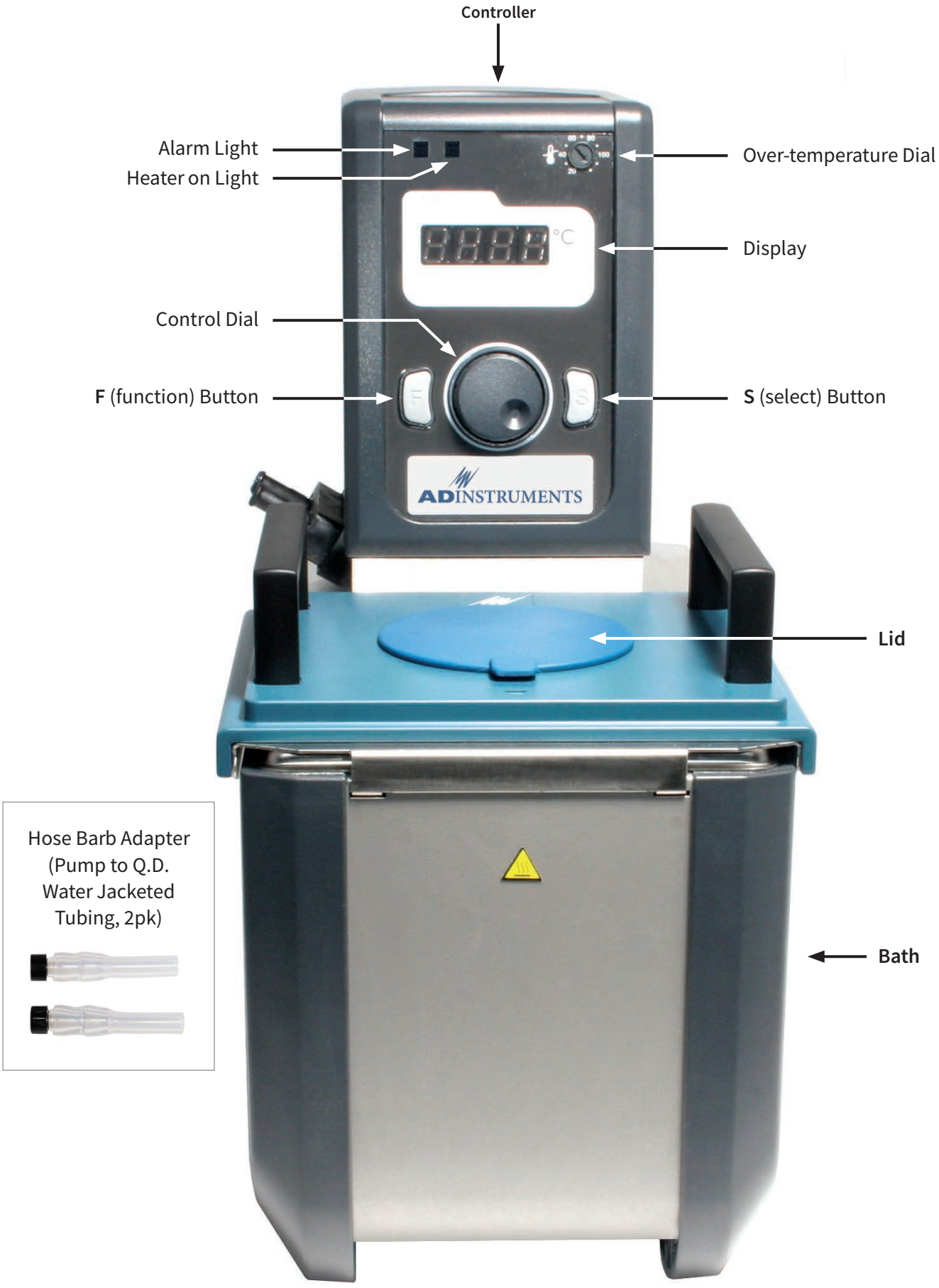
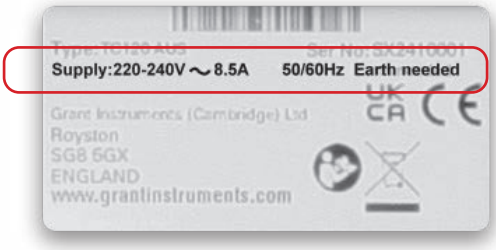


Figure 1: Model MLA216 Thermal Water Circulator

Installation

- Place the Thermal Water Circulator on a level, non-combustible surface. Ensure that the mains plug and the switch at the rear of the unit are easily accessible.
- If it has been transported or stored in cold or humid conditions, condensation may form inside it. If that could have happened, allow time (at least 2 hours at room temperature) for the condensation to evaporate before using the circulator.
- Do not block or restrict ventilation slots at the back of the controller.
- Check that the supply voltage and frequency marked on the serial number label of the controller, and the type of mains plug, are correct for your mains supply outlet, which must have a ground connector. It must only be connected to the mains using the mains cord supplied or one with an identical rating.

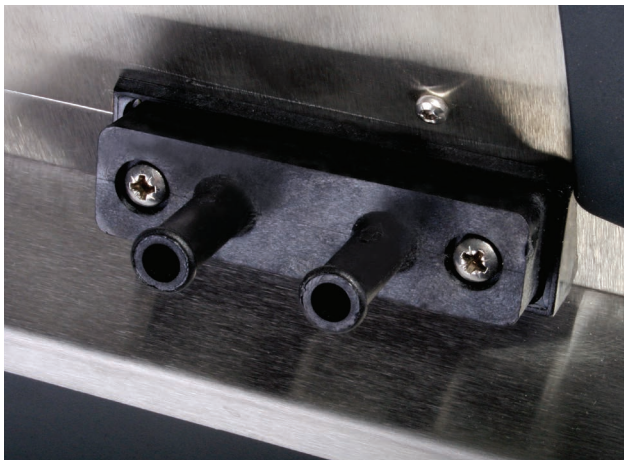


Filling the Bath

- Fill the bath with water to at least the minimum recommended fill level such that the float level switch is fully raised.
- Its water level should always be maintained between a depth of 85 mm (minimum) to 140 mm (maximum). These levels also apply when there are other suitable physical contents that are inserted into the bath.
- Appropriate periodic checking on evaporation should be made and refill the bath if required.
- The low level float switch will alarm if the water level drops below the minimum required level and the controller will switch off the heater and stop temperature control.

Water Circulation Connection

- The Thermal Water Circulator is designed to allow the heated water to be pumped around a closed external apparatus (not open to the atmosphere).
- An assessment of the required volume of water when the circulator is running should be completed to ensure water levels are stable during operation and there is no chance of the bath of the circulator running dry or overflowing.
- Water circulation is provided by the Outlet/Inlet Plate on the left side of the Thermal Water Circulator.



- A pack of two Hose Barb Adapters is provided to attach both the outlet and inlet to suitable Radnoti Quick Disconnect (Q.D.) Water Jacketed Tubing Assemblies.
- First remove the protective caps from the threaded glass end of each Hose Barb Adapter (Pump to Q.D. Water Jacketed Tubing). Using one Hose Barb Adapter (Pump to Q.D. Water Jacketed Tubing), carefully insert one end of a suitable Radnoti Q.D. Water Jacketed Tubing Assembly and carefully fasten it by screwing the drill cap onto the threaded glass end.

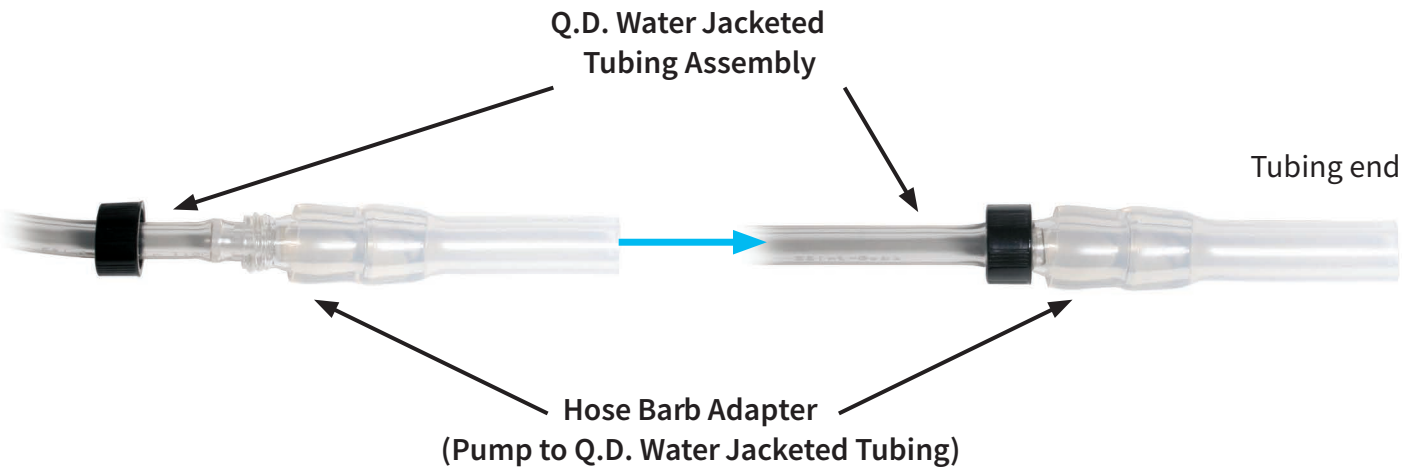


Figure 2: Connecting a Quick Disconnect Water Jacketing Tubing Assembly to a Hose Barb Adapter.

- Identify the inlet and outlet of the Thermal Water Circulator.
- Connect the Hose Barb Adapter with the connected Water Jacketed Tubing Assembly to the outlet/inlet of the circulator via the tubing end of the Hose Barb Adapter.

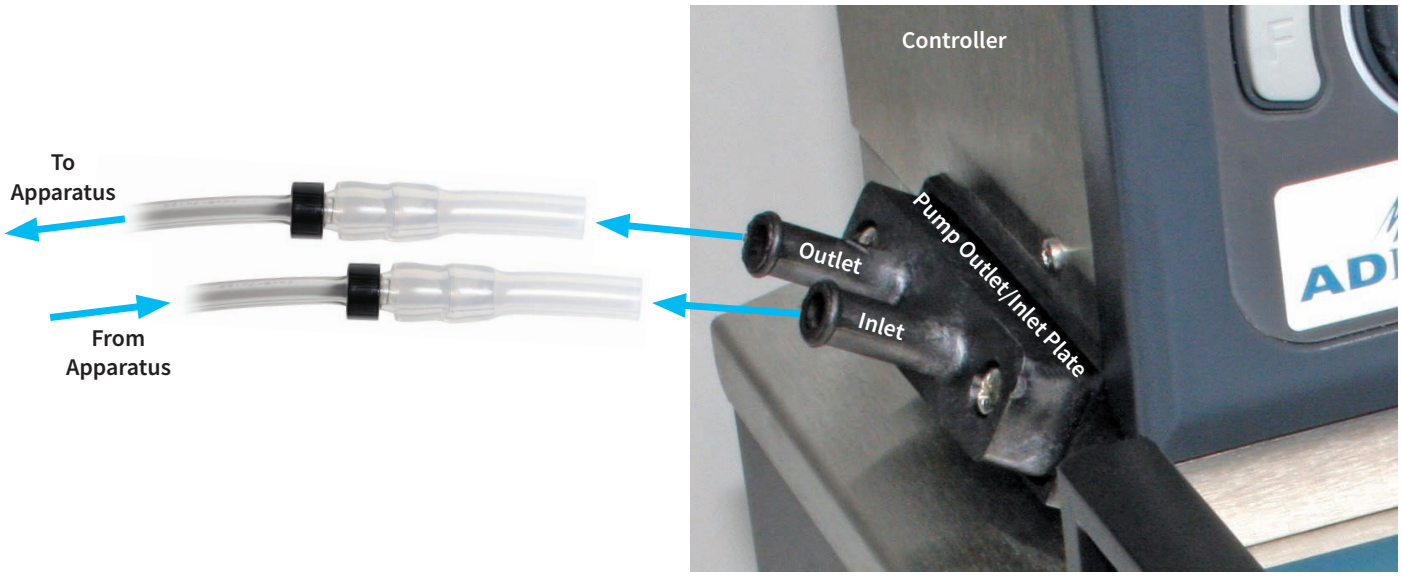
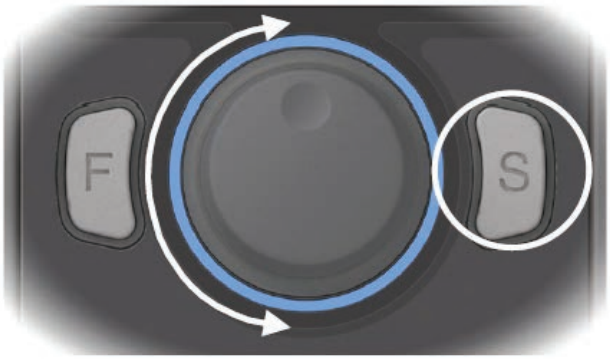


Figure 3: Connecting the circulator to a suitable Radnoti apparatus.

- Switch on the circulator using the power switch on the rear of the unit. The motor will start immediately and the buzzer will sound while the unit starts up. During start up the display will show the model type, followed by the software version and finally the current liquid temperature.
- Water will also begin circulating through the apparatus.

Setting the Temperature

- The temperature range that is set for water (H_2O) is between 0°C to 100°C.
- The temperature of the bath water can be set using the **S** button.
- Whilst the Display (see above) is showing the bath temperature, press the **S** button. The Display will begin to flash indicating that it can be set
- Rotate the Control Dial to set the desired temperature.
  - If no key is pressed for 10 seconds then the Display will revert back to showing the bath temperature and the set temperature will remain at its original value.
- Press the **S** button again to store the requested temperature value and the Display will revert to showing the bath temperature.
- If the temperature selected is higher than the current liquid temperature, the heater light will come on.

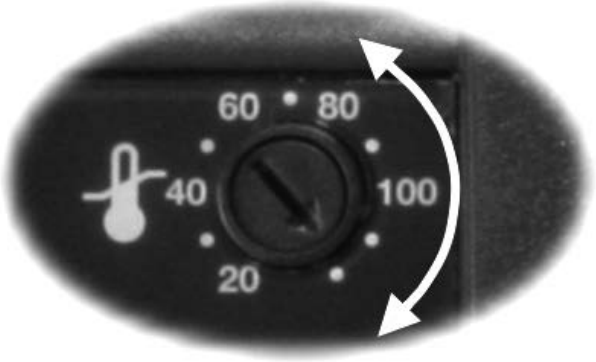


Configuring a Temperature Preset

- Thermal Water Circulator provides three presets, which can be configured to different set temperatures within the temperature range of the circulator. It allows the circulator to be conveniently operated at frequently used temperatures.
- Press the **F** button and rotate the Control Dial until the Display shows “t-1”. The Display will alternate between the preset number and its temperature.
- Press the **S** button to select the preset.
- Use the Control Dial to set the desired preset temperature.
  - If no key is pressed for 10 seconds then the display will revert back to showing the bath temperature and the preset temperature will remain at its original value.
- Press the **S** button to save the preset temperature. The preset will automatically start as soon as the value is saved.
- Similarly repeat the procedure for the other two presets. For example, presets can be set as t-1 at 37°C, t-2 at 56°C and t-3 at 72°C.
- To change between presets, press the **F** button and rotate the Control Dial until the display shows the correct preset. Press the **S** button to select the preset.

Setting the Over-Temperature Dial

- An over-temperature cut-out dial with a temperature scale is located at the top right of the controller. The over-temperature probe independently monitors the bath temperature and switches the heater off if it goes above the cut-out threshold.
- Use an appropriately sized screwdriver to rotate the arrow until it aligns with the marked scale of the desired temperature.
  - This should be higher than the set temperature (at least 5°C above) to avoid operating the cut-out before the set temperature has been reached.
- If the alarm is triggered, it can be canceled by pressing either the **F** or **S** button once.
- The Thermal Water Circulator must then be switched off to clear the cut-out alarm.
  - Let the bath water by at least 5°C either naturally or by replacing the water.
  - Wait 10 seconds before switching it on again to clear the alarm.



Lid Feature

- The lid that is supplied with the Thermal Water Circulator is designed to minimize heat loss and evaporation from the heated water bath.
- It has two handles for easy placement and removal. Please note the correction orientation of the lid.
- Additionally, it has a removable cap that allows placing a suitably sized and designed Radnoti glassware bottle or reservoir within the heated water bath for simultaneous heating.
  - Remove the cap from the lid.
  - First place the glassware into the bath. It is recommended that the glassware has been filled with the necessary solution to aid stability when placing it into a body of water.
  - Center the opening of the lid to securely place it on top of the glassware, which should have sufficient weight to hold it in place.

Figure 4: Thermal Water Circulator Lid with (left) and without (right) removable cap. It should be orientated so that its small arrow faces the front of the bath.

Standard operation | Inserting glass container | Placing lid and securing glass container

Figure 5: Thermal Water Circulator with capped lid for standard operation (left), with the insertion of a glassware before (middle) and after (right) the placement of the lid.

Cleaning

- Clean the unit with a damp cloth, using only water.
- Do not use chemical cleaning agents.

Services and Repair

- For service or repair please contact our local ADInstruments sales or support representative or your local distributor.
- All returned units must be accompanied by a Return Materials Authorisation (RMA) number, obtainable by contacting the ADInstruments Support.

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