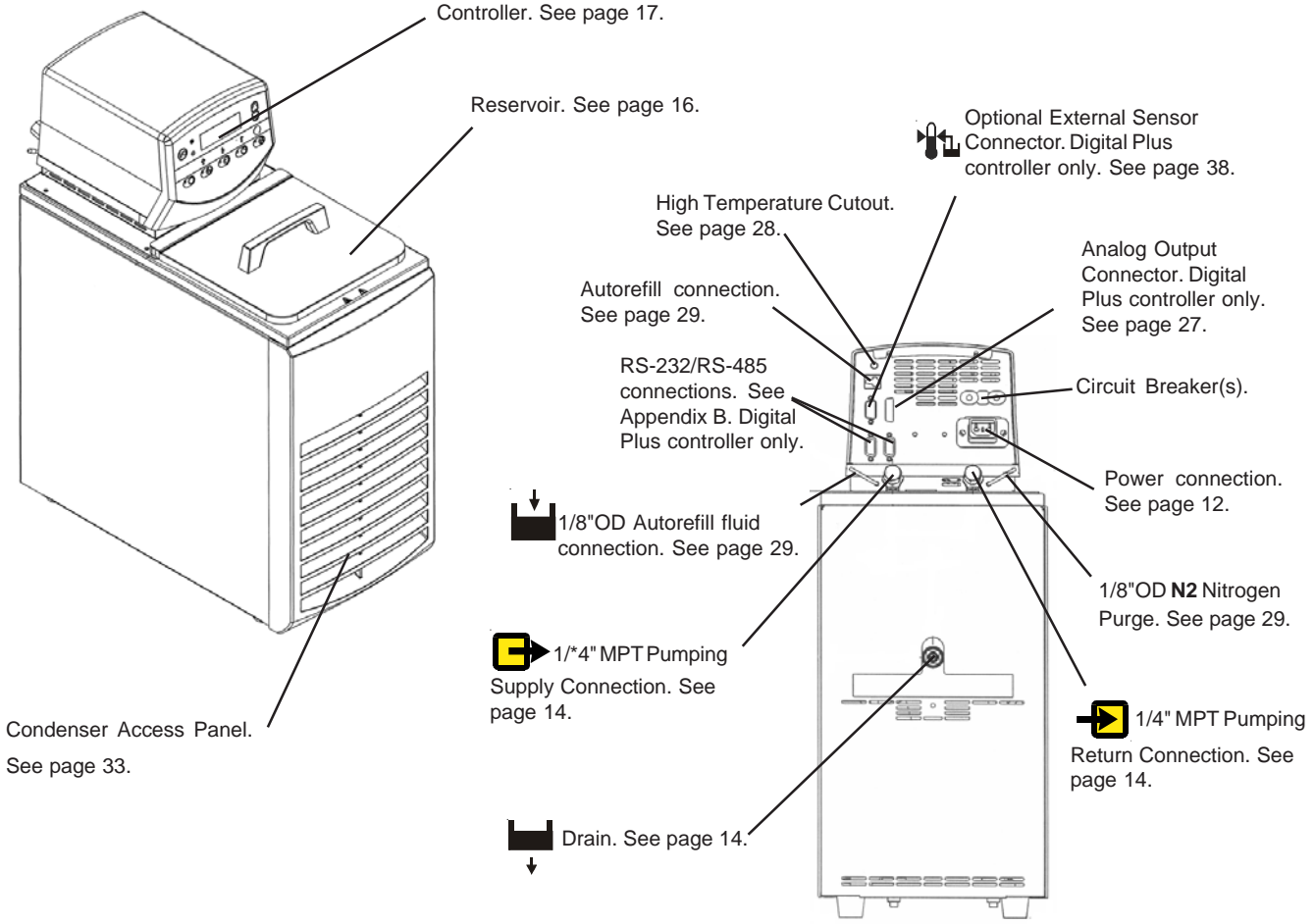
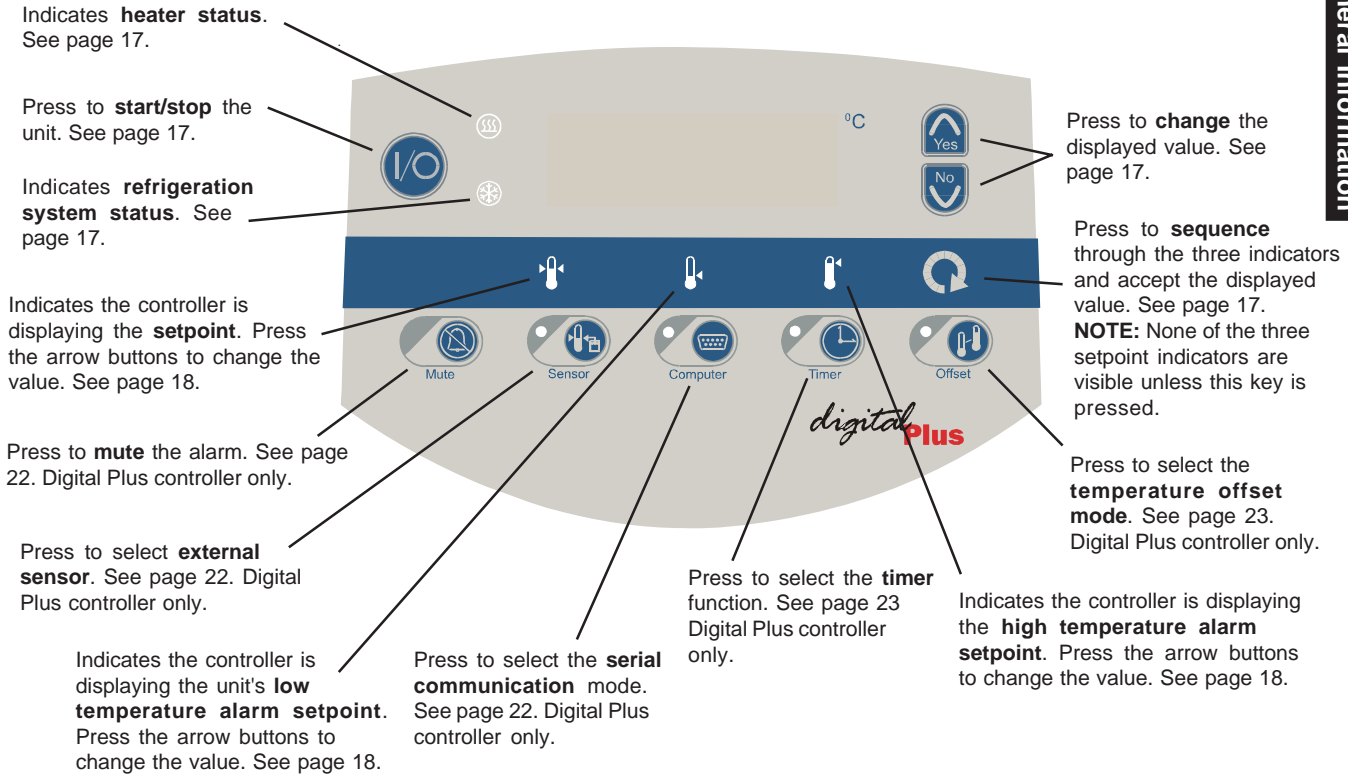


## Section II General Information



## Quick Reference Operating Procedures

### Installation

Locate the unit on a sturdy work area. Ambient temperatures should be inside the range of +50°F to +104°F (+10°C to +40°C). The maximum operating relative humidity is 80%.



Never place the unit in a location where excessive heat, moisture, or corrosive materials are present.

The unit has an air-cooled refrigeration system. Air is drawn through the front panel and discharged through the rear panel. The unit must be positioned so the air intake and discharge are not impeded. A minimum clearance of 12 inches (30 centimeters) at the front and rear of the unit is necessary for adequate ventilation. Inadequate ventilation will reduce cooling capacity and, in extreme cases, can cause compressor failure.

Excessively dusty areas should be avoided and a periodic cleaning schedule should be instituted.

The unit will retain its full rated capacity in ambient temperatures up to approximately +75°F (+24°C).

Make sure the voltage of the power source meets the specified voltage,  $\pm 10\%$ .

The pump connections are located at the rear of the pump box and are labelled  and . These connections are angled upward so the recirculating fluid will drain back into the reservoir when the hoses are disconnected. Both connections are capped with stainless steel serrated plugs.


The pump lines have 1/4" MPT for mating with standard plumbing fittings. For your convenience stainless steel adapters, 1/4" FPT to 3/8" O.D. serrated fitting, are provided.


The bath work area has a high and low level marker to guide filling. The markers are 1 inch horizontal slits located in the center of the stainless steel baffle separating the work area and the pump assembly. The correct fluid level falls between these two markers. The unit will not start if the fluid level is below the lower slit.

### Operation

Before starting the unit, double-check all electrical and plumbing connections. Make sure the bath is properly filled with fluid.


To start the unit, press . To turn the unit off press  again.


The  LED indicates the status of the heater. It illuminates to indicate the heater is on.

The  LED indicates the status of the refrigeration system. It illuminates to indicate the refrigeration system is removing heat from the cooling fluid.

### Temperature Adjustment

To display the temperature setpoint, press  on

the controller. The  indicator will illuminate and the display will flash the current setpoint value. To adjust the temperature setpoint, press the arrow buttons until the desired temperature setpoint is

indicated. Press  again to confirm the change.

The display will rapidly flash the new value for a short time and then return to the recirculating fluid temperature.

### Periodic Maintenance

Periodically inspect the reservoir fluid. If cleaning is necessary, flush the reservoir with a cleaning fluid compatible with your application.

The reservoir fluid should be replaced periodically. Frequency depends on the operating environment and amount of usage.

### Before changing the reservoir fluid ensure it is at a safe handling temperature.

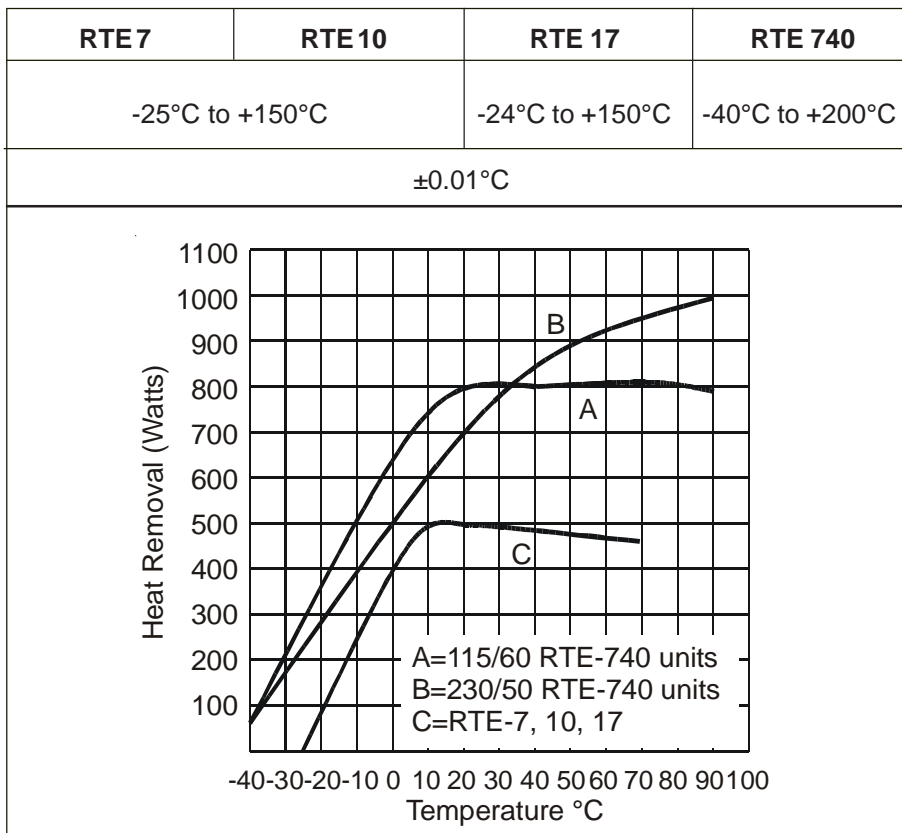
Periodic vacuuming of the condenser fins is necessary. The frequency of cleaning depends on the operating environment. We recommend a monthly visual inspection of the condenser after initial installation. After several months, the cleaning frequency will be established.

## Description

The Thermo Scientific NESLAB RTE Refrigerated Bath/Circulators are designed to provide temperature control for applications requiring a fluid work area or pumping to an external system. Units consist of a non-CFC air-cooled refrigeration system, circulation pump, seamless stainless steel bath, work area cover, and a microprocessor temperature controller.

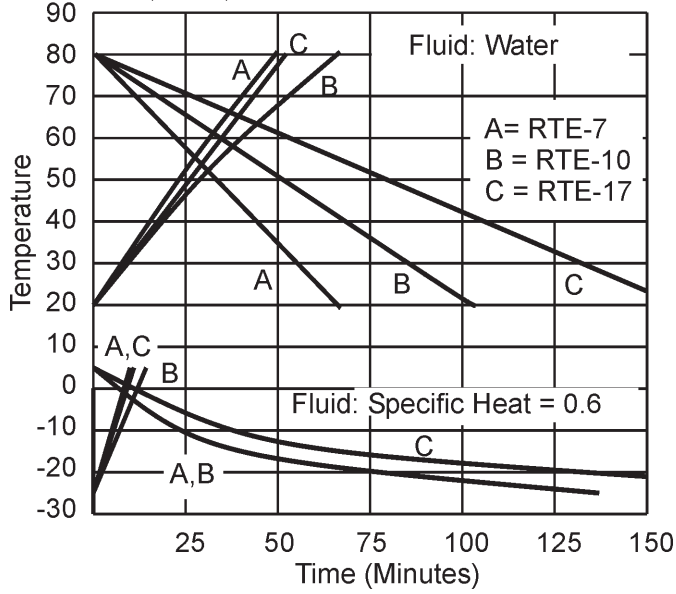
## Specifications<sup>1</sup>

- Process Fluid
- Temperature Range<sup>2</sup>
- Temperature Stability<sup>3</sup>
- Cooling Capacity<sup>4</sup>

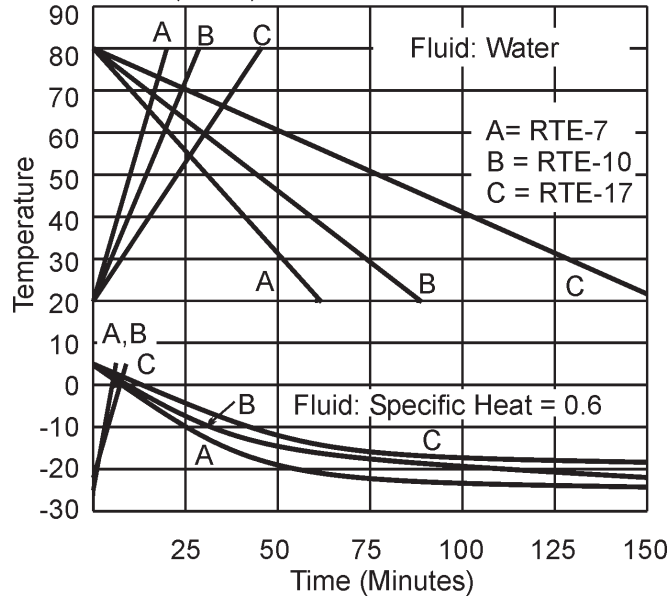


1. Specifications subject to change without notice.
2. Baths are tested at temperatures below freezing with denatured alcohol. This fluid is HIGHLY flammable and is not recommended by Thermo Fisher Scientific. Above 80°C, baths are tested at with silicone oil. This fluid is known to release a formaldehyde vapor (which is carcinogenic) above 150°C.
3. 20°C ambient. 20°C bath temperature using water. Sea level. Measured at the center of the work area, work cover on, no external flow, stable ambient, full refrigeration (RTE-740 in Energy Saving Mode). For some applications, agitation and stability above ambient may be improved by connecting a small length of hose between the pump connections on the rear of the unit.
4. 20°C ambient. 20°C bath temperature using water. Pump fully loaded. Sea level.

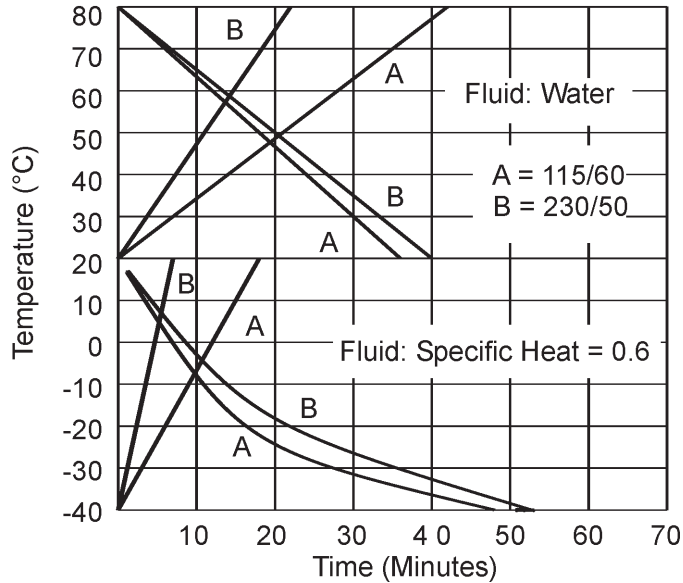
**Time to Temperature**  
115V/60 Hz units



230V/50 Hz units



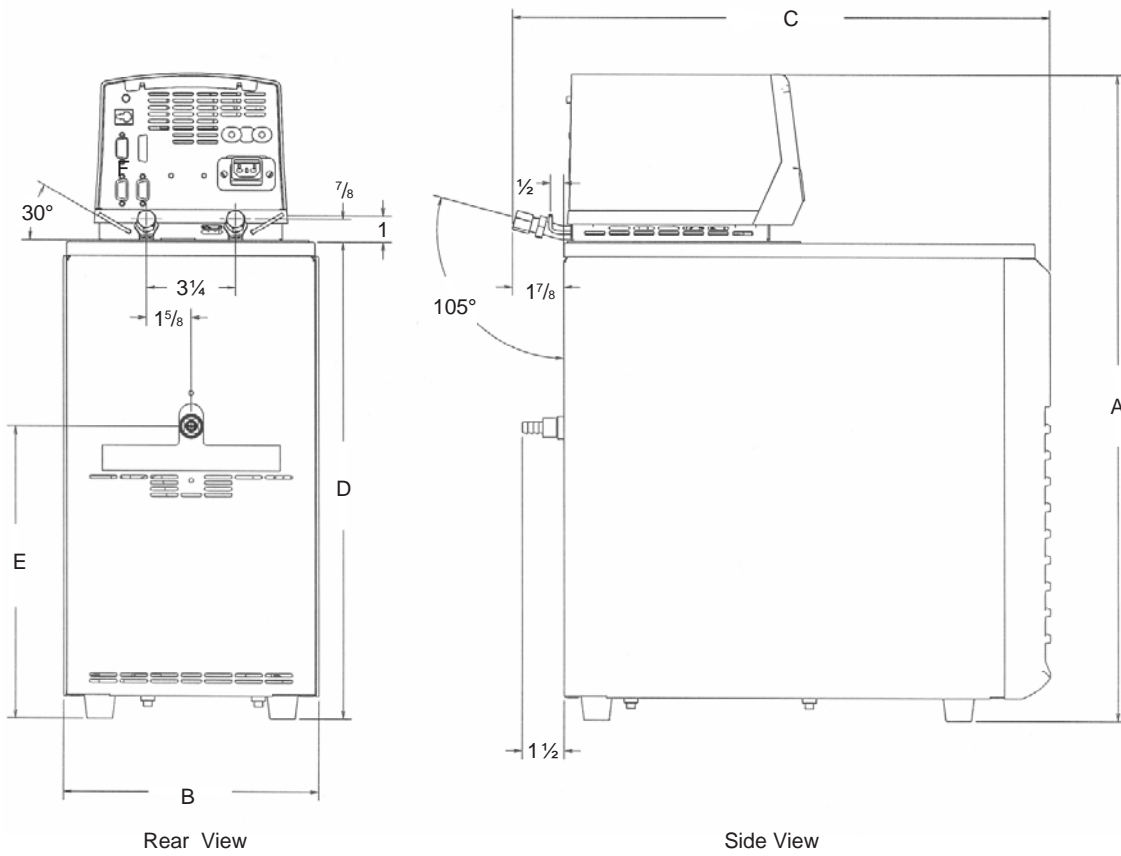
RTE-740 units



|                                                                           | RTE 7                               | RTE 10                                  | RTE 17                                  | RTE 740                             |
|---------------------------------------------------------------------------|-------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------|
| <b>Pump Capacity<sup>4</sup></b>                                          |                                     |                                         |                                         |                                     |
| <b>Heater (Watts)</b>                                                     |                                     |                                         |                                         |                                     |
| 115V/60 Hz Models                                                         | 800                                 |                                         | 1600                                    | 800                                 |
| 230V/50 Hz Models                                                         | 2000                                |                                         | 2000                                    | 2000                                |
| 100V/50-60Hz Models                                                       | 800                                 |                                         | 1200                                    | 800                                 |
| <b>Refrigerant</b>                                                        | R134a (6 ounces)                    |                                         |                                         | R404a (8 ounces)                    |
| <b>Bath Work Area<sup>5</sup></b><br>(W x L x D)<br>Inches<br>Centimeters | 6 5/8 x 7 x 6<br>16.8 x 17.8 x 15.2 | 8 3/4 x 8 1/8 x 6<br>22.4 x 20.6 x 15.2 | 8 3/4 x 8 1/8 x 9<br>22.4 x 20.6 x 22.9 | 6 5/8 x 7 x 6<br>16.8 x 17.8 x 15.2 |
| <b>Bath Volume</b>                                                        |                                     |                                         |                                         |                                     |
| Gallons                                                                   | 1.9                                 | 3.0                                     | 4.8                                     | 1.9                                 |
| Liters                                                                    | 7.2                                 | 11.3                                    | 18.1                                    | 7.2                                 |
| <b>Air Flow Requirements</b><br>SCFM                                      | 170                                 |                                         |                                         | 200                                 |
| <b>Shipping Weight</b>                                                    |                                     |                                         |                                         |                                     |
| Pounds                                                                    | 75                                  | 79                                      | 84                                      | 114                                 |
| Kilograms                                                                 | 34                                  | 36                                      | 38                                      | 52                                  |

4. 20°C ambient. 20°C bath temperature using water. Pump fully loaded. Sea level.  
 5. See next page for unit dimensions.

Unit Dimensions (inches)



| Unit Dimensions <sup>"/cm</sup> | RTE7                                | RTE 10                              | RTE 17                              | RTE740                              |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| <i>Dimension A</i>              | <b>23 5/8</b><br>60.0               | <b>23 5/8</b><br>60.0               | <b>26 5/8</b><br>67.6               | <b>26 5/8</b><br>67.6               |
| <i>Dimension B</i>              | <b>9 1/4</b><br>23.5                | <b>11 3/8</b><br>28.9               | <b>11 3/8</b><br>28.9               | <b>11 3/8</b><br>28.9               |
| <i>Dimension C</i>              | <b>19</b><br>48.3                   | <b>20 1/8</b><br>51.1               | <b>20 1/8</b><br>51.1               | <b>20 1/8</b><br>51.1               |
| <i>Dimension D</i>              | <b>17 3/8</b><br>44.1               | <b>17 3/8</b><br>44.1               | <b>20 3/8</b><br>51.8               | <b>20 3/8</b><br>51.8               |
| <i>Dimension E</i>              | <b>10 5/8</b><br>27.0               | <b>10 5/8</b><br>27.0               | <b>10 5/8</b><br>27.0               | <b>12 3/8</b><br>31.4               |
| Crate Dimensions<br>(D x W x H) | <b>19 x 26 x 34</b><br>48 x 66 x 86 | <b>19 x 27 x 32</b><br>48 x 69 x 81 | <b>26 x 20 x 33</b><br>66 x 51 x 84 | <b>28 x 20 x 36</b><br>71 x 51 x 91 |