VeritiPro™ Thermal Cycler Installation and Operation

Catalog Number A47394

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Note: For safety and biohazard guidelines, see the "Safety" appendix in the *VeritiPro™ Thermal Cycler User Guide* (Pub. No. MAN0019157). Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

Product description

This document summarizes procedures for installing and using the VeritiPro™ Thermal Cycler with 6-zone 96-well 0.2 mL block and VeriFlex™ "better than gradient™" technology. For detailed instructions, see the *VeritiPro™ Thermal Cycler User Guide* (Pub. No. MAN0019157).

Fig. 1 VeritiPro™ Thermal Cycler

Required materials not provided

- Can of compressed air (For use in cleaning wells of sample block).
- *(Optional)* Electrical protective devices.

  Note: The use of one or more of the following electrical protective devices is recommended.

  - Power line regulator (100–240 V)
  - Surge protector/line conditioner (10-kVA)
  - Uninterruptible power supply (1.5-kVA)

Set up the VeritiPro™ Thermal Cycler

IMPORTANT! Save the packing materials and box in case you need to ship the instrument in for service.

1. Open the shipping crate to unpack the instrument. You should receive one box containing the thermal cycler and the accessories.
2. Remove the packing material, then inspect the instrument for shipping damage.
3. Use compressed air to clear out each well of the sample block to remove particles that may have collected inside during shipping.
4. Move the instrument to an installation site that meets the spatial and weight requirements for the thermal cycler (see "Technical specifications" on page 5).

5. Connect the instrument to a power outlet.
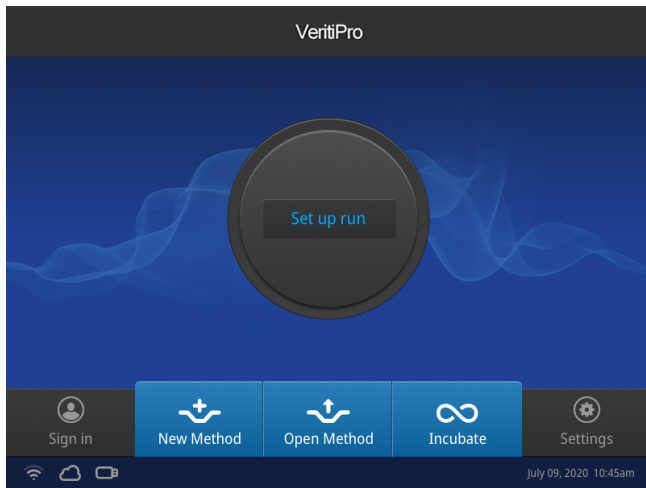   a. Connect the power cord to the instrument.
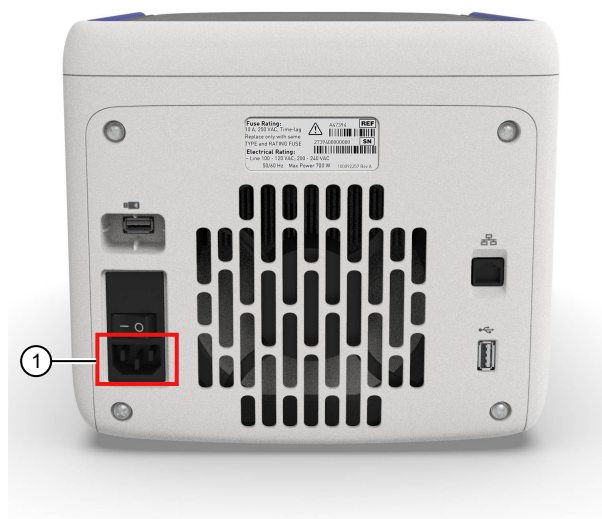
① Power cord port

   b. Install any desired electrical protective devices.
   c. Connect the power cord to a wall plug.
6. Turn the power switch on, then wait for the instrument to start up. Proceed with the installation after the touchscreen displays the Home screen, indicating that the instrument is active.

   When you power on the instrument, the instrument will take under a minute to start up.
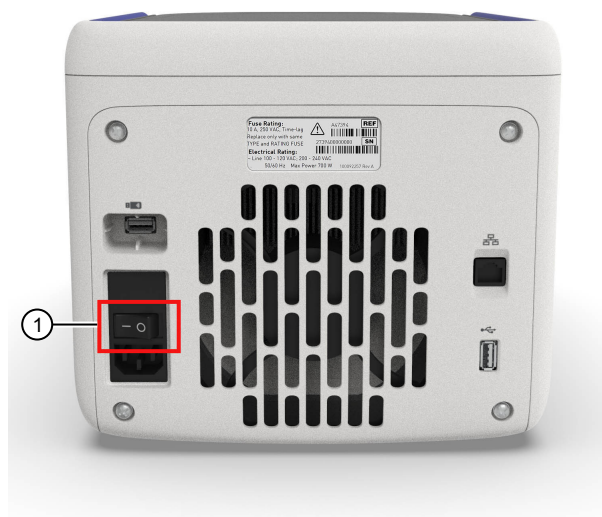
① Power switch

The Home screen will display following successful installation.

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Connect the PCR instrument to the Internet

Connect your thermal cycler to the Internet. See the instrument user guide for detailed instructions.

- Connect through the instrument Ethernet port using a cable.
- Connect via wireless connection with the High-Power USB Wi-Fi Module (Cat. No. A26774).

Create a user profile on the PCR instrument

1. Select 👤 **(Sign In)** > **Get started** > **Create profile**.
2. Fill in the required text fields and enter a four digit PIN to create your user profile.

   Note: The first profile created is automatically given an Administrator profile (indicated by an asterisk after the **Username**).

Create a Connect account

1. Go to **thermofisher.com/connect** from your web browser.
2. Click **Sign up now** and follow the prompts to create an account.

Link the PCR instrument to Connect

1. Select 👤 **(Sign In)** > **Connect**, then select the cloud region of the instrument.
2. Select the method for linking the instrument to Connect .
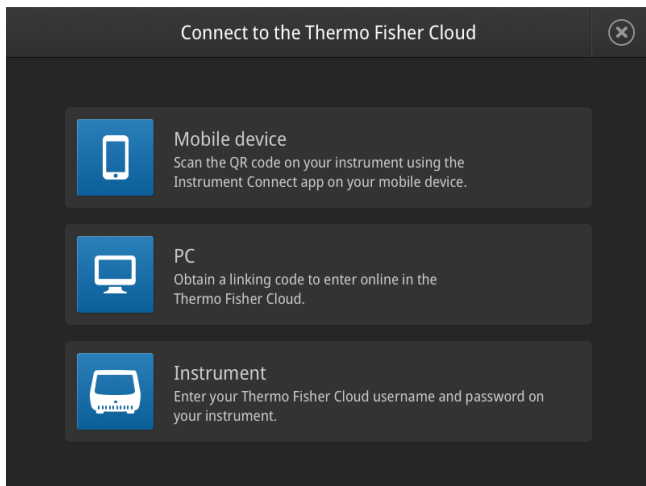
Connect by mobile device

1. Download the "Instrument Connect Mobile Application" on your mobile device.
   a. For iPad™ or iPhone™ devices, download the application from the iTunes™ music store by searching for Instrument Connect by Thermo Fisher Scientific.
   b. For Android devices, download the application from Google™ Play by searching for Instrument Connect by Thermo Fisher Scientific.
2. Launch the Instrument Connect Mobile Application and log in using your Connect login and password.
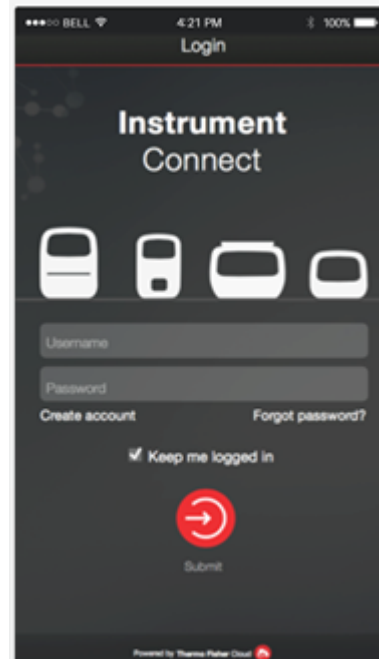
3. Capture the QR code on the instrument screen.

Connect by PC

1. Log in to your Connect account using a web browser from a computer.
2. Select 📱 **(InstrumentConnect)** from the left navigation strip.
3. Select 📲 **(Add an Instrument)** from the top navigation strip.
4. Select **VeritiPro** from the drop down menu, then click **Next**.
5. Enter the linking code generated by the instrument in the text box, then click **Send**.

   Upon successful authentication, the instrument is linked to Connect.

Connect by instrument

1. Enter your Connect **Username** and **Password** from the instrument.
2. Click **Link account**.

   Note: If you do not have a PIN, you will be prompted to create one.

   Upon successful authentication, the instrument is linked to Connect.

How to use the VeritiPro™ Thermal Cycler

Operate the instrument using the touchscreen. For detailed instructions on using the thermal cycler, see the *VeritiPro™ Thermal Cycler User Guide* (Pub. No. MAN0019157).

In the Home screen for the Touchscreen, you can set up a run by creating a new method for a run. To set up a run using a new method:

1. Press **New Method** or where it says **Set Up Run**.
2. Select a template.
3. In the edit mode, edit the parameters of the method template such as temperature, time, number of steps/stages.
4. To access advanced editing options, press **Manage Steps** > **Advanced Options**. Advanced editing options include VeriFlex™ blocks for optimization, simulation modes, ramp rates, and AutoDelta.
5. Save the new method in a folder.
6. (Optional) Press **Start Run** to start the Method.

Maintenance guidelines

⚠️ **CAUTION!** During instrument operation, the temperature of the heated cover can be as high as 110°C, and the temperature of the sample block(s) can be as high as 100°C. Before performing the procedure, keep hands away until the heated cover and sample block(s) reach room temperature.

To ensure proper operation:

- Regularly:
  – Wipe the instrument surfaces with a lint-free cloth.
  – Clean the vents, touchscreen, and sample block of the instrument.
  – Clean the sample wells with 100% isopropanol.
- Use only consumables recommended by Thermo Fisher Scientific for the instrument.

  Use of consumables that are larger or smaller than the specified volume can damage the instrument, contaminate the sample block, and/or decrease the PCR yield (due to inefficient thermal transfer).
- **Do not use sharp objects on the touchscreen.**

  Use only your fingers or blunt objects to enter commands on the instrument touchscreen. Sharp and/or pointed objects such as writing utensils can damage the surface of the touchscreen.
- **Back up frequently.**

  Routinely back up the configurations and files on your instrument to a USB drive. Regular backups protect against data loss caused by user error, power failure, or instrument error. For more information, see the *VeritiPro™ Thermal Cycler User Guide* (Pub. No. MAN0019157).

How to use the MicroAmp™ 96-well Tray and Retainer

IMPORTANT! Use the MicroAmp™ 96-well Tray and Retainer to prevent crushing of tubes in the thermal cycler.

When small number of tubes (1–2 tube strips or ≤8–16 tubes are placed in the sample block without support, they can be crushed or deformed when the lid of the thermal cycler is closed over the block. Using the tray and retainer set allows the pressure to be distributed evenly over the tubes and prevents uneven pressure across the block.

Using the tray and retainer set is optional when using ≥3 tube strips or ≥16 tubes that are distributed evenly across the block.

- The **blue** tray and retainer set is compatible for use with MicroAmp™ **single tubes or tube strips** with **separate** cap strips.
- The **blue** tray by itself is compatible for use with MicroAmp™ **tube strips** with **attached** caps.
- The **black** retainer is compatible for use with **single** MicroAmp™ reaction **tubes with attached caps**.

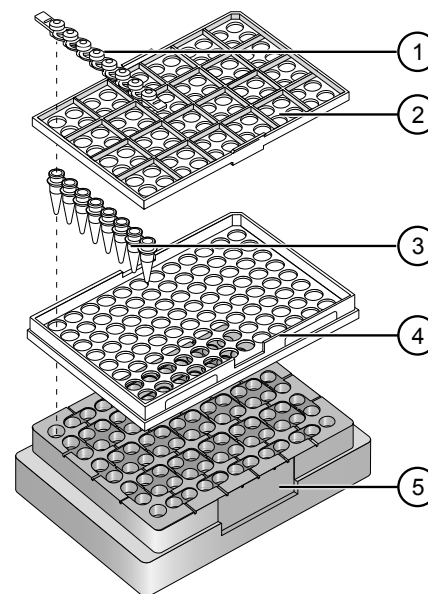## Prepare samples using MicroAmp™ tubes/tube strips with separate cap strips

The following procedure describes how to properly load and seal MicroAmp tube strips using cap strips and the MicroAmp 96-well tray/retainer set. For a visual demonstration, watch the video "How to use adapter tray retainers" by visiting **PCR/qPCR Plastics and Seals Education**.

1. Separate the **blue** tray and retainer by squeezing the release catch as indicated in the graphic.
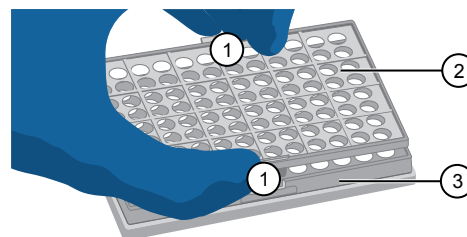
① Release catch
② MicroAmp™ 96-Well Retainer
③ MicroAmp™ 96-Well Tray

2. Place the **blue** tray on the 96-well base.
3. Load the tube strips on the tray.
4. Pipette the reaction mixture into the tubes.
5. Place the **blue** retainer over the tubes and snap the retainer into the tray.
6. Seal the tube strip using a MicroAmp™ cap strip. See "Seal tube strips with cap strips" on page 4 for instructions.
7. Remove the **blue** tray/retainer assembly containing the sealed tube strips from the 96-well base and place the assembly into the instrument.
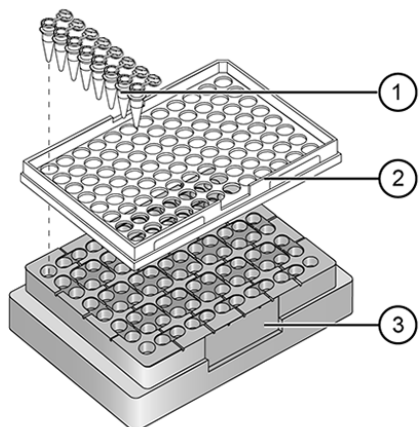

① MicroAmp™ 8-Cap strip
② MicroAmp™ 96-Well Retainer
③ MicroAmp™ 8-Tube Strip (0.2-mL) or MicroAmp™ Reaction Tube without Cap (0.2-mL)
④ MicroAmp™ 96-Well Tray
⑤ MicroAmp™ Splash Free 96-Well Base

Prepare samples using MicroAmp™ tube strips with attached caps

The following procedure describes how to properly load and seal MicroAmp tube strips with attached caps using the MicroAmp 96-well tray/retainer set. For a visual demonstration, watch the video "How to use adapter tray retainers" by visiting **PCR/qPCR Plastics and Seals Education**.

1. Separate the **blue** tray from the retainer by squeezing the release catch as indicated in the graphic.
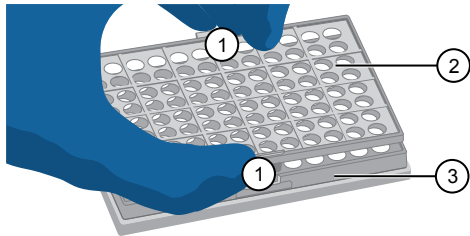
① Release catch
② MicroAmp™ 96-Well Retainer
③ MicroAmp™ 96-Well Tray

2. Place the **blue** tray on the splash-free 96-well base.

   Note: Only the bottom tray is used for tubes with attached caps.

3. Load the tube strips with attached caps into the tray.
4. Pipette the reaction mixture into the tubes.
5. Seal the cap strips using the rocking capping tool:
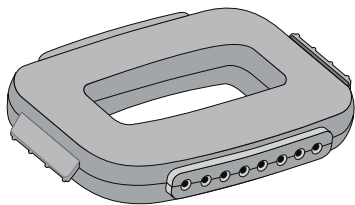
   a. Slip your fingers through the handle with the holes in the tool facing down for domed caps and with the holes facing up for optical caps.
   b. Align the tool over the first eight caps in a row.
   c. Rock the tool back and forth a few times to seal the caps.
   d. Repeat for all remaining rows.

6. Remove the **blue** tray containing the sealed tube strips from the 96-well base and place the tray and sealed tube strips into the instrument.
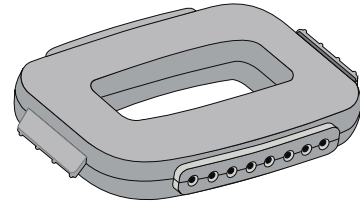

① MicroAmp™ 8-Tube Strip with Attached Caps (0.2-mL)
② MicroAmp™ 96-Well Tray
③ MicroAmp™ Splash Free 96-Well Base

Seal tube strips with cap strips

IMPORTANT! Apply significant downward pressure on the sealing tool in all steps to form a complete seal on top of the tubes.

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1. Align and place the cap strips on the tubes.
2. Seal the cap strips using the rocking capping tool:

   a. Slip your fingers through the handle with the holes in the tool facing down for domed caps and with holes facing up for optical caps.
   b. Align the tool over the first eight caps in a row.
   c. Rock the tool back and forth a few times to seal the caps.
   d. Repeat for all remaining rows.

Prepare samples using MicroAmp™ Reaction Tubes

The following procedure describes how to properly load and seal MicroAmp™ individual tubes with attached caps and the MicroAmp™ 96-well tray for VeriFlex systems. For a visual demonstration, watch the video "How to use adapter tray retainers" by visiting **PCR/qPCR Plastics and Seals Education**.

1. Set the **black** tray on a 96-well base.
2. Place the reaction tubes in the **black** tray.
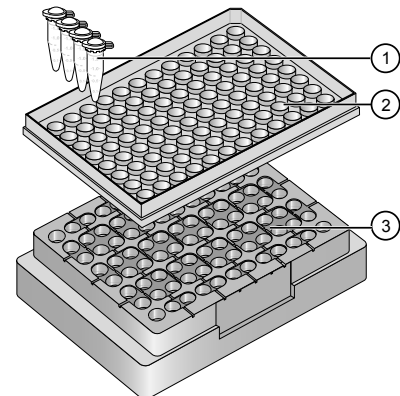
① MicroAmp™ Reaction Tube with Cap (0.2-mL)
② MicroAmp™ 96-Well Tray for VeriFlex™ Blocks
③ MicroAmp™ Splash Free 96-Well Base

3. Pipette the reaction mixture into the reaction tubes.
4. Cap the tubes.
5. Remove the **black** tray with sealed reaction tubes from the 96-well base and place the tray and sealed tubes into the instrument.

Technical specifications

Feature	Specification
Maximum block ramp rate [1]	6.0°C/sec
Maximum sample ramp rate	4.4°C/sec
Temperature accuracy	±0.25°C (35–99.9°C)
Temperature range for protocol run	0.0–100.0°C
Temperature non-uniformity [2]	≤0.5°C
Dimensions	• Height: 21.7 cm (8.54 in) • Width: 24.5 cm (9.65 in) • Depth: 46.5 cm (18.31 in)
Weight	12 kg (16.5 lb)
PCR volume range	• Supported: 10–100 µL • Allowable: 1–100 µL
Instrument memory	USB, 16 GB on-board
Display interface	8 inch color TFT LCD
Power	100–120 VAC, 200–240 VAC, 50–60 Hz, Maximum 700 W
VeriFlex™ block	• 6 VeriFlex™ Zones • Supported: 25°C (5°C zone-to-zone) • Allowable [3]: 30°C (10°C zone-to-zone)
Ambient humidity	15–80% Relative Humidity, non-condensing (acceptable range)
Ambient operating temperature	15–30°C (acceptable range)

[1] Reaction volume of 1 µL.
[2] 30 seconds after clock starts.
[3] Temperature accuracy ±0.5°C and Temperature non-uniformity < 0.75°C.

Power and communication port symbols

Port	Description
$\sim$	AC power cable port
⊼	10/100 Fast Ethernet port for connecting to a network
USB	USB v2.0 port for connecting to an external network drive, jump drive, or other USB storage device
▣◀	USB v2.0 port for connecting to USB-enabled Wi-Fi Card

The information in this guide is subject to change without notice.

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