

# CTS Rotea Counterflow Centrifugation System

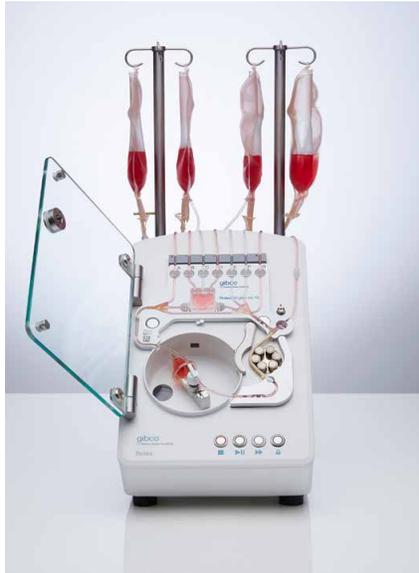


## Workflow

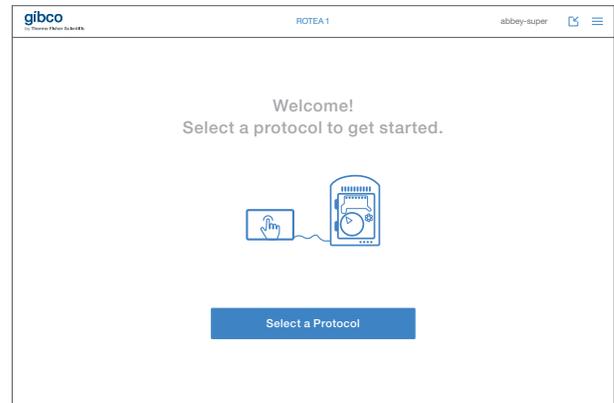
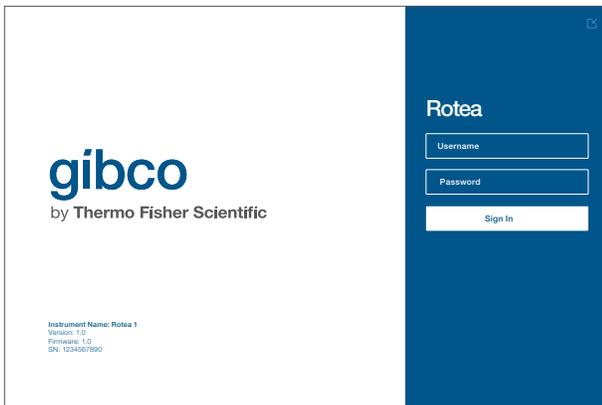


### I. Set up the Gibco™ CTS™ Rotea™ Counterflow Centrifugation System

1. **Plug in** the CTS Rotea Counterflow Centrifugation System power cord at the rear of the instrument.
2. **Connect** the CTS Rotea Counterflow Centrifugation System to the Dell™ 2-in-1 laptop with USB-C cable.
3. **Turn on** the CTS Rotea Counterflow Centrifugation System using the power switch at the back of the instrument.
4. **Start up** the laptop and log in.
  - a. Press “Control + Alt + Delete” function to log in
  - b. Use the preloaded user ID/password:  
INSTR\_ADMIN/INSTR\_ADMIN  
**Note:** Please change the password following installation for security purposes.
5. **Download** the Gibco™ CTS™ Rotea™ software suite from the USB stick or from the Rotea software **download** page.
  - a. Press “Control + Alt + Delete” function to log in
  - b. Software contents include:  
Gibco™ CTS™ Rotea™ Graphical User Interface (GUI)  
Gibco™ CTS™ Rotea™ Protocol Builder  
Instrument Firmware Main  
Instrument Firmware Power
  - c. Click on the executable files for the CTS Rotea software GUI and CTS Rotea Protocol Builder, and follow the installation instructions.

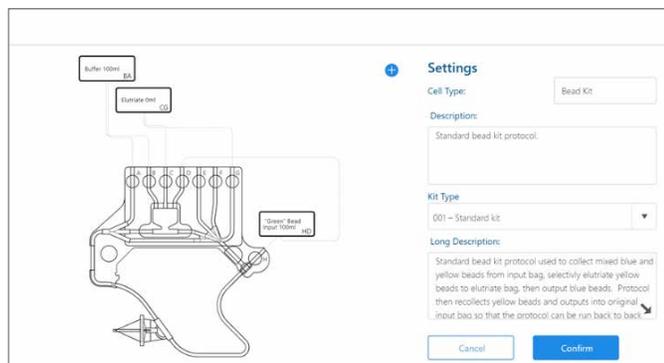


6. **Click** on the CTS Rotea GUI icon on your desktop and log in.
  - a. Use the preloaded user ID/password: admin/admin  
**Note:** Please change the password following installation for security purposes.
7. **Verify** that the laptop is connected to the CTS Rotea Counterflow Centrifugation System. The bottom left corner of the log in page lists the software/firmware version number and the CTS Rotea Counterflow Centrifugation System serial number.



8. **Load** the “Wash-Concentrate Bead” protocol from the USB stick or from the Rotea protocol **download** page.
9. **Now** you are ready to load the Gibco™ CTS™ Rotea™ Single-Use Kit.

## II. Assemble a CTS Rotea bead kit



### Materials

- Polybead™ microspheres dyed yellow (Cat. No. 15716-5)
- Polybead™ microspheres dyed blue (Cat. No. 18138-2)
- PBS
- Thermo Scientific™ Tween™ 80 detergent
- Penicillin-streptomycin
- CTS Rotea Single-Use Kit
- Blood bags: 150 mL (1); 600 mL (2)
- 50 mL conical tubes
- 60 mL syringes
- Male luer locks (6)
- Female luer locks (6)
- Tube clamps

1. Create bead and buffer solutions and fill the blood bags using a syringe.
2. Connect the blood bags to the CTS Rotea Single-Use Kit.
3. Bead solution composition:

Material	Final concentration
Polybead spheres dyed blue	2%
Polybead spheres dyed yellow	5%
PBS	88%
Penicillin-streptomycin	2%
Tween 80 detergent	3%
<b>Total volume</b>	<b>100 mL</b>

4. Buffer solution composition:

Material	Final concentration
PBS	97%
Penicillin-streptomycin	2%
Tween 80 detergent	3%
<b>Total volume</b>	<b>100 mL</b>

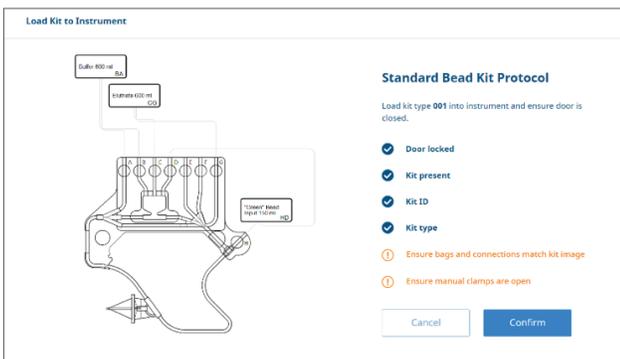
5. Connect the blood bags to the CTS Rotea Single-Use Kit either by luer locks or sterile welding according to the chart below.  
**Recommendation:** Shorter tube lengths between the blood bags and CTS Rotea Single-Use Kit are preferred due to reduced dead volume.

Bag	Attachment sites
150 mL—bead solution	D and H
600 mL—buffer	C and G
600 mL—elutriate (empty)	A and B

6. Clamp all tubes once the assembly of the CTS Rotea Single-Use Kit is completed to avoid any movement of fluid into or out of each bag.

### III. Load an assembled CTS Rotea bead kit

1. Press the “Unlock” button on the CTS Rotea Counterflow Centrifugation System to open the glass door.
2. Align the main body of the CTS Rotea Single-Use Kit with the two kit location buttons (Figure 1) on the CTS Rotea Counterflow Centrifugation System.
3. Pull the tubing around the peristaltic pump and securely fasten the bulb connector in place below the pump.
4. Connect the rotary coupling in the center of the centrifuge chamber by lifting the silver lever and returning it to its original position after the cone is in place.
5. Verify that all tubing is correctly placed in the bubble detector strip and press each tube into the track to ensure tight coupling to each bubble sensor.  
**Note:** Press the tubing firmly into the bubble detector strip. Additional pressure may be required to ensure a functional contact.
6. Ensure all other tubing is pressed snugly into the instrument face.
7. Close the glass door on the CTS Rotea Counterflow Centrifugation System. Ensure that the pump tube closes after the door is shut.
8. Click “Confirm” once the instrument checks are complete.



### IV. Run protocol

1. Optional: Input protocol details (“Cell Count,” “Starting Volume,” etc.).

2. Press the green “Start” button on the instrument to start the protocol.



### V. Shut down the system

1. Once the protocol run is complete, be sure to clamp all tubes connected to the CTS Rotea Single-Use Kit.
2. Press the “Unlock” button on the instrument and the glass door will unlock.
3. The CTS Rotea Single-Use Kit can now be removed from the instrument.

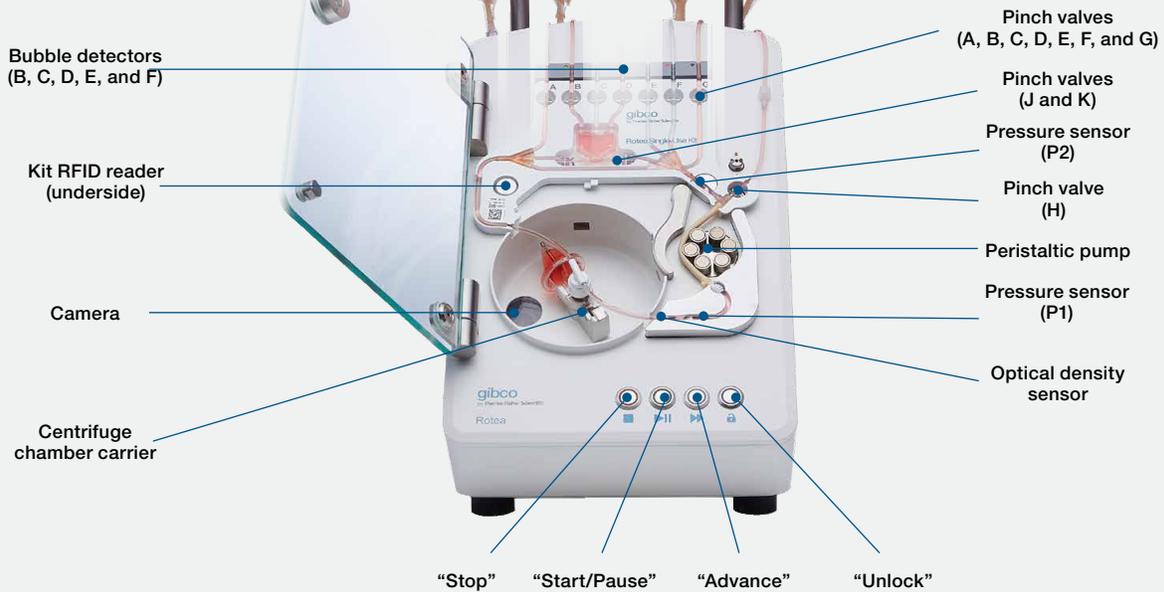


Figure 1. Detailed overview of the CTS Counterflow Centrifuge System.

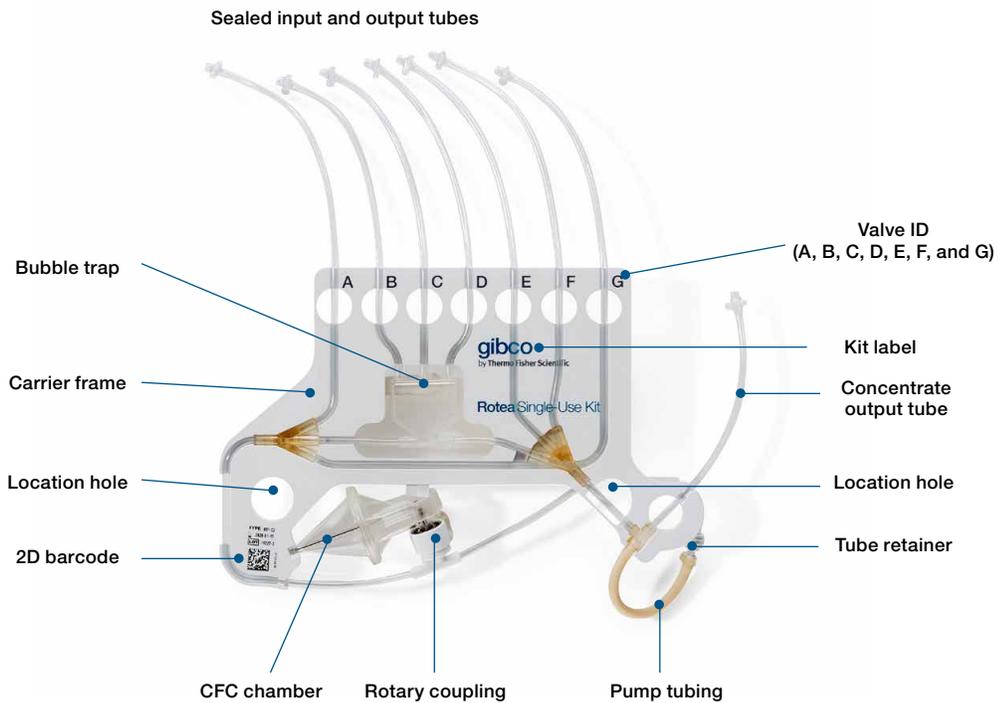


Figure 2. Detailed overview of the CTS Rotea Single-Use Kit.

Download the user manual from [thermofisher.com/rotea](https://www.thermofisher.com/rotea) or contact your sales representative for more information.

For technical support, visit [thermofisher.com/instrumentrepair](https://www.thermofisher.com/instrumentrepair)