

This quick guide obtains just brief information. In case you need detailed instructions, read the guide or OEM manual.

DHR2_RHEOMETER – Quick guide (Discovery Hybrid Rheometer–2, TA Instruments)

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Starting procedure

- 1. Turn on the pressure air, and check that the pressure is 2 bar.**

The pressure air supply is always the first thing to be turned on and the last thing to be turned off! Do not proceed if the correct pressure is not established.

- 2. If installed, remove the spindle lock.**

3. Turn on the PC, control unit (main switch in the back), and the water circuit pump.



4. Start the TRIOS software using the  icon, and connect to the DHR2 online instrument.

5. Mount the upper geometry.

- a. Check that the machine’s status is Idle (on the front display or in the software) and the spindle is freely rotating (i.e., it is not locked).

- b. While idle, carefully hold the spindle by one hand and put on the geometry with the second hand around the shaft to the topmost position. The spindle will be lifted. **Do not use excessive force be either of your hands!**

- c. Screw on the geometry by carefully rotating the spindle – never screw the geometry by rotating the geometry itself. Beware of any excessive force applied to the geometry in any direction! **Do not overtighten!**

- d. Select the active geometry in the TRIOS software.

- e. Check the validity of all calibrations.

Renew any outdated calibrations if necessary, or contact the guarantor.

- f. Run the **rotational mapping** calibration whenever the geometry is reinstalled (even if it is the same geometry as was previously installed).

6. Mount the lower geometry (if not installed already).

See the guide for detailed instructions.

7. Run the zero-gap procedure whenever one of the geometry is reinstalled.

- a. Ensure that both the upper and the lower geometry are installed and selected in the TRIOS software as the active geometries.
 - b. Make sure that the geometries are clean.
 - c. Bring the rheometer head to close contact (approx. 5–20 mm) using the up/down arrows on the front panel. **Avoid contact between the geometries!**
 - d. Go to Gap control panel – Click on the Zero gap icon  .
8. The instrument is ready for use.

Measuring

1. Ensure that the instrument is initiated, calibrated (incl. geometry), and clean.
2. Load the sample.
3. Set the measuring procedure.
4. Run the experiment.
5. Once the measurement is finished, **raise the head** with the upper geometry and clean both geometries. **Do not exceed the Axial force of +/- 10N and avoid excessive force on the upper geometry!** If necessary, dismount the upper geometry for cleaning.

Never use steel brushes or other hard tools for cleaning! Only tools from soft materials such as brass, copper, certain plastics, paper cloths, etc., are allowed for cleaning!

Never use corrosives or abrasives for cleaning!

Turning off

1. Dismount the upper geometry.
 - a. **Make sure that the geometry is unlocked and free to spin.**
 - b. Raise the head, hold the upper geometry with one hand and gently unscrew the spindle with the second hand. Always rotate the spindle – never turn with the geometry!
2. For using the optical stage lower geometry, reinstall the Peltier Plate using the smart swap.
 - a. Press the smart swap button on the front panel, and unplug the geometry connector while the green light blinks.
 - b. Press the smart swap button on the front panel again, remove the geometry while the green light is on.
 - c. Install the Peltier plate geometry following step 6 of the initialization procedure.
3. Turn off the SW TRIOS.
4. Turn off the Control unit and the water pump.
5. Install the Spindle lock.
6. Close the pressure air valve.

The order of steps 4–6 must not be interchanged! Never leave the spindle lock on when the rheometer is running. The pressure air supply is always the first thing to be turned on and the last thing to be turned off!