

NANOPORE

UNBLOCKING GUIDE



To troubleshoot a nanopore blockage, follow the steps below until a stable baseline current has been re-established. Once the baseline stabilises, there is no need to continue to subsequent troubleshooting steps. If the nanopore blocks again, then follow this unblocking guide from the beginning.

1

Apply a Negative Pressure

Make sure the pressure nozzle is inserted and apply a negative pressure of -2500 Pa for 10-30 seconds.

2

Tap the Pressure Nozzle

Without changing the pressure, use the back of the Pressure Application Device (PAD) to firmly tap the top of the pressure nozzle.

3

Apply the PAD

Set the pressure to 0 Pa and remove the pressure nozzle. Use the plunging end of the PAD to apply pulses of pressure to the upper fluid cell.

4

Pipette Mix Contents

Using a further 35 μL of fluid (Measurement Electrolyte, sample or calibration particles, depending on what you are working with), mix the fluid in the upper fluid cell by pipetting up and down. After mixing remove the extra 35 μL .

5

Stretch and Positive Pressure

Increase the nanopore stretch to 50 mm and apply a full positive pressure of 2500 Pa for 10-30 seconds. You may need to reduce the voltage to avoid current saturation.

6

Stretch and Negative Pressure

Increase the nanopore stretch to 50 mm and apply a full negative pressure of -2500 Pa for 10-30 seconds.

7

Reset the System

Set the pressure to 0 Pa and remove the pressure nozzle. Reduce the stretch and remove the nanopore. Rinse with DI water and dry the nanopore, upper fluid cell and pressure nozzle.

8

Reassemble the System

Reassemble the system with Measurement Electrolyte in the upper and lower fluid cells and stretch to 47 mm, or the stretch used previously (prior to the blockage).

9

Flush the System

Replace all the fluids with DI water and apply a maximum pressure of 2500 Pa until the current is <5 nA. You may need to flush the system multiple times to meet this criteria.