numed
healthcare

SpiroConnect

Calibration Verification

Check Process

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SpiroConnect Calibration Verification Check Process

To perform a calibration verification check, you will need to conduct three tests using a 3-litre calibration syringe. This is to ensure the SpiroConnect is still operating as calibrated.

Complete three tests by emptying and filling the syringe through an inverted SpiroConnect: first at a slow flow, then medium, and finally fast.

According to ARTP, ERS, and ATS guidelines, the device passes if the error across all three flow rates is within ±3% of 3 litres.

Follow the steps below.

1 Insert the serial-numbered dongle into a spare USB port on the PC.

2 Ensure your SpiroConnect is attached to the syringe upside down with a good air-tight connection. You may need to use a MicroGard filter adapter and/or a silicone sleeve adapter to get a good connection.

**3** Open SpiroConnect Data Manager from your desktop.

4 Turn your device on, ensuring that it shows as connected in the bottom left-hand corner, and then click the Calibration Check button.

5 Fill the syringe with air, making sure the plunger is pulled all the way out. Then click Start in the bottom right-hand corner.

6 The Calibration Check starts with the slow flow. With a smooth, steady and slow motion, empty the syringe of air. Pause for just a couple of seconds before filling the syringe back up. You need to keep the graph inside the green bands. Once complete, your slow flow measured volumes will be in the yellow banner at the top of the window.
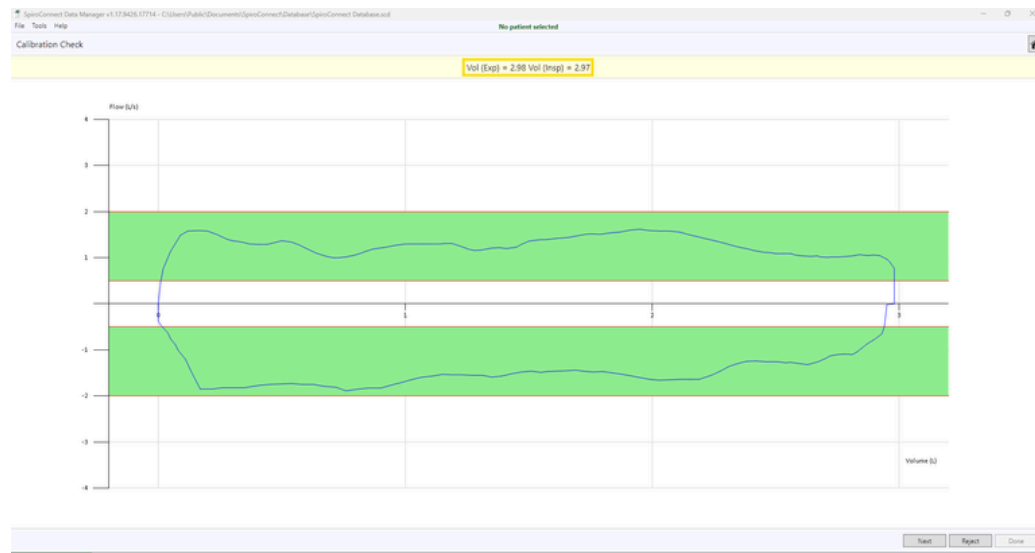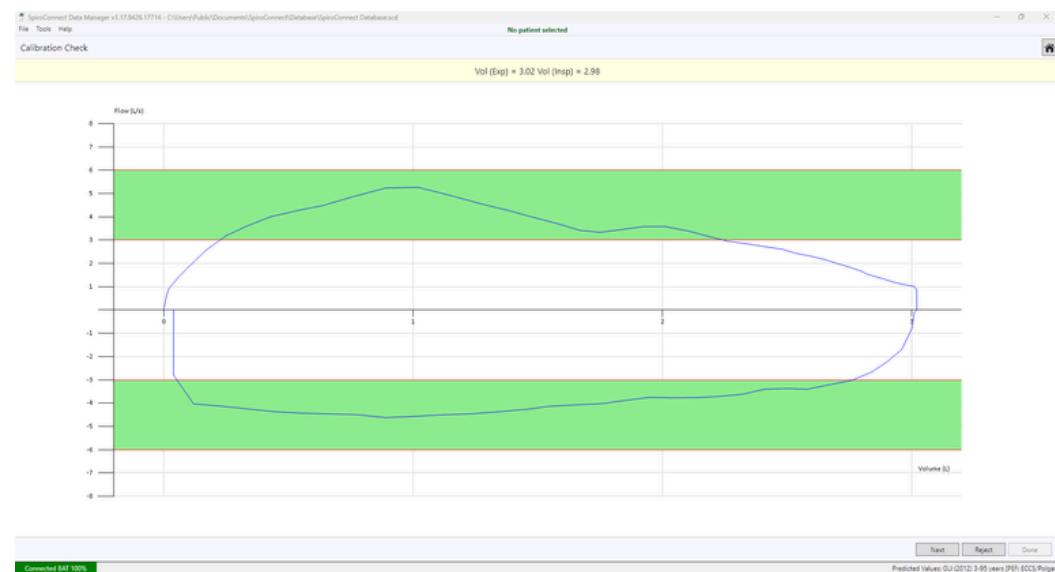

7 If you are happy with the measured values and your technique, you can click [Next] or if you are unhappy with the measured values or technique, click [Reject] .
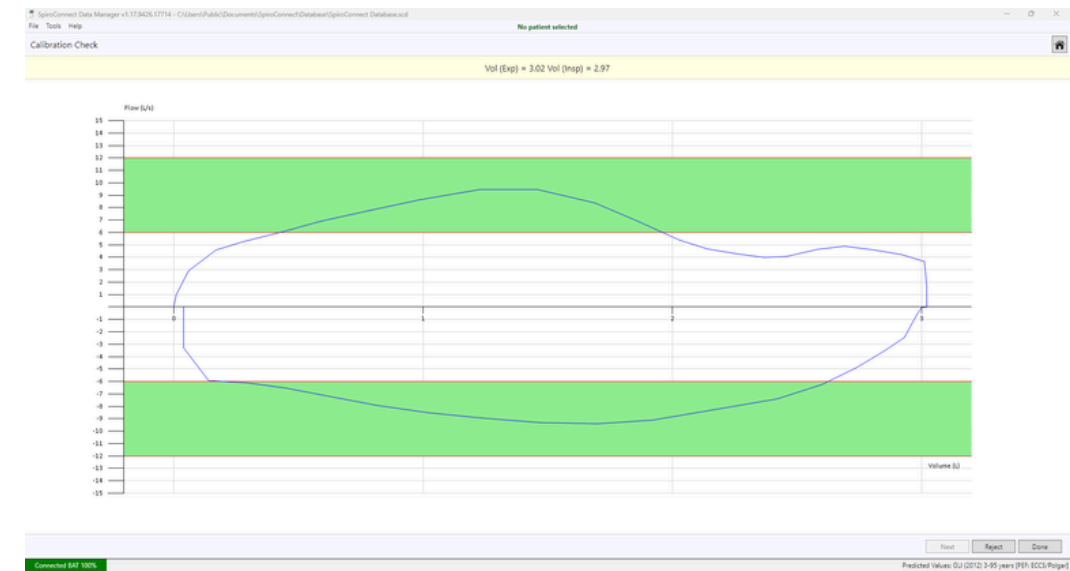
8 Repeat the process in steps 6 and 7 for the medium flow.
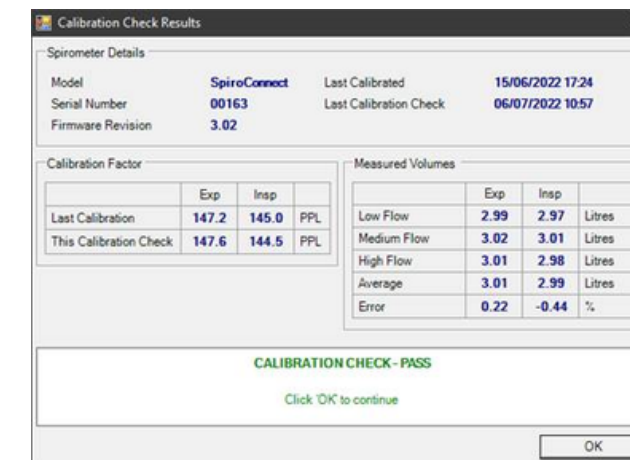

9 Once you've performed the fast flow manoeuvre, if you are happy, you will need to click [Done] or [Reject] if you are unhappy.
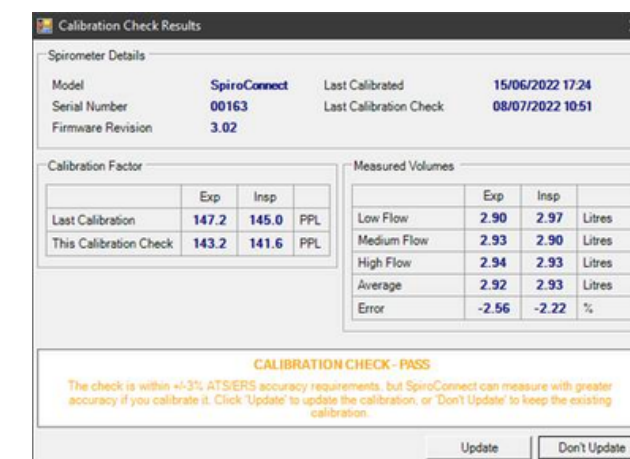

10 Your results will then appear.
  * If less than 1% error margin, you will need to click OK:

  * If greater than 1% but less than 3% error, always click Don't update:

* If greater than 3% but less than 6% error, always click Try again. If the SpiroConnect fails repeatedly, contact Numed support:

Calibration Check Results

Spirometer Details

Model	SpiroConnect	Last Calibrated	15/06/2022 17:24
Serial Number	00163	Last Calibration Check	08/07/2022 10:53
Firmware Revision	3.02		

Calibration Factor

	Exp	Insp	
Last Calibration	147.2	145.0	PPL
This Calibration Check	140.3	138.7	PPL

Measured Volumes

	Exp	Insp	
Low Flow	2.88	2.89	Litres
Medium Flow	2.84	2.86	Litres
High Flow	2.85	2.86	Litres
Average	2.86	2.87	Litres
Error	-4.78	-4.33	%

CALIBRATION CHECK - FAIL

The check is outside of +/- 3% ATS/ERS accuracy requirements. Click 'Update' to update the calibration, or 'Try Again' to re-run the calibration check if you have any doubts about this calibration check being performed correctly (e.g. poor technique, a leaking syringe or sticking piston).

Update | Try Again

* If greater than 6% error but less than 14PPL (Pulses Per Litre) change, always click Try again. If the SpiroConnect fails repeatedly, contact Numed support:

Calibration Check Results

Spirometer Details

Model	SpiroConnect	Last Calibrated	15/06/2022 17:24
Serial Number	00163	Last Calibration Check	08/07/2022 10:57
Firmware Revision	3.02		

Calibration Factor

	Exp	Insp	
Last Calibration	147.2	145.0	PPL
This Calibration Check	136.8	136.7	PPL

Measured Volumes

	Exp	Insp	
Low Flow	2.78	2.81	Litres
Medium Flow	2.79	2.84	Litres
High Flow	2.81	2.84	Litres
Average	2.79	2.83	Litres
Error	-6.89	-5.67	%

CALIBRATION CHECK - FAIL (WARNING: MORE THAN 6% CHANGE FROM LAST CALIBRATION)

The check is outside of +/- 3% ATS/ERS accuracy requirements. Click 'Update' to update the calibration, or 'Try Again' to re-run the calibration check if you have any doubts about this calibration check being performed correctly (e.g. poor technique, a leaking syringe or sticking piston).

Update | Try Again

* If greater than 14PPL (Pulses Per Litre) change, contact Numed support:

Calibration Check Results

Spirometer Details

Model	SpiroConnect	Last Calibrated	15/06/2022 17:24
Serial Number	00163	Last Calibration Check	08/07/2022 10:57
Firmware Revision	3.02		

Calibration Factor

	Exp	Insp	
Last Calibration	147.2	145.0	PPL
This Calibration Check	136.8	136.7	PPL

Measured Volumes

	Exp	Insp	
Low Flow	2.78	2.81	Litres
Medium Flow	2.79	2.84	Litres
High Flow	2.81	2.84	Litres
Average	2.79	2.83	Litres
Error	-6.89	-5.67	%

CALIBRATION CHECK - FAIL (WARNING: MORE THAN 6% CHANGE FROM LAST CALIBRATION)

The check is outside of +/- 3% ATS/ERS accuracy requirements. Click 'Update' to update the calibration, or 'Try Again' to re-run the calibration check if you have any doubts about this calibration check being performed correctly (e.g. poor technique, a leaking syringe or sticking piston).

Update | Try Again

11 If the device passes its calibration check, you can print a paper copy of the report if required. A passed calibration check report should always say Calibration OK, Calibration Factor was NOT updated.

Calibration Check Results

Spirometer Details

Model	SpiroConnect	Last Calibrated	21/01/2025 09:09
Serial Number	00192	Last Calibration Check	24/11/2025 13:13
Firmware Revision	4.00		

Calibration Factor

	Exp	Insp	
Last Calibration	150.5	152.3	PPL
This Calibration Check	151.0	150.7	PPL

Measured Volumes

	Exp	Insp	
Low Flow	2.98	2.97	Litres
Medium Flow	3.02	2.98	Litres
High Flow	3.02	2.97	Litres
Average	3.01	2.97	Litres
Error	0.22	-0.89	%

Calibration Check recorded

Print Report | Exit

If you have any issues with your calibration verification or need to report that your device is failing calibration verification, please contact the Numed support team.

Keeping your service running smoothly

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