# HAMILTON-G5/S1 Preoperational Checks

Perform the preop check after setting up the ventilator with a new breathing circuit, expiratory valve set, and/or flow sensor, and before connecting the patient.

- Leak test (Tightness)
- Flow sensor calibration
- O2 sensor calibration (if needed)
- CO2 sensor calibration (if needed)
- Alarm tests (as desired)

① Accessing the Tests & calib window

1. Do either of the following:
   - While in Standby, touch **System > Tests & calib** (see figure below).
   - In the Standby window, touch **Preop check**.

2. Touch the button for the desired operation.
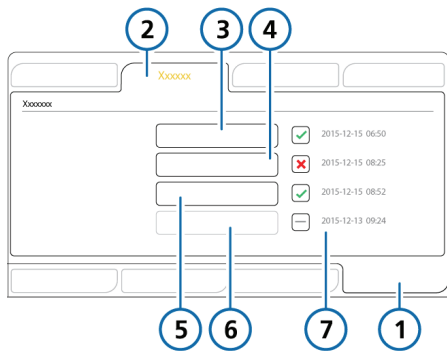
1	System	**5**	O2 sensor
2	Tests & calib	**6**	CO2 sensor
3	Flow sensor	**7**	Time/date of last test, calibration
4	Leak test (Tightness)		

② Performing the Leak test

⚠️ Follow infection-control procedures to disinfect your hands before blocking the flow sensor in step 4.

1. Set up ventilator for ventilation, complete with expiratory valve set, breathing circuit, flow sensor, CO2 airway adapter (if used), and/or other components you will use on the patient.*

2. While in Standby, in the System > Tests & calib window, touch **Leak test** (**Tightness**).

3. When prompted, disconnect the breathing circuit at the patient side of the flow sensor.

4. When prompted, block the flow sensor opening (wearing a glove is recommended).
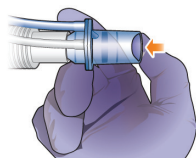
When done, pass ✓ or fail ✗ and date/time of completion are displayed.

③ Calibrating the adult/pediatric flow sensor

1. Calibrate the flow sensor in Standby, with **no patient connected**.

2. Connect the flow sensor to the breathing circuit.

3. Connect the **next** component in the circuit to the flow sensor.

   Depending on your setup, this could be, for example, an HMEF, nebulizer, CO2 sensor, or flex tube.

   Do **not** connect any more components at this time. You will be prompted to connect the calibration adapter once the process starts.


4. In the Standby window, touch **Preop check**.

5. Touch **Flow sensor**.

6. When prompted, attach the calibration adapter to the component connected to the flow sensor and flip all three of them together 180°, so the adapter is directly connected to the breathing circuit limb.
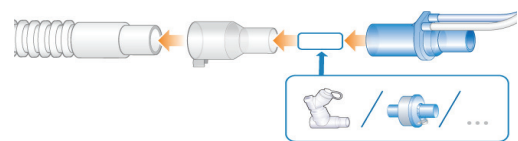
7. When prompted, flip the components 180° again, so the flow sensor is directly connected to the limb, and remove just the calibration adapter.
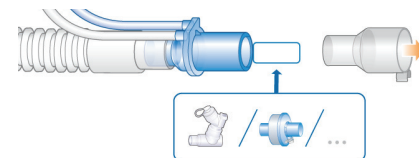
When done, pass ✓ or fail ✗ and date/time of completion are displayed.

* For details, see the HAMILTON-G5/S1 coaxial and dual limb *Circuit Setup Quick Reference Cards* (PN ELO2020-113-TW, ELO2020-114-TW).

④ Calibrating the O2 sensor (if needed)

1. Touch **System** > **Tests & calib**.

2. Touch **O2 sensor**.

When done, pass ✓ or fail ✗ and date/time of completion are displayed.

⑤ Calibrating the CO2 sensor/adapter (if needed)

Zero calibration is performed with the CO2 sensor and airway adapter connected to each other, *disconnected from the breathing circuit*.

1. Connect the CO2 sensor (**1**, in the figure below) to the CO2 port (**2**) on the ventilator, and ensure CO2 monitoring is enabled (System > Sensors > On/Off).

2. Wait at least 2 minutes for the device to warm up.

3. Attach the CO2 sensor to the airway adapter.

   Calibration is performed with the sensor and airway adapter connected to each other, disconnected from the breathing circuit.

   Keep the sensor and airway adapter away from all sources of CO2, including the patient's and your own exhaled breath, as well as the ventilator exhaust port.

4. Touch **System** > **Tests & calib**.

5. Touch **CO2 sensor**.

   Do *not* move the components during calibration.

When done, pass ✓ or fail ✗, and date/time of completion are displayed.
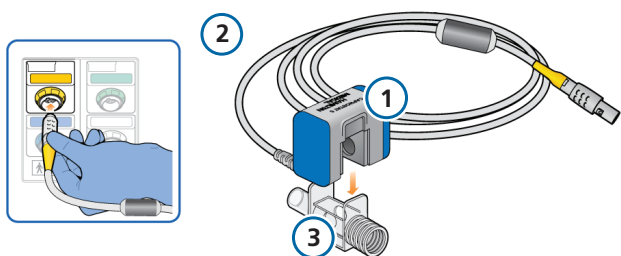
1 CO2 sensor	**3** Airway adapter
2 CO2 module on device	

⑥ Alarm tests

During ventilator startup, the ventilator performs a self-check that also verifies proper alarm function, including generation of an audible alarm sound.

You are *not* required to perform additional alarm tests.

If the preoperational check fails

Check breathing circuit

No disconnection, properly connected, leakage

↓ ✗ *Calibration fails*

Check flow sensor

↓ ✗ *Calibration fails*

Check expiratory valve set

Properly installed and seated

↓ ✗ *Calibration fails*

Repeat test without humidifier

If successful, check humidifier setup for leaks ↓ ✗ *Calibration fails*

Replace breathing circuit, flow sensor, expiratory valve set

Properly connected and seated

↓ ✗ *Calibration fails*

Have ventilator serviced

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