



## GEM5K Easy Steps

### Gas Check



**WARNING** – Calibration gases can be dangerous. For each gas used the appropriate material safety data sheet (MSDS) must be read and understood before proceeding.

1. Switch unit on by pressing the **On/Off** key  for 2-3 seconds. Wait for unit to boot up and complete self-test.
2. Press **Next** after self-test is complete.
3. If prompted to login as a technician select the proper user from the list and press enter when done.
4. When at the main read screen press the Menu key . This will take you to the Operation Settings screen.
4. Press key 2 for **Gas Check**.
5. Press key 1 for **Gas Check**; this should take you to the Select Gas Mix screen.

From the Select Gas Mix screen you will notice as default a list of 6 gas mixes, each gas mix has pre-determine gas concentrations that you can see under the gas mixture detail. From the list of gas mixes you need to select a gas mix to zero and a gas mix to span/calibrate. In the example below the following mixes will be used:

- **Fresh Air** – To zero CH<sub>4</sub>
- **CH<sub>4</sub> High** – To span CH<sub>4</sub>/ CO<sub>2</sub> and Zero O<sub>2</sub> (50% CH<sub>4</sub>, 35% CO<sub>2</sub>, 0% O<sub>2</sub>)
- **Oxygen High** – To span O<sub>2</sub> to ambient air (20.9% O<sub>2</sub>)

#### Zero CH<sub>4</sub>

6. Select gas mix **Fresh Air** and press enter. This will take you to the Gas Check screen and the pump will automatically turn on. Select **Check** when ready, a one minute timer will start for readings to stabilize.
7. When timer reaches zero the following message will be displayed **Check complete**.
8. Read the status field...



Means the gas channel is within specification.



Means the gas channel is out of tolerance and recommended to zero the gas channel.



Means the gas channel is out of range, has failed the check and can't be adjusted by a user calibration.



Means the gas channel is disabled or can't be zeroed.

9. You will notice the following options:

- **Record** – To accept and record results of the zero calibration check.
- **Calibrate** – To zero and record the zero calibration result.
- **Retry** – To allow the gas to flow for longer.

10. Select **Calibrate** to zero your CH<sub>4</sub>, note calibration result and select **Retry** or **Exit**.

#### Span CH<sub>4</sub>/CO<sub>2</sub> and Zero O<sub>2</sub>










11. Select gas mix **CH<sub>4</sub> High** and press enter.
12. Connect the 50% CH<sub>4</sub>/35% CO<sub>2</sub> calibration gas mix to the inlet (white colored) port on analyzer. Open the pressure regulator for gas to start flowing and select **Check** when ready. A one minute timer will start for readings to stabilize.
13. When timer reaches zero the following message will be displayed **Check complete**.
14. Once again, read the status field and select **Calibrate** to span the CH<sub>4</sub> and CO<sub>2</sub> and zero O<sub>2</sub>.
15. Note calibration results and select **Retry** or select **Exit** until you return to the Gas Mix screen.

#### Span O<sub>2</sub>

16. Select gas mix **Oxygen High** and press enter, the pump will start automatically then select **Check** when ready. A one minute timer will start for readings to stabilize.
17. When timer reaches zero the following message will be displayed **Check complete**.
18. Once again, read the status field and select **Calibrate** to span your O<sub>2</sub> then you can turn off the pump manually if it's running.
19. Note calibration results and select **Retry** or **Exit** until you get to the main reading screen.

**For any help or assistance please contact technical support at 909-783-3636 Ext. 6141**

# GEM5000—Taking a Reading (Workflow)

1. Hold  until the instrument turns on. Logo screens and Self-Test screen will appear. Press **Next**.
2. Select  or  keys to scroll up or down through the list of Technician IDs. To add a new technician ID press the soft-key **Add**. After selecting or adding technician scroll to the correct technician ID and press the enter key  to continue.
3. ID's must be sent to the instrument from LSGAM software prior to them appearing on the instrument. *Note: Unlike the GEM2000, all ID's appear together in one list. GEM & GA are workflows with different screens. Any ID with a flow device set to "No Flow (GA Mode)" will automatically switch the GEM5000 to GA Mode. For all others GA mode can be selected by using the "Special Action" Menu.*  
Choose the desired ID by scrolling up and down through the list. If the list is large or contains multiple sites the "**Filter List**" feature can be utilized to reduce the list to IDs containing a particular set of letters (IE. The first couple letters representing the site).
4. Select one ID from the list and press the enter key  to continue.
5. Disconnect tubes and complete clean air purge.
6. If NAV option is installed, acknowledge the terrain warning then choose either:
  - a. **Store Location** if the ID does not have a location
  - b. **Continue**
  - c. **Options**
7. Choose **Special Action**, at any point in the reading if you need to restart the reading process or update Site Questions or ID Questions. Choose **Exit** to return to the reading screen.  
Press **Start**. Connect the clear hose and press **Next**. The pump will turn on and draw a gas sample into the instrument. Press **Next** to fix the initial gas reading. A message will pop-up saying "Initial reading fixed". Press **Dismiss**.  
*Note: pressing "Dismiss" simply dismisses the pop-up and continues with the reading.  
Your reading will NOT be deleted.*
8. If a temperature probe is NOT connected, press the **Temperature** soft-key. Enter the temperature and press the enter key . If temperature probe is connected press the **Next** soft-key.
9. Disconnect the clear hose (and blue hose if connected). Allow pressures to return to zero or stabilize choose:
  - a. **Zero** if the pressures are NOT reading zero or close to zero.
  - b. **Next** if the pressures are reading zero or close to zero.
10. Connect the Clear hose to the white port on the instrument. Connect the Blue hose to the blue port on the instrument. Press **Next**.
11. Press **Next** to take the adjusted gas reading. If needed, enter in the gas temperature press enter  and then press **Next**. Press **Dismiss**.
12. Answer any questions that are assigned to the ID.
  - a. For selection comments use the 2 and 8 keys to scroll up and down. The currently selected comment will have a **Blue highlight bar** indicating it is where the comment. Press enter  to place a checkmark  in front of the chosen comment. Repeat until all desired comments are chosen. Press **Next** when done.
  - b. For Numeric entry questions enter in the Number and press enter. Press **Next**.
  - c. For Alpha Numeric questions enter in the letters from the keypad similar to entering a text message on a cellular phone by multi-tapping the letters. Press **Next**.
13. If a system pressure is required you will be prompted to zero and take a system pressure reading.
14. Click **Store** to save the reading.
15. Press the soft-key "Dismiss" to make the 'reading stored' message disappear.