Anaerobic Gas Infuser Instruction Manual

Coy Laboratory Products, Inc.
14500 Coy Drive
Grass Lake, Michigan 49240

(734) 475-2200
www.coylab.com

One printed copy of this manual is provided with your Coy anaerobic gas infuser. It is also available for downloading from the Coy website so you can print additional copies if needed or place a copy on your computer for reference.

The information in this manual is subject to change without notice and should not be construed as a commitment by Coy Laboratory Products, Inc. While every effort has been made to ensure the accuracy of the material, Coy Laboratory Products, Inc., assumes no responsibility or liability for any errors, inaccuracies or omissions that may be present in this manual.

Document History

Part #	Manual Version	Product Version	Date
—	Anaerobic Gas Infuser Instruction Manual 071322	Anaerobic Gas Infuser 2022 to present	July 13, 2022

Safety, Warranty, and Support Information

WARNING!

1. The anaerobic gas infuser is a tool of measurement and control. Do not use it as a safety device.
2. The gas infuser is designed to be used with non-flammable hydrogen gas mixes and a nitrogen background gas only. Do not use pure hydrogen or gas mixes with a hydrogen content greater than 5 %. Hydrogen concentrations above flammable limits should be considered an extreme fire hazard.
3. Gas pressure into the back of the anaerobic gas infuser should not exceed 15 psi.
4. Do not use abrasive cleaners as they may damage the surfaces. Check all cleaners before use to ensure that they are compatible with the construction materials listed in Appendix A.
5. Never immerse any portion of the gas infuser enclosure or power cord, as damage may result to the unit. There is the also potential of electrical shock.

WARRANTY INFORMATION

This product is warranted against defects in material and workmanship during the first 12 months after the original date of shipment. Coy Laboratory Products will, at its option, repair or replace defective material within this period at no charge for parts and labor.

All returns or exchanges must first be authorized by Coy Laboratory Products:

14500 Coy Drive
Grass Lake, MI 49240

Phone: 734-475-2200
Fax: 734-475-1846

The responsibility of Coy Laboratory Products is limited to the purchase price of this product. Coy Laboratory Products will not be responsible for any consequential damages.

This warranty does not cover the following: damage in shipment, damage as a result of improper use or maintenance of this product, or damages caused by excessive line transients on the AC supply line.

Unless otherwise instructed, items to be repaired or replaced should be shipped to:

Coy Laboratory Products, Inc.
14500 Coy Drive
Grass Lake, Michigan 49240

TECHNICAL SUPPORT

To obtain technical support, contact Coy Laboratory Products by either phone or e-mail:

Phone: (734) 475-2200
E-mail: techservice@coylab.com

Contents

Overview 1

The Coy anaerobic gas infuser (AGI) is an optional component that allows you to maintain a constant hydrogen level in your vinyl anaerobic chamber automatically:

The gas infuser is specifically designed for Coy anaerobic chambers that use a hydrogen gas mix with a nitrogen background and palladium catalyst to remove oxygen. It is used in conjunction with the Coy anaerobic monitor (aka CAM-12) to maintain a hydrogen level of 2.5 %.

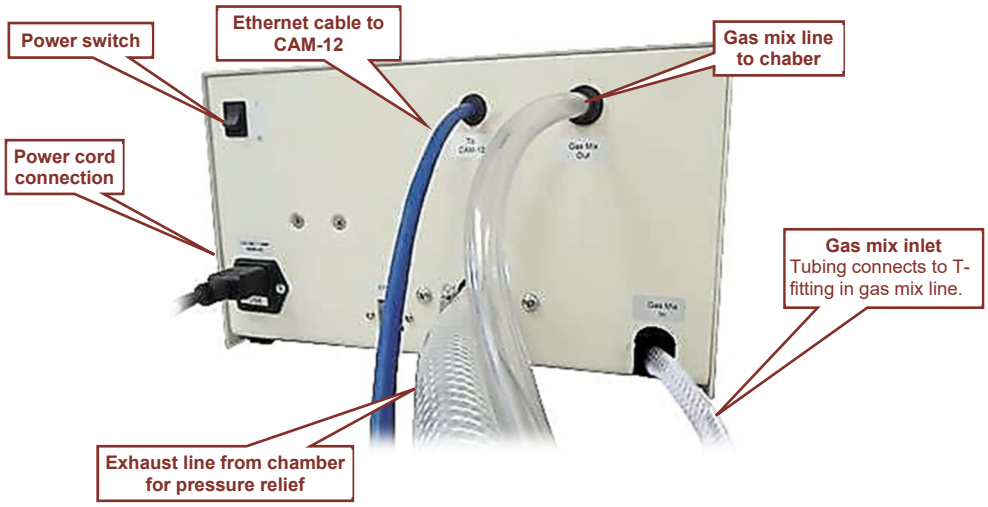
The gas infuser communicates continuously with the CAM-12 to obtain the H_2 level in the chamber. Whenever the H_2 level falls below 2.5 %, the gas infuser will purge the chamber with the H_2 gas mix until the H_2 level reaches 2.5 %. A touch screen displays the H_2 and O_2 levels from the CAM-12 and allows you to monitor purge activity and make maintenance adjustments to the gas infuser's operation.

1.1 Gas Infuser Connections

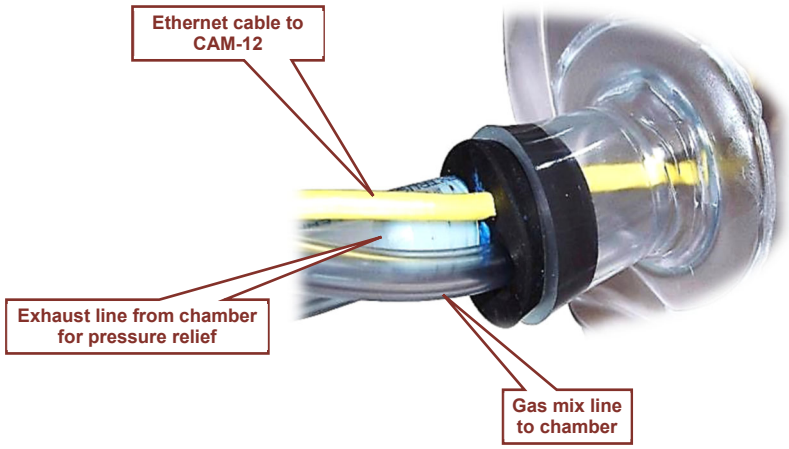
The anaerobic gas infuser is generally placed on top of the airlock:

However, you may place it elsewhere if you prefer. It does not matter where you place it, as long as the line connections to the chamber and the gas mix line can be made and there is an electrical outlet within reach for the power cord.

The back of the gas infuser contains connections to both the chamber and the air-lock and also the power connection and power switch:



The chamber lines enter the chamber through a feed-thru adapter, which is located behind the airlock:



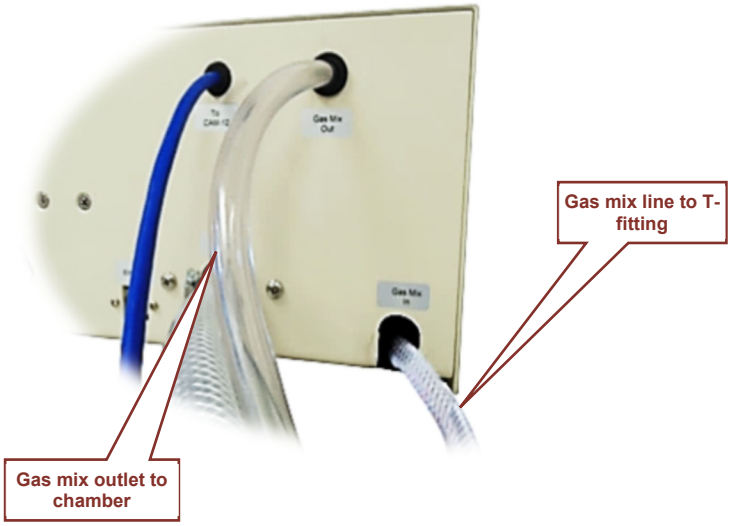
An Ethernet cable sends hydrogen and oxygen readings from the CAM-12 to the gas infuser. It is connected to a port on the CAM-12:

Note: *The Ethernet cable will not necessarily be either of the colors shown here. Whatever cable is installed in the gas infuser is correct.*

The gas mix line from the regulator is connected to the gas mix lines from the air-lock and the gas infuser via a T-fitting:

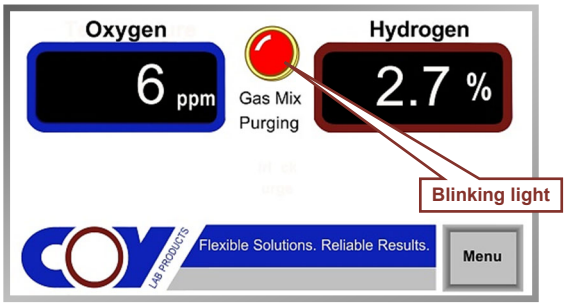
1.2 How the Gas Infuser Works

The gas mix from the tank flows into the gas infuser through the T-fitting:



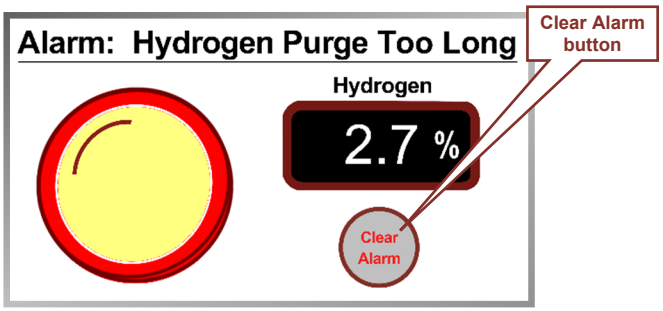
When the hydrogen level reported by the CAM-12 falls below 2.5 %, a valve on the gas mix outlet opens to allow the gas mix to flow into the chamber. When the hydrogen level in the chamber reaches 2.5 %, the valve closes.

Whenever a purge is in progress, a blinking light will appear on the main screen and **Gas Mix Purging** will appear below it:



When the purge is completed, the blinking light will disappear from the screen.

Once the gas infuser is set up and running, it needs very little attention. However, if a purge lasts for more than 2.5 hours, an alarm will sound and the following screen will appear:



To continue the purge, you press **Clear Alarm**. The alarm will be reset, the screen with the blinking light will reappear, and the purge will resume.

Installation 2

Before you can install the gas infuser, the CAM-12 must be installed in your chamber. If you are installing the gas infuser with a new chamber, your CAM-12 will be installed during the chamber setup. If you are installing the gas infuser in a working chamber and the CAM-12 is not installed, you will need to interrupt chamber activity to do it. Therefore, you should plan your gas infuser installation during a regularly scheduled maintenance period.

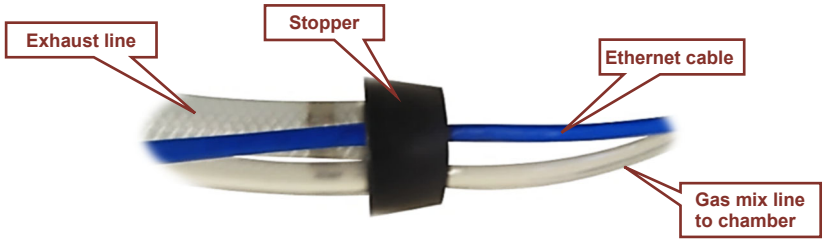
2.1 Positioning the Gas Infuser

The gas infuser is usually placed on top of the airlock:

This is generally the most convenient position because it is close to the chamber and the feed-thru adapter where the Ethernet cable and gas mix line enter the chamber. Assuming that you have a power outlet for the gas infuser power cord in close proximity, this is probably the best place for it, as you can monitor its operation easily.

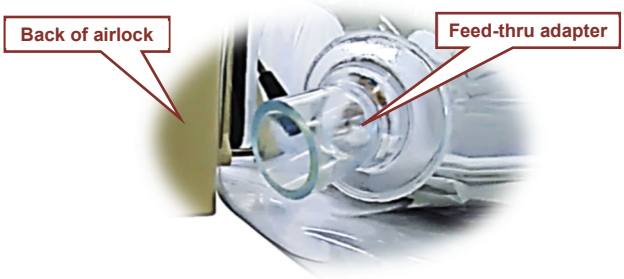
2.2 Connecting the Gas Infuser Lines

The gas infuser is shipped with its connections intact (except for the power cord, which is packed separately in the same carton). All lines that are connected to the chamber are attached to a rubber stopper:

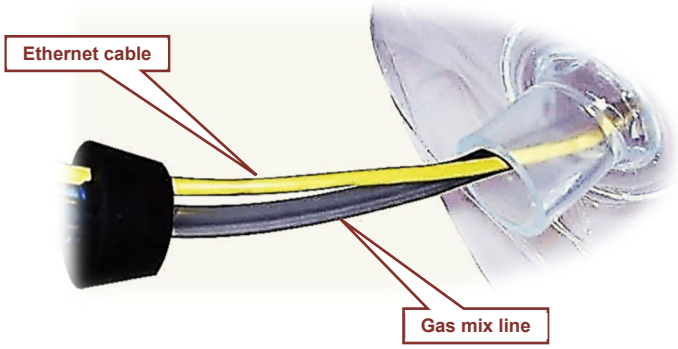


To connect the gas infuser to the CAM-12

1. Locate the feed-thru adapter for the gas infuser in the chamber wall. It should be just behind the airlock:

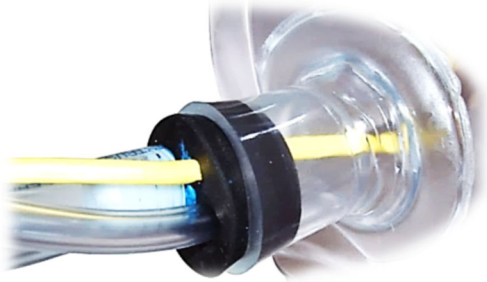


2. Insert the Ethernet cable and the gas mix line into the feed-thru adapter:



3. Continue pushing the lines into the chamber until the rubber stopper reaches the feed-thru adapter opening.

4. Rub alcohol on the outside of the stopper so it will slide more easily. Then push it into the feed-thru adapter until it is at least ¾ of the way in:



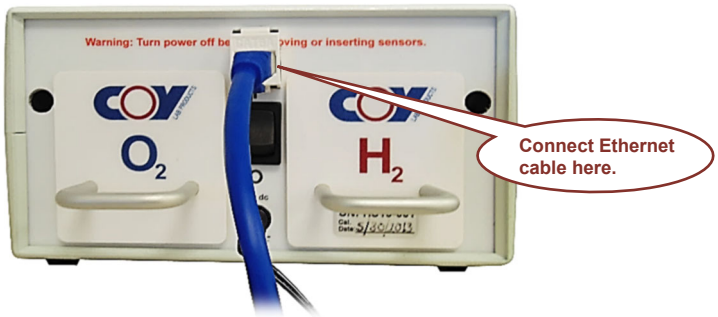
Note: *Alcohol may discolor the vinyl but it will not do any actual harm to the material.*

5. Secure the stopper to the feed-thru adapter with yellow tape (available from Coy).

6. Route the gas mix line along the back of the inside of the chamber behind the other installed components (incubator, shelving, etc.)

Note: *If necessary, you may cut the gas mix line for a better fit, but it should be no shorter than one foot from the feed-thru adapter.*

7. Connect the Ethernet cable to the CAM-12:

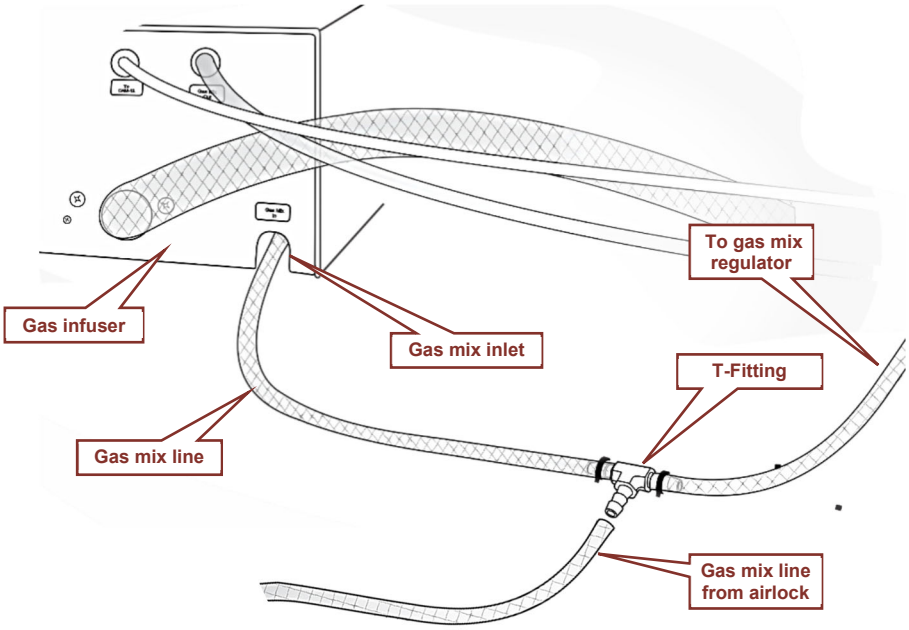


Push the connector into the port until you hear it click. Then tug gently to make sure the connection is secure.

> ***Note:*** *The Ethernet cable will not necessarily be either of the colors shown in this manual. Whatever cable is installed in the gas infuser is correct!*

2.3 Connecting the Gas Line to the Gas Supply

The gas mix line for chambers with a gas infuser is shipped attached to the gas infuser:



The line is split in two and connected by a T-fitting, which is preinstalled. The other end of the line connects to the gas mix regulator. The gas mix line from the airlock attaches to the empty hose barb of the T-fitting. The T-fitting enables gas to flow from the regulator to either the gas infuser or the chamber as needed.

Your installation procedure depends on whether you are installing the gas infuser in an existing chamber or a new chamber:

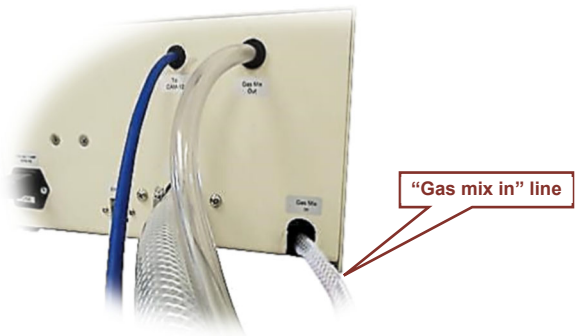
- If you are installing the gas infuser in a new chamber, you will make these connections when you connect the airlock to the gas supply. Complete instructions for setting up chamber gas connections are given in Chapter 5 of the *Vinyl Anaerobic Chamber Setup Manual*. If you are relatively familiar with gas line setup, you will find abbreviated instructions in the *Vinyl Anaerobic Chamber Quick Start Guide,* steps 9 and 10.

- If you are installing the gas infuser in a working chamber, follow the instructions in section 2.3.1–2.3.2 below.

Important: *The instructions below assume that you are familiar with your gas connections and their operation. If you are not, get assistance from someone who is.*

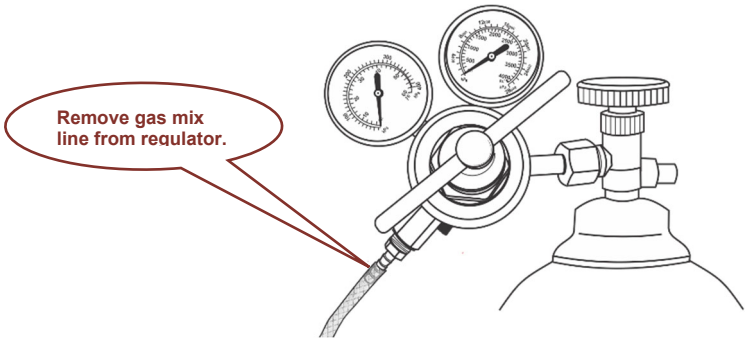
2.3.1 Connecting the gas mix line to the gas mix regulator

The "gas mix in" line from the gas infuser replaces the line that is currently connected the regulator:

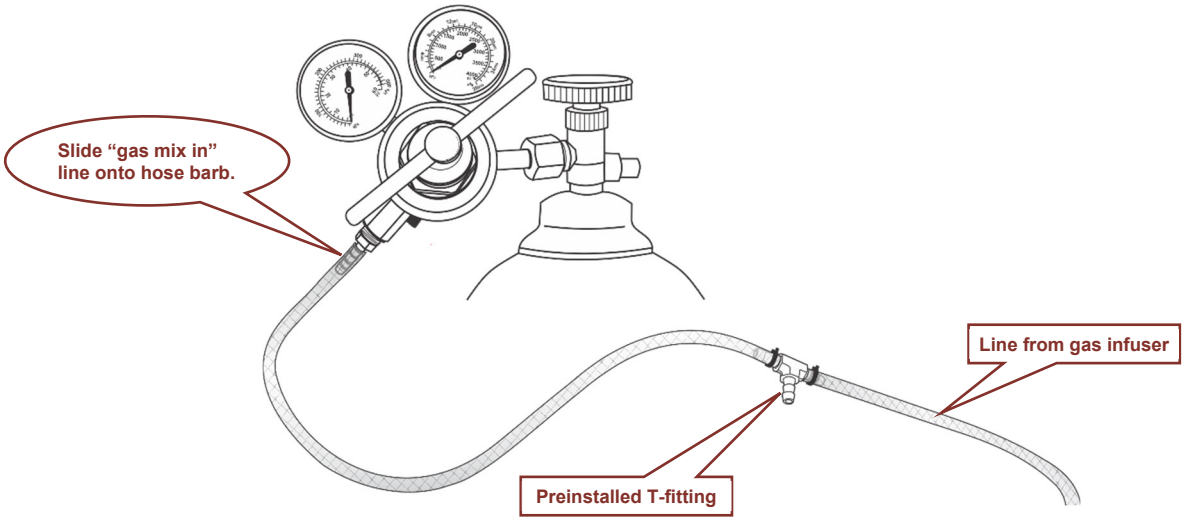


To connect the gas mix line from the gas infuser to the regulator

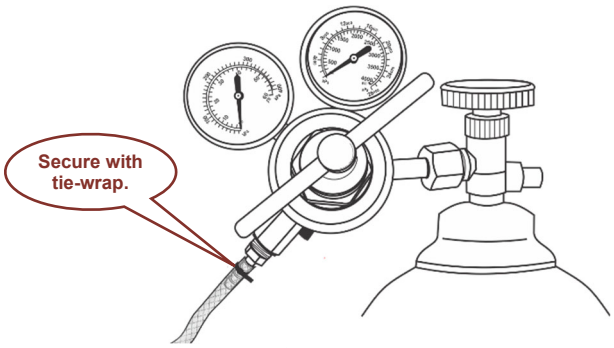
1. Make sure the gas is turned off at the tank.
2. Remove the currently installed line from the gas mix regulator:



3. Slide the "gas mix in" line from the gas infuser onto the regulator hose barb:



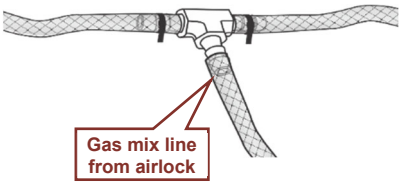
4. Secure the line with a new tie wrap:Connecting the gas mix line from the airlock



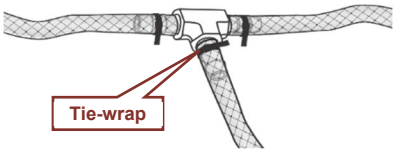
The gas mix line from the airlock that was formerly connected to the regulator must be connected to the T-fitting in the gas infuser line.

To connect the airlock gas mix line to the T-fitting

1. Slide the gas mix line from the airlock onto the T-fitting:

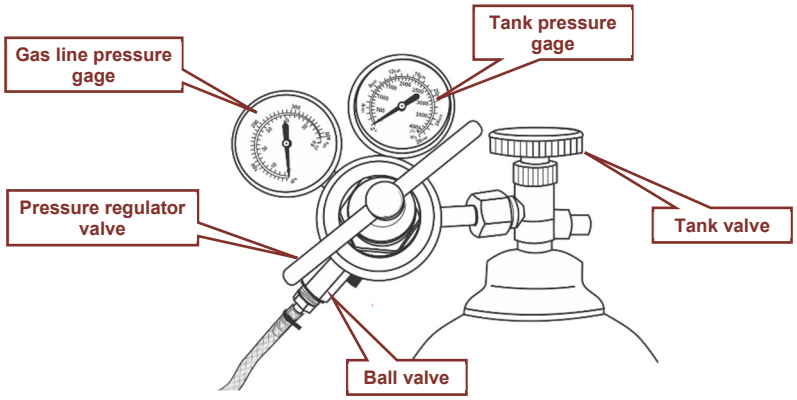


2. Secure the line with a tie-wrap:



2.3.2 Testing your installation

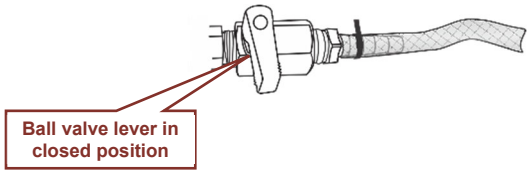
After your lines are installed, your next step is to check your connections for leaks. We assume that, since you are installing the gas infuser in an installed chamber, you are somewhat familiar with gas line operation. The drawing below is for reference in case you are accustomed to different terminology:



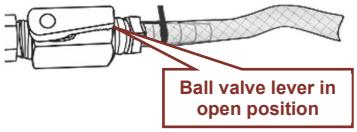
For the purposes of testing, follow the instructions below to turn on the gas and test for leaks.

To turn on the gas

1. Close the ball valve:



2. Turn the pressure regulator valve counterclockwise until it stops. The gas line pressure gage should read 0.
3. Turn on the gas at the tank. The tank pressure gage should show the current contents of the tank.
4. Set the gas line pressure to 20 psi (138 kPa).
5. Open the ball valve:



To check for leaks

1. Close the gas mix line tank valve so no more gas will be fed into the line and watch the gas line pressure gage:
   - If the pressure does not drop below 20 psi within 10 minutes, there are no leaks and your installation is complete.
   - If the pressure drops, there is a leak.
2. Remove the tie-wrap from the ball valve and T-fitting connections and try to push the tubing further up on the hose barb:
   - If the gas line pressure stabilizes, either or both of these connectors were most likely the cause of the leak. Place new tie-wraps on the connections.
   - If the pressure continues to drop, the problem may be in the preinstalled line connections or in the gas infuser itself. Contact Coy technical support for advice.

2.4 Powering Up the Gas Infuser

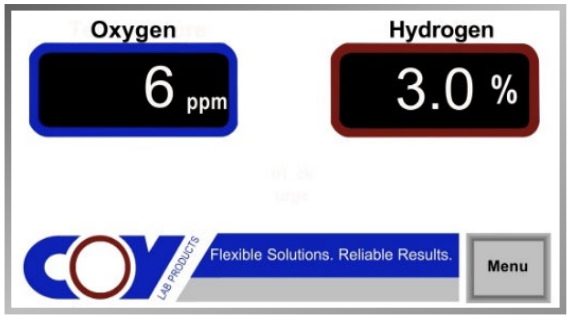
The gas infuser must be connected to an external power source (usually a wall outlet) in order to operate:

The power cord was packed in the same carton as the gas infuser.

To power up the gas infuser

1. Connect the power cord to the power inlet on the back of the anaerobic gas infuser and plug it into a power source.

2. Turn the gas infuser on with the power switch on the back of the unit. The home screen will appear on the touch screen:



2.5 Setting the Flow Rate

The flow meter on the anaerobic gas infuser controls the flow rate of the gas mix entering the chamber:

The gas flow rate is the amount of gas that flows through a given point in a given time interval. Usually, the unit of measure is SCFH (standard cubic feet per hour). The flow meters on Coy components use SCFH units. The flow rate affects the inflation level in the anaerobic chamber while the purge is running. The standard recommended setting is 15 SCFH. The flow rate must be set above 0 for the gas infuser to work. If it is set to 0, no gas will flow during the purge.

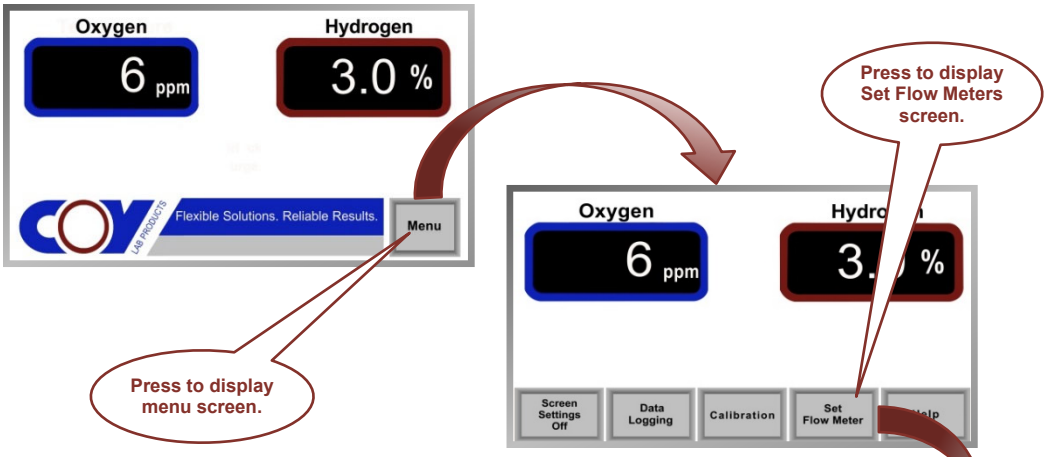
The flow rate can be increased or decreased if needed for optimal operation and user comfort while a purge is in progress. If the chamber sags during a purge, the chamber is underinflated and the flow rate needs to be increased. If it is over-inflated and the gloves start sticking out, the flow rate needs to be decreased. Make any needed adjustments to the flow rate in 5 SCFH increments.

The gas infuser must be turned on and the gas must be flowing through the gas infuser into the chamber to set the flow rate. In normal operation, this only happens when a purge is in progress. The following procedure, which is run through the gas infuser touch screen, starts the gas flow so you can set or adjust the flow rate when the gas infuser is idle.

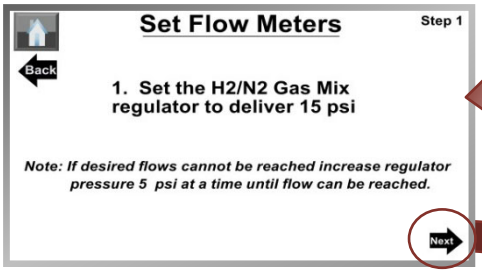
> ***Note:*** *The flow rate on the gas infuser only affects the inflation level of the chamber during a purge. If your chamber sags when no purge is running, the cause is not related to gas infuser operation and is more likely to be caused by a leak in the chamber (see section7.5 of Chapter 7 in the Vinyl Anaerobic Chamber Operation Manual).*

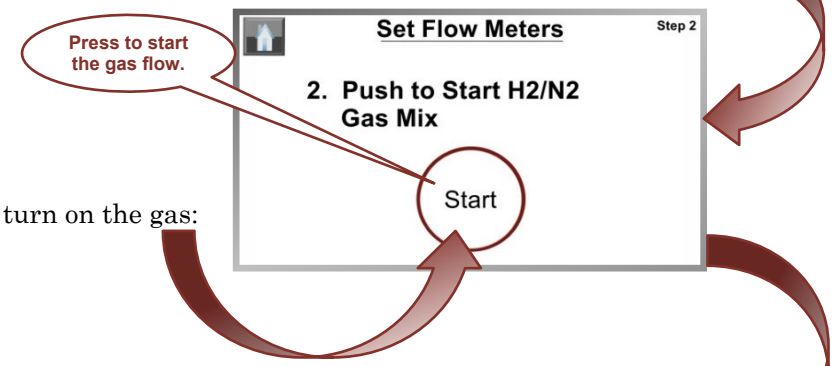
To set the flow rate

1. Press **Menu** on the touch screen to display the menu screen and select **Set Flow Meter** to display the **Set Flow Meter** screen:



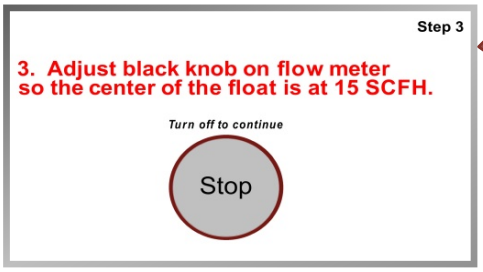
2. Set the gas mix regulator to 15 psi (103 kPa) and press Next to display the step 2 screen:



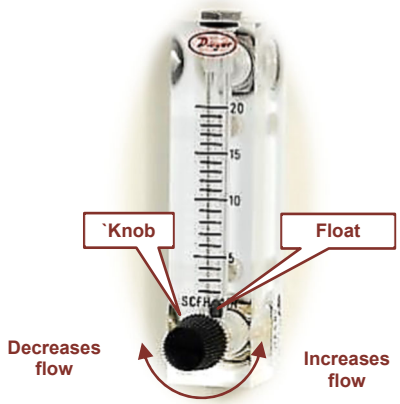


3. Press **Start** to turn on the gas:

The gas will start flowing and the step 3 screen will appear:



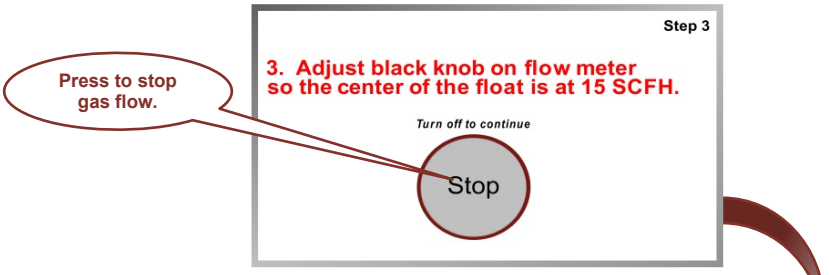
4. Increase or decrease the flow rate by turning the knob at the bottom of the flow meter:



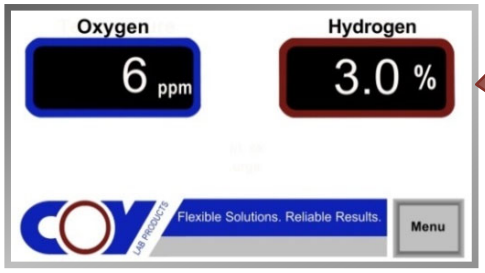
- Turn the knob clockwise to decrease the flow.
- Turn the knob counterclockwise to increase the flow.

The center of the float should be on the setting you want.

5. After you have set the flow rate, press **Stop**:



The gas flow will stop and you will return to the main screen:



6. Reset the gas mix regulator to its orginal setting—usually 20 psi.

Calibrating the Anaerobic Gas Infuser 3

The anaerobic gas infuser automatically maintains a 2.5 % hydrogen level in your chamber. To accurately maintain this level, the values displayed on the gas infuser must match the readings reported by the CAM-12. Since the CAM-12 reports the current oxygen and hydrogen readings to the gas infuser, the gas infuser must be calibrated to the CAM-12.

Calibration is simply the process of determining the difference between the actual gas content reported by the CAM-12 and the values displayed by the gas infuser and entering it on the gas infuser touch screen. This difference is called the *offset*.

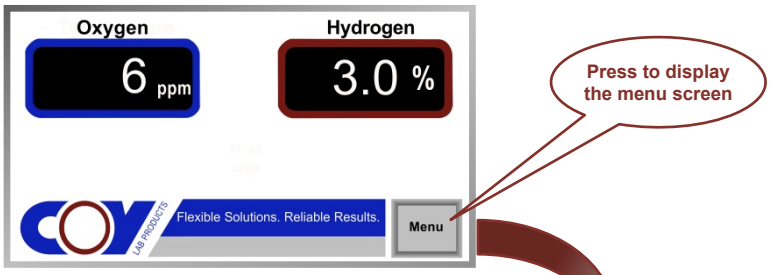
> ***Reminder:*** *The chamber must have a hydrogen content of 2.5 % before you can use the gas infuser to maintain the hydrogen level.*

3.1 The Calibration Screen

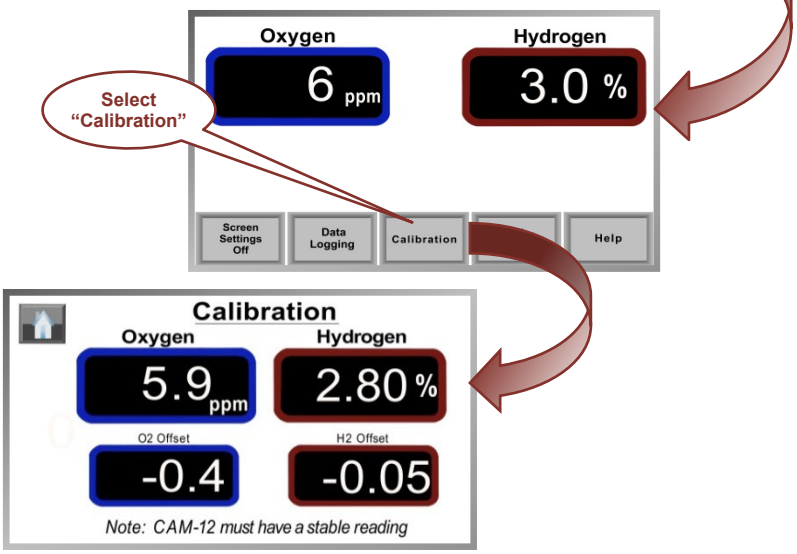
The calibration values are set through the calibration screen, which is accessed from the main menu.

To display the calibration screen

1. Press the **Menu** key to display the menu screen:



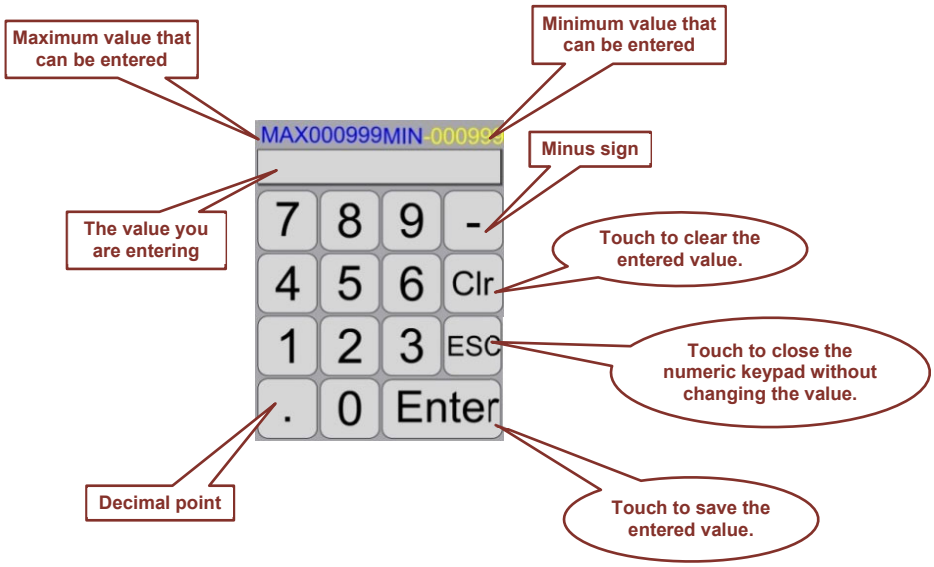
2. Select **Calibration** to display the **Calibration** screen:



The offset values are the values currently being applied to the values from the monitor. The oxygen and hydrogen fields show the corrected values from the monitor after the offset has been applied.

To enter the offset values

The offset values are entered into the offset value fields through the numeric keypad. You enter the values by touching the numbers. The value is displayed in the field above the number keys as you enter it:

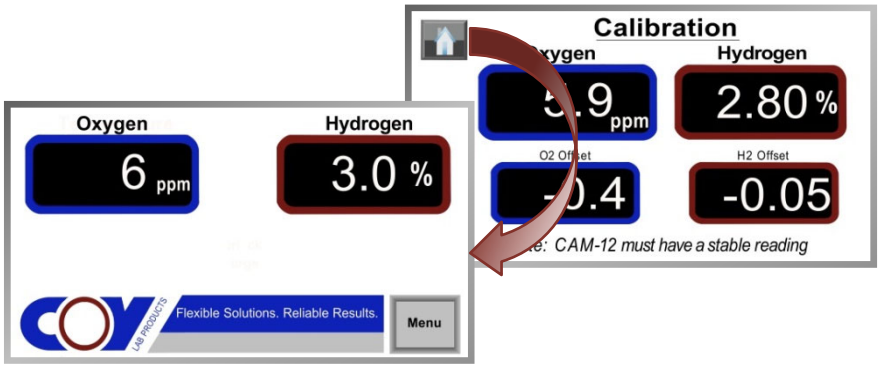


Use the special non-numeric keys to do the following:

- To make a number negative, place a minus sign in front.
- To enter a decimal number, enter the digits to the left of the decimal point. Then insert a decimal point and enter the digits to the right.
- To erase your entry and start over, press **Clr**.
- To exit without changing the displayed value, press **ESC**.
- To save the entered value, press **Enter**.

To leave the screen

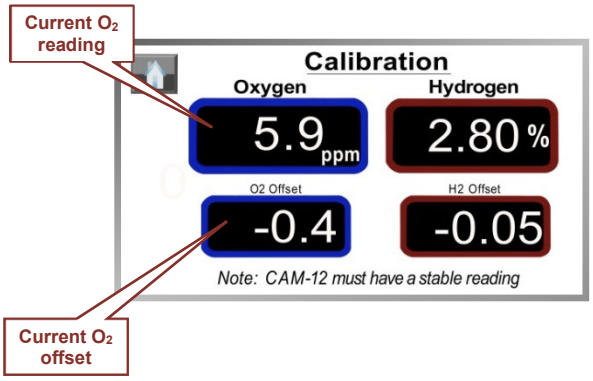
Press  to return to the home screen:



If you changed the values, your new values will be displayed in the oxygen and hydrogen fields.

3.2 The Oxygen Offset

The oxygen value and current offset are displayed on the left side of the **Calibration** screen:



The oxygen value is displayed to the nearest 0.1 ppm. If the oxygen value displayed on the gas infuser screen is different from the oxygen reading on the CAM-12, you will need to calibrate the oxygen display on the gas infuser.

3.2.1 Calculating the oxygen offset

To calculate the oxygen offset, you must calculate the difference between the value displayed on the CAM-12 and the value displayed on the gas infuser.

To calculate the oxygen offset

1. Compare the oxygen value on the gas infuser with the oxygen reading displayed on the CAM-12:

   - If the value displayed on the CAM-12 is *lower* than the value displayed on the gas infuser, *subtract* the value displayed on the *monitor* from the value displayed on the *gas infuser:*

     CAM-12 value: 4.2 ppm
     Gas infuser value: 5.9 ppm
     Difference: 5.9 – 4.2 = 1.7

   - If the value displayed on the CAM-12 is *higher* than the value displayed on the gas infuser, *subtract* the value displayed on the *gas infuser* from the value displayed on the *monitor*.

     CAM-12 value: 4.7 ppm
     Gas infuser value: 2.9 ppm
     Difference: 4.7 – 2.9 = 1.8

2. Since the current offset has already been factored into the displayed oxygen value, the new offset value must be incorporated into the current offset:

   - If the oxygen value on the CAM-12 is *less than* the value displayed on the gas infuser, the offset must be *reduced*. Subtract the difference from the current offset:

     O2 value from CAM-12: 4.2 ppm
     O2 value displayed on gas infuser: 5.9 ppm
     Difference: 5.9 – 4.2 = 1.7
     Current offset value: –0.3
     New offset value: –0.3 – 1.7 = –2.0

- If the oxygen value on the CAM-12 is *greater than* the oxygen value displayed on the gas infuser, the offset must be *increased*. Add the difference to the current offset:

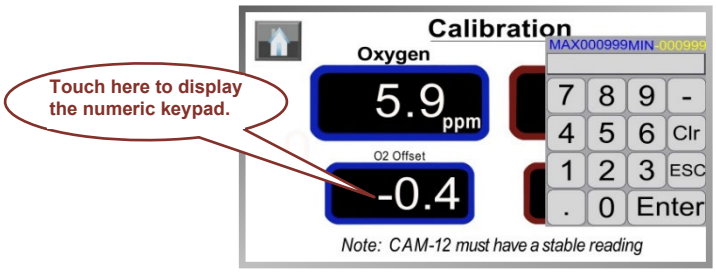
O2 value from CAM-12:	4.7 ppm
O2 value displayed on gas infuser:	2.9 ppm
Difference:	4.7– 2.9 = 1.8
Current offset value:	–0.3
New offset value:	–0.3 + 1.8 = 1.5

3.2.2 Entering the O_2 offset

Next you must enter your calculated offset into the gas infuser's memory. Only 1 decimal place is allowed for the O_2 offset. Additional decimal places will be ignored.

To enter the new O_2 offset

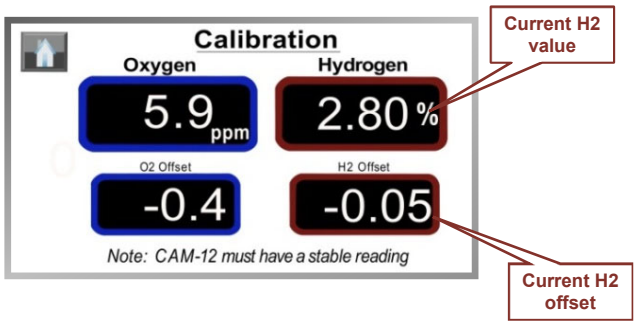
1. Touch the center of the **O_2 Offset** field to display the numeric keypad:



2. Use the numeric keypad to enter the new offset value you calculated in section 3.2.1. The value will appear in the field above the number keys as you type.
3. Touch **Enter** to save the new value. The keypad will close and the number will appear in the **O_2 Offset** field.

3.3 The Hydrogen Offset

The hydrogen value and offset are displayed on the right side of the **Calibration** screen:



The hydrogen value is displayed to the nearest 0.01 %. If the hydrogen value displayed on the gas infuser screen is different from the hydrogen reading on the CAM-12, you will need to calibrate the hydrogen display on gas infuser.

3.3.1 Calculating the hydrogen offset

To calculate the hydrogen offset, you must calculate the difference between the value displayed on the CAM-12 and the value displayed on the gas infuser.

To calculate hydrogen offset

1. Compare the hydrogen value on the gas infuser with the hydrogen reading displayed on the CAM-12:

   - If the value displayed on the CAM-12 is *lower* than the value displayed on the gas infuser, *subtract* the value displayed on the *monitor* from the value displayed on the *gas infuser:*

     CAM-12 value: 2.32 %
     Gas infuser value: 2.8 %
     Difference: 2.8 – 2.32 = 0.48

   - If the value displayed on the CAM-12 is *higher* than the value displayed on the gas infuser, *subtract* the value displayed on the *gas infuser* from the value displayed on the *monitor:*

     CAM-12 value: 2.72 %
     Gas infuser value: 2.5 %
     Difference: 2.72 – 2.5 = 0.22

2. To calculate the new offset, you must incorporate the offset value you calculated into the current offset:

   - If the hydrogen value on the CAM-12 is *less than* the value displayed on the gas infuser, the offset must be *reduced*. Subtract the difference from the current offset:

     H2 value from CAM-12: 2.32 %
     H2 value displayed on gas infuser: 2.8 %
     Difference: 0.48
     Current offset value: –0.2
     New offset value: –0.2 – 0.48 = –0.68

   - If the hydrogen value on the CAM-12 is *greater than* the value displayed on the gas infuser, the offset must be *increased*. Add the difference to the current offset:

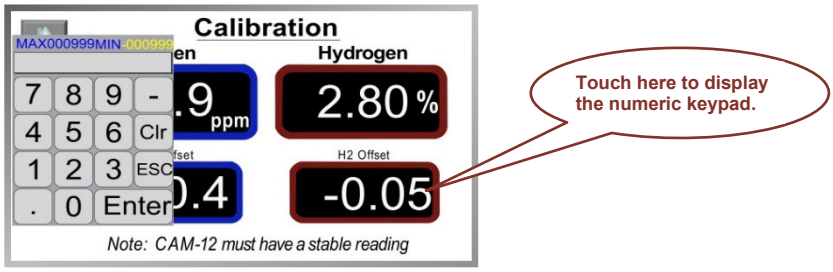
     H2 value from CAM-12: 2.72 %
     H2 value displayed on gas infuser: 2.5 %
     Difference: 0.22
     Current offset value: –0.3
     New offset value: –0.3 + 0.22 = –0.08

3.3.2 Entering the H_2 offset

Next you must enter your calculated offset into the gas infuser's memory. Only 2 decimal places are allowed. Additional decimal places will be ignored.

To enter the new H_2 offset

1. Touch the center of the **H_2 Offset** field to display the numeric keypad:



2. Use the numeric keypad to enter the new offset value you calculated in section 3.3.1. The value will appear in the field above the number keys as you type.

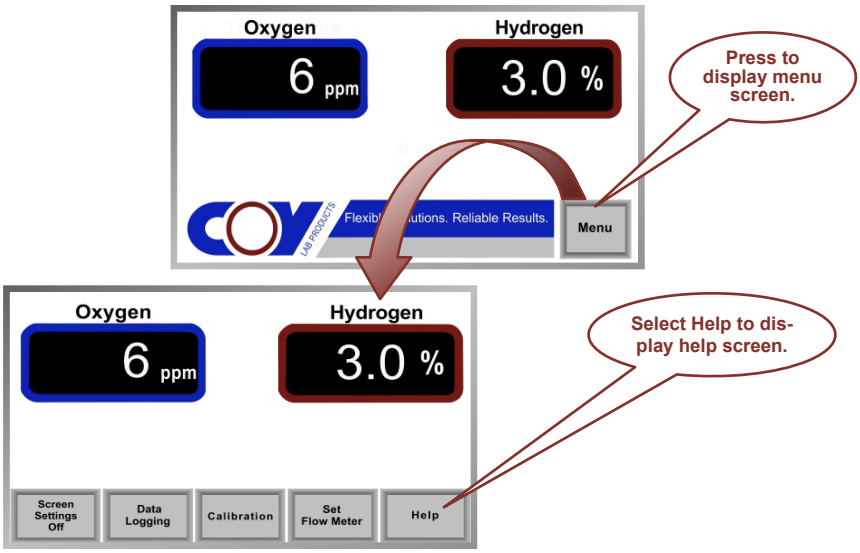
3. To save the new offset, touch **Enter**. The keypad will close and the number will appear in the **H2 Offset** field.

Troubleshooting Excessive Purge Times 4

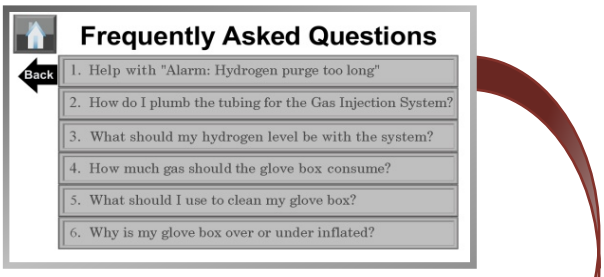
On-screen help is available to guide you through the troubleshooting procedure. However, because screen space is limited, it may not give you all the information you need. Therefore, we have provided more complete instructions in sections 4.1 through 4.5. When you are familiar with the process, the on-screen help should be enough to jog your memory.

To access the troubleshooting help screen

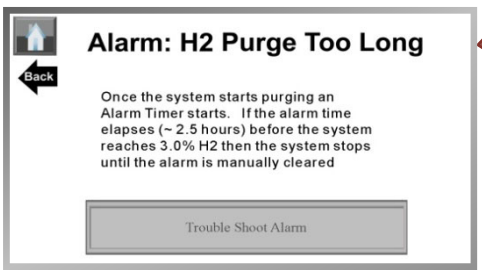
1. Press **Menu** to display the menu screen and select **Help**:



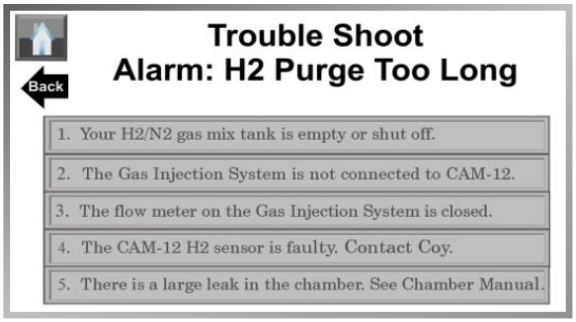
2. Select **FAQ** from the **Help** screen to display the **FAQ** screen:



3. Select the first item in the list and the following screen will appear:



4. Press **Troubleshoot Alarm** to display the troubleshooting screen:



The causes of the problem are listed on the screen and could be any of the following:

- Either the gas mix tank is empty or the gas flow has been shut off (1).
- The gas infuser is not communicating with the CAM-12 (2).
- The flow meter on the gas infuser is closed (3).
- There is a large leak in the chamber (5).
- The hydrogen sensor on the CAM-12 is faulty (4).

To determine the cause, you will need to check each of these items. To access more information, touch the item on the screen.

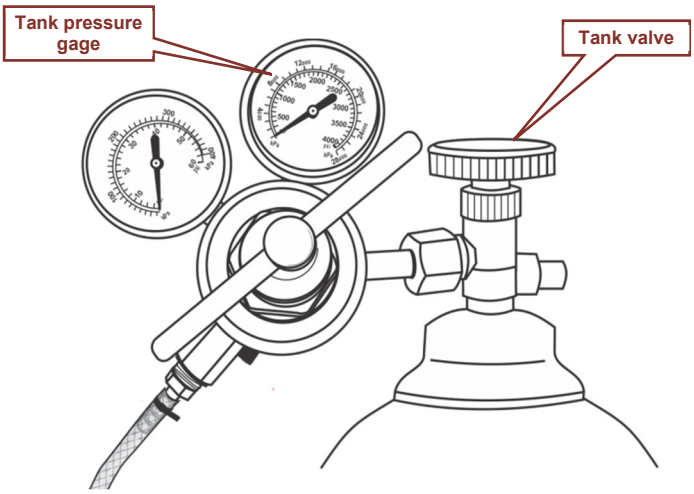
The expanded instructions in sections 4.1 to 4.5 correspond to the items on the troubleshooting screen. Unless you are very familiar with the interrelationship among the chamber components, we recommend that you start with these instructions, as those on the screens are abbreviated. Once you have done this a couple of times, the touch screen instructions should be enough to guide you.

4.1 Checking the Gas Mix Line

The first troubleshooting step is to make sure that gas is flowing from the gas mix tank to the infuser.

To check the gas flow from the gas mix tank

1. Check the reading on the tank pressure gage (aka primary pressure gage):

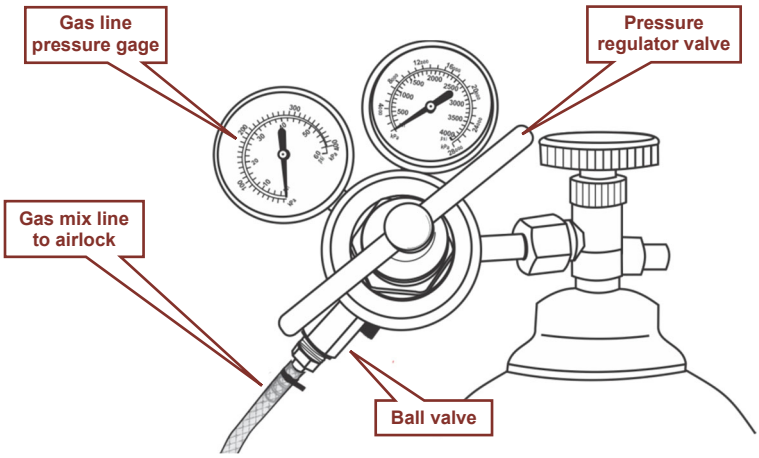


2. If the reading is **0**, either the tank is empty or the tank valve is turned off. Try to turn the tank valve counterclockwise to see if the gas has been turned off:

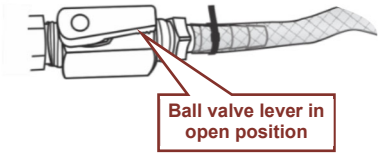
   - If the valve turns, the gas has not been turned off. A pressure reading of **0** indicates that the tank is empty. Install a new tank.

   - If the valve does not turn counterclockwise, the gas has been turned off at the tank. Turn the tank valve clockwise to turn on the gas. If the pressure reading on the tank pressure gage rises, the tank is not empty. Continue with step 3. Otherwise, install a new tank.

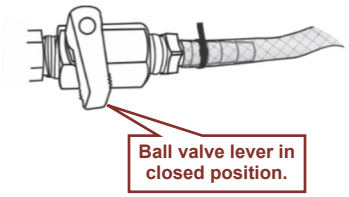
3. If the tank pressure reading is not **0**, check to see if the ball valve is open. The ball valve is attached to the gas mix line to the airlock:



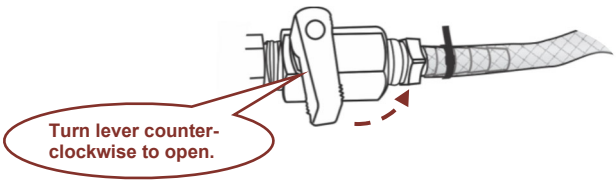
When the ball valve is open, the ball valve lever is parallel to the ball valve:



When it is closed, the ball valve lever is perpendicular:



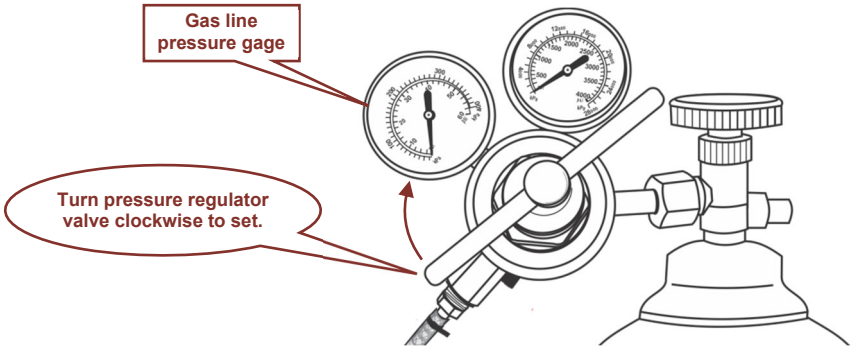
- If the ball valve lever is closed, no gas is flowing into the gas line, so no gas can enter the gas infuser. Turn the ball valve to the “open” position:



Gas will start flowing through the line and into the gas infuser.

- If the ball valve is open, gas is already flowing through the line. Continue with step 4.

4. Check the gas line pressure gage:



- If the pressure reading is 20 psi (or the setting determined by your lab), the gas mix flow to the airlock is not the cause of the problem.
- If the reading is low, the low pressure is probably the cause of the problem. If it is **0**, no gas is flowing through the line at all. Set the pressure to 20 psi (or the setting mandated by your lab) by turning the pressure regulator valve clockwise.

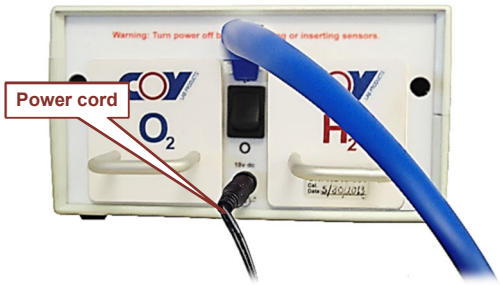
4.2 Checking the CAM-12 Connection

If the gas infuser is not communicating with the CAM-12, the purge will keep going nonstop because the gas infuser cannot tell when the hydrogen level reaches 2.5 %. The most likely cause is a disconnected Ethernet cable, but it could also be caused by a turned off or disconnected power connection. Presumably, all connections were intact when the purge started because low hydrogen was detected.

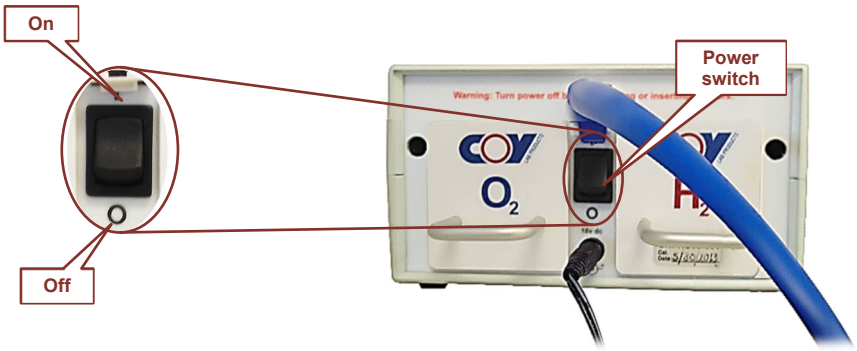
To check CAM-12 communications

1. Check the display on the front of the CAM-12. If the power indicator and the data display are dark, the unit has no power:

2. Check to see if the power cord is connected to the monitor and reconnect it if necessary:

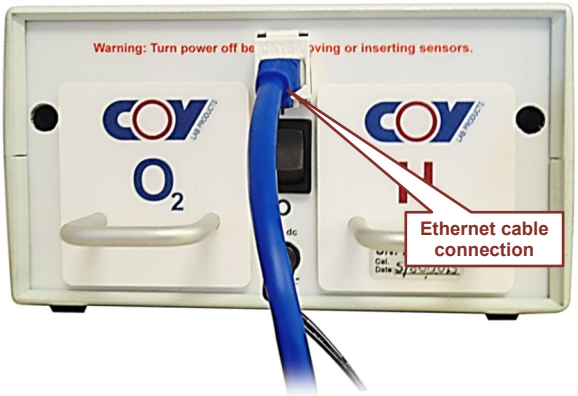


- Make sure the power switch is turned on (set to **I**):

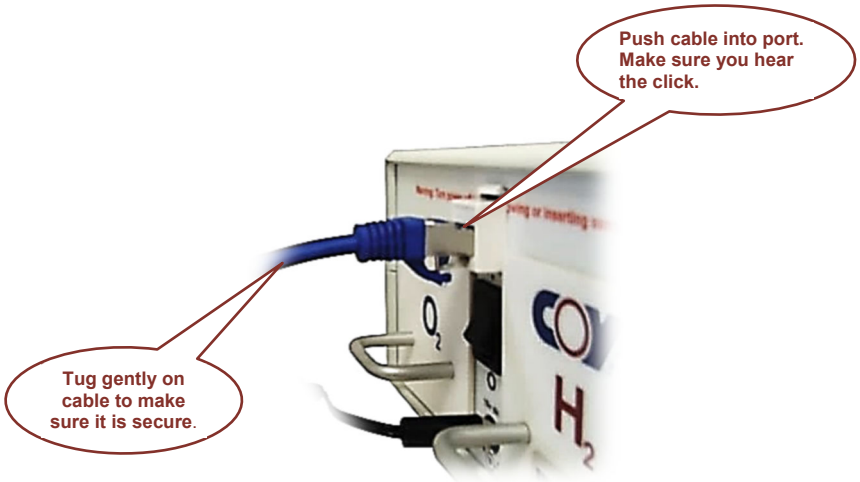


- If the power indicator and the display still do not light up, make sure the power cord is connected to the power strip.

3. If the power connections are intact, check the Ethernet cable connection:



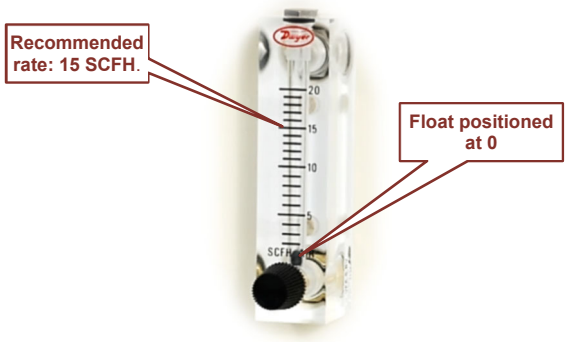
- If the cable is not obviously disconnected, pull on the cable gently. If it comes out easily, it is not connected (most likely, it did not "click in" when it was last connected).
- To reconnect the cable, push the connector into the port until you hear it click:



Then tug gently to make sure the connection is secure.

4.3 Checking the Flow Rate

Gas must be able to flow out of the gas infuser for a purge to be executed. If the flow rate is set to **0**, no gas can flow from the gas infuser to the chamber:



This will trigger the "purge too long" alarm, because the purge will never complete. A very low flow rate could also trigger this alarm, although the purge will eventually finish.

To check the flow rate

1. Check the position of the black float on the gas infusion flow meter:
   - If the float is positioned at the setting you have established for your chamber, there is no flow rate problem.
   - If the float is positioned at **0**, no gas is flowing out of the infuser.
   - If the float is positioned considerably lower than your standard setting (15 SCFH unless your lab has another setting), the flow rate may be too slow.
2. If the setting is **0** or significantly below your standard setting, follow the instructions in section 2.5 in Chapter 2 to reset the flow rate.

4.4 Checking for a Leak in the Chamber

If the gas mix line, CAM-12 communication, and flow rate do not appear to be the cause, there may be a large leak in the chamber. Small leaks do not usually affect gas infuser operations.

To check the chamber for leaks

1. Follow the instructions in section 6.5 of Chapter 6 in the *Vinyl Anaerobic Chamber Operation Manual* to check the chamber for leaks.
2. If any leaks are found, follow the instructions given to repair them.

4.5 Checking the H_2 sensor

If none of the above appears to be the cause, the problem may be with the H_2 sensor in the CAM-12. The sensor may be failing or it may simply need recalibration. Follow the instructions in section 7.2 of Chapter 7 in the CAM-12 instruction manual to troubleshoot the sensor. Contact Coy for advice if necessary.

If the H_2 sensor is functioning correctly, the gas infuser may need to be recalibrated to match the hydrogen value that is currently displayed on the CAM-12. See section 3.3 of Chapter 3.

Data Logging 5

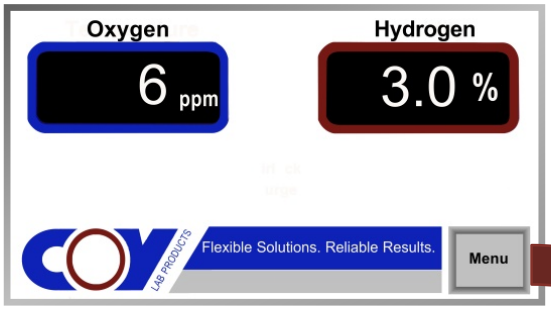
A key feature of the gas infuser is the ability to log oxygen and hydrogen values in local memory that can be downloaded to a computer at any time. This can be useful for documenting experiments and troubleshooting gas usage problems. To use the data logging feature, your PC must be set up to communicate with the gas infuser. Instructions are given in the *Data Logging Setup Manual*, which may be downloaded from the Coy web site.

5.1 Enabling and Disabling Data Logging

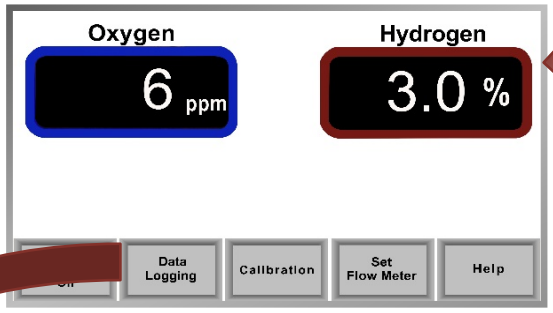
Data logging can be turned on and off as needed. It is not automatically enabled.

To start data logging

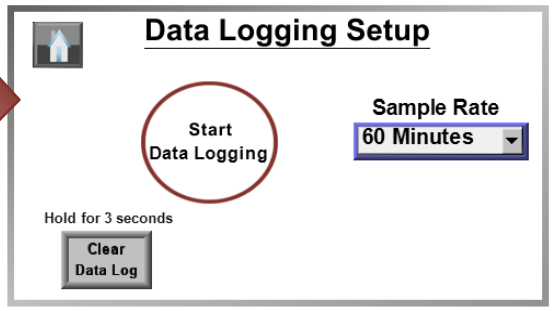
1. Press the **Menu** key to display the menu screen:



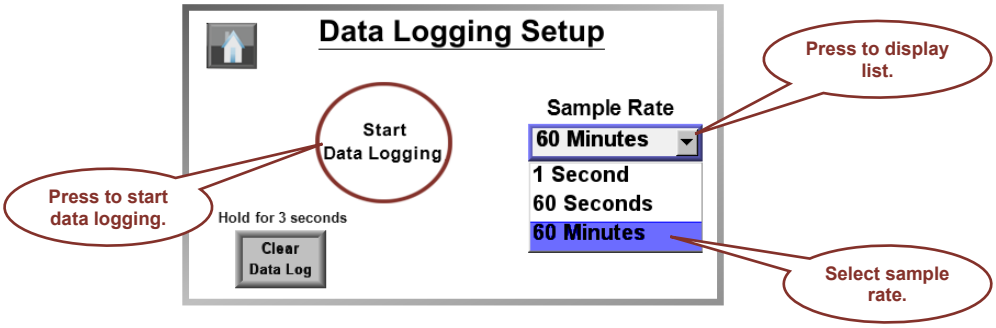
2. Press **Data Logging** to display the data logging screen:



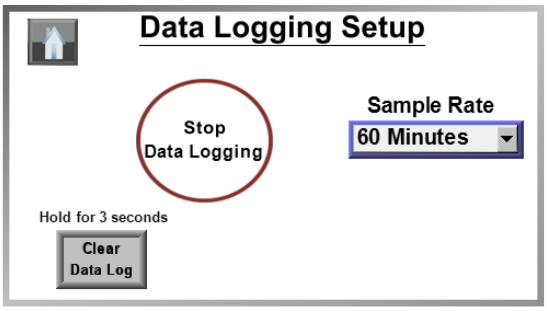
3. Select **Data Logging** to display the **Data Logging Setup** screen:



4. Choose your **Sample Rate** from the drop-down list and press **Start Data Logging**:



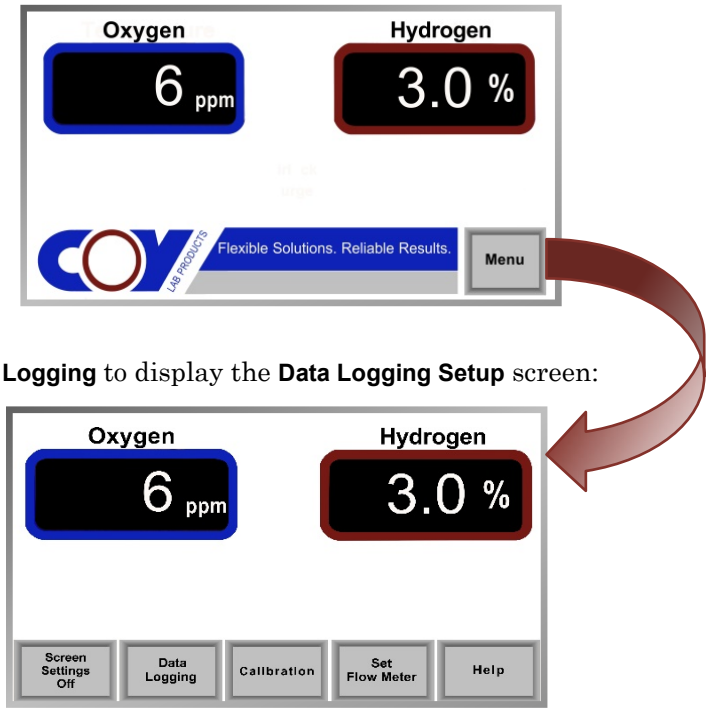
5. Data logging will start and **Stop Data Logging** will appear in the red circle:



Press  to return to the home screen. Data logging will continue in the background.

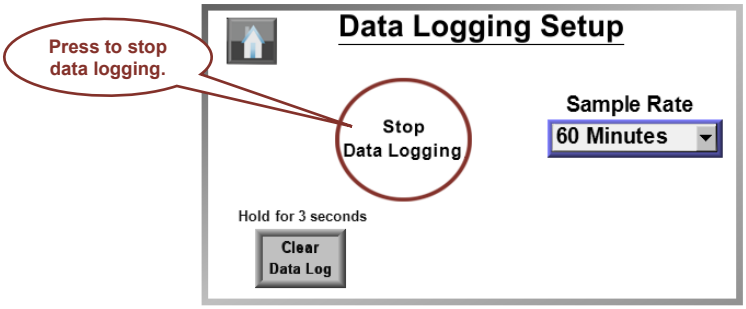
To stop data logging

1. Press the **Menu** key to display the menu screen:

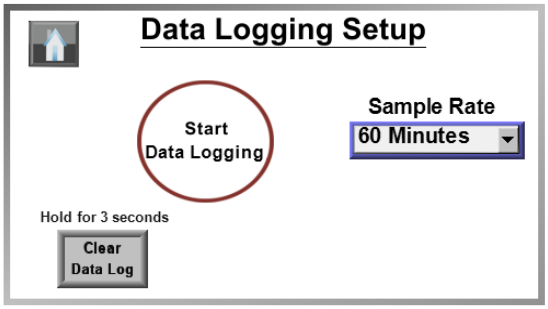


2. Press **Data Logging** to display the **Data Logging Setup** screen:

3. Press **Stop Data Logging** to stop data logging:



Data logging will stop and **Start Data Logging** will appear in the circle on the screen:



4. Press  to return to the home screen. To continue with the same log, all you need to do is access the **Data Logging Setup** screen and press **Start Data Logging** again.

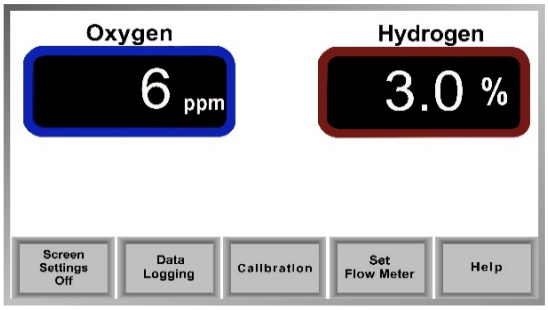
Warning: *DO NOT PRESS* ***Clear Data Log*** *TO STOP DATA LOGGING!* ***Clear Data Log*** *clears all data from the current data log, so you can start from scratch. Once you clear the current log, the stored data will no longer be available!*

5.2 Starting a New Data Log

Only one log file is can be in the touch screen's memory at one time. To you start a new data log, you must clear the current data log. To preserve the data in your current data log, you must upload it to your PC. If you do not, you will lose the information when the log file is cleared. Instructions for doing this are given in the data logging manual.

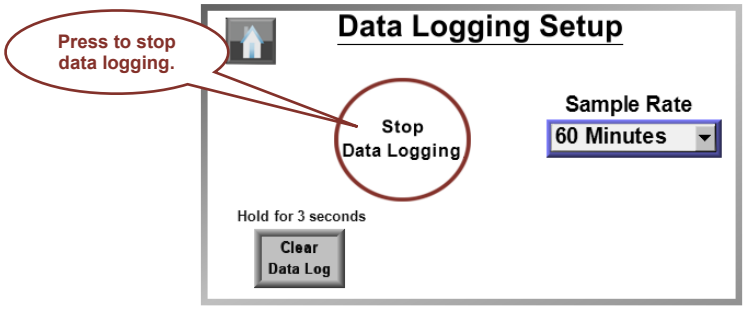
To start a new data log

1. Access the menu screen and select **Data Logging**:

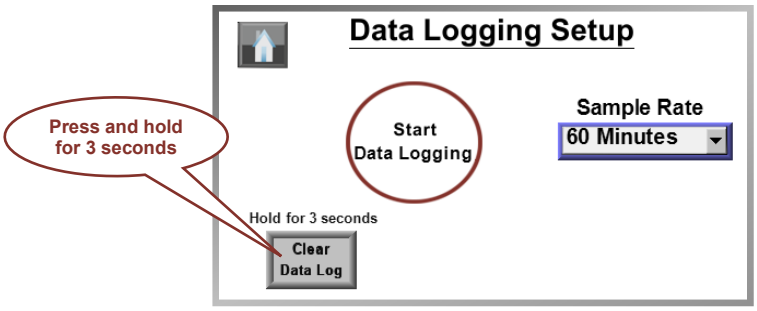


The **Data Logging Setup** screen will appear.

2. If data logging is still in process, press **Stop data logging**:



3. Press **Clear Data Log** and hold for 3 seconds:



The old data log will be cleared.

4. Press **Start Data Logging** to start logging data. The new log will not be started until you press **Start Data Logging.**

Anaerobic Gas Infuser Specifications

Physical and Electrical Specifications	
Dimensions	10.5 in (26.7 cm) W × 11.75 in (29.8 cm) D × 7 in (17.8 cm) H
Operational dimensions	10.5 in (26.7 cm) W × 15.0 in (38.0 cm) D × 7 in (17.8 cm) H
Power requirements	~15 W,100 VAC – 240 VAC, 50 Hz – 60 Hz
Operating environment	15 ºC – 42 ºC Up to 90 % RH, non-condensing

Functional Specifications	
Operating temperature & humidity range	Ambient to 42 °C and non-condensing
Hydrogen control set point	2.5 %
% H_2 Control hysteresis	0.1 %
Purge initiated	< 2.5 % hydrogen
Purge too long alarm initiated	> 2.5 hours after purge initiated
Purge too long alarm reset	Manual reset with **Clear Alarm** button
Flow rate	User settable. Initiated from touch screen. 15 SCFI recommended.
H2 and O2 calibration to CAM-12	Set through touch screen by user.

Connections		
Ethernet cable	To CAM-12	Bundled in stopper for insertion into chamber
Gas mix line	To chamber	
Exhaust line	For pressure relief from chamber	
Gas mix inlet	From T-fitting in gas mix line from tank	
Power inlet	For power cord.	
Ethernet port	For optional PC connection	