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# VET Capnography Application Suggestions

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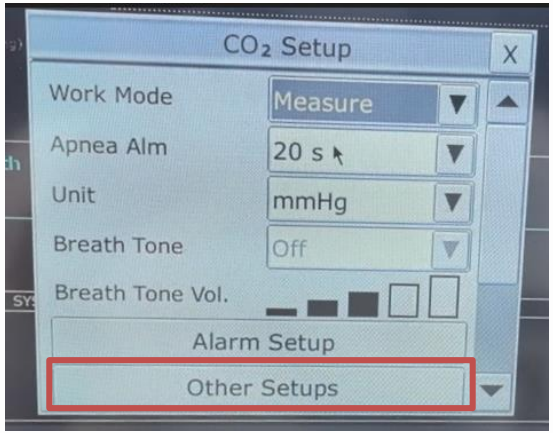
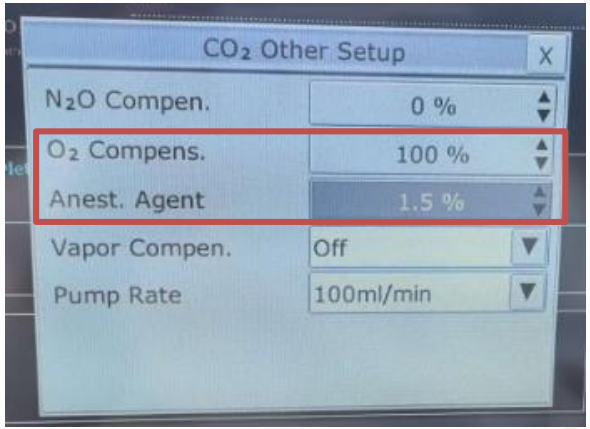
2024.04.11

# CO2 Configuration

## Surgery setting

Click CO2 reading area to enter **CO2 Setup** >> **Other Setups**




**For surgery,** normally a mixture of pure oxygen and a little AG are being used. To ensure the accuracy of the measurement, it's required to set the O2 compensation to 100%, Anesthesia Agent compensation to around 1.5%

- The rest parameters are unchanged as default.
- For very small animals, in case it couldn't give an ideal EtCO2 reading, we could try to decrease the pump rate.

# General issues

## Three major issues in practices

**EtCO2 no reading**

**EtCO2 low reading**

**FiCO2 high reading**

# Troubleshooting

**Is there an alarm message?**



Airway is occluded.

- Check the status of the watertrap and line.
- try to replace them
- Check internal connectors/tubes

Two possible causes

1. If the above **CO2 Occlude** error is not solved for a long time, then the system will show **CO2 Sensor Faulty** and stop taking in air as a protection action.
2. The G2 module is indeed faulty. Replacement is needed.

# Troubleshooting

## EtCO2 no reading—without alarm message

**Try to breathe into the sampling line, see if it shows any reading and trace**

# Troubleshooting

## EtCO2 no reading—without alarm message

**If it WORKS with human breathe**

**1. Verify If the animal is breathing**

For some cases the patient is barely breathing, so it could result in no reading . In some cases, changing the positon of the patient may help

**2. Verify the intubation is correct**

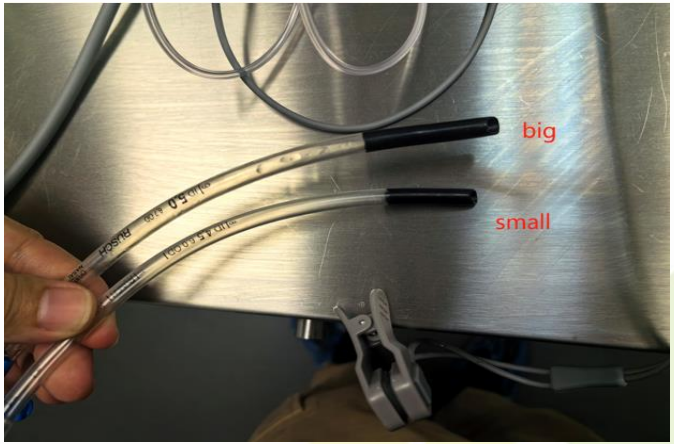
watch out for oesophageal intubation

**3. Obstruction**

ET tube is obstructed, try to verify it,  install it again or move it a little bit

**4. Air leakage**

a. Make sure the size of ET tube is suitable, the patient must not breath around the tube




b. Make sure all connections are firm

# Troubleshooting

## EtCO2 no reading—without alarm message

**If it DOES NOT WORK with human breathe**

**1. Replace the watertrap and line**

It being leaking or blocked could be the cause, try to replace them with new ones.

Watertrap and sample line are disposable and must be replaced for each patient.

**2. Make sure the watertrap is firmly installed**

Watch out for possible loose contact which may cause leakage

**3. Make sure the line is firmly installed on the watertrap**

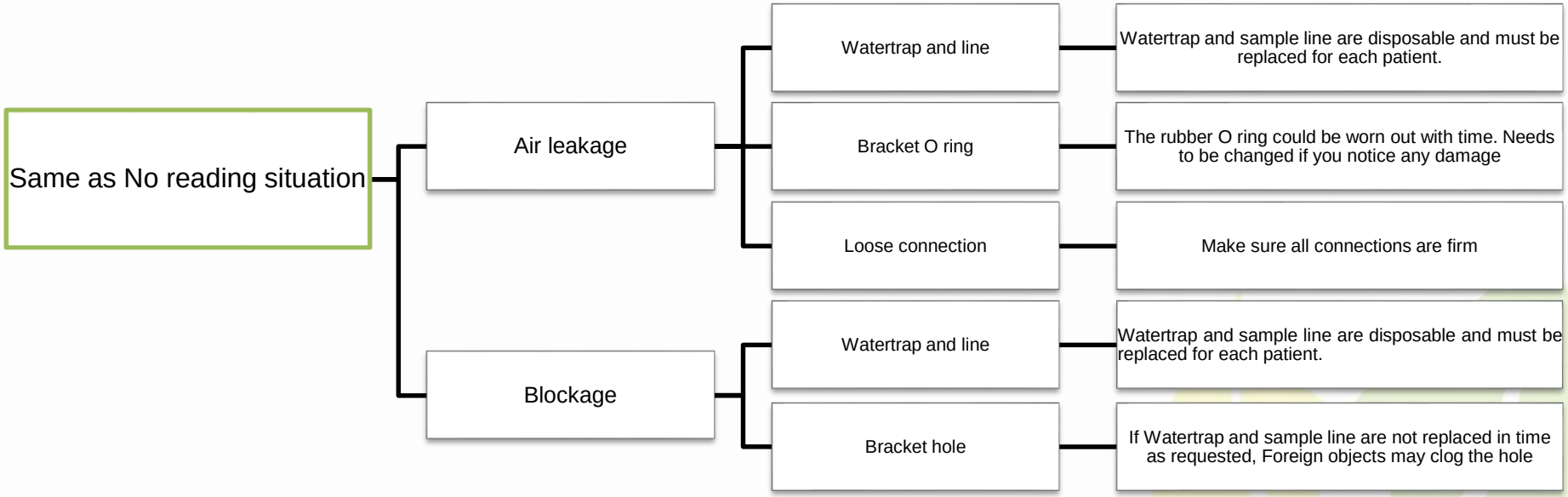
Watch out for possible loose contact which may cause leakage

**4. Check the bracket O ring**

The rubber O ring could be worn out with time and cause leakage. Needs to be changed if you notice any damage

# Troubleshooting

## EtCO2 LOW reading—without alarm message



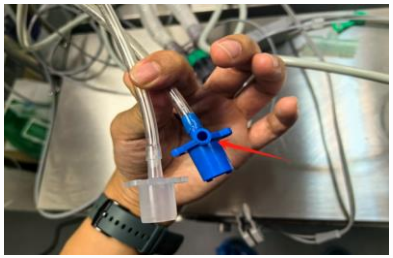
# Troubleshooting

## EtCO2 LOW reading—without alarm message

### Other causes

**1. Dead space**

a. Use ET tube with side-port connector



b. Use low dead-space ET tube adaptor with luer sampling port

c. Make sure that the ET tube is not excessively long

d. For small patient, do not use L tube (right angle)
e. Sample close to ET tube as possible

**2. Flow rate of oxygen high**

It could interfere and dilute the CO2 concentration. Try to decrease it

**3. Module needs calibration**

Send it back for service

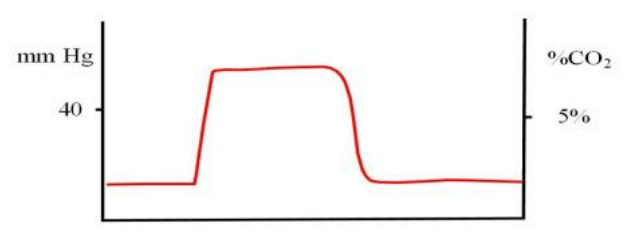
# Troubleshooting

## EtCO2 LOW reading—without alarm message

**Try to breathe into the sampling line, see if it shows correct reading, around 38mmhg**

# Troubleshooting

## FiCO2 high reading—without alarm message

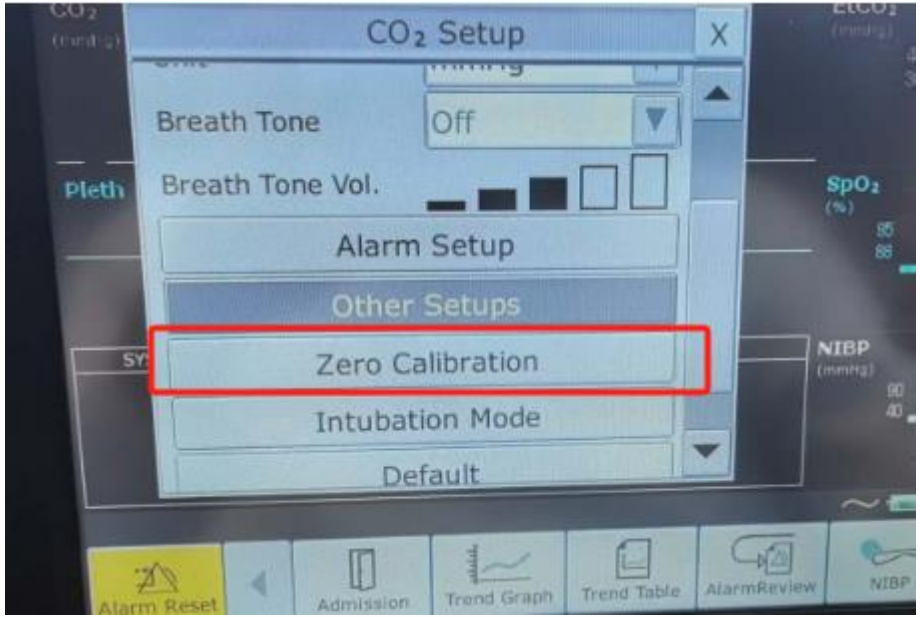



- Rebreathing of CO2
  - Non-rebreathing circuit
    - Insufficient fresh gas flow
  - Rebreathing circuit
    - Exhausted soda lime
  - Dead space
    - Use ET tube with side-port connector
    - Use low dead-space ET tube adaptor with luer sampling port
    - Make sure that the ET tube is not excessively long
    - For small patient, do not use L tube (right angle)
    - Sample close to ET tube as possible

# Troubleshooting

## Any abnormal reading or trace

**Try zero calibration**




**Note:**

**<u>Calibration must be done in a ventilated environment.</u>**

It's very important to make sure the space is well-ventilated during the surgery. Because auto zero calibration is being done from time to time.

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# In case problem cannot be solved

In case the problem cannot be solved with the suggestions mentioned above,

Please try to take a **VIDEO** in case of any problem.
A video including **the CO2 trace, the CO2 reading, the tubes, the connections and the ET tube** would be very helpful for further troubleshooting.





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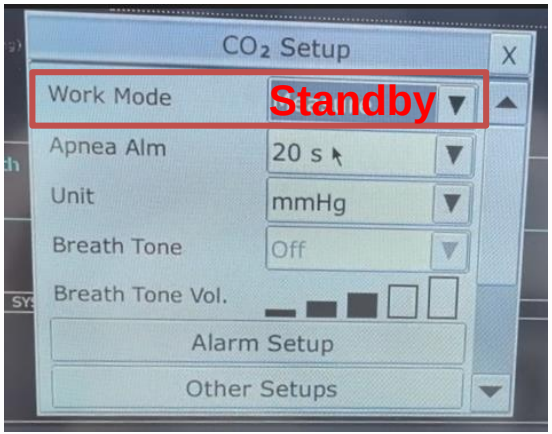
# Standby mode

When a surgery is finished, remember to put the monitor to **STANDBY MODE** in terms of EtCO2 function or just switch off the monitor.

Click CO2 reading area to enter **CO2 Setup**
>> **Work Mode**
>> select **Standby**




In standby mode, the EtCO2 module stops working. The pump rests and it stops sampling.

**Benefit:**
- It avoids dust and moisture from entering the system.
- It helps to extend the life-span of the module

**Resume measurement:**
To start the CO2 measurement, select **Measure** for work mode

# Quick summary

- Always consider replacing the watertrap and line
- Try to reduce dead space-particularly for small patients
- Try to test with human
- Try auto zero
- Compensation settings must be done
- Put the monitor to Standby mode
- Try to take a video in case of any problems. The video should include the trace and reading, the tubes and connections, ET tube


# THANK YOU

**Edan Instruments, Inc.**