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Gas Samplig Glass Tube / GS-2 Operation Manual

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Thank you for purchasing the Iijima Gas Samplig Glass Tube "model GS-2".

This glass tube is used to collect the headspace gas of the container such as a can by opening it in water. This method is suitable for measuring samples having low amounts of gas, such as when sufficient gas cannot be collected with one sample.

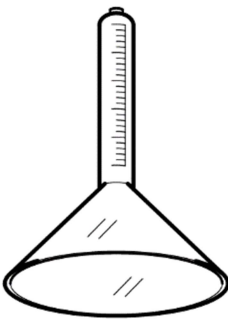


This manual describes how to operate GS-2 and the precautions that must be observed to ensure proper and safe use.

Always read and fully understand this manual before starting. Keep this manual near the tool for quick reference at any time.

1. Confirmation of Package Contents

When unpacking the gas collection glass tube, confirm that the following items are included and that the contents have not been damaged. If any parts are missing or damaged, contact the dealer which you purchased the product.

Package contents

	Description	Quantity
1	<p>Gas sampling glass tube (model: GS-2)</p> <p>One rubber stopper is attached.</p> 	1
2	<p>Rubber stopper</p> <p>One stopper is attached to the GS-2 at shipment.</p> <p>Specify "Rubber Stopper 3 (model: M-30, 30-pc. set)" when ordering additional rubber stoppers.</p> 	10 pcs.
3	<p>Needle (for replacement)</p>  <p>When using the oxygen meter models RO-105 series or RO-103 series, replace with this needle for measurement.</p> <p>Specify "Needle (model: T-20, 12-pc. set) when ordering additional needles.</p>	2 pcs.
4	Operation manual (this document)	1

2. Preparing for use

Measurements may not be possible if there is less than 6 mL of sample gas or if the internal pressure of the packaging is lower than -30 kPa. In such cases, use this Gas sampling glass tube to collect the gas in water before measurement.

The amount of residual oxygen can be calculated from the total amount of gas collected and the residual oxygen concentration.

$$\text{Amount of residual oxygen (mL)} = \frac{\text{Total amount of gas (mL)} \times \text{Residual oxygen concentration (\%O}_2\text{)}}{100}$$

< Things to prepare >

- A large water tank or bucket (large and deep enough the entire glass tube can be completely submerged)
- Water
- A fixing stand
- Towels or paper towels
- Oxygen meter (RO-105 series, RO-103S/103*, RO-102)
*When using oxygen meter RO-103S/103, also use the “Compression and Decompression Sampler (model: S-2)” option.

Step 1. Fill the tank or bucket with enough water to completely submerge the Gas sampling glass tube.

Step 2. Remove the standard needle attached with the oxygen meter.

- For oxygen meter models RO-105 series, the standard needle is model: NN-2116R.
- For oxygen meter models RO-103 series, the standard needle is model: NN-2138S.



Note

When removing the needle, do not remove the accessories, such as the membrane filter or check valve. Proper measurements may not be possible if these parts are removed.

Step 2. Attach the needle dedicated for the Gas sampling glass tube.



Warning

Take care not to stab the human body with the needle. There is a risk of blindness, puncture wounds, or cuts.

Step 3. Prepare the oxygen meter with state and setting so that it is ready for measurement.

(Refer to the operation manual enclosed with the oxygen meter for details.)

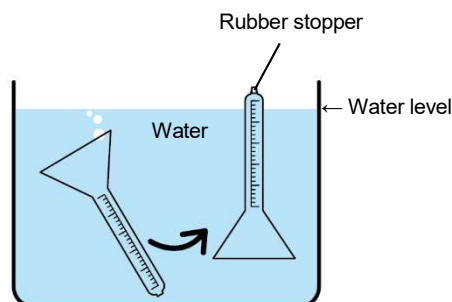
<Using oxygen meter RO-103S/103>

Measure with the Compression and Decompression Sampler (model: S-2) option.

3. Usage methods

Step 1. Remove the rubber stopper from the tip of the glass tube and carefully submerge it into the water so that completely remove all of the air from the gas sampling glass tube.

Step 2. Confirm that the air has been completely discharged, and attach the rubber stopper to the tip of the glass tube in the water.

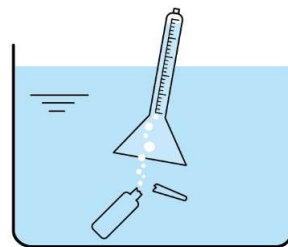


Step 3. Using a fixing stand, fix the end of the glass tube so that the tip of the glass tube is protruding in the air.

Step 4. Sink an unopened sample container into the water.

Remove any air bubbles that may be attached to the container at this time.

Step 5. Move it under the Gas sampling glass tube and then open the sample container.



Step 6. Collect all of the gas in the container into the glass tube.

Take care not to allow any sample gas to escape outside of the glass tube.

When all of the gas in the container has been captured, the amount of gas in the container is indicated by the scale on the glass tube above water level.



Note

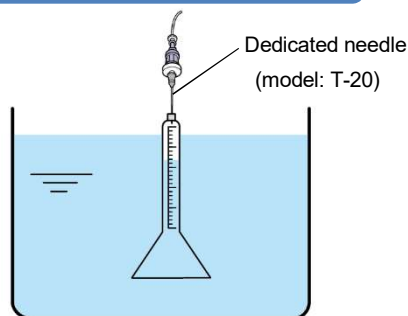
- If the required amount of gas (approx. 10 mL) is not achieved, open another unopened sample, and collect the gas.

- Confirm there are no moisture on the rubber stopper. If there, wipe all moisture off.

Step 7. Insert the dedicated needle, and operate the oxygen meter to sample and measure the sample gas.

For details, refer to the measurement methods described in the operation manual enclosed with the oxygen meter.


The water level will rise as the gas is suctioned. Take care not to suck in water when taking the measurement.



< Using oxygen meter RO-105 series >

If the amount of gas collected is approx. 6 mL, water could be sucked in during the automatic suction operation. In this case, use the "Manual mode" and suction the gas while manually adjusting the operation.

<Measuring with the Manual mode>

(1) When the Measurement Standby screen is displayed, press  , and the mode switches to Manual mode.

(2) Hold down  and suction the gas.

The pump operates only while the key is held down and stops when released. The stability decision starts when the pump stops. The process is finished when a beep sounds and the stable measurement value appears.

• If there are any concerning symptoms, refer to the symptoms and actions explained in the Troubleshooting Section of the operation manual enclosed with the oxygen meter.



Note

Replace rubber stopper with new parts if any degradation is observed.

Please contact the dealer from which you purchased the product if you have any questions or inquiries regarding handling, repairs, or inspections.

You can also watch the video on how to handle the product.

<https://www.ijjima-e.co.jp/en/video.html>

<Video page>



IIJIMA Iijima Electronics Corporation

1-1, Ishida, Toyooka-cho, Gamagori-shi, Aichi 443-0011 JAPAN

Telephone: +81-533-67-2827 Facsimile: +81-533-69-6814 E-mail: eigy@ijjima-e.co.jp

<https://www.ijjima-e.co.jp/>