



User Manual

Sampling

Backpack

Sampling-Backpack-MAN-ENG-v1.3L1E

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Safety Information - Read First

To ensure personal safety, read **Safety Information - Read First** and the **Cautions** before using the Sampling Backpack.

For safety reasons, users need to be properly trained in the use of the equipment. Use the Sampling Backpack only as specified in this guide, otherwise the usage provided by the device may be impaired.

Read the **Warning** and **Cautions** below before using the device.

Warning

- This instrument contains a lithium battery. Dispose of lithium cells immediately. Do not disassemble and do not dispose of in fire. Do not mix with the solid waste stream. Used batteries must be disposed of by a qualified recycler or hazardous materials handler.
- This product is for safe area use only.
- Substitution of components may impair Intrinsic Safety.

Cautions

- Inspect the Sampling Backpack before use. Look for cracks and/or missing parts. **DO NOT USE** the device if it is damaged and/or is missing parts. In that case, contact WatchGas or an authorized WatchGas distributor immediately.
- Check all hoses and connections for damage or a blockage before use.
- Do not use the sample bag near open flames or heat sources.
- If the battery is left unused for a period longer than 6 months, it should be placed on charge.
- Change the air pump's filter (located on the inlet) once a week to ensure it is free of dust and working correctly.
- WatchGas recommend that users use a lanyard to attach the remote control to, for easier handling and transportation.
- As many shipping containers are fumigated with phosphine (PH₃), WatchGas recommends that users wear a PH₃ gas detector device - **such as the [WatchGas SST1](#)** - for personal protection.
- When not using the Sampling Backpack, make sure that it is turned off (by switching the red power switch off). Otherwise, the battery will get depleted, requiring that the device be charged before being usable again.
- Take care to replace the cotton balls in the jar with new, odorless, and sterile cotton balls, and to replace or sterilize the jar (by washing it in an industrial-grade washing machine, at 90 °C / 194 °F) after every use.
- The teflon tube used to connect the Sampling Backpack to the container is re-usable. Wash it in hot water (at 80 °C / 176 °F) for at least ten minutes after every use.
- Charge the Sampling Backpack before first-time use. WatchGas recommends the detector to be charged until all three lights on the battery are green - indicating a full charge.
- Charge the Sampling Backpack using the recommended charging adapter only. Do not use any other charging adapter. Failure to adhere to this caution can lead to fire and/or explosion.
- Do not expose the device to electrical shock and/or severe continuous mechanical shock.
- Do not immerse the device in water or other liquids.

- Keep out of reach of children.
- Do not attempt to disassemble, adjust, or service the device unless instructions for that procedure are provided in the technical reference guide, and/or that part is listed as a replacement part. Use only WatchGas replacement parts. Refer to [Spare Parts List](#).
- If the Sampling Backpack or its components are damaged or contaminated, dispose of them according to local regulations for hazardous materials.
- Test the device prior to use for leaks by doing a pump block test. Place your finger on the end of the suction hose to generate a pump alarm.
- The device warranty will be voided if customers, personnel, or third parties damage the device during repair attempts.
- Non-WatchGas repair/service attempts void this warranty.

1. Introduction

1.1 Sampling Backpack Product Description

The Sampling Backpack is designed to safely extract and contain air samples from closed containers, allowing users to test for the presence of hazardous, volatile, or illegal substances.

The goal for the Sampling Backpack is to make the inspection of shipping containers (mainly drugs) a lot safer and easier.

1.2 What's In the Box

The content below provides all the standard items included with the Sampling Backpack. If the Sampling Backpack is damaged or parts are missing, contact the place of purchase immediately.

- **Sampling Bag** – black flexible bag for sample collection.
- **Air Hoses** – flexible hoses for air intake and outlet.
- **Air Pump** – high-volume electric pump that creates suction to move the air through the system.
- **LiFePO4 Battery Pack** – lithium battery pack and charger (90 - 200 volts). Comes with the UK and standard European type sockets.
- **Connectors & Valves** – ensure proper sealing and control airflow direction.
- **Inlet Air Filter** – protects the pump.
- **Jar With Cotton Balls** – the sample will be collected in this.
- **Sampling Probe** – allows air extraction from a closed container.
- **Metal Probe** – metal pipe for inserting air hose in container.
- **Teflon Tube** – transparent tube used to connect to the container.

1.3 Battery Cautions

Warning

To avoid personal injury and/or property damage, adhere to the following:

- Charge the battery in a safe area in temperatures of 0°C to 45°C (32°F to 113°F).
- Charge the battery using the supplied charger adapter only. Do not use any other charging adapters. Failure to adhere to this caution can lead to fire and/or explosion. **NOTE:** only European and UK sockets are currently supported. Use of a charging adapter outside your region will damage the charger and the device.
- Never use a modified or damaged charger to charge the device.
- The battery can only be replaced by the manufacturer. Failure to adhere to this caution can lead to fire and/or explosion.
- The Sampling Backpack uses a lithium battery that may present a risk of fire or chemical burn hazard if misused.
- Do not disassemble, heat above 212° (100°C), or incinerate.
- Do not leave the battery in a discharged state for over 24 hours.

NOTE: To replace the battery, contact WatchGas or an authorized distributor.

1.4 Charging the Sampling Backpack

NOTE: The device must be charged in a safe area, in temperatures of 32°F to 113°F (0°C to 45°C).

1. If the device is turned on, first deactivate the Sampling Backpack by turning the red switch off.
2. Check to make sure that the pump is firmly connected to the battery.
3. Connect the charging adapter to the battery.
4. Plug the charging adapter into an AC outlet.
5. The battery pack comes with a built-in Fuel gauge that shows the status of the charge level:
 - **3 green and 2 red LEDs:** The battery is fully charged.
 - **2 green and 2 red LEDs:** The battery is at over 50% charge capacity.
 - **1 green and 2 red LEDs:** The battery is at over 20% charge capacity.
 - **2 red LEDs:** The battery is at less than 20% charge capacity.
 - **1 red LED:** The battery is at less than 10% charge capacity.
 - **No lights:** The battery is empty.

1.5 Replacing the Battery

To replace the battery, contact WatchGas or an authorized distributor. The battery can only be replaced with the original manufacturer part number. Refer to [Battery Cautions](#).

To order replacement parts, refer to [Spare Parts List](#).

2. How to Use

Step 1: Preparation

1. Get a sterile jar and sterile, odorless cotton balls.
2. Check if the air tubes and the air filter of the Sampling Backpack are clean. If not, clean them.
3. Check the battery power level. If low, first charge the battery. Refer to [Charging the Sampling Backpack](#).
4. Turn on the Sampling Backpack. When an amber light is shown, first calibrate the sample bag. Refer to [Calibration](#).

Step 2: Connecting the Sampling Backpack to the Container

1. Bring a hammer to wedge the metal probe in between the cracks in the container door. **IMPORTANT NOTE: DO NOT OPEN THE CONTAINER.**
2. Insert the teflon tube inside the metal probe.
3. Remove the metal probe, leaving the teflon tube connected to the container.
4. Connect the teflon tube to the jar with the cotton balls.
5. Connect the other tube to the remote control of the sample bag.

Step 3: Sampling Procedure

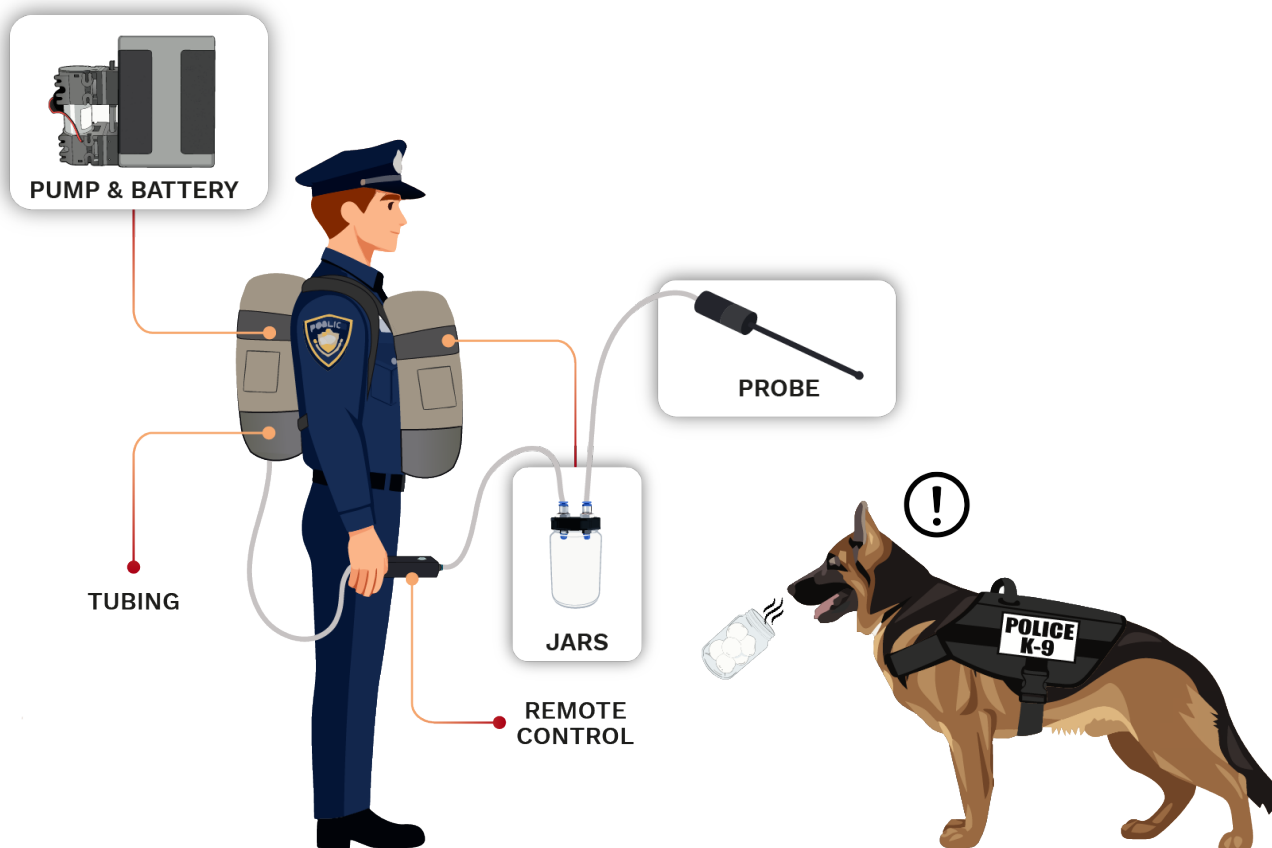
1. Turn the dial on the remote control to the desired time for the sampling procedure. WatchGas recommends 5 minutes for a 20 foot container and 9 minutes for a 40 foot container.
2. Push the activation button two times to start taking a sample.

Step 4: After Sampling

1. Disconnect the tubes from the jar. The valves on the jar are sealed when the teflon tubes are removed.
2. Label the jar with the number of the container sampled.
3. Open the lid of the jar to let the sample air out for 30 minutes. This is done in order to protect the dog that is going to sniff the sample for the presence of illegal substances.
4. To take the next sample, get a sterile jar with sterile, odorless cotton, and a clean Teflon tube for connecting to the container.

Step 5: Dog

1. Once the sample jar has been sufficiently aired out for 30 minutes, a dog that has been trained to sniff out illegal substances can be allowed to smell the jar with the sample.
2. If the trained dog indicates the presence of illegal substances, the jar will then be placed in a sealed bag as evidence.



3. Calibration

If an amber light is shown on the remote control when it is turned on, this indicates that the Sampling Backpack needs to be calibrated before use. The calibration process is as follows:

1. Turn off the Sampling Backpack.
2. Push and hold the button on the remote control.
3. Turn on the Sampling Backpack.
4. The calibration starts when the LED ring on the remote control glows red and then purple to indicate that the calibration is ongoing.
5. The calibration takes 5 cycles, with each cycle lasting around 35 seconds.
6. The calibration process is complete when the LED on the remote control shows blue.
7. The Sampling Backpack is now ready for use.
8. If a red light begins to blink on the remote control, this means that the calibration has failed. Check for any blockage or a dirty filter and replace if needed, then restart this progress. If after four tries the Sampling Backpack still cannot be calibrated, contact the manufacturer.

4. Maintenance and Storage

Cleaning

After taking a sample, the jar and teflon tubes can be used again. The cotton balls cannot be used again, new sterile and odorless cotton balls have to be used for every new sampling test. The jar must be washed at 90 °C / 194 °F in an industrial dishwasher, and the Teflon tubes in hot water at 80 °C / 176 °F for at least ten minutes after every use. After washing the teflon tube ensure there is no residual water left prior to next use.

The tubes inside the Sampling Backpack do not have to be cleaned.

Air Filter

WatchGas recommends users check the air filter for blockage at least once a week and to replace it as needed.

Pump

This is a maintenance-free pump. When broken, it needs to be replaced. Refer to the [Spare Parts List](#).

Battery

Storage: store the battery in a cool, dry and well-ventilated area. The battery must be charged when at 10% - one red LED bar on the battery pack's fuel gauge. When storing the battery for long periods of time ensure that it is stored with a minimum of 2 red and 1 green charge LEDs. For more information, refer to [Charging the Sampling Backpack](#). If the battery stops working, refer to [Replacing the Battery](#).

5. Errors

In the table below, you can find all the errors and their most common causes and fixes:

Alarm	Cause	Action
Continuously blinking red LED	During calibration of the device an error occurred, and the calibration failed and stopped	Turn off the battery. Check for blockage in the air tubes. Remove the blockage or replace the air tube when needed. Check the battery power, if there is low or no power, first charge the battery before restarting the device. Check the air filter near the pump. If the filter is dirty, replace the filter. When everything is checked, start a new calibration.
Blinking red LED	While taking samples, the device experienced an airflow error	Check for blockage in the air tubes. If blockage is present, remove the blockage, or replace the air tube. Check the battery power, if there is low or no power, first charge the battery. Check the air filter near the pump. If the filter is dirty, replace the filter. When everything is checked, press the button one time and retry to take the sample.
Blinking green LED	The rotary on the remote control for the duration of sampling time is set to zero.	Turn the remote control rotary to the desired numerical value and start the sampling action again.

Table 1. Errors

NOTE: If these errors persist, contact WatchGas or an authorized WatchGas distributor immediately.

6. Sampling Backpack Spare Parts List

Part Number	Description	Detail
7179189	Teflon tubes	ID = 4mm, OD = 6mm
002-3022-010	Air Filter	
7179190	BP2616 - 12v 16Ah LiFePO4 Battery Pack	If batteries need to be replaced, the battery can be ordered via Watchgas. Batteries can also be ordered locally; the batteries need to be the same electric specs and connector.
7179186	SP V 730 EC-EV-VD (DC) Pump	12V DC, 2.5L/min
7179188	Cotton balls	Can be ordered locally. Must be made out of cotton, odorless, and sterile.
7179187	Jar with valves	
	Remote control	

Table 2. Sampling Backpack Spare Parts List

7. Contact details

EMEA

Klaverbaan 121
2908 KD Capelle a/d IJssel
The Netherlands

info@watchgas.com
www.watchgas.com

Americas

313 N. State Hwy 342
Red Oak, TX 75154, USA

info@watchgasusa.com
www.watchgasusa.com

APAC

Woods Square Tower 1,
12 Woodlands Square,
#11-71, Singapore 737715

info@watchgas.com
www.watchgas.com

ANZ

aus@watchgas.com

SERVICE CENTERS:

EMEA: servicesupportemea@watchgas.com

APAC: servicesupportapac@watchgas.com

NSAM: servicesupportnsam@watchgas.com

ANZ: servicesupportanz@watchgas.com