



INSTRUCTION MANUAL

OxyCheq Expedition Helium Analyzer

PATENT PENDING

Unpacking and Inspection

The user should always inspect the shipping package for damage. If there is damage evident, please save the package and notify the shipping company immediately. Your Expedition He Analyzer consists of the analyzer, smart charger and carrying case.

General Description

The OxyCheq Expedition Helium Analyzer is a hand-held device used for measuring Helium content in a gas mixture. It is specifically designed for the diving industry to confirm the Helium content in the diving cylinder or gas mixing station. The Expedition He Analyzer is powered by rechargeable batteries. (Figure 1 shows the top panel.)

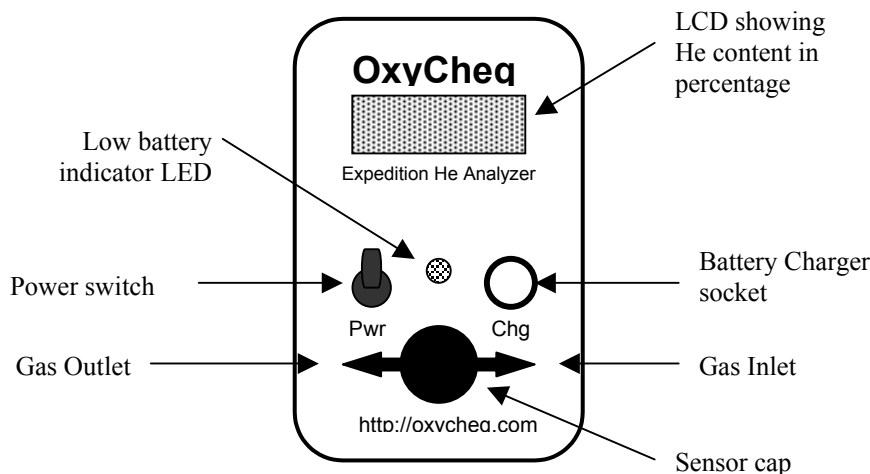


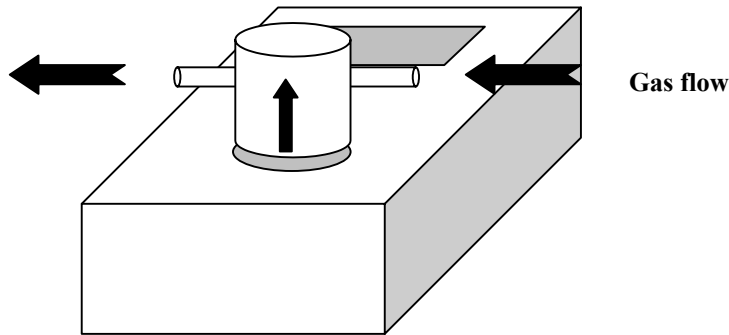
Fig. 1. Unit top panel view.

The LCD displays the helium content from 0 to 100% with 0.1% resolution. When the low battery indicator LED is on, the unit's battery must be recharged prior use. The patented sample cap allows the user to flow a gas mixture through the sensor inside the unit, as well as to seal the gas mixture in the sensor for measurement.

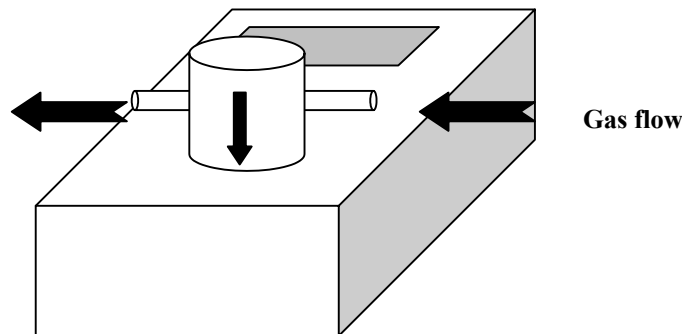
Operation

The operation of the Expedition Helium Analyzer unit is very simple and does not require a flow control regulator, but can easily work with typical flow rates used with oxygen analyzers. The operation is as simple as 1, 2, 3.

Step 1. Pull up the sensor cap and flow gas mixture through the gas inlet with a steady flow for approximately 10 seconds (or enough time to clear the line of any existing gas).



Step 2. If using the He analyzer in line with the Expedition O2 analyzer, push the sensor cap down firmly to stop the gas flow and seal the gas mixture inside the device. If using the Expedition He Analyzer independently, place a finger on the gas flow exit tube when pushing sensor cap down.



Step 3. Turn on the power switch and wait for the display to give a stable reading (less than one minute) of the helium percentage of the mix tested.

Note: Always turn off the power after you take the reading to extend the battery life between charging.

Cautions

1. Charge the OxyCheq Helium Analyzer prior to use and any time the “Low Battery Warning” light on the analyzer is activated.
2. The He Analyzer is a vibration sensitive device. Please avoid mechanical shock while handling. Dropping the unit on a hard floor may result in damage to the unit. Treat your OxyCheq Expedition He Analyzer as you would any precision electronic instrument.
3. When operating the Expedition He Analyzer unit outdoors, please avoid direct sunlight on the unit.
4. The reading can be taken one minute after turning on the power switch. The power should be turned off after analyzing is completed to extend the life between charging batteries.
5. When the unit is not used, always pull up the sensor cap to allow the sensor chamber to be exposed to ambient air.
6. Only use the smart charger supplied with the Expedition He Analyzer to charge the batteries. Using any other charger may result in damage to the batteries.

Operating Principle

The Expedition He Analyzer measures the helium content based on the extinct high thermal conductivity of helium gas. The unit consists of two main components: one is sensor block and the other is the electronic circuit. The patented design allows the unknown gas mixture to flow through the sensing chamber and seal it inside for measurement. Once the gas mixture is sealed inside the sensing chamber, the electronic circuit then measures the difference of the thermal conductivity between the gas mixture and the reference gas. The helium content is then calculated by the circuit and displayed.

NOTE: PATENT PENDING.

GENERAL SPECIFICATIONS:

OxyCheq Expedition Helium Analyzer

All product specifications are at sea level, ambient conditions.

Range:	0 to 100% Helium
Electrical Requirements:	Portable, rechargeable batteries
Operating Temperature:	Ambient Temperature
Response Time:	Less than 1 minute to accurate reading.
Sensor Life Expectancy:	Ten years plus
Accuracy:	±1% of scale
Interference:	None in normal air
Temperature Compensation:	Built in
Maximum Storage Temp:	-10°C to 60°C
Weight:	Approximately 7.0 oz.
Influence of Pressure / Moisture:	Compensated
Limited Warranty:	Two years (Warranty does not include batteries, physical damage or abuse).

OxyCheq
34929 Sweetwater Drive
Agua Dulce, CA 91390
661.268.0182
sales@oxycheq.com
<http://oxycheq.com>