Check and Go Disposable

Operating Manual

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Check and Go Disposable **Part# 18580**

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WARNING

Before use, all individuals who will be using this product must become thoroughly familiar with the information contained in this Operation Manual. Strict adherence to the operating instructions is necessary for safe and effective product performance. This product will perform only as designed and only if installed and operated in accordance with the manufacturer's operating instructions.

WARNING

Although the sensor of this device has been tested with various anesthesia gases including nitrous oxide, Halothane, Isoflurane, Enflurane, Sevoflurane and Desflurane and found to have acceptably low interference, the device in entirety (including electronics) is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide. Only the threaded sensor face, flow diverter, and "T" adapter may be allowed to contact such a gas mixture.

CAUTIONS

- The Drive *Check & Go Disposable ™* oxygen sensor is a sealed device containing a weak acid electrolyte, lead (Pb), and lead acetate. Lead and lead acetate are hazardous waste constituents and should be disposed of properly, or returned to Maxtec for proper disposal or recovery.
- The *Check and Go Disposable ™* is not intended for steam, ethylene oxide or radiation sterilization. Do not autoclave or expose the sensor to high temperatures. Do not immerse the *Check and Go Disposable ™* oxygen analyzer in any cleaning solution.
- The flow diverter provided with the *Check and Go Disposable ™* is for use with flowing gases only. Do not use the diverter when performing static sampling (e.g., in incubators, oxygen tents, oxygen hoods).
- Do not attempt any repairs or procedures, which are not described in this Operation Manual. Drive cannot warrant this product from damage resulting from misuse, unauthorized repair or improper maintenance of this product.
- Federal (USA) law restricts this device to sale by or on the order of a physician.

Effect of Interferent Gases and Vapors

	Volume % Dry	Interference in O_2
Nitrous Oxide	75%	< 2%
Halothane	5%	< 2%
Isoflurance	5%	< 2 %
Enflurane	5%	< 2 %
Sevoflurane	6%	< 2 %
Desflurane	15%	< 2 %
Carbon Dioxide	10%	< 2 %
Helium	70%	< 2 %

Warranty

Drive warrants the Check and Go Disposable ™ to be free from defects of workmanship or materials for a period of two-(2) years from the date of shipment from Drive, under normal operating conditions and provided that the Check and Go Disposable ™ is properly operated and maintained in accordance with Drive's operating instructions. Should Check and Go Disposable ™ fail prematurely, the replacement Check and Go Disposable ™ is warranted for the remainder of the original analyzer warranty period. Based on Drive's product evaluation, Drive's sole obligation under the foregoing warranty is limited to making replacements, repairs or issuing credit for equipment found to be defective. This warranty extends only to the buyer purchasing the equipment directly from Drive or through Drive's designated distributors and/or agents as new equipment.

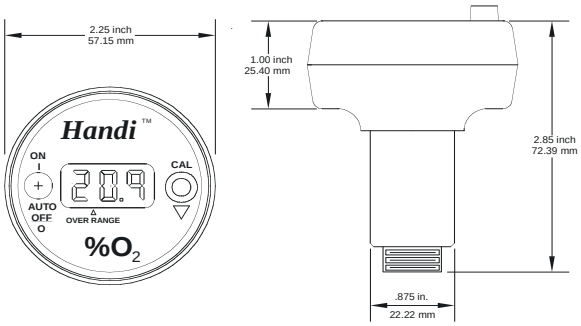
Routine maintenance items are excluded from this warranty. Drive shall not be liable to the purchaser or other persons for incidental or consequential damages or equipment that has been subject to abuse, misuse, misapplication, alteration, negligence or accident. THESE WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

General Specifications

Sensor Type:	Drive galvanic cell w/Temperature Compensation (Non-Replaceable)
Measurement Range:	0.0 - 99.9% oxygen (gas).
Resolution/ Display:	0.1% - The three digit LCD indicates values between 0.0 - 99.9% oxygen. Over range indicated by one decimal point on display located after the first digit.
Response Time:	< 15 seconds for 90% step change. (at 25°C)
Linearity/ Accuracy: @ 15° to 40°C	± 1 % of full scale at constant temperature, R.H. and pressure when calibrated at full scale. ± 3% actual oxygen level over full operating temperature.
Power:	Powered by one internal, non-replaceable Lithium battery. Power on push button automatically shuts off after 80 seconds time-out. Low Battery Indication: Display will turn on and immediately off after button is pushed. Electronics rated general purpose; not for use in hazardous areas or for use with flammable gases.
Battery Life:	Approx. 1850 hours (74,000 cycles) or 24 months under normal usage.
Sample Port	M-16 x 1 thread with diverter fitting and barbed tubing adapter.
Diverter Fitting:	Fits medical standard 15mm "T" adapter.
Operating Temperature: **Storage Temperature:**	15° to 40°C -15° to 50°C
Warm-up Time:	None Required (Instant On)
Expected Storage Life:	Two months. Special freshness seal on sensor.
Operating Pressure:	Atmospheric pressure to 3psig.
Environmental:	General purpose housing equivalent to NEMA 1. The *CHECK AND GO DISPOSABLE™* is not waterproof. 0 - 95% RH, non-condensing.
Warranty:	Twenty-four months in normal operating conditions.
Weight:	Approx. 60 grams

Table of Contents

Page



Introduction

The *Check and Go Disposable* is designed to monitor oxygen concentration in the patient-breathing environment. It is one of a full line of oxygen analyzers. The *Check and Go Disposable* utilizes the Drive oxygen sensor and is engineered for fast response, maximum reliability and stable performance. The *Check and Go Disposable* is designed primarily for spot-checking of oxygen levels delivered by medical oxygen delivery equipment and respiratory care systems. Its lightweight, compact size, extended battery life, and "auto off" feature makes this oxygen analyzer ideal for portable oxygen analysis by qualified heath care professionals.

Humidity Effect

Humidity has no effect on the performance of the *Check and Go Disposable* other than diluting the gas, as long as there is no condensation. Depending on the humidity, the gas may be diluted by as much as 4%, which proportionally reduces the oxygen concentration. The device responds to the actual oxygen concentration rather than the dry concentration. Environments where condensation may occur are to be avoided since condensate may obstruct passage of gas to the sensing surface, resulting in erroneous readings and slower response time. For this reason, the following is recommended:

- Avoid usage in environments greater than 95% relative humidity.
- When used in a breathing circuit, place the sensor upstream of the humidifier.

The primary factors influencing the Check and Go Disposable are temperature, pressure and humidity.

Effects of Temperature

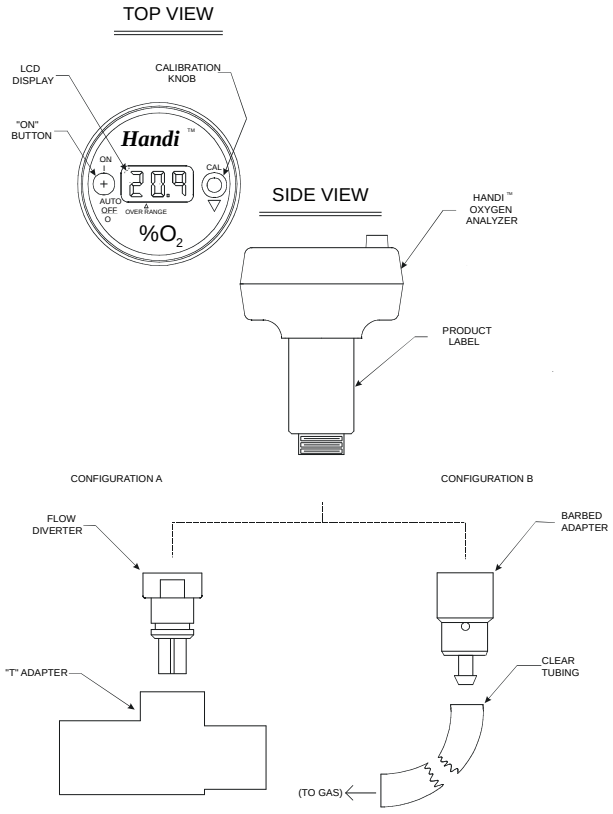
The *Check and Go Disposable* will hold calibration and read correctly within ±3% when in thermal equilibrium within the operating temperature range. The device must be thermally stable when calibrated and allowed to thermally stabilize after experiencing temperature changes before readings are accurate. For these reasons, the following is recommended:

- Allow adequate time for the sensor to equilibrate to a new ambient temperature.
- When used in a breathing circuit, place the sensor upstream of the heater.
- For best results, perform the calibration procedure at a temperature close to the temperature where analysis will occur.

Pressure Effect

Readings from the *Check and Go Disposable* are proportional to the partial pressure of oxygen. The partial pressure is equal to the concentration times the absolute pressure. Thus the readings are proportional to the concentration if the pressure is held constant. Flow rate of sample gas can affect pressure at the sensor in that back pressure at the sensing point may change. For these reasons, the following is recommended:

- Calibrate the *Check and Go Disposable* at the same pressure as the sample gas.
- If sample gases flow through tubing, use the same apparatus and flow rates when calibrating as when measuring.
- The *Check and Go Disposable* oxygen sensor has been validated at pressures up to 2 atmospheres absolute. Calibration or operation above this pressure is beyond the intended use.



LCD Display: A 3-digit display provides a direct readout of oxygen concentration in the range of 0 - 99.9%. The display is blank when the *Check and Go Disposable* enters its Sleep (power off) mode. The *Check and Go Disposable* will automatically enter the Sleep mode after approximately 1.3 minutes from the last time the ON button was pressed.

ON Button/Auto OFF: Use this button to turn the *Check and Go Disposable* on. When the *Check and Go Disposable* is in the Sleep (power off) mode, the LCD display is blank. When the ON button is pressed once, the analyzer will display the oxygen concentration for 1.3 minutes. Pressing the ON button during this 1.3 minute "window" will prolong the ON period to 1.3 minutes from the most recent time that the button was pushed.

Calibration Knob: Rotate the calibration (CAL) knob to adjust the calibration value to reflect the known oxygen concentration.

Flow Diverter: The flow diverter is designed to fit industry standard 15 mm I.D. "T" adapters.

Over Range Indicator: The appearance of a decimal point after the first digit means that the *Check and Go Disposable* ™ is reading in excess of 99.9%.

Example: 0.0.0 = 100%
0.0.1 = 101%
0.0.2 = 102%
etc.

3. **I have calibrated to 99.9% but when I check my oxygen delivery equipment, the *Check and Go Disposable* reads ".0.4" or greater (Over Range Indicator)**

   It is recommended that you conduct the calibration procedure again to get another reading. The most likely cause is that the *Check and Go Disposable* has received a "false " calibration value. Make sure that the calibration gas is connected to the *Check and Go Disposable* at 2 liters per minute for a minimum of 2 minutes prior to proceeding with calibration. This 2-minute equilibration time is necessary to insure that the sensor is completely saturated with the calibration gas.

4. **I have found the reading to drift greater than ± 3% from a know source value. What is the possible cause?**

   The sensor may be at or near its useful life. Replace your *Check and Go Disposable.*

   Sensor life is dependent on the oxygen concentration exposure. For example, a sensor which is used to check flow meters once a week for 8 hours will outlast one which is used to analyze oxygen blender performance 24 hours per day, 5 days a week

Cleaning and Maintenance

- When cleaning or disinfecting the *Check and Go Disposable*, take appropriate care to prevent any solution from entering the analyzer.
- The *Check and Go Disposable* surface may be cleaned using a mild detergent and moist clothe.
- The *Check and Go Disposable* may be disinfected using standard topical disinfectants.
- The *Check and Go Disposable* is not intended for steam, ethylene oxide or radiation sterilization.
- Store the *Check and Go Disposable* in a temperature similar to its ambient environment of daily use.

Problem-Solving Table

Condition	Likely Cause	Recommended Action
LCD goes on momentarily and then returns to blank display (Sleep mode).	• ON button was not actuated. • Battery is depleted.	If condition continues after making sure ON button is actuated, then analyzer is Low Battery disabled. Replace analyzer with a new *Check and Go Disposable*. Contact Drive Customer Service to reorder.
While analyzer on, LCD shows a decimal point (".") after first digit.	Analyzer is in Over Range mode, meaning that an oxygen concentration greater than 99.9% was identified.	0.0.0 = 100% 0.0.1. = 101% 0.0.2. = 102% If display reads > 0.3. the *Check and Go Disposable*. should be re-calibrated.

Frequently Asked Questions

1. **I cannot adjust the calibration when I rotate the CAL knob in a clockwise (counterclockwise) direction.**

   Remove the *Check and Go Disposable* from the calibration sample gas stream and re-calibrate in room air with a gas with known oxygen concentration.

   If any calibration procedure is unsuccessful, replace the *Check and Go Disposable* with a new one. To reorder, contact Drive Customer Service.

2. **After I calibrate to 20.9%, the display changes as much as ± 1%.**

   This is within the normal *Check and Go Disposable* operating tolerance of ± 1% when temperature and pressure are constant.

Before You Begin

A protective film covering the threaded sensor face must be removed and the sensor allowed to "breath" for at least 30 minutes, next, the *Check and Go Disposable* Oxygen Analyzer should be calibrated. Thereafter, Drive recommends calibration on a weekly basis. However, more frequent calibration will not adversely affect product performance.

Calibration of the instrument should be performed when the temperature of the gas stream changes by more than 3 degrees Celsius.

Changes in elevation result in calibration error of approximately 1% of reading per 250 feet. In general, calibration of the instrument should be performed when the geographic elevation at which the product is being used changes by more than 500 feet.

In addition, calibration is recommended if the user is unclear when the last calibration procedure was performed or if the measurement value displayed is in question.

It is best to calibrate the *Check and Go Disposable* to a known oxygen value, which has been documented at a pressure and flow similar to your clinical application. Calibrating the *Check and Go Disposable* at lower concentrations with a known oxygen value is also acceptable and may provide additional accuracy if the calibration gas is closer to the environment in which the *Check and Go Disposable* will be used. A "known" value of oxygen is defined as an oxygen source, which has a traceable certificate and/or USP certification.

> **Note:** Before beginning calibration the *Check and Go Disposable* must be in thermal equilibrium. You may also need to be aware of other factors, which affect device calibration values. For more information, refer to "Factors Influencing Calibration and Performance" on page 12 of this manual.

In Line Calibration (Configuration A)

1. Put the *Check and Go Disposable* in an upright position such that you can read the product label.
2. Connect a sample supply hose to a standard "T" piece. The Drive "T" is precision-tapered to insure a tight connection with O-rings of the MAX-250 oxygen sensor diverter.
3. Insert the *Check and Go Disposable* in the center position of the "T" piece.

4. Attach an open-ended reservoir to the end of the "T" piece. Then start the calibration flow of oxygen at 2 liters per minute.

   Six to 10 inches of corrugated tubing works well as a reservoir. A calibration oxygen flow to the *Check and Go Disposable* of 2 liters per minute is recommended to minimize the possibility of obtaining a "false" calibration value.

5. Allow the oxygen to saturate the sensor. Although a stable value is usually observed within 30 seconds, allow at least 2 minutes to ensure that the sensor is completely saturated with the calibration gas.

6. If the *Check and Go Disposable* is not already turned on, do so now by pressing the analyzer ON button.

7. Rotate the Calibration knob on the *Check and Go Disposable* until you read the calibration gas value on the analyzer display.

   Turning the Calibration knob in a clockwise direction will increase the displayed value. Turning the Calibration knob counterclockwise will decrease the displayed value.

Direct Flow Calibration (Configuration B)

1. Attach the Barbed Adapter to the *Check and Go Disposable*.

2. Connect the clear sampling tube to the Barbed Adapter.

3. Attach the other end of the clear sampling tube to a source of oxygen with a known oxygen concentration value and initiate flow of the calibration gas to the unit (2 liters per minute is recommended).

4. Allow the oxygen to saturate the sensor. Although a stable value is usually observed within 30 seconds, allow at least 2 minutes to ensure that the sensor is completely saturated with the calibration gas.

5. If the *Check and Go Disposable* is not already turned on, do so now by pressing the analyzer “ON” button.

6. Rotate the “CAL” knob on the *Check and Go Disposable* until you read the calibration gas value on the analyzer display. Turning the “CAL” knob in a clockwise direction will increase the displayed value. Turning the “CAL” knob in a counterclockwise direction will decrease the displayed value.

Operating the Check and Go Disposable

To Check the Oxygen Concentration of a Sample Gas:

1. Maintain the *Check and Go Disposable* in an upright position such that you can read the product label.

2. Place the *Check and Go Disposable* in the sample gas stream.

   IMPORTANT:

   - When using a standard "T" adapter, make sure that the sensor is mounted in the adapter with the flow diverter pointing down.
   - Make sure that there is a tight fit between the flow diverter and the "T" adapter.

3. Start the flow of the sample gas to the sensor.

4. Allow the oxygen sensor to remain in the flow of the sample gas until stable.

5. If the *Check and Go Disposable* is not already turned on, do so now by pressing the analyzer ON button.

6. Read the value displayed on the LCD.

   Note: If the *Check and Go Disposable* is used to measure the oxygen concentration with equipment using a heated or humidified gas stream, it is recommended that the *Check and Go Disposable* be placed upstream of the heater and/or humidifier. For more information, refer to "Factors Influencing Calibration and Performance" on page 12 of this manual.