

## Operating Instructions for the

# Praxair *Grab 'n Go*® *Opti* Advanced Medical Oxygen System

Before using or working with the *Grab 'n Go Opti* system, please read and understand the usage and safety instructions provided in this booklet.



The Praxair *Grab 'n Go*® *Opti* Advanced Medical Oxygen System provides an easy-to-use package for those who need medical oxygen from portable cylinders.

It is easy to use because the oxygen regulator, analog pressure gauge, cylinder contents indicator, and gas supply valve are combined and permanently attached to the gas cylinder as one system.

This innovative design helps to eliminate difficulties in locating and attaching a separate regulator, thereby helping to save you time and money. Other valuable features of the system include the pressure gauge and an easy-to-see indication of the cylinder contents.

These features are available on both aluminum E size (shown) and aluminum D size cylinders and expand the *Grab 'n Go*® family of advanced respiratory systems.

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## Read these Instructions

### Danger, Warning, Caution, and Note Statements

Dangers, Warnings, Cautions, and Notes may appear throughout these operating instructions. A sample of each type of statement appears below. Within each sample, a definition of the statement type and its purpose is given.



**Danger:** Dangers alert you to an immediate hazard that causes serious injury or death and requires special precautions to be taken.



**Warning:** Warnings alert you to a potential hazard that causes serious injury or death under certain conditions.



**Caution:** Cautions alert you to a non-immediate or potential hazard or an unsafe practice that presents a minor threat of personal injury or damage to equipment, data, or processes.



**Note:** Notes emphasize or remind you of an important piece of information.

## Safety Precaution Information

Please read and understand the following safety information before using or working with this system.

**Pressurized oxygen vigorously accelerates combustion.** The *Grab 'n Go Opti* system is equipped with a pressure-reducing regulator and contains several safety features that relieve pressure if a malfunction occurs. Any continuous or intermittent escape of gas from the regulator indicates a malfunction or a leak; if this occurs, immediately turn off the system, place it in a secure and well-ventilated area, mark the system as unserviceable, and immediately notify Praxair.



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Use No Oil. Do not lubricate any part of the cylinder, regulator, or connections with oil, grease, or other hydrocarbons or touch them with oily or greasy hands, gloves, or clothing due to the risk of combustion.

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The *Grab 'n Go Opti* system is MRI Conditional.

- The *Grab 'n Go Opti* system can be used outside the 1,500 gauss (0.15 T) line with MRI systems up to 3.0T.



**Caution:** Potential for *Grab 'n Go Opti* system movement if used inside the 1,500 gauss (0.15 T) line.

- Secure cylinder consistent with NFPA 99 requirements using only MRI Safe or MRI Conditional cylinder restraints rated for use with MRI systems up to 3.0T.



The *Grab 'n Go* system is compatible with aluminum cylinders ONLY. Do not attempt to install the *Grab 'n Go Opti* regulator on a steel cylinder: steel cylinders are MRI Unsafe and are not compatible with the *Grab 'n Go Opti* system.



Do not expose the cylinder to heat or direct sunlight or to any condition where the cylinder temperature exceeds 125°F (52°C).

The system is designed for use above 32°F (0°C). Flow may be delayed or prevented at low temperatures. Store the system indoors to protect it from temperature extremes and weather.



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**Danger:** Do not smoke or allow open flames in areas where oxygen is stored or in use.



**Warning:** Keep the system out of reach of children.

This device is ONLY for use by, or on the order of, a physician. Do not activate the system unless you have been trained in its proper functioning or are under competent supervision.

Flow must be verified before administering oxygen to a patient.

Secure the *Grab 'n Go Opti* system during use or when in storage in accordance with local code. Protect the cylinder from impacts by ensuring that the cylinder is secure.

Protect the system from exposure to dust, water, or other unfavorable environmental conditions that may affect its quality, reliability and safety. Refer to the Equipment Storage section (page 8).

Clean the cover with a clean lint-free cloth and water. DO NOT use flammable liquids such as alcohol to clean the system.



**Caution:** Never attempt to service the *Grab 'n Go Opti* system or to remove the regulator from the cylinder.

Never wrap the system in bedcovers or carry it under clothing.

Always turn the system off when not in use so that no oxygen flows from the outlet.



**Note:** The cylinder contains high pressure USP (United States Pharmacopoeia) grade oxygen.

When the system is in operation, always observe the cleaning and safety requirements described in these operating instructions to ensure proper use of the oxygen.

## Introduction



The Praxair *Grab 'n Go*<sup>®</sup> *Opti* Advanced Medical Oxygen System provides an easy-to-use package for those who need medical oxygen from portable cylinders. It is easy to use because the oxygen regulator, valve, and the pressure gauge are combined and permanently attached to the gas cylinder as one unit. The combined valve and regulator design eliminates difficulties locating and attaching a separate regulator, helping to save you time and money.

As an added feature, the design of the *Grab 'n Go Opti* system includes an easy-to-see indication of the cylinder contents in addition to the pressure gauge. This innovative feature allows you to make faster assessments of cylinder content levels, helping to save you time.

## Product Overview and Specifications

The *Grab 'n Go Opti* system contains an integral regulator; a flow-adjusting knob to set the flow of oxygen in clearly numbered increments; an easy-to-read, glow-in-the-dark pressure gauge that displays a continuous indication of cylinder pressure; and a durable plastic housing that doubles as a convenient carrying handle.

The *Grab 'n Go Opti* system provides metered flow rates from 0.5 to 25 liters per minute (LPM) and a 50 pounds per square inch (PSI) connection to supply auxiliary equipment at flow rates up to 70 LPM. Refer to the Specifications chart on page 7 for more details. The *Grab 'n Go Opti* system is manufactured to requirements of the Compressed Gas Association (CGA) Publication E-18, and is available on both aluminum E size (shown on cover) and aluminum D size cylinders.

## Grab 'n Go Opti Advanced Medical Oxygen System Specifications

Operating Limits	
Storage Temperature	-40°F to 125°F (-40°C to 52°C)
Operation Temperature	32°F to 125°F (0°C to 52°C)
Nominal Operating Parameters	
Flow Rates (LPM)	0.5, 1, 1.5, 2, 3, 4, 6, 8, 15, 25
Auxiliary Port Pressure	50 PSI
Maximum Aux Flow Rate @ Minimum Delivery Pressure	70 LPM
Gas Type	Oxygen
Cylinder Contents Indicator	
Green	Cylinder pressure is greater than 750 PSI
Partially Red	Cylinder pressure is less than 750 PSI
Completely Red	Cylinder pressure is less than 500 PSI; needs to be replaced.

## MRI Safety Information



- Non-clinical testing has demonstrated that the Grab 'n Go Opti system is MRI Conditional.
  - The Grab 'n Go Opti system can be used outside the 1,500 gauss (0.15 T) line with MRI systems up to 3.0T.
- Caution:** Potential for Grab 'n Go Opti system movement if used inside the 1,500 gauss (0.15 T) line.
- The *Grab 'n Go* system must always be secured when in use or storage.
  - Secure cylinder consistent with NFPA 99 requirements using only MRI Safe or MRI Conditional cylinder restraints rated for use with MRI systems up to 3.0T.
  - Clinical users: Do not remove the *Grab 'n Go Opti* regulator from the cylinder.
  - The *Grab 'n Go* system is compatible with aluminum cylinders ONLY. Do not attempt to install the *Grab 'n Go Opti* regulator on a steel cylinder: steel cylinders are MRI Unsafe and are not compatible with the *Grab 'n Go Opti* system.

## Equipment Storage

Store the *Grab 'n Go Opti* system indoors in a safe and well-ventilated area. Ventilation is important, since the system contains oxygen. Proper ventilation avoids oxygen accumulation if the system is inadvertently left on or develops a leak.

The *Grab 'n Go Opti* system must be securely stored where it will not fall over or be damaged by falling objects. Never store a system in an elevated location, because a fall could seriously damage the regulator or cylinder. If a system is dropped or knocked over, check to see that components are not damaged and that the system connection remain secure.

## Equipment Handling and Maintenance

Handle the *Grab 'n Go Opti* system safely. Avoid jarring or dropping the system.

**There is no maintenance required by the user.** The flow of gas is metered through a series of fixed orifices inside the regulator. The *Grab 'n Go Opti* system is maintained and tested by Praxair. If the *Grab 'n Go Opti* system malfunctions or develops a leak, turn it off immediately, place it in a secure and well-ventilated area, mark the system as unserviceable, and notify Praxair.

DO NOT attempt to remove the regulator from the cylinder.

## System Replacement and Refill

**Pressure:** The pressure gauge is visible through the plastic housing and gives a continuous reading of cylinder pressure, regardless of whether oxygen is flowing. To ensure proper functioning and an adequate supply of oxygen, replace the system whenever the pressure gauge indicates 500 PSI or less.

**Contents:** The cylinder contents indicator is visible through the plastic housing and gives a high or low indication of the cylinder pressure.

The *Grab 'n Go Opti* system must be refilled with USP grade medical oxygen by Praxair or an authorized Praxair dealer.



**Warning:** Never attempt to remove the large cap from the system's fill port (E) (refer to page 9).



## Intended Use

The *Grab 'n Go Opti* system is an integrated delivery system intended to provide supplemental oxygen, by prescription (Rx) only, to patients. When administered by properly trained personnel for oxygen deficiency and resuscitation, the device is for emergency use only. For all other medical applications, the device is prescription (Rx) only. The device is MRI Conditional, and suitable for use outside the 1,500 gauss (0.15 T) line during MRI imaging for MRI systems up to 3.0 Tesla. The device is intended for limited duration use, such as would be necessary during patient transports.

## Setup

Before using a *Grab 'n Go Opti* system, inspect the barbed outlet port (B) and auxiliary connection port (F) for signs of physical damage or contamination, such as dust, dirt, oil, or grease. Ensure that the entire system is free of oil, grease, or other contaminants. If you observe the presence of foreign substances, do not attempt to remove them or use the system. Refer to page 10 for additional precautionary statements.

If using a metered flow rate, attach the oxygen supply tubing to the barbed outlet port (B) located to the right of the pressure gauge. If a 50 PSI connection is required, connect the *Grab 'n Go Opti* system using the auxiliary connection port (F) located adjacent to the pressure gauge on the left side of the system.



- A Flow-Adjusting Knob
- B Barbed Outlet Port
- C Cylinder Contents Indicator
- D Pressure Gauge



- E Fill Port (Never Remove Cap)
- F Auxiliary Connection Port

## Proper Usage



### Correct Position for Flow Rate Setting



### Incorrect Position for Flow Rate Setting

The *Grab 'n Go Opti* system is designed and tested to provide accurate, metered flow **ONLY** when positioned at the flow rates marked on the flow-adjusting knob.

**ALWAYS VERIFY THE FLOW OF OXYGEN AT THE PATIENT'S END OF THE TUBING BEFORE ADMINISTERING TO THE PATIENT.**

Remember that when connected to the barbed outlet port, oxygen flows properly only when the flow-adjusting knob is stopped at one of the numbered flow rates.

**DO NOT OPERATE THE SYSTEM BETWEEN MARKED FLOW RATE SETTINGS.**



**Warning:** If the intended flow rate is not marked on the flow-adjusting knob, **DO NOT ATTEMPT TO USE THE SYSTEM.** The use of higher flow rates on particular patients can be unsafe. Consult the patient's physician if a different flow rate is required.

# Instructions for Use



**Correct OFF Position**



**Correct Auxiliary Port Position**

After Setup (refer to page 9) is completed:

1. Check the pressure gauge to ensure the presence of adequate oxygen contents.

2. Select **Metered Flow** or **Auxiliary Flow**:

**Metered Flow:** To turn the system ON, rotate the flow-adjusting knob (letter A in the figure on page 9) clockwise from the OFF position to an indicated numerical FLOW position (0.5, 1, 1.5, 2, 3, 4, 6, 8, 15, or 25 LPM). The knob has a limited range of travel, about 330 degrees. Click-stops mark each flow rate. **Verify the flow at the patient's end of the tubing before applying.**

**Auxiliary Flow:** When using the auxiliary port on the *Grab 'n Go Opti* system, connect the oxygen supply hose to the auxiliary connection port (F). Rotate the flow-adjusting knob (A) clockwise until the auxiliary setting, marked as AUX, is visible in the flow setting window, and then verify flow at the device.

3. To turn the system off, turn flow-adjusting knob (A) counter-clockwise to the OFF position. If you still hear a hissing sound, do not try to force the knob past the positive stop at the OFF position. Hissing indicates a leak. Remove the system from service, immediately turn off the system, place it in a secure and well-ventilated area, mark the system as unserviceable, and notify Praxair.



**Warning:** Never connect a cannula, patient tubing, or mask directly to the **AUXILIARY CONNECTION PORT**. The auxiliary connection port's flow rate is **not metered**, and excessive flow to the patient will result. When the flow-adjusting knob (A) (refer to page 9) is at the AUX setting, no oxygen is supplied to the barbed outlet port (B) (refer to page 9).



**Warning:** Never attempt to repair any part of the *Grab 'n Go Opti* system. Any system repairs must be performed by an authorized Praxair representative.



**Caution:** Never force the flow-adjusting knob.



**Note:** Oxygen flow must be verified before administering to a patient.

# Cylinder Contents Indicator

The cylinder contents indicator should only be used as a preliminary assessment for the status of the cylinder.

If the cylinder contents indicator is **completely GREEN**, the cylinder pressure is greater than 750 PSI.

If the cylinder contents indicator is **completely RED**, the cylinder pressure is less than 500 PSI.



**Note:** The indicator will be in a transitional state and indicating partially red as the pressure falls from 750 PSI to below 500 PSI.



**Completely Green**  
(Greater than 750 PSI)



**Completely Red**  
(Less than 500 PSI)



**Caution:** For determination of patient therapy duration and cylinder replacement, use the contents gauge for accurate calculations.

## Frequently Asked Questions (FAQ)

### **How do I know if there is enough oxygen in the *Grab 'n Go Opti* system?**

The amount of time remaining for use is based on the selected flow rate and the cylinder pressure at the time of initiating flow. To determine if there is sufficient oxygen in the system for use, the user must consider the cylinder contents, flow rate, and amount of time the system is required to be used. If you are unsure, it is recommended that a full *Grab 'n Go Opti* system be used.

### **When should the *Grab 'n Go Opti* system be replaced?**

The *Grab 'n Go Opti* system must be returned to Praxair if the pressure falls below 500 PSI or there is no indication of pressure on the gauge. The cylinder contents indicator provide a preliminary assessment of the cylinder contents status and should not be used for determining therapy duration.

### **How do I know how much time of use is remaining?**

An estimate for the amount of use time remaining for a system is found by a computation that is based on the pressure in PSI and flow rate setting in LPM. The following tables (on page 14) provide approximate times in minutes for given pressures before a system reaches 500 PSI at the specified flow rates.

## System Duration Charts (for reference only)

These tables provide the estimated duration in minutes to 500 PSI for a given cylinder pressure.

Aluminum E Cylinder	Duration Estimate for Given Cylinder Pressure (PSI)					
	2000	1750	1500	1250	1000	750
Flows (L/min)						
<b>0.5</b>	949	790	630	470	311	154
<b>1</b>	474	395	315	235	156	77
<b>1.5</b>	316	263	210	157	104	51
<b>2</b>	237	197	157	117	78	39
<b>3</b>	158	132	105	78	52	26
<b>4</b>	119	99	79	59	39	19
<b>6</b>	79	66	52	39	26	13
<b>8</b>	59	49	39	29	19	10
<b>15</b>	32	26	21	16	10	5
<b>25</b>	19	16	13	9	6	3

Aluminum D Cylinder	Duration Estimate for Given Cylinder Pressure (PSI)					
	2000	1750	1500	1250	1000	750
Flows (L/min)						
<b>0.5</b>	590	491	392	292	194	96
<b>1</b>	295	246	196	146	97	48
<b>1.5</b>	197	164	131	97	65	32
<b>2</b>	148	123	98	73	48	24
<b>3</b>	98	82	65	49	32	16
<b>4</b>	74	61	49	37	24	12
<b>6</b>	49	41	33	24	16	8
<b>8</b>	37	31	24	18	12	6
<b>15</b>	20	16	13	10	6	3
<b>25</b>	12	10	8	6	4	2

## Recommended Reference Publications

Publication Title	Publication No.	Source
Safety Precautions and Emergency Response Planning Awareness: Oxygen, Nitrogen, Argon, Helium, Carbon Dioxide, Hydrogen, Fuel Gases	P-3499	Praxair, Inc. P.O. Box 44 Tonawanda, NY 14151-0044 Phone: 1-800-PRAXAIR (1-800-772-9247)
Guidelines for Handling Compressed Gas Cylinders and Cryogenic Liquid Containers	P-14-153	
Safety Data Sheet - Oxygen	P-4638	Praxair supplier, sales representative, the Call Center (1-800-PRAXAIR), our Web site ( <a href="http://www.praxair.com">http://www.praxair.com</a> ), or write to Praxair Tonawanda, NY address above.
Additional copies of these operating instructions	P-15-728	
Medical Gas Valve Integrated Pressure Regulators	CGA E-18	Compressed Gas Association 14501 George Carter Way Suite 103 Chantilly, VA 20151 Phone: (703) 778-2700 ( <a href="http://www.cganet.com">http://www.cganet.com</a> )
Characteristics and Safe Handling of Medical Gases	CGA P-2	
Hazards of Oxygen in the Health Care Environment	CGA SB-31	

All information referred to and/or included in the operating instructions is current as of the original issue date of these operating instructions.

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