

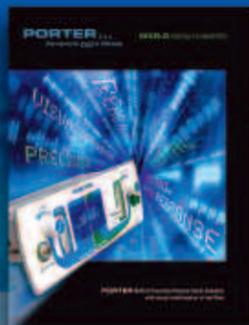
# PORTER...

the *trusted* name in Nitrous

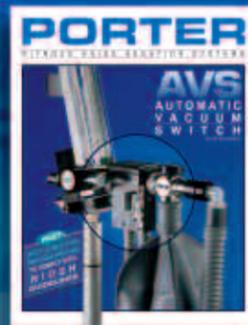
## NITROUS OXIDE SEDATION SYSTEMS

Proven to be  
Best for your patients  
Best for your practice

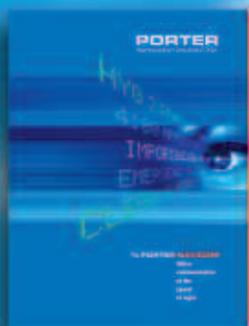
These Porter brochures are available as PDF files on the  
Porter web site, [www.porterinstrument.com](http://www.porterinstrument.com)



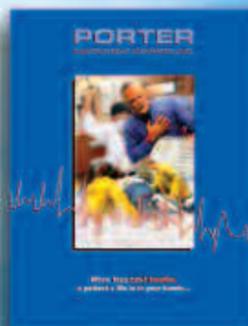
Porter MXR-D Digital Flowmeter  
FM-1095



Porter AVS FM-791



Porter Navicom FM-996



Porter O-Two Emergency Oxygen  
FM-956



# PORTER

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## PORTER

INSTRUMENT DIVISION

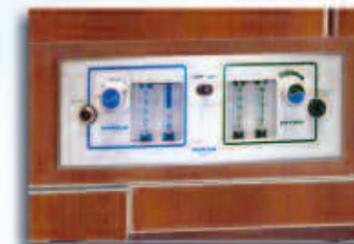
# Porter Nitrous Oxide Sedation Systems

Better for your patients. Better for your practice. Better for your bottom line.

Porter's trailblazing innovations in measuring and controlling gases in critical applications reach their highest realization and effectiveness in the Porter Nitrous Oxide Sedation Systems. This unparalleled 30 year legacy of precision is your assurance of a sedation system offering the highest attainable levels of patient comfort and system safety, reliability and ease of operation. The entire Porter system, from the precision flowmeter, to the patented automatic vacuum switch, to the double mask scavenger are designed to enhance the patient experience while helping generate a desirable and dependable revenue stream for you.



## Featuring an Unequaled Blend of Precision, Safety and Comfort



### **Precision!** Porter Glass Tubes and Valve Design

Unsurpassed for accurate visual *real flow* readings with .5 liter markings, Porter flow tubes have become the standard of the Dental and Medical professions. The needle valves, designed and manufactured by Porter Instrument, provide quick, accurate, one-hand adjustment of gas flows to match the patient's breathing rate.



### **Safety!** Porter Automatic Vacuum Switch and Failsafe

Patented design, the AVS automatically prevents nitrous oxide/ oxygen from being administered without scavenging. Whenever the "gas" flows, the vacuum is "ON". It's automatic and a real time saver! A dual-seal, one-piece, solid aluminum construction failsafe virtually eliminates internal gas leaks. The proportional failsafe automatically reduces/stops the flow of nitrous oxide if the oxygen line pressure is reduced or the oxygen flow is interrupted.



### **Comfort!** Porter Double Mask Scavenger

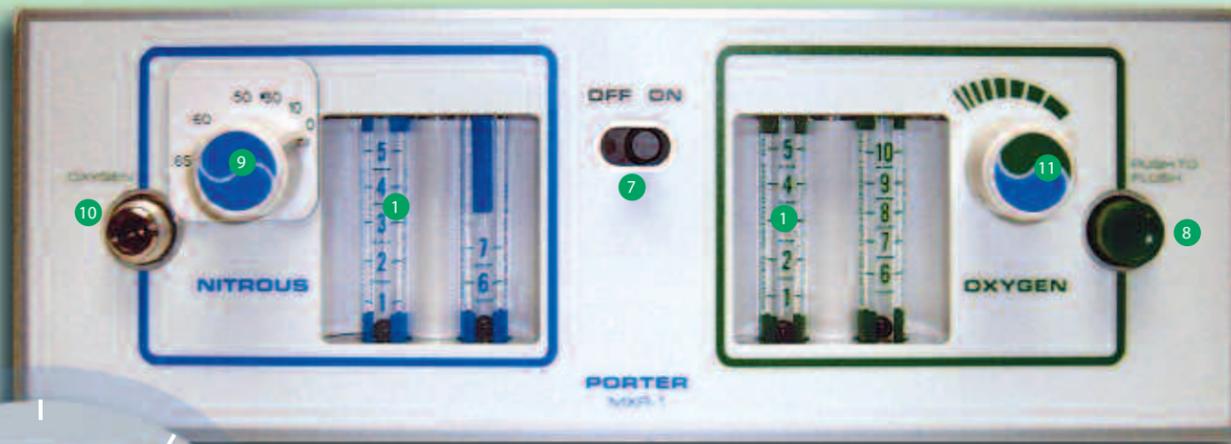
A soft and flexible inner liner provides a better seal around the nose, a more comfortable fit for your patient, and extraordinary, industry-leading scavenging efficiency.\*

\* Virginia Commonwealth University test data available, contact Porter.

# Flowmeters

## Setting the standard for accuracy, convenience and economy

These are the gas-saving flowmeters that have set the new standard for accuracy so high, they are trusted in hospitals across the country for the critical administration and regulation of anesthetic gases. The full range of exceptional performance and safety features built into the Porter Flowmeters make them the most trustworthy instruments of their kind for your practice.



### Porter MXR-1 Cabinet Mount Flowmeter

Installed in the preferred 12 o'clock position behind the dentist, it affords convenient and easy access, out of the patient's line of sight, and in the position that gives you the greatest efficiency of movement.

The cabinet mount flowmeter comes standard with a NIOSH recommended inter-connect between the delivery unit and the vacuum system for fail-safe operation.

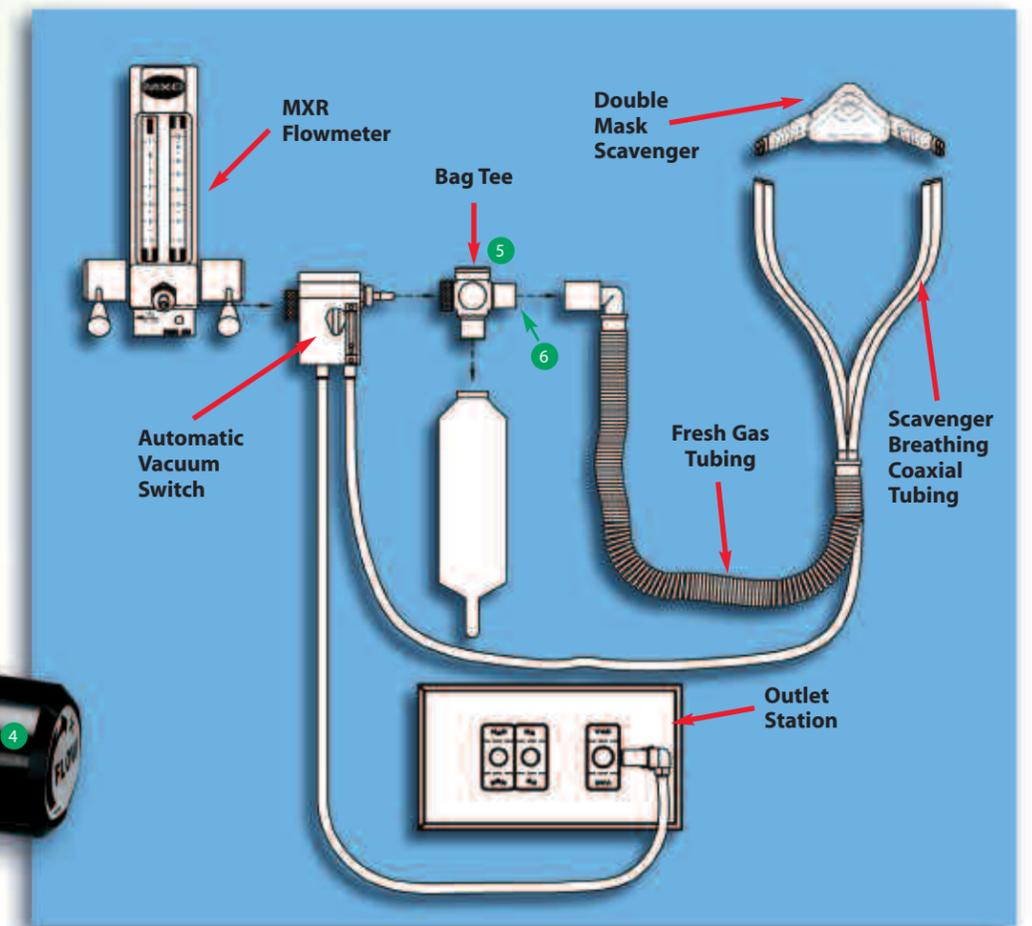
### The original gas-saving Porter MXR Flowmeter

Offers all the fail-safe and security features of the Porter cabinet mount MXR-1 to those dentists who would prefer an at-your-side vertical version. The only practical difference is that the breathing bag and bag tee are attached to the machine for ideal monitoring efficiency. Dual-seal, one-piece solid aluminum construction virtually eliminates internal gas leaks.

Perfect for installing at the preferred 12 o'clock position

### Outstanding Features Include:

- 1 Porter Flowmeter Tubes.**  
Provide accurate, visual flow readings—the standard of the industry.
- 2 Dual Seal Fail-Safe.**  
Automatically reduces and eliminates N<sub>2</sub>O if O<sub>2</sub> is shut off or the pressure is reduced.
- 3 Gas Control Block.**  
Virtually eliminates internal gas leaks. One-piece, solid aluminum construction.
- 4 Gas Flow Adjustment Knobs.**  
Throttle-type knobs allow quick, accurate, one-hand adjustment of gas flows.
- 5 Emergency Air In-Take Valve.**  
Automatically provides patient with ambient air if gas flow is interrupted.
- 6 Check Valve.**  
Prevents rebreathing of used gases and guards against CO<sub>2</sub> build-up in the breathing bag.
- 7 Positive ON-OFF Switch.**  
On all models, the on-off switch eliminates the possibility of accidentally leaving the machine on.
- 8 Oxygen Flush Button.**  
Provides an easily accessible override of all other gas flows and delivers 100% O<sub>2</sub>.
- 9 Posi-Stop Needle Valves.**  
Spring washer design prevents overturn of needle stems and resulting damage to seats and valves.
- 10 Oxygen Quick Connect.**  
Facilitates connection of resuscitation equipment to the central system.
- 11 Total Flow Adjustment Knob.**  
Controls flow of both N<sub>2</sub>O and O<sub>2</sub> at any desired concentration. Total flow can be adjusted without affecting concentration. Low flow capability means economy of operation. Available only on MXR model.



# Scavenger System

## The Porter "Double Mask" Scavenger

### Unique, Comfortable, Quiet and Safe

The Porter scavenging system is the only double mask (mask-within-a-mask) system. It features an outer mask and a flexible, disposable (single-use), or autoclavable (multi-use), easily removable inner liner. It is the soft inner liner that creates the complete, yet comfortable, seal around the patient's nose, thus assuring the Porter mask's superior scavenging efficiency. The Porter masks are available in both adult and pedo sizes; the inner liners either unscented or citrus scented. The masks are autoclavable by either steam or chemical sterilizing and the Porter scavenging system is retrofittable to most flowmeters.

**Rated #1**  
In Scavenging Efficiency In Independent Clinical Trial\*

**Rated #1 in Scavenging Efficiency in Independent Clinical Trial.** In a major Dental School\* study of the effectiveness of different scavenging systems used in actual pediatric dental treatment, the Porter "Double Mask" Scavenging System was found to be the only one tested to reduce the occupational exposure of nitrous oxide to acceptable levels, meeting the 25 ppm requirements set by the National Institute of Occupational Safety and Health.

\* University of Medicine and Dentistry of New Jersey, New Jersey Dental School



Green Unscented Disposable

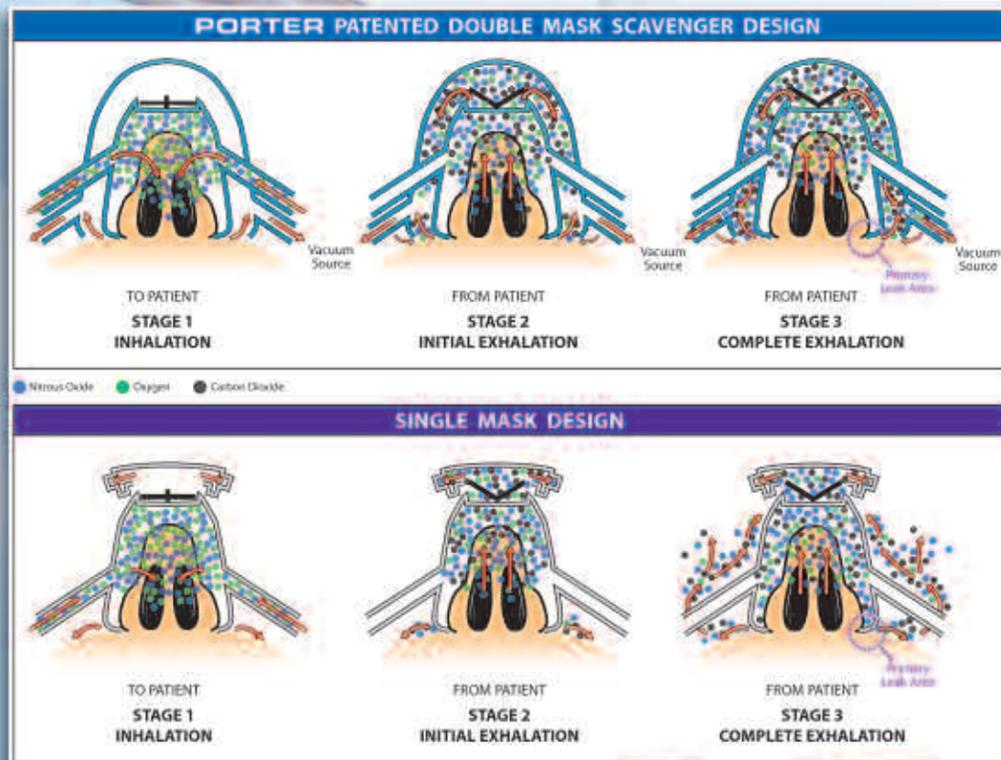


White Citrus Scent Disposable



Gray Autoclavable

Help promote office efficiency and infection control, these disposable or autoclavable latex-free liners can be on and gone, while complying fully with infection control protocols. Available in both adult and pedo sizes, unscented and citrus scented.

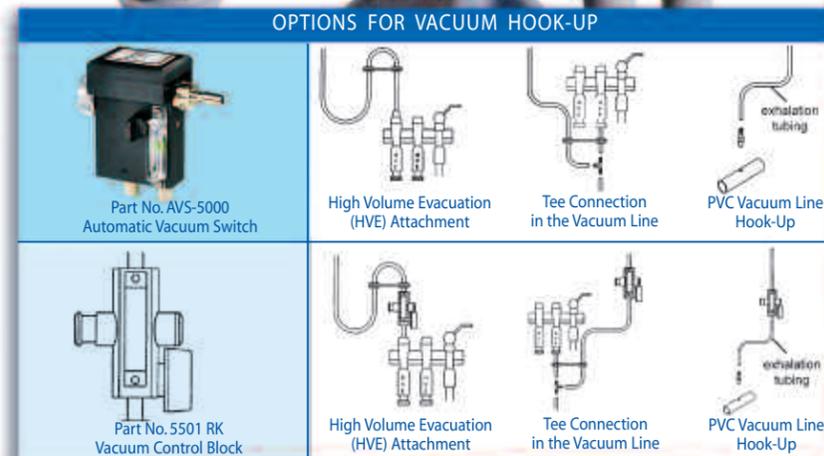
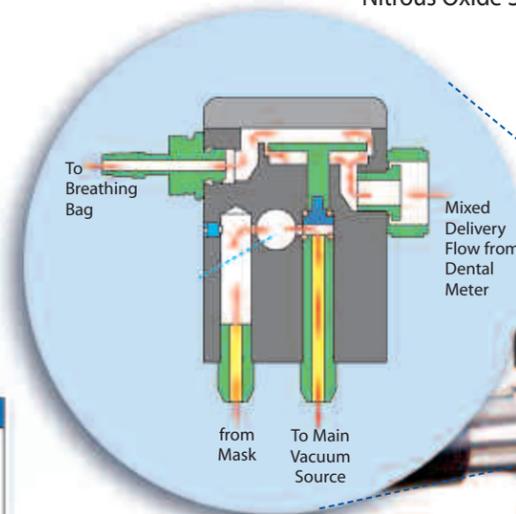


## The Porter AVS

### Automatic Vacuum Switch

The failsafe is the heart of the scavenger system. The patented Porter AVS prevents nitrous oxide/oxygen from being administered without scavenging, per mandated NIOSH and OSHA guidelines.

The Porter AVS provides safety with certainty. It is automatic "on" and automatic "off". Nothing is required of the system operator. The minute the gas begins to flow from the flowmeter, the Porter AVS activates the scavenger vacuum. When the procedure is finished, it automatically shuts down the vacuum. The Porter AVS is another integral component of the complete Porter Nitrous Oxide Sedation System.



## Scavenger System Retrofit Kits

For quick and easy retrofit of your present scavenger system to the more efficient PORTER double-mask breathing circuit.

PORTER No. 5800-1 Universal Retrofit Kit includes the PORTER Scavenger with in-line vacuum control in adult or pedo sizes, 3-liter breathing bag flowmeter adapters and bag tee where necessary to upgrade systems using these flowmeters. Contact your full-service authorized Porter dealer for additional information.



The Porter Scavenger was rated No. 1 in scavenging efficiency in a study at Virginia Commonwealth University Dental School.\*

\*reprint available on request.

# Manifold Systems

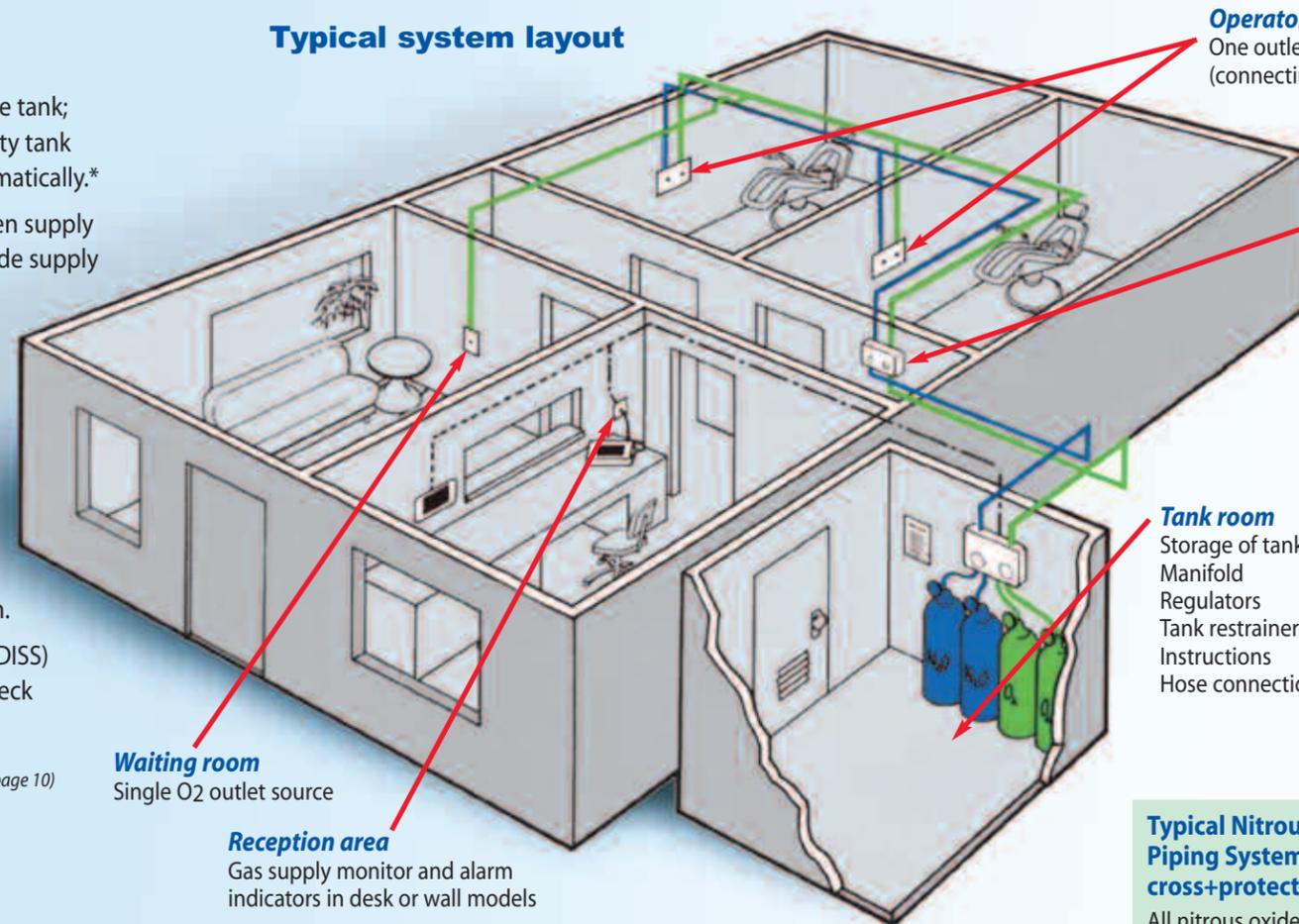
Porter provides unmatched safety, security and convenience

Porter Sentinel Manifold System

- ✓ Automatic changeover to reserve tank; memory of tank usage and empty tank indicator all accomplished automatically.\*
- ✓ Failsafe protection- loss of oxygen supply pressure shuts down nitrous oxide supply pressure.\*
- ✓ Cross+protection diameter indexed tubing connections.
- ✓ Swivel tubing connections allow for easy connection of piping in up or down configuration.
- ✓ Pressure relief valves for operatory equipment protection.
- ✓ Diameter indexed inlet fittings (DISS) with O-ring seal back-up and check valves.

\*Pertains to Vanguard manifold systems (see page 10)

## Typical system layout



**Waiting room**  
Single O2 outlet source

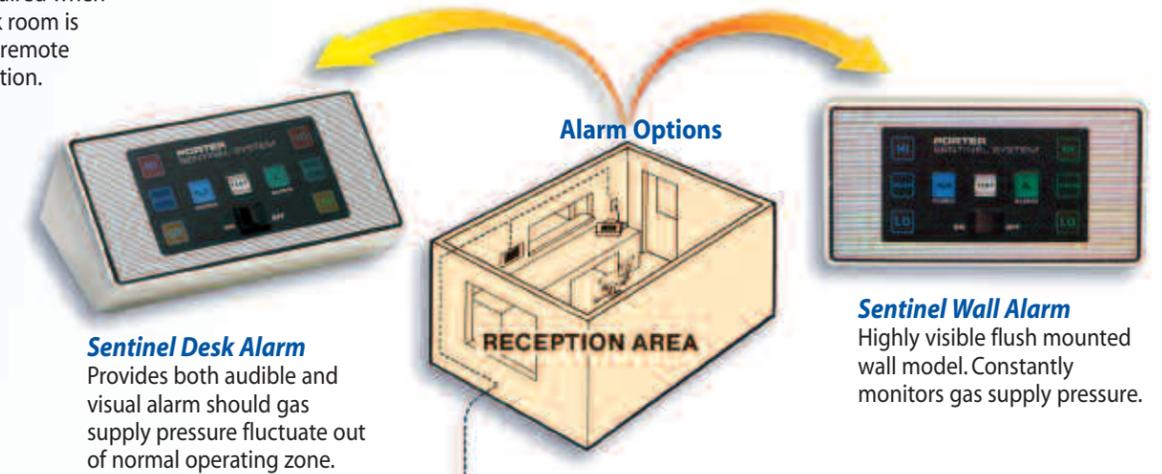
**Reception area**  
Gas supply monitor and alarm indicators in desk or wall models

**Operatory**  
One outlet station per operatory (connecting O<sub>2</sub>, N<sub>2</sub>O, and Vac).

**Zone Valve**  
Required when tank room is in a remote location.

**Tank room**  
Storage of tanks  
Manifold  
Regulators  
Tank restrainers  
Instructions  
Hose connections

The Sentinel System provides immediate audible, and highly visible alarms, should gas supply pressure begin to fluctuate out of the normal operating zone. The compact, high precision alarms are available in on-desk or flush-mounted wall models.



**Sentinel Desk Alarm**  
Provides both audible and visual alarm should gas supply pressure fluctuate out of normal operating zone.

### Alarm Options

**Sentinel Wall Alarm**  
Highly visible flush mounted wall model. Constantly monitors gas supply pressure.

### Electrical connection



**Sentinel Manifold**  
Both gases are manifolded through this compact unit. Analog gauges indicate system pressures.

### Typical Nitrous Oxide/Oxygen Central Piping System Incorporating Porter's cross+protection system

All nitrous oxide lines are 3/8" O.D. copper piping. All oxygen lines are 1/2" O.D. copper piping. Unless deliberately tampered with, nitrous oxide and oxygen lines cannot be crossed. The use of two different pipe sizes eliminates the greatest cause for concern and potential problems connected with the installation of central piping systems, meeting NFPA 99 recommended guidelines.

## NFPA 99 Requirements for Central Supply Systems

1. No more than 3000 cubic feet of gas in the tank room.
2. Gas stored in a locked cabinet or room.
3. At least 72 sq. inches of vent area in cabinet or room.
4. A separate regulator for each cylinder of gas.
5. A pressure relief valve set at 75 psi.
6. A check valve downstream of each regulator.
7. Line pressure gauges for each gas.
8. Type K or L, pre-cleaned, degreased capped copper piping ONLY.
9. Flexible tubing with minimum burst pressure of 1000 psig.
10. Flexible tubing must NOT go through wall or partition.
11. System must be tested for leaks with dry nitrogen for 24 hours at 150 psi.
12. Line pressure set at 50-55 psi.
13. All joints must be silver soldered with 1000°F melting point.
14. An audible and visual alarm, set at 40 psi low, and 60 psi high, must be in a constantly monitored area.
15. A remote shut-off must be used if gases are stored in a remote area, ie: outside, in the basement, etc.
16. Automatic changeover (Vanguard system) required if tanks are stored in a remote area.



PORTER

# Manifold Systems

## Porter Vanguard Manifold System

Porter's Vanguard System incorporates precise monitoring of gas pressures, providing both audible and visual alarms if line pressures fluctuate more than 20% in either direction. The Vanguard offers the additional benefit of automatic changeover of gas supply from empty to reserve tanks.



### Vanguard Wall Alarm

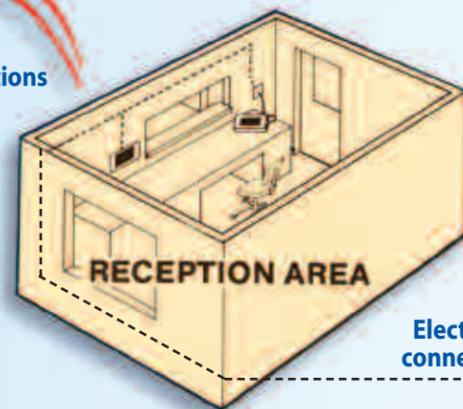
Just press a button and gas supply is delivered from the manifold system. Provides automatic changeover from empty to reserve tank. Audible alarm monitors the gas supply, and LED's indicate line pressure and on-line tank status.



### Vanguard Desk Alarm

All the features of the Vanguard wall alarm, but in a convenient desk model.

Alarm Options

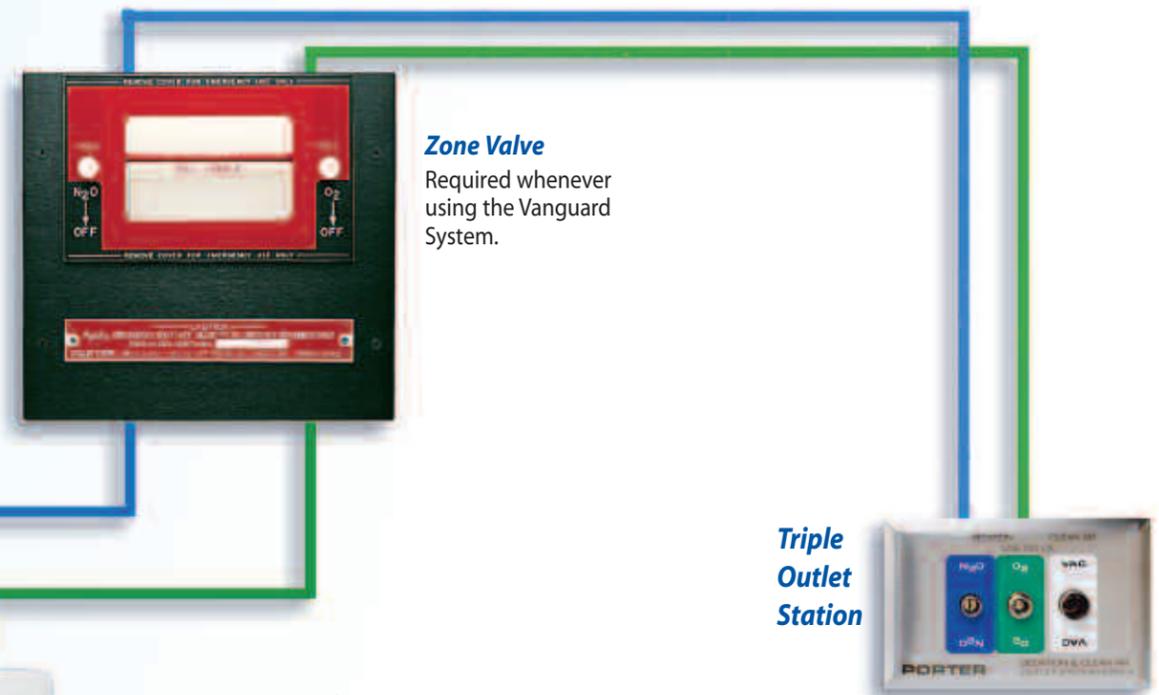


Electrical connection

### Typical Nitrous Oxide/Oxygen Central Piping System Incorporating Porter's cross+protection system

All nitrous oxide lines are 3/8" O.D. copper piping. All oxygen lines are 1/2" O.D. copper piping. Unless deliberately tampered with, nitrous oxide and oxygen lines cannot be crossed. The use of two different pipe sizes eliminates the greatest cause for concern and potential problems connected with the installation of central piping systems, meeting NFPA 99 recommended guidelines.

## Porter System Schematic



### Zone Valve

Required whenever using the Vanguard System.

Triple Outlet Station

### Vanguard Manifold

Both gases are manifolded through one compact unit. Easily installed and simple to operate. An attractive neutral-color cover in a pebble-finish, conceals connections. Easy to read gauges indicate system pressure. The standard combination of O<sub>2</sub> and N<sub>2</sub>O tanks is generally two O<sub>2</sub> and two N<sub>2</sub>O. Contact Porter to add more oxygen cylinders.

In lieu of outlet stations, diameter indexed gate valves with check valves are utilized when connecting to a flushmount flowmeter within a cabinet.

Gate Valve



Flushmount



PORTER



N<sub>2</sub>O Cylinders

O<sub>2</sub> Cylinders

# Outlet Stations

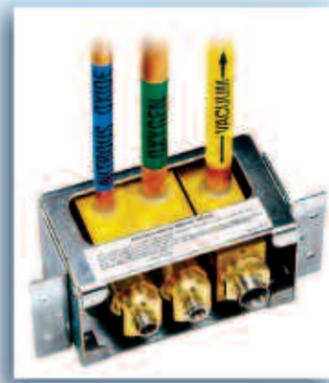
# Mounting & Accessories

## Porter Operatory Outlet Stations



(6255-1)

5 3/8"



(6256-3)

8 3/16"



4 5/8"



(6256-3)



### Triple Outlet Station

(6255-1, 6256-3)

This is Porter's advanced one-piece combination Clean-Air™ and Nitrous Oxide/Oxygen gas outlet station that both delivers and removes Oxygen and Nitrous Oxide in the dental operatory.

### Standard Outlet Station

(6200-1)

This is Porter's performance proven, diameter indexed Nitrous Oxide/Oxygen outlet station.

### Floor Mounted Outlet Station

(6300-1)

Identical in operation to the Standard Outlet Station, but in a compact size for clean, un-obtrusive floor installation.

## Porter Flowmeter Mountings and Accessories

### A. Solid Wall Mount (2020)

Sturdy aluminum construction with telescoping arm that extends or retracts.

### B. Cut Out Wall Mount (2022)

For use with Porter's 6255-1 outlet station.

### C. Side Cabinet Slide Mount for AVS/bag tee (2036-2, 2036-4)

Slides out for easy access and storage. For use with flushmount flowmeters for AVS/bag tee. Minimum cabinet depth needed is 18" for AVS and 12" for bag tee only.

### D. Under Cabinet Slide Mount for AVS/bag tee (2037-1)

### E. Flowmeter Cabinet Mount, Slide Away (2035-1)

Under the cabinet mounting for flowmeters. Measures 9 1/2" long by 3" wide with a 5" extension.

### F. Flowmeter Cabinet Side Mount (2036-3)

Slides out for easy access and storage. For use with flowmeter head.

### G. Compact Mobile Stand (2040)

Top of meter telescopes from 24" to 36" high.

### Tall Mobile Stand (2042)

Top of meter telescopes from 43" to 50" high.

### H. Short Portable "E" Tank Stand (2045-short)

Fits under 31" counter for storage.

### I. Portable "E" Tank Stand (2045-2)

For use with two "E" tanks O<sub>2</sub> and two "E" tanks N<sub>2</sub>O. Height adjusts from 43" to 50".



PORTER

# Emergency Oxygen

## Porter -O-Two Demand Valve Resuscitation



Whether your patients experience cardiac or respiratory arrest, you'll be much better prepared with the Porter O-Two Demand Valve Resuscitator. In a crisis, it's fast, easy to use and highly effective

**The Porter O-Two combines two lifesaving technologies:**

### 1. Positive Pressure Resuscitation

It ventilates non-breathing patients with 100% oxygen.

### 2. Demand Valve Oxygen Delivery

It delivers 100% oxygen 'on demand' to patients suffering respiratory distress.



**Demand Valve Resuscitator**



**Bag-Valve Mask**



**Positive Pressure Demand Valve**

# Typical Order

	Part #	Description	# of Units	Retail	Totals
<b>FLUSHMOUNT MXR SYSTEM</b>					
	4465CAB-AV	MXR-D Flushmount Digital Flowmeter package complete			\$
		or			
	3465WF-AV	MXR-1 Flushmount Flowmeter package complete			
	3222CX	Sentinel Wall Manifold System	1- per system		
	9000-1	Concealed Zone Valve-Sentinel System	1- per system*		
		or			
	4222CXA	Vanguard Wall Manifold System	1- per system		
	9000-2	Concealed Zone Valve-Vanguard System	1- per system		

\* if needed

	Part #	Description	# of Units	Retail	Totals
<b>VERTICAL MXR</b>					
	3420AV	MXR Flowmeter W/breathing circuit, AVS on a telescoping mount			\$
	6255-1	Compact triple outlet(N2O,O2,VAC)	1- per operator		
	8063	3 foot O2/N2O Porter/DISS hose (connects meter to outlet)			
	5602	Vacuum Q/C connects Scavenger exhaust line to Central Vac System through outlet			
	3222CX	Sentinel Wall Manifold System	1- per system		
	9000-1	Concealed Zone Valve-Sentinel System	1- per system*		
		or			
	4222CXA	Vanguard Wall Manifold System	1- per system		
	9000-2	Concealed Zone Valve-Vanguard System	1- per system		

\* if needed

### All gas systems should be equipped with Emergency Oxygen

	1506-1	Positive Pressure/Demand Valve			\$
	1540-2	Bag Valve Mask style Emergency Oxygen Delivery			

	Part #	Description	# of Units	Retail	Totals
<b>PORTER NAVICOM COMMUNICATION SYSTEM</b>					
	PNC-30W	Navicom Wall Stations			\$
	PNC-30D	Navicom Desk Stations			
	PNC-PCWJ	Computer Wall Jack Kits			
	PNC-PS1	Power Supply			
	PV-100	Round cable w/PVC Jacket (100 ft.)			
	PV-250	Round cable w/PVC Jacket (250 ft.)			
		or			
	TF-100	Round cable w/Teflon Jacket (100 ft.)			
	TF-250	Round cable w/Teflon Jacket (250 ft.)			

Additional products and accessories are available in the Porter Products and Parts Catalog. Contact your Authorized Porter Full-Service Dental Dealer or visit Porter online at [www.porterinstrument.com](http://www.porterinstrument.com)



**PORTER**