

# TOC Gas Generators

- Replaces high pressure oxygen or nitrogen gas cylinders with hydrocarbon-free, CO<sub>2</sub>-free compressed gas for TOC Analyzers
- Ensures consistent, reliable, TOC operation and reduces instrument service and maintenance costs
- Compact design frees up valuable laboratory floor space
- Purity meets or exceeds all TOC manufacturer's gas purity requirements
- Operational display shows system status at a glance
- Requires minimal annual maintenance



Model TOC-625

**The Parker Balston® TOC Gas Generators** produce carrier/combustion gas, from an existing compressed air supply for TOC instruments, eliminating the need to purchase expensive, inconvenient, high pressure cylinders of air, nitrogen, or oxygen.

The generators utilize catalytic oxidation and pressure swing adsorption technologies to remove hydrocarbons to 0.05 ppm (measured as methane), CO<sub>2</sub> to 1 ppm, water vapor to 1 ppm, and CO to 1 ppm.

**Parker Balston TOC Gas Generators** eliminate all the inconveniences and costs of cylinder gas supplies and dependence on outside vendors. Uncontrollable vendor price increases, contract negotiations, long term commitments and tank rentals are no longer a concern. The Parker Balston TOC Gas Generator offers long-term cost stability.

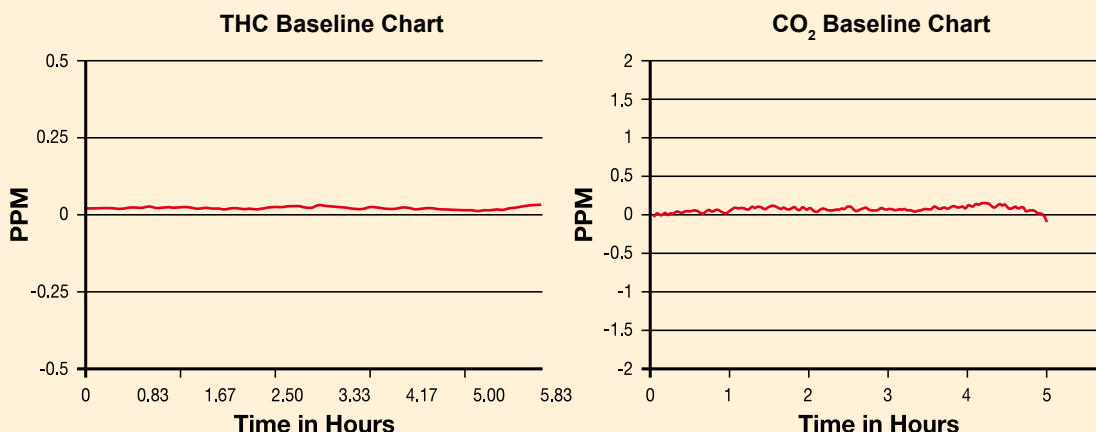
**Parker Balston TOC Gas Generators** are complete systems with carefully matched components engineered for easy installation, operation, and long term reliability. Installation consists of connecting a standard compressed air line to the inlet and connecting the outlet to the TOC gas supply line. Plug the generator into a standard electrical wall outlet and within minutes high purity carrier/combustion gas is supplied!



Model TOC-1250

# TOC Gas Generator

## Baseline Supplied by a Parker Balston TOC Gas Generator



Baselines of THC Analyzer (above) and CO<sub>2</sub> Content Analyzer (right) after 5 hours supplied by a Parker Balston® TOC Gas Generator.

## Principal Specifications

TOC Gas Generator	Model TOC-625	Model TOC-1250
Max. TOC Gas Flow Rate (outlet) at 100 psig	0.625 lpm (650 cc/min)	1.25 lpm (1,250 cc/min)
Outlet Hydrocarbon Concentration (as methane)	< 0.05 ppm	0.1 ppm
Outlet CO <sub>2</sub> Concentration	< 1 ppm	< 1 ppm
Outlet CO Concentration	< 1 ppm	< 1 ppm
Dewpoint	< -100°F (-73°C)	< -100°F (-73°C)
Inlet and Outlet Port Connections	1/4" NPT (female)	1/4" NPT (female)
Min/Max Inlet Air Pressure	60 psig/125 psig	65 psig/125 psig
Max Inlet Air Temperature	78°F (25°C)	78°F (25°C)
Min Required Inlet Air Flow at 100 psig	2.0 lpm (2,000 cc/min)	2.5 lpm (2,500 cc/min)
Max Inlet Hydrocarbon Concentration (as methane)	100 ppm	100 ppm
Pressure Drop at Maximum Flow Rate	7 psig	7 psig
Warm-up Time	30 minutes	45 minutes
Electrical Requirements (1)	120VAC/60 Hz, 2.0 Amps.	120VAC/60 Hz, 2.0 Amps.
Dimensions	9"w x 12.5"h x 16"d (23 cm x 32 cm x 41 cm)	11"w x 17"h x 17"d (28 cm x 43 cm x 43 cm)
Shipping Weight	34 lbs. (15.42 kg)	48 lbs. (22 kg)

## Ordering Information for assistance, call 800-343-4048, 8 to 5 Eastern Time

Description	Model Number	Model Number
TOC Gas Generator	TOC-625	TOC-1250
Maintenance Kit @ 12 months	MKTOC625-12	MK7840
Maintenance Kit @ 36 months	MKTOC625-36	Consult Factory
Installation Kit	IK76803	IK76803
Preventive Maintenance Plan	TOC-625-PM	TOC-1250-PM
Extended Support with 24 Month Warranty	TOC-625-DN2	TOC-1250-DN2

(1) Refer to voltage appendix for electrical and plug configurations for outside North America.

# Nitrogen Generators for TOC

- Produces a continuous supply of high purity nitrogen gas from existing compressed air
- Eliminates the need for costly, dangerous, inconvenient nitrogen cylinders in the laboratory
- Ideal for all combustion, UV persulfate, and wet oxidation sampling techniques
- Compact design frees up valuable laboratory floor space
- Offers long term cost stability - uncontrollable vendor price increases, contract negotiations, long term commitments and tank rentals are no longer a concern



Model HPN2-1100

## The Parker Balston® Models

### HPN2-1100 and UHPN2-1100 Nitrogen

**Generators** can produce up to 1.1 lpm of ultra high purity nitrogen gas. These systems are completely engineered to transform standard compressed air into 99.9999% nitrogen, exceeding the specification of UHP cylinder gas.

Nitrogen is produced by utilizing a combination of state-of-the art purification technologies and high efficiency filtration. The Model HPN2-2000 can produce up to 2 lpm of 99.99% pure nitrogen gas from standard compressed air.

Pressure swing adsorption removes O<sub>2</sub>, CO<sub>2</sub>, and water vapor. A catalyst module is incorporated in the UHPN2-1100 to oxidize hydrocarbons from the inlet air supply. The generators also have high efficiency

coalescing prefilters and a 0.01 micron (absolute) membrane filter incorporated into their design.

### The Parker Balston UHP Nitrogen

**Generators** are engineered and packaged in a small cabinet to fit nearly any benchtop. The systems eliminate the need for costly, inconvenient high pressure nitrogen cylinders. The HPN2-1100 and UHPN2-1100 are ideal for TOC carrier gas and purge applications.

## Flow Chart

Inlet Air Pressure (psig)	Max Outlet Flow (cc/min.)	Max Outlet Pressure (psig)
<b>Models HPN2-1100, UHPN2-1100</b>		
125	1100	85
110	1000	75
100	900	65
90	800	60
80	700	50
70	600	45
60	500	35

# Nitrogen Generators for TOC

## Principal Specifications

Model	HPN2-1100, UHPN2-1100	HPN2-2000
Max Nitrogen flow rate	See Flow Table	2 lpm
Nitrogen Purity	99.9999%	99.99%
Max Nitrogen output pressure	See Table	90 psig
CO Concentration	< 1 ppm	NA
CO <sub>2</sub> Concentration	< 1 ppm	< 1 ppm
O <sub>2</sub> Concentration	< 1 ppm	< 100 ppm
H <sub>2</sub> O Concentration	< 1 ppm	< 1 ppm
Hydrocarbon concentration (1)	< 0.1 ppm	NA
Argon Concentration (2)	0.9%	0.9%
Min/Max Inlet Pressure	60 psig/125 psig	75 psig/120 psig
Recommended Inlet Temperature	78°F (25°C)	78°F (25°C)
Ambient Operating Temperature	60°F-100°F (16°C-38°C)	60°F-100°F (16°C-38°C)
Max Air Consumption	42 lpm (1.5 scfm)	42 lpm (1.5 scfm)
Inlet Connection	1/4" NPT (female)	1/4" NPT (female)
Outlet Connection	1/8" NPT (female)	1/8" NPT (female)
Electrical Requirements (3,4)	120 VAC/60 Hz	120 VAC/60 Hz
Dimensions	12" w x 16" d x 35" h (31cm x 41cm x 89cm)	12" w x 16" d x 35" h (31cm x 41cm x 89cm)
Shipping Weight	110 lbs. (50 kg)	110 lbs. (50 kg)

### Notes:

- 1 Model HPN2-1100 does not remove hydrocarbons and carbon monoxide
- 2 Purity specification for Nitrogen does not include Argon concentration.
- 3 Power Consumption is as follows:  
Model HPN2-1100 = 25 Watts,  
Model UHPN2-1100 = 700 Watts,  
Model HPN2-2000 = 25 Watts.
- 4 Refer to voltage appendix for electrical and plug configurations for outside North America.

## Ordering Information call 800-343-4048, 8 to 5 EST

Description	Model Numbers
High Purity Nitrogen Generator	HPN2-1100, HPN2-2000
Ultra High Purity Nitrogen Generator	UHPN2-1100
Purity Indicator/Scrubber	72092
Optional Prefilter System	2002N-1B1-DX
Maintenance Kit	MK7692*, MK7694
Installation Kit for all Models	IK7694
Preventive Maintenance Plan	HPN2-1100-PM, UHPN2-1100-PM, HPN2-2000-PM
Extended Support with 24 Month Warranty	HPN2-1100-DN2, UHPN2-1100-DN2, HPN2-2000-DN2

\*For Model HPN2-1100

# Offer of Sale

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**2. Payment:** Payment shall be made by Buyer within 30 days from the date of shipment. Amounts not timely paid shall bear interest at the Maximum rate permitted by law for each month or portion thereof that the Buyer is late making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

**3. Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

**4. Warranty:** Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 12 months from date of shipment to Buyer. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

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**6. Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

**7. Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**8. Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

**9. Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

**10. Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

**11. Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's Control.

**12. Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.