



# Analytical Gas Systems Products for LC/MS & Evaporation

Bulletin AGS-LCMS

aerospace  
climate control  
electromechanical  
**filtration**  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding

# Parker Hannifin Corporation

## The Global Leader in Motion and Control Technologies

We engineer success of our customers around the world, drawing upon nine core motion and control technologies. These technologies enable virtually every machine and process to operate accurately, efficiently and dependably.

As the global leader in motion and control, we partner with our distributors to increase our customers' productivity and profitability by delivering an unmatched breadth of engineered components and value-added services.

We continue to grow with our customers by creating application-focused products and system solutions. A key to our global expansion has been to follow our customers and establish operations, sales and service wherever they are needed. No single competitor matches Parker's global presence.



Corporate Headquarters  
in Cleveland, Ohio.

## Parker's Motion and Control Technologies

Aerospace	Hydraulics
Climate Control	Pneumatics
Electromechanical	Process Control
<b>Filtration</b>	Sealing & Shielding
Fluid & Gas Handling	

### Legal Notifications



#### **WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

### Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".

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# SOURCE LC/MS TriGas Generator Series

## Model LCMS-5001TNA

The Parker Balston SOURCE LCMS TriGas Generator is a completely engineered system designed to transform ordinary compressed air into pure nitrogen for curtain gas, pure zero grade air as gas-1/gas-2 source gases and dry -40°F dew point air as source exhaust. The system is designed to produce gases which meet and exceed the requirements of any LC/MS requiring three independent gases. The system consists of six functional technologies: Coalescing pre-filtration with timed solenoid drains, self regenerating compressed air dehydration membranes, a proprietary heated catalysis module, elegant self-regenerating nitrogen retentate membranes, high capacity - high sensitivity carbon absorption modules and carefully matched final filtration membrane media.

The Parker Balston SOURCE LCMS TriGas Generator will provide enough gas for a single

LC/MS instrument on a continual basis and will completely eliminate dependence, expense and hassle with using high pressure nitrogen and zero air cylinders.

The generator can connect easily to an existing compressed air supply line and features independent stainless steel output gas ports carefully matched to the instrument. Gas distribution, pressure and flow control are integral to each TriGas generator and therefore requirements for secondary gas pressure or gas management systems are eliminated.

There is no longer any need to use valuable laboratory floor space to store excess cylinder reserves to protect from running out of gas, late or missed cylinder deliveries, transportation interruptions or periods of tight supply. With a Parker Balston SOURCE LCMS TriGas Generator, you control all your LC/MS gas supplies.



Model LCMS-5001NA



### Features and Benefits

- Generates pure nitrogen, zero air and source exhaust air from compressed air continuously, 24/7
- Eliminates costly and inconvenient nitrogen gas and zero air gas cylinders
- Prevents running out of gases during LC/MS instrument operation
- Preserves valuable laboratory space and maximizes LC/MS instrument uptime
- Easy installation; reliable, silent operation at a safe, low pressure
- Gas purity to 99.999% and no Phthalates
- Turnkey system that eliminates stainless steel regulators and gas distribution panels
- Produced and manufactured by an ISO 9001 registered organization
- Floor standing, includes internal economizer air receiver system
- Listed to U.S. & Canadian safety standards
- Carries CE Marking/Compliant to WEEE standard

# SOURCE LC/MS TriGas Generator Series

## Model LCMS-5001TNA

### Principal Specifications

Model	LCMS-5001TNA
Curtain gas (nitrogen)	to 10 lpm and 80 psi
Source gas (uhp zero grade air)	to 23 lpm and 110 psi
Exhaust gas (dry air)	to 8 lpm and 60 psi
Air pressure required	85-145 psi (>100 psi suggested)
Pressure dewpoint	-40°F
Hydrocarbons	<0.1 ppm measured as methane
Particles > 0.01 micron	None
Phthalates	None
Suspended Liquids	None
Inlet	3/8" tubing (presto)
Outlets	1/4" tube - stainless steel - 3 each
Dimensions	25"D x 20"W x 43"H
Pressure gauges	3 each
Electrical requirements (1)	120vac, 60Hz, 3 amp
Noise	Silent operation
Weight	271 lbs (123 kgs)

#### NOTES

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

### Ordering Information

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

Description	Model
Source Trigas Generator	LCMS-5001TNA
Backup Gas Cylinder Panel	LCMS-EZLINK
Installation Kit	IKLCMS-5000
Preventive Maintenance Plan	LCMS-5001TNA-PM
Extended Support with 24 Month Warranty	LCMS-5001T-DN2
1/4" Clear PFA Tubing for Connections to LC/MS	11426-1 (specify length)

# Voltage Appendix

## 220vac / 50hz configuration for locations where final plug configuration is unknown

### Order Part Number

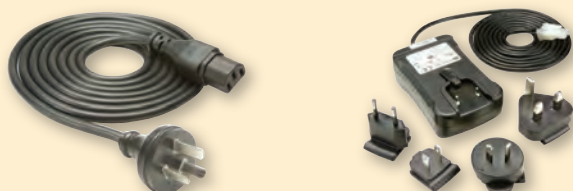


FID-1000-220, FID-2500-220, FID-3500-220, GCGS-7890-220, H2PD-150-220, H2PD-300-220, 75-83-220, HPZA-3500-220, HPZA-7000-220, HPZA-18000-220, HPZA-30000-220, HPN2-1100-220, HPN2-2000-220, UHPN2-1100-220, 76-97-220, 76-98-220, 74-5041-220, UDA-300-220, LCMS-5000-220, LCMS-5001T-220, LCMS-5001NT-220, N2-14A, N2-22A, N2-35A, N2-45A, N2-80A, N2-135A, MGG-400-220, MGG-2500-220, TOC-625-220, TOC-1250-220

\* Units will be supplied only with IEC connector as depicted, power cord to be customer supplied

## 220vac / 50hz plug configuration for Australia

### Order Part Number

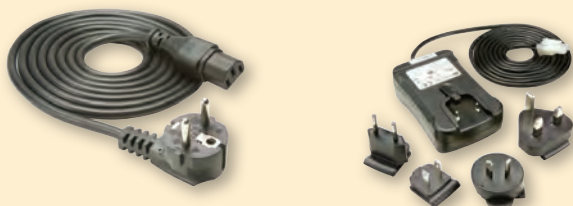


FID-1000AU, FID-2500AU, FID-3500AU, GCGS-7890AU, H2PD-150AU, H2PD-300AU, 75-83AU, HPZA-3500AU, HPZA-7000AU, HPZA-18000AU, HPZA-30000AU, HPN2-1100AU, HPN2-2000AU, UHPN2-1100AU, 76-97AU, 76-98AU, 74-5041AU, UDA-300AU, LCMS-5000AU, LCMS-5001TAU, LCMS-5001NTAU, N2-14AAU, N2-22AAU, N2-35AAU, N2-45AAU, N2-80AAU, N2-135AAU, MGG-400AU, MGG-2500AU, TOC-625AU, TOC-1250AU

\* Models 75-45AU, 75-52AU and 75-62AU will include universal fit plug and transformer kit.

## 220vac / 50hz plug configuration for Europe

### Order Part Number

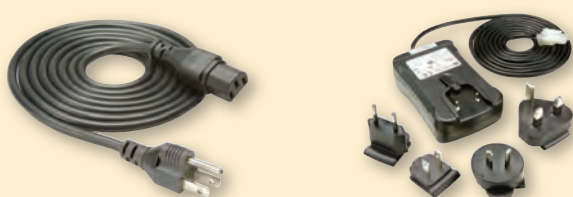


FID-1000EU, FID-2500EU, FID-3500EU, GCGS-7890EU, H2PD-150EU, H2PD-300EU, 75-83EU, HPZA-3500EU, HPZA-7000EU, HPZA-18000EU, HPZA-30000EU, HPN2-1100EU, HPN2-2000EU, UHPN2-1100EU, 76-97EU, 76-98EU, 74-5041EU, UDA-300EU, LCMS-5000EU, LCMS-5001TEU, LCMS-5001NTEU, N2-14AEU, N2-22AEU, N2-35AEU, N2-45AEU, N2-80AEU, N2-135AEU, MGG-400EU, MGG-2500EU, TOC-625EU, TOC-1250EU

\* Models 75-45EU, 75-52EU and 75-62EU will include universal fit plug and transformer kit.

## 100vac / 60hz plug configuration for Japan

### Order Part Number



FID-1000JA-100, FID-2500JA-100, FID-3500JA-100, GCGS-7890JA-100, H2PD-150JA-100, H2PD-300JA-100, 75-83JA-100, HPZA-3500JA-100, HPZA-7000JA-100, HPZA-18000JA-100, HPZA-30000JA-100, HPN2-1100JA-100, HPN2-2000JA-100, UHPN2-1100JA-100, 76-97JA-100, 76-98JA-100, 74-5041JA-100, UDA-300JA-100, LCMS-5000JA-100, LCMS-5001TJA-100, LCMS-5001NTJA-100, N2-14AJA-100, N2-22AJA-100, N2-35AJA-100, N2-45AJA-100, N2-80AJA-100, N2-135AJA-100, MGG-400JA-100, MGG-2500JA-100, TOC-625JA-100, TOC-1250JA-100

\* Models 75-45JA-100, 75-52JA-100 and 75-62JA-100 will include universal fit plug and transformer kit.

## 220vac / 50hz plug configuration for United Kingdom (some Asia)

### Order Part Number



FID-1000UK, FID-2500UK, FID-3500UK, GCGS-7890UK, H2PD-150UK, H2PD-300UK, 75-83UK, HPZA-3500UK, HPZA-7000UK, HPZA-18000UK, HPZA-30000UK, HPN2-1100UK, HPN2-2000UK, UHPN2-1100UK, 76-97UK, 76-98UK, 74-5041UK, UDA-300UK, LCMS-5000UK, LCMS-5001TUK, LCMS-5001NTUK, N2-14AUK, N2-22AUK, N2-35AUK, N2-45AUK, N2-80AUK, N2-135AUK, MGG-400UK, MGG-2500UK, TOC-625UK, TOC-1250UK

\* Models 75-45UK, 75-52UK and 75-62UK will include universal fit plug and transformer kit.

# Recommended Gas Generators for Analytical Instruments

Instrument	Gas Requirements	Gas Purity Requirements	Flow Rates	Generator Recommendation/Model
Atomic Absorption (AA) with Flame	Air for Oxidant Gas	Clean, Dry	1-7 SCFM	<b>AA Gas Purifier</b> (Model 73-100)
Atomic Thermal Desorber	Zero Air	Clean, Dry, Hydrocarbon-free	Up to 1600 ml/min.	<b>Zero Air or TOC Gas Generator</b> (HPZA-3500 or TOC-1250)
	Hydrogen for FID Fuel	Clean, Dry, High Purity	Up to 40 ml/min. per FID	<b>Hydrogen Generator</b> (H2PEM-100, H2PEM-165) (H2PEM-260, H2PEM-510)
Atmospheric Pressure Ionization (API-MS)	Air for Nebulizer Gas	Clean, Dry, Hydrocarbon-free	< 30 LPM	<b>Zero Air Generator</b> (HPZA-30000)
	Nitrogen for Curtain, Sheath, and Shield gas	99% or higher	< 20 LPM	<b>Nitrogen Generator</b> (N2-14, N2-22, N2-35, NitroFlowLab)
Autosamplers for Various Instruments	Air for Pneumatic Controls	Clean, Dry	< 1 SCFM	<b>Membrane Air Dryer</b> (64-02)
	Nitrogen for Sample Injector	Ultra High Purity	< 550 cc/min	<b>UHP Nitrogen Generator</b> (HPN2-1100) (UHPN2-1100)
CO <sub>2</sub> Analyzers	Calibration Air	CO <sub>2</sub> -free	0.5-1.0 SLPM	<b>FT-IR Purge Gas Generator</b> (75-45, 75-52)
Continuous Emissions Monitoring (CEM)	Calibration Air Dilution Air	Dry, CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>x</sub> , Hydrocarbon-free	10-15 SLPM	<b>CEM Zero Air Generator</b> (75-45-M744)
Emissions Analyzers	Zero Air	Hydrocarbon-free	2-15 SLPM	<b>Zero Air Generator</b> (HPZA-18000)
Fourier Transform Infrared Spectrometer (FT-IR)	Air for Sample Compartment, Optics, and/or Air-Bearing Components	Clean, Dry, CO <sub>2</sub> -free	0.5-3 SCFM	<b>FT-IR Purge Gas Generator</b> (75-62, 75-52, 75-45) <b>Lab Gas Generator</b> (74-5041NA)
Gas Chromatograph (GC) GC-FID	Zero Air as Flame Support Air	Clean, Hydrocarbon-free	150-600 cc/min.	<b>Zero Air Generator</b> (HPZA-3500)
	Hydrogen as Flame Fuel Gas	Ultra High Purity	30-40 cc/min.	<b>Hydrogen Generator</b> (H2PEM-260)
	Hydrogen as Capillary Carrier Gas	Ultra High Purity	Varies	<b>Hydrogen Generator</b> (H2PD-300)
	Nitrogen as Packed Carrier Gas	Ultra High Purity, Zero Grade	Varies	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
	Nitrogen as Make up Gas	Ultra High Purity, Zero Grade	<100 cc/min	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
GC-FPD	Zero Air as Flame Support Air	Clean, Hydrocarbon-free	<200 cc/min	<b>Zero Air Generator</b> (HPZA-3500)
	Hydrogen as Flame Fuel Gas	Ultra High Purity	50-70 cc/min	<b>Hydrogen Generator</b> (H2PEM-260)
	Hydrogen as Capillary Carrier Gas	Ultra High Purity	Varies	<b>Hydrogen Generator</b> (H2-1200)
	Nitrogen as Packed Carrier Gas	Ultra High Purity	Varies	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
GC-NPD	Zero Air to Rubidium/Thermonic Bead	Dry, Clean, Hydrocarbon-Free	60-200 cc/min.	<b>Zero Air Generator</b> (HPZA-3500)
	Hydrogen as Detector Support Gas	Ultra High Purity	<10 cc/min	<b>Hydrogen Generator</b> (H2PEM-100)
	Hydrogen as Capillary Carrier Gas	Ultra High Purity	Varies	<b>Hydrogen Generator (Palladium)</b> (H2PD-300)
	Nitrogen as Packed Carrier Gas	Ultra High Purity	Varies	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
GC-ECD	Nitrogen as Carrier Gas	Ultra High Purity, Zero Grade	Varies	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
	Nitrogen as Make up Gas	Ultra High Purity, Zero Grade	<100 cc/min	<b>UHP Nitrogen Generator</b> (UHPN2-1100)
GC-ELCD, HALL	Hydrogen as Reaction Gas	Ultra High Purity	70-200 cc/min	<b>Hydrogen Generator</b> (H2PD-300)

# Recommended Gas Generators for Analytical Instruments

Instrument	Gas Requirements	Gas Purity Requirements	Flow Rates	Generator Recommendation/Model
GC-TCD	Hydrogen as Carrier & Reference Gas	Ultra High Purity	Varies	<b>Hydrogen Generator</b> (H2PD-300)
LC/MS	Nitrogen as a Curtain Gas	LC/MS Grade	3-30 lpm	<b>Nitrogen Generator</b> (N2-14, N2-14ANA, NitroFlowLab) (NitroFlow60, N2-35, N2-35ANA)
ICP Spectrometer	Nitrogen as Optic/Camera Purge	Ultra High Purity	<1-5 lpm	<b>Nitrogen Generator</b> (76-97NA, 76-98NA)
Nuclear Magnetic Resonance (NMR)	Air for Lifting, Spinning	Clean, Dry	<10 SCFM	<b>Air Dryer</b> (UDA-300NA) <b>Lab Gas Generator</b> (74-5041NA)
Ozone Generator	Supply Air	Clean, Dry	.3-20 SCFM	<b>Air Dryer</b> (64-01, 64-02, 64-10, UDA-300NA)
Protein Analyzer	Dry Air, Nitrogen	Clean, Dry	40 psig	<b>Nitrogen Generator</b> (N2-14, N2-22, NitroFlowLab, N2-35)
Solvent Evaporators (Sample Concentrators)	Nitrogen	Clean, Dry Nitrogen	Up to 5 SCFM	<b>Nitrogen Generator</b> (Nitrovap-1LV, Nitrovap-2LV)
Stack Gas Sampler	Dilution Air	Clean, Dry	<1.0 SCFM	<b>CEM Zero Air Generator</b> (75-45-M744)
Total Oxygen Demand (TOD)	Nitrogen Carrier Gas	Ultra High Purity	300 cc/min	<b>Nitrogen Generator</b> (UHPN2-1100)
Thermal Gravimetric Analyzer (TGA)	Nitrogen as Furnace Purge	Clean, Dry, Inert	<100 cc/min	<b>Nitrogen Generator</b> (UHPN2-1100)
Differential Scanning Calorimeter (DSC)	Air for Air Shield	Clean, Dry	<100 cc/min	<b>Dry Air Generator</b> (64-01, UDA-300)
Total Hydrocarbon Analyzer (THA)	Zero Air for FID	Clean, Hydrocarbon-Free	50-500 cc/min	<b>Zero Air Generator</b> (75-82S, 75-83NA)
	Hydrogen as Flame Fuel Gas	Ultra High Purity	5-50 cc/min	<b>Hydrogen Generator</b> (H2PEM-100)
Total Organic Carbon Analyzer (TOC)	Dry Air or Nitrogen for Carrier Gas or Combustion Gas	Clean, Dry, Hydrocarbon-Free	100-500 SLPM	<b>TOC Gas Generator</b> (TOC-625, TOC-1250)
		CO <sub>2</sub> -Free Ultra High Purity	50-700 cc/min	<b>UHP Nitrogen Generator</b> (UHPN2-1100)



## Parker Balston also offers Gas Generators for these Applications



### Products for LC/MS & Evaporation

(Request Bulletin AGS-LCMS)

- High purity nitrogen for LCMS instruments and solvent evaporation
- Tri-gas units available for instruments that require nitrogen, dry air and zero grade air
- Produce a continuous supply of high purity nitrogen from an existing compressed air supply
- Integrated compressor systems eliminate the need for house air
- Systems available to support one or dozens



### Products for Chromatography

(Request Bulletin AGS-Chromatography)

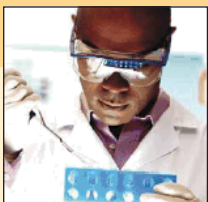
- Hydrogen, Zero Air and UHP Nitrogen Generators for Gas Chromatography
- Combination systems available to provide multiple gasses from one unit
- Highest purities available from any supplier



### Products for Spectroscopy

(Request Bulletin AGS-Spectroscopy)

- Remove water and CO<sub>2</sub> from compressed air
- Protect expensive optics from damage from water vapor
- Increase Signal to Noise Ratio and maximize instrument sensitivity
- Ultra dry air for NMR injecting, spinning and ejecting samples



### Products for TOC Analysis

(Request Bulletin AGS-TOC)

- Generate gasses for all combustion, UV persulfate and wet oxidation techniques
- Ensures consistent, reliable, instrument operation and reduces instrument service and maintenance costs



### Products for Ultra Dry Air

(Request Bulletin AGS-UDA)

- Gas generators for dilution and calibration of Emissions Analyzers
- Exceed instrument manufacturer specifications
- Nitrogen and specialty blend gasses available



### Analytical Gas Supplies

(Request Bulletin AGS SUPCAT)

- Installation kits, compressors, purifiers, flow-meters, regulators and all the materials needed to equip your lab
- High quality components, designed specifically for use with Parker gas generators, to deliver high purity gas to your instruments



# Gas Generator Services



**Parker Balston Extended Support Services** extend the warranty term of gas generators to 24-months. There are two choices available for level of service: Depot and Express. All parts and labor are included, with "next business morning" delivery available.



**Parker Balston "Balston Bucks" Loyalty Programs** are offered to every customer who purchases gas generators. Services include special discounts and incentives on gas generator spare parts and consumables as well as special deals on buying your next gas generator. Customers can easily "opt-in" and opt-out" of our special e-mail alerts system which features newsletters, new product announcements and product reminders.



**Parker Balston Leasing and Rental Services** can provide simple cost effective ways to acquire your next gas generator. Our competitive rates typically provide a monthly payment less than current monthly cylinder gas expenditures. Leasing and rental programs help the customer avoid the need to use capital budget money.



**Parker Balston Preventative Maintenance Contracts** provide convenient direct in-lab maintenance service for your gas generator. A factory trained technician will service your gas generator, in your lab, with original Parker parts. Preventative maintenance saves time, money and will reduce the total cost of ownership of your gas generator.

# Application Notes

# Offer of Sale

The items described in this document and other documents and descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors ("Seller") are hereby offered for sale at prices to be established by Seller. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in its document, when communicated to Seller verbally, or in writing, shall constitute acceptance of this offer. All goods, services or work described will be referred to as "Products".

**1. Terms and Conditions.** Seller's willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions or any newer version of the terms and conditions found on-line at [www.parker.com/saleterms/](http://www.parker.com/saleterms/). Seller objects to any contrary or additional terms or conditions of Buyer's order or any other document issued by Buyer.

**2. Price Adjustments; Payments.** Prices stated on Seller's quote or other documentation offered by Seller are valid for 30 days, and do not include any sales, use, or other taxes unless specifically stated. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2010). Payment is subject to credit approval and is due 30 days from the date of invoice or such other term as required by Seller's Credit Department, after which Buyer shall pay interest on any unpaid invoices at the rate of 1.5% per month or the maximum allowable rate under applicable law.

**3. Delivery Dates; Title and Risk; Shipment.** All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon placement of the products with the shipment carrier at Seller's facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyers' request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.

**4. Warranty.** Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve months from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

**5. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.

**6. LIMITATION OF LIABILITY.** UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. **IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.**

**7. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

**8. Loss to 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, will be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items 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. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. 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 Products, 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.

**10. Buyer's Obligation; Rights of Seller.** To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

**11. Improper use and Indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

**12. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.

**13. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

**14. Force Majeure.** Seller does not assume the risk 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, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

**15. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

**16. Termination.** Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) dissolves or liquidates all or a majority of its assets.

**17. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

**18. 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 Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("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 a Product sold pursuant to this Agreement 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 a Product 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 the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product 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 Products 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 Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

**19. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.

**20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act.** Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

# Worldwide Filtration Manufacturing Locations

## North America

### Compressed Air Treatment Filtration & Separation/Balston

Haverhill, MA  
978 858 0505  
[www.parker.com/balston](http://www.parker.com/balston)

### Finite Airtek Filtration Airtek/donnick hunter/Zander

Lancaster, NY  
716 686 6400  
[www.parker.com/faf](http://www.parker.com/faf)

### Finite Airtek Filtration/Finite

Oxford, MI  
248 628 6400  
[www.parker.com/finitefilter](http://www.parker.com/finitefilter)

### Engine Filtration & Water Purification Racor

Modesto, CA  
209 521 7860  
[www.parker.com/racor](http://www.parker.com/racor)

### Racor

Holly Springs, MS  
662 252 2656  
[www.parker.com/racor](http://www.parker.com/racor)

### Racor

Beaufort, SC  
843 846 3200  
[www.parker.com/racor](http://www.parker.com/racor)

### Racor – Village Marine Tec.

Gardena, CA  
310 516 9911  
[desalination.parker.com](http://desalination.parker.com)

### Hydraulic Filtration

**Hydraulic Filter**  
Metamora, OH  
419 644 4311  
[www.parker.com/hydraulicfilter](http://www.parker.com/hydraulicfilter)

Laval, QC Canada  
450 629 9594  
[www.parkerfarr.com](http://www.parkerfarr.com)

### Process Filtration

**domnick hunter Process Filtration**  
Oxnard, CA  
805 604 3400  
[www.parker.com/processfiltration](http://www.parker.com/processfiltration)

## Europe

### Compressed Air Treatment domnick hunter Filtration & Separation

Gateshead, England  
+44 (0) 191 402 9000  
[www.parker.com/dhfns](http://www.parker.com/dhfns)

### Parker Gas Separations

Etten-Leur, Netherlands  
+31 76 508 5300  
[www.parker.com/dhfns](http://www.parker.com/dhfns)

### Hiross Zander

Padova Business Unit  
Padova, Italy  
+39 049 9712 111  
[www.parker.com/hzd](http://www.parker.com/hzd)

### Hiross Zander

Essen Business Unit  
Essen, Germany  
+49 2054 9340  
[www.parker.com/hzd](http://www.parker.com/hzd)

### Engine Filtration & Water Purification

**Racor**  
Dewsbury, England  
+44 (0) 1924 487 000  
[www.parker.com/rfde](http://www.parker.com/rfde)

### Racor Research & Development

Stuttgart, Germany  
+49 (0)711 7071 290-10  
[www.parker.com/rfde](http://www.parker.com/rfde)

### Hydraulic Filtration

**Hydraulic Filter**  
Arnhem, Holland  
+31 26 3760376  
[www.parker.com/hfde](http://www.parker.com/hfde)

### Urjala Operation

Urjala, Finland  
+358 20 753 2500  
[www.parker.com/hfde](http://www.parker.com/hfde)

### Condition Monitoring Center

Norfolk, England  
+44 1842 763 299  
[www.parker.com/hfde](http://www.parker.com/hfde)

### Process Filtration

**domnick hunter Process Filtration**  
Birtley, England  
+44 (0) 191 410 5121  
[www.parker.com/processfiltration](http://www.parker.com/processfiltration)

## Asia Pacific

### Australia

Castle Hill, Australia  
+61 2 9634 7777  
[www.parker.com/australia](http://www.parker.com/australia)

### China

Shanghai, China  
+86 21 5031 2525  
[www.parker.com/china](http://www.parker.com/china)

### India

Navi Mumbai, India  
+91 22 651 370 8185  
[www.parker.com/india](http://www.parker.com/india)

### Japan

Tokyo, Japan  
+81 45 870 1522  
[www.parker.com/japan](http://www.parker.com/japan)

### Korea

Hwaseon-City  
+82 31 359 0852  
[www.parker.com/korea](http://www.parker.com/korea)

### Singapore

Jurong Town, Singapore  
+65 6887 6300  
[www.parker.com/singapore](http://www.parker.com/singapore)

### Thailand

Bangkok, Thailand  
+66 2 186 7000  
[www.parker.com/thailand](http://www.parker.com/thailand)

## Latin America

### Parker Comercio Ltda. Filtration Division

Sao Paulo, Brazil  
+55 12 4009 3500  
[www.parker.com/br](http://www.parker.com/br)

### Pan American Division

Miami, FL  
305 470 8800  
[www.parker.com/panam](http://www.parker.com/panam)

## Africa

Aeroporto Kempton Park, South Africa  
+27 11 9610700  
[www.parker.com/africa](http://www.parker.com/africa)



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1 800 343 4048 (US & Canada)  
[www.labgasgenerators.com](http://www.labgasgenerators.com)

