



## FOCUSED ON CHROMATOGRAPHY

AGS-Chromatography-E



ENGINEERING **YOUR** SUCCESS.

## FOCUSED ON PURITY

Offering a wide range of advantages over traditional cylinder gas supply, gas generators are increasingly becoming the popular choice in many laboratories.

In chemical sectors such as pharmaceuticals, polymer, environmental monitoring, CRO, and forensics, scientists rely upon specialized instruments for fast and accurate analysis of compound properties.

A consistent, safe supply of high-purity make-up, carrier, and fuel gases is essential to ensure precise results in separation techniques such as gas chromatography.

The challenge is to find a gas supply solution that meets the quality criteria while being easy to use, cost-efficient, and reliable.



Parker on-site gas generation allows us to have a high-purity, safe, and consistent supply of gas.



### Consistent, reliable purity

Gas purity varies significantly from cylinder to cylinder, and impurities can be introduced via the pipeline during changeover. In contrast, on-site generators consistently supply high-purity gas, preventing variations in quality, and ensuring ultra-sensitive analysis, every time.

Supported by proven, advanced technologies you can trust, Parker gas generators to deliver the reliability and consistency your work demands.

### Expert gas generation solutions

With a history of expertise in gas generation, Parker is perfectly placed to support profitable operations in analytical science. Working with partners in laboratories across a range of sectors, our industry-leading solutions enable consistent accuracy through a constant, on-demand supply of nitrogen, hydrogen, and zero air for carrier, make-up, and fuel gas.

## FOCUSED ON PERFORMANCE

### A safer choice

High-pressure cylinders are inherently linked to safety issues – from the chance of injury through manual handling to the risk of gas leaks, which can make the atmosphere potentially explosive or deficient in oxygen.

Gas generators from Parker are a safe alternative, thanks to leak detection technology with 'auto shut off' and integral alarms. They also operate at a fraction of the pressure and with low volumes of stored gas, further reducing the potential for harm.

These generators eliminate many of the inconveniences of dependence on outside vendors, such as uncontrollable price increases, dewar ice and condensation, contract negotiations, long term commitments, and tank rentals. With a Parker generator, you control your gas supply.

### Cost-efficient with the lowest lifetime cost

In some cases, you can expect to have recouped the cost of your gas generator in less than one year. Energy efficient technologies keep running costs down, there are no hidden charges such as on-going delivery costs, cylinder rental or storage fees for spares and empty cylinders, and maintenance and part replacement costs are minimal.





### Global support for your peace of mind

We know that business continuity is vital to your work. That's why we offer a comprehensive package of expert service, care, and maintenance across our complete analytical gas systems range, worldwide.

From installation, scheduled maintenance, and in very rare cases, emergency assistance, wherever you are, you can trust Parker to give you complete peace of mind.

### Continuous supply, available on-demand

Parker gas generators are engineered to transform standard compressed air into high quality analytical gas at safe, regulated pressures, on demand, without operator attention. Engineered for easy installation, operation, and long term performance, and permanently installed at the point of use, an on-site generator provides you with straightforward access to an unlimited supply of gas. Always at the correct pressure, flow, and temperature, Parker gas generators improve the stability of your instruments and the accuracy of your results.



## NitroVap Gas Generators

**Parker NitroVap Nitrogen Generators provide clean, ultra-dry (to -20°F) dewpoint evaporator grade nitrogen at high output flows from any standard laboratory compressed air source.**

Nitrogen is produced by utilizing a combination of filtration and membrane separation technologies. A high efficiency prefiltration system pretreats the compressed air to remove all contaminants down to 0.01 micron.

Hollow fiber membranes subsequently separate the clean air into a concentrated nitrogen output stream and an oxygen enriched permeate stream, which is vented from the system. The combination of these technologies produces a continuous, on-demand supply of pure nitrogen.

Unique membrane separation technology allows immediate nitrogen delivery to the sample concentrator. "Lock-it-and-leave-it" operation of the sample concentrator is maintained without downtime and without running out of gas mid blow-down.

### NitroVap-1LV & -2LV

- Ideal for any combination of sample evaporators - up to 100 nozzle positions
- Accelerates evaporation by decreasing the partial vapor pressure above the solvent liquid
- Recommended and used by many sample concentrator and sample evaporator manufacturers
- Payback period of typically less than one year
- Sleep economy mode - eliminate compressed air consumption when the sample concentrator is not in use
- Silent operation
- Minimal operator attention required
- Compact; frees up valuable floor space





## Principal Specifications

| NitroVap-1LV & -2LV        |                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------|
| Nitrogen Dewpoint          | Down to -20°F (-29°C) atmospheric                                                     |
| Maximum Nitrogen Flow Rate | <b>NitroVap-1LV</b> up to 80 slpm @ 100 psig input<br>up to 140 slpm @ 125 psig input |
|                            | <b>NitroVap-2LV</b> up to 160 slpm @ 100 psig input up to 287 slpm @ 125 psig input   |
| Electrical Requirements    | None                                                                                  |
| Nitrogen Outlet Pressure   | 0-15 psig user controlled                                                             |
| Dimensions                 | 10.63" w x 14.1" d x 16.5" h<br>(26.92cm x 35.81cm x 41.91cm)                         |
| Inlet Port/Outlet Port     | 1/4" NPT (female)                                                                     |
| Shipping Weight            | 53 lbs/24 kg                                                                          |

## Ordering Information

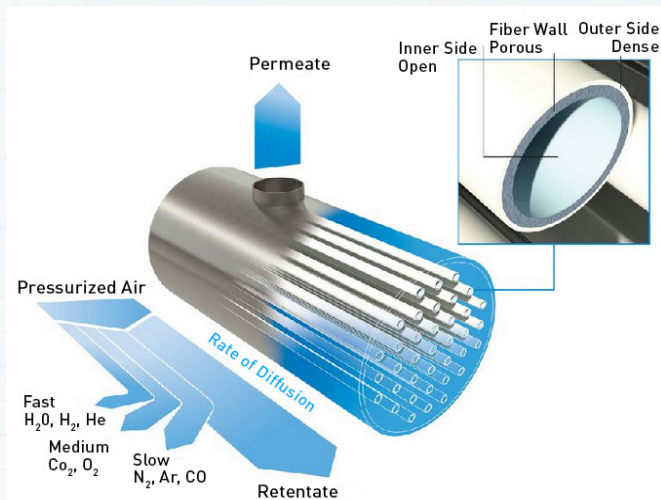
for assistance, call 800-343-4048

| Description                                                                       | Model                               |
|-----------------------------------------------------------------------------------|-------------------------------------|
| NitroVap Nitrogen Generators                                                      | NitroVap-1LV and NitroVap-2LV       |
| Maintenance Kit (Includes 1 each filter cartridge, and 1 each membrane cartridge) | MKNITROVAP                          |
| Preventive Maintenance Plan                                                       | NITROVAP-1LV-PM,<br>NITROVAP-2LV-PM |
| Extended Support with 24 Month Warranty                                           | NITROVAP-DN2                        |

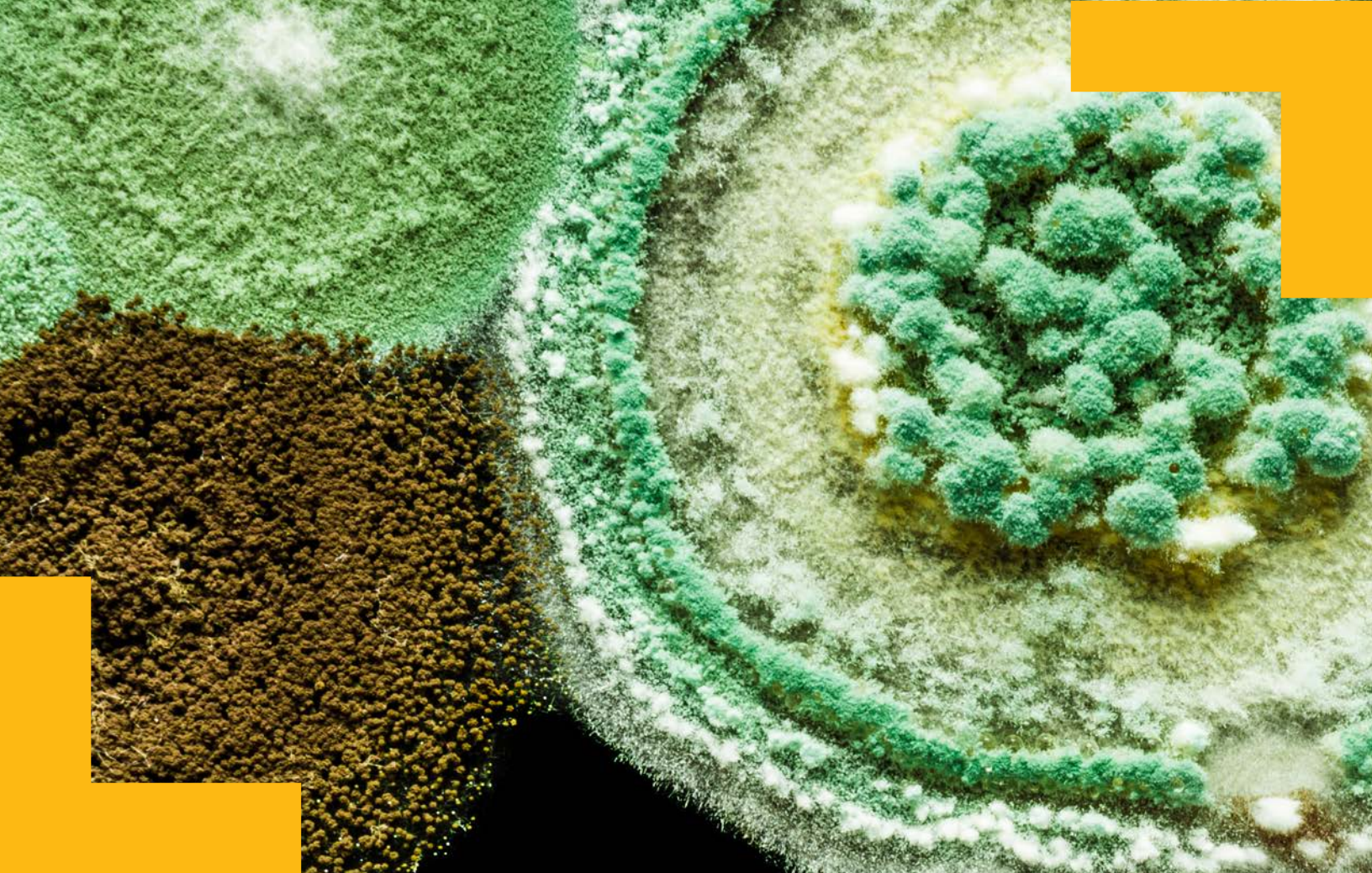
## Use with These and Other Blowdown Evaporators

- TurboVap from Biotage
- N-Evap from Organomation
- RapidVap from LabConco
- Reacti-Vap from Fisher Pierce
- Duo-Vap from Jones Chromatography
- DryVap from Horizon Technology
- Evaporex from Apricot

## Gas Separation Membrane



Featuring Parker Advanced HiFlux Fiber



## FID Gas Stations

Parker FID Gas Stations provide both hydrogen gas and zero grade air to FID detectors on gas chromatographs. These systems are specifically designed to provide fuel gas and support air to 5-6 flame ionization detectors, flame photometric detectors, or total hydrocarbon analyzers.

Hydrogen gas is produced from deionized water using a proton exchange membrane cell. The hydrogen generator compartment utilizes the principle of electrolytic dissociation of water and hydrogen proton conduction through the membrane. The hydrogen supply produces up to 250 cc/min of 99.9995% pure hydrogen with pressures to 60 psig.

Zero air is produced by purifying on-site compressed air to a total hydrocarbon concentration of < 0.1 ppm (measured as methane). The zero air compartment produces up to 2500 cc/min of zero grade air.

### FID Gas Station

- Ideal for up to 5-6 FIDs
- Increases the accuracy of analysis
- Reduces the cleaning requirement for the detector
- Recommended and used by many GC and column manufacturers
- Typical payback period of less than one year
- Automatic water fill
- Silent operation
- Minimal operator attention required
- Exceed NFPA 504 and OSHA 1910.103 regulations
- Meet toughest laboratory standards in the world: CSA, UL, and IEC1010



## Principal Specifications

| Model                      | FID-1000NA                                      | FID-2500NA                                     |
|----------------------------|-------------------------------------------------|------------------------------------------------|
| Hydrogen Purity            | 99.9995%                                        | 99.9995%                                       |
| Zero Air Purity            | < 0.1 ppm<br>(total hydrocarbon<br>as methane)  | < 0.1 ppm<br>(total hydrocarbon<br>as methane) |
| Maximum Hydrogen Flow Rate | 90 cc/min                                       | 250 cc/min                                     |
| Maximum Zero Air Flow Rate | 1000 cc/min                                     | 2500 cc/min                                    |
| Electrical Requirements    | 120/230VAC, 60/50Hz,<br>4 Amps                  | 120/230VAC, 60/50Hz,<br>4 Amps                 |
| Hydrogen Outlet Pressure   | 60 psig                                         | 60 psig                                        |
| Zero Air Outlet Pressure   | 40-125 psig                                     | 40-125 psig                                    |
| Certifications             | IEC 1010-1;<br>CSA 1010; UL 3101;<br>CE Mark    | IEC 1010-1;<br>CSA 1010; UL 3101;<br>CE Mark   |
| Dimensions                 | 10.5" w x 17" d x 16.5" h, (27cm x 43cm x 42cm) |                                                |
| Inlet Port                 | 1/4" NPTF<br>compressed air supply              | 1/4" NPTF<br>compressed air supply             |
| Outlet Ports               | 1/8" compression                                | 1/8" compression                               |
| Shipping Weight            | 53 lbs / 24 kg                                  | 53 lbs / 24 kg                                 |

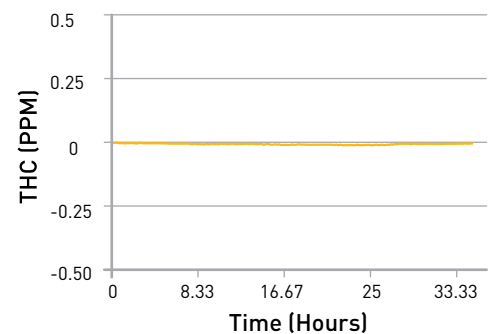
## Ordering Information

for assistance, call 800-343-4048

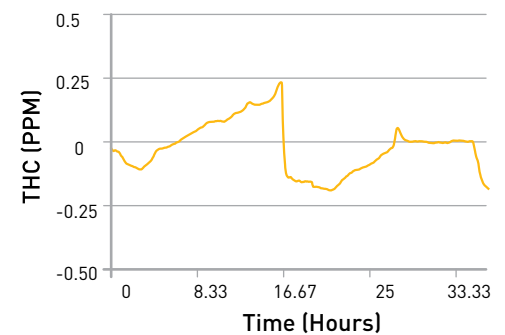
| Description                          | Model                        |
|--------------------------------------|------------------------------|
| FID Gas Station                      | FID-1000NA, FID-2500NA       |
| Installation Service                 | FID-1000-INST, FID-2500-INST |
| Annual Maintenance Kit               | MKFID1000                    |
| Preventive Maintenance Plan          | FID-1000-PM, FID-2500-PM     |
| Extended Support (24 Month Warranty) | FID-1000-DN2, FID-2500-DN2   |

The chromatograms below compare baselines produced by a Parker FID gas station and bottled fuel air. The baseline produced by the Parker generator is very flat, with no fluctuations or peaks, in comparison with the chromatogram of the bottled air fuel supply, which has many peaks ranging from .25 ppm to -.25 ppm.

### Baseline FID-2500 Gas Station



### Baseline Bottled Fuel Air



# Hydrogen Generators for Fuel Gas

Parker's fuel gas hydrogen generators utilize proton exchange membrane, which eliminates the use of liquid electrolytes with hydrogen generators.

Deionized water is all that is required to generate hydrogen for weeks of continuous operation. Automatic water filling is available for all fuel gas hydrogen generators. Simply connect your in-house supply of deionized water to the nitrogen generator for virtually hands-free operation.

With an output capacity of up to 510 cc/min, one generator can supply 99.9995% pure hydrogen for up to several FIDs. Based on cylinder gas savings alone, a Parker hydrogen generator pays for itself in less than one year.



## H2PEM Hydrogen Generator

- Ideal for fuel gas for up to 14 FID's
- Exclusive water management system and control circuitry maximize uptime
- Unique display lighting changes color for easy status checks and water level indication
- Remote control and remote monitoring capable by adding USB options bay controller
- Compact - only one square foot of bench space required
- No liquid caustics required
- Includes 2 year cell warranty
- Little maintenance or monitoring required
- Pays for itself in less than one year
- Exceeds NFPA 504 and OSHA 1910.103 regulations
- Meet toughest laboratory standards in the world: CSA, UL, and IEC1010



## Principal Specifications

| Model                   | H2PEM-100                                      | H2PEM-165                                      | H2PEM-260                                      | H2PEM-510                                      |
|-------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| Purity                  | 99.9995%                                       | 99.9995%                                       | 99.9995%                                       | 99.9995%                                       |
| Flow Rates              | 100 cc/min                                     | 165 cc/min                                     | 260 cc/min                                     | 510 cc/min                                     |
| Outlet Port             | 1/8" compression                               | 1/8" compression                               | 1/8" compression                               | 1/8" compression                               |
| Electrical Requirements | 100/230VAC, 60/50Hz                            | 100/230VAC, 60/50Hz                            | 100/230VAC, 60/50Hz                            | 100/230VAC, 60/50Hz                            |
| Delivery Pressure       | 5-100 psig $\pm$ 0.5 psig                      | 5-100 psig $\pm$ 0.5 psig                      | 5-100 psig $\pm$ 0.5 psig                      | 5-100 psig $\pm$ 0.5 psig                      |
| Shipping weight         | 70 lb (32 kg) dry                              | 70 lb (32 kg) dry                              | 70 lb (32 kg) dry                              | 70 lb (32 kg) dry                              |
| Dimensions              | 17"h x 13.4"w x 18"d<br>(43cm x 34.2cm x 45cm) | 17"h x 13.4"w x 18"d<br>(43cm x 34.2cm x 45cm) | 17"h x 13.4"w x 18"d<br>(43cm x 34.2cm x 45cm) | 17"h x 13.4"w x 18"d<br>(43cm x 34.2cm x 45cm) |

## Ordering Information

for assistance, call 800-343-4048

| Description                   | Model                                                                |
|-------------------------------|----------------------------------------------------------------------|
| Desiccant Cartridge (1 each)  | MKH2PEM-D                                                            |
| 6 Month Service Kit           | MKH2PEM-6M                                                           |
| 24 Month Service Kit          | MKH2PEM-24M                                                          |
| Preventative Maintenance Plan | H2PEM-100-PM<br>H2PEM-165-PM<br>H2PEM-260-PM<br>H2PEM-510-PM         |
| Installation Service          | H2PEM-100-INST<br>H2PEM-165-INST<br>H2PEM-260-INST<br>H2PEM-510-INST |
| USB Remote Control Accessory  | 604970894                                                            |



# Hydrogen Generators for Fuel and Carrier Gas

## H2PD & H2PEMPD Series

The Parker hydrogen generator is an excellent source of ultra pure, dry hydrogen for a wide range of laboratory uses.

The **H2PD and H2PEMPD series** are used extensively with gas chromatographs, as a fuel gas for flame ionization detectors (FID), as a reaction gas for hall detectors, and as a carrier gas to ensure absolute repeatability of retention times. In high sensitivity trace hydrocarbon analyzers and air pollution monitors, the hydrogen produced ensures the lowest possible background noise.

Other applications include using hydrogen for hydrogenation reactions and for FIDs used in the analysis of engine gas emissions in the automobile industry.



### H2PD Series

- Automatic water fill for endless operation
- Produces a continuous supply of 99.9999+% pure hydrogen gas without snap on downstream purifiers
- Compact - only one square foot of bench space required
- Designed to run continuously 24 hours/day
- Unique (NM) no maintenance palladium membrane prevents baseline drift unlike auto-drying technologies
- Exceeds OSHA 1910.103 and NFPA 50A safety guidelines

Hydrogen gas is produced by electrolytic dissociation of water. The resultant hydrogen stream then passes through a palladium membrane to assure carrier grade purity. Only hydrogen and its isotopes can penetrate the palladium membrane; therefore, the purity of the output gas is guaranteed to be 99.9999+% consistently. This technology produces hydrogen at a guaranteed purity two orders of magnitude greater than desiccant or silica gel technologies. Generator flow capacities of up to 300 cc/min. of ultra high purity hydrogen are available.



Our H2 generator has saved us time, space, and money over a traditional tank configuration. We realized a return on our investment in less than one year and no longer have to manage bulky and unsightly tanks in the lab."

John Ross  
Director Corporate Quality  
Ungerer & Company



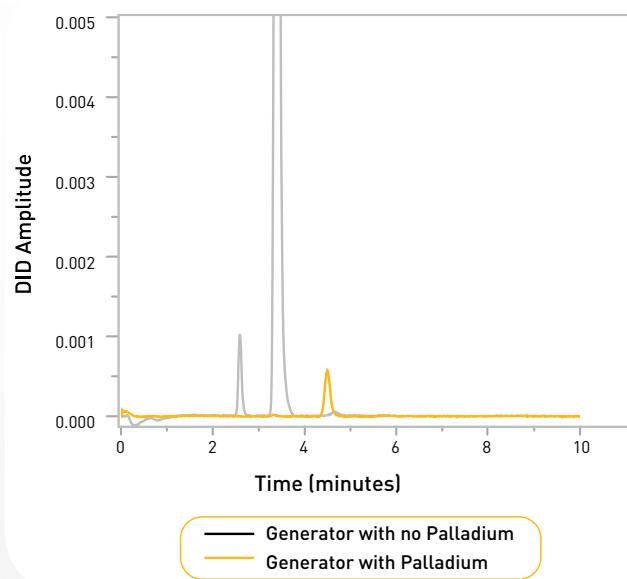
## H2PEMPD Series

- Flow capacity up to 1,300 cc/min
- Delivery pressure of up to 175 PSIG; ideal for high speed and fast GC applications
- Produces a continuous supply of 99.99999+% pure hydrogen gas; palladium membrane prevents baseline drift unlike auto-drying technologies
- Compact - only one square foot of bench space required
- Standard automatic water feed for 24/7 operation
- Optional cascading feature enables users to connect as many as 32 H<sub>2</sub> generators together to supply a large number of instruments
- Remote monitoring via PC
- Advanced PEM electrochemical cell protection system with microprocessor controls
- Little maintenance or monitoring required
- Pays for itself in less than one year
- Includes 3 year cell warranty
- Exceeds OSHA 1910.103 and NFPA 50A safety guidelines

The Parker **H2PEMPD series** of Hydrogen generators use a proton exchange membrane (PEM) to produce hydrogen on demand. Each generator incorporates a maintenance free palladium purifier module to remove oxygen down to <0.01 ppm and moisture down to <1.0 ppm. Only 100 mL of hydrogen gas is stored in the system at any time.

The **H2PEMPD series** of hydrogen generators incorporate break-through software and microprocessor controls to provide many new features. Up to 32 hydrogen generators can be connected together using Parker's cascading, load balancing software to supply gas to a large gas delivery system. Data logging of gas generator performance is incorporated into the H2PEMPD series for use in regulated environments where system validation may be required.





**Simple Experimental:** The two merged baselines in the right chromatogram were created using a Gow-Mac Gas Chromatograph Series 590 equipped with a (DID) discharge ionization detector with hydrogen separator. In creating both baselines (black and red) the gas sample is hydrogen from a hydrogen generator. Both generators are the same - as hydrogen gas is produced from water via electrolytic disassociation, but differ slightly as one generator incorporates a desiccant drying tube as a final purifier while the second generator has a palladium membrane as the final purifier.

The large black peak represents a combined 12 ppm concentration of oxygen and nitrogen, suitable for hydrogen fuel gas while the corresponding point in the red baseline represents a combined 12 ppb concentration of oxygen and nitrogen, suitable for either fuel or carrier gas.

## Principal Specifications

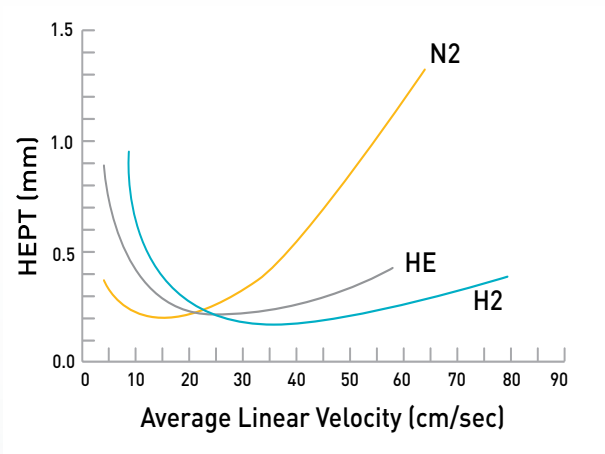
| Model                    | H2PD-150                                   | H2PD-300                                   |
|--------------------------|--------------------------------------------|--------------------------------------------|
| Hydrogen Purity          | 99.99999+%                                 | 99.99999+%                                 |
| Oxygen Content           | < 0.01 ppm                                 | < 0.01 ppm                                 |
| Moisture Content         | <1.0 ppm                                   | < 0.01 ppm                                 |
| Max Hydrogen Flow Rate   | 150 cc/min                                 | 300 cc/min                                 |
| Electrical Requirements  | 120/230 VAC, 60/50 Hz, 3.5 Amps            | 120/230 VAC, 60/50 Hz, 3.5 Amps            |
| Hydrogen Outlet Pressure | Adjustable, 0 to 60 psig                   | Adjustable, 0 to 60 psig                   |
| Certifications           | IEC 1010-1; CSA; UL 3101; CE Mark          | IEC 1010-1; CSA; UL 3101; CE Mark          |
| Dimensions               | 12" w x 12" d x 22" h (30cm x 33cm x 58cm) | 12" w x 12" d x 22" h (30cm x 33cm x 58cm) |
| Outlet Ports             | 1/8" compression                           | 1/8" compression                           |
| Shipping Weight          | 55 lbs (25 kg)                             | 55 lbs (25 kg)                             |

| Model                              | H2PEMPD-510                                                     | H2PEMPD-650                       | H2PEMPD-850                       | H2PEMPD-1100                      | H2PEMPD-1300                      |
|------------------------------------|-----------------------------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Hydrogen Purity                    | 99.99999+%                                                      | 99.99999+%                        | 99.99999+%                        | 99.99999+%                        | 99.99999+%                        |
| Max Hydrogen Flow Rate             | 510 cc/min                                                      | 650 cc/min                        | 850 cc/min                        | 1100 cc/min                       | 1300 cc/min                       |
| Oxygen Content                     | < 0.01 ppm                                                      | < 0.01 ppm                        | < 0.01 ppm                        | < 0.01 ppm                        | < 0.01 ppm                        |
| Water Content                      | < 0.01 ppm                                                      | < 0.01 ppm                        | < 0.01 ppm                        | < 0.01 ppm                        | < 0.01 ppm                        |
| Max Outlet Pressure <sup>(1)</sup> | 100 or 175 psig (6.8 or 11.9 Bar)                               | 100 or 175 psig (6.8 or 11.9 Bar) | 100 or 175 psig (6.8 or 11.9 Bar) | 100 or 175 psig (6.8 or 11.9 Bar) | 100 or 175 psig (6.8 or 11.9 Bar) |
| Electrical Requirements            | 100 to 230 VAC, 50/60 Hz                                        | 100 to 230 VAC, 50/60 Hz          | 100 to 230 VAC, 50/60 Hz          | 100 to 230 VAC, 50/60 Hz          | 100 to 230 VAC, 50/60 Hz          |
| Outlet Connection                  | 1/4" Compression                                                | 1/4" Compression                  | 1/4" Compression                  | 1/4" Compression                  | 1/4" Compression                  |
| Dimensions                         | 17.1" h x 13.5" w x 21" d (43.5cm x 34cm x 53cm) for all models |                                   |                                   |                                   |                                   |
| Shipping Weight                    | 94 lb (42.6 kg)                                                 | 94 lb (42.6 kg)                   | 94 lb (42.6 kg)                   | 94 lb (42.6 kg)                   | 94 lb (42.6 kg)                   |

### NOTES

- H2PEMPD Hydrogen Generators are available with maximum pressure of either 100 or 175 PSIG. See Ordering Information for pressure selection

The Van Deemter Curves (right) show a comparison of nitrogen, helium and hydrogen carrier gases. A Parker hydrogen generator will also allow the user to exploit the benefits of using hydrogen carrier gas instead of helium. Increased flow velocity can shorten analysis time by 50%.



**Ordering Information** for assistance, call 800-343-4048

| Description                          | Model                      |
|--------------------------------------|----------------------------|
| Hydrogen Gas Generator               | H2PD-150, H2PD-300         |
| Installation Kit                     | IK7532                     |
| Preventive Maintenance Plan          | H2PD-150-PM, H2PD-300-PM   |
| Extended Support (24 Month Warranty) | H2PD-150-DN2, H2PD-300-DN2 |

| Description                                | H2PEMPD-510        | H2PEMPD-650        | H2PEMPD-850        | H2PEMPD-1100        | H2PEMPD-1300        |
|--------------------------------------------|--------------------|--------------------|--------------------|---------------------|---------------------|
| Max Outlet Pressure to 100 PSIG (6.8 bar)  | H2PEMPD-510-100    | H2PEMPD-650-100    | H2PEMPD-850-100    | H2PEMPD-1100-100    | H2PEMPD-1300-100    |
| Max Outlet Pressure to 175 PSIG (11.9 bar) | H2PEMPD-510-175    | H2PEMPD-650-175    | H2PEMPD-850-175    | H2PEMPD-1100-175    | H2PEMPD-1300-175    |
| Annual Preventive Maintenance              | H2PEMPD-510-PM     | H2PEMPD-650-PM     | H2PEMPD-850-PM     | H2PEMPD-1100-PM     | H2PEMPD-1300-PM     |
| Semi Annual Preventive Maintenance         | H2PEMPD-510-PMPLUS | H2PEMPD-650-PMPLUS | H2PEMPD-850-PMPLUS | H2PEMPD-1100-PMPLUS | H2PEMPD-1300-PMPLUS |



# Zero Air Generators

## HPZA Series

- Produce UHP zero air from house compressed air (<0.05 ppm THC)
- Easy installation and operation
- Increase the accuracy of analysis and reduce the cleaning requirement of the detector
- Qualitative SMART-Display provides operational status at a glance
- Recommended and used by many GC and column manufacturers
- Typical payback period of less than 1 year
- Silent operation and minimal operator attention required
- Models available to service up to 66 FIDs



| Number of FIDs | Model Number |
|----------------|--------------|
| Up to 2        | 75-83NA      |
| Up to 8        | HPZA-3500    |
| Up to 16       | HPZA-7000    |
| Up to 40       | HPZA-18000   |
| Up to 66       | HPZA-30000   |

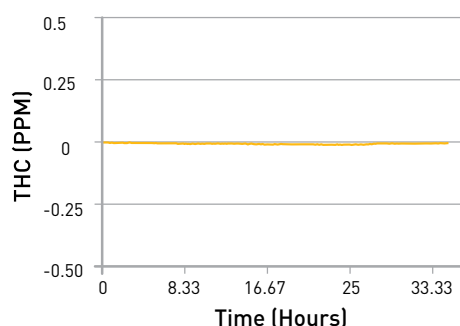
Based on a 450 ccm fuel air rate.



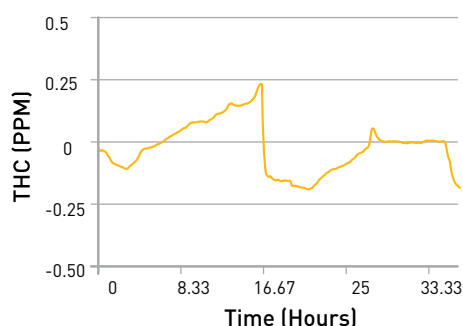
## Principal Specifications

| Model                                            | 75-83NA                                  | HPZA-3500                                 | HPZA-7000                                 | HPZA-18000                                | HPZA-30000                                |
|--------------------------------------------------|------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| Max Zero Air Flow Rate                           | 1 lpm                                    | 3.5 lpm                                   | 7 lpm                                     | 18 lpm                                    | 30 lpm                                    |
| Outlet Hydrocarbon Concentration (as methane)    | < 0.1 ppm                                | < 0.05 ppm                                | < 0.05 ppm                                | < 0.05 ppm                                | < 0.01 ppm                                |
| Min/Max Inlet Air Pressure                       | 40 psig/125 psig                         | 40 psig/125 psig                          | 40 psig/125 psig                          | 40 psig/125 psig                          | 40 psig/125 psig                          |
| Max Inlet Hydrocarbon Concentration (as methane) | 100 ppm                                  | 100 ppm                                   | 100 ppm                                   | 100 ppm                                   | 100 ppm                                   |
| Pressure Drop at Max Flow Rate                   | 4 psig                                   | 4 psig                                    | 4 psig                                    | 4 psig                                    | 4 psig                                    |
| Max Inlet Air Temperature                        | 78°F (25°C)                              | 78°F (25°C)                               | 78°F (25°C)                               | 78°F (25°C)                               | 78°F (25°C)                               |
| Inlet/Outlet Ports                               | 1/4" NPT (female)                        | 1/4" NPT (female)                         | 1/4" NPT (female)                         | 1/4" NPT (female)                         | 1/4" NPT (female)                         |
| Electrical Requirements                          | 120/230V, 60/50Hz                        | 120/230V, 60/50Hz                         | 120/230V, 60/50Hz                         | 120/230V, 60/50Hz                         | 120/230V, 60/50Hz                         |
| Dimensions                                       | 10"w x 3"d x 12"h<br>(25cm x 8cm x 30cm) | 1"w x 13"d x 16"h<br>(27cm x 34cm x 42cm) | 1"w x 13"d x 16"h<br>(27cm x 34cm x 42cm) | 1"w x 13"d x 16"h<br>(27cm x 34cm x 42cm) | 1"w x 13"d x 16"h<br>(27cm x 34cm x 42cm) |
| Shipping Weight                                  | 7 lbs. (3 kg)                            | 41 lbs. (19 kg)                           | 41 lbs. (19 kg)                           | 41 lbs. (19 kg)                           | 41 lbs. (19 kg)                           |

**Baseline 75-83NA  
Zero Air Generator**



**Baseline Bottled Fueled Air**



The chromatograms (left) compare baselines produced by a Parker zero air generator and bottled fuel air. The baseline produced by the Parker generator is very flat, with no fluctuations or peaks, in comparison with the chromatogram of the bottled air fuel supply, which has many peaks ranging from .25 ppm to -.25 ppm.

## Ordering Information

for assistance, call 800-343-4048

| Description                          | Model                                                                   |
|--------------------------------------|-------------------------------------------------------------------------|
| Zero Air Generator                   | 75-83NA, HPZA-3500, HPZA-7000, HPZA-18000, HPZA-30000                   |
| Maintenance Kit for Model 75-83NA    | MK7583                                                                  |
| Maintenance Kit for All Other Models | MK7840                                                                  |
| Installation Kit for All Models      | IK76803                                                                 |
| Preventive Maintenance Plan          | 75-83-PM, HPZA-3500-PM, HPZA-7000-PM, HPZA-18000-PM, HPZA-30000-PM      |
| Extended Support (24 Month Warranty) | 75-83-DN2, HPZA-3500-DN2, HPZA-7000-DN2, HPZA-18000-DN2, HPZA-30000-DN2 |



## Nitrogen Generator with Research Grade Purity

### Model UHPN2-1100

- Compact design frees up valuable laboratory floor space
- Ideal for carrier gas applications

**The UHPN2 Nitrogen Generator is engineered to transform standard compressed air into 99.9999% nitrogen, exceeding the specification of UHP cylinder gas.**

This system can produce up to 1.1 lpm of UHP nitrogen gas by utilizing a combination of state-of-the-art purification technologies and high efficiency filtration. Pressure swing adsorption removes O<sub>2</sub>, CO<sub>2</sub>, and water vapor. A catalyst module is incorporated in the **UHPN2 Series** to oxidize hydrocarbons from the inlet air supply. High efficiency coalescing prefilters and a 0.01 micron (absolute) membrane filter is also incorporated into the design of the generators. Typical applications include GC carrier and make-up gas and low flow sample concentrators.





## Principal Specifications

| Description                    | UHPN2-1100                                    |
|--------------------------------|-----------------------------------------------|
| Max Nitrogen Flow Rate         | See flow table                                |
| Nitrogen Purity                | 99.9999%                                      |
| Max Nitrogen Output Pressure   | See flow table                                |
| CO Concentration               | <1 ppm                                        |
| CO <sub>2</sub> Concentration  | <1 ppm                                        |
| O <sub>2</sub> Concentration   | <1 ppm                                        |
| H <sub>2</sub> O Concentration | <1 ppm                                        |
| Argon Concentration            | 0.9%                                          |
| Min/Max Inlet Pressure         | 60 psig/125 psig                              |
| Recommended Inlet Temperature  | 78°F (25°C)                                   |
| Ambient Operating Temperature  | 60°F-100°F (16°C-38°C)                        |
| Max Air Consumption            | 42 lpm (1.5 scfm)                             |
| Inlet Connection               | 1/4" NPT (female)                             |
| Outlet Connection              | 1/8" NPT (female)                             |
| Electrical Requirements        | 120/230 VAC, 60/50 Hz                         |
| Power Consumption              | 700 Watts                                     |
| Dimensions                     | 12" w x 16" d x 35" h<br>(31cm x 41cm x 89cm) |
| Shipping Weight                | 137 lbs. (62 kg)                              |

## Flow Table

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

## Ordering Information for assistance, call 800-343-4048

| Description                          | Model          |
|--------------------------------------|----------------|
| Ultra High Purity Nitrogen Generator | UHPN2-1100     |
| Optional Prefilter Scrubber Assembly | 76080          |
| Maintenance Kit                      | MK7694         |
| Installation Kit                     | IK7694         |
| Preventive Maintenance Plan          | UHPN2-1100-PM  |
| Extended Support (24 Month Warranty) | UHPN2-1100-DN2 |

### NOTES

1. Purity specification for Nitrogen does not include Argon concentration.

# Zero Nitrogen Generators for GC Carrier Gas and Makeup Gas Applications

## UHPZN2 Series



Parker Zero Nitrogen Generators are engineered to transform standard compressed air in to a safe regulated supply of 99.9995% pure nitrogen, with <0.1ppm of hydrocarbons.

- Ideal for make-up and carrier gas applications including ECD
- Integral oil free compressors with noise reduction technology
- Economy mode: increasing compressor life and reducing ongoing running costs
- Designed to run 24 hours a day

Typical applications include GC make up gas and carrier gas, including ECD (Electron Capture Detector), DSC (Differential Scanning Calorimeter), and virtually any analytical instrument that requires a small flow of ultra high purity zero nitrogen.

Innovative design features include integral compressors with economy mode as standard. This extends compressor life and reduces ongoing running costs.

Nitrogen is produced by utilizing a combination of filtration and pressure swing adsorption (PSA) technology. Standard compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.01 micron. For ultra sensitive applications such as ECD, units also include the addition of a heated catalyst module to ensure hydrocarbons are removed to < 0.1ppm.

The air then passes through two columns filled with proprietary carbon molecular sieve (CMS) which adsorb O<sub>2</sub>, CO<sub>2</sub>, moisture and hydrocarbons. These are desorbed to atmosphere during the pressure swing cycle leaving a supply of ultra pure nitrogen.



## Principal Specifications

| Description                    | UHPZN2-1000C-W                                     | UHPZN2-3000C-W                                     |
|--------------------------------|----------------------------------------------------|----------------------------------------------------|
| Purity                         | 99.9995%                                           | 99.9995%                                           |
| Hydrocarbon Concentration      | <0.1ppm                                            | <0.1ppm                                            |
| CO Concentration               | <1 ppm                                             | <1 ppm                                             |
| CO <sub>2</sub> Concentration  | <1 ppm                                             | <1 ppm                                             |
| H <sub>2</sub> O Concentration | <1 ppm                                             | <1 ppm                                             |
| Flow Rates                     | 1 L/min                                            | 3 L/min                                            |
| Inlet Pressure                 | N/A                                                | N/A                                                |
| Outlet Pressure                | 75 psig (5 bar)                                    | 75 psig (5 bar)                                    |
| Integral Compressor            | Yes                                                | Yes                                                |
| Inlet Connection               | N/A                                                | N/A                                                |
| Outlet Connection              | 1/8"                                               | 1/8"                                               |
| Ambient Temperature            | 60 to 77°F (15 to 25°C)                            | 60 to 77°F (15 to 25°C)                            |
| Electrical Requirements        | 120/230VAC, 60/50Hz                                | 120/230VAC, 60/50Hz                                |
| Power Consumption              | 1250 Watts                                         | 1250 Watts                                         |
| Dimensions (HxWxD)             | 34.2" x 13.6" x 26.3"<br>[869mm x 345 mm x 668 mm] | 34.2" x 13.6" x 26.3"<br>[869mm x 345 mm x 668 mm] |
| Shipping Weight                | 212 lbs (96 Kg)                                    | 212 lbs (96 Kg)                                    |

## Ordering Information

for assistance, call 800-343-4048

| Description                                                       | Model          |
|-------------------------------------------------------------------|----------------|
| 1,000 ml/min Zero UHP Nitrogen Generator with Integral Compressor | UHPZN2-1000C-W |
| 3,200 ml/min Zero UHP Nitrogen Generator with Integral Compressor | UHPZN2-3000C-W |
| Installation Kit                                                  | IK7694         |

| Maintenance Items                      | Model Number  | Change Frequency                                      |
|----------------------------------------|---------------|-------------------------------------------------------|
| Filter Kit - All Non Compressor Models | MKUHPZN2-FK   | 12 months                                             |
| Filter Kit - All Compressor Models     | MKUHPZN2CL-FK | 12 months                                             |
| Compressor Kit 230V - All Models       | MKN2-CK230L   | 14,000 hours or 12 months<br>(whichever comes sooner) |



## High Purity Nitrogen Generators for GC and Other Analytical Applications

Nitrogen on demand, up to 3,200 ml/min

### UHPN2 Series

**Parker High Purity Nitrogen Generators are engineered to transform standard compressed air in to a safe regulated supply of 99.9995% nitrogen.**

- Produces a continuous supply of high purity nitrogen 99.9995% for analytical applications
- Minimal operator attention and maintenance required
- Integral oil free compressors with noise reduction technology
- Economy mode: increasing compressor life and reducing ongoing running costs
- Designed to run 24 hours a day



Nitrogen is produced by utilizing a combination of filtration and pressure swing adsorption (PSA) technology. Standard compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.01 micron.

The air then passes through two columns filled with proprietary carbon molecular sieve (CMS) which adsorb O<sub>2</sub>, CO<sub>2</sub>, moisture and hydrocarbons. These are desorbed to atmosphere during the pressure swing cycle leaving a supply of ultra pure nitrogen.

Typical applications include GC make up gas, solvent evaporation, DSC (Differential Scanning Calorimeter) and virtually any analytical instrument that requires a small flow of ultra high purity nitrogen.



## Principal Specifications

|                                | UHPN2-600                                 | UHPN2-600C                                | UHPN2-800                                 | UHPN2-800C                                | UHPN2-1600                                | UHPN2-1600C                               | UHPN2-3200                                | UHPN2-3200C                               |
|--------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| Purity                         | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  | 99.9995%                                  |
| Hydrocarbon Concentration      | N/A                                       | N/A                                       | N/A                                       | N/A                                       | N/A                                       | N/A                                       | N/A                                       | N/A                                       |
| CO Concentration               | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    |
| CO <sub>2</sub> Concentration  | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    |
| H <sub>2</sub> O Concentration | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    | <1 ppm                                    |
| Flow Rates                     | 600ml/min                                 | 600ml/min                                 | 800ml/min                                 | 800ml/min                                 | 1600ml/min                                | 1600ml/min                                | 3200ml/min                                | 3200ml/min                                |
| Inlet Pressure                 | 115-145 psig<br>(8-9.9 bar)               | N/A                                       | 115-145 psig<br>(8-9.9 bar)               | N/A                                       | 115-145 psig<br>(8-9.9 bar)               | N/A                                       | 115-145 psig<br>(8-9.9 bar)               | N/A                                       |
| Outlet Pressure                | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           | 75 psig (5 bar)                           |
| Integral Compressor            | No                                        | Yes                                       | No                                        | Yes                                       | No                                        | Yes                                       | No                                        | Yes                                       |
| Inlet Connection               | 1/4"                                      | N/A                                       | 1/4"                                      | N/A                                       | 1/4"                                      | N/A                                       | 1/4"                                      | N/A                                       |
| Outlet Connection              | 1/8"                                      | 1/8"                                      | 1/8"                                      | 1/8"                                      | 1/4"                                      | 1/4"                                      | 1/4"                                      | 1/4"                                      |
| Ambient Temperature            | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                | 60 to 77°F<br>(15 to 25°C)                |
| Electrical Requirements        | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    | 120/230VAC,<br>60/50Hz                    |
| Power Consumption              | 85 Watts                                  | 606 Watts                                 | 85 Watts                                  | 606 Watts                                 | 88 Watts                                  | 698 Watts                                 | 88 Watts                                  | 698 Watts                                 |
| Dimensions (HxWxD)             | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) | 34" x 14" x 16"<br>(869 x 345 x<br>417mm) |
| Shipping Weight                | 97lbs (44Kg)                              | 110lbs (50Kg)                             | 97lbs (44Kg)                              | 110lbs (50Kg)                             | 185lbs (84Kg)                             | 205lbs (93Kg)                             | 185lbs (84Kg)                             | 205lbs (93Kg)                             |

## Ordering Information

for assistance, call 800-343-4048

| Description                                                 | Model       |
|-------------------------------------------------------------|-------------|
| 600 ml/min UHP Nitrogen Generator                           | UHPN2-600   |
| 600 ml/min UHP Nitrogen Generator with Integral Compressor  | UHPN2-600C  |
| 800ml/min UHP Nitrogen Generator                            | UHPN2-800   |
| 800ml/min UHP Nitrogen Generator with Integral Compressor   | UHPN2-800C  |
| 1600ml/min UHP Nitrogen Generator                           | UHPN2-1600  |
| 1600ml/min UHP Nitrogen Generator with Integral Compressor  | UHPN2-1600C |
| 3,200 ml/min UHP Nitrogen Generator                         | UHPN2-3200  |
| 3,200ml/min UHP Nitrogen Generator with Integral Compressor | UHPN2-3200C |
| Installation Kit                                            | IK7694      |

| Description                                  | Model Number | Change Frequency                                  |
|----------------------------------------------|--------------|---------------------------------------------------|
| Filter Kit - All Non Compressor Models       | MKUHPN2-FK   | 12 months                                         |
| Filter Kit - UHPN2-600C/800C Models          | MKUHPN2C-FK  | 12 months                                         |
| Filter Kit UHPN2-1600C / 3200C Models        | MKUHPN2CL-FK | 12 months                                         |
| Compressor Kit 230V - UHPN2-600C/800C Models | MKN2CK230S   | 8,000 hours or 24 months (which ever comes first) |
| Compressor Kit 230V UHPN2-1600C/3200C Models | MKN2-CK230L  | 8,000 hours or 24 months (which ever comes first) |

# Flame-Proof Zero Air Generator

## Model 75-82S



The Parker Model 75-82S Zero Air Generator produces up to 1,000 cc/min. of high purity zero grade air from a standard compressed air supply. The generator utilizes state-of-the-art catalytic technology to continuously convert compressed air into zero-grade air, at safe regulated pressures, without need for operator attention.

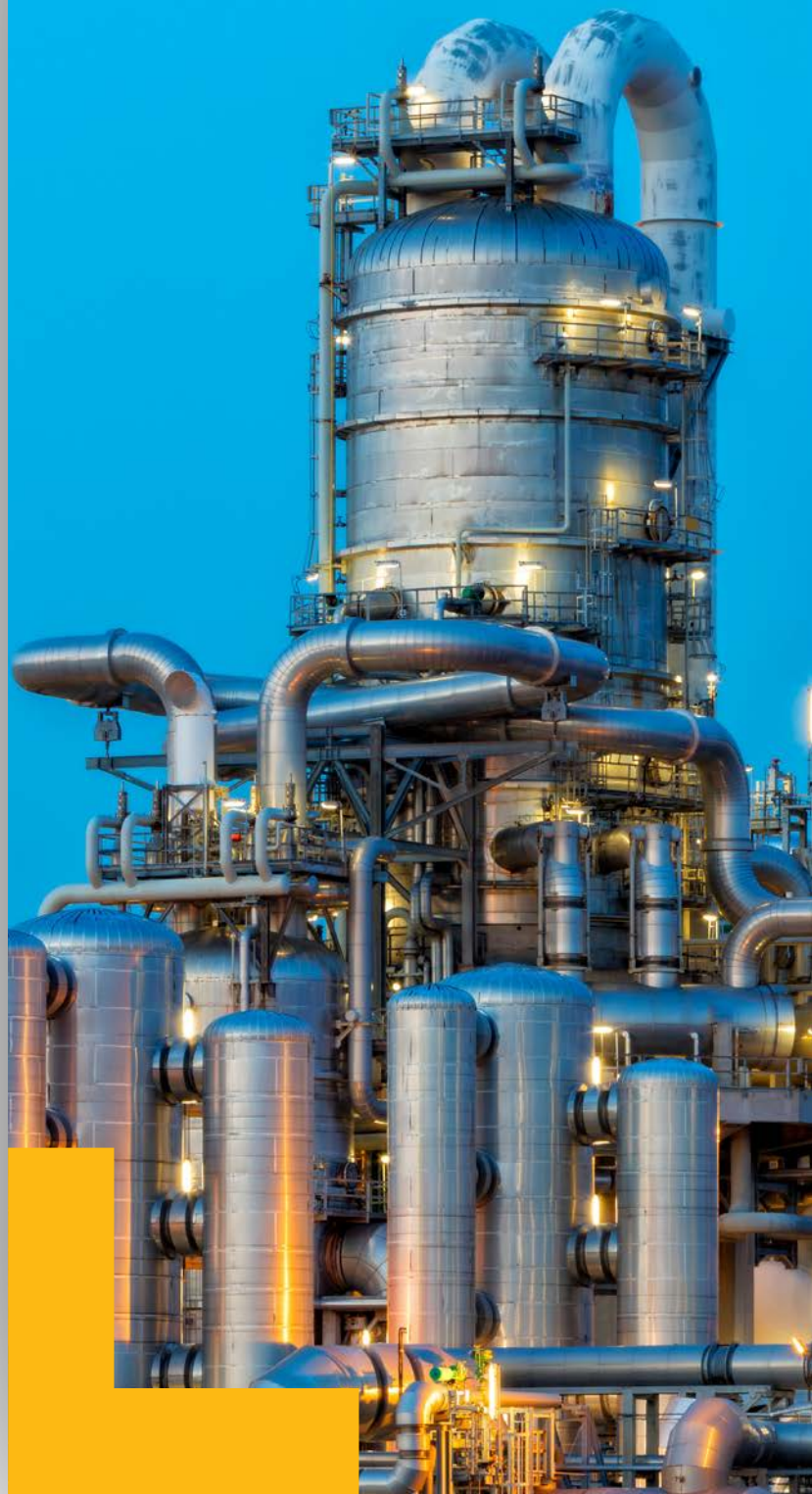
- Safe, even in explosive environments
- Low maintenance
- Produces a continuous supply of ultra high purity zero grade air
- Compact - frees up valuable floor space
- Designed to mount on Unistrut® framing or directly on the wall

The housing is a standard Crouse-Hinds® flame-proof enclosure designed to operate in a class 1, division 1, groups B, C, or D environment. The internals are all stainless steel.

Model 75-82S Zero Air Generator can be used as a fuel air supply to process GC-FIDs, and as a zero grade gas supply/zero reference for process analytical instruments.

Zero grade air is produced from compressed air by means of catalytic oxidation. The compressed air is channeled into a heated catalyst bed where the hydrocarbons are converted to carbon dioxide and water vapor, producing zero-grade air with less than 0.1 ppm hydrocarbon content (measured as methane).

The use of a 75-82S Zero Air Generator has advantages over the conventional sources of fuel air for GC analysis. For example, a lower and more stable baseline signal can be obtained. Lower baseline noise means higher signal-to-noise ratio, giving rise to higher sensitivity or larger peak areas. The result is increased accuracy and reduced cleaning requirement of the detector.





## Principal Specifications

| Description                            | Model                                   |
|----------------------------------------|-----------------------------------------|
| Zero Air Generator                     | 75-82S                                  |
| Flame-Proof Certification (CSA NRTL/C) | Class 1, Division 1, Groups B, C, and D |
| Maximum Flow Rate                      | 1000 cc/min.                            |
| Total Hydrocarbon Concentration        | < 0.1 ppm (measured as methane)         |
| Min./Max. Inlet Pressure               | 40 psig/125 psig                        |
| Maximum Inlet Hydrocarbon Content      | 100 ppm                                 |
| Maximum Inlet Air Dewpoint             | 10°F (5°C) above ambient                |
| Pressure Drop at Max. Flow Rate        | < 8 psid                                |
| Ambient Temperature                    | 40°F to 100°F (4°C to 38°C)             |
| Electrical Requirements <sup>(1)</sup> | 120/230 VAC, 60/50 Hz                   |
| Shipping Weight                        | 28 lbs. (13 kg)                         |
| Dimensions                             | 11" w x 7" h x 6" d (28 x 18 x 15 cm)   |

## Ordering Information

for assistance, call 800-343-4048

| Description                          | Model                      |
|--------------------------------------|----------------------------|
| Zero Air Generator                   | 75-82S                     |
| Replacement Catalyst Module          | 75398                      |
| Final Filter Cartridge               | 75820                      |
| Optional Prefilter Assemblies        | 2002N-1B1-DX, 2002N-1B1-BX |
| Installation Kit                     | IK76803                    |
| Preventive Maintenance Plan          | 75-82S-PM                  |
| Extended Support (24 Month Warranty) | 75-82S-DN2                 |

## 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<br>Hydrogen for FID Fuel                                                                                                                             | Clean, dry, hydrocarbon-free<br>Clean, dry, high purity                                                                             | Up to 1600 ml/min.                                                  | <b>Zero Air or TOC Gas Generator</b><br>HPZA-3500 or TOC-1250                                                                                                                                            |
| Atmospheric Pressure Ionization (API-MS)        | Air for nebulizer gas, nitrogen for curtain, sheath, and shield gas                                                                                           | Clean, dry, hydrocarbon-free<br>99% or higher<br>(Nitrogen or Zero Air)                                                             | 20-67 lpm                                                           | <b>Nitrogen Generator</b><br>N2-14, N2-22, N2-35, N2-45,<br>N2-80, N2-135, N2-200, Nitroflowlab,<br>Nitroflow60, NitroflowTG1, NitroflowTG2,<br>76-98-N100, 76-98-N200, 76080                            |
| Autosamplers for Various Instruments            | Air for pneumatic controls,<br>nitrogen for sample injector                                                                                                   | Clean, dry<br>Ultra high purity                                                                                                     | <1 SCFM<br><550 cc/min                                              | <b>Membrane Air Dryer</b> 64-02<br><b>UHP Nitrogen Generator</b> 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><br>Spectra15, Spectra30                                                                                                                                                 |
| Continuous Emissions Monitoring (CEM)           | Calibration Air<br>Dilution Air                                                                                                                               | Dry, CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>x</sub> ,<br>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,<br>optics, and/or air-bearing                                                                                                     | Clean, dry, CO <sub>2</sub> -free                                                                                                   | 0.5-3 SCFM                                                          | <b>FT-IR Purge Gas Generator</b><br>Spectra 15, Spectra 30<br><b>Lab Gas Generator</b> 74-5041NA                                                                                                         |
| Gas Chromatograph (GC)<br>GC-FID                | Zero air as flame support air<br>Hydrogen as flame fuel gas<br>Hydrogen as capillary carrier gas<br>Nitrogen as packed carrier gas<br>Nitrogen as make up gas | Clean, hydrocarbon-free<br>Ultra high purity<br>Ultra high purity<br>Ultra high purity, zero grade<br>Ultra high purity, zero grade | 150-600 cc/min.<br>30-40 cc/min.<br>Varies<br>Varies<br><100 cc/min | <b>Zero Air Generator</b> HPZA-3500<br><b>Hydrogen Generator</b> H2PEM-260<br><b>Hydrogen Generator</b> H2PD-300<br><b>UHP Nitrogen Generator</b> UHPN2-1100<br><b>UHP Nitrogen Generator</b> UHPN2-1100 |
| GC-FPD                                          | Zero Air as Flame Support Air<br>Hydrogen as Flame Fuel Gas<br>Hydrogen as Capillary Carrier Gas<br>Nitrogen as Packed Carrier Gas                            | Clean, hydrocarbon-free<br>Ultra high purity<br>Ultra high purity<br>Ultra high purity                                              | <200 cc/min<br>50-70 cc/min<br>Varies<br>Varies                     | <b>Zero Air Generator</b> HPZA-3500<br><b>Hydrogen Generator</b> H2PEM-260<br><b>Hydrogen Generator</b> H2-1200<br><b>UHP Nitrogen Generator</b> UHPN2-1100                                              |
| GC-NPD                                          | Zero Air to Rubidium/Thermonic Bead<br>Hydrogen as Detector Support Gas<br>Hydrogen as Capillary Carrier Gas<br>Nitrogen as Packed Carrier Gas                | Dry, clean, hydrocarbon-free<br>Ultra high purity<br>Ultra high purity<br>Ultra high purity                                         | <200 cc/min<br><10 cc/min<br>Varies<br>Varies                       | <b>Zero Air Generator</b> HPZA-3500<br><b>Hydrogen Generator</b> H2PEM-100<br><b>Hydrogen Generator (Palladium)</b><br>H2PD-300<br><b>UHP Nitrogen Generator</b> UHPN2-1100                              |
| GC-ECD                                          | Nitrogen as carrier gas<br>Nitrogen as make up gas                                                                                                            | Ultra high purity, zero grade<br>Ultra high purity, zero grade                                                                      | Varies<br><100 cc/min                                               | <b>UHP Nitrogen Generator</b> UHPN2-1100<br><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                                                                                                                                                                       |

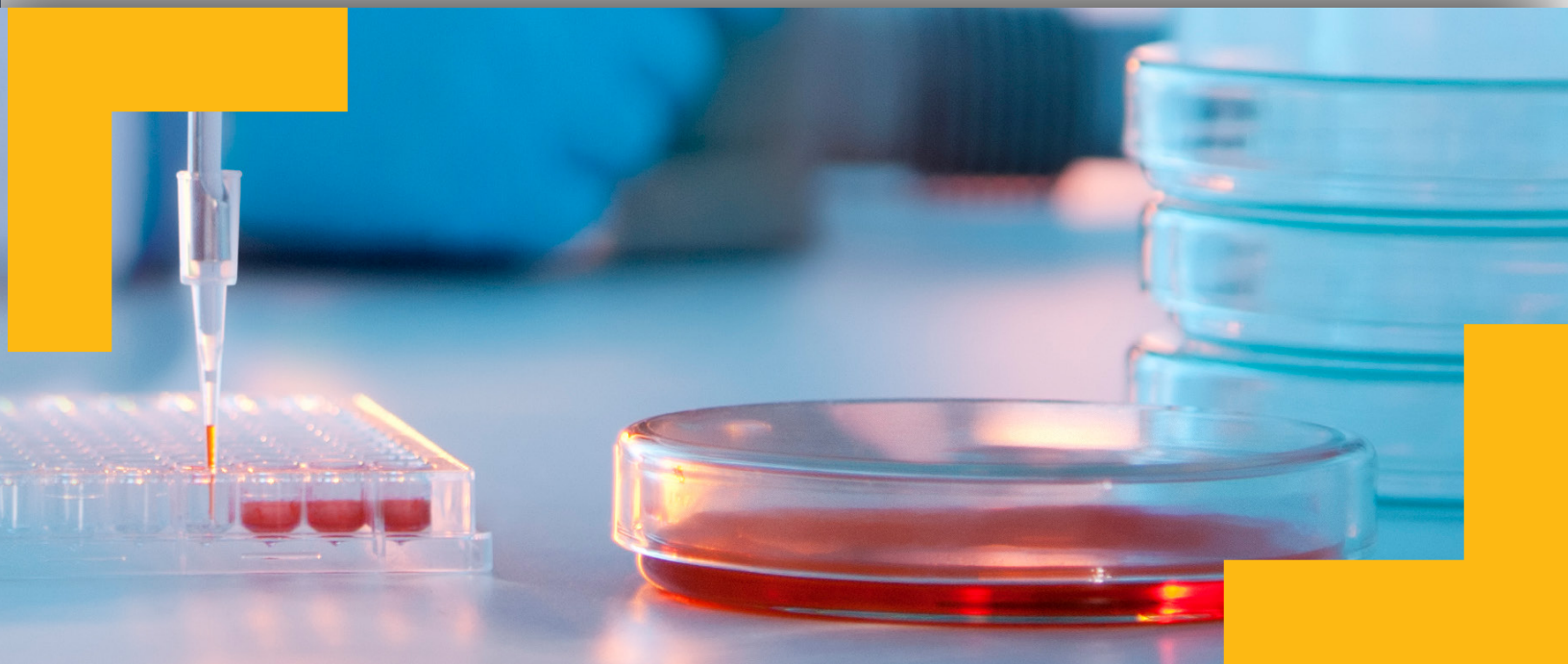
| Instrument                                 | Gas Requirements                                      | Gas Purity Requirements                                                  | Flow Rates                    | Generator Recommendation/Model                                                                                                                                       |
|--------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 lmp                      | <b>Nitrogen generator</b> N2-14, NitroFlowLab, NitroFlow60, N2-35                                                                                                    |
| ICP Spectrometer                           | Nitrogen as Optic/Camera Purge                        | Ultra high Purity                                                        | <1-5 lmp                      | <b>Nitrogen generator</b> 76-98NA                                                                                                                                    |
| Nuclear Magnetic Resonance (NMR)           | Air for lifting, spinning                             | Clean, dry                                                               | <10 SCFM                      | <b>Air dryer</b> UDA-300NA<br><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                                                               | Up to 5 SCFM                  | <b>Nitrogen generator</b> N2-14, N2-22, NitroFlowLab, N2-35                                                                                                          |
| Solvent evaporators (sample concentrators) | Nitrogen                                              | Clean, dry nitrogen                                                      | 2-15 SLPM                     | <b>Zero Air 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 as a 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>Zero Air Generator</b> HPZA-3500<br><b>Hydrogen Generator</b> H2PEM-260<br><b>Hydrogen Generator</b> H2PEMPD-1300-100<br><b>UHP 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 hydration analyzer (THA)             | Zero Air for FID<br>Hydrogen as flame fuel gas        | Clear, hydrocarbon free<br>Ultra high purity                             | 50-500 cc/min<br>5-50 cc/min  | <b>Zero Air Generator</b> 75-82S, 75-83NA<br><b>Hydrogen Generator</b> H2PEM-100                                                                                     |
| Total organic carbon analyzer (TOC)        | Dry air or nitrogen for carrier gas<br>Combustion gas | Clean, dry, hydrocarbon-free,<br>CO <sub>2</sub> Free, Ultra high purity | 100-500 SLPM<br>50-700 cc/min | <b>TOC gas generator</b> TOC-625, TOC-1250<br><b>UHP Nitrogen Generator</b> UHPN2-1100                                                                               |

## 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.



# Worldwide Filtration Manufacturing Locations

## North America

### Compressed Air Treatment

#### Industrial Gas Filtration and Generation Division

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

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

### Engine Filtration

#### Racor

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

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

### Hydraulic Filtration

#### Hydraulic & Fuel Filtration

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)

Velcon  
Colorado Springs, CO  
719 531 5855  
[www.velcon.com](http://www.velcon.com)

### Process Filtration

#### domnick hunter Process Filtration SciLog

Oxnard, CA  
805 604 3400  
[www.parker.com/processfiltration](http://www.parker.com/processfiltration)

### Water Purification

#### Village Marine, Sea Recovery, Horizon Reverse Osmosis

Carson, CA  
310 637 3400  
[www.parker.com/watermakers](http://www.parker.com/watermakers)

## Europe

### Compressed Air Treatment

#### domnick hunter Filtration & Separation

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

#### Parker Gas Separations

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

#### Hiross Zander

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

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

### 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

### Hydraulic Filtration

#### Hydraulic Filter

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

Ujala, Finland  
+358 20 753 2500

#### Condition Monitoring Parker Kittiwake

West Sussex, England  
+44 (0) 1903 731 470  
[www.kittiwake.com](http://www.kittiwake.com)

### Process Filtration

#### domnick hunter Process Filtration Parker Twin Filter BV

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

Chennai, India  
+91 22 4391 0700  
[www.parker.com/india](http://www.parker.com/india)

### Parker Fowler

Bangalore, India  
+91 80 2783 6794  
[www.johnfowlerindia.com](http://www.johnfowlerindia.com)

### 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 2186 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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