Hydrogen Generators for Fuel and Carrier Gas

The Parker Balston H2PEMPD Series of Hydrogen Generators are an excellent source of ultra pure, dry hydrogen for a wide range of laboratory uses. The generator is 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.

With an output capacity of up to 1,300 cc/minute, one generator can supply 99.99999+% pure carrier gas at up to 175 psig to multiple GCs, and fuel gas up to 45 FIDs. The Parker Balston 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. Based on cylinder gas savings alone, a Parker Balston hydrogen generator pays for itself in less than one year.

The H2PEMPD series of hydrogen generators incorporate breakthrough software and microprocessor controls to provide many new features. Up to 32 hydrogen generators can be connected together using Parkers' cascading, load balancing software to supply gas to a large gas delivery system. Built in remote monitoring capability enables users to view system performance from a PC; multiple systems can be monitored at one time. Data logging of gas generator performance is incorporatedinto the H2PEMPD series for use in regulated environments where system validation may be required.

Parker Balston hydrogen generators meet the strict safety guidelines of the National Fire Protection Agency (NFPA) and the regulations of the Occupational Safety and Health Association (OSHA). Parker Balston hydrogen generators are certified for laboratory use by CSA, IEC 1010, and CE. Proven in over 40,000 GC installations worldwide, Parker Balston generators are the most reliable hydrogen generators on the market. Maintenance requires only a few moments per year - no inconvenient, extended downtime. Simply change the deionizer cartridge every six months. In all applications the Parker Balston Hydrogen Generator sets the standard for safety, operational performance and dependability.

Model H2PEMPD Hydrogen Generator

Features and Benefits

- Flow capacity up to 1,300 cc/min
- Delivery pressure of up to 175 PSIG; ideal for high speed and fast GC applications
- Eliminates dangerous and expensive helium and hydrogen gas cylinders
- Safe - produces only as much gas as you need
- Produces a continuous supply of 99.99999+% pure hydrogen gas; palladium membrane prevents baseline drift unlike auto-drying technologies
- Compact and reliable - only one square foot of bench space required
- Automatic water feed for continuous operation, 24/7
- Cascading feature enables users to connect as many as 32 hydrogen generators together to supply a large number of instruments
- Remote PC monitoring features
- Advanced PEM electrochemical cell protection system with microprocessor controls
- Simple maintenance, without Snap-on downstream purifiers
- Certified for laboratory use by CSA, IEC 1010, and CE Mark

"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

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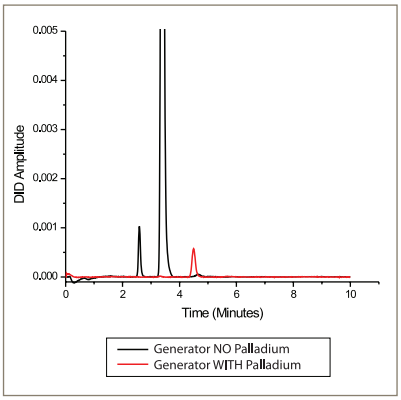
Simple Experimental: The two merged baselines in the right chromatogram were created using a Gow-Mac Gas Chromatograph Series 590 equipped with a (DID) discharge ionization detector with hydrogen separator. In creating both baselines (black and red) the gas sample is hydrogen from a hydrogen generator. 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

	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	800 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	< 1 ppm	< 1 ppm	< 1 ppm	< 1 ppm	< 1 ppm
Max Outlet Pressure (1)	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	60 lb (27.4 kg) for all models				

NOTES

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

Ordering Information

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

	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-800-100	H2PEMPD-1100-100	H2PEMPD-1300-100
Max Outlet Pressure to 175 PSIG (11.9 bar)	H2PEMPD-510-175	H2PEMPD-650-175	H2PEMPD-800-175	H2PEMPD-1100-175	H2PEMPD-1300-175
Annual Preventative Maintenance	H2PEMPD-510-PM	H2PEMPD-650-PM	H2PEMPD-800-PM	H2PEMPD-1100-PM	H2PEMPD-1300-PM
Semi Annual Preventative Maintenance	H2PEMPD-510-PMPLUS	H2PEMPD-650-PMPLUS	H2PEMPD-800-PMPLUS	H2PEMPD-1100-PMPLUS	H2PEMPD-1300-PMPLUS