

HB-F1-0500-N Hydrogen Storage System

500 Liter Capacity

- ◇ Safe ◇ Highly Portable ◇ Rechargeable ◇ High Purity

The HBank-F1-0500-N is a 500 Liter capacity hydrogen storage system based on the latest achievements in AB₅-type solid metal hydride technology as well as on unique alloy loading techniques. It allows for the storage and release of high purity hydrogen at ambient temperatures and at designed pressure range from 1.5 up to 10 atm (~20-140psi) with very constant gas flow: 95% of stored gas can be released within the designed maximum flow rate at constant temperature.

Unlike high-pressure hydrogen cylinders, the HBank hydrogen is chemically bonded with the metal hydride alloy. In the eventuality of a system leak, it would take hours before the HBank would fully release its contents, providing a safe and durable hydrogen supply.



HB-F1-0500-N

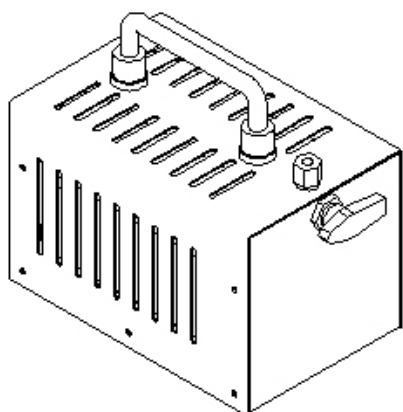
When used properly, the HBank system can provide several thousand charge/discharge cycles without any essential changes in working technical characteristics.

The HBank F1-0500-N has a 500 liter capacity and is capable of supplying high purity hydrogen (over 99.9999%) even when charged with only 99.99% purity hydrogen. This makes F1-0500-N an ideal pure hydrogen source for GC-FIDs, Fuel Cell systems, as well as for many other gas purity-sensitive systems.

Specifications

Parameter	HB-F1-0500-N
Hydrogen Storage Capacity	500 Liters
Raw Hydrogen Input Purity	≥99.99%
Charge Temperature	0 ~ 40°C
Recommended Minimum Charge Pressure	2.5-3.0Mpa (>350psi)
Recharge time @ 25°C	2 hours
(Recharge time in cold water bath, <20°C)	(50 minutes)
Hydrogen Discharge Purity	99.9999%
Hydrogen Discharge Pressure	≥0.2 MPa @ 20°C (30psi)
Hydrogen Discharge Flow Rate	≥2L/min. @ 20°C
Operating Temperature Range	0~60°C
Heat Exchange Method	Air Convection
Valve Type	1/4" Swagelok Needle Valve (SS316)
Dimension (L×W×H)	210×120×120mm (7.3" x 4.75" x 4.75")
Total Weight	7.0kg (15lbs.)

Features



- The HBank system is based on patented AB₅ alloy technology with a hydrogen absorption capacity of 1.65 wt%. The unique composition and special production technology of the alloy allows the system to operate over 5000 cycles.
- The bodies of HBank canisters are produced with high-grade low carbon 321SS stainless steel, which ensures the system's necessary strength and prevents oxidation-related negative effects.
- The 500L system consists of four small canisters which improves the efficiency of heat exchange with the environment and yields a higher maximum gas discharge flow rate.
- The HBank system's complete stainless steel construction permits the increase of the designed maximum gas flow rate (for stable operation with natural heat exchange) if a hot water bath is used.

Expected Output Levels*

Volume	Usage/ min.	Continuing time
500 Liters	÷80ml	= 6,250min. (104 hrs. / 4 days)
500 Liters	÷60ml	= 8,333min. (139 hrs. / 5.7 days)
500 Liters	÷40ml	= 12,500min. (208 hrs. / 8.6 days)
500 Liters	÷20ml	= 25,000min. (417 hrs. / 17 days)
500 Liters	÷10ml	= 50,000min. (833 hrs. / 34 days)

* Output levels based on maximum output pressure reduction via instrumentation-based gas regulator.

Applications

- Pure Hydrogen Source For:
 - Gas Chromatography
 - Metal Organic Chemical Vapor Deposition
 - Environmental Protection
- Spectrometry
- Fuel Cell (Uninterruptible Power Supply)
- Other Precision Testing Instruments

HB-F1-0500-N, H-Bank 500 Liter Hydrogen Storage System

\$9,000.00

Distributed by:



P.O. Box 3881, Woodbridge, CT 06525 U.S.A.

Tel: 1-800-275-7033, (203) 393-3112, Fax: (203) 393-0391

E-mail: sales@quadrexcorp.com

Web: www.quadrexcorp.com

www.capillary-columns.com



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