

ISO9001:2008

REGISTERED



**Alternat Energy Systems, Inc.**

**A Company devoted to Your Energy Needs**

# ***Pricelist December 2009***

## ***WB/HVS LPG-Vaporizer /***

### ***Air Mixing Systems***

***Water Bath Vaporizer with Venturi - Type Mixing System***

- Natural Gas Backup Systems
- Capacities from 14 MM BTU/h to over 200 MM BTU/h
- Complete with Vaporizer, Vapor/Air Mixer, Steel Skid, Controls and Surge Tank
- PLC Controls with Touch Screen Operator Interface for all systems
- Conforms to ASME, NFPA, NEC
- FM / IRI / CSA approved
- Vaporizers with ‘Smart’ Liquid Carryover Protection
- Mixers with dual Solenoid Valves (“dynamic” and “safety”)
- Small Footprint
- High Efficiency



This price list supersedes the price list of July 2008 and all previous price lists. Prices shown in this list are believed to be accurate at the time of printing. They are given for standard equipment, standard options, and standard product configurations. All sales are subject to the terms and conditions as shown on page 16 of this price list. Please contact the factory or your nearest authorized AES distributor for a price quote and current delivery times. **Prices and product configurations are subject to change without notice.**

**Alternat Energy Systems, Inc. • 210 Prospect Park • Peachtree City, GA 30269, USA**

Phone (770) 487-8596 • Fax (770) 631-4306 • e-mail: [info@altenergy.com](mailto:info@altenergy.com) • <http://www.altenergy.com>

## Options, Accessories and Spare Parts for WB/HVS Systems

The following list shows the most commonly requested options, accessories and spare parts for HVS series LPG/Air mixers. Unless listed otherwise, all parts fit all models and all model-years after 1985, except for models modified for specific applications. When ordering spare parts, please provide the serial number of your HVS Mixer.

Part Number	Description	Price in US-\$
HVSOPT-S7W	Siemens S7-1200 with 6-inch (320x240) Siemens Touch Panel with built-in Web Server for Remote Access and Control (Systems with Siemens PLC only)	\$ 2,792.00
SWI0030	Pressure switch, Low LPG; for models WB-200/HVS-14MM and WB-250/HVS-20MM;	\$ 597.70
SWI0033	Pressure switch, Tank Monitor, 2 setpoints; for models WB-200/HVS-14MM and WB-250/HVS-20MM;	\$ 788.60
SWI0029	Pressure switch, Tank Monitor, 3 setpoints; for models WB-200/HVS-14MM and WB-250/HVS-20MM;	\$ 989.50
TRA0056	Tank Monitor Pressure Transmitter; 0-30 psi, 4-20 mA; for systems with PLC controls;	\$ 1,918.00
TRA0058	Vapor Pressure Transmitter; 0-300 psi, 4-20 mA; for systems with PLC controls;	\$ 1,918.00
VAL0012M	Instrument valve (in pressure gauge line);	\$ 17.50
GAU0005	Pressure gauge; liquid filled; stainless steel case, brass internals; with case vent; 15 psi;	\$ 39.50
GAU0001	Pressure gauge; liquid filled; stainless steel case, brass internals; with case vent; 30 psi;	\$ 39.50
GAU0002	Pressure gauge; liquid filled; stainless steel case, brass internals; with case vent; 100 psi;	\$ 39.50
GAU0006	Pressure gauge; liquid filled; stainless steel case, brass internals; with case vent; 300 psi;	\$ 39.50
SOL0073	Solenoid valve, non-explosion-proof; for venturi assembly; valve can be used in "static" or "dynamic" positions in venturi line;	\$ 308.80
SOL0073R	Repair kit for solenoid non-explosion-proof solenoid valve; (includes Solenoid Coil; specify voltage DC24V or AC110V 60Hz or AC220V 50Hz);	\$ 200.60
SOL0073C	Solenoid Coil, non-explosion-proof (specify voltage DC24V or AC110V 60Hz or AC220V 50Hz);	\$ 91.10
SOL0082	Solenoid valve, explosion-proof; for venturi assembly; valve can be used in "static" or "dynamic" positions in venturi line;	\$ 448.60
SOL0082R	Repair kit for solenoid explosion-proof solenoid valve; (includes Solenoid Coil; specify voltage DC24V or AC110V 60Hz or AC220V 50Hz);	\$ 291.40
SOL0082C	Solenoid Coil, explosion-proof; (specify voltage DC24V or AC110V 60Hz or AC220V 50Hz);	\$ 132.30
VAL0002	Valve Assembly, Air Intake, complete; includes valve body, back plate, check plate, bronze bearing sleeve, gasket, O-rings, self-locking nut, stainless steel spring, spring retainer;	\$ 1,660.20
VAL0084	Check valve: backplate for air intake;	\$ 247.00
VAL0085	Check valve: check-plate for air intake;	\$ 258.10
GAS0014	Check valve: gasket for air intake;	\$ 15.00
SPR0001	Check valve: spring, stainless steel	\$ 62.00
NOZ0003	Venturi Nozzle, Type "C";	\$ 691.80
NOZ0004	Venturi Nozzle, Type "D";	\$ 691.80
VEN0001	Venturi Tube, Type "M";	\$ 1,221.70
VEN0002	Venturi Tube, Type "N";	\$ 1,221.70
NOZ0007	Venturi Nozzle, Type "E";	\$ 816.30
NOZ0008	Venturi Nozzle, Type "F";	\$ 816.30
VEN0009	Venturi Tube, Type "O";	\$ 1,346.20
VEN0010	Venturi Tube, Type "P";	\$ 1,346.20

For Options, Accessories and Spare Parts for Water Bath Vaporizers, please refer to price list "Water Bath LPG Vaporizers".



WB-450/HVS-40 with Enlarged Control Room / Maintenance House

### Enlarged Control Room / Maintenance House

All AES Water Bath Vaporizer / LP-Air Mixing Systems (WB/HVS and WB/POM) can be equipped with an enlarged system control room, sometimes referred to as the maintenance house. These enlarged control offer operators and maintenance personnel additional weather protection, as well as additional room for monitoring, recording, and control components. They are typically as wide as the vaporizer/mixer skid and approximately 8 ft (2.4 m) long, but can be built to meet any specific requirements. They are equipped with light fixture, AC outlet, electric heater, and GasLeak Monitor. Air conditioning units of various capacities are available as options.

For pricing and available options, or to discuss your specific requirements, please contact the factory or your nearest AES distributor.

## HVS LPG-Vapor / Air Mixers with Water Bath Vaporizers

Model Numbers are WB-168/HVS-14 to WB-3000/HVS-250. The first part of the model number indicates the vaporizer capacity in gallons per hour; the second part indicates the mixer capacity in MMBTU per hour. All systems combine horizontal water bath vaporizers (08-series or 05-series) with Venturi-type mixing systems (HVS-series). They come complete with vaporizer, venturi mixer, surge tank, interconnecting piping, electrical and safety controls, and are mounted on a common steel skid. This design concept makes them very compact, easy to install and to maintain, and very reliable.

All systems are factory-tested prior to shipping. After placing a system on a non-combustible surface (i.e. concrete pad), filling the vaporizer with heat transfer solution, and connecting it to electrical supply, liquid gas supply, and mixed gas outlet, it is immediately ready to produce high-quality gas which is directly compatible and interchangeable with NatGas.

Standard design output pressure is 5 to 8 psi, or 9 to 12 psi (please specify desired output pressure with order). Higher pressures up to 40 psi are also available and require compressed air for operation. In system with High Pressure Option, the surge tank is ASME U-stamped.

All WB/HVS systems monitor the gas pressure in the surge tank, using a pressure transmitter that is connected to a Siemens or Allen-Bradley PLC. The PLC, which is shared with the vaporizer, "sequences" the venturi lines and controls all mixer safety functions. The PLC also communicates with a color LCD display with Touch Screen Operator Interface, displaying system pressures, and any trouble conditions that may occur.

The WB/HVS series is designed for outdoor installation and requires only nominal preventive maintenance. Intended for intermittent service (see Note), the systems are manufactured to meet or exceed requirements of the ASME Pressure Vessel Code Section VIII, and the latest edition of NFPA Pamphlet #58. They are approved by Factory Mutual (FM) and Canadian Standards Association (CSA), and are suitable for Industrial Risk Insurers (IRI) installations.

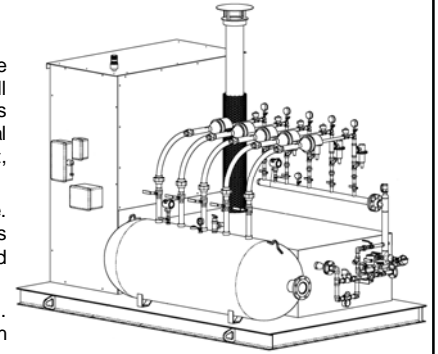
All systems are factory tested, primed, painted and ready for installation. They come with 2 sets of operating manuals and test reports. All vaporizers are equipped with "smart" Liquid Carryover Protection.

All HVS Mixers are equipped with two solenoid valves per venturi train. The "dynamic" solenoid valve opens and closes each time a venturi train is activated to produce mixed gas. The "static" solenoid valves opens when the mixer is started and stays open until the mixer is stopped, or until a high-pressure alarm occurs. This feature provides an additional level of safety, and prevents the unwanted discharge of mixed gas in case of a failure of the "dynamic" solenoid valve.

The mixer sendout pressure and the sequencing of the venturi lines (differential pressure between trains; ON-OFF deadband) can be adjusted through simple inputs at the touch screen. A separate "Venturi Cycle Counter" for each venturi train increments each time a venturi train is activated. This information can be used to determine when the mechanical components of a venturi train should be closely inspected, overhauled, or replaced.

The required vapor supply pressure depends on the desired sendout pressure, on the type of available LPG (Propane/Butane content), and on other factors (i.e. altitude). Typical supply pressures for "Propane" and 5-8 psi sendout pressure are 30-60 psi. Systems with higher sendout pressure of 9-12 psi require considerably higher vapor supply pressure, which can be difficult to maintain in very cold climates. Mixed Gas Sendout Pressures of more than 12 psi require the High Pressure option, which includes a surge tank with ASME "U"-Stamp.

Please Note: Venturi-based LP/Air mixers are generally considered "for intermittent use". Due to the relatively limited useful life of their dynamically exercised mechanical components (regulators, check valves, solenoid valves, air intake valves, etc. are typically specified by their respective manufacturers to withstand 200000 to 500000 cycles), they are not very well suited for baseload applications. Their main application is "Emergency Backup".



Model Number	Nominal Capacity MMBTU	Number of Venturis <sup>1</sup>	Surge Tank Capacity US-gal (m <sup>3</sup> )	Approximate Skid Size in inches (m)	Price in US-\$ 5 to 8 psi	Price in US-\$ 9 to 12 psi	Price in US-\$ High Press.	
WB - 168 / HVS - 14 MM	14	2	120 (0.450)	W = 84 (2.13) L = 135 (3.43) H = 100 (2.54)	\$ 42,800.00	N/A	\$ 4,813.00	
WB - 208 / HVS - 17 MM	17	2	120 (0.450)		\$ 44,800.00	N/A	\$ 4,813.00	
WB - 258 / HVS - 20 MM	20	2	120 (0.450)		\$ 48,800.00	\$ 52,490.00	\$ 4,813.00	
WB - 308 / HVS - 27 MM	27	3	120 (0.450)		\$ 59,860.00	N/A	\$ 6,724.00	
WB - 358 / HVS - 30 MM	30	3	120 (0.450)		\$ 61,860.00	\$ 67,400.00	\$ 6,724.00	
WB - 408 / HVS - 37 MM	37	4	120 (0.450)		\$ 71,390.00	N/A	\$ 8,413.00	
WB - 458 / HVS - 40 MM	40	4	120 (0.450)		\$ 72,890.00	\$ 80,270.00	\$ 8,413.00	
WB - 555 / HVS - 50 MM	50	5	250 (0.950)	W = 98 (2.49) L = 158 (4.01) H = 100 (2.54)	\$ 97,739.00	\$106,969.00	\$ 9,908.00	
WB - 755 / HVS - 60 MM	60	6	250 (0.950)		\$ 117,364.00	\$128,440.00	\$ 11,599.00	
WB - 855 / HVS - 70 MM	70	7	250 (0.950)		\$ 127,537.00	\$140,459.00	\$ 13,289.00	
WB - 1005 / HVS - 80 MM	80	8	500 (1.893)	W = 107 (2.72) L = 198 (5.03) H = 100 (2.54)	\$ 142,410.00	\$157,178.00	\$ 14,787.00	
WB - 1005 / HVS - 90 MM	90	9	500 (1.893)		\$ 151,478.00	\$168,092.00	\$ 16,695.00	
WB - 1205 / HVS - 100 MM	100	10	500 (1.893)		\$ 164,753.00	\$183,213.00	\$ 18,386.00	
WB - 1505 / HVS - 110 MM	110	11	500 (1.893)		\$ 181,457.00	\$201,763.00	\$ 20,077.00	
WB - 1505 / HVS - 120 MM	120	12	500 (1.893)		\$ 186,034.00	\$208,186.00	\$ 22,745.00	
WB - 1505 / HVS - 130 MM	130	13	500 (1.893)		\$ 192,526.00	\$216,524.00	\$ 24,435.00	
WB - 1805 / HVS - 140 MM	140	14	500 (1.893)		\$ 211,564.00	\$237,408.00	\$ 26,126.00	
WB - 1805 / HVS - 150 MM	150	15	500 (1.893)		\$ 217,476.00	\$245,166.00	\$ 27,816.00	
WB - 2005 / HVS - 160 MM	160	16	500 (1.893)		\$ 238,847.00	\$268,383.00	\$ 29,311.00	
WB - 2005 / HVS - 170 MM	170	17	1000 (3.785)		\$ 245,373.00	\$276,755.00	\$ 31,002.00	
WB - 2005 / HVS - 180 MM	180	18	1000 (3.785)	W = 107 (2.72) L = 198 (5.03) H = 100 (2.54)	\$ 257,145.00	\$290,373.00	\$ 32,693.00	
WB - 2205 / HVS - 190 MM	190	19	1000 (3.785)		\$ 267,350.00	\$302,424.00	\$ 34,189.00	
WB - 2205 / HVS - 200 MM	200	20	1000 (3.785)		\$ 273,398.00	\$310,318.00	\$ 35,877.00	
WB - 2505 / HVS - 210 MM	210	21	1000 (3.785)		\$ 293,476.00	\$332,242.00	\$ 38,742.00	
WB - 2505 / HVS - 220 MM	220	22	1000 (3.785)		\$ 305,181.00	\$345,793.00	\$ 40,431.00	
WB - 3005 / HVS - 230 MM	230	23	1000 (3.785)		call factory	\$ 322,727.00	\$365,185.00	\$ 41,927.00
WB - 3005 / HVS - 240 MM	240	24	1000 (3.785)		call factory	\$ 329,254.00	\$373,558.00	\$ 43,617.00
WB - 3005 / HVS - 250 MM	250	25	1000 (3.785)	call factory	\$ 341,009.00	\$387,159.00	\$ 45,309.00	

<sup>1</sup> Actual number of venturi arrangements may vary with mixed gas pressure.

Weights and dimensions are approximate. Specifications are subject to change without notice. Call factory or distributor for price quotation and actual lead times.

## Terms and Conditions, Warranty Information

The following are the standard terms and conditions of Alternate Energy Systems, Inc. for **domestic** customers. Actual terms and conditions for a specific order may have adjusted language and may be attached to the acknowledgement of the purchase order. Contact Alternate Energy Systems, Inc. for terms and conditions for export orders.

### Acceptance:

Where these terms and conditions are incorporated in a proposal submitted by Alternate Energy Systems, Inc. ("Seller"), that proposal, together with these terms and conditions, expresses the Seller's entire undertaking and responsibility when the Purchaser's written order is transmitted to the Seller within thirty (30) days from the proposal date, and when the Purchaser's order is accepted by the Seller at its offices. Any previous quotations, agreements, conversations, or understandings, are superseded hereby.

For all other orders, these terms and conditions shall govern the contract between the Purchaser and the Seller. Any deviation from these terms and conditions must be agreed upon by the Seller, in writing. Specifically, the fact that Seller provides product in response to an order issued by the Purchaser, carrying deviating terms and conditions, does not automatically indicate that the Seller has accepted the Purchaser's terms and conditions.

### Limited Warranty:

Seller guarantees that all products of its manufacture, sold pursuant hereto, shall be free of defects in workmanship and material, normal wear and tear excepted, for the standard period of one year from date of shipment from Seller. Certain products may carry shorter or longer warranty periods, in effect for these particular products at the time of shipment from the Seller. Commercial items, and other components, such as controls, electric motors, drives, etc., utilized in these manufactured products, are not guaranteed by Seller. Instead, they are covered by, and are subject to, their respective manufacturers' guarantees only. Complete products represented by, distributed by, or purchased and resold in any other manner by, Seller, are not guaranteed by Seller, but will be subject to their respective manufacturer's guarantee.

In the event of defects developing within the Seller's applicable guarantee period under normal and proper use, the Seller will only be obligated to furnish, F. O. B. point of manufacture or the Seller's plant, at its option, without charge, parts required to replace materials found defective; or, at Seller's option, replacement of defective item. Seller or its suppliers shall not be held liable for any further costs or expense, or for indirect or consequential damages, including removal or reinstallation cost, and lost profits. Deterioration or wear caused by chemicals, abrasive action, or excessive heat shall not constitute defects under warranty, unless such conditions are expressly provided for by the Seller, in writing. Products or parts that have been subject to accidental damage, misuse, unauthorized disassembly or alterations, improper installation, lack of proper lubrication, or lack of other service requirements established by the manufacturer, will not be covered by warranty. THE WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY, OR IMPLIED; INCLUDING, WITHOUT LIMITATION, THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

### Taxes:

Unless otherwise specifically noted in a proposal, prices quoted by seller do not include any applicable city, county, state or federal taxes. Any of these taxes to which a transaction is subject, are to be borne by the Purchaser, even if collection is required by the Seller.

### Applicable Codes:

Seller or any manufacturer it represents, shall not be liable for any expense involved in meeting any federal, state or local codes. Federal codes, such as those represented in OSHA, refer to the employer (Purchaser) and not to the supplier (Seller). They cannot be delegated. However, the Seller will endeavor to help the Purchaser comply with these codes.

### Component Equipment:

Seller's sales proposals are based on supplying its chosen make of motors, controls, drives and miscellaneous incidental equipment of the type required. If the Purchaser specifies a particular brand of one of these devices, the Seller reserves the right to charge any additional price involved, and its estimated shipping date is subject to such delays as may be required to obtain any non-stock item.

### Shipping:

Seller will use all reasonable care in shipping the equipment and will endeavor to make shipment within the time estimated. However, it assumes no responsibility for loss of, or damage to, the equipment after shipment from its plant, or for unavoidable delays, such as those caused by fire, strikes, carriers, or other causes beyond the Seller's control. Unless instructed otherwise, all shipments will be insured at the buyer's expense and at the net invoice value of the goods.

### Erection and Installation:

Seller assumes no responsibility for improper operation of equipment due to faulty erection or installation, when the equipment is erected by the Purchaser or his designates.

### Cancellation:

All orders placed with, and accepted by, Seller are firm and not subject to cancellation, except by mutual consent. They are cancelable then only on terms that will indemnify the Seller against any losses incurred.

### Claims:

Claims for shortages or damage to merchandise should be made to the transportation company making delivery. Should any piece of equipment prove defective, it will be repaired or replaced under the applicable warranty provided herein. Under no circumstances should any items be returned to Seller or the manufacturer from which Seller procured the item, without prior written Return Goods Authorization from Seller.

If Goods are returned without obtaining Return Goods Authorization, Seller and its associated manufacturers will not be responsible for the cost of repairs made in the field, if they are made without the written agreement of, and specific written instructions from, Seller and the affected manufacturer, if any.

### Payment Terms:

Full net payment must reach Seller's office by the 30th day after invoice date. The following finance charges will apply for later payment, unless other agreements exist for that sale only:

The account is subject to a finance charge for late payment of the lower of (A) the maximum allowable rate, or (B) 1½ % per month (Annual Percentage Rate: 18%) on the total past due balance at any time that the past due balance includes any charge remaining unpaid 30 days after the date on which it was billed. There shall be no finance charge under a "Consumer Credit Transaction" as defined under the Federal Truth in Lending Law.

### Governing Law:

This agreement has been executed in, and shall be governed by, the laws of the State of Georgia.

### Security Agreement and Security Interest:

Purchaser agrees that Seller shall have and retain a security interest in the material furnished pursuant under this Agreement and, if full payment of all sums due is not received by Seller in accordance with the payment terms set forth herein and on the face hereof, Seller shall have the right to enter Purchaser's premises, and any other place where the material may be located, and repossess the material. This right of repossession shall be in addition to, and in no way in limitation of, any rights or remedies Seller may have under law or this Agreement by reason of Purchaser's failure to pay.

### Purchaser's Acceptance of above Conditions:

All orders shall be subject to the terms and conditions described above, and to no others, whatsoever. When attached to the Seller's written quotation, this document contains the entire agreement between the parties, and there will be no oral or written understandings, terms or conditions, and Purchaser will not have relied upon any conditions or representation not contained therein. No waiver, alteration or modification of the terms and conditions on this and the other side hereof shall be binding unless in writing and signed by an executive officer or by a duly authorized representative of the Seller.

THE PURCHASER'S RECEIPT OF THE INVOICE SHALL CONSTITUTE AN ACCEPTANCE BY THE PURCHASER OF ALL THE TERMS AND CONDITIONS CONTAINED DESCRIBED ABOVE, AND ANY ATTACHMENT HEREOF OTHER THAN ANY TERMS OR CONDITIONS TO WHICH THE PURCHASER SHALL PROMPTLY TAKE EXCEPTION BY SPECIFIED WRITTEN OBJECTION.

Version 12/99 (05/04)