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**Alternat Energy Systems, Inc.**

**A Company devoted to Your Energy Needs**

## ***Pricelist December 2009***

# ***Liquid Transfer Pumps Test Flares Truck Unload Stations Coalescing LPG Vapor Filters***

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.**

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## Flare Burner Heads (Test Flares)

Test Flares are used during system setup, and for periodical system tests and maintenance. They represent large loads, and allow the system to be tested under simulated load conditions.

AES manufactures standard test flares with 1" gas line, 2" gas line, and 3" gas line. Other flares for specific systems are available as customer specials. All AES test flares are equipped with automatic ignition, standing pilot, stainless steel parts, Electronic Flame Safeguard, and electric solenoid (or pneumatically actuated) main flare gas valve. Flame Arrestors are available as an option.

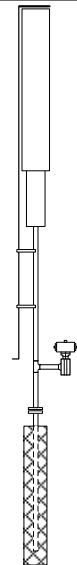
Model Number	Size	Shipping Weight	Price in US-\$	Flame Arrester
FH-1	1"	200 lbs.	\$ 6,923.00	\$ 2,148.00
FH-2	2"	250 lbs.	\$ 8,760.00	\$ 2,567.00
FH-3	3"	390 lbs.	\$ 10,529.00	\$ 3,509.00

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

### Approximate Theoretical Flare Burner Capacities

	@ 5 psi	@ 10 psi	@ 15 psi	@ 30 psi	@ 50 psi
FH-1	25 MMBTU/h	33 MMBTU/h	44 MMBTU/h	76 MMBTU/h	88 MMBTU/h
FH-2	36 MMBTU/h	72 MMBTU/h	101 MMBTU/h	188 MMBTU/h	304 MMBTU/h
FH-3	108 MMBTU/h	196 MMBTU/h	290 MMBTU/h	522 MMBTU/h	841 MMBTU/h

Capacities are approximate and are based on flare stack distance of ~50 ft. from mixer discharge location and minimum pressure of 2 psig at the flare stack.



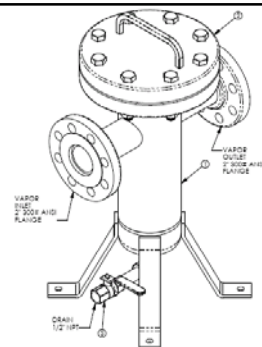
## Coalescing LPG Vapor Filters

All AES vaporizers are equipped with strainers in the liquid LPG supply line. These strainers are designed to remove solid contaminants from the LPG, i.e. sand or rust. However, in order to remove moisture and unwanted by-products from the refining process of the LPG, so-called "heavy ends", from the LPG, a coalescing filter is required. AES manufactures coalescing filters for the vapor phase (PVF series) that are specifically designed for this purpose.

The filters are available in various sizes, and are all equipped with a manual drain for the removal of accumulated contaminants, and a differential pressure gauge. All filters are designed for 250 psi operating pressure at 650°F (17.2 bar @ 343°C). Filters above 6 inch vessel ID are shipped with ASME "U"-Stamp. The ASME "U"-Stamp is available as an option for the smaller filters. All filters have flanged inlet and outlet connections (ANSI or DIN), and can be opened for inspection and maintenance.

All filters should be installed with a maintenance bypass around them.

AES PVF Coalescing Filters are painted "Gas-Yellow" (RAL xxxx).



### Coalescing Vapor Filters

Model Number	PVF 010104	PVF 020204	PVF 020206	PVF 030306	PVF 040408
Nominal Flow Capacity	250 gph / 500 kg/h	500 gph / 1000 kg/h	800 gph / 1600 kg/h	1200 gph / 2400 kg/h	2500 gph / 5000 kg/h
Inlet Size	1-inch / DN25	2-inch / DN100	2-inch / DN100	3-inch / DN80	4-inch / DN100
Outlet Size	1-inch / DN25	2-inch / DN100	2-inch / DN100	3-inch / DN80	4-inch / DN100
Vessel Diameter	4-inch / DN100	4-inch / DN100	6-inch / DN150	6-inch / DN150	8-inch / DN200
Overall Dimensions, W	16 inches / 0.41 m	16 inches / 0.41 m	18 inches / 0.46 m	18 inches / 0.46 m	22 inches / 0.56 m
Overall Dimensions, H	40 inches / 1.02 m	46 inches / 1.17 m	46 inches / 1.17 m	46 inches / 1.17 m	56 inches / 1.42 m
Shipping Weight	135 lbs / 61 kg	150 lbs / 68 kg	220 lbs / 100 kg	250 lbs / 113 kg	390 lbs / 177 kg
Price	\$ 4,350.00	\$ 5,310.00	\$ 6,130.00	\$ 6,840.00	\$ 8,670.00
ASME "U"-Stamp	\$ 1,107.00	\$ 1,107.00	\$ 1,107.00	\$ 1,107.00	included

All specifications are subject to change without notice. Weights and dimensions are approximate. Call factory or distributor for price quotation and actual lead times. Nominal Flow Capacity is based on 20 psi / 1.4 bar vapor pressure. Higher vapor pressures may increase the actual flow capacity. Lower vapor pressures will decrease the actual flow capacity.

## Truck Unload Stations and Forklift Cylinder Fill Stations

Truck Unload Stations are used to transfer LPG from supply trucks to the storage tank(s). AES truck unload stations are designed to be anchored in a concrete foundation. They come complete with liquid transfer connection and vapor return connection. They are equipped with block valves, excess flow valves, vent valves, backcheck valves, and breakaway couplings. Emergency Shutoff Valves (ESV) with pull cable and Nitrogen-operated ESV are available as an option.

Cylinder fill stations, i.e. for filling of forklift cylinders, can be supplied separately, or integrated with the truck unload station. The price shown below is for a station that is integrated with a Truck Unload Station.

Model Number	Description, Size	Shipping Weight	Price in US-\$
TUS-2	Truck Unload Station, 2" x 1 1/4"	430 lbs.	\$ 6,575.00
TUS-3	Truck Unload Station, 3" x 2"	490 lbs.	\$ 10,408.00
CFS-1	Forklift Cylinder Fill Station	80 lbs.	\$ 3,334.00
MIS-1	Methanol Injection System for TUS-2	90 lbs.	\$ 2,602.00
MIS-2	Methanol Injection System for TUS-3	120 lbs.	\$ 3,382.00

Prices for Truck Unload Stations do not include Emergency Shutoff Valves with Safety Handle.

Price for Cylinder Fill Station is for integrated unit (with TUS-2 or TUS-3) and does not include fill hose or nozzle.

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

## LPG Transfer Pumps

LPG Transfer Pumps, as the name implies, are used to transfer LPG from the storage tanks to the vaporizer. In systems with venturi LPG/air mixing systems, they are also responsible for maintaining the pressure needed for optimum and efficient function of the venturi mixers.

AES uses pumps from the two leading manufacturers, Blackmer and Corken.

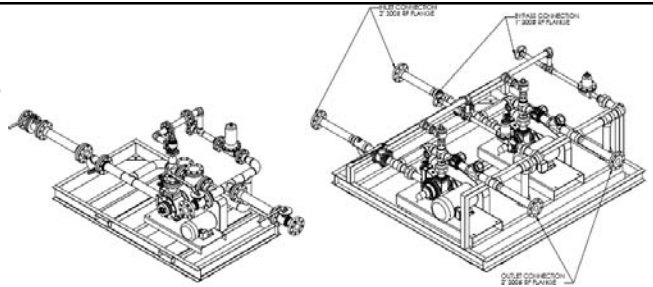
All pumps are mounted on steel skids, and are primed and painted. They are equipped with constant pressure regulator, strainer, isolation valves, summer bypass loops, liquid filled pressure gauges, and other components that are required for safe operation.

Smaller pumps up to 23/26 GPM are for single phase AC115/230V 60Hz service.

Larger pumps are for 3-phase AC230/460V 60Hz and require external motor starters. All pumps are also available for 50Hz service (AC230V 50Hz single phase; AC380/400/415V 50Hz 3-phase). Pumps up to 31 GPM are direct drive pumps (electric motor directly coupled to pump). Larger pumps are belt driven.

Dual Pump Systems are manufactured as two single pumps. Except for the common skid, they do not share any essential components (maximum redundancy). The pumps in dual pump systems can be used in any combination: Pump 1, Pump 2, or Pump 1 and Pump 2 together.

If pump systems are integrated with the vaporizer or vaporizer/blender controls, a start/stop station in an explosion-proof enclosure is installed directly at the pump skid. Integrated pumps can also be equipped with an automatic start/stop function in response to the pressure in the storage tank(s). The price adder for these options is shown below (in the "Motor Starters" section).



Model Number	Nominal Capacity	Max. <sup>1</sup> Syst. Size (MMBTU/h)	Pump Type	Motor HP/RPM	Drive Type	Electrical Supply	Shipping Weight (lbs / kg)	Price in US-\$ Single Pump Package	Price in US-\$ Duplex Pump Package	
<b>Blackmer Pump Packages</b>										
AEP - 5 B	5 gpm	10	LGF1	1.0 / 1750	Direct	AC115/230V 1-Ph	320 / 146	\$8,564.00	\$ 15,134.00	
AEP - 9 B	9 gpm	20	LGF1P	1.5 / 1750	Direct	AC115/230V 1-Ph	340 / 155	\$9,132.00	\$ 16,274.00	
AEP - 15 B	15 gpm	30	LGLF1.25	3.0 / 1750	Direct	AC230/460V 3-Ph	410 / 186	\$9,797.00	\$ 17,602.00	
AEP - 23 B	23 gpm	50	LGL1.5	3.0 / 1750	Direct	AC230/460V 3-Ph	410 / 186	\$11,603.00	\$ 20,529.00	
AEP - 45 B	45 gpm	100	LGLD2	5.0 / 520	Belt	AC230/460V 3-Ph	650 / 295	\$18,541.00	\$ 30,459.00	
AEP - 58 B	58 gpm	130	LGLD3	7.5 / 420	Belt	AC230/460V 3-Ph	1280 / 581	\$21,806.00	\$ 36,307.00	
AEP - 75 B	75 gpm	160	LGLD3	10 / 520	Belt	AC230/460V 3-Ph	1320 / 599	\$22,489.00	\$ 37,676.00	
AEP - 112 B	112 gpm	240	LGLD4	15 / 420	Belt	AC230/460V 3-Ph	1570 / 713	\$33,772.00	\$ 60,221.00	
AEP - 150 B	150 gpm	300	LGLD4	15 / 520	Belt	AC230/460V 3-Ph	1570 / 713	\$33,772.00	\$ 60,221.00	
<b>Corken Pump Packages</b>										
AEP - 12 C	12 gpm	25	C12	1.0 / 3450	Direct	AC115/230V 1-Ph	310 / 141	\$9,235.00	\$ 16,238.00	
AEP - 16 C	16 gpm	30	C13	2.0 / 3450	Direct	AC115/230V 3-Ph	350 / 159	\$10,136.00	\$ 18,037.00	
AEP - 26 C	26 gpm	50	C14	3.0 / 3450	Direct	AC230/460V 3-Ph	370 / 168	\$10,744.00	\$ 19,251.00	
AEP - 29 C	29 gpm	60	521	3.0 / 420	Belt	AC230/460V 3-Ph	670 / 304	\$17,792.00	\$ 30,328.00	
AEP - 40 C	40 gpm	80	521	5.0 / 520	Belt	AC230/460V 3-Ph	720 / 327	\$18,211.00	\$ 31,166.00	
AEP - 53 C	53 gpm	110	521	5.0 / 640	Belt	AC230/460V 3-Ph	720 / 327	\$18,211.00	\$ 31,166.00	
AEP - 60 C	60 gpm	130	1021	7.5 / 350	Belt	AC230/460V 3-Ph	1340 / 608	\$22,465.00	\$ 39,673.00	
AEP - 68 C	68 gpm	150	1021	10 / 350	Belt	AC230/460V 3-Ph	1370 / 622	\$23,150.00	\$ 41,044.00	
AEP - 80 C	80 gpm	200	1021	10 / 420	Belt	AC230/460V 3-Ph	1370 / 622	\$23,150.00	\$ 41,044.00	
AEP - 108 C	108 gpm	240	1021	15 / 520	Belt	AC230/460V 3-Ph	1530 / 694	\$24,299.00	\$ 41,972.00	
AEP - 132 C	115 gpm	300	1521	15 / 420	Belt	AC230/460V 3-Ph	1600 / 726	\$33,433.00	\$ 59,614.00	

(1) Maximum System Size is based on manufacturer-recommended over-sizing factor of 2.0 to 2.5.  
Weights are approximate; specifications are subject to change without notice. Call factory or distributor for price quotation and actual lead times.

<b>Motor Starter Packages for 3-Phase Pumps (fits both Blackmer and Corken Pumps)</b>					
Description	Voltage	3 HP	5 HP	7.5 HP	10HP
Starter Package, Non-Explosion-Proof, NEMA 1 Indoor Enclosure; Start/Stop Station; Pilot Light; supplied loose for field installation.	AC 230 V	\$1,109.00	\$1,153.00	\$1,153.00	\$1,153.00
	AC 460 V	\$1,153.00	\$1,153.00	\$1,153.00	\$1,153.00
Starter Package, Non-Explosion-Proof, NEMA 3R Outdoor Enclosure; Start/Stop Station; Pilot Light; supplied loose for field installation.	AC 230 V	\$1,395.00	\$1,468.00	\$1,468.00	\$1,468.00
	AC 460 V	\$1,468.00	\$1,468.00	\$1,468.00	\$1,468.00
Installation of Non-Explosion-Proof Motor Starter on the Inside or the Outside of a Vaporizer Control Room.	AEP-INS-1 \$929.00 (per Starter Package)				
Starter Package, Explosion-Proof, NEMA 7,9,3R Outdoor Enclosure; Start/Stop Station; Pilot Light; supplied loose for field installation.	AC 230 V	\$3,261.00	\$3,349.00	\$3,349.00	\$3,349.00
	AC 460 V	\$3,349.00	\$3,349.00	\$3,349.00	\$3,349.00
Installation of Explosion-Proof Motor Starter on Pump Package (includes mounting frame and explosion-proof Flex-Conduit)	AEP-INS-2 \$2,047.00 (per Starter Package)				
Integration of pump control in vaporizer or vaporizer/blender control system; includes remote start/stop station in ex-proof enclosure, installed at pump skid.	\$ 2,664.00				
Automatic pump start/stop in response to pressure in storage tank(s); includes option "integration of pump control in vaporizer or vaporizer/blender control system"; includes Rosemount pressure transmitter in pump inlet.	\$ 5,578.00				

All Starter Packages consist of the motor starter (appropriately sized for the selected pump motor), integrated Start/Stop station, heater strips, and an enclosure. "Standard" configurations are available for indoor or outdoor installation in non-hazardous areas (such as the vaporizer control room); "Ex-Proof" configurations are designed for installation at the pump location. Factory installation of ex-proof starter packages includes a mounting frame attached to the pump skid, and ex-proof flexible conduit between the enclosure and the pump. Dual Pump Packages require 2 Starter Packages.

## 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.

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