



ARP
American Research Products



ARPFog Energy Efficient High Pressure Systems

Minimize Your Energy and
Maintenance Needs

American Research Products

American Research Products, Inc.

Energy Efficient High Pressure Humidification Systems

"Custom Solutions Using Standard Components"



ARPFog Systems

**Experience the benefits of ARP Fog
energy efficient adiabatic systems
today!**

Energy Efficient Operation
Low Maintenance Requirements
Improve Industrial Processes
Improve Indoor Air Quality
Enjoy free cooling energy savings
Qualifies for Energy Incentive programs
Long, Low Maintenance, Service Life

Energy Efficient Adiabatic Humidification Systems with mineral free treated water.

The ARP Fog high pressure atomizing system provides energy efficient humidification and evaporative cooling solutions for a wide variety of industrial and commercial applications.

The ARP Fog system uses high pressure to atomize the water into billions of ultra fine droplets for large surface area and fast absorption.

The adiabatic absorption process uses heat available in the surrounding air for energy free absorption. This process also provides free cooling for high heat load situations.

The ARP Fog high pressure pumping systems use water lubricated, oil free pumps with long service lives and reduced maintenance requirements.

The ARP Fog micro-processor control system monitors the pump for flow, temperature and pressure. The system controls the staging valves and monitors the discharge humidity for safe efficient production of optimum humidification levels.

The use of reverse osmosis treated water eliminates mineral dusting in the treated spaces and prolongs the life of the nozzles and pumping system.

The ARPFog Answer For Energy Efficient Humidification

Waste heat that would normally be exhausted to atmosphere provides the 970 BTU's per pound heat of vaporization.

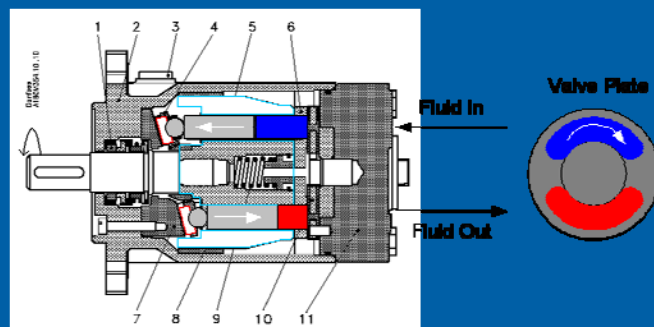
The economizer controls automatically off set the drop in discharge temperature by increasing the proportion of return air to outside air. This ratio determines the mixed air temperature. Simple and automatic, when the heat energy is needed the economizer provides it and when it isn't needed it doesn't.

Assumptions: \$.065 per kWh, 3500 hours of operation annually,
1000 lbs per hour moisture output.

Energy Cost Comparison (Annual)		
Mistifier System	\$700	0.5%
Centrifugal	\$3,430	2.7%
Ultrasonic	\$5,950	4.6%
Compressed Air	\$14,350	11.1%
Steam to Steam	\$68,950	53.5%
Gas To Steam	\$86,188	66.9%
Electric Steam	\$128,800	100.0%

Using waste heat,

ARPFog systems eliminate the energy needed to create steam, as well as the losses inherent in a steam generator distribution system. The steam energy load is replaced by the electrical energy needed to operate a small high pressure pump, much less than the energy needed by the steam system as the chart above shows.



Water lubricated high pressure pump

ARPFog advanced systems using 1000 psi water atomized through high efficiency SS nozzles provides energy saving humidification and evaporative cooling solutions.

The ARPFog System ~ Custom Solutions From Standardized Components

Engineering Analysis of your application, assistance with energy incentive program applications, start-up and owner training,.

Buy ARPFog Systems and receive free support for the life of your system!

Simple to Install . . .

Simple to Operate . . .

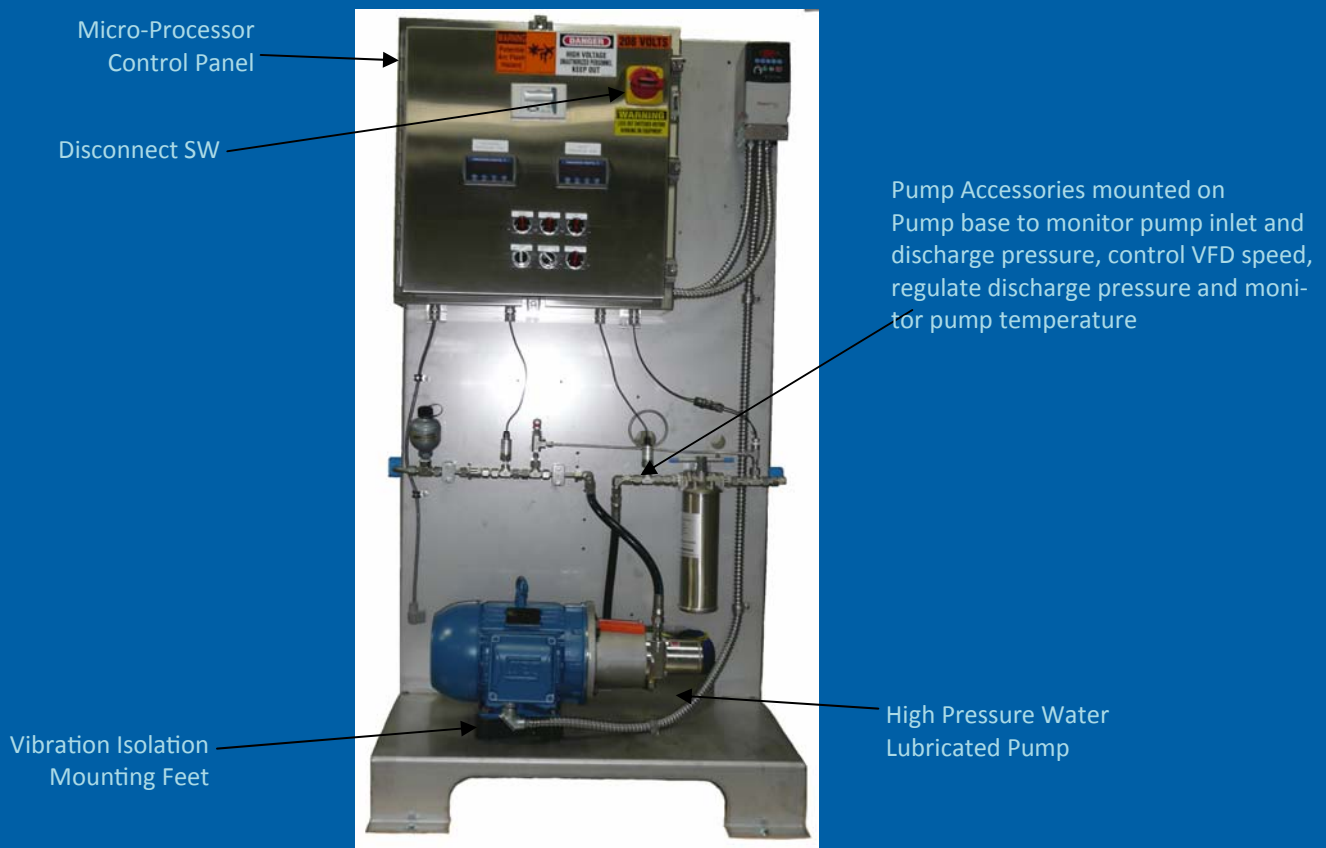
Simple to Maintain . . .

Simply a Great System !

ARPFog High Pressure Pumping Station Specifications

Model	ARP-500	ARP-1000	ARP-1500	ARP-2000	ARP-3000	ARP-3500
System Capacity, #/hr	50-500	100-1,000	150-1,500	200-2,000	300-3,000	350-3,500
Power	2.6 amp 480/3/60	3.7 amp 480/3/60	3.7 amp 480/3/60	6.4 amp 480/3/60	8.7 amp 480/3/60	8.7 amp 480/3/60
Pumping Station Dimensions wxdxh	27"x20"x60"	27"x20"x60"	27"x20"x60"	27"x20"x60"	27"x20"x60"	27"x20"x60"
Weight	73kg/161#	79 kg/174#	79 kg/174#	90 kg/198#	113 kg/250#	113 kg/250#
Inlet Water Connection	3/4" FNPT	3/4" FNPT	3/4" FNPT	3/4" FNPT	3/4" FNPT	3/4" FNPT
Pre-Filter Size, dia x length	10µm Abs 4" x 5"	10µm Abs 4" x 5"	10µm Abs 4" x 10"	10µm Abs 4" x 10"	10µm Abs 4" x 10"	10µm Abs 4" x 20"
HP Pp Flow Rate, gpm	1	2	3	4	6	7
HP Pp Hp	1	2	3	5	5	7.5
HP Pp RPM	1000-3000	1000-3000	1000-3000	1000-3000	1000-2400	1000-2400

Larger pump systems are available. Contact the factory for specifications and pricing to match your application.



ARPFog High Pressure Nozzles, Manifolds and Control Valves

All SS welded construction with high pressure connections made with double ferrule compression fittings. Nozzle capacities can be selected to match system loads to maximize coverage and minimize over spray and water losses.



Nozzle construction is SS with anti-drip check valves to minimize dripping and water hammer on start up. Wide dispersion angles promote efficient absorption of the water into the air stream.



High pressure valves have integral drain ports to relieve the pressure on the nozzle headers on shut down and to facilitate draining of the supply headers during periods of low demand.

Valve blocks for various combinations of valves provide multiple configurations to satisfy any project requirement.



American Research Products
American Innovation

ARPFog Evaporative Cooling For HVAC and Mission Critical Applications



Increase cooling system performance and capacity using evaporative cooled condensers and free cooling on inlet air streams.

Energy Cost Comparison (Annual)		
ARP EC System	\$1,462	3%
Hybrid Mech/EC	\$9,630	20%
Chiller	\$24,528	50%
DX Cooling	\$49,056	100%
Assumptions: \$.07 per kWh, 8760 hours of operation, 100 Ton Cooling Load with Economizer Operation.		

Data center energy consumption can be reduced significantly by switching to evaporative cooling. Utilizing the evaporative cooling system for humidification and cooling reduces component count and energy consumption.

ARP's high pressure adiabatic systems operate on less energy and require less maintenance than any other technology available today.



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ARPFog Mistifier™ Wall Mounted Humidifiers

- Completely Self Contained
- Operates on High Pressure Water
- No Electric Heating Elements
- Uses less than 51 watts
- Treated or Un-treated water
- Low Maintenance
- Constructed of Stainless Steel
- Unique Air Distribution System
- Ideal For Low Ceiling Applications



American Research Products Mistifier™ wall mounted self-contained room humidifier offers the lowest operating cost of any room humidifier on the market. The use of high pressure to atomize the water into billions of fine particles provides quick absorption and close control, while using the least amount of energy.

The proprietary mixing of the air and water creates optimum unit efficiency and prevents moisture fall out. The air distribution fans provide quiet, low velocity distribution of the moisture into the conditioned space.

American Research Products Mist-a-Fier™ ARP-30 Technical Data

Nominal 30#/hr output at 1000 psi input pressure
120 volts, 51 watts, 6' grounded power cord
3/8" FNPT Inlet Connection ~ 1/2" FNPT Drain Connection
Weight 40 # ~ Dimensions 24" W x 12" D x 14" H

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