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Other Alternative Fuel

American Air Filter (AAF) introduces Gas Phase

Gone are the days when the term 'air filtration' used to immediately and exclusively imply particulate air filtration. In today's environment, premier health organizations such as the Centers for Disease Control's – National Institute for Occupational Safety and Health (NIOSH) define air filtration as removing "unwanted material" from airstreams. The term "unwanted material" thereby further described as material removed via both Particulate Air Filtration AND Gas-phase Air cleaning (for removing gases, vapors and odors).

Chemical or Gas-Phase air filters have been in use for over three decades now. These specialty air filtration products scrub mal-odorous, corrosive, harmful and toxic gases from airstreams. Applications of this invention spanned across scrubbing corrosive gases to protect electronics and air compressors in industrial facilities, treating air in a museum or archive, removing odors within office buildings or commercial establishments, treating air quality in airports, laboratories, hospitals, healthcare etc.



But, due to little expertise in the physics of air, these inventions did not gain widespread use because of inherent product flaws such as high pressure drop, excessive dusting, uneven pressure drop and velocity gradients, ineffective chemical media utilization, excessive leakage, air by-pass and premature breakthroughs.

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For more information....

Please contact us at Air Equipment Company, or feel free to visit the following websites:

Air Equipment Company – <http://www.airequipmentcompany.com>

American Air Filter - <http://www.aafintl.com>

Vulcain - <http://www.vulcaininc.com>

ABB – <http://www.abb-drives.com>



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1. **A. Kansas City** – they hosted 10, New York 7, Louisville 6, and Seattle 5
2. **C. Marquette** – declined in 1970 because they were put in the Ft. Worth Region instead of the Dayton Region. They played in, and won the NIT.
3. **B. Bradley** – In 1955, they went 7-19 in the regular season, but still managed to win 2 tournament games before being eliminated.
4. **D. LSU** – In 1986, LSU made it to the final four with #2 seed Louisville, and two #1's, Duke and Kansas.

For suggestions and comments regarding this newsletter, please contact Luke Powell.

American Air Filter (AAF) introduces Gas Phase

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As air quality degrades globally, the highly specialized air treatment company – **American Air Filter (AAF International)**, now addresses this market need with innovative and advanced product offerings. Problems from currently employed technologies were revealed using evaluations employing cutting-edge air analysis technologies at **AAF International's** Global R&D centers.

In the new realm, with **AAF International** addressing Gas-phase air filtration, it can now be safely expected that gas-phase air filters are not being designed to operate in isolation anymore. Gas-phase filters are an integral part of any HVAC system, are to be governed by the physics of air, and need to be designed with a systems approach in mind. With the ultimate goal being to provide – “BETTER AIR”. •



SAAF Recirculation Unit



SAAF Deep Bed Scrubber



Side Access Housings

NCAA Tournament Trivia

1. What city hosted the most Championship games in the 20th century?

A. Kansas City, B. New York, C. Louisville, D. Seattle

2. Which was the last school to reject a bid to play in the tournament?

A. LSU, B. BYU, C. Marquette, D. Mississippi State

3. What team had the worst regular season record of any team every invited to the tournament?

A. G. Washington, B. Bradley, C. Oklahoma City, D. Lehigh

4. The lowest seed ever to reach the Final Four was an 11, who was it?

A. Wisconsin, B. Villanova, C. Pennsylvania, D. LSU

Answers on page 4

Product Feature: Vulcain IAQProbe

Simultaneously monitor

- Carbon Monoxide
- Carbon Dioxide
- Temperature
- Relative Humidity



User Friendly

- Easy-to-read LCD Display
- Instantaneous Readings
- One-Button calibration
- Windows-based data management software
- Portable
- Compact and lightweight

Versatility and Reliability

- Full line of accessories
- More than 77 days of data stored

Practicality

- Real-Time clock calculates and records STEL and WA readings
- Peak reading memory
- Audible and visual alarms

Energy Efficiency: The Other Alternative Fuel

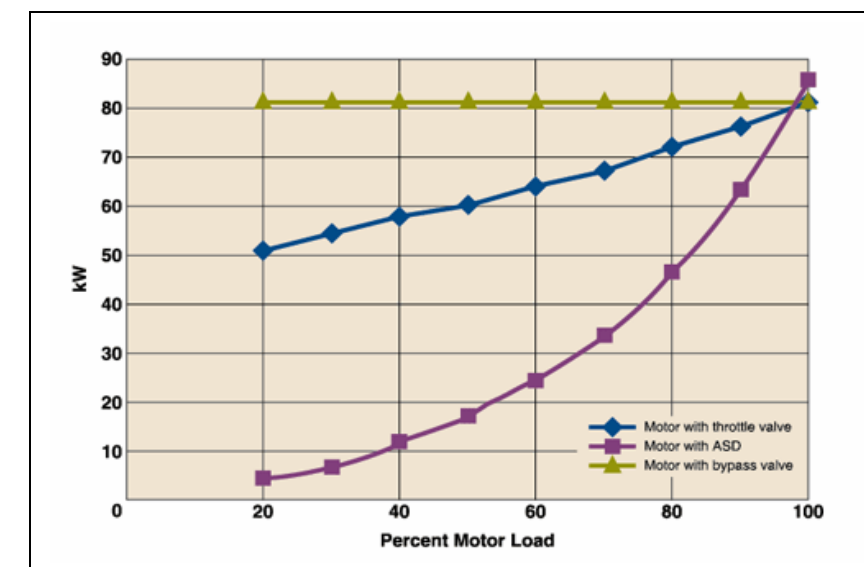
Proven methods for industry to reduce energy consumption and environmental impact are already at hand.

Much has been written about the challenge of global warming; the House Appropriations Committee went on record to support addressing global warming through a mandatory cap on U.S. emissions. The panel accepted an amendment which endorses capping greenhouse gas emissions – principally carbon emissions - as long as the program does not harm the U.S. economy. The amendment also requires participation from international trading partners, an important consideration. Fossil fuel use accounts for 45 percent of all carbon emissions. Alternative fuels have been hailed as the solution to traditional carbon-based regimes. But those fuels are in limited supply, or still on the drawing board. For most companies and organizations, the answers to cutting emissions and cutting energy costs, in this era of rising oil and gas prices, are readily available. **By applying certain cost-effective power and automation solutions, industry can achieve substantial energy savings today without waiting for the alternative fuels of the future.**

The benefit of smart energy usage is simple: put every single kilowatt to work more efficiently and more productively – savings millions of tons of coal and petroleum products that are now being consumed to supply energy that is not truly needed. In industry alone, there are abundant technologies available today to save billions of kilowatts throughout the energy chain -- from supply to conversion, from distribution to use. Currently, some 15,500 TWh (terawatt hours) of electricity are generated per year, with industry consuming 41.7%, or 6,500 TWh of the total. Some surprisingly simple steps can reduce this appetite.

For example, nearly two-thirds of the electrical energy used by industry around the world is consumed by electric motors that turn everything from massive paper machines to fans that keep buildings cool. Only five percent of these motors are controlled by a variable speed drive device that adjusts motor speed to match current demand. This technology can cut the average running speed of a pump or fan in half, consuming one-eighth of the energy vs. constant-speed operation.

Based on the current global installed base of adjustable speed drives on this five percent of the total number of motors used, industry worldwide is saving the energy equivalent of the output of 10 average-sized power plants, and eliminating more than 68 million tons of greenhouse gas emissions annually. (An average power plant generates 1000 – 1200 megawatts of energy -- enough to power 400 to 800 homes, depending on the area of the country in the U.S., or the specific locality in other regions around the globe.)



We plot the input kW needed to operate a 100-hp pump using 40%–100% and also using both throttle valves and bypass valves. Let's compare an adjustable speed drive as well. The kW curves are plotted, which uses a 92% efficiency standard based on DOE energy average efficiency. Bypass valves are not the best choice, as the motor is still pumping the same amount of water and using the same amount of energy at full load or 40% load. A throttle valve looks somewhat better at a 67% use of energy at 40% load. However, the adjustable speed drive looks best at 40% load with a power consumption of only 13% in relation to bypass valves. Let's look at the bottom line and compare how much money each type uses. The pump is run at various loads throughout the day as follows: 50% of the load (10% of the day), 60% (15%), 70% (25%), 80% (20%), 90% (15%), 100% (15%).

If the power rate is \$0.10 per kilowatt hour, using the load percentages listed to the right, total annual dollars spent on energy would be: **Bypass valve \$71,032, Throttle valve \$61,727, ASD \$39,565.** •

Portions of this article were written by Dinesh Paliwal