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Getting Productive
 by COMPILED BY ES' STAFF
 January 1, 2007

There's only so much time to walk the floor at the AHR Expo. That's why we put together this annual article, featuring equipment that has been released since last year's Expo and which will be exhibited at this year's show. Consider it our effort to help you find the things you can use while you peruse.



RBI's Futera Fusion™ gas-fired condensing boiler will be showcased at the Expo.

Boilers / Water Heaters

RBI will showcase its new Futera Fusion™ boiler and the new 4 MBtu Futera III at the Expo. The Futera Fusion is a gas-fired condensing boiler with full modulation and a 3:1 turndown, and is available in sizes from 500 to 2,000 MBtuh. It features a gasketless primary heat exchanger with solid bronze headers and finned copper or cupronickel tubing, and a stainless steel secondary heat exchanger which is designed to operate at the boiler's full flow rate. The unit operates in full condensing mode at all times, while the temperature mixing system protects the boiler's primary heat exchanger.

RBI's Futera III line is now available in both 3- and 4-MBtuh versions. The Futera III is a sealed combustion, direct vent, finned copper tube boiler that provides full modulation and 4:1 turndown. The unit features a four-pass design and a gasketless heat exchanger with bronze headers and fittings.



Peerless Boilers will feature its new Pinnacle Oil high-efficiency condensing boiler at the show.

Peerless Boilers has introduced the new Pinnacle Oil high-efficiency condensing boiler, designed to fill a void in the oil heating market. The boiler is a direct vent, sealed combustion boiler and is 93%+ efficient, earning it the Energy Star® rating. It is equipped with a Beckett AFG burner fueled with standard commercial grade #2 fuel oil and operates at two firing rates with inputs of 70,000 and 84,000 Btuh, respectively. The ASME-rated heat exchanger is constructed with high alloy stainless steel that ensures the boiler's durability and protects it from corrosion. Features include multiple temperature setpoints for both heating and domestic hot water and, with the addition of an outdoor sensor the boiler is fully capable of outdoor

reset operation.

HydroTherm, a division of Mestek, will feature the newly updated KN Series of high-efficiency commercial, gas-fired boilers that feature a self-adaptive design tolerant to changing conditions. They feature the on-board Heat-Net integrated boiler management control system, providing the ability to control up to 16 KN units in a boiler network for optimized heating efficiency without the need for a traditional wall-mount control panel. This control system also allows communications with various BMS such as LonWorks®, Modbus®, and BACnet®. The units feature Mestek's Tru-Flow™ technology to control the air fuel mixture at all firing rates and multiple venting conditions. Each is equipped with a low-noise blower, unique air inlet, and low-velocity burner for whisper-quiet operation.



The KN Series of commercial gas-fired boilers will be showcased in the HydroTherm booth.

Boiler Controls



Cleaver-Brooks' Hawk ICS is a control system for boiler/burner management.

The Cleaver-Brooks Hawk ICS is an integrated control system embodying precise boiler/burner management and safety with logic-based ancillary devices and functions. It is designed to maximize efficiency, reduce operating costs, and increase productivity; delivering critical information with the touch of a screen or remotely using Ethernet capabilities. It also integrates seamlessly into existing BMS. Features include VSD control, oxygen monitoring, parallel positioning, and efficiency monitoring. Retrofitting the Hawk ICS into existing boiler rooms is ideal for those who are serious about environmental implications and cost reduction.

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AERCO International, Inc. will unveil a new multi-protocol, communications gateway for its Benchmark or KC1000 boilers, KC1000 water heaters, and full line of indirect-fired heaters. The plug-n-play package supports integration with N2, BACnet®, and LonWorks® systems to deliver up to 300 customer-selected data points from each product's C-More™ or ECV unit controller or from the AERCO BMS, a multiple unit control system. The booth will also feature the 3-MBtuh version of AERCO's Benchmark boiler and a unit from its new 300,000 to 1 million Btuh Modulex line. Both low NOx boiler lines feature best-in-class turndown and condensing operation for superior seasonal efficiency.



AERCO International's Modulex low NOx boiler will be featured at the Expo.

Heat Exchangers



Alfa Laval's AQ8 ARI-certified plate heat exchanger is designed for all HVAC applications.

The AQ8 ARI-certified plate heat exchanger by **Alfa Laval** is designed for all HVAC applications including free cooling, pressure interceptors, and building interchangers. The unit is specifically designed for the close temperature approaches in HVAC applications. The AQ8, which features an 8" port, is certified in accordance with ARI Standard 400, an independent certification that the heat exchanger will perform as certified.

Heat Pumps

According to **Bard**, the patent-pending "Quiet" technology in its Quiet-Climate 2 wall-mount heat pump delivers operating sound levels 20 to 35 times quieter than a standard wall-mount heat pump. Patent-pending acoustical sound accessories can be added for even lower operating sound levels as requirements and budgets dictate and can even meet the ANSI S12.60 Standard requiring 35 dbA. The company says the Series is the most efficient wall-mounted heat pump on the market, featuring a multi-step capacity compressor with green refrigerant R-410A. It's designed for new construction, modular applications, school modernization, telecommunication structures, and more. Additional product features include ECM indoor blower motor, dual pressure controls, compressor control module, and step-capacity scroll compressor.



The Quiet-Climate 2 wall-mount heat pump will be featured at the Bard booth.

ClimateMaster has released a new DOAS water source heat pump product line with EarthPure® (HFC-410A) zero ozone depletion refrigerant or R-22 refrigerant. Because a DOAS system pretreats the ventilation air, it allows a building design that addresses the ASHRAE 62 outside air requirements while maintaining proper equipment sizing for space conditioning. This design is meant to provide superior occupant comfort and reduce energy costs, especially when combined with an optional enthalpy wheel. The ClimateMaster DOAS unit uses a method of heating 100% outdoor winter air without the need for a separate auxiliary heat source in most cases. The DOAS unit is effective down to 15°F [-9°C] winter design temperature. With an optional enthalpy wheel, the system is effective down to -10°F [-23°C].



Munters will introduce a new self-contained water cooled desiccant at the Expo.

Munters introduces a new self-contained water cooled desiccant, which is designed to reduce operating costs by 30% to 50% compared to traditional rooftop units. In the cooling mode, the HCU heat pumped system extracts heat from the air and rejects it into a water loop through a coaxial heat exchanger. This heat can be recovered to generate hot water for general purposes or simply be rejected out of the building via a cooling tower. In the heating mode, the HCU unit reverses the cycle, extracting heat from the water loop through the coaxial heat exchanger and utilizing a common air coil to heat the building space. The company reports that when using a DDC controller and a VFD supply motor to blend a mixture of return air and outside air, the system operates effectively even when the ambient temperature is approaching 10°.

Heaters

Roberts-Gordon, LLC has added indirect-fired air turnover units to its COMBAT® AT Series line. These units are designed to be ideal for industrial applications, such as warehouses that require even heat but not building pressurization. The heaters offer 48-in. extension sections to increase unit



height to user specifications. Available in air volumes from 4,500 to 100,000 cfm, the units draw in cooler air from the floor, warm it, and recirculate it throughout the area.

[Roberts-Gordon, LLC's will showcase its new indirect-fired air turnover units at the show.](#)

Roberts-Gordon has also added axial fan unit heaters to its COMBAT UHA-Series. These heaters are for commercial and industrial applications, such as vehicle repair/service shops, warehouses, and manufacturing facilities. The units are also equipped to provide optional summer air circulation with the use of remote fan operation.

Filtration

The PreVent wrap-around air conditioner filter from **Permatron** is designed to protect central air conditioner unit air intake louver/fins from debris that clogs fin surfaces, insulates coils, and decreases equipment efficiency. Heat builds up and demand on the motor increases, causing higher discharge pressure, amp draw, and longer cycle times that result in breakdowns, decreased life expectancy and escalating power costs. The unit's washable 3-D electrostatic polypropylene filter has a flexible vinyl edge that attaches to the unit by bungee hook cords. PreVent is available in three sizes: 25 in. by 80 in., 30 in. by 100 in., and 38 in. by 110 in. UV protected, the filter stands up to hostile environments, corrosive areas, and fluctuating weather conditions. It can also be custom-made for commercial air intake applications.

Temporary HVAC

MovinCool has introduced the CM12, a new ceiling-mounted packaged air conditioner ideal for small office spaces that must be kept cool. Often the main roadblock to the efficient cooling of cramped server telecom and equipment rooms is the lack of floor space to accommodate a roll-in portable spot cooler. MovinCool offers a convenient solution with the CM12, a lightweight, space saving, easy-to-install ceiling-mounted unit. The CM12 delivers 10,500 Btuh of cooling in a compact, self-contained unit that mounts easily with standard, off-the-shelf hardware above a standard drop ceiling. The CM12 connects to a standard 115V, 15-amp circuit, saving time, space, and money. The new CM12 comes with built-in mounting brackets, is conveniently controlled by most off-the-shelf thermostats, has the ability to connect to the BAS, and offers an automatic safety shut-off from a common fire alarm control panel.

Controls / Sensors / BAS

Alerton's T7350 and FLG-7350 assembly, which consists of a T7350 thermostat and FLG-7350 BACnet subbase, is designed to answer the need for a BACnet-enabled communicating thermostat for small to medium-size buildings or applications within any building or campus. Six models of the T7350 and FLG-7350 assembly, including relay and modulating versions, give customers a choice to best fit their needs. The T7350 and FLG-7350 assembly features scheduling, a humidity sensor, remote sensor capability, and more. Users can mount the T7350 thermostat on the FLG-7350 subbase for BACnet functionality and use Envision for BACtalk data displays to access, monitor, and control T7350 parameters. This fully equipped assembly makes it easy to network outlying buildings and more accurately capture tenant billing.



[The IQ3xcite Web-enabled controller from Trend Control Systems uses Ethernet and TCP/IP networking technologies to deliver user-specific Web pages to a PC or mobile device.](#)

The IQ3xcite Web-enabled controller from **Trend Control Systems** uses Ethernet and TCP/IP networking technologies to deliver user-specific Web pages to a PC or mobile device. With the correct connections, a user with the appropriate security controls can monitor or adjust the unit from any Internet access point in the world.

Richards-Zeta will showcase its RZ Mediator™ multi-protocol exchange, which provides an integration framework for controlling building operations. The framework communicates with

numerous protocols, allowing convergence on an IP network.

Tridium will feature its new Niagara AX 3.1 software, a new oBIX driver and oBIX interface for Niagara, and a portfolio of Vykon-based solutions for integrating building automation, energy, and security to the enterprise. In addition, the company will have on hand its next-generation touch screen JACE controller and two new expanded-memory JACE controllers.

Contemporary Controls has introduced its BAS Remote I/O system that communicates on a BACnet/IP network via its built-in 10/100 Mbps Ethernet port and allows easy expansion of the existing BAS system I/O. It is a distributed I/O suitable for locations where a controller is not required. Its universal I/O provides direct connection to most servers and actuators. The BAS Remote's unique switch

prints invoices suitable for mailing to tenants, with a detailed audit trail for every phone call received by the system. CSV data import capability simplifies the task of loading tenant, user, and zone data into ZoneDial, while features such as remote hangup detection to prevent modem lockup, automated launch, and password-protected shutdown help ensure uninterrupted availability.

The new ASI ZoneDial from ASI Controls will be featured at the show.

Pumps

Patterson Pro-Max® horizontal split-case HVAC pumps offer a high-efficiency design that minimizes energy consumption and easy serviceability without disturbing piping connections. Their precision cast, dynamically balanced impeller minimizes vibration and maximizes bearing life. Durable flex coupling absorbs vibration. Precision bearings and machining limit shaft deflection to only 0.002 in. (0.051 mm) at the seal face. Flows to 6,000 gpm (22,712 liters per minute [lpm]), with heads to 160 ft (48.77 m) total discharge head (TDH).

The Micropump II condensate pump is intended by **EDC International** to meet the continuing need for a small, one-piece pump able to fit inside a split-system ductless air conditioner, to quietly and efficiently pump all the condensate to a drain. Equipped with the company's AquaSensor© water sensor, the unit has no moving parts or mechanical floats, allowing more flexibility in positioning the pump. The Micropump II is enhanced with Electronic Noise Control© and a removable, cleanable filter. It is designed to achieve up to 3.17 gal/hr of condensate removal, performing with up to 50 ft of vertical discharge and up to 100 m of horizontal discharge.

Chillers



New models of the Evergreen® 23XRV variable-speed screw chiller will be featured at the Carrier Corporation booth.

Carrier's Evergreen® 23XRV variable-speed screw chiller is now available from 300 to 550 tons. The 23XRV combines simple, reliable screw compression with the energy saving benefits of variable-speed operation to provide unparalleled application flexibility, reliability, and efficiency, says the company. This "LEED®-friendly" chiller features chlorine-free HFC-134a that has zero ozone depletion potential.

In addition, Carrier has announced efficiencies of 10.9 EER full-load and 15.4 part-load on the company's premium line of AQUAFORCE™ air cooled chillers with non-ozone depleting HFC-134a refrigerant by utilizing new Microchannel coil technology. The company reports that the technology is widely used in the automotive industry to increase heat transfer efficiency while providing enhanced reliability through improved corrosion resistance. The Microchannel coils come standard with an industry exclusive three-year coil warranty on all AQUAFORCE models ranging from 80 to 500 tons. Chillers utilizing these condenser coils operate with up to 30% less refrigerant, according to the manufacturer.

Transducers

Setra Systems, Inc. introduces its new Model 260, "One Size Fits All" low differential pressure transducer. Model 260 offers user selectable pressure ranges and analog outputs, a standard LCD, and AC/DC excitation on voltage output operation. The unit offers various pressure ranges from 0.1 in. w.c. full-scale up through 10 in. w.c. full-scale (comparable Pascal ranges available as well). Model 260 is designed to be ideal for HVAC control, static room pressure, oven pressurization, furnace draft controls, HVAC service and retrofit, and environmental pollution control.



Setra Systems' Model 260 differential pressure transducer is suited for HVAC control and static room pressure.

UVC



Steril-Aire will feature its UVC retrofit kits at the show. The kits contain all components needed and can be installed opposite cooling coils in PTAC units, fancoil systems, unit ventilators, and similar systems. The kits are designed to provide a cost-effective alternative to IAQ and mold control.

Valves & Actuators

Siemens will showcase its SKP Series of multifunction gas shut-off valve actuators at the Expo. The electro-hydraulic actuators feature NEMA 4 design and perform two functions — safety shutoff and gas pressure regulation — eliminating



the need for a separately piped pressure regulator to reduce gas train length and valve size. Visual position indicators and wiring terminations are located on the front for easy valve position information and access.

Siemens will showcase its SKP Series of multifunction gas shut-off valve actuators, which eliminate the need for a separately piped pressure regulator.

Belimo Americas has introduced a new generation of actuators that feature even greater torque output than previous products, consumes less energy, and is fully integrated with common Belimo accessories allowing for more options in both mounting and commissioning. A wide selection of clamping options, electrical connections, and running times are now available in four torque ranges from 45 to 360 in-lb. New linear actuators for lifting movements up to 300 mm and full rotation actuators for angles of rotation over 95° round out the line. Designed for new construction, retrofit, and OEM markets, these compact units have the same footprint as the previous generation of actuators and are fully backward-compatible. The new generation of actuators is up to 35.3% more powerful, yet more compact. This increase in torque means smaller, more cost-effective Belimo actuators can be applied to larger dampers and valves, according to the company.

Dampers And Louvers



Ruskin's PSD pressure seal damper is designed for applications in isolation and bubble-tight projects.

Ruskin is featuring several new products at this year's show. The PSD pressure seal damper is designed for applications in isolation and bubble-tight projects where system pressure is 10 in. wwg or less. The PSD is available in standard sizes of 12 to 42 in. square or round inside duct dimensions with transitions available for smaller requirements.

The EME520MD hurricane louver will also be showcased at the Ruskin booth. This horizontal blade model is Miami-Dade approved for impact resistance and ±140 psf windload and is qualified for use in the high velocity hurricane zone of south Florida.



The EAMS060 electronic air measuring damper by Ruskin combines the air scoop and thermal air measuring technologies of the company's EAMS with an ultra low-leak, airfoil blade, control damper, and actuator.



The EAMS060 electronic air measuring damper by Ruskin combines the air scoop and thermal air measuring technologies of the company's EAMS with an ultra low-leak, airfoil blade, control damper, and actuator.

Also, the EAMS060 electronic air measuring damper by Ruskin combines the air scoop and thermal air measuring technologies of the company's EAMS with an ultra low-leak, airfoil blade, control damper, and actuator. The BAS sends a setpoint cfm to the controller and the actuator modulates control to that setpoint. The output signal confirms the flow to the BAS.

Other Products

The "Inverter Phase Check Module" from **EDC International** is meant to be a low-cost answer to facility staff's problems when an inverter-controlled air conditioner fails. The difficulty is always to know whether it is the compressor or the inverter which is giving trouble, and the Inverter Phase Check Module can identify which is faulty.

The supply connections are disconnected from the compressor, and are connected to this module. When the inverter is switched on the six lights on the module should light up red, yellow, and blue. If the inverter PCB is faulty, one or more of these lights will not switch on, and this indicates the position of the fault. If all six lights are on, the PCB is fine, and the fault is with the compressor. If they are not all on, or one light is significantly dimmer than the rest, then the fault is with one or more of the output transistors on the PCB, or with the drive circuitry.

Testo's latest series of air conditioning/refrigeration system digital analyzers — 523, 556, and 560 — are designed to analyze and maintain all A/C, heat pump, and refrigeration systems. The units simultaneously measure, display, and print high- and low-side pressure; line temperature; and calculate saturation temperatures, superheat, and subcooling for 30 refrigerants.



Testo's latest series of air conditioning/refrigeration system digital analyzers measure, display, and print high- and low-side pressure readings for 30 refrigerants.



The Haloguard remote display panel by **Thermal Gas Systems, Inc.** will be showcased at the show. The panel displays refrigerant gas concentration levels, diagnostics, and visual and

The Haloguard remote panel by Thermal Gas Systems, Inc. displays refrigerant gas concentration levels, diagnostics, and visual and audible alarms.

audible alarms. The unit may be partnered with any Thermal Gas refrigerant leak monitoring system, including the Photoacoustic Haloguard IR.

Sidebar: Off The Floor

You can only wander around for so long, checking out products and picking up the occasional free souvenir that will make your carry-on bag that much harder to pack. Here are a few sessions taking place off the floor, not even considering the main ASHRAE technical sessions at the Adams Mark Hotel.

January 27-30

ASHRAE Continuing Education Courses

These classes, conveniently held at the Dallas Convention Center, cover 16 topics and more than 40 non-commercial presentations. Most seminars are 90 minutes long. From commissioning to insulation, from desiccant dehumidification to thermal storage, from health care facilities best practices to green building constructions, there is something for everyone. Attendees (except those from New York) receive PDH's for participating. For course details and registration, visit <http://www.ashrae.com/education/page/554#cc>.

January 28

ASHRAE Plenary Speaker Dennis Dimick

As ASHRAE focuses on sustainability, learn more about how Earth is being impacted by global climate change during the technical plenary at the ASHRAE winter meeting.

Dennis Dimick, an executive editor at National Geographic Magazine, will address the technical program attendees at a technical plenary scheduled on Sunday, January 28, from 9:30 a.m. to 10:30 a.m. at the Adam's Mark Hotel. The technical plenary will take place in between sessions of the technical program on Sunday morning, allowing all attendees to attend. A meeting badge is required for admittance.

Dimick will discuss the 2004 article, "Signs from Earth," that examined "how much of the warming is our fault, and if we are willing to slow the melt-down by curbing our insatiable appetite for fossil fuels." The article was cited in 2005 by the Overseas Press Club for best environmental coverage, and received second place from the Society of Environmental Journalists for best explanatory journalism.

January 29

HVAC Marketing/Sales/Service Workshop.

Designed to help those involved with HVAC marketing/sales/service develop a proactive marketing plan that will address the needs of engineers, contractors, and facility owners at various stages of the project life. The two-hour seminar, which will be presented by Engineered Systems' contributor Steve Liescheidt, author of the "HVAC Challenge" crossword puzzles, will be held concurrently with the AHR Expo. For more information, visit www.speccs.com.

January 31

Intelligent Building System Design Seminar

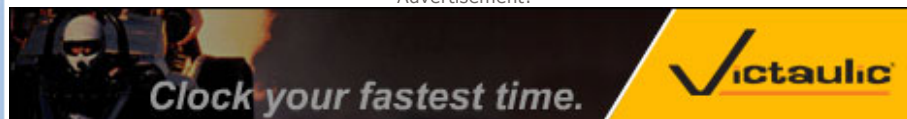
Orchestrated by ES advisor Paul Ehrlich, P.E. of Building Intelligence Group, this session will feature speakers such as Cisco's Dave Clute, Ken Sinclair of AutomatedBuildings.com, Jack Mc Gowan of Energy Control, and Tom Lohner of Teng, just to name a few. Learn what exactly an intelligent building is, with an emphasis on "use of technology and process to create a building that is safer and more productive for its occupants and more operationally efficient for its owners."

For more info, visit www.buildingintelligencetour.com/event.php/id/98/.

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