EVENTS

Volume II

valuable information and ideas for better venting

Intelligent Tjernlund CPC-3 controller enables 'on-demand' make-up air system for 54-dryer laundromat

A laundromat contractor and an equipment distributor teamed up to design a unique mechanical system for a new facility. The system provides up to 20,000 CFM of make-up air for 54 large commercial dryers from two four-square-foot roof openings. The brains of the system is a Tjernlund CPC-3 Constant Pressure Controller. It senses room pressure and automatically adjusts two roof-mounted modulating fans to deliver the amount of air needed by the dryers when they are operating. Multiple benefits for the owner include reduced construction costs, fewer roof penetrations, increased interior comfort for customers and energy savings. The system has been operating successfully since May 2005.

Fox Lake Laundromat, located in Fox Lake, Illinois, features 54 large commercial dryers that require up to 20,000 CFM of make up air.

A builder of laundromats for the past 15 years, Jon Tumpack, owner of TCS Contracting in Romeoville, Illinois, has struggled with issues related to make-up air supply. Tumpack teamed up with Cliff Curtis, a Business Development Specialist for laundry equipment distributor Mac-Gray, to design a better system for the Fox Lake Laundromat. They wanted an automated system that

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Above: Tjernlund's CPC-3 Constant Pressure Controller senses room pressure and adjusts modulating roof mounted blowers to deliver the volume of make up air required by dryers in operation.

From Tom's Desk

by Tom Tjernlund, Vice President

The number of interesting applications we get involved with never ceases to amaze me. Besides draft and combustion air, our CPC-3 Constant Pressure Controller has been successfully used to control a host of other exhaust and ventilation applications—central exhaust shafts, multi-story dryer vents, gas fireplaces, bakery ovens and even a commercial tortilla cooker.

All of these applications benefited from automatic and precise control of their exhaust or supply air requirements.

Add value to your next commercial project by specifying Tjernlund exhaust and ventilation systems.

New Product

Critical exhaust and ventilation applications can now benefit from 100% redundancy

with the RC2000 constant pressure controller

Like our CPC-3 Constant Pressure Controller, the RC2000 Redundant Controller can simultaneously control both exhaust and supply air. The difference is that the RC2000 incorporates a second CPC-3 controller for 100% automatic redundancy. If one system fails the RC2000 automatically activates an identical

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Contractor's Corner

Test mode on CPC-3 Controller is a time and money saver

Here's a way to minimize the time and expense of troubleshooting completed mechanical systems at commissioning time: As soon as the CPC-3 Controller has been wired up, use the Test Mode on the Controller to catch and clear up any problems with the installation.

Here is what the test will do:

1. Confirm that the transducer is properly situated and is outputting a stable signal to the CPC-3 Controller.
2. Verify the VFD is ramping the inducers/blowers up and down correctly.
3. Allow the rotation of the inducers/blowers to be verified and switched right at the CPC-3 circuit board.

Verifying that all components of the CPC-3 controlled modulating inducer/blower system are operating to design specifications is a simple procedure. The test should be done after the electrician connects all of the leads and before heating equipment is activated. Press the set up button on the keypad and follow the steps outlined in the CPC-3 Start-Up Guide.

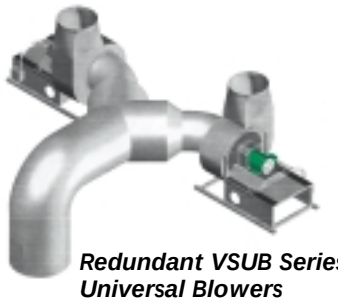
Complete Test Mode instructions can be found in the CPC-3 start-up manual at www.tjernlund.com.

RC-2000—Continued

redundant system, avoiding the need for immediate service.

The RC2000 Redundant Controller is the perfect answer for building owners who want the advantages of modulating exhaust and or supply air but are leery of relying on a single mechanical system. Typical applications include hospitals, hotels, schools and treatment plants.

The exhaust vent is symmetrically split at the roof or outside wall into two inducers/blowers. Each leg of the split has a Tjernlund supplied motorized damper. The damper of the inactive inducer/blower remains closed to prevent bypass of air. If the active system fails, its damper will close and the back-up system damper will open allowing the redundant inducer/blower to operate. The alarm output relay can be tied into a building management system to indicate that one of the inducers/blowers is not operating properly.



Redundant VSUB Series Universal Blowers

Wiring and operation are virtually identical to that of a single CPC-3 controlled system. LED indicators show which system is in operation and 1, 7 or 30 day duty cycle schedules can be selected from the soft touch keypad so that both systems operate for even intervals.

Specify the RC2000 Redundant Controller for your next critical exhaust or ventilation application.

FAQ

Q In some exhaust applications I need to maintain a high exit velocity to avoid recirculation into an adjacent air handler. How is this possible with your modulating exhaust systems?

A Due to the very nature of a modulating system it is not possible without setting an abnormally high system set point or using dilution bolts. Dilution bolts allow a specific gap to be maintained between the exhaust vent and inducer inlet connection. This gap allows outdoor dilution air to be mixed with the exhaust gases, maintaining a high velocity discharge without an excessive negative exhaust vent pressure.

Q Your VSUB Universal Blowers include something called an FFP-1. What is its purpose?

A The FFP-1 Fire and Freeze Protection Limit helps protect the boiler room from temperature extremes. It is used with Tjernlund VSUB Series Commercial Combustion Air Systems. The FFP-1 is designed to disrupt power to the combustion air supply blower in the event of a boiler room fire (165º F) or if boiler room temperature drops towards freezing (42º F).

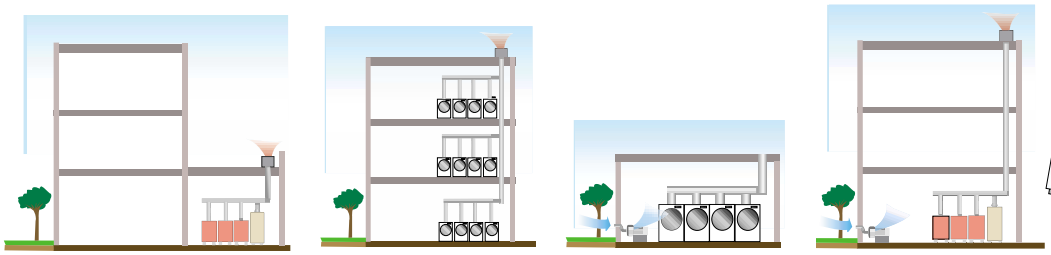
Q You offer both the TD-2 and TD-3 pressure transducers. What's the difference?

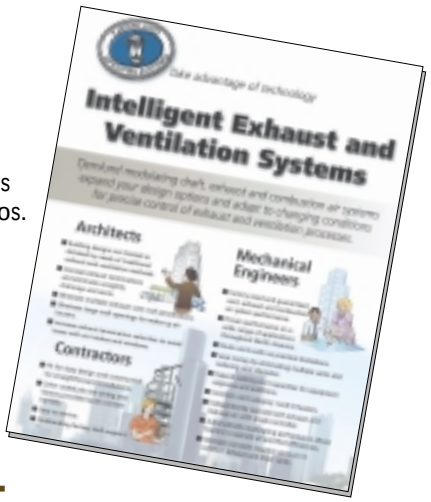
A The difference between the two is the sensing range that they are calibrated to. The TD-2 has a sensing range from +0.15" to -0.60" w.c. and is used for draft/exhaust or "Sealed" (ducted sealed combustion air) sensing. The TD-3 has a sensing range from +0.10" to -0.10" w.c. and is for "Open" (room pressure) combustion/make-up air sensing.

You are invited to send us questions via email at: fanmail@tjfans.com. If your question is published, you will receive a gift.

New Brochure illustrates applications and benefits of Tjernlund Specified Systems

Brochure # 8500790 centers on the variety of value added applications for modulating draft, exhaust, combustion and make-up air systems. Benefits are outlined for Architects, Engineers and Contractors. Also included is a partial listing of prominent jobs along with job site photos.





Laundromat: Continued

would overcome numerous installation and operational issues associated with traditional make-up air systems.

Traditional systems are sized to handle the CFM requirements when all dryers are running at the same time. Air is typically delivered to dryers either through large exterior wall or roof louvers or by running ducts from each dryer through penetrations in the roof. These large openings provide enough outside air when all dryers are operational, but create problems when dryers are operating at minimum levels. Cold climate locations are subject to excess cold temperature.

Two modulating fans provide make-up air for all dryers through two four-square-foot openings in roof.

Security can also be a concern as typical make-up air openings are large enough for an adult to fit through. Often, there is not enough square footage available on a roof or outside wall to accommodate the required area for entry of make-up air.

Conventional make-up air openings are typically too close to the dryer exhausts creating a problem as lint circulates back into the laundry through the make-up opening. Trying to distance multiple large openings from exhaust can add cost quickly.

Tumpack and Curtis' quest for a better system started with an Internet search for the latest venting technology that led them to Tjernlund's CPC-3 Constant Pressure Controller.

"We were looking for a way to create an "on demand" system...and that's why this controller interested us," said Curtis.

The CPC-3 controller senses pressure in the interior space behind the dryers and ramps the modulating intake fans up or down to meet the demands of those dryers in use.

The CPC-3 controller is microprocessor-based and compatible with virtually all VFD controlled modulating fans. The controller is simple to program and operate and offers many options including interfaces with a motorized louver or CO detector. It also has a built in alarm relay that can be interfaced with a building management system.

"As a provider of the dryers, it is my responsibility to be sure make up air systems are properly sized," Curtis said. "Over the years, we've found many installations that are inadequate...mainly because some architects, installers and owners are reluctant to specify large openings in structures where they are needed or adequate space is not available."

Tumpack said with a conventional system in the Fox Lake Laundromat between 40 and 50 square feet of roof openings would be required to provide enough make-up air for the dryers. With the new system, there are only two four-square-foot openings.

"The other element we deal with in this part of the country is cold weather," said Tumpack. "A passive make up air system is always at 100 percent opening, no matter if one or all dryers are in use, which means a tremendous amount of cold air entering the building on slow laundry days and uncomfortable customers."

Curtis noted that with the new system "You can go behind the dryers on a slow day and not feel any air coming down from the vents. However, on a busy day, when all of the dryers are going at once, there's quite a bit of air blowing down, but you hardly feel air movement at the service entrance behind the dryers."

Tumpack noted that the system is not creating a negative or positive pressure — it's balanced whether the fans are cranking out 10,000 CFM or 1,000 CFM.

Curtis and Tumpack's new system fits right in with the energy savings theme they are featuring in a new facilities development program.

"Since we're using laundry equipment, water heating and lighting systems that work together, it affords us the opportunity to create more high energy efficient installations," Curtis said. "Our industry is so dependent on utilities such as gas...and right now there is a lot of buzz about gas consumption."

Tjernlund Products
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Web Site Features

Tjernlund Resource CD is packed with valuable draft, combustion air & ventilation information

If you need information on draft, exhaust or combustion air products, and don't want to browse the Internet, you can get it all with Tjernlund's resource CD.

The CD contains 1000's of pages of useful information including; brochures, spec sheets, performance curves, installation/service instructions, wiring diagrams, parts breakdown/cross reference, product photos and more.

Bonus features include draft and combustion air Power Point presentations and combustion air videos. Covered are the full line of Tjernlund Draft Inducers, Side Wall Vent Systems, Combustion Air In-Forcers™, Duct Booster® Fans, and Electronic Air Cleaners.

CDs are available at Tjernlund's ASHRAE booth, by phone (800-255-4208), email (fanmail@tjfans.com) or on the Internet (www.tjernlund.com/document library/literature and display materials request form).

Agency Spotlight

Chicagoland agency is a growing source for creative solutions to venting problems

When engineers and contractors in the greater Chicago area need straightforward solutions to tough ventilation problems, ARCO Mechanical Equipment Sales Co., located in Bensenville, Illinois is available for service.

The company began selling HVAC products in 1971 and was purchased by Jeff Dahnke in 2003. Dahnke is a mechanical engineer with 22 years experience in HVAC controls. He believes his company's greatest strength is understanding customers' needs and bringing creative, functional solutions to them quickly. For engineers, it means quick response with fully developed specs and support materials to match their requirements. For contractors who rely on ARCO's ventilation and controls expertise, it has often been a major factor in winning bids.

Dahnke said ARCO prides itself on representing premier product lines that offer outstanding value, and the Tjernlund line of specified products his company added two years ago fits that profile perfectly. "They offer a unique set of products and systems. Venting hurdles are sometimes show-stoppers for retrofitting older appliances, the Tjernlund Auto-Draft system breaks down these barriers." Plus, when tough application problems come up, Tjernlund is able to provide phenomenal factory support. They have a real 'can do' ... 'whatever it takes' attitude," he said.

Jeff Dahnke, President of ARCO Mechanical Equipment Sales Co. says Tjernlund has "whatever it takes" attitude to support its representatives.

ARCO services what they sell, including commissioning of Tjernlund systems.

ARCO can be contacted via their web site: arcomech.com, by phone: 630-350-1770 or email: info@arcomech.com.