Progress Supply Inc.
The Progress Report
Helpful Information for HVAC/R & Controls Contractors from Progress Supply Inc.

# FAST ACTION SAVES $20,000 FOR MAJOR SUPERMARKET CHAIN

When Mike McFadden, Maintenance Supervisor at Kroger's 48,000 square foot store in Waverly, Ohio, checked his dairy, meat and deli cases one weekend he knew he had a problem. Due to a failed controller, the store had lost all its compressors at one time in the rack refrigeration system. This meant they were in danger of losing all their product in the cases, which would have resulted in a loss of approximately $20,000 at retail.

A quick call to **Progress Supply's emergency weekend phone** number was picked up by ***Rick Thomas*** at the Columbus, Ohio branch office. Rick went into immediate action.

There weren't enough scroll compressors in stock so Rick drove from Columbus to the 'quick ship' point set up by Copeland Corporation at the Dayton airport. He loaded the compressors in his car, then drove to meet Mike in Chillicothe, Ohio, who then transported them to the Waverly store located midway between Chillicothe and Portsmouth in southeastern Ohio.

It was a 175-mile round trip to pick up and deliver a solution to a customer's problem on a weekend. ***The refrigeration system was back on line in six hours, with no loss of product.***

SERVICE

Time, of course, was a big factor with frozen food involved, not to mention the savings on a point-to-point delivery charge.

"We were in a pretty big bind," Mike McFadden said. "We had two choices — flat loss of product or call in a refrigeration trailer and unload the product from the shelves into the trailer at a great expense of manpower and lost sales. Progress Supply and Rick Thomas went, what I consider to be, two steps beyond the normal procedures to get us back on line and cooling. I am absolutely happy with the service Progress Supply provided," Mike added.

> ***"Progress Supply. . . . . went two steps beyond the normal procedures to get us back on line and cooling. I am absolutely happy with the service Progress Supply provided."***

So, if you want to know what extraordinary service is, call Progress Supply in Columbus, Dayton or Cincinnati. ***We go the extra mile — or even 175 of them — to make you happy.***

## *IN THIS ISSUE*

# Valve Sizing and Selection

By Brenda Pomeroy

Valve sizing and selection may seem very intimidating for a lot of people. With all the formulas and conversion factors, fancy terms and seemingly endless options for not only the valves, but the actuators, as well, it can seem to be a difficult venture at times.

The key to remember is that **valve sizing is not an exact science.** More often than not, you will be choosing a valve that is closest to what your calculations determine and very seldom exactly what you calculate.

The more information you can collect up front, the better job you can do selecting the best valve for the application. For valve selection, there are several questions you need to answer so you can choose the correct valve for the application:

***What is the service?***
— Water, Steam, or Glycol?

***How much capacity?***
— Water in GPM, Steam in lbs/hour

***Desired pressure drop?***
— 3-5 psi is average

***Temperature of fluid?***
— How hot or cold is the medium?

***System Pressure?***
— Valve needs to be able to withstand the pressure

***Pipe Size?***
— Fp correction may be required

***Type of Valve?***
— Ball, Globe, Butterfly?

**For actuator selection, the following needs to be determined:**

***Electric or pneumatic?***

***Spring return or non-spring return?***

***Power source?***
— 120v, 24v/80 psi air?

***Control signal?***
— 4-20 ma, 0-10 VDC, 3-15 psi air?

***Close off requirement?***
— How much torque is needed?

***Accessories?***
— Auxiliary switches? Feedback?

***Ambient temperature/conditions?***
— Weatherproof enclosure? Heater?

With this information, Progress Supply can help you size and select your valves and actuators. Progress Supply stocks valves, actuators and valve assemblies from manufacturers such as Johnson Controls, Honeywell, Siebe, Belimo and others. Please give us a call. We will be happy to assist you in your valve and actuator selection.



# MEET YOUR COPELAND TECHNICAL SPECIALIST

***Progress Supply is proud of the 6 employees we have who have completed the Copeland 2-week training course — Copeland Technical Specialist (CTS). This is an in-depth factory training session that takes place at the plant in Sidney, Ohio. These people are dedicated to our industry, and to getting the training that helps our customers get the answers they need, when they need them. Below we have listed the "highlights" of the training and education they have taken. All of our employees are continuously learning and growing in their technical knowledge and all of these CTS's are fine examples of this spirit.***

## DAYTON BRANCH

***Kim Ryan. . .*** has worked in the industry since 1975, and in sales since 1988, gaining experience at several wholesalers in that time. Kim is currently an inside salesperson at Progress in Dayton. Her Copeland training includes COSS-class (3-day) and *Passport I* and *Passport II* from 1998 through 2001. In 2002, Kim successfully completed the CST 2-week training. She also has attended, among others, both Larkin and Bohn courses on refrigeration equipment and sizing.

***Alex Cole. . .*** has worked in the HVAC/R industry for the past dozen years. His previous experience is both with other wholesalers, as well as contractors, and he currently is in outside sales at Progress. Besides his CST training in 2003, he has Copeland *Passport I* and *Passport II* and Tear-Down training. Other training classes have been on Tecumseh products, Trane Chillers and HVAC units, Bell & Gossett & Aurora circulating pumps, as well as Honeywell pneumatic and V.F.D. training. Alex is providing "Tear-Down" classes in our Dayton facility.

## CINCINNATI BRANCH

***Steve Schlewinsky. . .*** is our inside technical advisor on refrigeration in Cincinnati, as well as the guy who puts on our "Tear-Down" classes there. He has 30 years of experience in the HVAC/R, 17 in the field, and the last 14 years in sales and tech support. Steve's Copeland training includes *Passport I* and *Passport II,* COSS and CTS. Factory training from Alco, Scotsman, Ice-O-Matic, Uniflow, Heatcraft (Larkin) and Johnson Controls, as well as educational classes of RSES I, II and III, Ohio Mechanics Institute training on Electrical and HVAC are all part of Steve's resume.

## COLUMBUS BRANCH

***Terri Surber. . .*** is the branch manager of Progress, Columbus. She worked at Several HVAC/R wholesalers in the Columbus area for 15 years before she joined us in 1990. Her Copeland training has included COSS in 1989, a 3-week *Train-The-Trainer* course in 1995 (the forerunner of CTS), as well as *Passport I* and *Passport II* in 2001 and 2002. She also completed a Copeland Counterman Training course in 1986. Terri's general refrigeration education has included RSES I, II and III, Heatcraft & Beacon training in 1998, and other professional skills training classes.

***George Kaebel. . .*** is in outside sales in Columbus. His background includes Southeast Career Center HVAC/Refrigeration training, then going right into the field in installation in the mid-1980's. Copeland training includes COSS in 1995, CTS training in 2001, as well as *Passport I* and *Passport II* in 2001 and 2002. Alco Controls, Trane and Johnson Controls factory training have all taken place in the last 10 years. George currently leads our "Tear-Down" classes in Columbus and has for the last two years.

***Rick Thomas. . .*** does outside sales in the Columbus branch. He started his career in Cleveland in 1976 working in an HVAC wholesaler. His Copeland training includes *Passport I* and *Passport II,* as well as COSS and CST in 2002. Background training includes RSES, II and III, as well as Honeywell Flame-Safeguard and Johnson Controls Pneumatic training. In addition to Rick's accomplishments, he was recently named Progress Supply, Inc.'s ***2003 Salesman of the Year.***

# Proper System Charging Methods

By Alex Cole

The use of a sight glass for charging a system is common in the refrigeration industry, but is not the best way to get a proper system charge. It is better to charge a system first by measuring the operating conditions (discharge and suction pressures, suction line temperature, compressor amps, super-heat, sub-cooling and coil temperature differentials), before using the liquid line sight glass. If the sight glass is close to the exit of the condensor, or if there is very little sub-cooling at the sight glass, bubbles may be present even when the system is properly charged. If a system is charged to a full sight glass, over charging may be the result, decreasing efficiency. ***Note. . . .follow the manufacturer's recommendation for super-heat and sub-cooling.***

A **thermostatic expansion valve** (TXV) is designed to maintain a constant super-heat. Overcharging a TXV system will raise sub-cooling, increase system pressures and decrease efficiency. Undercharging a TXV system will decrease sub-cooling, increase super-heat, decrease system capacity, and lower refrigerant velocity, leaving oil out in the system.

A **fixed orifice** is the simplest metering device made and the most critical to charge. Overcharging will lower super-heat, increase pressures, decrease efficiency, and flood the compressor with liquid refrigerant. Undercharging a fixed orifice will raise super-heat, lower pressure, lower capacity and lower velocity, leaving oil in the evaporator. Always refer to the manufacturer specifications when charging a fixed orifice.

The process of charging to super-heat and sub-cooling improves a system's efficiency, capacity and lessens equipment failure. Always let the system stabilize for 10-20 minutes after adjusting charge. This takes time, but improves the accuracy.

***Remember, when charging refrigerants, all super-heat and sub-cooling adjustments must be checked and recorded. The procedure is called baselining. This procedure not only saves time, money and aggravation, but it is a sign of a professional.***