The Cold Facts

Winter 2002

HCFC Refrigerant Update

We are over halfway there! As you know, the Montreal Protocol on substances that deplete the ozone layer prohibited the use of CFCs beginning January 1, 1996. It also restricted the use of HCFCs and froze HCFC production on January 1, 2004. So, we are over halfway there.

According to the EPA plan, after the production freeze, an allocation system will be established similar to that of the CFC phase-out program we experienced a few years ago. The plan will then continue to tighten the supply, with a final total phase-out of HCFC use by 2030.

What does this mean to someone who is currently using an HCFC? It means that pricing will continue to increase and availability will get more difficult. The concept of drop-in replacement refrigerants has been somewhat lackluster. The "drop-in replacements," for the most part, are expensive and typically require additional energy.

Fortunately, nearly all of our industrial customers have eliminated their CFC usage. But we still have a few plants that use HCFCs. If you were to ask for a logical solution from us, we would advise a properly designed system employing *ammonia*. It is inexpensive, clean, environmentally friendly, energy efficient and self-alarming.

For more detailed information on this topic, please contact your RSC specialist. We can provide an evaluation that will help you make decisions about the system design you need to fit your specific plant requirements.

Compressor Spins

Compressors for refrigeration service have been around since the late 1800s. They are employed to cool food products, make ice, and even air condition our homes. RSC International, RSC's Houston office, specializes in some other uses, too. We offer compressors for a variety of other applications.

Some of these applications include special air compression, gas lift, gas gathering, injection/withdraw, fuel boosting, well-head gas, process gas, pipeline evacuation, pipeline transmission, gas storage, and others.

In the past years, significant changes have been made in selecting the right compressor for these applications. Before the screw compressor made its debut, the reciprocating compressor was the machine of choice and it dominated the market. But, it can not handle the variety of pressure ratios and varying applications like the screw compressor. To handle large volumes of gas at one time, one would use the vane rotary for a booster, then use a reciprocating compressor for high stage or a multi-stage centrifugal type compressor.

It was our experience years ago that only a few individuals would go out on a limb and try something new like the screw compressor. Today, the rotary screw is the compressor of choice for most refrigeration applications, and in the process gas field, its popularity is growing rapidly.

Of all three choices—reciprocating, centrifugal and rotary screw—we can state without reservation that the machine of choice for refrigeration and gas compression is the screw compressor. In the lower Cubic Feet per Minute (CFM) ranges and pressures to 350 psig, it is hard to beat.

For high-pressures, the reciprocating is still the selected machine, going up to a discharge pressure up to 60,000 psig. For large volumes of gas, the centrifugal is the machine of choice, handling volumes up to 200,000 inlet CFM.

Now there are two designs of screw compressors—dry and oil flooded. Oil flooded screw compressors range up to 7,540 inlet CFM. As for the reciprocating compressors, there are still many advantages, but more and more frequently they are substituted with the more versatile rotary screw with its fewer parts and broad operating range, where possible. When entrained oil is a problem in the gas stream, we employ non-lubricated reciprocating, dry screw or centrifugal.

The American Petroleum Institute (API) produces the standards used for these specialty applications. They prepare high standards to govern the industrial compressor and systems.

When RSC designs system, we take into consideration the application and the industry standards. We note the special design requirements that may apply for each component, matching the application with the correct solution.

—Vince Orlando, President, RSC International

1770 Genessee Avenue
Columbus, OH 43211
Phone: (614) 263-0913
Fax: (614) 263-6660
www.rsc-gc.com

Who Steals Ammonia? It Only Costs Pennies!

In recent months, we have seen numerous articles in trade journals discussing the rise in theft of ammonia. We always knew ammonia was one of the best fertilizers available to mankind, as well as being a great refrigerant. It turns out that the rising incidence of ammonia theft is not being perpetrated by farmers or the odd neighbor with the maniacal lawn fetish (you know the one we mean). Rather, it is illegal drug producers.

As we understand it, ammonia can be used to accelerate the production of methamphetamine. The International Association of Refrigerated Warehouses (IARW) has published information provided by the EPA that is intended to help plants address this 21st century crime. It is as follows:

The EPA offers the following suggestions to deter anhydrous ammonia theft:

- Educate employees about the theft problem.
- Locate tanks in well-lit areas.
- Know your inventory (to quickly identify missing chemicals).
- Visually inspect tanks each morning, especially following weekends or other periods when the facility is not occupied.
- Consider auditing your facility and setting up a valve protection plan for critical valves that could cause significant releases if left open.
- Consider installing valve locks or fencing, especially for unattended tanks.
- Report thefts, signs of tampering, leaks or any unusual activity to local law enforcement officials.
- Consider installing other theft deterrent measures such as motion detector alarms, security patrols and/or video surveillance.
- Evaluate benefits of installing lockable, quarter-turn, spring-load, ball valves in series with a manual valve in critical areas (such as at system fill point or oil discharge pot).

We recently visited this plant and it made us think about a license plate we have seen:

The RSC Family Tree

RSC Cleveland Branch
77 Milford Drive
Suite 201
Hudson, OH 44236
Phone: 330-528-3933
Fax: 330-528-3988

RSC Cincinnati Branch
10921 Reed Hartman Hwy.
Suite 115
Cincinnati, OH 45242
Phone: 513-793-4463
Fax: 513-793-4465

RSC Nashville Branch
475 Metroplex Drive
Suite 213
Nashville, TN 37211
Phone: 615-333-6625
Fax: 615-333-6476

RSC International
11931 Wickchester Lane
Suite 201, Houston, TX 77043
Phone: 281-531-0001
Fax: 281-531-0011

Celebrating 40 years of Exemplary Service

1770 Genesee Avenue
Columbus, OH 43211
www.rsc-gc.com