

The Cold Facts

Fall 2003



Another Successful Project by RSC



RSC is proud to announce that we have successfully completed the insulated panel portion of a 750,000-square-foot distribution center project located in Delaware, Ohio. It has been reported that the leading supermarket chain was delighted with the workmanship and the finished product. Mike Donnelly took it upon himself to captain the job as long as RSC promised to get him a 4-wheel drive go-cart for his use on site. As you can see, pictured at left, Mike was delighted with his transportation!

It's All About Oil

How does changing to one of the new refrigerants affect the lubrication requirements in the compressors? Many people today are asking this question. And it's a very important one.

To begin, when you are changing to one of the HFCs (such as 134a and 404a/507), any mineral oil remaining in the system *must* be flushed out. Once the system is clean, the oil needs to be replaced with an appropriate polyolester (POE). Most manufacturers recommend less than 5% residual mineral oil, and in some cases down to 1%.

With the retrofit blends (such as 401A, 401B, 402A, 402B, 408A, 409A and similar fluids), the answer isn't quite as clear. Most compressor manufacturers recommend that some of the mineral oil be changed to either alkylbenzene (AB) or POE (usually 50% or more). On the other hand, some refrigerant manufacturers have made conflicting claims that "no oil change is needed." These are based on oil-refrigerant miscibility tests or measuring oil return in actual systems.

One of the primary concerns when making a lubricant choice is protecting the compressor. For continuous protection, there must be a means of providing a method for oil return from the system. The two factors that will affect oil return are chemical mixing of refrigerant and oil (miscibility) and the physical system design that promotes "mechanical" oil return. Smaller, higher temperature/warmer systems will generally show better oil return characteristics than larger, lower temperature/colder systems.

Since we cannot change the system design on a retrofit, the best way to improve oil return is to remove the less miscible mineral oil for the more miscible AB or POE. This is true even with R-502, which often has oil return problems. Generally, the more mineral oil changed, the better the oil return.

There is no perfect blend of refrigerant in the new refrigerant market. Each blend has advantages and disadvantages that must be balanced to pick the best overall choice for your



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A Sad Day For RSC...

We are saddened to report that one of our retired service technicians, Dick Burson, passed away. Dick was a very hard working, friendly fellow that many of you knew and grew to admire. He was a great family man and leaves behind his wife, Barbara, four children and eight grandchildren. Please join us in extending our condolences to the Burson family. It hardly seems fair that we spend our lives working toward retirement and then only have a short time to enjoy it.

Monumental Facts...

On February 21, 1885, Chester Arthur, the twenty-first president, dedicated the Washington Monument. The 555-foot structure is one of the tallest freestanding stone structures in the world, and the tallest building in the U.S. capital.

Construction of the Egyptian-style obelisk, made out of Maryland marble, began in 1848, but was halted about a fourth of the way through in 1854 because of financial setbacks and then the Civil War. Twenty-six years later, construction resumed, though with a change in the color of the marble. Construction was completed in 1885 and the monument was opened to the public in 1888. It recently underwent a three-year, \$10 million restoration. Roughly 1.5 million people visit the monument every year.

Oil... *continued from page 1*

specific application. Although certain blends can be used in some applications with little or no change, you should at least check the glide, oil miscibility and performance properties for potential problems.

With the introduction of so many new refrigerants, it is becoming more and more difficult to select the correct or best refrigerant for a particular application. However, in many applications the choice is clearly the time tested and proven refrigerant, ammonia. From experience, we know what it can and cannot do. Experience has also taught us how to effectively handle lubricating oil in ammonia systems.

Add this to its superior performance and low first cost and it's easy to understand why ammonia might be the clear choice in many applications. Then again, there are many reasons to select a refrigerant. Why not get some help with that decision from your RSC contact? We'll be glad to help!

—Vince Orlando, President
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