

With the Environmental Protection Agency projecting an R-22 refrigerant shortfall of more than 27 million lb beginning in 2010, recovery rates must increase to help decrease possible supply gaps. Technicians need to be well-versed in proper recovery procedures and understand their company's reclaim policies on recovering refrigerant from the field.



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Addressing the Refrigerant Reclamation Challenge

Supply shortfalls? Increasing prices? New regulations? While numerous questions abound, there is one certainty for today's HVACR technician—reclaiming R-22 is going to be more important than ever.

BY MARC RICHBURG

The HVACR industry will soon encounter perhaps the greatest challenge since amendments to the 1970 Clean Air Act were passed in 1990. On Jan. 1, 2010, a new era will begin as the industry finds itself scrambling to comply with sweeping new regulations, policies and procedures that are the product of the hydrochlorofluorocarbon (HCFC) phaseout.

One of the most critical issues facing refrigerant users as a result of the phaseout, is the projected 27.5-million-lb R-22 supply shortfall the U.S. Environmental Protection Agency (EPA) foresees (beginning next year). Along with equipment replacement, system-leak reduction, and increased use of non-ozone-depletion-potential (ODP) alternative refrigerants, reclamation will play a vital role in closing the supply/demand gap.

Numerous reclamation sites and reclaim services are available to refrigerant users, yet the total amount of refrigerant currently being returned for reclaim is dismal. Where is the problem? From a total disregard of leak rate and venting regulations to accidental releases, a variety of factors are contributing to poor recovery rates. The good news is that recovery rates can be improved—and they must if the HVACR trade plans to close the R-22 supply gap.

After much discussion and debate, the largest consensus within the industry is that the only practical way to effectively energize the reclaim industry is through EPA enforcement—and a little capitalism as well.

Setting the stage

Assuming the government would provide adequate funding for enforcement activities, conducting random compliance audits of refrigerant users and equipment owners—similar to the audits the EPA conducted during the early '90s to ensure recovery system compliance—would surely stimulate the reclaim market. As a result, increased R-22 recovery would ignite competition among reclaim-service providers. Current providers' reclamation programs would improve as they battled for market share. This in turn would attract even more refrigerant users "back" into the process.

Anticipating this potential boon, reclaim-service providers are scrambling to improve their programs and expand their services. Refrigerant users are finding a growing list of reclaim-service providers to choose from, but they also are discovering some major differences in the type and quality of the service they provide.

There are three primary refrigerant-reclamation business models available to users. Since this industry spans from residential to industrial, individual companies and users will have unique reclaim requirements. Following is a breakdown of the primary program models available and some of the differences between them:

Commercial/industrial project reclamation—At times, major recovery/reclaim projects require the use of specialized equipment and techniques. There are a limited number of providers capable of large-volume recovery of high- and low-pressure systems, and these services can be expensive. However, when the contractor or equipment owner considers all the costs and liabilities associated with refrigerant recovery from a large project, it most often makes sense to rely upon companies that specialize in commercial/industrial recovery and reclamation. [Editor's Note: The EPA lists certified refrigerant reclaimers at www.epa.gov/ozone/title6/608/reclamation/reclist.html.]

Pump-down services—This com-



Many HVACR contractors work with refrigerant suppliers in an exchange program, which allows them to have access to a steady, stable supply of refrigerant without having to store it or wait for another individual to pump the customer's cylinder down.

Increase your return and reduce the R-22 shortfall.

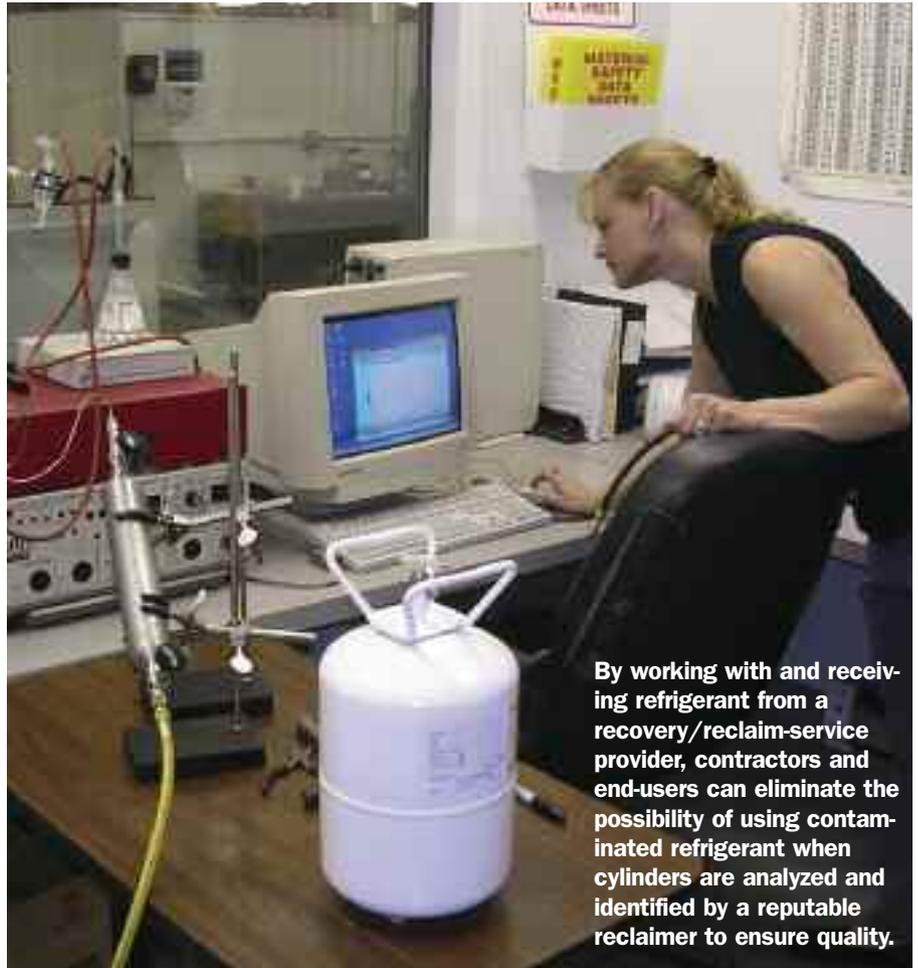


The EPA forecasts a 25 million pound shortage in 2010, making refrigerant reclamation more important than ever. Return your used refrigerant to any authorized ReKlaim Collection Center, and help ensure a ready supply to meet demand – we'll even pay you cash in return! You simply won't find a better refrigerant return program. Anywhere.

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Self pump-down programs can require substantial amounts of facility space, labor hours and power usage, as well as an ongoing investment in maintaining recovery equipment and sensitive diagnostic instruments.



By working with and receiving refrigerant from a recovery/reclaim-service provider, contractors and end-users can eliminate the possibility of using contaminated refrigerant when cylinders are analyzed and identified by a reputable reclaiming company to ensure quality.

mon service model includes several variations based on the same concept. As a result, there are a number of factors to consider depending on company type (contractor, distributor or equipment owner) and/or individual reclaim requirements.

Some reclaim companies provide onsite, “mobile” cylinder pump-down services. Though this may sound convenient, this program, like other pump-down programs, can lack bottom-line value compared to other service models. Traditionally, like many reclaim companies, these companies offer their services to the end-user or equipment owner directly or through an established wholesale distributor—a practice that, at times, can cause confusion and/or friction in the market.

Another variant of the pump-down concept occurs when the reclaim company provides the end-user/equipment owner with a large-volume recovery cylinder (100–1,000-lb capacity), reimbursing them for the R-22 (with the payout dependent on the purity levels of the reclaimed refrigerant). Transferring the refrigerant from the system, or from small recovery cylinders to the larger ones, is the responsibility of the program partici-

pant (contractor, distributor, etc.). Along with the various human and environmental safety hazards to be considered when transferring refrigerants, there also are several financial considerations associated with these programs. Self pump-down programs can require substantial amounts of facility space, labor hours and power usage, as well as an ongoing investment in maintaining recovery equipment and sensitive diagnostic instruments.

If you are a contractor participating in a self pump-down program, or using a distributor’s pump-down service, it also is your responsibility to keep your recovery cylinders operable and to maintain their U.S. Department of Transportation (DOT) certification, which alone can be a tremendous financial and legal liability.

Pump-down programs also can encounter pitfalls when service is disrupted in any way—for example, if a recovery unit breaks down or ambient temperatures impede the process. These troubles are magnified by the fact that you will have employees—on the clock, of course—waiting in line for a cylinder, and you may need

to invest in additional cylinders to avoid such future delays. This is a vicious cycle that adds undue frustration and has cost many refrigerant users countless dollars. While the pump-down program participant has the benefit of determining when and how they will recover refrigerant, at times they can sacrifice speed and convenience, and may have to maintain additional cylinders that are not always needed to keep the process moving in the event of delays.

Finally, when transferring refrigerants, there is a great risk of mixing gases that could potentially cost hundreds, if not thousands of dollars in lost rewards and/or destruction penalties. Self pump-down participants are always vulnerable when it comes to refrigerant cross-contamination. Whether contamination happens due to sloppy processing procedures or simply because a refrigerant analyzer is out of calibration, it only takes a small amount of cross-contamination to ruin a large batch of recovered R-22.

Cylinder-exchange programs—The cylinder-exchange, or swap, program is rapidly becoming the service model of choice by small cylinder (30–125-lb capacity) users. Similar to traditional industrial gas programs used in the HVACR industry to exchange oxygen, acetylene and nitrogen, these programs dramatically reduce the financial and legal liabilities—as well as the safety hazards—of all downstream participants.

Depending on the particular reclaim-service provider, these programs are designed for speed and efficiency. While traditionally offered through the wholesale distribution channel, some companies do offer cylinder exchange directly. The downside of an end-user direct cylinder-exchange program is that the contractor/equipment owner

assumes more shipping, handling and reporting responsibility/liability.

When exchanging cylinders through a wholesale distributor, the contractor/equipment owner pays a basic processing fee, which varies by distributor. This fee is designed to cover the distributor's cost of processing the refrigerant through an EPA-certified reclaim company and, depending on the program, to cover the costs of maintaining the cylinder and providing the participant with detailed processing records (if needed for an audit). The refrigerant user receives a clean, operable and DOT-certified cylinder with every exchange.

As noted earlier, another advantage to the cylinder-exchange model is speed. There is no waiting for another individual to pump the customer's cylinder down, and the refrigerant user is not burdened with maintaining unneeded cylinders.

The streamlined efficiency and alleviation of liability built into the cylinder-exchange model provides end-users/equipment owners with long-term savings that far outweigh the distributor's processing fees.

With so much riding on reclamation to close the R-22 supply/demand gap in the future, refrigerant users need to measure all of the competing reclaim programs available and establish a fine-tuned refrigerant-recovery strategy. This will benefit the individual user, and help the industry overall as it prepares for a new era of refrigerant requirements. ♦

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