DEI Hybrid Refrigeration System Applications

What Systems have the greatest payback?

Systems that run year round are the best applications to look for. These systems could be data centers, ice rinks, manufacturing facilities, grocery stores, cold storage facilities, ice storage facilities or office buildings that require internal cooling year round.

Roof top A/C units, especially in the colder areas of the country such as New England, usually don't have the compressor run hours to warrant a retrofit unless they are about 50 tons or greater. Most of these systems run their compressors until the outside temperature drops below 55 degrees.

What Types of Systems should you be looking at?

Systems with Expansion Valves (TXV) and one of the following:

- 40–50 ton units with an average of 1,500 or greater run hours per year.
- 50–80 ton units with an average of 1,000 or greater run hours per year.
- 80 ton units and above with 750 or more run hours per year.
- Systems with capacity problems.
- Split systems with long refrigerant piping runs (vertical or horizontal).

What Types of Facilities are appropriate?

There are many types of systems used for different applications that operate at various temperatures. The following facilities commonly have the types of units best suited for the greatest payback:

Data Centers – Small and large computer room centers that use split systems (i.e. Liebert) for cooling are great candidates for our retrofit. These usually fall into the 50% energy savings potential. This type of unit usually has the condensers located on the roof. The refrigerant piping drops down from the roof of the building supplying the raised floor evaporator units. Some systems are at ground level and enter the building from the side. The longer the length of refrigerant piping the greater potential for energy savings.

Ice Rinks – These facilities utilize mainly larger systems that are air or water cooled packaged reciprocating chillers. They are very good candidates for the DEI Hybrid Refrigeration System. These systems can also achieve 40% to 50% savings. When surveying rinks, make sure that they are not ammonia systems (we do not retrofit ammonia systems) or they are not a flooded system (flooded systems do not use TXV expansion valves).

Manufacturing Facilities – Depending upon the process loads at the facility, these could be good candidates for the DEI Hybrid Refrigeration Systems. Some manufacturing companies use process chilled water year round or need cooling for plastic molding injection systems or other processes.

Grocery Stores – With the small margin of profit associated with this industry, every dollar spent on energy has a larger impact on percent net profit. Eliminating the waste energy is extremely important in this industry. Operating at high head pressures and underfeeding the expansion valves and evaporators is a waste of energy and money. These systems run year round to maintain the refrigerated product and are very good candidates for our technology.

When surveying a refrigeration rack system the total HP of the rack is evaluated. To be able to determine the payback, we have to know if the rack is high, medium, low temperature or an uneven parallel rack (a combined rack that adjusts to high, medium or low).

Office Buildings – Most office buildings will use packaged chillers or large roof top units depending on the square footage of the building. Office buildings where interior cooling is required year round have a good payback.

If you have any questions, please contact us at our main office by calling toll free 877-334-2875 and speak to our technical engineering staff.