

Refrigeration Tips

1. Variable speed drives

Lowering your refrigeration system's temperature more than necessary wastes energy and money. Variable speed drives automatically adjust the level of refrigeration and are being used on the motors of all kinds of refrigeration units.

Blast chillers

In addition to chilling food effectively and efficiently, a blast chiller is crucial to complying with FDA Food code.

Blast chillers reduce the core temperature of food before it is stored in a conventional cooler, which is designed to hold cool food, not chill it rapidly.

Foods that benefit from blast chilling include:

- Roasted meats and poultry, prepared hours in advance.
- Casseroles, which tend to trap heat when conventionally chilled.
- Salad and sandwich fillings, made in advance, that use mayonnaise.

Air curtain technology

This technology uses a specially designed fan to seal in cool air. As an added bonus, it also repels windborne contaminants like dust and pollutants. Air curtain systems save energy by keeping cold air where it belongs -- and where you need it.

2. Tips for Refrigeration Maintenance

- Add strip curtains to walk-in coolers to reduce the amount of energy lost to the surrounding air. Your system will use less energy and will not work as hard, which also can cut maintenance costs. As an added bonus, these curtains repel windborne contaminants like dust and pollutants.
- Defrost regularly so your refrigerator can more efficiently remove heat from the case.
- Keep the temperature at the right setting. Better yet, consider installing variable speed drives which automatically adjust the level of refrigeration and are being used on the motors of all kinds of refrigeration units.
- Consider installing a blast chiller which reduces the core temperature of food before it's stored in a conventional cooler. In addition to chilling food effectively and efficiently, a blast chiller is crucial to complying with FDA Food code.
- Each month, clean condenser coils and check for the proper amount of refrigerant. Also check gaskets and latches on doors to make sure they form an airtight seal when closed.

3. Reduce the cooling load

Reducing the cooling load results in your system not having to work as hard to achieve the required conditions. This involves managing your refrigeration system to reduce the amount of cooling it has to do. Strategies include changing temperature settings, switching off display or internal lighting and controlling anti-sweat heaters.

Reduce the heat intrusion

Reducing heat intrusion (and the cold air escaping) will reduce cooling requirements due to "external" sources. Strategies include managing your system to reduce door openings, covering open fridges and maintenance of door seals.

Improve cooling efficiency

Improving the cooling efficiency reduces the energy needed to achieve the required temperatures. Strategies include improving internal air circulation and maintenance of evaporators (keeping clean and ice-free).

Improve the heat transfer efficiency

Improving the heat transfer efficiency allows the refrigeration system to operate more efficiently and reduce energy costs. Strategies include improving air circulation over the condensers, maintenance of condensers (keeping them clean) and locating condensers in the correct (cool) location.

Managing the use of the refrigeration system

Managing the way in which you use your refrigeration system can have a big effect on running costs. Strategies for improving energy performance include managing stock levels and consolidating stock, loading stock in batches (perhaps at night), turning off refrigeration systems when not required, only cooling what's needed (non-perishables) and regular monitoring of the refrigeration system(s).

Buying the correct system

The best time to save energy is when you are purchasing new equipment. Selection of the right refrigeration system for the job will assist with optimum performance. Things to consider include system capacity (buy the right size), temperature requirements, door/access type, insulation, equipment location, controls and monitoring.

Reference:

http://www.sce.com/_Tips/MediumLargeBusiness/Cooling/RefrigerationTips.htm

http://www.sdge.com/business/ee_tips.shtml