



HY-SAVE[®] The cool solution

The Thermodynamic Principles of LPA[®]



In A Nutshell...

Most current refrigeration and air conditioning systems waste 20% to 40% of the electrical power used. The Liquid Pressure Amplifier technology (LPA[®]) can save most of this power.

How is my power being wasted?

Present day designs with head pressure controls were developed some 50 years ago. Higher head pressures were designed into a system so it would function well at lower outdoor temperatures. These higher pressures were needed to deliver the refrigerant to the cooling coils. Power costs a half a century ago were not a factor so the added cost of operation with lower efficiency did not matter.

At today's power costs, inefficiency is an unacceptable part of your overhead.



How does HY-SAVE[®] technology eliminate waste?

The people at HY-SAVE took a fresh look at the problem. The solution was so simple, yet so effective, it has surpassed all other technology.

By increasing the liquid pressure of the liquid refrigerant with LPA[®], it becomes sub-cooled and "cannot flash".

With this simple process, head pressure controls can be eliminated or drastically reduced.



Protect your equipment with the HY-SAVE LPA® engineered system

Your refrigeration and air conditioning equipment works hard to supply your cooling needs. Unfortunately the harder your equipment works the more it costs to operate and maintain. Overheated compressors not only fail sooner but require expensive maintenance to replace or repair.

Cooler compressors mean longer life. Maintenance costs have been reported by customers to be reduced by as much as 75%.

Facts about the LPA® system

- LPA systems are engineered to integrate into the basic refrigeration / air conditioning cycle.
- The HY-SAVE patented process overcomes losses and eliminates flashing at almost any head pressure.
- Pumping liquid refrigerant is up to 40 times more efficient than using the head pressure of the compressor to do the same amount of work.
- More unwanted heat is dissipated outdoors and not recycled back into the cooling coils.
- A significant increase in evaporator capacity is created resulting in an increase in the net refrigeration effect.

What is the LPA® pump design?

- The pump is a semi-hermetically sealed unit with important design features.
- The impeller floats in a revolving magnetic field and is the only moving part.
- The magnetic flux is supplied by an external motor with a magnetic coupling device. Because the motor is external to the system, a burnout cannot contaminate the system.
- The external placement of the motor eliminates any additional heat back into the system.
- In the unlikely event of a motor failure, your system will continue to operate. The pump is designed to be completely passive.
- Compressor manufacturers agree that the design and location of the LPA mean it "cannot hinder" the system and will probably increase compressor life considerably
- Unlike conventional pumps, it has minimal moving parts and is extremely reliable. HY-SAVE LPA pumps have been known to perform without fault for over 20 years.

You can look forward to a positive return on your investment and ongoing savings year after year.

"In trials of the HY-SAVE® Liquid Pressure Amplification (LPA) system at a Tesco store in Ireland, independent energy consultants saw the amount of energy consumed by the refrigeration plant reduce by 24%.

Previously at the store, condensing temperatures had to be kept unnecessarily high at around 32°C to combat system flash gas and to keep the stores evaporators operating efficiently. Since LPA pumps were installed in the system's liquid line, condensing temperatures have been reduced to 20°C whilst delivering vapour-free refrigerant to the stores display cabinets and cold rooms maintaining peak efficiency.

"In trials of the HY-SAVE pumps, we saw a reduction in energy use of 24% and are currently considering further tests at a new store."

Michael McNerny C Eng FCIBSE (Energy Manager Tesco Ireland)

Why HY-SAVE® Technology?

HY-SAVE patented technology is in use around the world, providing unparalleled energy, cost savings and vital environmental benefits for supermarkets, cold stores, process cooling, and air conditioning systems.

HY-SAVE Technology is supported by the HY-SAVE Group.

We offer a complete range of services that include;

Energy and Cost Savings Consulting,

Optimal Design Functionality & Efficiency Design Schematics

Installation, Technical Support, Customer Service and Training.

Energy Monitoring

HY-SAVE Group gives you the flexibility to commission a complete, end-to-end solution or simply access the expertise when needed. Each service is provided with the same impressive HY-SAVE quality paying great attention to detail resulting in a positive experience.

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