HY-SAVE® TECHNOLOGY

LPA® Liquid Pressure Amplification

Improving Refrigeration Dynamics for Peak Efficiency:

Today, a major challenge facing the Refrigeration & HVAC Industry is the high cost of energy!
We are committed to help energy conscious companies achieve their goals and commitments to themselves, shareholders and the global community. As electric utility deregulation looms, there is no better time to fine-tune your existing commercial refrigeration systems for peak operating efficiency.

When HY-SAVE® patented Liquid Pressure Amplification LPA® Technology is integrated into existing as well as new chilling and cooling equipment, corporations around the world have not only achieved energy cost savings but aided in the reduction of emissions of the gases that can lead to global climate change.

What can Liquid Pressure Amplification LPA® Technology do for you?

- Reduce energy consumption up to 25% by boosting chilling and cooling systems, maximizing efficiency, increasing capacity, while saving electrical energy.
- Help meet your commitment to Corporate Social Responsibility by lowering Carbon Emissions or "Carbon Footprint".

The Principles of Liquid Pressure Amplification LPA®:

It is well documented that reduced discharge pressure and the corresponding reduction of compression ratios in a refrigeration cycle is desirable and provides increased efficiency and reduced mechanical wear. The dilemma is that a reduction in discharge pressure results in refrigerant evaporating in the liquid line ensuing a loss in capacity and efficiency.

The solution to achieving drastically reduced discharge pressures is Liquid Pressure Amplification *LPA®:* A liquid refrigerant free cooling pump installed after the condenser and liquid receiver maintains constant outlet pressure, ensuring a flow of liquid refrigerant to the expansion valve at all times. In addition to reducing the compressor load, it enables the system to operate in stable conditions regardless of ambient conditions.

In addition to a HY-SAVE Technology installation, **"Liquid Injection"** is an effective method for reducing superheat at the compressor discharge. A small portion of the pumped liquid is injected into the discharge line reducing discharge temperature and increasing condenser efficiency particularly at high ambient temperature.

PumpPro III

Designed and Manufactured exclusively for HY-SAVE , the ***"PumpPro III"*** provides protective control for liquid refrigerant free cooling pumps by cross referencing pump control and running conditions with differential pressure induced by the pump.

- Can be used for a maximum of three circuits.
- Configuration is through the key board panel. Does not need an external device for configuration.
- Employs 16 bit processor for high accuracy and speed computing.
- Optical isolation is provided in IO terminals.
- Uses an alphanumeric display to display dynamic values of inlet, outlet and differential pressures.
- LED indications for all operations.
- Alarm for fault condition.

Following a refrigeration survey HY-SAVE® will prepare an energy analysis to establish the potential for improvements in efficiency, this takes into account operating pressures, manufacturers specifications, ambient temperatures and loading. At this stage a full commercial proposal can be prepared to establish the viability of an installation showing installed cost and projected reductions in energy consumption.

All applications have similarities but are not the same. Decisions about where the pump should be installed in the system need to be made carefully to achieve highest beneficial results. Given the correct circumstances on site, the findings are that a capital payback period is up to 24 months.