

Inefficiency evaporated



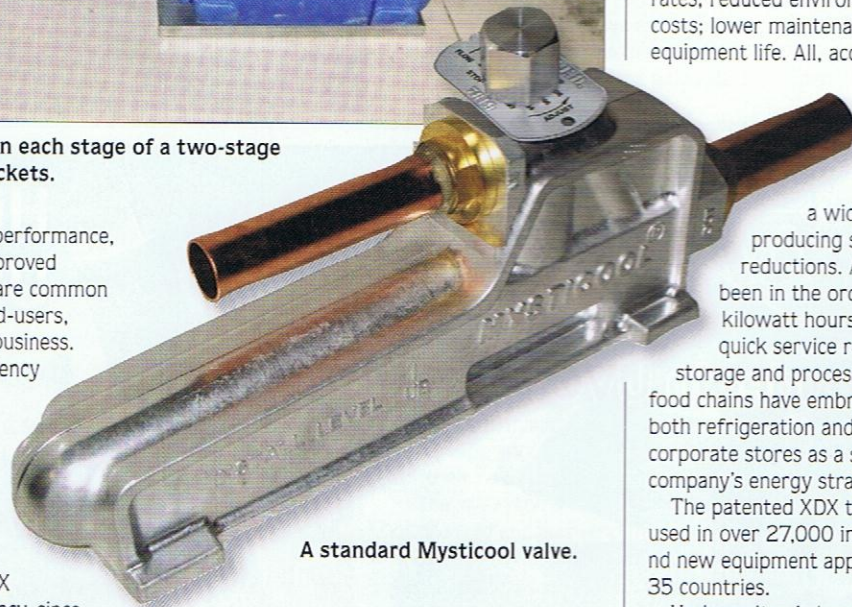
Installation of two XDX valves on each stage of a two-stage package unit, with insulating jackets.

The desire for reliable system performance, reduced energy costs and improved refrigerated product quality are common among all refrigeration systems end-users, affecting the bottom line of every business.

XDX focuses on evaporator efficiency through new technologies that improve the refrigerant flow characteristics.

Since the introduction of the thermostatic expansion valve (TXV) in the 1940s, direct expansion (DX) has been the industry's primary refrigerant-feed method. But even DX has limitations with regard to efficiency, since portions of the evaporator coil are operated with less than optimal heat transfer. While the last few years have seen the development of a few air-side improvements, such as super sub-coolers, rifled tubing, and the electronic expansion valve (EEV) to improve coil performance through better control of superheat requirements at the exit of evaporator coils; the fundamental issue with evaporator inefficiency remains.

XDX was developed with the idea that heat transfer is the most important aspect of



A standard Mysticool valve.

cooling. Its technology optimises the liquid refrigerant flow and the resulting heat transfer capability within the evaporator by using vapour refrigerant to force a film of liquid refrigerant around the circumference of the inner walls within the evaporator tubing. The result is improved performance, superheat stability and consistent evaporator surface temperatures, which minimises frost build-up and expedites temperature pull-down capabilities.

The improvement in heat transfer reduces the refrigerating portion of the refrigeration cycle with more rapid temperature achievement.

XDX is placed in the evaporator inlet liquid line of the system downstream of and in series with the conventional TXV expansion valve, where it serves to enhance the two-phase flow characteristics of the saturated refrigerant. A system using this valve provides a patented high vapour fraction and turbulent (HVFT) annular bi-phase refrigerant flow throughout the evaporator coil.

Benefits include energy savings of at least 15 per cent through efficiency improvements; capacity increases of up to 10 per cent; increased humidity removal in air conditioning systems; improved moisture retention in refrigerated products; decreased defrost cycles; improved product shelf life; faster pull-down rates; reduced environmental impact and power costs; lower maintenance costs and longer equipment life. All, according to XDX, paying for itself in just nine to 36 months.

XDX Australia has been making inroads with validations across a wide spectrum of industries producing significant energy reductions. Average reductions have been in the order of 24 per cent of kilowatt hours. These industries include quick service retail, hotels, clubs, food storage and processing plants. Two major food chains have embraced XDX nationally for both refrigeration and HVAC across all their corporate stores as a significant part of the company's energy strategy.

The patented XDX technologies have been used in over 27,000 installations in retrofit and new equipment applications in more than 35 countries.

Underwriter Laboratories in the US quantified the XDX improvement as providing between 18 to 24 per cent energy savings. The XDX valve offers both increased evaporator coil and full system performance of any DX system, whether installed with replacement or retrofitted equipment. XDX delivers substantial efficiency improvements and improves the performance of traditional refrigeration systems and air conditioning units.

www.xdx.com.au.



Built by Australians. For Australians.



Baltimore Aircoil Aust. Pty Ltd
Ph (02) 4340 1200 • Fax (02) 4340 1545

www.baltimoreaircoil.com.au