

ABSTRACT

**A MODULAR HEAT PUMP SYSTEM FOR DRYING
AND AIR-CONDITIONING**

A modular versatile heat pump system for drying and air-conditioning is disclosed.

5 The refrigerating components of the heat pump, comprising the compressor, condenser, evaporators and expansion valves, are housed in a chassis with three interface ports for easy integration with any air-handling chamber via flexible industrial couplers. For drying application, the design makes use of conventional import/export transport containers with modification for loading and unloading of products. It adopts the first-in first-out process for

10 loading and unloading of the products. For air-conditioning application, the present design can be coupled to the chamber to provide air-conditioning during system repair and maintenance. The proposed heat pump system has several advantages, namely, easy chamber scale-up to meet increase production, significant reduction of production down time, eliminate thermal discomfort during maintenance of refrigeration components for air

15 conditioning systems.

(Figure 5 is to be published)