**UNIT FEATURES:**

# ADVANTAGES OF USING A THERMAL EXPANSION VALVE

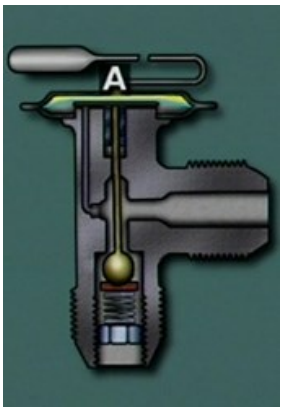
All phase change refrigerant systems require an expansion device which controls the flow of refrigerant in the evaporator. Two principal types of control are used: Thermal Expansion Valves or Capillary Tubes.

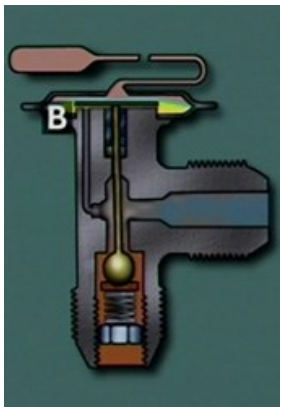
**Thermal Expansion Valves** balance and modulate the refrigerant flow to the heat load by sensing the temperature of the refrigerant leaving the evaporator. There are three major advantages to this refrigerant control method.

1. Maximum efficiency over a wide temperature and load range
2. Improved refrigerant return to the compressor assures better cooling at high temperatures and reduces the possibility of liquid slugging at lower temperatures which can destroy the compressor.
3. Variations in refrigerant charge, particularly in smaller units, are less critical

Alternately, fixed expansion devices, such as **Capillary Tubes**, work at one preset level and have no ability to compensate for load changes. They are more commonly used in un-changing environmental temperature applications such as refrigerators and freezers. Since most refrigerators are in a temperature controlled space and have limited temperature set points, they work just fine. Due to their simplicity, capillary tubes are inexpensive. (However, this rarely translates into a cost saving for the purchaser of industrial enclosure air conditioning.)

Variations of capacity over the ambient temperature range of 80° F to 131°F can cause a performance loss of 85% with a cap tube system. A well tuned expansion valve system will lose less than one half this amount, while maintaining better compressor temperature control. That's why **Thermal Edge Inc.** uses **Thermal Expansion Valves**. In your demanding environment, you need enclosure cooling that you can depend on, regardless of temperature changes through out the work day or seasonal year.




c UL us LISTED CE