CLAIMS

1. An apparatus for enhancing the efficiency of a heat exchange system having a compressor, condenser, evaporator, a circulating refrigerant and an expansion valve, said apparatus comprising:

a vessel having a refrigerant entrance and a refrigerant exit, wherein said vessel is positioned between the condenser and the evaporator;

a refrigerant delivery tube angled to produce rotational motion of incoming refrigerant;

a first disk positioned at the entrance and within the delivery tube,

said first disk comprising an orifice within a central ring configured to allow vaporization of a portion of the liquid refrigerant; wherein said central ring is supported by connectors connected to an outer ring to define apertures for the direct flow of refrigerant into the vessel; and

a means associated with said vessel to create turbulent flow of refrigerant exiting said vessel.

2. The apparatus of claim 1, wherein said means for creating turbulence comprises a second disk located proximate said refrigerant exit, said second disk permitting the passage of exiting refrigerant; and at least one fixed angle blade formed in said second disk, wherein said blade adds turbulence to the exiting refrigerant.

3. The apparatus of claim 2, wherein said second disk comprises three fixed angle blades formed in said second disk.

4. A method of enhancing the efficiency of a heat exchange system having a compressor, condenser, evaporator, a circulating refrigerant, and an expansion valve, said method comprising the steps of:

providing a vessel between the condenser and the evaporator wherein said vessel has a refrigerant entrance and a refrigerant exit;

providing a refrigerant delivery tube at the entrance angled to provide rotational motion of entering refrigerant;

positioning a first disk inside the delivery tube, said first disk comprising an orifice within a central ring configured to allow vaporization of a portion of the liquid refrigerant; wherein said central ring is supported by connectors connected to an outer ring to define apertures for the direct flow of refrigerant into the vessel; and

providing a means to create a turbulent flow of the refrigerant at the refrigerant exit.

5. The method of claim 4, wherein said means for creating turbulence comprises a second disk located proximate said refrigerant exit, said second disk permitting the passage of exiting refrigerant; and at least one fixed angle blade formed in said second disk, wherein said blade adds turbulence to the exiting refrigerant.

6. The method of claim 5, wherein said means comprises three fixed angle blades formed in said second disk.

7. A heat exchanger system with improved efficiency having a compressor, condenser, evaporator, an expansion valve and a circulating refrigerant, said system further comprising:

an efficiency enhancing apparatus positioned between the condenser and the evaporator; said efficiency enhancing apparatus comprising:

a vessel having a refrigerant entrance and a refrigerant exit; a refrigerant delivery tube located at the entrance, configured to generate rotational motion of the refrigerant entering said vessel; a first disk positioned at the entrance and within the delivery tube, said first disk comprising an orifice within a central ring configured to allow vaporization of a portion of the liquid refrigerant; wherein said central ring is supported by connectors connected to an outer ring to define apertures for the direct flow of refrigerant into the vessel; and a means associated with said vessel to create turbulent flow of refrigerant exiting said vessel.

8. The heat exchanger system of claim 7, wherein said means for creating turbulence comprises a second disk located proximate said refrigerant exit, said second disk permitting the passage of exiting refrigerant; and at least one fixed angle blade formed in said second disk, wherein said blade adds turbulence to said exiting refrigerant.

9. The heat exchanger system of claim 8, wherein said means comprises three fixed angle blades formed in said second disk.

10. A method for enhancing the efficiency of a heat exchange system having a compressor, condenser, evaporator, a circulating refrigerant and an expansion valve; said method comprising the steps of:

compressing the refrigerant in the compressor to form a compressed gas refrigerant;

passing the compressed refrigerant into a condenser to form a liquid refrigerant;

allowing the liquid refrigerant exiting said condenser to flow into a vessel positioned between the condenser and evaporator;

generating rotational motion of refrigerant entering said vessel;

allowing a portion of the entering refrigerant to expand through a first disk, said first disk comprising an orifice within a central ring configured to allow vaporization of a portion of the liquid refrigerant; wherein said central ring is supported by connectors connected to an outer ring to define apertures for the direct flow of refrigerant into the vessel; and

generating turbulent flow of refrigerant exiting said vessel.