Air-condition Waste Heat Recovery retrofit to 1.5 – 5 PK

By DOUCETTE INDUSTRIES INC.
USA

Benefits

Up to 98% energy saving

Improved cooling cycle efficiency by 8%

Reduced AC compressor head pressure for extended operating life and 10-15% energy saving

Increase Seasonal Energy Efficiency Ratio (SEER) rating

The heat Exchanger

Coaxial counter flow, vented double wall, surface enhanced for superior heat transfer.
Tested pressure:
450 psi refrigerant side
150 psi water side

U.L. Listed

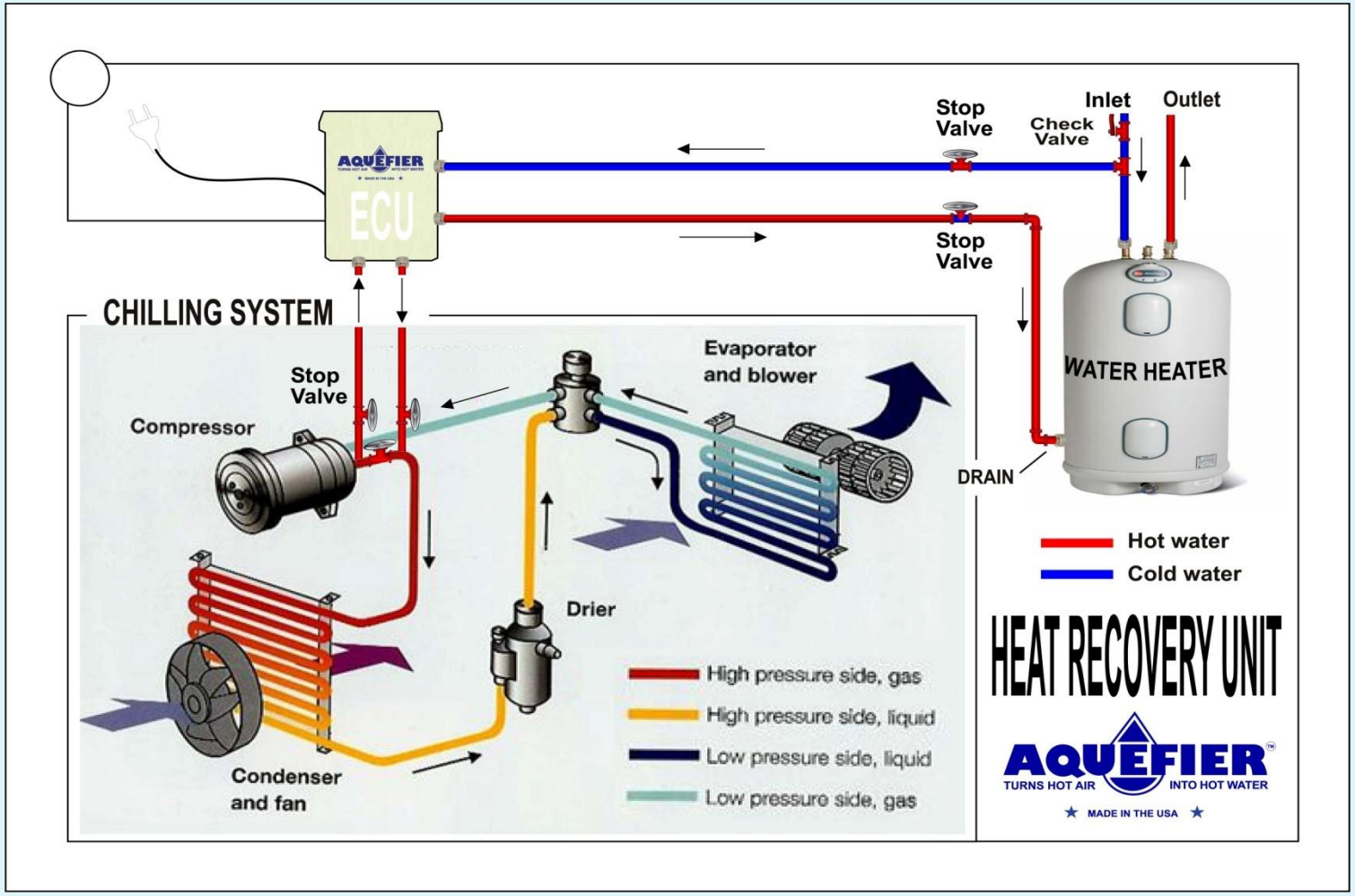
The Pump

Maintenance free, in-line , single stage. Wet rotor type, stainless steel or bronze impeller and volute; 145 psi rated pressure; for use in potable hot water system Integral thermal motor protection

How Does A Desuperheater Work

In the refrigeration cycle, refrigerant is pumped from the compressor at high (150°F to 200° +F) Temperatures so that it can reject heat and condenses to liquid form. About 25% of this heat is called "superheat" and is easily recycled into lower temperature water. Water is pumped from a storage tank through the desuperheater and back to the tank (closed loop) adding heat to the water with each pass through the heat exchanger. The heat exchanger results in increased efficiency for refrigeration system, while at the same time producing free hot water.

Retrofitting



Where Can Desuperheater Be Used

- Desuperheaters can be applied to any refrigeration system with reciprocating, rotary, scroll or screw type compressors. Facilities such as motels, hotels, schools, hospitals, restaurants, health club and food processing, to name a few, make excellent applications. Heating potable water for domestic use is common. Application for hot deck reheat, space heating, subsoil heating (freezers & ice rinks) and fluid heating are very cost effective.

Energy Generated

AC Capacity	Watts Equivalent	Hourly Hot Water Produced at 60ºC
1.5 TR	990	25 liters
2.0 TR	1320	34 liters
2.5 TR	1650	43 liters
3.0 TR	1980	51 liters
4.0 TR	2640	68 liters
5.0 TR	3300	85 liters