



doucette industries, inc.

ECU[®]

HEAT RECOVERY UNIT

MODEL
HR06

SPECIFICATION SHEET

HEAT RECOVERY UNIT FOR DOMESTIC HOT WATER FROM RESIDENTIAL HVAC SYSTEMS

DESCRIPTION:

The Heat Recovery Unit captures waste heat discharged from the refrigerant cycle in an Air Conditioning or Heat Pump system, and transfers that heat into a water heater tank, thereby creating low cost hot water for domestic use. Not only does the Heat Recovery Unit substantially reduce the amount of energy required to provide domestic hot water, but it also improves the cooling efficiency of the Air Conditioner or Heat Pump while it is operating. The Model HR06 is designed to operate with systems of 1½ to 5 ton cooling capacity.



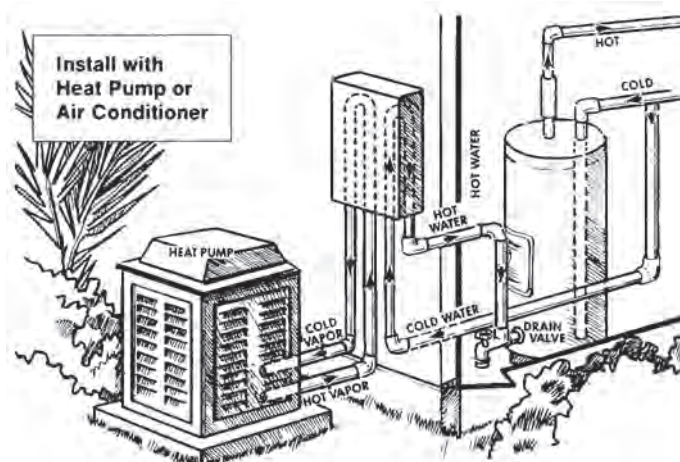
FEATURE HIGHLIGHTS

- 230 volt wiring for easy connection to compressor contactor
- Factory wired and preset controls
- Fully automatic operation
- High-Efficiency All-Copper Vented Double-Wall Heat Exchanger
- Water lubricated low wattage Circulator
- Grounded electrical circuit.
- Sturdy Aluminum Cabinet with baked enamel finish for outdoor or indoor use
- ARL listed Appliance, with UL approved components
- Freezestat option available
- Water connection accessories available

APPLICATION:

The refrigerant side of the Heat Recovery Unit Heat Exchanger is installed in the refrigerant hot gas line between the compressor and condenser; or between compressor and reversing valve, if installed on a Heat Pump System. The water side of the Heat Exchanger is connected to the water heater tank to form a circulation loop. Power is drawn from the compressor contactor. Waste heat may be collected when the compressor operates, and the water circulating from the water heater tank is less than 140°F. A minimum refrigerant temperature of 125°F is also required to allow Heat Recovery operation.

APPLICATION CAUTION: Installations subject to freezing ambients must make provision for freeze protection. Heat Recovery Units containing freezestats must draw power from the line side of the compressor contactor. Drainable hand valves are a more positive freeze protection approach.



SPECIFICATIONS AND INFORMATION

THESE SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

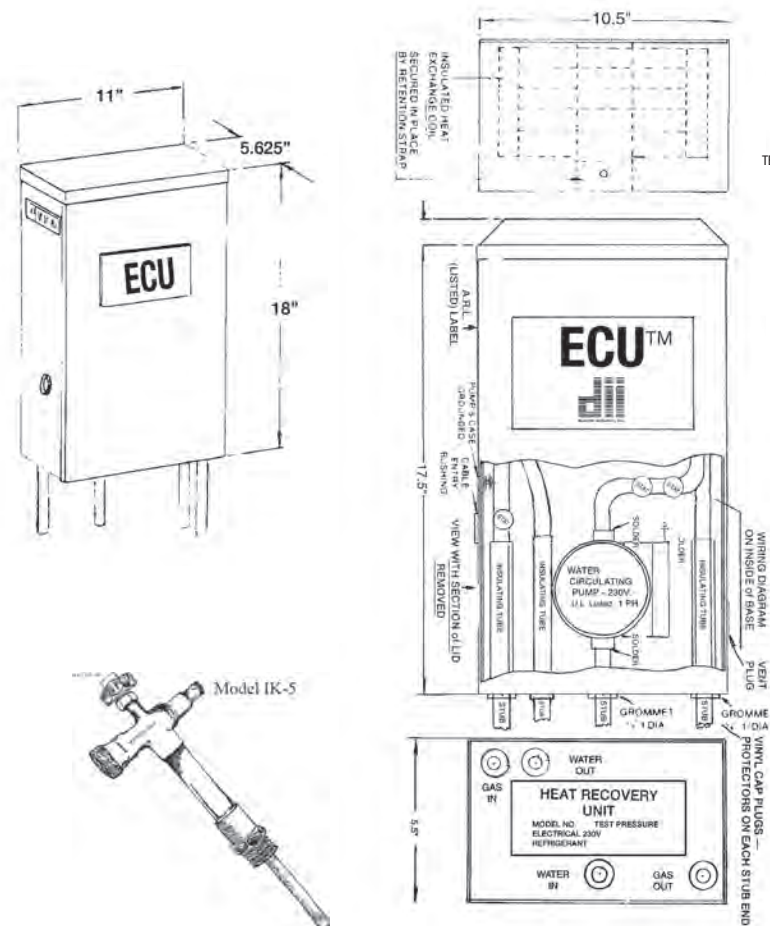
MOUNTING/LOCATION

ECU® Heat Recovery Units may be mounted indoors or outdoors. They must be mounted vertically, at a height above the top of the condenser. While normally located outdoors near the air conditioning equipment, they can be located in any convenient place, such as the garage or laundry room; but the refrigerant run should be kept to a minimum.

CONTROLS

All ECU® models contain a water high limit control. It is factory set to 140°F. Models also contain a refrigerant gas low limit. It is factory set to 125°F. Freeze-protected models are equipped with a water low limit. It is factory set to 50°F, and is designed to operate when water temperatures of 40°F or less are detected, in order to provide water circulation independent of compressor operation, in the event of freezing ambients.

TYPICAL INSTALLATION



Optional IK-5 easy installation fitting available

WARRANTY: ECU® Heat Recovery Units offer a limited Parts Warranty as follows: Heat Exchanger- 5 Years; Pump- 3 Years; All other components- 1 Year.

ECU Heat Recovery Units

MODEL	FEATURE	SHIP WEIGHT
HR06	Base Model	15 lbs
HR06-F	with Freeze-Stat	
HR06-V	with hand valves & bleed port	
HR06-PC	with hand valves & PRV	

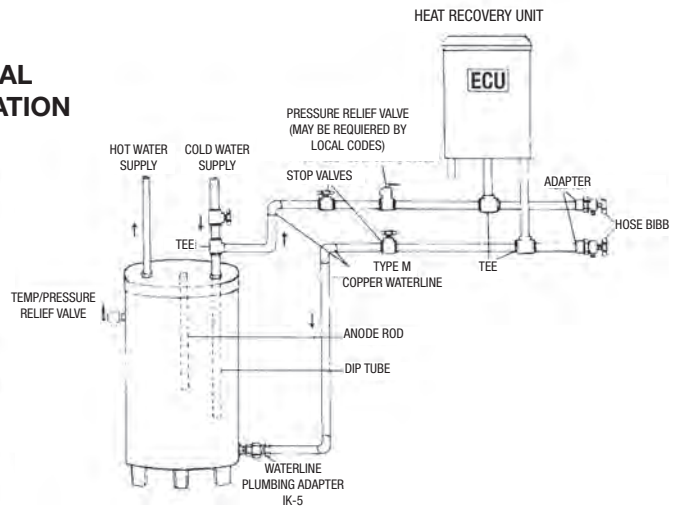
High Pressure (650psi test) Models available in all configurations add-410 to model number. All Models suitable for use in 1½ to 5 ton systems.
All Models wired 230V 1phase.

HEAT EXCHANGER

ECU® Heat Recovery Units contain a corrosion resistant all-copper double wall heat exchanger of counterflow twin tube design. Continuously vented along its entire length, the Heat Exchanger meets strict IAPMO safety criteria, and exceeds UL requirements.

CIRCULATOR PUMP

ECU® Heat Recovery Units contain a low wattage wet rotor in-line single stage circulator. Standard Models use a Taco 006 series circulator. This water cooled pump is rated at 90 watts, 230 volts and .40 amps. It is designed for 125 psi working pressure and up to 220°F fluid temperature. The pump housing is bronze and the bearings are ceramic.



Plumbing hook-up methods can vary, do not "T" returning water into homes hot water supply

WATER LINE SIZING

Actual Size O. D.	Nominal Size	NOMINAL COOLING CAPACITY (BTU/H)			
		24,000	36,000	48,000	60,000
		Maximum One-Way Water Line Length (Feet)			
1/2	3/8	150	80	40	24
5/8	1/2	—	150	100	50
3/4	5/8	—	—	150	150

REFRIGERANT LINE SIZING

Refrigerant Tube Size O. D.	R-22 Charge Addition per 10 Feet oz.	NOMINAL COOLING CAPACITY (BTU/H)			
		24,000	36,000	48,000	60,000
		Maximum One-Way Refrigerant Tube Length (Feet)			
1/2	1.0	16	9	5	—
5/8	2.0	30	25	13	9
3/4	3.0	—	30	30	25

THERMAL PERFORMANCE (ARI 470-2001)

Water Side	Refrigerant Side	Nominal 5 ton Cooling Capacity
EWT: 95°F LWT: 106°F Flow Rate 2.0 gpm	Entering: 178°F Leaving: 114°F Flow Rate 730 lb/hr	Heat Transferred: 11,145 Btu/h Testing Performed by Applied Research Labs Miami, Fl. : Sept. 2007

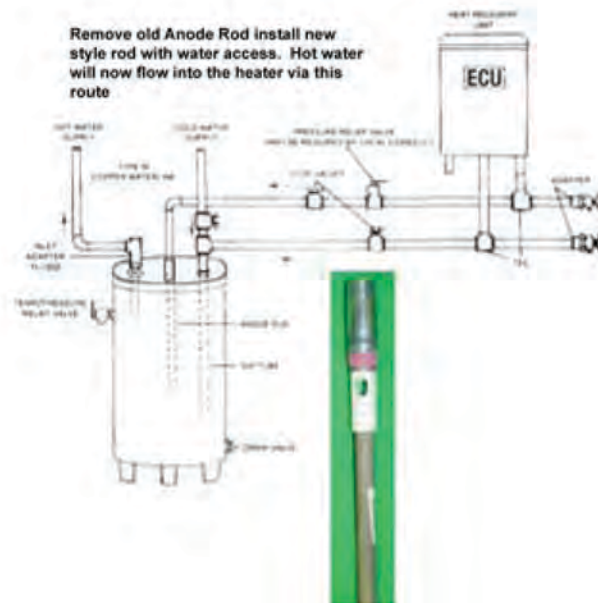
ACCESSORIES

PART NO.	DESCRIPTION
IK-5	Installation Kit
L140	High water thermostat
L50	Freeze control thermostat
F125	Refrigerant low limit thermostat
PV05	½" pressure relief valve
T006	Taco 006 pump

Suggested hot water from ECU entry points

- 1> Use spare 3/4 FPT (not used by Pressure relief) on top or side of tank.
- 2> Remove old anode and replace with new sacrificial anode with water inlet/outlet connection see below.
- 3> Drain tank remove boiler drain install tee, have hot water enter here, re-install boiler drain, hot water will flow to the top via thermodynamics. (This was the method tested by ARL.)
- 4> Goal is to have hot water not enter into the copper/cpvc/pex line after it has left the tank. This way there is no water temperature fluxations or any siphoning effects

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