



REZNOR[®]

SUPERIOR HOT GAS REHEAT SYSTEM



Model R7DA

**OPTIONAL FOR
AIR CONDITIONING UNITS**

Models: R7DA, YDMA and YDHA

PATENTED HOT GAS REHEAT CIRCUIT AND CONTROL

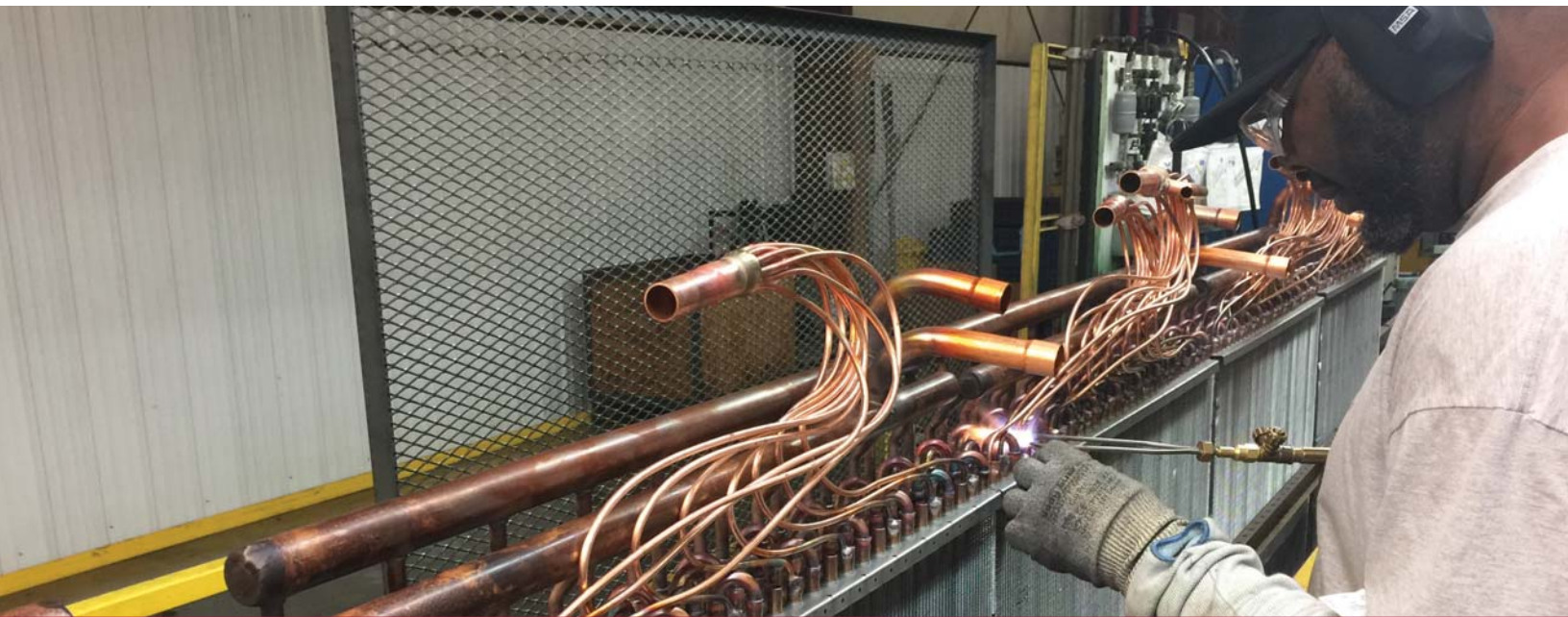
Ground breaking technology improvement for hot gas reheat (HGRH) circuit and control when your application requires stable and reliable dehumidification.

Unlike other reheat circuits on the market, the Reznor hot gas reheat (HGRH) circuit can operate at lower temperatures without freezing, thereby preventing loss of capacity control and poor compressor oil return. You need this capability the most in spring and fall raining conditions. Available for the following models: R7DA, YDMA and YDHA.

No Mechanical Limits

Hot gas reheat circuits have an inherent instability when operated in mild-to-cool outdoor air temperatures. It is this instability that causes failure. The failure includes; evaporator coil freezing, loss of cooling capacity, poor oil return to the compressor and loss of leaving air temperature control. To avoid these reheat failure issues, vendors often limit the amount of hot gas available to the reheat coil to around 40-50%. This limitation results in either the reheat being ineffective in colder weather operation or the customer suffering from the different failure modes. Sometimes vendors install ineffective solutions such as condenser fan low ambient control that adds cost with no proven benefit. The Reznor hot gas reheat circuit has no mechanical limits.

Coil Production Dyersburg Facility



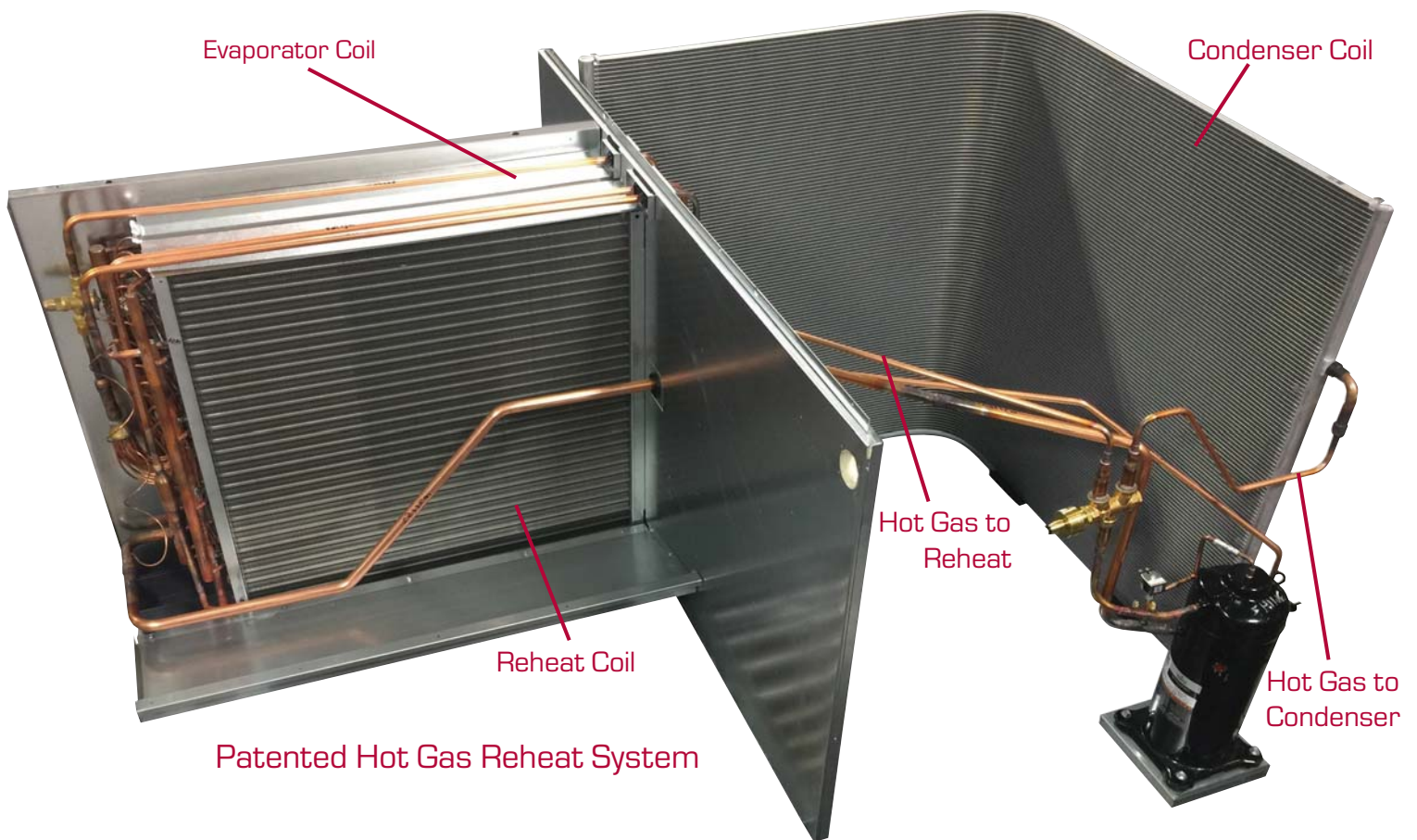
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CONTROLLING THE REFRIGERANT FLOW

The patented system controls the flow of the refrigerant so the reheat operation is never disabled nor causes a failure mode. This is accomplished through the monitoring of system parameters, which in turn controls the flow of refrigerant through the reheat valves and modulating compressors.

Customers need reheat the most when the weather turns mild with rain or fog. At 63°F ambient, the reheat valve is required to be 100% open to meet the leaving air setpoint requirements. In this instance, the system is very unstable because the refrigerant is trapped in both the condenser and reheat coils.

As the refrigerant becomes trapped in the coils, the DX system experiences a loss of capacity. After continued use, the loss of capacity evolves to evaporator coil freezing. Over time, the compressors will fail due to poor oil return. Our patented system avoids these issues.



Model YDMA



Model YDHA



FOG...

Nice to look at – when it's outside.



Most HGRH system performances are shown at design conditions when the demand for reheat is needed the least. Many mechanical schedules are shown at 95°F/78°F, where the reheat valve is required to slightly crack open to meet the design needs. At this point, the system is relatively stable. *It's part load conditions that matter the most.*

Evaporator Coil Entering Air Condition		Leaving Air Condition from Reheat Coil		Compressor Capacity	Reheat Valve Position
db	wb	db	Dewpoint	0-100%	Open to Reheating
95°F	78°F	75.0°F	55.3°F	100%	8.8%
80°F	73°F	75.0°F	54.9°F	76.7%	17.6%
70°F	66°F	75.0°F	54.9°F	46.6%	75%
63°F	59°F	68.5°F	54.8°F	10.0%	100%
63°F	59°F	75.0°F	52.1°F	18.2%	100%

Table depicts unit function at AHRI 920 dehumidification test standards

The chart shows a common, yet hard-to-manage control issue. In mild weather, the amount of reheat available from 100% valve control may not be enough to reach the setpoint. The Reznor reheat algorithm modulates the compressor to provide additional reheat capacity while maintaining proper evaporator coil control to avoid freezing.

For complete catalog information including submittals, energy calculations, dimension drawings, and more go to ReznorHVAC.com or call 800-695-1901.

Note: In keeping with our policy of continuous product improvement, we reserve the right to alter, at any time, the design, construction, dimensions, weights, etc., of equipment information shown here.

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