Dry Coolers, Inc specializes in manufacturing process heat transfer equipment and are experts in integrating heating and cooling systems. We have immersed ourselves in the alternative energy market, geothermal energy being one of them. In this market we are ahead of the curve in how to effectively and efficiently transfer energy (heat) from one medium to another in order to help harness the geothermal potential into a viable utility.
Dry Cooler Standard Products

- Air Cooled Heat Exchanger Systems (Dry Coolers)
- Cooling Tower Systems
- Closed Circuit Evaporative Cooling Systems
- Packaged Chillers – Air and Water Cooled
- Pumping Stations
- Heat Recovery Systems
- Plate and Frame Heat Exchangers
- System Integration Projects
Air Cooled Heat Exchangers – Standard Offering
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Air Cooled Heat Exchangers – Standard Offering
Centrifugal Blowers used for an indoor mounted dry cooler so warm discharge air can be ducted and distributed throughout building
Forced Draft

- Direct Drive Propeller Fans - Forced Draft
- Full 1" Diameter Heavy Wall Tubing
- Removable Coverplate Headers
- Slide-Out Fan Plenum for Easy Access to Fins and Motor
- 3" FPT Inspection Port
- Pre-Wired to Safety Switch with Circuit Breaker
- Powdercoated Steel
- Floating Tube Bundle for Thermal Expansion
- Removable Corrosion-Resistant Fin Guard
### Selection Software

#### Heat Exchanger Performance Data:
- **Heat Exchanger Model:** AVQ3x3x3-CS-15
- **Number of Units in Parallel:** 1
- **Fluid Circulated:** Houghton 150 Quench Oil @ 40C
- **Heat Exchanged (Total):** 727,400 BTU/hr
- **Flow Rate per Unit:** 130 GPM, 492 l/min
- **Flow Rate (Total):** 130 GPM, 492 l/min
- **Fluid Inlet Temperature:** 310 °F, 154.4 °C
- **Fluid Outlet Temperature:** 286 °F, 140 °C
- **Fluid Pressure Drop:** 3.6 psi, 24.7 kPa
- **Design Ambient Air (Dry Bulb):** 100 °F, 37.8 °C
- **Elevation:** 0 ft, 0 m

#### Heat Exchanger Structural Data (per unit):
- **Length:** 36.13 ft, 11.01 m
- **Width:** 3 ft, 0.91 m
- **Weight (shipping):** 3540 lbs, 1600 kg
- **Tubes:**
  - **Material:** Carbon Steel
  - **OD:** 1 in, 25.4 mm
- **Fins:**
  - **Material:** Aluminium
  - **Spacing:** 10 fins/inch, 394 fins/m
- **Fans:**
  - **Quantity (per unit):** 1
  - **Diameter:** 22 in, 558.8 mm
  - **Type:** Direct Drive - Induced Draft
  - **Total Air Flow (per unit):** 3700 ACFM, 1.76 m³/sec

#### Calculated Data:
- **Max. Heat Injection:** 8000 BTU/hr
- **Time To Reach Finish Temp:** 727,393 min

#### Batch Cooling Calculations for ACHQ

**REFERENCE:**
- **SURFACE COMBUSTION**

**HEAT EXCHANGER:** AVQ3x3x3-CS-15

**BATCH DATA:**
- **Plant Circulated:** Houghton 150 Quench Oil @ 40C
- **Flowrate:** GPM, 130.0
- **Batch Start Temp:** 90 °F, 91.0
- **Batch Finish Temp:** 95 °F, 35.0
- **Batch Volume:** gal, 2,060
- **Ambient Air Temp:** °F, 100

**CALCULATED DATA:**
- **Tank Temp:** °F, 90
- **Ambient Air Temp:** °F, 90
- **ACHQ Exit Temp:** °F, 90

#### Dry Coolers Inc.

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Oklahoma City, OK 73111
Phone: (405) 995-3400
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**Note:** The image contains a table and a graph with data related to heat exchanger performance, structural data, and batch cooling calculations. The graph illustrates temperature changes over time.
Design Advantages

• Floating Coil
  - Allows coil tubes to expand and contract without rubbing the tube sheets causing premature failure
Future Offerings
All Aluminum Coil – Micro Channel

- 30% Weight reduction
- Up to 50% less refrigerant charge
Future Offerings
EC Motors

• Double the life expectancy
• Greater than 90% Efficient
Shell and Tube Heat Exchangers
Evaporators
Cooling Tower Systems
Pumping Stations

780 GPM CLOSED-LOOP COOLING SYSTEM with BLADDER EXPANSION TANK and PLATE and FRAME HEAT EXCHANGER

September 2004
**Heat Recovery Systems**

**HEAT RECOVERY UNIT OPERATION**

**WATER TEMPERATURE CONTROL:**

- In **HAND** position, the damper goes to the full bypass position, which allows all the exhaust gas to go thru the damper and out the stack.
- In **AUTO** position, the damper modulates to maintain the desired water temperature as displayed on YCDL.

**WARNING:** This damper does **NOT** fully seal the exhaust from the heat recovery unit and should **NOT** be used as a shutoff valve when servicing the unit.
Heat Recovery Systems

- Automatic damper-controlled gas flow
- Operating temperatures to 750°F
- Removable coverplate for tube bundle access
- Slide-out finned coil heat exchanger for easy access
- All stainless steel heat transfer surfaces
- Fully shielded and insulated construction
- Engineered to handle thermal expansion
**Countries Dry Coolers has shipped to within the last 12 months**

<table>
<thead>
<tr>
<th>Germany</th>
<th>China</th>
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<tr>
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The Dry Coolers Advantage

• Talent
• Teamwork
• Innovation
• Quality
• Service to our customers
• OEM Relationships

Quality Policy
Dry Coolers Inc is committed to providing high quality and cost efficient heat transfer equipment to industry. To achieve this we are dedicated to the continual improvement of our services and our company. We endeavor to respect the needs of our customers, our valued employees, and the community.
Warranty

• Service Network across the US, Mexico and China
• Factory trained and certified field technicians
• Factory run-off and quality check to avoid warranty situations
We value the opportunity to present our capabilities and hope that we can be of service to you.

Thank You.