AquaEdge™ 19XR Centrifugal Chiller

Simple Installation
- Single-piece factory package
- Bolt-together modular construction
- In-chiller refrigerant storage
- Compact footprint (tons/sq.ft.)
- Thermowells, Schrader valves as standard
- Optional factory refrigerant charge

Precise, Easy-to-Use Controls
- Integrated controls optimize chiller operation according to operational needs
- Convenient adjustable Touchscreen Display\(^1\) assures comfortable viewing from four possible mounting locations
- Full diagnostics, trending and data logging
- Controls compatible with BACnet\(^2\) and Modbus\(^3\) for integration with Carrier or other HVAC and building automation systems

Meet Environmental Mandates
- Positive pressure, non-phaseout HFC R-134a refrigerant does not contribute to ozone depletion, minimizing chiller’s environmental impact
- Meet your green mandate without compromise

Benefits at a Glance

For Building Owners and Managers
- Reduces operating expenses
- Easy to maintain
- Quiet, reliable operation
- No shaft seal for low maintenance costs
- No purge — eliminating weekly inspections
- Building Automation System compatible
- Environmentally sustainable refrigerant
- Optional hinged water box covers

For Consulting Engineers
- ASHRAE 90.1 compliant
- AHRI certified
- HFC R-134a refrigerant
- High-efficiency optimization
- Ideal for replacement projects
- Semi-hermetic motor
- ASME-certified heat exchangers
- Variable orifice for wide operating range

For Contractors
- Bolt-together modular construction
- Optional factory charge
- Diagnostic controls
- Compressors factory run-tested
- Reduces installation expenses
- Compact footprint (tons/sq.ft.)
- In-chiller refrigerant storage
- Thermowells, Schrader valves standard

Customers can be confident that the products they purchase from Carrier are not only energy efficient and environmentally sustainable, but also that they are manufactured at best-in-class factories.

The Carrier North America Chiller and Split Systems manufacturing plant, located in Charlotte, NC, has achieved LEED\(^4\) Certification and is a 2010 winner of Industry Week’s “Best Plants” award.

\(^1\)Touchscreen Display where applicable.
\(^2\)BACnet is a registered trademark of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.
\(^3\)Modbus is a registered trademark of Schneider Electric USA, INC.
\(^4\)LEED is a registered trademark of the U.S. Green Building Council.
AquaEdge™ 19XR Centrifugal Chiller
Delivering the Edge You Are Looking For

Installation / Operations / Energy / Maintenance
(per 1,000 tons of open drive chiller)

**Semi-Hermetic Design**

Semi-hermetic motors are the overwhelming choice in the industry due to higher reliability, leak-free design and reducing the need for additional mechanical room cooling. These motors are located inside the refrigerant boundary eliminating:

- Service, maintenance and refrigerant/oil loss associated with shaft seals
- Exposure to contaminants that can degrade insulation and shorten motor life
- Exposure to vapors and dust that can coat the stator winding, increase operating temperature and shorten motor life
- Exposure to moisture and/or condensation which can reduce motor insulation resistance and cause catastrophic failure. (Semi-hermetic motors do not require motor winding coolers to prevent condensation as open motors do.)

In addition, refrigerant cooled semi-hermetic motors operate ~100°F. (56°C) cooler than open drive motors.

**Wide Operating Envelope**

- Two-stage design is ideally suited for large process or comfort cooling applications
- Energy saving condenser water operation down to 55°F (12.8°C) ECWT
- Parallel and Series configurations
- Variable orifice design provides a wide range of operational flexibility
- Optional VFD significantly improves efficiency at part load conditions

**Reliable and Robust**

- No purge required — thereby eliminating regular inspections and associated refrigerant/oil loss
- Semi-hermetic field serviceable motor for high dependability
- 100% run-tested compressor ensuring reliability
- ASME heat exchangers certified by independent third party
- Certified to UL 995 (CSA C22.2 No. 238) by independent third party
- Quiet operation
- Factory certified to ISO 9001

**SBS GOVERNMENT**

Meets BFS 2006, ASCE 7-05, CBC 2007, and OSHPD seismic requirements

**Estimated Cost Avoidance Items Associated with Open Drive Chillers**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Annual Cost Avoidance</th>
<th>Additional Maintenance / Oil Bottle Cost Avoidance</th>
<th>Refrigerant Loss Cost Avoidance</th>
<th>Motor Related Cost Avoidance</th>
<th>Shaft Seal Cost Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Motor Heat</td>
<td>$11,000</td>
<td>$4,000</td>
<td>$3,000</td>
<td>$2,000</td>
<td>$1,000</td>
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<tr>
<td>2 Sensible Cooling Load</td>
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<td>$0</td>
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<tr>
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<td>$2,000</td>
<td>$1,000</td>
<td>$0</td>
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<tr>
<td>4 Shaft Seal Maintenance</td>
<td>$8,000</td>
<td>$3,000</td>
<td>$2,000</td>
<td>$1,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Additional Maintenance includes cleaning oil cooler, weekly inspection of shaft seal and replacing VFD glycol.**

**Refrigerant Loss of 2% results in 1.5% loss in efficiency (2,000 tons x 0.58 x 6,000 hours operation x 0.0057 kW/Ton x $0.10/kW).** Based on an IPLV of 0.380.

**Motor Related expenses include removal of motor heat rejection, motor winding heater power and megger testing of motor.**

**Shaft Seal expenses assume $10,000 for material and labor every 4-7 years.**

*Savings may vary based on unit capacity, operating conditions, environment and unit configuration.*