

Your Chiller Solution For Efficiency And Reliability

McQuay Dual Compressor Centrifugal Chillers

160 to 2500 Tons



McQuay[®]
Air Conditioning

Engineered for flexibility and performance.™

McQuay Dual Compressor Centrifugal Chillers

Superior part load efficiency, reliability and low installed cost



McQuay dual compressor centrifugal chillers offer you the best part load efficiency in the industry today. Our design has been proven in thousands of installations around the world since 1971. These chillers are built in an ISO-certified facility for consistent, dependable quality, and factory tested on ARI-certified test stands for reliable start-up and operation at the job site.

Installed Cost Savings—Two Chillers in One Package

The smaller footprint of a dual centrifugal chiller in an equipment room uses less floor space than multiple single compressor chillers required to produce the same capacity. Also, a dual compressor chiller can mean installed cost savings of up to 35% compared to installing two separate chillers.

- Eliminates piping to the second chiller and to additional pumps
- Fewer valves and controls
- Less rigging costs
- Less equipment mounting pads
- Less control wiring

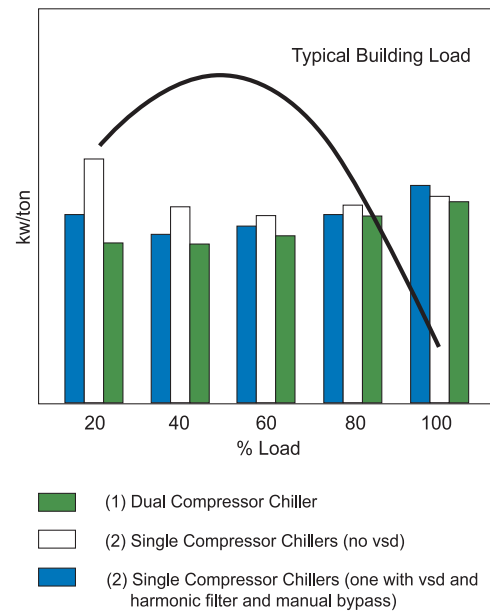
Redundancy for Added Reliability

In buildings with critical applications that can't afford downtime due to a chiller failure, an economical solution is the McQuay dual compressor centrifugal chiller with two of everything connected to a common evaporator and condenser. This redundancy provides 60% of the design cooling capacity with only one compressor running.

The Part Load Efficiency Advantage – Operational Savings When It Counts

Chillers spend 99% of the time under part load conditions. That's why part load efficiency is so important. The dual compressor design is perfectly suited for part load efficiency because the biggest savings are realized when a half-size compressor is operating on a full size set of shells. Adding variable frequency drives will increase efficiency even more.

When comparing two single compressor machines with one dual, a 20% energy savings is common with most load profiles.



Dual Compressor Centrifugal Chillers

Features that give you performance advantages

Positive Pressure R-134a Design

- Sustainable performance for the life of the chiller
- No refrigerant phase-out or availability issues
- Eliminates annual oil change or filter replacement
- No purge unit required

Gear Drive Compressor

- Quiet operation
- Extremely low vibration
- Extended durability with unique hydraulic bearings

MicroTech II™ Controls

- Microprocessor for each compressor for redundancy
- For stand-alone operation or integration with a building automation system
- Protocol Selectability™ feature for easy integration using BACnet®, LonTalk® or Modbus® protocols

Service Friendly Design

- Refrigerant charge stored in condenser for easy servicing
- One compressor operates while the other is serviced
- Valves isolate each compressor

Spring-Actuated Oil Reservoir

- Safe compressor coastdown
- Protects bearings from damage after a power failure



Smaller Footprint of One Dual Chiller vs. Two Separate Chillers

- Increases usable space in the building
- Eliminates one set of service clearances
- Can eliminate one set of pumps

Superior Unloading

- Unique thermal expansion valves optimize refrigerant flow
- Moveable discharge geometry reduces the surge point for greater stability
- Unit unloading to 5% prevents compressor cycling

Quiet Compressor Design

- Unique refrigerant injection system absorbs sound energy
- Movable discharge geometry increases stability at low loads
- Reduced sound levels at part load

Single Refrigerant Circuit

- Superior part load efficiency
- Improved capacity - up to 60% of unit capacity with one compressor operating
- Unique motor cooling system prevents circuit contamination
- Extended five-year motor protection warranty (contact representative for details)
- Reduced footprint saves installed costs

Variable Frequency Drive Option

- Improves part load energy efficiency
- Reduces annual energy costs
- VFD provided for both compressors for added efficiency and redundancy

Efficient R-134a Refrigerant

Designed for Sustainability

With McQuay's positive pressure design utilizing R-134a refrigerant, performance is sustainable for the chiller's life. In positive pressure designs all components operate above atmospheric pressure. In contrast, negative pressure designs using refrigerants such as R-123 have some components that operate in a vacuum. This vacuum allows air and moisture to seep into the refrigeration cycle, which can significantly hurt performance. Removing air and moisture from a negative pressure chiller requires a purge system consisting of a small compressor, condenser and storage tank. This purge system can add substantial maintenance costs to a chiller system.

McQuay's dual compressor centrifugal chiller gives you the following benefits

- The chiller does not require a purge system, lowering your maintenance costs, increasing reliability and lowering operating costs.
- The positive pressure design eliminates leakage of moisture or air into the chiller providing efficient performance that is sustainable for the life of the chiller.
- It uses environmentally friendly R-134a refrigerant which has no scheduled phase-out date, which can lower your costs because of the longer availability compared to R-123 refrigerant.
- It does not require "off cycle" heating equipment, which eliminates power consumption when your unit is off, saving operating costs.
- It does not require annual oil or filter changes, lowering your maintenance costs.
- R-134a has an A1 safety rating (lower toxicity) in ASHRAE Standard 34 compared to a B1 rating (higher toxicity) for R-123 chillers. R-134a is safer and less toxic.



A McQuay dual compressor centrifugal chiller provides quiet operation and energy cost savings for Harbor Point Condominiums in Chicago.



An Impressive Payback

Over the life of the chiller system, one McQuay dual compressor chiller can provide impressive energy cost savings compared to two single compressor chillers. Look at the example of a four-story high school located in Phoenix, Arizona which has a fan-coil system with make-up air. Based on the total utility cost savings over a 25-year life cycle, the McQuay dual compressor chiller would have a simple payback of four years.

How much money would you save? The McQuay Energy Analyzer™ software program can compare life cycle costs of one dual compressor chiller versus a single compressor chiller. Call your McQuay representative for an energy analysis and see what your payback would be.

Dual Compressor Centrifugal Chillers

Flexible Solutions

- **Efficiency.** The McQuay dual compressor centrifugal chiller leads the industry in part load efficiency.
- **Installed Cost Savings.** A dual compressor chiller can mean installed cost savings of up to 35% compared to installing two separate single compressor chillers.
- **Reliability.** These chillers provide more system backup in nearly half the space. And you have all critical components times two!
- **Environmentally Friendly.** McQuay dual compressor chillers use R-134a, the ozone-safe, operator safe, refrigerant.
- **Controls Flexibility.** MicroTech II™ controls with our Protocol Selectability™ feature allow easy integration to your building automation system of choice using open, standard protocols such as LonTalk®, BACnet® or Modbus®.
- **Less Maintenance.** No purge system, no annual oil change or filter replacement.

McQuay International delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements with reliable products, knowledgeable applications expertise and responsive support. McQuay products and services are provided through a worldwide network of dedicated sales and service offices.

McQuay is your source for value-added HVAC systems including Centrifugal, Screw and Scroll Compressor Water Chillers (10-2700 tons), Evaporative Cooled Chillers (60-240 tons), Packaged Chiller Plants, Applied Rooftop Systems and Rooftop Air Handlers (15-135 tons), Skyline™ Outdoor Air Handlers (900-25,000 cfm), Vision™ Customized Air Handlers (900-50,000 cfm), Vertical Self-Contained Floor-by-Floor Units (15-125 tons) Unit Ventilators, Fan Coils, Water Source Heat Pumps and Packaged Terminal Air Conditioners. For more information or the name of your local McQuay representative, call 1-800-432-1342 or visit www.mcquay.com.

