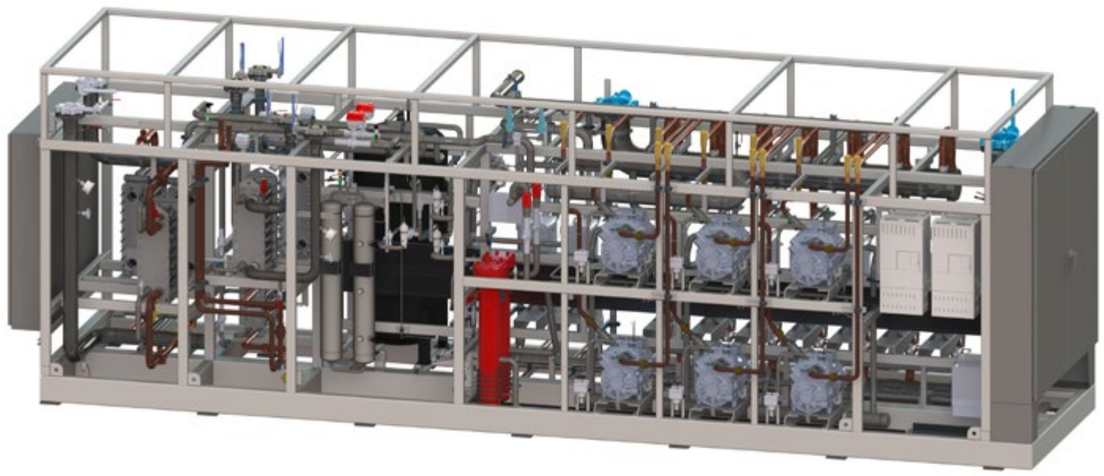
M&M CARNOT

Transcritical CO_2 Industrial Chiller

A natural-refrigerant-based refrigeration system that is safe, sustainable and energy efficient in all climates

The power behind **your mission**

Johnson Controls



Design features

- High-pressure design eliminates the need for a backup generator and separate small condensing unit for off-cycle pressure protection
- Chiller heat exchanger options:
  - Multiple parallel brazed plate heat exchangers
  - Single shell and tube heat exchanger
- Multiple parallel transcritical semi-hermetic compressors
- High-efficiency oil management system with coalescing separators
- VFD on lead compressor; second VFD is optional
- Cooling capacities from 50-250 tons (for larger capacities, consult factory)
- Superheater/liquid subcooler for efficient equipment protection
- Microprocessor package control with local HMI and remote monitoring capability
- Multiple heat reclaim opportunities and benefits, including:
  - Direct heat recovery (HVAC)
  - Snow melt
  - Domestic hot water
  - Sub slab warming
  - Process heating
- Optional factory-mounted plate heat exchangers for water-cooled gas coolers for use with site cooling water
- Optional waterproof all-weather enclosure with insulation for outdoor installations

Contractor benefits

- Single-point electrical power connection for the Aquilon Chill package
- Includes circuit breakers for power distribution to the remote gas cooler fans
- Full-access doors for commissioning, start-up, maintenance and service
- Pre-insulated refrigerant vessels and piping
- Easy rigging and mounting

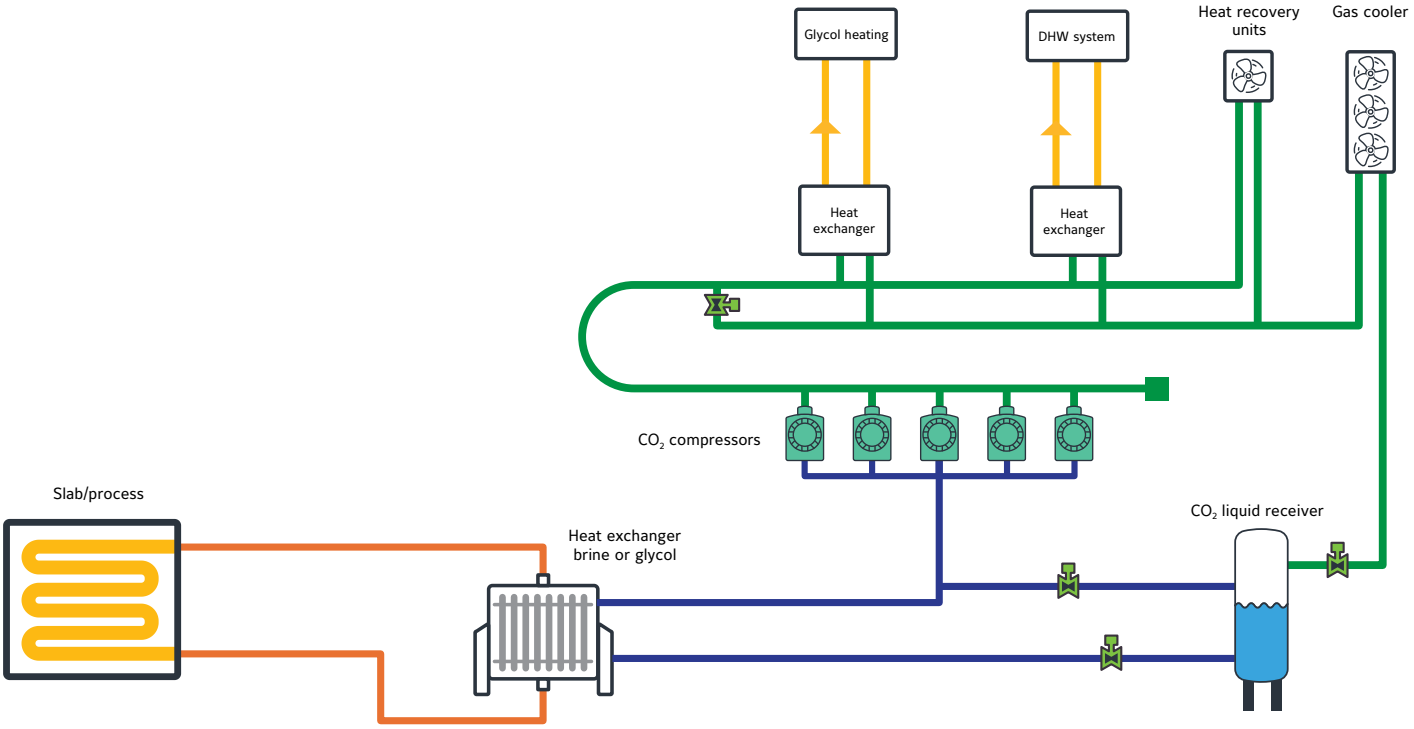
End-user benefits

- Long-term, environmentally friendly natural refrigerant that is future-proof and low cost
- Significantly reduced regulatory cost and compliance burden
- Reduced energy costs
- Intelligent and efficient heat recovery
- Significant reduction in maintenance
- Semi-hermetic compressors that do not require inspections for shaft seal replacements
- Potential for no condenser/gas cooler water treatment
- Potential for no condenser/gas cooler wastewater sewer costs
- Outdoor design available to save on mechanical room
- Significant energy reclaim opportunities available

Aquilon Industrial packaged system controller

- Built on the latest industrial-grade hardware to ensure sustainability for years to come
- Industrial-grade sensors with increased instrumentation and diagnostics to improve accuracy and reliability
- Optimized high-pressure valve and flash gas valve control for maximum energy efficiency at any ambient conditions
- Built-in safeties to provide comprehensive system protection
- Minimized energy consumption through advanced evaporator controls with refined superheat monitoring
- Easy-to-use graphic HMI interface with real-time status, alarm data and graphing capability
- Optional touchscreen interface panel available
- Viewable panel electrical drawings and user manuals with comprehensive, easy-to-use help menu and system documentation library
- Email alarm notification and remote access (network connection required)
- Multiple building management system interface communication connections and protocol available

System diagram



Technical data: Ice Rink application

Model	Capacity TR	Compressor manufacturer*	Compressor quantity	Motor power (HP)	Dry weight (lbs.)	Dimensions (in.)*
Aquilon Chill 71	71	Dorin	4	140	23,800	291 x 75.5 x 102
Aquilon Chill 96	96	Dorin	4	200	24,700	291 x 75.5 x 102
Aquilon Chill 119	119	Dorin	5	250	26,400	321 x 75.5 x 102
Aquilon Chill 143	143	Dorin	6	300	27,700	321 x 75.5 x 102
Aquilon Chill 162	162	Dorin	4	360	34,500	333 x 94.5 x 108
Aquilon Chill 203	203	Dorin	5	450	36,800	360 x 94.5 x 108
Aquilon Chill 244	244	Dorin	6	540	38,500	360 x 94.5 x 108

*Bitzer compressor available as engineer to order option.

*Dimensions shown on table include brazed plate heat exchanger gas cooler, high grade, mid grade and low grade heat reclaim with one brazed plate heat exchanger each.
Performances based on ethylene gycol 40% at 16°F supply duty. Saturated suction temperature at 3.5°F and gas cooler return temp at 83.5°F.

Visit **www.mmcarnot.com** for more information.

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