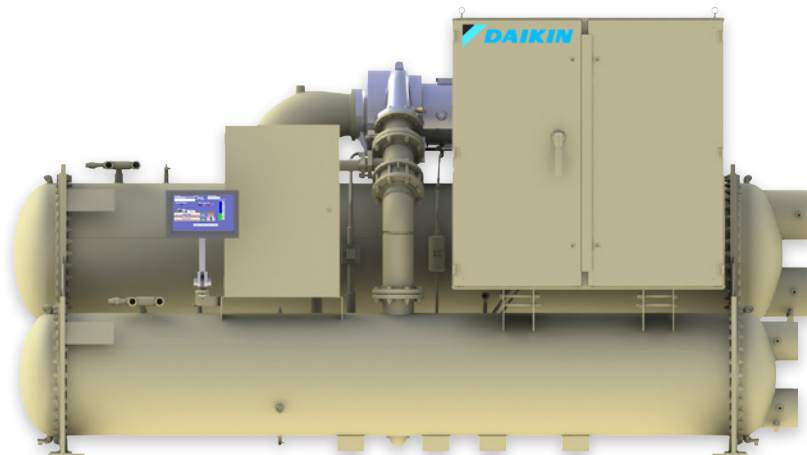


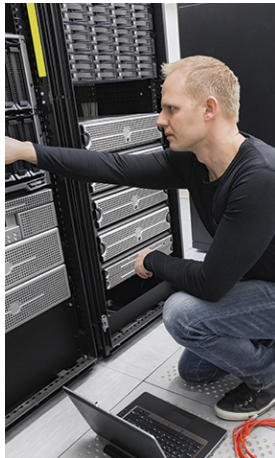
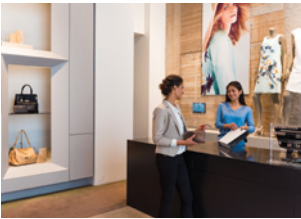


# Magnitude<sup>®</sup> magnetic bearing centrifugal chillers



75-1500 tons

# Better Air, Better Outcomes



Magnitude® magnetic bearing centrifugal chillers deliver the energy savings that building owners demand under all operating conditions. Offices, data centers, hospitals, luxury condominiums, and colleges worldwide rely on the Daikin Magnitude chiller to provide efficient, reliable cooling to their buildings. Millions of building owners and occupants have reaped the benefits of increased productivity and improved air quality that comes from the installation of Daikin's innovative chiller technology. When it comes to saving energy, Magnitude is up to 40% more efficient than standard centrifugal chillers, offering improved savings year over year for a measurable and assured low cost of ownership.

## Service and maintenance savings

*Free from energy losses, annual oil change and disposal, and oil-circulation equipment, the Magnitude magnetic bearing chiller requires less maintenance and service over the life of the chiller. With oil removed from the system, maintenance tasks such as oil samples, changes, filter changes, disposal, and leaks from shaft seals are eliminated. The results are reduced operational costs and maintenance savings each and every year.*

*With an additional Daikin maintenance agreement, owners can be confident they are reaping the most rewards through superior maintenance practices and optimized system efficiencies from our factory-trained technicians.*

*Operator training for maintenance and operation of Magnitude chillers is available from the Daikin Learning Institute. Visit the Training page at [www.DaikinApplied.com](http://www.DaikinApplied.com) for details.*

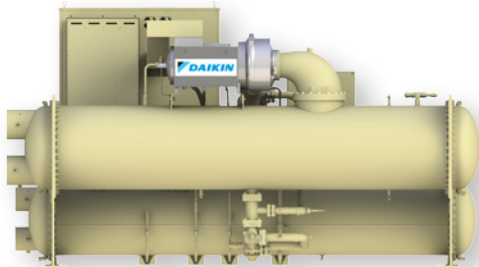


# Freedom from friction with oil-free technology

## Oil-free design yields sustainable efficiency

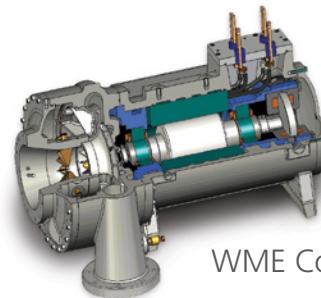
The frictionless magnetic bearing compressor was developed to improve performance, reliability, and reduce service requirements. Oil-free technology affords you increased power with decreased electrical requirements, offering 40% energy savings over fixed speed centrifugal chillers.

The magnetic bearing compressor has a single rotating component—the compressor shaft—levitated on a magnetic field. The compressor shaft is kept perfectly aligned in all directions by sensors at each magnetic bearing providing real-time feedback to the digital bearing control system. This magnetic bearing technology enables outstanding energy efficiency and reliable, long-life operation.



## Oil-free reduces friction and cost while improving reliability

- Magnetic technology eliminates oil, wear surfaces, and gears for longer machine life and increased reliability.
- Positive pressure, oil-free design eliminates the performance degradation due to non-condensables and oil contamination of the refrigerant.
- According to an ASHRAE study, chillers experience a 2% efficiency loss for every 1% of oil. By eliminating the oil in our Magnitude chillers, you can see a near 10% efficiency gain.
- Oil-free design eliminates oil management systems for improved compressor and system reliability.
- Compressor VFD reduces power consumption during off-design conditions while maximizing chiller performance and bolstering efficiency.
- The simplicity of a direct-drive motor and shaft eliminates gears, slide valves, and extra parts to reduce downtime.
- Utilization of a VFD as standard reduces in-rush current, saving on generator sizing, if required for the project, plus soft starting lessens mechanical and thermal stresses yielding an increased motor life.
- Onboard digital controls continuously monitor operating status and provide fault protections.



WME Compressor

## Quiet Operation

The Magnitude chiller is quieter than your washing machine with sound pressure ratings on some models as low as 76 dBA, tested according to AHRI Standard 575. Sound levels will be even lower at reduced loads and non-standard design conditions.

This quiet operation makes Magnitude ideal for sound-sensitive environments where people learn, heal, live and listen: schools, hospitals, performance halls, museums, and condominiums.

## Full-range Energy Performance

**Complete portfolio offers just the right size** for your tonnage requirements, reducing initial first cost and optimizing energy efficiency and energy costs for the life of the unit.

**Easy integration** with our Open Choices™ feature using BACnet®, LonWorks® or Modbus® communications without an expensive gateway panel.

**Seismic compliance** with both IBC seismic certification standards and OSHPD pre-approval on WME models.

**Dual Compressors** for redundancy and industry-leading part-load efficiency available in 150-400 ton and 800-1500 ton capacity.

# Advanced technology sets new standards

## When your facility calls for certainty

A power loss could turn into a critical loss of cooling in mission critical facilities such as data centers, health care buildings or manufacturing processes. A short-term power loss can happen during power interruptions, brown-outs or utility switching operations. The low inrush current of the Magnitude at startup is ideal for operation with backup or emergency power systems.

With RapidRestore® and Fast Loading technology, Daikin goes beyond “quick start.” Your Magnitude chiller can restart in less than 43 seconds after power is restored. In addition, the Fast Loading option can restore 80% load-cooling capacity in less than 75 seconds in single compressor models or less than 120 seconds in dual compressor models.

WME models feature Daikin’s unique RideThrough® technology, maintaining operation during momentary power loss events up to 5 seconds. When RideThrough is enabled during a power loss, the compressor motor maintains rotation, the VFD catches, and resynchronizes with the spinning rotor.

## Why R134a is the best refrigerant choice today

R134a is the best choice for centrifugal applications today when you consider all the variables – efficiency, safety, availability and value. It is the most efficient positive pressure A1 refrigerant choice today and has the lowest ASHRAE toxicity classification. Plus, it’s well vetted and accepted, and is approved for use in new chiller equipment through Jan 1, 2024, and continued use in servicing beyond that date. Its abundant supply also assures affordability. If you are looking to buy a centrifugal chiller today, focus on safe, efficient R134a chillers to deliver the best impact for your building and the environment.

## Leading the industry to a sustainable future with environmental solutions

Sustainable practices are ingrained in Daikin’s corporate culture. We believe it is the right thing to do for our customers, our community, the environment and ourselves. As the world’s #1 air conditioning company, Daikin has a unique opportunity to make a difference in sustainable initiatives by leading the industry in environmental solutions.

### Innovation to save you millions

The Daikin Magnitude magnetic bearing centrifugal chiller offers industry-leading performance, earning Type III Environmental Product Declaration (EPD) verification per ISO 14025. Up to 40% more efficient than standard centrifugal chillers, this innovative equipment can save more than \$2 million over the life of the machine. Did you know that adding a single gallon of oil to a 1200 ton chiller costs approximately \$1,100 in efficiency loss every single year? Just think of the gallons of oil added to a traditional chiller at spring start-up each year!

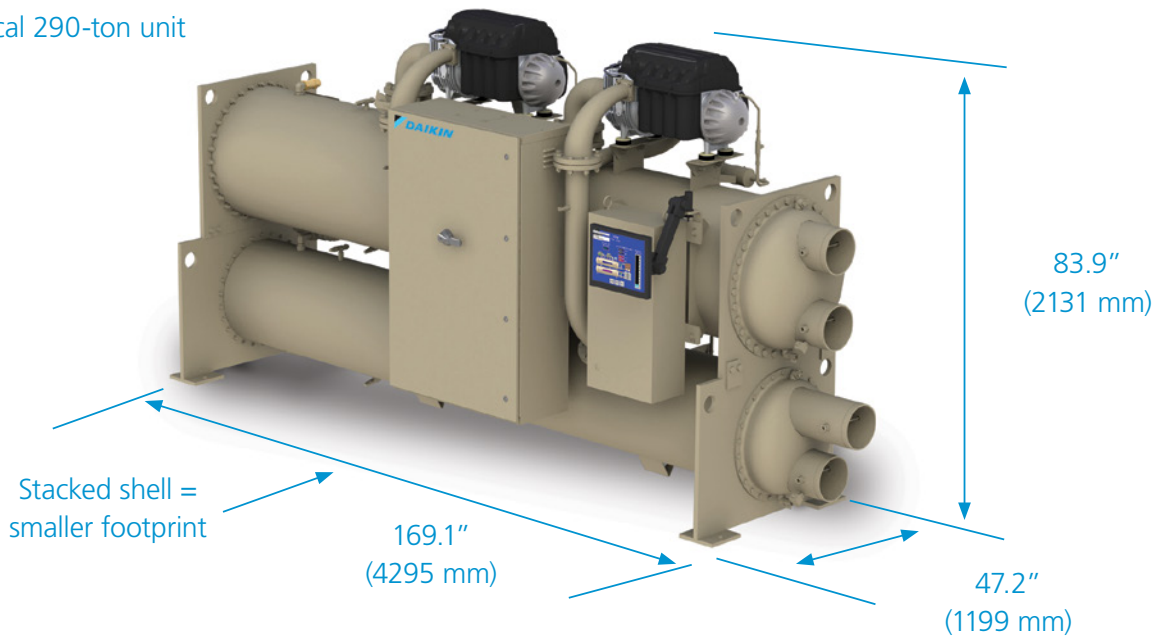
Integrating VFD technology and oil-free efficiency, the Magnitude will operate at its best performance all the time, not just under its full-load design. You’ll continue to reap energy savings at non-peak loads throughout the life of the chiller all while minimizing expensive maintenance downtime. Due to its recognized efficiency through the EPD, Magnitude chillers gain you points for the LEED Energy and Atmosphere Credit 1 (EAc1) and have the potential to qualify you for utility rebate programs.



# Compact size for time and installation cost savings

The compact size of the Magnitude chiller makes it ideal for retrofit and replacement installations. In addition, the space that would have been used for equipment can now be put to more productive use in the facility. Most models can easily fit through standard entryways without any disassembly. Even the most challenging access projects can be accommodated using our factory disassembly option.

Typical 290-ton unit



## Dimensions and Shipping Weights

Model	Heat Exchanger	Length in (mm)	Width in (mm)	Height in (mm)	Shipping Weight <sup>1</sup> lb (kg)
036D-SN	E2209/C2009	134.70 (3421)	43.42 (1103)	79.02 (2007)	6367 (2888)
036D-SN	E2212/C2012	169.59 (4308)	43.42 (1103)	79.02 (2007)	7477 (3392)
043D-SN	E2609/C2209	135.72 (3447)	47.17 (1198)	84.01 (2134)	7517 (3409)
048D-SN	E2609/C2209	135.72 (3447)	47.17 (1198)	84.01 (2134)	7517 (3409)
043D-SN	E2612/C2212	170.61 (4333)	47.17 (1198)	84.01 (2134)	8898 (4036)
048D-SN	E2612/C2212	170.61 (4333)	47.17 (1198)	84.01 (2134)	8898 (4036)
048D-SE <sup>4</sup>	E2612/C2212	170.61 (4333)	47.17 (1198)	84.01 (2134)	9768 (4431)
060D-SN	E3009/C2609	137.09 (3402)	55.17 (1401)	94.50 (2400)	9747 (4421)
060D-SN	E3012/C2612	171.98 (4368)	55.17 (1401)	94.50 (2400)	11470 (5203)
060D-SE <sup>3</sup>	E3012/C2612	171.98 (4368)	55.17 (1401)	94.50 (2400)	12475 (5658)
WME0500S	E3012 / C2612	168.5 (4280)	68.4 (1737) <sup>5</sup> 70.7 (1796) <sup>6</sup>	92.8 (2357) <sup>4</sup>	12864 (5835)
	E3012 / C3012	168.5 (4280)	71.3 (1811)	96.8 (2459) <sup>4</sup>	14163 (6424)
	E3612 / C3012	170.0 (4318)	77.3 (1963)	96.8 (2459) <sup>4</sup>	16329 (7407)
WME0700S	E3612 / C3012	170.0 (4318)	77.3 (1963)	96.3 (2446) <sup>4</sup>	17726 (8040)
	E3612 / C3612	170.0 (4318)	83.0 (2108)	102.3 (2598) <sup>4</sup>	20094 (9115)
WME1000D	E4216 / C3616	218.3 (5545)	89.0 (2261)	102.8 (2611) <sup>4</sup>	28172 (12779)
WME1500D	E4816 / C4216	230.0 (5842)	101.0 (2565)	109.8 (2789) <sup>4</sup>	38114 (17288)

1. Shipping weight is based on unit with standard tube configuration and standard dished heads..

2. Width is based on unit without optional harmonic filters.

3. Denotes unit with economizer

4. Unit height does not include height of removable eye bolt.

5. Dimension for unit with M2 standard motor (60Hz 440/460/480V).

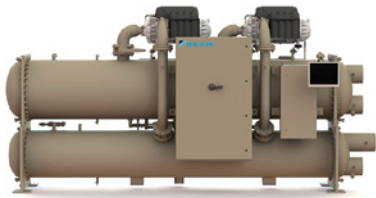
6. Dimension for unit with M2 standard motor (50Hz 380/400/415V, 60Hz 380/575V), M2 standard motor (60Hz 380/460V) with factory-mounted harmonic filter, or M3 low THD motor (50Hz 380/440/460/480/575V)

NOTE: See certified drawings for additional dimensional data

# Make it a complete system for optimum performance and reliability

1

## Choose a Daikin Magnitude chiller



**Magnitude magnetic bearing chiller (WMC)**

75 to 400 ton



**Magnitude magnetic bearing chiller (WME)**

400 to 1500 ton

2

## Choose a Daikin air handler or terminal unit



**Vision® indoor air handler**

900 to 100,000 cfm



**Skyline® outdoor air handler**

900 to 65,000 cfm



**Destiny® indoor air handler**

600 to 15,000 cfm



**RoofPak® outdoor air handler**

4000 to 50,000 cfm



**Unit ventilators**

750 to 2,000 cfm



**Fan coil units**

200 to 3,000 cfm

Learn why Magnitude chillers are the right solution for your application. Call us at 800-432-1342, or visit [DaikinApplied.com](http://DaikinApplied.com).

