

MINI COMPRESSOR



RIGID HVAC CO., LTD





RIGID MINIATURE COMPRESSOR

New Enabling Technology for Compact Cooling Applications

RIGID Miniature DC Compressors are the result of a breakthrough in vapor compression technology featuring low vibration and low noise operation. Its tiny device is the first real innovation in micro-compressor technology for a century. They can be utilized in many thermal management applications from compact recirculating chillers, small coolers, medical cooling, direct cooling of electronics, and white goods to mobile refrigeration.

For smooth and easy temperature adjustment, RIGID miniature BLDC compressors with cooling capacities ranges 100W (340Btu) up to 550W (1,876Btu) by our patent drive board. The drive board is continuously speed-controllable via the frequency of a square wave signal, with variable speeds from 2000rpm to 6500rpm.



- Cooling capacity up to 550 W
- Low vibration pump & Brushless DC motor design

RIGID MINI COMPRESSOR - ACTIVE THERMAL MANAGEMENT

Compressors are a key component to refrigeration products, it is the “heart” of such appliances, comparable to a car engine or even the human heart. RIGID Technologies now presents a lightest, ultra compact and more efficient mini dc compressor. Its compact and light weight design makes it ideally suited for mobile and small cooling applications. Today, RIGID has successfully developed the 5th generation miniature compressor, it adopts our patented sine wave drive board.

NEW POSSIBILITIES WITH MINIATURE DC COMPRESSORS

The Mini Rotary Compressor with a cooling capacity of up to 550 W. It is the result of a breakthrough in compressor technology. RIGID miniature refrigerated dc compressor, equipped with our patent drive board. It is an advanced compact cooling method, provides a variable speed and load-following capability for precise temperature control and high efficiency. RIGID mini compressor is not only utilized in many Thermal Management applications, but also ideally suited for a miniature refrigeration system, mobile & portable aircon, cooling electronics, and in numerous commercial appliance types where space and weight are important.

Click here for our [Compact Cooling Systems Applications](#).

MINI COMPRESSOR APPLICATIONS

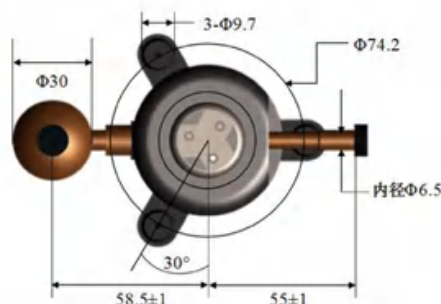
Numerous refrigerated applications can benefit from the size and weight advantages of the new brushless direct current (BLDC) Miniature Rotary Compressor. Some of the relevant applications are listed below:

- Small & Compact Cooling
- Portable Cooling Systems
- Portable Air Conditioners
- Portable Heat Pumps
- Medical & Aesthetic
- Beverage Cooling
- Electronics Cooling Systems
- Mini-Chilled Water Systems
- Mini Refrigeration/Freezer Systems
- Thermally-Controlled Shipping Containers



ENABLING TECHNOLOGY FOR COMPACT & LIGHTWEIGHT REFRIGERATION SYSTEMS

RIGID mini compressors are exceptionally compact and achieve extraordinary power density. They are pocket size and portability and very competitive price enable us is irreplaceable. The mini compressor is available for 12V, 24V, and 48V voltage input options and compatible with various current and most of the upcoming low GWP refrigerants. RIGID mini compressors can be used in a wide range of evaporator conditions and in LBP, MBP, and HBP systems. Plus, RIGID patent sine wave drive controller provides variable speed and load following capability for precise temperature control and high efficiency. Substantial discounts are available for government, military, and large-volume purchases.



RIGID MINI COMPRESSOR SPECIFICATIONS

Refrigerant: R134A
 Weight: 0.72kgs (1.6lbs)
 Capacity: 100W ~ 550W
 Direct current: 12V / 24V / 48V DC
 Ultra small: Length 56.5mm, Length 77.9mm
 Power supply: Battery, Solar Power, Car Power and off grid
 Drive board: Sine wave controller, adjustable speed 2000rpm to 6500rpm.





- Cooling capacity up to 550 W
- Low vibration pump & Brushless DC motor design

RIGID MINI COMPRESSOR - ACTIVE THERMAL MANAGEMENT



Brushless DC Motor

- Concentrated Winding Stator (9 Slot)
- Nd-IPM Rotor (6Pole)





Reliable Rotary Cpump

- Reduce Vibration & Noise
- Single Suction Pipe for Efficiency





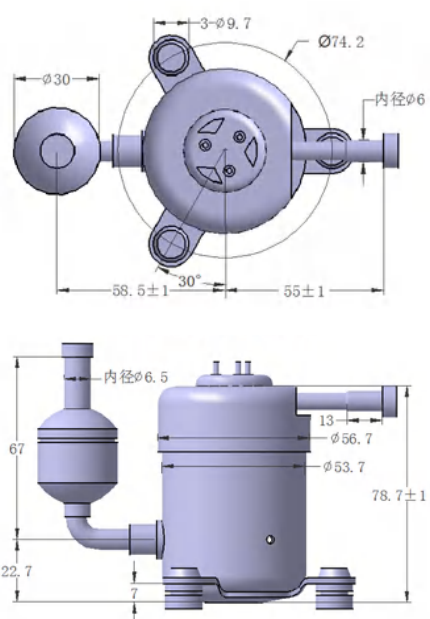
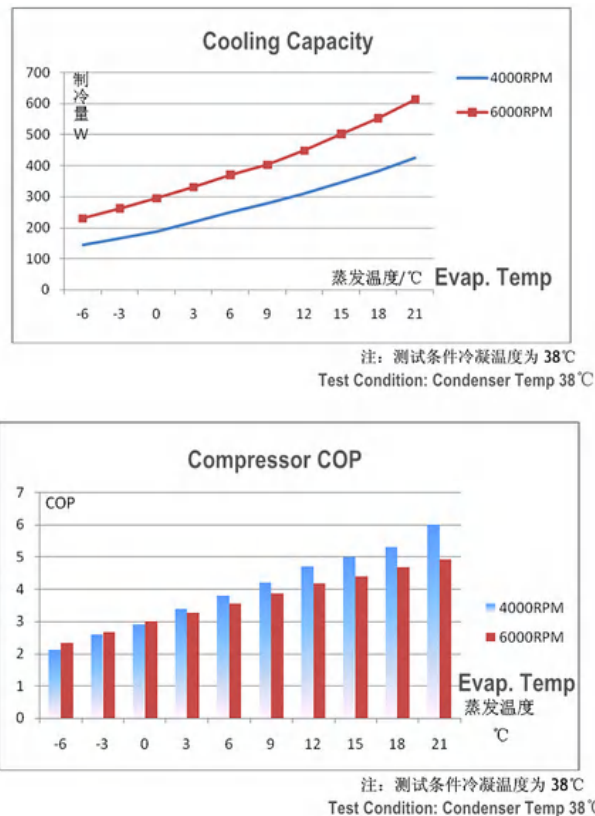
Compressor Driver Board

- Sine Wave Inverter
- Torque Control Method



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EXTRAORDINARY COOLING PERFORMANCE



HIGH EFFICIENCY MINIATURE DC ROTARY COMPRESSOR

Refrigerant	R134a
Lubricating Oil	Polyol Ester
Compressor Type	Rotary Brushless Direct Current (Rolling Piston)
Displacement	1.4cc, 1.9cc and 3.25cc per revolution
ASHRAE Cooling Capacity	360, 460 and 550W respectively
Speed	Variable 2,000~6,500 rpm
Motor	Brushless, DC Motor
Nominal Input Voltage	12V, 24V or 48V DC
Maximum Current	10A, 8.5A and 4.2A respectively
Evaporator Temperature Range	-18 to +25 °C
Condenser Temperature Range	27 to 70 °C
Maximum Compressor Ratio	8:1
Driver Board	Sine Wave

*HBP: Evap. Temp. 7.2°C / Cond. Temp. 54.4°C / Superheated to 35°C; Sub-Cooled to 46.1°C / Ambient Temp. 35°C
 *LBP: Evap. Temp. 23.3°C / Cond. Temp. 54.4°C / Superheated to 32.2°C; Sub-Cooled to 32.2°C / Ambient Temp. 32.2°C