

# Compact Refrigeration System

COOLING SPECIALIST

**RIGID HVAC CO., LTD**





# RIGID - Cooling Specialist

## *Miniature DC Compressor Cooling – Active Thermal Management*

RIGID is a company specialized in manufacturing, marketing, research & development of microclimate cooling systems and provides small cooling solutions for extreme hot environment and confined space. We specialize in and focus on ***Mini Compressor, Compact Liquid Chillers, Micro DC Aircon***. The small cooling systems are well suited for a variety of applications like laser, racing, plants, body cooling, medical & aesthetic and other small cooling needs. The qualification of products have met the technical and quality standard of Germany, U.S., Italy and Asian countries.

For the past 9 years, Rigid Technology has stood the test of time for the highest level of performance, quality, safety and innovation. All Rigid standard cooling systems are designed and manufactured with complete control of every step to ensure that Rigid's uncompromising standards for ultimate performance, unmatched reliability and highest durability are met. Besides standard chiller modules, Rigid also custom-made refrigeration units according to clients' demand. More details, feel free to [click here](#).

RIGID product's pocket size and portability and very competitive price enable us is irreplaceable. Our unique design and high tech precision manufacturing, is resulting in products, which outperform and outlast any other brand on the market today.



**WE'RE PROUD OF EVERY  
PRODUCT WE MAKE.**





# Liquid Chiller Series

Small Refrigeration Systems for Chilling Liquid

RIGID has developed the compact liquid chillers to satisfy the growing market segment of customers who want to microclimate cooling systems, but can handle the coolant circuitry and the system controls.

Rigid liquid chiller is a circulatory cooling subsystem. It consists of mini compressor (12V/24V/48V) with R134A coolant, smallest condenser and radiator, copper coil evaporator (heat exchanger), filter drier, driver board and other refrigeration parts.

The performance of liquid chiller depends on the major components (compressor, heat exchangers, coolant). RIGID standard liquid chiller offers 100W~550 W of capacity and can operate in ambient environments as warm as 50°C.

RIGID liquid chiller is a kind of heat transfer system. Its benefits include ultra small radiator and high heat flux, it provides excellent cooling performance. The compact chiller is good for customers who is able to deal with system control. If you want cooling subsystem module only to integrate or assemble with your machine or equipment, Rigid small chillers are better choice.

We provide drive board together accordingly. User's control board can connect with our DC compressor drive board (included) to control compressor speed and get the best performance they needed.



# Copper Coil Chiller

The Coil-E type liquid chiller module is a compact cooling module used as heat transfer system for small liquid cooling. It is widely used for small reservoir liquid circulating cooling, laser, medical-aesthetic, various heat transfer Systems and many other small cooling applications.

- R134A;
- 3kgs/6.6lbs;
- Capacity: 100~550W;
- Size: 275x175x138mm;
- Mini dc compressor to enable peak performance.

Model Names:

DV1910E (12V)

DV1920E (24V)

DV1930E (48V)

DV3220E (24V)



# Stainless St Coil Chiller

The Stainless Steel Coil-S type liquid chiller module is used as heat transfer system for small liquid cooling. It applies for laser, medical-aesthetic, and many other small cooling applications. It meets customer's specific demand where weight and space is critical.

- R134A;
- 3kgs/6.6lbs;
- Capacity: 100~550W;
- Size: 275x175x138mm;
- Mini dc compressor to enable peak performance.

Model Names:

DV1910E-S (12V)

DV1920E-S (24V)

DV1930E-S (48V)

DV3220E-S (24V)



# Plate Liquid Chiller

The benefits of Plate-P liquid chiller module include ultra small radiator and high heat flux. It is not only facilitated installation but also assures end users having excellent cooling performance. Users only need to connect liquid inlet pipe and outlet pipe to get chilled liquid they expected. It applies for microclimate cooling system and provides extraordinary cooling capacity for laser, computer, body cooling, racing, firefighter, EV battery, precision instrument, medical & aesthetic device ...

- R134A;
- 4kgs/8.8lbs;
- Capacity: 100~550W;
- Size: 330x200x138mm;
- Mini dc compressor to enable peak performance.

Model Names:

DV1910E-P (12V)

DV1920E-P (24V)

DV1930E-P (48V)

DV3220E-P (24V)





# Coaxial Stainless Chiller

This Coaxial-C water cooler is a type of closed loop liquid chilled system. It provides compact and reliable circulatory liquid cooling. The small water cooled chiller uses S-316 coaxial stainless steel evaporator, widely apply for aesthetic and medical device cooling, as well as pure water cooling.

- R134A;
- 4kgs/8.8lbs;
- Capacity: 100~550W;
- Size: 330x200x138mm;
- Mini dc compressor to enable peak performance.

Model Names:

DV1910E-C (12V)

DV1920E-C (24V)

DV1930E-C (48V)

DV3220E-C (24V)



# Micro DC Aircon

Compact, Light, Rugged DC Air Conditioning

RIGID focus on working for Microclimate Cooling System and provides compact cooling solutions for extreme hot environment and confined space. RIGID has his own R&D and sophisticated technicians, we welcome OEM and ODM projects.

RIGID Micro DC Aircon units are ruggedized miniature refrigeration systems designed and developed specifically to meet the demands of compact and confined space air cooling.

It is compact size, lightest weight and industrial-class reliability DC air conditioner for many small cooling applications.

RIGID Micro DC Aircon applies for a wide range of applications cooling, like electronics, animals, computer, advertising board, LED sign, telecom basement etc. It provides cooling and dehumidification to electronics enclosures.

Furthermore, because of its lightest weight, it is perfect for mobile applications like mobile dc air conditioner. It enables electronics systems to be deployed effectively in hot, challenging environments.

Besides cooling, Rigid micro dc aircon also provides heating function. Using our miniature dc compressor technology, our micro air conditioner module is 4 times more efficient, 7 times lighter, and 5 times smaller than competing thermoelectric systems.

# Micro DC Aircon

## *Portable DC Aircon Unit 12V / 24V / 48V*

This DC A/C is a compact solution for small & confined space cooling, such as electronics, dog crate cooling, driver cabins and electric vehicles etc.

- R134A;
- 5.0kgs (11.02lbs);
- Capacity: 100~550W;
- Size: 338\*208\*145mm;
- Mini dc compressor to enable peak performance.

Features: Compact Size, Lightweight, High Efficient and Portability.

Model names:

DV1910E-AC (12V)

DV1920E-AC (24V)

DV1930E-AC (48V)

DV3220E-AC (24V)





# DC Condensing Unit

The World's Smallest Cooling Refrigeration System-12V/24V/48V DC

The DC Condensing Unit is a direct expansion subsystem (without evaporator). It consists of micro dc compressor, smallest condenser and radiator, filter drier, expansion valve or capillary, driver board and other refrigeration parts.

It is developed aim to satisfy the growing market who wants ideal vapor-compression refrigeration cycle, to meet their compact device's direct expansion cooling demand.

It uses micro refrigeration compressor, which eliminates the use of a secondary coolant loop. This configuration enables the small dc cooling unit and uses the refrigerant to directly cool the desired equipment or device via a cold plate.

In the cold plate of dc refrigeration system, the refrigerant undergoes an isothermal phase change, which offers extremely tight temperature control across the cold plate.

Users want direct cooling unit only to integrate with their machine or equipment, in order to get small direct cooling solution.

End user's control board can connect with RIGID drive board (included) to control compressor speed and get the best performance they needed.

Except standard chiller units, RIGID also custom made or personalize small cooling modules to meet customer's special demand.

# DC Condensing Unit

## *World's Smallest Direct Expansion Refrigeration Unit*

Using DC 12V, 24V, 48V variable speed inverter compressors, the mini DC condensing unit is perfect match for direct cooling applications like portable freezer, fridge and small mobile refrigeration applications.

- R134A;
- 2.5 kgs/5.5lbs;
- Capacity: 100~550W;
- Size: 190\*160\*138mm;
- Miniature dc compressor efficiency to enable peak performance.

Model names:

DV1910 (12V)

DV1920 (24V)

DV1930 (48V)

DV3220 (24V)





# 12V Compact Cooler

The “Core” Power Emitting the Charm of Science and Technology

RIGID Technology has developed unparalleled compact thermal management products based on patented miniature refrigeration technology.

This latest developed compact cooler LC1910E-PRO is a liquid cooling system. It is a completed cooling packaged, which including mini compressor, condenser, evaporator, refrigerant and water pump in one small component package. It is plug and play.

The 12V liquid cooler is the smallest, lightest, and most energy efficient solution of its kind. It specially used to increase personal effectiveness in hot weather conditions or while using protective equipment, markets include hospital, medical, military, fire fighters, outdoor workers, 1st responders, and racing and so on.

If a change in physical dimensions, temperature requirements etc. is required for your application, RIGID specializes in volume manufacturing of refrigeration systems tailored to your application. Feel free to contact [ann@rigidhvac.com](mailto:ann@rigidhvac.com) about your requirements, we will get back to you within 12hrs.

RIGID accepts OEM manufacturing and offers customized service. Our easy-going R&D teams work directly for your special needs. More product details, [\*\*click here!\*\*](#)



# 12V Compact Cooler

## *Outstanding Performance Cooler for Body Cooling*

Using miniature brushless dc compressors, the 12V compact cooler is compact, light, rugged liquid cooler for local and core power cooling. After working out or being exposed to an extremely hot environment, it can take your body 30mins or more to cool back down to normal temperature. The Compact Cooler is especially designed to achieve the same cooling results in just 1 minute. That is the benefits of RIGID core control cooling system.

- 6Kgs / 13.23lbs
- Voltage: DC 12V / 24V
- Refrigerant: R134A
- Capacity: 100~450W
- Digital Display Controller
- Reservoir: 145ml
- Pump Flow Rate: 7.5L/min
- Length x Width x Height: 300x170x170mm

Model names:

LC1910E-PRO (12V)

LC1920E-PRO (24V)





# 24V Liquid Cooler (Heat & Cool)

The “Core” Power Emitting the Charm of Science and Technology

RIGID Technology has developed unparalleled compact thermal management products based on patented miniature refrigeration technology.

This latest developed compact cooler LC1910E-PRO is a liquid cooling system. It is a completed cooling packaged, which including mini compressor, condenser, evaporator, refrigerant and water pump in one small component package. It is plug and play.

The 12V liquid cooler is the smallest, lightest, and most energy efficient solution of its kind. It specially used to increase personal effectiveness in hot weather conditions or while using protective equipment, markets include hospital, medical, military, fire fighters, outdoor workers, 1st responders, and racing and so on.

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RIGID accepts OEM manufacturing and offers customized service. Our easy-going R&D teams work directly for your special needs. More product details, [\*\*click here!\*\*](#)

# 24V Liquid Cooler (Heat & Cool)

## *World's Smallest Liquid Cooler with Digital Display*

Like the Personal Cooling solutions, RIGID also has developed personal heating technology employs custom designed components in a single and small package. The 24V liquid cooler is the smallest, lightest, industrial-class reliability and most energy efficient solution available and applies to a large number of markets including laser, medical, military, diving, animals and racing.

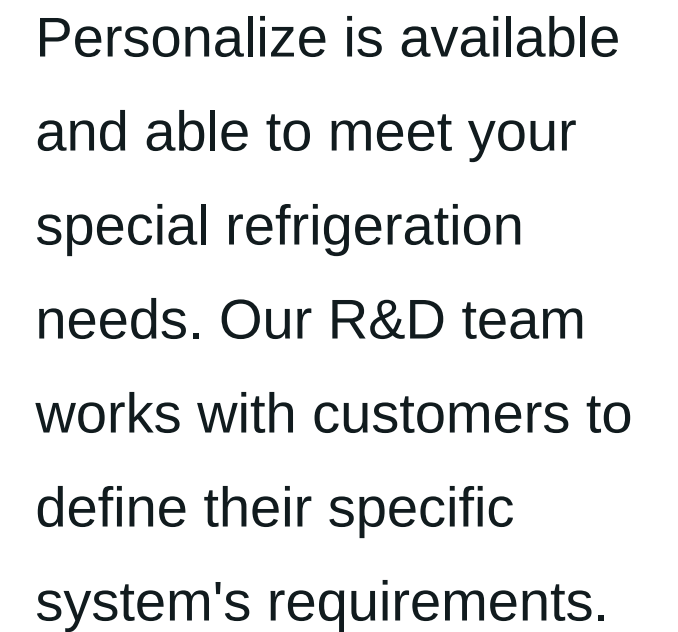
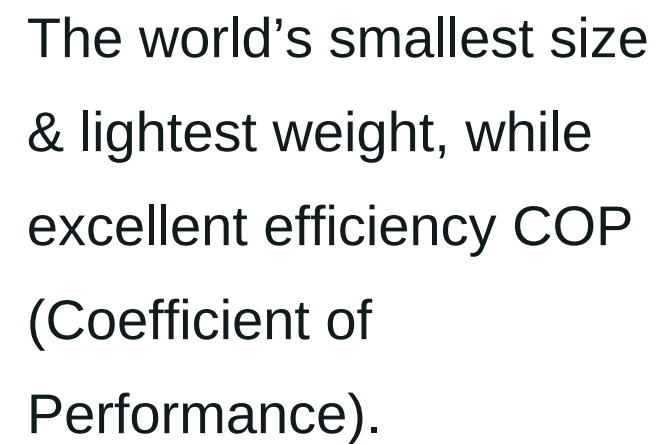
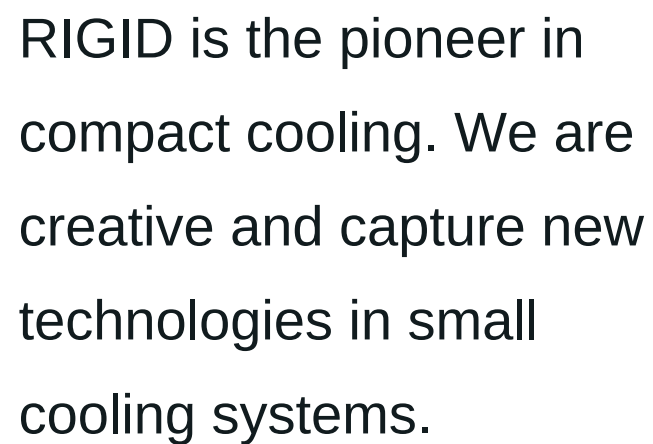
- 5Kgs / 11lbs
- Voltage: DC 24V
- Refrigerant: R134A
- Capacity: 100~450W
- Digital Display Controller
- Reservoir: 750ml
- Pump Flow Rate: 7.5L/min
- Length x Width x Height: 339x208x235mm

Model name:

LC3220E-H (24V)







# • Applications

## COMMERCIAL

- Electric Vehicle
- Battery Cooling
- Telecommunications
- Beverage Dispensers
- Refrigerated Drawers
- Solar Appliances
- Portable Refrigerators
- Automotive Fridge
- Auto Racing
- Animals

## INDUSTRIAL

- Body Cooling
- Firefighters
- Courier Service
- RV Air Conditioners
- Outdoor workers
- First Responders
- Rescue & Safety
- Emergency Responders
- Furnaces and Foundries
- Construction Workers

## ELETRONICS

- Laser Diodes
- EV Battery Pack
- Computer Server
- Telecom Basement
- Notable Applications
- PCs and Servers
- Liquid Cooled Racks
- Advertisement Sign
- Aircraft POD Cooling
- High Power Electronics

## MEDICAL & AESTHETIC

- Sub-cooling
- Sports Injuries
- Physical Therapy
- Athlete rehabilitation
- Medical Machine
- Acute Care
- Post Operative
- Sports Injuries
- Medical Electronics





## BEVERAGE

Wine & Beer & Beverage Cooling



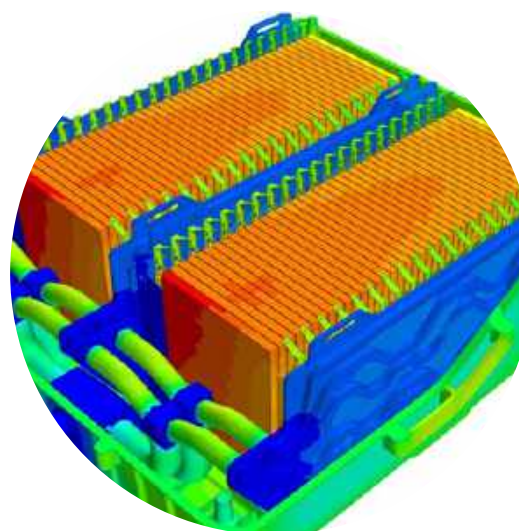
## DRIVER & RACING

Body Cooling & high-temp working environment



## TELECOM BASEMENT

Electronics & Animals & Driver Cab



## EV BATTERY PACK

Computer Server & PCs & Liquid Cooled



## MEDICAL & AESTHETIC

Laser & Medical Device & Equipments



## MILITARY & ATHLETES

Core Control Cooling & Post Recover



# How We're Making A Difference

## 100% TOTAL INSPECTION

- Every process is inspected by the quality department.
- 100% complete inspection before shipment.
- Each product has a unique tracking code.

## STRONG RESEARCH & DEVELOPMENT

- Technicians & Engineers work directly with you.
- We react rapidly, all issues have our reply in 12hrs.
- Accelerating the success of our customers has been our focus.

## CUSTOM PRODUCT CREATION

- 10-years of experience in compact & portable cooling industry.
- RIGID Technology provides unmatched solutions to meet our customer specific needs in small cooling applications.





## **100% TOTAL INSPECTION**

Every process is inspected by the quality department. 100% complete inspection before shipment.

## **100% PRODUCT TRACKING**

Each product has its unique tracking code. Ensure traceability and inventory accuracy/control.







## FACTORY & PRODUCTION LINE

Technicians & Engineers work directly with you. 100% complete inspection before shipment. Each product is identification and Traceability.

## DELIVERY ON-TIME

Quality control, flow management, on-time delivery and reasonable pricing are our main advantages, making our products are better received all over the world.





## A Brief History Of Rigid

2010-The 1st generation tiny compressor was unveiled in 2010. RIGID is the pioneer in this miniature compressor industry.

2010



2011-The factory has been awarded China high-tech enterprise in Oct 2011.

2011



2013-Factory has gained the ISO9001 certificate, with all its products got national CCC & CE. RIGID tiny compressor honored for "Innovation Awards".

2013



2015-T3 Tropical Compressor was unveiled in June 2015. The T3 tropical compressor series are specially designed for extreme hot areas.

2015



2017-Under the unremitting effort of R&D team, RIGID successfully developed 3 types small liquid chiller module (LCM). RIGID LCM serve as a small liquid cooler for continuously liquid loop cooling.

2017



2010.9

2010.9-Compressor QX1401, QX1402 (12V/24V ) series were published in September 2010. The 1st generation driver board (Square wave) was coming out.

2012



2012-The 2nd generation driver board (Sine Wave) has developed, well matched QX19 series compressor.

2014

2014-Gained capital from the Technology Research & Development Center. Getting funding from local government for Energy Conservation & Emissions Reduction in April 2014. The 3rd generation QX14, QX19 series were published in Aug.



2016



2016-The 1st small cooling unit was launched. Its main advantage is ultra compact size, less energy consumption and affordable.

- RIGID has focused on compact and portable cooling systems for nearly 9 years.
- The brand "RIGID" is already registered in China and the United States.
- RIGID has filed 3 patents and other 2 new patents are in process.
- To maintain our technological edge, RIGID re-invests a large portion of corporate earnings back into R&D each year.
- RIGID keep close track of market movements and react rapidly. Our strong R&D capacity enable us stand out in the peers!



## CUSTOM PRODUCT CREATION

Rigid has been looking for novel solutions in compact and portable cooling applications. We are creative and capture new technologies.

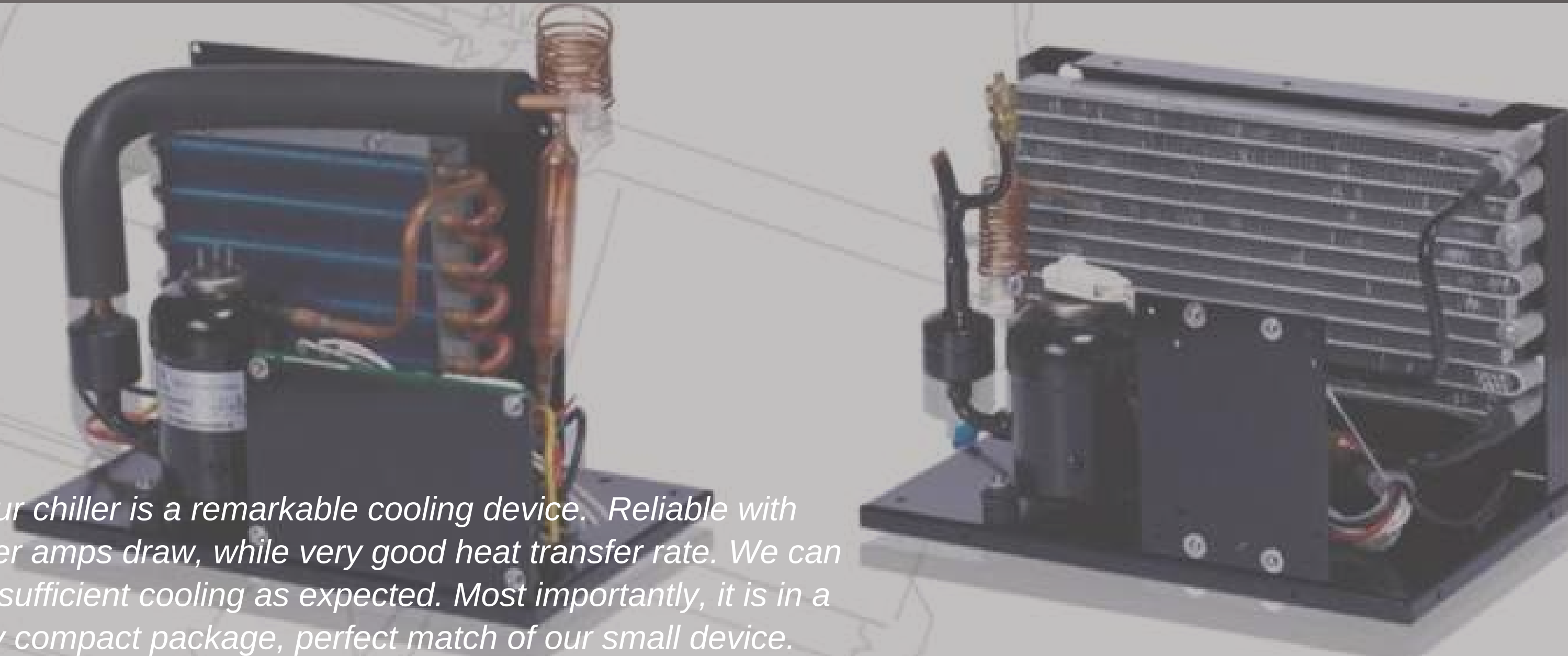
Our success is based on continuous involvement in research and development. RIGID re-invests a large portion of corporate earnings back into R&D each year. We work closely with our customers to understand and define their needs, engineer work out a solution that meets or exceeds their requirements.

Our Production department and QC make sure stable production output and quality delivery. All of our products are designed for manufacturing and thoroughly tested for usability and durability.

RIGID Technology has the facilities, equipment, and experience to build your custom product.







*"Your chiller is a remarkable cooling device. Reliable with lower amps draw, while very good heat transfer rate. We can get sufficient cooling as expected. Most importantly, it is in a very compact package, perfect match of our small device. That remarkability, that performance and that packaging is why we will continue to look at your products."*

*-- STATED BY THE CLIENT*



# ***RIGID HVAC CO., LTD***

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