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Version Number: C-ST06-EN-V2.0

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SRMTEC

Mobile Rafrigeration Station

Mobile Ammonia Refrigeration Station

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SRMTEC

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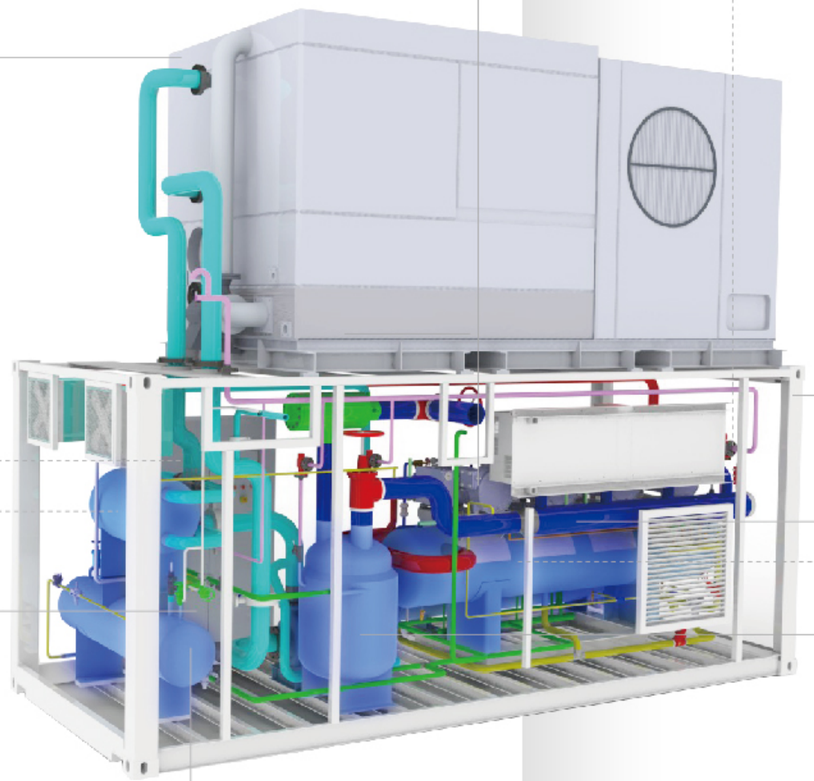
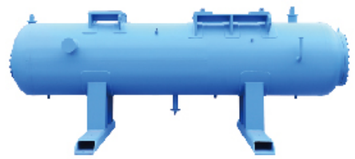




Oil Separator
(Oil Separation Efficiency Reaches 3ppm)

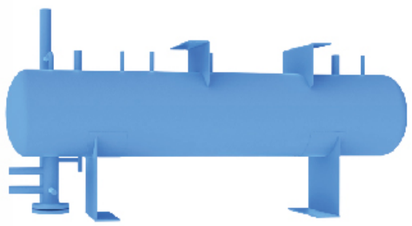
Shell-and-plate Heat Exchanger

Plate-exchange Economizer

Unit Control Center

Circuit Breaker

Programmable Controller



New Horizontal Fluid Reservoir

Three-in-one Device

SRMTEC

Mobile Ammonia Refrigeration Station

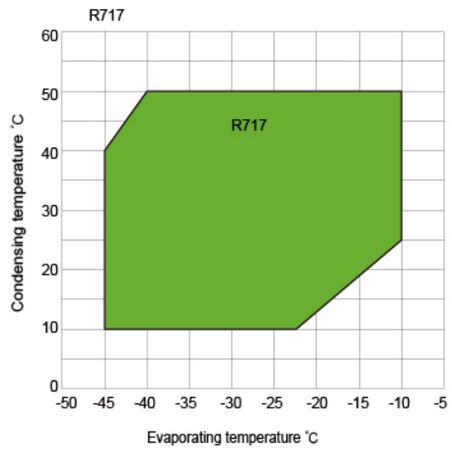
Application

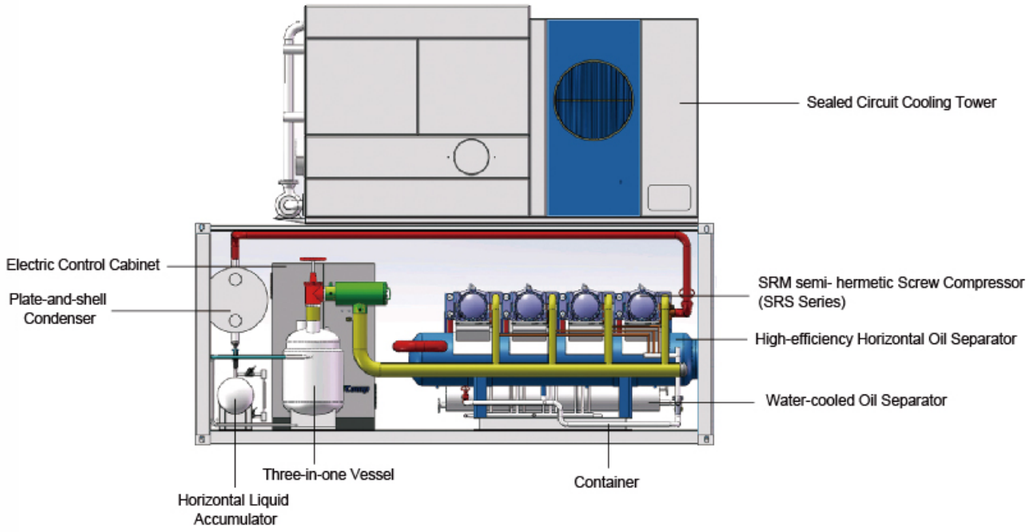
Snowman mobile refrigeration station combines major refrigeration equipment, such as compressors, condenser, accumulator, separator and electrical control into a container with cooling tower or evaporative condenser on top. The container is used as a machine room. Professional design. Appropriate layout. Small footprint. Flexible installation. Easy for transportation. The compressor unit has high efficiency and stability. It has a range of cooling capacities in low temperature condition with maximum 8 compressors in parallel. The compressor units have smart control for easy, safe and reliable operation. They can be used for medium to small logistic cold storage or the ones that need to be expanded.

Use Conditions

Refrigerant: R717
Cooling capacit:
178.0~1815.3kW(Evaporating temperature: -20℃)
109.2~1144.1kW(Evaporating temperature: -30℃)
60.0~666.6kW(Evaporating temperature: -40℃)
Power supply: 380V/3P/50Hz
Compressors in parallel: 1~8
Ambient temperature: +5℃~+40℃
Refrigerant oil: only provided or authorized by snowkey
Cooling water condition:Cooling water quality should meet the requirement of Code For Design of Industrial Recirculating Cooling Water Treatment
Entering temperature of cooling water: +15℃~+32℃

Application Scope





SRM Semi-hermetic Screw Compressor

- Compared with the existing open-type compressor, the assembly accuracy is high, and risks of ammonia leakage are greatly reduced.
- The motor is installed in the housing and only equipped with one oil return port. The oil circulation system is also installed in the housing, reducing the risks of leakage.

Shell-plate Water-cooled Condenser

Water-cooled condensers are simpler than evaporative and air- cooled condensers. Plate water-cooled condensers is smaller by 80% in size and has lower charge compared to normal shell-tube water- cooled condensers.

High Efficiency Horizontal Separator

Four level of oil separation with efficiency of 99.9%. It reduces the chance of taking oil into other equipment greatly and improves the performance of heat exchangers.

Direct Expansion Liquid Supply System

Ammonia direct expansion liquid supply system compared with traditional pump as well as gravity liquid supply system is simple, safe and has low charge. It uses the lubrication oil soluble in ammonia. The advantage is uncontested.

Skid Design

Skid system is assembled in factory to improve the quality. It avoids the uncontrollable factors on construction site and shortens the installation time.

Plate Heat Exchanger Economizer

High Efficiency, reliability and low charge of ammonia.

Water-cooled Oil Cooler

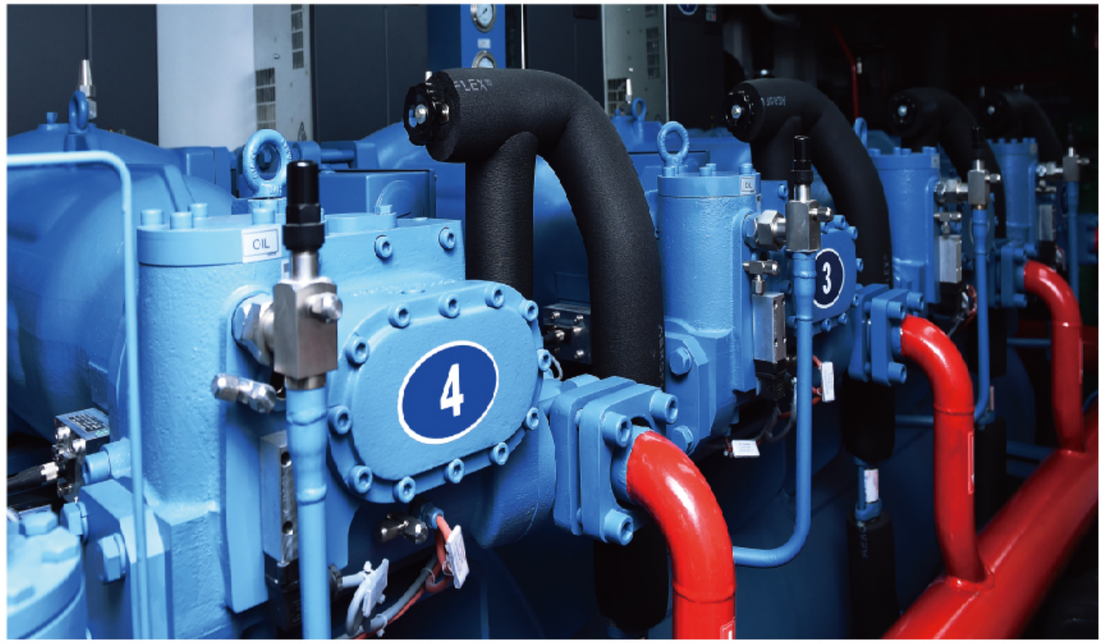
Water-cooled oil cooler compared to thermosiphon system reduces the charge of ammonia, since water replaces ammonia.

Container

With container as the carrier of condensing compressor unit, equipment can be installed inside without the need of machine room design. It is easy for installation on-site.

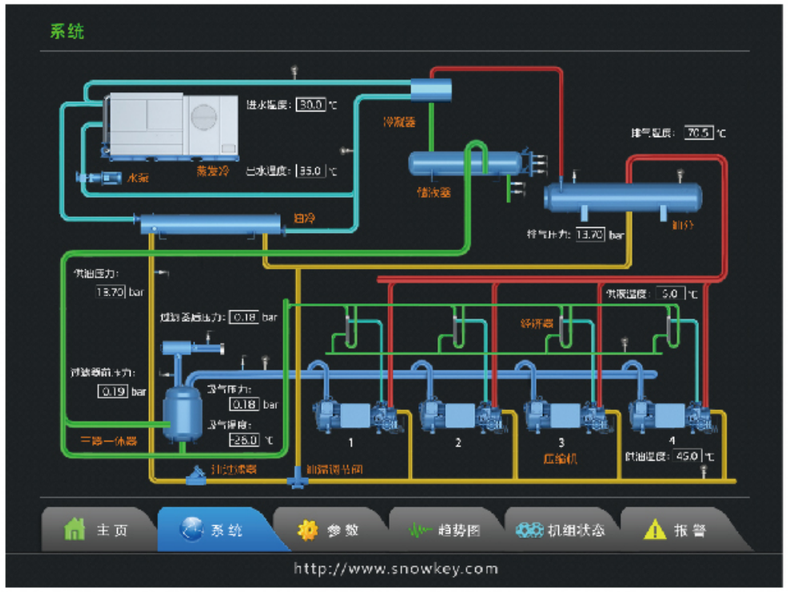
Sealed Circuit Cooling Tower

Replacing wate cooling tower with evaporative condensers can avoid splashing. To use water instead of ammonia reduces the charge level.



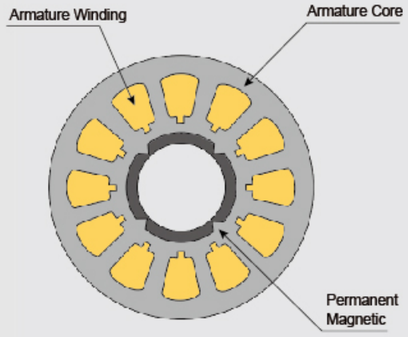
Mobile Ammonia Refrigeration Station Advantages

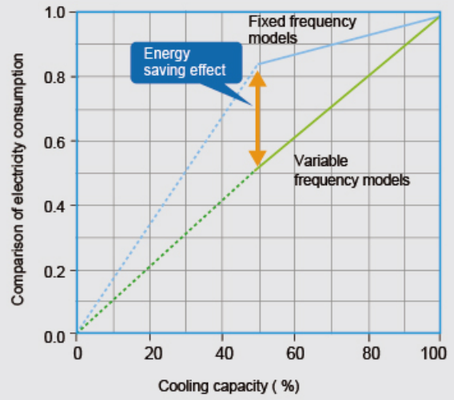
- Assembled in factory, better quality control;
- No need for machine room design, mobile, shorter installation time;
- Advanced control system, safe and energy efficient.



Compressor Equipped With Eternal Magnetic VSD Synchronous Motor

SVPMW vector VSD control distributes torque properly to improve efficiency. It saves up to 25%~38% energy in partial load.

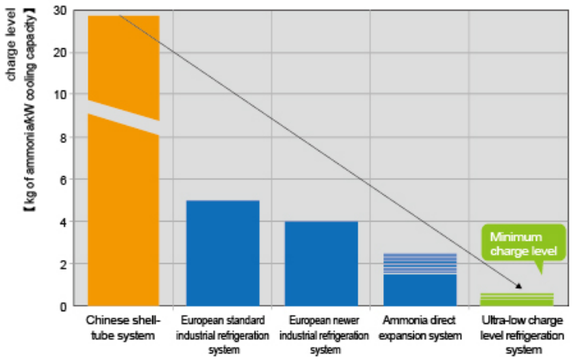




Refrigeration System With Ultra-low Charge Level

Mobile ammonia refrigeration station uses shell- tube heat exchangers, water- cooled oil coolers and direct expansion liquid supply system to assemble a refrigeration system with ultra- low charge level, which is 50%~80% lower. It reduces potential risk.

The charge level in different industrial refrigeration systems



Safe, Smart And Economical Compressor Units

Medium to small logistic cold chain solution

Security

- Optimized system and special structure design reduces refrigeration charge and eliminate safety risk.
- Adopt SRMTEC safe and advanced semi-hermetic screw compressors, which has high strength and low vibration.
- Equipped with motor protection module to prevent burn- out.
- Shutoff valves, auto control valves are from famous international brands, which are precise and reliable.
- High standard safety design to ensure the safe operation of refrigerant system. Such as by-pass circuit on the high pressure side, safety valve, vacuum design and etc.
- Smart control system with multiple preventative protection modules and alarming system.

Intelligence

- Easy operation
  One button start, friendly UI, multi- language.
- Dynamic tracking
  Real- time monitoring, logging, resetting and data transmission.
- Safety protection
  Refrigeration system equipped with safety device to protect from the risks in electrical (over voltage, lacking phase, over load, short circuit) and refrigeration (high pressure, low pressure, over temperature) system.
- Smart alarm
  Compressor unit diagnose the operating status in real- time and send alarms in abnormal situation.

Environmental economy

- Use ammonia as refrigerant, great thermal dynamic properties, environmental friendly, economical.
- Plate economizer has high efficiency to improve system COP.
- Three- in- one device (liquid gas separator) has also exchange heat to improve refrigeration efficiency.
- Use container as carrier, skid design, easy assembling, short installation time and less labor cost.

SRMTEC

Application Area

Food Flash Freezing

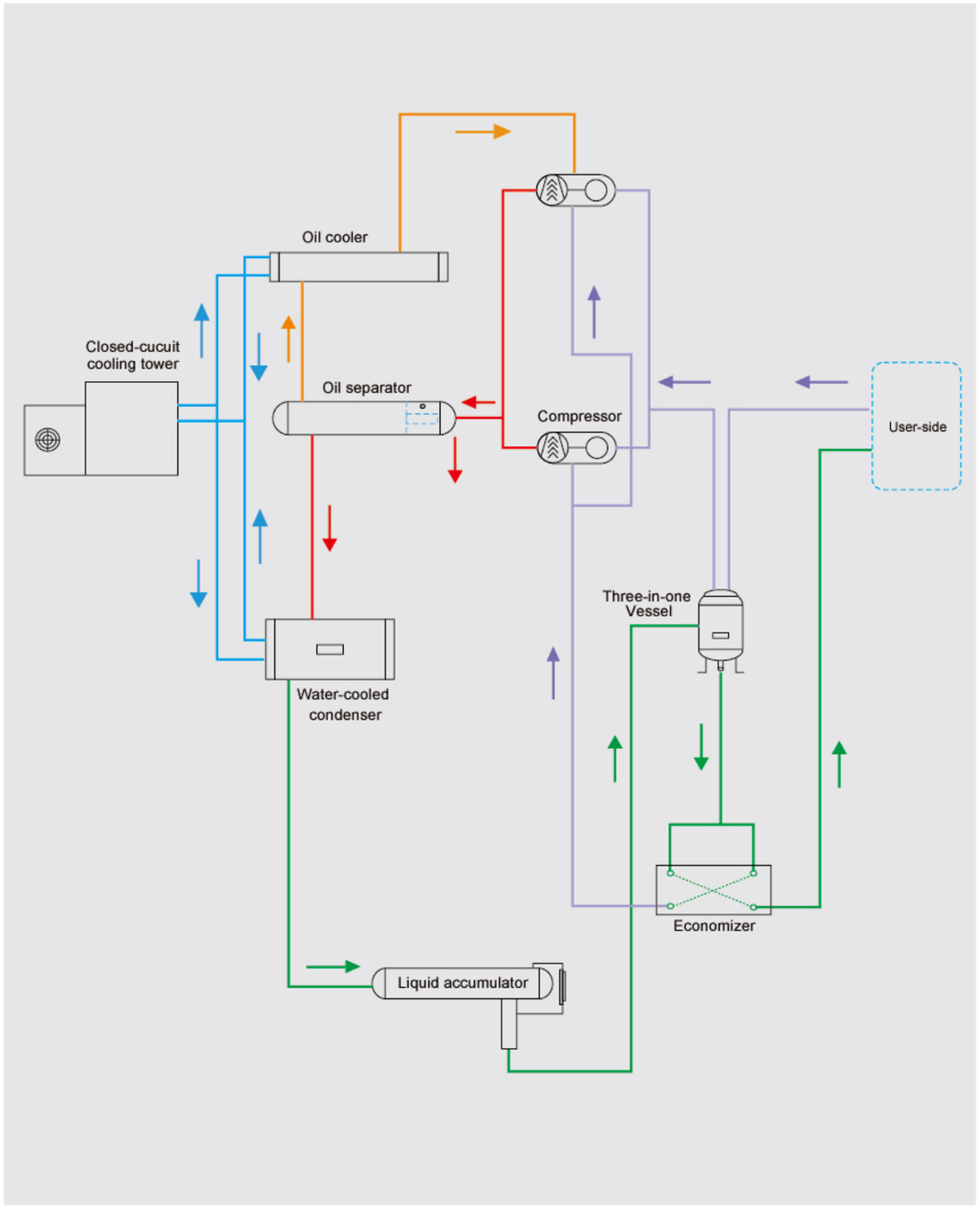
Low Temperature Storage

Sports Arena

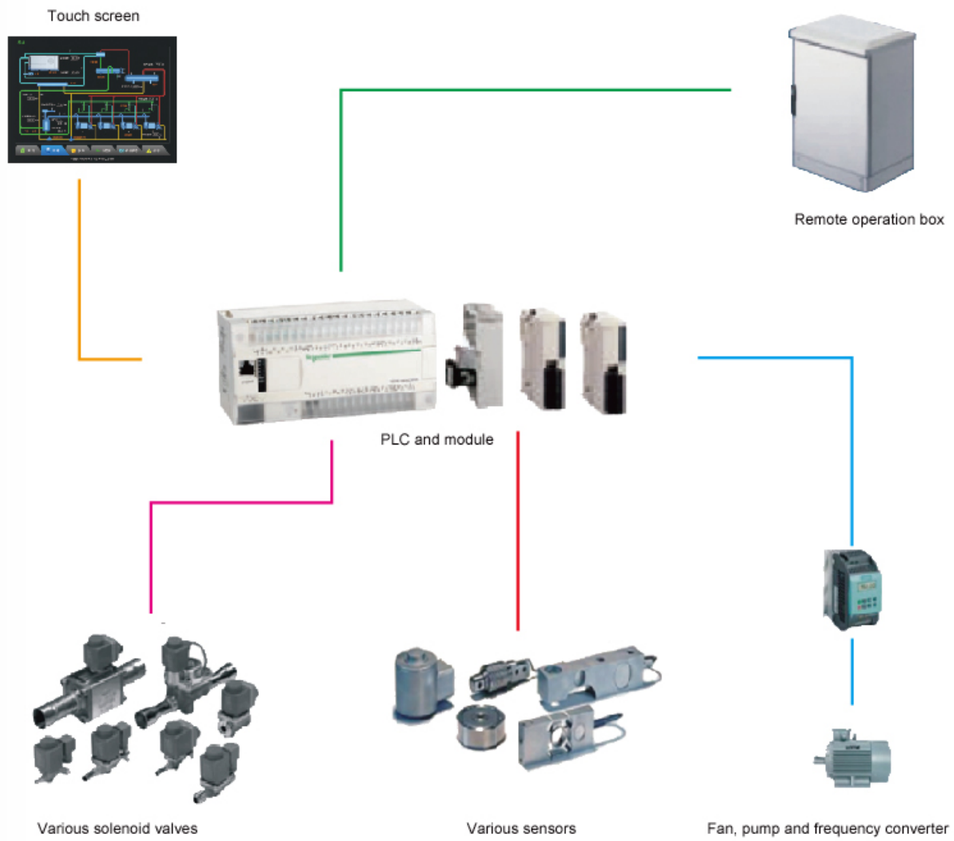
Chemical Industry, Pharmaceutical

Refrigerating System

The ammonia refrigerant is always recognized as a kind of environmentally-friendly, efficient and economical refrigerant. However, people are afraid of using it as a result of ammonia system accidents. Actually, the ammonia system safety can be controlled. It can be guaranteed by improving the equipment stability, standardizing the system design, reducing the charge amount of the ammonia refrigerant, etc.



Electronic Control System



Modularized Ammonia Compressor Unit

The core of the modularized ammonia screw compressor unit is Swedish SRM SRS semi-hermetic single stage screw compressor, which is optimized through design to form the compressor unit. It is suitable for pharmaceutical, chemical, electronic, food, plastic, household article, hydraulic and electrical power, building (central air- conditioning) industries and etc. The wide application range can provide cooling power at high, medium and low temperature to offer the most economical, efficient and safest solution. The modularized compressor unit is compact, easy to install, convenient for shipment and simple to maintain and repair.

The modularized ammonia screw compressor unit is designed for indoor and being installed inside the machine room. It connects evaporator and condenser externally. Equipment and pipe connections can be set up according to the site layout. It is flexible and takes small space.

If outdoor design is needed, please consult with Snowman Co., Ltd.

Advantages of Modularized Ammonia Screw Compressor Unit

ENERGY SAVING

· High efficiency refrigerant
Use ammonia as refrigerant, great thermal dynamic properties, environmental friendly, economical.
· High efficiency refrigeration screw compressor
Compressor units use advanced SRS semi-hermetic single stage screw compressor with high efficiency profile line and eternal magnetic synchronous motor. Such design is innovative and highly efficient.
· High efficiency VSD
Compressor uses SVPWM VSD control to distribute torque properly and improve efficiency.
· VSD eternal magnetic synchronous motor
High power factor. No copper loss. Energy save is around 10-20% compared to normal motors.

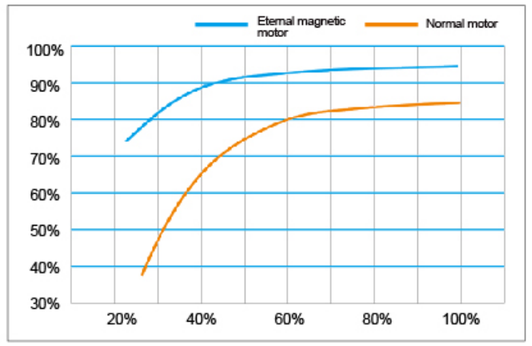
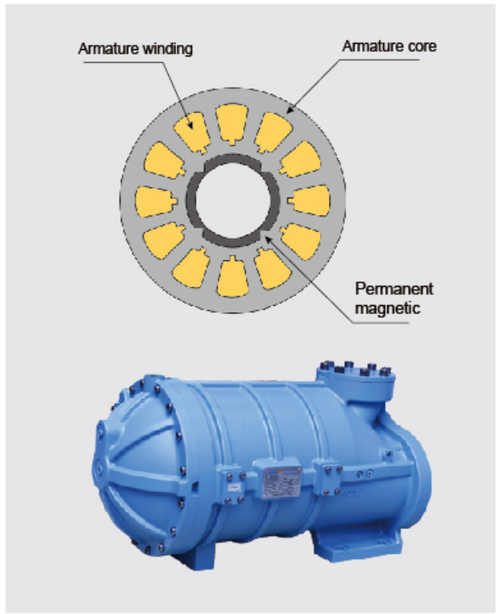


Illustration of eternal magnetic synchronous motor



SAFETY

· Easy operation
One button start, friendly UI, multi- language.
· Dynamic tracking
Real- time monitoring, logging, resetting and data transmission.
· Safety protection
Refrigeration system equipped with safety device to protect from the risks in electrical (over voltage, lacking phase, over load, short circuit) and refrigeration (high pressure, low pressure) system.
· Smart alarm
Compressor unit diagnose the operating status in real-time and send alarms in abnormal situation.

SMART

· Safe and advanced semi- hermetic screw compressor from SRMTEC. High strength. Low vibration.
· Motor protection module equipped to prevent motor burn-out.
· Shutoff valves, auto control valves are from famous international brands, which are precise and reliable.
· High standard safety design to ensure the safe operation of refrigerant system.
• Smart control system with multiple preventative protection modules and alarming system.

Use Conditions

Refrigerant: R717

Cooling capacit:

46.7~724.0kW(Te: - 20℃)

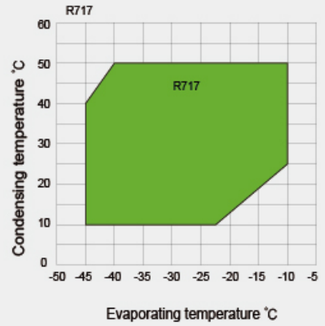
29.5~458.8kW(Te: - 30℃)

17.8~277.2kW(Te: - 40℃)

Power supply: 380V/3P/50Hz

Compressors in parallel: 1~4

Application Scope



Major components

SRM semi- hermetic screw compressor

· Globally recognized SRM screw compressor technology. Built according to European industrial standard. All time stable operation guaranteed.
· Advanced patented SRM "I" profile line, 5+7 gear ratio, high capacity, high efficiency and sealing. Volumetric efficiency is first class.
· Compared to the existing open type compressors, the precision of assembling is much higher, which reduces the risk of leakage greatly.
· Motors are enclosed inside housings with only one oil- return port. Oil circuit is inside the chamber to reduce the risk of leakage.

Shutoff valve

· Shutoff valves are normally the point that is most vulnerable to leakage in the refrigeration system. Snowmans standard for shutoff valves includes great fluidity and precise linear characteristic. They meet every country's requirement on pressure equipment.

Expansion valve

· Danfoss thermal expansion valve uses stainless steel components. The components of outlets are exchangeable. Precise temperature sensor bulb. Wide range of cooling capacity. Small gap in junction and small overlap.

Economizer

· Economizer uses plate heat exchanger, which has compact structure and light weight. It is easy to install. It distributes flow evenly, sustains superheat and uses little refrigerant.

High efficiency horizontal oil separator

· Four levels of oil separation with the efficiency up to 3- 5PPM, which reduces the risk of oil taken into other equipment greatly and improves the heat exchanging efficiency.

Shell-tube oil cooler

· Compressor units are equipped with high efficiency shell-tube oil cooler. Oil cooling method can be chosen between water cooling and working substance cooling.
· Shell-tube oil cooler uses electric-arc welding to ensure safety and no leakage.