



The Thermo King **MAGNUM[®]:** *peace of mind, no matter what you transport.*

Let's face it, colder is better. Especially when it comes to transporting premium cargo like seafood, ice cream or pharmaceuticals. And no other reefer unit gets colder than the Thermo King MAGNUM. It's the only refrigerated container unit on the market that can maintain a -35°C setpoint. But deep frozen cargo isn't the only commodity that benefits from the MAGNUM's unprecedented range. Thanks to an increased pull down capacity, and the industry's most precise temperature control, the MAGNUM is the most reliable way to ensure all your customer's cargo - fresh or frozen - arrives at its destination in optimal condition.

“ The recommended storage temperature for all fishery products ... is -30°C . ”

United Nation Food and Agriculture Organization's "Food For All"



The MAGNUM: tops the competition in every

What must the reefer unit of tomorrow have? We asked, you told us: Your feedback was virtually unanimous.

- Any box temperature (-35°C and above)
- In any ambient temperature (even +50°C!)
- Less complexity/higher reliability
- Continuous performance over time

Armed with that information, our designers and engineers went to work. The results? Everything you demanded, and then some.

✓ Coldest Setpoint

Only the MAGNUM can maintain a -35°C setpoint. Meaning only the MAGNUM can guarantee your deep frozen cargo will stay deep-frozen no matter where you haul.

✓ Highest Cooling Capacity

Due to the extreme environmental conditions cargo boxes are exposed to, they typically experience an increase in heat leakage of 3-5% per year. Taking that into account, even a 15-year old MAGNUM has the capacity to maintain deep frozen cargo in +50°C ambient. No other reefer unit can make that claim.

✓ Fastest Pull Down Capacity

Higher cooling capacity means faster pull down. And faster pull down means better quality product upon delivery.

✓ Simplest Design

With fewer components and an overall design that's easy to service, you'll have lower maintenance costs and more uptime with the MAGNUM.



category that counts.



✓ **Longest Usable Box Life**

Unlike traditional units, which are only effective in moving deep frozen products for the first 5 years, the MAGNUM offers enough cooling capacity to maintain -29°C throughout the 15-year life of the container. Not only does this make each box more profitable, it also eliminates paying repositioning costs for deep frozen shipments.

✓ **Most Reliable Compressor**

Our aluminized scroll compressor - custom-designed by Thermo King and the world's largest scroll compressor manufacturer- can withstand the most brutal environments imaginable. That's why we have the reputation for having the most reliable compressors in the world.

✓ **Largest Cargo Capacity**

25% lighter than the standard industry units, the MAGNUM can significantly increase your overall cargo capacity.

✓ **Lowest Power Consumption**

In laboratory tests and field trials, the MAGNUM, compared to the competition, was able to reduce overall energy consumption an average of 30%. That adds up to even more money on your bottom line.

✓ **Lowest TEWI**

Numbers don't lie. After combining the direct GWP and the indirect GWP, the numbers show that the competition produces significantly more CO₂ than the MAGNUM. Translation? The MAGNUM has the lowest TEWI in the industry.



“ ...R-404A provides better performance over the entire range of box temperatures than R-134a. ”

David J. Bateman, Sr. Technical Service Consultant, DuPont Suva® Refrigerants

What does -35°C mean for your customers and your bottom line?

With the industry's lowest TEWI, a deep frozen box life that's double the competition, and plenty of next-generation advantages, like our digital economized scroll with corrosion-free coating, there's a lot more to like about the MAGNUM than just -35°C (see inside).

Still, it's that extra margin of safety that makes the MAGNUM the indisputable choice to haul all your valued cargo.

It provides the flexibility that lets you expand your market share. It provides the capacity that lets you haul deep frozen cargo throughout the life of your box. And it provides a reassuring level of comfort to give both you and your customers peace of mind.



Why is colder better?

- Reduced product degradation
- Improved texture
- Reduced product loss
- Increased storage life
- Increased cargo protection throughout the cold chain
- Maintain optimal deep frozen characteristics

MAGNUM: specifications

Description

The Thermo King MAGNUM is a one-piece, integral front wall, all-electric automatic cooling and heating unit for ISO sea-going containers. It is suitable for operation on trailer on flat car (TOFC), container on flat car (COFC), and aboard ship.

Heating capacity

System net heating capacity (including fanheat) with 60 Hz electric power:
5,800 Watts (4,984 Kcal/hr, 19,800 Btu/hr).

Refrigerant capacity:

Scroll w/R-404A

Zer-O system net cooling capacities at 37.8°C (100°F) ambient and 60 Hz electric power:

Temperature	Cooling Capacity		
	Watts	KCal/hr	Btu/hr
21°C (70°F)	15,822	13,608	54,000
2°C (35°F)	12,309	10,584	42,000
-18°C (0°F)	7,327	6,300	25,000
-29°C (-20°F)	5,070	4,360	17,300
-35°C (-31°F)	4,099	3,528	14,000

STANDARD FEATURES

- **404A refrigerant**
- **Compressor Scroll:**
Exclusive Copeland® Digital Scroll® Compressor with Digital Control Valve for capacity modulation, economizer circuit, ambient compensated internal overload and high temperature protection.
 - Type: Scroll (one stationary and one orbiting) with radial and axial compliance allowing tolerance to liquid refrigerant and debris
 - Rating: 6 hp motor, 380/460V, 50/60 Hz
 - Construction: steel shell with rigid internal mount of scroll and motor
 - Oil: polyol ester
 - Finish: thermal sprayed aluminum
- **Microprocessor controller**
The MP-3000 microprocessor controller provides thermostat, digital thermometer programming keypad, mode indicators, and a digital status readout window for displaying electronically recorded trip and cargo information
 - MP-3000 includes PTI programs, manual test, self-diagnostic test, advanced service information and service help functions
 - The controller contains the following basic features and components:
 - Backlit LCD digital display
 - Mode indication LEDs
 - Alarm indicator functions
 - Demand and timed defrost
 - Defrost cycle control
 - Internal self-checking/diagnostics
 - Pre-trip testing for reefer unit
 - Remote monitoring and data retrieval
 - Interface ports
 - Data recording
 - Electronic phase selection
 - Three-phase current monitoring and protection
 - Power consumption control to limit total unit power consumption
- **Proportional-integral differential (PID) refrigeration capacity control system**
- **Non-corrosive sea-going construction** includes marine-treated aluminum alloy frame,

non-corrosive fittings, all stainless steel hardware, condenser coil with epoxy e-coat and polyurethane top coat for UV protection, hydrophilic coating on evaporator coil, and a marine duty protective coating on the compressor

- **Condenser and evaporator fan motors** include stainless steel shafts and internal thermal overload protection
- **CFC-free foamed-in-place insulation**
- **Evaporator fan airflow:**

High Speed	m ³ /h	cfm
60Hz: 12.7 mm (0.50 in) WG	5,603	3,300
60Hz: 19.0 mm (0.75 in) WG	5,094	3,000

Evaporator fans operate on demand depending on cargo and ambient temperature to reduce power draw from fan motors
- **Fresh air exchange** adjustable from 0-285 m³/hr (0-150 ft³/min)
- **Unit wired** for 380/460 volt, three-phase, 50/60 Hz power supply with an 18 meter (60 ft) 11/4 power cable with CEE-17 plug
- **Bottom air discharge**
- **Automatic electronic phase correction system**
- **29 Vac control system**
- **Demand defrost and supplemental** timed defrost with selectable intervals
- **Manual defrost** initiation via MP-3000 keypad
- **Cool, Modulation Cool, Null, Heat, Defrost, In-Range and alarm indicator lights**
- **Time delay start sequence**
- **ABS certification**
- **Composite condenser and evaporator fans**
- **Conforms to ISO classifications and specifications** for thermal containers including racking and end-loading standards, **TIR** specifications, **ATP** refrigeration standards, **ARI** standards for rating refrigeration capacity, **UIC** international Union of Railways, **Australian Electrical Certification**, **British Standard 3755 Requirement (TAINT)**, **USDA** requirements for "Insect Cold" treatment, and **Agrotechnological Research Institute (ATO-DLO)** for flower bulb transportation
- **Auxiliary battery and charger**
- **USDA "Cold Treatment" provision**
- **Dehumidification control**
- **Bulb mode**

OPTIONAL FEATURES

- AFAM+ Advanced Fresh Air Exchange Management
- Water Cooled Condenser
- 4-Pin remote monitoring receptacle
- Thermo King electronic chart recorder
- Partlow temperature recorder
- Saginomiya Temperature recorder
- Remote monitoring
- Transfresh provision
- 10/4 power cable
- Dual Voltage Transformer



Dimensions:

Height	2,235 mm (88 inches)
Width	2,026 mm (79.8 inches)
Depth	420 mm (16.5 inches)

Weight (approximate)

420 kg (926 lb)

For complete details on how the Thermo King MAGNUM can make your containers more profitable, visit www.thermoking.com/magnum, or email your inquiry to containerproducts@thermoking.com

Warranty Summary

Specific terms of the Thermo King Ireland Ltd. 24 month limited warranty (TK 52506-9-CH) are available on request. Thermo King excludes liability in contract and tort (including strict liability and negligence) for any special, indirect or consequential damages by reason of the installation or use of any covered product or its mechanical failure.

Specifications are subject to change without notice.



Providing equipment and services to manage controlled-temperature environments for food and other perishables, our Climate Control Technologies sector encompasses both transport and stationary refrigeration solutions. Our product brands include Thermo King®, a world leader in transport temperature control system and Hussmann®, a manufacturer of refrigeration and food merchandising equipment.

www.thermoking.com www.hussmann.com www.ingersollrand.com

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