
**MARINE
AFTERMARKET.
RETROFIT. RENEW.
REPAIR. RESTORE.**



An aerial photograph of a large container ship docked at a port. The ship's deck is densely packed with stacks of colorful shipping containers in shades of blue, red, and white. A large blue and red gantry crane stands on the deck, positioned over the containers. The ship is moored at a pier, and the surrounding area is filled with more stacks of containers and port infrastructure. The lighting suggests a bright, sunny day.

MARINE AFTERMARKET

**MARINE
AFTERMARKET.
PROTECT YOUR
INVESTMENT.**

MARINE AFTERMARKET. PROTECT YOUR INVESTMENT.

Thermo King has set the world standard in marine container refrigeration ever since we developed the first refrigeration unit over 70 years ago. From ship to shop, by rail or road, moving or in storage, we offer the latest technology in marine gensets and reefers and back them up with the best service support network you can find.

PROTECT YOUR INVESTMENT

Our investment in quality and reliability delivers longer-life parts and increased service intervals, keeping your unit on the move and minimizing overall operating costs. Your investment in Thermo King equipment is best protected by using genuine Thermo King parts, designed specifically for the extreme demands of marine reefer and genset applications.

Ensure that your Thermo King unit remains in top condition and maximise operational cost effectiveness by using genuine Thermo King parts and service, every time.

PERFORMANCE ENHANCEMENT RETROFIT SOLUTIONS

Aftermarket parts and service aren't just for maintenance and repair, you can also increase the performance of your existing fleet.

Thermo King offers performance enhancement retrofit solutions for previous reefer and genset equipment versions to optimize your fleet's efficiency and operating costs by leveraging the latest technology and reliable solutions from present platform units.

Renew your fleet affordably with Thermo King performance enhancement kits. We can make your old units look and perform like new.



MARINE AFTERMARKET

RETRO-FIT. FUTURE-PROOF.



RETRO-FIT. FUTURE-PROOF. MP4000 PERFORMANCE ENHANCEMENT KIT.

The only reefer that surpasses the original, game-changing MAGNUM™ is the MAGNUM PLUS®. Through advanced technology and focused research & development, Thermo King introduced the MAGNUM PLUS® with the MP4000 controller, a new industry benchmark in efficient operation, performance, operability and reliability, designed to comply with the most stringent regulations. The MAGNUM PLUS® integrates with a range of options for increased performance.

Sounds wonderful, but buying new reefers isn't the right choice for your business? Easy solution: **you can convert your MAGNUM into a MAGNUM PLUS® unit affordably for an excellent return on investment.**

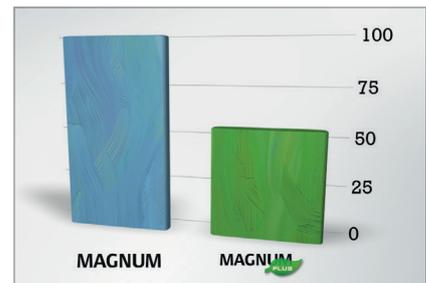
THE POWER OF THE MP4000

- Increase fuel savings and the operational efficiency of your existing MAGNUM fleet by almost 45% with the patented, energy-saving MP4000 controller.
- Set a new standard in efficiency with advanced options.

- Friendlier user interface with high resolution VGA display, efficient visualization, interactive menus, and soft- and hot-key functions.
- Precise, tight temperature control.
- Lower Total Cost of Ownership with reliable, long-life, solid-state components, and advanced electronics board design.
- Advanced communication capability to interface with advanced telematics systems.
- Expand your options to Smart PTI, AFAM+ Advanced Fresh Air Exchange Management, De-humidification control, and On-demand defrost combined with intelligent timed defrost.
- 100,000+ units in service and years of experience prove extreme reliability in the field.

The MP4000 Performance Enhancement Kit is the retrofit solution that delivers great performance and decreases operation costs while prolonging the useful life of your equipment.

FUEL SAVINGS



MARINE AFTERMARKET

**FRESH AIR.
FRESH PRODUCE.
ADVANCED
FRESH AIR
MANAGEMENT.**

FRESH AIR. FRESH PRODUCE. ADVANCED FRESH AIR MANAGEMENT.

Maintaining the optimal shipping conditions for each specific cargo load allows it to be delivered in its freshest, most desirable state.

Thermo King AFAM+ Advanced Fresh Air Management is a microprocessor-controlled fresh air exchange system that delivers superior temperature control and cargo protection. When desired oxygen and carbon dioxide levels exceed the programmed range, AFAM+ provides "ventilation on demand" to exchange fresh air in response to continuing changes in respiratory gases.

Upgrade your existing MAGNUM PLUS® fleet with the AFAM+ function for:

- Superior cargo protection
- More consistent product quality
- Precise fresh air settings and rate of fresh air exchange
- Up to 50% faster temperature pull down
- Longer shelf life
- Energy savings and fuel savings
- Reduced cargo weight loss
- Fresh air exchange rate, events, pertinent temperature and unit operation data automatically stored in the microprocessor's memory for analysis.

AFAM+ advanced protection is easy, safe, and cost effective.

- Maximizes refrigeration system efficiency through intelligent monitoring and control.
- Continuously ventilates on demand, according to cargo requirements, to maintain correct O₂ and CO₂ levels.
- Helps assure consistent produce quality.
- The AFAM+ system adjusts its control mechanism automatically and delivers best performance for your container or reefer, regardless of the unit's age and container leak rate.

A cost efficient alternative to fully controlled atmosphere, AFAM+ takes the guesswork out of fresh air exchange.



MARINE AFTERMARKET

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KNOWLEDGE
IS POWER.
SMART
SOFTWARE.
SUPERIOR
SERVICE.



KNOWLEDGE IS POWER. SMART SOFTWARE. SUPERIOR SERVICE.

Shipping fresh cargo around the world to arrive in excellent condition requires constant monitoring of the cold chain to protect cargo integrity. Thermo King marine telematics greatly reduce the risk of cargo loss and decrease operational and maintenance costs.

Thermo King Marine Telematics solutions for genset units, MAGNUM and MAGNUM PLUS® offer:

- Live data and historical records, safely and easily accessible through a secure web portal
- Global SIM card for worldwide GPRS coverage in more than 170 countries
- Secure administrator access
- Full user support via email and telephone
- All-in device and communication package for reduced administration
- Full integration with existing Thermo King MP-3000 and MP-4000 reefer controllers
- Full compatibility with ISO 10368

- Compatible with standard local reefer monitoring systems and existing infrastructures
- Built-in short and long-range wireless communication for real time remote monitoring and software uploads /data downloads
- Highly tailored, equally friendly reports to any device, with updates around the clock. Easy to use, understand and filter

PEACE OF MIND, 24/7: THE THERMO KING DEALER NETWORK

Our global warranty and service programs protect your fleet, your cargo, and your peace of mind. No matter what the routing is, 24/7 Thermo King support is never far away: over 400 certified Thermo King Dealers provide worldwide, round-the-clock service, guaranteeing that your equipment is maintained, the cold chain unbroken, and the cargo kept in prime condition.

Just what you'd expect from the world leader in transport refrigeration.

MARINE AFTERMARKET

LESS IS MORE.
ENERGY-SAVING
SOFTWARE.

MAGNUM ENERGY-SAVING SOFTWARE. AVERAGE 30% LESS CONSUMPTION.

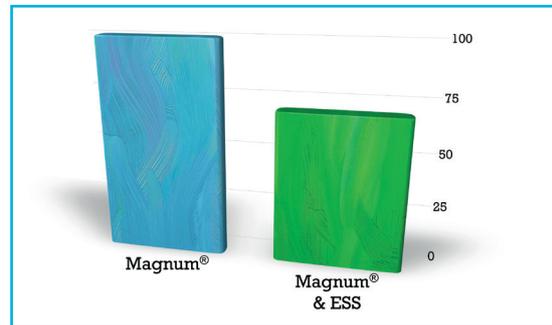
Thermo King now offers energy saving software to optimize Magnum® performance. Set a new standard in efficiency for your fleet with the advanced option that uses less energy and decreases fleet operation costs. Make your Magnum one lean, mean cooling machine.

Imagine your MAGNUM® MP3000 using a patented technology to achieve better energy savings through adaptive refrigeration control algorithms, compliant with ISO1496, just like the MP4000 MAGNUM PLUS®.

It's not a dream.

These benefits and operating cost reductions are now available for your MAGNUM® MP3000 fleet with software updates. You'll realize a 100% return on investment in less than a year in fuel cost alone without compromising on product quality or unit performance.

Energy saving software (ESS) controls load cycling dynamically to save energy while still maintaining proper temperatures within $\pm 0.25^{\circ}\text{C}$ of fresh setpoint tolerance on an hourly average.



Even a 10-year-old Magnum® reefer tested per ISO 1496-2 can achieve average 30% energy savings (~1.2kW) without compromising reefer performance or cargo quality.

The higher-efficiency, environmentally friendly energy saving software ensures that you can reduce the overall environmental footprint of your fleet.

| Operating Condition | Energy Saving | Examples of Cargo Applications |
|--|---------------|---|
| 10°C Setpoint, 30°C Ambient 850 Watts Heat of respiration 40 CMH Air Exchange | 25.4% | Avocados, Cucumbers, Eggplants (aubergine), Ginger, Grapefruit, Lemons, Limes, Mangoes, Melons (water, honeydew, piel de sapo), Oranges, Papayas, Peppers (bell/sweet and chilli), Physalis (cape gooseberries), Pineapples, Plantains, Okra, Potatoes (table, for processing), Squash, Tomatoes, etc |
| 10°C Setpoint, 10°C Ambient 850 Watts Heat of respiration 40 CMH Air Exchange | 29% | |
| 10°C Setpoint, 30°C Ambient 850 Watts Heat of respiration No Air Exchange | 31.4% | |

MARINE AFTERMARKET

**PROVEN TECHNOLOGY.
LOWEST TOTAL COST
OF OWNERSHIP.**

PROVEN TECHNOLOGY: ECO-POWER™. LOWEST TOTAL COST OF OWNERSHIP.

Thousands of units in use worldwide attest to the Thermo King SG-3000 range benchmark standard for reliability.

The diesel engine employs low-pressure mechanical fuel injection to generate 15 kW of utterly dependable electric power with low emissions, no matter how high the ambient temperature or how sensitive the load.

Great. But what about the effect of energy consumption on total life cycle cost of a Genset unit?

The SG range offered with EcoPower™ option, an enhanced operation mode that delivers more than 20% fuel savings when compared with competing products.

The EcoPower™ option with the Hardware & Software enhancement package and Thermo King patented technology are the foundation of the SG-3000's record performances, enabling significant extra power saving, greater efficiencies and fewer emissions with overall lowest total cost of ownership (TCO).

Enhanced efficiency:

- Enhanced operation mode allows highly efficient engine management
- Dramatic fuel savings
- Low emissions
- Extremely accurate
- Load-independent voltage regulation

Easy does it:

- Reduces refueling frequency
- Extends maintenance periods
- Lowers life-cycle costs



ECOPOWER™ KIT ASSEMBLY



MARINE AFTERMARKET

**EXTENDED LIFE
FOR YOUR GENSET.
FUEL STRAINER KIT.**

EXTENDED LIFE FOR YOUR GENSET. FUEL STRAINER RETROFIT.

The most important component to optimize fuel delivery system, achieve optimal engine performance, and keep your Genset running in top condition between service intervals is the Fuel Strainer kit.

The SG-3000 Fuel Strainer Kit:

- Lengthens engine life
- Boosts engine power
- Increases fuel efficiency
- Ensures optimal engine efficiency
- Protects fuel injectors and fuel pumps from contaminants

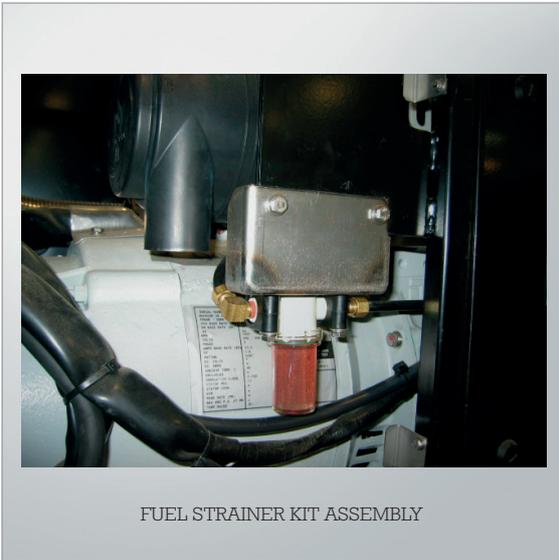
Make sure your gensets are maintained in good condition by replacing the fuel, air, and oil filters with genuine Thermo King parts at the suggested maintenance interval.

The surest way to prolong equipment life and protect your cargo from any unexpected downtime.

Improve your Genset energy efficiency, performance and lifetime with our smart options.

If your Thermo King genset isn't equipped with the EcoPower™ or Fuel Strainer options, help is at hand: you can retrofit and upgrade your fleet with genuine Thermo King Aftermarket solutions and bring new life to your trusted SG-3000.

The EcoPower™ and Fuel Strainer options are available as retrofit kits, ordered separately or together, from your Thermo King Marine Dealer.



MARINE AFTERMARKET

**NATURE ABHORS
A VACUUM.
RELIEVE THE
PRESSURE.**

RELIEVE THE PRESSURE. THERMO KING VACUUM RELIEF VALVE.

Refer container temperature and air leakage rates have been dropping significantly as technology has advanced, yet these developments can result in conditions that are damaging to the container. If a vacuum forms inside the reefer, roofs and sidewalls can be compromised, putting cargo at risk and increasing operating costs.

It protects your valuable container, critical cargo, and offers you priceless peace of mind.

The bottom line is worry-free, future-proof operation.

Ensure that your reefer container remains in top condition, and reduce downtime, by using genuine Thermo King Vacuum Valve parts.

All it takes to prevent this undesirable situation is the installation of a vacuum valve for a simple and effective solution.

If a vacuum reaches the critical point, the relief valve automatically opens to admit air into the reefer, release the pressure, and prevent the damage that vacuum formation can cause.

It's never too late for this preventive measure. Even if a vacuum valve wasn't factory-installed as an option on your reefer, you can purchase an aftermarket Thermo King Vacuum Valve to retrofit your containers.

Our genuine Thermo King Vacuum Relief Valve, with an opening pressure of 1400 PA / 140 MM WG, is precisely engineered to provide optimal performance and maximum life to your reefer.



VACUUM RELIEF VALVE

MARINE AFTERMARKET

THE REAL DEAL. GENUINE THERMO KING PARTS.



THE REAL DEAL. GENUINE THERMO KING PARTS.

The best replacement part is designed by the original manufacturer and is tried and tested to the same high standards of performance, reliability and safety as every other original part of your Thermo King unit.

GENUINE REPLACEMENT PARTS

Genuine Thermo King replacement parts, engineered to provide optimal performance and maximum life, protect valuable equipment, critical cargo, and your priceless peace of mind.

REMANUFACTURED PARTS

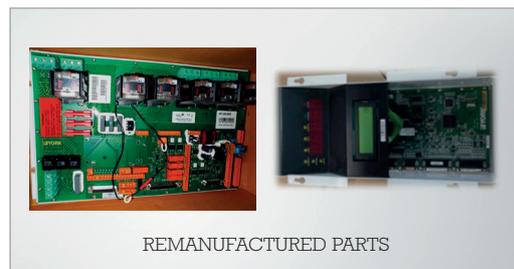
Renew your fleet with Thermo King's wide range of remanufactured parts, including controllers and PCBs, and further reduce your cost of ownership.

Completely remanufactured to the highest standard, every component is tested extensively for reliable operation and a performance level similar to a new part. Warranty coverage for remanufactured parts is equivalent to new parts warranties, so your repair investment is sound, regardless of its scope.

CONSUMABLE PARTS

Every component, no matter how large or small, is important to the overall quality and performance of your unit. Reliability and accuracy are crucial, so each Thermo King component is given individual attention to ensure the highest quality.

Designed for perfect fit and alignment with your Thermo King equipment, consumable parts deliver reliable operational efficiency, even in the most extreme working conditions.





Thermo King – by Trane Technologies (NYSE: TT), a global climate innovator – is a worldwide leader in sustainable transport temperature control solutions. Thermo King has been providing transport temperature control solutions for a variety of applications, including trailers, truck bodies, buses, air, shipboard containers and railway cars since 1938. For more information, visit thermoking.com or tranetechnologies.com.

