



TSe Series

enhanced performance



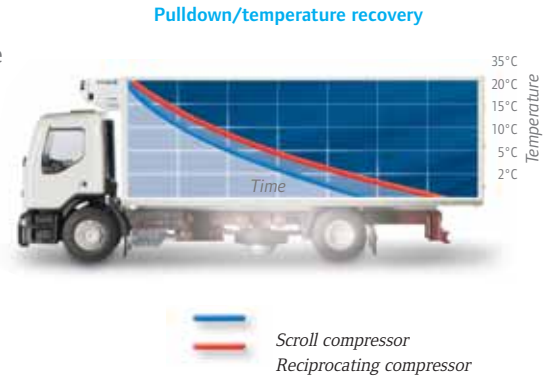
- Superior temperature management
- Superior fuel economy
- Smooth, whisper-quiet operation
- Reduced environmental impact

TSe: proven to deliver enhanced performance.

Total temperature management

With the introduction of the TSe, Thermo King has established a new standard in transport temperature control for trucks. Cooling capacities on diesel engine operation are up to 20% greater, and airflow volumes up to 10% improved. The highly efficient Scroll compressor enables the units to deliver greater cooling capacity, even more efficiently than Thermo King's conventional reciprocating compressors. Greater capacity means faster pulldown and temperature recovery.

This is especially important to protect cargo in distribution operations where delivery cycles involve frequent door openings. Overnight performance is upgraded too, with up to 10% more cooling capacity on electric standby.

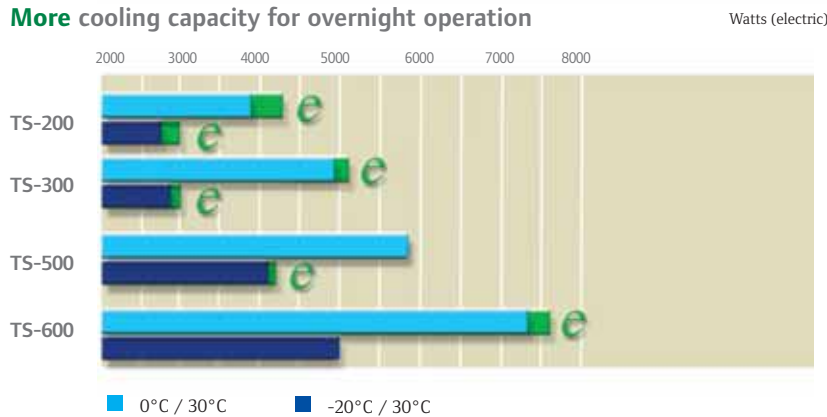


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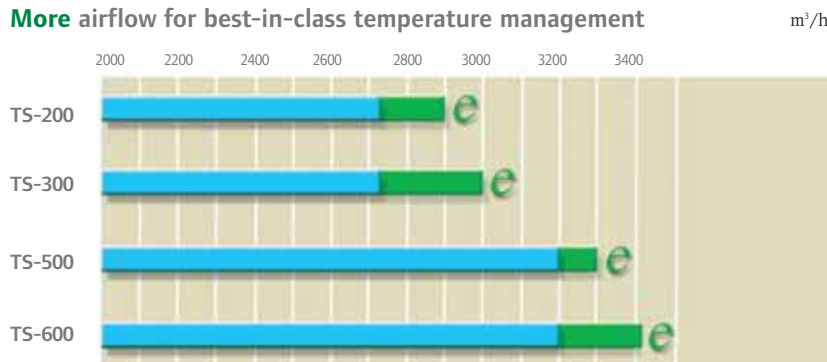
More cooling capacity for over-the-road operation



More cooling capacity for overnight operation

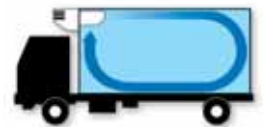


More airflow for best-in-class temperature management

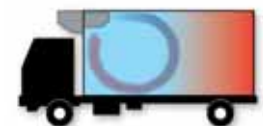


Total load protection

Good temperature management throughout the load requires more than just refrigeration capacity. It requires superior air volume and air velocity. With Thermo King's TSe units, two high-output, belt driven fans provide Load Encircling™ airflow as well as superior air throw. This ensures rapid temperature recovery after door openings, critical to load protection in demanding delivery operations.



Thermo King's Load Encircling™ full air throw



Prevents short cycle airflow

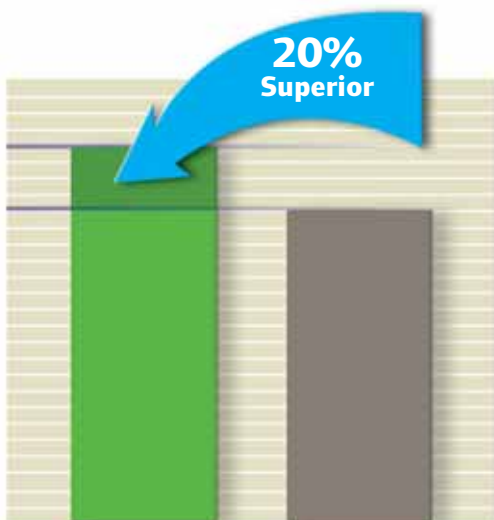


Reduced fuel consumption

In a typical temperature control system, fuel contributes up to 40% of the Total Life Cost of the equipment.

Thermo King has invested heavily in research and development to reduce fuel consumption. The efficiency of the Scroll compressor, coupled with low emission diesel engines and belt-driven fans deliver up to 20% more cooling watts per litre of fuel consumed than competitor systems.

Fuel efficiency (watts/litre)



Competition

Reduced maintenance

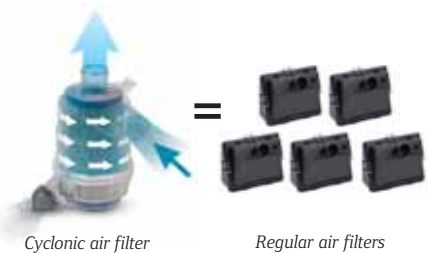
Maintenance is a significant portion of the total life cost of a temperature control system. Thermo King's TSE units use innovative design to minimise maintenance, resulting in lower maintenance cost.

These units come equipped as standard with Thermo King's exclusive EMI-2000 filter and fluids package increasing service intervals.

- 2,000 hour oil change
- 12,000 hour coolant



A patented cyclonic air filter uses centrifugal force to collect contaminants, avoiding clogging of the filter element and extending the life of the filter by a factor of five.



Cyclonic air filter

Regular air filters

A two-belt drive system increases belt life by a factor of five. This significantly reduces parts and labour costs while increasing system efficiency through higher torque transfer.



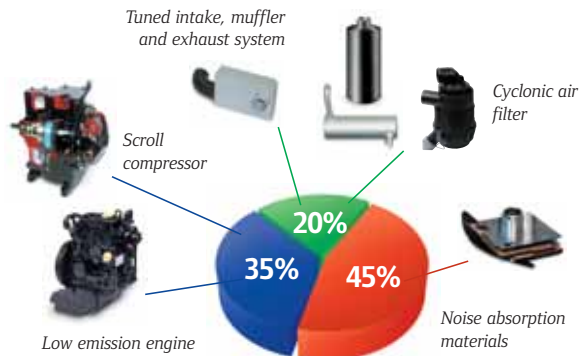
Poly "V" belt

Regular "V" belt

Whisper-quiet operation

Thermo King recognises the critical importance of low noise levels for vehicles which often operate in highly noise-sensitive areas. TSe units establish a new low noise level benchmark– at no extra cost – by reducing component noise generation, isolating critical components and absorbing sound with purpose-designed exterior panels.

Percentage contribution to noise reduction



User-friendly Smart Reefer® controller

Thermo King's SMART REEFER controller features an easily read backlit display and simple to operate touch keys. It installs conveniently in the driver's cab or, in a weatherproof enclosure, on the truck body. Exclusive driver training software such as Thermo King's Tutor Series provides rapid but effective interactive training to reduce driver error and ensure optimum equipment operation.



Scroll compressor

Technological ADVANTAGES:

High efficiency means:

- High capacity

Greater capacity means:

- Fast pulldown/recovery

83% fewer moving parts means:

- High reliability/long life

Lower fuel consumption means:

- More operating profit

Less weight means:

- More payload

No pistons or rods means:

- Less vibration

Environmental ADVANTAGES:

Less fuel required means:

- Less fuel consumed

Less fuel consumed means:

- Lower diesel emissions

Quieter operation means:

- Lower noise emissions

Chlorine-free R-404A means:

- Zero ozone depletion



How the Scroll compressor works:



Compression in the scroll is created by the interaction of an orbiting spiral and a stationary spiral. Gas enters an outer opening as one of the spirals orbits.



The open passage is sealed off as gas is drawn into the spiral.



As the spiral continues to orbit, the gas is compressed into an increasingly smaller pocket.



By the time the gas arrives at the centre port, discharge pressure has been reached.



Actually, during operation, all six gas passages are in various stages of compression at all times, resulting in nearly continuous suction and discharge.

TSe key features and options

1- TOTAL KARE

Because maintenance costs constitute a key variable in the Total Life Cost of a temperature control system, we now offer, through Total Kare, a complete selection of maintenance programmes.



2- CYCLE-SENTRY

Stops engine when refrigeration is not needed and restarts when refrigeration or battery charge is needed.

- Fuel savings of up to 80%
- Increases component life
- Reduces maintenance costs

3- EXTENDED MAINTENANCE INTERVAL

Thermo King EMI-2000 will extend your maintenance interval and reduce your operating cost by:

- Reducing clean-up and disposal cost
- Reducing environmental impact with less spillage and less waste
- Extending engine life with improved, highly efficient filtration
- Reducing scheduled maintenance cost by up to 40%

4- THERMO KING HIGH PERFORMANCE BATTERY

The Thermo King high performance battery is designed exclusively for transport refrigeration applications. It is the only battery recommended by Thermo King for its equipment. It incorporates new Silver and Calcium technologies that provide performance far superior to that of any conventional automotive battery technology. The Thermo King high performance battery minimises your costs and maximises your confidence on the road; it is totally maintenance free and delivers a service life more than 20% longer than conventional batteries.



5- WARRANTY COVERAGE

- 1st year complete warranty
- 2nd year major components warranty: covers specified components



6- THERMAX SYSTEM

- Faster defrosts

7- DAS (DATA ACQUISITION SYSTEM)

High performance data recorder system. Records temperatures, set point, operating modes and external events.

- Data can be output to computer or printer
- Operates independently of unit controller
- 512K memory stores over one year's data
- Reassures customer of total quality control
- Provides evidence of correct practice
- Approved to EN-12830, CE Mark and IP-65 standards
- Up to six independent sensors
- Automatic power-up and shut-off to protect unit battery

8- TKDL

- User-friendly temperature recorders for all makes of temperature-controlled equipment
- Simple data offload to PC
- Delivery and journey printouts at the touch of a button
- Approved to EN-12830, CE Mark and IP-65 standards
- Up to four independent sensors and 512K memory



9- WINTRAC (DATA ANALYSIS SOFTWARE)

Wintrac is a Windows based, simple to use, multilingual management software package designed to communicate and read data from all Thermo King temperature recorder devices. It provides quick and easy answers to all your questions in relation to the performance of the temperature control unit and the temperature of the produce while in transit.



10- FLEETWATCH

User-friendly software empowers fleet manager with automatic custom reporting.

- Provides seamless connection to collect and organise output from Thermo King's DAS and TKDL data recorders
- Automatically organises data recorder output data into simple, selectable reports useful to your operation
- Reports are easy to understand and user-friendly

Life Cost Management

1- Guaranteed Maintenance Contracts	■
2- Cycle-Sentry start / stop control system	●
3- EMI 2000 extended maintenance	●
4- Thermo King High Performance Battery	■
5- Warranty Coverage	●
6- TherMax system	●

Data Capture & Communications

7- DAS (Data Acquisition System)	○
8- TKDL data capture	■
9- Wintrac data analysis software	■
10- FleetWatch fleet management software	■
11- TrackKing tracking and load monitoring	■

Load Protection

12- SMART REEFER In-cab Controller	●
13- Auto Phase Correction	●
14- Diesel/electric auto-switching	●
15- Door Switches	■

● Standard Feature

○ Option : factory installed

■ Option : dealer supplied

11- TRACKING

Complete load monitoring and fleet tracking at your fingertips

- Monitors sensitive loads via the web
- Increases truck asset utilisation
- Reduces operating costs
- Enhances customer satisfaction
- Increases security and reduces insurance risk
- TrackKing can be sold with a Total Kare service contract
- TrackKing is compatible with all Thermo King dataloggers and trailer controllers
- www.tktracking.com



12- SMART REEFER IN-CAB CONTROLLER

- Simplified keypad to reduce incorrect operation of the system
- Visible set-point confirmation for load protection
- Enhanced temperature management
- Unit self-check for reduced down-time
- Alarm codes for simplified trouble-shooting
- Programmable features to tailor operating conditions to the load

13- AUTO PHASE CORRECTION

- Avoids reverse fan rotation while on electric stand-by
- Protects load

14- DIESEL/ELECTRIC AUTO SWITCHING

- Automatically starts diesel engine if electric stand-by fails
- Manual override for ferry operation
- Protects the load automatically (without manual intervention)

15- DOOR SWITCHES

- Magnetic door switch minimises cargo temperature fluctuations
- Protects load



Exclusive driver training software

Thermo King's Tutor Series with "Professor Kool" provides rapid and effective interactive training to reduce driver error and ensure optimum equipment operation.

TSe - Specifications

		TS-200e		TS-300e		TS-500e		TS-600e	
		6 m - 6.5 m		6.5 m - 7.5 m		7.5 m - 9 m		9 m (+)	
Refrigeration capacity: System net cooling capacity under A.T.P. conditions at 30°C ambient									
Return Air To Evaporator		0°C	-20°C	0°C	-20°C	0°C	-20°C	0°C	-20°C
Capacity on engine power	W	6,600	4,000	7,300	4,300	8,400	5,900	10,000	6,200
Capacity on electric stand-by	W	4,300	3,000	5,100	3,000	5,800	4,200	7,600	5,000
Airflow: on high speed engine operation									
Airflow volume @ 0 Pa static pressure	m ³ /hr	2,900		3,000		3,300		3,430	
Discharge Velocity (airthrow)	m/s	8.4		8.7		6.6		6.9	
Weight: includes Low Decibel package									
Model 30: cooling and heating on engine operation	kg	421		427		491		500	
Model 50: cooling and heating on engine & electric stand-by operation	kg	450		455		522		526	
Engine: 3 cylinder, liquid cooled									
Model		TK 3.74		TK 3.74		TK 3.95		TK 3.95	
Maintenance Interval	hrs	2000		2000		2000		2000	
Compressor: lightweight aluminium alloy, Scroll compressor									
Model		TKO 4.0 scroll		TKO 4.0 scroll		TKO 6.0 scroll		TKO 6.0 scroll	
Displacement	cm ³	65		65		98		98	
Electric Stand-by Motor									
Voltage / phase / cycles		380/3/50		380/3/50		380/3/50		380/3/50	
Rating	kW	3.7		4.5		6.2		7.5	
Refrigerant: R-404A zero Ozone Depletion Potential (ODP), internationally approved									

Dimensions: Millimetres

TS-200e/ TS-300e



TS-500e/ TS-600e



Note: For final unit dimensions, please consult your local dealer.

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.

Service Parts and Accessories

Now, you can get the parts, accessories and services you need, where you need them, when you need them, quicker and more efficiently than ever. Recognised as the industry leader, Thermo King understands the importance of immediate parts availability and quality service performance. That's why we are expanding our aftermarket product line and increasing our service offerings. Our goal is to provide you with the total solutions package to keep your units operating for longer, with less down time.

Replacement Parts

Genuine Thermo King replacement parts are proven time after time to beat the competition in side-by-side testing. Engineered to provide optimal performance and maximum life, Thermo King service parts protect your investment and provide you peace of mind and confidence on the road. Insist on Genuine Thermo King Parts, every time!



For Maintenance

Thermo King offers the highest quality in durable maintenance parts on the market today. All products have been carefully selected and designed to keep your Thermo King equipment operating efficiently and at full capacity for longer. Insist on genuine Thermo King products . . . there is a difference!

Accessories

Complete your performance package with Thermo King's new and innovative quality accessories. Thermo King Accessories enhance equipment performance and increase productivity as well as driver safety and comfort and can be retrofitted for individual needs or factory fitted.

Telematics

Utilising the newest generation of technology, Thermo King's Telematics systems and software provide integrated solutions for global communications and asset management.



Controllers Devices

Designed exclusively for transport refrigeration applications, Thermo King's microprocessor controllers are the most advanced in the industry-providing versatility and allowing for total temperature control.

TOTAL KARE Service Contracts

Because maintenance costs constitute a key variable in the Total Life Cost of a temperature control system we can offer, through Total Kare, a complete selection of maintenance programs.

Thermo King - Total Kare is the solution for all your concerns about fleet management, offering you a program tailored to your needs. You only have to ask Thermo King Total Kare and we will answer what else we can do for you.



Life Cost Management

- **** Full Services
 - *** Extended Warranty
 - ** Preventative Maintenance
 - * Central Administration

Your Needs + TK² Advantages = Your Benefits

Anywhere in Europe, 24 hours a day, 365 days a year.



www.thermoking.com



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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