



THERMO KING

SB-400

Superior cooling capacity
for deep frozen loads.



Features highest cooling capacity at low temperatures

- Super fast temperature pull down
- Precise temperature control
- *Whisper™* quiet operation
- Unmatched fuel savings
- Unsurpassed system quality and reliability
- Driver friendly, easy to use **SMART REEFER®** controls
- Unmatched service access
- EMI-3000 for extended maintenance intervals



Lower operating costs.

NO COMPROMISES!



Easy access and serviceability, lower maintenance costs.

The SB-400 was designed and engineered to allow for easy servicing. And, being able to service the unit more efficiently means lower maintenance costs. Just open the main doors, and the whole front of the unit opens via gas assisted struts. What's more, all the main components are right there. No components tucked in behind each other so that you have to be a contortionist to get at them. Service technicians are going to appreciate everything about the SB-400. When a reefer does require servicing, access in any location is essential. Thermo King has done everything possible to lessen the maintenance effort from design of door panels to location of components.

Long-life coolant and hoses for the long haul.

The SB-400 features long-life coolant with a 12,000 hr. service interval. Coupled with silicone hoses (now standard on the SB series), the coolant system lowers operating cost and is one less maintenance worry.

A refrigeration system unmatched in the industry for fuel savings.

In test after test, in high and low ambient temperatures, whether hauling fresh or frozen products, Thermo King products consistently beat the competition in fuel savings. The SB-400's advanced engine and control technology and unit weight are major contributors to reduced fuel consumption and life cycle costs.



Extended Maintenance Interval.

Thermo King's EMI-3000 option will extend the SB-400's maintenance interval and reduce your operating cost by:

- Reducing scheduled maintenance cost, up to 45% over competition
- Extending engine life with improved, highly efficient filtration
- Reducing environmental impact with less spillage and less waste
- Reducing clean-up and disposal cost



✓ Thermo King Bulkhead and Duct System

Distributing conditioned air to all corners of the cargo area is another important component of total temperature management. With Thermo King's exclusive *PrimAir™* bulkhead and *unique FlexAir™* duct system, both dealer supplied options, temperature sensitive cargo never had it so good.

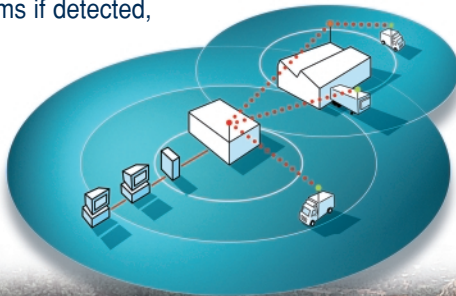
The angled design of the *FlexAir* support pods has been uniquely positioned so that return air actually mixes to deliver a more consistent temperature upon entering the evaporator coil. That results in a more efficient operating unit that delivers better cooling to the cargo.



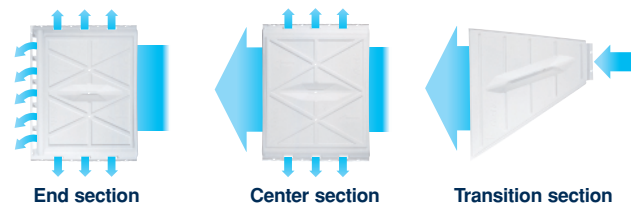
PrimAir Bulkhead

✓ Radio communications allow automatic data retrieval.

Thermo King's R:COM option, with remote radio "stations," allows you to retrieve data stored in a unit datalogger when your reefer unit passes by. You can also continuously monitor that reefer from a base station at a yard location where your trailer might sit for a period of time. It can even report controller alarms if detected, automatically.



FlexAir Duct System



✓ In-Cab SMART REEFER® controller option.

Available as an option with the SB-400, the in-cab controller for SMART REEFER brings temperature control and monitoring inside the cab. Setting temperature conditions, monitoring them, performing a pre-trip or changing a set point for a new load is all done from the comfort of the driver's seat.



Advanced controller is industry standard.

Precise temperature management starts with the SMART REEFER MP-VI controller. The user-friendly MP-VI microprocessor controller provides everything from pre-trip to on-going diagnostics. Simple up/down arrows and keys also give ready access to operating mode, hour meters, gauges and data logging.



Software that helps you manage.

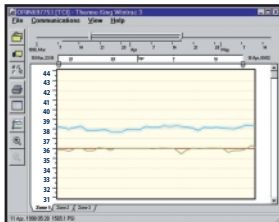
Thermo King's WINTRAC™ software was developed to operate in conjunction with Thermo King dataloggers. WINTRAC provides:

- Quick, easy set-up and viewing of temperature parameters.
- Convenient setting of trip headers (start of trip).
- Fast downloads (end of trip).
- Options to view data in graph or table form.



Proof of quality... a complete unit log.

Thermo King's powerful Data Acquisition System (DAS) maintains a complete log of cargo temperatures and unit operating conditions. This information can be downloaded to a personal computer, printer, or sent electronically to a remote location. Thermo King's optional R:COM system, an industry exclusive, allows data to be transmitted automatically via radio frequency from the unit to a base station.



Monitor your equipment and cargo anywhere.

Somewhere down the line you'd like to know where your trailer is as well as the status of its cargo. Thermo King provides complete remote communications capability from approved providers of satellite and 2.4 GHZ radio frequency systems to monitor and collect data from Thermo King's SB-400.



Quality and reliability is tested all the way.

Before a Thermo King SB-400 unit hits the road it was tested like no other equipment in the business! Exhaustive lab and field tests, under all conditions, were conducted for capacity, airflow and ambient performance as well as noise, vibration and overall durability. That gives customers further assurance of their equipment investment and their cargo's protection.

Thermo Gard® the best service program.

Thermo King SVC offers the best service available through its Thermo Gard comprehensive programs including:

- Guaranteed maintenance program (GMP)
- Custom Care
- Centralized billing
- Extended warranty



Through a network of 200 North American dealers, SVC provides seamless service coverage. Your Thermo King dealer can even customize a Thermo Gard program to meet your needs.

Precise temperature control.

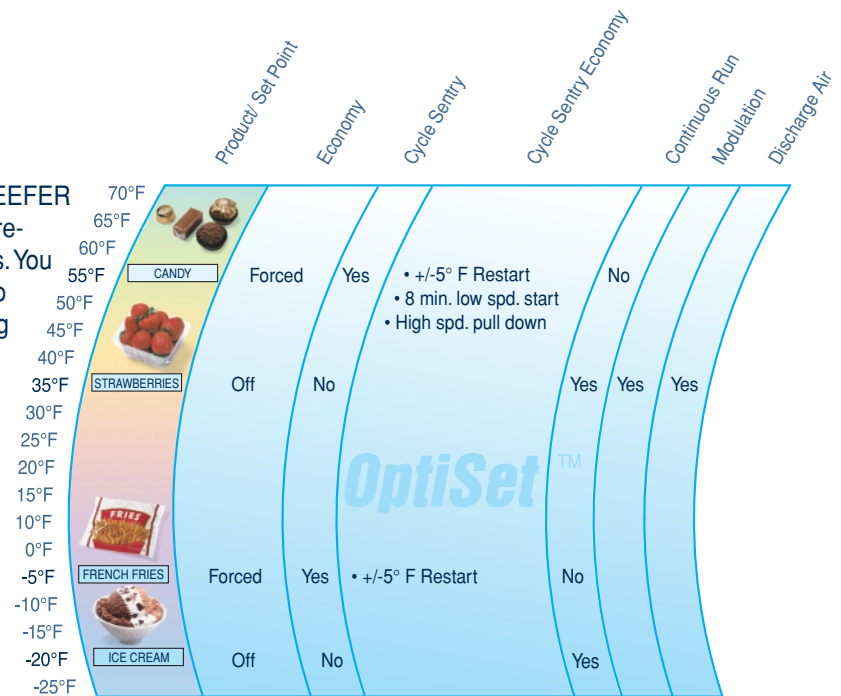


Structured temperature management with OptiSet.™

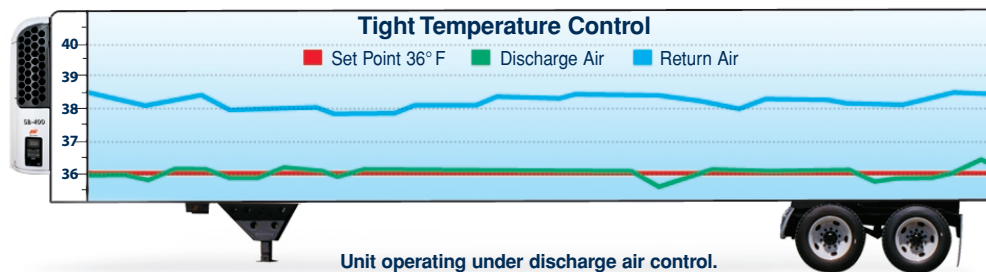
A unique, exclusive feature of the MP-VI SMART REEFER controller, OptiSet helps manage temperature requirements to coincide with your particular hauling needs. You can set up to 10 pre-determined conditions for cargo you regularly carry to assure that products are being hauled the way you and your customers want.

Discharge air temperature control for fresh loads.

To prevent “top freezing” of fresh loads, this unique feature works in conjunction with OptiSet when incorporated into the pre-set parameters.



Examples of Pre-Programmed Settings with OptiSet.
Hauling requirements can vary (for different as well as the same cargo). Your Thermo King dealer will help with all presets according to your needs.



ETV: Tightest temperature control on the road.

Thermo King’s electronic throttling valve (ETV) incorporates the ultimate modulation control technology, standard on the SB-400. It maintains temperature within a very narrow band, allowing a supply of moist cool air to be delivered throughout the cargo with continuous circulation, thereby minimizing dehydration. Fresh cargo is delivered in superior condition ... top freezing is eliminated.

Proof of temperature control at delivery.

Customers and regulatory bodies alike demand tight control and accurate monitoring of temperatures throughout the “cold chain.” The SB-400 provides just that through exclusive components such as the DAS datalogger and the optional R:COM system. Any aspect of a trips log can be recorded, retrieved (real time or otherwise) and stored. The DAS even has capacity to log data from up to six independent temperature sensors.

Unequaled high capacity & fast pull down.



The SB-400 takes high cooling capacity to a new low.

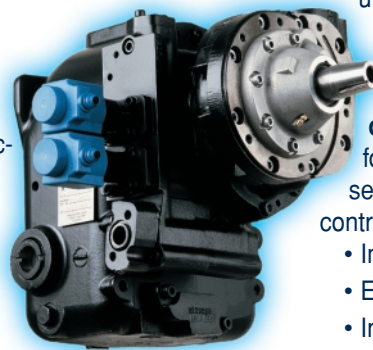
The SB-400 was designed with deep frozen cargo in mind. For the trailer that is typically filled to maximum cube hauling ice cream or other deep frozen products, the SB-400 is ideal. Whether long or short haul, the SB-400 delivers product in optimum condition.

How is that achieved? To begin with, like its predecessor the Magnum, the SB-400 screw compressor, the S-391, uses twin rotor screws to compress the refrigerant to achieve its capacity and an extra suction port "capacity booster" to generate even higher capacity for deep frozen loads. The S-391 screw compressor offers distinct advantages:

- 80% fewer moving parts than reciprocating
- Smoother running, quieter and more efficient
- Greater reliability/less maintenance

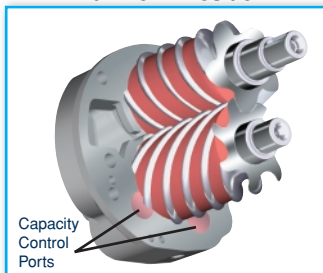
Introducing fully automatic capacity control.

The SB-400's screw compressor has two capacity control ports (featured below) that are the key to providing an unprecedented range of flexibility in temperature management. The position of these ports are controlled automatically in response to the required level of capacity: **closed**, for maximum pull down; **half open**, for power saving capacity control around set point; **fully open**, for critical temperature control at set point. The SB-400 provides:



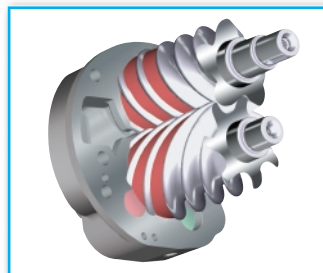
- Improved pull down
- Excellent temperature management
- Increased fuel savings
- **No Compromises!**

Pull Down Position



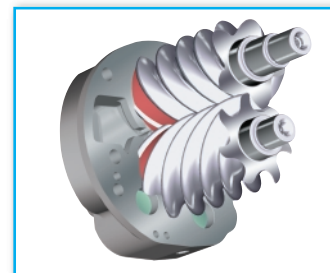
Maximum Capacity (both ports closed).

Power Saver Position



Moderate Capacity (one port open).

Set Point Position

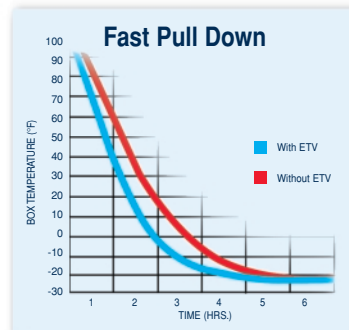


Minimum Capacity (both ports open).

Maximum capacity at fresh or frozen.

Evaporator return air	Engine power	
	Btu/hr.	Watts
35°F (1.7°C)	60,000	17,585
0°F (17.8°C)	40,000	11,723
-20°F (28.9°C)	30,000	8,792

Getting to the right temperature faster.



It's simple math. The faster you can get the trailer temperature pulled down to the required level for the cargo, the faster you can load and be on the road. Well, thanks to a unique Electronic Throttling Valve (ETV), the SB-400 gives you the fastest pull down (and pull up) in the industry.

Peace of mind, whatever you haul.

NO COMPROMISES!

The SB-400 answers the call.

Without a doubt the SB-400 exemplifies the very best of Thermo King's SB truckload series. It provides unequaled deep frozen capacity and, at the same time, maintains the efficiencies and standards of the SB series in all other hauling categories. From fresh to frozen, the SB-400 will:

- Provide the best hauling conditions for any cargo
- Maintain ideal temperature control
- Provide the best fuel efficiency available

Leading the way in advanced cargo protection.

Thermo King's SB series of temperature control systems for trailers usher in a new era in transport refrigeration. Fueled by growing concerns over temperature inaccuracy and contamination of perishable food



products, governments and customers worldwide are demanding tighter control and more accurate monitoring of temperatures throughout the "cold chain." Regulatory bodies such as the USDA and FDA have become industry partners in this effort creating the Hazard Analysis Critical Control Points (HACCP) as a means of control. Thermo King's SB-400 meets these challenges and those of the transport companies head-on.

The demand for reliability, temperature control, fast pull down, ease of use, fuel efficiency and quiet operation have all been met by the SB-400.



Precise control at any temperature for critical products.

The SB-400 provides the precise control and maximum capacity that many unique, but equally temperature sensitive products, such as blood plasma, require. Regardless of the cargo, the demands of the industry continue to require high capacity, fast pull down and precise control ... all provided by the SB-400.



Incorporates exclusive *Whisper* quiet technology.

With noise pollution becoming an increasing problem, Thermo King's *Whisper* quiet technology built into every SB-400 unit offers welcome added value.



SB-400 Specifications

DESCRIPTION

Microprocessor-controlled, high-capacity, frontmount, diesel-powered temperature control unit with directional air delivery for today's jumbo trailers.

MODEL AVAILABLE

SB-400: Cooling and heating on engine operation using R-404A refrigerant

OPERATION

- Single-switch operation
- OptiSet™ programmable temperature modes
- Continuous run/Cycle-Sentry™
- Automatic defrost initiation
- Programmable defrost timer

REFRIGERATION CAPACITY

System net cooling capacity at 100°F (38°C) ambient and high-speed engine operation.

Evaporator return air	Btu/hr. Engine power	Watts
35°F (1.7°C)	60,000	17,585
0°F (-17.8°C)	40,000	11,723
-20°F (-28.9°C)	30,000	8,792

ENGINE

- TK486 direct-injection diesel engine
- Four-cylinder, liquid-cooled
- API classified CD mineral oil after break-in
- 15 qt (14.2 liter) oil capacity
- 34.0 hp rating operating at 2,200 rpm

COMPRESSOR

- Model S-391 with internal capacity control
- 23.8 cu in (391 cm³) displacement
- High strength driveshaft
- Lightweight, aluminum alloy oil separator body and sump
- All rolling bearings
- Twin rotor
- Full flow compressor oil filter with pressure bypass

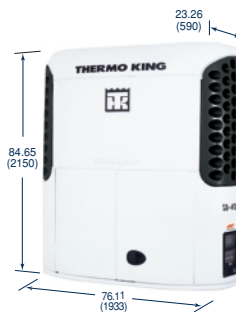
SB-400 FEATURES & OPTIONS	
SMART REEFER MP-VI controller	●
OptiSet™: Economy	●
Cycle-Sentry™	●
Cycle-Sentry™ economy	●
Continuous run	●
Modulation (return or discharge air)	●
Electronic Throttling Valve (ETV)	●
MP-VI built-in communications	●
Data Acquisition System (DAS)	●
EMI-3000	●
Whisper™ quiet technology	●
Easy-access design	●
Long-life coolant/silicone hoses	●
Directional air delivery	●
Vibration isolation system	●
Aluminum undermount fuel tank 50 gal. (186 liter)	●
Fuel tank, 110 gal. (409.2 liter)	○
Sleep mode easy switch	○
Fuel heater	○
Frost plug heater	○
Alternator, 65 Amp, 12V dc	○
Fresh Air Exchange	○
Chrome Grills	○
R:COM™ automatic data transmission system	■
Satellite communication systems	■
Thermo King bulkhead and duct system	■
Battery, 12V	■

- Standard feature ○ Option/factory installed ■ Option/dealer installed

WEIGHT (approximate)

SB-400 1690 lbs (773 kg)
Fuel tank, 50 gal. 35 lbs (16 kg)

DIMENSIONS (inches (millimeters))



Warranty Summary

Terms of the Thermo King Warranty are available on request from your local Thermo King dealer. Please reference document TK50046 for the Thermo King Trailer Unit Warranty.

Specifications are subject to change without notice.

