THERMO KING

Operator`s Manual

Legend L-1880
Single Temperature Unit

Revision A

May 2025

TK AP10002-2-OP-EN

TRANE TECHNOLOGIES

Introduction

This manual is published for informational purposes only and the information furnished herein should not be considered as all-inclusive or meant to cover all contingencies. If more information is required, consult your Thermo King Service Directory for the location and telephone number of the local dealer.

Thermo King's warranty shall not apply to any equipment which has been "so installed, maintained, repaired or altered as, in the manufacturer's judgment, to affect its integrity."

Manufacturer shall have no liability to any person or entity for any personal injury, property damage or any other direct, indirect, special, or consequential damages whatsoever, arising out of the use of this manual or any information, recommendations or descriptions contained herein. The procedures described herein should only be undertaken by suitably qualified personnel. Failure to implement these procedures correctly may cause damage to the Thermo King unit or other property or personal injury.

There is nothing complicated about operating and maintaining your Thermo King unit, but a few minutes studying this manual will be time well spent.

Performing pre-trip checks and enroute inspections on a regular basis will minimize operating problems. A regular maintenance program will also help to keep your unit in top operating condition. If factory recommended procedures are followed, you will find that you have purchased the most efficient and dependable temperature control system available.

All service requirements, major and minor, should be handled by a Thermo King dealer for four very important reasons:

- They are equipped with the factory recommended tools to perform all service functions.
- They have factory trained and certified technicians.
- They have genuine Thermo King replacement parts.
- The warranty on your new unit is valid only when the repair and replacement of component parts is performed by an authorized Thermo King dealer.

Machine Information Policy

Use of this product serves as acceptance of the Thermo King Machine Information Policy available at: Thermo King Transport Refrigeration Solutions | Asia Pacific..This product includes an optional feature that collects and shares Machine Information with Thermo King Separate terms may apply when a customer has entered into an agreement with Thermo King.

Software License

The product includes software that is licensed under a non-exclusive, non-sublicensable, terminable and limited license to use the software as installed on the product for its intended purpose. Any removal, reproduction, reverse engineering, or other unauthorized use of the software is strictly prohibited. Hacking the product or installing unapproved software may void the warranty. The owner or operator shall not reverse engineer, decompile, or disassemble the software, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation. The product may include third party software separately licensed as specified in any documentation accompanying the product or in an about screen on a mobile application or website that interfaces with the product.

Emergency Assistance

Thermo Assistance is a multi-lingual communication tool designed to put you in direct contact with an authorized Thermo King dealer.

Thermo Assistance should only be contacted for breakdown and repair assistance.

To use this system, you need the following information before you call: (phone charges will apply)

- Contact Phone Number
- Type of TK Unit
- Thermostat Temperature Setting
- Ambient temperature
- Present Load Temperature
- Probable Cause of Fault
- Warranty Details of the Unit
- Payment Details for the Repair

Leave your name and contact number and a Thermo Assistance Operator will call you back. At this point you can give details of the service required and the repair will be organized.

No payment at point of repair for customers with a ThermoKare service contract or with a guaranty of payment from their Thermo King home-dealer.

General Inquires and Unit Maintenance

For general inquiries please contact your local Thermo King dealer.

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Danger, Warning, Caution, and Notice

Thermo King® recommends that all service be performed by a Thermo King dealer and to be aware of several general safety practices.

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this unit depend upon the strict observance of these precautions. The four types of advisories are defined as follows:

DANGER

Hazard!

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Hazard!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Hazard!

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury and unsafe practices.

NOTICE

Hazard!

Indicates a situation that could result in equipment or property-damage only accidents.

General Safety Practices

DANGER

Risk of Injury!

Keep hands and loose clothing clear of fans and belts at all times when the unit is operating with the doors open.

WARNING

Personal Protective Equipment (PPE) Required!

A battery can be dangerous. Lithium-ion batteries are potentially hazardous. The combustion gas from these batteries is toxic and can present a serious FIRE HAZARD if damaged, defective, or improperly used. A battery stores enough electricity to burn you if it discharges quickly. Always wear goggles or safety glasses and personal protective equipment when working with a battery. Do not replace the battery with any type other than the one approved by Thermo King for this unit.

WARNING

Risk of Injury!

Do not apply heat to a closed cooling system. Before applying heat to a cooling system, drain it. Then flush it with water and drain the water. Antifreeze contains water and ethylene glycol. The ethylene glycol is flammable and can ignite if the antifreeze is heated enough to boil off the water.

WARNING

Risk of Injury!

Temperatures above 120 degrees F (50 degrees C) can cause serious burns. Use an infrared thermometer or other temperature measuring device before touching any potentially hot surfaces.

CAUTION

Sharp Edges!

Exposed coil fins can cause lacerations. Service work on the evaporator or condenser coils should only be accomplished by a certified Thermo King technician.

Automatic Start/Stop Operation

CAUTION

Risk of Injury!

The unit can start and run automatically any time the unit is turned on. Turn the unit On/Off switch Off before doing inspections or working on any part of the unit. Please note that only Qualified and Certified personnel should attempt to service your Thermo King unit.

Battery Installation and Cable Routing

⚠WARNING

Hazard of Explosion!

An improperly installed battery could result in a fire, explosion, or injury. A Thermo King approved battery must be installed and properly secured to the battery tray.

⚠WARNING

Hazard of Explosion!

Improperly installed battery cables could result in a fire, explosion, or injury. Battery cables must be installed, routed, and secured properly to prevent them from rubbing, chaffing, or making contact with hot, sharp, or rotating components.

⚠WARNING

Fire Hazard!

Do not attach fuel lines to battery cables or electrical harnesses. This has the potential to cause a fire and could cause serious injury or death.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Overcharging or over-discharging of an AGM Battery. There is a very real possibility of inducing enough heat into an AGM battery to initiate thermal runaway if the battery is charged at too high a voltage. This could cause your AGM battery to get very hot. Always wear personal protective equipment when working with a battery.

⚠WARNING

Hazard of Explosion!

Always cover battery terminals to prevent them from making contact with metal components during battery installation. Battery terminals grounding against metal could cause the battery to explode.

⚠CAUTION

Hazardous Service Procedures!

Set all unit electrical controls to the OFF position before connecting battery cables to the battery to prevent the unit from starting unexpectedly and causing personal injury.

NOTICE

Equipment Damage!

Do not connect other manufacturers' equipment or accessories to the unit or to the Thermo King batteries unless approved by Thermo King. Failure to do so can result in severe damage to equipment and void the warranty.

Refrigerant

DANGER

Hazardous Gases - Personal Protective Equipment (PPE) Required!

Refrigerant in the presence of an open flame, spark, or electrical short produces toxic gases that are severe respiratory irritants which can cause serious injury or possible death. When working with or around hazardous chemicals, ALWAYS refer to the applicable Material Data Safety Sheets (MSDS) and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection, and handling instructions.

DANGER

Refrigerant Vapor Hazard!

Do not inhale refrigerant. Use caution when working with refrigerant or a refrigeration system in any confined area with a limited air supply. Refrigerant displaces air and can cause oxygen depletion, resulting in suffocation and possible death. When working with or around hazardous chemicals, ALWAYS refer to the applicable Material Data Safety Sheets (MSDS) and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection, and handling instructions.

WARNING

Personal Protective Equipment (PPE) Required!

Refrigerant in a liquid state evaporates rapidly when exposed to the atmosphere, freezing anything it contacts. Wear butyl lined gloves and other clothing and eye wear when handling refrigerant to help prevent frostbite. When working with or around hazardous chemicals, ALWAYS refer to the applicable Material Data Safety Sheets (MSDS) and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection, and handling instructions.

Although fluorocarbon refrigerants are classified as safe, use caution when working with refrigerants or in areas where they are being used.

Refrigerant Oil

Observe the following precautions when working with or around refrigerant oil and when servicing the unit:

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Protect your eyes from contact with refrigerant oil. The oil can cause serious eye injuries. Protect skin and clothing from prolonged or repeated contact with refrigerant oil. To prevent irritation, wash your hands and clothing thoroughly after handling the oil. Rubber gloves are recommended. When working with or around hazardous chemicals, ALWAYS refer to the applicable Material Data Safety Sheets (MSDS) and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection, and handling instructions.

First Aid

REFRIGERANT

- **Eyes:** For contact with liquid, immediately flush eyes with large amounts of water and get prompt medical attention.
- **Skin:** Flush area with large amounts of warm water. Do not apply heat. Remove contaminated clothing and shoes. Wrap burns with dry, sterile, bulky dressing to protect from infection. Get prompt medical attention. Wash contaminated clothing before reuse.
- **Inhalation:** Move victim to fresh air and use Cardio Pulmonary Resuscitation (CPR) or mouth-to-mouth resuscitation to restore breathing, if necessary. Stay with victim until emergency personnel arrive.
- **Frost Bite:** In the event of frost bite , the objectives of First Aid are to protect the frozen area from further injury, warm the affected area rapidly, and to maintain respiration.

REFRIGERANT OIL

- **Eyes:** Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
- **Skin:** Remove contaminated clothing. Wash thoroughly with soap and water. Get medical attention if irritation persists.
- **Inhalation:** Move victim to fresh air and use Cardio Pulmonary Resuscitation (CPR) or mouth-to-mouth resuscitation to restore breathing, if necessary. Stay with victim until emergency personnel arrive.
- **Ingestion:** Do not induce vomiting. Immediately contact local poison control center or physician.

ENGINE COOLANT

- **Eyes:** Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
- **Skin:** Remove contaminated clothing. Wash thoroughly with soap and water. Get medical attention if irritation persists.
- **Ingestion:** Do not induce vomiting. Immediately contact local poison control center or physician.

BATTERY ACID

- **Eyes:** Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention. Wash skin with soap and water.
- **Skin:** Immediately remove contaminated clothing. Wash skin with large volumes of water, for at least 15 minutes. Wash skin with soap and water. Do not apply fatty compounds. Seek immediate medical assistance.
- **Inhalation:** Provide fresh air. Rinse mouth and nose with water. Seek immediate medical assistance.
- **Ingestion:** If the injured person is fully conscious: make the person drink extensive amounts of milk. Do not induce vomiting. Take the injured person immediately to a hospital.

ELECTRICAL SHOCK

Take IMMEDIATE action after a person has received an electrical shock. Get quick medical assistance, if possible.

The source of the shock must be quickly stopped, by either shutting off the power or removing the victim. If the power cannot be shut off, the wire should be cut with an non-conductive tool, such as a wood-handle axe or thickly insulated cable cutters. Rescuers should wear insulated gloves and safety glasses, and avoid looking at wires being cut. The ensuing flash can cause burns and blindness.

If the victim must be removed from a live circuit, pull the victim away with a non-conductive material. Use wood, rope, a belt or coat to pull or push the victim away from the current. DO NOT TOUCH the victim. You will receive a shock from current flowing through the victim's body. After separating the victim from power source, immediately check for signs of a pulse and respiration. If no pulse is present, start Cardio Pulmonary Resuscitation (CPR). If a pulse is present, respiration might be restored by using mouth-tomouth resuscitation. Call for emergency medical assistance.

ASPHYXIATION

Move victim to fresh air and use Cardio Pulmonary Resuscitation (CPR) or mouth-to-mouth resuscitation to restore breathing, if necessary. Stay with victim until emergency personnel arrive.

Safety Decals and Locations

Service

The Service decal is located inside the Engine Doors. This decal gives you the information to access/download your unit operator manual, but also the safety icons associated with your unit. These safety icons are directly associated with the information within this chapter. You can see the explanations for these icons starting from “General Safety Practices,” p. 8.

Note: *This decal only contains symbols of warning for the operation of the unit.*

Figure 1. Service Decal

Operation

The Operation decal is located on your HMI. Navigate to this using the following steps.

- From the Standard Display, Select the Main Menu. See (“HMI Control Panel,” p. 34) for instructions on navigating the Controller Menu`s.
- From the Main Menu, Select “System”.
- From the System Menu, Select “Summary”.
- Select Soft Key 3 to enter the “Legal” Menu.

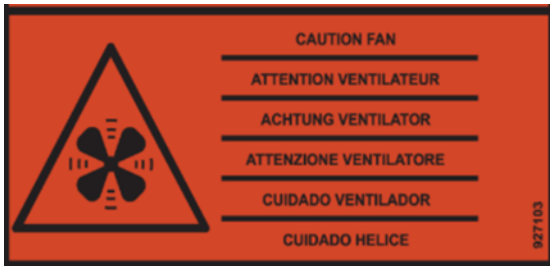
This decal gives you the information to access/download your unit operator manual and other supporting documentation and in many supported languages.

Condenser and Evaporator Fans

Be aware of warning nameplates in the following locations:

- On bulkhead
- On belt guard
- On rear of evaporator housing
- On frame inside door

Figure 2. Fan Warning Nameplate



1.	**Rotating Fans: Risk of Injury!** Caution Rotating Fan blade operating. Keep hands, hair, cloths and all object clear. Prior to completing any inspections or working on any part of the unit. 1. Press the OFF key on the HMI control panel. 2. Open the engine bay doors. 3. Turn the On/Off switch to the “Off” position.
2.	**Automatic Start/Stop Operation: Risk of Injury!** The unit can start and run automatically any time without warning. Prior to completing any inspections or working on any part of the unit. 1. Press the OFF key on the HMI control panel. 2. Open the engine bay doors. 3. Turn the On/Off switch to the “Off” position.
3.	**Rotating belt: Risk of Injury!** Rotating belt. Keep clear. Prior to completing any inspections or working on any part of the unit. 1. Press the OFF key on the HMI control panel. 2. Open the engine bay doors. 3. Turn the On/Off switch to the “Off” position.

Refrigerant and Compressor Oil

Refrigerant nameplate is located on frame inside door.

Figure 3. Refrigerant and Compressor Oil Nameplate

Electrical Warnings

Figure 4. High Voltage Warning Nameplate

Unit Description

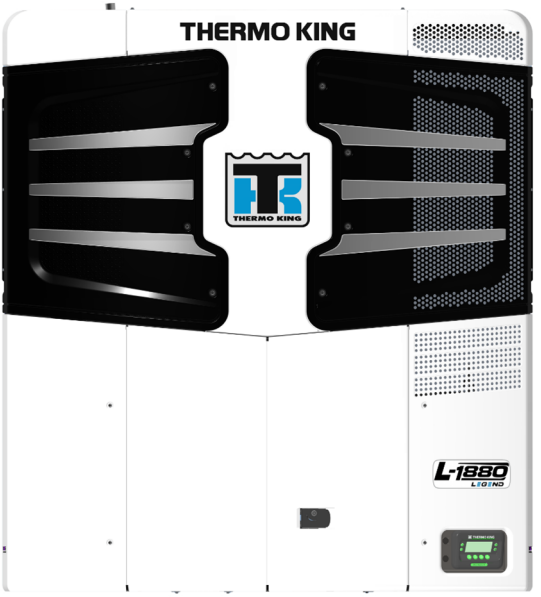
General Information

This Thermo King Legend unit is a one piece, self-contained, diesel/electric powered cooling/heating trailer unit. The unit mounts on the front of the trailer with the evaporator extending through an opening in the front wall. It features a fully programmable microprocessor controller designed exclusively for transport refrigeration applications, all-new DDE (Diesel Direct Electric) architecture, a quiet running Thermo King diesel engine, and a Thermo King X430 reciprocating compressor.

- Cooling, heating (hot gas) and defrost (hot gas) on engine operation and electric standby operation.

Single Temperature Units: Power is provided by a water-cooled, direct injection diesel engine. A centrifugal clutch transfers power from the engine to the compressor. Belts transfer power to the fans and alternator. During electric standby operation, an electric motor drives the compressor, fans and alternator using belts. The centrifugal clutch on the engine isolates the engine from the compressor during electric operation.

Figure 5. Thermo King Legend Unit Shown



Diesel Engine

This trailer unit uses a 4-cylinder, water cooled, direct injection diesel engine. The engine is coupled to the compressor with a centrifugal clutch. The pulley on the clutch is connected by a belt that transfers power to a generator/electric motor combination that supply's DC current to operate the 12VDC and 48VDC electrical systems. A second belt operates the engine's water pump.

This trailer unit complies with 2016/1628 EU regulation (or NRMM Stage V). To determine if an engine is NRMM Stage 5 compliant, the engine model shall be stated on the engine serial plate (located on engine behind trailer service doors). See below an example of engine serial plate.

Figure 6. Engine Serial Plate for NRMM

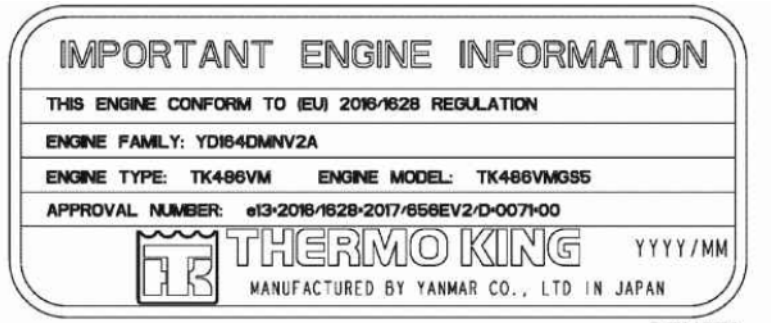


Figure 7. Engine Serial Plate for NRMM China GB4

Extended Life Coolant (ELC)

ELC (Extended Life Coolant) is standard equipment. The maintenance interval for ELC is five years or 12,000 hours. A nameplate on the coolant expansion tank identifies units with ELC. The new engine coolant, Chevron Extended Life Coolant, is RED in color instead of the previous GREEN or BLUE-GREEN colored conventional coolants.

NOTICE

System Contamination!

Do not add "GREEN" or "BLUE-GREEN" conventional coolant to cooling systems using "RED" Extended Life Coolant, except in an emergency. If conventional coolant is added to Extended Life Coolant, the coolant must be changed after 2 years instead of 5 years.

EMI 3000

EMI 3000 is an extended maintenance interval package. It is standard equipment. The EMI 3000 package consists of the following key components:

- EMI 3000-Hour Cyclonic Air Cleaner Assembly and Air Cleaner Element.
- EMI 5-Micron 3000-Hour Fuel Filter.
- EMI 3000-Hour Dual Element Oil Filter.
- API Rating CK-4 Mineral Oil.
- Five Year or 12,000 Hour ELC (Extended Life Coolant).

The EMI package allows standard maintenance intervals for air cleaner, air cleaner element, fuel filter and dual element oil filter to be extended to 3,000 hours, or 2 years, whichever occurs first.

Note: *Units equipped with the EMI 3000 package do require regular inspection in accordance with Thermo King's maintenance recommendations.*

Thermo King Reciprocating Compressor

This trailer unit is equipped with a 4-cylinder 30.0 cu. in. (492 cm3) displacement Thermo King X430 reciprocating compressor.

Electronic Throttling Valve

The Electronic Throttling Valve (ETV) provides enhanced control of the refrigeration system as follows:

- Allows the refrigeration system to fully utilize the power capabilities of the engine under varying conditions.
- Provides an additional measure of protection against high discharge pressures.
- Protects the engine from high coolant temperature shutdowns.
- Provides a means of precise temperature control.

Smart ARCHON-T Control System

Thermo King's ARCHON-T Controller is a microprocessor control system designed exclusively for a transport refrigeration system. The ARCHON-T Controller's integrated HMI (Human Machine Interface) control panel allows the operator to perform the following functions:

- Power Up and Power Down Unit.
- Display and Change Language.
- Display and Change Setpoint.
- Display and Initiate Defrost.
- Display System Status of Engine, Refrigeration, Power and Control.
- Display and Clear Alarms.

The unit will operate in either Cycle-Sentry or Continuous Run mode of operation as selected by the operator using the HMI Control Panel.

See "Operating Instructions" for more information about the ARCHON-T Controller.

CYCLE-SENTRY™ Stop-Start Operation

When CYCLE-SENTRY Mode is selected the unit will start and stop automatically to maintain setpoint and the battery charged.

Continuous Run Operation

When Continuous Mode is selected, the unit starts automatically and runs continuously to maintain setpoint and provide constant airflow.

This trailer unit is equipped with iTracKing Connected Solutions communication device that when enabled allows remote access to unit data. Downloading the Thermo King Reefer mobile app, will allow you to monitor and manage temperature and reefer settings over the road, in the yard or incab via Bluetooth®. Contact your Thermo King representative for more information about all the features and options available with iTracKing Connected Solutions.

Further Communication Capabilities

Cable connection: when using a laptop with WinTrac™ software.

ServiceWatch™: ServiceWatch is standard equipment. It records operating events, alarm codes, and compartment temperatures as they occur and at preset intervals. This information is typically used to analyze unit performance. Use a USB port to download the ServiceWatch data.

Important: *A ServiceWatch download can be helpful when diagnosing a problem. Therefore, it is recommended that a ServiceWatch download be performed to help diagnose a problem. A ServiceWatch download must be preformed before contacting the Thermo King Service Department for assistance in diagnosing a problem.*

CargoWatch™: CargoWatch data logging requires the installation of optional sensors. Up to six temperature sensor/probes and four door switches can be installed. CargoWatch also logs the setpoint. Use the CargoWatch Port to download the CargoWatch data. If optional temperature sensors are installed, the readings are displayed as Datalogger Sensor (1-6) Temperature in the sensor readings.

Printer Port: This port is used to print trip records from the CargoWatch™ datatlogger download. It is located inside the control box.

USB key: via the USB port provided as standard, eliminating the need for laptops and cables.

GPRS connection: via iTracKing™ tool which allows online fleet and temperature management.

OptiSet™ Plus

OptiSet Plus is a group of programmable functions that control how the unit will operate with specific setpoints or named products. This assures that when a particular setpoint or named product is selected, the unit will always operate the same way. This allows an entire fleet to be configured to match the customers' needs. Contact your Thermo King dealer for information about programming OptiSet Plus.

Defrost

Frost gradually builds-up on evaporator coils as a result of normal operation. The unit uses hot refrigerant to defrost the evaporator coil. Hot refrigerant gas passes through the evaporator coil and melts the frost. The water flows through collection drain tubes onto the ground. The methods of defrost initiation are Automatic and Manual.

Automatic Defrost: The H.M.I. automatically initiates timed or demand defrost cycles. The H.M.I. can be programmed to initiate timed defrost cycles at intervals of 2, 4, 6, 8, or 12 hours. Demand defrost cycles occur if the differences between the return air temperature, discharge air temperature, and coil temperature exceed certain limits. The unit can enter defrost cycles as often as every 30 minutes if required.

Manual Defrost: In Manual Defrost mode, the operator initiates a defrost cycle. Refer to (“,”).”

Note: *The unit will not perform a Manual Defrost Cycle unless the unit has been turned on with the ON key, the unit is running in Continuous or CYCLE-SENTRY Mode (or shut down in CYCLE-SENTRY Null Mode), and the coil temperature is below 45°F (7°C)7°C (45°F).*

Engine Compartment

⚠ WARNING

Risk of Injury!

The unit can start at any time without warning. Press the OFF key on the HMI control panel, place the unit Service Switch (On/Off switch) in the Off position, and disconnect the battery before inspecting or servicing any part of the unit.

⚠ CAUTION

Service Procedures!

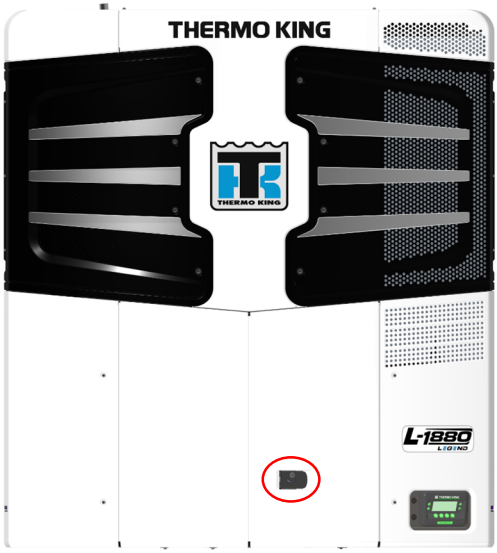
Turn the unit off before attempting to check the engine oil.

The following maintenance items can be checked visually.
Engine Oil Dipstick: Use the engine oil dipstick to check the engine oil level.

Opening the Front Doors

To open the front doors to access the engine compartment, pull the door handle out. To close the door, push the door shut and latch the handle securely.

Figure 8. Thermo King Legend Front Door



Unit Protection Devices

Preheat Buzzer: The preheat buzzer sounds when the controller energizes the preheat relay. This warns anyone near the unit that the controller is about to start the engine.

Coolant Level Switch: The coolant temperature switch closes if the coolant level drops below an acceptable level. If it stays closed for a specified time, the microprocessor records Alarm Code 37.

Engine Coolant Temperature Sensor: The microprocessor uses the engine coolant temperature sensor to monitor the engine coolant temperature. If the engine coolant temperature rises above an acceptable level, the microprocessor records Alarm Code 41 and possibly 18. The microprocessor might also shut the unit down.

High Pressure Cutout Switch: The high pressure cutout switch is located on the compressor discharge manifold. If the compressor discharge pressure becomes excessive, the switch opens the circuit to the run relay to stop the unit. The microprocessor will record Alarm Code 10.

High Pressure Relief Valve: This valve is designed to relieve excessive pressure in the refrigeration system. It is located on the receiver tank. If the high pressure relief valve opens, much of the refrigerant will be lost. Take the unit to a Thermo King dealer if this occurs.

Low Oil Level Switch: The low oil level switch closes if the oil drops below an acceptable level. If it stays closed for a specified time, the microprocessor shuts the unit down and records Alarm Code 66.

Low Oil Pressure Switch: The low oil pressure switch closes if the oil pressure drops below an acceptable level. If it stays closed for a specified time, the microprocessor shuts the unit down and records Alarm Code 19.

Overload Relay - Automatic Reset (Electric Standby): An overload relay protects the standby electric motor. The overload relay opens the circuit to the electric motor if the motor overloads for any reason (e.g., low line voltage or improper power supply) while the unit is on electric standby operation. The microprocessor will record Alarm Code 90.

Smart FETs: Smart FETs in the base controller protect some circuits and components from an overcurrent condition.

Fuses: Fuses are located on the base controller and on the Power Distribution Module (DCDC converter). All fuses must be serviced only by qualified Thermo King technicians. Contact your nearest Thermo King Dealer for assistance.

Table 1. 48 Volt Fuses on DCDC (Single Temperature Units Only)

Fuse	Size	Function	Remark
F1	20A	Power to evaporator fan 1	
F2	20A	Power to evaporator fan 2	
F3	20A	Power to condenser fan 1	
F4	20A	Power to condenser fan 2	
F5	20A	Power to DCDC converter input	
F6	20A	Not used	

Table 2. 12 Volt Fuses on base controller

Fuse	Size	Function	Remark
F2	15A	Power to On/Off Switch	
F3	40A	Power to Fuel Sol Pull-In/Starter Solenoid	Only Starter Solenoid for Legend Series
F4	None Or 2A	No Fuse – all Bosch and TK Alternators (Note 1) 2A fuse – all Prestolite Alternators (Note 1)	Not Used for Legend Series
F5	60A	Preheat Circuit (Note 2)	
F6	15A	Power to Damper and High Speed Solenoids	Not Used for Legend Series
F7	2A	Switch On Power to CAN Bus	
F8	5A	2A Power to CAN Connector J12	
F9	5A	2A Power to CAN Connector J14	
F10	10A	Power to On Relay (Right Position)	
F11	10A	Power to Auto Fresh Air Solenoid	Not Used for Legend Series
F12	5A	2A Power to CAN Connector J13	
F13	2A	Power to Remote Lights	
F15	P/S	On/Off Relay (Note 3)	
F20	2A	Power to Alternator Sense	Not Used for Legend Series
F25	7.5A	Power to HPCO	
F26	5A	Power to REB Board	Not Used for Legend Series

Notes:

1. Fuse *F4 must be in place for Prestolite alternators to charge. Fuse F4 must be removed for Bosch and Thermo King alternators. Service Parts Base Controllers are shipped without the F4 fuse.*

2. The F5 preheat fuse is a “slow blow” type fuse. It is designed for use with the engine air pre-heater. Always replace the fuse with the TK specified fuse. Service Parts Base Controllers are shipped without the F5 fuse.

3. The device identified as F15 is a poly switch. This poly switch provides over-current protection for the On/Off relay. The poly switch will reset automatically and is not field repairable.

Table 3. 12 Volt Fuses Expansion Relay Board

Fuse	Size	Function	Remark
F2	20A	Power to main relay and rack relay	

Pharma

Single temperature units qualified for pharmaceutical applications under Thermo King protocol are configured with specific Optiset profiles visible on the HMI display as follow:

- PHARMA AMBIENT: for temperature ranges +15°C to 25°C.
- PHARMA CHILLED: for temperature ranges +2°C to 8°C.
- PHARMA FROZEN: for temperature below -20°C.

In case the operator is not using the Optiset profiles, ThermoKing recommends to run the unit with the recommended Setpoints below:

Table 4. Single Temperature Units

Temperature Range	Recommended Setpoint	Max Deviation Setpoint	Max Deviation Returned Air
Temperature < -20° C	-20°C	+1.5°C of setpoint	+ 1°C of setpoint
Temperature between 2°C and 8° C	+4°C	+/- 2°C of setpoint	+/- 1.5°C of setpoint
Temperature between 15°C and 25°C	+20°C	+/- 2.5°C of setpoint	+/- 2°C of setpoint

Manual Pretrip Inspection (Before Starting the Unit)

Pretrip inspections are an important part of a preventative maintenance program designed to minimize operating problems and breakdowns. Perform this pretrip inspection before every trip involving refrigerated cargo.

Note: *Pretrip inspections are not intended to take the place of regular maintenance inspections.*

Battery: Verify the battery terminals are tight and free of corrosion.

Note: *All truck and trailer units will have a small battery drain when the unit is off. The battery can be drained even quicker if there are aftermarket options or third party devices connected to the unit which consume battery power.*

This will cause the battery to become discharged over time.

Apart from the obvious inconvenience of having to charge the battery, it is also liable to damage battery cell material and cause the life of the battery to be shorter than acceptable.

Therefore, to ensure the battery remains in optimum condition during periods when the unit is not being used, Thermo King strongly recommends to switch on the unit at least once each week and run for 30 minutes or longer to keep the battery safe.

If the EnergyONE battery is drained after a long idle period, it will need to be recharged using an automatic programmable battery charger (Thermo King does not recommend the use of manual battery chargers on dry cell batteries).

Failure to do so may result in warranty for the battery being rejected.

Alternatively, Thermo King offers a solar panel option which would negate the requirement to switch off the microprocessor switch during long unit idle periods. For more information, please contact your local Thermo King dealership.

Compressor:

Important: *To maintain the integrity of the compressor shaft seal and to prevent loss of refrigerant, it is recommended to run the unit at least once each week for 30 minutes or longer.*

Belts: Verify belts are in good condition and adjusted to the proper tension. For more information about belt tension, see the Specifications chapter.

Fuel: Verify the diesel fuel supply is adequate to guarantee engine operation to the next check point. Allow for maximum fuel consumption of 3.8 Litres (one gallon) per hour of engine operation.

Engine Oil: Check the engine oil level. It should be at the Full mark when the dipstick is threaded all the way into the oil pan. Do not overfill.

⚠ CAUTION

Service Procedures!
Turn the unit off before attempting to check the engine oil.

Engine Coolant: The engine coolant must have antifreeze protection to -34 C (-30 F). Add coolant if Alarm Code 37 is active. Check and add coolant to the expansion tank.

⚠ CAUTION

Hazardous Pressures!
Do not remove expansion tank cap while coolant is hot.

Note: *Refer to Specifications Maintenance where it is clearly states which coolant types are allowed to be used in this unit.*

Electrical: Check the electrical connections to verify they are securely fastened. Wires and terminals should be free of corrosion, cracks, and moisture.

Structural: Visually inspect the unit for leaks, loose or broken parts, and other damage.

Coils: Verify condenser and evaporator coils are clean and free of debris.

- Washing with clean water should be sufficient.
- The use of cleaning agents or detergents is strongly discouraged due to the possibility of degradation of the construction.
- If using a power washer, the nozzle pressure should not exceed 600 psi (41 bar). For the best results, spray the coil perpendicular to the face of the coil. The spray nozzle should be kept between 1 inch and 3 inches (25 to 75 millimeters) from the coil surface.
- If necessary to use a chemical cleaner or detergent, use a cleaner that does not contain any hydrofluoric acids and is between 7 and 8 on the pH scale. Verify dilution instructions provided by the detergent supplier are followed. In case of doubt about the compatibility of the detergent with the type of materials listed above, always ask the supplier a written confirmation of the compatibility.

- Should a chemical cleaner be required, it is MANDATORY that all components are thoroughly rinsed with water even if the instructions of the cleaner specify that it is a “no rinse” cleaner.

NOTICE

Equipment Damage!
Failure to comply with above mentioned guidelines will lead to a shortened life of the equipment to an indeterminable degree and also may void your warranty.

Note: *The repeated transportation of meat and fish waste can cause extensive corrosion to the evaporator coils and evaporator section tubing over time due to ammonia formation and can reduce the lifespan of the coils. Appropriate additional measures should be taken to protect the coils against the aggressive corrosion that can result from transportation of such products.*

Cargo Box: Check the interior and exterior of the cargo box for damage. Any damage to the walls or insulation must be repaired.

Note: *On trailers equipped with units qualified for pharmaceutical applications - under ThermoKing protocol inspect the integrity of the air chute.*

Cargo Doors: Verify the cargo doors and weather seals are in good condition. The doors should latch securely and the weather seals should fit tightly.

Defrost Drains: Check the defrost drain hoses to verify they are open.

Legend Controller (ARCHON-T)

Thermo King has applied the Legend in computer technology to develop a device that controls temperature and unit function, and displays operating information quickly and accurately.

There is nothing complicated about learning to operate the ARCHON-T Controller, but you will find that a few minutes studying the contents of this manual will be time well spent.

Highlights of the ARCHON-T Controller

New Software and Controller

- Software developed by Thermo King.
- Hardware developed by Thermo King.

Improvements

- Bigger screen size with higher resolution and colors.
- All in one screen display dashboard.
- Icon based Interface.
- Improved ease of use.
- Superior Controls.
- Fully accessible and visible HMI orientation angle.

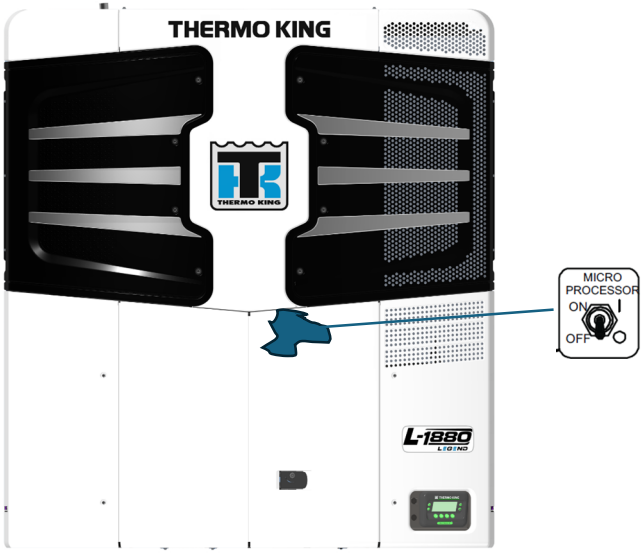
Master Isolator On/Off Switch

The master isolator On/Off switch is located above the engine compartment inside the right door. This switch supplies or removes all electrical power to the microprocessor control system and all electrical circuits.

The switch must be in the ON position for the unit to operate.

The switch should be placed in the OFF position only when servicing the unit or if the unit is not going to be operated for one week or longer. Placing the switch in the OFF position will help prevent parasitic battery voltage loss and a dead battery.

Figure 9. Master Isolator On/Off Switch



ARCHON-T Controller Display Overview

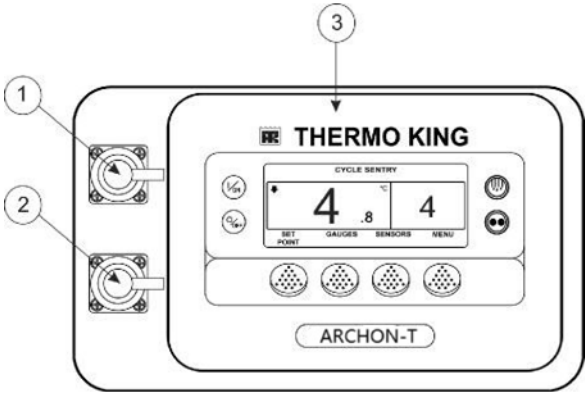
Thermo King has applied the Legend in computer technology to develop a device that controls temperature and unit function, and displays operating information quickly and accurately.

There is nothing complicated about learning to operate the ARCHON-T Controller, but you will find that a few minutes studying the contents of this manual will be time well spent.

⚠ CAUTION

Risk of Injury!
Do not operate the SR-3 Controller until you are completely familiar with its function.

Figure 10. ARCHON-T Single-Temperature Controller Display



1.	CargoWatch Download Port
2.	USB Port
3.	HMI Control Panel

Switching “ON” the Unit

1. On/Off Master Isolator Switch must be ON.
2. Press the I/ON Microprocessor key for one second.
3. Unit is switched “on”.

HMI Control Panel

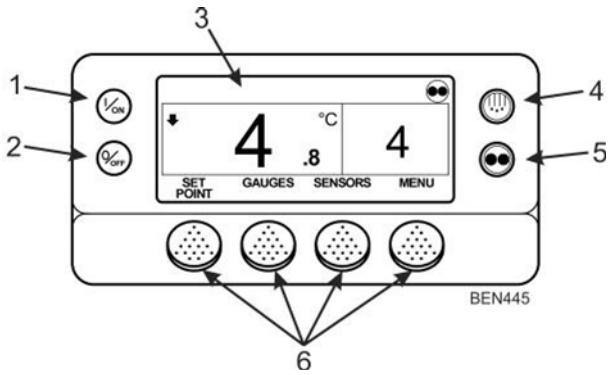
The HMI control panel has a display and eight touch sensitive keys. The display is capable of showing both text and graphics. The four keys on the left and right sides of the display are dedicated keys. The four keys under the display are “soft” keys. The function of “soft” keys change depending on the operation being performed. If a soft key is active, its function will be shown in the display directly above the key.

Control Panel Display

The display is used to supply unit information to the operator. This information includes setpoint, current box temperature operating information, unit gauge readings, system temperatures and other information as selected by the operator.

The default display is called the Standard Display. It is shown below and will be described in detail later in this chapter.

Figure 11. Control Panel Display and Keys



1.	On Key (Dedicated Key)
2.	Off Key (Dedicated Hard Key)
3.	Display
4.	Defrost Key (Dedicated Key)
5.	CYCLE-SENTRY/Continuous Mode Key (Dedicated Key)
6.	Soft Keys

Control Panel Keys

The four keys on the left and right sides of the display screen are “dedicated keys”. Their functions are listed below.

On Key: Used to turn the unit on. First the display will briefly show the Thermo King Logo and then the statement “Configuring System - Please Wait”. When the power-up sequence is complete, the display shows the Standard Display of box temperature and setpoint.

Off Key: Used to turn the unit off. First, the display will briefly show “System is Powering Down - Please Wait. Press On to Resume” and then “Off” will appear momentarily. When the power-down sequence is complete the display will be blank.

Defrost Key: Press this key to initiate a Manual Defrost cycle.

CYCLE SENTRY/Continuous Mode Key: Press this key to switch back and forth between the CYCLE-SENTRY mode and the Continuous Run mode. If OptiSet Plus is in use, it may not be possible to change the Mode.

The four “soft” keys under the display are multi-purpose keys. Their function changes depending on the operation being performed. If a soft key is active, the key function is shown in the display directly above the key. The keys are numbered from left to right, with Key 1 on the far left and Key 4 on the far right.

Typical soft key applications:

SETPOINT	GAUGES	SENSORS	MENU
EXIT	SELECT	BACK/NEXT	LOCK/UNLOCK
+ or -	YES/NO	HELP	CLEAR

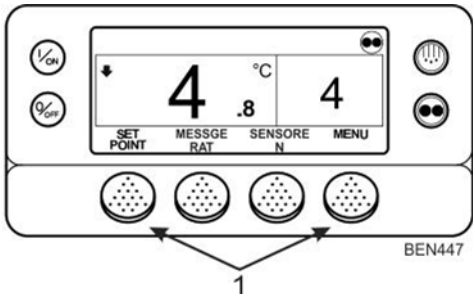
Operating the ARCHON-T Controller

Return to English at Any Time

Important: *If necessary, English and all other languages in the software version may be accessed from the Standard Display.*

When the Standard Display is shown press and hold the first and last soft key for five seconds as shown.

Figure 12. Standard Display (German Shown)

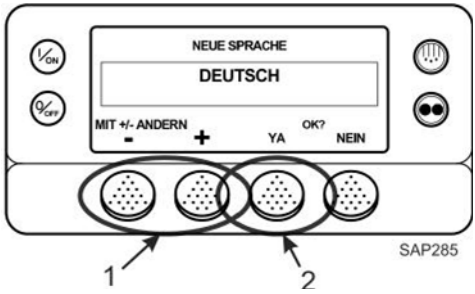


1. Press These Soft Keys

After five seconds the Language Menu will appear in the current language as shown. Press the + or - Keys to select the desired language. When the desired language is shown press the YES Key to confirm the choice.

Note: *All languages in the installed software can be selected using this method.*

Figure 13. + or - Keys, YES Key (German Shown)



1.	+ or - Keys
2.	YES Key

Alarm Codes

An alarm code is generated when the microprocessor senses an abnormal condition. Alarms direct an operator or service technician to the source of a problem.
Multiple alarms can be present at onetime. All generated alarms will be stored in memory until cleared by the operator. Document all alarm occurrences and report them to the service technician.

Important: *Always record any Alarm Codes that occur in the order that they occur as well as any other pertinent information. This information is extremely valuable to service personnel.*

Notes:
1. *Some alarms (3, 4, 74, 203, and 204) cannot be cleared in the Alarms Menu, they must be cleared in the Maintenance Menu or the Guarded Access Menu. Contact your supervisor or a Thermo King dealer about clearing those alarms.*
2. *In some cases alarms cannot be cleared, or cannot be cleared after they have occurred a specified number of times. If such is the case, these alarms must be cleared by service personnel. These are all explained in your Alarm Codes List.*

Info Log

Info Log events serve as a notice to take corrective action before a problem becomes severe. Maintenance items such as maintenance hourmeter timeouts are Info Log events. The TemperatureWatch screen is not disabled if only Info Log event(s) are active.

When the unit is turned on, the display will show the Thermo King Logo and then the “Configuring System” message. The Info Log event notification will appear on the Standard Display.

An Info Log event is indicated by an "information" notification on the display located next to the setpoint. The Info Log event icon will appear.

Check Alarm

A Check alarm is indicated by a “check alarm” notification on the display located next to the setpoint. The Check alarm icon will appear. This level of alarm serves as a notice to take corrective action before a problem becomes severe. The unit will run with Check alarms but some features and functions may be inhibited. If a Check alarm condition occurs while the unit is running, the alarm icon will appear in the display.

Prevent Shutdown Alarm

A Prevent Shutdown alarm is indicated by an “Alarm Active” enlarged red icon in the center of the display. The Alarm Active icon will appear. The unit will be temporarily shut down if a Prevent alarm is active. The unit will remain shut down for a timed restart interval or until the fault conditions are corrected and then restart. In some cases, the unit will restart with reduced performance to determine if continued operation is possible. If the alarm does not reoccur with reduced performance, the unit will return to full performance. In general, if the alarm condition reoccurs a defined number of times, the alarm is set as a Shutdown alarm and no further restarts are possible.

Note: *If the Restart After Shutdown feature in the Guarded Access Menu is set as DISABLED, the control system will regard all prevent shutdown alarms as standard shutdown alarms.*

Shutdown Alarm

A Shutdown alarm is indicated by an “Alarm Active” enlarged red icon in the center of the display. If a Shutdown alarm occurs while the unit is running, it will be indicated by all of the following:

- The Alarm Active icon will appear.

Shutdown alarms will force the unit into shutdown. The unit will remain in shutdown until the Shutdown alarm is manually cleared.

Loading and Inspection Procedures

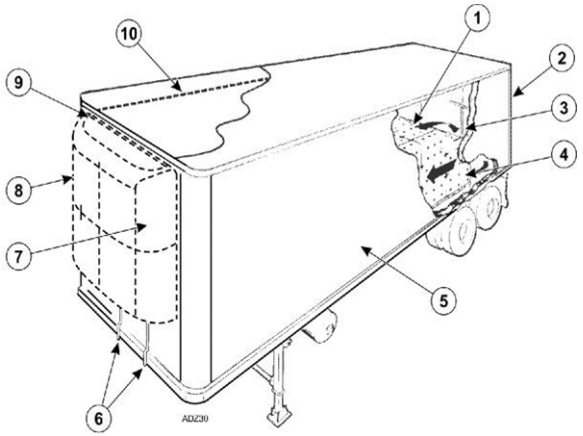
This chapter describes pre-loading inspections, loading procedures, post-loading procedures, post-loading inspections, and enroute inspections. Thermo King refrigeration units are designed to maintain the required product load temperature during transit. Follow these recommended loading and enroute procedures to help minimize temperature related problems.

Pre-Loading Inspection

1. Pre-cool products before loading. Note any variances on the manifest.
2. Inspect door seals and vent doors for condition and a tight seal with no air leakage.
3. Inspect the trailer inside and out. Look for:
   - Damaged or loose trailer skin and insulation.
   - Damaged walls, air ducts, floor channels, or “T” flooring.
   - Clogged defrost drain tubes.
   - Blocked return air bulkhead.
4. Verify that the setpoint temperature is correct for your cargo. Pre-cool the trailer as required.
5. Supervise product loading to ensure sufficient air space around and through the load.

Note: *If the warehouse is not refrigerated, operate the unit with the doors closed until cargo is ready to be loaded. Then turn off the unit, open the cargo doors and load cargo. When cargo is loaded, close trailer doors and restart the unit. The unit can be operated with the cargo box doors open if the truck is backed into a refrigerated warehouse and the dock door seals fit tightly around the trailer.*

Figure 15. Loading Considerations



1.	Correct load height (trailers without chutes)	6.	Clear defrost drains
2.	Tight doors and seals	7.	Good outside air circulation
3.	Good air circulation around load	8.	Unit inspection
4.	Proper cargo temperature (prior to loading)	9.	Tight seals
5.	Interior/exterior walls and insulation in good condition	10.	Maximum load height followed

Post-Loading Inspection

Post-loading inspections verify the cargo has been loaded properly. To perform a post-load inspection:

1. Inspect the evaporator outlets for blockage.
2. Turn the unit off before opening the cargo box doors to maintain efficient operation.

Note: *The unit can be operated with the cargo box doors open if the truck is backed into a refrigerated warehouse and the dock door seals fit tightly around the trailer.*

3. Perform a final check of the load temperature. If the load is above or below temperature, make a final notation on the manifest.

Important: *Cargo must be pre-cooled to proper temperature before loading. The unit is designed to maintain temperature, not cool an above-temperature load.*

4. Close or supervise the closing of the cargo box doors. Verify they are securely locked.
5. Verify the setpoint is at the temperature listed on the manifest.
6. If the unit was stopped, restart using the correct starting procedure. See the Operating Instruction chapter in this manual.
7. Start a manual defrost cycle 30 minutes after loading. See the Manual Defrost procedure in the manual.

Enroute Inspections

Complete the following enroute inspection every four hours. This will help minimize temperature related problems.

Inspection Procedure

1. Verify setpoint is correct.
2. Check the return air temperature reading. It should be within the desired temperature range.
3. Initiate a manual defrost cycle after each enroute inspection.

Inspection Troubleshooting

1. If a temperature reading is not within the desired temperature range, refer to the troubleshooting table. Correct problem as required.
2. Repeat the Enroute Inspection every 30 minutes until the compartment temperature is within the desired temperature range. Stop the unit if the compartment temperature is not within the desired temperature range on two consecutive 30 minute inspections, especially if the compartment temperature appears to be moving away from the setpoint.
3. Immediately contact the nearest Thermo King or Frigoblock Dealer or your company office.
4. Take all necessary steps to protect and maintain proper load temperature.

NOTICE

Cargo Loss!

Stop the unit if the compartment temperature remains higher than the desired temperature range from the setpoint on two consecutive 30 minute inspections. Contact the nearest Thermo King or Frigoblock Dealer or your company office immediately. Take all necessary steps to protect and maintain proper load temperature.

Table 6. Inspection Troubleshooting

Problem: A return air temperature reading is not within desired temperature range of the setpoint.	
Cause	**Remedy**
The unit has not had time to cool down to correct temperature.	Refer to the load log history. Look for above temperature load records, properly pre-cooled cargo compartment, length of time on road, etc. Correct as required. Continue monitoring return air temperature until the reading is within the desired temperature range of the setpoint. ***Note:*** *Ensure cargo is properly pre-cooled prior to loading onto trailer. If 'warm cargo' is loaded onto trailer and reefer is used to cool to setpoint this will result in longer time required to cool down to correct temperature and possibly plugging of evaporator with frost due to increased humidity in trailer compartment.*
The unit may have a low refrigerant charge.	Check the receiver tank sight glass for refrigerant level. If fluid is not showing in the receiver tank sight glass, the refrigerant charge may be low. A competent refrigeration technician is required to add refrigerant or repair the system. Contact the nearest dealer, authorized Service Center.
The unit is in defrost or has just completed a defrost cycle.	Monitor the return air temperature after the defrost cycle is completed to see if the temperature returns to the desired temperature range of the setpoint.
The evaporator is plugged with frost.	Initiate a manual defrost cycle. The defrost cycle will automatically terminate when complete. Continue monitoring the return air temperature until the reading is within the desired temperature range of the setpoint.

Table 6. Inspection Troubleshooting (continued)

Problem: A return air temperature reading is not within desired temperature range of the setpoint.	
Cause	**Remedy**
Improper air circulation in the cargo compartment.	Inspect the unit and cargo compartment to determine if the evaporator fan (2) are working properly circulation the air. Poor air circulation may be due to improper loading of the cargo, shifting of the load, or depending on unit, fan belt slippage or faulty electrical fans. Correct as required. Continue monitoring return air temperature until problem is corrected.
The unit did not start automatically.	Determine the cause for not starting. Correct as required. Continue monitoring return air temperature until reading is within desired temperature range of the setpoint.

Specifications

Refrigeration System

Contact your Thermo King dealer for refrigeration system service or maintenance.

Electrical Control System

Low Voltage	12.5Vdc to 51Vdc. 24Vac @ 1500rpm.
Battery	AGM Battery: 12 Volt, Capacity :75 AH, 800 CCA (30 sec at -18°C).
Fuses	See Fuses in “Electrical Maintenance”
Battery Charging (DCDC Converter)	Nominal output 14 volt, 40 amp max. 2 stage control with ambient temperature compensation. 14.4 volts <= 25°C, 13.8 volts > 25°C.

Electric Motor

Size / Type	Operating Speed	Voltage / Phase / Hertz	Full Load Amps
9.3 kW Induction	1450 RPM	400 Volt, 3 phase, 50 hertz	17.4 amps
9.5 kW Induction	1755 RPM	460 Volt, 3 phase, 60 hertz	15.4 amps

Standby Power Requirements

Power Supply Circuit Breaker	400/3/50 460/3/60	32 ampere 32 ampere
Power Cord Size	400/3/50 460/3/60	Up to 15m, 6mm2 Over 15m, 10mm2 Up to 15m, 10mm2 Over 15m, 16mm2

iTracKing

	Domestic	International
Platform	AIR780EG	SIM7600G-H
GSM/GPRS	4G CAT1, AIR780EG	2G/3G/4G(CAT4), SIM7600G-H
GPS	AIR780EG	SIM7600G-H
Bluetooth	Version 4.0 Bluetooth Classic /Bluetooth Low Energy (BLE)	Version 4.0 Bluetooth Classic /Bluetooth Low Energy (BLE)
Serial Ports	Single channel CAN Single channel 485 Single channel 232	Single channel CAN Single channel 485 Single channel 232
Operating voltage	9 to 36 Vdc	9 to 36 Vdc
Backup Battery	None	None
Environmental Storage Temperature	-40 to +85 ℃	-40 to +85 ℃

Jump Starting

If unit battery is discharged or run down, unit may be jump started using jumper cables and another battery or vehicle. Consider the following precautions and be careful when jump starting a unit.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

A battery can be dangerous. A battery contains a flammable gas that can ignite or explode. A battery stores enough electricity to burn you if it discharges quickly. A battery contains battery acid that can burn you. Always wear goggles or safety glasses and personal protective equipment when working with a battery. If you get battery acid on you, immediately flush it with water and get medical attention.

⚠ CAUTION

Hazard of Explosion!

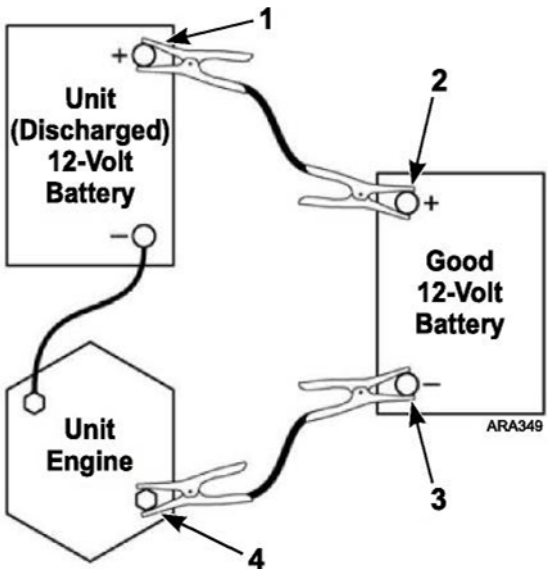
Unhook the semi tractor from the trailer before using the tractor to jump start the unit on the trailer. The negative ground circuit is complete when the tractor is hooked to the trailer. This can cause dangerous sparks when the positive connection is made at the battery.

Important: *Make sure to use a 12 volt battery to jump start unit. If you are using a vehicle, make sure it has a 12 volt battery with a negative ground system. Do not use a "hot shot" booster device or a 24 volt source.*

Read and understand the following procedure completely before connecting and jumper cables. Use good jumper cables made with #2 gauge (or larger) cables.

1. Verify unit is turned off. If you are using a vehicle, verify its ignition is also turned off.
2. Open front doors on unit. Battery is located to the left of engine.
3. Check discharged battery to verify it is not damaged or frozen. Do not jump start a damaged or frozen battery. Check vent caps to verify they are tight.
4. Identify positive (+) and negative (–) battery terminals.
5. Remove red cover from positive (+) battery terminal on the unit's battery.

Figure 16. Sequence for Connecting Jumper Cables



1.	Positive (+) Terminal on Unit Battery
2.	Positive (+) Terminal on Good Battery
3.	Negative (–) Terminal on Good Battery
4.	Starter Mounting Bolt on Unit Engine

6. Connect the red positive (+) jumper cable to the positive (+) battery terminal on the unit's battery. Do not let the other end of the jumper cable touch anything that conducts electricity.

⚠ WARNING

Hazard of Explosion!

Allowing the positive (+) jumper cable to short to ground can produce dangerous sparks.

7. Connect the other end of the red positive (+) jumper cable to the positive (+) battery terminal on the good battery.

8. Connect the black negative (–) jumper cable to the negative (–) battery terminal on a good battery. Do not let the other end of the jumper cable touch anything that conducts electricity.
9. Connect the black negative (–) jumper cable to the lower starter mounting bolt on the unit's engine.

10. If you are using a vehicle to jump start the unit, start the vehicle and let it run for a few minutes. This will help charge the discharged battery.

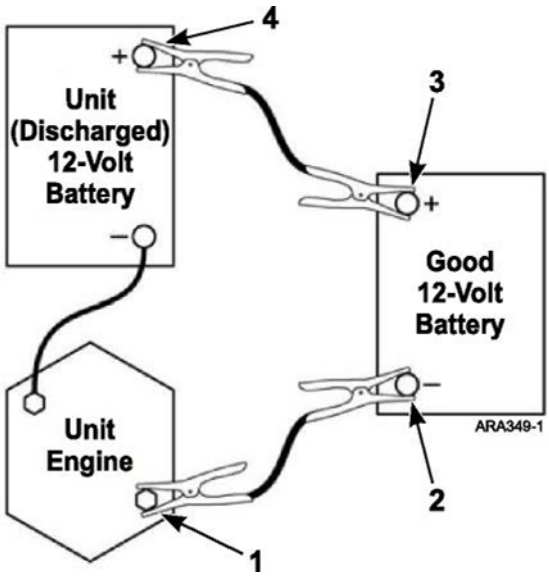
⚠ DANGER

Risk of Injury!

Keep your hands, clothing, and tools clear of fans and/or belts when working on a unit that is running or when opening or closing compressor service valves. Loose clothing might entangle moving pulleys or belts, causing serious injury or possible death.

11. Turn the unit on and let it start automatically or start it manually. If the unit will not crank or start, contact a qualified technician.
    Note: *Some units with microprocessors will show an alarm code and will not try to start the unit until battery voltage is above 10 volts.*
12. After the unit starts, remove the jumper cables in reverse order: black negative (–) from the unit starter mounting bolt, black negative (–) from the good battery, red positive (+) from the good battery, and red positive (+) from the unit battery (that was discharged).

Figure 17. Sequence for Disconnecting Jumper Cables



1.	Starter Mounting Bolt on Unit Engine
2.	Negative (–) Terminal on Good Battery
3.	Positive (+) Terminal on Good Battery
4.	Positive (+) Terminal on Unit Battery

Warranty

Terms of the Thermo King Trailer Unit warranty are available on request from your local Thermo King dealer.

THERMO KING

Maintenance Inspection Schedule

Inspection and Service Intervals

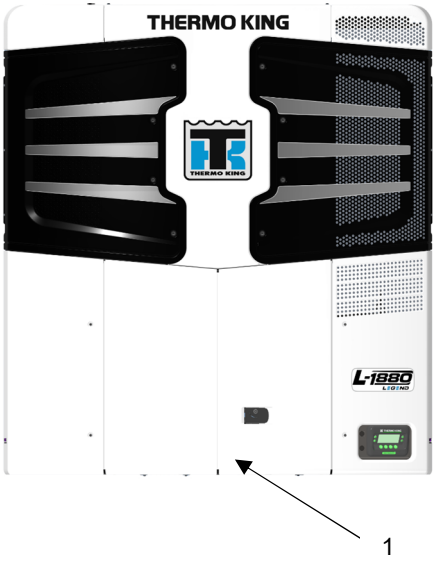
Inspection and Service intervals are determined by the number of unit operating hours and by the age of the unit. Examples are shown in the table below. Your Dealer will prepare a schedule to suit your specific needs.
Service Record: Each inspection and service performed should be recorded on your Dealer Service Record.

Interim Inspection	Complete PM	Full Service
A Service Every 1500 hours or every 12 months (whichever comes first)	B Service Every 3000 hours or every 24 months (whichever comes first)	C Service Every 6000 hours or every 48 months (whichever comes first)

Pretrip	Inspect/Service These Items
•	Run Pretrip Test
•	Check fuel supply.
•	Check and adjust coolant/engine oil levels.
•	Listen for unusual noises, vibrations, etc.
•	Visually inspect unit for fluid leaks. (fuel, coolant, oil and refrigerant).
•	Visually inspect unit for damaged, loose or broken parts (includes air ducts and bulkheads if so equipped).
•	Visually inspect belt.
Note: *For further best practices, please go to Thermo King Transport Refrigeration Solutions | Asia Pacific.*	

Serial Number Locations

Figure 18. Serial Number Location



1. Located on inside door frame

Figure 19. Serial Number Plates

THERMO KING

Recover Refrigerant

At Thermo King®, we recognize the need to preserve the environment and limit the potential harm to the ozone layer that can result from allowing refrigerant to escape into the atmosphere.

We strictly adhere to a policy that promotes the recovery and limits the loss of refrigerant into the atmosphere.

In addition, service personnel must be aware of local regulations concerning the use of refrigerants and the certification of technicians. For additional information on regulations and technician certification programs, contact your local THERMO KING dealer.

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 www. thermoking.com or www.tranetechnologies.com.