Installation Manual

Truck Edition
V-500 Series

TK 51857-1-IM (Rev. 3, 01/05)

Introduction

This manual was written to assist with the installation of a **Thermo King V-500** condenser unit and a **ES-500** remote evaporator onto trucks designed and built for refrigerated applications. Due to its complexity, you should not attempt this installation unless you:

- Are an experienced mechanic.
- Can safely lift 34 kilos (75 lbs.)
- Are certified or trained in the repair and maintenance of transport refrigeration systems.
- Have a basic understanding of electricity and electrical wiring.
- Have the necessary tools and equipment to complete the installation
- Have a truck body designed and built to meet the requirements of this installation.

This manual is published for informational purposes only. Thermo King makes no representations warranties express or implied, with respect to the information recommendations and descriptions contained herein. Information provided should not be regarded as all-inclusive or covering all contingencies. If further information is required, Thermo King Corporation Service Department should be consulted.

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.

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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 Federal 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.

R-404A/R-134a

WARNING: Use ONLY Polyol Ester based refrigeration compressor oil (TK P/N 203-513) in R-404A and R-134a units.

DO NOT use Polyol Ester based oil in standard Thermo King units.

DO NOT mix Polyol Ester and standard synthetic compressor oils.

Keep Polyol Ester compressor oil in tightly sealed containers. If Polyol Ester oil becomes contaminated with moisture or standard oils, dispose of properly—DO NOT USE!

WARNING: When servicing Thermo King R-404A and R-134a units, use only those service tools certified for and dedicated to R-404A or R-134a refrigerant and Polyol Ester compressor oils. Residual non-HFC refrigerants or oils will contaminate R-404A and R-134a systems.

CAUTION

Thermo King condenser units and remote evaporators are shipped with a 35 kPa (5 psi) holding charge of Helium. This holding charge may be safely vented into the atmosphere.

CAUTION: SEVERE COMPRESSOR DAMAGE will result from operating the unit before completing the installation which includes: installing the components, releasing the holding charge, connecting refrigeration lines, leak testing, evacuation, clean-up and charging of the system with the proper amount and type of refrigerant.

Safety Precautions

The ⚠ symbol appears next to a point that is particularly important:

⚠ ***DANGER: Addresses a circumstance that, if encountered, will lead to death or serious injury.***

⚠ ***WARNING: Addresses a circumstance that, if encountered, might lead to death or serious injury.***

⚠ ***CAUTION: Addresses a circumstance that, if encountered, may cause damage to equipment or minor injury.***

⚠ ***DANGER: Never operate the unit with the discharge valve closed as it could cause the compressor to explode, causing death or serious injury.***

⚠ ***DANGER: Never apply heat to a sealed refrigeration system or container because it could explode, causing death or serious injury.***

⚠ ***DANGER: Fluorocarbon refrigerants, in the presence of an open flame or electrical short, produce toxic gases that are severe respiratory irritants capable of causing death.***

⚠ ***DANGER: Be careful when working with a refrigerant or refrigeration system in any enclosed or confined area with a limited air supply (i.e., a trailer, container or the hold of a ship). Refrigerant tends to displace air and can cause oxygen depletion which may result in death by suffocation.***

⚠ ***WARNING: Always wear eye protection such as goggles or safety glasses. Refrigerant liquid, refrigeration oil, and battery acid can permanently damage the eyes (see First Aid under Refrigeration Oil).***

⚠ ***WARNING: Keep your hands away from fans when the unit is running. This should also be considered when opening and closing the compressor service valves.***

⚠ ***WARNING: Make sure gauge manifold hoses are in good condition. Never let them come in contact with a belt, fan motor pulley, or any hot surface.***

⚠ ***WARNING: Make sure all mounting bolts are tight and are of correct length for their particular application.***

Safety Precautions

WARNING: Never drill holes in the unit unless absolutely necessary. Holes drilled into the unit may weaken structural components. Holes drilled into electrical wiring can cause fire or explosion.

WARNING: When using ladders to install or service refrigeration systems, always observe the ladder manufacturer's safety labels and warnings. A work platform is the recommended method for installations.

WARNING: Exposed coil fins are very sharp and can cause painful lacerations.

Refrigerant

WARNING: Although fluorocarbon refrigerants are classified as safe refrigerants, certain precautions must be observed when handling them or servicing a unit in which they are used. When released to the atmosphere in the liquid state, fluorocarbon refrigerants evaporate rapidly, freezing anything they contact.

First Aid

- FROSTBITE: In the event of frost bite, the objectives of First Aid are to protect the frozen area from further injury, to warm the affected area rapidly and to maintain respiration.
- 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 lukewarm water. Do not apply heat. Remove contaminated clothing and shoes. Wrap burns with dry, sterile, bulky dressing to protect from infection/injury. Get medical attention. Wash contaminated clothing before reuse.
- INHALATION: Move victim to fresh air and use CPR or mouth-to-mouth ventilation, if necessary. Stay with victim until arrival of emergency medical personnel.

Refrigeration Oil

WARNING: Avoid refrigeration oil contact with the eyes. Avoid prolonged or repeated contact of refrigeration oil with skin or clothing. Wash thoroughly after handling refrigeration oil to prevent irritation.

First Aid

In case of eye contact, immediately flush with plenty of water for at least 15 minutes. CALL A PHYSICIAN. Wash skin with soap and water.

Tips for a Successful Installation

- Read the Installation Manual to understand how components are to be located and installed.
- Verify the tools and special equipment required for the installation are available and in good operating condition.
- The vehicle's cargo box must be designed and built for refrigeration applications with insulated walls, ceilings and floors. All cargo box doors must close and seal tightly.
- The front wall of the cargo box must be able to adequately support the weight of the V-500 condenser. Additional supports may be required.
- The compartment ceiling of the cargo box must be able to adequately support the weight of the ES-500 evaporator. Additional supports may be required.
- Check clearance for tilt cab applications before installing unit.
- Verify all measurements before drilling any mounting holes in the vehicle.
- Verify there is no interference with any OEM electrical wiring, internal supports, etc. before drilling any mounting holes in the vehicle.
- Provide protection to the vehicle's finish to prevent damage during the installation process.
- Install all components with correct hardware and tighten securely.
- All access holes through the cargo box must be sealed with silicone caulking to prevent moisture or air leakage.
- When disassembling components for installation, be sure to reassemble correctly with proper hardware and tighten securely.
- Verify the evaporator air outlet is facing the correct direction for proper airflow before installing.
- The rear of the evaporator must be installed a minimum distance of 101.1mm (4.00 in.) from the cargo box wall to allow for refrigerant hose and drain hose connections.
- Always keep refrigeration system fittings capped and sealed until the installation of the refrigeration hoses.
- Only cut refrigerant hoses with the correct hose cutting tool (204-677). NEVER USE A SAW!
- Always use the correct hose fitting tool (204-1045 or 204-1128) when assembling refrigerations hoses.
- Always lubricate hose fittings with refrigerant oil when assembling to refrigeration hoses.
- Always install and lubricate O-rings with refrigerant oil when connecting refrigeration hose fittings to component connections.
- Refrigeration hoses should be installed onto components in such a way as to allow for vibration and movement.THEY SHOULD NEVER BE STRETCHED TIGHT!
- All refrigerations connections should be tightened securely using two wrenches.
- Electrical and refrigeration hoses should be carefully routed from the vehicle's engine compartment, up the exterior wall of the cargo box, and into the cargo box. The fabrication and installation (by the installer) of protective covers for these components is recommended.
- Always use protective grommets when routing electrical harnesses or refrigeration hoses through sheet metal floors or walls.

Tips for a Successful Installation

- Always keep electrical harness and refrigeration hoses from rubbing or chafing against sharp metal objects or rotating components.
- Always reinstall the condenser's filter drier in the direction indicated by the arrow.
- Always install the orifice screen correctly into the expansion valve of the evaporator.
- Superlube or equivalent should be applied to all electrical connections.
- All electrical harnesses should be neatly routed and secured with band wraps or clamps.
- Evaporator heater resistance wires must be installed as far as possible into the drain hoses. NEVER CUT HEATER RESISTANCE WIRES!
- Evaporator drain hoses should be installed and routed correctly with no kinks or sharp bends to provide for proper drainage.
- Flush compressor with oil (203-515).
- The In-Cab controller should only be mounted inside the vehicle. It should be accessible and visible from the drivers position while not interfering with the driver's mobility, visibility or access to the vehicle controls and instruments.
- Electrical power to the In-Cab controller must be connected to a fused circuit of the vehicle to provide power only when the ignition switch is in the ON position.
- Verify In-Cab controller is set to the proper voltage for your application (12/24 Vdc) and the desired temperature scale (C or F).
- Verify the main power harness is connected to the vehicle's battery positive and negative posts.
- The solenoid valves must be in the OPEN position during evacuation procedures. The valves must be held open manually using special magnet tools (204-1074) designed for this purpose.
- Thermo King Evacuation Station P/N 204-725 and Evacuation Station Operation and Field Application Instructions (TK-40612) is required.
- The oil in the evacuation station vacuum pump should be changed after each use.
- Verify the refrigeration system is charged with the correct type and amount of refrigerant for your application.
- Verify the refrigeration system has been checked for leaks by using an electronic leak detector.

ELECTRIC STANDBY MODELS

NOTE: Thermo King recommends a 20 amp fused power source for electric standby operation.

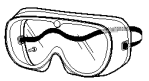
- Verify the receptacle box is wired for the correct voltage for your application.
- The standby receptacle box should be installed securely to the cargo box. It should be easily accessible while not interfering with the driver's visibility or tilt cab operation.

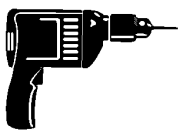
Required Tools

1. Protective Eye Wear
2. Drill
3. Drill Bits
4. Tape Measure
5. Hand Saw
6. File
7. Mechanics Tools
8. Torque Wrench
9. Wire Crimper
10. Hose Cutting Tool (204-677)
11. Hose Fitting Tools (204-1045 and 204-1128)
12. Voltmeter
13. Silicone Caulk
14. Manifold Set
15. Evacuation Station
16. Reclaiming Station
17. Electronic Leak Detector
18. Nitrogen
19. Refrigerant and Scale
20. Overhead Crane or Hoist
21. Work Platform (Recommended)
22. Installation Manual
23. Solenoid Valve Magnet (204-1074)

IMPORTANT: Equipment such as scales, gauges, and torque wrenches should be in good working condition and routinely calibrated to assure accurate readings.

Required Tools

1 

2 

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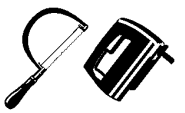
5 

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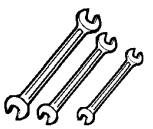
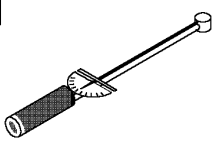
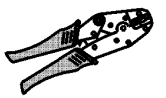
7 

8 

9 

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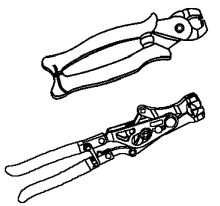
11 

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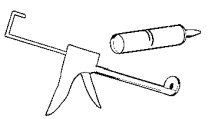
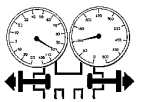
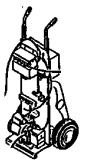
13 

14 

15 

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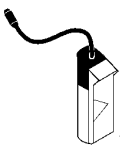
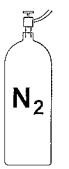
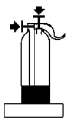
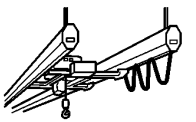
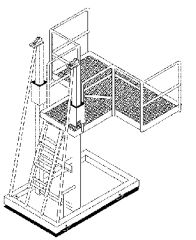
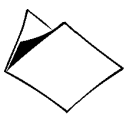
17 

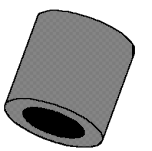
18 

19 

20 

21 

22 

23 

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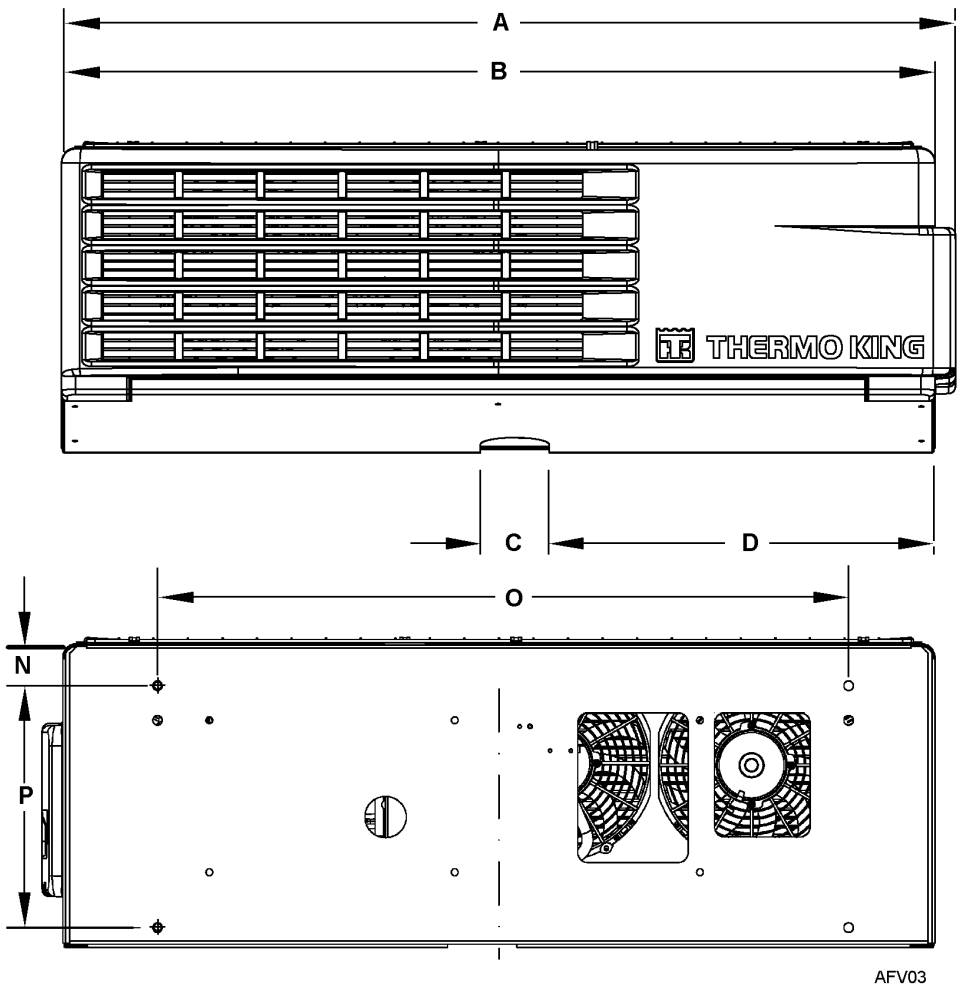
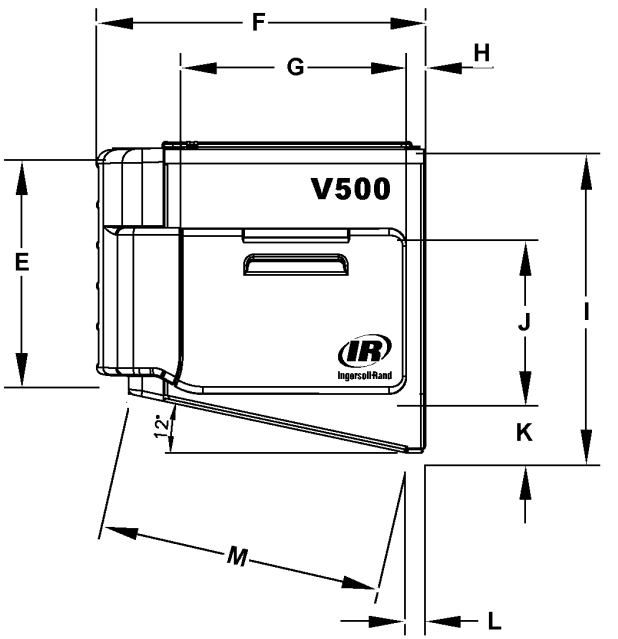
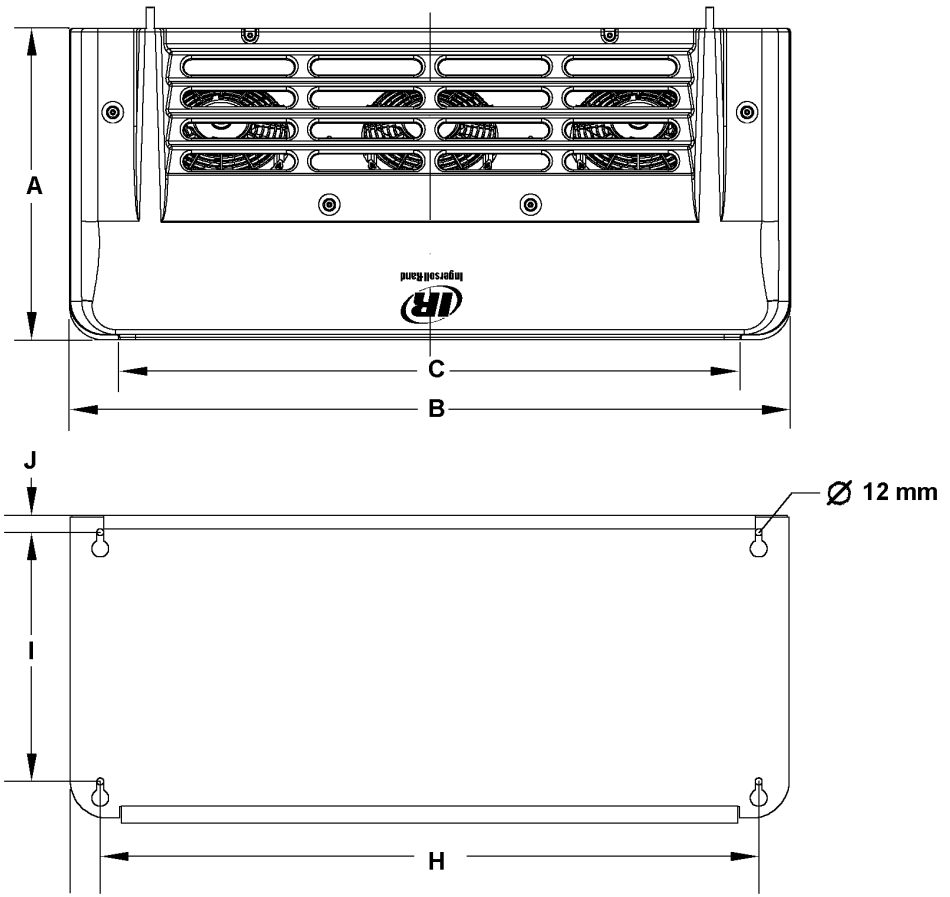
V-500 Dimensions

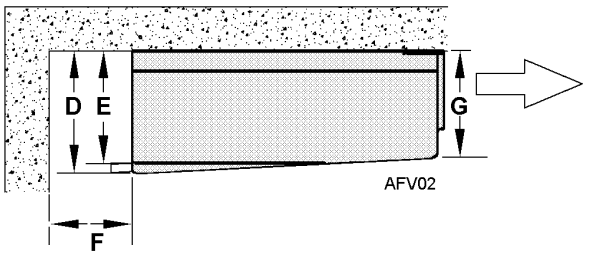




A.	50.8 in. (1292 mm)	I.	17.6 in. (448 mm)
B.	49.6 in. (1262 mm)	I.	9.4 in. (239 mm)
C.	3.9 in. (100 mm)	K.	3.3 in. (85 mm)
D.	21.9 in. (557 mm)	L.	1.0 in. (28 mm)
E.	12.9 in. (329 mm)	M.	16.0 in. (410 mm)
F.	18.7 in. (475 mm)	N.	2.7 in. (69 mm)
G.	12.8 in. (326 mm)	O.	39.00 in. (1000 mm)
H.	1.0 in. (27.5 mm)	P.	13.7 in. (350 mm)

ES-500 Dimensions





A.	22.0 in. (562 mm)	F	6.0 in. (150 mm)
B.	51.0 in. (1304 mm)	G.	7.5 in. (192 mm)
C.	44.0 in. (1120 mm)	H.	47.00 (11.90 mm)
D.	8.5 in. (220 mm)	I.	18.00 in. (450 mm)
E.	8.0 in. (202 mm)	J.	1.00 in. (30 mm)

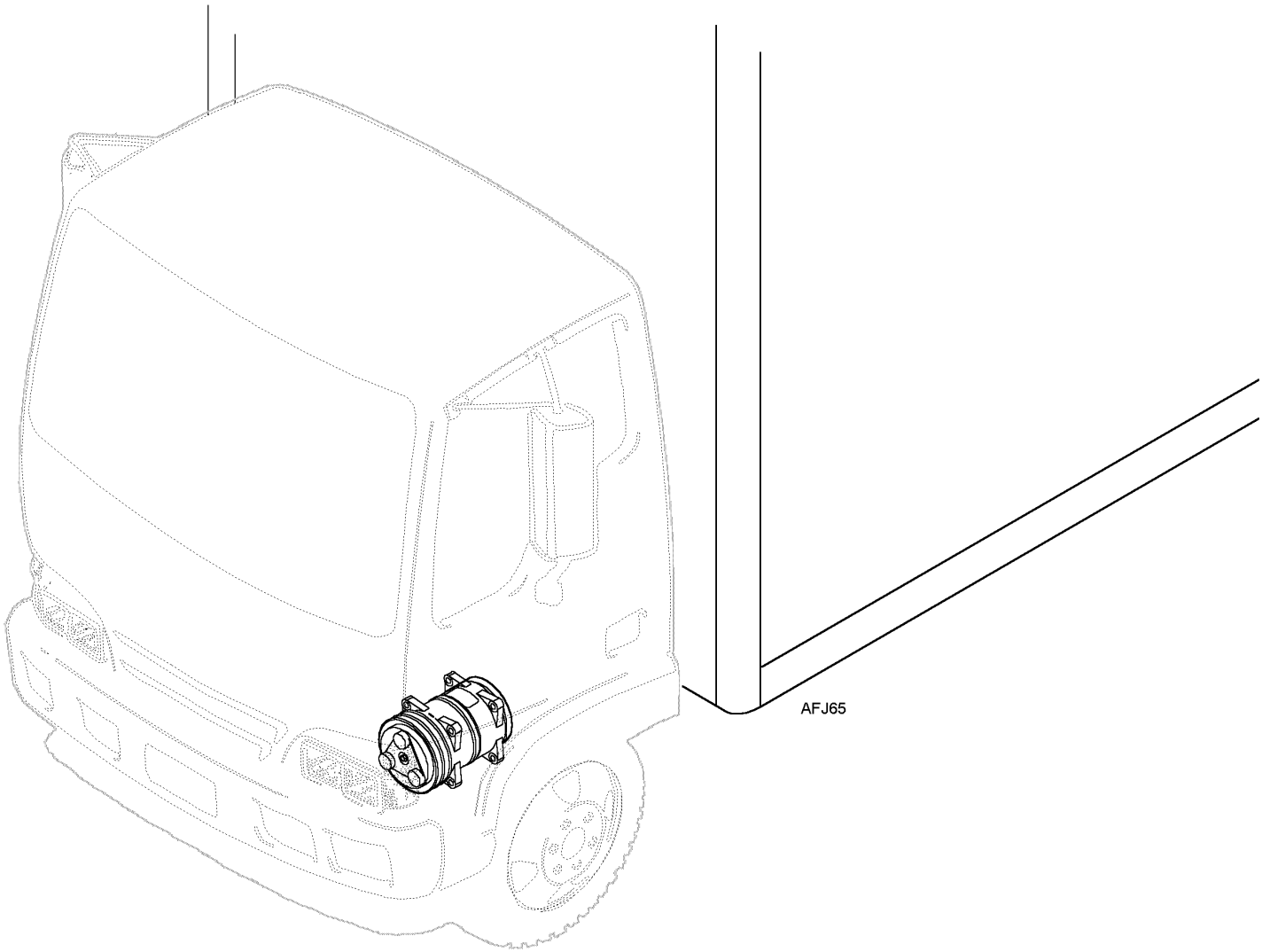
Installation of Vehicle Powered Compressor

CAUTION: Always disconnect the vehicle's negative (-) battery cable to prevent damage to equipment or personal injury during the installation of the compressor.

IMPORTANT: Always confirm installation kit is correct for your vehicle before preceding.

1. Install compressor in the vehicle by following the instructions included in the compressor kit.

Installation of Vehicle Powered Compressor



Installation of V-500 Condenser

Important Installation Instructions

An improperly installed V-500 condenser could lead to serious injury! The front wall of the truck box must be structurally strong enough to support the weight of the condenser. Additional supports may be required. All channels, brackets, and mounting hardware must be able to safely support the weight of the condenser.

Weights (approximate)

- ***without electric standby150 lbs. (68 kg.).***
- ***with electric standby 309 lbs. (140 kg.).***

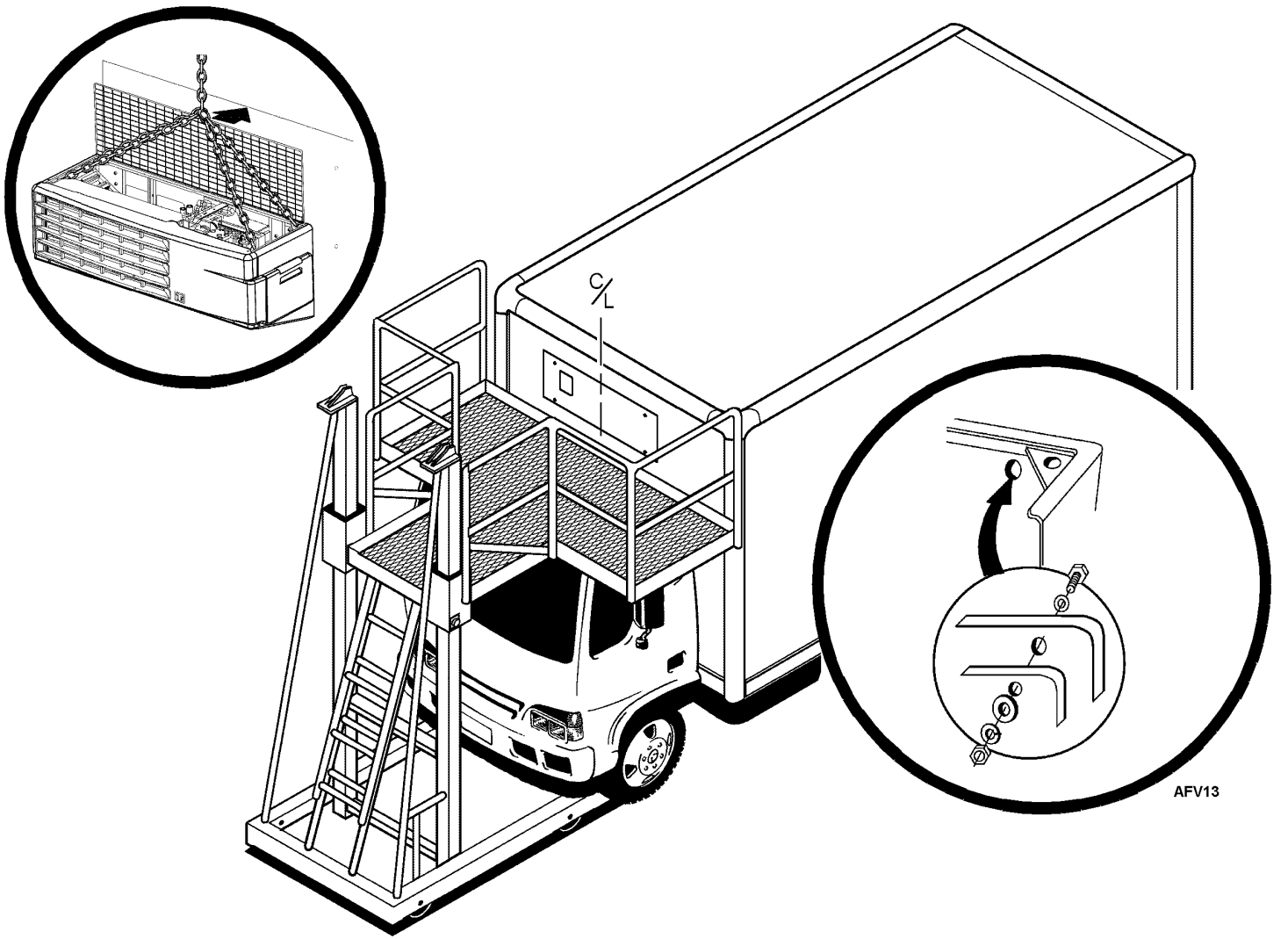
All channels, brackets, and mounting hardware must be able to safely support the weight of the condenser.

- The use of a safe working platform for installing the V-500 condenser is recommended.
- The use of a safe lifting device for installing the V-500 condenser is recommended.
- All mounting hole locations and hole diameters must be correct to properly install the V-500 condenser.
- Mounting hardware length is based on your specific installation and is to be supplied by the installer.
- All holes drilled into the truck box must be sealed with silicone sealant to prevent moisture and air from entering the box.
- Never install any compressible washers or other materials between the V-500 condenser and the truck box.

Installation of V-500 Condenser

1. Locate the center line **(C/L)** on the truck box.
2. Position the supplied V-500 condenser template onto the truck box.
3. Mark and drill four 1/2 in. (14 mm) condenser mounting holes.
4. Mark and cutout the 5.4 in. x 7.0 in. (138.4 mm x 180 mm) refrigeration tubing access opening. Remove any sharp edges with a file. Remove template.
5. Use an appropriate lifting device to raise the V-500 condenser into position.
6. Install four 1/2 in. (14 mm) Grade 5 mounting bolts, washers and locking nuts**.** Tighten nuts securely and torque to 81.4 N•m (60 ft-lb).
7. Seal all mounting holes with silicone sealant.
8. Route the compressor/battery harness to the engine compartment.
9. Route the evaporator harness into the cargo box.

Installation of V-500 Condenser



Installation of ES-500 / ES-500 MAX Evaporator

DANGER: An improperly installed ES-500 evaporator could lead to serious injury! Additional supports may be required. All mounting hardware must be able to safely support the weight of the condenser.

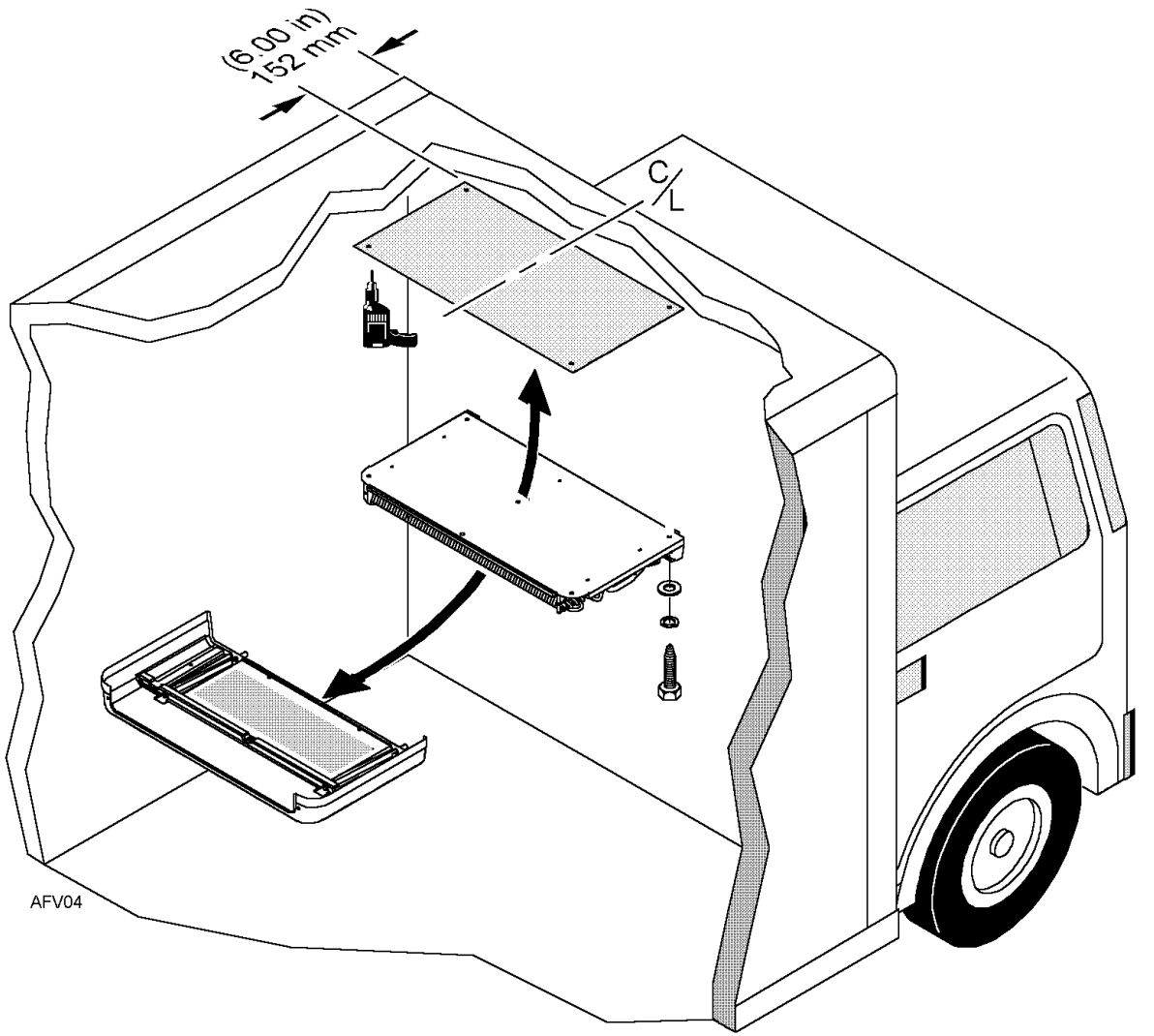
Weights (approximate)

- ***ES-500 / ES-500 MAX 56 lbs. (25.5 kg)***

1. Locate and mark the center line **(C/L)** of the compartment ceiling.
2. Mark a line a minimum of 6.00 in. (152 mm) from the compartment rear wall. This distance is required to allow access for refrigerant hose and drain hose connections.
3. Position the template onto the ceiling (with the air outlet facing the correct direction for proper airflow) and mark the mounting locations.
4. Drill four .472 in. (12 mm) mounting holes in the ceiling and install mounting hardware. Do not tighten hardware.
5. Remove the cover from the evaporator to access the mounting holes.
6. Install the evaporator onto the mounting hardware in ceiling and tighten securely.

NOTE: The cover will be reinstalled later.

Installation of ES-500 / ES-500 MAX Evaporator



Fabricating Refrigeration Hoses

TK 2000 Assembly System

The TK 2000 System is designed for assembly with Multi-Refrigeration hose only.

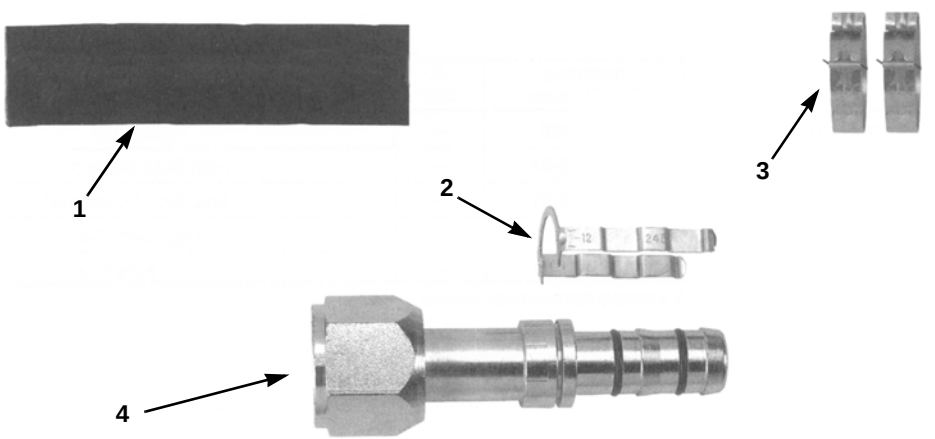
The benefits are virtually endless:

- No Guess work
- No Leaking Crimps
- No Power Supply Needed
- As easy to use as a pair of Pliers
- Easy to use in confined areas

Assembly Materials Checklist

- Hose Fitting Tools (204-1045 and 204-1128)
- Hose Cutting Tools (204-677)
- TK 2000 Multi-Refrigerant Hose
- Nipple Assembly
- Appropriately Sized Clips and Cage

NOTE: The two black O-rings on the nipple assembly are of a specific rubber compound and size. They should not be removed or replaced.



1.	Hose
2.	Cage
3.	Clips
4.	O-ring (internal)

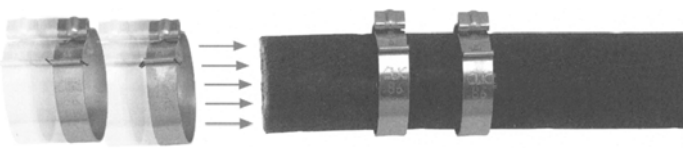
Fabricating Refrigeration Hoses

Cut the Hose

1. Cut the hose to proper length with an appropriate cutting tool. Hand-held hose cutter (204-677) has been specially designed for cutting all non-wire reinforced hose, such as TK 2000 Multi-refrigerant hose. Be sure the cut is made square to the hose length.

Slip on Two Clamps

2. Install two proper- size clips onto the cut end of the hose. Orientation of the clips does not affect the performance of the connection. However for ease of assembly, both clips should have the same orientation.

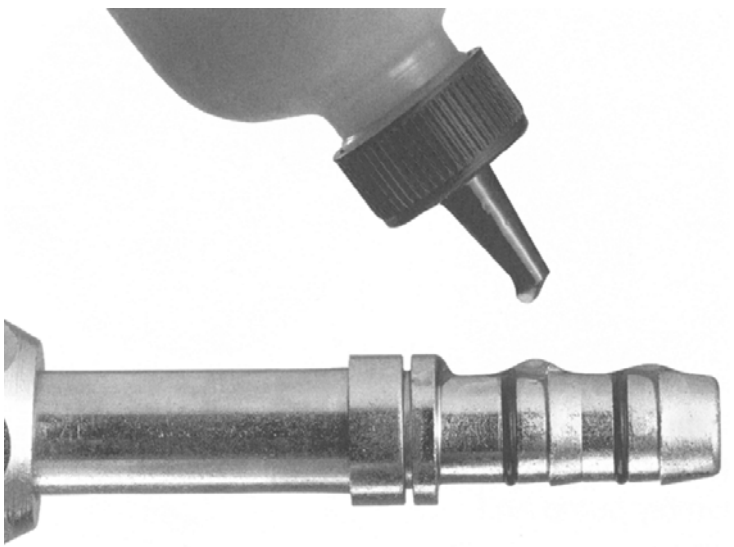


CAUTION: Failure to slide the clips over the hose at this time will require the clips to be stretched over the hose or fitting later. This may permanently damage the clip

Fabricating Refrigeration Hoses

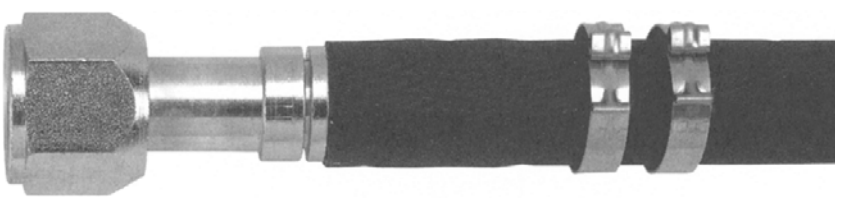
Oil the Nipple

3. Lubricate the nipple with a generous amount of the refrigeration or A/C system's compressor lubricating oil. This MUST be done to lower the force of nipple insertion.



4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion.

NOTE: Be sure to wipe excess oil from the nipple and hose.



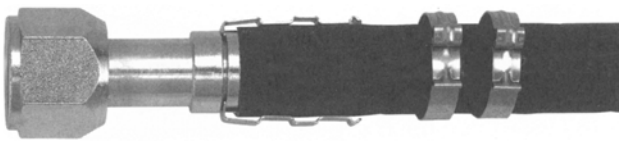
Fabricating Refrigeration Hoses

Snap on the Cage.

5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been carefully installed in the cage grove, the cage will be able to rotate in the grove. This step must be performed to ensure:
   - The clips will be located over the O-ring on the nipple.
   - The connection will be compatible with the connection's pressure rating.

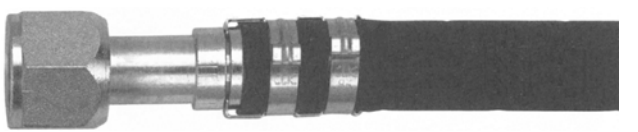
Slide the Clips

6. Slide the clips over the cage arms and into the channels on each arm.



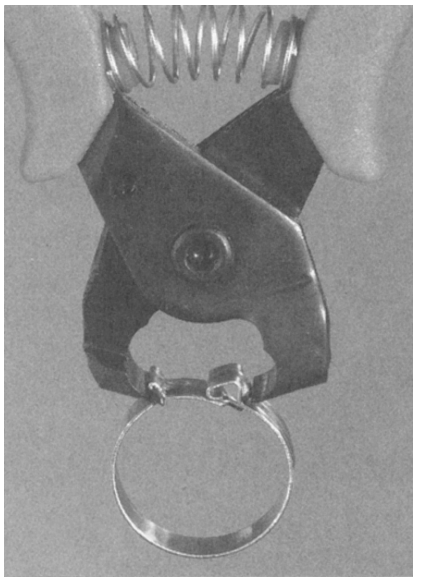
Close the Clips

7. Use the fitting tool (204-1045 or 204-1128) to close the clips. The pliers should be positioned squarely on the clip connection points and should remain square during the closing of the clip.



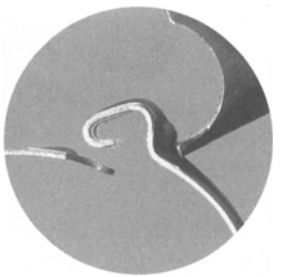
NOTE: For easiest assembly, the clasp should be closed between the cage arms.

Fabricating Refrigeration Hoses

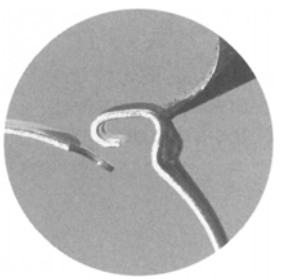


Nose of the pliers should be firmly seated under the assembly bump and lock latch.

If the pliers are not kept square during closing the clip, the clasp may have an offset. Use the piers to correct the clasp alignment.



Correct

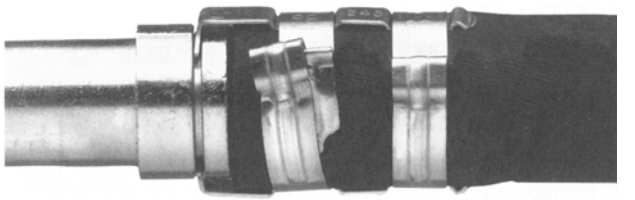


Incorrect

Fabricating Refrigeration Hoses

CAUTION: TK 2000 Speedy Clip System components should not be reused. Failure to follow these instructions and/or the use of TK 2000 Speedy Clip System hose with fittings supplied by other manufactures could result in sudden or unintended escape of refrigerant gases. Personal injury and/or violations of EPA regulations may occur as a consequence.

NOTE: Thermo King recommends adherence to all guidelines, including EPA guidelines concerning the service of refrigerant systems.



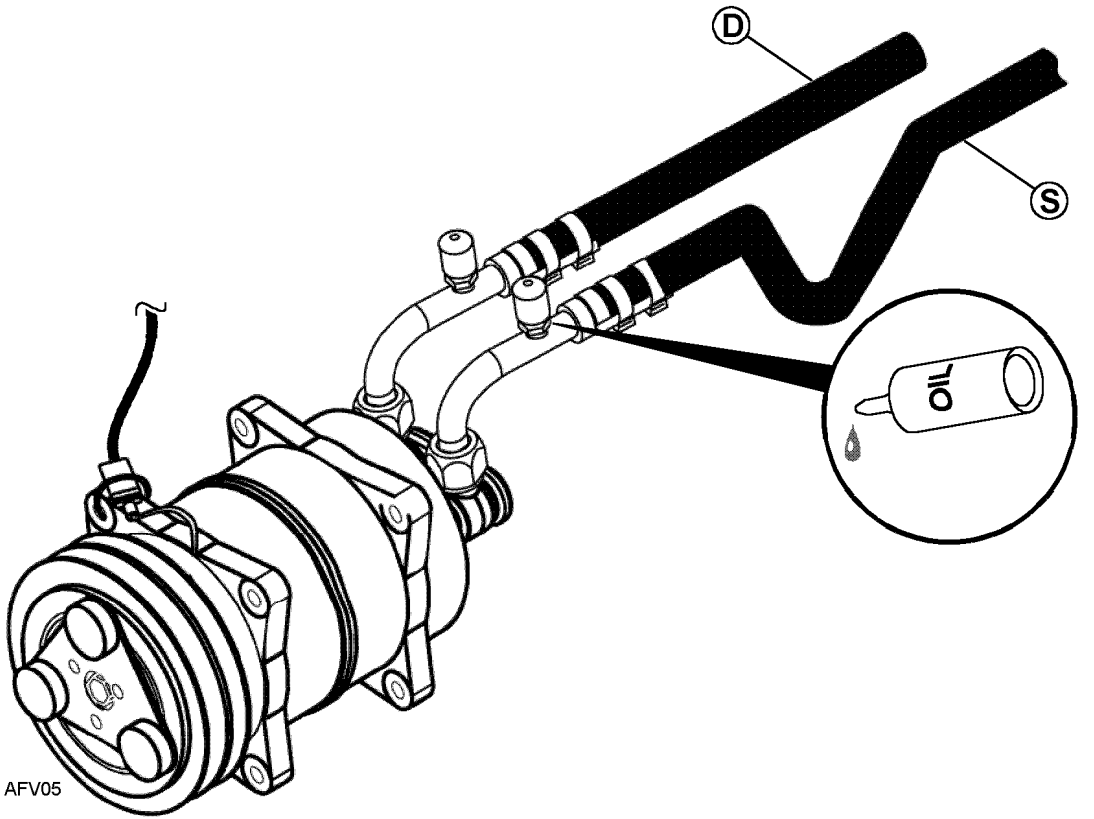
Improperly Installed Clip

Installation of Hoses to the Vehicle’s Compressor

IMPORTANT: Always keep refrigeration hoses from rubbing or chafing against sharp metal objects or rotating components. Avoid tight bends and allow slack for movement.

1. Fabricate suction and discharge refrigeration hoses.
2. Place an O-ring on each compressor fitting.
3. Lubricate the compressor refrigeration fittings and O-rings with refrigerant oil.
4. Provide an oil trap and connect the **SUCTION** hose to the compressor fitting marked **S**. Pour the remaining refrigerant oil into the suction hose.
5. Connect the **DISCHARGE** hose to the fitting marked **D**.
6. Use two wrenches and tighten all refrigeration hose fittings.
7. Connect the compressor harness **(CLU-03)** to the mating connector. Secure the harness to the compressor to avoid damages to the wire caused by the vibrations.

Installation of Hoses to the Vehicle’s Compressor



Installation of the Jet Cool System

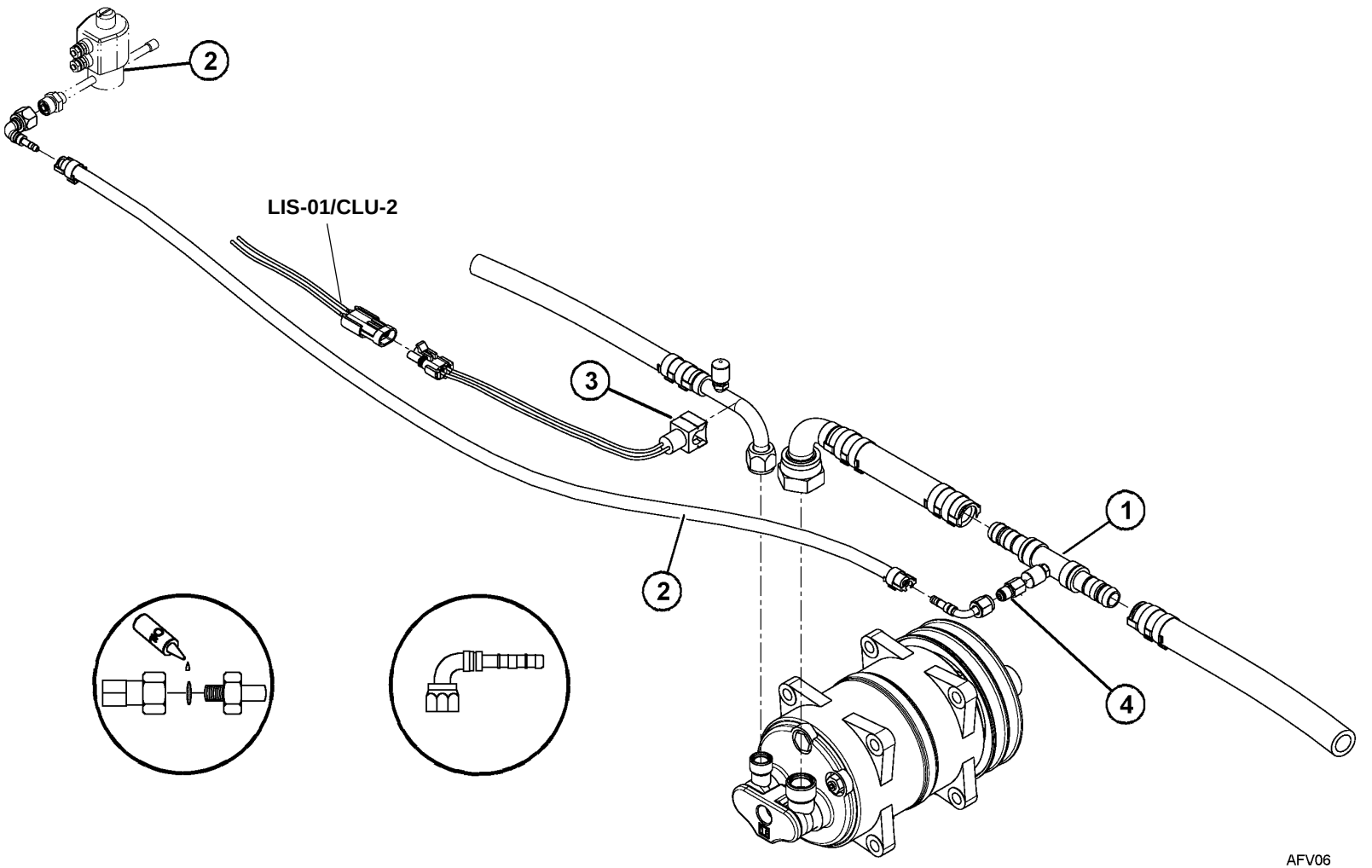
MAX Units Only

1. Mount the tee and orifice on the suction line service port as close to the compressor as possible using the supplied cages and clips.

IMPORTANT: Be sure to install the orifice (item #4) onto the tee or the unit will not operate properly.

2. Install one end of the liquid injection hose onto the suction line tee and the other end to the injection solenoid valve (located in condenser unit) using the supplied elbow, cages and clips.
3. Mount the liquid injection switch onto the compressor discharge fitting. Connect the switch to the mating condenser electrical harness **(LIS-01, CLU-2)**.
4. Make sure the liquid injection orifice is in place. See IMPORTANT note above.

Installation of the Jet Cool System

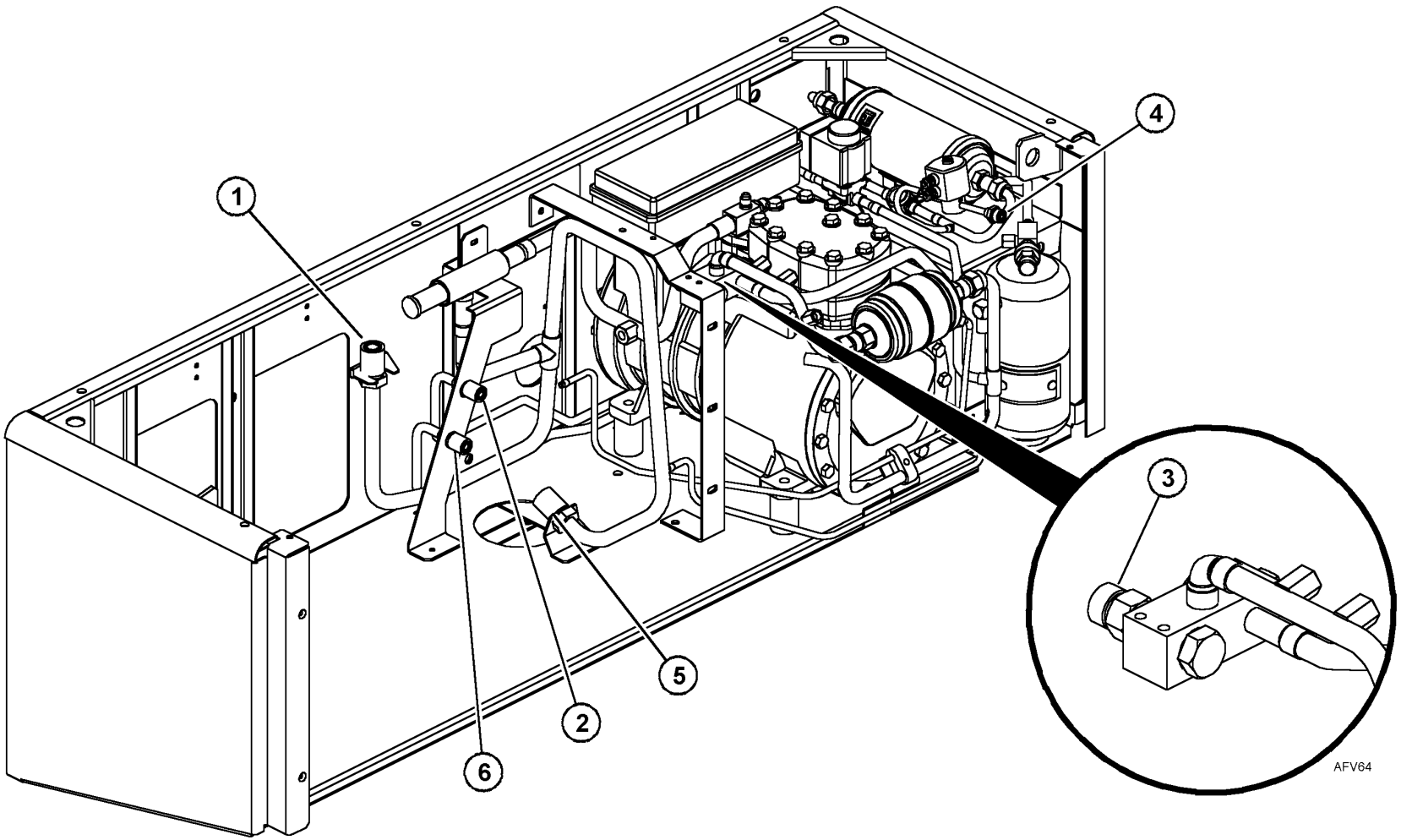


Installation of Hoses to Condenser Unit

1. Route hoses from the compressor to the condenser.
2. Remove the rubber plugs or plastic caps from all the tubes.
3. Lubricate all refrigeration fittings with refrigerant oil.
4. Place an O-ring in the seat of all the refrigeration fittings.
5. Check that the O-ring is properly positioned and connect each hose using two wrenches.
6. Connect the filter-drier to the liquid line in the direction indicated by the arrow.

Item	Description	Hose Size
1.	Suction Line - evaporator to condenser	#12
2.	Liquid Line - evaporator to condenser	#6
3.	Discharge Line - vehicle compressor to condenser	#8
4.	Injection Line - Jet Cool - MAX units only	#4
5.	Suction Line - vehicle compressor to condenser	#16
6.	Hot Gas Line - evaporator to condenser	#6

Installation of Hoses to Condenser Unit



Installation of Hoses to Evaporator

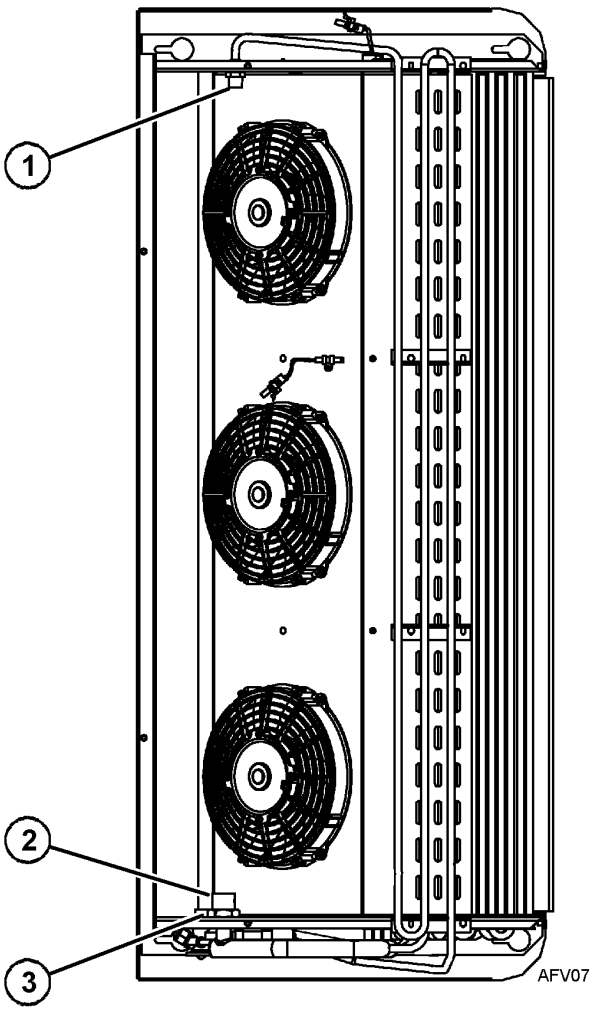
1. Remove the rubber plugs or plastic caps from all the tubes.

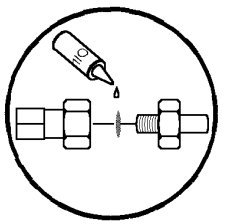
NOTE: Do not remove the metal plugs on a 10 Model unit.

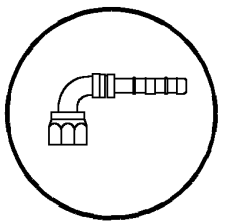
2. Lubricate all refrigeration fittings with refrigerant oil.
3. Place an O-ring on each refrigeration fitting ***(except on the expansion valve).***
4. Check that the O-ring is properly positioned and connect each hose using two wrenches.

Item	Description	Hose Size
1.	Hot Gas Line - evaporator to condenser	#6
2.	Suction Line - evaporator to condenser	#12
3.	Liquid Line - evaporator to condenser	#6

Installation of Hoses to Evaporator







System Leak Check and Evacuation

IMPORTANT: Thermo King Evacuation Station P/N 204-725 and Evacuation Station Operation and Field Application Instructions (TK-40612) is required.

NOTE: The oil in the evacuation station vacuum pump should be changed after each use.

Solenoid Valve Positions

IMPORTANT: The solenoid valves must be in the OPEN position during evacuation procedures. The valves must be held open manually using special magnet tools (204-1074) designed for this purpose.

a. Unscrew the solenoid coil retaining nut and remove the coil assembly.

b. Place a magnet tool on the solenoid valve stem.

c. Carry out the required leak check and evacuation procedures.

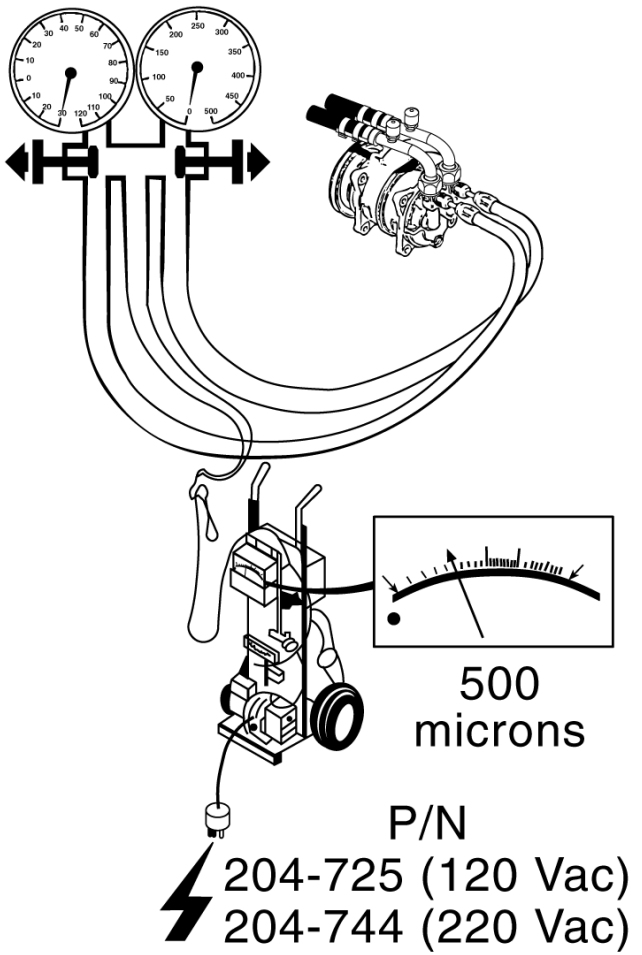
d. After completing the leak check and evacuation procedures, remove the magnet tools and replace the solenoid coil assembly on the solenoid valve and hand tighten the coil retaining nut.

Leak Check and Evacuation

1. Connect the gauge manifold to the suction and discharge intakes of the vehicle compressor.
2. Connect the central line of the gauge manifold to the vacuum pump. Always use recommended vacuum equipment. Before each use, check that there are no leaks in the vacuum equipment either in the pump itself or in the hoses.
3. Open the gauge manifold and vacuum pump valves. Open all the solenoid valves in the circuit.
4. Start the vacuum pump and maintain suction until it reaches 500 microns.
5. Once it reaches 500 microns, leave suction running for **one hour**.
6. Close the vacuum pump valve, switch off the pump, checking that the gauge reading for the vacuum pump does not exceed **2000 microns** in the following five minutes. If vacuum level exceeds 2000 microns after five minutes, a leak is present or additional evacuation time is required.
7. Start the vacuum pump again and open the vacuum valve. Leave the pump running until it reaches **500 microns** of pressure again.
8. Once it reaches 500 microns, close the vacuum pump valve and switch off the pump.

The unit is ready to be filled with refrigerant.

System Leak Check and Evacuation

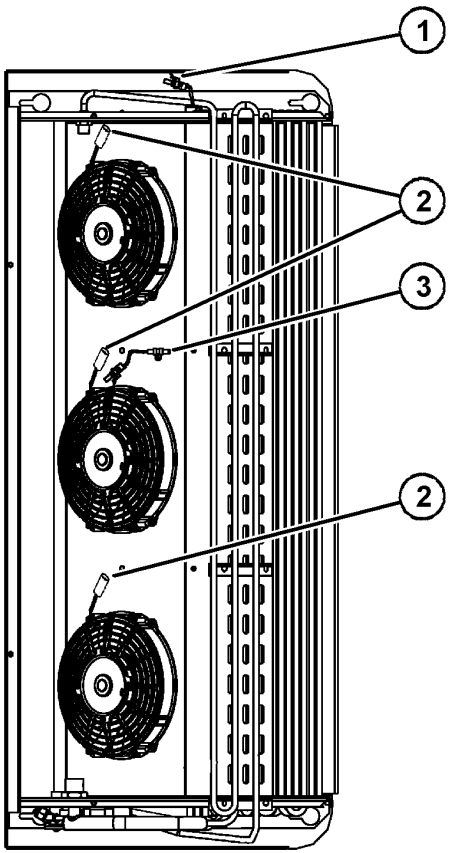


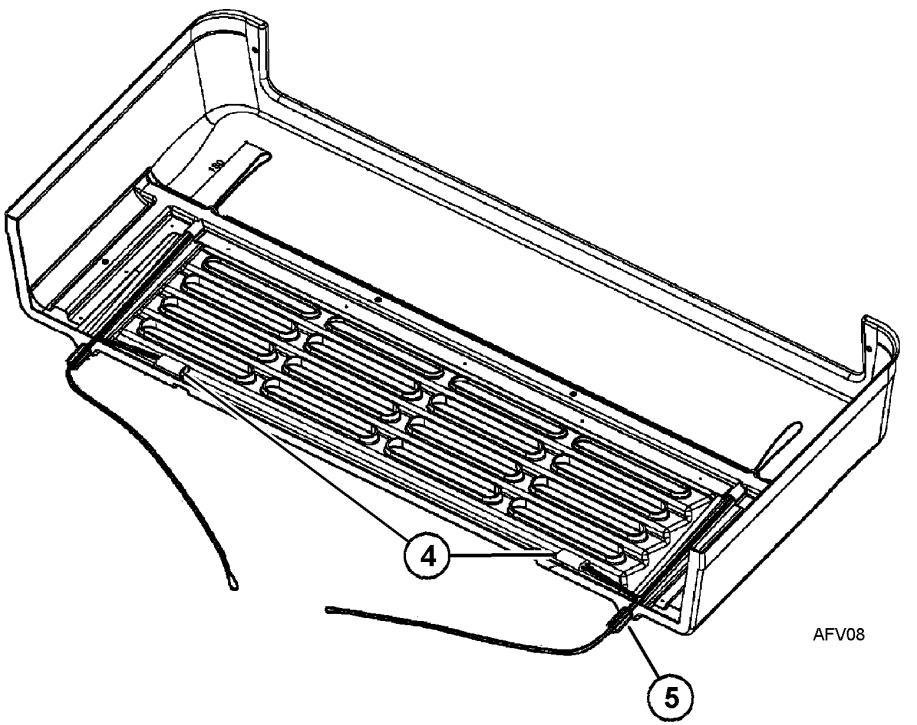
ASA 092

Electrical Connections - Evaporator

1. Connect the defrost temperature switch harness **(12-01 - CH-01)** to the connector on the switch.
2. Connect the fan harnesses to the fans:
   - FAN #1 **(EF1-01 - CH-07)**
   - FAN #2 **(EF2-01 - CH-04)**
   - FAN #3 **(EF3-01 - CH-03)**
3. Connect the return temperature sensor harness **(SN1-01 - SN2-01)** to the sensor.
4. **ES-500 MAX UNITS ONLY:**
   Connect the defrost heater harnesses **(7T-01 - CH-02, 7T-02 - CH-05)** to the resistance wires connectors.
5. **ES-500 MAX UNITS ONLY:**
   Route the defrost resistance wires out through the drain tube connections.

Electrical Connections - Evaporator

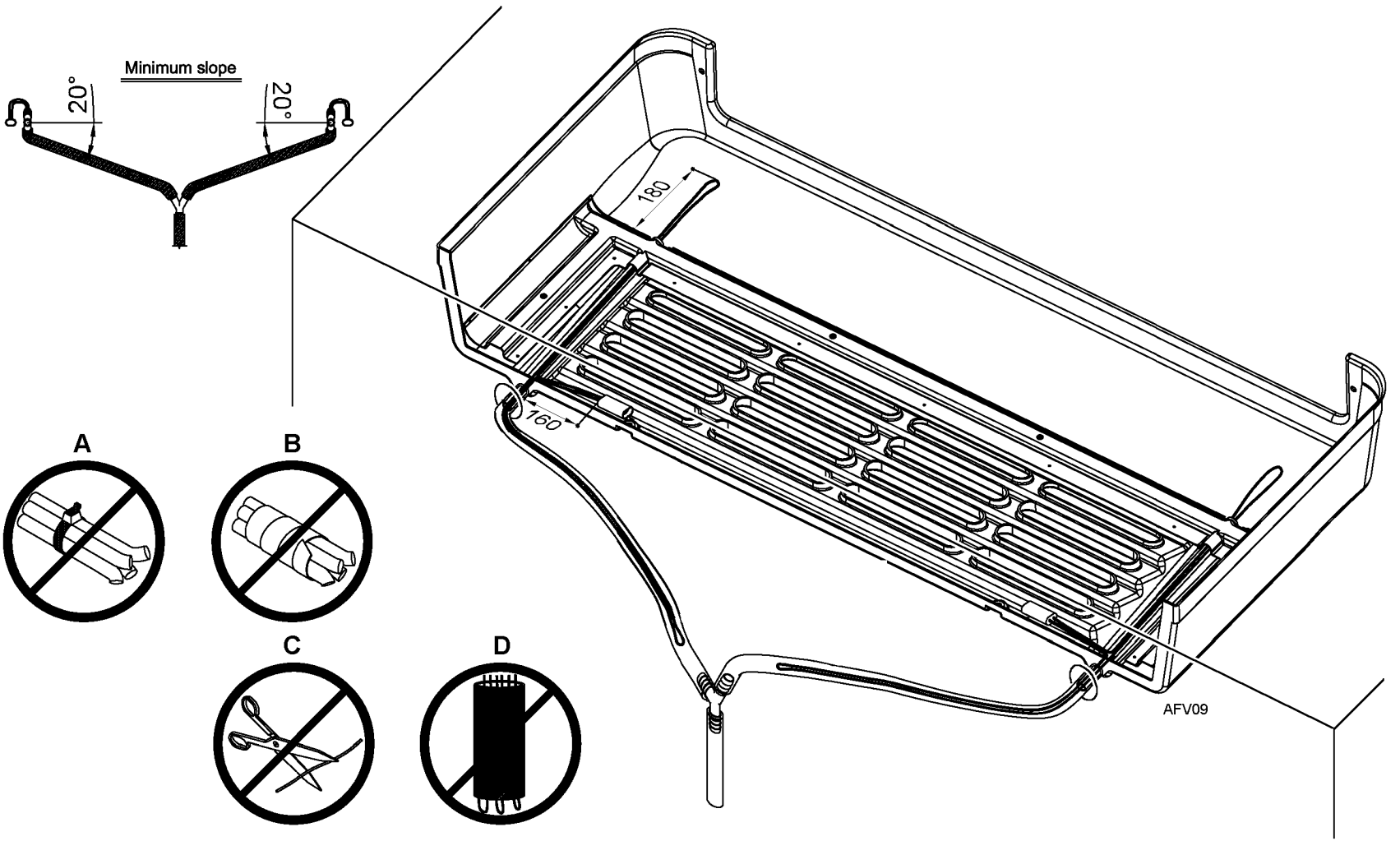




Installation of Drain Hoses

1. Cut the drain hose into two sections of suitable length.
2. Allow the drain hoses a sufficient slope to ensure that the water drains away and connect the hoses to the drain tubes. Secure the connections with tie bands.
3. Route both hoses directly out through the compartment wall and join to a third single drain hose using the **Y connector**. Seal the drain hose holes in the cargo box with caulking.
4. Route the single drain down the outside of the cargo box and secure with clamps.
5. **ES-500 MAX ONLY**:
   Insert the defrost heater wires through each drain hose and along its entire length.
   A. ***Do not*** use band wraps (wire ties) to hold the defrost heater wires.
   B. ***Do not*** cover or wrap the defrost heater wires.
   C. ***Do not*** cut the defrost heater wires.
   D. ***Do not*** install more than 4 defrost heater wires into the drain tube.

Installation of Drain Hoses



Installation of the In-Cab Controller

Remove the rear cover of the controller and select the following:

Operating Voltage

- Locate the 3-pin connector **(S1)** on the circuit board.
- Move the jumper to select either 12 or 24 Vdc.

Set Point Range

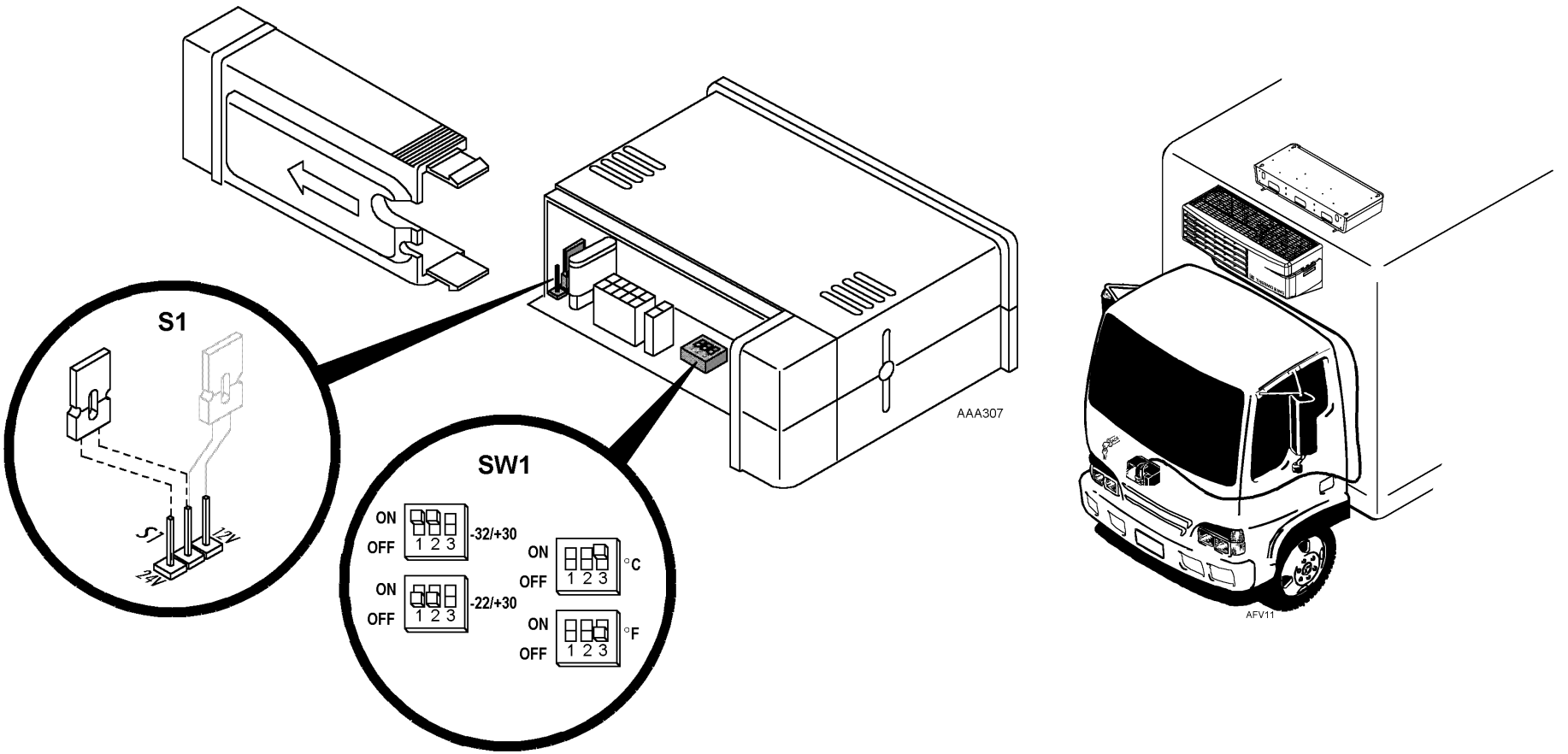
- Locate the 3-pin dip switch **(SW1)** on the circuit board.
- Place dip switches #1 and #2 to the ON position for a set point range of -26 to 86 F (-32 to 30 C).
- Place dip switches #1 and #2 to the OFF position for a set point range of -8 to 86 F (-22 to 30 C).

Temperature Scale

- Locate the 3-pin dip switch **(SW1)** on the circuit board.
- Place dip switch #3 to the ON position to select the temperature in degrees C (Celsius).
- Place dip switch #3 to the OFF position to select the temperature in degrees F (Fahrenheit).

1. Route the control harness and temperature sensor wires **(SN2-01 - SN1-01)** into the cab and connect them to the controller.
2. Connect wire from the in-cab controller **(ACD-01)** to the fused ignition circuit of the vehicle.
3. Reinstall the controller cover without crimping the wires.
4. Install the in-cab control mounting bracket in a location that is accessible and visible from the driver's position and that does not hinder the driver's mobility, visibility or access to the vehicle instruments and levers.
5. Install the controller to the bracket.

Installation of the In-Cab Controller



Installation of the Electric Standby Power Supply (Option)

DANGER: Electrical cord must not be connected to an electrical power source during installation.

NOTE: Thermo King recommends a 20 amp fused power source for electric standby operation.

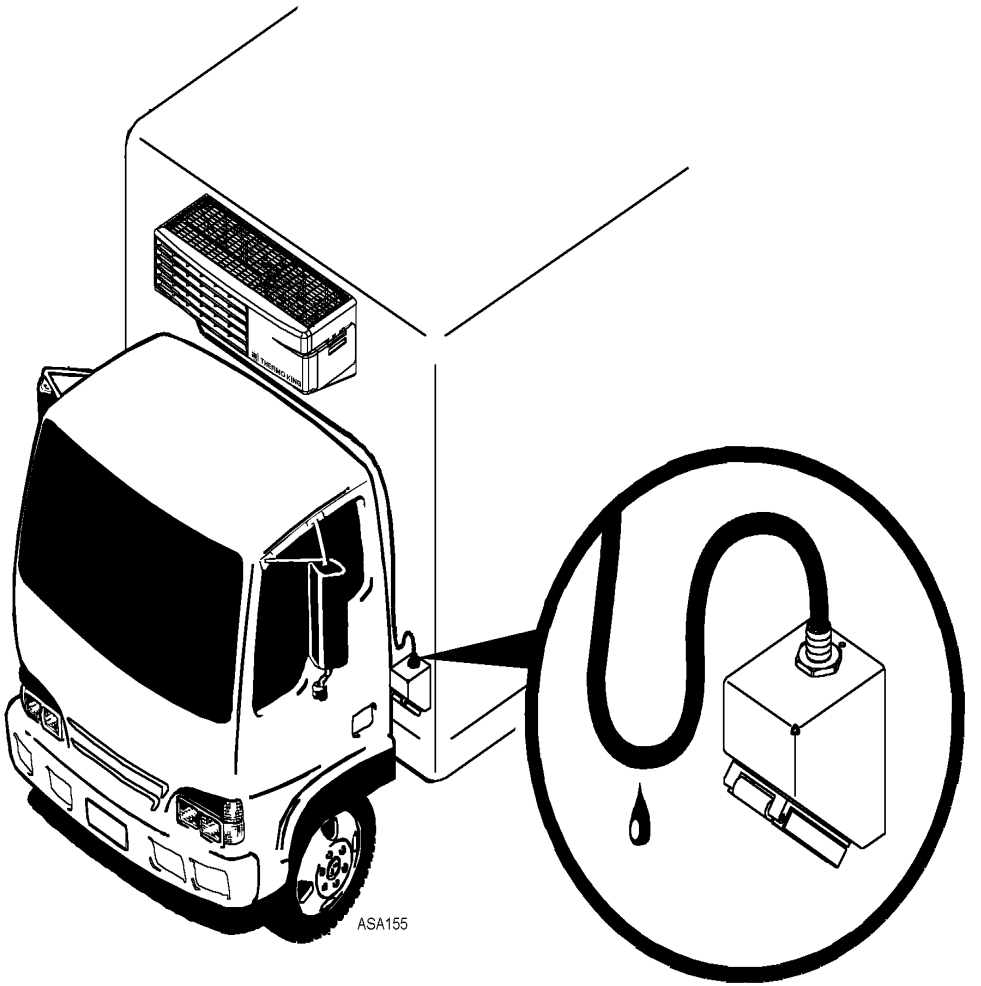
IMPORTANT: See drawing 2C21034 (in back of this manual) for receptacle wiring instructions.

1. Choose an appropriate location, remove cover and mount receptacle box to truck with appropriate hardware.
2. Route the electrical wire from the unit to the receptacle box providing for a drip loop. Secure using the clamps provided.
3. Cut off the excess electrical wire and connect to receptacle.

IMPORTANT: Do not roll up the excess electrical wire or create splices in the electrical wire.

4. Reinstall cover.

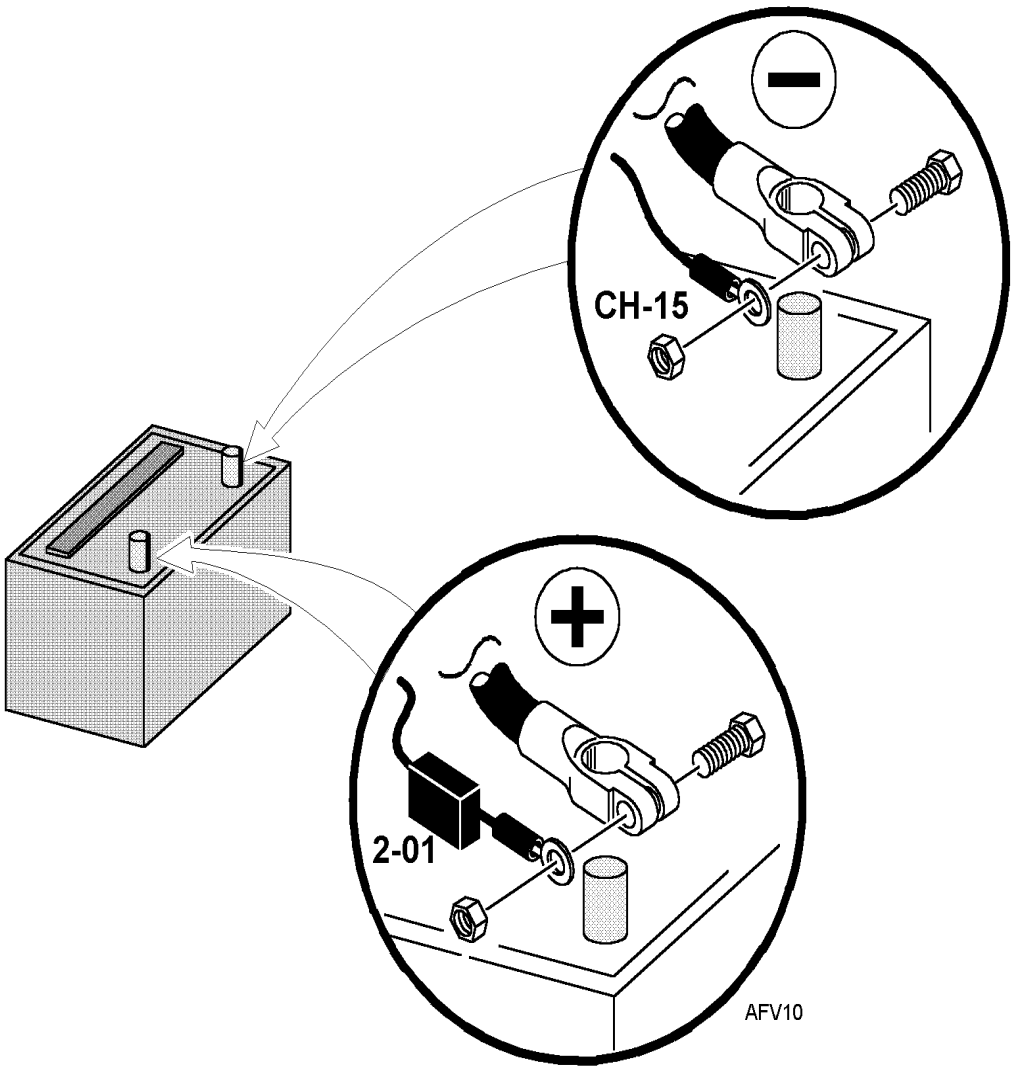
Installation of the Electric Standby Power Supply



Electrical Connections - Battery

1. Route the battery electrical wires **(CH-15, 2-01)** to the battery.
2. Connect the negative wire (**CH-15)** to the negative **(-)** pole of the battery.
3. Connect the positive wire **(2-01)** to the positive **(+)** pole of the battery.

Electrical Connections -Battery



System Charging

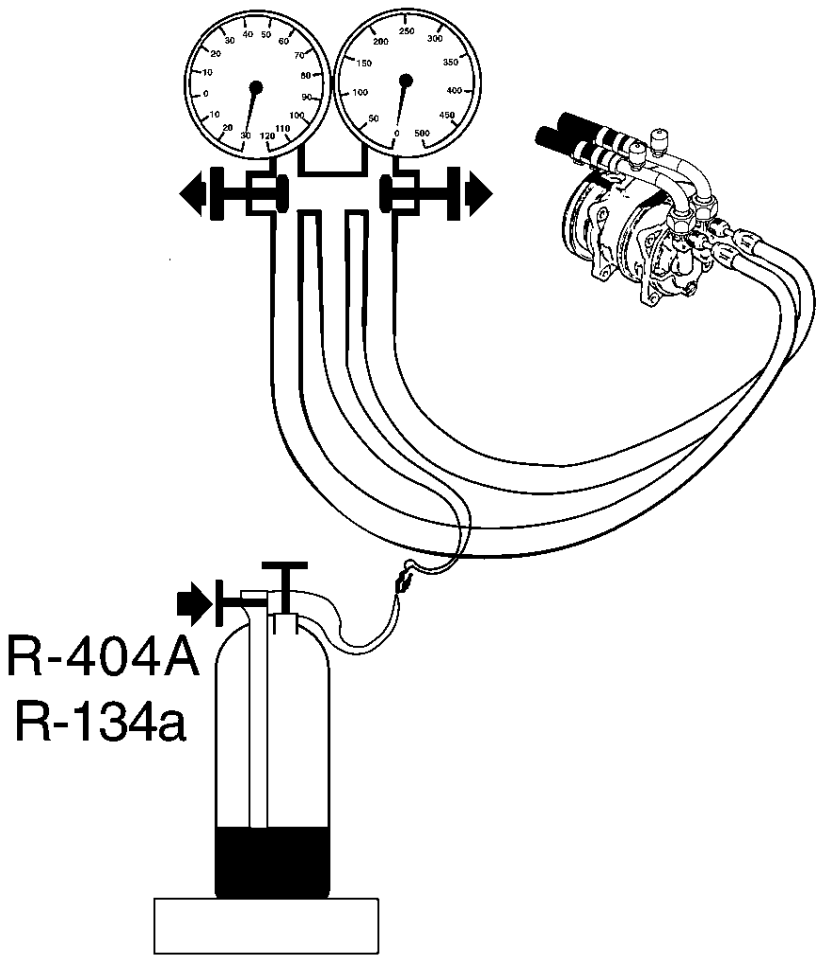
1. Connect a gauge manifold set to the suction and discharge service ports on the engine driven compressor.
2. Connect the refrigerant bottle to the gauge manifold and place it on a scale.
3. Connect the refrigerant bottle valve and drain the gauge fitting line.
4. Keep the low pressure side valve of the gauge manifold closed. Open the high pressure side valve.
5. Add refrigerant until reaching approximately 3.6 kg/7.93 lb. for R-134A or 3.7 kg/8.15 lb.for R-404A The refrigerant charge must be made in liquid phase for R-404A.
6. Close the refrigerant bottle valve and the high side valve of the gauge manifold.
7. Start the vehicle engine, run at approximately 1000 rpm and turn the unit ON.
8. Set the unit thermostat at 0C/32F (see operating manual).
9. Run the unit until it reaches a temperature close to that indicated, and a high circuit pressure of 12.5 bar (**180 psig for R-134a)** or 19 bar (**275 psig for R-404A**). Partially block off the air intake to the condenser if necessary.
10. Open the low side valve of the gauge manifold and the refrigerant bottle valve, and add refrigerant slowly until no bubbles can be seen through the liquid sight glass.
11. Close the refrigerant bottle and gauge manifold valves.
12. Leave the unit running for 15 minutes.
13. Check that there are no bubbles in the sight glass. If bubbles are seen, repeat steps 10 and 11.
14. Units **WITHOUT** Electric Standby:
    - Turn OFF the unit, stop the vehicle and remove the gauge manifold.
15. Units **WITH** Electric Standby:
    - Turn OFF the unit and stop the vehicle.
    - Connect the unit to electrical standby source. Run the unit on electric standby operation for 15 minutes.

    NOTE: Thermo King recommends a 20 amp fused power source for electric standby operation.

    - Turn the unit OFF and remove the electrical standby plug.
    - Remove the gauge manifold.

NOTE: The above conditions MUST be established each time the refrigerant level is checked or if refrigerant needs to be added for any reason.

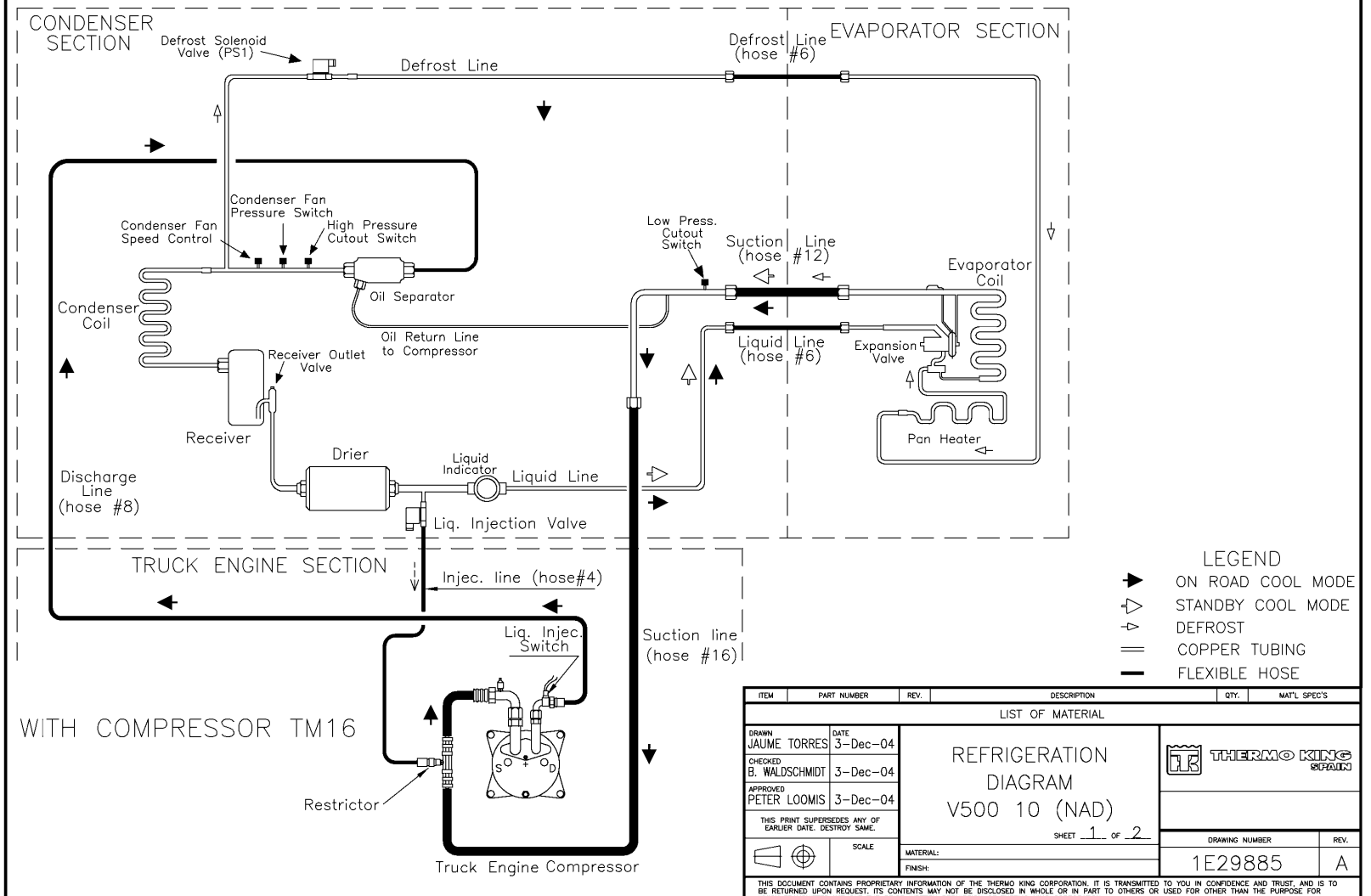
System Charging



Installation Check List

- ☐ All mounting holes and access holes are sealed with silicone or foam.
- ☐ All covers, guards or screens are installed securely on unit.
- ☐ The evaporator fans blow in the right direction.
- ☐ The drain hoses are slanted on all evaporators.
- ☐ The orifice screen is installed in the expansion valve at the evaporator.
- ☐ The temperature sensor is connected at the evaporator.
- ☐ The in-cab control box is installed in a area that it is accessible and visible from the driver’s position.
- ☐ The unit’s electrical contact draw was verified. (Thermo King recommends a 20 amp fused power source for electric standby operation.)
- ☐ Refrigerant hoses are not taut. They should be able to absorb vibrations and be shortened in case of leaks.
- ☐ Refrigerant hoses are not rubbing against moving parts, sharp parts, or parts that can reach high temperatures.
- ☐ The oil return hose is installed.
- ☐ The liquid injection hose is installed (R-404A units only).
- ☐ The liquid injection orifice is installed in the tee (R-404A units only).
- ☐ The vehicle compressor was primed with oil.
- ☐ All battery connections are clean and tight.
- ☐ The vehicle compressor drive kit test was carried out.
- ☐ The system was checked for leaks.
- ☐ The unit was charged with correct type and amount of refrigerant.
- ☐ The unit operates correctly.

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP
508462	A	RELEASED	3-Dec-04	JT	BW	PL



ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN JAUME TORRES	DATE 3-Dec-04
CHECKED B. WALDSCHMIDT	3-Dec-04
APPROVED PETER LOOMIS	3-Dec-04

THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.

SCALE

REFRIGERATION DIAGRAM
V500 10 (NAD)

SHEET 1 OF 2

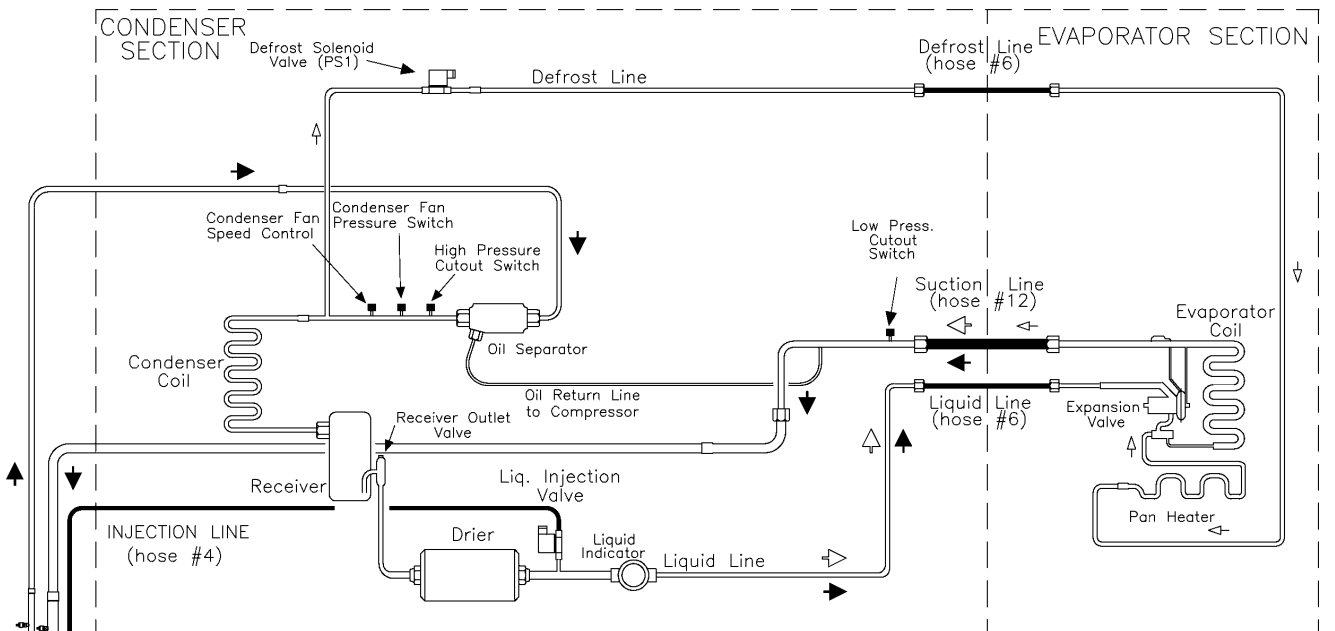
MATERIAL:

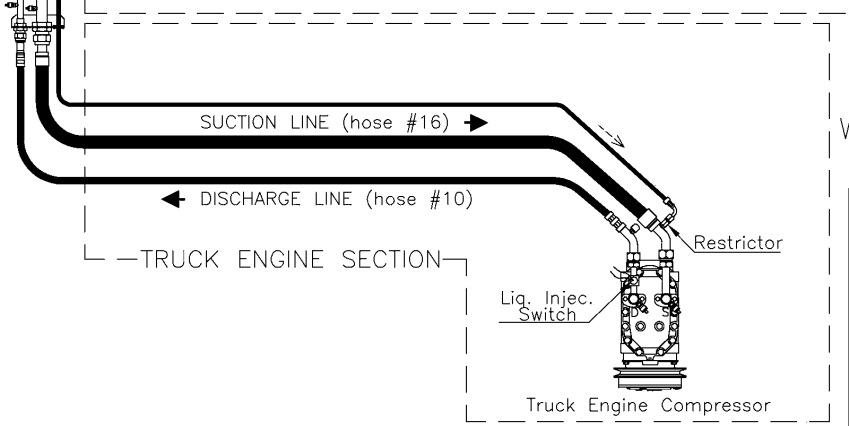
FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E29885	A

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP





WITH COMPRESSOR TK312R

LEGEND
- ON ROAD COOL MODE
- STANDBY COOL MODE
- DEFROST
- COPPER TUBING
- FLEXIBLE HOSE

ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN JAUME TORRES	DATE 3-Dec-04	REFRIGERATION DIAGRAM V500 10 (NAD)
CHECKED B. WALDSCHMIDT	3-Dec-04	
APPROVED PETER LOOMIS	3-Dec-04	SHEET 2 OF 2
THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.		MATERIAL:
SCALE		FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E29885	A

REVISIONS						
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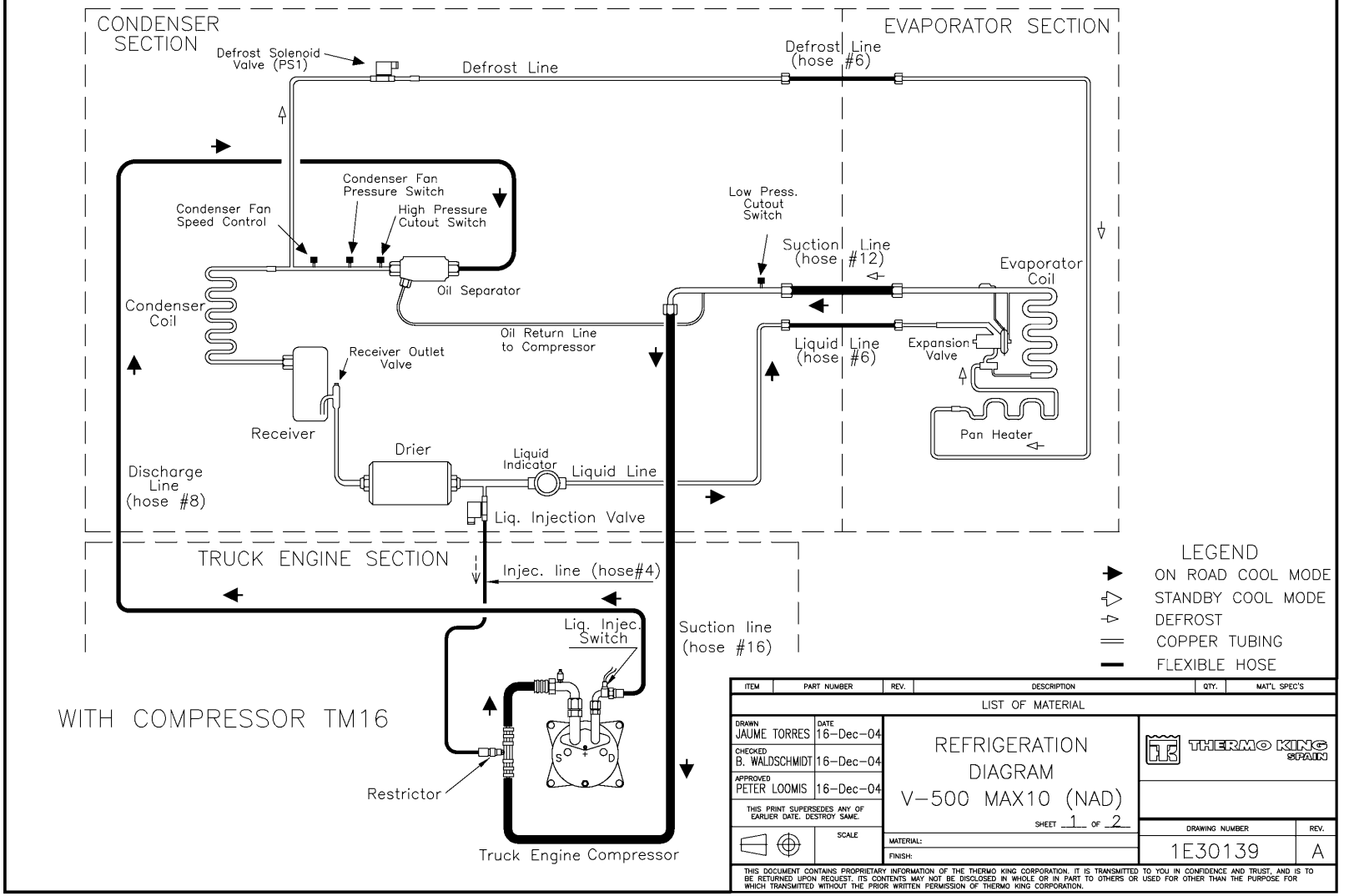


ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

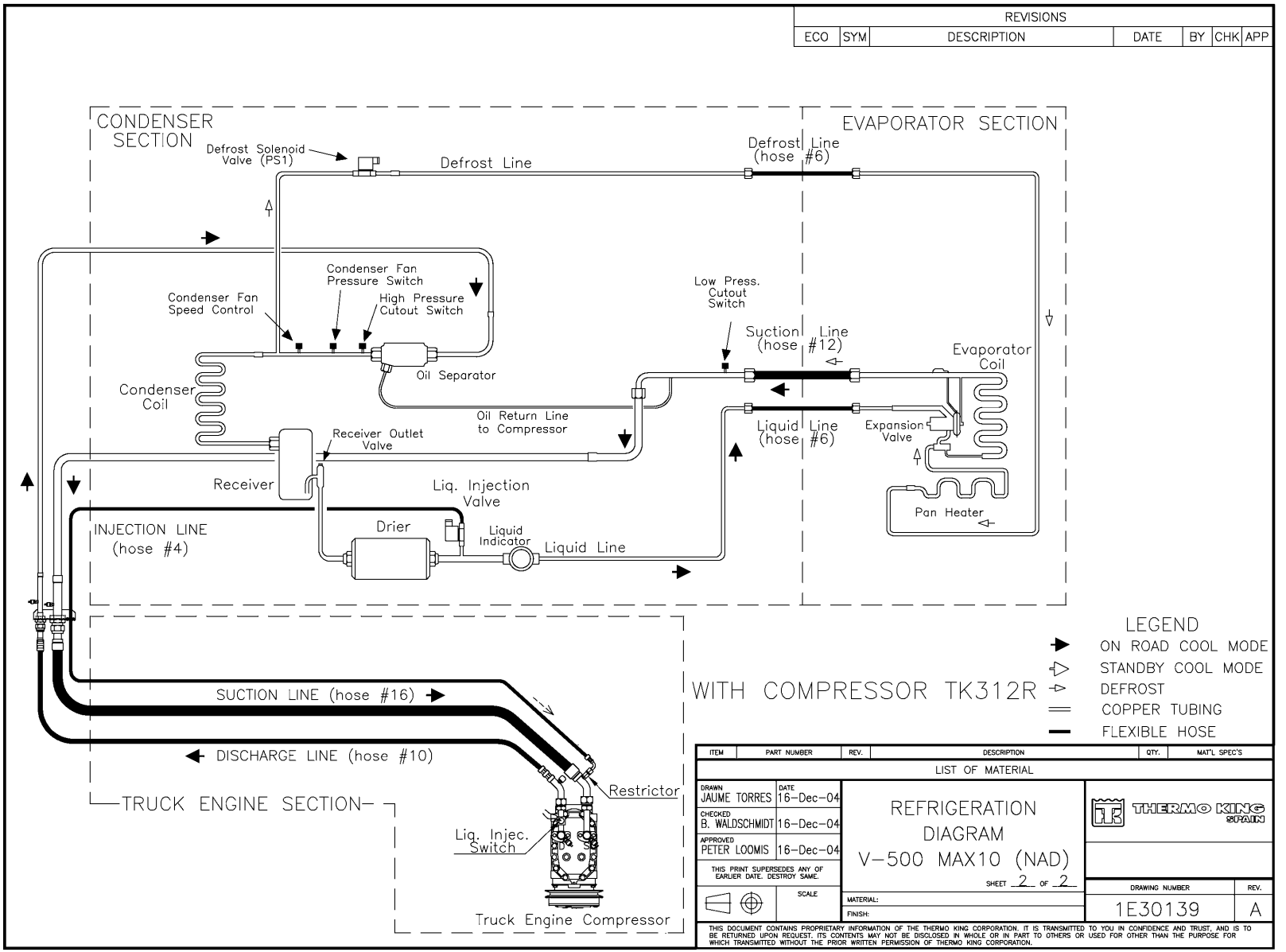
DRAWN JAUME TORRES	DATE 16-Dec-04
CHECKED B. WALDSCHMIDT	16-Dec-04
APPROVED PETER LOOMIS	16-Dec-04
THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.	
SCALE	

REFRIGERATION DIAGRAM
V-500 MAX10 (NAD)
SHEET 1 OF 2

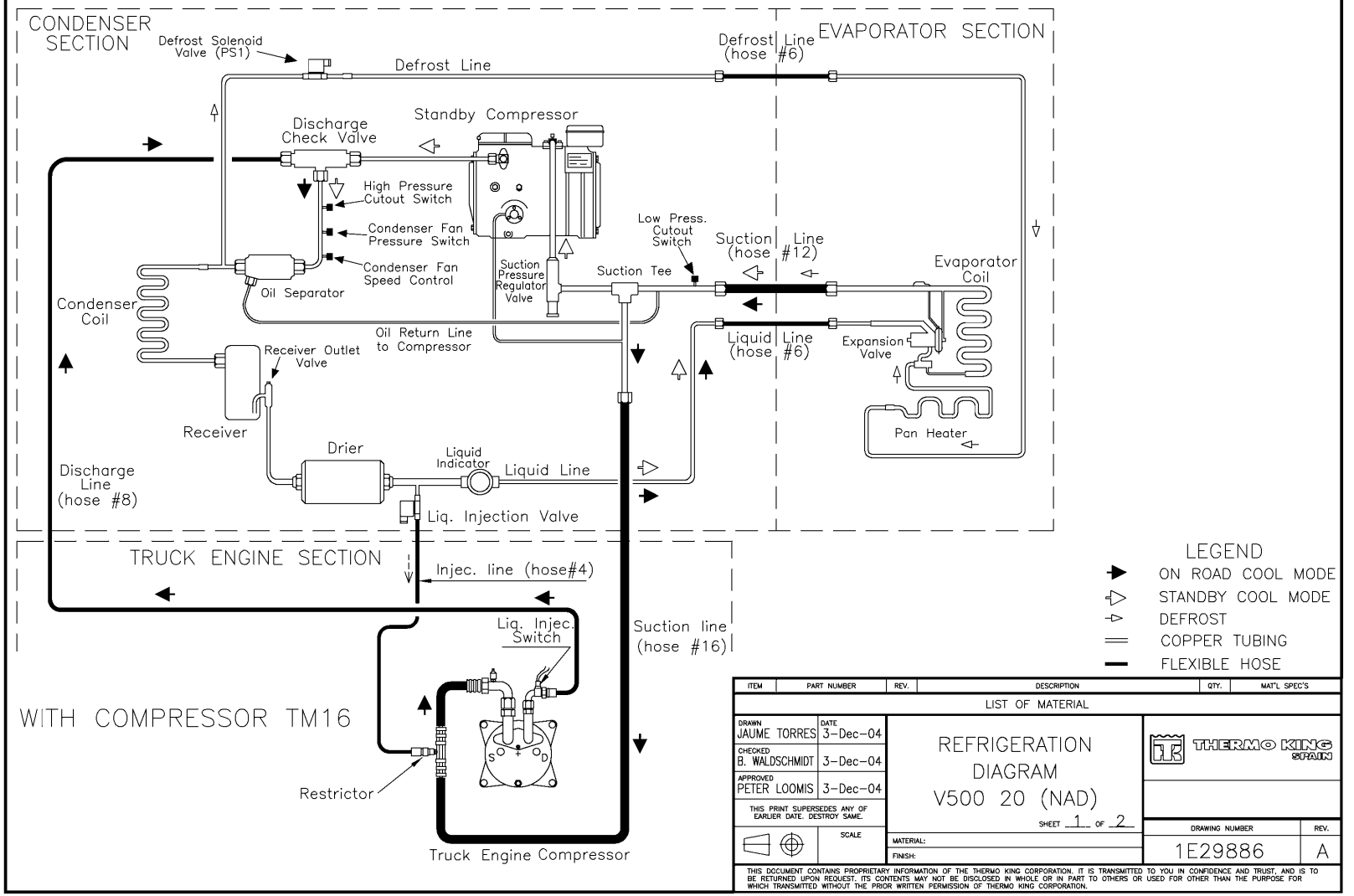
THERMO KING SPAIN

MATERIAL:
FINISH:

DRAWING NUMBER	REV.
1E30139	A


REVISIONS
ECO SYM DESCRIPTION DATE BY CHK APP
CONDENSER SECTION
EVAPORATOR SECTION
Defrost Solenoid Valve (PS1)
Defrost Line
Defrost Line (hose #6)
Condenser Fan Pressure Switch
Condenser Fan Speed Control
High Pressure Cutout Switch
Low Press. Cutout Switch
Suction Line (hose #12)
Evaporator Coil
Oil Separator
Condenser Coil
Oil Return Line to Compressor
Receiver Outlet Valve
Liquid Line (hose #6)
Expansion Valve
Receiver
Liq. Injection Valve
Pan Heater
INJECTION LINE (hose #4)
Drier
Liquid Indicator
Liquid Line
SUCTION LINE (hose #16)
DISCHARGE LINE (hose #10)
Restrictor
TRUCK ENGINE SECTION
Liq. Injec. Switch
Truck Engine Compressor
WITH COMPRESSOR TK312R
LEGEND
ON ROAD COOL MODE
STANDBY COOL MODE
DEFROST
COPPER TUBING
FLEXIBLE HOSE
ITEM PART NUMBER REV. DESCRIPTION QTY. MAT'L SPEC'S
LIST OF MATERIAL
DRAWN JAUME TORRES 16-Dec-04
CHECKED B. WALDSCHMIDT 16-Dec-04
APPROVED PETER LOOMIS 16-Dec-04
THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.
SCALE
REFRIGERATION DIAGRAM
V-500 MAX10 (NAD)
SHEET 2 OF 2
MATERIAL:
FINISH:
THERMO KING SPAIN
DRAWING NUMBER 1E30139
REV. A
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF THE THERMO KING CORPORATION. IT IS TRANSMITTED TO YOU IN CONFIDENCE AND TRUST, AND IS TO BE RETURNED UPON REQUEST. ITS CONTENTS MAY NOT BE DISCLOSED IN WHOLE OR IN PART TO OTHERS OR USED FOR OTHER THAN THE PURPOSE FOR WHICH TRANSMITTED WITHOUT THE PRIOR WRITTEN PERMISSION OF THERMO KING CORPORATION.

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP
508462	A	RELEASED	3-Dec-04	JT	BW	PL



ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN JAUME TORRES	DATE 3-Dec-04
CHECKED B. WALDSCHMIDT	3-Dec-04
APPROVED PETER LOOMIS	3-Dec-04

THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.

SCALE

REFRIGERATION DIAGRAM
V500 20 (NAD)

SHEET 1 OF 2

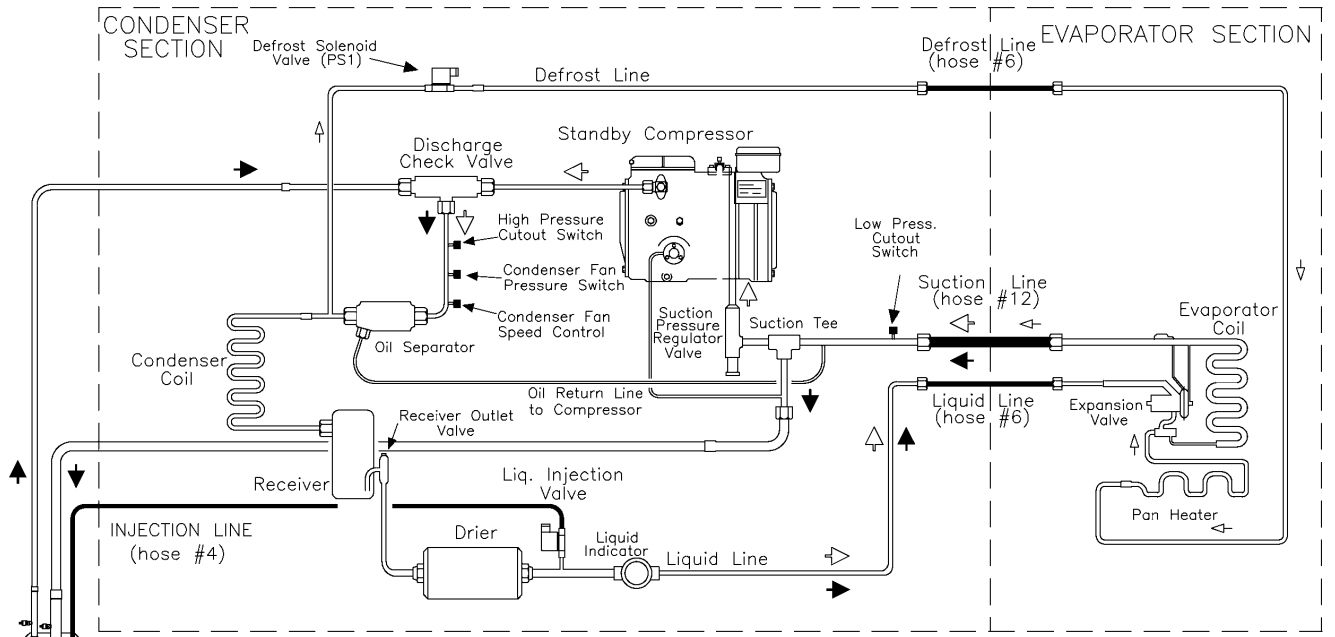
MATERIAL:

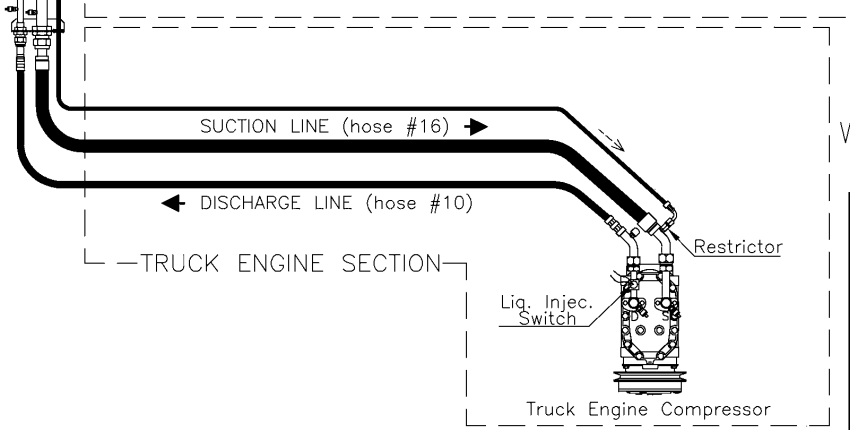
FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E29886	A

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP





WITH COMPRESSOR TK312R

LEGEND

- ON ROAD COOL MODE
- STANDBY COOL MODE
- DEFROST
- COPPER TUBING
- FLEXIBLE HOSE

ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN JAUME TORRES	DATE 3-Dec-04
CHECKED B. WALDSCHMIDT	3-Dec-04
APPROVED PETER LOOMIS	3-Dec-04

THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.

SCALE

REFRIGERATION DIAGRAM
V500 20 (NAD)
SHEET 2 OF 2

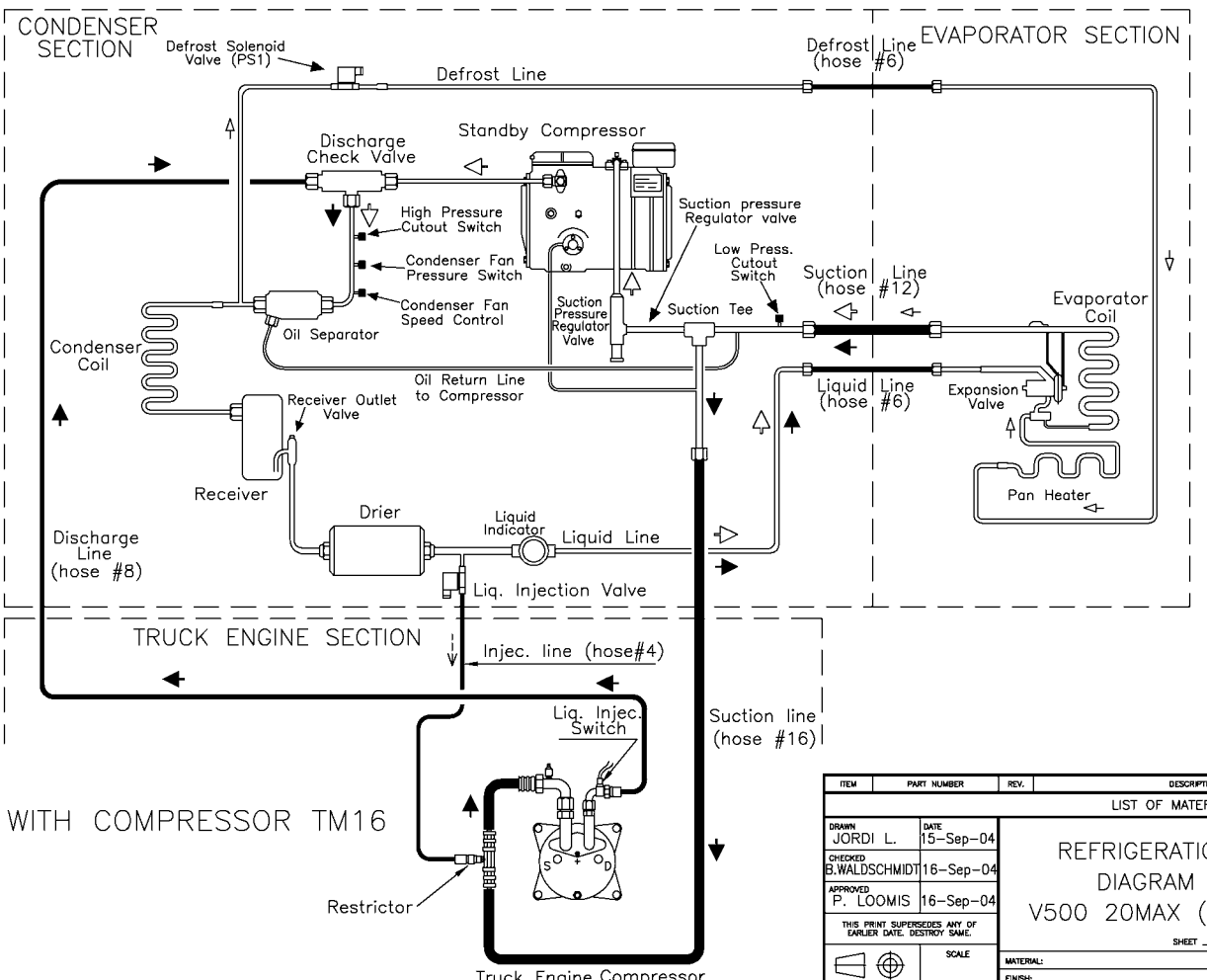
MATERIAL:

FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E29886	A

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP
506288	A	RELEASED	15/Sep/04	JL	BW	PL



LEGEND

- ON ROAD COOL MODE
- STANDBY COOL MODE
- DEFROST
- COPPER TUBING
- FLEXIBLE HOSE

ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN: JORDI L.	DATE: 15-Sep-04
CHECKED: B.WALDSCHMIDT	16-Sep-04
APPROVED: P. LOOMIS	16-Sep-04

THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.

SCALE

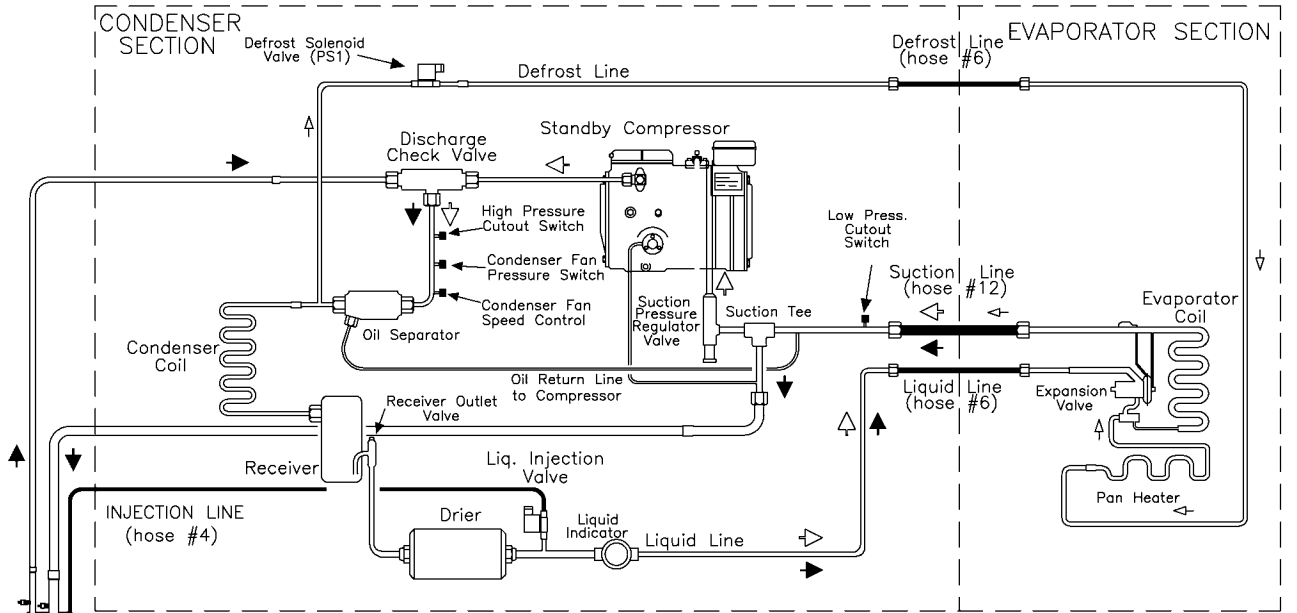
REFRIGERATION DIAGRAM
V500 20MAX (NAD)
SHEET 1 OF 2

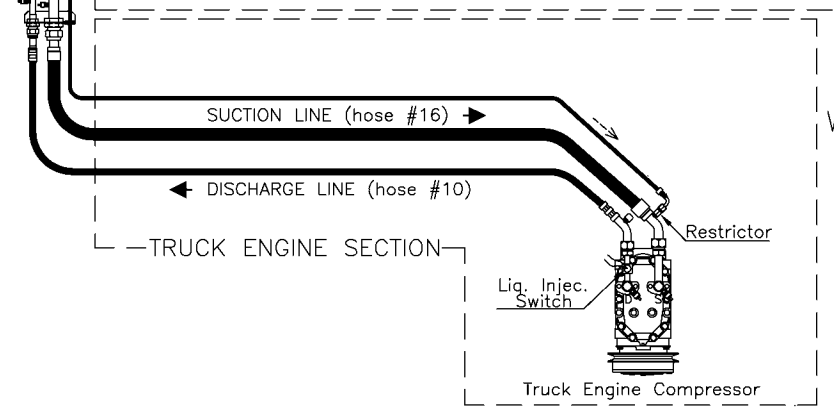
MATERIAL:
FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E28576	A

REVISIONS						
ECO	SYM	DESCRIPTION	DATE	BY	CHK	APP





WITH COMPRESSOR TK312R

LEGEND
- ON ROAD COOL MODE
- STANDBY COOL MODE
- DEFROST
- COPPER TUBING
- FLEXIBLE HOSE

ITEM	PART NUMBER	REV.	DESCRIPTION	QTY.	MAT'L SPEC'S

LIST OF MATERIAL

DRAWN: JORDI L.	DATE: 15-Sep-04
CHECKED: B.WALDSCHMIDT	16-Sep-04
APPROVED: P. LOOMIS	16-Sep-04

THIS PRINT SUPERSEDES ANY OF EARLIER DATE. DESTROY SAME.

SCALE

REFRIGERATION DIAGRAM
V500 20MAX (NAD)
SHEET 2 OF 2

MATERIAL:
FINISH:

THERMO KING SPAIN

DRAWING NUMBER	REV.
1E28576	A

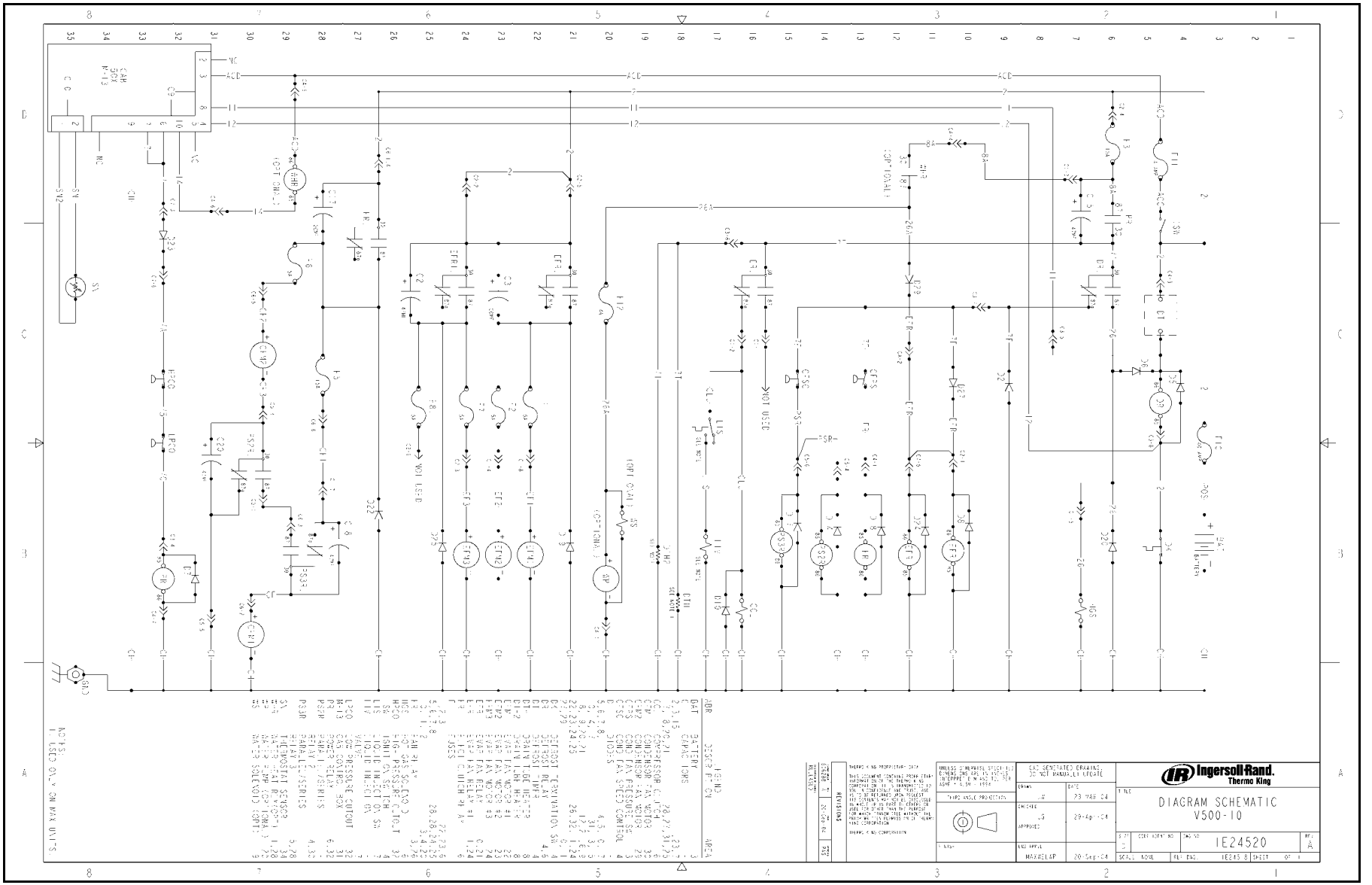
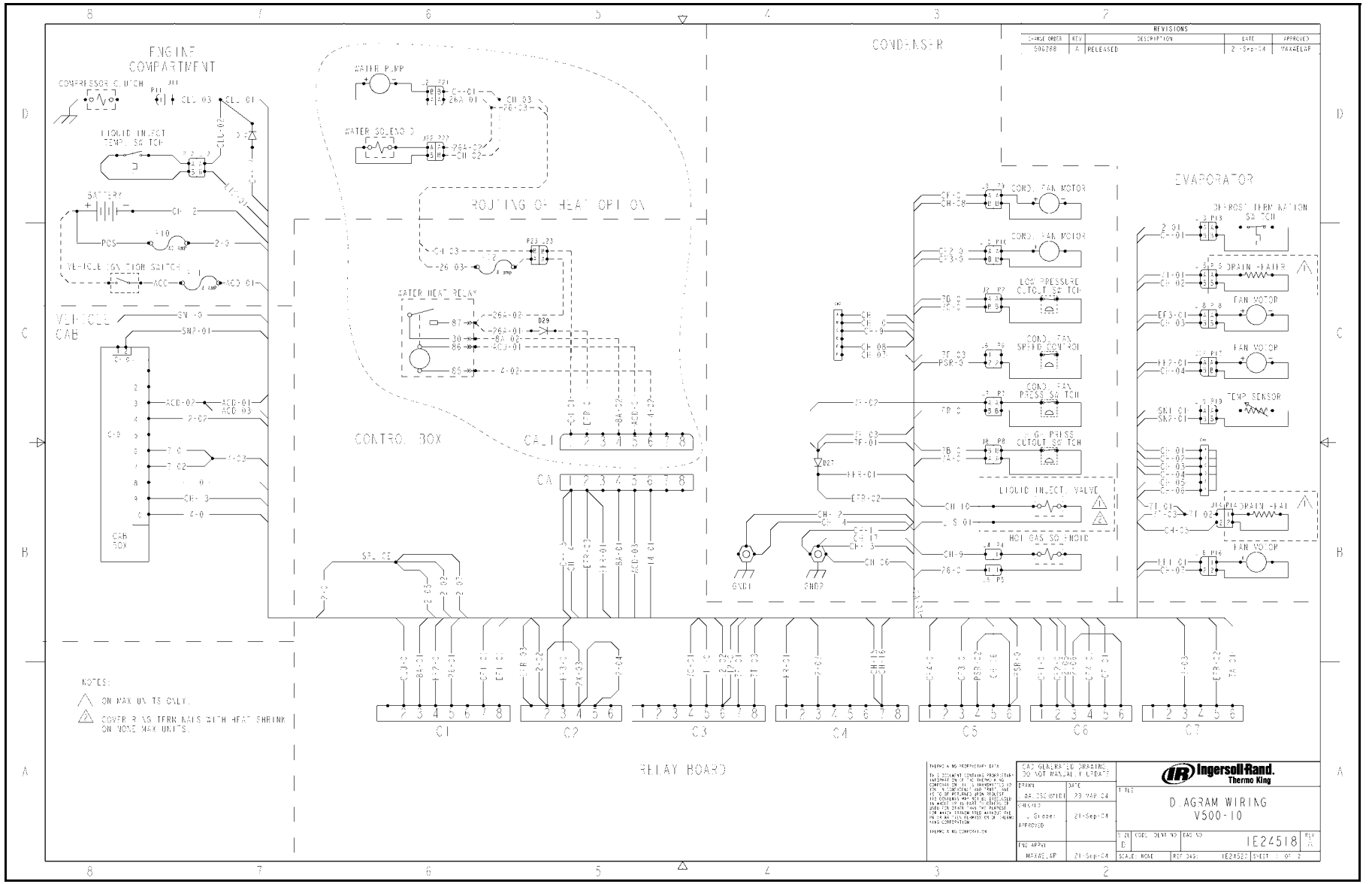
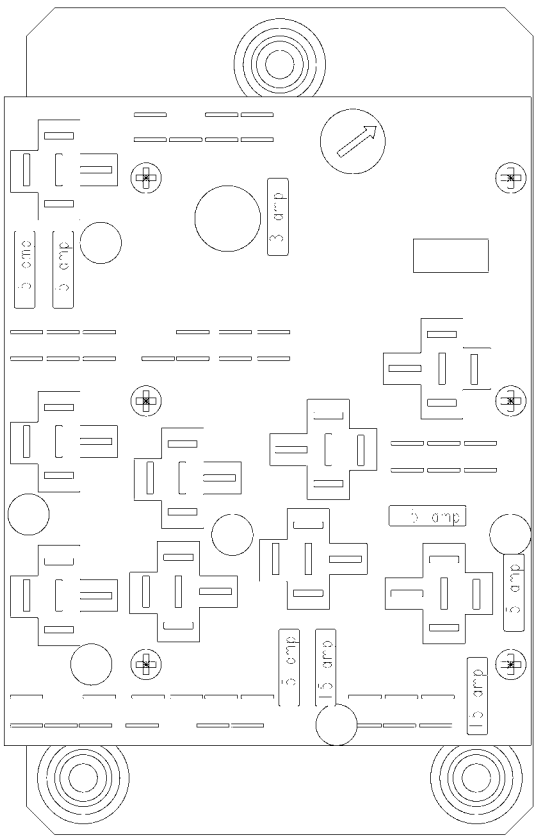


DIAGRAM SCHEMATIC
V500-10
IE24520
Ingersoll-Rand
Thermo King

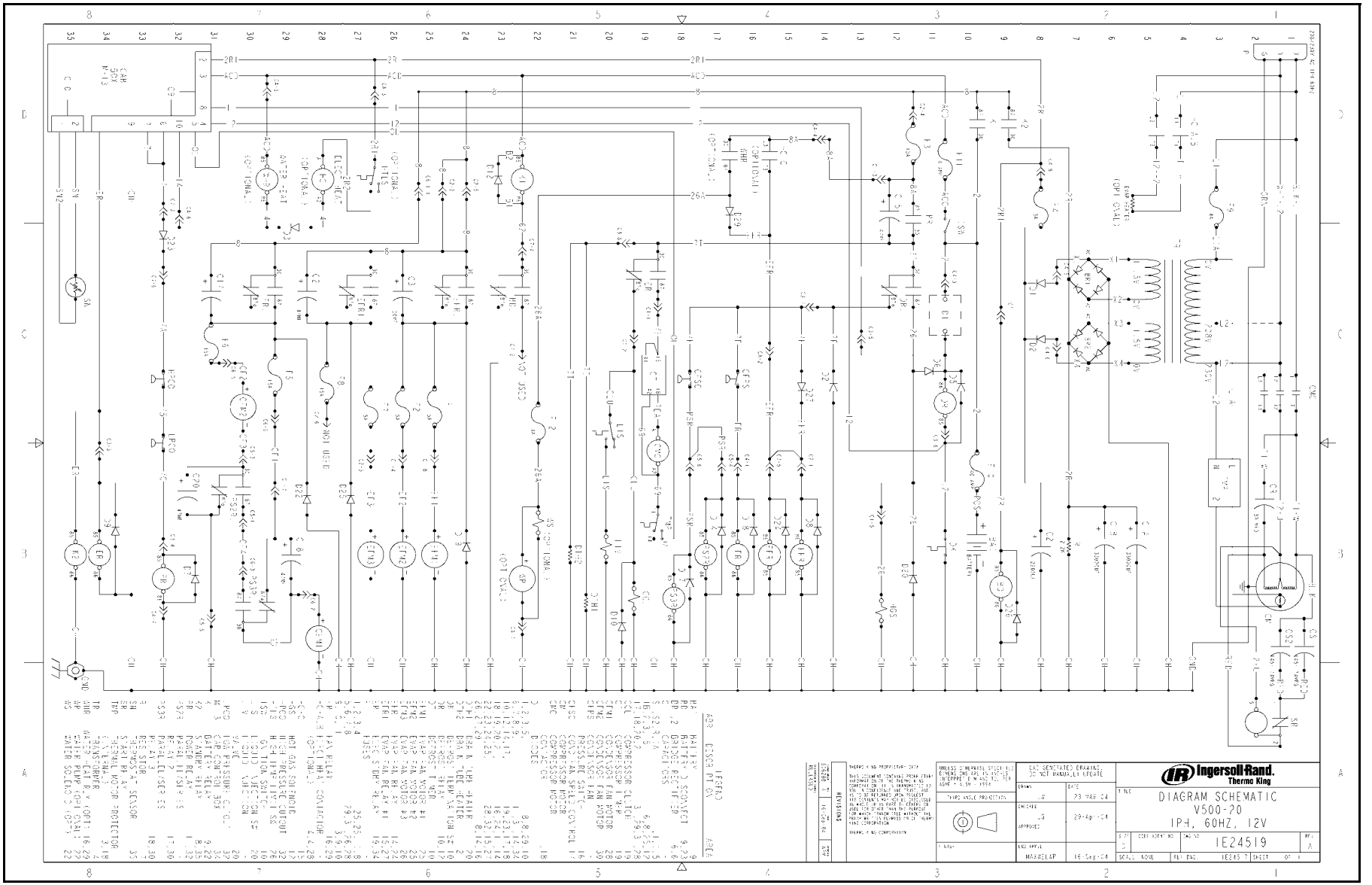

ENGINE COMPARTMENT
CONDENSER
EVAPORATOR
VEHICLE CAB
CONTROL BOX
ROUTING OF HEAT OPTION
RELAY BOARD
COMPRESSOR CLUTCH
LIQUID INJECT TEMP. SW TCH
BATTERY
VEHICLE IGNITION SWITCH
WATER PUMP
WATER SOLENOID
WATER HEAT RELAY
COND. FAN MOTOR
LOW PRESSURE CUTOUT SW TCH
COND. FAN SPEED CONTROL
COND. FAN PRESS SW TCH
HI PR PRESS CUTOUT SW TCH
LIQUID INJECT VALVE
HOT GAS SOLENOID
DEFROST TERMINATION SW TCH
DRAIN HEATER
FAN MOTOR
TEMP SENSOR
GND1
GND2
C1
C2
C3
C4
C5
C6
C7
NOTES:
1. ON MAX UV TS ONLY.
2. COVER R AG TERM WIRES WITH HEAT SHRINK ON MDME MAX UNITS.
CAD GENERATED DRAWING DO NOT MANUALLY UPDATE
Ingersoll-Rand. Thermo King
TITLE
D AGRAM WIRING V500-10
DWG NO IE24518
REV K
SCALE: NONE
REF DWGS:
SHEET 1 OF 2

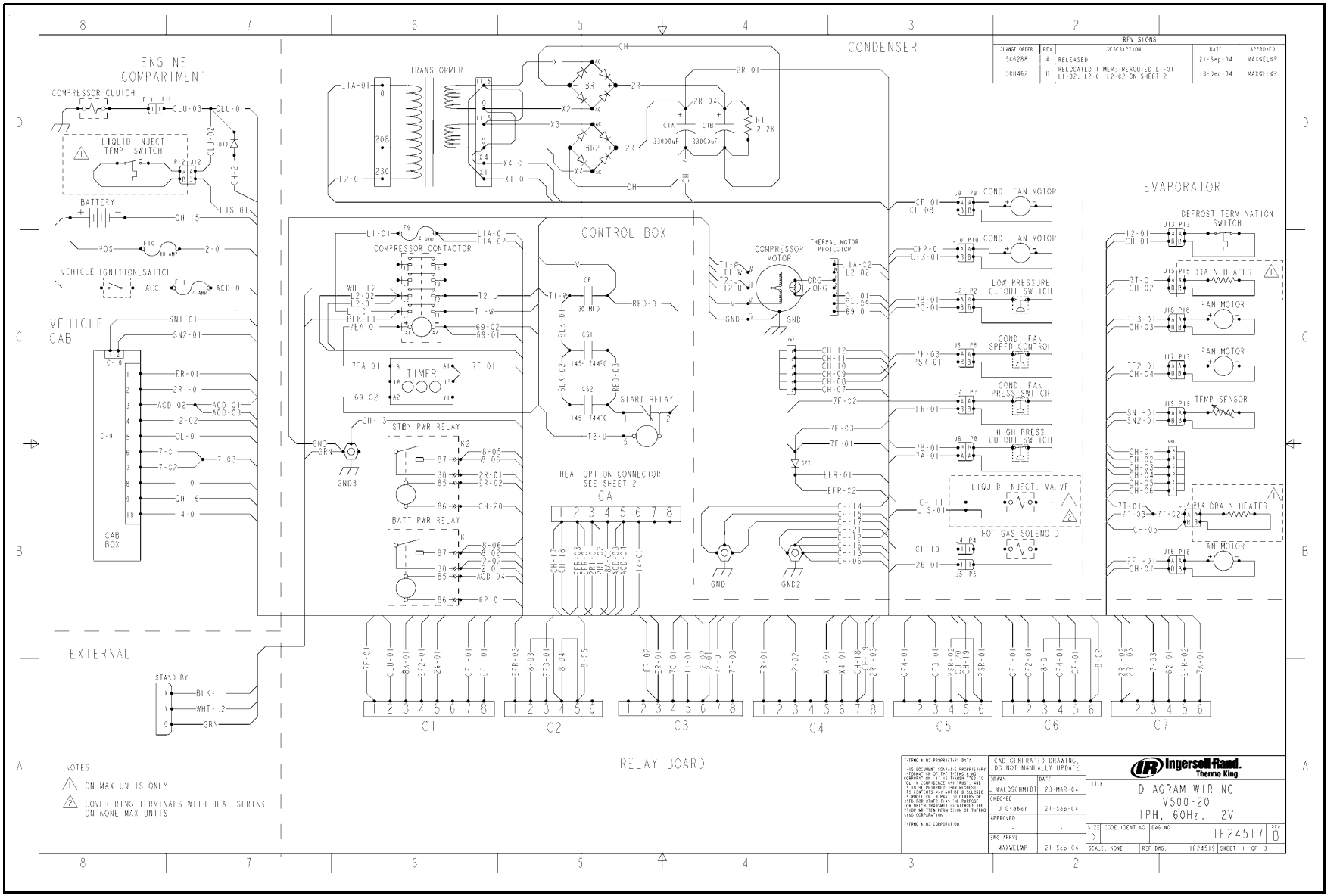


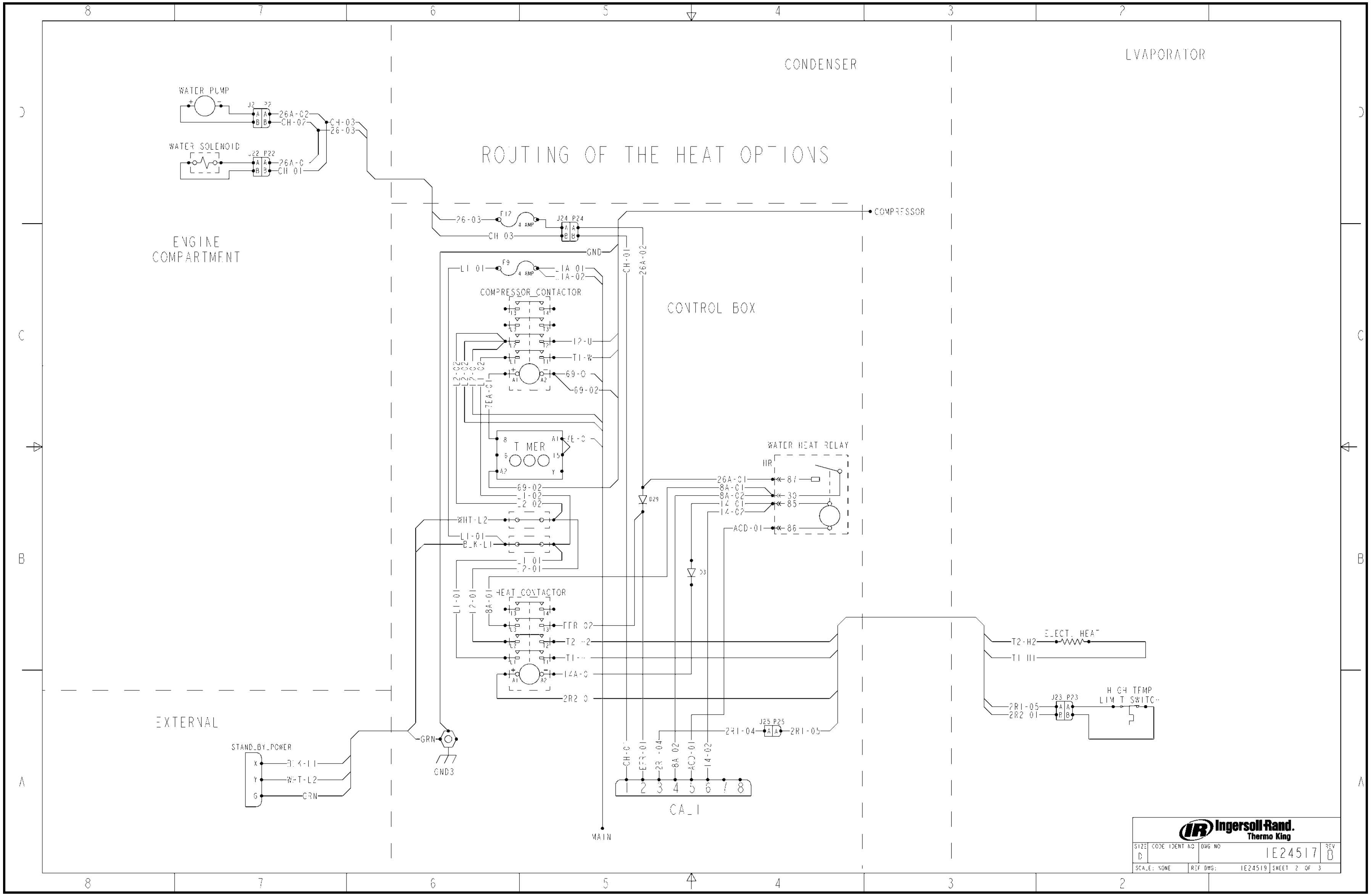
Ingersoll-Rand.
Thermo King

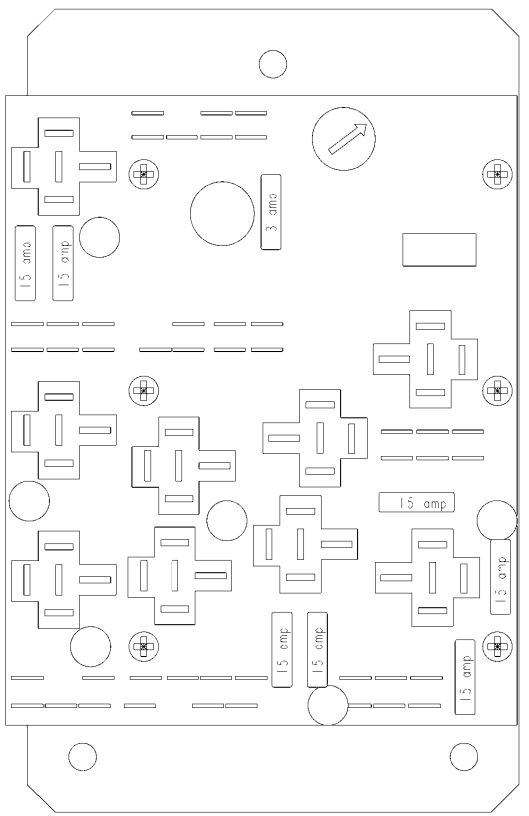
SIZE D	CODE IDENT NO	DWG NO	REV K
		IE24518	

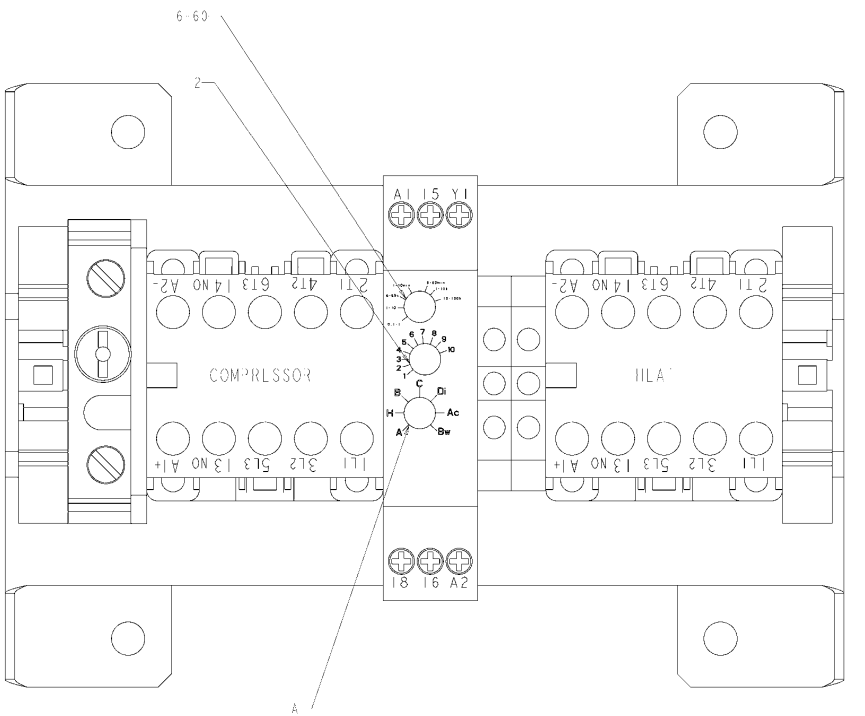
SCALE: NONE | REF DWG: IE24522 | SHEET 2 OF 2


Ingersoll-Rand
Thermo King
DIAGRAM SCHEMATIC
V500-20
IPH, 60HZ, 12V
IE24519


ENGINE COMPARTMENT
CONDENSER
EVAPORATOR
CONTROL BOX
VEHICLE CAB
EXTERNAL
RELAY BOARD
TRANSFORMER
COMPRESSOR CLUTCH
LIQUID INJECT TEMP. SWITCH
BATTERY
VEHICLE IGNITION SWITCH
COMPRESSOR CONTACTOR
TIMER
STBY PWR RELAY
BATT PWR RELAY
START RELAY
COMPRESSOR MOTOR
THERMAL MOTOR PROTECTOR
HEAT OPTION CONNECTOR SEE SHEET 2
COND. FAN MOTOR
LOW PRESSURE CUT OUT SWITCH
COND. FAN SPEED CONTROL
COND. FAN PRESS SWITCH
HIGH PRESS CUT OUT SWITCH
LIQUID INJECT VALVE
HOT GAS SOLENOID
DEFROST TERMINATION SWITCH
DRAIN HEATER
TEMP SENSOR
CAB BOX
STAND BY
GND
GND2
GND3
C1
C2
C3
C4
C5
C6
C7
NOTES:
1. ON MAX LV IS ONLY.
2. COVER RING TERMINALS WITH HEAT SHRINK ON NONE MAX UNITS.
REVISIONS
CHANGE ORDER | REV | DESCRIPTION | DATE | APPROVED
506288 | A | RELEASED | 21-Sep-04 | MAXGELB
508462 | B | RELOCATED 1 WLR: REROUTED L1-01, L1-02, L2-C, L2-C2 ON SHEET 2 | 13-Dec-04 | MAXGELB
Ingersoll-Rand. Thermo King
DIAGRAM WIRING
V500-20
1PH, 60Hz, 12V
DRAWN: WALDSCHMIDT 23-MAR-04
CHECKED: J Graber 21-Sep-04
APPROVED:
ENG APPVL: MAXWELMP 21 Sep 04
SIZE D | CODE IDENT NO | DWG NO 1E24517 | REV D
SCALE: NONE | REF DWG. 1E24519 | SHEET 1 OF 3


ROUTING OF THE HEAT OPTIONS
CONDENSER
EVAPORATOR
ENGINE COMPARTMENT
CONTROL BOX
EXTERNAL
WATER PUMP
WATER SOLENOID
COMPRESSOR
COMPRESSOR CONTACTOR
HEAT CONTACTOR
WATER HEAT RELAY
TIMER
ELECT. HEAT
HIGH TEMP LIMIT SWITCH
STAND BY POWER
GND3
MAIN
Ingersoll-Rand.
Thermo King
1E24517
SHEET 2 OF 3

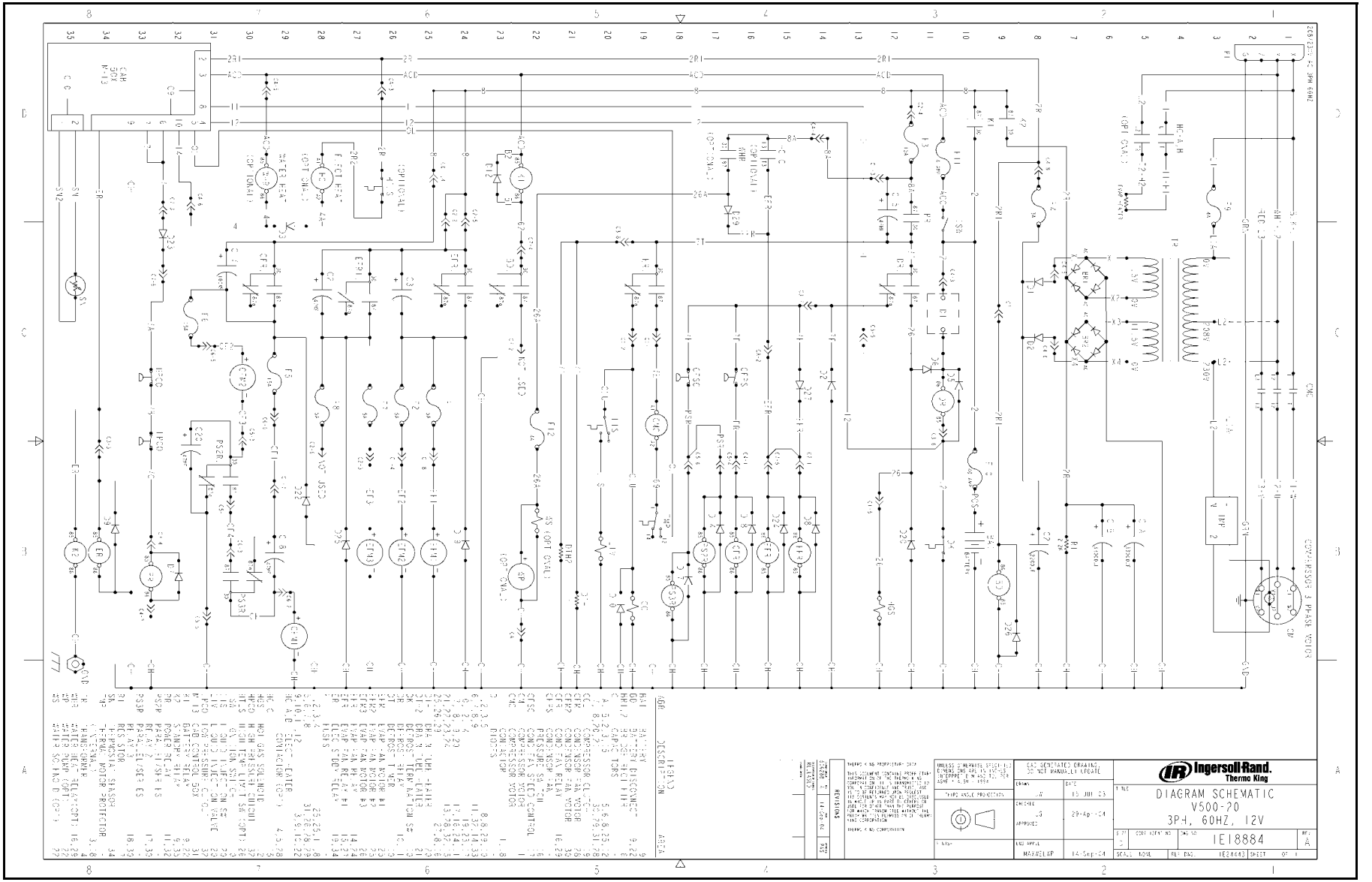


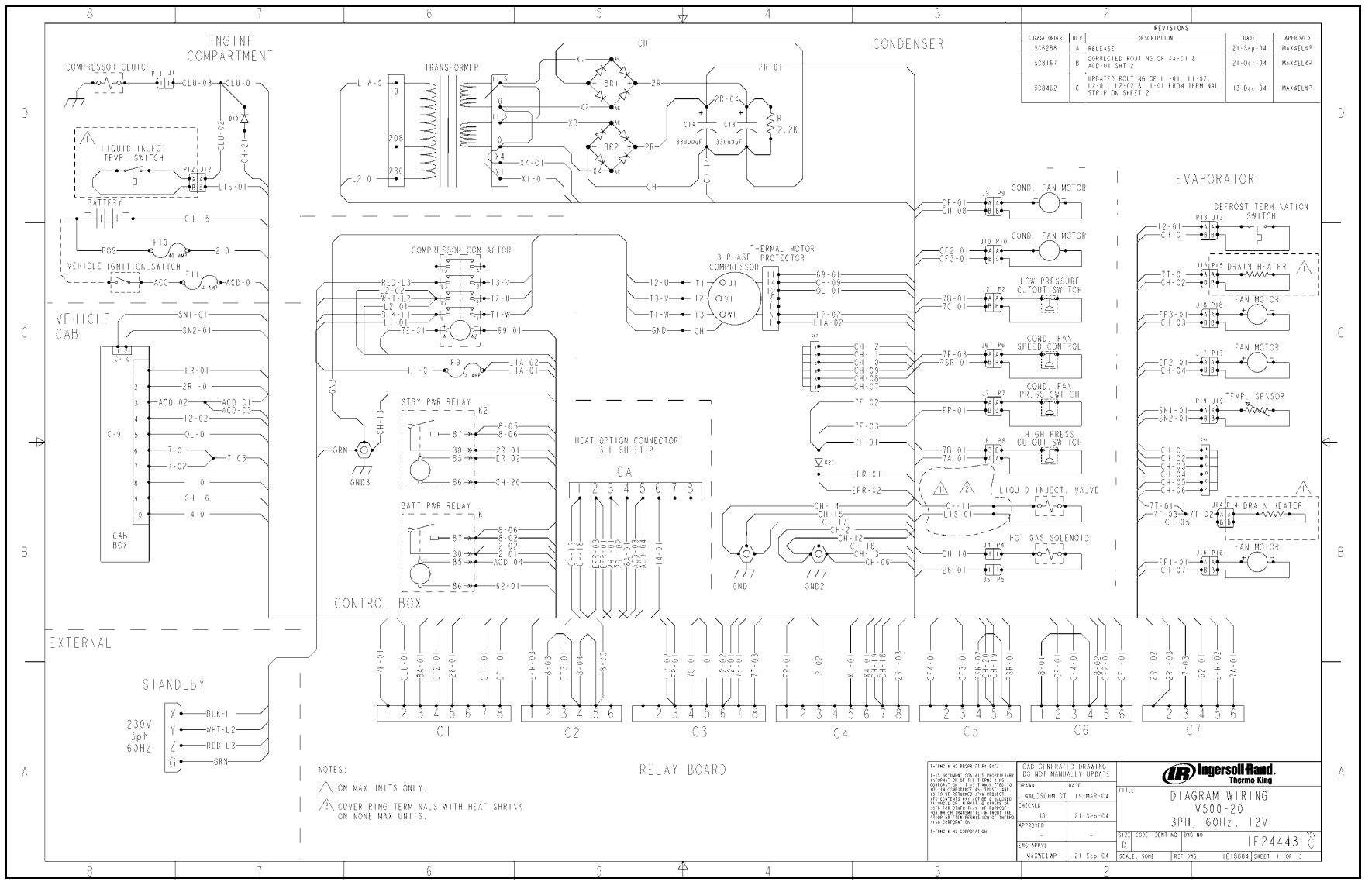


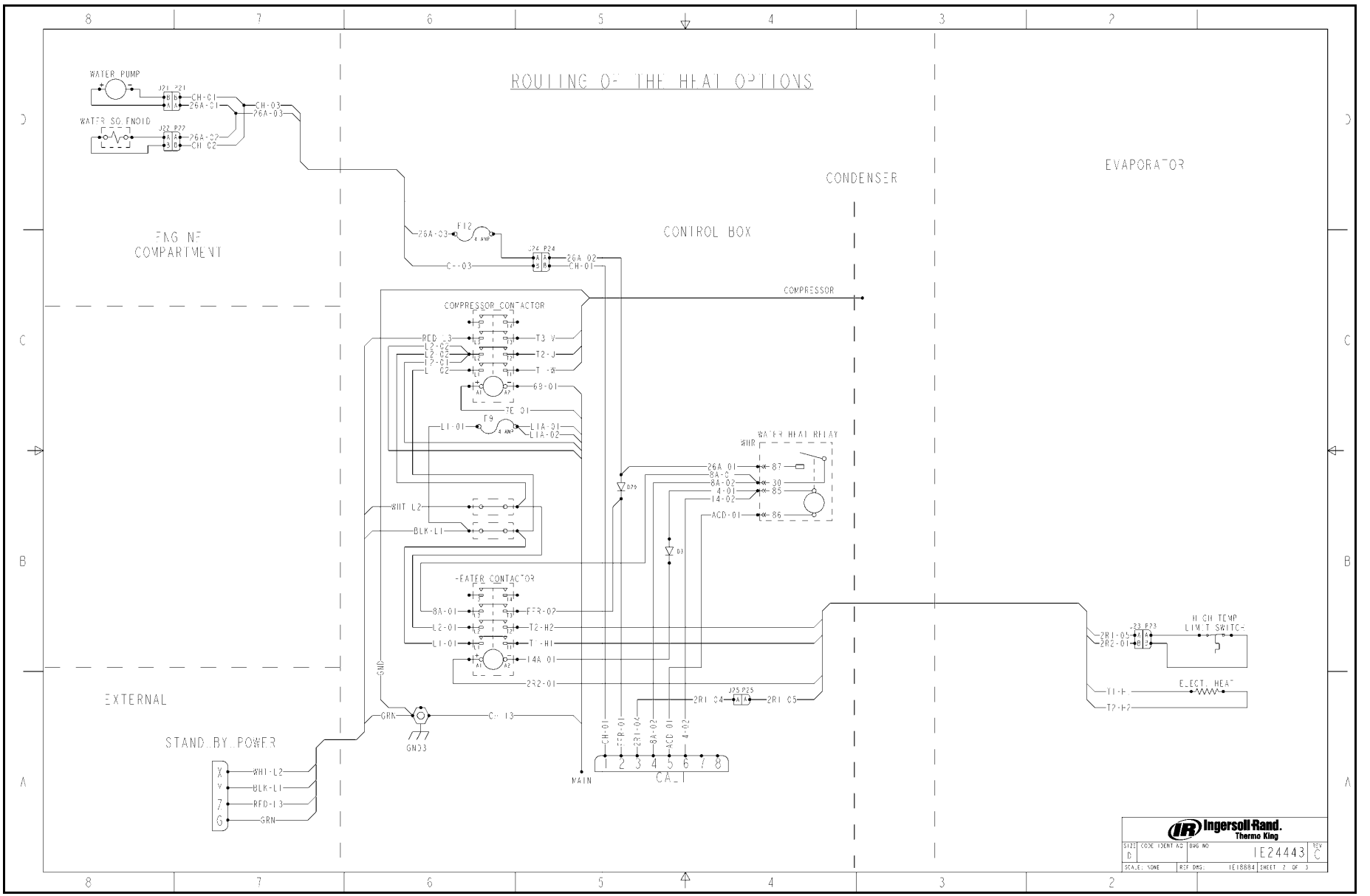
CONTACTOR ASSEMBLY FOR HEAT OPTION

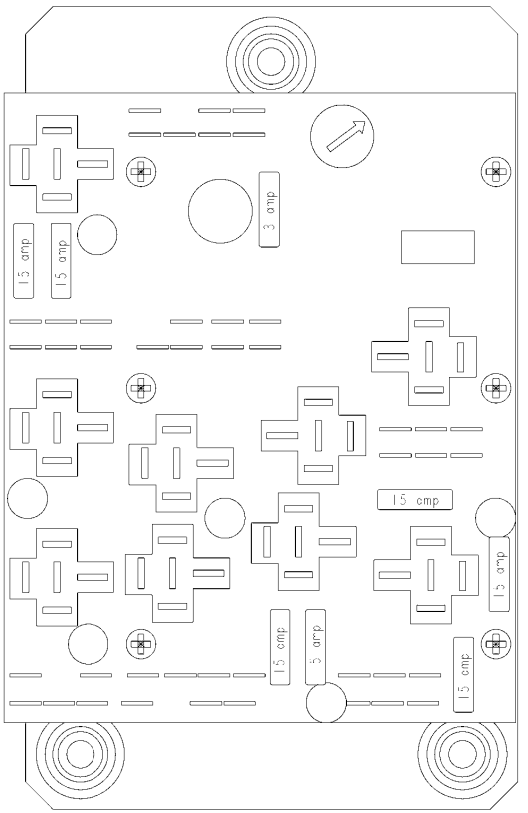
Ingersoll Rand. Thermo King

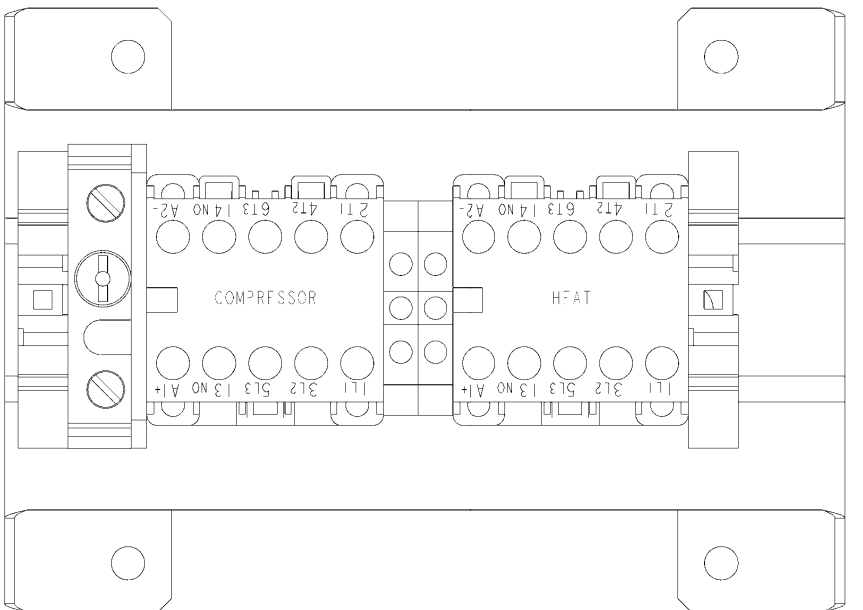
SIZE	CODE IDENT NO	DWG NO	REV
D		IE24517	B
SCALE: NONE	REF DWG: IE24519	SHEET 3 OF 3	


Ingersoll-Rand.
Thermo King
DIAGRAM SCHEMATIC
V500-20
3PH, 60HZ, 12V
IE18884


REVISIONS
CHANGE ORDER | REV | DESCRIPTION | DATE | APPROVED
506288 | A | RELEASE | 21-Sep-04 | MAXWELL
508167 | B | CORRECTED ROUTING OF 4A-C1 & ACD-01 SHT 2 | 21-Oct-04 | MAXWELL
508462 | C | UPDATED ROUTING OF L -01, L1-02, L2-01, L2-C2 & T-01 FROM TERMINAL STRIP ON SHEET 2 | 13-Dec-04 | MAXWELL
ENGINE COMPARTMENT
CONDENSER
EVAPORATOR
VEHICLE CAB
CONTROL BOX
EXTERNAL
RELAY BOARD
COMPRESSOR CLUTCH
TRANSFORMER
LIQUID INJECT. SOLENOID
HOT GAS SOLENOID
COND. FAN MOTOR
LOW PRESSURE CUT-OUT SWITCH
COND. FAN SPEED CONTROL
COND. FAN PRESS SWITCH
HIGH PRESS CUT-OUT SWITCH
DEFROST TERMINATION SWITCH
DRAIN HEATER
TEMP. SENSOR
COMPRESSOR CONTACTOR
3 PHASE PROTECTOR
THERMAL MOTOR
STBY PWR RELAY
BATT PWR RELAY
HEAT OPTION CONNECTOR
SEE SHEET 2
BATTERY
VEHICLE IGNITION SWITCH
CAB BOX
STAND_BY
230V 3ph 60HZ
NOTES:
1. ON MAX UNITS ONLY.
2. COVER RING TERMINALS WITH HEAT SHRINK ON NONE MAX UNITS.
Ingersoll-Rand. Thermo King
TITLE
DIAGRAM WIRING
V500-20
3PH, 60Hz, 12V
SIZE D
CODE IDENT NO
DWG NO IE24443
REV C
SCALE: NONE
REF DWG: IE18884
SHEET 1 OF 3


ROUTING OF THE HEAT OPTIONS
ENGINE COMPARTMENT
CONTROL BOX
CONDENSER
EVAPORATOR
EXTERNAL
STAND..BY..POWER
WATER PUMP
WATER SQ ENOID
COMPRESSOR CONTACTOR
COMPRESSOR
WATER HEAT RELAY
HEATER CONTACTOR
HIGH TEMP LIMIT SWITCH
ELECT. HEAT
MAIN
GND3
Ingersoll-Rand.
Thermo King
IE24443



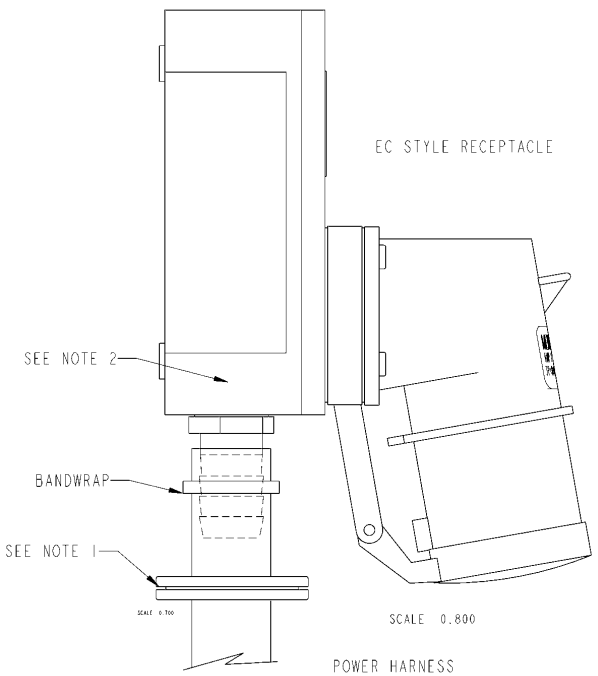


CONTACTOR ASSEMBLY FOR HEAT OPTION

Ingersoll-Rand
Thermo King

SIZE	CODE IDENT NO	DWG NO	REV
D		IE24443	C
SCALE: NONE	REF DWG: IE18884	SHEET 3 OF 3	

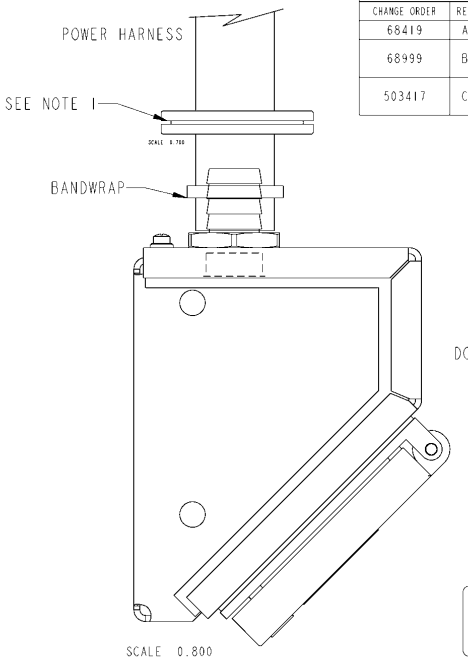
REVISIONS				
CHANGE ORDER	REV	DESCRIPTION	DATE	APPROVED
68419	A	RELEASED	27-Aug-96	JS
68999	B	REVISED DRAWING TO SHOW 1 & 3 PHASE POWER HARNESS	11-Mar-97	JS
503417	C	REDRAW ON PRO-E, UPDATED VIEW OF EC RECEPTACLE	06-Dec-02	RWS



EC STYLE RECEPTACLE

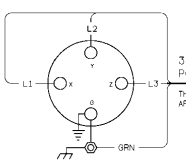
SCALE 0.800

POWER HARNESS



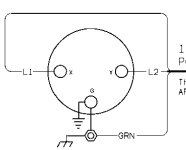
DOMESTIC STYLE RECEPTACLE

SCALE 0.800



3 PHASE
POWER HARNESS

THE RECEPTACLE IS ATTACHED TO THE POWER HARNESS AFTER THE HARNESS IS ROUTED THROUGH THE FRAME.

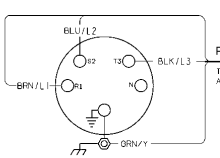


1 PHASE
POWER HARNESS

THE RECEPTACLE IS ATTACHED TO THE POWER HARNESS AFTER THE HARNESS IS ROUTED THROUGH THE FRAME.

RECEPTACLE MOUNTING SCREW

SPOTFACE AROUND HOLE IN COVER TO ALLOW FOR A GOOD ELECTRICAL GROUND CONNECTION. (BOTH PHASES)



POWER HARNESS

THE RECEPTACLE IS ATTACHED TO THE POWER HARNESS AFTER THE HARNESS IS ROUTED THROUGH THE FRAME.

RECEPTACLE MOUNTING SCREW

SPOTFACE AROUND HOLE IN COVER TO ALLOW FOR A GOOD ELECTRICAL GROUND CONNECTION.

NOTES:
1. GROMMET NOT USED IN ALL APPLICATIONS.
2. A BANDWRAP IS TO BE INSTALLED AROUND THE POWER HARNESS WIRES TO PROVIDE FOR A VERTICAL STRAIN RELIEF.

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE

		DATE
DRAWN	MTN	27-Aug-96
CHECKED	MTN	02-Sep-96
APPROVED	JS	10-Sep-96
ENG APPVL	-	-

Ingersoll-Rand. Thermo King

TITLE DIAGRAM - INSTALLATION
POWER HARNESS
REMOTE RECEPTACLE BOX

SIZE	CODE IDENT NO	DWG NO	REV
C		2C21034	C

SCALE: NONE | REF DWG: - | SHEET 1 OF 1