



**ADVANCED TEMPERATURE CONTROL**

**TRUCK REFRIGERATION SYSTEMS**

**INSTALLATION INFORMATION**

**PART NUMBER M960052  
REV. (FEB 2010)**

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# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

- 1. REVIEW ALL PARTS PROVIDED IN THE INSTALLATION KIT AND REPORT ANY SHORTAGES OR ERRORS IMMEDIATELY.**
- 2. INSTALL COMPRESSOR MOUNTING KIT AND COMPRESSOR TO ENGINE AS PER THE SEPARATE INSTRUCTIONS PROVIDED BY THE MOUNT KIT MANUFACTURER.**
- 3. INSTALL CONDENSER: DEPENDING ON THE APPLICATION THE CONDENSER MAY BE ONE OF TWO TYPES.**

### **A) ROOF MOUNTED**

**WILL REQUIRE FOUR (4) 1/2" MOUNTING HOLES AND A LINE HOLE SUITABLE TO PASS REFRIGERANT LINES AND ELECTRICAL HARNESS THROUGH THE ROOF (TEMPLATE AND MOUNTING HARDWARE PACKED WITH THE CONDENSER.)**

### **B) NOSE MOUNTED**

**WILL REQUIRE PERIMETER FASTENERS SUITABLE TO SECURE THE UNIT ON THE FRONT BULKHEAD, ALSO A LINE HOLE SUITABLE TO PASS REFRIGERANT LINES AND ELECTRICAL HARNESS THROUGH THE FRONT WALL (TEMPLATE AND MOUNTING HARDWARE PACKED WITH THE CONDENSER.)**

- 4. INSTALL EVAPORATOR: EVAPORATORS ARE DESIGNED TO BE CEILING OR FRONT WALL MOUNTED. PLEASE NOTE IF THE EVAPORATOR IS FRONT WALL MOUNTED ADD A CEILING SUPPORT TO THE FRONT OF THE EVAPORATOR. A SPACE OF 12" IS RECOMMENDED ON THE UNIT SIDES FOR SERVICEABILITY.**
- 5. INSTALL RELAY BOX: THE RELAY BOX IS DESIGNED TO MOUNT IN THE SAME AREA AS THE EVAPORATOR. AFTER INSTALLATION OF THE BOX THE WIRING HARNESS AND CAB CONTROL HARNESS CAN BE ROUTED TO THE TRUCK CAB AND ENGINE COMPARTMENTS. THE RELAY BOX IS ALSO THE JUNCTION BOX FOR THE WIRING CONNECTIONS FROM THE CONDENSER, THE EVAPORATOR AND THE ELECTRIC STANDBY SECTIONS.**

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## **GENERAL INSTALLATION INSTRUCTIONS**

6. **INSTALL CAB CONTROL:** THE CAB CONTROL IS DESIGNED TO BE MOUNTED IN A CONVENIENT LOCATION TO ALLOW THE OPERATOR ACCESS TO SET THE BOX TEMPERATURE.
  
7. **INSTALL POWER HARNESS:** THE POWER HARNESS IS DESIGNED TO MOUNT IN THE ENGINE COMPARTMENT NEAR THE VEHICLES BATTERY AND INCLUDES A BREAKER AND RELAY FOR THE SYSTEM. PLEASE NOTE IF THE RELAY IS INSTALLED IN ANOTHER LOCATION THE CIRCUIT BREAKER SHOULD STILL BE NEAR THE VEHICLES BATTERY.
  
8. **OIL SEPARATOR INSTALLATION:**
  1. THE OIL SEPARATOR MUST BE MOUNTED SECURELY IN A VERTICAL POSITION.
  2. THERE IS A SMALL ORIFICE ADAPTER IN THE OIL RETURN PORT ON THE SEPARATOR. THIS MUST BE IN PLACE PRIOR TO CONNECTING THE OIL RETURN LINE.
  3. THE OIL SEPARATOR IS USUALLY INSTALLED REASONABLY CLOSE TO THE COMPRESSOR IN THE ENGINE COMPARTMENT.
  4. THE OIL SEPARATOR SHOULD BE INSTALLED CLOSE TO THE COMPRESSOR DISCHARGE LINE BETWEEN THE COMPRESSOR AND THE CONDENSER.
  5. OIL SEPARATORS PERFORM BEST WHEN OPERATING AT OR NEAR THE COMPRESSOR DISCHARGE TEMPERATURE.
  6. WHEN USING A SCHRADER PORT FOR THE OIL SEPARATOR CONNECTION, THE VALVE STEM MUST BE REMOVED.
  7. WHEN USING A SELTEC COMPRESSOR THE OIL RETURN LINE MUST BE CONNECTED TO THE 1/4" SCHRADER PORT ON THE SUCTION LINE FITTING FASTENED TO THE COMPRESSOR OR TO AN IN-LINE SPLICER WITH A SCHRADER PORT.

# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

### **8. OIL SEPARATOR INSTALLATION (CONT.)**

- 8. WHEN USING A SANDEN COMPRESSOR THE OIL RETURN LINE CAN BE CONNECTED THE SAME AS ABOVE, OR TO THE OIL FILLER PORT BY USING AN ADAPTER. (NOT SUPPLIED)**
  
- 9. THE REFRIGERANT LINES SHOULD BE INSTALLED USING THE FITTINGS SUPPLIED FOR THE THREE SIZES OF LINES PROVIDED IN THE INSTALLATION KIT. (NOTE REFER TO THE REFRIGERATION CIRCUIT DIAGRAMS)**
  
- 10. FOR ELECTRICAL CONNECTIONS PLEASE REFER TO THE ATC WIRING DIAGRAMS INCLUDED WITH THE UNIT.**
  
- 11. ALL HOSE AND WIRING SHOULD BE INSPECTED AFTER THE INSTALLATION TO ENSURE A NEAT APPEARANCE AND TO PREVENT A WEAR – THROUGH RESULTING FROM VEHICLE VIBRATION.**
  
- 12. ON UNITS WITH HOT WATER HEAT THE SOLENOID VALVE SHOULD BE INSTALLED IN THE OUTLET LINE OF THE HEATER COIL. THE HEATER LINES SHOULD BE ROUTED AWAY FROM ANY HOT SPOTS. THEY SHOULD BE INSPECTED AFTER THE INSTALLATION TO ENSURE A NEAT APPEARANCE AND TO PREVENT ANY WEAR – THROUGH RESULTING FROM VEHICLE VIBRATION.**
  
- 13. THE INSTALLED STSTEM SHOULD THEN BE LEAK TESTED, EVACUATED AND CHARGED BY A QUALIFIED REFRIGERATION TECHNICIAN.**
  
- 14. THE CHARGED SYSTEM SHOULD THEN BE TESTED.**

# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

### **OIL TYPE**

**ALL 134A (A.T.C) OVER-THE-ROAD ONLY REFRIGERATION SYSTEMS HAVE BEEN SET UP FOR USE WITH POLYALKYLENE GLYCOL (P.A.G) OIL. ANY TOP-UP MUST BE DONE WITH COMPATIBLE OIL.**

**ALL 404A (A.T.C) OVER-THE-ROAD ONLY REFRIGERATION SYSTEMS HAVE BEEN SET UP FOR USE WITH POLYOLESTER OIL (MOBILE ARCTIC 22.) ANY TOP-UP MUST BE DONE WITH COMPATIBLE OIL.**

**ALL (A.T.C) ELECTRIC STANDBY REFRIGERATION SYSTEMS WITH A COPELAND COMPRESSOR HAVE BEEN SET UP FOR USE WITH POLYOLESTER OIL (MOBILE ARCTIC 22) ANY TOP-UP MUST BE DONE WITH COMPATIBLE OIL.**

### **OIL CHARGE – NEW INSTALLATIONS**

**LOW TEMPERATURE SYSTEMS (C/W OIL SEPARATOR) ADD 6 OUNCES.**

**MEDIUM TEMPERATURE SYSTEMS (NO OIL SEPARATOR) ADD 5 OUNCES.**

### **OIL CHARGE – COMPONENT REPLACEMENT**

<b>OIL SEPARATOR</b>	<b>ADD 1 OUNCE</b>
<b>CONDENSER INSTALLATION</b>	<b>ADD 1 OUNCE</b>
<b>EVAPORATOR INSTALLATION</b>	<b>ADD 2 OUNCES</b>
<b>FILTER DRIER INSTALLATION</b>	<b>ADD 1 OUNCE</b>
<b>HOSE REPLACEMENT (OVER 20 FEET)</b>	<b>ADD 1 OUNCE</b>

# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

### **OIL CHARGE – COMPONENT REPLACEMENT**

#### **COMPRESSOR REPLACEMENT**

FLUSH AND CLEAN ALL MAJOR COMPONENTS AND **REPLACE THE FILTER DRIER.**

ADD OIL TO THE SYSTEM AS PER THE ABOVE LISTED COMPONENTS.

**NOTE:** THE ABOVE IS A GUIDELINE ONLY WHEN CHANGING ANY COMPONENTS THE OIL IN THE COMPRESSOR SHOULD BE CHECKED FOR NORMAL OPERATING LEVELS AND ADDITIONAL OIL ADDED IF REQUIRED.

#### **FITTINGS**

##### **CAUTION:**

WHEN USING IN-LINE SPLICER FITTINGS ON THE COMPRESSOR DISCHARGE AND SUCTION LINE HOSES, THERE MUST BE A MINIMUM OF 12 INCHES BETWEEN THE COMPRESSORS FITTING FERRULES OR CLIPS AND THE SPLICER FERRULES OR CLIPS IN ORDER TO PREVENT UNDUE STRESS AT THE COMPRESSOR FITTINGS.

#### **COMPRESSOR WARRANTY CONDITIONS**

##### **NOTE:**

MANUFACTURERS OF BELT DRIVEN REFRIGERANT COMPRESSORS **WILL NOT** HONOUR WARRANTY IF ANY OF THE FOLLOWING CONDITIONS ARE FOUND:

1. COMPRESSOR CONTAINS NO OIL OR HAS BEEN TOPPED-UP AFTER THE FACT. (THIS IS DETECTABLE)

# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

### **COMPRESSOR WARRANTY CONDITIONS (CONT.)**

2. COMPRESSORS ARE RETURNED WITHOUT CAPPED PORTS.
3. COMPRESSOR CONTAINS CONTAMINATED OIL I.E DARK, WITH METAL FRAGMENTS. THIS IS USUALLY DUE TO A PRIOR BURNOUT CONDITION NOT BEING FLUSHED OUT OF THE SYSTEM.
4. COMPRESSOR SHAFT SEAL IS LEAKING. THIS IS CONSIDERED TO BE FIELD REPLACEABLE.
5. COMPRESSOR HAS BEEN USED ON A SYSTEM, WHICH CONTAINED A REFRIGERANT NOT SPECIFIED BY THE MANUFACTURER.

AS PER THE COMPRESSOR MANUFACTURERS POLICIES, A.T.C. **WILL NOT** ASSUME ANY RESPONSIBILITY, NOR ACCEPT PRODUCTS, WHICH EXHIBIT ANY OF THE ABOVE CONDITIONS.

IT IS THE INSTALLER'S RESPONSIBILITY TO ENSURE ANY PRIOR CONTAMINANTS HAVE BEEN FLUSHED OUT OF THE SYSTEM BY FOLLOWING ACCEPTABLE INDUSTRY STANDARDS, AND COMPATIBLE OILS AND TOP-UP PROCEDURES HAVE BEEN USED.

### **COPELAND SERVICE VALVES**

#### **WARNING:**

ALL ELECTRIC STANDBY COMPRESSORS USED IN A.T.C UNITS ARE SHIPPED WITH THE SERVICE VALVES IN THE FRONT SEATED POSITION (CLOSED.)

THEY ARE SHIPPED THIS WAY TO PROTECT THE OIL FROM MOISTURE CONTAMINATION.

THEY MUST BE IN THE BACK SEATED POSITION (OPEN) PRIOR TO START UP.

# **ADVANCED TEMPERATURE CONTROL**

## **GENERAL INSTALLATION INSTRUCTIONS**

### **SCHRADER VALVE LEAKAGE**

#### **IMPORTANT:**

**SINCE THE INTRODUCTION OF 134A WE HAVE EXPERIENCED A RASH OF SERVICE COMPLAINTS RELATED TO REFRIGERANT LEAKAGE FROM THE CHARGING PORTS ON THE IN-LINE SPLICERS OR THE FITTINGS. THIS PROBLEM HAS ALSO BEEN REPORTED BY A NUMBER OF OTHER DISTRIBUTORS THROUGHOUT NORTH AMERICA.**

**WE FEEL THAT BY MOVING THE RESPONSIBILITY FOR THE QUALITY OF THE SCHRADER VALVE SEAL FROM THE COMPRESSOR MANUFACTURER TO THE FITTING MANUFACTURER HAS CAUSED THIS PROBLEM. FOR WHATEVER REASON THE FITTING MANUFACTURER DOES NOT DO AS GOOD A JOB AS THE COMPRESSOR MANUFACTURER.**

**THE QUALITY OF THE REFRIGERANT SEAL THROUGH THE SCHRADER VALVE MUST BE ESTABLISHED BY THE SERVICE PERSONAL AT THE TIME OF INSTALLATION; THERE IS NO OTHER PRACTICAL MEANS TO VERIFY THIS SEAL.**

**NO WARRANTY ALLOWANCE WILL BE GRANTED FOR THIS PROBLEM, OTHER THEN AT THE TIME OF INSTALLATION. WE KNOW FROM OUR DAY-TO-DAY EXPERIENCE THAT SOME OF THESE VALVES ARE LOOSE, SO THEY MUST BE CHECKED.**

**IT IS ALSO IMPORTANT TO ENSURE THE PLASTIC CAPS ARE INSTALLED AFTER THE INSTALLATION TO PROTECT THE VALVE FROM CONTAMINATION AND/OR DAMAGE.**