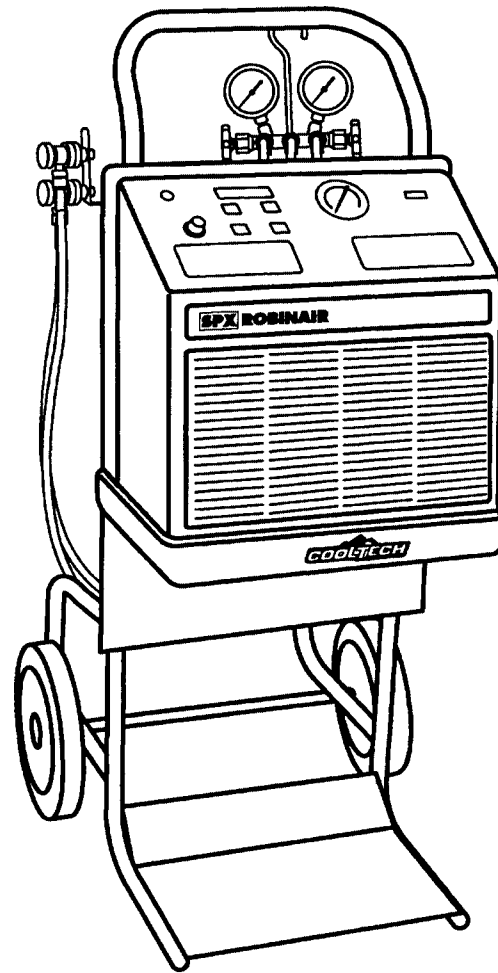


Operating Manual



34134-2K—Refrigerant Recovery,
Recycling and Recharging Unit
for R-134a

34134-2K—Unidad de Recuperación,
Reciclado y Recarga para R-134a
(Page 21)

LISTED



80S2

Recycling Equipment Design
Certified by Underwriters
Laboratories Inc.® for
Compliance with SAE-J2210
(1991) for HFC-134a



SPX **ROBINAIR**
Refrigerant Recovery,
Recycling and Recharging Station

Series: 34134-2K

Refrigerants: R-134a

SAFETY DEFINITIONS: Follow all **WARNING**, **CAUTION**, **IMPORTANT**, and **NOTE** messages in this manual. These messages are defined as follows: **WARNING** means you may risk serious personal injury or death; **CAUTION** means you may risk personal injury, property damage, or serious unit damage; **IMPORTANT** means you may risk unit damage; and **NOTES** provide clarity and helpful tips. These safety messages cover situations ROBINAIR is aware of. ROBINAIR cannot know, evaluate, and advise you as to all possible hazards. You must make sure all conditions and procedures do not jeopardize your personal safety.

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⚠ **WARNINGS** ⚠



ALLOW ONLY QUALIFIED PERSONNEL TO OPERATE THE UNIT. Before operating the unit, read and follow the instructions and warnings in this manual. The operator must be a certified technician and must be familiar with air conditioning and refrigeration systems, refrigerants, and the dangers of pressurized components. If the operator cannot read English, operating instructions and safety precautions must be read and discussed in the operator's native language.

Si el operador no puede leer el inglés, las instrucciones de operación y las precauciones de seguridad deberán leerse y comentarse en el idioma nativo del operador.

Si l'utilisateur ne peut lire l'anglais, les instructions et les consignes de sécurité doivent lui être expliquées dans sa langue maternelle.



PRESSURIZED TANK CONTAINS LIQUID REFRIGERANT. Do not overfill the internal storage vessel because overfilling may cause explosion and serious personal injury or death. Do not recover or charge refrigerants into non-refillable containers; use only federally authorized refillable containers.



ALL HOSES MAY CONTAIN LIQUID REFRIGERANT UNDER PRESSURE. Contact with refrigerant may cause personal injury. Wear correct protective equipment, including safety goggles. Disconnect hoses with extreme caution.



HIGH VOLTAGE ELECTRICITY INSIDE THE UNIT HAS A RISK OF ELECTRICAL SHOCK. Exposure may cause personal injury. Refer to the instruction manual for correct procedure when disconnecting the power.



TO REDUCE THE RISK OF FIRE, do not use the unit in the vicinity of spilled or open containers of gasoline or other flammable substances. An extension cord may overheat and cause fire. If an extension cord is needed, use the shortest possible cord with a minimum size of No. 14 AWG.



DO NOT BREATHE REFRIGERANT. Exposure may cause personal injury, especially to the eyes, nose, throat, and lungs. Use this equipment in locations with mechanical ventilation that provides at least four air changes per hour or locate the equipment at least 18 inches above the floor. If accidental system discharge occurs, ventilate the work area before resuming service.



USE THE UNIT WITH ONLY R-134a REFRIGERANT. The unit is for recovering, recycling, and recharging only R-134a refrigerant! Do not attempt to adapt the unit for another refrigerant. Do not mix refrigerant types through a system or in the same container; mixing of refrigerants will cause severe damage to the unit and the vehicle air conditioning system.



DO NOT USE COMPRESSED AIR TO PRESSURE TEST OR LEAK TEST THE UNIT OR VEHICLE AIR CONDITIONING SYSTEM. Some mixtures of air and R-134a refrigerant are combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion causing personal injury or property damage.

Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.

This equipment is protected by one or more of the following patents: US: 4,938,031; 5,005,369; 5,248,125; 4,261,178; 4,768,347. Other U.S. and Foreign Patents Pending.

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English

Español

Introduction

This manual contains important safety procedures concerning the operation, use and maintenance of this product. Failure to follow the instructions contained in this manual may result in serious injury. If you are unable to understand any of the contents of this manual, please bring it to the attention of your supervisor. Do not operate this equipment unless you have read and understood the contents of this manual.

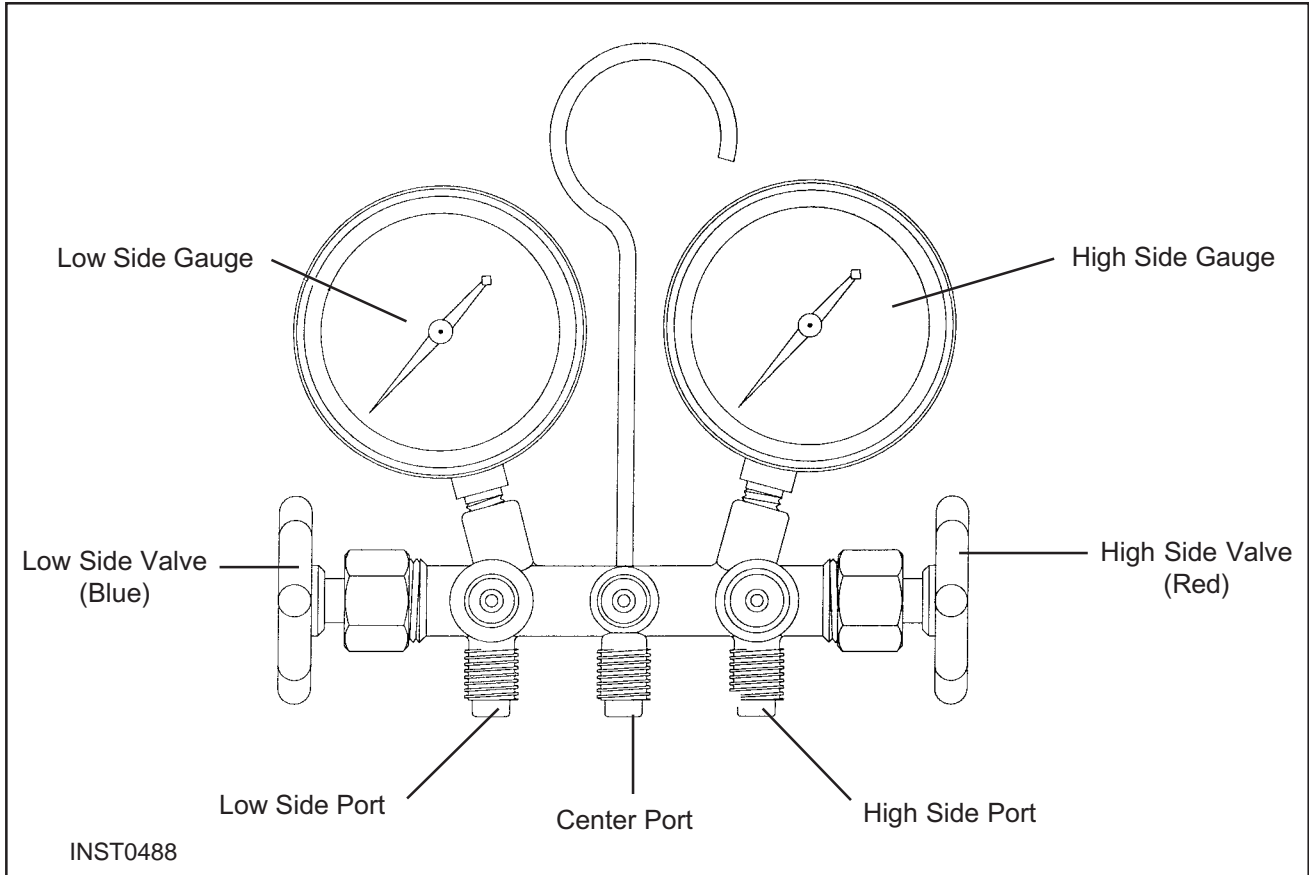
The 34134-2K Recovery, Recycling and Recharging unit is a one hook-up system used for R-134a vehicles. This single-pass system is UL listed and meets the SAE specifications for recycled refrigerant. It is also designed to be compatible with existing service equipment and standard service procedures.

The 34134-2K is simple to operate and has many user-friendly features:

- Hose holder rack
- Large diameter wheels for easy relocation
- Plastic shroud that is resistant to abrasions and chemicals
- Handy manifold gauge set

GLOSSARY OF TERMS

A/C System	The air conditioning system being serviced.
Unit	The refrigerant recovery/recycling/recharging unit.
Unit Tank	The refillable refrigerant tank included with this unit.
Source Tank	A supply of refrigerant used to refill the unit tank.



OPERATING TIPS

Follow the SAE-J2210 recommended service procedures for the containment of R-134a.

R-134a systems require special oils in place of the mineral oil used with R-12 systems. Refer to the A/C system manufacturer's service manuals for oil specifications.

Change the filter-drier when the display shows "CHANGE FILTER." Follow the instructions for changing the filter-drier.

Wait 10 minutes between recovery jobs when temperatures exceed 120°F / 49°C.

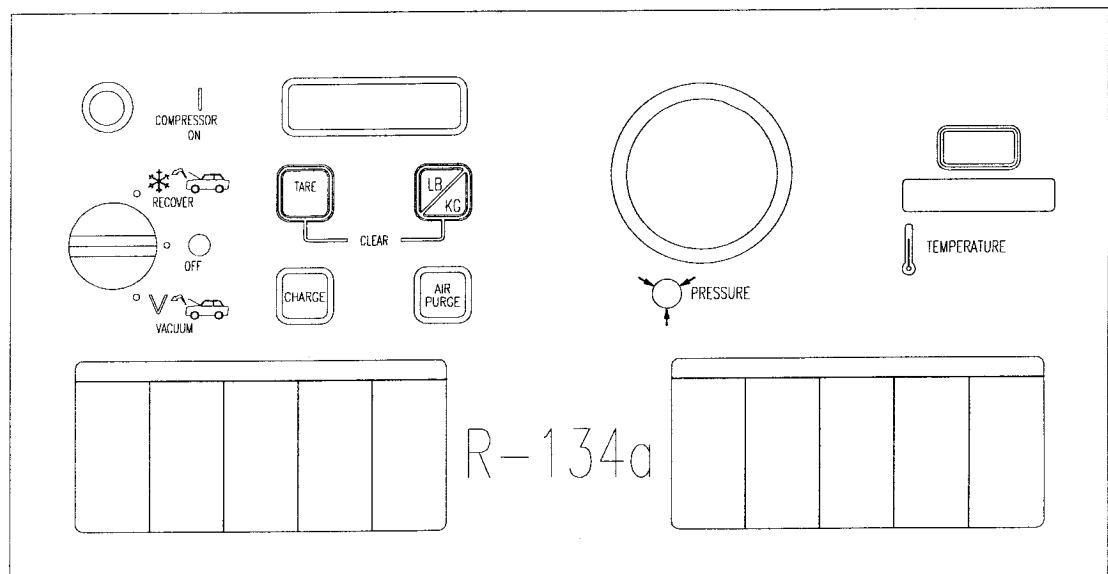
CAUTION! R-134a systems have special fittings (per SAE specifications) to avoid cross-contamination with R-12 systems. Do not attempt to adapt your unit for another refrigerant type—system failure will result!

Introduction

USING THE CONTROL PANEL

The control panel has the following specific operating functions:

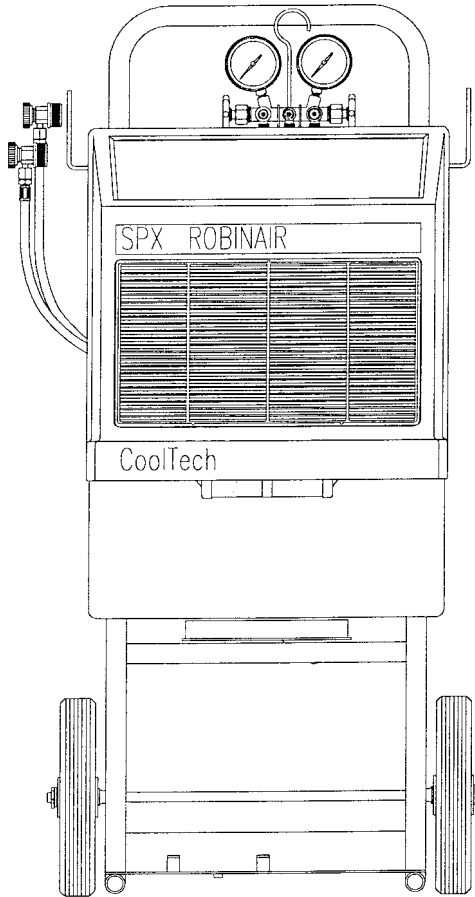
1. **RECOVER/VACUUM** Switch — Starts the recovery or vacuum process.
2. **TARE** Button — Zeros the display weight prior to recovery or charging.
3. **LB/KG** Button — Toggles between the weight measurement units.
4. **CHARGE** Button — Controls the charging process.
5. **AIR PURGE** Button — Controls the air purge process.
6. **TEMPERATURE** Display — Indicates tank temperature.
7. **COMPRESSOR ON** Light — Indicates compressor has started.
8. **PRESSURE** Gauge — Indicates the tank pressure.
9. **CONTROL BOARD** Display — Indicates refrigerant weight and error messages.



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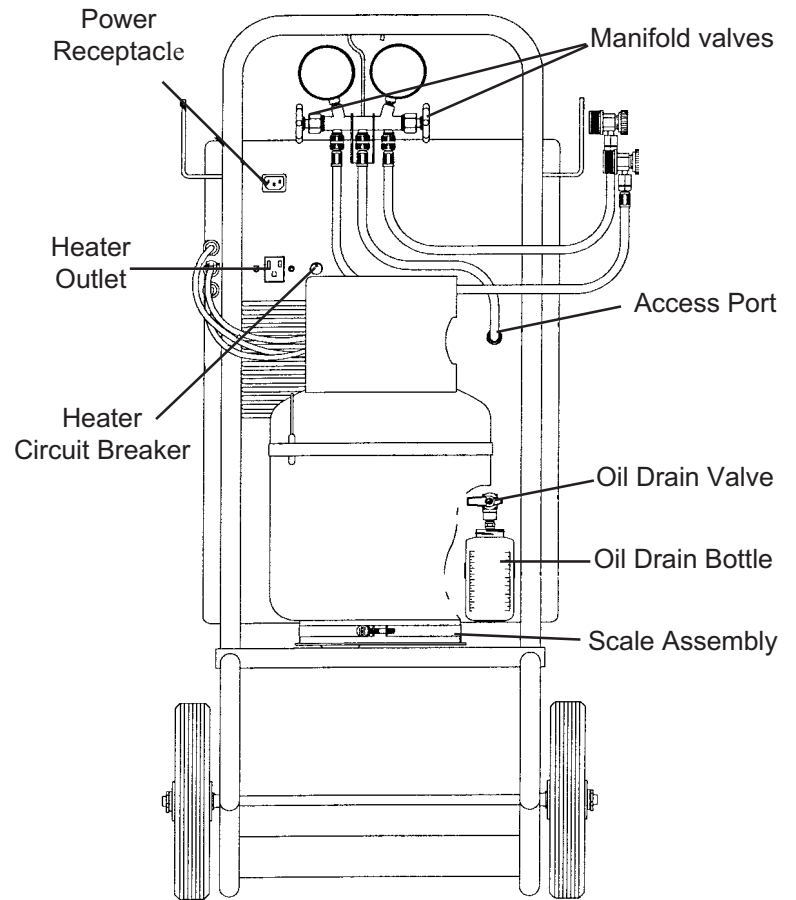
COMPONENT LOCATION AND IDENTIFICATION

Front View



INST 0755

Rear View



INST 0756

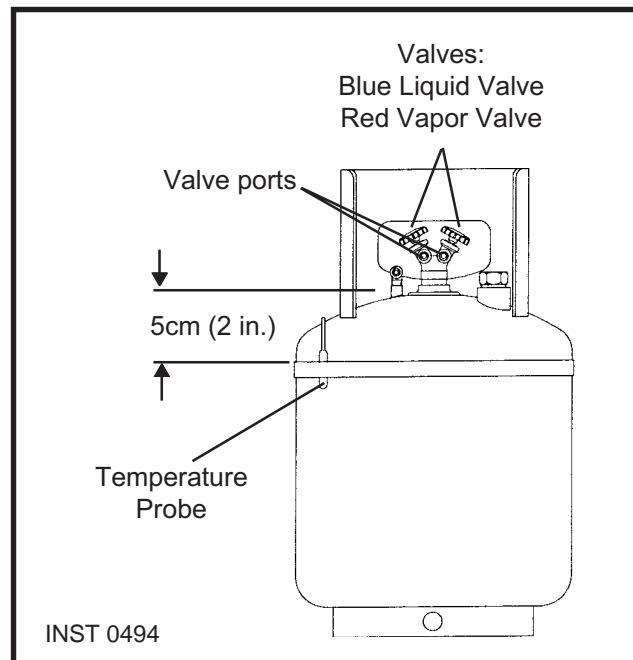
Set-Up Instructions

INSTALLING THE TANK

The new tank comes with a dry nitrogen charge of 10 to 15 psi (4.9 to 7.4 bar) to keep it clean and dry during shipment. To install the new tank, you will need to:

1. Purge its nitrogen charge by opening either valve on the tank, vent the pressure to the atmosphere, then close the valve.
2. Place the unit tank on the scale platform on the back of the unit (see illustration on page 5 for location). Then attach the tank strap to the tank handle.
3. Attach the temperature probe at the approximate location shown below.

CAUTION! Some tanks have slightly different valve configurations. Be sure to connect the VAPOR hose to the GAS (vapor) valve and connect the LIQUID hose to the LIQUID valve.



SETTING UP THE UNIT

To set up the unit to an R-134a vehicle:

1. Attach the 60" blue hose to the low side port of the manifold.
2. Attach the 60" yellow hose to the center port of the manifold.
3. Attach the 60" red hose to the high side port of the manifold.
4. Place the assembled manifold onto the manifold support bracket on the back of the unit.
5. Attach the yellow hose from the manifold to the access port on the back of the unit.
6. Connect the tank adapter (included with the unit) to the LIQUID port (blue) of the tank. Attach the blue low side hose from the manifold to the tank adapter.

NOTE: Use *ONLY* the tank adapter included with this unit. Use of any other adapter could result in damage to the compressor, voiding the manufacturer's warranty.

7. Attach the red vapor hose from the back of the unit to the GAS (red vapor) valve on the tank.
8. Attach the air purge hose to the air purge fitting on the unit tank.
9. Open both valves on the manifold.
10. Open both valves on the tank.
11. Open the service coupler on the blue low side hose.
12. Verify that the RECOVER/VACUUM switch (see page 4 for switch location) is in the OFF position.
13. Attach the power cord to the back of the unit (see page 5) and connect to the correct voltage outlet on the vehicle.
14. Turn the switch on the control panel to VACUUM.
15. Allow the unit to run for 5 minutes.
16. Turn the RECOVER/VACUUM switch to OFF.
17. Close the high side manifold valve (red).
18. Close the service coupler valve on the blue low side hose.
19. Close the LIQUID valve (blue) on the tank.
20. Disconnect the service coupler from the tank adapter.
21. Remove the tank adapter from the tank.
22. Attach LIQUID hose from the back of the unit to LIQUID port on the tank. Open the LIQUID valve on the tank.
23. Reconnect the tank adapter to the hose holder for storage.

ADDING REFRIGERANT TO THE UNIT TANK

With the tank in place on the unit, add refrigerant from a source tank to the unit tank using the following steps:

1. Connect the tank adapter to the LIQUID valve on the source tank. Attach the blue low side service coupler to the tank adapter.

NOTE: Use *ONLY* the tank adapter included with this unit. Use of any other could result in damage to the compressor, voiding the manufacturer's warranty.

2. Open the service coupler valve. Open the LIQUID valve on the source tank.

NOTE: Disposable tanks have only one valve and must be turned upside down to transfer liquid.

3. Press the TARE button (see page 4 for button location) on the control panel to zero the tare weight.
4. Turn the control panel switch to RECOVER. Monitor the display until 15 lbs. (6.8 kg) have been transferred.
5. Close the blue LIQUID valve on the source tank. Allow the unit to run for 5 minutes to clear the hoses.
6. Turn the RECOVER/VACUUM switch to OFF.
7. Close both manifold valves (see page 5 for manifold location).
8. Disconnect the service coupler from the tank adapter.
9. Remove the adapter from the tank.
10. Reconnect the tank adapter to the hose holder for storage.

RECOVERING REFRIGERANT

Use the following steps to take refrigerant out of a vehicle:

1. Connect the unit's 60" (1.5m) red high side hose with the service coupler to the high side fitting of the A/C system, then open the service coupler valve.
2. Connect the unit's 60" (1.5m) blue low side hose with the service coupler to the low side fitting of the A/C system, then open the service coupler valve.
3. Check the manifold gauges — both should register above zero. If there is no system pressure, there is no refrigerant in the system to recover.
4. Be sure the oil drain valve (see page 5 for oil drain valve location) is closed.
5. Open both manifold valves.
6. Verify both tank valves are open.
7. Plug the unit into the correct voltage outlet.
8. Turn the control panel switch to RECOVER. Recover refrigerant until the low side manifold gauge reads 13 in. Hg (0.44 Bar).
9. Close both manifold valves.
10. Turn the RECOVER/VACUUM switch to OFF.
11. Wait 5 minutes. Monitor the manifold gauges for a pressure rise above zero. If a rise occurs, repeat steps 5 – 10.

CAUTION! Drain the oil from the separator only after each recovery. Do not depressurize the oil separator.

12. Be sure the oil catch bottle is empty, then *slowly* open the oil drain valve, and drain the oil into the oil catch bottle. This oil was removed from the A/C system during recovery. When all the recovered oil has completely drained, close the valve and record the amount of oil in the bottle.

The A/C system is empty. Make any repairs at this time.

EVACUATING THE A/C SYSTEM

To ensure complete evacuation of the A/C system, use the following steps:

1. With the high side and low side hoses connected to the A/C system, open both manifold valves.
2. Verify both tank valves are open.
3. Turn the control panel switch to VACUUM. Follow the manufacturer's recommendations for evacuation time.
4. Turn the RECOVER/VACUUM switch to OFF.
5. Wait 5 minutes. Monitor the manifold gauges. Any rise indicates a leak in the A/C system. Locate and repair. Repeat steps 3 – 5 until there is no longer a rise on the gauges.

AIR PURGE

The gauge on the control panel shows when to purge air from the tank. To purge non-condensables:

1. Check the TEMPERATURE display (see page 4) to find the temperature of the refrigerant in the unit tank.
2. Use this temperature to find the correct pressure for the refrigerant on the appropriate pressure/temperature chart on the control panel.
3. Compare the pressure from the chart to the reading on the tank pressure gauge.
4. If the pressure exceeds the target pressure by more than 10 psi (0.7 Bar), press the air purge button for approximately 30 seconds.
5. Check tank pressure and repeat steps as necessary.

RECHARGING THE A/C SYSTEM

To recharge A/C system:

1. Connect the high side and low side hoses to the A/C system according to its manufacturer's recommendations for charging. Open appropriate service coupler and manifold valve(s).
2. Verify both tank valves are open.
3. Press TARE button until "00.00" weight is displayed.
4. Determine the amount of charge needed from the vehicle nameplate. Press and hold the CHARGE button until the desired weight charge is indicated on the display. Release the CHARGE button.
5. Close both manifold valves.
6. Start the vehicle's engine and turn on the A/C system for maximum cooling. Let it run until the gauge pressure readings stabilize. Compare the gauge readings with the system manufacturer's specifications.
7. Check the evaporator outlet temperature to be sure that the A/C system is operating correctly. Refer to the system manufacturer's specifications for the correct temperature.
8. Turn off the vehicle's engine.
9. Close the high side coupler valve, then disconnect the high side hose from the A/C system.
10. Restart the vehicle, then open both valves on the manifold. Refrigerant from both hoses will be drawn quickly into the A/C system through the low side hose.
11. Close the low side coupler valve, then disconnect the low side hose from the A/C system.
12. Turn off the vehicle engine.
13. Close both manifold valves.

NOTE: *If using the optional heating blanket, make sure the blanket is far enough away from the temperature probe not to interfere with temperature probe accuracy.*

CHECKING AND CALIBRATING THE SCALE

To check and calibrate the unit's scale:

1. Remove the tank from the platform.
2. Press the TARE button (see page 4) until the display reads "00.00."
3. Press the TARE button once more. The display reads "TOTAL" and "0± .10."
4. Place a known weight on the scale. The display will show the known weight "± .04 LB/.02 KG."
5. If the display does not, recalibrate the scale.
6. To recalibrate, press the TARE and LB/KG buttons simultaneously to access "DIAGNOSTICS."
7. Press the TARE button until the display shows "CALIBRATION."
8. Press LB/KG. Press YES (TARE) to continue or NO (LB/KG) to return to main menu.
9. With no weight on the platform, press LB/KG. The display shows "30 LB/15 KG." Place the indicated weight on the platform.

NOTE: *This weight must be EXACT for accurate scale calibration.*

10. Press LB/KG. "PLEASE WAIT" shows on the display for approximately 10 seconds.
11. Reverify scale accuracy.

IMPORTANT!
You must have a
known weight of
15KG ±.005
(30LB ± .01)

REPLACING THE FILTER-DRIER

The filter-drier on this unit is designed to trap acid, and particulates and is formulated to remove moisture from the refrigerant. Typically, you can recover up to 300 pounds of refrigerant between filter changes.

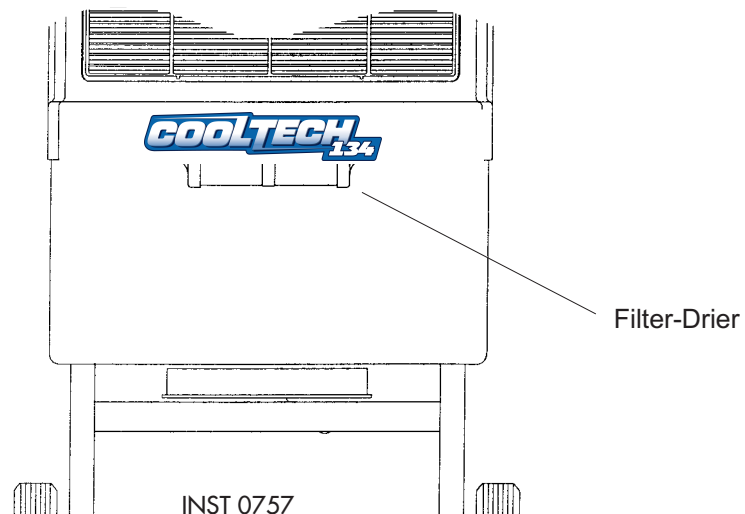
CAUTION! For best results, use a Robinair filter-drier (part no. 34430). All performance tests and claims are based on using this specially-blended filter-drier. Use of any other may affect performance results.



WARNING



Steps 1 – 5 are critical to avoid possible hazardous release of refrigerant!



1. Make sure both tank valves and manifold valves are open.
2. Make sure the service couplers are closed.
3. Turn control panel switch to RECOVER.
4. Monitor manifold gauges until pressure reads below zero.
5. Turn RECOVER/VACUUM switch to OFF.
6. Remove filter by unscrewing nuts located at each end of the filter. Dispose of the old filter according to all local and state regulations.
7. Inspect the condition of the gaskets inside the copper tubes that are connected to the filter. Install new filter and hand tighten.
8. Turn the control panel switch to VACUUM for 5 minutes.
9. Turn RECOVER/VACUUM switch to OFF.

NOTE: Following filter-drier replacement, the filter capacity must be reset.

CHECKING AND RESETTING FILTER CAPACITY

The filter-drier removes contaminants from the refrigerant. To check and reset the filter capacity:

1. Turn the RECOVER/VACUUM switch on the control panel to OFF.
2. Press LB/KG and the TARE buttons (see page 4 for button locations) simultaneously to access “DIAGNOSTICS.”
3. Press the TARE button until the display reads “FILTER CAPACITY.”
4. Press the LB/KG button. The display will show the filter capacity remaining in the selected weight measurement.
5. To reset the capacity, press the TARE and LB/KG buttons simultaneously. The display will show “300 LB/136 KG” remaining.
6. Press any button to exit “DIAGNOSTICS.”

CHECKING FOR LEAKS

Every three months, or as specified by local or state laws, you should check your unit for leaks. To check for leaks:

1. Disconnect the power cord from the outlet.
2. Remove the shroud by removing the threaded screws at the back of the unit.
3. Use a leak detector to probe all fitting connections for refrigerant leaks. Tighten fittings if a leak is indicated.
4. Reassemble the shroud to the unit, replacing all screws.

IMPORTANT!
Inspect the unit periodically for leaks. The manufacturer does not reimburse for lost refrigerant.

CHOOSING THE TEMPERATURE SCALE

The temperature scale may be changed from Fahrenheit or Centigrade using the following procedure.

1. Disconnect the power cord from the outlet.
2. Remove the shroud by removing the threaded screws at the back of the unit.
3. A small selector switch is located on the back of the thermometer. Change the position of the switch to change the temperature scale from either Fahrenheit or Centigrade.
4. Reassemble the shroud to the unit, replacing all screws.

RECOVERY AND VACUUM OPERATION

Compressor does not start or stop prematurely

Problem: No power.

Solution: Check for power at plug or outlet.

Problem: ****OVERLOAD**** is displayed.

Solution: Move refrigerant from unit tank to approved refrigerant storage tank. See RECHARGING A/C SYSTEM.

Problem: HIGH PRESSURE is displayed.

Solution: Be sure tank valves are open and hoses are correctly connected to the unit tank.

Problem: ****SCALE**** is displayed.

Solution: The scale is damaged, disconnected, out of calibration or overloaded.

Runs but gauges won't indicate 13 in Hg (0.44 BAR)

Problem: Oil drain valve open.

Solution: Close the oil drain valve.

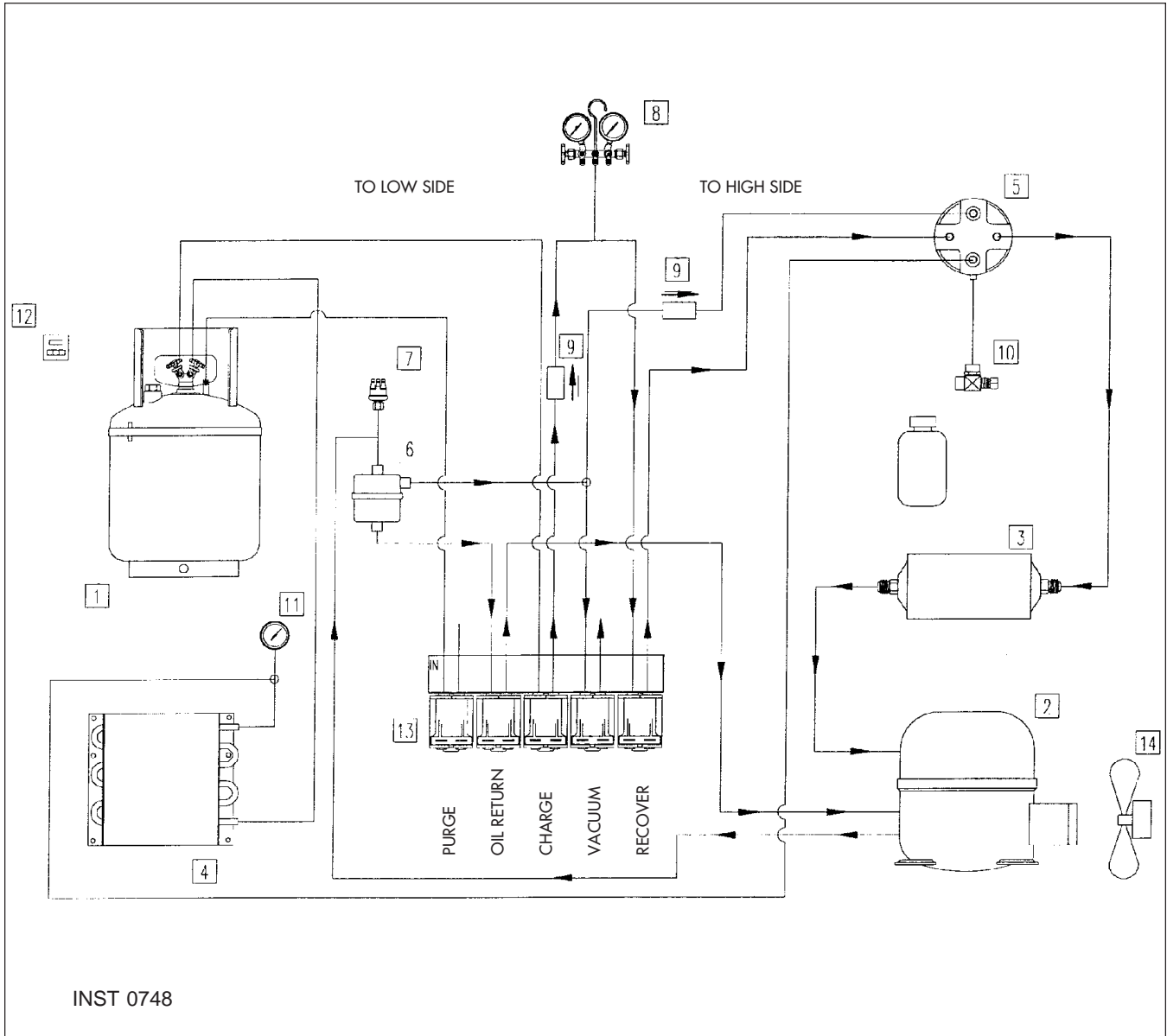
Problem: Leak in vehicle system.

Solution: Locate and repair all system leaks.

Problem: Manifold valves not open.

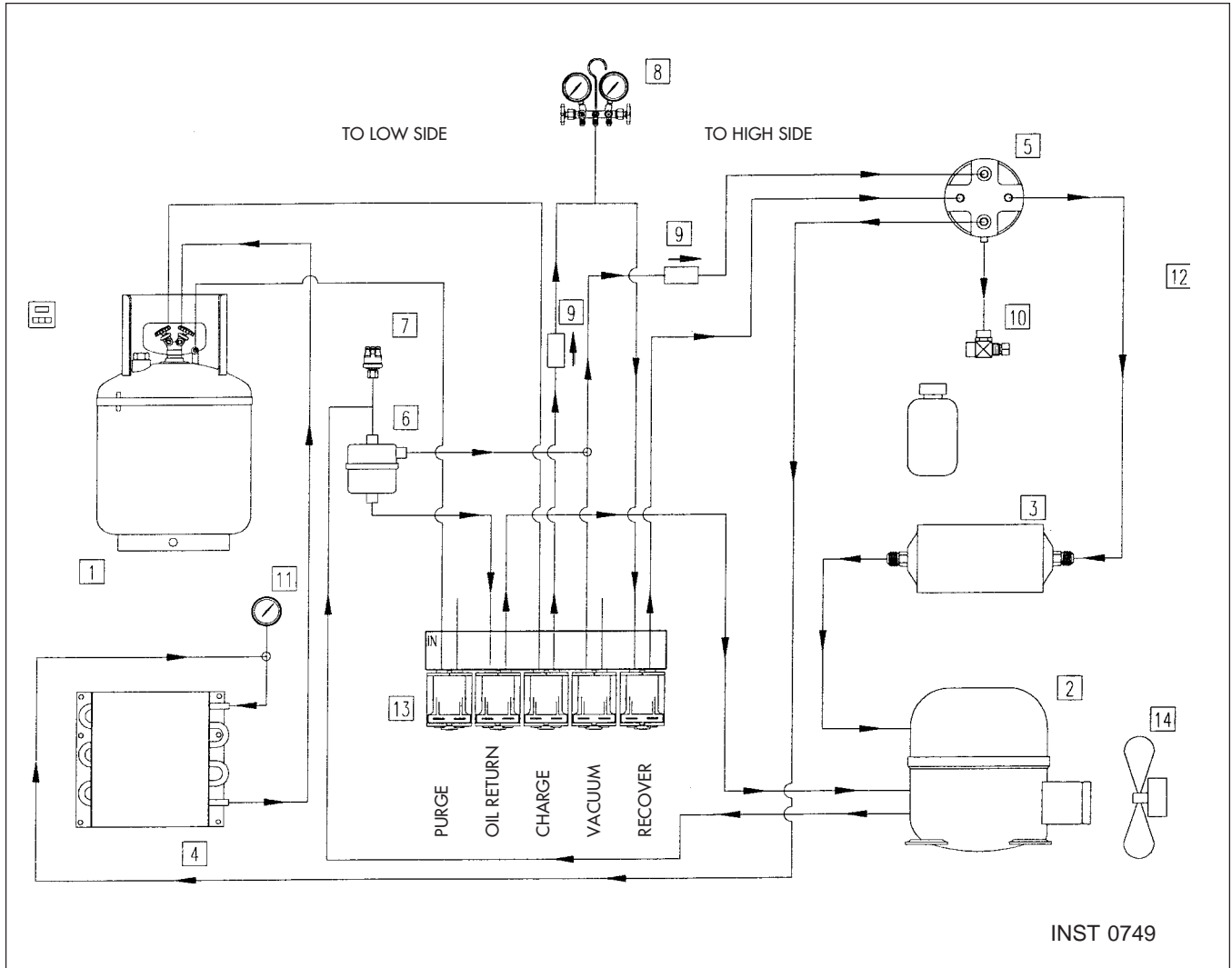
Solution: Open valves.

Vacuum Flow Diagram



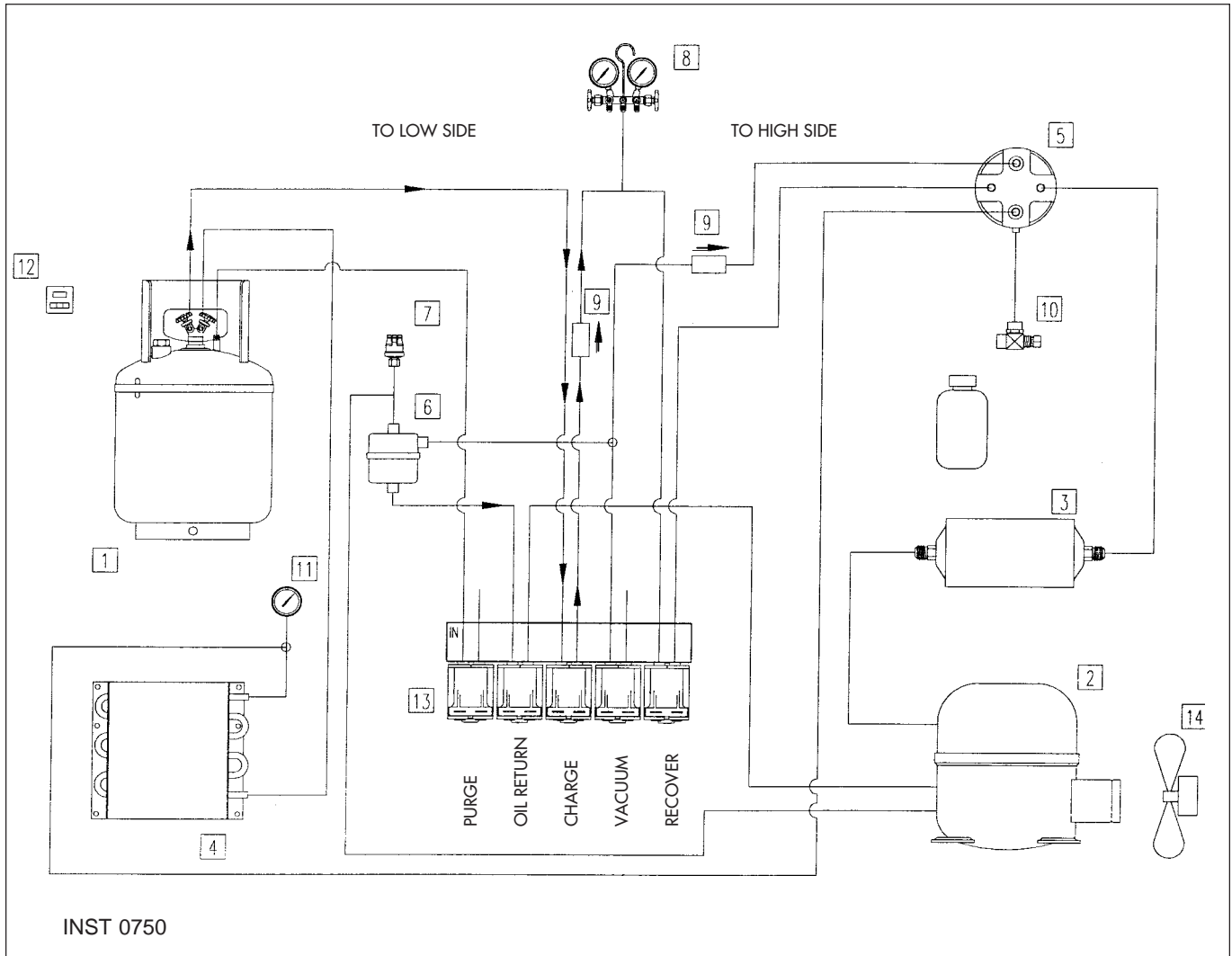
- | | | |
|---------------------|--------------------------|--------------------------------|
| 1. Refrigerant Tank | 6. Oil Separator | 11. Pressure Gauge (Air Purge) |
| 2. Compressor | 7. Pressure Switch | 12. Thermometer F°/C° |
| 3. Filter | 8. 2-Way Manifold | 13. Solenoid Block |
| 4. Condenser Coil | 9. Check Valve | 14. Fan |
| 5. Accumulator | 10. Oil Drain Ball Valve | |

Recover Flow Diagram



- | | | |
|---------------------|--------------------------|--------------------------------|
| 1. Refrigerant Tank | 6. Oil Separator | 11. Pressure Gauge (Air Purge) |
| 2. Compressor | 7. Pressure Switch | 12. Thermometer F°/C° |
| 3. Filter | 8. 2-Way Manifold | 13. Solenoid Block |
| 4. Condenser Coil | 9. Check Valve | 14. Fan |
| 5. Accumulator | 10. Oil Drain Ball Valve | |

Charge Flow Diagram



- | | | |
|---------------------|--------------------------|--------------------------------|
| 1. Refrigerant Tank | 6. Oil Separator | 11. Pressure Gauge (Air Purge) |
| 2. Compressor | 7. Pressure Switch | 12. Thermometer F°/C° |
| 3. Filter | 8. 2-Way Manifold | 13. Solenoid Block |
| 4. Condenser Coil | 9. Check Valve | 14. Fan |
| 5. Accumulator | 10. Oil Drain Ball Valve | |

Replacement Parts List

The following is a list of replacement parts and accessories you may need to service or maintain your unit. We suggest you keep several filter-driers on hand so you will always be able to change them and complete any recycling job that is in progress.

Component	110-Volt
Filter-Drier	34430
Low Side Service Coupler	18190A
High Side Service Coupler	18191A
60 in. (1.52m) Red Hose	63060
60 in. (1.52m) Blue Hose	62060
60 in. (1.52m) Yellow Hose	61060

This product is warranted to be free from defects in workmanship, materials, and components for a period of one year from date of purchase. All parts and labor required to repair defective products covered under the warranty will be at no charge. The following restrictions apply:

1. The limited warranty applies to the original purchaser only.
2. The warranty applies to the product in normal usage situations only, as described in the Operating Manual. The product must also be serviced and maintained as specified.
3. If the product fails, it will be repaired or replaced at the option of the manufacturer.
4. Warranty service claims are subject to factory inspection for product defect(s).
5. The manufacturer shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, and un-authorized shipping and/or labor charges.
6. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.
7. Use of this equipment with unauthorized refrigerants will void the warranty. Authorized refrigerants are listed on the equipment or are available through our service centers.

This Limited Warranty does not apply if:

- The product, or product part, is broken by accident.
- The product is misused, tampered with, or modified.
- The product is used for recovering or recycling any substance other than the specified refrigerant type.

Notes
