

ROBINAIR

Operating Manual



34134a for R-134a

Refrigerant Recovery,
Recycling and Recharging Unit

LISTED



80S2

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



ROBINAIR
Refrigerant Recovery,
Recycling and Recharging Station

Series: 34134a

Refrigerants: R-134a



WARNING



PRESSURIZED TANK CONTAINS LIQUID REFRIGERANT. OVERFILLING OF THE TANK MAY CAUSE VIOLENT EXPLOSION AND POSSIBLE INJURY OR DEATH. Safety devices require the use of only authorized refillable refrigerant tanks. Refer to the instruction manual for tank specifications and ordering information. Do not recover refrigerants into a non-refillable storage container! Regulations require refrigerant to be transported only in specifically authorized containers.

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

HIGH VOLTAGE ELECTRICITY INSIDE PANELS. RISK OF ELECTRICAL SHOCK. Disconnect power before servicing unit. Refer to the instruction manual.

TO REDUCE THE RISK OF FIRE, avoid the use of an extension cord. The extension cord may overheat. If you must use an extension cord, the cord must be No. 14 AWG minimum and as short as possible. Do not use this equipment in the vicinity of spilled or open containers of gasoline or other flammable substances.

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.

Make certain that all safety devices are functioning properly before operating the unit. Before operating, read and follow the instructions and warnings in the manual.

CAUTION: SHOULD BE OPERATED BY QUALIFIED PERSONNEL. Operator must be familiar with air conditioning and refrigeration systems, refrigerants and the dangers of pressurized components.

Use only with R-134a. This equipment is not designed for any other purpose than recovering or recycling refrigerants! Do not mix refrigerant types!

OPERATING NOTES

Change the filter-drier when the display shows "CHANGE FILTER". Follow the instructions for changing the filter-drier. At temperatures exceeding 120°F / 49°C, wait 10 minutes between recovery jobs.

R-134a WARNINGS!

Use the 34134a unit only with R-134a! Cross-contamination with other refrigerant types will cause severe damage to the A/C system and to service tools and equipment. Do not mix refrigerant types through a system or in the same container! Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove R-134a from the A/C system, use service equipment certified to meet the requirements of SAE-J2210 (R-134a recycling equipment). If accidental system discharge occurs, ventilate work area before resuming service.

HFC-134a service equipment or vehicle A/C systems should not be pressure tested or leak tested with compressed air. Some mixtures of air/HFC-134a have been shown to be combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion causing 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

CONVERSION TABLE

OZ.	LBS.
0.5	0.03
1.0	0.06
1.5	0.09
2.0	0.13
2.5	0.16
3.0	0.19
3.5	0.22
4.0	0.25
4.5	0.28
5.0	0.31
5.5	0.34
6.0	0.38
6.5	0.41
7.0	0.44
7.5	0.47
8.0	0.50
8.5	0.53
9.0	0.56
9.5	0.59
10.0	0.63
10.5	0.69
11.0	0.69
11.5	0.72
12.0	0.75
12.5	0.78
13.0	0.81
13.5	0.84
14.0	0.88
14.5	0.91
15.0	0.94
15.5	0.97
16.0	1 lb.



Call toll-free

Technical Support Line
800-822-5561

in the continental U.S. or Canada.

In all other locations, contact your local distributor. To help us serve you better, please be prepared to provide the model number, serial number, and date of purchase.

To validate your warranty, you must complete the warranty card attached to your unit and return it within ten days from date of purchase.

• **NATIONWIDE NETWORK OF AUTHORIZED SERVICE CENTERS**

If your unit needs repairs or replacement parts, you should contact the service center in your area. For help in locating a service center, call the toll free technical support line.

Due to ongoing product improvements, we reserve the right to change design, specifications and materials without notice.

This equipment is designed to meet all applicable agency certifications including Underwriter's Laboratories, Inc., SAE Standards and CUL. Proper maintenance of this equipment will provide accurate A/C service for many years.

Certain state and local jurisdictions dictate that using this equipment to sell refrigerant by weight may not be permitted. We recommend charging for any A/C service by the job performed.

This weight scale provides a means of metering the amount of refrigerant needed for optimum A/C system performance as recommended by OEM manufacturers.

SPX ROBINAIR

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***Because of ongoing product improvements,
we reserve the right to change design,
specifications, and materials without notice.***

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 Series 34134a is used for R-134a vehicles. This unit recovers, recycles and recharges refrigerant in one hook-up.

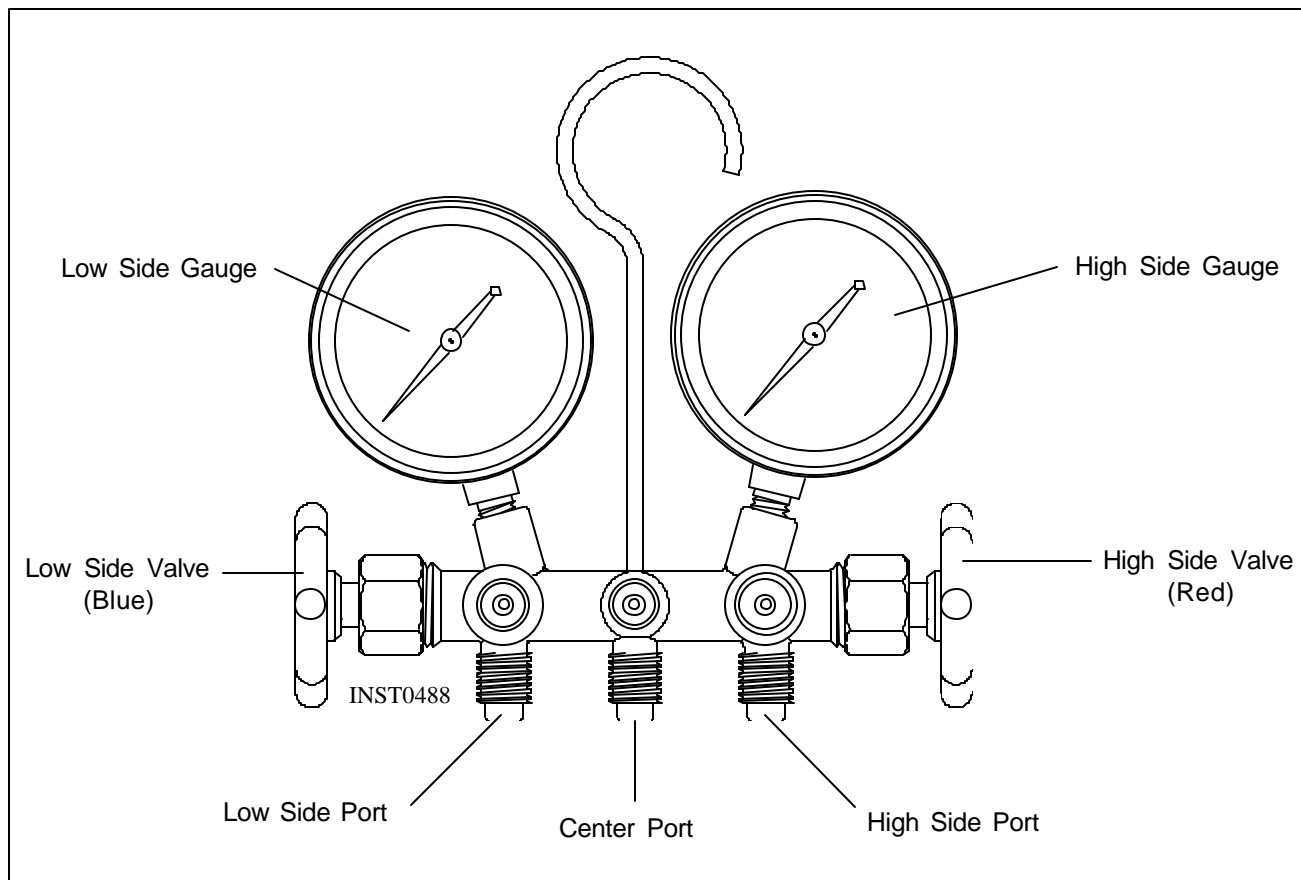
This unit is UL listed as a single-pass system and meets the SAE specifications for recycled refrigerant. It is also designed to be compatible with existing service equipment and standard service procedures.

This unit is simple to operate and have 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.

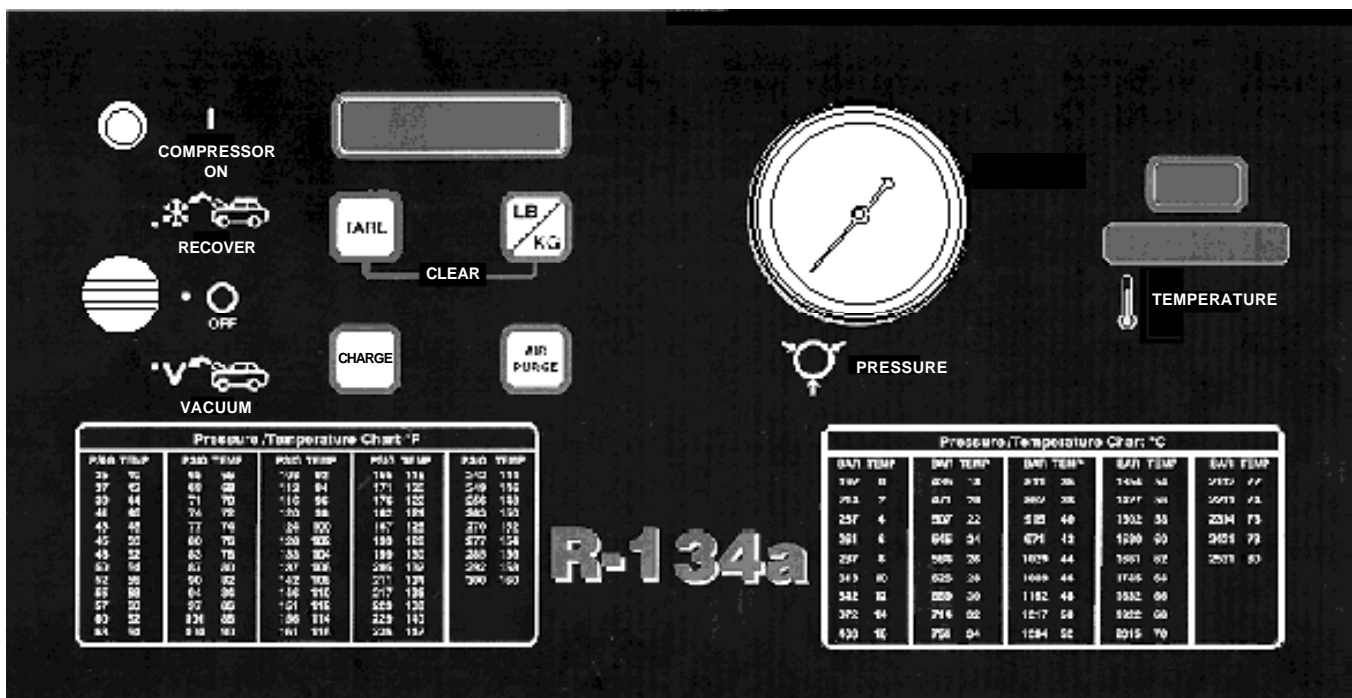
R-134a systems require special oils in place of the mineral oil used with R-12 systems. Refer to the A/C system manufacturer's service manuals for oil specifications.

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!

USING THE CONTROL PANEL

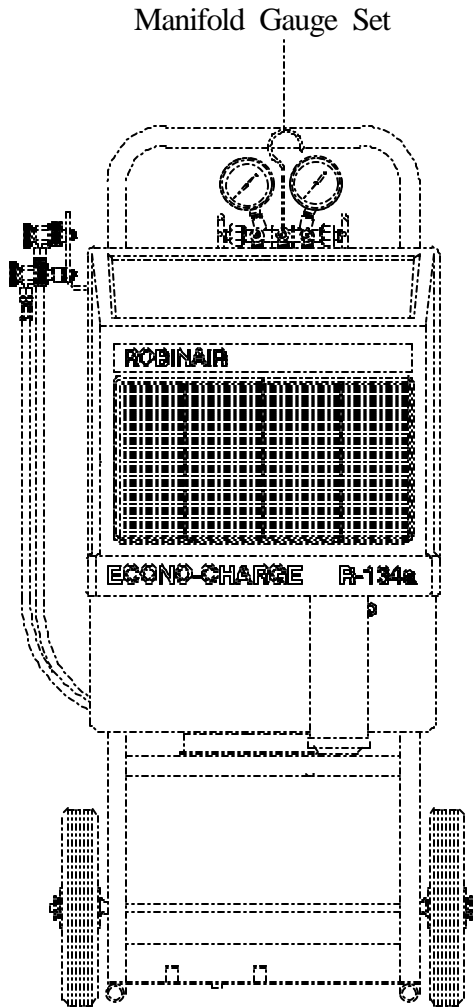
The control panel has specific operating functions.

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



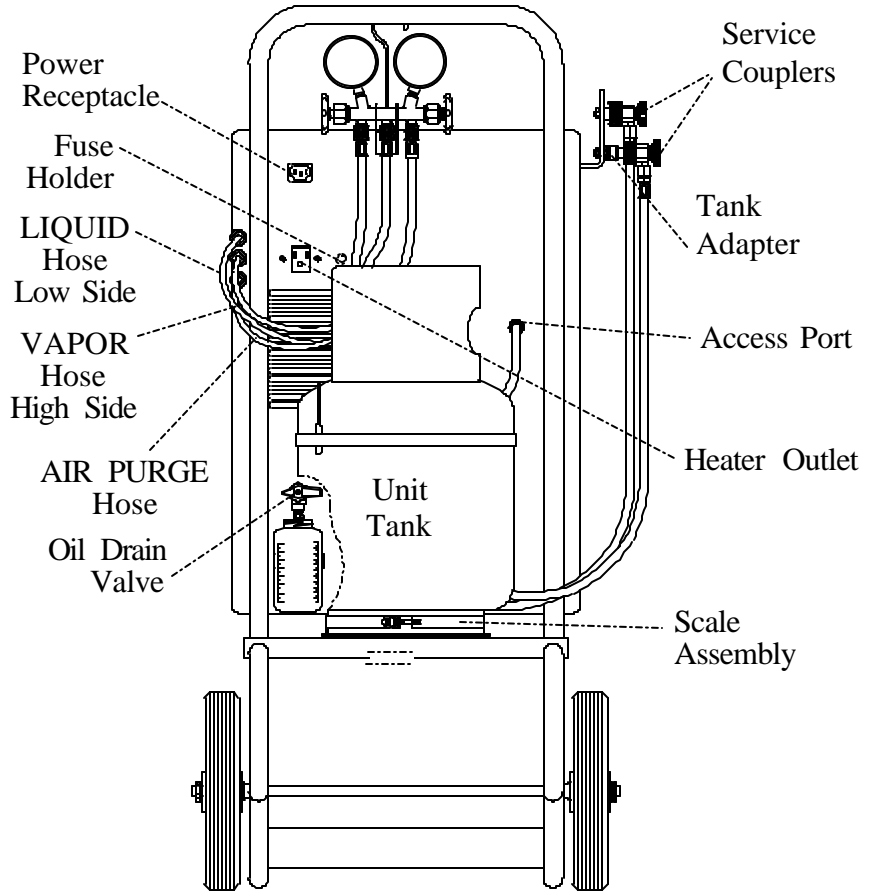
COMPONENT LOCATION AND IDENTIFICATION

FRONT VIEW



INST0492

REAR VIEW

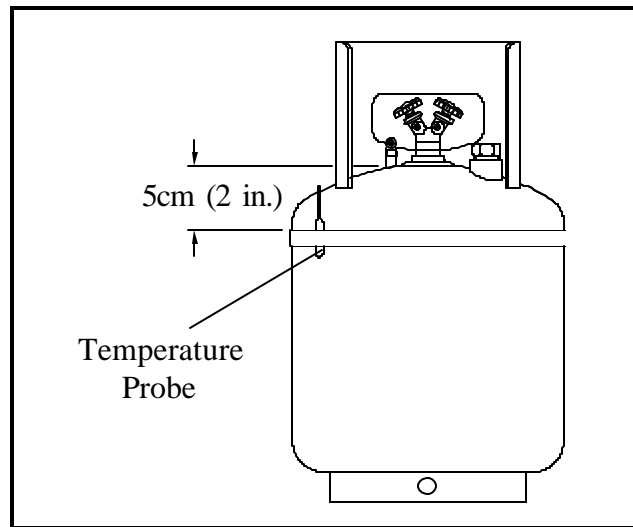


INST0493

INSTALL THE TANK

1. A 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. 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. 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.



INST0494

UNIT SET UP

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 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 could result in damage to the compressor, voiding the manufacturer's warranty.

7. Attach the vapor hose from the back of the unit to the GAS (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 is in the OFF position.
13. Attach the power cord to the back of the unit and connect to the proper voltage outlet.
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.
19. Close the LIQUID valve 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

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 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 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.
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

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 — they should both 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 is closed.
5. Open both manifold valves.
6. Verify both tank valves are open.
7. Plug the unit into the proper 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

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

1. To begin to purge non-condensibles, check the TEMPERATURE display 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

1. Connect the high side and low side hoses to the A/C system per 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 properly. Refer to the system manufacturer's specifications for the proper 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

1. Remove the tank from the platform
2. Press the TARE button 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

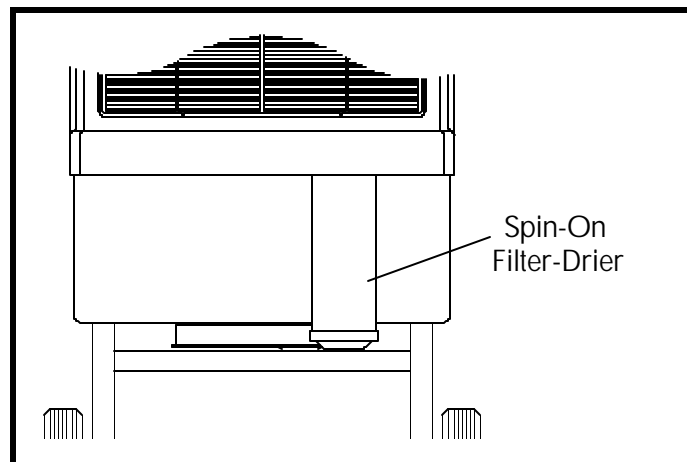
The filter-drier on this unit is designed to trap acid and particulates and is formulated to remove moisture from the refrigerant.

Typically, you can recover up to 300 pounds of refrigerant between filter changes.

CAUTION! For best results, use a Robinair filter-drier (part no. 34724). 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. Unscrew the filter-drier. Dispose of the old filter according to all local and state regulations. Remove the used O-rings.
7. Remove the cap from the end of the filter and replace the O-rings at the end of the filter-drier. Install. Tighten to 120 in. lbs.
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

1. Turn the RECOVER/VACUUM switch to OFF.
2. Press LB/KG and the TARE buttons 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.

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 by 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 stops 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 properly 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

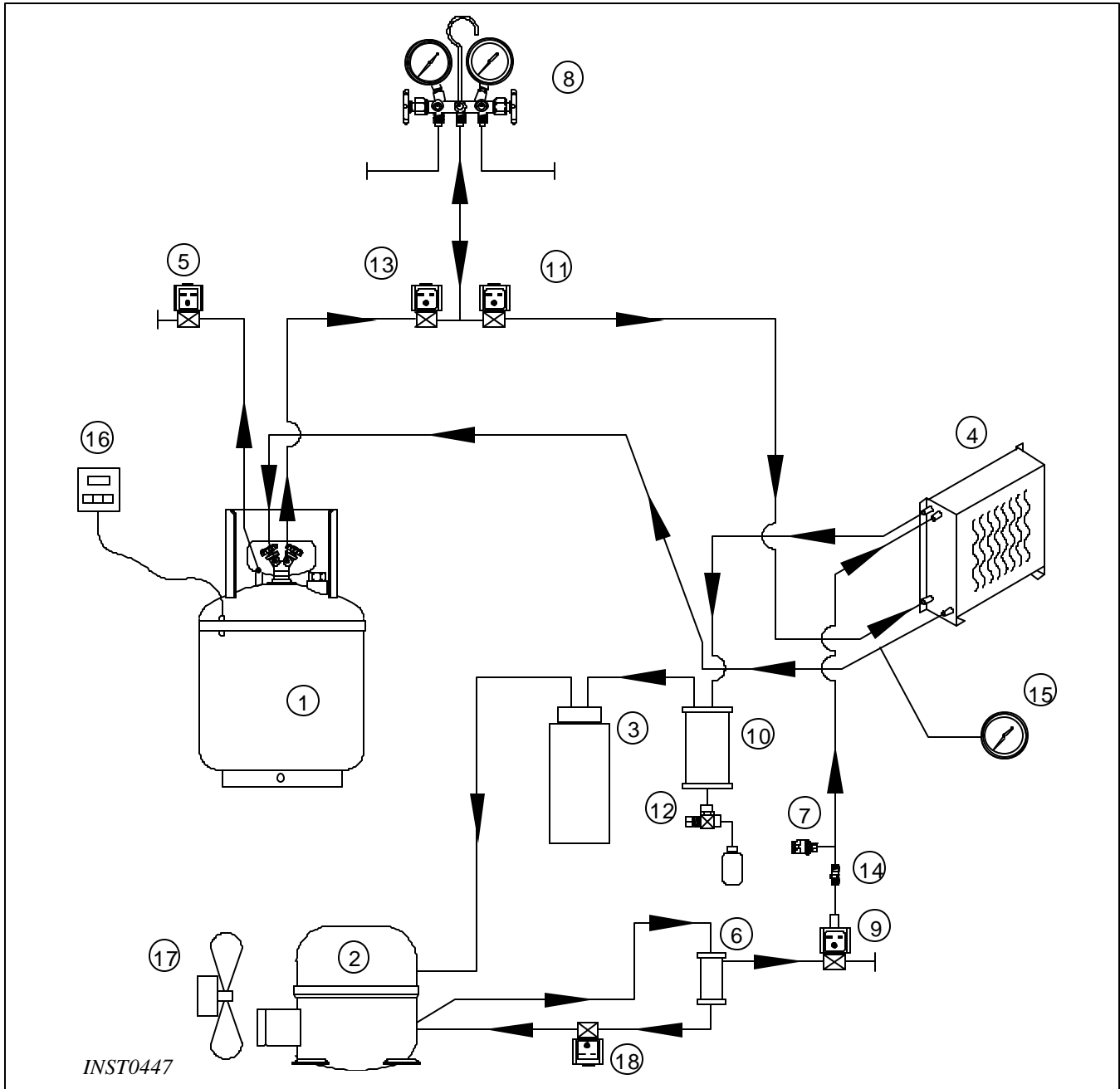
Solution: Close the oil drain valve

Problem: Leak in vehicle system

Solution: Locate and repair all system leaks

Problem: Manifold valves not open

Solution: Open valves



- | | | |
|------------------------------|--------------------------|-------------------------|
| 1. Unit Tank | 8. 2-Way Manifold | 15. Tank Pressure Gauge |
| 2. Compressor | 9. 3-Way Solenoid | 16. Thermometer |
| 3. Spin-On Filter-Drier | 10. System Oil Separator | 17. Fan |
| 4. Evaporator/Condenser Coil | 11. Recover Solenoid | 18. Oil Return Solenoid |
| 5. Air Purge Solenoid | 12. Oil Drain Valve | |
| 6. Compressor Oil Separator | 13. Charge Solenoid | |
| 7. Pressure Switch | 14. Check 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
Thermometer	RA19461
Fan	RA17416
Filter-Drier	34724
Compressor	RA19458
Circuit Board	RA19459
Solenoid, 3-Way	RA19463
Solenoid, 2-Way	RA19464
High Pressure Switch	RA19104
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
Tank Hose (Black)	RA19468
Pressure Gauge (Control Panel)	RA19460
Pressure Gauge (Manifold)	RA19475
Compound Gauge (Manifold)	RA19474
Rotary Switch (ON, OFF, ON)	RA19473
Indicator Light (Green)	RA19470
Scale Assembly (Single)	RA19469

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.