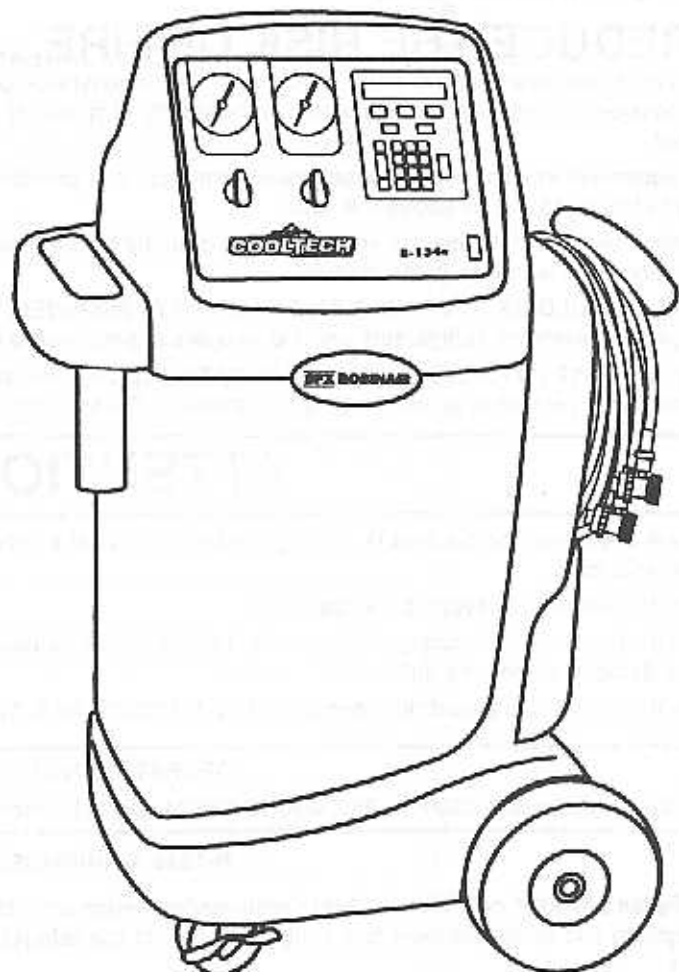


ROBINAIR

Operating Manual



Model 347002K/177002K
Recovery/Recycling/Recharging Unit

ROBINAIR

Refrigerant Recovery,
Recycling and Recharging Station

Series: 347002K/177002K

Refrigerants: R-12 or R-134a

⚠ WARNING ⚠

PRESSURIZED TANK CONTAINS LIQUID REFRIGERANT. OVERFILLING OF THE TANK MAY CAUSE VIOLENT EXPLOSION AND POSSIBLE INJURY OR DEATH. Refer to the instruction manual for tank specifications and ordering information. Do not recover refrigerants into a non-refillable storage container! Federal regulations require refrigerant to be transported only in containers meeting DOT spec. 4BW or DOT spec. 4BA.

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 because the extension cord may overheat. However, if you must use an extension cord, use No. 14 AWG at the 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-12 (177002K) or with R-134a (347002K). This equipment is not designed for any other purpose than recovering, recycling or recharging refrigerants! Do not mix refrigerant types!

ATTENTION!

Ce réservoir sous pression contient du frigorigène liquide. S'il est surchargé, ce réservoir peut exploser et causer des blessures ou la mort.

ATTENTION. Débrancher avant la maintenance.

ATTENTION. Pour réduire les risques d'incendie, ne pas utiliser de cordon prolongateur de section inférieure à 14 AWG de façon à éviter la surchauffe du cordon.

ATTENTION. Utiliser seulement du frigorigène R-12 (177002K) ou R-134a (347002K).

OPERATING NOTES

At temperatures exceeding 120°F / 49°C, wait 10 minutes between recovery jobs.

R-134a WARNINGS!

Use the Series 347002K 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.

Introduction	2
Glossary of Terms	2
Set-Up Instructions	2
Initial Set-Up	4
Vacuum Pump Initial Fill	5
Installation Routine	5
Operating Guidelines	6
Using the Selection Menu	6
Change Filter	6
Recycle	7
Tank Refill	7
Vacuum Pump Hours	7
Drier Recovered Lbs.	7
Basic/Advanced Prompts	8
Auto Restart ON/OFF	8
Selecting a Unit (Metric/English)	8
Language Select	8
Change Defaults	9
Installation Routine/First Fill	9
Using the Control Panel	9
Keypad Functions	10
Operating Instructions	11
Operating Tips	11
Recovering Refrigerant	12
Evacuating the A/C System	14
Replenishing A/C System Oil	16
Recharging the A/C System	17
Maintenance Instructions	19
Replacing the Filter-Drier	19
Changing the Vacuum Pump Oil	20
Checking for Leaks	21
Calibrating the Scale	22
UL Circuit Calibration	23
Electrical Protection	24
General Maintenance	24
Replacement Parts List	24
Flow Diagram	26
Wiring Diagram	27
Limited Warranty	28

U.S. Patents: 4,523,897; 4,688,388 Re 33,212; 4,768,347; 4,805,416; 4,809,520; 4,878,356; 4,938,031;
5,005,369; 5,005,375; 5,038,578; 5,042,271; 5,209,653; 5,248,125 Australian Patent: 613,058 Canadian
Patents: 1,311,621; 1,311,622; 2,012,620; 2,026,348 European Patent: 0 315 296 B1 German Patent: 031296
Mexican Patent: 16208 OTHER U.S. AND FOREIGN PATENTS PENDING.

Mfd. by Robinair, SPX Corporation, Montpelier, OH 43543

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 347002K models are used for R-134a vehicles, whereas the 177002K models are used for R-12 vehicles. Both models are designed to be compatible with existing service equipment and standard service procedures.

The 347002K and the 177002K models are UL-listed, single pass systems that meet the SAE specifications for recycled refrigerant.

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

GLOSSARY OF TERMS

A/C System	The air conditioning system being serviced.
Unit	The refrigerant recovery/recycling/recharging unit.
Internal Storage Vessel	The refillable refrigerant storage vessel designed specifically for this unit.
Source Tank	A disposable tank of new refrigerant used to refill the internal storage vessel.

Set-Up Instructions

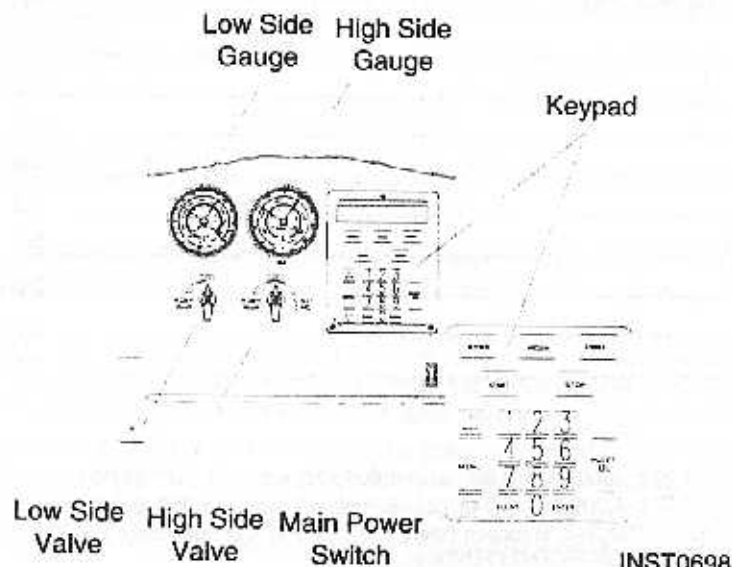
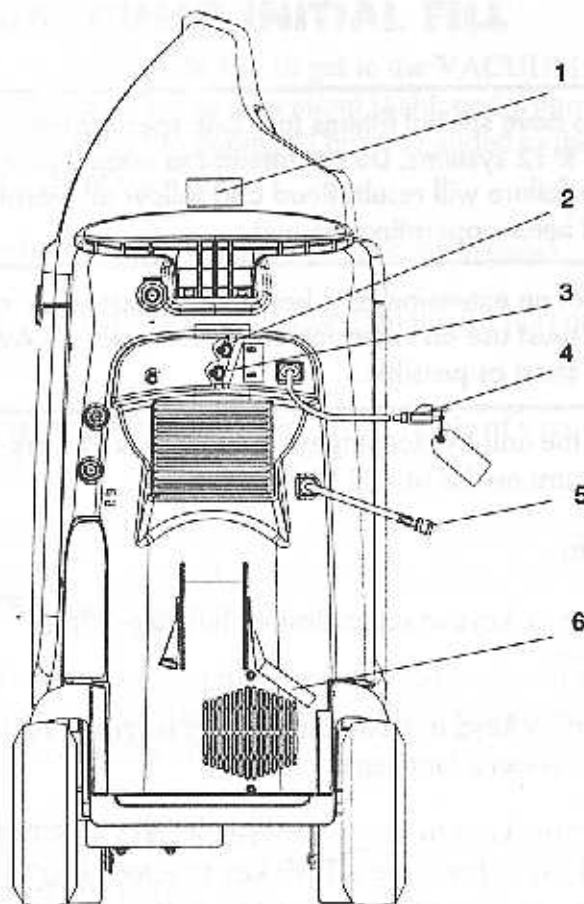


Diagram of the Control Panel

Set-Up Instructions

*Diagram of Unit's Components—
Side View*

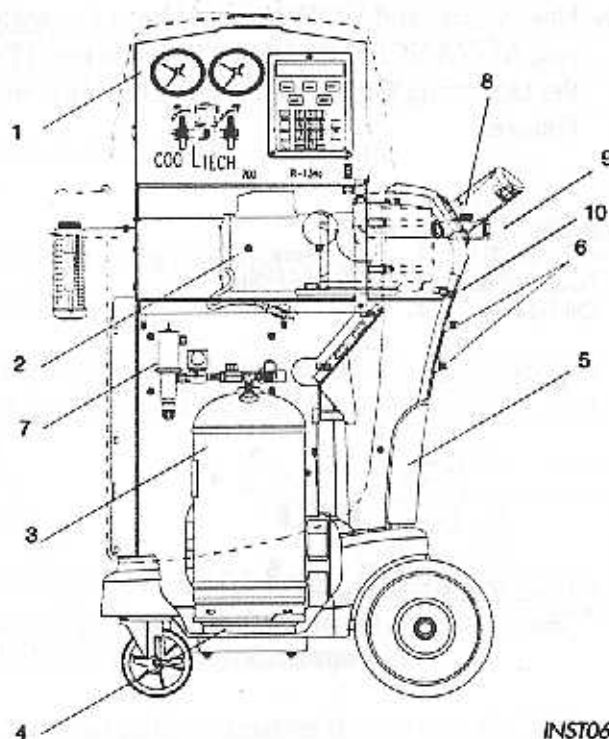


1. 1-800 Phone Number Decal
2. High Side Inlet
3. Low Side Inlet
4. Power Cord with Tag
5. Fill Hose
6. Tank Strap

INST0691

*Diagram of Unit's Components—
Internal View*

1. Control Panel Assembly
2. Vacuum Pump
3. Internal Storage Vessel
4. Scale Assembly
5. Oil Drain Bottle
6. Hose Holder
7. Air Purge Control
8. Oil Drain
9. Sight Glass
10. Oil Drain



INST0689

Set-Up Instructions

INITIAL SET-UP

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—system failure will result! Read and follow all warnings at the beginning of this manual before operating the unit.

CAUTION! Avoid the use of an extension cord because the extension cord may overheat. However, if you must use an extension cord, use a No. 14 AWG minimum and keep the cord as short as possible.

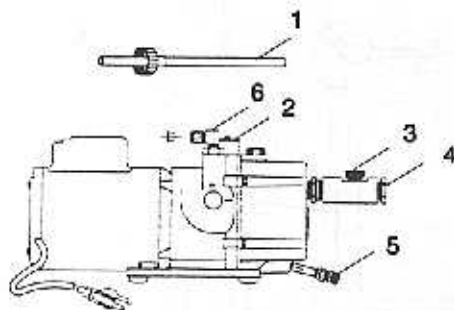
IMPORTANT!

You must press the **MENU** key to access all the functions.

1. Lock both front casters of the unit by stepping on the cam brake levers, plug in the extension cord, and turn on the **MAIN POWER** switch.
2. Press the **MAIN MENU** key.
3. Use the **UP** and **DOWN** arrow keys to select desired language. Press **ENTER** after every selection.
4. Use the **UP** and **DOWN** arrow keys to scroll through the language options and press the **STOP** key to select a language.
5. Use the **UP** and **DOWN** arrow keys to toggle between **AUTO RESTART ON** and **AUTO RESTART OFF**. Press the **STOP** key to select. **NOTE:** See the Operating Guidelines section of this manual for a description of these functions.
6. Use the **UP** and **DOWN** arrow keys to toggle between **BASIC PROMPTS** and **ADVANCED PROMPTS**. Press the **STOP** key to select. **NOTE:** See the Operating Guidelines section of this manual for a description of these features.

Vacuum Pump Components

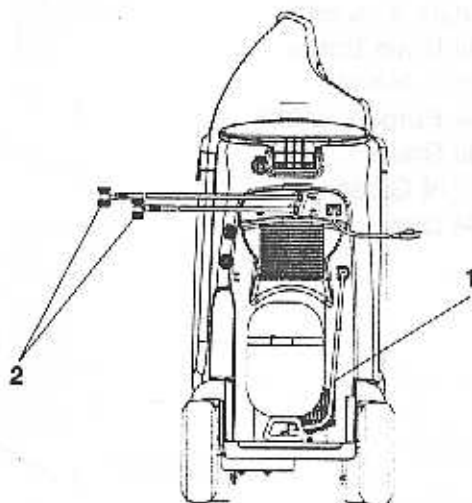
- | | |
|--------------------|----------------------|
| 1. Oil Filler Tube | 4. Sight Glass |
| 2. Pump Exhaust | 5. Oil Drain Fitting |
| 3. Oil Fill Port | 6. Inlet |



INST0692

Diagram of Hose Connections

1. Fill Hose 2. Quick-Couplers



INST0701

VACUUM PUMP INITIAL FILL

1. Press the **VACUUM** key to get to the VACUUM mode. Press the **ENTER** key. **NOTE:** The vacuum pump is shipped without oil in the reservoir. Before starting the pump, oil must be added to the pump or damage to the pump may occur.
2. Close both manifold valves on the control panel.
3. Remove the black plastic plug from the fill port on the top of the vacuum pump.
4. Attach the oil fill tube to the 16 oz. bottle of vacuum pump oil provided in the accessory kit.
5. Pour oil (approximately 12 oz.) into the fill port of the vacuum pump until the oil appears at the bottom of the sight glass. Press the **START** key. Press the **ENTER** key to start pump.
6. While the vacuum pump is running, add oil until it reaches the center of the sight glass. Press the **STOP** key. The vacuum pump is now filled to the proper level with oil.
7. Replace the plug in the fill port.
8. Press **STOP** to exit.

IMPORTANT!

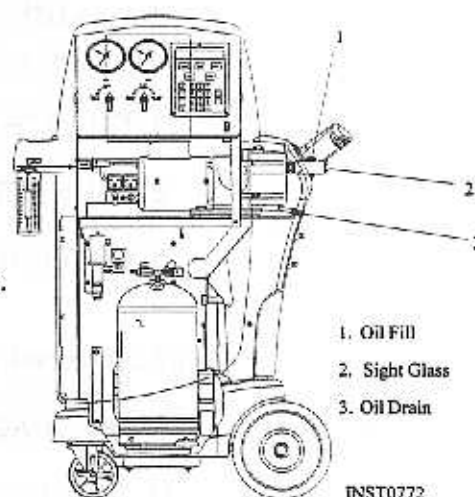
For maximum performance, be sure to change the vacuum pump oil frequently.

IMPORTANT!

Be sure the pump is running when adding oil.

INSTALLATION ROUTINE

1. Press the **MENU** key. Go to the **INSTALLATION ROUTINE**.
2. Press **ENTER** key. The display reads **FIRST FILL**. Follow the on-screen prompts.
3. Remove the service hoses from the accessory kit and remove the plugs from the hoses using pliers.
4. Attach the service hoses to the high and low side bulkheads on the rear of the unit. Attach the **RED** hose to the bulkhead labeled **HIGH** and the **BLUE** hose to the bulkhead labeled **LOW**.
5. Press the **START** key.
6. Install the source tank upside down in the rear of the unit. If using a refillable tank, also install it upside down to avoid wasting the refrigerant that would remain in the bottom of the tank if it had been installed upright.
7. Press the **START** key. The unit automatically evacuates the system for 2:00 minutes to remove any air from the internal storage vessel.



INST0772

Operating Guidelines

8. Connect the fill hose to the tank valve when the 2:00 minute evacuation is complete.

NOTE: If using a refillable tank, attach the fill hose to the VAPOR (red) valve and turn the tank upside down.

9. Open the source tank valve and press the **START** key. The unit automatically fills the internal storage vessel with refrigerant until it is full or all refrigerant is depleted from the source tank. This process takes 15-20 minutes. Press the **STOP** key if you wish to stop the process before the internal storage vessel is full. **NOTE:** Add at least 8 lb. of refrigerant before stopping the process to ensure that enough refrigerant is available for charging.

10. Press **STOP** to exit.

The unit is now ready for use. **NOTE:** There is no need to calibrate the scale as it is calibrated at the factory.

USING THE SELECTION MENU

1. Press the **MENU** button. The top line of the display reads SET UP MENU.
2. Use the **UP** and **DOWN** arrow keys to scroll through the menu choices displayed on the second line. The menu choices are (in order of appearance):

1. CHANGE FILTER	2. RECYCLE
3. TANK REFILL	4. VACUUM PUMP HOUR
5. DRYER RECOVERED LBS.	6. BASIC /ADVANCED PROMPT
7. AUTO RESTART ON	8. UNITS (Metric/English)
9. LANGUAGE SELECT	10. CHANGE DEFAULTS (Password Protected)
11. INSTALLATION ROUTINE	
4. Press **ENTER** to make a choice from the menu. Press **STOP** to terminate any process.

CHANGE FILTER

The filter-drier removes acid, particulates, and water from the refrigerant. Change the filter-drier after 150 pounds of refrigerant has been filtered. See the DRIER RECOVERED LBS section on the following page as well as the Maintenance Section for instructions on page 19.

RECYCLE

Manual recycling may be necessary if excessive air and/or moisture is recovered from the A/C system.

1. Select **RECYCLE** from the selection menu.
2. Press the **ENTER** button to start recycling. The recycling process lasts for 10 minutes and stops automatically. To pause recycling, press the **STOP** key. To terminate recycling, press the **STOP** key again.

TANK REFILL

1. Select **TANK REFILL** from the selection menu.
2. Attach a full source tank to the back of the unit and secure the tank strap. Press **START**. Follow the on-screen prompts.

NOTE: If using a refillable tank, install the tank upside down and connect the fill hose to the vapor valve.

3. Connect the fill hose to the source tank.
4. Open the tank valve. Invert the tank and install on back of the unit.
5. Press the **ENTER** key and the tank automatically refills. The unit stops when a sufficient amount of refrigerant has been transferred to the internal tank. Press the **STOP** key to terminate the process before the internal tank is full.
6. Press **STOP** to exit.

VACUUM PUMP HOURS

This feature displays the number of hours the vacuum pump has been used since the last oil change. After an oil change, the display prompts for a reset of the counter. Change the vacuum pump oil after every 10 hours of operation. See the Maintenance section on page 20 of this manual for instructions.

DRIER RECOVERED LBS.

This function is used to show the operator how many pounds of refrigerant have been recovered since the last filter change.

1. Select **DRIER RECOVERED LBS** from the menu.
2. The display reads: XXX.XX lbs. RECOVERED
3. If desired, press the **CLEAR** key to zero the counter.
4. Press **STOP** to exit.

BASIC/ADVANCED PROMPT

Use the BASIC PROMPT option to receive step-by-step, on-screen prompting through any procedure. Use ADVANCED PROMPT once you know the procedure and no longer need the step-by-step routine.

1. Select BASIC/ADVANCED PROMPT from the menu.
2. Toggle between BASIC/ADVANCED using the **ENTER** key.
3. Press the **STOP** key to select the current choice.

AUTO RESTART ON/AUTO RESTART OFF

The AUTO RESTART ON option is used to automatically restart the unit if a pressure rise is detected by the unit during the five minute waiting period after recovering refrigerant. If AUTO RESTART OFF is selected, the operator must watch the gauges for a pressure rise and manually restart the recovery process if a pressure rise is detected.

1. Select AUTO RESTART ON or AUTO RESTART OFF from the menu, depending on which mode the unit is in at the time.
2. Use the **ENTER** button to toggle between the two options.
3. Press the **STOP** button to select the current choice.

SELECTING A UNIT (Metric/English)

1. Select UNITS from the menu.
2. Toggle between UNITS ENGLISH and UNITS METRIC using the **ENTER** key.
3. Press the **STOP** button to select the current choice.

LANGUAGE SELECT

The operator can choose between English, Spanish, French, or German.

1. Scroll through the selection menu to LANGUAGE SELECT and press **ENTER**.
2. Use the **UP** and **DOWN** arrows to scroll through the languages and then press **STOP** to save the current choice.

INSTALLATION ROUTINE and FIRST FILL

The **INSTALLATION ROUTINE** is an automatic function that is used only for initial set up. See the Initial Set-Up section of this manual for details.

USING THE CONTROL PANEL

The control panel has various components that control specific operating functions.

MAIN POWER Switch—Supplies electrical power to the control panel.

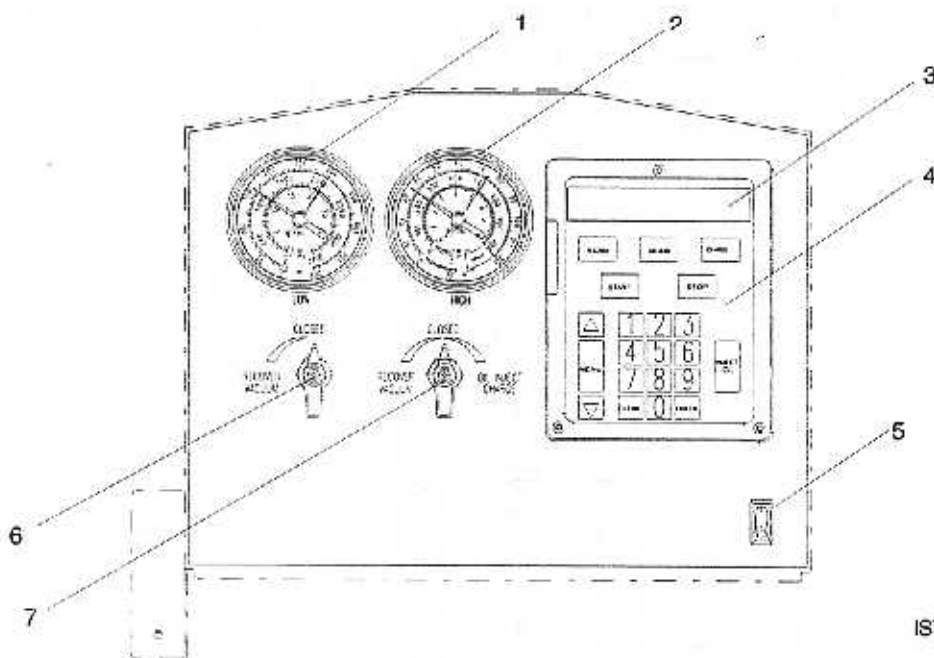
DIGITAL DISPLAY—Used on the visual interface between the operator and the machine.

LOW Side Manifold Gauge—Connects to an A/C system and shows the system's low side pressure.

HIGH Side Manifold Gauge—Connects to an A/C system and shows the system's high side pressure.

LOW Side Valve—Controls the low side flow from the A/C system through the unit.

HIGH Side Valve—Controls the high side flow from the A/C system through the unit. It has three positions: 1) Recover/Vacuum, 2) Closed, 3) Oil Inject/Charge



IST0693

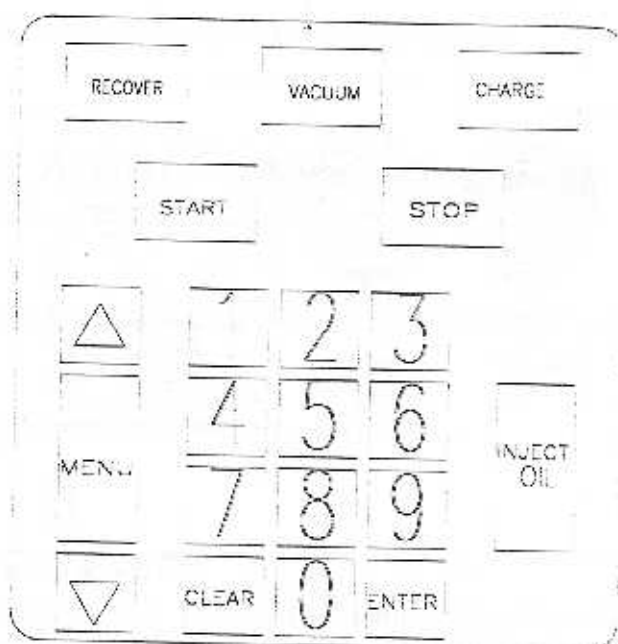
Diagram of Control Panel

- | | |
|----------------------------|----------------------|
| 1. Low Side Gauge | 5. Main Power Switch |
| 2. High Side Gauge | 6. Low Side Valve |
| 3. Display | 7. High Side Valve |
| 4. Bezel & Keypad Assembly | |

KEYPAD FUNCTIONS

In addition to the number keys, the keypad contains special keys that accomplish specific operating functions.

- **START**—Begins a function.
- **STOP**—Terminates a function.
- **RECOVER**—Activates the recovery sequence.
- **VACUUM**—Activates the vacuum and automatic recycling sequence.
- **CHARGE**—Automatically charges the A/C system with the programmed amount of refrigerant.
- **MENU**—Enters the selection menu.
- **UP/DOWN ARROWS**—Used for scrolling through the menu items.
- **CLEAR**—Clears indicated data from the unit's memory.
- **ENTER**—Enters programmed data into the unit's memory.
- **INJECT OIL**—Injects oil into the A/C system when pressed.



INST0694

Diagram of Keypad

OPERATING TIPS

Follow the SAE-J1991 recommended service procedure for the containment of R-12 and the SAE-J2210 recommended service procedure for the containment of R-134a.

The recovery compressor is *not* a vacuum pump. The compressor pulls the A/C system to a partial vacuum only. You must use the unit's vacuum cycle to remove moisture from the A/C system. We recommend a minimum 15-minute vacuum or follow the system manufacturer's recommendations.

This unit is designed to be used with the manifold gauge set built into the control panel.

The unit includes a 6 cfm (142 l/m) Robinair high vacuum pump for fast, thorough evacuation. Be sure to change the vacuum pump oil after every 10 hours of vacuum pump use.

R-134a systems require special oils. Refer to the A/C system manufacturer's service manuals for oil specifications.

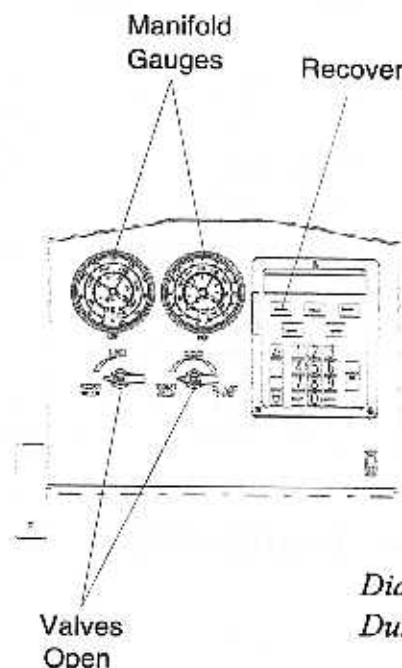
NOTE: The following operating instructions are written to be used with the BASIC PROMPTS mode of operation. It is recommended that the BASIC PROMPTS mode is used until the operator becomes very familiar with the operation of the unit. See the OPERATING GUIDELINES section of this manual for instructions on how to select between BASIC PROMPTS and ADVANCED PROMPTS.

RECOVERING REFRIGERANT

⚠ WARNING ⚠

Always wear safety goggles when working with refrigerant. Read and follow all warnings at the beginning of this manual before operating the unit.

1. Connect the power cord to the back of the unit and plug into the proper voltage outlet.
2. Turn on the MAIN POWER and empty the oil drain bottle located on the right hand side of the unit.
3. Press the **RECOVER** button.
4. If 300 or more pounds of refrigerant has been recovered since the last filter-drier change, the display reads XXX.X lb. RECOVERED.
5. Connect the high and low side hoses to the A/C system and open the coupler valves.
6. Put Low Side Valve in the Recover/Vacuum position. Put High Side Valve in the Recover/Vacuum position.
7. If the system pressure is below 25 psi, the display reads: LOW SYSTEM PRESSURE until the pressure increases or the **START** button is pressed.
8. If the unit has refrigerant in the low-side plumbing, it begins the clearing process and displays **CLEARING**. If you wish to skip the clearing operation or stop the clearing prematurely, press the **START** key. **NOTE:** An inaccurate recovery weight may result if the clearing operation is not completed.



INST0695

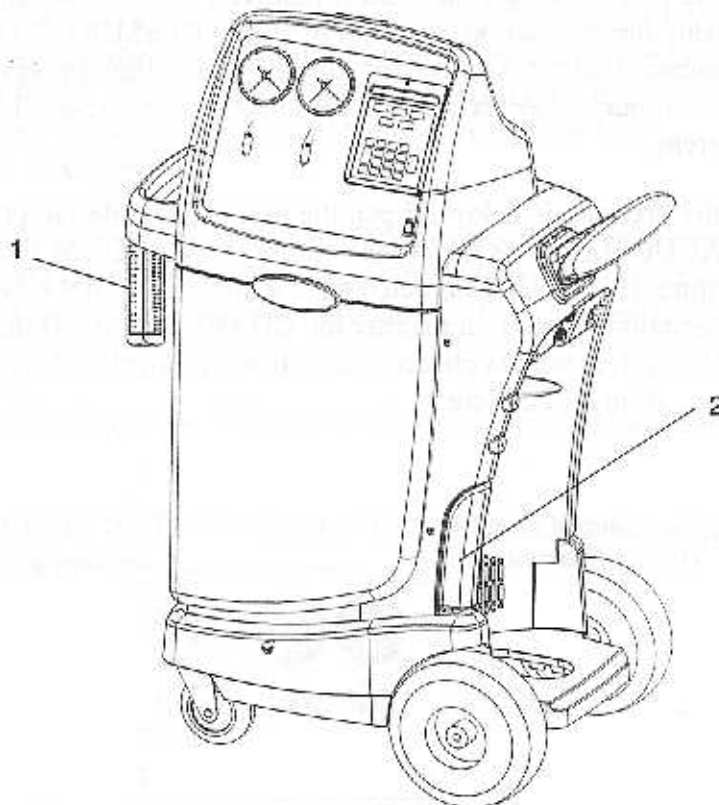
*Diagram of Control Panel
During Recovery*

9. When the system has recovered to a vacuum level of approximately 13 in. Hg., the compressor automatically shuts off.
10. The unit then goes into automatic oil drain and the display reads: OIL DRAINING. Oil draining can require up to 90 seconds to complete.
11. After the oil drain is complete, the display alternates between:
RECOVERY COMPLETE CHECK OIL BOTTLE.
RECOVERED XXX.XX lbs. RECOVERED XXX.X lbs.
12. Check the oil drain bottle and note the amount of oil that was removed from the A/C system. This is the amount of oil that must be charged into the A/C system after evacuation is complete.
13. To ensure complete recovery of refrigerant, wait 5 minutes and watch the manifold gauges for a rise in pressure above 0 in. Hg. A pressure rise may occur if there was freezing in the A/C system during recovery. If a rise occurs, press the **START** button to repeat the recovery process. Repeat as needed until the system pressure holds for two minutes, then press **STOP**. The **AUTO RESTART ON** option can be used to automatically restart the recycling process if the unit detects a pressure rise after five minutes. See the Selection MENU section for details.

Recovery is now complete. You are now ready to make any repairs to the A/C system, if necessary, or advance to the Evacuation Process.

*Diagram of the
Oil Injection System*

1. Oil Injector Bottle
2. Oil Drain Bottle



INST0699

Operating Instructions

EVACUATING THE A/C SYSTEM

⚠ WARNING ⚠

Always wear safety goggles when working with refrigerant. Use only authorized refillable refrigerant tanks. Read and follow all warnings at the beginning of this manual before operating the unit. In addition to the number keys, the keypad contains special keys that accomplish specific operating functions.

IMPORTANT!

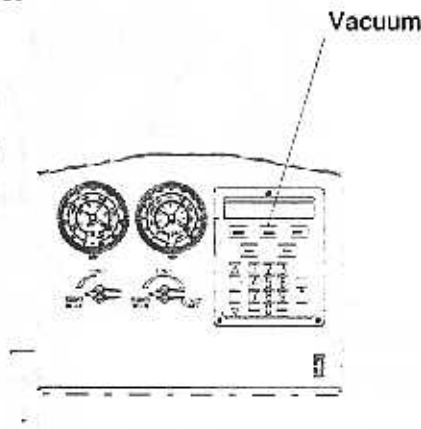
You should evacuate for at least 15 minutes to ensure adequate moisture and contaminant removal.

IMPORTANT!

If the vacuum pump has run for 10 or more hours without an oil change, the message **XX.X PUMP OIL** appears on the display. Change the pump oil following the procedures in the **MAINTENANCE INSTRUCTIONS**.

1. Connect the service hoses to the vehicle and open the coupler valves.
2. Put the Low Side Valve in the Recover/Vacuum position. Put the High Side Valve in the Recover/Vacuum position.
3. Press the **VACUUM** button.
4. If the vacuum pump has been run more than 10 hours since the last oil change, the display reads: **XX.X PUMP OIL HRS**. Press the **STOP** key to change the vacuum pump oil or press the **START** key to continue. Instructions for changing the vacuum pump oil are located in the maintenance section of this manual. **NOTE:** Vacuum Pump oil should be changed after 10 hours of use to maintain maximum performance and endurance levels.
5. If the system being evacuated contains a pressure over 25 psi at any point during the evacuation, the display reads **PRESSURE EXISTS**. This message indicates that the A/C system contains refrigerant. Press the **RECOVERY** key to continue. After recovery is complete, return to Step 1 to evacuate the A/C system.
6. If the pressure is below 25 psi, the user is prompted to press **START** to **VACUUM** or press **CHARGE** to use the **VACUUM-CHARGE (VAC-CHG)** feature. If **VACUUM** is selected, the unit vacuums the system only and user interaction is required to enter the **CHARGE** mode. If the **VACUUM-CHARGE** feature is chosen, the unit automatically charges the system after evacuation is complete.

*The Control Panel
During Evacuation*



INST0696

NOTE: If any oil was drained from the system during recovery, DO NOT use the VAC-CHG feature. The oil must be replenished into the A/C system, which is not possible when the VAC-CHG function is used.

VACUUM

1. Press the **START** key.
2. Press the **START** key to accept the default evacuation time of 15:00 minutes or enter the desired vacuum time by using the number keys and press the **ENTER** key.
3. The unit evacuates the A/C system and stops when the specified time has elapsed.
4. You are now ready to replenish the A/C system oil (if necessary) or to recharge the system with refrigerant.

VAC-CHG

1. Press the **CHARGE** key to select the VAC-CHG feature.
2. Press the **START** key to charge the default amount of refrigerant (2.00lb) or use the number keys to enter the desired charge weight. Then press the **ENTER** key.
3. If the weight entered leaves less than 5 lbs. of refrigerant in the internal storage vessel, the VAC-CHG process does not begin and the display reads **LOW REFRIGERANT**. At this point, refrigerant must be added to the internal storage vessel. See the **OPERATING GUIDELINES** section of this manual for internal storage vessel refill instructions and then return to Step 1 of **EVACUATING** the A/C system.
4. If the internal storage vessel contains a sufficient amount of refrigerant, press the **ENTER** key to accept the default evacuation time of 15:00 minutes or enter the desired vacuum time by using the number keys. Then press the **ENTER** key.
5. The unit automatically charges the A/C system after the specified vacuum time has elapsed.
6. Advance to Step 6 of **RECHARGING** the A/C SYSTEM in this manual to complete the charging process.

IMPORTANT!

You should evacuate the A/C system for at least 15 minutes to ensure adequate moisture and contaminant removal.

REPLENISHING A/C SYSTEM OIL

CAUTION! To prevent air from entering the A/C system, never let the oil level drop below the pick-up tube while charging or replenishing.

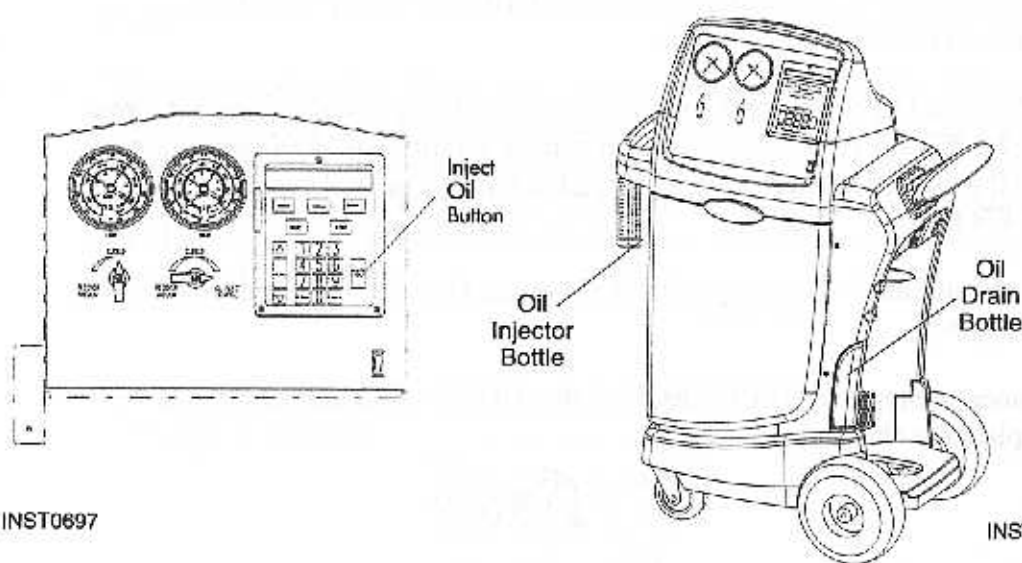
IMPORTANT!

You can charge oil through either the low side or high side, or both, depending on the vehicle manufacturer's recommendation. Just open the appropriate manifold valve or valves.

Before charging the A/C system, you must replenish any oil removed from the A/C system during the recovery process. Charge only the amount of oil that was removed from the A/C system during the recovery process. Check the oil drain bottle to determine the amount of oil that was removed during recovery. Be sure to empty the oil drain bottle before recovering the next A/C system to prevent an inaccurate oil charge. **NOTE:** If no oil was removed from the A/C system during recovery, DO NOT charge any oil into the A/C system.

1. Select the correct oil for the A/C system being serviced. Refer to the vehicle manufacturer's service manual.
2. Adjust the O-ring around the oil injector bottle to the required oil charge level. For example, if the bottle's oil level is at 4 ounces and you need 1/2 ounce of oil to replenish the A/C system, place the o-ring at the 3 1/2 ounce level.
3. Reattach the oil injector bottle to the unit.
4. Close the Low Side manifold valve. Put the High Side valve in the Oil Inject/Charge position.
5. Press the **INJECT OIL** button and hold until the oil level reaches the o-ring.
6. Press the **STOP** button after the oil charge is complete.

You are now ready to recharge the A/C system with refrigerant.



Control Panel

Diagram of the Oil Injection System

RECHARGING THE A/C SYSTEM

WARNING

Always wear safety goggles when working with refrigerant. Use only authorized refillable refrigerant tanks. Disconnect hoses with extreme caution!

All hoses may contain liquid refrigerant under pressure. Read and follow all warnings at the beginning of this manual before operating the unit.

IMPORTANT!
You should evacuate the A/C system for at least 15 minutes for adequate moisture and contaminant removal.

1. Put the Low Side Valve in the Closed position. Put the High Side Valve in the Oil Inject/Charge position.
2. Press the **CHARGE** button.
3. Accept either the default weight by pressing **START** or type in a weight with the number keys and press **START**.
4. If the weight entered will leave less than 5 lbs. of refrigerant in the refrigerant tank, the charge function will not start and the display reads:

LOW REFRIGERANT

Refrigerant XX.XX lbs.

See the Operating Guidelines section of the manual for refill instructions.

5. Upon entering a valid charge weight, the display reads:

CHARGE MODE

AMT. CHARGED xx.xx lbs.

6. If, during the charge cycle, the weight fails to charge 0.05 lbs. in 30 seconds, the unit intermittently beeps while the display alternates between:

CHARGING HAS SLOWED

press **START**

AMT. CHARGED XX.XX lbs.

AMT. CHARGED XX.XX lbs.

7. If the charging speeds up, the beeping stops and the display reverts back to the previous message.

Operating Instructions

8. Pressing the **START** button when the charging is slowed causes the charging to be halted and the display to alternate between:

Close High-Side Valve then Press

Start the Automobile

Start to Charge

CAUTION! Be sure the high side manifold valve is closed before starting the vehicle A/C system.

WARNING

Before starting the vehicle's engine, check to see that it is in **PARK** or **NEUTRAL**, with the emergency brake **ON**. Never run a vehicle without adequate ventilation in the work area.

9. Close the High Side Valve. Put the Low Side Valve in the Recover/Vacuum position.
10. After starting the vehicle, press **START**. The unit charges out of the low side inlet only, allowing the vehicle's compressor to pull the refrigerant into the A/C system. This display indicates **LOW SIDE CHARGE**.
11. When the unit is finished charging, the display reads: **CHARGE COMPLETE**.
12. Close the **LOW SIDE** manifold valve.
13. Turn off the vehicle's engine.
14. Close the high and low side coupler valves and remove the service hoses from the A/C system.
15. Turn off the **MAIN POWER** switch.

The A/C system is now ready for use.

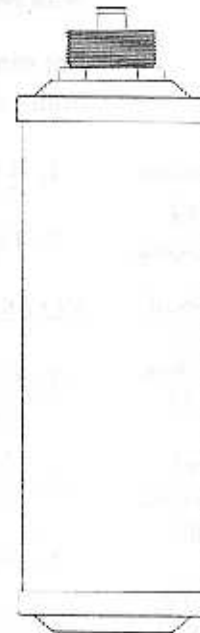
REPLACING THE FILTER-DRIER

Order part #34724 for a replacement filter-drier. The filter-drier on this unit is designed to trap acid and particulates and is formulated to remove water from the refrigerant. You must change the filter-drier to assure adequate moisture and contaminant removal.

Typically, you can recycle up to 150 pounds (68 kilograms) of refrigerant between filter changes.

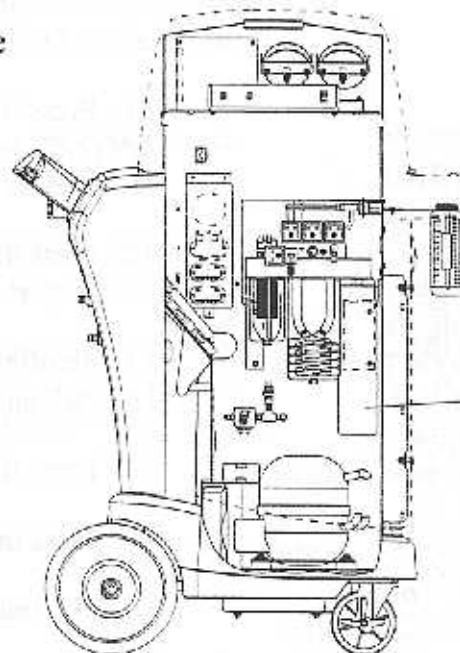
CAUTION! For best results, use Robinair filter-driers (part no. 34724). All performance tests and claims are based on using this specially-blended filter-drier. Use of another may affect performance results.

1. Press the **MENU** button.
2. Scroll through the menu to **CHANGE FILTER** and press **ENTER**.
3. Wait for the unit to self clear.
4. When clearing is complete, the display reads **DISCONNECT POWER FROM THE MACHINE**.
5. Turn off the main power and unplug the machine.
6. Open the unit door and replace the old filter with the new filter.
7. Close the unit door, plug in the machine, and turn on the Main Power.
8. Close the door to the unit and press **ENTER**.
9. The filter change is now complete.



INST0477

Filter-Drier



Filter
Drier

INST0700

Location of the Filter-Drier

CHANGING THE VACUUM PUMP OIL

For maximum vacuum pump performance, change the vacuum pump oil every 10 hours of operation.

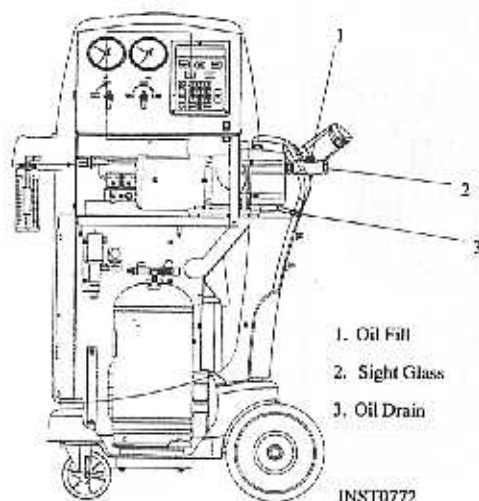
IMPORTANT!

Review current local, state, and federal statutes, cases, laws, and regulations to determine the current status and appropriate disposal method for pump oil. It is the responsibility of the user to determine if a material is a hazardous waste at the time of disposal. Ensure that you are in compliance with all applicable laws and regulations.

1. Turn on the **MAIN POWER** switch.
2. Press the **VACUUM** button.

NOTE: Do not connect the service hoses to a vehicle.

3. Ensure that the high side and low side manifold valves are closed and press **START**.
4. Press **START** to vacuum.
5. Set vacuum time to 5:00 minutes and press **ENTER**.
6. Allow the vacuum pump to run until it automatically stops. Press the **STOP** key.
7. Remove the black plastic plug on the oil fill port of the vacuum pump.
8. Remove the oil drain cap from the vacuum pump and drain the oil into a suitable container for proper disposal.
9. Replace the oil drain cap.
10. Attach the flexible tube and cap to the oil bottle and pour five ounces of vacuum pump oil into the fill port.
11. Press the **VACUUM** key. Press the **START** and press the **ENTER** key. While the vacuum pump is running, slowly add oil until the level rises to the center of the reservoir's sight glass.
12. Press the **STOP** key and replace the black plastic plug on the fill port. Press the **STOP** key to exit.
13. Scroll through the selection menu to **VACUUM PUMP HOURS** and press **ENTER**.
14. Press the **CLEAR** button to reset the counter to zero.
15. Press the **STOP** key.
16. The unit is now ready to operate.



INST0772

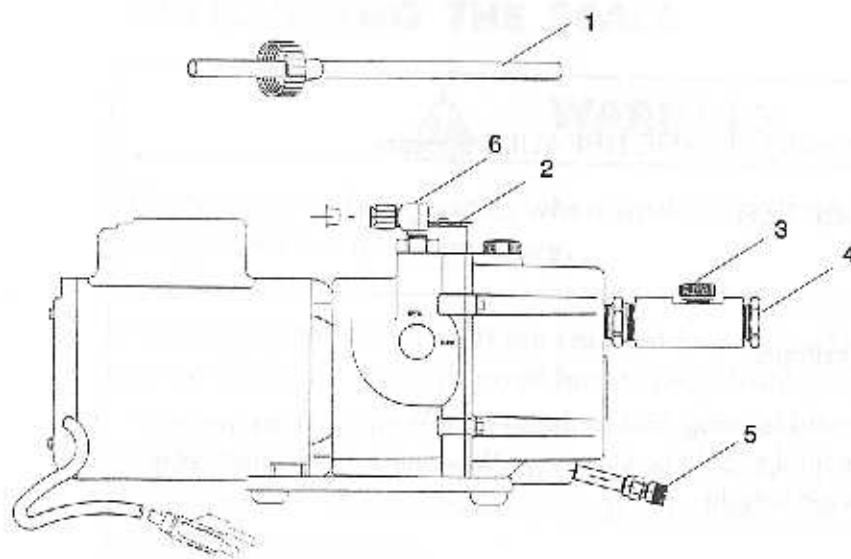


Diagram of Vacuum Pump

1. Oil Filler Tube
2. Pump Exhaust
3. Oil Fill Port
4. Sight Glass
5. Oil Drain Fitting
6. Inlet

CHECKING FOR LEAKS

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

1. Turn off the **MAIN POWER** switch, and disconnect the power cord from the outlet.
2. Open the rear door. Remove the top cover and front panel.
3. Use a leak detector to probe all connections for refrigerant leaks. Tighten fittings if a leak is indicated.
4. Reassemble the body panels and close the rear door.

IMPORTANT!

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

CALIBRATING THE SCALE



WARNING



Always wear safety goggles when working with refrigerants. Contact with refrigerant can cause eye injury.

Disconnect hoses with extreme caution! Pressurized refrigerant may be present in hoses. Always point hoses away from yourself and anyone else.

Unplug the unit before beginning any service work. Improper use or connection can cause electrical shock. Only qualified personnel should perform service work.

If the scale assembly and UL circuit are not calibrated, the scale can overfill the tank, causing possible explosion and/or vehicle overcharge.

1. To calibrate the scale, you must remove the ISV (Internal Storage Vessel) from the scale. The ISV is attached to three locations within the machine. Two options may be taken at this point. Both require removing four screws that secure the bottom of the ISV to the scale. The screws are Torx, size 30 head.

OPTIONS:

A. Balance the ISV

The hoses are not long enough to set the ISV on the floor. It must be balanced on the edge of the cart.

B. Remove the ISV

Close the liquid valve on the ISV. The liquid line is the hose that runs directly to the middle front side of the manifold block. Next, perform the RECYCLE function only. To recycle only, press the **MENU** button. Use the **UP** and **DOWN** arrow keys until RECYCLE appears. Press **ENTER**. The unit stops recycling when the liquid line is empty. The display returns to REFRIGERANT and WEIGHT. Close the remaining two ISV valves and disconnect the hoses.

CAUTION! The hoses will retain pressure—remove slowly. Notice which hoses go to which valve.

Place the ISV on the floor.

2. Press the **MENU** key.
3. Press the **UP** arrow key until **CHANGE DEFAULT** appears.
4. Press **8-7-8-7** and then **ENTER**.
5. Press **ENTER** again.
6. Follow the On-Screen prompts.
7. Verify the calibration by subtracting 17.4 pounds (Tare Weight) from the total weight on the scale. The total should be shown on the display. This method is the only way to check scale weight.

UL CIRCUIT CALIBRATION



WARNING



Live AC voltages are present in the unit when the power is turned on. Exercise caution when making the adjustments below.

1. Remove the front cover from the unit. Remove all the weight from the scale. Remove the cover under the circuit board.
2. Press the **MENU** key. Press the **UP** arrow until **CHANGE DEFAULTS** appears.
3. Press **8-7-8-7**, then press the **ENTER** key.
4. Press the **UP** arrow till **SET UL TRIP POINT** appears. Press the **ENTER** key.
5. Place 43 lbs. on the scale. Find the potentiometers on the under side of the circuit board.
6. Adjust the potentiometer until the display shows **SET**. Remove one pound from the scale. The display should read **CLEAR**.
7. Repeat Step 7 until the display reads correctly for both weights.
8. Press the **STOP** key to exit.



INST 0720

Replacement Parts List

ELECTRICAL PROTECTION

If the circuit breaker trips, all power to the unit is lost. Press the circuit breaker button to reset. The circuit breaker is located near the fuse on the back of the unit.

GENERAL MAINTENANCE

1. On a regular basis, wipe off the unit with a clean cloth to remove grease, dust or other dirt.
2. Periodically check the internal components for leaks—over time, fittings can loosen as the unit is moved. Open the unit door panel and trace lines with a leak detector. Also, check connections on the back of the unit. Tighten any loose fittings or connections you may find.

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.

Premium High Vacuum Pump Oil is also available in handy quart containers or in convenient gallon containers:

Quart (shipped 12 quarts per case) 13203

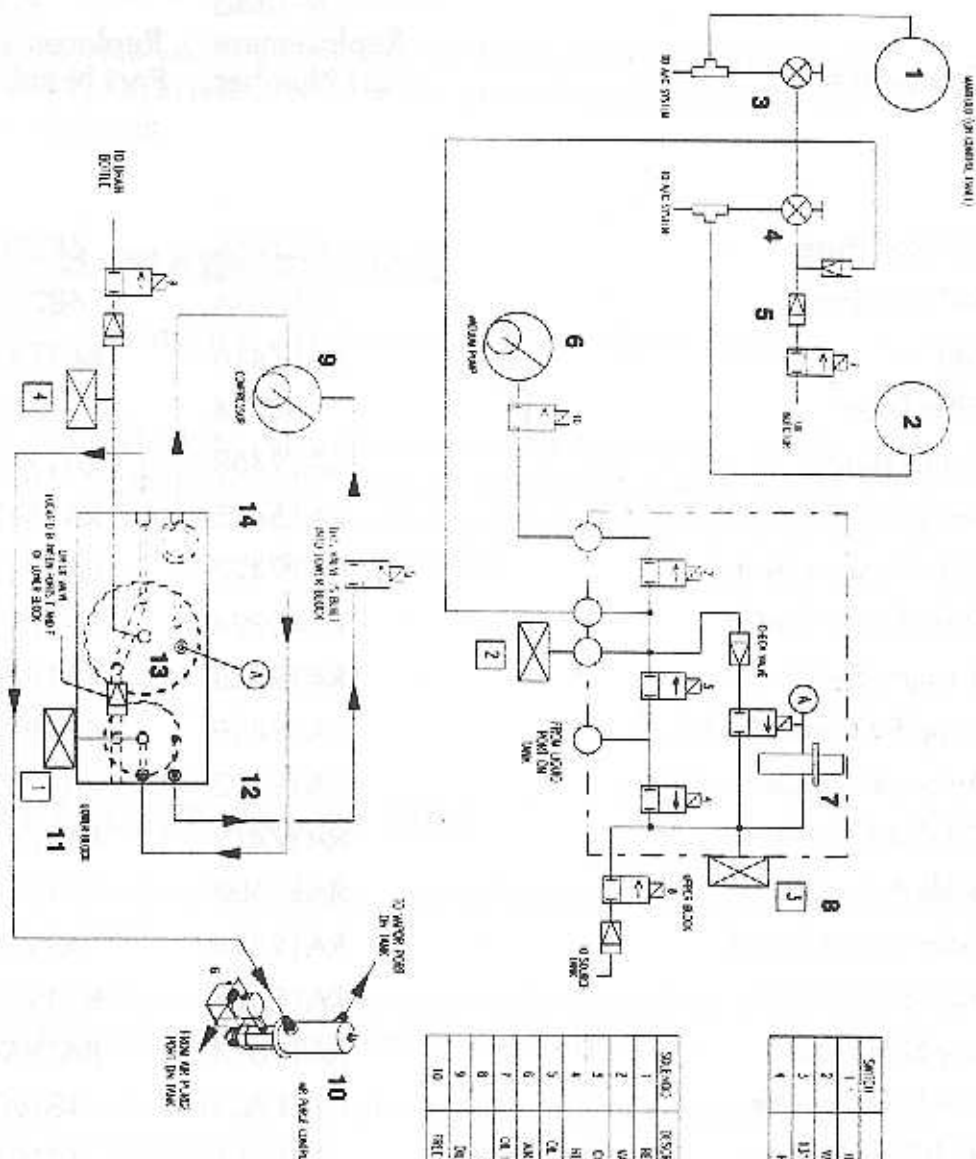
Gallon (shipped 4 gallons per case) 13204

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

Replacement Parts List

Component	347002K R-134a Replacement Part Number	177002K R-12 Replacement Part Number
96" Red Hose	 68396A	68396A
96" Blue Hose	68296A	68296A
Fan	RA17416	RA17416
Filter-Drier	34724	34724
Compressor	RA19458	RA19458
Vacuum Pump	RA15425	RA15425
High Pressure Switch	RA19427	RA19427
Main Power Switch	RA40994	RA40994
Vacuum Switch	RA19428	RA19428
Pump Protection Switch	RA19429	RA19429
Automatic Expansion Valve	RA19592	RA19592
Oil Catch Bottle	RA17419	RA17419
Scale Assembly	RA19603	RA19603
Main Circuit Board	RA19594	RA19594
High Side Gauge	RA19613	RA19613
Low Side Gauge	RA19614	RA19614
Low Side Coupler	18190A	18190A
High Side Coupler	18191A	18191A
Automatic Air Purge	RA19595	RA19476
Transformer	RA19596	RA19596
Solenoid Rebuild Kit	RA19258	RA19258
Castors	RA19631	RA19631
ISV (Internal Storage Vessel)	RA19612	RA19612

Flow Diagram



1. Low Side Manifold Gauge
2. High Side Manifold Gauge
3. Low Side Manifold Valve
4. High Side Coupler
5. Oil Injector Check Valve
6. Vacuum Pump
7. Expansion Valve

8. Upper Block
9. Compressor
10. Air Purge Control
11. Lower Block
12. Return Oil Separator
13. Accumulator
14. Filter-Drier

SWITCH	DESCRIPTION
1	HIGH PRESSURE SWITCH-WARNING
2	VACUUM PROTECTION SWITCH
3	1/2" VACUUM SWITCH
4	HIGH PRESSURE SWITCH-OIL DRAIN

SOLENOIDS	RECOIL	RETURN	VACUUM	RETURN	RETURN	RETURN	RETURN
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0

0 - OFF
X - ON
... - PNEUMATIC ON

INST0676

Wiring Diagram



INST 0702

Limited Warranty

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. Transportation charges for warranty service will be reimbursed by the factory upon verification of the warranty claim and submission of a freight bill for normal ground service. Approval from Robinair must be obtained prior to shipping to either an authorized service center or the factory.
5. Warranty service claims are subject to factory inspection for product defect(s).
6. Robinair 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 unauthorized shipping and/or labor charges.
7. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.
8. Use of Robinair recovery/recycling equipment with unauthorized refrigerants will void our warranty. Authorized refrigerants are listed on the equipment or are available through our Technical Service Department.

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.

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.



Visit our web site at
www.robinair.com

or

Call our Toll-Free
Technical Support Line at
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.

The 347002K/177002K 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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