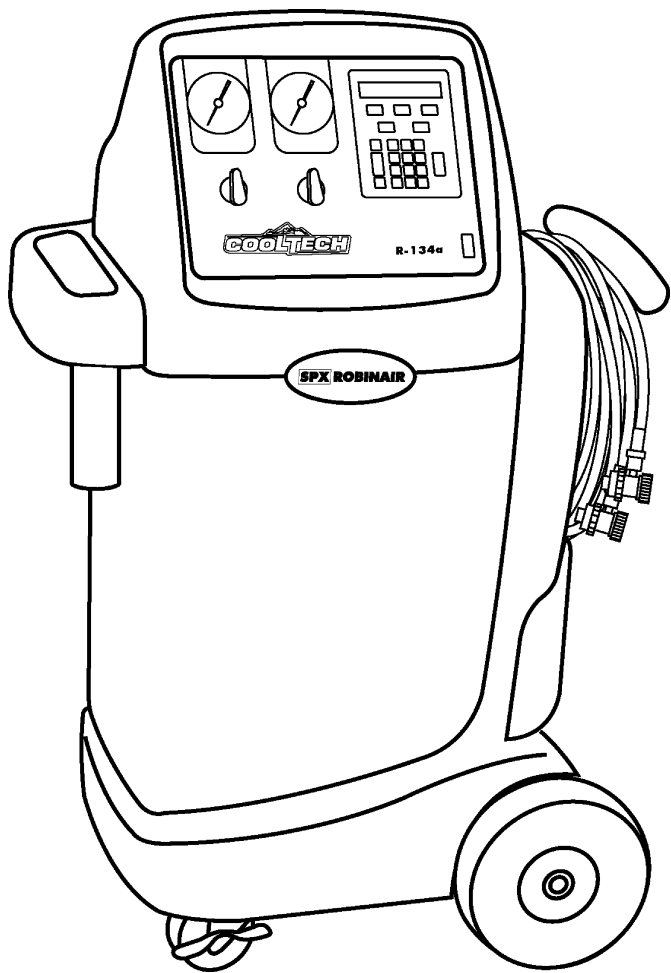


Operating Manual



**Model 34700-2K/17700-2K
Recovery/Recycling/Recharging Unit**



Model 17700-2K (for R-12 refrigerant)
Model 34700-2K (for R-134a refrigerant)
Recover, Recycle, and Recharge Unit

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 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 verify that conditions and procedures do not jeopardize your personal safety.

DISCLAIMER: Information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without obligation to notify any person or organization of such revisions or changes. Further, ROBINAIR shall not be liable for errors contained herein or for incidental or consequential damages (including lost profits) in connection with the furnishing, performance, or use of this material. If necessary, obtain additional health and safety information from the appropriate government agencies and the vehicle, refrigerant, and lubricant manufacturers.

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 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 personal injury or death. Do not recover refrigerants into non-refillable containers; use only federally authorized refillable containers (DOT spec. 4BW or 4BA).



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



DO NOT BREATHE REFRIGERANT AND LUBRICANT VAPOR OR MIST. Exposure may cause personal injury, especially to the eyes, nose, throat, and lungs. Use the unit in locations with mechanical ventilation that provides at least four air changes per hour. If accidental system discharge occurs, ventilate the work area before resuming service.



DO NOT USE AN EXTENSION CORD. An extension cord may overheat and cause fire. If you must use an extension cord, use the shortest possible cord with a minimum size of 14 AWG.

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.



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.



USE THE 17700-2K UNIT WITH R-12 REFRIGERANT ONLY. The unit is for recovering, recycling, and recharging only R-12 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.



USE THE 34700-2K UNIT WITH R-134a REFRIGERANT ONLY. 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.



HIGH VOLTAGE ELECTRICITY INSIDE THE UNIT HAS A RISK OF ELECTRICAL SHOCK. Exposure may cause personal injury. Disconnect the power before servicing the unit.

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

Table of Contents

Introduction	2
Glossary of Terms	2
Setup Instructions	2
Initial Setup	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 Oil Time	7
Filter Capacity	7
Basic/Advanced Prompts	8
Selecting a Unit (Metric/English)	8
Language Select	8
Change Defaults	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
Electrical Protection	22
General Maintenance	22
Replacement Parts List	22
Flow Diagram	24
Wiring Diagram	25
Limited Warranty	26

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 34700-2K models are used for R-134a vehicles, whereas the 17700-2K models are used for R-12 vehicles. Both models are designed to be compatible with existing service equipment and standard service procedures.

The 34700-2K and the 17700-2K 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.

Setup Instructions

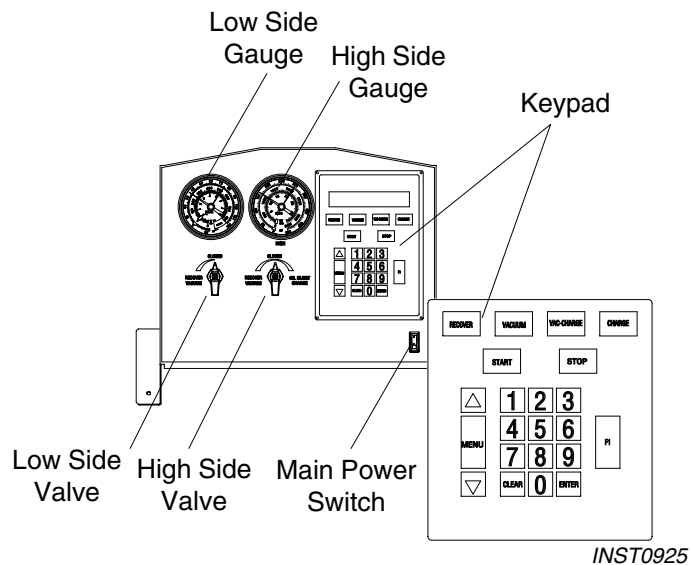
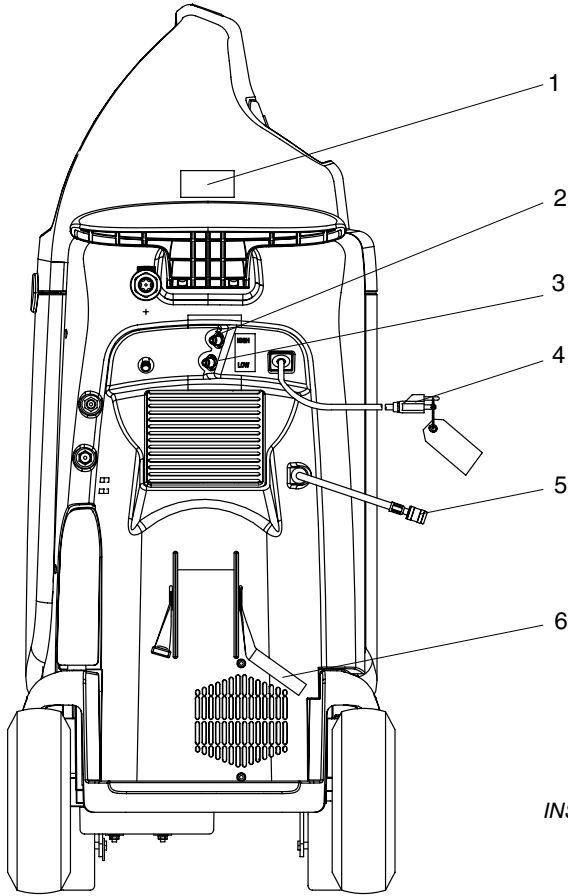


Diagram of the Control Panel

Setup Instructions



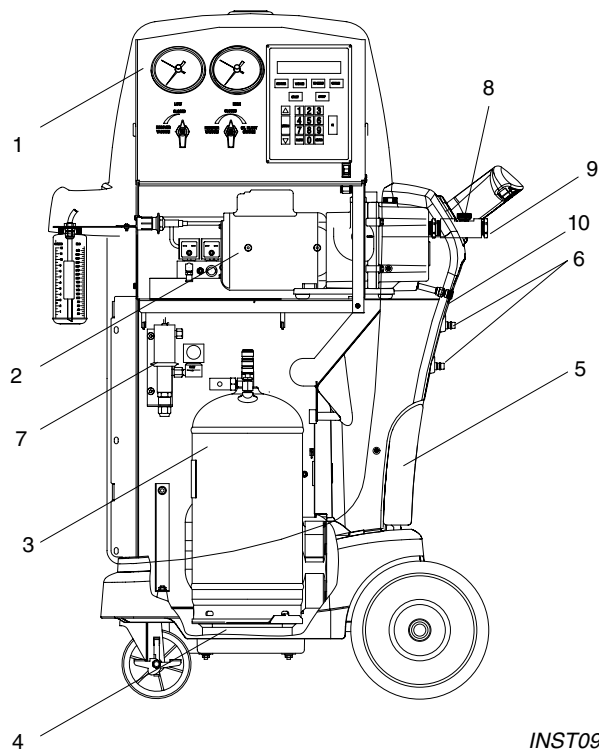
*Diagram of Unit's Components—
Side View*

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. Vacuum Pump Oil Fill
9. Sight Glass
10. Oil Drain



INST0946

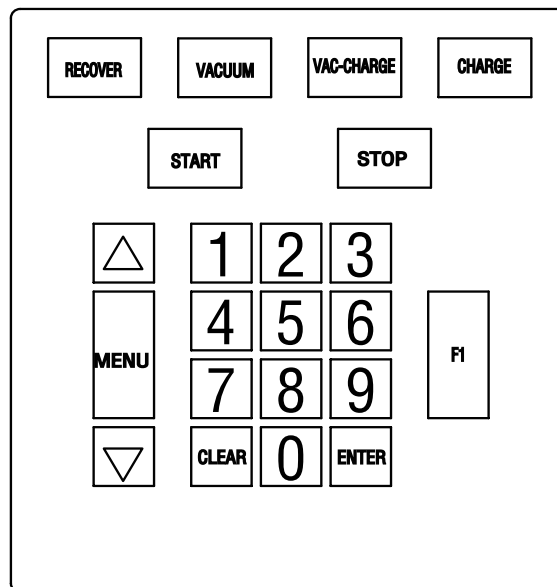
Setup Instructions

KEYPAD FUNCTIONS

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

- | | |
|-------------------|--|
| START | START — Begins, or resumes, a function. |
| STOP | STOP — Terminates, or pauses, a function. |
| RECOVER | RECOVER — Activates the recovery sequence. |
| VACUUM | VACUUM — Activates vacuum and automatic recycling sequence. |
| VAC-CHARGE | VAC-CHARGE — Activates vacuum and automatic recycling sequence, followed by a charge. |
| CHARGE | CHARGE — Charges A/C system with a programmed amount of refrigerant. |
| MENU | MENU — Enters the selection menu. |
| ▲ ▼ | UP/DOWN ARROWS — Scroll through menu items. |
| F1 | F1 (Inject Oil) — Injects oil into A/C system (active at end of vacuum). |

Diagram of Keypad



INITIAL SETUP

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.

1. The first time the unit is powered up, it will start in the initial setup mode. If the initial setup must be performed again, it may be selected using the menu function.
2. The first step is to select a language. Use the **UP** and **DOWN** arrow keys to select the desired language. Press **START** to save the currently displayed language.
3. Next select the operating units. Toggle between UNITS ENGLISH and UNITS METRIC using the arrow keys. Press **START** to save the currently displayed choice.
4. Toggle between BASIC/ADVANCED using the **ARROW** keys. 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. Press **START** to save the currently displayed choice.

IMPORTANT!
You must press the MENU key to access all the functions.

NOTE: This manual is written using the BASIC prompt option

Vacuum Pump Components

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

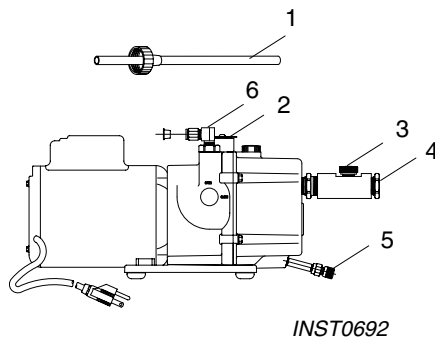
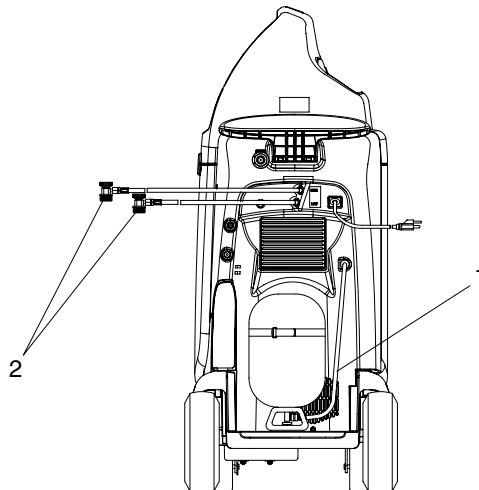


Diagram of Hose Connections

1. Fill Hose
2. Quick-Couplers (34700 Only)



Setup Instructions

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.

5. Press the **START** key to begin the oil fill process.
6. Attach the flexible tube and cap to the oil bottle, and pour eight ounces of vacuum pump oil into the fill port.
7. Press the **START** key. While the vacuum pump is running, slowly add oil until the level rises to the center of the reservoir's sight glass.
8. Press the **STOP** key, and replace the black plastic plug on the fill port.
9. Connect the service hoses, open both panel valves, and press **START**.
10. Connect the fill hose to a full source tank.
11. Open the tank valve. Invert the tank and install it on the back of the unit, making sure to secure the tank strap.

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

12. Press **START**, and the unit will automatically run a five-minute vacuum to clear all internal air.
13. After the vacuum is complete, press **START** to begin filling the internal storage vessel.
14. The unit stops when a sufficient amount of refrigerant has been transferred to the internal tank, or when the source tank is empty. Press the **STOP** key to pause the process. Press **STOP** again to exit, or **START** to resume. This process takes 15-20 minutes.

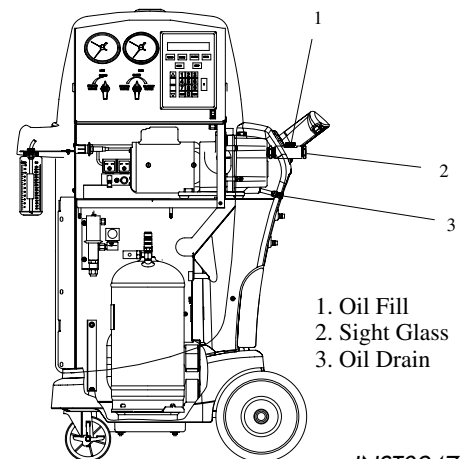
NOTE: Add at least 8 lb. (3.6 kg) of refrigerant before stopping the process to ensure enough refrigerant is available for charging.

15. When the fill process is complete, you may press **STOP** to exit.
16. The unit is now ready to operate.

NOTE: There is no need to calibrate the scale, because it is calibrated at the factory.

IMPORTANT!
For maximum performance, change the vacuum pump oil frequently.

IMPORTANT!
The pump must be running when adding oil.



1. Oil Fill
2. Sight Glass
3. Oil Drain

INST0947

USING THE SELECTION MENU

1. Press the **MENU** button. The top line of the display reads SETUP MENU.
2. Use the **UP** and **DOWN** arrow keys to scroll through the menu choices displayed on the second line. The menu choices are:
 1. SELECT LANGUAGE
 2. SELECT UNITS (ENGLISH/METRIC)
 3. TANK REFILL
 4. RECYCLE ONLY
 5. FILTER CAPACITY
 6. CHANGE FILTER
 7. VACUUM OIL TIME
 8. CHANGE VACUUM PUMP OIL
 9. SELECT PROMPTS
 10. CHANGE DEFAULTS (password protected)
 11. VERSION X.XX
3. Press **START** to make a choice from the menu. Press **STOP** to pause any process, and **STOP** a second time to exit any process.

CHANGE FILTER

The filter-drier removes acid, particulates, and water from the refrigerant. Change the filter-drier after 150 pounds (68 kg) of refrigerant has been filtered. See the *REPLACING THE FILTER DRIER* section on the following page, as well as the Maintenance Section, for instructions.

RECYCLE

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

1. Press the **MENU** key. Use the arrow keys to select RECYCLE ONLY, and press **START** to begin.
2. Press the **START** button to start recycling. To pause recycling, press the **STOP** key. To terminate recycling, press the **STOP** key again, or press **START** to resume.

TANK REFILL

1. Press the **MENU** key. Use the arrow keys to select TANK REFILL, and press **START** to begin.
2. Connect the fill hose to the source tank.
3. Open the tank valve. Invert the tank, install it on the back of the unit, and secure the tank strap.

Operating Guidelines

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

4. Press the **START** key, and the tank automatically refills. The unit stops when a sufficient amount of refrigerant has been transferred to the internal tank, or if the source tank is empty. Press the **STOP** key to pause the process. Press **STOP** again to exit, or **START** to resume.
5. When the fill process is complete, press **STOP** to exit.

VACUUM OIL TIME

This function displays how long the vacuum pump has run since the last oil change.

1. Press the **MENU** key. Use the arrow keys to select VACUUM OIL TIME, and press **START** to begin.
2. The display reads: OIL TIME = XX:XX This shows how long the pump has run since the last oil change. The time resets to zero after a VACUUM PUMP OIL CHANGE. See page 20 of this manual for details.
3. Press **STOP** to exit.

FILTER CAPACITY

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

1. Press the **MENU** key. Use the arrow keys to select FILTER CAPACITY, and press **START** to begin.
2. The display reads: FILTERED= XXXlbs(kg). This shows how much refrigerant has passed through the filter. The amount filtered resets to zero after a FILTER CHANGE. See page 19 of this manual for details.
3. Press **STOP** to exit.

SELECT PROMPT (BASIC/ADVANCED)

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. Press the **MENU** key. Use the arrow keys to choose SELECT PROMPT, and press **START** to begin.
2. Toggle between BASIC/ADVANCED using the **ARROW** keys.
3. Press **START** to save the current choice and exit.

NOTE: This manual is written for the BASIC PROMPT option.

SELECTING A UNIT (METRIC/ENGLISH)

1. Press the **MENU** key. Use the arrow keys to choose **SELECT UNITS**, and press **START** to begin.
2. Toggle between **UNITS ENGLISH** and **UNITS METRIC** using the arrow key.
3. Press **START** to save the current choice and exit.

LANGUAGE SELECT

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

1. Press the **MENU** key. Use the arrow keys to choose **SELECT LANGUAGE**, and press **START** to begin.
2. Use the **UP** and **DOWN** arrows to scroll through the languages.
3. Press **START** to save the current choice. Press **STOP** to exit without saving.

CHANGE DEFAULTS

For service use only.

VERSION

Displays the current software revision.

Operating Guidelines

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.

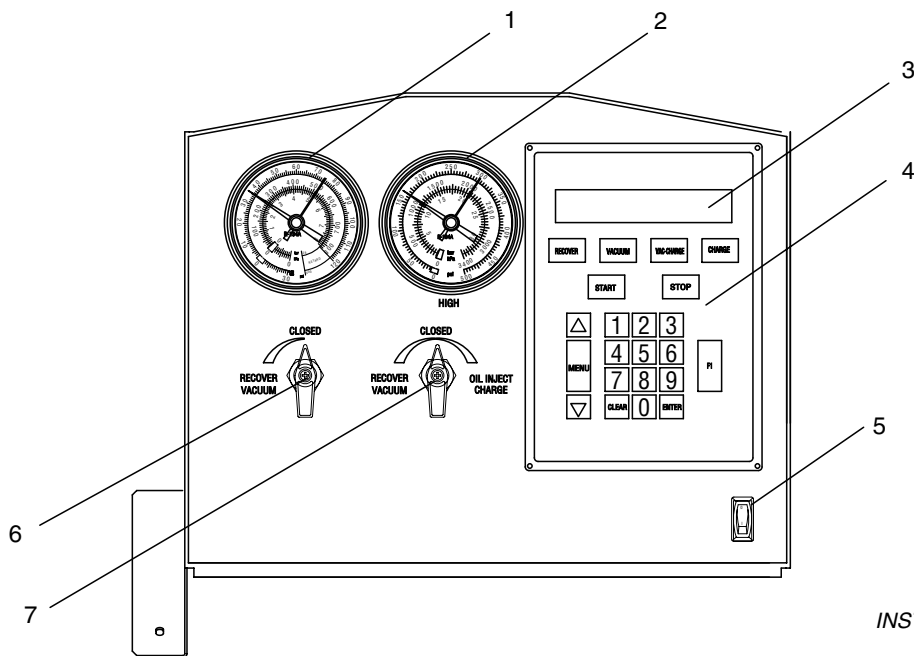
DIGITAL DISPLAY—Used on the visual interface between the operator and the machine.

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.



INST0926

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 | |

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. Change the vacuum pump oil after every 10 hours of use.

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

Pressing the **START** and **STOP** keys together for several seconds will exit any mode and reset the control.

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

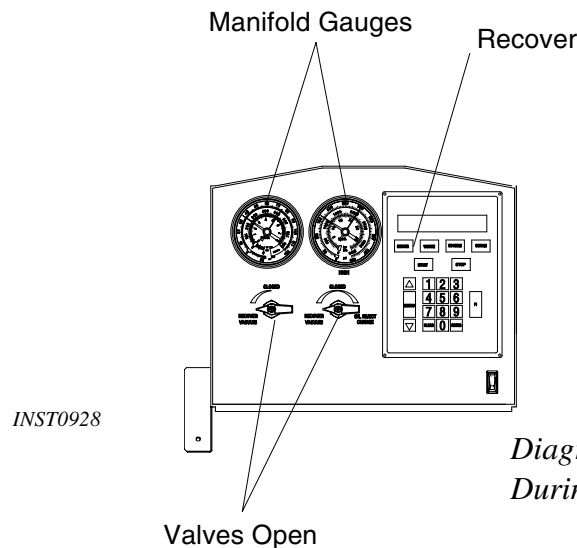
⚠ WARNING ⚠

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 it into the correct voltage outlet.
2. Turn on the MAIN POWER and, if necessary, empty the oil drain bottle located on the right hand side of the unit.
3. Press the **RECOVER** button.
4. If 150 pounds (68 kg) or more of refrigerant has been recovered since the last filter-drier change, the display reads FILTER WEIGHT XXX lb (XX kg). Press **START**.

NOTE: Refer to the filter change procedure on page 19 of this manual for details about replacing the filter.

5. Connect the high and low side hoses to the A/C system, and open the coupler valves.
6. Put the Low Side Valve in the Recover/Vacuum position. Put the High Side Valve in the Recover/Vacuum position. Press **START** to continue.
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. You may press **STOP** to exit at this point.
8. If the unit has refrigerant in the low-side plumbing, it begins the clearing process and displays CLEARING IN PROGRESS. If you wish to skip the clearing operation or stop the clearing prematurely, press the **START** key.



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 XX.XX lbs. (X.XX kg)	RECOVERED XX.XX lbs. (X.XX kg)

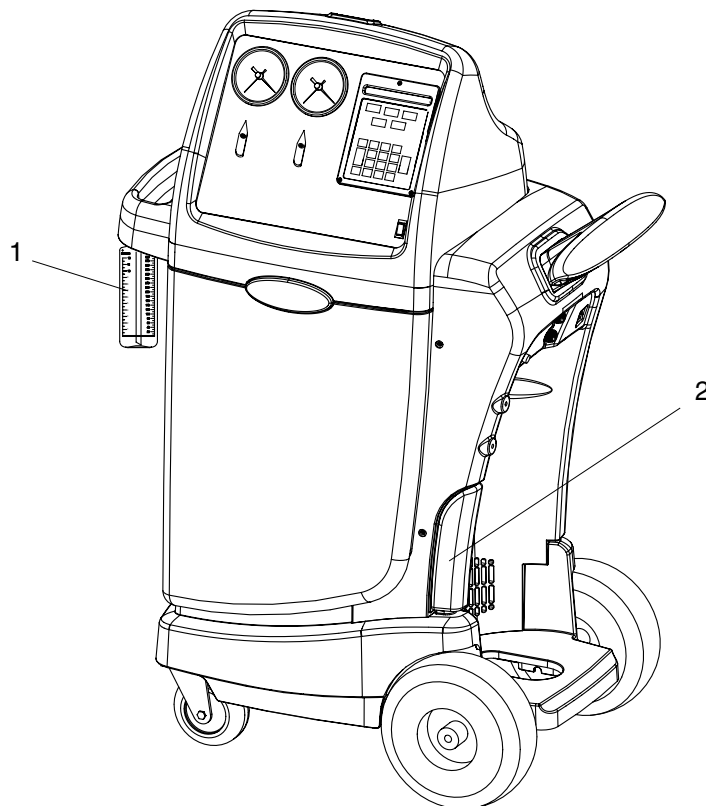
NOTE: The displayed recovered weight can vary depending on ambient conditions, and should not be used as an indicator of scale accuracy.

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 resume the recovery process. Repeat as needed until the system pressure holds for two minutes, then press **STOP** to exit.

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

EVACUATING THE A/C SYSTEM

⚠ WARNING ⚠

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!

Evacuate the system 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 **VACUUM OIL TIME XX:XX** appears on the display. Change the pump oil following the procedures in the **MAINTENANCE INSTRUCTIONS**.

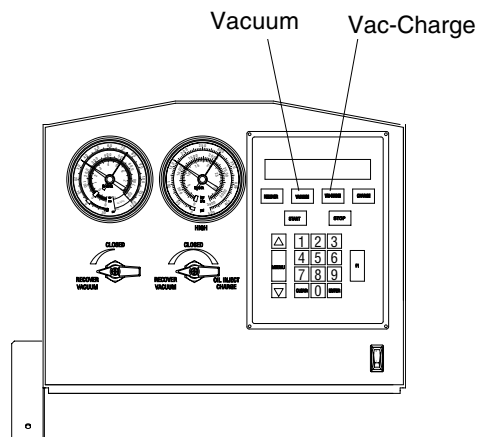
NOTE:

- If any oil was drained from the system during recovery, **DO NOT** use the **VAC-CHARGE** feature. The oil must be replenished into the A/C system, which is not possible when the **VAC-CHARGE** function is used.
- If the vacuum pump has been run more than 10 hours since the last oil change, the display reads: **VACUUM OIL TIME XX:XX**. 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 every 10 hours of use to maintain maximum performance and endurance levels.
- 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 any key to continue. Press the **RECOVERY** key to recover any refrigerant in the system (See **RECOVERING REFRIGERANT**, page 12). After recovery is complete, return to evacuating the A/C system.

VAC-CHARGE

1. Press the **VAC-CHARGE** key to select the **VAC-CHARGE** feature.
2. Ensure the service hoses are connected and both panel valves are in the **VACUUM/ RECOVER** position. Press **START**.

*The Control Panel
During Evacuation*



NOTE: It is not necessary to change the High side panel valve from vacuum to charge when performing the VAC-CHARGE function.

3. Press the **START** key to charge the default amount of refrigerant, or use the number keys to enter the desired charge weight. Then press the **START** key.
4. If the weight entered leaves less than 3 lbs (1.36 kg) of refrigerant in the internal storage vessel, the VAC-CHARGE process does not begin, and the display reads INSUFFICIENT REFRIG. At this point, refrigerant must be added to the internal storage vessel. See page 6 of this manual for internal storage vessel refill instructions, and then return to Step 1 of EVACUATING the A/C system.
5. If the internal storage vessel contains a sufficient amount of refrigerant, 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. Then press the **START** key.
6. The unit automatically charges the A/C system after the specified vacuum time has elapsed.
7. Advance to Step 4 of RECHARGING the A/C SYSTEM in this manual to complete the charging process.

IMPORTANT!
Evacuate the
A/C system for
at least 15
minutes to
ensure
adequate
moisture and
contaminant
removal.

VACUUM

1. Press the **VACUUM** key.
2. Ensure the service hoses are connected and panel valves are in the correct position. Press **START**.
3. 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 **START** key.
4. The unit evacuates the A/C system and stops when the specified time has elapsed. Pressing the **STOP** key will pause the process. Press **START** to resume, or **STOP** again to exit.
5. You are now ready to replenish the A/C system oil (if necessary), or to recharge the system with refrigerant.

REPLENISHING A/C SYSTEM OIL

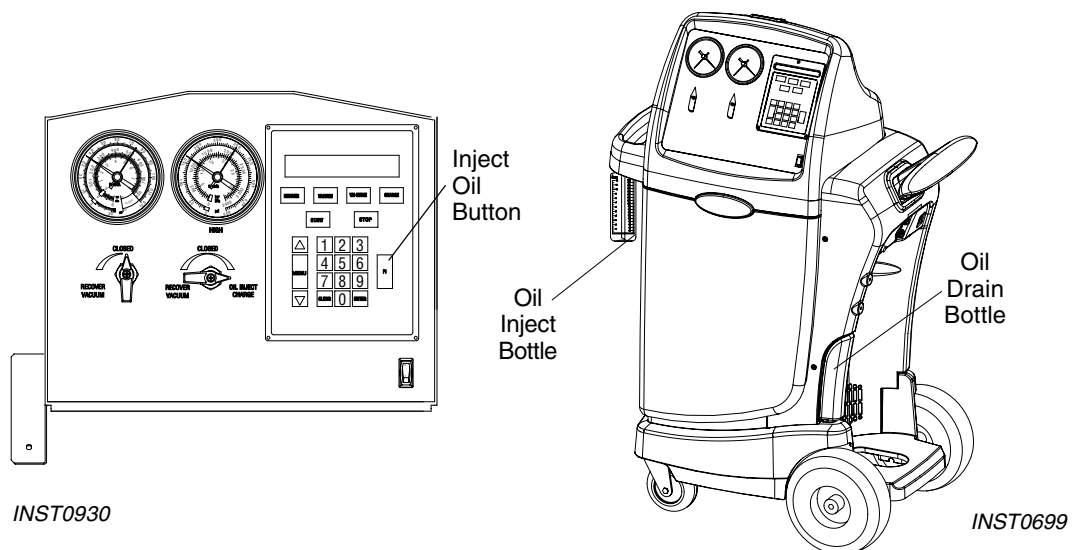
CAUTION! To prevent air from entering the A/C system, never let the oil level drop below the pickup tube while charging or replenishing.

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 recovery. Check the oil drain bottle to determine the amount of oil that was removed during recovery. 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.

THE VACUUM CYCLE MUST RUN COMPLETELY OR THE OIL INJECT WILL NOT OPERATE.

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 **F1 (INJECT OIL)** button once and release it when it “beeps.” Press the F1 button again and hold it until the oil level reaches the o-ring.
6. Press the **STOP** button after the oil charge is complete to recharge the A/C system with refrigerant. You must recharge the AC system with refrigerant at this time to ensure all of the oil is delivered.



Control Panel

Diagram of the Oil Injection System

RECHARGING THE A/C SYSTEM

WARNING

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!

Evacuate the A/C system for at least 15 minutes for adequate moisture and contaminant removal.

1. Press the **CHARGE** button. (If an oil inject has been performed, the **CHARGE** key does not have to be pressed.)
2. Put the Low Side Valve in the Closed position. Put the High Side Valve in the Oil Inject/Charge position. Press **START** to continue.
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 3 lbs (1.36 kg) of refrigerant in the refrigerant tank, the charge function will not start, and the display reads:

INSUFFICIENT REFRIG.
PRESS ANY KEY TO EXIT

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

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

CHARGE IN PROGRESS
CHARGED= X.XX lbs. (X.XX kg)

6. If, during the charge cycle, the weight fails to charge 0.05 lbs (0.02 kg) in 30 seconds, the unit intermittently beeps while the display alternates between:

CHARGING HAS SLOWED CHARGE HAS SLOWED
PRESS START TO RETRY OR STOP TO EXIT

7. Pressing the **START** button when the charging is slowed causes the charge to resume. If charging does not complete, see the SLOW CHARGE PROCEDURE below.

8. When the charge is complete the display will show

CHARGE COMPLETE
X.XXlb (kg) CHARGED

9. For R-134a systems, close the high and low side coupler valves. Remove the service hoses from the A/C system.

The A/C system is now ready for use.

SLOW CHARGE PROCEDURE

WARNING

Before starting the vehicle's engine, verify that it is in **PARK** or **NEUTRAL**, with the emergency brake **ON**.

Never run a vehicle without adequate ventilation in the work area.

CAUTION! Close the high side manifold valve before starting the vehicle A/C system.

1. Close the High Side Valve. Put the Low Side Valve in the Recover/Vacuum position.
2. Start the vehicle, and set the AC system to its maximum setting.
3. 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.
4. When the unit is finished charging, the display reads:

CHARGE COMPLETE
X.XX lb (kg) CHARGED

5. Close the LOW SIDE manifold valve.
6. Turn off the vehicle's engine.
7. For R-134a systems, close the high and low side coupler valves. Remove the service hoses from the A/C system.

The A/C system is now ready for use.

REPLACING THE FILTER-DRIER

Order part no. 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 ensure 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 **START**.
3. Press **START** again, and the unit will begin clearing the filter.
4. When clearing is complete, the display reads:

TURN UNIT OFF AND REPLACE FILTER

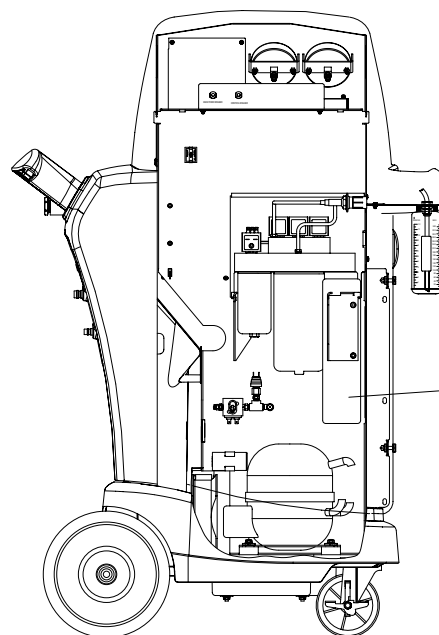
5. Turn off the main power, and unplug the machine.
6. Open the unit door, and replace the old filter with the new filter.
7. Close the unit door, plug in the machine, and turn on the Main Power.

The filter change is now complete.



INST0478

Filter-Drier



Filter
Drier

INST0948

Location of the Filter-Drier

CHANGING THE VACUUM PUMP OIL

For maximum vacuum pump performance, change the vacuum pump oil after 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 **MENU** button.

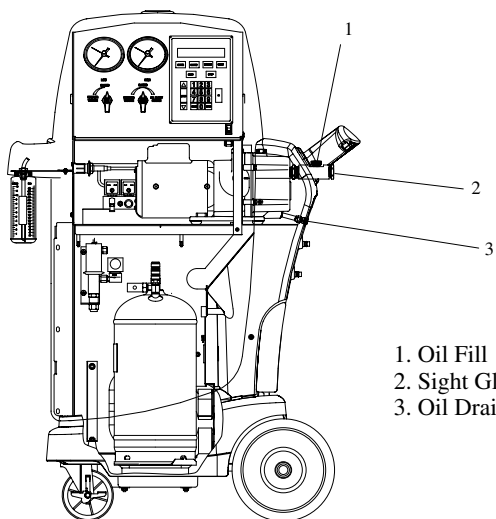
NOTE: Do not connect the service hoses to a vehicle.

3. Use the arrow keys to select **CHANGE VACUUM PUMP OIL**, and press **START**.
4. Press **START** again to begin.
5. The vacuum pump will run for two minutes. Allow the vacuum pump to run until it automatically stops.
6. Remove the black plastic plug on the oil fill port of the vacuum pump.
7. Remove the oil drain cap from the vacuum pump, and drain the oil into a suitable container for correct disposal.
8. Replace the oil drain cap.
9. Attach the flexible tube and cap to the oil bottle, and pour eight ounces of vacuum pump oil into the fill port.

10. Press the **START** key. While the vacuum pump is running, slowly add oil until the level rises to the center of the reservoir's sight glass.

11. Press the **STOP** key and replace the black plastic plug on the fill port.

12. The unit is now ready to operate.



1. Oil Fill
2. Sight Glass
3. Oil Drain

INST0947

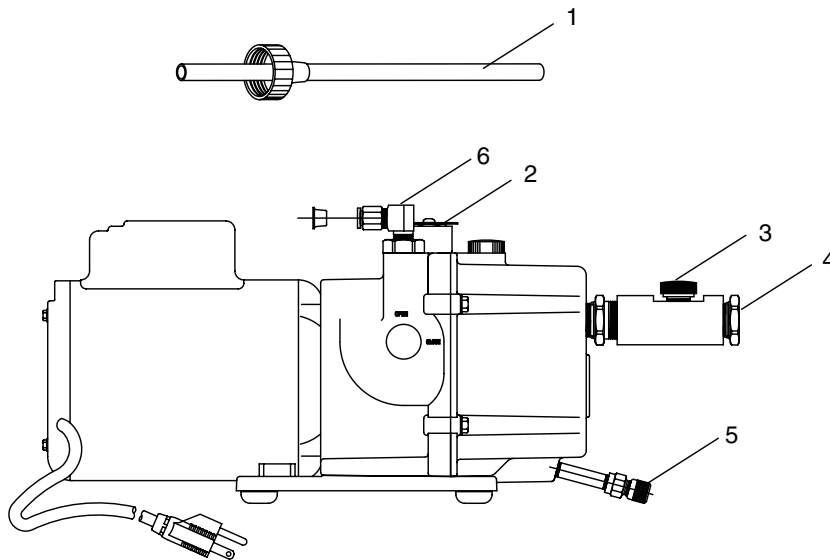


Diagram of Vacuum Pump

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.

ELECTRICAL PROTECTION

The unit is equipped with two circuit breakers. If either circuit breaker trips, the unit will not function correctly and may lose all power. Press the circuit breaker button to reset. The circuit breakers are 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) No. 13203

Gallon (shipped 4 gallons per case) No. 13204

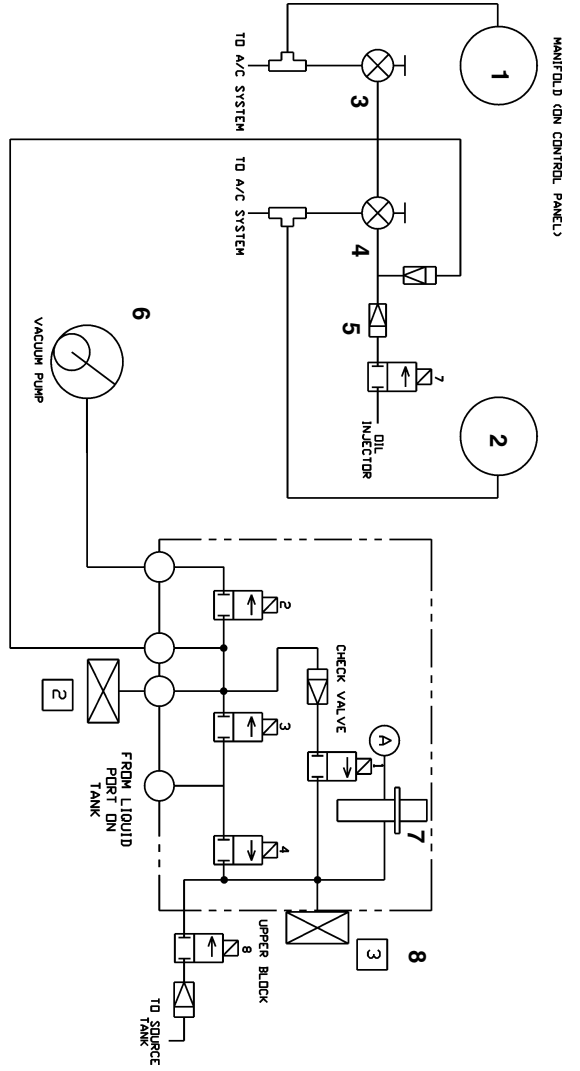
**Because of ongoing product improvements,
we reserve the right to change design, specifications,
and materials without notice.**

Replacement Parts List

Component	34700-2K R-134a Replacement Part Number	17700-2K R-12 Replacement Part Number
96" Red Hose	63096	68396A
96" Blue Hose	62096	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	RA18752	RA18752
Pump Protection Switch	RA19429	RA19429
Automatic Expansion Valve	RA19592	RA19592
Oil Catch Bottle	RA17419	RA17419
Scale Assembly	RA19603	RA19603
Control Module	RA19768	RA19768
High Side Gauge	RA19742	RA19742
Low Side Gauge	RA19741	RA19741
Low Side Coupler	18190A	18190A
High Side Coupler	18191A	18191A
Automatic Air Purge	RA19743	RA19744
Solenoid Rebuild Kit	RA19258	RA19258
Castors	RA19631	RA19631
ISV (Internal Storage Vessel)	RA19612	RA19612

Flow Diagram

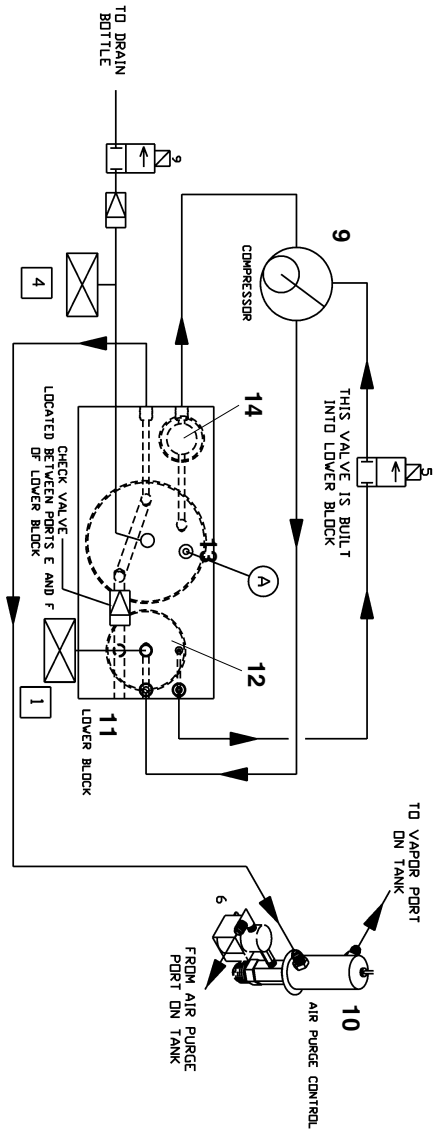
INST0576



SWITCH	DESCRIPTION
1	HIGH PRESSURE SWITCH-MANIFOLD
2	VACUUM PROTECTION SWITCH
3	13" VACUUM SWITCH
4	HIGH PRESSURE SWITCH-OIL DRAIN

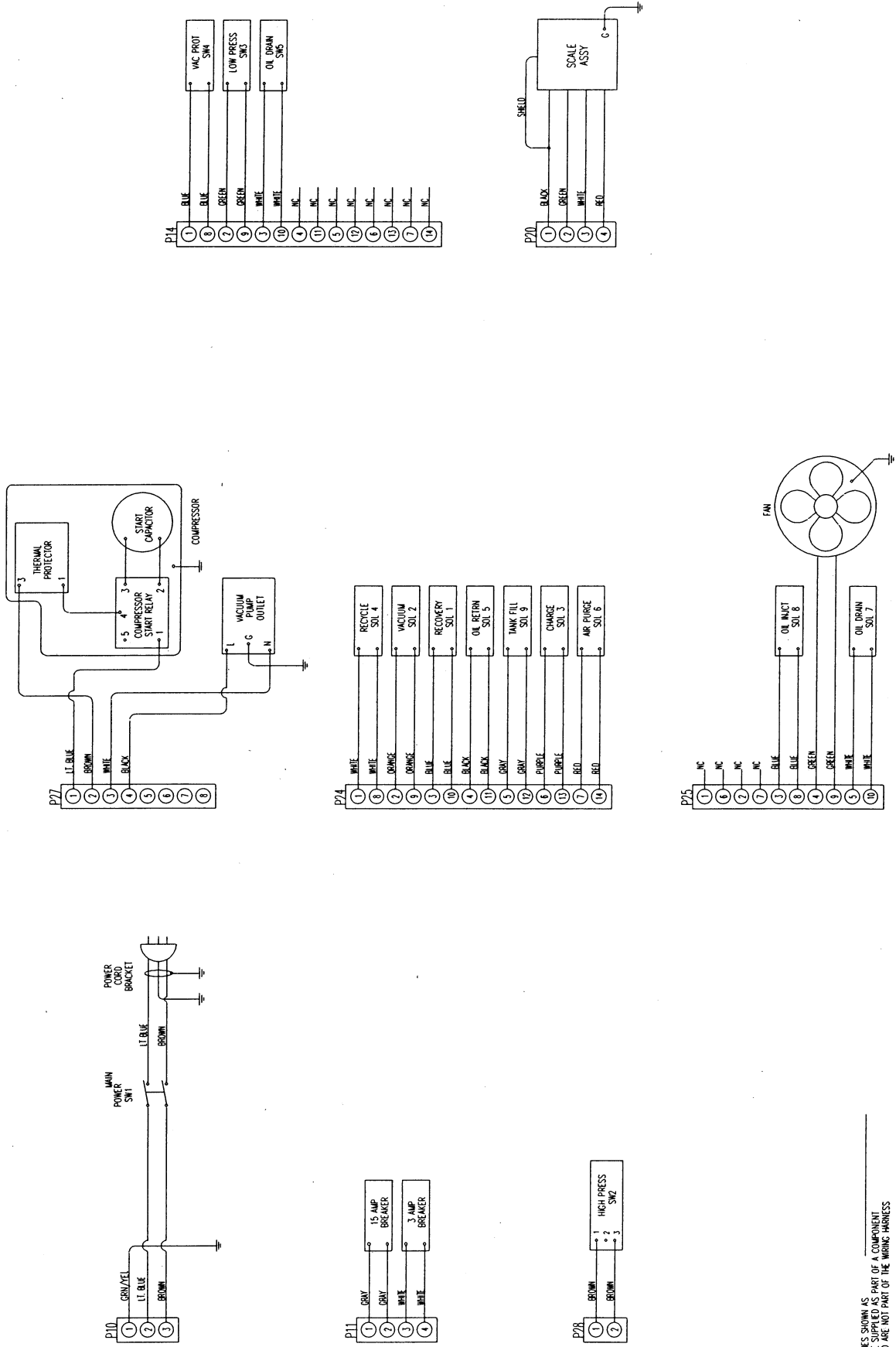
SOLENOID	DESCRIPTION	FUNCTION						
		RECOVER	VACUUM	RECYCLE	CHARGE	INJECT	FILL	
1	RECOVER	X	0	0	0	0	0	
2	VACUUM	0	X	0	0	0	0	
3	CHARGE	0	0	0	X	0	0	
4	RECYCLE	0	0	X	0	0	0	
5	OIL RETURN	0	0	*	0	0	0	
6	AIR PURGE	0	0	*	0	0	0	
7	OIL INJECTOR	0	0	0	0	X	0	
8	FILL	0	*	0	0	0	X	
9	OIL DRAIN	*	0	0	0	0	0	

0 = OFF
 X = DN
 * = PERIODICALLY DN



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

Wiring Diagram



Robinair Limited Warranty Statement

Rev. July 11, 2003

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 the manufacturer must be obtained prior to shipping to an authorized service center.
5. Warranty service claims are subject to authorized inspection for product defect(s).
6. 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, cross-contamination 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 recovery/recycling equipment with unauthorized refrigerants, sealants, or dyes will void the warranty.
 - Authorized refrigerants are listed on the equipment or are available through the Technical Service Department.
 - The manufacturer prohibits the use of the recovery/recycling equipment on air conditioning (A/C) systems containing leak sealants, either of a seal-swelling or aerobic nature.
 - The manufacturer prohibits the use of dyes injected through the oil injection device on the recovery/recycling equipment.

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. This includes, but is not limited to, materials and chemicals used to seal leaks in A/C systems.
- The product is equipped with an oil injection device that has been used to inject dye. The manufacturer only endorses the use of separate dye injection devices, and does not support the use of the oil injection feature for this purpose.

Note: Refillable refrigerant tanks are reusable.



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 of your unit.

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 repair or replacement parts, 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. Correct 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**

*SPX Corporation
655 Eisenhower Drive
Owatonna, MN 55060-0995 USA
Tech Services: 1-800-822-5561
Fax: 1-800-822-7805
Customer Service: 1-800-533-6127
Fax: 1-800-322-2890
Web site: www.robinair.com*