



Operating Manual for
Model 34988
Recovery, Recycling, Recharging 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** and **OPERATING TIPS** provide clarity and helpful information. 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 this manual, operating instructions and safety precautions must be read and discussed in the operator's native language.



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 nonrefillable containers; use only federally authorized refillable containers (DOT spec. 4BW or 4BA).



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.



TO PREVENT CROSS-CONTAMINATION, USE THIS UNIT WITH R-134A REFRIGERANT ONLY. The unit is designed to recover, recycle, and recharge 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.

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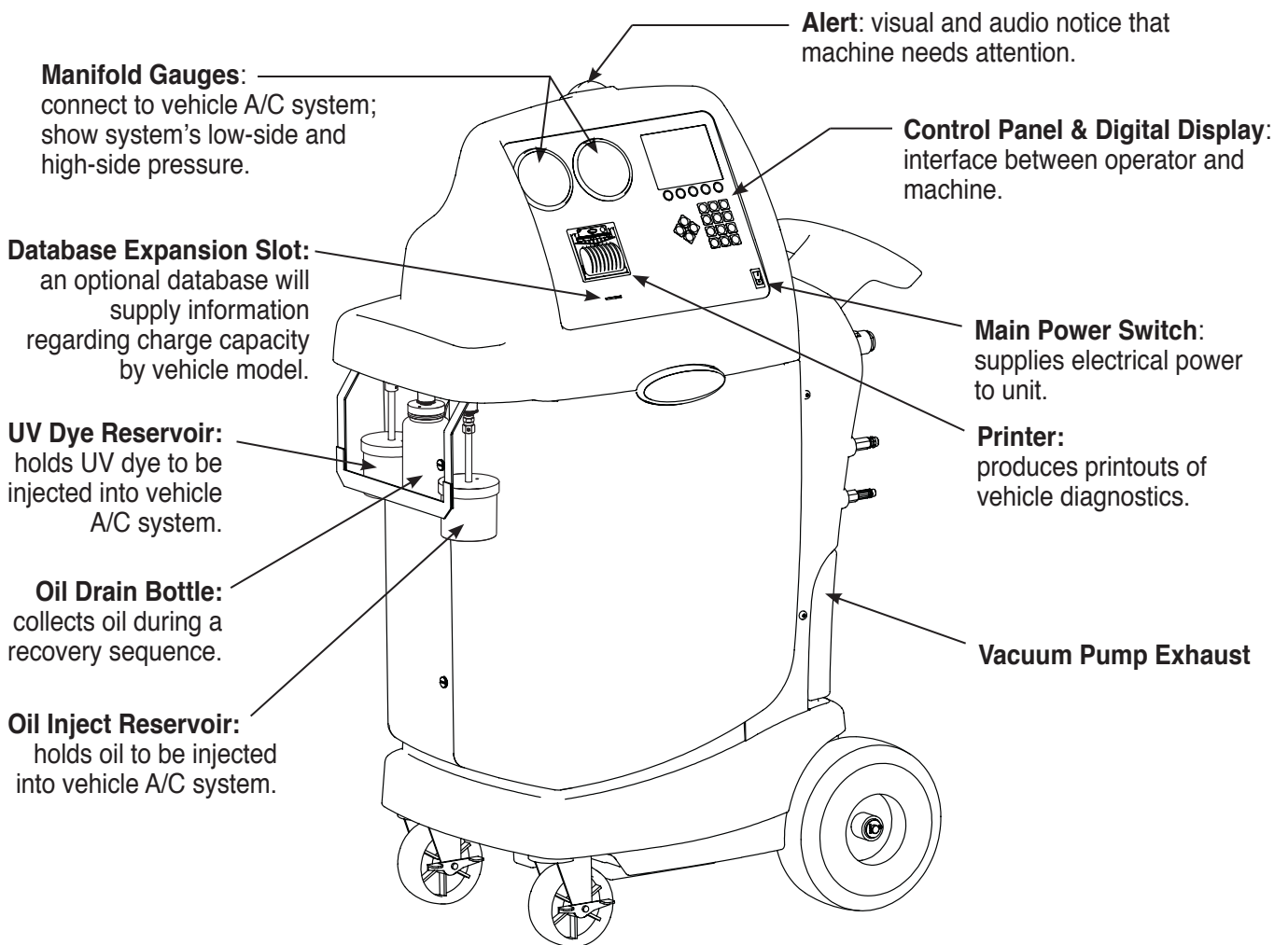
IMPORTANT: To comply with federal law governing A/C system service, you must complete and mail the MVAC Certification Form included in the accessory kit. Technicians using this equipment must be certified under EPA Section 609 (Environmental Protection Agency). For more information, read the MACS information included in the accessory kit, or visit the MACS website at www.macs.org.

To validate the warranty provided by SPX Robinair, complete the warranty card included in the accessory kit, and mail it within ten days from the purchase date of the unit.

Introduction

Robinair No. 34988 is used on R-134a vehicles and is designed to be compatible with existing service equipment and standard service procedures. Model No. 34988 is a UL-listed, single-pass system that meets SAE specifications for recycled refrigerant. Follow the SAE-J2211 recommended service procedure for the containment of R-134a.

The unit includes a 1.5 cfm (42 l/m) Robinair high vacuum pump for fast, thorough evacuation. The compressor pulls the A/C system to 0 psig, then works in series with the vacuum pump to achieve highly efficient recovery and immediate recharge. If the system is not opened for service, there is no need to pull additional vacuum. If the system is opened for service, use the unit's vacuum cycle to remove air and moisture from the A/C system. (We recommend a minimum 15-minute vacuum, or follow the vehicle manufacturer's specs.) *Note: R-134a systems require special oils. Refer to the A/C system manufacturer's service manual for oil specifications.*



Technical Specifications

Nominal Voltage 34988:	115V, 60 Hz	Operating Range	50° to 120° F (11° to 49° C)
. 34988-I:	230V, 50/60 Hz	Filter-Drier	43 cu. in. spin-on type
Utilization Voltage Range 34988:	104–127	Pump Free-Air Displacement	1.5 cfm (42 l/m)
. 34988-I:	200–250	Dimensions	49" H x 34" W x 23" D
			(124.5 cm x 86.4 cm x 58.4 cm)

Control Panel Functions

AUTOMATIC activates a menu that helps the user set up an automatic recover / vacuum / leak test / charge sequence.

CHARGE activates the sequence that charges the vehicle A/C system with a programmed amount of refrigerant.

EXIT returns the test sequence to previous screen.

HELP displays screens that explain information or steps to take.

INJECT OIL injects oil into vehicle A/C system.

NEXT displays the next screen in the sequence.

NO answers a query.

PAUSE temporarily stops the machine from running the current sequence.

PRINT (when it appears on the control panel) produces a printout of the screen content. Turning off the machine clears the print memory.

RECOVER activates the sequence to recover refrigerant from the vehicle system.

RESUME reactivates a paused sequence.

SAVE stores the information loaded for future use by the program.

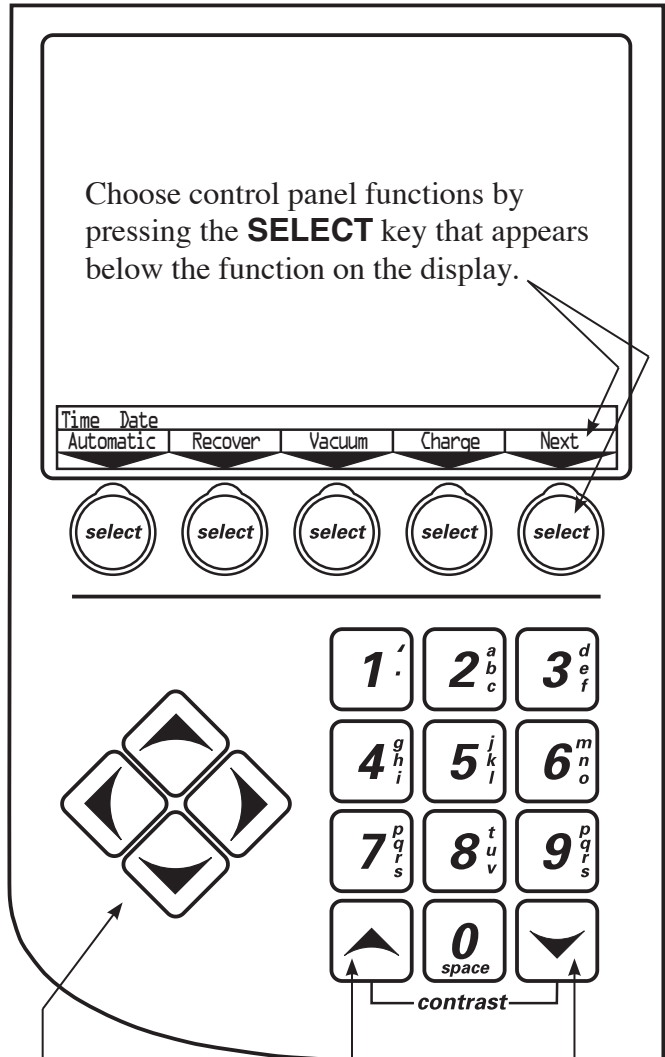
START begins a function.

STOP terminates a function.

TOGGLE UNITS moves the cursor through choices on the screen.

VACUUM activates the sequence that pulls a deep vacuum on the vehicle system to remove air and moisture.

YES answers a query.



ARROWS are used for scrolling through menu items.

CONTRAST
darker

CONTRAST
lighter

Glossary

A/C System : The vehicle air conditioning system being serviced.

Internal Storage Vessel (ISV): The refillable refrigerant storage vessel designed specifically for this unit; 30 lb. (14 kg).

Source Tank : A disposable tank of new refrigerant used to refill the ISV; not included.

Unit : Model No. 34988.

Introduction

Menu Functions

Adjust Refill Default

When connected to a refrigerant source, the unit maintains a pre-set amount of refrigerant in the internal storage vessel. This value may be adjusted up or down to suit the user's needs. (The default is 15 lbs.).

Refer to instructions outlined in the Maintenance section under *Adjust Tank Fill Level*.

Calibration Check

Use to verify internal scale calibration. Refer to instructions in Maintenance section under *Scale Calibration Check*.

Display ISV Info

Displays internal storage vessel (ISV) pressure and temperature. Use to check ISV for excessive pressure.

Edit Print Header

Program information that will appear on the printout each time the print function is used.

Hose Flush

Flushes residual oil from the unit to prepare for the service of next vehicle.

Maintain Filter

The filter-drier removes acid, particulates, and moisture from the refrigerant. To meet SAE J-2788 requirements, it is mandatory to replace the filter-drier after 150 lbs. (68 kg) of refrigerant has been filtered.

This menu item shows how much refrigerant has been filtered since the last filter change, and displays the filter capacity remaining until the machine locks down and no longer functions.

Refer to the instructions outlined in the Maintenance section under *Replace the Filter-Drier*.

Maintain Vacuum Pump

Displays how long the vacuum pump has operated since the last oil change, and the amount of time remaining until the next oil change is needed. For maximum vacuum pump performance, change vacuum pump oil after every 10 hours of operation.

Refer to the instructions outlined in the Maintenance section under *Change Vacuum Pump Oil*.

Refrigerant Management

Displays the amount of refrigerant recovered, charged, and replenished (for the life of the unit), and filtered (since the last filter change).

Relay X.XXX

Displays the revision level of the relay board software in the unit.

Select Language

Choose to have prompts displayed in one of three languages: English, French, or Spanish. English is the default language.

Select Units

Program the machine to display units of measure in pounds, kilograms, ounces, or grams. The default display is in pounds.

Service Menu

For Robinair service center use only.

Set Date and Time

Use the keypad to program the machine for the current date and time. Press "2" for AM and press "7" for PM.

System Flush

A method of removing oil by forcing liquid refrigerant through an A/C system or components.

Tank Fill

Transfer refrigerant from the source tank to the internal storage vessel (ISV).

Refer to instructions outlined in the Maintenance section under *Manually Fill the ISV*.

Version X.XXX

Displays the revision level of the software in the unit.

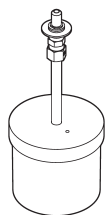
Unpack the Accessory Kit

Unpack the accessory kit from the box, and remove the plastic packaging. The kit consists of

- A calibration weight.
- Vacuum pump oil, oil filler cap, and tube.
- Service hoses.
- Four bottles—oil reservoir, oil drain, UV dye reservoir, spare reservoir.
- Three rolls of paper for the printer.
- Plastic pouch containing a warranty card (to be completed and mailed), applicable MSDS sheets, a service center listing, and an envelope of Mobile Air Conditioning Society (MACS) information.

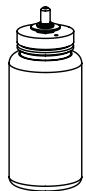
Assemble the Dye Bottle and Oil Bottles

Oil Inject Bottle



1. Determine the correct oil for the A/C system being serviced.
2. Unscrew the lid from the oil inject reservoir and remove the piston.
3. Fill the reservoir with oil only to the MAX FILL line. Overfilling the reservoir will compromise the o-ring seal and may cause air to be injected into the vehicle system.
4. Spread a thin film of oil on the piston o-ring (to reduce seal drag), and insert the piston into the reservoir. Thread the lid onto the reservoir.
5. Slowly push the piston into the reservoir until you see oil at the connector.
6. Inspect the oil reservoir bottle to ensure there are no air bubbles between the piston and the oil—the piston should be in direct contact with the oil supply.
7. Hold the assembly by the plastic bottle, and insert the connector into the magnetic coupler on the unit.
8. Inspect the bottle again to ensure there are no air bubbles between the piston and the oil—the piston should be in direct contact with the oil supply.

Oil Drain Bottle



1. Hold the oil drain bottle by the plastic bottle, and insert the connector into the magnetic coupler on the unit.

Important: To operate this equipment, the owner must complete and mail the MVAC Certification Form, and technicians must be certified with the Environmental Protection Agency (EPA).

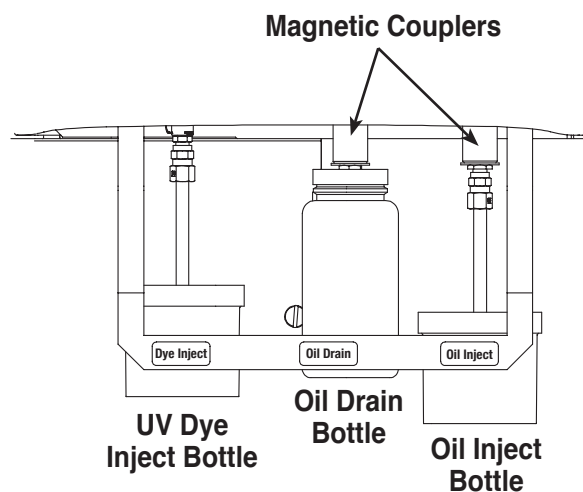
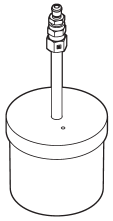


Figure 1

Setup

UV Dye Inject Bottle



1. Unscrew the lid from the UV dye reservoir and remove the piston.
2. Fill the reservoir with UV dye only to the MAX FILL line. Overfilling the reservoir will compromise the o-ring seal and may cause air to be injected into the vehicle system.
3. Spread a thin film of oil or dye on the piston o-ring (to reduce seal drag), and thread the lid onto the reservoir.
4. Slowly push the piston into the reservoir until you see dye at the connector.
5. Inspect the dye reservoir bottle to ensure there are no air bubbles between the piston and the UV dye—the piston should be in direct contact with the dye.
6. Refer to Figure 2. Hold the assembly by the connector while supporting the bottom of the plastic bottle to keep the piston in contact with the UV dye. Snap the connector into the coupler on the unit.
7. Inspect the bottle again to ensure there are no air bubbles between the piston and the UV dye—the piston should be in direct contact with the dye.

Note: To remove the UV dye bottle from the coupler, press the release button on the coupler and pull the bottle straight down.

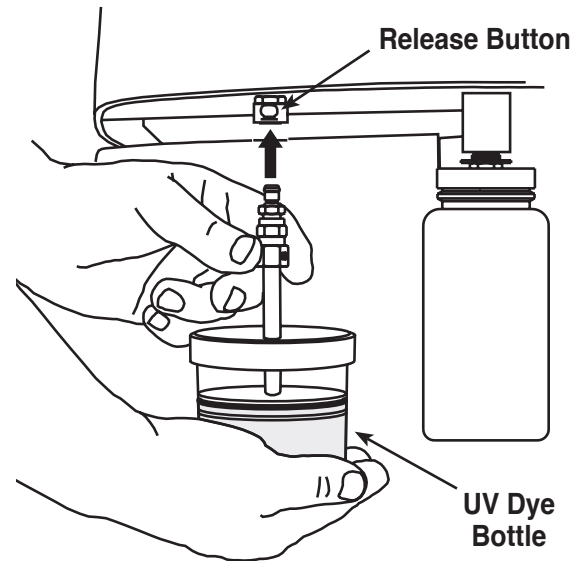


Figure 2

Power Up the Unit

1. Unwind the power cord from the handle, and plug it into a correct voltage outlet.
2. Turn on the main power switch. The first time the unit is powered up, it displays the initial setup mode.

Select Language

The operator may choose to have prompts displayed in one of three languages: English, French, or Spanish.

1. Use the **UP** or **DOWN** arrow key to toggle through the choices. Refer to Figure 3.
2. Select **SAVE** to choose the displayed language.

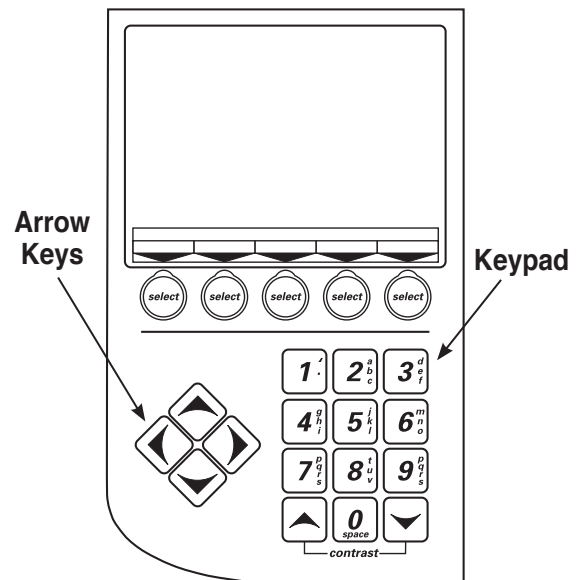


Figure 3

Select Units

The operator may choose to have units of measure displayed in pounds, kilograms, ounces, or grams.

1. Use the **UP** or **DOWN** arrow key or select **TOGGLE UNITS** to toggle through the choices.
2. Select **SAVE** to choose the displayed unit of measure.

Set Date and Time

The machine is programmed at the factory for the local time zone and date. Use the keypad and arrow keys to revise that information.

1. Use the keypad to enter the date and time. Press “2” for AM; press “7” for PM.
2. Select **SAVE** to accept the date and time.

Adjust Tank Fill Default

The operator may either accept the unit’s pre-set default weight of 15 lbs. of refrigerant stored in the internal storage vessel (ISV), or change the amount to accommodate the application. The unit displays

15.00 LBS.

ENTER THE AMOUNT OF REFRIGERANT THAT THE TANK FILL FUNCTION SHOULD MAINTAIN IN THE INTERNAL STORAGE VESSEL.

MAX = 17.00LB MIN = 04.00LB

SELECT SAVE TO ACCEPT OR EXIT TO ABORT

1. Select **SAVE** to accept the default amount, or use the keypad to enter an amount and select **SAVE**.

Maintain Vacuum Pump

Note: Service hoses are shipped in the accessory kit.

The unit displays

INSTALL SERVICE HOSES ONTO BULKHEADS AND STORAGE PORTS.

ADD 5 OZ OF NEW OIL TO VACUUM PUMP. PRESS NEXT TO CONTINUE OR EXIT TO ABORT.

1. Connect the service hoses from the bulkhead fittings (located on the side of the unit) to the storage ports. See Figure 4. Connect the red hose to the fitting labeled HIGH; connect the blue hose to the fitting labeled LOW.

IMPORTANT: R-134a systems have special fittings (per SAE specifications) to avoid cross-contamination with other systems. DO NOT adapt your unit for a different refrigerant — system failure will result.

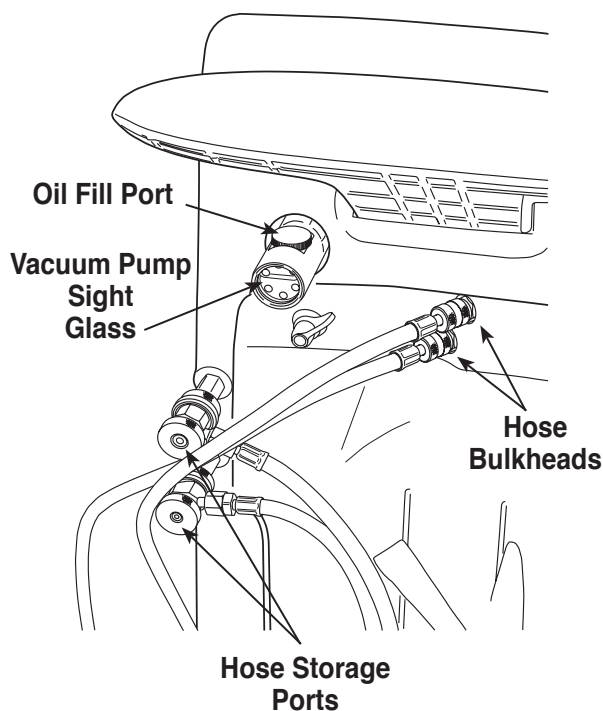


Figure 4
Side View

Setup

Maintain Vacuum Pump contd.

CAUTION: The vacuum pump is shipped without oil in the reservoir. Failure to add oil will damage the vacuum pump.

2. Remove the plug from the vacuum pump oil fill port.
3. Attach the flexible tube/cap to the oil bottle (from the accessory kit); pour **only five (5) ounces** of vacuum pump oil into the fill port. *Note: You will top off the oil in the next step as the vacuum pump is running.*
4. Select **NEXT**. While the vacuum pump is running, slowly add oil until the level rises to the center of the sight glass.
5. Install the plug in the fill port, and select **EXIT**. The unit pulls a 3-minute vacuum to clear all internal air before proceeding.

Note: The “burping” noise heard during this process indicates air is being purged from the system—this is normal.

Manual Tank Fill

1. After the vacuum pump shuts off, the unit displays,
CONNECT SOURCE TANK TO
TANK FILL HOSE, OPEN TANK VALVE,
AND ORIENTATE TANK
TO PROVIDE LIQUID SUPPLY.
PRESS START TO BEGIN OR EXIT TO ABORT.

Connect the fill hose to the liquid connector on a full source tank. See Figure 5.

2. Open the source tank valve.
3. Install the source tank, and secure it to the unit (using the tank strap) in such a way that liquid refrigerant is supplied to the connection.
4. Press **START** to begin filling the internal storage vessel. Add at least 8 lbs. of refrigerant to ensure enough is available for charging.

This process takes 15–20 minutes. The unit stops when the designated amount of refrigerant has been transferred to the internal tank, or when the source tank is empty.

CAUTION: The unit is programmed to run the setup procedure as outlined here. To prevent personal injury, do NOT operate the unit at any other time without the oil fill port plug installed, because the vacuum pump is pressurized during normal operation.

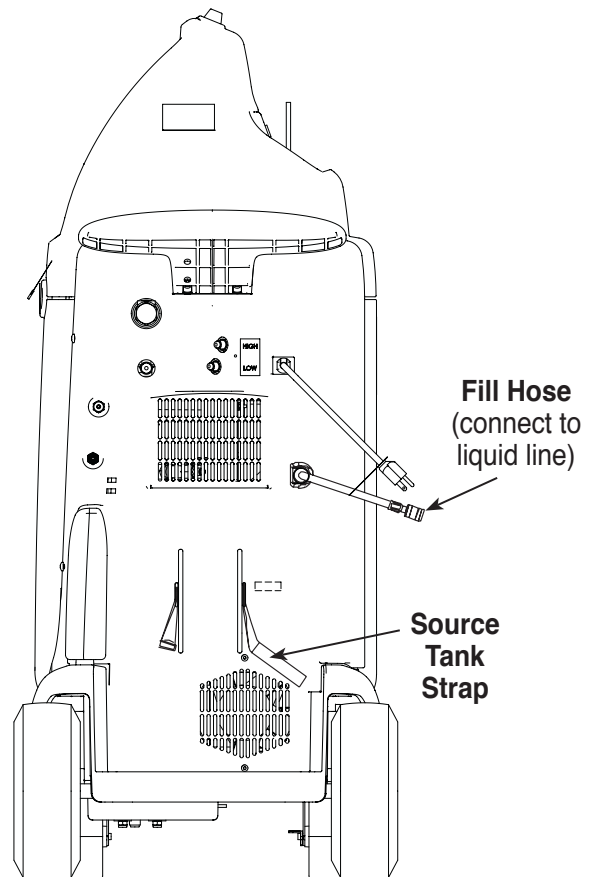


Figure 5
Side View

Manual Tank Fill contd.

*Note: Only the amount of refrigerant **available** for charging is displayed. For example, if the tank fill default is set at 15 lbs., the unit will transfer 15 lbs. to the ISV, but the display may show only 13 lbs.*

5. When the fill process is complete, the unit is ready for operation.

Note: There is no need to calibrate the scale; it is calibrated at the factory.

Edit Print Header

This machine has the capability to print out recovery, vacuum, charge, and flush information for each vehicle tested.

The print header information that is entered during this procedure will appear on each printout. Respond to the questions on the display screen by using

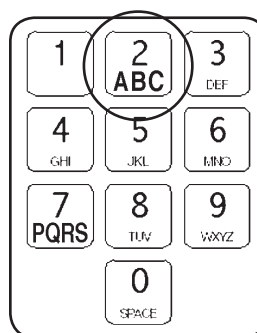
- the keypad to enter information,
 - the left and right arrow keys to move the cursor,
 - the down arrow to clear information.
1. Enter your dealership number, and your dealership name, street address, state, and zip code.
 2. Four more lines are available for you to specify other information to appear on each printout.

Once a test has been completed and the **PRINT** key has been pressed, enter the vehicle's VIN and license plate number.

Operating Tips

Entering Information

The numerical keys on the keypad include an alphabet that is used to enter information into the machine. The procedure is similar to text messaging. For example,



To enter an "A":

Press the **2** key once to see the "A" on the digital display.

To enter a "2":

Press the **2** key four times to see the "2" on the digital display.

Note: After the appropriate letter is shown on the display, pause for a moment until the cursor moves to the next position.

Operating Instructions

Recover Refrigerant from a Vehicle

1. Empty the oil drain bottle before starting a recovery.
Remove the oil drain bottle from the machine by pulling the bottle straight down from the magnetic connector — do not use a twisting or rocking motion. See Figure 6.

Note: The machine gives an alert when the oil drain bottle needs to be emptied, but it is a good practice to completely empty the oil drain bottle before recovering an A/C system to prevent an inaccurate oil charge later.

2. Connect the high- and low-side hoses to the vehicle A/C system.
3. Open the coupler valves on the hoses by turning the collars clockwise.
4. Select **RECOVER**.
5. At this point, you have the option to start the vehicle's A/C to retrieve pre-recovery data and select **RESET** to set the Minimum / Maximum data to current live pressure readings.
6. Select **NEXT** to begin the recovery process. *Note: The clicking noise indicates the solenoid is opening and closing — this is normal.*
7. When the system has recovered to 0 psi, the vacuum pump starts and runs until recovery is complete. The unit then goes into an automatic oil drain—this may require 90 seconds to complete.
8. After the oil drain is complete, the display shows
RECOVERED AMOUNT XX.XX LB.
RECOVER COMPLETED.
OIL DRAINED XXX OZ.
PLEASE MAKE A SELECTION TO CONTINUE.

At this point you may print out recovery information and pre-recover diagnostics by selecting **PRINT**.

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

9. Check the oil drain bottle, and note the amount of oil that was removed from the A/C system. This is the amount of new oil that must be charged into the A/C system after evacuation is complete.
 - Use only **new** oil to replace the oil removed during the recycling process.
 - Dispose of used oil according to local, state, and federal regulations.

Recovery is complete. You are now ready to either advance to the charge process, or to make repairs to the A/C system followed by the evacuation process.

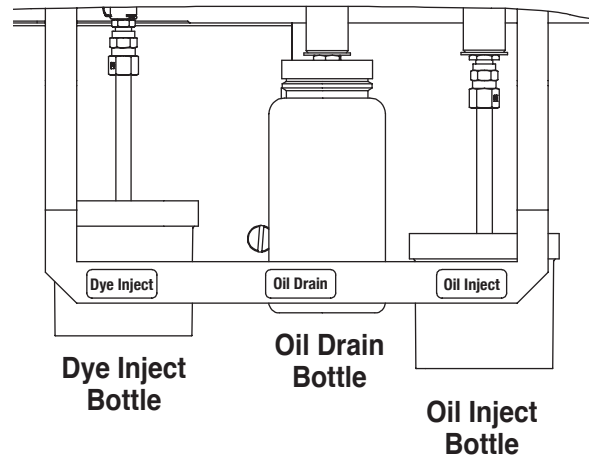


Figure 6

Note: It is easier to remove the oil drain bottle if the oil inject bottle is removed first.

Operating Tips

After the **RECOVER** function is selected :

- If system pressure is below 10 psi, until pressure increases, the display reads

LOW RECOVER PRESSURE.
PLEASE CHECK VALVES AND
CONNECTIONS.

SELECT YES TO CONTINUE WITH
RECOVER OR SELECT VACUUM.
THE EXIT KEY ABORTS THE FUNCTION.

Verify high- and low-side hoses are connected and coupler valves are open. Select Yes to recover, select Vacuum to bypass recover, or select Exit.

- If 100 lbs. (45 kg) or more of refrigerant has been recovered since the last filter-drier change, the display reads

FILTER WEIGHT XXX LB

To meet SAE J-2788 requirements, it is mandatory to replace the filter-drier after 150 lbs. (68 kg) of refrigerant has been filtered. The unit gives a warning to replace the filter when filter weight reaches 100 lbs.; when filter weight reaches 150 lbs., **the unit locks out and ceases to operate.** Refer to instructions outlined in the Maintenance section under Replace the Filter-Drier.

Evacuate the A/C System

1. Ensure service hoses are connected to the vehicle A/C system, and coupler valves are OPEN.
2. Select **VACUUM**.
3. The unit gives you the option of doing a leak test after evacuation. Select **TOGGLE LEAK** to turn the leak test OFF / ON.
4. Select **START** to accept the default evacuation time, or enter the desired vacuum time using the number keys, and select **START**.

IMPORTANT: The unit pulls a vacuum on the vehicle A/C system to remove air and boil off moisture that may be present in the system. Evacuate the system for at least 10 minutes, or follow the A/C system manufacturer's specifications, to ensure adequate moisture and contaminant removal.

5. The unit evacuates the A/C system and stops when the specified amount of time has elapsed. Select **EXIT** to continue.

Note: During the vacuum process, the unit may perform a tank fill or an air purge, if needed.

You are now ready to either manually replenish the A/C system with new oil or to recharge the system with refrigerant.

Operating Tips

- *If the vacuum pump has run for 10 or more hours without an oil change, the unit displays*

MAINTAIN VACUUM PUMP
VACUUM OIL TIME XX:XX
OIL LIFE REMAINING XX:XX
CHANGE VACUUM PUMP OIL NOW?
SELECT YES TO CHANGE OIL
OR NO TO EXIT.

Refer to instructions in the Maintenance section under Change Vacuum Pump Oil.

- *Before the unit begins evacuating the A/C system, it checks for any pressure in the system that might damage the vacuum pump. If pressure is detected, the unit displays*

PRESSURE TOO HIGH FOR VACUUM!
PRESS EXIT

Select EXIT, and recover refrigerant before proceeding.

- *If a leak test was programmed and a leak is detected, the unit displays*

LEAK TEST FAILED
PRESS YES TO CONTINUE
NO TO ABORT

Select NO to exit the evacuation, perform needed repairs, and repeat the evacuation.

- *To ensure an accurate leak test, it is imperative that a thorough recovery and evacuation of the system be performed. During the recovery process, cold spots can develop in the A/C system. Pockets of refrigerant in desiccant and in system oil will continue to vaporize as the A/C system temperature equalizes toward ambient. As this occurs, A/C system pressure will increase, which may be interpreted by the unit as a leak.*

This will vary somewhat with ambient temperature conditions.

Operating Instructions

Flushing the Hoses

If the next vehicle to be serviced contains a different type of oil than the previous vehicle serviced, it is recommended that the service hoses be flushed of residual oil to prevent contamination.

1. Connect the service hoses to the unit's storage port connections (shown in Figure 7).
2. Open the coupler valves by turning the collars clockwise.

3. Select **HOSE FLUSH**. The unit displays
HOSE FLUSH CLEARS THE SERVICE HOSES OF
OIL SO THAT A VEHICLE WITH ANOTHER OIL
TYPE CAN BE SERVICED.

PLACE BOTH SERVICE HOSES ONTO STORAGE
PORTS AND OPEN SERVICE VALVES.

PRESS START TO BEGIN FLUSH
OR EXIT TO ABORT.

4. Select **START** to begin the hose flush process, which is programmed to run for three (3) minutes.
5. When the hose flushing process is complete, the display reads

HOSE FLUSH COMPLETE
PRESS EXIT

6. Close the coupler valves by turning the collars counterclockwise, and select **EXIT**.

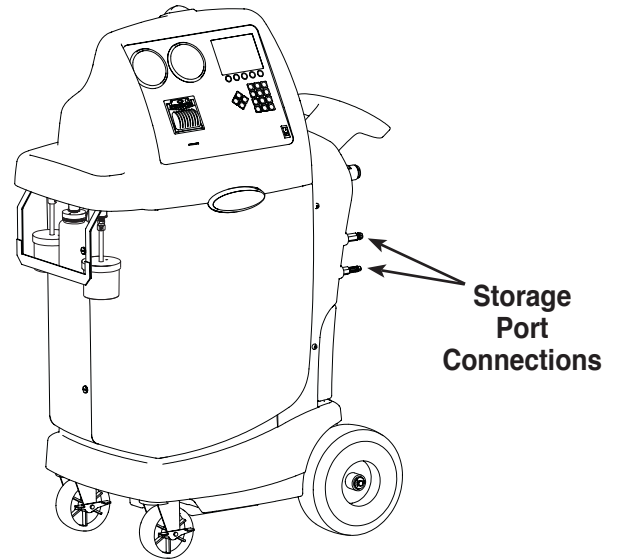


Figure 7

Recharge the A/C System

1. Connect service hoses to the vehicle's service ports.
2. Select **CHARGE**. The display reads

CHARGE MENU
CHARGE AMOUNT: 0.00 LB
CHARGE MODE: _____ SIDE
USE ARROW KEYS TO SCROLL UNITS.

3. At this point, select **INJECT OIL**, if necessary. The display reads

OIL XXX
INJECT DYE _____

Use the number keys to enter the amount of oil to inject.

4. Select **TOGGLE DYE** to turn dye inject ON or OFF. Select **SAVE** to return to the charge screen.
5. Select **MODE** to toggle between a high-side or low-side charge, or both. *Note: Charge mode after injecting oil allows only a high-side charge.*
6. Type in a charge weight using the number keys. Select **START**.

Moving or bumping the unit at this point may result in an inaccurate charge.

Note:

- *During a charge cycle, if the unit fails to transfer refrigerant due to low tank pressure, the charge process is automatically interrupted and the unit operates in a mode to build tank pressure. Once tank pressure is sufficient, the unit automatically completes the charge.*
- *When the charge cycle gets close to the weight entered in Step 6, the unit slows down. It will charge, settle, charge again, settle, etc.*
- *Before it charges, the unit may purge air out of the ISV to minimize the amount of noncondensable gases that could contaminate the A/C system.*

Operating Tips

- *After selecting the **CHARGE** function and entering a desired weight, if the weight entered will leave less than 2 lbs. (.91 kg) of refrigerant in the internal tank after charge, the charge function will not start. The display reads*

INSUFFICIENT REFRIG.
THERE IS NOT ENOUGH REFRIGERANT IN THE
ISV TO COMPLETE CHARGE.
PRESS TANK FILL TO ADD MORE
OR EXIT TO ABORT.

Refer to the Maintenance section for instructions to Manually Fill the Internal Storage Vessel (ISV).

- *After selecting **INJECT OIL**, if the oil inject bottle is not in the correct position, the display reads*

INJECT OIL BOTTLE WEIGHT IS LOW
CHECK OIL BOTTLE
RETRY OR EXIT TO ABORT

Verify the oil inject bottle is attached to the machine as explained in the Setup section.

- *After selecting **INJECT OIL**, if there is an insufficient amount of new oil in the oil inject bottle, the display reads*

INJECT OIL HAS STALLED
CHECK OIL BOTTLE
RETRY OR EXIT TO ABORT

Fill the oil inject bottle with new oil as explained in the Setup section.

- *If pressure is detected, the unit displays*

PRESSURE TOO HIGH FOR INJECT!
PRESS EXIT

Select EXIT, and recover refrigerant before proceeding.

Operating Instructions

Recharge the A/C System contd.

7. When the charge is complete, the display shows

CHARGE DIAGNOSTICS

HIGH SIDE XX PSI MAX XX PSI

LOW SIDE XX PSI MIN XX PSI

CHARGE AMOUNT: XX.XX LBS

START A/C TO PERFORM DIAGNOSTICS OR
WITH A/C OFF, PRESS NEXT TO CLEAR HOSES.

To obtain current pressure readings and diagnostics from the vehicle, start the vehicle's air conditioning system (set at maximum output), or select **NEXT** to continue.

8. The unit displays

CHARGE COMPLETE

SELECT EQUALIZE TO USE A/C SYSTEM
TO CLEAR HOSES.

SELECT COMPENSATE TO USE HOSE
COMPENSATION AND NOT RUN A/C SYSTEM.

Select **EQUALIZE** to ensure all liquid refrigerant trapped in the hoses is transferred to the vehicle A/C system for an accurate charge.

OR

Select **COMPENSATE** to charge a small amount of refrigerant into the vehicle A/C system to offset any refrigerant that may be left in the hoses.

 **WARNING:** To prevent personal injury,

- Verify the vehicle is in park or neutral with the emergency brake ON before starting the engine.
 - Never run a vehicle without adequate ventilation in the work area.
-
-

Recharge the A/C System contd.

9. If **EQUALIZE** was selected, the display reads
HOSE EQUALIZE
CONNECT LOW SIDE SERVICE HOSE TO A/C SYSTEM AND OPEN COUPLER. MAKE SURE HIGH SIDE HOSE IS DISCONNECTED FROM A/C SYSTEM. START A/C SYSTEM ON MAX AND/OR RECIRCULATE.
Close the high-side coupler valve. The high-side hose may be removed from the vehicle, but **the low-side hose must stay connected to the vehicle** with the low-side coupler open.
10. Place the vehicle gear selector in park or neutral, with the emergency brake ON.
11. Start the vehicle. Set the A/C system at maximum output.
12. Select **NEXT**. The display reads
EQUALIZING HOSES. PLEASE WAIT.
The unit internally connects the low- and high-side hoses, allowing the vehicle's compressor to pull refrigerant into the A/C system.
13. When the charge is complete, the unit displays
DISCONNECT LOW SIDE AND HIGH SIDE HOSES FROM A/C SYSTEM
Close the low-side coupler valve. Remove service hoses from A/C system and install on unit's storage ports. Shut OFF vehicle.

IMPORTANT: If the low-side or high-side coupler valves are left open during the hose clearing process, the system will pull refrigerant back out of the vehicle.

14. Select **NEXT** to begin clearing hoses to prepare the machine for the next service.

When the hoses are clear, the display returns to the main menu, and the A/C system is now ready for use.

9. If **COMPENSATE** was selected, the display reads
HOSE COMPENSATION IN PROGRESS
PLEASE WAIT
DO NOT DISTURB UNIT OR CHARGE ACCURACY WILL BE AFFECTED.
HOSE CLEAR
DISCONNECT LOW SIDE AND HIGH SIDE HOSES FROM A/C SYSTEM.
SELECT NEXT TO CONTINUE OR EXIT TO ABORT.
10. Close coupler valves. Remove service hoses from the A/C system and install on unit's storage ports.

IMPORTANT: If the low-side or high-side coupler valves are left open during the hose clearing process, the system will pull refrigerant back out of the vehicle.

11. Select **NEXT** to begin clearing hoses to prepare the machine for the next service.

When the hoses are clear, the display reads

REFRIGERANT: XX.XX LB
SOURCE TANK EMPTY
SELECT FUNCTION USING KEYS BELOW

The A/C system is now ready for use.

Operating Instructions – Automatic

The automatic function allows a user to program an automatic recovery, vacuum, leak test, and / or charge sequence. The user may choose to skip any step in the automatic operation during the programming. A total automatic sequence may take an hour to complete.

Note: When a charge cycle in automatic mode is complete, the machine will not prompt to equalize hoses; it will automatically compensate this amount of refrigerant.

1. Connect the high- and low-side service hoses to the A/C system, and open the coupler valves on the hoses.
2. Select **AUTOMATIC**.
3. Decide if the unit should collect pre-recovery diagnostics by selecting **YES** or **NO**. *Note: Data may be printed from the Recover Diagnostics screen.*
4. Decide if the unit should perform a recovery by selecting **YES** or **NO**. *Note: Selecting YES automatically programs the vacuum step of the recovery process. Selecting NO disables recovery, but vacuum remains a choice for the operator. The next step would be to set vacuum time.*
5. Decide if the unit should perform a leak test by selecting **YES** or **NO**.
6. Decide if the unit should perform a charge by selecting **YES** or **NO**. If yes, enter amount of oil to be injected.
Note: The amount of oil recovered during the recovery cycle is automatically injected before the charge cycle, and no entry will be necessary.
If recovery was not selected, the amount of oil to be injected may be entered while programming the charge information.
7. Toggle **DYE INJECT** on or off. Select **SAVE** to return to the charge screen.
8. Select **MODE** to toggle between high- or low-side charge, or both. *Note: Charge mode after injecting oil allows only a high-side charge.* Enter a charge weight using the keypad, and select **SAVE**.
9. The display shows an overview of all tests selected. Select **START** to begin the automatic sequence.
10. When the sequence is complete, the display shows
CHARGE DIAGNOSTICS (if applicable)
START A/C TO PERFORM DIAGNOSTICS OR
WITH A/C OFF PRESS NEXT TO CLEAR HOSES.
To obtain current pressure readings and diagnostics from the vehicle, start the vehicle's air conditioning system, or select **NEXT** to continue.
11. Close the high- and low-side coupler valves, and remove the service hoses from the A/C system.
12. Select **NEXT** to begin clearing hoses. This prepares the machine for the next service.
13. The machine displays a summary of actions performed during the automatic sequence.

Operating Tips

- If the weight entered is more than the refrigerant available in the internal tank, the charge function will not start. The display reads
INSUFFICIENT REFRIGERANT
THERE IS NOT ENOUGH REFRIGERANT IN THE
ISV TO COMPLETE CHARGE. PRESS TANK FILL
TO ADD MORE OR EXIT TO ABORT.
Refer to the Maintenance section of this manual for instructions to Manually Fill the ISV.
- If problems are encountered during the automatic sequence, the unit will “beep” three times and the control panel readout will pinpoint the problem encountered. The sequence remains paused until the user enters a decision regarding how to proceed.
- Before the unit begins evacuating the A/C system during the automatic sequence, it checks for any pressure in the system that may damage the vacuum pump. If pressure is detected, the unit displays
PRESSURE TOO HIGH FOR VACUUM!
PRESS EXIT
Select EXIT. Recover refrigerant before proceeding.
- If a leak test was programmed, and a leak is detected, the unit displays
LEAK TEST FAILED
CONTINUE WITH AUTOMATIC MODE?
PRESS YES TO CONTINUE NO TO ABORT.
Select NO to exit the automatic sequence and perform needed repairs. Press YES to continue the automatic sequence despite the failed leak test.
- To ensure an accurate leak test, it is imperative that a thorough recovery and evacuation of the system is performed. During the recovery process, cold spots can develop in the A/C system. Pockets of refrigerant in desiccant and in system oil will continue to vaporize as the A/C system temperature equalizes toward ambient. As this occurs, A/C system pressure increases, which may be interpreted by the unit as a leak. This varies somewhat with ambient temperature conditions.

System Flushing Process

This unit provides a method of removing oil by forcing liquid refrigerant through an A/C system, or components of an A/C system. A special flushing adapter (purchased separately) accesses the A/C system at the compressor block. After flushing, the refrigerant is recovered by the unit and filtered by the recycling circuit, returning it to SAE purity levels.

A/C systems vary and may require the adapting and flushing of individual components. The following procedure works with an orifice tube system. Refer to any service bulletins as needed during this procedure.

Notes:

- *The unit must have at least 10 lbs. of refrigerant available in the ISV (as indicated on the display) for charging.*
- *If the flush process is interrupted by an accidental power-down or other fault, use the Recover mode to remove the refrigerant from the vehicle.*

Setup

1. Verify the oil drain bottle on the side of the unit is empty. See Figure 8. Recover refrigerant as outlined in this manual under *Recover Refrigerant from a Vehicle*.
2. Close service coupler valves and disconnect hoses from vehicle access ports.
3. Close the valve on the external source tank.

Note: During this procedure, up to 12 lbs. of refrigerant is charged into the vehicle A/C system. If the flushing cycle is stopped before it is complete and the external source valve is open, the unit automatically adds refrigerant to the ISV, and there will be no room to recover the refrigerant used for flushing.

4. Remove the A/C system orifice tube, and reconnect the fittings to create a bypass.
5. Disconnect the compressor block at the rear of the compressor.
6. Attach the compressor block adapter (from the flushing kit) to the system side of the compressor block.

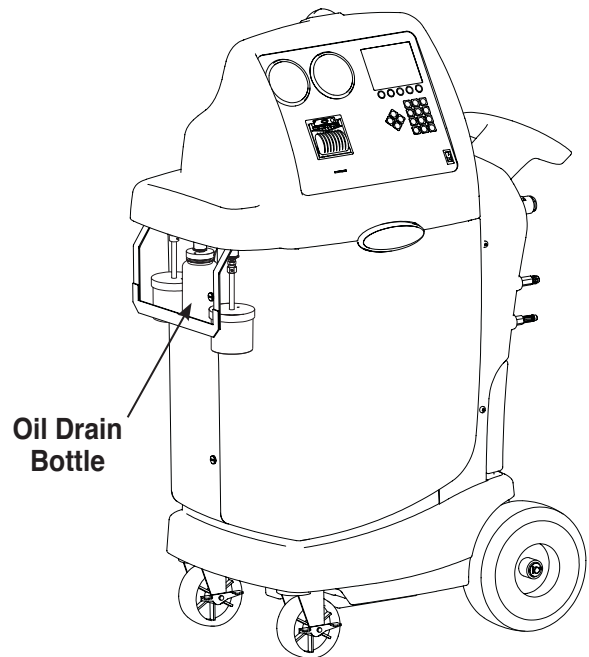


Figure 8

System Flush

7. Configure the block connectors to provide forward- or back-flushing of the refrigerant. *Note: Refrigerant flows from the red high-side connector to the blue low-side connector.*
8. Open the red service coupler.
9. Connect the filter housing to the desired return side of the adapter block and to the blue low-side hose.
10. Open the blue service coupler.
11. Verify that a flushing filter is correctly installed in the flushing filter housing. Open the isolation valve on the hose.

Operating Instructions

1. Select **SYSTEM FLUSH**.
2. Select **START** to accept the default flush time of 10 minutes, or enter the desired flush time using the keypad and select **START**.
3. The vacuum pump runs for five minutes to remove air from the A/C system, if needed.
4. The unit flushes the system for the designated length of time, and then enters a recovery mode.
5. Oil that has been collected drains into the graduated oil drain bottle. Remove the bottle and measure the oil.

Dispose of oil according to the laws in your jurisdiction. It is the responsibility of the user to determine if a material is a hazardous waste at the time of disposal.
6. When the unit displays **FLUSH COMPLETE**, close service couplers, remove hoses, and reassemble the vehicle's A/C system to its original state.
7. Open the valve on the source tank.
8. Evacuate and recharge the vehicle according to the instructions in this manual.

! WARNING: Do NOT disconnect service couplers during the flushing process. Refrigerant could spray out of the fittings, and exposure may cause personal injury.

Operating Tips

If the external flushing filter is plugged, the unit displays

**NO FLOW DETECTED. FLUSH FILTER
MAY BE BLOCKED.
CHECK CONNECTIONS AND VALVE
POSITIONS.
TO CLEAR FILTER FOR
REPLACEMENT, CLOSE FLUSH FILTER
ADAPTER VALVE AND SELECT START.
SELECT EXIT TO ABORT
OR RETRY TO CONTINUE WITHOUT
REPLACING FILTER.**

The message repeats until the filter is replaced.

General Maintenance

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

Electrical Protection

The unit is equipped with a 15 amp circuit breaker on the back panel. See Figure 9. If the breaker trips, its button will pop out. A tripped circuit breaker will cause the unit to lose all power.

Press the circuit breaker button to reset.

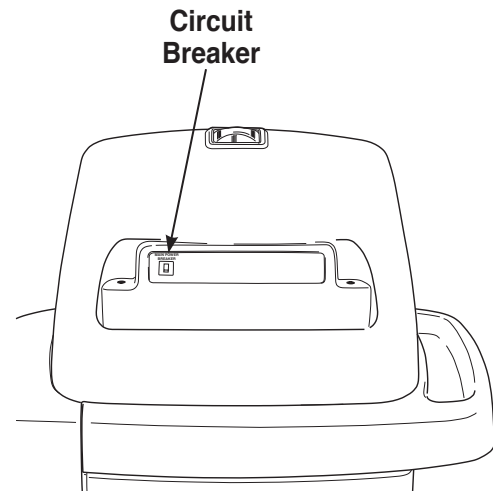


Figure 9
Back View

Manually Fill the Internal Storage Vessel (ISV)

This menu item is used to transfer refrigerant from a source tank to the internal storage vessel.

Note: If a refrigerant source tank remains connected to the unit during normal operation, the correct amount of refrigerant will automatically be maintained in the ISV. The ISV may be manually refilled, if necessary.

1. Select **SETUP MENU**. Scroll to **TANK FILL** and select **START**. The unit displays
CONNECT SOURCE TANK TO
TANK FILL HOSE, OPEN TANK VALVE, AND
ORIENTATE TANK TO PROVIDE LIQUID SUPPLY.
PRESS START TO BEGIN OR EXIT TO ABORT.
2. Connect the fill hose to the liquid connector on a full source tank, and open the source tank valve. See Figure 10.
3. Install the source tank, and secure it to the unit (using the tank strap) in such a way that liquid refrigerant is supplied to the connection.
4. Press **START** to begin filling the ISV.
5. The unit automatically stops when the preset tank fill level is reached. To stop the tank fill before the preset level is reached, select **PAUSE** and **EXIT**.

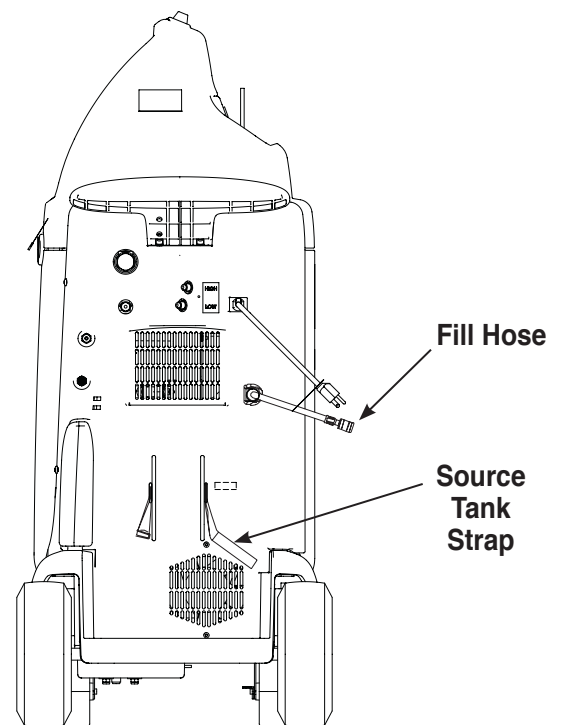


Figure 10
Side View

Note: Only the amount of refrigerant available for charging is displayed. For example, if the tank fill default is set at 15 lbs., the unit will transfer 15 lbs. to the ISV, but the display may show only 13 lbs.

Maintenance

Replace the Filter-Drier

The filter-drier is designed to trap acid and particulates, and to remove water from refrigerant. To meet the SAE J-2788 mandate for adequate moisture and contaminant removal, the filter-drier must be replaced after 150 lbs. (68 kg) of refrigerant has been filtered.

Therefore, you no longer have a choice—the filter-drier must be replaced. The unit gives a warning when 100 lbs. of the filter capacity has been used; **the unit locks down when the 150 lb. filter capacity has been reached and will no longer function.** For this reason, always have a spare Robinair No. 34724 filter-drier on hand.

Check Remaining Filter Capacity

1. Select **SETUP MENU**. Scroll to **MAINTAIN FILTER** and select **START**. The unit displays

FILTER CAPACITY USED: XXX LBS
FILTER CAPACITY REMAINING: XXX LBS
CHANGE FILTER NOW?
SELECT YES TO CHANGE FILTER OR
NO TO CONTINUE.

The unit displays the amount of refrigerant recovered since the last filter change, and the amount of filter capacity remaining until the machine locks down.

2. Select **YES** to change the filter; **NO** to resume using the machine.

Change the Filter

1. If **YES** was selected at the end of the *Check Remaining Filter Capacity* procedure, the unit displays

ENTER NEW FILTER SERIAL NUMBER
SELECT SAVE TO CONTINUE
OR EXIT TO ABORT.

2. Use the keypad to enter the serial number that appears on the new filter-drier, and select **SAVE**.

Note: If SERIAL NUMBER USED OR INVALID is displayed, the serial number has been incorrectly entered or the filter-drier has already been used in this unit.

3. If there is pressure in the filter, the unit performs a clearing process and displays CLEARING FILTER.

IMPORTANT: Use only authentic Robinair No. 34724 filter-driers in this machine. All performance tests and claims are based on using this specific filter-drier.

Only the Robinair No. 34724 filter-drier includes the code necessary to make the unit operable again.

Operating Tips

Enter the Serial No. for a New Filter-Drier

The numerical keys on the keypad include an alphabet that is used to enter the serial number code for the new filter-drier. The procedure is similar to text messaging. For example,



To enter an "A":

Press the **2** key once to see the "A" on the digital display.

To enter a "2":

Press the **2** key four times to see the "2" on the digital display.

After the appropriate letter is shown on the display, pause for a moment until the cursor moves to the next position.

Replace the Filter-Drier contd.

4. The display reads

CAREFULLY REMOVE USED FILTER AND
INSTALL NEW FILTER.
SELECT EXIT TO FINISH

Open the rear door of the unit and unscrew the old filter. See Figure 11.

5. Look at the new filter—verify both o-rings are lubricated and correctly located in the grooves. See Fig. 12. Thread the new filter into place and tighten.
6. Close the rear door. Select **EXIT**. The filter-drier replacement is complete.

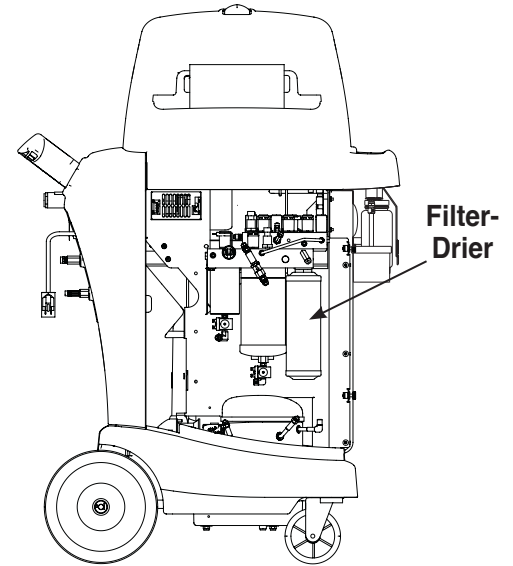


Figure 11
rear view without shroud

Scale Calibration Check

The calibration check is used to ensure the unit's internal scale is always calibrated. During this test, use only the calibration weight that is provided with the unit.

1. Select **SETUP MENU**. Scroll to **CALIBRATION CHECK** and select **START**.

2. The unit displays

MAKE SURE NOTHING IS ATTACHED TO THE
TEST MAGNET UNDERNEATH THE UNIT.
PRESS START TO BEGIN OR EXIT TO ABORT.

Refer to Figure 13, and verify the magnet on the bottom of the unit is clean. Select **START**.

3. The unit displays

INSTALL STEEL CALIBRATION BALL ONTO
MAGNET UNDERNEATH UNIT. PRESS NEXT
TO CONTINUE OR EXIT TO ABORT.

Attach the weight provided to the magnet on the bottom of the unit. Select **NEXT**.

- If the display shows

CALIBRATION CHECK PASSED
PRESS EXIT TO CONTINUE

the scale is in calibration. Select **EXIT**.

- If the display shows **CALIBRATION CHECK FAIL**, the scale is out of calibration. Contact an authorized Robinair service center for assistance.

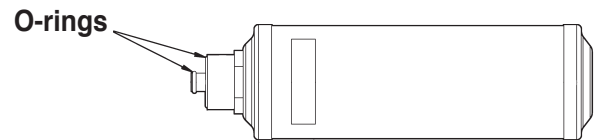


Figure 12

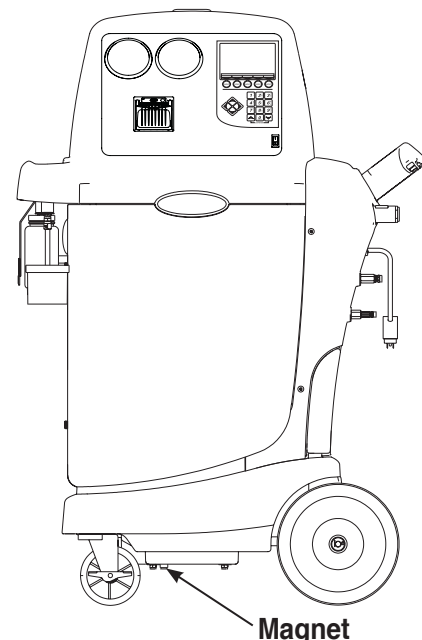


Figure 13

Maintenance

Change Vacuum Pump Oil

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

1. Select **SETUP MENU**. Scroll to **MAINTAIN VACUUM PUMP** and select **START**.

The display shows how long the vacuum pump has operated since the last oil change and the amount of time remaining until the next oil change is needed:

VACUUM OIL TIME: XX:XX
OIL LIFE REMAINING: XX:XX
CHANGE VACUUM PUMP OIL NOW?
SELECT YES TO CHANGE OIL OR NO TO EXIT

2. Select **YES**. The display shows

WARMING OIL FOR BETTER DRAIN.
VACUUM TIME: XX:XX

Allow the vacuum pump to run until it automatically stops. This will take approximately one minute.

3. The display then shows

DRAIN USED OIL AND ADD 5 OZ OF NEW OIL.
PRESS NEXT TO CONTINUE OR EXIT TO ABORT.

Refer to Figure 14, and remove the plug from the oil fill port. (The pump drains faster when vented.)

4. Remove the oil drain fitting cap, and drain the oil into a suitable container for disposal. Replace the cap.
5. Attach the flexible tube/cap to the oil bottle (from the accessory kit). Pour **only five (5) ounces** of vacuum pump oil into the fill port. *Note: You will top off the oil in the next step as the vacuum pump is running.*
6. Select **NEXT**. The unit displays
FILL VACUUM PUMP WITH NEW OIL UNTIL
THE LEVEL REACHES THE MIDDLE OF THE
SIGHT GLASS.
REPLACE CAP AND PRESS EXIT WHEN
COMPLETE.

While the vacuum pump is running, slowly add oil until the level rises to the center of the sight glass.

7. Install the plug in the fill port, and select **EXIT**.

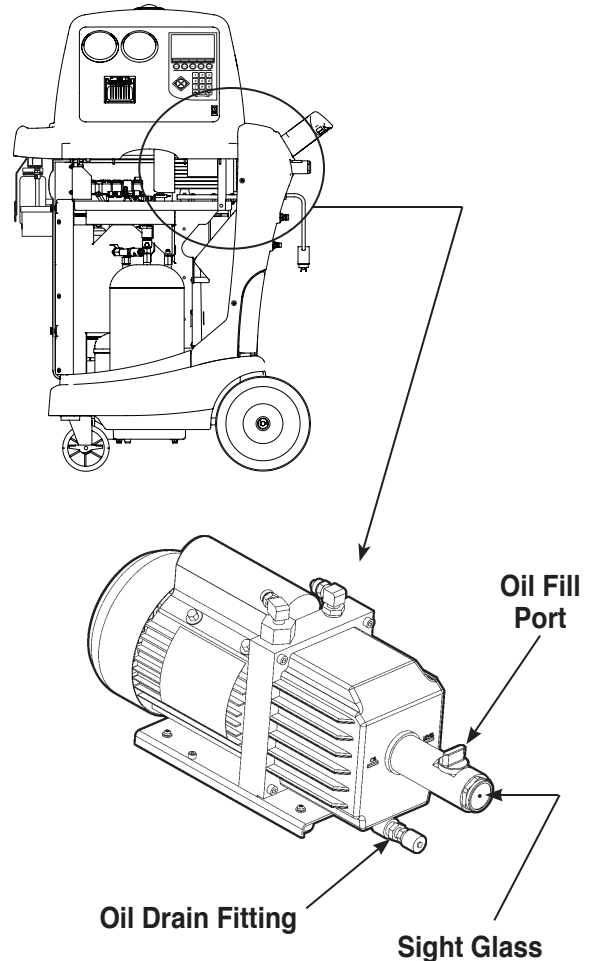


Figure 14

CAUTION: To prevent personal injury, do NOT operate the unit at any time without the oil fill port plug installed, because the vacuum pump is pressurized during normal operation.

Review the laws in your jurisdiction to determine the correct disposal procedure 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 you are in compliance with all applicable laws and regulations.

Adjust Tank Fill Level

When connected to a refrigerant source, the unit maintains a default value of 15 lbs. of refrigerant in the internal storage vessel. This value may be adjusted up or down to suit the application. The minimum value is 4 lbs.; the maximum value is 17 lbs.

1. Select **SETUP MENU**. Scroll to **ADJUST REFILL DEFAULT** and select **START**.

2. The unit displays

15.00 LBS.

ENTER THE AMOUNT OF REFRIGERANT THAT THE TANK FILL FUNCTION SHOULD MAINTAIN IN THE INTERNAL STORAGE VESSEL.

MAX = 17.00LB MIN = 04.00LB

SELECT SAVE TO ACCEPT OR EXIT TO ABORT.

3. Select **SAVE** to accept the default amount, or use the keypad to enter an amount and select **SAVE**.

Check for Leaks

Check the unit for leaks every three months, or as specified by law in your jurisdiction.

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 the 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.

Replace the Printer Paper

1. Press the oval button at the top of the printer to release the printer cover. See Figure 15.
2. Grasp the tabs and pull the cover off the printer.
3. Remove the paper core.
4. Install the new roll of paper with the end of the paper at the top of the roll.
5. Assemble the cover onto the printer with the end of the paper over the roller.

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

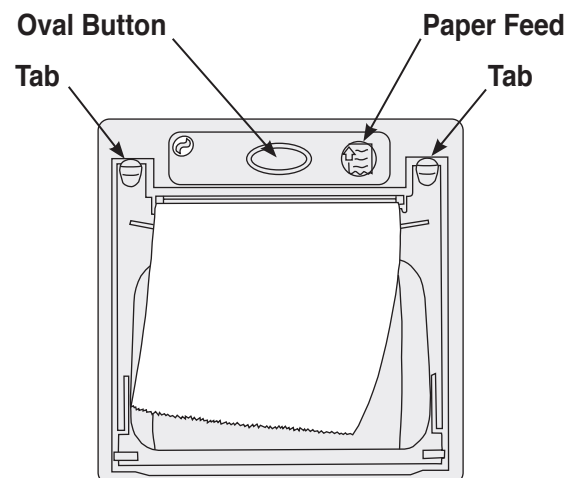


Figure 15

Maintenance

Edit Print Header

This function allows the user to make changes to the text that appears in the header on each printout.

1. Select **EDIT PRINT HEADER**.
2. Use the arrow keys on the control panel to navigate within the existing text. Use the keypad to make changes within the text.
3. Select **SAVE** to retain the text; select **CLEAR** to remove all text on the selected row.

Operating Tips

The numerical keys on the keypad include an alphabet that is used to enter information into the machine. The procedure is similar to text messaging. For example,



To enter an “A”:

Press the **2** key once to see the “**A**” on the digital display.

To enter a “2”:

Press the **2** key four times to see the “**2**” on the digital display.

After the appropriate letter is shown on the display, pause for a moment until the cursor moves to the next position.

Replacement Parts

Component	Replacement Part No.
Calibration Weight	540066
Cap for Oil / Dye Inject Bottle	545574
Dye Inject Bottle	548905
Filter-Drier	34724
High-side Storage Port	546882
Low-side Storage Port	546883
Maintenance Kit <i>(consists of a filter-drier and vacuum pump oil)</i>	13172
Oil Drain Bottle	546411
Oil Inject Bottle	548905
Printer Paper (3 rolls)	34215
Service Coupler Set <i>(high- and low-side couplers)</i>	18192
Service Hose <i>(low-side, blue)</i>	62121
Service Hose <i>(high-side, red)</i>	63096
Vacuum Pump Oil <i>(case of 12 quarts)</i>	13203
Vacuum Pump Oil <i>(case of 4 gallons)</i>	13204
Vinyl Dust Cover <i>(optional)</i>	17492

Robinair Limited Warranty Statement

Rev. November 1, 2005

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 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 or sealants will void 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.

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.

Declaración de garantía limitada Robinair

Revisión del 1 de noviembre de 2005

Se garantiza que este producto no posee defectos de mano de obra, materiales y componentes por el período de un año a partir de la fecha de compra. Todas las partes y mano de obra requerida para reparar los productos con defecto cubiertos bajo la garantía no tendrán costo. Aplican las siguientes restricciones:

1. La garantía limitada aplica al comprador original únicamente.
2. La garantía aplica al producto en situaciones de uso normal únicamente, como lo indica el Manual de funcionamiento. Al producto se le debe dar servicio y mantenimiento como se especifica.
3. Si falla el producto, se debe reparar o reemplazar a discreción del fabricante.
4. Los cargos de transporte de servicio de garantía serán reembolsados por la fábrica al verificar el reclamo de garantía y presentar una boleta de flete por servicio terrestre regular. Se debe obtener la aprobación del fabricante antes de hacer el envío a un centro de servicio autorizado.
5. Los reclamos de servicio de garantía están sujetos a inspección de defectos del producto.
6. El fabricante no será responsable de los costos adicionales relacionados con fallas en el producto, que incluyen pero no se limitan a, tiempo improductivo, pérdida de refrigerante, contaminación de refrigerante y envío no autorizado o cargos por mano de obra.
7. Todo reclamo de servicio de garantía se debe hacer dentro del período de garantía establecido. Se debe proporcionar la fecha de la prueba de compra al fabricante.
8. El uso de equipo de recuperación/reciclaje con refrigerantes o selladores no autorizados anula la garantía.
 - Los refrigerantes autorizados se indican en el equipo o están disponibles a través del Departamento de servicio técnico.
 - El fabricante prohíbe el uso de equipo de recuperación/reciclaje en sistemas de aire acondicionado (A/C) con fugas de sellador, ya sea porque un sello se infla o es de naturaleza aeróbica.

Esta garantía limitada NO aplica si:

- El producto, o parte de éste, se rompe accidentalmente.
- El producto se usa incorrectamente, se adultera o modifica.
- El producto se usa para recuperar o reciclar cualquier sustancia que sea diferente al tipo de refrigerante establecido. Esto incluye, pero no se limita a materiales y productos químicos utilizados para sellar fugas en sistemas de A/C.

Énoncé de la garantie limitée de Robinair

Révisée le 1er novembre 2005

Ce produit est couvert contre les défauts de matériau, de fabrication et de composant pendant un an à compter de la date d'achat. Toutes les pièces et la main-d'œuvre nécessaires aux réparations sous garantie sont sans frais. Toutefois, les restrictions suivantes s'appliquent :

1. La garantie limitée s'applique uniquement à l'acheteur initial.
2. La garantie s'applique uniquement au produit utilisé dans des conditions de fonctionnement normales conformément au manuel d'utilisation. Il doit être réparé et entretenu conformément aux spécifications.
3. Si le produit subit une défaillance, il sera réparé ou remplacé à la discrétion du fabricant.
4. Les frais de transport pour les réparations sous garantie sont remboursés par l'usine après l'évaluation de la réclamation au titre de la garantie et après la soumission d'une facture de transport terrestre standard. L'approbation du fabricant est requise avant l'expédition du produit à un atelier de réparation autorisé.
5. Les réclamations au titre de la garantie sont sujettes à l'inspection du produit défectueux par un personnel autorisé.
6. Le fabricant ne peut être tenu responsable pour tout coût supplémentaire lié à la défaillance du produit incluant, sans toutefois s'y limiter, les interruptions de fonctionnement, la perte de liquide frigorigène, la contamination des liquides frigorigènes et l'expédition et/ou les frais de main-d'œuvre soumis par des ateliers non autorisés.
7. Toute réclamation pour des réparations au titre de la garantie doit être soumise durant la période de garantie. Une preuve d'achat doit être fournie au fabricant.
8. L'utilisation d'un appareil de récupération et de recyclage avec du liquide frigorigène ou des scellants non spécifiés annule la garantie.
 - Les liquides frigorigènes autorisés sont indiqués sur l'appareil, ou ils peuvent être obtenus auprès du Service technique.
 - Le fabricant interdit l'utilisation d'un appareil de récupération et de recyclage dans les systèmes de climatisation contenant des colmatants pour fuites, que ce soient des scellants à dilatation ou aérobiques.

Cette garantie limitée NE s'applique PAS si le produit :

- ou une partie du produit a été endommagé par un accident.
- a été utilisé de façon inadéquate, ou qu'il a été altéré ou modifié.
- est utilisé pour la récupération et le recyclage de substances autres que le type de liquide frigorigène spécifié. Ces substances comprennent, sans toutefois s'y limiter, les matériaux et les produits chimiques utilisés pour colmater les fuites des systèmes de climatisation.

**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, complete the warranty card attached to the 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 or visit www.robinair.com.

**Visite nuestro sitio web en www.robinair.com o llame sin costo a
la línea de Asistencia técnica al 800-822-5561
en EE.UU. continental o Canadá.**

En todas las demás ubicaciones, comuníquese con su distribuidor local. Para ayudarnos a servirle mejor, tenga a mano el número de modelo, número de serie y fecha de compra de su unidad. Para validar la garantía, complete la tarjeta de garantía anexa a su unidad y devuélvala dentro de los diez días siguientes a la fecha de compra.

RED NACIONAL DE CENTROS DE SERVICIO AUTORIZADOS

Si su unidad necesita reparaciones o partes de reemplazo, comuníquese con el centro de servicio de su área. Para obtener ayuda para ubicar un centro de servicio, llame sin costo a la línea de asistencia técnica o visite www.robinair.com.

**Visitez notre site Web à www.robinair.com ou appelez sans frais
le soutien technique au 800-822-5561
sur le territoire continental des États-Unis ou au Canada.**

Pour tout autre endroit, communiquez avec votre distributeur local. Afin de nous aider à mieux vous servir, soyez prêt à nous donner le numéro de modèle, le numéro de série et la date de l'achat de votre unité. Afin de valider votre garantie, remplissez la carte de garantie jointe à votre système et retournez-la dans les dix jours de la date d'achat.

RÉSEAU NATIONAL DES CENTRES DE SERVICE AUTORISÉS

Si votre unité a besoin d'être réparée ou à besoin de pièces de remplacement, communiquez avec le centre de service de votre région. Pour vous aider à localiser un centre de service, appelez sans frais la ligne de soutien technique ou visitez le www.robinair.com.

The Robinair 34988 unit is designed to meet all applicable agency certifications, including Underwriter's Laboratories, Inc., SAE Standards, and CUL. 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

La unidad Robinair 34988 está diseñada para cumplir con todas las certificaciones de agencia aplicables, incluyendo Underwriter's Laboratories, Inc., Estándares SAE y CUL. Ciertas jurisdicciones estatales y locales prescriben que el uso de este equipo para vender refrigerante por peso es posible que no sea permitido. Recomendamos que se cobre el trabajo realizado por dar servicio al aire acondicionado. Esta escala de peso proporciona un medio para medir la cantidad de refrigerante que se necesita para el rendimiento óptimo del sistema de aire acondicionado, tal como lo recomiendan los fabricantes OEM.

Le modèle 34988 a été conçu pour répondre aux certifications applicables de la Underwriter's Laboratories, Inc., aux normes SAE et CUL. Certains endroits dictent l'utilisation de cet équipement et il peut arriver que la vente de fluide frigorigène en fonction du poids puisse être interdite. Nous vous recommandons de facturer les services de climatisation en fonction du travail effectué. Ce poids de tarification permet de calculer la quantité de fluide frigorigène nécessaire pour un rendement optimum de la climatisation, tel qu'il est recommandé par les fabricants de l'équipement d'origine.

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

Debido a las constantes mejoras del producto, nos reservamos el derecho de cambiar diseño, especificaciones y materiales sin aviso.

En raison des améliorations constantes apportées à nos produits, nous nous réservons le droit de changer de concept, de spécifications et de matériaux sans préavis.

SPX

SERVICE SOLUTIONS

655 EISENHOWER DRIVE
OWATONNA, MN 55060-0995 USA

TECH SERVICES	800	822	5561
FAX	412	690	2001
CUSTOMER SERVICE	800	533	6127
FAX	800	322	2890

www.robinair.com