Operating Manual for

Model 34988

Recovery, Recycling, Recharging Unit
SAFETY DEFINITIONS: Follow all WARNING, CAUTION, 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; 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.

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.

AVOID BREATHING A/C REFRIGERANT AND LUBRICANT VAPOR OR MIST. Exposure may irritate eyes, nose, and throat. To remove refrigerant from the A/C system, use only equipment certified for the type of refrigerant being removed. 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.

CAUTION—DO NOT PRESSURE TEST OR LEAK TEST EQUIPMENT AND / OR VEHICLE AIR CONDITIONING SYSTEMS WITH COMPRESSED AIR. Some mixtures of air and refrigerant have been shown to be combustible at elevated pressures. These mixtures, if ignited, may cause 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.

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

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.macsw.org.

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

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

**Alert**: visual and audio notice that machine needs attention.

**Control Panel & Digital Display**: interface between operator and machine.

**Main Power Switch**: supplies electrical power to unit.

**Printer**: produces printouts of vehicle diagnostics.

**Vacuum Pump Exhaust**

**Manifold Gauges**: connect to vehicle A/C system; show system’s low-side and high-side pressure.

**Database Expansion Slot**: an optional database will supply information regarding charge capacity by vehicle model.

**UV Dye Reservoir**: holds UV dye to be injected into vehicle A/C system.

**Oil Drain Bottle**: collects oil during a recovery sequence.

**Oil Inject Reservoir**: holds oil to be injected into vehicle A/C system.
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 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 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 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.

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**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—piston should be in direct contact with 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).
**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.

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**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.*
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**.

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**Setup**

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**CAUTION: 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.**
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.**

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### 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.

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**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.
Manual Tank Fill contd.

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.

*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.*
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.

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.
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 compete, the display reads

**HOSE FLUSH COMPLETE**

PRESS EXIT

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

    **CAUTION: 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.

    **CAUTION: 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; 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 automatic sequence and perform needed repairs. Press YES to continue 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.

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.

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.

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.
Tank Fill Hose Filter Service

The black tank fill hose at the rear of the machine contains a filter that can be cleaned when it appears that refrigerant flow is restricted.

When the machine senses low flow, it may display the following message:

- SOURCE TANK EMPTY, but yet you know the source tank contains refrigerant, connections are secure, and the source tank valve is open.

The cause may be that the tank fill hose filter is plugged.

Cleaning the Tank Fill Hose Filter

1. First ensure that pressure does not exist in the line. Disconnect the external source tank, and perform a manual tank fill to capture any refrigerant in the line.
2. Slowly and carefully disconnect the tank fill hose from the adapter. There may still be a little pressure in the line.
3. Disassemble the tank fill hose at the filter housing as shown in Figure 11.
4. Remove and clean the filter.
5. After the filter has been installed back into the filter housing, torque the housing assembly to 8.5 N•m (6 ft. lbs.).
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 12.

5. Look at the new filter—verify both o-rings are
   lubricated and correctly located in the grooves.
   See Figure 13. Thread the new filter into place
   and tighten.

6. Close the rear door. Select EXIT. The filter-drier
   replacement is complete.

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 14, 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.
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 15, 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**.

   **WARNING:** 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 16.

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.

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Figure 16
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

<table>
<thead>
<tr>
<th>Component</th>
<th>Replacement Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration Weight</td>
<td>540066</td>
</tr>
<tr>
<td>Cap for Oil / Dye Inject Bottle</td>
<td>545574</td>
</tr>
<tr>
<td>Dye Inject Bottle</td>
<td>548905</td>
</tr>
<tr>
<td>Filter-Drier</td>
<td>34724</td>
</tr>
<tr>
<td>High-side Storage Port</td>
<td>546882</td>
</tr>
<tr>
<td>Low-side Storage Port</td>
<td>546883</td>
</tr>
<tr>
<td>Maintenance Kit <em>(consists of a filter-drier and vacuum pump oil)</em></td>
<td>13172</td>
</tr>
<tr>
<td>Oil Drain Bottle</td>
<td>546411</td>
</tr>
<tr>
<td>Oil Inject Bottle</td>
<td>548905</td>
</tr>
<tr>
<td>Printer Paper <em>(3 rolls)</em></td>
<td>34215</td>
</tr>
<tr>
<td>Service Coupler Set <em>(high- and low-side couplers)</em></td>
<td>18192</td>
</tr>
<tr>
<td>Service Hose <em>(low-side, blue)</em></td>
<td>62121</td>
</tr>
<tr>
<td>Service Hose <em>(high-side, red)</em></td>
<td>63096</td>
</tr>
<tr>
<td>Vacuum Pump Oil <em>(case of 12 quarts)</em></td>
<td>13203</td>
</tr>
<tr>
<td>Vacuum Pump Oil <em>(case of 4 gallons)</em></td>
<td>13204</td>
</tr>
<tr>
<td>Vinyl Dust Cover <em>(optional)</em></td>
<td>17492</td>
</tr>
<tr>
<td>Tank Fill Hose Filter</td>
<td>10233</td>
</tr>
</tbody>
</table>
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 posea defectos de mano de obra, materiales y componentes por el periodo 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 originalmente.
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 aerobic.

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.

If you need 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.

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.

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

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