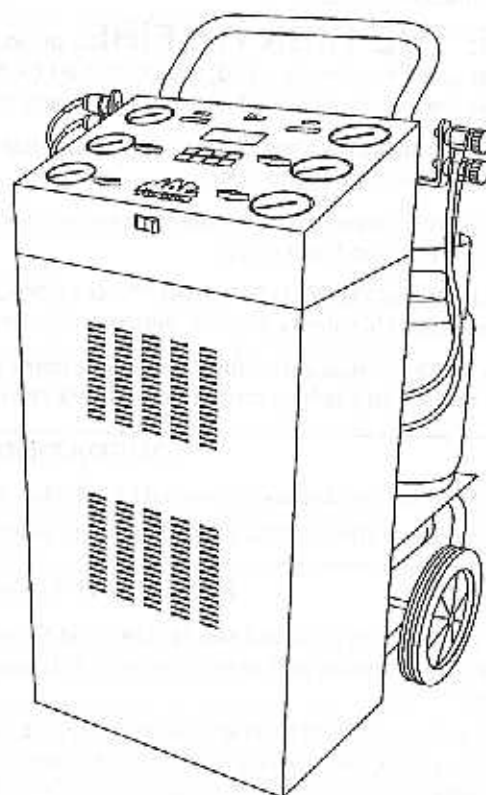




Operating Manual



Model AC990

120236 → Condenser/Evaporator

RMC Series
Refrigerant management Center

*Compressor Also pulls Vacuum
NO Vacuum pump*

LISTED



80S2

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



MAC
TOOLS
RMC Series

Series: AC990

Refrigerants: R-12 and R-134a

Refrigerant Management Center



WARNING



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

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

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

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

Use this equipment in locations with mechanical ventilation that provides at least four air changes per hour or locate the equipment at least 18 inches above the floor.

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

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

Use with R-134a or R-12 refrigerants only. This equipment is not designed for any other purpose than recovering, recycling and recharging refrigerants! Do not mix refrigerant types!

OPERATING NOTES

Change the filter-drier when the display shows "CH-F". Follow the instructions for changing the filter-drier.

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

R-12 and R-134a WARNINGS!

Use the 34234 unit only with R-12 or R-134a refrigerants! Cross-contamination with other refrigerant types will cause severe damage to the A/C system and to service tools and equipment. Do not mix refrigerant types through a system or in the same container!

Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove R-134a from the A/C system, use service equipment certified to meet the requirements of SAE-J2210 (R-134a recycling equipment). If accidental system discharge occurs, ventilate work area before resuming service.

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

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

This equipment is protected by one or more of the following patents: US: 4,938,031; 5,005,369; 5,248,125; 4,261,178; 4,768,347. Other U.S. and Foreign Patents Pending

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This manual contains important safety procedures concerning the operation, use and maintenance of this product. Failure to follow the instructions contained in this manual may result in serious injury. If you are unable to understand any of the contents of this manual, please bring it to the attention of your supervisor. Do not operate this equipment unless you have read and understood the contents of this manual.

The AC990 is designed for servicing the air conditioning systems on both R-12 and R-134a vehicles. This unit recovers, recycles and recharges refrigerant in one hook-up. Dual circuitry eliminates the need to change hoses on tanks when switching refrigerants.

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

This unit is simple to operate and has many user-friendly features:

- microprocessor for semi-automatic operation
- two electronic scales for accurate charging
- large diameter wheels to move easily between service bays and over grates

GLOSSARY OF TERMS

A/C System	The air conditioning system being serviced
Unit	The refrigerant recovery/recycling/recharging unit
Unit Tank	The refillable refrigerant tank(s) included with this unit
Source Tank	A supply of refrigerant used to refill the unit tank(s). There are two tanks on the AC990

OPERATING TIPS

Follow the SAE-J2210 recommended service procedures for the containment of R-134a and the SAE-J1770 procedures for the containment of R-12.

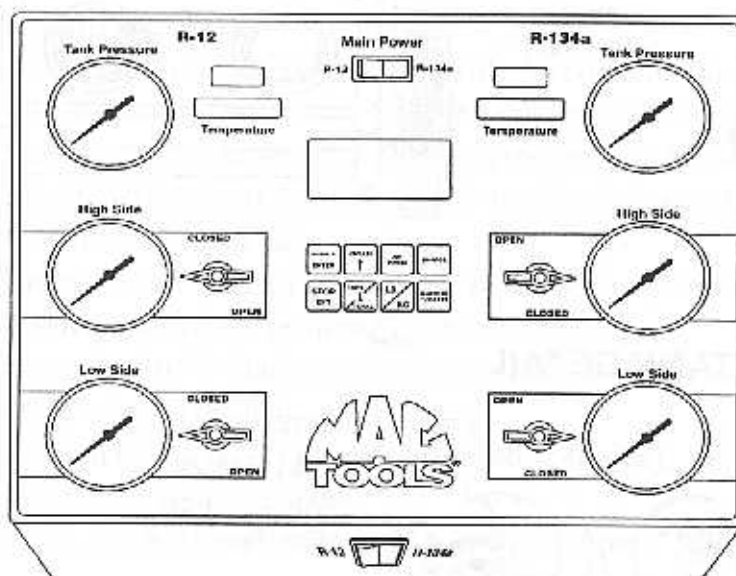
Refer to the A/C system manufacturer's service manuals for oil specifications.

CAUTION! R-134a systems have special fittings (per SAE specifications) to avoid cross-contamination with R-12 systems. Do not attempt to adapt your unit for another refrigerant type — system failure will result!

USING THE CONTROL PANEL

The control panel components have specific operating functions.

1. **MAIN POWER** —controls power to the unit.
2. **RECOVERY/ENTER**—RECOVERY starts the recovery process
/ENTER locks in selections during diagnostics.
3. **VACUUM /↑**—begins the vacuum process; UP arrow changes selection during diagnostics..
4. **AIR PURGE** —controls the air purge process
5. **CHARGE** —controls the charging process
6. **STOP/EXIT** — stops any process and exits DIAGNOSTICS
7. **TARE/TOTAL /↓**—toggles display between Tare and Total Weight.
Arrow down changes selection during diagnostics.
8. **LB/KG** —toggles between metric and imperial units of measure.
9. **DIAGNOSTIC FUNCTIONS** — changes display to diagnostic menu
10. **TANK PRESSURE** —indicates pressure in the recovery tanks.
11. **MAIN DISPLAY**—shows refrigerant weight and error messages
12. **TEMPERATURE DISPLAY** — indicates recovery tank temperature.
13. **REFRIGERANT SELECTOR SWITCH**—Selects current refrigerant.

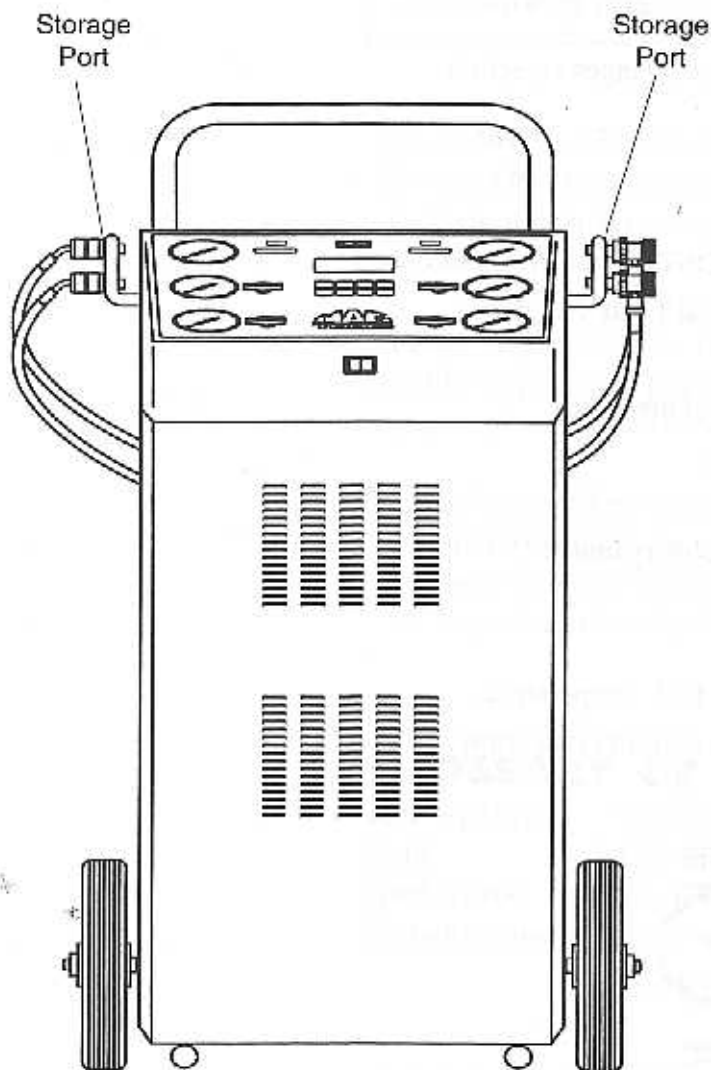


AC990 Control Panel

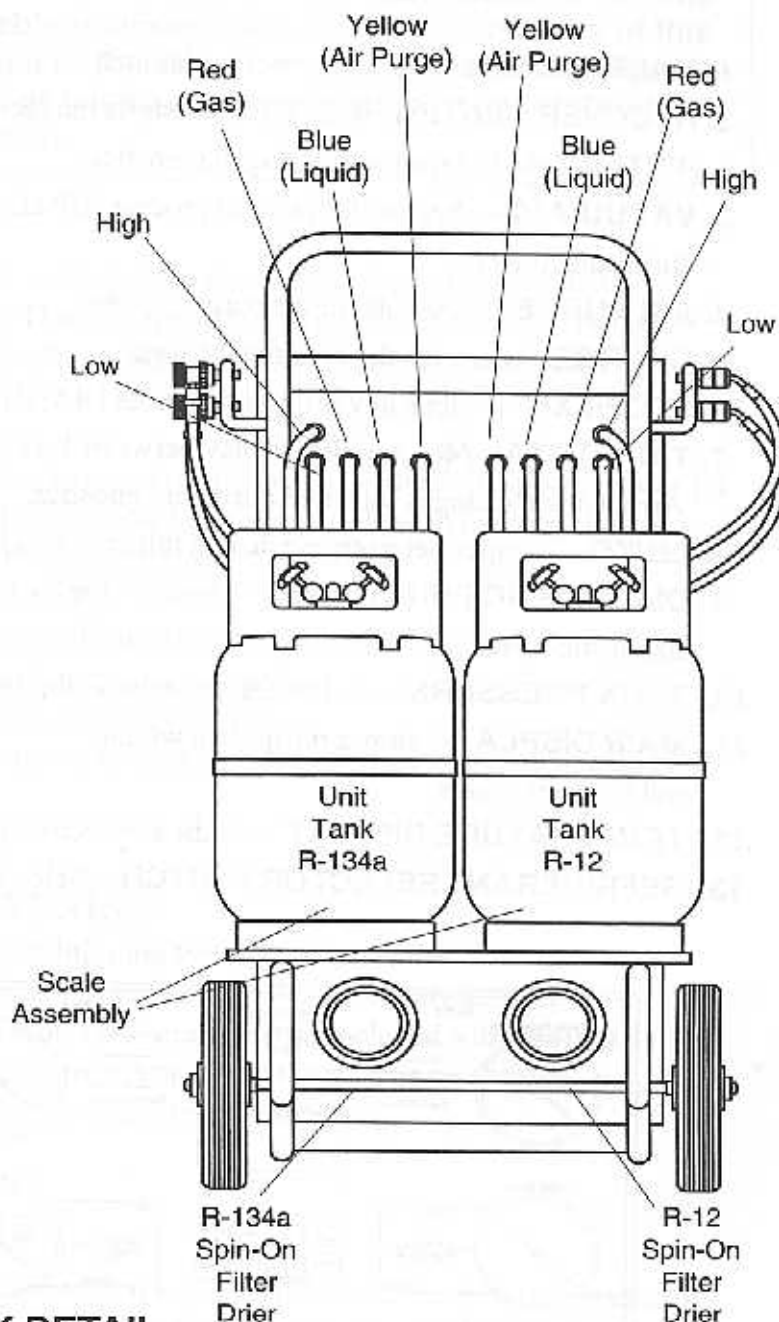
Introduction

COMPONENT LOCATION AND IDENTIFICATION

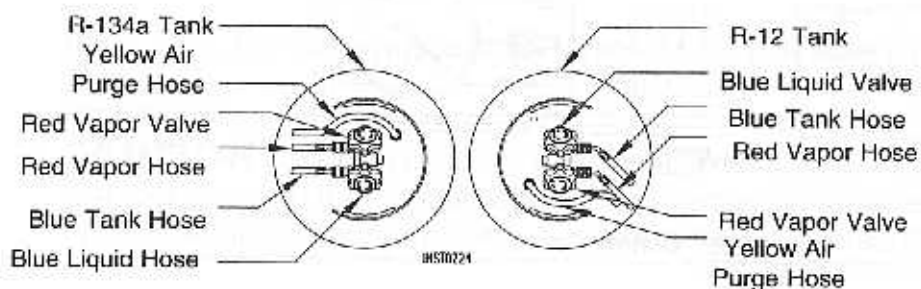
FRONT VIEW



REAR VIEW

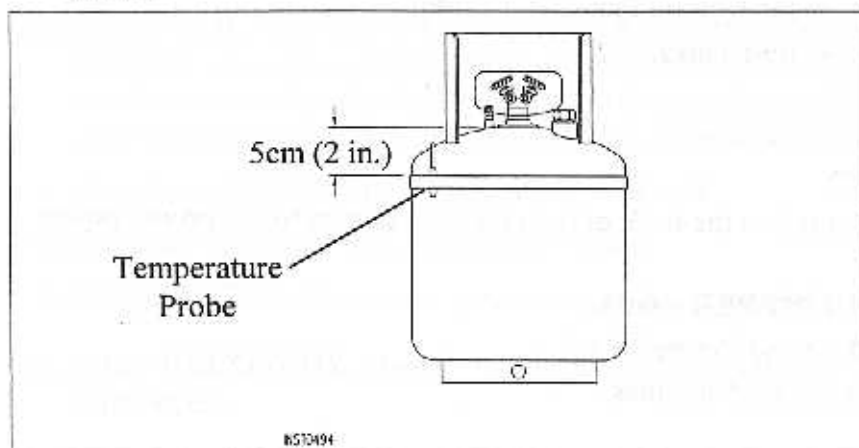


TANK DETAIL



INSTALL THE TANKS

1. A new tank comes with a dry nitrogen charge of 10 to 15 psi (4.9 to 7.4 bar) to keep it clean and dry during shipment. Purge its nitrogen charge by opening either valve on the tank. Vent the pressure to the atmosphere, then close the valve.
2. Place the unit tank on the scale platform on the back of the unit. Attach the tank strap to the tank handle. Securely tighten the thumbscrew on the platforms to hold the tanks in place.
3. Place the temperature probe under the elastic band on the tank as shown below.



NOTE

Use only the adapter provided with your equipment

UNIT SET UP

R-134a Side Hookups

1. Attach the 96" (blue hose to the low side port on the back of the unit.
2. Attach the 96" red hose to the high side port on the back of the unit.
3. Connect the tank adapter (included with the unit and installed on the oil drain) to the LIQUID port of the tank. Attach the blue low side hose from the back of the unit to the tank adapter.
4. Connect the 36" (91cm) yellow hose to the yellow (Air Purge) port on the unit and to the Air Purge fitting on the unit tank.
5. Connect the 36" (91cm) red hose to the red (Gas) port on the unit to the GAS (vapor) valve on the unit tank.
6. Open both valves on the Control panel (R-134a side).
7. Open both valves on the tank.
8. Open the service coupler on the blue low-side hose.

CAUTION!

Some tanks have slightly different valve configurations. Be sure to connect the blue hose to the liquid valve.

Set Up Instructions

R-12 Side Hookups:

1. Attach the 72" blue hose to the low side port on the back of the unit.
2. Attach the 72" red hose to the high side port on the back of the unit.
3. Attach the blue low side hose from the back of the unit to the tank (LIQUID port of the tank).
4. Connect the 36" (91cm) yellow hose to the yellow (Air Purge) port on the unit and to the Air Purge fitting on the unit tank.
5. Connect the 36" (91cm) red hose to the red (Gas) port on the unit to the GAS (vapor) valve on the unit tank.
6. Open both valves on the Control Panel (R-12 side).
7. Open both valves on both tanks.

Pulling a Vacuum

1. Attach the power cord to the back of the unit and connect to the proper power source.
2. Turn on the **MAIN POWER** switch.
3. Press **VACUUM** on the Control Panel.
4. Allow the unit to run for 5 minutes.
5. Press **STOP**.
6. Change the mode switch to the correct refrigerant type and repeat steps 3, 4, and 5.
7. Close the red high side Control panel valve.
8. Close the service coupler valve.
9. Close the LIQUID valve on the tank.
10. Disconnect the service coupler from the tank adapter and remove the adapter from the tank.
11. Connect the 36" blue hose to the blue (LIQUID) port on the unit to the LIQUID valve on the tank. Open the LIQUID valve on the tank. Repeat this step on the other refrigerant side hookup.
12. Reconnect the tank adapter to the oil drain fitting for storage.

CAUTION! Some tanks have slightly different valve configurations. Be sure to connect the VAPOR hose to the GAS (vapor) valve and connect the LIQUID hose to the LIQUID valve.

ADDING REFRIGERANT TO THE UNIT TANK

CAUTION! R-134a systems have special fittings (per SAE specification) to avoid cross-contamination with R-12 systems. Do not attempt to adapt this unit for any other refrigerant — system failure will result! Read and follow all warnings given at the beginning of this manual.

R-134a Users:

1. Connect the blue service hose directly to the adapter (use tank adapter supplied with unit) on the source tank.
2. Open the LIQUID valve on the source tank (there is only one valve on a non-refillable tank.) Disposable tanks have only one valve and most must be turned upside down to transfer liquid. If you are using a disposable tank, follow the instructions on the side of the tank to obtain a liquid supply.
3. Open the red GAS (vapor) valve on the unit tank.
4. Open the blue, low side Control panel valve.
5. Press **TARE** on the control panel to zero the tare weight.
6. Press **RECOVERY**. Monitor the display until 15 lbs. (6.8 kg) have been transferred.
7. Close the LIQUID valve on the source tank. Allow the unit to run for 5 minutes to clear the hoses.
8. Press **STOP**.
9. Close both Control panel valves.
10. Disconnect the service coupler from the tank adapter.
11. Remove the adapter from the tank.
12. Reconnect the tank adapter to the oil drain fitting for storage.
13. Turn the tank right side up, close its valve and carefully disconnect the 36" (91 cm) blue liquid hose.
14. Reconnect the 36" (91 cm) blue liquid hose to the LIQUID valve on the unit tank, then open that tank's LIQUID valve.

NOTE:

Purchase only tanks of R-134a refrigerant that have 1/2 inch (1.2cm) Acme threads. This is necessary to match the hose fittings.

ADDING REFRIGERANT TO THE UNIT TANK

R-12 Users:

1. Connect the 6" (15.2cm) yellow adapter (included) to the source tank, then connect the 96" blue service hose to the adapter.
2. Open the LIQUID valve on the source tank (there is only one valve on a non-refillable tank.) Disposable tanks have only one valve and most must be turned upside down to transfer liquid. If you are using a disposable tank, follow the instructions on the side of the tank to obtain a liquid supply.
3. Open the red GAS (vapor) valve on the unit tank.
4. Using the Control Panel valve to meter the refrigerant, open the blue, low side Control panel valve slightly.
5. Press **TARE** on the control panel to zero the tare weight.
6. Press **RECOVERY**. Monitor the display until 15 lbs. (6.8 kg) have been transferred.
7. Close the LIQUID valve on the source tank. Allow the unit to run for 5 minutes to clear the hoses.
8. Press **STOP**.
9. Close both Control panel valves.
10. Disconnect the Quick Seal End from the tank adapter.
11. Remove the adapter from the tank.
12. Close the supply valve on the source tank, and carefully disconnect the 36" (91cm) blue liquid hose from the 6" (15.2) yellow adapter, if used; then remove the 6" (15.2 cm) yellow adapter from the source tank.

WARNING: Refrigerant is present in the hoses.

13. Turn the tank right side up, close its valve and carefully disconnect the 36" (91 cm) blue liquid hose.
14. Reconnect the 36" (91cm) blue liquid hose to the LIQUID valve on the unit tank, then open that tank's LIQUID valve.

RECOVERING REFRIGERANT

For R-12 systems:

- Attach the proper adapters to the low side and high side access fittings on the vehicle. (The 10237A adapter package is included)
- Connect the R-12 96" (244 cm) red high side hose to the adapter attached to the vehicle's high side access port.
- Connect the R-12 96" (244 cm) blue low side hose to the adapter attached to the vehicle's low side access port.

For R-134a systems:

- Connect the R-134a 96" (244 cm) red high side hose with the quick coupler to the high side fitting of the A/C system, then open the service coupler valve.
- Connect the R-134a 96" (244 cm) blue low side hose with the quick coupler to the low side fitting of the A/C system, then open the service coupler valve.

Follow the procedure below using the appropriate manifold for the vehicle. Be sure the Refrigerant Selection switch is set for the refrigerant type used in the vehicle.

1. Check the Control Panel gauges — they should both register above zero. If there is no system pressure, there is no refrigerant in the system to recover.
2. Be sure the oil drain valve is closed.
3. Open both Control panel valves.
4. Be sure both tank valves are open.
5. Plug the unit into the proper voltage outlet.
6. Press **RECOVERY**. You will hear the compressor begin recovering refrigerant. Recover refrigerant until the low side Control Panel gauge reads 13 in. Hg vacuum (0.44 Bar).
7. Close both Control Panel valves.
8. Press **STOP**. The display flashes OIL.
9. Wait 5 minutes. Monitor the Control Panel gauges for a pressure rise above zero. If a rise occurs, repeat steps 5-10.
10. Be sure the oil catch bottle is empty, then *slowly* open the oil drain valve, and drain the oil into the oil catch bottle. This oil came from the A/C system during recovery and must be replaced with new oil. When all the recovered oil has completely drained, close the valve and record the amount of oil in the bottle. Dispose of used oil properly.

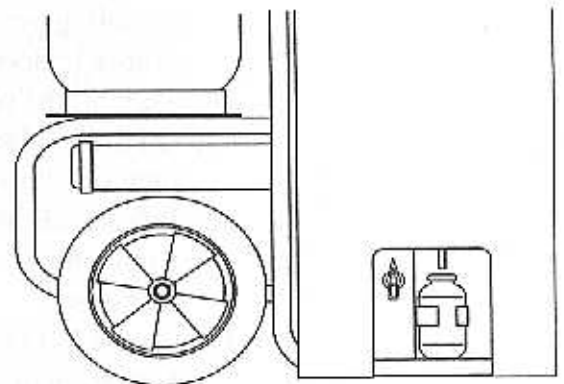
The A/C system is empty. Make any repairs at this time.

NOTE:

To monitor recovered amount, press **TARE** until display reads 00.00 before beginning recovery.

CAUTION!

Drain the oil from the separator only after each recovery. Keep the oil separator pressurized. Turn oil drain valve to correct refrigerant type.



EVACUATING THE A/C SYSTEM

1. With the high side and low side hoses connected to the A/C system, open both Control panel valves.
2. Push **VACUUM**. Pull down to a minimum of 26"Hg. vacuum. Follow the manufacturer's recommendations for evacuation time and level. (Robinair recommends a minimum of 15 minutes of evacuation.)
3. Push **STOP**.
4. Monitor the Control panel gauge for a rise in pressure. Any rise indicates a leak in the A/C system. Locate and repair the leak(s), then repeat steps 2-4 until there is no longer a rise on the gauges.

RECHARGING THE A/C SYSTEM

NOTE:
If the "CHECK REFRIGERANT" message displays, refer to "ADDING REFRIGERANT TO THE TANK" portion of this manual.

1. Connect the high side and low side hoses to the A/C system per manufacturer's recommendations for charging. Open appropriate service coupler and Control panel valve(s).
2. Be sure both tank valves are open.
3. Press **TARE** until 00.00 weight is displayed.
4. Determine the amount of charge needed from the vehicle nameplate. Press and hold the **CHARGE** button until the desired weight charge is indicated on the display. Refrigerant enters vehicle as long as button is pushed. Release the **CHARGE** button.
5. Close both Control panel valves.

WARNING: Be sure the working area around the vehicle is well ventilated.

6. Start the vehicle's engine and turn on the A/C system for maximum cooling. Let it run until the gauge pressure readings stabilize. Compare the gauge readings with the system manufacturer's specifications.

WARNING: Do not touch any moving parts in the vehicle.

7. Check the evaporator outlet temperature to be sure that the A/C system is operating properly. Refer to the system manufacturer's specifications for the proper temperature.
8. Turn off the vehicle's engine.
9. On the R-134a only, close the high side coupler valve first. Disconnect the high side hose from the A/C system.
10. Restart the vehicle, then open both valves on the Control panel. Refrigerant from both hoses will be drawn quickly into the A/C system through the low side hose.
11. On the R-134a only, close the low side coupler valve. Disconnect the low side hose from the A/C system.
12. Turn off the vehicle engine.
13. Close both Control Panel valves.

AIR PURGE

1. To begin to purge non-condensibles, check the **TEMPERATURE** display to find the temperature of the refrigerant in the unit tank.
2. Use this temperature to find the correct pressure for the refrigerant on the appropriate pressure/temperature chart.
3. Compare the pressure from the chart to the reading on the tank pressure gauge.
4. If the pressure exceeds the target pressure by more than 10 psi (0.7 Bar), press and hold the air purge button for approximately 10 seconds.
5. Check tank pressure and repeat steps as necessary.

CHECKING AND CALIBRATING THE SCALE

1. Remove the tank from the platform
2. Press **TARE** until the display reads 00.00.
3. Press **TARE** once more. The display reads **TOTAL** and $0 \pm .10$.
4. Place a known weight on the scale. The display will show the known weight $\pm .04$ LB/.02 KG.
5. If the display does not show this message, recalibrate the scale following the steps 6 through 12 below.

IMPORTANT!
You must have
a known weight
of 15KG $\pm .005$
(30LB $\pm .01$)

Calibrating the Scale:

6. Press the **UP** key until FO6 is displayed, then press **ENTER**.
7. Enter the current month and year. For example, if the unit is being calibrated in November of 1999, press **1, 1, 9, 9**. To do this, press and hold the **DIAGNOSTIC** key, then press the **UP** or **DOWN** key to change the year. Press **ENTER** to store the input. The display will flash R-12, then show ZERO.
8. With nothing on the scale, press **ENTER** again. The display will flash A-1, then 0.00.
9. Place a known weight on the R-12 scale platform, then enter that weight numerically on the keypad by pressing and holding the **DIAGNOSTIC** key, then pressing the **UP** or **DOWN** key to change pounds. Press the **UP** or **DOWN** key only once to change the weight in hundredths of a pound.
10. Press **ENTER**. This display will show R-134a and ZERO.
11. With nothing on the R-134a scale, press **ENTER**. The display will flash A-1, then 0.00.
12. Repeat Steps 8 and 9, using the R-134a scale.

REPLACING THE FILTER-DRIER

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

Typically, you can recover up to 300 pounds of refrigerant between filter changes. This procedure is the same for both R-12 and R-134a.

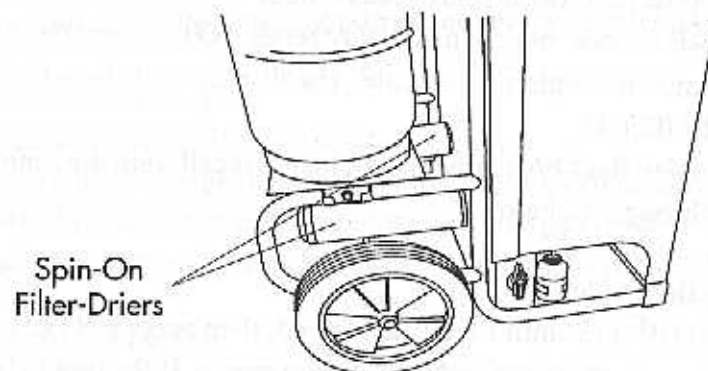
CAUTION! For best results, use filter-drier Part No. 34724. All performance tests and claims are based on using this specially-blended filter-drier. Use of any other may affect performance results.



WARNING



Steps 1-5 are critical to avoid possible hazardous release of refrigerant!



1. Make sure both tank valves and Control panel valves are open.
2. Make sure the service hoses are not connected to the A/C system.
3. Turn on the **MAIN POWER** switch.
4. Press **RECOVERY** to pull all refrigerant from the hoses and internal components.
5. Monitor Control panel gauges until pressure reads below zero.
6. Press **STOP**.
7. Confirm that the Refrigerant Selector Switch is in the correct position for the filter to be charged.
8. Unscrew the filter-drier. Dispose of the old filter according to all local and state regulations. Remove the used O-rings.
9. Remove the cap from the end of the new filter and install the new O-rings that are included. Install new filter on unit. Tighten to 120 in. lbs.
10. Press **VACUUM**. After 5 minutes, press **STOP**.
11. Turn **MAIN POWER** off.

NOTE: Following filter-drier replacement, the filter capacity must be reset. See next section.

CHECKING AND RESETTING FILTER CAPACITY

This procedure is the same for both R-134a and R-12 refrigerants.

1. Turn **MAIN POWER** to ON.
2. Press **DIAGNOSTIC**. Display shows F00.
3. Use the **UP** or **DOWN** arrow keys until display shows F01.
4. Press **ENTER**. Display shows current refrigerant mode and the total accumulated weight that has been collected in the filter.
5. To reset accumulated filter weight, press the **CHARGE** and **DIAGNOSTIC** keys at the same time.
6. Check the accumulated weight collected in the other filter at any time by changing the refrigerant selector switch.

CHECKING FOR LEAKS

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

1. Disconnect the power cord from the outlet.
2. Remove the shroud by removing the threaded screws at the back of the unit.
3. Use a leak detector to probe all fitting connections for refrigerant leaks. Tighten fittings if a leak is indicated.
4. Reassemble the shroud to the unit, replacing all screws.

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

CHOOSING THE TEMPERATURE SCALE

The temperature scale may be changed from Fahrenheit or Centigrade by the following procedure:

1. Disconnect the power cord from the outlet.
2. Remove the shroud by removing the threaded screws at the back of the unit.
3. A small selector switch is located on the back of the thermometer. Change the position of the switch to change the temperature scale to either Fahrenheit or Centigrade.
4. Reassemble the shroud to the unit, replacing all screws.

RECOVERY AND VACUUM OPERATION

Compressor does not start or stops prematurely

Problem: No power

Solution: Check for power at plug or outlet.

Problem: **FULL** is displayed

Solution: Move refrigerant from unit tank to approved refrigerant storage tank. See RECHARGING A/C SYSTEM.

Problem: HI-P is displayed

Solution: Be sure tank valves are open and hoses are properly connected to the unit tank.

Problem: **SCAL** is displayed

Solution: The scale is damaged, disconnected, out of calibration or overloaded.

Runs but gauges won't indicate 13 in Hg vacuum (0.44 Bar)

Problem: Oil drain valve open

Solution: Close the oil drain valve

Problem: Leak in vehicle system

Solution: Locate and repair all system leaks

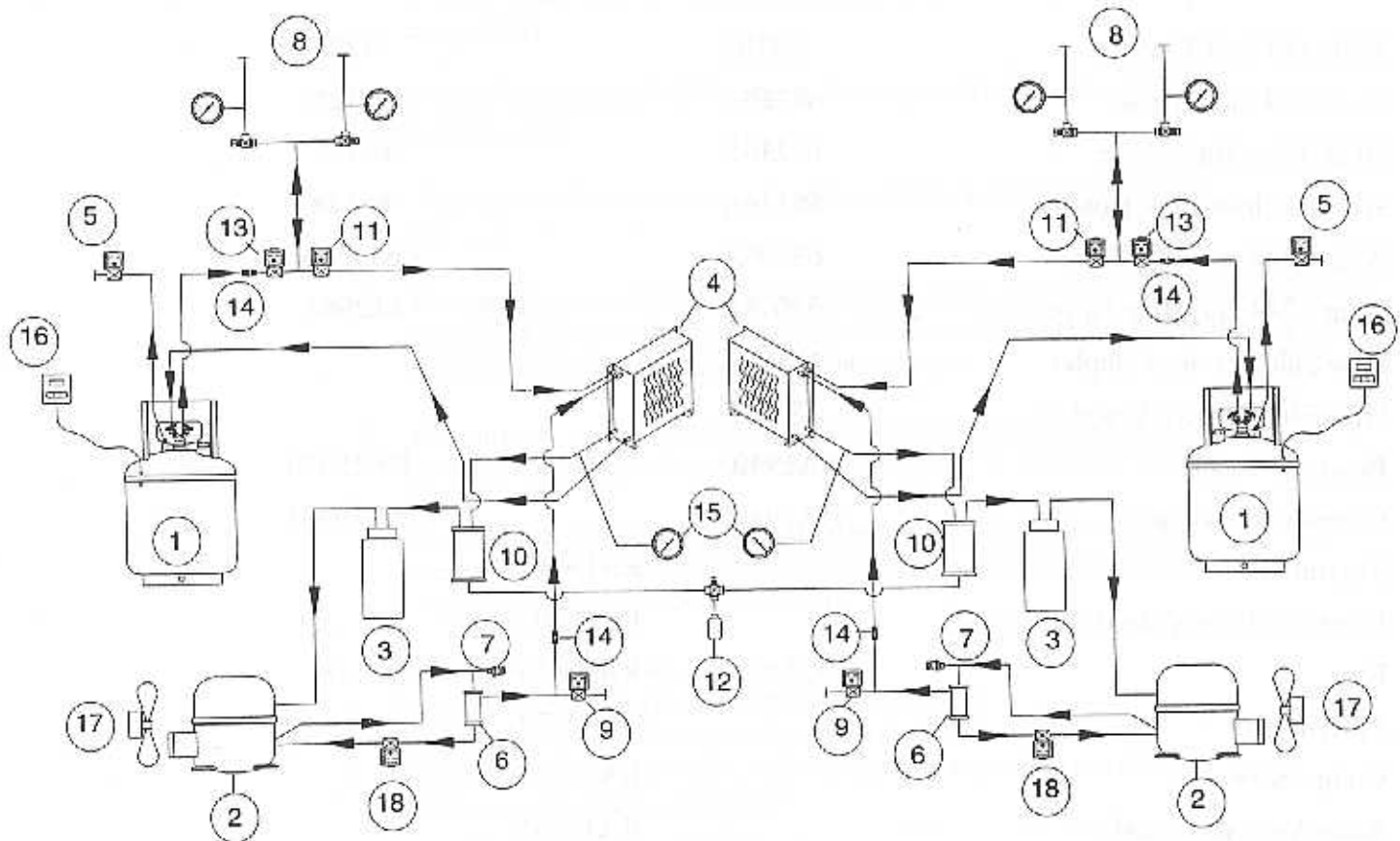
Problem: Control panel valves not open

Solution: Open valves

AC990 Flow Diagram

R-134a Side

R-12 Side



INST 0564

1. Unit Tank
2. Compressor
3. Spin-On Filter-Drier
4. Evaporator/Condensor Coil
5. Air Purge Solenoid
6. Compressor Oil Separator

7. Pressure Switch
8. Control Panel Valves
9. Vacuum Solenoid
10. System Oil Separator
11. Recovery Solenoid
12. Oil Drain Valve

13. Charge Solenoid
14. Check Valve
15. Tank Pressure Gauge
16. Thermometer
17. Fan
18. Oil Return Solenoid

Replacement Parts List

The following is a list of replacement parts and accessories you may need to service or maintain your unit. We suggest you keep several filter-driers on hand so you will always be able to change them and complete any recycling job that is in progress.

Component	R-134a	Common Number	R-12
30 lb. (13 kg.) Tank	17105		34705
36 in. Red Tank Hose	68336A		68126
36 in. Blue Tank Hose	68236A		68127
36 in. Yellow Tank Hoses	68136A		68128
96 in. (244 cm) Red Hose	63096A		68396A
96 in. (244 cm) Blue Hose	62096A		68296A
Low Side Service Coupler	18190A		
High Side Service Coupler	18191A		
Pressure Gauge	RA19402		RA19400
Compound Gauge	RA19403		RA19401
Thermometer		RA19461	
Pressure Gauge (Control Panel)		RA19393	
Fan		RA17416	
Filter-Drier		34724	
Compressor		RA19458	
Scale Assembly (dual)		RA19445	
Replacement Tank Strap		RA19500	
Check Valve, 1/8NPT x 1/8NPT		RA19282	
O-Ring Check Valve, 1/8NPT x 1/4NPT		RA19504	
Circuit Board		RA19565	
Solenoid, 2-Way		RA19464	
High Pressure Switch		RA19104	

Limited Warranty

This product is warranted to be free from defects in workmanship, materials, and components for a period of two years from date of purchase. All parts and labor required to repair defective products covered under the warranty will be at no charge. The following restrictions apply:

1. The limited warranty applies to the original purchaser only.
2. The warranty applies to the product in normal usage situations only, as described in the Operating Manual. The product must also be serviced and maintained as specified.
3. If the product fails, it will be repaired or replaced at the option of the manufacturer.
4. Warranty service claims are subject to factory inspection for product defect(s).
5. The manufacturer shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, and un-authorized shipping and/or labor charges.
6. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.
7. Use of this equipment with unauthorized refrigerants will void the warranty. Authorized refrigerants are listed on the equipment or are available through our service centers.

This Limited Warranty does not apply if:

- The product, or product part, is broken by accident.
- The product is misused, tampered with, or modified.
- The product is used for recovering or recycling any substance other than the specified refrigerant type.

Mac Tools, Inc. warrants any of its manufactured products for the expected life of the product against deficiency in material or workmanship.

This warranty is subject to the disclaimers and limitations on liability described below. This LIMITED WARRANTY gives you specific legal rights—you may also have other rights which vary by state. Some states do not allow the limitation or exclusion of incidental or consequential damages, or the duration of implied warranties.

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CONVERSION TABLE

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

Call toll-free



Technical Support Line 888-MAC-TOOL

in the continental U.S. or Canada.

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

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

• NATIONWIDE NETWORK OF AUTHORIZED SERVICE CENTERS

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

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

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

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

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

MAC TOOLS®

RMC Series
Refrigerant Management Center