YELLOW JACKET®

Automatic Refrigerant Recovery/Recycling/Recharge Systems

For Automotive Applications

Models: 39810/39811 (for use with R-12)

Models: 39820/39821/39822/39823 (for use with R-134a)

YELLOW JACKET®

HVAC/R & Automotive Service Tools

WARNING!

Inhalation of high concentration of refrigerant vapors is harmful and may cause heart irregularities, unconsciousness, or death. Deliberate inhalation of refrigerants is extremely dangerous. Death can occur without warning. Vapors reduce oxygen available for breathing and are heavier than air. Decomposition products are hazardous. Liquid contact can cause frostbite. All refrigerant containers, equipment, and hoses are under pressure.

WARNING!

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 service equipment certified to meet the requirements J1996 or SAE J2210. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.

CAUTION!

Do not pressure test or leak test service equipment and/or vehicle air conditioning systems with compressed air. Some mixtures of air and oil have been shown to be combustible at elevated pressures. These mixtures, if ignited, may cause injury or property damage. Additional health and safety information may be obtained from refrigerant manufacturers.

CAUTION!

Before operating this unit, please read this manual thoroughly. You must understand the procedures outlined in this manual. Failure to follow these procedures could void all warranties.

CAUTION!

Before handling refrigerants, read the material safety data sheet (MSDS) from the refrigerant manufacturer.

For operation only by certified personnel.

800 Series Refrigerant Management Systems

Specifications

Refrigerants: Model 39810/39811: R-12
Model 39820/39821/39822/39823: R-134a

Compressor: 1/2 HP Hermetic
Power Source: 120V AC 60Hz
Amperage: RLA: 9.3
FLA: 11.0
LRA: 30.0

Size: 810/811/820/821/822/823/Units
Height: 53 in
Width: 22 in
Depth: 27 in

Table of Contents

General Safety Instructions

Know your equipment. Read and understand the operation manual and labels affixed to the unit. Learn the application and limitations as well as the specific potential hazards of your equipment.

ALWAYS WEAR SAFETY GOGGLES

Ground all equipment. This unit is equipped with an approved three prong grounding-type plug. The green ground wire should never be connected to a live terminal.

Use the Proper Extension Cords. Use the following guide for choosing the proper extension cord:

Wire	Maximum Length
18 Ga.	10 feet
16 Ga.	25 feet
14 Ga.	50 feet
12 Ga.	100 feet

Avoid Dangerous Environments. Do not use this unit in damp locations or expose it to rain. This equipment should be used in a location with mechanical ventilation that provides at least four air changes per hour. This equipment should not be used near open containers of flammable liquids.

Disconnect Unit from Power Supply Before Servicing. An electrical shock hazard is present when the unit is disassembled or the cowling is removed.

Repair Damaged Parts. Do not operate the unit with a defective part. Repair unit to proper operating conditions.

Use Recommended Accessories. Follow the instructions that accompany all accessories. Improper use of accessories may damage equipment or create a hazard.

Use Caution When Connecting or Disconnecting. Improper usage may result in refrigerant burns (frostbite). If a major refrigerant leak occurs, proceed immediately to a well ventilated area. The hoses included with this unit are supplied with valves that, when closed, prevent refrigerant vapors from venting when disconnecting from the vehicle.

Use the Model 800 Series with the Specified Refrigerants Only. See “Specifications” on page 2 for a list of compatible refrigerants.

Operate the Unit Within the Design Environment. The Model 800 series was designed to operate in a temperature range from 40°F to 120°F. Do not operate the unit in a wet location.

WARNING! Refrigerant, in liquid and vapor form, is a potentially hazardous material. Please consult the manufacturer’s Material Safety Data Sheet (MSDS) for additional information and adhere to the safety guidelines in the next column:

- Avoid breathing high concentrations of vapors.
- Use with sufficient ventilation to keep operator exposure below recommended limits, especially in enclosed and low-lying areas.
- Avoid contact of liquid refrigerant with the eyes and prolonged skin exposure.
- Wear goggles and protective gloves.
- Do not attempt to operate this unit above 125°F ambient temperature.
- Do not allow refrigerants to contact open flame. Refrigerant decomposition in a flame results in phosgene gas. Breathing phosgene gas can be fatal.

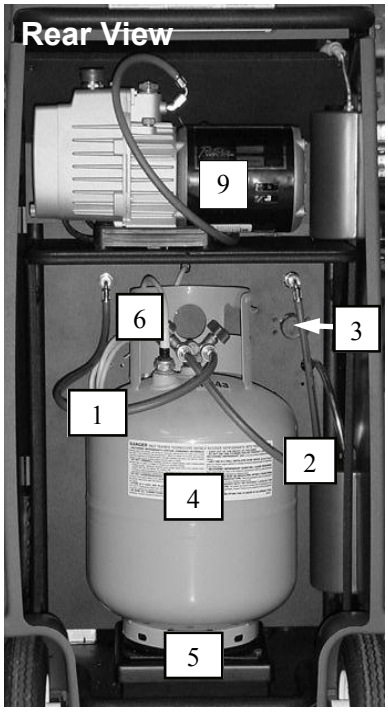
FIRST AID: If high concentrations of refrigerant are inhaled, immediately remove the victim to fresh air. Call a physician or emergency medical technician. Keep calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs.

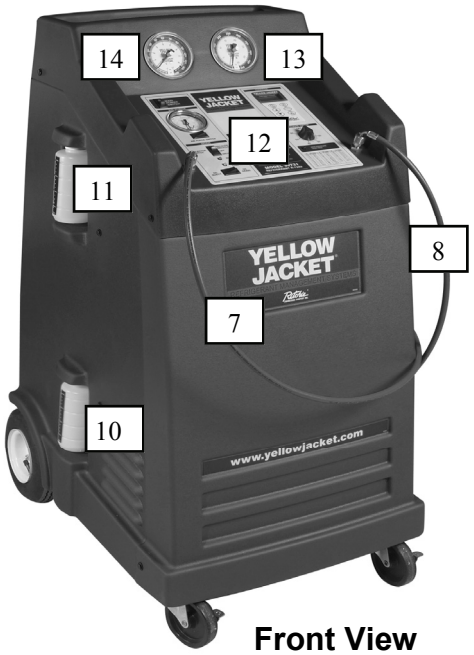
- **EYE:** In case of liquid contact, immediately flush eyes with plenty of water. Call a physician.
- **SKIN:** Flush with water. Treat for frostbite, if necessary, by gently warming the affected area.

CAUTION! All refrigerant hoses, recovery tanks, refrigerant lines, the Model 800, and other vessels containing refrigerants should be handled as if under high pressure.

Component Location and Description

1. Tank Liquid Hose – 3’ red hose that connects from the tank liquid connection on the unit to the liquid connection on the recovery tank.
2. Tank Vapor Hose – 3’ blue hose that connects from the tank vapor connection on the unit to the vapor connection on the recovery tank.
3. Moisture Indicator – Indicates the level of moisture in the system and when filter maintenance is needed.
4. Storage Tank – Stores recycled refrigerant.
5. Scale – Used to measure the amount of refrigerant being recovered and charged.
6. 80% Tank Overfill Sensor Cord - Shuts off unit if tank reaches 80% of capacity
7. Auto Low Side Hose – 8’ blue hose that connects to the automobile’s low side.
8. Auto High Side Hose – 10’ red hose that connects to the automobile’s high side.
9. Vacuum Pump (optional) – Used to dehydrate the A/C System.
10. Oil Drain Bottle – Collects and measures contaminated oil removed from the automobile’s A/C system.
11. Oil Inject Bottle – Contains new oil
12. Control Panel – Contains the scale display and switches that control each of the unit’s functions (see page 6).
13. High Pressure Gauge – Shows the high side pressure of the automobile’s A/C system.
14. Low Pressure Gauge – Shows the low side pressure of the automobile’s A/C system.
15. Tank Refill Adapter (not shown) – Connects to the virgin cylinder to refill storage tank (P/N 19153).





Front View

Control Panel

Control Panel Features

1. Main Power Switch - Turns unit on and off.
2. Air Purge Gauge - Shows tank pressure.
3. Air Purge Switch - Used to purge non-condensable gasses from tank.
4. Selector Switch - Used to change functions.
5. Status LED’s - Shows recover/recycle status.
6. Oil Drain/Oil Inject Switch - Used to drain and inject oil.
7. Scale LCD Display - Shows weight of refrigerant being recovered or charged.
8. Scale Control Touch Pad - Used to control scale functions (tare, charging and scale power).
9. Vacuum Timer - Used to set vacuum time.
10. High Pressure/Tank Full LED - LED illuminates when tank is full or if the unit exceeds the high pressure limit switch.
11. Pressure Temperature Chart - Used with the magnetic thermometer to determine if non-condensable are present in tank.

Set Up Instructions

To ensure quick, successful integration of the equipment into your shop, please follow these set-up procedures before the first use of the unit.

1. Check the oil drain bottle to ensure it is empty.
2. Check and open the valves on the storage tank. If the valve will not turn counter-clockwise and seems to be completely open, verify it is actually open by turning the valve clockwise one quarter turn.
3. Turn on the “Main Power Switch” at the upper left hand corner of the control panel.
4. Turn scale on.
5. Press the “Tare “ key on the touch pad.
6. Connect tank of virgin refrigerant to the (blue) low side hose using the provided tank refill adapter. Remember to open the tank valve on the virgin tank. Turn the virgin tank upside down for the refill procedure.
7. Place selector switch in the “Recovery/Recycle” position.
8. Fill the storage tank on the unit with at least 10 lb. of refrigerant. This will insure a fast and proper charge.
9. Disconnect the tank of virgin refrigerant and press the “Tare “ key on the touch pad.
10. Fill vacuum pump with oil to the proper level (Models 39810/39820/39822/39823 only).

Recover / Recycle

The RECOVER / RECYCLE function should be used to fully recover all refrigerant from an air conditioning system. For instance, if the system needs to be opened to atmosphere to replace a part, all refrigerant must be removed before opening the system.

Recover / Recycle Operational Steps

1. Connect the high and low side auto service hoses to the respective high and low side service ports on the automobile A/C system. Open the service hose valves.

NOTE: If desired, the gauges can now be used to aid investigation of an A/C system problem. Ensure the automobile A/C system is turned off prior to running the unit.

2. Verify the automobile air conditioning system is off.
3. Turn on “Main Power Switch.”
4. Turn scale on—press the “TARE” key on the touch pad.
5. Place selector switch to the RECOVER / RECYCLE position.

During the recovery operation, refrigerant is removed from both the high and low side of the automobile air conditioning system. The LCD will display the amount of refrigerant being recovered.

6. When the unit achieves the proper vacuum level the RECOVERY COMPLETE LED will illuminate.
7. Monitor the unit for five minutes after the RECOVERY COMPLETE LED illuminates to insure that all of the refrigerant has been removed.
8. If the pressure rises above 0 psi, repeat steps 5-8.

Note: The vacuum cycle will not run if the system pressure is above 0 psi.

9. Press the OIL DRAIN switch for 10 seconds to drain oil recovered during the RECOVER / RECYCLE process.
10. Observe the amount of oil removed from the auto A/C system.
11. After service has been performed make sure to inject the proper amount and type of oil back into the system (see oil injection procedure).

Vacuum

The vacuum function is designed to remove moisture from the automobile A/C system by pulling a deep vacuum. This mode is most often used after completing a repair which required opening the A/C system to the atmosphere. Moisture in an A/C system can cause erratic operation and must be removed before recharging the system with refrigerant.

Vacuum Operation:

Connect the high and low side auto service hoses to the respective high and low side service ports on the automobile A/C system. Open the service hose valves.

NOTE: If desired, the gauges can now be used to aid investigation of an A/C system problem. Ensure the automobile A/C system is turned off prior to running the unit.

3. Verify the automobile air conditioning system is off.
4. Turn on “Main Power Switch.”
5. Place the selector switch in the VACUUM position.
6. Rotate the VACUUM TIMER to desired vacuum time.
7. When the VACUUM cycle is complete the timer knob will rotate to the off position.
8. Inject oil at this time (see oil injection procedure).

NOTE: Always evacuate the A/C system for at least 15 minutes to insure that you remove as much moisture and contamination as possible.

Oil Injection

This unit is equipped with a vacuum assisted oil injector. The automobile A/C system **must** be in a vacuum to inject oil into the A/C system. It is important to inject the proper amount and type of oil into the automobile's A/C system. Refer to the OEM specifications for oil type and amount. When replenishing the oil in the automobile's A/C system be sure to only inject the amount of oil that was removed from the system during the recover/recycle process.

Oil Injection Steps:

1. Ensure that the automobile A/C system is in a vacuum.
2. Connect Low side (blue) hose to automobile.
3. Pour a few ounces more than the proper amount and type of oil into the oil injection bottle.
4. Connect oil injection bottle to the oil injection assembly.
5. Press and hold the oil injection button
6. Release the button when the proper amount of oil has been injected.

Charging

The "Charge Only" function is designed to add a precise amount of refrigerant to the automobile's A/C system .

You should always make sure that you have at least 8 lb of refrigerant in the storage tank. Here is how to check the amount of refrigerant you have in the storage tank:

1. Turn on the "Main Power Switch".
2. Turn the scale on.
3. Remove the tank from the scale.
4. Press the TARE key on the scale touch pad.
5. Place the tank on the scale.
6. The scale LCD should show the gross weight of the tank and the refrigerant.

Subtract 26 lbs. (tank weight) from the gross weight this will give you the amount of refrigerant in the tank.

Charging Process

1. Connect the high and low side auto service hoses to the respective high and low side service ports on the automobile A/C system. Open the service hose valves.

NOTE: If desired, the gauges of the unit can now be used to aid investigation of an A/C system problem. Ensure the automobile A/C system is turned off prior to running the unit.

2. Ensure that the automobile A/C system is in a vacuum.
3. Press the CHARGE key on the scale touch pad.
4. Enter the charge amount using the UP and DOWN arrows on the scale touch pad.
4. Press the CHARGE key to set the charge amount and to begin the charging process.

NOTE: Once the charge process begins you can press the CHARGE key again to begin a HOLD function. Pressing the CHARGE key again will restart the charging process again.

In the event that the automobile's A/C system does not accept the full charge it may be necessary to start the automobile and use the A/C compressor to pull in the remainder of the charge. Once the desired charge amount is met the flow of refrigerant will stop automatically.

Oil Maintenance

The oil should be checked for contamination and proper oil level at least every three months. The proper oil charge is 7.6 ounces or 225 cc's of Arctic 22 Castrol SW 22 POE oil.

Instructions for Oil Maintenance

Oil Level Check

1. Place unit on a level surface and run a recovery cycle with the unit.
2. Unplug unit.
3. Remove the front cover of unit.
4. Remove oil port cap on compressor.

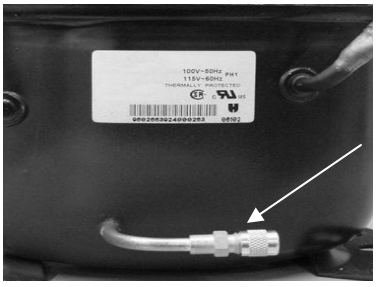
Note: High pressure may be present, remove cap slowly.

5. Oil should drip out of oil drain port.
6. If oil runs out of port rapidly, allow to drain.
7. Replace oil port cap and cover.
8. Dispose of oil properly.

Oil Replacement Procedure

1. Follow steps 1 thru 4 in the oil level check.
2. Tilt unit at 45° angle towards oil drain port until all oil has been drained.
3. Refill with proper amount and type of oil listed in the oil check section.
4. Replace oil port cap and cover.
5. Dispose of oil properly.

Note: Failure to follow the oil maintenance instructions can cause the compressor to overfill with oil and severely damage the compressor.



Oil Drain Port

Maintenance

Following the recommended maintenance schedule will insure proper operation and many years of trouble free operation.

Filter Drier – The filter drier should be replaced after ten hours of use or after 100 pounds of refrigerant processed. Follow these simple steps to replace the filter drier:

1. Recover the refrigerant from the system.
2. Remove the front cover.
3. Slowly remove and replace the “O”-ring and filter drier .
4. Check for leaks around the filter drier.
5. Replace the front cover.

Air Purge Operation

The air purge feature allows you to purge off non-condensable gasses from the storage tank. This is done with a push of a button making it very easy to use. Follow these simple instructions to perform the air purge operation:

1. Using the magnetic thermometer determine the tank temperature.
2. Match temperature reading with the pressure temperature chart provided on the front of the machine.
3. Observe the air purge indicator gauge.
4. If the reading on the on the air purge indicator is higher than the number on the pressure temperature chart press and release the air purge switch until the pressure reading matches the pressure temperature chart.

Note: The best time to perform the air purge operation is at the beginning of the day. This will allow the tank to return to room temperature and give you the most accurate readings.

Example– (R-134a) The tank temperature is 75°F and the air purge indicator is reading 140 psi. You should purge the storage tank until the air purge indicator reads 79 psi.

NOTE: When reading the pressure temperature chart always round the number up to prevent releasing any refrigerant into the atmosphere.

Troubleshooting

Problem	Possible Cause	Possible Solution	
Unit will not start	Electrical outlet not energized	Check outlet for power	
	Circuit breaker tripped	Reset circuit breaker if extension cord is present make sure it is the proper gauge	
	Main power switch not on	Turn on main power switch	
Unit will not recover refrigerant	Valves not open on automobile	Open valves on automobile	
	Vapor port on storage tank not open	Open vapor port on storage tank	
	Compressor not operating	Call technical service	
Unit will not charge refrigerant	Valve on connection to automobile not open	Open valve to automobile	
	Liquid valve on storage tank not open	Open liquid valve on storage tank	
	Pressures equalized in automobile	Start automobile	
	Storage tank empty	Refill storage tank	
Unit will not achieve a vacuum	Valve closed on storage tank	Open valve on storage tank	
	Leak	Check all hose and fitting connections	
	Vacuum pump power switch is turned off	Turn on power switch to vacuum pump	* If unit has optional vacuum pump
	Isolation valve closed on vacuum pump	Open isolation valve on vacuum pump	* If unit has optional vacuum pump
	Contaminated oil in compressor or vacuum pump	Change oil	

For any other issues call for technical support at 1-800-769-8370 or 952-943-1333.

CERTIFICATE OF LIMITED WARRANTY

1. LIMITED ONE YEAR WARRANTY PARTS AND LABOR

Each YELLOW JACKET Model is warranted by YELLOW JACKET to be free from defects in materials and workmanship for fifteen months from the date of manufacture or twelve months from the date of purchase. If found defective upon inspection by YELLOW JACKET , the unit will be repaired or replaced by YELLOW JACKET and/or a replacement part may be shipped free of charge. YELLOW JACKET will return your equipment prepaid freight, provided it is delivered prepaid to YELLOW JACKET.

2. GENERAL WARRANTY CONDITIONS AND LIMITATIONS

This warranty does not cover hoses, fittings and attachments or any field labor for inspection, removal, transportation, and any other labor costs due to a unit defect. Replacement or repair under this warranty shall not extend beyond the warranty time limits stated in Sections I and II. This warranty is extended to protect the user from equipment defects only and YELLOW JACKET assumes no liability under the terms of this warranty for part failures due to misapplication, improper operation, improper maintenance, equipment abuse, excessive contamination levels in refrigeration circuit, improper voltage, or acts of God. YELLOW JACKET neither assumes nor authorizes any person to assume for it any obligation or warranty other than those stated herein, any suggestion to the contrary notwithstanding. This warranty covers the continental U.S. Outside the continental U.S., other limitations to shipping and handling may apply.

4. LIMITATIONS OF WARRANTY

It is expressly understood that this warranty is made in lieu of any other representations, conditions, and warranties, expressed or implied, including but not limited to those of merchantability and fitness for a particular purpose whether arising from statue, common law, custom or otherwise, and that the procedure set forth in this limited warranty shall be the exclusive remedy available to any person notwithstanding the preceding sentence.

5. CONSEQUENTIAL DAMAGES

YELLOW JACKET shall not in any event be liable for incidental or consequential damages arising out of the ownership, use or operation of this equipment, whether a claim for such damages is based upon warranty, contract, tort or otherwise. Some states do not allow exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and may also have other rights which vary from state to state.

KEEP THIS WARRANTY FOR YOUR RECORDS

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