



Operations and Maintenance Manual

FOR MODELS

1234XL	R-12/R134a
1090XL	R134a
1095XL	R-12
1070XL	R134a Recover/Recycle Units
1075XL	R-12 Recover/Recycle Units

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White Industries

Limited Product Warranty

Seller warrants only to the original purchaser (user) that under normal use, care and service, this unit shall be free from defects in material and workmanship for one year from the date of original invoice provided:

- 1) warranty card and proof of purchase is submitted to the factory within 30 days from date of sale and
- 2) freight charges are prepaid to the authorized service center*. Gauge calibration, filter elements, light bulbs, hoses, O-rings, gaskets, depressors, tank stems, lost refrigerant or fluid (new or recovered), and all other attachments, supplies and consumables (except as otherwise provided herein) are not warranted.

This Warranty does not cover (and separate charges for parts, labor and related expenses shall apply to) any damage to, malfunctioning, inoperability or improper operation of this unit caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of this unit by other than Seller's authorized representatives; (C) installation, repair or maintenance (other than specified operator maintenance) of this unit or related equipment, attachments, peripherals or optional features by other than Seller's authorized representatives; (D) processing of, or contamination with, materials or chemicals other than those recommended for processing or recycling with this equipment; (E) improper or negligent use, application, operation, care, contamination, cleaning, storage or handling; (F) fire, water, wind, lightning or other natural causes; (G) adverse environmental conditions, including, without limitation, excessive heat, moisture, corrosive elements, dust or other air contaminants; radio frequency interference; electric power failure; power line voltages beyond those specified for this unit; unusual physical, electrical or electro-magnetic stress; and/or any other condition outside of Seller's environmental specifications; (H) use of this unit in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (I) failure to comply with any applicable federal, state or local regulation, requirement or specification governing emission analyzers and related supplies or consumables (including, without limitation, filters, printer paper, printer ribbons and calibration gases).

NO OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY, AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY EXCLUDED.

Seller's obligations under this warranty are limited solely to the repair or, at Seller's option, replacement of or refund of the original purchase price for, Equipment or parts which to Seller's satisfaction are determined to be defective and which are necessary, in Seller's judgment, to return this unit to good operating condition.

Repairs or replacements qualifying under this Warranty will be performed or made by a factory authorized service center on regular business days during Seller's normal working hours within a reasonable time following Buyer's request and provided: 1) the warranty card and proof of purchase is on file with the manufacturer, 2) if proof of purchase is not on file with the manufacturer, the original purchaser (user) must provide proof of purchase to a factory authorized service center before service is rendered, and 3) freight is pre-paid one way. All requests for warranty service must be made during the stated warranty period.

*** Call 1-800-225-5786 for factory authorized service information.**

Return Goods Authorization (RGA): If the *manufacturer requests* that a product be shipped to its facility, an RGA (Return Goods Authorization) number must be issued prior to shipment, and transportation charges must be prepaid to the factory.

White Industries® Models

There are a variety of White Industries® models. Each model has the ability to recycle and recover or charge separate automotive refrigerants, however, the basic operation is the same for all White Industries® units. This manual is designed to provide operation and maintenance information for the following White Industries® models:

Note: Only the listed refrigerants and refrigerant oils are to be recycled with these models or the WARRANTY IS VOIDED.

A/C Unit	Refrigerant	Refrigerant Oil
1234XL serial B	R-12	Mineral oil
	R-134a	PAG, ESTER or POE
1090XL serial B	R-134a	PAG, ESTER or POE
1095XL serial B	R-12	Mineral oil
1070XL serial B	R-134a	PAG, ESTER or POE
1075XL serial B	R-12	Mineral oil

Set-Up

Introduction

Thank you for selecting a White Industries® air conditioning service equipment. White Industries® is a leader in providing a full range of high quality air conditioning service equipment allowing you to choose the system that meets the needs of your operation.

Each White Industries® system is manufactured to the highest quality standards. This means that your White Industries® unit delivers the very best reliability in the industry.

This manual is designed to help you better understand the operation of your White Industries® air conditioning service equipment. Please read it thoroughly before you operate your White Industries® unit.

Unit Set-Up

There are a few steps you will need to take to set-up your system. These steps are described in detail in the **Set-Up Instructions** sheet that is shipped with every unit. You will need to:

1. Fill out your Warranty registration card.
 - If you have not done so yet, please fill out your postage paid warranty registration card and drop it in the mail. This will enable White Industries® to provide quick, helpful customer support if you need it. In addition, your new unit will become registered in our database so that we can keep you informed of industry news and service equipment.
2. Attach the hose hanger.
 - Using a medium phillips screwdriver, screw one of the 1" 1/4-20 bolts through the top hole of the hose hanger and into the upper tapped hole in the side of the unit. Repeat for lower hole in hose hanger.
 - The hose hanger should be attached with the hook pointing toward the unit.
 - If setting up a 1234XL R-12/R-134a unit be sure to attach a hose hanger to both sides of unit.
3. Attach the instruction cards.
 - Attach the included operating instructions to the unit by slipping the metal ring over the hose hanger.
4. Route the service hoses through the hole in the side of the unit.

R-134a UNITS

- Remove the quick couplings from the service hoses.
- Route service hoses through the hole.
- Reattach the quick couplings to their respective service hoses.

R-12 UNITS

- Route service hoses through the hole.
5. Install the oil purge discharge cup.
 - Install the oil discharge cup on the bracket located on the upper inside of the front tank compartment. The cup may have to be squeezed slightly for insertion onto the bracket.
 6. Install the recovery tank.

R-12 RECOVER, RECYCLE, & RECHARGE and DUAL UNITS

- Open the tank vapor valve to release the dry air charge.
- Place tank in front compartment and connect tank full sensor cord to the tank receptacle.
- Connect the blue service hose, not the tank hose, to vapor port of tank for tank evacuation. Open the vapor port tank valve. Close the valve on the liquid port of the tank.
- Evacuate tank for at least 30 minutes.
- Close vapor valve of tank and remove service hose. Connect the blue vapor hose to the tank vapor valve and connect the red liquid hose to the tank liquid valve.

R-134a RECOVER, RECYCLE, & RECHARGE and DUAL UNITS

- Open the tank vapor valve to release the dry air charge.
- Place tank in front compartment and connect tank full sensor cord to the tank receptacle.
- Connect the tank adapter to the vapor port of the tank. Attach the low service quick coupling to the tank adapter.
- Open valves on the vapor port and service hose coupling, close the valve on the liquid port of tank.
- Evacuate tank for at least 30 minutes.
- Close vapor valve of tank and quick coupling, and remove service hose quick coupling and tank adapter. Connect the blue vapor hose to the tank vapor valve and connect the red liquid hose to the tank liquid valve.

R-12 and R-134a RECOVER & RECYCLE ONLY UNITS

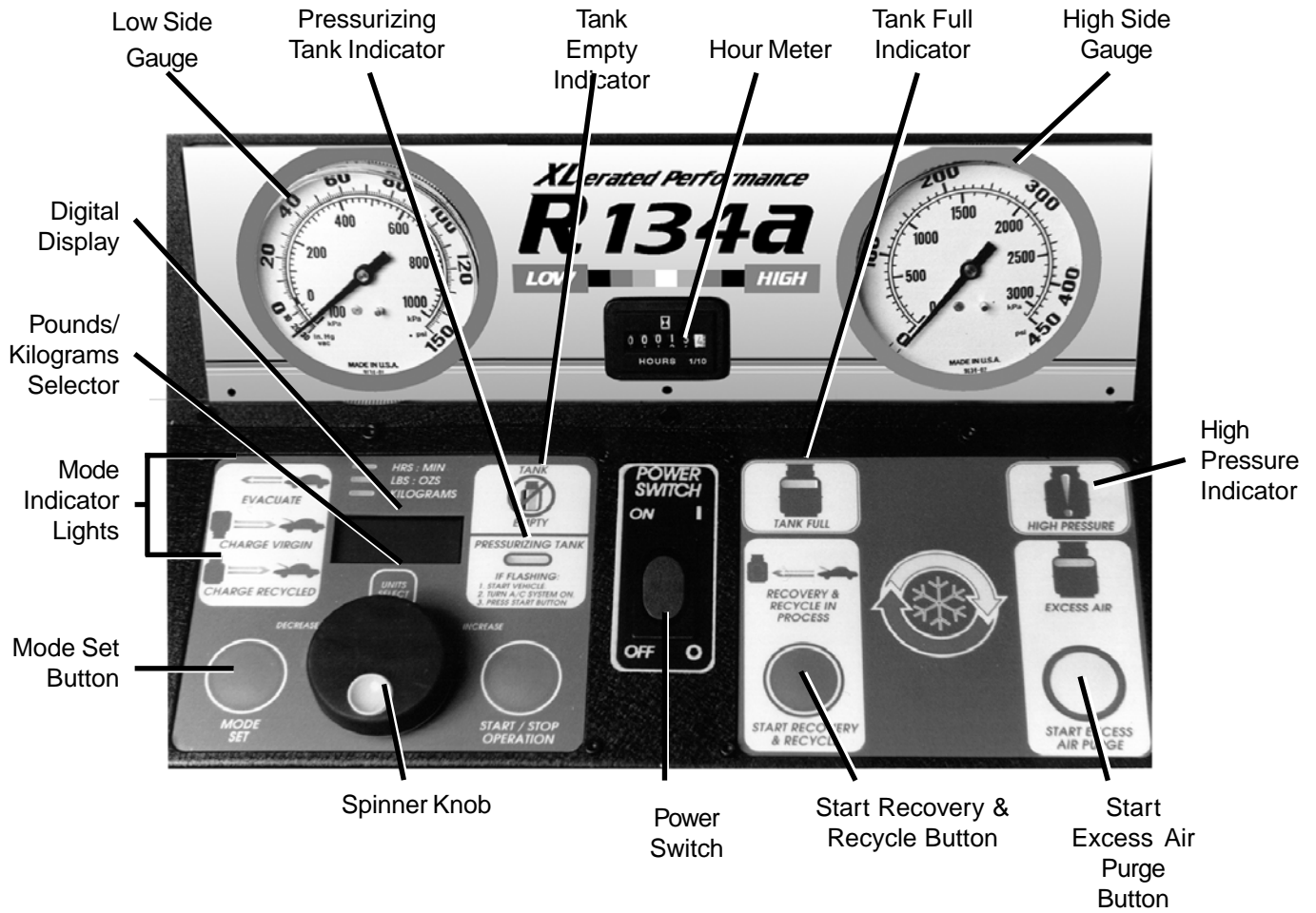
- Open the tank vapor valve to release the dry air charge.
 - Place tank in tank compartment.
 - Connect the tank full sensor cord to the receptacle on the tank.
 - Connect a vacuum pump to the vapor port of the tank and open the vapor valve.
 - Evacuate tank for at least 30 minutes.
 - Close vapor valve of tank and remove service hose and tank adapter (if applicable). Connect the blue vapor hose to the tank vapor valve and connect the red liquid hose to the tank liquid valve.
7. Install the virgin refrigerant tank.

(For refrigerant charging units only — Virgin tanks not included with unit)

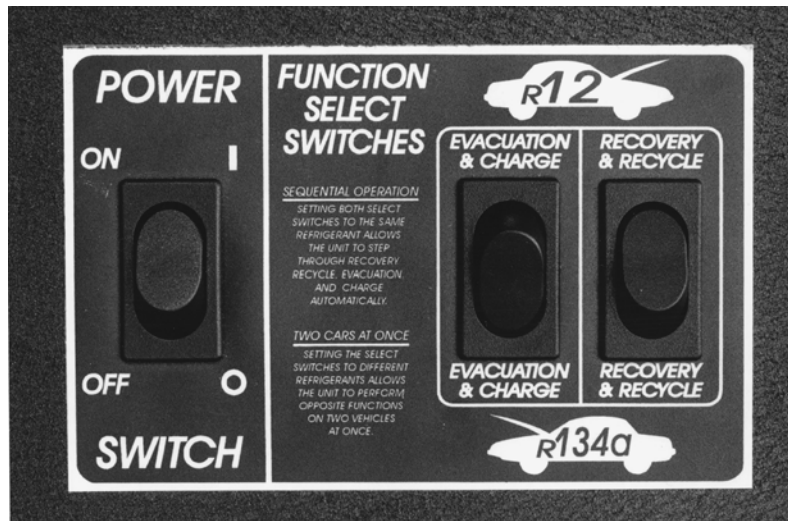
 - Place appropriate R-12, R-134a or both virgin refrigerant tank(s) in rear tank compartment and attach yellow hose. Tank must be placed upside down (handles pointing down) with the tank valve extending through the cutout on the shelf.
 - Wrap the heater blanket around the lower half of the tank (portion nearest the tank shelf). Pull the straps of the blanket through the O-rings and secure tightly.

If you have any questions, please do not hesitate to contact your local sales representative or one of our many authorized service centers.

The 1090XL Panel



The 1234XL Selector Switch Panel



1090XL



1234XL



Safety Precautions

DANGER: Risk of serious injury or death if the TSD (Tank Full Shutdown Device) tank is connected to any equipment that is not designed for use with TSD tanks. Tank overfill and rupture is possible.

CAUTION: Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove R-12 from the A/C system, use service equipment certified to meet requirements of SAE J1991 (1991) (R-12 Recycling Equipment). To remove HFC-134a from the A/C system, use service equipment certified to meet requirements of SAE J2210 (HFC-134a Recycling Equipment). If accidental discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.

The Clean Air Act stipulates that a technician certified in refrigerant recovery recycling be the only person to operate this machine. Information regarding the certification has been included with your machine. Unless the operator has experience and training, unfortunate accidents can occur.

Secondly, as common practice when working with refrigerants, the operator should always wear safety goggles. We know that sometimes you get in a hurry and can't find your goggles, but stop and do yourself and your eyes a favor. Find your glasses and use them. Protect yourself at all times.

WARNING: Some vehicle fuel systems such as Mercedes, light trucks, and some Fiat models have the same service fittings as the A/C systems. DO NOT connect to similar fuel service fittings. Connect only to A/C service fittings.

If you mistakenly connect to fuel system: DO NOT use any switches or move any metal items as this may cause sparks. Unplug unit's power cord from the wall outlet. Immediately ventilate the work area and call your local service representative.

IMPORTANT: Close all valves on tanks and hoses when not in use to prevent loss of refrigerant.

Recovery and Recycling

Before starting a recovery, it's a good idea to run the engine for about five minutes without the air conditioning system running. Running the engine will warm the refrigerant and decrease your recovery time.

After the vehicle has warmed, shut the engine off before beginning the recovery process.

Make sure the unit is plugged into a grounded 110-volt outlet. If an extension cord is needed make sure it is 14 gauge or heavier.

Procedure

Step #1: Connect The 10 Ft. Hoses to the Vehicle Air Conditioning System



- Connect the blue service hose to the low-side port on the vehicle's system.
- Connect the red service hose to the high-side port on the vehicle's system.

Step #2: Open The Tank and Hose Valves



Tank Valves

- Check to make sure that the tank valves are open.

Step #3: Open The Valves On the Red and Blue Service Hoses — Check For Pressure

- At the end of each 10 foot R-12 service hose is an anti-blowback valve and on the R-134a service hose is a quick coupling with a hand valve. Open the quick coupling valves on the R-134a hoses and check for positive vehicle system pressure on the unit gauges. No pressure indicates that there is no refrigerant in the air conditioning system.
- **Do not recover an empty air conditioning system!**

Step #4: Turn The Unit On

- Turn the **POWER SWITCH** on.
- If you are using a model 1234XL dual refrigerant unit, make sure that the recovery switch is set for the refrigerant being recovered.

Step #5: Start Recovery

If the gauges show pressure, press the **START RECOVERY & RECYCLE** button on the right hand panel.

The **RECOVERY/RECYCLE IN PROCESS** light will illuminate and start to flash to let you know that the recovery has started.

The gauges may not drop immediately — but will begin dropping within 30 seconds to a minute.

The unit will remove refrigerant from the vehicle system until it reaches six inches of mercury — that is, a six-inch vacuum.

If your **RECOVERY** light is flashing during recovery and the recovery process is slow you should inspect your unit's micron filters, depressors, gaskets in the unit's hoses, and the valve cores in the vehicle air conditioning system.

Also, make sure all connections depress valve cores completely, allowing access to the vehicle A/C system pressure.

Recovery In Process

When 6 in vacuum is reached the compressor will automatically turn itself off and go into a two-minute "hold" period to make sure that the vehicle system stays in a vacuum.

The **RECOVERY & RECYCLE IN PROCESS** light will remain flashing to let you know that the process is still underway. If at any time during the two-minute hold period the vehicle system pressure rises to a positive 2 PSI, the recovery process will automatically restart and once again pull the vehicle's system down to a six-inch vacuum. The unit will continue this process as long as there is refrigerant left in the system. Depending upon ambient conditions and the temperature of the refrigerant, this cycle could continue a number of times.

Do not shut the unit off while the recovery and recycle light is flashing, wait until the **RECOVERY & RECYCLE IN PROCESS** light stops flashing.

Oil Purge

Once the vehicle system holds a vacuum reading for the full two minute period the unit will automatically open a vapor valve to the recovery tank and fill the filter shell with a low pressure. The unit uses this pressure to purge any oil that may be recovered during the process into the oil cup located underneath the front compartment.

There may or may not be any oil recovered from the vehicle.

This will depend on the ambient temperature conditions and the state of the refrigerant.

If there is oil, you can easily determine how much was removed during the recovery process by simply using the cup to read the amount marked in both ounces and milliliters. **Be sure to make a note of the amount.** During the evacuation and charge process (covered later in this manual) you'll need



to replace the same amount of oil removed with the proper lubricant for the system being recovered. Always dispose of the oil in accordance with federal, state and local regulations.

Once the pressure reduces to 0 to 5 PSI inside the recovery shell the recovery light will shut off and the recovery process is done.

Step #6: Close The Service Hoses — And Make Any Necessary Repairs

You can now close the quick couplings on the service hoses and disconnect the R-134a or R-12 hoses from the vehicle, and make any necessary repairs to the air conditioning system.

Recovery and Recycling Indicators

High Pressure Light

There is a **HIGH-PRESSURE** light that illuminates if the pressure on the discharge side of the recovery unit exceeds 375 PSI during either the recovery or charging process. The most common cause of a high-pressure situation is when the “tank liquid” valve hasn’t been opened, not allowing refrigerant to flow into the tank, or when the recovery tank hoses haven’t been opened.

As a safety precaution, when the **HIGH PRESSURE** light illuminates the machine will not operate.

Make sure the tank liquid valve is fully opened.

Contaminated refrigerant can also cause a high pressure condition.

High pressure can also be caused by a leak in the vehicle system. This will cause excess air to constantly be pulled into the recovery tank.

After the high-pressure situation has been corrected, turn the **POWER SWITCH** off and then back on to reset the high-pressure switch.

If the high-pressure condition is related to excess air — then the **EXCESS AIR** light will be illuminated when the unit comes back on.

Excess Air Indicator Light

To check for excess air, turn the unit off, wait two seconds, and then turn the unit on. If using a 1234XL unit, make sure the recovery switch is set to the refrigerant being recovered. The microprocessor in the unit will check for excess air in the recovery tank. The **EXCESS AIR** light will illuminate if this condition is identified.

When the **EXCESS AIR** light illuminates simply press the “start excess air purge” button to begin the automatic air purge process. This air purge will automatically shut off once the air has been expelled.

The **EXCESS AIR** indicator can also **FLASH** to indicate other conditions besides excess air:

- **ONE FLASH**

ON	OFF	ON	OFF	ON	OFF	ON	OFF
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TANK PROBE NOT CONNECTED
- **TWO FLASHES**

ON	ON	OFF	OFF	ON	ON	OFF	OFF
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RECOVERY TANK TOO COLD
- **THREE FLASHES**

ON	ON	ON	OFF	OFF	OFF
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RECOVERY TANK TOO HOT
- **FOUR FLASHES**

ON	ON	ON	ON	OFF	OFF	OFF
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TANK PROBE IS SHORTED

Tank Full Indicator Light

The **TANK FULL** light will illuminate once the recovery tank becomes 80% full of refrigerant. **Charging refrigerant from the recovery tank will reduce the possibility of a tank full condition.** If your tank becomes full, replace the tank following the tank installation instructions. You’ll need to turn the power switch off and then back on to reset the tank full function. Also, if the tank sensor cord is unhooked the **TANK FULL** light and **EXCESS AIR** light will flash together and shut the system off. If these lights flash independently — then refer to the flash code in this operation manual.

If the **TANK FULL** light flashes make sure that the tank sensor cord is properly connected.

- **ONE FLASH**

ON	OFF	ON	OFF	ON	OFF	ON	OFF
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TANK PROBE NOT CONNECTED
- **TWO FLASHES**

ON	ON	OFF	ON	ON	OFF
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TANK FULL PROBE IS SHORTED

Hour Meter

The **HOUR METER** totals the time the machine has run in recovery mode.

This allows you to keep track of the total accumulated recovery time of the master filter/dryer. The master filter/dryer should be changed after every 20 hours of use.

Pulling a Vacuum on an Air Conditioning System

Note: Does not apply to 1070XL or 1075XL units.

Once you have removed the refrigerant and performed any necessary repairs, you should pull a vacuum on the system according to O.E.M. specifications to remove any moisture, air and impurities from the system.

Procedure

Step #1: Set Vacuum Function

With the service hoses hooked up and the **POWER SWITCH** on, use the **MODE SET** button on the left hand (charge) panel to toggle to the **VACUUM** function. The hours and minutes indicator will be illuminated.

Step #2: Set Vacuum Time and Start

Rotate the spinner knob to the desired amount of minutes you want the unit to pull a vacuum. Generally it is recommended to pull a vacuum between 20 to 45 minutes.

If you are using a 1234XL dual refrigerant unit, set the **VACUUM & CHARGE** selector switch to the desired refrigerant.

Step #3: Start The Operation

Press the green **START/STOP OPERATION** button on the left-hand charge panel to start the operation. The unit will automatically pull a vacuum on the vehicle system.

If excess pressure exists in the vehicle system, the unit will display the **E:03** error code in the digital display on the left-hand charge panel. This error code tells you that there is more refrigerant that should be recovered from the system before you can pull a vacuum.

If the vehicle system pressure is normal, then pressing the **START/STOP OPERATION** button will activate the unit's vacuum pump which will pull the vehicle system into a deep vacuum.

During the vacuum process, the **VACUUM** light will flash and the digital display will count down by the minute until it reaches zero.

Vacuum Leak Test

If you programmed a vacuum time of over 20 minutes, the unit will automatically go into a five minute leak check after the twenty minute vacuum time has expired. This is a vacuum leak test. Although this test does not identify the location of the leak, it will prevent charging into a leaking system.

During the leak test, five minutes will then be displayed on the digital display and the unit will count down by the second. The **VACUUM** light will flash twice as fast during the leak check as it did during the vacuum cycle.

If the unit counts down to zero, then no leak is detected. However, if the unit detects a loss of 2 inches of vacuum in the vehicle system during the five-minute leak check, the display will stop and display "LEAK FAIL".

The time left on the display will give an indication of the size of the vehicle system leak. The more time left on the display, the bigger the leak.

Adding Lubricant to the Vehicle Air Conditioning System

Lubricant can only be added to the vehicle system when the vehicle system is in a vacuum and the vacuum pump has stopped running. Make sure you check the manufacturer's service procedures for the correct lubricant.

To add oil to the system take the oil injection bottle and fill it with oil in excess of the amount that you will be replacing. Attach the hose to the lubricant injection port on the low-side service hose at the front of the unit and inject an amount of replacement oil equal to what was recovered from the system.



Charging the Vehicle Air Conditioning System

Note: Does not apply to 1070XL or 1075XL units.

Charge Virgin

Step #1: Select Refrigerant

To charge the system with virgin refrigerant, first make sure the hoses are connected and the tank valves are open. Depress the **MODE/SET** switch until the **CHARGE VIRGIN** light is lit.

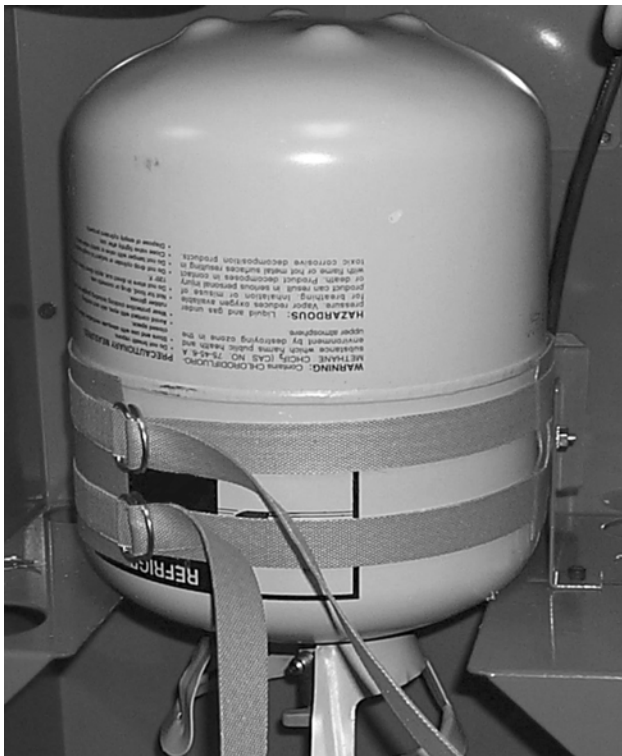
Step #2: Set Charge Amount

The indicator light will appear next to the setting for pounds and ounces. If you wish to change to kilograms press the **UNITS** button until the kilograms indicator is lit. The charge must be set at zero before you can switch between pounds and kilograms.

Check the rating of the vehicle to determine the correct amount of refrigerant to dispense and set the desired charge amount of refrigerant using the spinner knob on the charge panel.

Step #3: Start the Operation

Press **START/STOP OPERATION** on the left-hand charge panel and the digital display will change to the pressure that is in the supply tank. If the supply tank pressure is below 100 PSI, the unit will wait until the heater blanket has increased the tank pressure within the tank to the proper charging pressure (approximately a 15 PSI increase). During this time the tank pressurization light will be on solid (not flashing).



Proper installation of virgin tank.

Always use caution when handling the heater blankets — they can become extremely hot.

Once the supply tank has sufficient pressure for charging, the tank pressurization light will turn off. And the charging process will begin.

The **CHARGE VIRGIN TANK** light will begin flashing.

The digital display will now go to zero and start counting up to the designated charge amount.

In some instances a differential condition may occur. This happens when there is a pressure balance between the unit and the vehicle air conditioning system. If a differential condition is reached, the **PRESSURIZING TANK** light will begin flashing. To correct a differential condition, turn the engine on, start the vehicle air conditioning system and press **START/STOP OPERATION** on the left-hand panel.

If the **PRESSURIZATION TANK** light comes on during a charge without flashing, then the unit senses bubbles in the refrigerant. The unit will automatically hold until the bubbles dissipate. If they persist for four minutes, the unit will indicate "TANK EMPTY".

Charge Recycled

Step #1: Select Refrigerant

To charge the system with recycled refrigerant first make sure the hoses are still connected and the tank valves are open. Depress the **MODE/SET** switch until the **CHARGE RECYCLED** light is lit.

Step #2: Set Charge Amount

The indicator light will appear next to the setting for "pounds and ounces". If you wish to change to kilograms press the **UNITS** button until the kilograms indicator is lit. The charge must be set at zero before you can switch between pounds and kilograms.

Check the rating of the vehicle to determine the correct amount of refrigerant to dispense. Set the desired charge amount of refrigerant using the spinner knob. You can split the amount of the charge between both the recovery and the virgin tank by simply setting the desired amount for each tank.

Step #3: Start the Operation

Check your refrigerant supply to make sure your tank supply valves are open and check to make sure the valves on the service hoses are open. Press the start operation on the left-hand charge panel and the display will change to the pressure that is in the supply tank.

If the supply tank pressure is below 100 PSI, the unit will wait until the unit's compressor has increased the pressure within the tank. During this time the **PRESSURIZING TANK** light will be on solid. Once the supply tank has sufficient pressure for charging, the tank pressurization light will turn off and the **CHARGE RECYCLED** light will begin flashing.

The digital display will now go to zero and start counting up to the designated charge amount.

In some instances a differential condition may occur. This happens when there is a pressure balance between the unit and the vehicle air conditioning system. If a differential condition is reached, the **PRESSURIZING TANK** light will begin flashing. To correct a differential condition, turn the engine on, start the vehicle air conditioning system and press **START/CHARGE** on the left-hand panel.

If the **PRESSURIZING TANK** light comes on during a charge without flashing, then the unit senses bubbles in the refrigerant. The unit will automatically hold until the bubbles dissipate. If they persist for four minutes, the unit will indicate "TANK EMPTY".

Sequential Operation

The sequential operation feature allows you to perform the recovery, vacuum leak test, and charging steps in sequence.

Procedure

Step #1: Hook Up And Open The Service Hoses

To use the sequential operation features, first connect the hoses and open the tank valves.

Step #2: Select Operation

Press the blue **MODE/SET** button on the left-hand (charge) panel until the first desired operation is selected – typically this will be vacuum.

Turn the spinner knob to set the vacuum time — when setting a vacuum time of over 20 minutes the leak/check function will be set automatically as well.

Step #3: Select Refrigerant

Select the refrigerant — either virgin or recycled.

Note: If you want to add oil to the vehicle A/C system, DO NOT set the charge amount.

Step #4: Set Refrigerant Amount

Use the spinner knob to set the proper amount.

If you are using the 1234XL, make sure that both refrigerant selector switches are set to the same refrigerant.

Step #5: Set Refrigerant Amount

When all of the desired operations have been set press **START RECOVERY & RECYCLE** on the right-hand (recovery) panel to start the process.

If your evacuation time is set for 20 minutes or more and the air conditioning system fails the vacuum leak test, the unit will not proceed to the charging process.

Also, the unit will not add lubricant to the system automatically. So if it is only programmed to go through the evacuation and leak check step, it will stop automatically. Then before setting the charge amount, you can manually add lubricant if necessary and then recharge the vehicle system.

Two Vehicles at Once

With the 1234XL, you can also recover refrigerant from one vehicle system while simultaneously charging another vehicle system as long as the vehicles use different refrigerants. That is, you can charge one vehicle with R-12 while recovering a R-134a system or vice versa,

You can do this by hooking the service hoses up to two vehicles. One connected to the R-12 and the other to the R-134a and operating the unit according to the charge and recovery procedures.

Topping Off an Air Conditioning System

Topping off an air conditioning system is not an accurate way of charging the system. However, if you want to top off a vehicle system you should have the air conditioning system running. Then set the desired charge amount from either the virgin or recovery tank. Press the “**START/STOP OPERATION**” button on the left-hand charge panel.

If the supply tank is slow to reach pressure, that is, if the **PRESSURIZING TANK** light is on for over seven minutes, the **TANK EMPTY** light will begin to flash. This indicates that you may be out of refrigerant in the tank or a condition exists that is preventing you from reaching the pressurization. These conditions might include:

- The valve on the tank is closed.
- The gasket at the end of a hose is twisted.
- The heater blanket is not attached to the virgin tank properly.
- The virgin tank is not properly installed (upside down).

The **PRESSURIZING TANK** light will begin flashing if a differential condition or balance in pressure between the unit and the vehicle air conditioning system is reached. To correct a differential condition, turn the engine on, start the vehicle air conditioning system, and press **START/STOP OPERATION** on the left-hand panel.

After Each Vehicle

After each vehicle, make sure you shut off any hand valves on the service hoses with quick couplings and unhook the hoses from the vehicle. Remember that there is still refrigerant left in the hoses and pressure on the gauges. To remove this refrigerant, press the **START RECOVERY & RECYCLE** button on the right-hand recovery panel. The gauges will pull down to zero. Then close the tank valves.

Maintenance and Operational Tips

Maintenance Schedule

After every 20 hours of operation you'll need to:

- Replace the master filter/dryer.
- Check and replace the vacuum pump oil every 20 hours.
- Check and replace the O-rings as needed.
- Check and replace the hose depressors and gaskets as needed.
- Check and replace the hose filter assemblies as needed.

Replacing the Master Filter/Dryer

Step #1: Replace The Master Filter/Dryer

Close the hand valves on the quick couplings of the red and blue service hoses. Then press the **START RECOVERY & RECYCLE** button on the right-hand recovery panel.

Allow the unit to run until the low gauge shows 0 PSI, then turn the power off and remove the power cord from the wall outlet.

Step #2: Remove Filter

Unscrew two hose fittings from the master filter/dryer and remove it from its bracket. Dispose of the filter in accordance with federal, state and local regulations.

Step #3: Replace Filter

Mount a new master filter/dryer into its holding bracket matching direction of flow on filter with flow decal on cabinet.

Attach hose fittings hand tight onto filter.



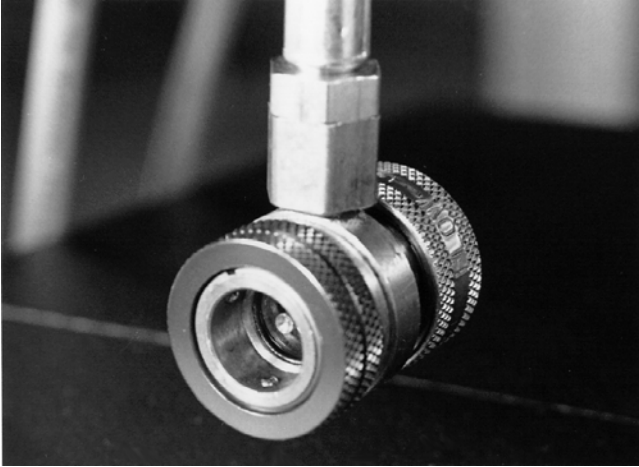
Replace Vacuum Pump Oil

After every 20 hours of operation or when the oil appears dirty you should change the vacuum pump oil.

To change the vacuum pump oil, open the virgin refrigerant door (on the 1234XL, open the R-134a virgin door). Locate the vacuum pump drain valve through the access hole in the top of the virgin tank compartment. Open the drain valve and drain the vacuum pump oil into a container. Close the drain valve. Dispose of the oil in accordance to federal, state and local regulations.

Remove the oil fill plug at the top rear of the unit. Fill to the oil level line on the sight glass with quality vacuum pump oil — available from White Industries®. Reinstall the oil filler cap.

Check/Replace O-Rings (R-134a Couplings Only)



You should also check and inspect the O-rings in the R-134a service couplings for signs of wear and tear. If they are damaged, replace them.

Check/Replace Anti-Blowback Valves (R-134a Tank Hoses & R-12 Service and Tank Hoses)



Check the anti-blowback valves for wear and tear and replace if needed.

Check/Replace Filter Assemblies



After 20 hours of operation you should check and replace the hose filter assemblies. The hose filter assemblies are located on the service and tank hoses. To clean or replace the hose filters use two 5/8" open-end wrenches to separate the filter assembly then remove the filter and clean or replace.

Error Codes

E:01 Not Used

E:02 The Oil Purge Did Not Occur

This error will occur if:

- The recovery tank vapor valve is closed.
- The recovery tank is empty. The ambient temperature is below 20 degrees Fahrenheit.

E:03 The Vacuum Pump Did Not Start

This error will occur if:

- The service hoses have more than 20 PSI in them or applied to them. A recovery operation must be performed before evacuating.

E:04 The Unit's Select Button Did Not Change The Dispensing Unit For The Charge

This error will occur if:

- The **EVACUATE** indicator is **ON** and the **UNIT SELECTOR** button is pressed. Evacuation time is always in minutes.
- Amounts are programmed for either **VIRGIN CHARGE** or **RECYCLED CHARGE**. To clear, dial all programmed charge amounts to zero or turn the machine off and then back on.

E:05 The Current Charge Can Not Start

This error will occur if:

- The pressure of the tank being charged from (virgin or recovery) is over 220 PSI.

This error will generally occur if the recovery tank contains excess air or is too hot. Allow the tank to cool if too hot. If excess air is suspected, shut the unit off and then back on. Wait about 40 seconds. The **EXCESS AIR** indicator will illuminate if the tank contains excess air. If so, follow the procedures for performing an excess air purge.

E:06 The Unit Did Not Complete The Oil/Air Purge At The End Of The Recovery Cycle

This error will occur if:

- There is a restriction in the unit plumbing from the filter shell to the oil purge port.
- Previous oil purge cycles were interrupted by shutting the unit off before the purge was completed.

Answers to Frequently Asked Questions

Why does it take so long to recover refrigerant from the vehicle?

Since automotive systems contain relatively low amounts of refrigerant, recovering the “vapor” is the fastest way to get all the refrigerant out. You can help expedite recovery by warming the vehicle prior to recovering and ensuring the unit’s filter is changed at 20 hour intervals. Also, recovery time is sometimes hampered by a bad connection to the vehicle. That is, the vehicle’s valve core is not being fully depressed. Check to ensure the depressors in the hose ends are in good shape and lined up straight.

Why does my unit wait sometimes before charging?

To ensure the most accurate charge, White Industries® units build pressure in the tank prior to charging. When charging from the recovery tank this process should last no longer than two minutes. When charging from the virgin tank, it can take up to ten minutes when the unit has been turned off for more than an hour. Leaving the unit on keeps the virgin tank heated for immediate charging.

I sometimes have oil dripping from the bottom of the unit. Why is this?

When adding oil to a vehicle using White’s built-in oil injection system, the vacuum pump must not be running. If it is, the oil will move through the vacuum pump and be discharged as excess vacuum pump oil. The vacuum pump discharge hose runs to the bottom of the unit.

Will my unit tell me if I have recovered another refrigerant?

No. White Industries® has an optional “Refrigerant Identifier” that mounts onto your unit and easily samples the vehicle prior to recovering. If the sample is suspect, do not recover with equipment designed to handle only R-12 and/or R-134a. Use an old R-12 unit or a unit designed for alternate refrigerants.

How can I inject oil or dye after a “sequential operation?”

White Industries® offer three ways to inject dye and one way to inject oil and dye into a system filled with refrigerant. White’s “Grip-n-Fill” is perfect for these tasks. It easily adds oil or dye to a charged system. White also offers a “Twist-n-Fill” that injects dye into charged systems. It holds 16 oz. of dye and is disposable. And finally, White offers “Port-to-Port” injectors that use the system’s high-side pressure to inject dye into the low-side.

Replacement Parts

Master Filter/Dryer	1-13481
10 Micron Filter Kit	EAK0218L33A (Pkg. of 10)
Protective Cover	1234XL: EEAC713ACV 1090/1095XL: EEAC707ACV
Recovery Tanks	50 lb. (R-12): EAA0222L75A 50 lb. (R-134a): EAA0222L05A
Vacuum Pump Oil Kit	EAK0227L01A

Depressor & Gasket Kit for Hose Ends

EAK0218L34A (Pkg. of 10 each)

Anti-Blowback Valves 1-26180: (R-12) Fits recovery tank and service hoses
1-26280: (R134a) Fits recovery tank only

R-134a Quick Coupler 1-27180 (High-side)
1-27280 (Low-side)

Quick Coupler Repair Kit EAK0027C00AS

For accessories refer to **White Industries**® catalog or call 1-800-225-5786.