Safety Information

Safety Notice

For your safety, read this manual thoroughly before operating your ***KoolKare Xtreme™*** unit.

Your ***KoolKare Xtreme™*** unit is intended for use by properly trained, skilled professional automotive technicians. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise care when using this unit.

There are many variations in procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the individual doing the work. Because of the vast number of test applications and variations in the products that can be tested with this instrument, ***Snap-on®*** cannot possibly anticipate or provide advice or safety messages to cover every situation. It is the automotive technicians responsibility to be knowledgeable of the system that is to be tested. It is essential to use proper service methods and test procedures and to perform tests in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area, the vehicle or equipment being tested.

It is assumed that the operator has a thorough understanding of vehicle air conditioning systems before using this ***KoolKare Xtreme™*** unit. This understanding of principles and operating theories is necessary for competent, safe and accurate use of this instrument.

Before using your ***KoolKare Xtreme™*** unit, always refer to and follow the safety messages and applicable test procedures provided by the manufacturer of the vehicle or equipment being tested.

Read All Instructions

Read, understand and follow all safety messages and instructions in this manual and on the test equipment. Safety messages in this section of the manual contain a signal word with a three-part message and, in some instances, an icon.

The signal word indicates the level of the hazard in a situation.

- **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

- **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

- **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

- **IMPORTANT** indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.

Safety messages in this section contain three different type styles.
- Normal type states the hazard.
- **Bold type** states how to avoid the hazard.
- *Italic type* states the possible consequences of not avoiding the hazard.

An icon, when present, gives a graphical description of the potential hazard.

IMPORTANT SAFETY INSTRUCTIONS

⚠WARNING

Risk of a lack of oxygen.
- — Vehicle exhaust gases contain carbon monoxide.
- — Refrigerant gas can displace air in work area.

- **Use your *KoolKare Xtreme™* unit in locations with mechanical ventilation providing at least four air changes per hour.**

Impairment of breathing can cause injury.

Power

Risk of electric shock and fire.
- **To avoid electric shock the power cord must be connected to a properly grounded A.C. outlet.**
- **Do not remove or bypass the grounding pin.**
- **Use the proper A.C. outlet for the unit to operate correctly. See the ID plate on the back of the unit.**
- **Extension cords are not recommended. If an extension cord must be used, use:**
  - **— 16 AWG for cords up to 50', and**
  - **— 14 AWG for cords greater than 50' but less than 100'.**
- **Do not use on wet surfaces or expose to rain.**
- **Use only fuses with the rating specified near the fuse holder.**

Electric shock and fire can cause injury.

Refrigerant

Risk of expelling refrigerant under pressure.

- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any refrigerant gets into the eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.**
- **Do not remove master filter/dryer while under pressure. Perform maintenance procedure for removing master filter/dryer in *Chapter 3–Changing the Master Filter/Dryer*.**
- **Prevent refrigerant from contacting the skin.**

Expelled refrigerant can cause injury.

Risk of explosion.

- **Do not use compressed shop air for leak detection or to pressure test a system containing refrigerant. Refrigerant can form combustible mixtures at pressures above atmospheric and with air concentrations greater than 60% by volume.**
- **Do not heat a container of refrigerant above 125°F (52°C).**

Explosion can cause injury.

Risk of fire.

- **Do not use this equipment in the vicinity of spilled or opened containers of gasoline.**
- **Do not use your *KoolKare Xtreme™* unit or any leak detector equipment if R-12 substitutes are suspected. R-12 refrigerant substitutes may be flammable.**

Fire can cause injury.

Risk of poison.

- **Avoid breathing air conditioning refrigerant and lubricant vapor or mist.**
- **Do not allow refrigerant to contact open flame or be drawn into a running engine. This can cause refrigerant to become poisonous phosgene gas.**
- **Use your *KoolKare Xtreme™* unit to remove refrigerant from air conditioning systems.**

Exposure can irritate eyes, nose and throat.

Risk of irritation to mucous membranes.
Avoid breathing air conditioning refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove HFC-134a from the A/C system, use service equipment certified to meet the requirements of SAE J2210 (HFC-134a Recycling Equipment). Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
Exposure can irritate eyes, nose and throat.

Oil (Lubricant)

Risk of expelling oil under pressure.
Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any oil gets into the eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.
Expelled oil can cause injury.

General

Engine systems can malfunction expelling fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris.
- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.**
- **Service should be performed by a certified A/C service technician.**

Engine systems that malfunction can cause injury.

The engine compartment contains electrical connections and hot or moving parts.
- **Keep yourself, test leads, clothing and other objects clear of electrical connections and hot or moving engine parts.**
- **Do not place test equipment or tools on fenders or other places in the engine compartment.**
- **Barriers are recommended to help identify danger zones in test area.**
- **Prevent personnel from walking through immediate test area.**

Contact with electrical connections and hot or moving parts can cause injury.

Service hoses can not withstand high temperatures or severe mechanical stress.
Keep the service hoses away from hot or moving engine parts.
Service hoses can split or burst causing injury.

Risk of explosion if improper tank is used.
Do not use any tank with this equipment other than part number EAA0275L05A. These tanks are D.O.T. certified for refilling. D.O.T certified tanks are marked "D.O.T. 4BA 350" or "D.O.T. 4BA 400".
Explosion can cause injury.

Removing tubing assemblies may discharge refrigerant.
Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
Expelled refrigerant may cause injury.

A test vehicle may move if not properly prepared.
- **Block the drive wheels before performing a test with the engine running. Unless instructed otherwise, set the parking brake and put the gear selector in neutral (manual transmission) or park (automatic transmission). If the vehicle has an automatic parking brake release, disconnect the release mechanism for testing and reconnect it when testing is completed.**
- **Do not leave a running engine unattended.**

A moving vehicle can cause injury.

Risk of explosion.
- **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 as this may cause sparks.**
- **Do not 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.**

Fuel in A/C recovery unit can explode and cause injury.

⚠CAUTION

Risk of injury.

- **This equipment should be operated by qualified personnel only.**
- **Use this equipment only as described in this manual. Use only the manufacturer's recommended attachments.**
- **Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged, until it has been examined by a qualified service representative. Care should be taken to arrange the power cord so that it will not be tripped over or pulled.**
- **Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp the plug and pull to disconnect.**
- **Let the equipment cool completely before putting it away. Loop the power cord loosely in proper location when storing.**

*Operation of your **KoolKare Xtreme™** unit by anyone other than qualified personnel may result in injury.*

⚠CAUTION

Risk of refrigerant leakage.

Always close the quick coupler valves before disconnecting a hose coupling.

Loosened hose couplings can leak refrigerant into the atmosphere.

⚠CAUTION

Misdiagnosis may lead to incorrect or improper repair and/or adjustment.

Do not rely on erratic, questionable, or obviously erroneous test information or results. If test information or results are erratic, questionable, or obviously erroneous, make sure that all connections are correct and that the test procedure was performed correctly. Refer also to the *Maintenance/Troubleshooting* section and perform tests and make repairs as required. If test information or results are still suspicious, do not use them for diagnosis. Contact your *Snap-on®* Representative.

Improper repair and/or adjustment may cause vehicle or equipment damage or unsafe operation.

SAVE THESE INSTRUCTIONS

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Using this Manual

This manual contains instructions for use and set-up of your ***KoolKare Xtreme™*** unit. A table of contents and table of illustrations are provided to make this manual easy to use.

Some of the information shown in text or illustrations is obtained using optional equipment. A ***Snap-on®*** Sales Representative can determine option availability.

Conventions

This section contains a list of conventions used in text.

Service Hose Couplers and Panel Valve

References in text to opening and closing the service hose couplers assume:

- Counterclockwise closes the valves, and
- Clockwise opens the valves.

References in text to opening and closing the panel valve assume:

- Valve pointed up opens the high-side service hose passage,
- Valve pointed to the left opens both the high- and low-side service hose passages,
- Valve pointed down opens the low-side service hose passage, and
- Valve pointed to the right closes the service hose passages.

Check Note

A check note provides additional information about the subject in the preceding paragraph.

Example:

✓ For additional information refer to *Chapter 2–Connecting Service Hoses to the* ***KoolKare Xtreme™*** *Unit* and *Chapter 2–Connecting Service Hoses to Vehicle*.

Equipment Tips

Equipment tips provide information that applies to specific equipment. Each tip is introduced by this icon ❒ for easy identification.

Example:

❒ Never attempt to change a recovery tank during unit operation. For additional information refer to *Chapter 2–Removing Recovery Tank*.

Equipment Damage

Situations arise during testing that could damage the vehicle or the test equipment. The word **IMPORTANT** signals these situations.

Example:

IMPORTANT

Failure to follow these instructions could damage the compressor.

Safety Messages

Safety messages are provided to help prevent personal injury and equipment damage. All safety messages are introduced by a signal word indicating the hazard level. The types of safety messages are:

⚠DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

⚠WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

⚠CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

Some safety messages also contain visual symbols with signal words.

Example:

Engine systems can malfunction expelling fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris.
Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
Engine systems that malfunction can cause injury.

Terms

Use the following definitions as a foundation to help understand your ***KoolKare Xtreme™*** unit's processes and/or components.

Virgin Tank
A refrigerant tank, disposable or refillable, that contains new refrigerant. When empty, a disposable virgin tank must be evacuated and cannot be refilled. Dispose of this evacuated tank in accordance with local, state and federal regulations that apply in your area. A refillable virgin tank should be returned to your supplier.

Recovery Tank
A refrigerant tank designed to store refrigerant removed from a virgin tank or recovered from a vehicle. On your ***KoolKare Xtreme™*** unit, refrigerant is filtered and dried before reaching the recovery tank. Once in the recovery tank, it is ready for reuse.

Recover
The process of removing refrigerant from a system to prevent release of refrigerant into the atmosphere. On your ***KoolKare Xtreme™*** unit, this process also recycles the refrigerant for reuse.

Recycle
The process of removing refrigerant from a system, filtering, drying and storing it in the recovery tank.

✓ Your ***KoolKare Xtreme™*** unit is a single pass unit. This means refrigerant is filtered and dried before reaching the recovery tank. Once in the recovery tank, it is ready for reuse. There is no separate "recycle" process to perform.

Evacuate/Vacuum
The process of drawing a vacuum on a refrigerant system to remove air and moisture. On your ***KoolKare Xtreme™*** unit, this process is known as vacuum.

Charge
The process of filling an air conditioning system with refrigerant.

Purging
The process of bleeding off non-condensable gases from the recovery tank.

Stable Scale
The situation where the reading from the refrigerant weight measuring device is steady. Moving your ***KoolKare Xtreme™*** unit causes the liquid refrigerant to slosh around in the recovery tank, resulting in an unsteady scale reading. Avoid moving your ***KoolKare Xtreme™*** unit before taking scale readings.

1

Introduction

Use your ***KoolKare Xtreme™*** unit on automotive air conditioning systems to:

- Recover,
  - — Remove refrigerant from vehicle,
- Recycle,
  - — Filter, dry and store recovered refrigerant in a refillable tank,
- Evacuate,
  - — Remove air and moisture from air conditioning system by drawing the system into a deep vacuum, and
- Recharge,
  - — Refill the air conditioning system with a specified amount of refrigerant.

Your ***KoolKare Xtreme™*** unit is a single pass design. This means recovered refrigerant is filtered and dried before entering the recovery tank. Refrigerant in the tank is always ready for use. Refer to *Chapter 2–Recovering Refrigerant From Vehicle.* There is no need to perform a separate recycle function. Recover, evacuate and recharge functions are performed semi-automatically.

This manual applies to the following ***KoolKare Xtreme™*** models:

Model Number	Refrigerant Type	Voltage
EEAC319A (w/vacuum pump)	R-134a	120 VAC
EEAC320A (w/o vacuum pump)	R-134a	120 VAC

Your ***KoolKare Xtreme™*** unit includes:

- A backlit Liquid Crystal Display (LCD) and four buttons to control operation,
- Integral gauge set and manual control valves with service hoses, fittings, and adapters,
- A 50 pound capacity recovery tank and electronic scale,
- Master filter/dryer with automatic replacement reminder,
- An oil drain bottle, and
- An oil injection bottle.

✓ The recovery tank is temperature-monitored to maintain accurate purging of non-condensable gases under all conditions.

Refrigerant Gases

Halogens are any of the five elements (fluorine, chlorine, bromine, iodine and astatine) that form part of group 7a of the Periodic Table of Elements. The fluorine and chlorine elements of this family are used to create a methane organic compound used to form dichlorodifluoromethane (CCL_2F_2), a halogenated hydrocarbon called CFC-12 (chlorofluorocarbon 12). This refrigerant gas is commonly known as Refrigerant-12, or R-12, and has been used as a refrigerant in mobile air conditioning systems for many years.

The new refrigerant in the halogenated hydrocarbon family, HFC-134a (CH_2FCF_3), or R-134a, is now being incorporated in mobile air conditioning systems. HFC stands for hydrofluorocarbon.

The environmental impact of mobile air conditioning refrigerant containing chlorine (R-12) has caused regulatory action that will eventually eliminate the use of such products. Regulatory action is necessary because when the chlorine content in R-12 is exposed to the atmosphere:

- It depletes the protective ozone layer in the atmosphere,
- It has relatively high global warming potential, and
- Its long atmospheric lifetime is approximately 120 years.

R-134a has been developed for new vehicle production but does not replace or directly substitute for R-12 in existing vehicles. R-134a does not contain chlorine, does not deplete the ozone layer in the atmosphere and has an atmospheric lifetime of about 15.5 years.

Environmental Protection Agency (EPA) and state regulations specify that:

- Provisions be made to certify all air conditioning service, installation and repair personnel,
- Refrigerant be recovered, recycled or reclaimed from automotive air conditioning systems, instead of allowing vapors to be expelled, or vented, into the atmosphere, and
- Refrigerant be recycled and reused, or properly disposed of, instead of allowing vapors to be expelled, or vented, into the atmosphere.

Mobile air conditioning service, installation and repair technicians must be qualified and certified.

Refrigerant Handling

Mobile air conditioning systems contain chemical mixtures that require special handling to avoid injury and to avoid venting refrigerant into the atmosphere.

Do not discharge any refrigerant gas, vapor or liquid from a refrigeration system into the atmosphere. If service is required that involves opening the refrigerant system, use a certified recovery system.

Refrigerant Safety

- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any refrigerant gets into the eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.**
- **Do not remove master filter/dryer while under pressure. Follow instructions for removing master filter/dryer. For additional information refer to *Chapter 3–Changing the Master Filter/Dryer*.**
- **Prevent refrigerant from contacting the skin.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

WARNING

- **Use your *KoolKare Xtreme™* unit in locations with mechanical ventilation providing at least four air changes per hour.**
- **Avoid breathing air conditioning refrigerant and lubricant vapor or mist.**
- **Do not allow refrigerant to contact open flame or be drawn into a running engine. This can cause refrigerant to become poisonous phosgene gas.**
- **Use your *KoolKare Xtreme™* unit to remove refrigerant from air conditioning systems.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

IMPORTANT

- **Tighten all connections properly. Insufficient or excessive torque can result in loose joints or deformed parts. Either condition can result in refrigerant leakage.**

Refrigerant Substitute Warning

- **Do not use your *KoolKare Xtreme™* unit or any leak detector equipment if R-12 substitutes are suspected. R-12 refrigerant substitutes may be flammable.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

Aftermarket R-12 refrigerant substitutes are being sold that are dangerous or potentially flammable gases. These products contain a blend of butane, isobutane and propane and have the potential for explosion. Some of these products are:

- OZ-12,
- Refrigerant-176,
- Arctic Chill R-176, and
- GHG Refrigerant 12.

Some vehicles using OZ-12 can be identified by a label that may be placed in the engine compartment, but many cannot be identified. Studies are currently being conducted to develop a procedure to identify the type of refrigerant in a refrigerant system. State agencies and the Environmental Protection Agency (EPA) are moving to ban flammable substitutes.

If it is suspected that a refrigerant system contains a product of this type:

- Question the customer about previous service,
- Be aware of any unfamiliar odor from the system,
- Do not use any leak detector equipment,
- Do not use recycling equipment, and
- Contact your state fire marshall or local EPA office.

Refrigerant Oils

In mobile air conditioning units, the lubricant needed for the compressor is blended with the refrigerant. Mineral (petroleum) oils were used with R-12 systems. Mineral oils are not soluble in R-134a and the industry had to substitute synthetic lubricating fluids for the mineral oils. Polyalkylene glycol oils (PAGs) were the first synthetics to meet the auto A/C compressor manufacturers performance criteria, and most automakers and compressor manufacturers devised their retrofit specifications with PAGs in mind. Since then, polyol ester oils (ESTERS or POEs) have been tested and also have been found to meet the performance criteria. Although POEs have not been approved by the automakers or A/C compressor manufacturers, POEs are frequently used in A/C retrofits in the automotive aftermarket.

Refrigerant Oil Safety

Risk of irritation of mucous membranes.

- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any refrigerant gets into the eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.**
- **Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove HFC-134a from the A/C system, use service equipment certified to meet the requirements of SAE J2210 (HFC-134a Recycling Equipment). Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.**

Exposure can irritate eyes, nose and throat.

Functional Description

Front View

Figure 1-1: Front View

✓ DO NOT lift the ***KoolKare Xtreme™*** unit by top plastic cover.

A — Integral Gauge Set

High and low pressure, panel mounted gauge set for monitoring vehicle A/C system pressures.

B — Control Panel

Houses backlit display screen and control buttons.

C — Liquid Crystal Display (LCD) Screen

Displays alpha-numeric information. Shows charged, recovered amounts or chargeable weight of the recovery tank. Also indicates software version, “Tank Full”, and “Tank Too Low” conditions.

D — Control Buttons

Four buttons are used to enter information and control the ***KoolKare Xtreme™*** system operation:

- UP (^) and DOWN (v) arrow buttons are used to select menu options on the screen.
- Two buttons with variable functions depending on the screen display.

E — Panel Valve

Used to select OFF, HIGH, LOW, or BOTH service hoses. Panel valve turned to HIGH opens the high-side service hose passage to your ***KoolKare Xtreme™*** unit. Panel valve turned to LOW opens the low-side service hose passage to your ***KoolKare Xtreme™*** unit. Panel valve turned to BOTH opens both service hose passages to your ***KoolKare Xtreme™*** unit.

F — Oil Separator (internal)

Removes oil and other contaminants from the refrigerant being recycled.

G — Oil Drain Bottle

Used to measure the amount of recovered oil.

H — Manual Oil Injection Bottle

Used to inject oil back into the vehicle A/C system.

Back View

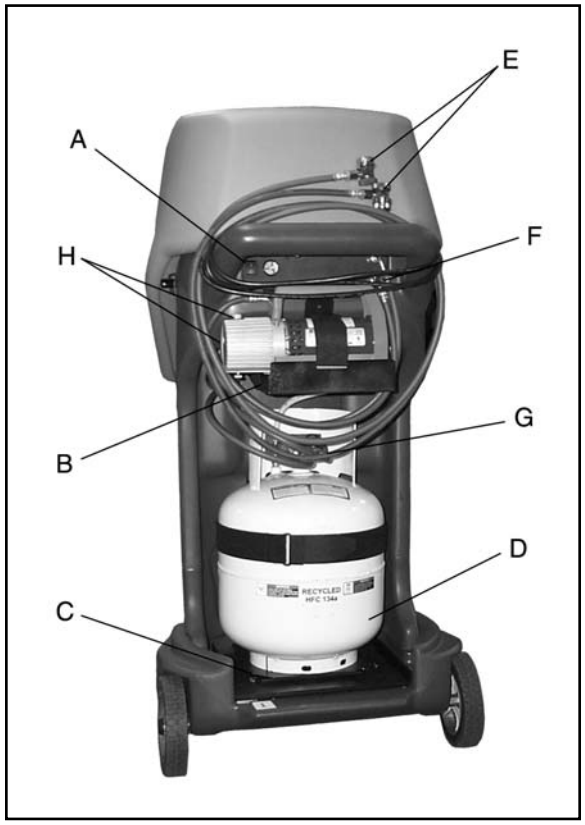

Figure 1-2: Back View with Vacuum Pump

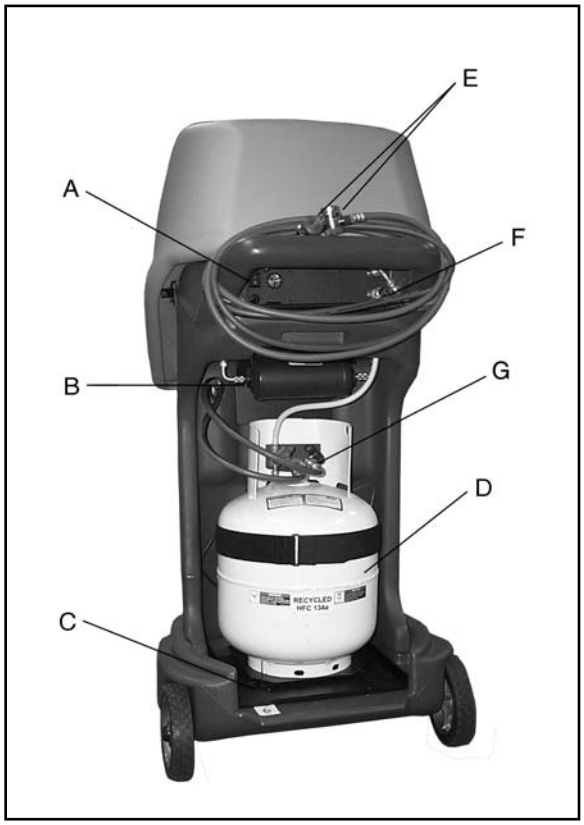

Figure 1-3: Back View without Vacuum Pump

A — Main Power Switch

Turns power ON and OFF. Must be on (I) for unit operation.

B — Master Filter/Dryer

Consists of a 10 micron particulate filter and desiccant to remove moisture. On units with a vacuum pump, the master filter/dryer is located behind the vacuum pump. For additional information refer to *Chapter 3–Changing the Master Filter/Dryer.*

C — Scale

Electronically measures the amount of refrigerant dispensed, recycled, and remaining in the recovery tank.

D — Recovery Tank

Holds refrigerant from a vehicle A/C service and supplies refrigerant for charging.

E — Service Hose and Coupler, High-Side

For connecting to high pressure side of vehicle A/C system.

Service Hose and Coupler, Low-Side

For connecting to low pressure side of vehicle A/C system.

F — External Vacuum Pump Port

Connects an external vacuum pump to the unit.

G — Particle Filter Assembly

Filter attached to the liquid (blue) port of recovery tank. Removes particles from the refrigerant.

H — Vacuum Pump Sight Glass and Oil Fill

(Only located on EEAC319A models. Left picture.)
Used to verify vacuum pump oil level and oil to vacuum pump when necessary.

R-134a Accessories

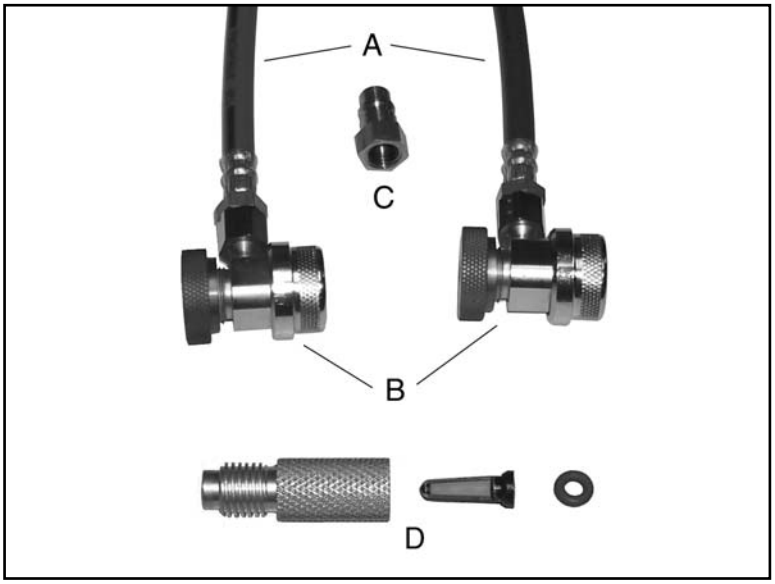

Figure 1-4: R-134a Accessories

A — Service Hoses

Red and blue hoses with shut-off adapters for your ***KoolKare Xtreme™*** unit to connect to the vehicle. For additional information refer to *Chapter 2–Connecting Service Hoses to the* ***KoolKare Xtreme™*** *Unit* and *Chapter 2–Connecting Service Hoses to Vehicle*.

B — Auto Shut-off Adapters (Couplers)

1 - Connects to high- and low-side service ports of vehicle.
2 - Quick connect/disconnect valve actuation without refrigerant venting. Couplers contain manual shut-off hand valves to control flow of refrigerant while connected to service ports and prevent blow-back while connecting/disconnecting hoses.

C — Low-Side Adapter Fitting

Adapter, part number 1-15080, to connect low-side service hose to a refrigerant tank for adding refrigerant to the ***KoolKare Xtreme™*** unit or for new recovery tank preparation.

D — Particle Filter Assembly

Removes particles from the refrigerant, part number 1-19281A.

Specifications

General

Power
120 VAC, 60 Hz, 6 amps maximum

Shipping Weight
EEAC319A — 185 lbs (79.38 kg)
EEAC320A — 175 lbs (83.91 kg)

Dimensions

Depth	29"
Height	46"
Width	23"

Operating

Operating Temperature Range
50–120°F (10–49°C) ambient

Relative Humidity
Up to 80%, non-condensing

Maximum Operating Pressure
450 psi

Pressure Range
30 inHg–300 psi

Storage

Storage Temperature Range
-4–140°F (-20–60°C) ambient

Relative Humidity
Up to 80%, non-condensing

Capacities

Refrigerant Charge Amount
0–42 lbs (19.05 kg)

Recovery Amount
0–45 lbs (20.41 kg)

Charge Oil Bottle Capacity
7 oz (.2 kg)

Drain Oil Bottle Capacity
7 oz (.2 kg)

2

Installation and Operation

Use the information in this chapter to:
- Prepare your ***KoolKare Xtreme™*** unit for initial use,
- Recover vehicle refrigerant,
- Create a vacuum before recharging, and
- Recharge with recycled refrigerant.

Connecting Service Hoses to the *KoolKare Xtreme™* Unit

Use the following procedure to connect service hoses to your ***KoolKare Xtreme™*** unit.

- **Do not use your *KoolKare Xtreme™* unit or any leak detector equipment if R-12 substitutes are suspected. R-12 refrigerant substitutes may be flammable.**
- **Read, understand and follow *Safety Information* in the front of this manual.**
- **Refer to *page 1-4.***

✓ Confirm refrigerant type in vehicle, and use the appropriate connections on the unit.

✓ Always lubricate rubber gaskets and seals at hose connections with fresh refrigerant oil before connecting.

✓ Tighten hose connections finger tight, including master filter/dryer connections. Use electronic leak detector to insure connections are leak free.

1. Connect the high (red) and low (blue) couplers to their respective hoses. Rotate coupler knobs fully CCW (closed).

2. Attach other end of red hose to upper, red labeled (high-side) port on the back panel of the ***KoolKare Xtreme™*** unit.

3. Attach other end of blue hose to lower, blue labeled (low-side) port on the back panel of the ***KoolKare Xtreme™*** unit.

Preparing and Installing Recovery Tank

The recovery tank is shipped with a dry air charge. The charge must be vented and the tank evacuated before use. Use the following procedure to evacuate the dry air from the recovery tank and install it in your ***KoolKare Xtreme™*** unit.

- **Do not use any tank with this equipment other than part number EAA0275L05A. These tanks are D.O.T. certified for refilling. D.O.T certified tanks are marked "D.O.T. 4BA 350" or "D.O.T. 4BA 400".**
- **Read, understand and follow *Safety Information* in the front of this manual.**

IMPORTANT

Vent and evacuate the recovery tank before first use. An unprepared tank can cause compressor burnout.

✓ The recovery tank must have a minimum of 25 inHg vacuum when evacuation is complete. If there is not 25 inHg vacuum, check connections and repeat the procedure.

Tank Preparation

Follow this procedure to install a new recovery tank in your ***KoolKare Xtreme™*** unit. New recovery tanks are charged with dry air which must be vented before using.

- **Wear safety goggles, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.**
- **Cover the blue hand valve port with a shop towel to help prevent debris from becoming projectiles.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

1. Vent dry air by slowly opening blue hand valve on the recovery tank.

2. Gently set the recovery tank on the scale with the hand valves up, facing the back of the unit.

3. Place the Velcro® strap securely around the recovery tank.

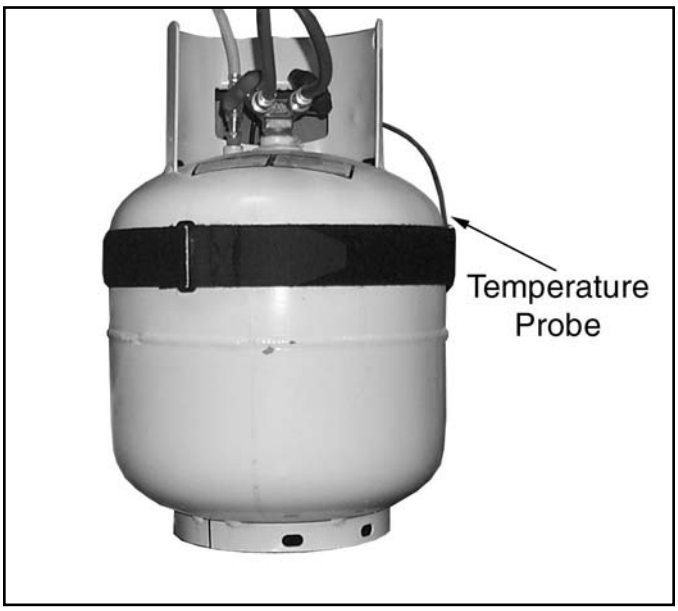

Figure 2-1: Recovery Tank and Temperature Probe

✓ Use only the 50 pound capacity recovery tank supplied with your ***KoolKare Xtreme™*** unit or one indicated by the warning label on the back of the unit. Inaccurate refrigerant amount may display if the correct tank is not used. Using any other type or capacity tank could create the danger of explosion and potential for personal injury.

4. Install the particle filter assembly, part number 1-19281A, to liquid (blue) port of recovery tank (port nearest to the blue hand valve).

5. Connect tank adapter, part number 1-15080, to particle filter assembly on recovery tank.

6. Connect blue service hose from low-side port of the ***KoolKare Xtreme™*** unit to installed tank adapter.

7. Open the following:
   — Blue (liquid) recovery tank valve, and
   — Blue service hose coupler (CW).

8. Connect the power cord to the proper wall outlet with the correct voltage for the unit. For additional information refer to *Power Up* in this chapter and *Chapter 1-Specifications*.

9. Turn power switch ON. The following screens will display:
   — Software Version screen, and
   — Main Menu screen.

✓ In the unlikely event the LCD screen is unreadable or a different language is displayed upon power up, adjust LCD contrast or change language selection. Refer to *Adjusting LCD Contrast* or *Accessing Language* in this chapter.

10. Select VACUUM and press ENTER, the following message displays:

. . . VACUUM . . .

30:00

^/v TO ADJUST TIME

Press ^/v buttons to adjust time to desired value.

11. Press NEXT and the following message displays:

OPEN PANEL VALVE

12. Turn the panel valve to LOW and press START, the following messages display:

PLEASE WAIT.

CHECKING FOR

PRESSURE IN VEHICLE

. . . . .

VACUUM RUNNING . . .

xx:xx

13. Monitor the low side panel gauge until a minimum of 25 inHg of vacuum is reached.

14. Close the following:
    — Blue (liquid) recovery tank valve, and
    — Blue service hose coupler (CCW).

15. Press EXIT and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

16. Turn the panel valve to OFF and press NEXT, the following message displays for 5 seconds before the Main Menu screen displays:

PLEASE WAIT . . .

17. Remove the blue service hose from the tank. Remove the tank adapter 1-15080.

18. Identify the yellow hose leading from the bottom of the unit. Connect the hose end to the tank purge port.

19. Identify the red hose leading from the bottom of the unit. Connect the hose end with the anti-blowback valve to the red (vapor) tank port.

20. Open the red (vapor) recovery tank valve.

21. Identify the blue hose leading from the bottom of the unit. Connect the hose end with the anti-blowback valve to the blue (liquid) tank port.

22. Open the blue (liquid) recovery tank valve.

23. Connect tank adapter, part number 1-15080, to port of virgin refrigerant tank.

24. Connect the blue service hose from low-side port of the ***KoolKare Xtreme™*** unit to installed tank adapter.

✓ Position the virgin tank with the valve up. Do not use the virgin tank with the valve underneath the tank.

✓ Do not recover liquid refrigerant from a supply tank.

25. Open the following:
    — Virgin tank hand valve, and
    — Blue service hose coupler (CW).

26. Select RECOVER and press ENTER, the following message displays:

EMPTY OIL DRAIN

BOTTLE NOW

27. Press NEXT and the following message displays:

OPEN PANEL VALVE

28. Turn the panel valve to LOW and press START, the following message displays:

RECOVERING . . .

AMOUNT RECOVERED

xxLb xxoz

The refrigerant flows from the virgin tank through your ***KoolKare Xtreme™*** unit and into the prepared recovery tank.

✓ A minimum of 6 lbs. of refrigerant needs to be in the recovery tank before a charge operation can be accomplished. Refer to *Tank Full/Empty* in this chapter.

29. When the desired amount of refrigerant has been transferred into the recovery tank, close the virgin tank hand valve and the blue service hose coupler.

Risk of expelling refrigerant under pressure.

- **Always close the tank valves before removing the hoses or fittings.**
- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any refrigerant gets into the eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.**
- **Prevent refrigerant from contacting the skin.**

Expelled refrigerant can cause injury.

30. Allow the recover/recycle operation to run until complete.

31. When recovery operation is complete, the unit will beep once, the LCD screen will flash, and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

32. Turn the panel valve to OFF and press NEXT, the Amounts screen and then the Main Menu screen will display.

33. Remove the blue service hose and adapter from the virgin tank and store the adapter with unit accessories.

Power Up

Refer to this section to understand the power up sequence of the ***KoolKare Xtreme™*** unit.

1. Connect the power cord to the proper wall outlet with the correct voltage for the unit. For additional information refer to *Chapter 1–Specifications.*

2. Turn power switch ON.

3. The ***KoolKare Xtreme™*** unit will power up. The following screens will appear in order:
   — Software Version screen:

   Snap-on
   KoolKare Xtreme
   Software Rev
   (C)2002 *Snap-on*

   — Main Menu screen with default arrow position:

   ➜ RECOVER > CHARGE
   > VACUUM > SET-UP
   > AUTO SEQUENCE

   (ENTER) (AMOUNTS)

✓ In the unlikely event the LCD screen is unreadable or a different language is displayed upon power up, adjust LCD contrast or change language selection. Refer to *Adjusting LCD Contrast* or *Accessing Language* in this chapter.

Accessing Set-Up

Adjusting LCD Contrast

Use the procedure in this section to adjust the contrast on the LCD screen, with or without being able to read the screen.

1. Power up the ***KoolKare Xtreme™*** unit.

2. Press ^ button once to select SET-UP from the Main Menu and then press ENTER, which is the left button under the LCD display.

➜ CONTRAST > Lbs/kg
> LANGUAGE > – – –
> FILTER > – – –

(ENTER) (EXIT)

3. Select CONTRAST from the Set-Up Menu, press ENTER.

   — CONTRAST will be the default selection when the Set-Up Menu screen displays:

PRESS ^ OR v
TO ADJUST LCD.
- - - > 25 < - - -

(DEFAULT) (EXIT)

4. Press DEFAULT to automatically reset LCD contrast to default settings, or press ^ button to lighten contrast or v button to darken it.

5. Press EXIT twice to return to Main Menu.

Accessing Language

Use the procedure in this section to change the language selection of the ***KoolKare Xtreme™*** unit.

1. Power up the ***KoolKare Xtreme™*** unit.

2. Press ^ button once to select SET-UP from the Main Menu and then press ENTER, which is the left button under the LCD display.

> CONTRAST > Lbs/kg
➜ LANGUAGE > – – –
> FILTER > – – –

(ENTER) (EXIT)

3. Press ^/v button as needed to select LANGUAGE from the Set-Up Menu, press ENTER.

PRESS ^ OR v TO
CHANGE LANGUAGE.

ENGLISH

4. Press ^/v button to scroll through language selections.

5. Press SAVE/EXIT to select a language.

6. Press EXIT to return to Main Menu.

Accessing Master Filter/Dryer Reset

Use the procedure in this section to reset the automatic reminder monitor for the master filter/dryer.

✓ This procedure should only be done when the master filter/dryer is replaced.

1. Power up the ***KoolKare Xtreme™*** unit.

2. Select SET-UP from the Main Menu, press ENTER.

> CONTRAST > Lbs/kg
> LANGUAGE > – – –
➜ FILTER > – – –

(ENTER) (EXIT)

3. Press ^/v buttons as needed to select FILTER from the Set-Up Menu, press ENTER.

FILTER
1508 OZ
99%

(RESET) (EXIT)

4. Press RESET button.

5. Press CONFIRM to reset the master filter/dryer reminder monitor.

6. Press EXIT twice to return to Main Menu.

Accessing Units of Weight

Use the procedure in this section to change the refrigerant unit of weight measurement.

1. Power up the ***KoolKare Xtreme™*** unit.

2. Select SET-UP from the Main Menu, press ENTER.

> **CONTRAST**	➜ **Lbs/kg**
> **LANGUAGE**	> – – –
> **FILTER**	> – – –
(ENTER)	**(EXIT)**

3. Press ^/v as needed to select Lbs/kg from the Set-Up Menu, press ENTER.

> 00Lb 00oz	➜ **000oz**
> 00.00lb	> – – – –
> 00.00kg	> – – – –

4. Press ^/v button to scroll through lb-oz, lb, kg or oz.

5. Press SAVE/EXIT to select a unit of measurement.

6. Press EXIT to return to Main Menu.

Operation

This section contains:
- Procedures for connecting the service hoses to the vehicle, and
- Procedures to:
  - — Recover vehicle refrigerant,
  - — Create a vacuum in the A/C system before recharging, and
  - — Recharge the A/C system with recycled refrigerant.

After performing all of the installation procedures, follow these recommended vehicle service procedures before using your ***KoolKare Xtreme™*** unit for A/C work.

Keep the service hoses away from moving or hot engine parts. The service hoses can not withstand high temperatures or severe mechanical stress.

IMPORTANT

- **Close the tank valves when not using your *KoolKare Xtreme™* unit. Leaving tank valves open may result in refrigerant loss from tank.**
- **Do not use your *KoolKare Xtreme™* unit outside of the following limits:**
  - **— Warmer than 120°F (49°C),**
  - **— Colder than 50°F (10°C), and/or**
  - **— Relative humidity greater than 80%.**
- **Stabilize your *KoolKare Xtreme™* unit to a moderate temperature and inspect for abnormalities.**
- **Contact your *Snap-on®* representative before operating if unsure of condition.**
- **Operating your *KoolKare Xtreme™* unit with the following conditions may reduce its functionality:**
  - **— Visible evidence of damage,**
  - **— Has been subjected to prolonged storage under unfavorable conditions, or**
  - **— Has been subjected to severe transportation stresses.**

Preliminary Checks

Successful use of your ***KoolKare Xtreme™*** unit depends on several external factors. The following information explains these.

Precondition Vehicle

The refrigerant in the vehicle A/C system is recovered faster and more completely when the components are warm.

1. Connect the service hoses to the vehicle, refer to *Connecting Service Hoses to Vehicle* in this chapter.

To efficiently recover refrigerant, the vehicle should be at normal operating temperature. Run the engine until normal operating temperature is reached, with

- The A/C system OFF, and
- The hood lowered as much as possible without damaging or crimping the service hoses.

2. Turn off the engine when normal operating temperature is reached. The unit and vehicle are ready to recover and recycle refrigerant.

Allow Adequate Evacuation Time

Evacuate the vehicle A/C system for a minimum of 30 minutes. This helps ensure vehicle A/C system is free of non-condensable gases (mostly air) and moisture.

✓ Sometimes a small amount of refrigerant is left in the vehicle A/C system that is not practical to recover. If recovery time is too short or if vehicle components are cold, this parasitic refrigerant can expand during a vacuum hold cycle or a leak test, and falsely report a leak condition that does not exist.

Follow Vehicle Manufacturer's A/C Service Procedures

When charging, a slow charge condition may occur due to pressure equalization between your ***KoolKare Xtreme™*** unit and the vehicle A/C system. Finish charging by:

- Turn the panel valve to OFF,
- Starting the engine,
- Turning the A/C system ON,
- Turn the panel valve to LOW, and
- Allow the unit to complete the charge.

✓ Never operate the vehicle A/C system with the panel valve on HIGH or BOTH.

✓ It is the technician's responsibility to be familiar with vehicle manufacturer recommended service procedures.

Connecting Service Hoses to Vehicle

Follow this procedure to connect the service hoses to the vehicle.

1. Connect the red, high-side service hose from the ***KoolKare Xtreme™*** unit to the high-side service port on the vehicle.

2. Connect the blue, low-side service hose from the ***KoolKare Xtreme™*** unit to the low-side service port on the vehicle.

✓ If the vehicle has more than one low-side service port, use the service port closest to the evaporator.

3. Open the service hose couplers.

— Refer to the vehicle manufacturer's service manual for proper diagnostic procedures and specifications.

Recover/Recycle Refrigerant from Vehicle

✓ Be sure that the vehicle is at normal operating temperature before recovering refrigerant.

1. Open the blue (liquid) and red (vapor) recovery tank valves.

✓ Empty the oil drain bottle (left bottle) before each recovery.

2. Connect the service hoses to the vehicle and open service hose couplers. For additional information refer to *Connecting Service Hoses to Vehicle* in this chapter.

3. Select RECOVER and press ENTER, the following message displays:

EMPTY OIL DRAIN

BOTTLE NOW

4. Press NEXT and the following message displays:

OPEN PANEL VALVE

5. Turn the panel valve to BOTH and press START, the following messages display:

PLEASE WAIT . . .

. . . PURGING AIR

. . . . .

RECOVERING . . .

AMOUNT RECOVERED

xxLb xxoz

Refrigerant flows from the vehicle, through your ***KoolKare Xtreme™*** unit, and into the recovery tank.

As refrigerant is recovered, the panel gauges show increasing vacuum.

✓ If the initial pressure in the vehicle A/C system is too low, below 20 PSI, the LCD screen will flash and the following message displays:

CANNOT RECOVER

VEHICLE. PRESSURE

IS TOO LOW.

— Press EXIT and the following message displays:

CLOSE PANEL VALVE.

PRESS NEXT.

— Follow steps 10-11.

6. When recovery is complete, the following message displays:

DRAINING OIL . . .

RECORD AMOUNT

WHEN DONE.

7. Waste oil is automatically expelled into the oil bottle.

8. The amount indicated on the bottle is the amount to add back into the vehicle A/C system when recharging.

✓ Discard refrigerant oil in accordance with local, state and federal regulations that apply in your area.

9. When recovery operation is complete, the unit will beep once, the LCD screen will flash, and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

10. Turn the panel valve to OFF and press NEXT, the Amounts screen and then the Main Menu screen will display.

11. When Main Menu screen appears, close the red and blue service hose couplers.

Purging Non-condensable Gas

✓ Purging non-condensable gases is an automatic feature executed by the ***KoolKare Xtreme™*** unit.

Evacuating A/C System

Use this procedure to remove non-condensible gases and moisture from the vehicle A/C system.

✓ If using the EEAC319A (with vacuum pump), always check the oil level of the vacuum pump when the pump is first turned ON. The oil level should be half way up the sight glass. If no oil level is shown, fill the vacuum pump with oil.

1. Open the blue (liquid) and red (vapor) recovery tank valves.

2. Connect the service hoses to the vehicle and open service hose couplers. For additional information refer to *Connecting Service Hoses to Vehicle* in this chapter.

✓ If the gauges indicate pressure, above 20 PSI, recover refrigerant from the service hoses before proceeding. Refer to *Recovering Service Hoses* in this chapter.

3. Select VACUUM and press ENTER, the following message displays:

. . . VACUUM . . .

30:00

^/v TO ADJUST TIME

Press ^/v buttons to adjust time to desired value.

4. Press NEXT and the following message displays:

OPEN PANEL VALVE

5. Turn the panel valve to BOTH and press START, the following messages display:

PLEASE WAIT.

CHECKING FOR

PRESSURE IN VEHICLE

. . . . .

VACUUM RUNNING

The panel gauges show vacuum increasing.

✓ Follow the manufacturer recommendations for evacuation time, usually at least 30 minutes.

6. When evacuation time is done, the unit will beep once, the LCD screen will flash, and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

7. Turn the panel valve to OFF and press NEXT, the following message displays:

PLEASE WAIT . . .

8. Monitor the low-side pressure for 5 minutes. Any loss of vacuum indicates a leak in the vehicle system.

✓ If the source of the leak cannot be determined, partially charge the system and perform a leak test using an electronic leak detector.

9. When the leak is identified, repeat Recover/Recycle procedure, repair the leak and attempt the Evacuation procedure again.

Evacuation is complete.

Charging A/C System

✓ When charging a vehicle after evacuation, allow for the capacity of the hoses. Each hose holds approximately two ounces of refrigerant, so the charge amount should be increased by two ounces for each hose used.

— If there is not enough refrigerant in the recovery tank to charge, refer to *Adding Refrigerant to the* ***KoolKare Xtreme™*** *Unit* in this chapter.

1. Open the blue (liquid) and red (vapor) recovery tank valves.

2. Connect the service hoses to the vehicle and open service hose couplers. For additional information refer to *Connecting Service Hoses to Vehicle* in this chapter.

3. Select CHARGE and press ENTER, the following message displays:

PRESS ^/v TO SET

CHARGE AMOUNT.

xxLb xxoz

— The unit of refrigerant measurement can be changed using the LBS/KG soft key in the bottom right of the LCD display.

4. Set desired charge amount and press NEXT, the following message displays:

OPEN PANEL VALVE

5. Turn the panel valve to HIGH, and press START, the following messages display:

WAITING FOR STABLE

SCALE!

. . . . .

CHARGING . . .

Refrigerant flows from the recovery tank into the vehicle.

6. When the charging operation is complete, the unit will beep once, the LCD screen will flash and the following message displays:

   CLOSE PANEL VALVE

   THEN PRESS NEXT.

   The refrigerant flow stops.

   ✓ When charging, a slow charge condition may occur due to pressure equalization between your ***KoolKare Xtreme™*** unit and the vehicle A/C system. Finish charging by:
   - — Turn the panel valve to OFF,
   - — Starting the engine,
   - — Turning the A/C system ON,
   - — Turn the panel valve to LOW, and
   - — Allow unit to complete the charge.

   ✓ Never operate the vehicle A/C system with the panel valve on HIGH or BOTH.

7. Monitor the high- and low-side system pressures. Refer to the manufacturer's specifications for proper operation and diagnosis.

8. Turn the panel valve to OFF and press NEXT, to return to the main menu.

Charge is complete.

Auto Sequence

The ***KoolKare Xtreme™*** unit can be programmed to perform an automatic series of operations. These operations include:

- Recovering the refrigerant from a vehicle,
- Evacuating the A/C system,
- Holding a vacuum for a predetermined time to find a leak,
- Adding refrigerant oil to the system, and
- Charging the A/C system with refrigerant.

Follow this procedure and the on-display prompts to set-up the unit for an auto sequence.

✓ Be sure the vehicle is at normal operating temperature before recovering refrigerant.

1. Open the blue (liquid) and red (vapor) recovery tank valves.

✓ Empty the oil drain bottle (left bottle) before each recovery.

2. Connect the service hoses to the vehicle and open service hose couplers. For additional information refer to *Connecting Service Hoses to Vehicle* in this chapter.

3. Select AUTO SEQUENCE and press ENTER, the following message displays:

WILL YOU RECOVER

FROM VEHICLE?

4. Select YES or NO to recover refrigerant from the vehicle, the following message displays:

WILL YOU BE PULLING

A VACUUM?

5. Select YES or NO. If yes, the following message displays:

PRESS ^/v TO SET

VACUUM PULL TIME.

30:00

6. Press ^/v buttons to set vacuum pull time and press NEXT, the following message displays:

PRESS ^/v TO SET

VACUUM HOLD TIME.

10:00

7. Press the ^/v buttons to set vacuum hold time and press NEXT, or press NONE for no hold time, the following message displays:

WILL YOU BE CHARGING

THIS SEQUENCE?

8. Select YES or NO. If yes, the following message displays:

PRESS ^/v TO SET

CHARGE AMOUNT

xxLb xxoz

— The unit of refrigerant measurement can be changed using the LBS/KG soft key in the bottom right of the LCD display.

9. Press the ^/v buttons to set charge amount and press NEXT, the following message displays:

PAUSE FOR OPTIONAL

OIL CHARGE?

✓ This message will only appear if the refrigerant charge is 7 ounces or greater.

10. Select YES or NO and the following message displays:

AUTO SEQUENCE SETUP

IS COMPLETE.

11. Press NEXT to start the auto sequence and the following message displays:

EMPTY OIL DRAIN

BOTTLE NOW

12. Press NEXT and the following message displays:

OPEN PANEL VALVE

✓ Have the panel valve turned to BOTH for the fastest recovery and best vacuum.

✓ Follow vehicle manufactures service procedures.

— Press EXIT to abort auto sequence and return to Main Menu screen.

13. Turn the panel valve to desired position and press START.

14. If yes is selected for RECOVER, the unit will recover the A/C refrigerant from the system as described in the individual test *Recover/Recycle Refrigerant from Vehicle.*

15. If yes is selected to pull a vacuum, the unit will evacuate the vehicle A/C system as described in the individual test *Evacuating A/C System*.

— Vacuum time can be adjusted while an evacuation is in progress.

When evacuation process is complete, the unit will perform a vacuum hold sequence for the specified time before advancing to the next step.

✓ If vacuum is lost over the specified amount of time, there is a leak in the vehicle A/C system and the auto sequence will not be completed.

16. If yes is selected for an oil and refrigerant charge, the unit will pause and beep once before initiating the refrigerant charge and the following message displays:

CHARGE OIL NOW.

PRESS NEXT WHEN

FINISHED.

17. Open the manual oil injection bottle valve to add refrigerant oil to the A/C system. Close the valve when the correct amount of oil has been added to the system.

✓ To reduce the possibility of damage to the vehicle compressor, charge on high-side only.

✓ Follow vehicle manufactures service procedures.

18. Turn the panel valve to desired position and press NEXT to continue the auto sequence.

19. The unit will charge the A/C system as described in the individual test *Charging A/C System.*

20. When the auto sequence has completed the following message displays:

    AUTO SEQUENCE

    IS COMPLETE.

    CLOSE PANEL VALVE.

21. Turn the panel valve to OFF and press NEXT, the Amounts screen and then the Main Menu screen will display.

Displaying Refrigerant Amount

Use this procedure to determine the amount of refrigerant in the recovery tank and the amount able to be charged.

1. Press the AMOUNTS button to obtain RECOVERED and CHARGED amounts.

2. Press the MORE button to obtain TANK amount, tank temperature, tank PSIG and FILTER/DRYER percentage.

   TANK amount is the total weight of the chargeable refrigerant in the recovery tank. Approximately 3 lbs of refrigerant is needed to meet the quill tube in the tank. This makes the “Tank Too Low” point 3 lbs. Any refrigerant over this amount is usable for charging.

   FILTER/DRYER percentage is the percentage left before the master filter/dryer needs to be replaced. This percentage number counts down from 100%.

Tank Full/Empty

Messages display when the recovery tank is full or empty.

- ✓ The unit may only be used to charge an A/C system when the recovery tank is full.
- ✓ The unit may be used to recover/recycle or evacuate an A/C system when the recovery tank is empty.
- ✓ “Tank Too Low” is displayed when the weight in the recovery tank is less than approximately 3 lbs.
- ✓ “Tank Full” is displayed when the amount of refrigerant in the recovery tank is above 43 lbs.

Removing Recovery Tank

✓ Ensure both valves on the recovery tank are closed.

1. Disconnect the hoses from the recovery tank.
2. Remove the Velcro® strap on the recovery tank.
3. Gently remove the recovery tank from the scale.

Recovering Service Hoses

Recover the service hoses before removing them from the ***KoolKare Xtreme™*** unit. Service hoses are not connected to a vehicle during this procedure.

1. Connect the power cord to the proper wall outlet with the correct voltage for the unit. For additional information refer to *Chapter 1–Specifications.*
2. Turn power switch ON.
3. Select RECOVER and press ENTER, the following message displays:

EMPTY OIL DRAIN

BOTTLE NOW

4. Press NEXT and the following message displays:

OPEN PANEL VALVE

5. Turn the panel valve to BOTH and press START, the following messages display:

PLEASE WAIT . . .

. . . PURGING AIR

. . . . .

RECOVERING . . .

AMOUNT RECOVERED

xxLb xxoz

Refrigerant flows through your ***KoolKare Xtreme™*** unit, and into the recovery tank.

✓ If the initial pressure in the vehicle A/C system is too low, below 20 PSI, the LCD screen will flash and the following message displays:

CANNOT RECOVER

VEHICLE. PRESSURE

IS TOO LOW.

— Press EXIT and the following message displays:

CLOSE PANEL VALVE.

PRESS NEXT.

6. When recovery is complete, the following message displays:

DRAINING OIL . . .

RECORD AMOUNT

WHEN DONE.

7. Waste oil is automatically expelled into the oil bottle.

✓ Discard refrigerant oil in accordance with local, state and federal regulations that apply in your area.

8. When recovery operation is complete, the unit will beep once, the LCD screen will flash, and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

9. Turn the panel valve to OFF and press NEXT, the Amounts screen and then the Main Menu screen will display.

Service hose recovery is complete.

Evacuating Contaminated Service Hoses

✓ If contaminated refrigerant or refrigerant other than R-134a is present in service hoses, use separate recover only machine to collect refrigerant.

Adding Refrigerant to the *KoolKare Xtreme™* Unit

Follow this procedure to add virgin or recycled refrigerant to your ***KoolKare Xtreme™*** unit.

✓ A minimum of 6 lbs. of refrigerant needs to be in the recovery tank before a charge operation can be accomplished. Refer to *Tank Full/Empty* in this chapter.

1. Refer to *Preparing and Installing Recovery Tank* in this chapter.

2. Open the blue (liquid) and red (vapor) recovery tank valves.

✓ Install the supplied tank adapter, part number 1-15080, between the tank valve and the blue service hose. The virgin tank should be upright (valve up).

✓ Do not recover liquid refrigerant from a supply tank.

3. Connect the blue service hose from the ***KoolKare Xtreme™*** unit to the refrigerant supply tank.

4. Open the following:
   — Supply tank valve, and
   — Blue service hose coupler.

5. Connect the power cord to the proper wall outlet with the correct voltage for the unit. For additional information refer to *Power Up* in this chapter and *Chapter 1–Specifications.*

6. Turn power switch ON.

7. Select RECOVER and press ENTER, the following message displays:

   EMPTY OIL DRAIN

   BOTTLE NOW

8. Press NEXT and the following message displays:

   OPEN PANEL VALVE

9. Turn the panel valve to LOW and press START, the following messages display:

   PLEASE WAIT . . .

   . . . PURGING AIR

. . . . .

RECOVERING . . .

AMOUNT RECOVERED

xxLb xxoz

The refrigerant flows from the virgin tank through your ***KoolKare Xtreme™*** unit and into the prepared recovery tank.

✓ Monitor the weight on the LCD display until the desired amount of virgin refrigerant has been transferred. Refer to *Tank Full/Empty* in this chapter.

10. When the desired amount of refrigerant has been transferred into the recovery tank, close the virgin tank hand valve.

11. Allow the recycler to run until recovery is complete, then close the blue service hose coupler.

12. When recovery is complete, the following message will display:

DRAINING OIL . . .

RECORD AMOUNT

WHEN DONE.

13. Waste oil is automatically expelled into the oil bottle.

✓ Discard refrigerant oil in accordance with local, state and federal regulations that apply in your area.

14. When operation is complete, the unit will beep once, the LCD screen will flash, and the following message displays:

CLOSE PANEL VALVE

THEN PRESS NEXT.

15. Turn the panel valve to OFF and press NEXT, the Amounts screen and then the Main Menu screen will display.

16. Remove the blue service hose and adapter from the virgin tank and store the adapter with unit accessories.

Errors and Messages

Error messages will flash on the bottom line of LCD screen and the LCD backlight will flash until conditions are corrected.

Temperature Error

Temperature errors can occur when the ***KoolKare Xtreme™*** unit is operating outside its normal temperature range or a temperature probe is damaged. If this should occur, the compressor will shut down. Return the ***KoolKare Xtreme™*** unit to normal operating temperature. If the temperature error is still present, call service.

Pressure Switch Err

A pressure switch error can occur when internal excessive pressure is seen. This high pressure will be seen if the red hand valve on the recovery tank is closed or the red hose fitting on the recovery tank is not installed or tight. While in recovery, if this should occur, the compressor will shut down. Open the tank valve or install or tighten the red hose fitting on the recovery tank to alleviate the pressure and restart recovery sequence. If the pressure switch error is still present call service.

High Pressure Error

A high tank pressure error can occur if pressure in the recovery tank reaches 350 psi. This high pressure will be seen if there is excessive air in the recovery tank due to vehicle A/C system having a leak. If this should occur, turn panel valve to OFF and press EXIT. Allow the ***KoolKare Xtreme™*** unit to purge and fix vehicle A/C system leak.

Tank Too Low

The chargeable amount is less than the available charge amount in the recovery tank. Add refrigerant to the recovery tank. A weight error will occur if one of these conditions arises:

- The tank is empty or below 3lb in the tank, or
- The scale circuitry malfunctions.

If this should occur:

- Add refrigerant to recovery tank, or
- Call service to repair the scale circuitry.

Tank Full

A full tank message will occur if one of these conditions arises:

- A full recovery tank weight is seen, or
- The scale circuitry malfunctions.

If this should occur:

- Charge a portion of the recovery tank into a certified tank,
- Replace the recovery tank, or
- Call service to repair the scale circuitry.

No Tank Present

A no tank message will occur if one of these conditions arises:

- There is no tank on the scale, or
- The scale circuitry malfunctions.

If this should occur:

- Install a recovery tank, or
- Call service to repair the scale circuitry.

Replace Filter

A replace filter message will occur when master filter/dryer percentage has expired. When this occurs, replace the master filter/dryer and reset the automatic reminder monitor, refer to *Accessing Master Filter/Dryer Reset* in this chapter.

Heater Error

A heater error message will occur if internal heater temperature is too high. Call service to repair the heater.

3

Maintenance

Use this chapter to maintain your ***KoolKare Xtreme™*** units':
- Master filter/dryer,
- Compressor,
- Vacuum pump, and
- When storing the unit for prolonged periods.

Troubleshooting information and a list of parts and accessories are also included.

Equipment Tips

❒ A stable scale weight reading, with the refrigerant not moving around in the recovery tank, is needed at the beginning and end of a recover/recycle or charge program. Do not lean on or move the unit at these times.

❒ Never attempt to change the recovery tank while your ***KoolKare Xtreme™*** unit is in use.

❒ Always recover the service hoses before disconnecting them from your ***KoolKare Xtreme™*** unit. For additional information refer to *Chapter 2–Recovering Service Hoses.*

❒ Never drop the recovery tank onto the scale. This may damage the scale assembly.

❒ Always oil the seals before connecting to any tank, filter or fitting. A leaky connection or no-flow condition may result if the connection is assembled dry.

❒ Always close all recovery tank valves, clockwise, when your ***KoolKare Xtreme™*** unit is not in use.

Master Filter/Dryer

Change the master filter/dryer when the filter percentage monitor has diminished to 0% since the last master filter/dryer change. Replacement of the master filter/dryer will be indicated by the REPLACE FILTER message on the LCD screen. The filter monitor has a reset of 95 lbs. During the course of recycling, this number decreases until it reaches zero. When zero is reached, the master filter/dryer needs to be replaced and the monitor reset. Refer to *Resetting Master Filter/Dryer Monitor* in this chapter or *Chapter 2–Accessing Master Filter/Dryer Reset*. Recovered refrigerant quality may be compromised if the filter is not replaced when required.

Changing the Master Filter/Dryer

Use the procedure in this section to change the master filter/dryer.

- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. If any refrigerant gets into eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.**
- **Do not remove the master filter/dryer while under pressure. Perform the maintenance procedure for removing the master filter/dryer in this section.**
- **Prevent refrigerant from contacting the skin.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

1. Evacuate service hoses by recovering if necessary and pulling a vacuum. For additional information refer to *Chapter 2–Recovering Service Hoses.*

2. Turn OFF power to the ***KoolKare Xtreme™*** unit and remove power cord from wall outlet.

3. Unscrew the two hose fittings from the master filter/dryer.

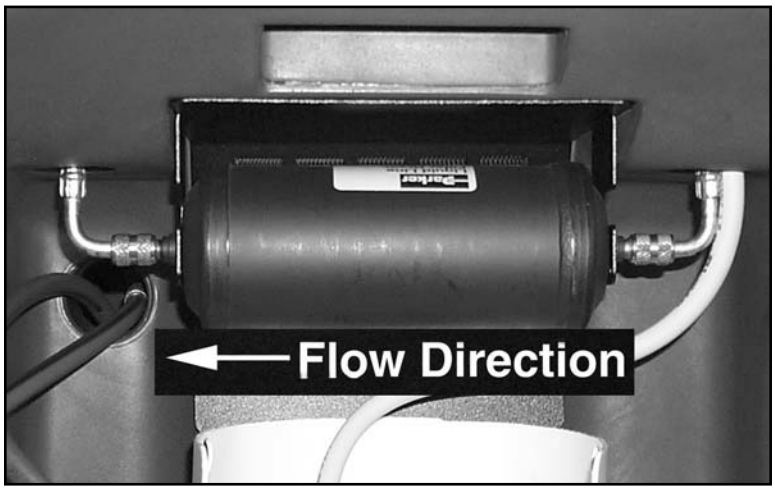

Figure 3-1: Master Filter/Dryer

4. Remove the master filter/dryer from its bracket.

✓ Dispose of the filter according to local, state and federal regulations that apply in your area.

5. Lightly oil hose seals and install a new master filter/dryer, matching the direction of FLOW on the filter with the flow decal on the cabinet.

6. Attach the hose fittings hand tight.

7. Reset master filter/dryer percentage monitor.

Resetting Master Filter/Dryer Monitor

Use the procedure in this section to reset the automatic reminder monitor for the master filter/dryer.

✓ This procedure should only be done when the master filter/dryer is replaced.

1. Power up the ***KoolKare Xtreme™*** unit.

2. Select SET-UP from the Main Menu.

3. Select FILTER from the Set-Up Menu.

4. Press RESET button.

5. Press CONFIRM to reset the master filter/dryer reminder monitor.

Compressor

For units w/o vacuum pumps (EEAC320A), the oil in the compressor assembly must be changed quarterly to prolong pump life. The optional oil change kit is recommended. For additional information refer to *Replacement Parts* in this chapter. All of the parts necessary to change the compressor oil are included in this kit.

Maintaining the Compressor

1. Evacuate service hoses by recovering if necessary and pulling a vacuum. For additional information refer to *Chapter 2–Recovering Service Hoses.*

✓ Recovery and evacuation operations must be performed to release pressure in the compressor.

2. Insure the panel valve is off.

3. Turn OFF power to the ***KoolKare Xtreme™*** unit and remove power cord from wall outlet.

4. Remove the four (4) bolts holding the plastic top cover, refer to *fig 3-2* for bolt locations.

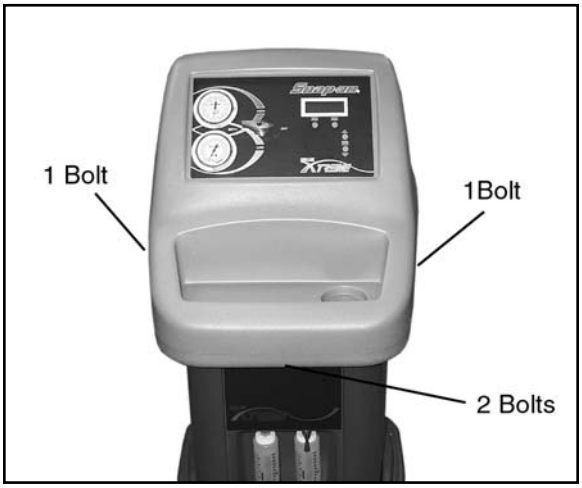

Figure 3-2: Top Cover Bolt Locations

5. Remove the plastic top cover.

6. Slide front panel support brackets off of the dowel pins.

7. Gently lay front panel forward.

- **Wear safety goggles and protective gloves, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.**
- **Read, understand and follow *Safety Information* in the front of this manual.**

8. Disconnect the tubing and hose assemblies from the compressor, taking note of their locations.

✓ Fittings at the compressor may be under pressure.

DO NOT unplug the electrical connections from the compressor. The capacitor will hold an electrical charge and an electrical shock can occur.

✓ Discard the O-rings from the hose tube ends.

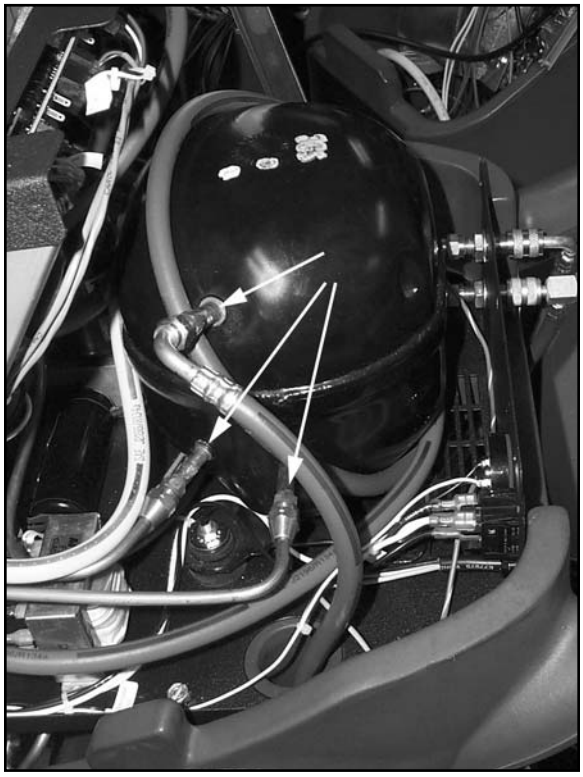

Figure 3-3: Compressor Connections

9. Remove the nuts holding the compressor in place.

10. Lift compressor up and to the side to position compressor connections over a drain pan.

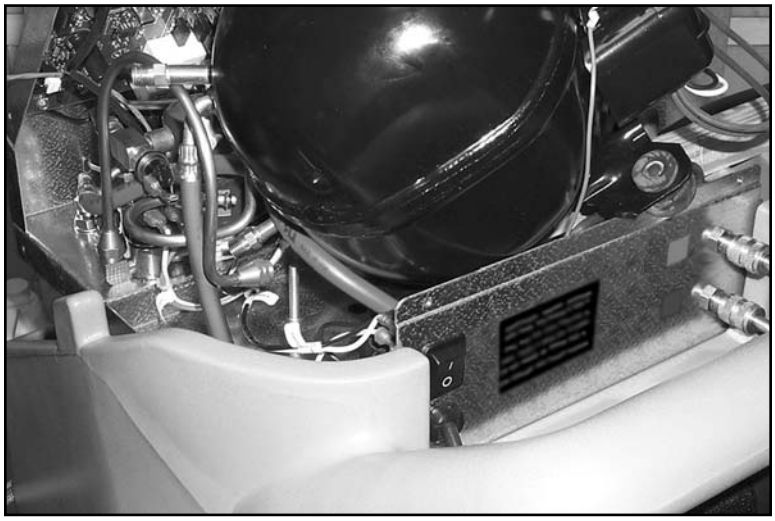

Figure 3-4: Lift Compressor

11. Drain the oil from the compressor. Approximately 9 oz. of oil should be recovered.

12. Reinstall compressor to its normal position. If approximately 9 oz. of oil is not recovered, repeat steps 10-11.

✓ Ensure compressor is not placed on, binds, or crimps any electrical wires or refrigerant hoses.

13. Use the plastic bottle supplied with the oil change kit to pour 9.3 oz (275 cc) of 3GS compressor oil into the input port of the compressor (top port).

14. Reinstall compressor hold down nuts.

15. Install new O-rings on the ends of the tubing and hose assemblies.

16. Place a small amount of compressor oil on the O-rings and reinstall the tubing and hose assemblies to their proper locations. Torque to 65 in. lbs.

17. Replace front panel support brackets and plastic top panel.

Maintaining the Vacuum Pump

(Only if using the EEAC319A with vacuum pump.)

Checking and Adding Vacuum Pump Oil

✓ To obtain an accurate vacuum pump oil level reading, the unit needs to be performing an evacuation with the vacuum pump running.

1. Look through oil level sight glass to verify vacuum pump oil level.

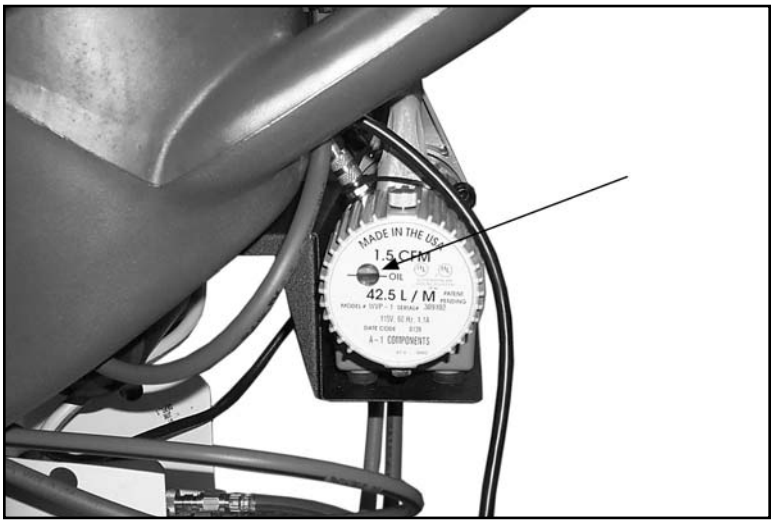

Figure 3-5: Oil Level Sight Glass

2. Oil level should appear to be in the middle of the sight glass.

3. If oil level is low, squirt oil into vacuum pump fill port.

Figure 3-6: Vacuum Pump Fill Port

Changing Vacuum Pump Oil

(Only if using the EEAC319A with vacuum pump.)
The vacuum pump contains approximately 4 oz. of oil. The oil must be changed at least every 6 months or if vacuum pump performance decreases. The oil may have to be changed earlier if the oil is no longer clear when viewed through the sight glass.

1. Turn OFF power to the ***KoolKare Xtreme™*** unit and remove power cord from wall outlet.

2. Release Velcro® strap holding vacuum pump.

3. Gently slide vacuum pump to the left, positioning vacuum pump drain off the end of the bracket.

4. Put a container under the drain plug of the vacuum pump.

5. Remove the filler and drain plugs and drain oil.

Figure 3-7: Pump Fill and Drain Ports

✓ Discard refrigerant oil in accordance with local, state and federal regulations that apply in your area.

6. Install the drain plug.

7. Pour the vacuum pump oil, from kit p/n EAK0227L01A, into the vacuum pump until the oil is visible halfway up the sight glass, refer to *fig 3-5.* The amount of oil is then approximately 4 oz.

8. Install the filler plug.

9. Slide vacuum pump back into original position and replace Velcro® strap.

10. Connect the power cord to the proper wall outlet with the correct voltage for the unit. For additional information refer to *Chapter 1–Specifications.*

11. Switch on the vacuum pump and let the pump run, with closed intake, for a few minutes. Top off the oil level if necessary.

Particle Filter Assembly

The particle filter assembly is connected to the blue (liquid) side valve of the recovery tank. A clogged particle filter may limit or block refrigerant flow.

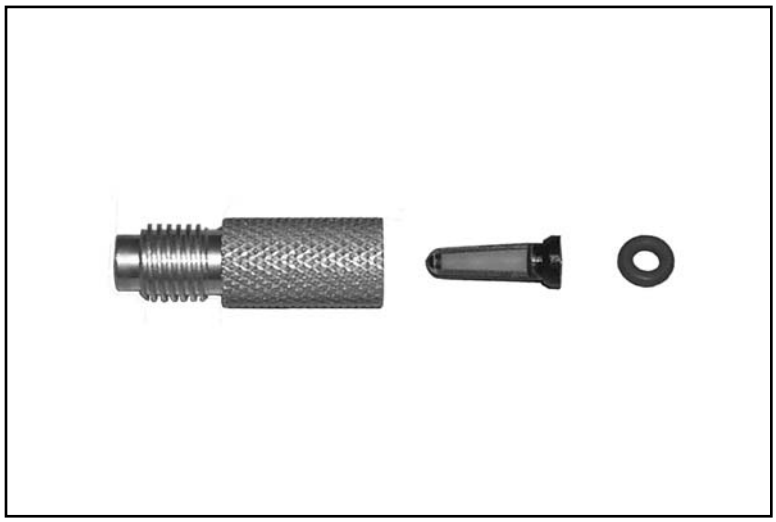

Figure 3-8: Particle Filter Assembly

Maintaining the Particle Filter

Perform the following procedure to clean the particle filter.

1. Turn OFF power to the ***KoolKare Xtreme™*** unit and remove power cord from wall outlet.

2. Close the blue (liquid) recovery tank valve.

3. Disconnect blue hose from particle filter assembly.

4. Remove filter assembly from tank valve.

5. Carefully remove O-ring and screen element from brass housing.

6. Wash screen element with mild soap and water, and blow dry with compressed air.

7. Reassemble filter taking care not to damage screen or O-ring. Lubricate O-rings with refrigerant oil.

8. Install filter assembly onto liquid tank valve.

9. Connect blue hose from the bottom of the unit to the particle filter assembly.

10. Open tank valve and check for leaks.

Storing the *KoolKare Xtreme™* Unit

Follow this procedure when storing your ***KoolKare Xtreme™*** unit for prolonged periods (3 months or more) of time.

✓ Storage temperature should not exceed the limits of -4° to 140°F.

1. Change the compressor and vacuum pump oil. Refer to *Maintaining the Compressor* and *Changing Vacuum Pump Oil* procedures in this chapter.

2. Close both hand valves on the recovery tank.

3. Remove the yellow hose from the recovery tank.

4. Close both service hose couplers.

5. Turn the panel valve to OFF.

Troubleshooting

Symptom	Possible Cause	Remedy
Machine does not turn on	• Power cord not plugged in	– Plug in the power cord
	• Power switch OFF	– Turn power switch ON
	• No power in A.C. outlet	– Check power source
Refrigerant not being removed from vehicle	• Hand valves on tank not open	– Open hand valves
	• Panel valve or service hose couplers not open	– Open panel valve or couplers
	• Recovery tank full (Tank Full Error)	– Change tank or Charge refrigerant
Excessive purging of non-condensable gases	• Fitting(s) not properly connected to master filter/dryer	– Tighten fitting(s) finger tight
	• Leaky service hose or adapter connection drawing in air	– Tighten fittings or replace seals in finger tight fittings
	• Maybe contaminated with a different refrigerant that has a higher pressure rating	– ID refrigerant, if contaminated replace tank
Does not charge	• Blue hand valve on recovery tank not open	– Open blue hand valve
	• Fitting not properly connected to recovery tank	– Tighten fitting finger tight
	• Leak in vehicle system	– Repair vehicle system leak
	• Service hose couplers not open	– Open couplers
	• Panel valve off	– Turn panel valve to LOW, BOTH, or HIGH
Machine does not draw a vacuum	• Loose hose connection	– Tighten loose hose connections
	• Low or no oil in vacuum pump	– Add oil to vacuum pump
	• Leak in vehicle system	– Repair vehicle system leak

Symptom	Possible Cause	Remedy
Refrigerant loss from tank on scale over time	• Leaky hand valve(s) on tank	– Make sure hand valves are either open completely (CCW) or closed completely (CW) and leak test
	• Leaky fitting(s)	– Oil seal with refrigerant oil and reconnect, or replace fitting, oil seal and reconnect
Long recover times	• System being recovered is cold and has components that hold a substantial amount of liquid refrigerant	– Heat A/C system by running engine with A/C OFF and keep hood closed as much as practical to hold in heat
Tank Temperature Error	• Operating outside normal temperature range	– Return to normal operating temperature
	• Temperature probe damaged	– Call service
Pressure Switch Err (Internal excessive pressure)	• Red hand valve on recovery tank is closed	– Open red hand valve on recovery tank
	• Red hose fitting on the recovery tank is not installed, or tight	– Install or tighten red hose fitting on recovery tank
High Pressure Error (Excessive tank pressure)	• Excessive air in tank	– Turn panel valve OFF, exit out of recovery screen, allow unit to purge, and fix leak
Tank Full	• Recovery tank full or overloaded	– Charge into external tank
		– Change tank
	• Scale circuitry malfunctions	– Call service
No Tank Present	• No tank on the scale	– Install a recovery tank
	• Scale circuitry malfunctions	– Call service
Tank Too Low	• Not enough refrigerant in tank to charge	– Add refrigerant to recovery tank
	• Scale circuitry malfunctions	– Call service
Replace Filter	• Master filter/dryer monitor has reached 0%	– Replace master filter/dryer and reset monitor
Heater Error	• Internal heater temperature too high	– Call service

Replacement Parts

Part Number	Description
1-27280	Service Fitting, Low-Side
1-27180	Service Fitting, High-Side
EAA0275L05A	Recovery Tank, 50 pound
1-19281A	Particle Filter Assembly
EAK0030C01AB	Master Drier Kit

Optional Accessories

EAK0027C00AS	Vehicle Adapter Repair Kit (O-rings)
1-15080	Low-Side Adapter Fitting
EAK0029C00AB	Compressor Oil Kit
EAK0227L01A	Vacuum Pump Oil Kit
EEAC316AV	Protective Cover

For service or to order replacement parts or optional accessories, contact your ***EquiServ®*** Representative or call 1-800-225-5786.

Snap-on Tools Company
Limited One (1) Year Warranty

Snap-on Tools Company (the "Seller") warrants only to the original purchaser that under normal use, care and service, the Equipment (except as otherwise provided herein) shall be free from defects in material and workmanship for one year from the date of original invoice. Items such as leads, probes, external hoses, adapters and all other attachments, supplies and consumables (except as otherwise provided herein) are warranted for 90 calendar days from the date of original invoice. Filter elements are not warranted.

SELLER'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED SOLELY TO THE REPAIR OR, AT SELLER'S OPTION, REPLACEMENT OF EQUIPMENT OR PARTS WHICH TO SELLER'S SATISFACTION ARE DETERMINED TO BE DEFECTIVE AND WHICH ARE NECESSARY, IN SELLER'S JUDGEMENT, TO RETURN THIS EQUIPMENT TO GOOD OPERATING CONDITION. NO OTHER WARRANTIES, EXPRESS OR 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 DISCLAIMED.

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 the Equipment caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of the Equipment by other than Seller's authorized representatives; (C) installation, repair or maintenance (other than specified operator maintenance) of the Equipment or related equipment, attachments, peripherals or optional features by other than Seller's authorized representatives; (D) improper or negligent use, application, operation, care, cleaning, storage or handling; (E) fire, water, wind, lightning or other natural causes; (F) 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 the Equipment, unusual physical, electrical or electromagnetic stress and/or any other condition outside of Seller's environmental specifications; (G) use of the Equipment in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (H) failure to comply with any applicable federal, state or local regulation, requirement or specification governing emission analyzers and related supplies or consumables.

Repairs or replacements qualifying under this Warranty will be performed on regular business days during Seller's normal working hours within a reasonable time following purchaser's request. All requests for Warranty service must be made during the stated Warranty period. This Warranty is nontransferable.

Snap-on **Tools Company**
Kenosha, Wisconsin 53141-1410