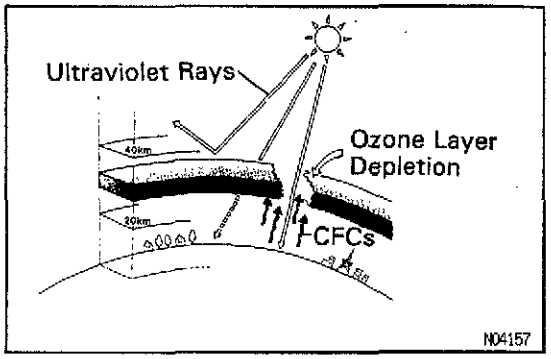
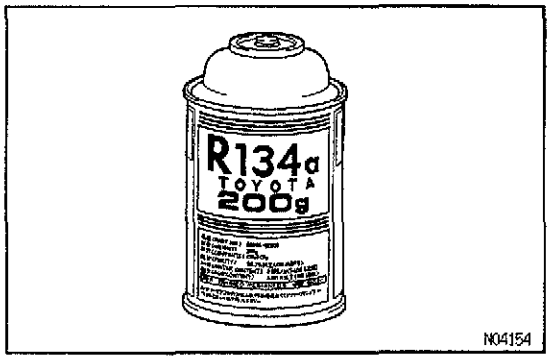


GENERAL INFORMATION

NEW AIR CONDITIONING SYSTEM WITH R134a

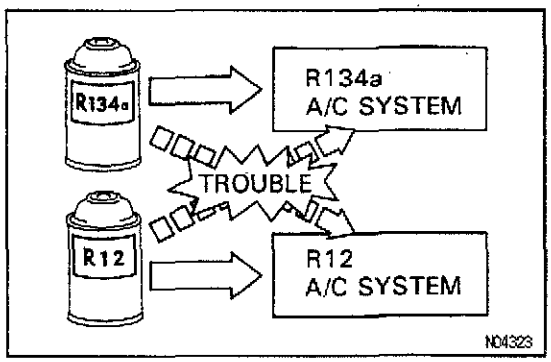
AC0K1-01

Refrigerant R 12 (CFC 12), previously used in automobiles' air conditioning systems is believed to contribute towards the depletion the earth's ozone layer. The ozone layer help to protect us against the harmful ultraviolet rays of the sun.



A newly developed refrigerant, R 134 a (HFC 134 a), does not the destroy the ozone layer.

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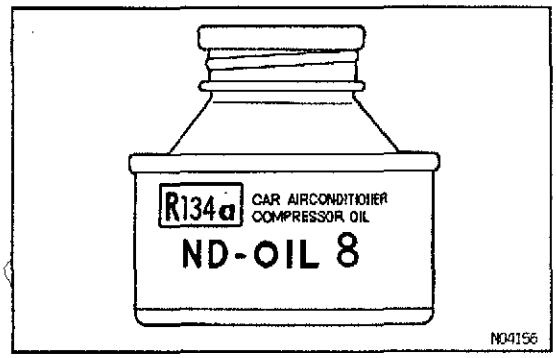


PRECAUTIONS FOR SERVICING R134a AIR CONDITIONINGS

AC0K2-02

1. USE OF NEW REFRIGERANT R134a

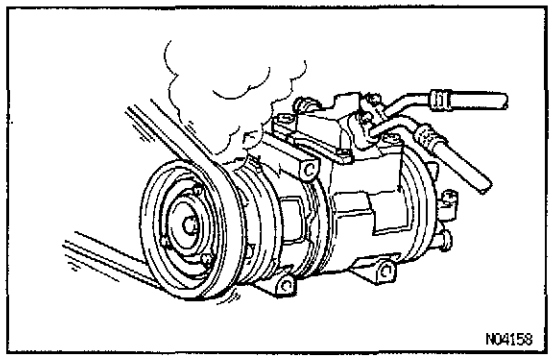
The very different characteristics of refrigerants R134 a and R12 have determined the design of their respective air conditioning systems. Under no circumstances allow R12 to enter an R134a system, or vice versa, because serious damage could occur.



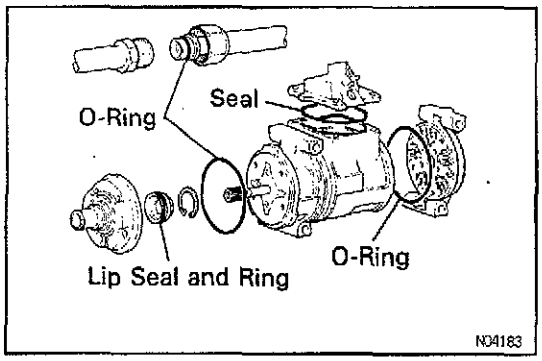
2. USE OF PROPER COMPRESSOR OIL

Compressor oil used in conventional R12 air conditioning systems cannot be used in R134a air conditioning systems.

Always use genuine Toyota R134a air conditioning oil ND–OIL 8, made expressly for use with R134a.



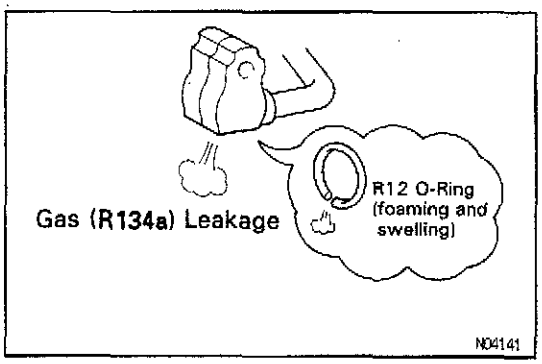
If even a small amount of the wrong oil is changed, it will result in clouding of the refrigerant. A large amount will cause the compressor to seize up.



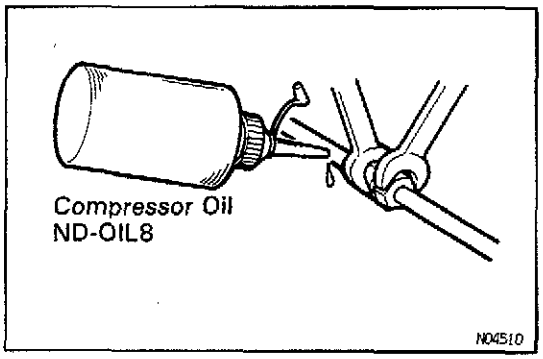
3. USE OF PROPER O–RINGS AND SEALS

O–rings and seals used for conventional R12 air conditioning systems cannot be used for R134a air conditioning systems.

Always use genuine Toyota R134a system O–rings and seals for R134a air conditioning systems.



If O – rings and / or seals for R12 air conditioning systems are used by mistake in the connections of an R134a air conditioning system, the O–ring and seals will foam and swell resulting in leakage of refrigerant.



4. TIGHTEN CONNECTING PARTS SECURELY

Securely tighten the connecting parts to prevent leaking of refrigerant gas.

- Apply a few drops of compressor oil to O–ring fittings for easy tightening and to prevent leaking of refrigerant gas.

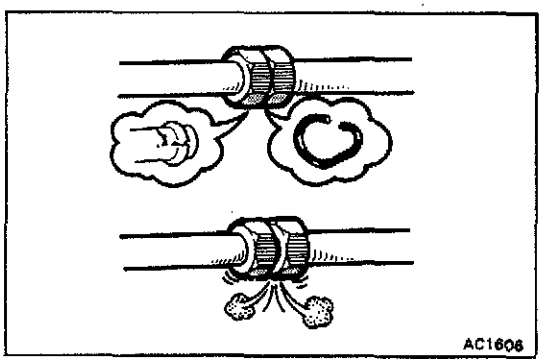
CAUTION: Apply only ND–OIL 8 compressor oil

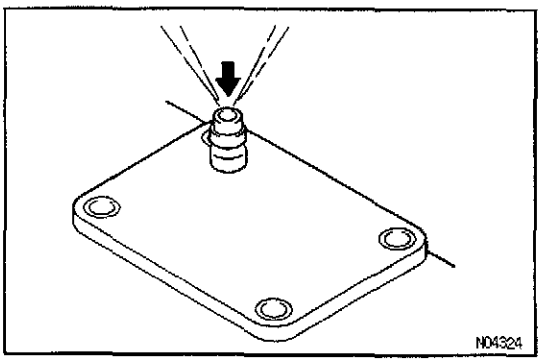
- Tighten the nuts using 2 wrenches to avoid twisting the tube.
- Tighten the O–ring fittings or the bolted type fittings to the specified torque.

5. INSERT PLUG IMMEDIATELY IN DISCONNECTED PARTS

Insert a plug immediately in the disconnected parts to prevent the ingress of moisture and dust.

6. DO NOT REMOVE PLUG FROM NEW PARTS UNTIL IMMEDIATELY BEFORE INSTALLATION





7. DISCHARGE GAS IN NEW COMPRESSOR FROM CHARGING VALVE BEFORE INSTALLING IT

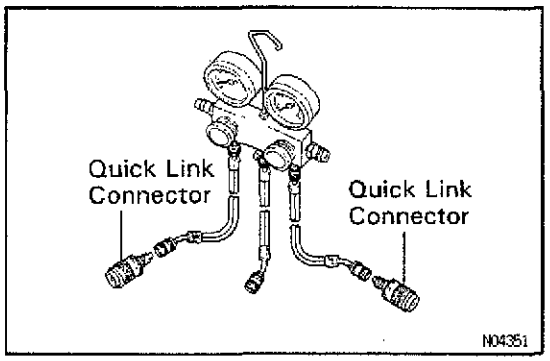
If the gas in the new compressor is not discharged first, compressor oil will spray out with gas when the plug is removed.

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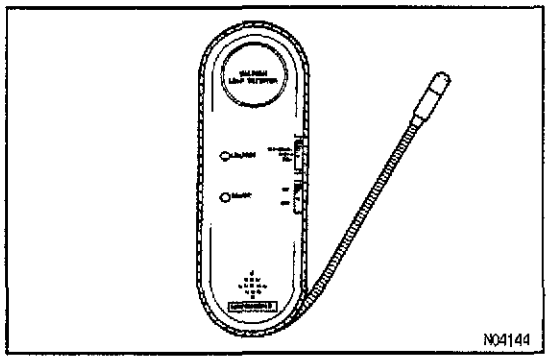
SERVICE TOOLS FOR R134a AIR CONDITIONING

When servicing R 134 a air conditioning systems always use the R134a dedicated manifold gauges, gas leak detector and vacuum pump adaptor.



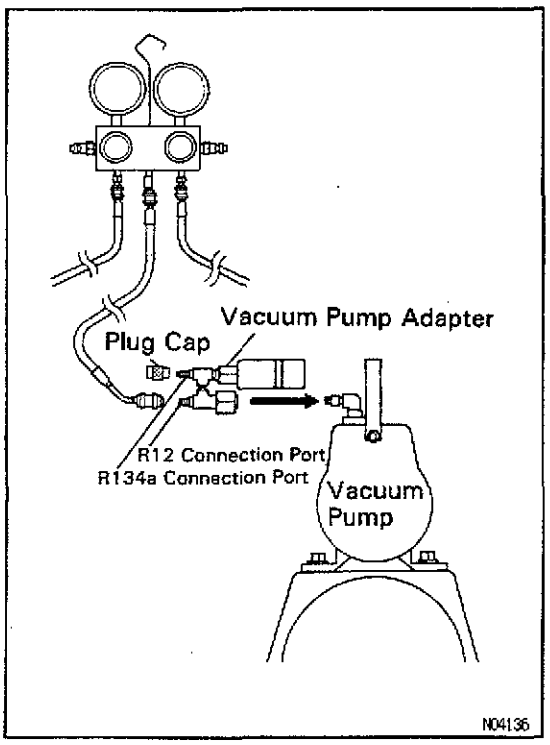
1. USE MANIFOLD GAUGES FOR R134a AIR CONDITIONING

Always use R 134 a dedicated manifold gauges to prevent R12 and R12 compressor oil contaminating the R134a system.



2. USE R134a GAS LEAK DETECTOR

Similarly, always use an R134a dedicated leak detector. The R12 leak detector is not sufficiently sensitive.



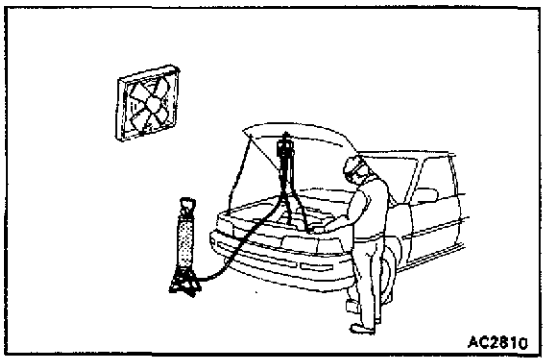
3. USE VACUUM PUMP ADAPTER

By correcting a vacuum pump adapter, the vacuum pump can be used for both R134a and R12 air conditioning systems.

The vacuum pump adaptor has an internal magnetic valve. When evacuation is completed and the vacuum pump switch is turned off, the magnetic valve opens allowing the introduction atmospheric air into the manifold gauges to prevent the back flow of oil from the vacuum pump into the gauge hose.

CAUTION:

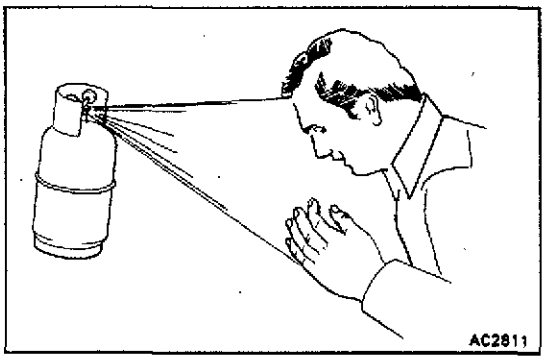
Be sure to turn off the manifold gauge valve immediately after evacuating the system. Then you may switch off the vacuum pump. If this order is reversed, the line will be temporarily open to atmosphere.



AC0K4-01

HANDLING PRECAUTIONS FOR REFRIGERANT

1. **DO NOT HANDLE REFRIGERANT IN AN ENCLOSED AREA OR NEAR AN OPEN FLAME**
2. **ALWAYS WEAR EYE PROTECTION**



3. **BE CAREFUL THAT LIQUID REFRIGERANT DOES NOT GET IN YOUR EYES OR ON YOUR SKIN**

If liquid refrigerant gets in your eyes or on your skin:

(a) Wash the area with lots of cool water.
CAUTION: Do not rub your eyes or skin.
(b) Apply clean petroleum jelly to the skin.
(c) Go immediately to a physician or hospital for professional treatment.

AC0K5-01

HANDLING PRECAUTIONS FOR REFRIGERANT CONTAINER

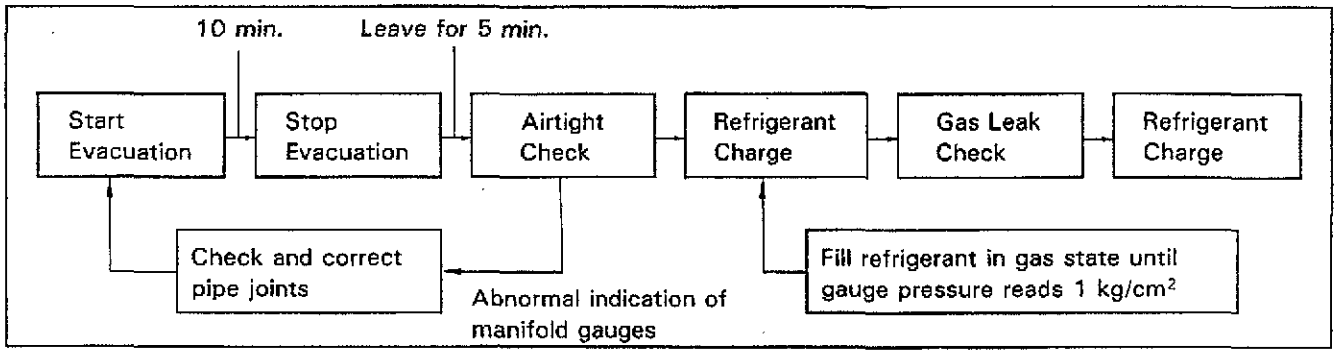
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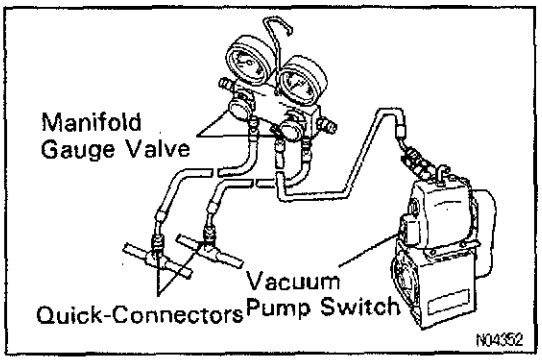
1. **NEVER HEAT CONTAINER OR EXPOSE IT TO NAKED FLAME**
2. **BE CAREFUL NOT TO DROP CONTAINER AND NOT TO APPLY PHYSICAL SHOCKS TO IT**

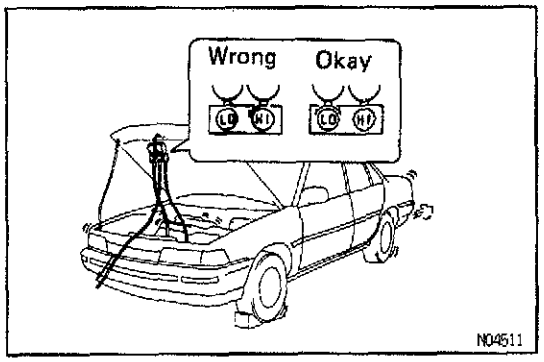
AC0K6-01

CHARGING AND LEAK – CHECK METHODS

Evacuate the refrigeration system according to the following procedures.







CAUTION:

- **Be sure to connect both the high and low pressure quick — connectors onto the A / C system when evacuating. If only one side is connected, the system would be open to atmosphere through the other connector, making it impossible to maintain vacuum.**
- **Be sure to turn off the manifold gauge valve immediately after evacuating the system. Then you may switch off the vacuum pump.**

AC0K7-01

PRECAUTIONS WHEN CHARGING REFRIGERANT

1. **DO NOT OPERATE COMPRESSOR WITHOUT ENOUGH REFRIGERANT IN REFRIGERANT CYCLE**
   If there is not enough refrigerant in the refrigerant cycle, oil lubrication will be insufficient and compressor burnout may occur, so take care to avoid this.
2. **DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILST COMPRESSOR IS OPERATING**
   If the high pressure valve is opened, refrigerant flows in the reverse direction and could cause the charging cylinder to rupture, so open and close the low pressure valve only.
3. **BE CAREFUL NOT TO OVERCHARGE WITH REFRIGERANT IN SYSTEM**
   If refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy, engine overheating etc.

AC0EP-03

ELECTRICAL PARTS

Before removing and inspecting the electrical parts, set the ignition switch to the LOCK position and disconnect the negative (−) terminal cable from battery.

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