

Alle Angaben ohne Gewähr !

## Klimaanlage Corvette C4 1990 – 1993

### Hinweis zur Umrüstung auf R134A / R437A Drum Methode

- R12 Anlage absaugen und spülen
- O-Ringe Erneuern, neue O-Ringe mit PAO Öl benetzen.
- ggf. Klimaanlage Schläuche ersetzen gegen R134A Schläuche
- Trockner ersetzen
- PAO Öl einfüllen, Ölmenge gemäß GM Service Manual
- Cycling switch erneuern
- Schraderventile erneuern
- Dichtheitsprüfung
- Anlage mindestens 2 Stunden evakuieren
- Bei C68 Klimaautomatik Code 09 löschen
- Anlage flüssig mit 420 g am Trockner füllen
- Motor starten, volle Kühlleistung an der Klimaanlage einstellen und Restmenge nachfüllen  
(Füllmenge ca. 920 g R134A / R437A)

**Achtung: alten oder neuen Compressor auf den Köpf legen und Ölmenge in einem Messbecher sammeln, dann die gesammelte Menge des alten Öl abmessen und zzgl. 30 ml PAO Öl in den neuen Kompressor wieder einfüllen!**

#### Refrigerant Oil Distribution

- New oil quantities must be added to the system during component replacement as follows:
  - a. Compressor - Remove, drain oil, measure, replace with same amount of new oil plus 30 ml (1 fl. oz.).

See 10PA17/10PA20 AIR CONDITIONING COMPRESSOR OVERHAUL (SECTION 1D) for proper compressor draining procedures.

- b. Evaporator - Add 90 ml (3 fl. oz.).
- c. Condenser - Add 30 ml (1 fl. oz.).
- d. Accumulator - Add 105 ml (3.5 oz.) of oil to the replacement accumulator to compensate for oil retained by the original accumulator desiccant and bag assemblies. The accumulator should only be replaced if leaking is due to a perforation, damaged O-ring seat, or damaged threads.

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## Refrigerant Oil Loss from an Abrupt Leak

An abrupt loss of refrigerant usually will cause a significant loss of refrigerant oil.

To insure the proper amount of refrigerant oil is added into the A/C system, remove the accumulator. Drain, measure and record the quantity of oil in the accumulator. If the amount drained is less than 90 ml (3 oz.), add 90 ml (3 oz.) of new 525 viscosity refrigerant oil to the system. If the amount is more than 90 ml, add the same amount of new 525 viscosity refrigerant oil.

## Evacuating and Charging the A/C System

If the system has been opened for any repair, or the Refrigerant-12 charge lost, the system must be evacuated prior to charging.

Evacuation and charging is a combined procedure, and all gage lines must be purged with R-12 prior to charging.

There are two evacuate and charge procedures.

1. J 23500-01 Charging Station Method.
2. Drum Method.

**NOTICE:** Under no circumstances should alcohol be used in the system in an attempt to remove moisture. Damage to the system components could occur.

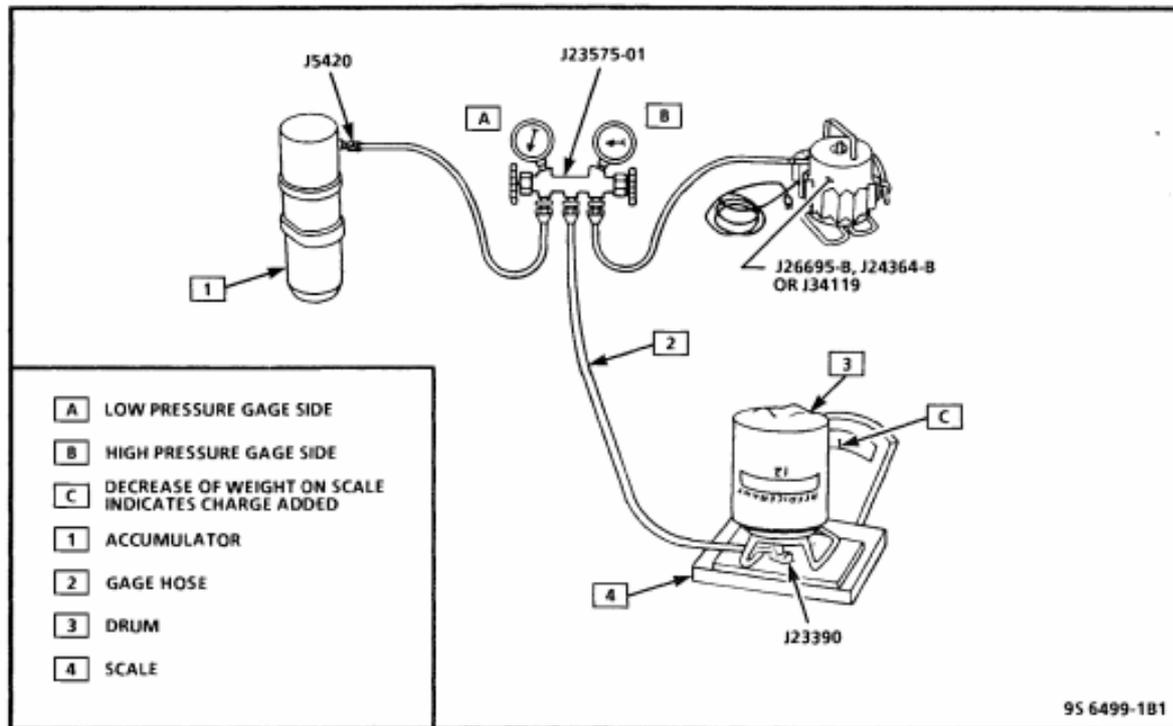


Figure 18 - Charging the Cycling Clutch Orifice Tube

## Refrigerant Drum Method Figure 18

Place the Refrigerant-12 drum on a scale and note the total weight before charging. Watch the scale during charging to determine the amount of R-12 used. Be sure to check the tightness of the Schrader valve before connecting the manifold gage set.

1. Connect manifold gage set J 23575-01 as follows:
  - a. Low-pressure gage to accumulator fitting.
  - b. Gage set center hose to Refrigerant-12 source.
  - c. High-pressure gage to vacuum pump.
2. To begin evacuation of the A/C system with manifold gage set and vacuum pump, slowly open high and low-side gage valves and begin vacuum pump operation. Evacuate the system until the low-side gage reaches 711.2-736.6 mm (28-29 in.)

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vacuum. Note that in all evacuation procedures, the specification of 711.2-736.6 mm (28-29 in.) vacuum is used. This specification can only be reached at or near sea level. For each 304.8 m (1,000 ft.) above sea level, specification should be lowered by one inch vacuum. At 1525 m (5,000 ft.) elevation, only 584.2-609.6 mm (23-24 in.) of vacuum is required. If prescribed vacuum cannot be reached, close vacuum control valve, shut-off pump and look for a leak at connections, pump or the vehicle air conditioning system.

3. When gage reaches prescribed vacuum, the system is fully evacuated. Close the high-side gage set valve and turn "OFF" the vacuum pump.
4. Watch low-side gage to be sure vacuum holds for five minutes. If vacuum is held, disconnect vacuum hose at gage set and then proceed with charging.

**NOTICE:** If the air conditioning system has been opened for a period exceeding 24 hours, continue evacuating the air conditioning system for an additional one-half hour.

5. If vacuum does not hold for five minutes, charge system with 420 ml (8 oz.) Refrigerant-12, and leak check. Discharge system again and repair leak as necessary. Repeat evacuation procedure.

#### Kältemittel-Drum-Methode

##### Abbildung 18

Legen Sie die Flasche Kältemittel auf eine Waage und notieren Sie das Gesamtgewicht vor der Befüllung. Beobachten Sie die Waage während des Befüllens, um die Menge des verwendeten Kältemittels zu bestimmen.

Prüfen Sie unbedingt die Dichtheit des Schrader-Ventils vor dem Anschluss des Manometersatzes.

1. Schließen Sie den Manometersatz wie folgt an:
  - a. Niederdruck-Manometer an Speicheranschluss.
  - b. Mittelschlauch des Manometersatzes an die Kältemittel-Quelle.
  - c. Hochdruckmanometer zur Vakuumpumpe.
2. Beginn der Evakuierung der Klimaanlage mit Manometer-Satz und Vakuumpumpe, langsam geöffnet Hoch- und Niederseiten-Manometer-Ventile und Vakuumbeginn Pumpenbetrieb.

Evakuieren Sie das System, bis die Niederdruckseite 711,2-736,6 mm (28-29 in.) erreicht.

**Zeit des Evakuierens 2 Stunden**

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Vakuum: Beachten Sie, dass bei allen Evakuierungsverfahren, die Spezifikation von 711,2-736,6 mm (28-29 in.) Vakuum verwendet wird. Diese Spezifikation kann nur auf oder nahe dem Meeresspiegel erreicht werden. Für jede 304,8 m

(1.000 ft.) über dem Meeresspiegel sollte die Spezifikation um einen Zoll Vakuum abgesenkt. A t 1525 m (5.000 ft.)

Höhe, nur 584,2-609,6 m m (23-24 in.) von

Vakuum erforderlich ist. I f vorgeschriebenes Vakuum kann nicht erreicht werden, Vakuumregelventil schließen, Absperrung Pumpe und suchen Sie nach einem Leck an Verbindungen, Pumpe oder die Fahrzeugklimaanlage.

Wenn das Messgerät den vorgeschriebenen Unterdruck erreicht, wird ist das System vollständig evakuiert.

Schließen Sie an der Hochdruckseite des Manometersatz das Ventil und schalten Sie die Vakuumpumpe "AUS".

Achten Sie darauf, dass das Vakuum nach abschalten der Pumpe für 5 Minuten gehalten wird.

Wenn das Vakuum gehalten wird, trennen Sie die Verbindung Vakuumschlauch am Manometersatz und beginnen Sie dann mit Befüllen.

**HINWEIS:** I f die Klimaanlage wurde

für einen Zeitraum von mehr als 24 Stunden geöffnet, weiter Evakuierung der Klimaanlage für eine zusätzlich eine halbe Stunde.

### To Begin Charging of the A/C System

1. Start engine and set A/C mode control button on "OFF." Place J 5421-02 pocket thermometer in instrument panel air conditioning outlet. Open driver and passenger window.



#### Important

- If oil is to be added to the system, add it at this time. Refer to "Adding Oil to the Air Conditioning Refrigerant System" in this section.

**420g  
R134A**

2. With the Refrigerant-12 drum inverted, open R-12 source valve(s) and allow 480 ml (16 oz.) of liquid R-12 to flow into system through low-side service fitting.

**420g  
R134A**

3. As soon as 480 ml (16 oz.) has been added to system, immediately engage the compressor by setting the A/C control button to "NORM" and blower speed on "HIGH," to draw in the remainder of the R-12 charge. See "Specifications" for total R-12 charge. The charging operation can be sped up by using a large volume fan to pass air over the condenser. If the condenser temperature is maintained below charging cylinder temperature, Refrigerant-12 will enter the system more rapidly.
4. On C68 (Automatic A/C) systems, the low pressure cycling switch may need to have a jumper wire installed across the switch connector terminals in order to prevent A/C compressor from disengaging while charging the A/C system. The C68 system may disengage the compressor and set a 09 (Low Freon) fault code during the recharging procedure if the low pressure cycling switch is not bypassed refer to ELECTRONIC AUTOMATIC AIR CONDITIONING (SECTION 1C1) for more information.
5. Turn "OFF" R-12 source valve and run engine for thirty seconds to clear lines and gages.
6. With the engine running, cover the fitting with a rag or shop towel and remove the charging low-side hose adapter from the accumulator service fitting. Unscrew rapidly to avoid excess R-12 escape from system.

**CAUTION:** Never remove a gage line from its adapter when line is connected to A/C system. Always remove the line adapter from the service fitting to disconnect a line. Do not remove charging hose at gage set while attached to accumulator. This will result in complete discharge of system due to the depressed Schrader valve in service low-side fitting, and may cause personal injury due to escaping Refrigerant-12.

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7. Replace protective cap on accumulator fitting.
8. Turn engine "OFF."
9. Leak check system with electronic leak detector J 29547 or equivalent. See "Leak Testing the Refrigerant System" in this section.
10. Remove the Low Pressure Cycling Switch connector jumper wire if installed in Step 4.
11. Start engine.
12. With system fully charged and leak-checked, continue to monitor system performance.