

Technical Bulletin

Model

All

Group

8

Subject:

**Retrofitting R12 A/C System
to Refrigerant R134**

Part Identifier

8717

Number

9501

ATTENTION: Service Manager / Service Technician

Models Affected: *All*

Concern: Retrofitting of R12 air conditioning systems to refrigerant R 134a (formerly R12).

General Information: As of January 1, 1995, (January 1, 1996 for USA) production of refrigerant R 12 containing CFC substances is no longer permitted in accordance with legislation in the European Union and several other countries and will be made illegal (with specific exceptions) worldwide in the near future. Starting with Model Year '93 (P), all air conditioning systems of new Porsche vehicles are factory charged with non-CFC refrigerant R 134a. The formerly used refrigerant R 12 was phased out at the same time. A new type of refrigerant oil, ND-Oil 8, must be used in conjunction with refrigerant R 134a. This refrigerant oil is of a synthetic type. The formerly used refrigerant oil based on mineral oils will not mix with the ND-Oil 8 refrigerant oil required for R 134a.

Due to the chemical properties of the new refrigerant R 134a and of the new refrigerant oil, modifications to the materials of various components exposed to refrigerant oil have become necessary.

The maximum refrigerant and refrigerant oil capacities are changed in this retrofitting process!

Retrofitting: In most cases, older vehicles fitted with air conditioners charged with R 12 refrigerant containing CFC can be converted without any major problems.

It is the responsibility of the dealer/retrofitting agent to maintain A/C system integrity during the retrofitting process.

It is of particular importance to draw off the R12 refrigerant and refrigerant oil charge. Recycling service equipment should be used for this purpose and to separate the refrigerant oil from the refrigerant.

Retrofitting operations should only be performed by qualified personnel in Porsche workshops. After retrofitting, a sticker should be attached near the compressor and in the Maintenance Booklet to confirm that retrofitting has been performed according to specifications. This technical information provides you with an overview of the required scope of operations and parts requirements for retrofitting air conditioners to non-CFC refrigerant R 134a.



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Procedures:

Retrofitting of air conditioning systems to refrigerant R 134a:

Important: When working on air conditioning systems, observe safety precautions for operations on the air conditioning system and for handling the refrigerant (also refer to Repair Manual, Group 87).

1. Before starting retrofitting, check operation of air conditioning to see if additional repair operations are required on the air conditioning system (e.g. faulty piping, inoperative compressor and/or system leaks).
2. Connect recycling service equipment for refrigerant R 12. Extract and dispose of refrigerant and refrigerant oil properly in accordance with instructions. Measure and make note of the refrigerant oil volume that has been drawn off.
3. Refill the system with the entire R 12 refrigerant volume drawn off **without the refrigerant oil**.
4. Start engine. Switch on A/C system and run engine at approximately 2,000 rpm for approximately 10 minutes. Operate the A/C system to mix any remaining refrigerant oil with the refrigerant so that it can be drawn off.
5. Draw off refrigerant and refrigerant oil. Measure refrigerant oil volume and add to volume determined under item 2. At least 50% of the specified refrigerant oil quantity (see system specifications in brackets) should be removed from the system.

If insufficient refrigerant oil was drawn off or drained, proceed as follows according to the compressor type:

- a) Compressor with drain plug:
Remove drain plug to drain refrigerant oil.
- b) Compressor without drain plug:
Remove compressor and drain refrigerant oil at port connections.
- c) Refit compressor.

6. Carry out any repairs that might be required on the air conditioning system (see item 1). Replace the receiver dryer (see chart) and install without any delay after removing the plugs. Replace o-rings and coat them with fresh ND-Oil 8 refrigerant oil.



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Procedures: (Cont'd)

7. To allow the R 134a service equipment to be connected, fit the required adapters (angle valves or straight adapters, depending on space constraints) to the previously used connections.

New charge:

8. Evacuate system with A/C in maximum position. If system evacuation is successful, proceed with item 9. If not o.k., proceed with troubleshooting (leak) and repair.
9. Fill in fresh ND-Oil 8 refrigerant oil (for volume see charts) using service unit or external filling unit.

Note: Only use new oil, used refrigerant oil extracted from an A/C unit must not be re-used.

10. Evacuate system again for approximately 1 hour. Run leak test in vacuum section (the vacuum generated must be maintained for approximately 2 minutes).
11. Fill with specified quantity of refrigerant R 134a.
12. Run engine. Check for output and leaks at an increased high pressure of approximately 18 bar. To reach this high pressure, switch off the fans briefly by disconnecting the wiring plug.
13. Sign the supplied (figure 1) self-adhesive labels (2 pc.) with a permanent marker to certify that retrofitting was performed correctly. Also enter the new capacities of refrigerant R 134a and refrigerant oil.

Attach one label to the body sheet metal near the compressor.
Attach second label in the maintenance booklet of the vehicle.

Standard self-adhesive label

Vorsicht Achtung: Klimaanlage Umgerüstet auf R-134a Umstellung durchgeführt Gemäss SAE-Verordnung SAE J1981 2-Use-Füllmenge: 1) Füllkompressionsverminderung Volumen: 1) Geben Sie Personelle Verbleibend	R-134a	Caution Notice: Air Conditioner Rebuilt to R-134a Refill Pressure Performed to SAE J1981 R-134a Equipment Operating charge Fill-Compressor Lubricant Volume: Use Porsche retrofitting instructions
Umstellung durchgeführt Markiert performed by _____ 1) = Enter relevant information here.		
Copyright © Für weitere Informationen über A/C System (R134a) System ist zu Service by qualified personnel SAE		

Figure 1



PORSCHE
CARS
NORTH
AMERICA
INC.

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Warranty Information:

A two year parts warranty without mileage limitations applies to all Genuine Porsche parts used for retrofitting.

The dealer warrants the A/C system integrity, correct installation and execution of all retrofitting operations.

944 - Model Years 1983 to 1985/1

Description	Qty.	Part Number	Notes
Receiver Dryer	1	944 573 943 00	May also be retrofitted to A/C systems using R 12
O-ring 7.5 X 2 mm	2	999 707 247 40	Coat with fresh ND-Oil 8 when installing
Charging Valve (see note)			Tightening Torque: 10 - 12 Nm (7.5 - 9 ftlbs)
High Pressure Valve	1	928 573 965 03	Angle Valve 90°
Low Pressure Valve	1	928 573 965 00	Straight Adapter
ND-Oil 8 Refrigerant Oil		PNA 573 001 40cc PNA 573 002 250cc	Capacity: 300 ± 20 ml. (270 ml) Value in () = Cap. for R 12
Refrigerant R 134a		-----	Capacity: 1020 g
Self-Adhesive Label	2	964 701 141 02	Attach the self-adhesive labels in the following places: - on the body work near the A/C compressor - in the Maintenance Booklet

Assembly Note:

When fitting Angle Valves (A), remove the formerly used valve inserts.

When fitting straight adapters (B), the former valve inserts remain installed.



Installed Compressor 944 126 008 00 - without drain plug.



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**944, 944S, 944 Turbo - Model Years 1985/2 to 1991
924S, Model Years 1987, 88**

Description	Qty.	Part Number	Notes
Receiver Dryer	1	944 573 943 00	May also be retrofitted to A/C systems using R 12
O-ring 7.5 X 2 mm	2	999 707 247 40	Coat with fresh ND-Oil 8 oil when installing
Charging Valve (see note)			Tightening Torque: 10 - 12 Nm (7.5 - 9 ftlbs)
High Pressure Valve	1	928 573 965 01	Straight Adapter
Low Pressure Valve	1	928 573 965 00	Straight Adapter
ND-Oil 8 Refrigerant Oil		PNA 573 001 40cc PNA 573 002 250cc	Capacity: 130 ± 20 ml. (120 ml) Value in () = Cap. for R 12
Refrigerant R 134a		-----	Capacity: 924S=770g 944 = 860g
Self-Adhesive Label	2	964 701 141 02	Attach the self-adhesive labels in the following places: - on the body work near the A/C compressor - in the Maintenance Booklet

Assembly Note:

When fitting Angle Valves (A), remove the formerly used valve inserts.

When fitting straight adapters (B), the former valve inserts remain installed.



Installed Compressor 944 126 008 00 - without drain plug.

